# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 5, 1965 Volume 810 Number 1


# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of November 1964

| | |
|---|---|
| Examiner affirmed | 241 |
| Examiner affirmed in part | 36 |
| Examiner reversed | 87 |
| Total | 364 |

### Re Meeting on Proposed New Interference Practice

Pending further consideration of proposed changes in the interference practice, the public hearing scheduled for January 12, 1965 (808 O.G. 381) is hereby canceled.

EDWARD J. BRENNER,
*Commissioner.*

Dec. 9, 1964.

### TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

### Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

*Interferences*

The following amended rules are adopted. The text of these rules, except in certain particulars, was published in the Federal Register of July 9, 1964 (29 F.R. 9398), and all persons who desired to were invited to submit written data, views, argument or suggestions, or to attend the hearing held on September 1, 1964, in connection therewith. The rules are being adopted after full and careful consideration of all the material submitted. The departures from the published text meet the views expressed in the material.

The time and manner of taking effect is as follows:

The amended rules shall take effect January 1, 1965, and shall apply only to interferences proposed for declaration after that date. In all other cases, the rules prior to amendment shall apply.

Section 1.204(b) of Title 37 CFR (Patent Rule 204) is amended and new paragraph (c) is added, as follows:

§ 1.204 *Interference with a patent; affidavit by junior party.*

* * * * *

(b) When the effective filing date of an applicant is three months or less subsequent to the effective filing date of a patentee, the applicant, before the interference will be declared, shall file an affidavit that he made the invention in controversy in this country before the effective filing date of the patentee, or that his acts in this country with respect to the invention were sufficient to establish priority of invention relative to the effective filing date of the patentee.

(c) When the effective filing date of an applicant is more than three months subsequent to the effective filing date of the patentee, the applicant, before the interference will be declared, shall file two copies of affidavits by himself and by one or more corroborating witnesses, supported by documentary evidence if available, setting out a factual description of acts and circumstances which would prima facie entitle him to an award of priority relative to the effective filing date of the patentee, and accompanied by an explanation of the basis on which he believes that the facts set forth would overcome the effective filing date of the patentee. Upon a showing of sufficient cause, an affidavit on information and belief as to the expected testimony of a witness whose testimony is necessary to overcome the filing date of the patentee may be accepted in lieu of an affidavit by such witness. If the examiner finds the case to be otherwise in condition for the declaration of an interference he will consider this material only to the extent of determining whether a date prior to the effective filing date of the patentee is alleged, and if so, the interference will be declared.

Section 1.226 is amended to read as follows:

§ 1.226 *Notice and access to applications.*

(a) After the preliminary statements have been received and approved, or the time for filing them has expired, the parties will be notified, and given the serial numbers and filing dates of the applications of each adverse party, including any applications which the parties may be entitled to inspect, and the parties will be permitted to see or obtain copies of each other's applications, except copies of affidavits filed under §§ 1.131, 1.202 and 1.204 which shall be and remain sealed until preliminary statements are opened under § 1.227, except as provided in § 1.228 regarding affidavits under § 1.204(c). The preliminary statements will be resealed by an examiner of interferences and shall not be revealed to the opposing parties except as provided in § 1.227.

(b) The notices will also ordinarily specify the motion period (§ 1.231) and may also include an order to show cause (§§ 1.225 and 1.228).

Section 1.228, is added, reading as follows:

§ 1.228 *Summary judgment.*

When an interference has been declared on the basis of a showing under § 1.204(c), such showing will be examined by a Board of Patent Interferences. If the Board considers that the facts set out in the showing provide sufficient basis for overcoming the effective filing date of the patentee, the interference will proceed in the normal manner as provided by these rules; otherwise an order shall be entered after the preliminary statements have been received and approved or the time for filing them has expired (§ 1.226), pointing out wherein the showing is insufficient and notifying the applicant making such showing that summary judgment will be

### New Applications Received During November 1964

| | |
|---|---|
| Patents | 6,975 |
| Designs | 436 |
| Plant Patents | 8 |
| Reissues | 9 |
| Total | 7,428 |

### Issue—January 5, 1965

| | | |
|---|---|---|
| Patents | 974 | No. 3,163,865 to No. 3,164,838, incl. |
| Designs | 90 | No. 199,955 to No. 200,044, incl. |
| Reissues | 3 | No. 25,707 to No. 25,709, incl. |
| Total | 1067 | |

rendered against him because of such insufficiency at the expiration of a period specified in the notice, not less than thirty days, unless cause be shown why such action should not be taken. Any response made during the specified period will be considered by the Board without an oral hearing unless such hearing is requested by the applicant, but additional affidavits or exhibits will not be considered unless accompanied by a showing justifying their omission from the original showing. If the applicant files a response to the order to show cause, the patentee will be furnished with one of the copies of the showing under § 1.204(c) and will be allowed thirty days from its mailing date within which to present his views with respect thereto. He shall also be entitled to be represented at any oral hearing on the matter.

Section 1.261 is amended to read as follows:

§ 1.261 *Termination of interference.*

An interference will be terminated by judgment of priority after final hearing (§§ 1.251 to 1.259), or by judgment on the record as provided by § 1.225 or § 1.252, or by summary judgment because of an insufficient showing under § 1.204(c) as provided by § 1.228, or by dissolution as provided by § 1.232 or § 1.237, or as otherwise provided.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
*Commissioner of Patents.*

Approved: November 13, 1964.

WILLIAM W. EATON,
*Acting Assistant Secretary for Science and Technology.*

[F.R. Doc. 64-12090; Filed, Nov. 25, 1964; 8:47 a.m.]

*Published in 29 F.R. 15866, 15867, Nov. 26, 1964*

## Disclaimers

3,035,946.—*Rudolph W. Kleine*, Milwaukee, Wis. METHOD OF MANUFACTURING TRACK SHOES. Patent dated May 22, 1962. Disclaimer filed Oct. 6, 1964, by the assignee, *CRO Engineering Co. Inc.*

Hereby enters this disclaimer to claim 5 of said patent.

3,138,571.—*Ivan C. Popoff*, Ambler, Pa. ANTIOXIDANTS AND ANTIOSONANTS. Patent dated June 23, 1964. Disclaimer filed Oct. 5, 1964, by the assignee, *Pennsalt Chemicals Corporation.*

Hereby enters this disclaimer to claims 1, 11, 18, 20 and 21 of said patent.

## United States Adopted Names

List No. 9

*July 1, 1964–October 31, 1964*

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

aletamine hydrochloride: sympathomimetic amine
benzindamine hydrochloride: analgesic; anti-inflammatory; antipyretic
cactinomycin: antineoplastic agent
carbamazepine: anticonvulsant
cephaloglycin: antibiotic
cephaloridine: antibiotic
coumermycin: antibiotic
deferoxamine: iron depleter
denatonium benzoate: denaturant
ethamsylate: hemostatic agent
follicle stimulating hormone, human: gonadotropin
furazolium chloride: antibacterial agent
hetacillin: antibiotic
hexedine: antibacterial
ioglycamic acid: radiopaque (cholecystographic and cholangiographic)
methyl cysteine hydrochloride: mucolytic agent
nitrodan: anthelmintic agent
peliomycin: antineoplastic agent
porfiromycin: antibiotic
prednazate: anti-inflammatory (veterinary)
proadifen hydrochloride: drug potentiator
quinbolone: anabolic agent
quingestanol acetate: progestational agent
sancycline: antibiotic
sodium acetosulfone: leprostatic agent
thiamiprine: anti-leukemic
triamcinolone hexacetonide: injectable glucocorticoid

## Foreign Patents Received in the Scientific Library as of November 30, 1964

| Source | Date received | Highest number |
|---|---|---|
| Australia: | | |
| (*Abstracts*) | Oct. 21, 1964 | 46,929 |
| (*Patents*) | Nov. 3, 1964 | 249,898 |
| Austria | Nov. 23, 1964 | 236,600 |
| Belgium | Oct. 16, 1962 | 573,100 |
| Canada | Nov. 27, 1964 | 698,785 |
| Czechoslovakia | Nov. 12, 1964 | 111,550 |
| Denmark | Nov. 23, 1964 | 99,070 |
| East Germany | Nov. 16, 1964 | 33,428 |
| Egypt | Jan. 30, 1964 | 4,326 |
| Finland | Nov. 16, 1964 | 33,750 |
| France: | | |
| (*Patents*) | Nov. 2, 1964 | 1,364,250 |
| (*Additions*) | Oct. 8, 1964 | 83,100 |
| (*Medicaments*) | Oct. 19, 1964 | 2,000 M |
| (*Additions*) | May 4, 1964 | 23 CAM |
| Germany: | | |
| (*Auslegeschriften*) | Nov. 24, 1964 | 1,179,160 |
| (*Patents*) | Nov. 24, 1964 | 1,166,639 |
| Great Britain | Nov. 18, 1964 | 973,900 |
| India | Oct. 15, 1964 | 86,939 |
| Ireland | Mar. 5, 1964 | 23,892 |
| Italy | Apr. 25, 1963 | 616,900 |
| Japan | Nov. 10, 1964 | 22,100/64 |
| Netherlands | Nov. 23, 1964 | 120,002 |
| Norway | Nov. 12, 1964 | 104,699 |
| Pakistan | Feb. 3, 1964 | 112,446 |
| Philippine Republic | Apr. 13, 1962 | 458 |
| Poland | Oct. 26, 1964 | 48,490 |
| Rumania | Oct. 6, 1964 | 42,611 |
| Sweden | Oct. 7, 1964 | 190,879 |
| Switzerland | Nov. 6, 1964 | 381,625 |
| U.S.S.R. | Oct. 13, 1964 | 163,546 |

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: Missing 1–10,000
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

## Netherlands Printed Specifications

The Scientific Library is now receiving three copies of specifications of Netherlands patent applications, printed under a system inaugurated in January 1964. One copy will be distributed to the Examining Groups and placed in the search files.

These printed specifications (actually reproductions of the typewritten originals with a heading) can be used as printed publications under 35 U.S.C. 102(a) and (b). These references should be cited in the same manner as patents, except that the application number and date of publication are used and they are to be identified as Netherlands *applications*.



Significant data appearing on the first page:

| | |
|---|---|
| Octrooiaanvrage No. | Application No. |
| Datum van ter inzagelegging | Date of Publication |
| Aanvrager | Applicant |
| Ingeroepen recht van voorang | Priority date claimed* |

There will be another printing of the specification when and if a patent is issued, but in view of the fact that an earlier printed publication is already available, distribution of Netherlands patent specifications for incorporation in the search files will be discontinued.

*Background*

The publication of Netherlands specifications reflects a far-reaching change in their examination system which became effective, by statute, on January 1, 1964. It is sometimes referred to as a "deferred" examination system. Unless the application is withdrawn (abandoned), publication automatically takes place. Unless earlier requested by applicant, publication is as soon as practicable eighteen months from the priority date claimed or, if no foreign priority is claimed, from the filing date. The new procedure is being applied also to applications pending on January 1, 1964, which had not gone beyond a certain stage in the prosecution.

Under the new system applications are published without any action on the merits; i.e., no search of the prior art nor action by the Examiner. During a period of seven years from the filing date, the applicant is at liberty to request (upon payment of a fee) what corresponds to a first action; that is, a citation of the prior art which may be found by the Examiner but without applying this art to the claims. After the applicant has considered this prior art, he may, upon payment of another fee, request a continuation of the prosecution. There has been no change in the examination procedure other than the deferring of the examination in the manner indicated. An interesting feature is that, during the period after publication when the application is open to a request by the applicant for the first action or the complete prosecution, any other person may pay the fee and make the request. Such a person does not become a party to the prosecution. (There is an opposition period later if the application is found allowable.)

During the seven year period, certain other fees are payable to keep the application pending. At the end of the period, if the examination has not been requested, the application becomes abandoned. During the period, any member of the public may submit prior art (without requesting any examination) which is placed in the file. Such papers, as well as the results of the first action, if one is made, are available to the public.

RICHARD A. WAHL,
*Acting Superintendent*
*Patent Examining Corps.*

Dec. 2, 1964.

*If the priority application should be a U.S. ("Ver. St. v. Amerika") application, the Serial No. of said application appearing along with the U.S. filing date makes it simple to locate the U.S. application in order (1) to understand the disclosure of the Netherlands application or (2) more importantly to determine if the U.S. application has issued as a patent.

## Classification Order No. 365

Classification Order No. 365, dated November 25, 1964, incorporates changes in the following classes:

88, OPTICS
148, METAL TREATMENT
209, CLASSIFYING, SEPARATING AND ASSORTING SOLIDS
260, CHEMISTRY, CARBON COMPOUNDS
351, OPTICS, EYE EXAMINING, VISION TESTING AND CORRECTING—Established (Bulletin No. 462)

RICHARD A. WAHL,
*Acting Superintendent, Examining Corps.*

## Classification Order No. 366

The following transfer is hereby ordered to take effect on Monday, November 30, 1964:

From Group 240 to Group 230
Class 178, TELEGRAPHY
Subclass 23

RICHARD A. WAHL,
*Acting Superintendent, Examining Corps.*

## Information Re Application Status

In view of the relatively long pendency of patent applications at the present time, the final disposition of which may, in some cases, be of substantial importance to the public in general or, at least, to persons other than the applicants, it has been decided effective immediately to advise any person who makes written request for information as to the status of a United States application referred to by number in a foreign patent, which patent is identified in the request, whether the application is pending, abandoned or patented and, if patented, what the patent number is. The former practice of giving similar information with respect to an application referred to by number in a United States patent (Manual of Patent Examining Procedure, section 102) will be continued.

EDWARD J. BRENNER,
*Commissioner of Patents.*

Dec. 11, 1964.

# PATENT EXAMINING CORPS

## H. B. WHITMORE, Superintendent

## CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 1, 1964

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 8-20-62 | 1-28-57 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Aso; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 12- 3-62 | 7- 9-56 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 9-23-58 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 9- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 10- 1-62 | 3-11-57 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-17-62 | 11- 7-55 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 12-29-55 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 10-5 -62 | 1-30-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 9- 3-59 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-10-62 | 12-22-53 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 4- 5-56 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 5-18-55 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-12-62 | 6-20-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 12-28-59 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 208,209 |
| Total number of Design applications pending | 5,762 |
| Total number of applications awaiting action (excluding Designs) | 138,972 |
| Total number of Design applications awaiting action | 2,593 |
| Date of oldest new application awaiting action | May 19, 1959 |
| Date of oldest amended application awaiting action | Dec. 22, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,433,824 to 2,435,186, inclusive

Plant Patents ..... Numbers 774 to 782, inclusive

| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action: New | Amended |
|---|---|---|
| **MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner... Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids. | 10- 2-62 | 10-31-60 |
| METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner..... Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 12-12-58 |
| MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner..... Special Article Making; Assembling, Tool and Implement Making; and Metal Working. | 11- 2-62 | 6-29-55 |
| MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders. | 1-22-63 | 8-13-59 |
| HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner..... Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling. | 1-17-63 | 10- 3-58 |
| FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner..... Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing. | 2- 1-63 | 9-22-59 |
| POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner..... Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3- 4-63 | 5-25-59 |
| HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner..... Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination. | 5-19-59 | 6-21-63 |
| **GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner..... Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working. | 7- 8-63 | 2- 2-60 |
| CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner..... Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 1-20-58 |
| PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12- 6-62 | 7-23-57 |
| TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner..... Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-19-63 | 12-10-59 |
| TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner..... Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 2-26-63 | 12-26-58 |
| FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner..... Furniture; Supports; Cabinet Structures; Receptacles; Baggage. | 3- 4-63 | 4-17-63 |
| PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner..... Printing; Typewriters; Stationery; Material Treatment. | 6-11-62 | 1-26-57 |
| PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner..... Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner..... Industrial Arts; Household, Personal and Fine Arts. | 10-16-61 | 2-21-64 |



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE WILSON JONES COMPANY

*No. 7218. Decided November 5, 1964*

[— CCPA —; — F.2d —; — USPQ —]

1. TRADEMARK—CONFUSING SIMILARITY—"GRAY LINE SNAP-A-WAY SPEED LETTERS," "SPEED MESSAGE," AND "SPEED-LETTER" FOR STATIONERY.

Upon reviewing the refusal to register appellant's marks "GRAYLINE SNAP-A-WAY SPEED LETTERS," in a configuration where the last two words predominate, and "SPEED MESSAGE" for letter forms in view of the prior registration of "SPEED-LETTER" in a lightning bolt configuration, *Held* that "When appellant's marks and the reference mark are considered as entities, there are obviously specific differences"; that "However, the essential similarities between them and the reference mark are easily their most significant features"; and that "We think these similarities are such that the ordinary purchaser would be likely to be confused as to the source or origin of the goods on which the marks are used."

2. SAME—REGISTRABILITY—EVIDENCE—RIGHT TO USE REFERENCE MARK IRRELEVANT.

"While we have held that an agreement by the owner of a reference registration giving express consent to *register* should have an important persuasive effect in determining registrability, see *In re National Distillers Products Co.*, 49 CCPA 854, 297 F.2d 941, 132 USPQ 271, that situation is not here. The agreement here conveys only the right to *use* the *reference* mark. We do not see that this agreement supports the inference that the owner of the reference thought confusion between the marks *sought to be registered* and the *reference* mark to be unlikely. Moreover, we do not feel that the inference, even if correct, is persuasive."

APPEAL from the Patent Office. Serial Nos. 95,027 and 95,028.

AFFIRMED.

*I. Walton Bader* for appellant.

*Clarence W. Moore* (*George C. Roeming* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

On April 13, 1960, appellant filed applications for registration of two marks on the Principal Register: GRAY LINE SNAP-A-WAY SPEED LETTERS (Serial No. 95,028), in the particular configuration reproduced in the margin,[1] and SPEED MESSAGE (Serial No. 95,027), both for "Letter Forms for Rapid Correspondence." The Examiner, sustained by the Trademark Trial and Appeal Board (see 137 USPQ 910), held that section 2(d) of the Trademark Act of 1946 (15 U.S.C. 1052) precluded registration of either mark, citing as a reference a registration of the mark "SPEED-LETTER," in the configuration shown below,[2] for "Stationery—Namely, Inter-Office Letter Sets." This appeal followed.

1/ Gray Line Snap-A-Way SPEED LETTERS

2/ SPEED-LETTER

[2] Registration No. 619,086, January 10, 1956, which was granted on application Serial No. 652,963, filed September 9, 1953 by the McBee Company and subsequently assigned to the Royal McBee Corporation.

In this proceeding we are required only to decide whether appellant's marks so resemble the reference mark as to be likely, when applied to appellant's goods, to cause confusion, mistake or deception.

The Board held, and we agree, that the goods mentioned in the reference registration and those of appellant are competitive in character. The Board further stated:

> With regard to the marks, the term "SPEED LETTERS," which constitutes an essential, and is visually the most prominent, feature of applicant's composite mark, is identical to the mark of the registrant, and applicant's mark "SPEED MESSAGE" conveys substantially the same commercial impression. Under these circumstances, it is our considered opinion that the contemporaneous use of these marks for the specified goods would be quite likely to cause confusion or mistake or deception of purchasers.

We would qualify this statement only by pointing out that the mark SPEED LETTERS is not *identical* with the reference mark, since the reference mark is in the singular and incorporates the lightning flash design as shown in footnote 2, supra. Otherwise, we are in full agreement. [1] When appellant's marks and the reference mark are considered as entities, there are obviously specific differences. However, the essential similarities between them and the reference mark are easily their most significant features. We think these similarities are such that the ordinary purchaser would be likely to be confused as to the source or origin of the goods on which the marks are used.

Appellant asserts that there is presently in effect a license agreement with the owner of the reference mark, under which agreement appellant is entitled to use the mark SPEED LETTER for letter forms for rapid correspondence. In its brief, appellant argues:

> • • • it is significant that the owner of the reference mark was willing to permit use of the words "SPEED LETTER" to applicant indicating that at least the owner of the reference mark did not believe that simultaneous use of both marks on the goods involved would lead to any confusion.

However, the appellant expressly concedes that the license agreement did not constitute a consent to register.

[2] While we have held that an agreement by the owner of a reference registration giving express consent to *register* should have an important persuasive effect in determining registrability, see *In re National Distillers Products Co.*, 49 CCPA 854, 297 F.2d 941, 132 USPQ 271, that situation is not here. The agreement here conveys only the right to *use* the *reference* mark. We do not see that this agreement supports the inference that the owner of the reference thought confusion between the marks *sought to be registered* and the *reference* mark to be unlikely. Moreover, we do not feel that the inference, even if correct, is persuasive.

The decision of the Board is affirmed.

AFFIRMED.

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## U.S. Court of Customs and Patent Appeals

IN RE ARTHUR H. FOTSCH, JOHN R. FINLEY, GILBERT W. ROSS, AND RICHARD F. FISCHER

*No. 7214. Decided November 12, 1964*

[— CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—CONSTRUCTION OF CLAIMS—WORDS AND PHRASES—"WHEELS."

"The claims define the objects to be worked on as simply 'wheels.' They make no allusion to railroad car wheels, which ordinarily have a projecting flange and a somewhat frustoconical tread that would cause special problems for maintenance in upright position. Neither do they recite any structural characteristics of the machine which are peculiar to the handling of that particular type of wheel. Stolle's workpieces are circular and roll about their central axes and thus meet the essential requirements for wheels."

2. SAME—OBVIOUSNESS—SUBSTITUTION OF POWER TRANSFER MEANS AND HORIZONTAL CHUTE FOR POWER MEANS WITH INCLINED CHUTE.

"Certainly it would be obvious to one skilled in the art that he could obtain a construction with the convenience of the input and output stations at about the same level by substituting substantially horizontal chutes in place of the inclined chutes of Stolle and using power means for transferring the pieces in place of the gravity effect he would thereby lose. In fact, the only apparent reason for Stolle's use of inclined chutes is to obtain a gravity assist. Moreover, Stolle's utilization of a power assist through the rear fingers of the escapement members leads directly to the concept of using a power source alone for moving the pieces if one is willing to forego the assist from gravity."

3. SAME—SAME—OBVIOUSNESS DETERMINED BY THE FACTS OF THE CASE—*In re Shaffer* DISTINGUISHED.

"In arguing that the Board erred, appellants cite several cases, principally in this court, in which it was held that modifications of the prior art were not obvious. We have considered those cases. However, the issue before us is whether *the particular modification involved in the present case* is obvious under 35 U.S.C. 103 and other cases, involving different subject matter and based on different records, not only lack controlling significance but generally offer little help. *In re Shaffer*, 43 CCPA 758, 229 F.2d 476, 108 USPQ 326, which seems to us to be representative of the cited cases, is readily distinguished from the present situation. In that case, the court held it was not obvious to substitute an electronic amplifier including a reactive circuit for an electro-mechanical amplifier used in a prior art automatic titration system for the reason that the substituted elements provided the "new, unobvious and unexpected" result of minimizing the amplification of rapid fluctuations of the input to the amplifier circuit, which fluctuations were not representative of the true value of the condition intended to control the system. In contrast, the use of power actuation for the transfer means in the present case merely provides the obvious and expected result that the workpieces or wheels can be moved along the chutes or guide means without relying on any assist from gravity."

4. SAME—PARTICULAR SUBJECT MATTER—"MACHINE TOOL."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Machine Tools" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 713,573.

AFFIRMED.

*Cyril M. Hajewski* for appellants.

*Clarence W. Moore* (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

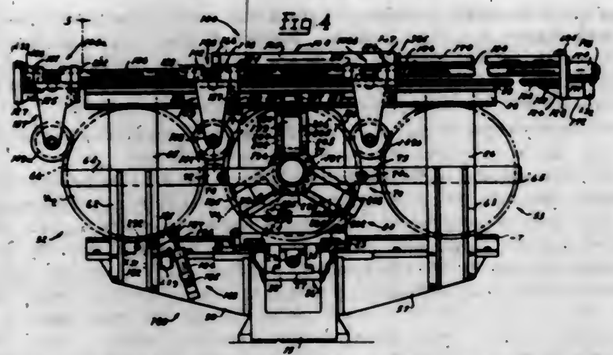
MARTIN, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 35, 36, 38 and 39 of appellants' application Ser. No. 713,573, filed February 6, 1958, for a patent for a "Machine Tool." Twenty-two claims have been allowed.

Appellants' invention relates to an automatic transfer type machine tool adapted for performing work operations on wheels. The exemplary embodiment in the application illustrates a machine for making the axial bore in railroad car wheels.

The wheels are transferred by power actuated means through three stations as illustrated by FIG. 4 of the application, reproduced below:

FIG 4



In operation, a wheel is first placed at a loading station 52 so that it may be engaged by a transfer mechanism 100 which operates to move the wheel to a machining station 54. At that station, the boring operation is performed on the wheel and the transfer mechanism then moves it to a position 53 for subsequent removal from the machine.

As shown in FIG. 4, the wheel is disposed in an upright position between guideways formed by a lower rail 47 and an upper rail 48 with the wheel flange bearing against the front side of the rails to limit movement to the rear as viewed in the figure. Displacement in the opposite direction is prevented by means comprising a fence 64 at the loading position 52, a fence or backing plate 70 at the machining station 54 and a fence 65 at the position 53. While the wheels are thus supported in an upright position for rolling movement, they are moved through the three positions by means of rollers 149*a*, 149 and 149*b* carried by roller arms 137, 138 and 139, respectively, of the transfer mechanism. Upon completion of a transfer movement from left to right in FIG. 4, the three roller arms are pivoted upwardly to bring the rollers out of engagement with the wheels and are then moved laterally in a leftward direction and returned to starting position.

At the machining station is a fixture head and a spindle head which cooperate for performing the machining operation on a wheel in that position. The fixture head includes a mechanism for clamping the wheel thereto and feeds it to rotating cutters on the spindle to provide an axial hole therethrough.

Claim 35, which appellants analyze in their brief as including a combination of six elements, is set out below with those elements numbered accordingly:

**35. In a machine tool having a machining station for performing a machining operation on wheels;**

**(1) a frame;**

**(2) guide means supported by said frame and adapted to support the wheels in an upright position for rolling movement and guide them in a path of travel into and out of the machining station;**

**(3) power actuated transfer means operative to move the wheels in a rolling movement along said guide means to locate the wheels at the machining station and remove them from the machining station upon the completion of a machining operation;**

**(4) a work supporting fixture mounted on said frame in position to secure the wheels to be operated upon in the machining station;**

**(5) a tool head mounted on said frame to operably support a cutting tool in position to operate on a wheel secured in the machining station; and,**

**(6) means to produce relative movement between said tool head and said fixture for effecting a feeding movement for completing the machining operation on a wheel secured in the machining station.**



Claim 36 differs principally from claim 35 in reciting separately a "support means" to which is attributed the work supporting function ascribed to the guide means in claim 35, and in the replacement of the term "work supporting fixture" in claim 35 with the term "clamping means."

Claim 39, which with claim 38 is directed to only the mechanism for advancing the wheels without reciting the machining structure, reads as follows:

**39. In a mechanism for advancing wheels in increments through a plurality of stations; a frame; support means mounted on said frame and operative to support the wheels in an upright position for rolling movement; guide means carried by said frame to guide the rolling wheels in a path of travel through the several stations; and a power actuated transfer mechanism operably connected to roll each of the wheels along said guide means from station to station successively.**

The references relied on by the Examiner and the Board are:

Stolle, 1,661,017, February 28, 1928.
Mitchell, 2,864,270, December 16, 1958.

The Stolle patent discloses an automatic transfer type machine tool for drilling an axial bore in elongated cylindrical members of wood, the pertinent features of which may best be considered in connection with FIGS. 8, 9 and 10 of the patent, reproduced below:

FIG 9



FIG 10

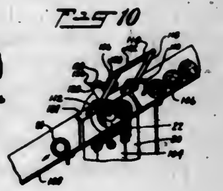
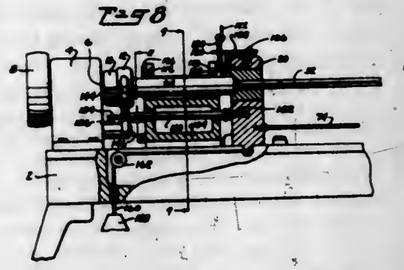


FIG 8



A support 104 carried by the bed of the machine is provided with an inclined supply chute 106 on one side thereof and an inclined discharge chute 108 on the opposite side. In FIGS. 8 and 9, a workpiece 24 is shown at a machining station between the two chutes. A mechanism controlling the movement of workpieces from the supply chute to the machining station and from that station into the discharge chute includes a pair of escapement members 110 and 112, pivotable in unison on shafts 114 and 116, respectively. A support 20, located at the machining station, is adapted to come into engagement with one end of a piece at that station to clamp it into cooperation with chuck 10, 12 of a head-stock member 4. When the support 20 is in forward clamping position as shown in FIG. 8, the escapement members are in the position shown in FIG. 9. After the work operation, accomplished by the head-stock 4 rotating workpiece 24

as drill 32 is advanced axially through the piece and then withdrawn, the support 20 is retracted and mechanism is operated to pivot the escapements in a clockwise direction from the position of FIG. 9 to that of FIG. 10. That action results in raising the front teeth of the escapements to clear the path of travel for the completed workpiece and for the next workpiece to be machined. At the same time, the rear teeth of the escapements "act as pushers" upon the respective workpieces to aid in discharging them from their previous positions. When the support 20 moves forward again to engage the next piece to be machined, the escapements return to the positions of FIG. 9.

The Mitchell patent also relates to a machine tool wherein cylindrical workpieces are automatically fed from a receiving station to a working station where an axial bore is drilled therein and then removed for unloading. It differs from Stolle in the specific structure used and in the fact that it is described as for machining billets made of metal. A more detailed discussion is not deemed necessary here.

The Examiner held the appealed claims to be unpatentable over either Stolle or Mitchell. He stated:

> In applying the Stolle patent to claim 35, the reference discloses a bed 2, supply and discharge chutes 106 and 108, two pairs of escapement members 110 and 112 operated by support 20 for feeding a rolling workpiece into the machining station and simultaneously discharging a completed workpiece from the machining station, a chuck 10 and 12, tail stock 30 which supports the drilling tool 32, and a power screw 42 for effecting a toolwork feed.
>
> In applying the Stolle reference to claim 36, the recited "guide means" reads on the sides of chutes 106 and 108, and the recited "clamping means" reads on the base 10 and the support 20 (FIGURE 1).

He also pointed out how he considered Mitchell to show structure corresponding to the recited elements.

The Board stated that it disagreed with the position of the Examiner "that the escapement mechanism 110–112 of Stolle and the loading mechanism 29 of Mitchell are responsive to the transfer mechanism set forth in the claims." In affirming the rejection, it set forth its view of that matter as follows:

> • • • Considering the Stolle patent as exemplary of the two references, the escape mechanisms 110 and 112 cooperate with the two inclined chutes 106 and 108 shown in FIGURES 9 and 10 of the reference to provide all of the functions ascribed by the claims to the transfer mechanism, namely to move a blank in a rolling movement to locate the same at a machining station, where a blank is gripped and operated upon by an appropriate tool, and thereafter to remove the worked blank from the station. We consider the reference structure noted above to be the full mechanical equivalent of the transfer mechanism, as broadly set forth in the claims on appeal. We agree with the Examiner that the nature of the workpiece is not significant in the claimed combination to the machine and transfer mechanism.
>
> Moreover, while the claims do not state that the workpiece is rolled along on a horizontal plane, we are of the opinion that it is an obvious modification (that is, obvious to one skilled in the art) of the inclined chutes shown in the references, which provide for a rolling movement or feed of the blanks both toward and away from the work station, to provide a horizontal surface and a reciprocating pusher element to push the blanks in a rolling movement along said horizontal surface toward and away from the work station. • • •

The Board further held that the remaining structure recited in claims 35 and 36 has full response in both references.

In our opinion the two references are of substantially the same significance and the appeal can therefore be determined from a detailed consideration of Stolle alone.

Despite the details involved in the specific embodiments of the respective machine tools disclosed by appellants and Stolle, the appealed claims are of such broad scope as to require comparison of only relatively simple aspects of the structures. Thus, both machines utilize a rolling motion to transfer circular workpieces to a machining station where they are held in a clamped condition while axial bores are drilled therein and then to transfer the workpieces away from the station for removal from the machine. Appellants use power actuated means for rolling the workpieces along a horizontal path. Stolle differs by using inclined chutes so that gravity has a part in causing the workpieces to roll although he additionally uses power actuated means which "act as pushers" on the pieces.

The difference in the embodiment of what is claimed on appeal and the figures of the references is easily explained by the fact that in the appealed claims one *form* of moving means is emphasized and in the references another is preferred. The question becomes whether it would be obvious for one skilled in the art to substitute one for the other and make necessary mechanical changes. We think it would.

Turning to claim 35 for consideration of the exact recitations relied on by appellants, we think it plain that Stolle includes a frame, which constitutes item (1) under appellants' analysis, as well as a work supporting fixture, a tool head and means to produce relative movement, which meet the recitations appellants designate as items (4), (5) and (6).

As to the recitation of the "guide means," item (2), appellants do not deny that the inclined chutes of the reference satisfy the definition of those two words but they argue that the chutes "in no way support the wheels in an upright position in accordance with the limitation recited in claim 35." We cannot agree with that contention. The workpieces in Stolle are supported in upright position so as to roll about their axes as are appellants' wheels.

Appellants argue that the cylindrical workpieces of Stolle do not present the problem of supporting them in an upright position that arises with railroad car wheels. However, that argument ignores the broad scope of the claims on appeal. The claims are of such scope that they substantially encompass the disclosure of the references.

[1] The claims define the objects to be worked on as simply "wheels." They make no allusion to railroad car wheels, which ordinarily have a projecting flange and a somewhat frustoconical tread that would cause special problems for maintenance in upright position. Neither do they recite any structural characteristics of the machine which are peculiar to the handling of that particular type of wheel. Stolle's workpieces are circular and roll about their central axes and thus meet the essential requirements for wheels.[1]

Thus the issue narrows to item (3) of claim 35, defining the power actuated transfer means. The question is whether that recitation distinguishes patentably over the Stolle device where power means and gravity together provide the transfer energy. In other words, did the Board err in holding it is an obvious modification of the inclined chute arrangement of the reference to use a horizontal surface and a pusher element so as to move the workpieces with a rolling motion along such surface to and away from the work station?

Appellants urge that the escapement members 110 and 112 of Stolle,

[1] Appellants' application refers to the rails of their device as cooperating to support and guide "rollable workpieces, which in this particular instance are railroad car wheels." Webster's New International Dictionary, second edition, sets out the following definitions of wheels: 1. A disk, or a circular frame or body, • • •, capable of turning on a central axis • • •. 2. Anything resembling or likened to a wheel (sense 1) • • •.

while they are actuated by power, "bear no resemblance whatsoever to a transfer mechanism inasmuch as they merely serve as movable stops for stopping the rolling movement of the workpieces and to release the workpieces for continued rolling movement along the inclined surface." That argument overlooks two things. In the first place, the members 110 and 112 do cooperate with the chutes 106 and 108 to form a transfer mechanism which transfers workpieces through a machining station as does appellants' own transfer mechanism. Also overlooked is the fact that the rear teeth of those escapement members are specifically stated by Stolle to "act as pushers" upon the workpieces immediately ahead of them, the passage in the patent describing that feature reading as follows:

> • • • the blocks to be drilled are automatically supplied and discharged by the chutes 106 and 108 and the detents 110 and 112 • • •. *The rear teeth of the escapements act as pushers upon the blocks immediately ahead of them to aid in discharging such blocks when the front teeth are lifted.* This automatic feed permits more continuous work and a higher speed with less supervision. [Emphasis supplied.]

Thus, Stolle may be said to utilize gravity augmented by power actuated starting means to automatically move the workpieces with a rolling motion to and from a machining station while the appealed claims require that the transfer means for moving the wheels through the same station be power actuated.

We find no error in the Board's position. [2] Certainly it would be obvious to one skilled in the art that he could obtain a construction with the convenience of the input and output stations at about the same level by substituting substantially horizontal chutes in place of the inclined chutes of Stolle and using power means for transferring the pieces in place of the gravity effect he would thereby lose. In fact, the only apparent reason for Stolle's use of inclined chutes is to obtain a gravity assist. Moreover, Stolle's utilization of a power assist through the rear fingers of the escapement members leads directly to the concept of using a power source alone for moving the pieces if one is willing to forego the assist from gravity.[2]

[3] In arguing that the Board erred, appellants cite several cases, principally in this court, in which it was held that modifications of the prior art were not obvious. We have considered those cases. However, the issue before us is whether *the particular modification involved in the present case* is obvious under 35 U.S.C. 103 and other cases, involving different subject matter and based on different records, not only lack controlling significance but generally offer little help. *In re Shaffer*, 43 CCPA 758, 229 F.2d 476, 108 USPQ 326, which seems to use to be representative of the cited cases, is readily distinguished from the present situation. In that case, the court held it was not obvious to substitute an electronic amplifier including a reactive circuit for an electro-mechanical amplifier used in a prior art automatic titration system for the reason that the substituted elements provided the "new, unobvious and unexpected" result of minimizing the amplification of rapid fluctuations of the input to the amplifier circuit, which fluctuations were not representative of the true value of the condition intended to control the system. In contrast, the use

[2] It is noted that appellants were aware of the possibility of using either gravity or power to transfer workpieces. Thus they state in their application:

> • • • The finished workpieces in the receiving position will be removed from the machine, as by gravity or conveyor means • • •

They also state:

> As previously mentioned, the car wheels may be supplied to the loading station 52 of the machine tool as by gravity or by any other desired means.



of power actuation for the transfer means in the present case merely provides the obvious and expected result that the workpieces or wheels can be moved along the chutes or guide means without relying on any assist from gravity.

Although reference has been made primarily to claim 35 in our discussion of the rejection, it is apparent that our reasoning applies equally to the other appealed claims.

[4] The decision of the Board is affirmed.

AFFIRMED.

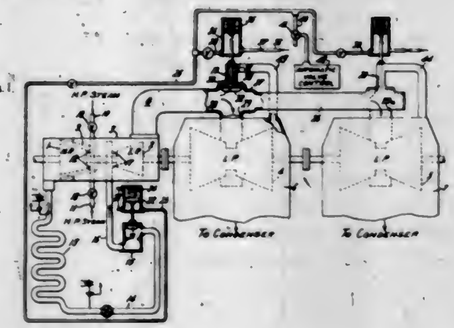
SMITH, *J.*, concurs in the result.

# ABBREVIATURES OF APPLICATIONS

Published at the request of the applicant or owner in accordance with Notice of July 28, 1964, 304 O.G. 813. The abbreviatures are identified by serial number of the applications and arranged in chronological order. The heading of each abbreviature of application published herein indicates the number of pages of specification, including claims, and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and photocopies of them, or any part thereof, may be purchased for 30 cents a page.

217,595. **UNLOADING VALVE.** Raymond Sheppard and Peter G. Ipsen, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York. Filed August 17, 1962. Published January 5, 1965. Class 137—22. 1 sheet of drawings. 12 pages of specification.

FIG. 1.




7. In a turbine power plant, the combination of:
a first turbine section supplied with high temperature steam,
a first valve connected to interrupt the flow of steam to the first turbine section,
a first conduit receiving exhaust steam from the first turbine section,
a second turbine section connected to be supplied with at least a portion of the exhaust steam from the first turbine section through the first conduit,
unloading valve means interposed between the first conduit and the second turbine section, said unloading valve having an inlet passage connected to the first conduit and a first outlet passage connected to the second turbine section, said valve also having a second outlet passage with a flow area substantially less than that of the first outlet passage,
a second conduit communicating with the second outlet passage and bypassing high temperature steam around the second turbine section to a region of lower pressure, said second conduit and second outlet passage together being of such a size as to provide a pressure drop therethrough substantially equal to the pressure drop of said first outlet passage and said second turbine section together,
a valve element arranged to provide a closure for either of said valve outlet passages alternatively, and
means for closing said first valve and simultaneously operating the unloading valve to connect the inlet passage to the second outlet passage, whereby steam flow to the first and second turbine sections respectively is interrupted while entrapped steam escapes through said second conduit at a restricted rate of flow.



# REISSUES

## JANUARY 5, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

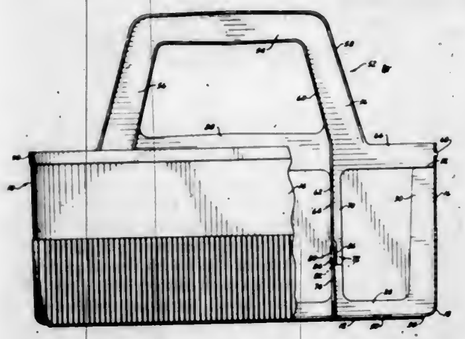
**25,707**

**PLASTIC CARRYING CASE FOR BOTTLES**

**William J. de Chelbor, Chicago, Ill., assignor, by mesne assignments, to General American Transportation Corporation, Chicago, Ill., a corporation of New York**

**Original No. 3,045,862, dated July 24, 1962, Ser. No. 17,916, Mar. 28, 1960. Application for reissue June 17, 1964, Ser. No. 389,508**

**21 Claims. (Cl. 220—102)**



*19. A carrying case for pop bottles, or the like, comprising a basket-like body molded of plastic material and including a substantially rectangular bottom wall and a pair of substantially parallel upstanding side walls and a pair of substantially parallel upstanding end walls and having an open top, said five walls named being integrally joined together along the several junctions therebetween, divider structure molded of plastic material and including a plurality of upstanding intersecting divider walls, said divider structure being disposed within said body and arranged to divide the interior of said body into a plurality of bottle-receiving pockets having open tops and readily accessible from the exterior, the bottoms of said divider walls being integrally joined to said bottom wall and the ends of said divider walls being integrally joined to the respectively adjacent ones of said side and end walls and defining a corresponding plurality of pocket bottom walls, one of said divider walls extending longitudinally between said end walls and located substantially centrally between said side walls and substantially parallel thereto, a corresponding plurality of crown-centering members respectively carried by said pocket bottom walls, said crown-centering members being arranged respectively adjacent to the central portions of the corresponding ones of said pocket bottom walls and projecting downwardly therefrom and being adapted respectively to embrace top closure crowns provided on bottles carried in another such carrying case, thereby to stabilize said carrying case when it is in a stacked position on top of another such carrying case arranged therebelow, said body and said divider structure and said crown-centering members constituting a one-piece construction molded of a single mass of plastic material with the bottoms of said divider walls integrally joined to said bottom wall and with the opposite ends of said divider walls integrally joined to the adjacent ones of said side and end walls and with said crown-centering members integrally joined to said bottom wall, upstanding handle structure molded of plastic material and extending longitudinally above said one divider wall, the lower portion of said handle structure being spaced above said bottom wall, means connecting the lower portion of said handle structure to said one divider wall, and means connecting the opposite end portions of said handle structure to said end walls, the upper portion of said handle structure being disposed well above the upper side and end edges of said body, whereby the upper portion of said handle structure extends longitudinally over the central portion of said bottom wall and is readily accessible from the exterior.*

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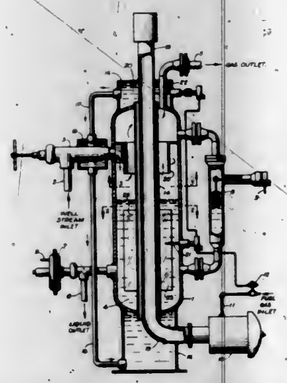
**25,708**

**LOW TEMPERATURE SEPARATOR**

**Clarence O. Glasgow, Tulsa, Okla., assignor to National Tank Company, Tulsa, Okla., a corporation of Nevada**

**Original No. 2,990,691, dated July 4, 1961, Ser. No. 782,979, Dec. 24, 1958. Application for reissue June 19, 1963, Ser. No. 290,279**

**11 Claims. (Cl. 62—12)**



2. A low temperature separation system for high pressure hydrocarbon well streams including,
a [high pressure] vessel receiving the well stream,
a choke through which the well stream is received into the [high pressure] vessel and reduced in pressure to condense the preponderant part of the hydrocarbons and dehydrate the gaseous portion of the well stream,
a liquid bath in the [high pressure] vessel arranged to receive hydrates directly therein as the hydrates are formed when the pressure of the well stream is reduced,
an outlet for the dehydrated gas above the level of the liquid bath,
and a source of heat mounted in the vessel and arranged in the liquid bath to maintain the bath at a temperature which will melt the hydrates received therein, and the source also extending substantially through the length of the gas flow path to the outlet so as to prevent hydrates from forming an obstruction to the gas flow at the outlet comprising,
a direct source of heat operated at low pressure,
and a chamber of heat exchange liquid about the low pressure source of heat and in heat exchange contact with the liquid bath and with the gas flowing to the outlet.

25,709

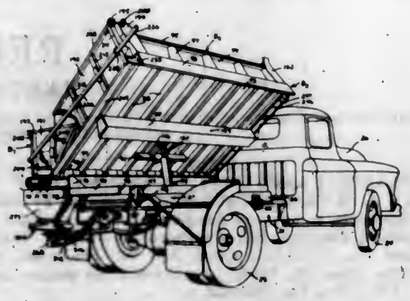
## DUMP TRUCK WITH CONVEYOR AND SPREADER

Eskil W. Swenson, Cherry Valley, and Philip Swenson, Lindenwood, Ill., assignors, by mesne assignments, to Swenson Spreader & Mfg. Co., a corporation of Illinois

Original No. 3,010,727, dated Nov. 28, 1961, Ser. No. 707,978, Jan. 9, 1958. Application for reissue May 31, 1962, Ser. No. 200,025

29 Claims. (Cl. 275—8)

1. In combination with a road vehicle including a support frame, a lift frame mounted on said support frame for pivotal movement about an axis transverse to the longitudinal axis of said vehicle, a conveyor mounted on said lift frame and extending longitudinally of said vehicle, a material receptacle mounted on said lift frame for pivotal movement about an axis parallel to said conveyor and, adjacent one side thereof to discharge material onto said conveyor, means operative selectively to tilt said receptacle relative to said lift frame and to tilt said lift



frame relative to said support frame, and means for driving said conveyor.

# PATENTS

## GRANTED JANUARY 5, 1965

## GENERAL AND MECHANICAL

3,163,865

### DRIVE TOOL

George J. Zetzer and Clarence L. Dracka, both of Port Clinton, Ohio, assignors to Port Clinton Manufacturing Company, Port Clinton, Ohio, a corporation of Ohio

Filed Sept. 13, 1961, Ser. No. 137,894

13 Claims. (Cl. 1—47)



1. A drive tool for driving anchor elements into masonry construction comprising, in combination, a holder having a sleeve portion, a plunger slidably disposed in said sleeve portion, a guide member shaped to receive and engage elements to be driven by the tool, said guide member having a shoulder portion and a cylindrical portion projecting from each side of the shoulder portion, said cylindrical portions being adapted to be selectively entered into the sleeve portion whereby said guide member may be reversibly mounted in said holder with the shoulder portion engaging an end of the sleeve portion, and rotatably releasable locking means for removably retaining the guide member in assembled relation with the shoulder portion engaging an end of the sleeve portion in either of its positions with the holder.

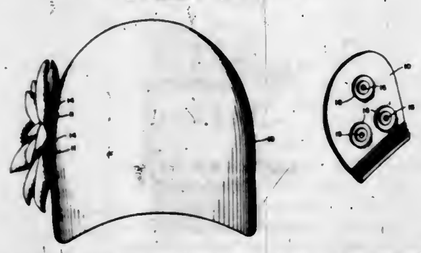
3,163,866

### DECORATED BATHING CAP

Bernhart Denmark, Port Chester, N.Y., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware

Filed Nov. 22, 1961, Ser. No. 154,130

1 Claim. (Cl. 2—68)



A decorated bathing cap comprising a waterproof rubber head covering cap member and a polyethylene decoration member, said decoration member extending out from the cap member and being detachably secured to same by three male-female type fasteners, the fasteners being arranged in the form of a triangle having its apex towards the top thereof and having sides of the order of one to two inches, the spacing of the fastener members of the decoration member corresponding to the spacing of the fastener members mounted in the cap, and being overlain by frond members of said decoration so as to cover said fasteners when the decoration is positioned on said cap, each of said fastener members of the cap being secured to the undersurface thereof through individual reinforcing fabrics.

3,163,867

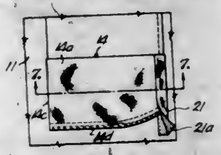
### POCKET REPAIR CONSTRUCTION AND METHOD

Walter C. Halcomb, Harrisonville, Mo., assignor to Jiffy Enterprises, Inc., a corporation of Missouri

Filed Jan. 10, 1962, Ser. No. 165,437

3 Claims. (Cl. 2—248)

2. For use in combination with a damaged garment pocket having parallel side panels joined along their opposite edges but open at the lower end, a repair assembly comprising a two ply fabric envelope open on two adjacent edges, said envelope having a length in the direction of one of said edges no less than the width of said pocket between the side edges thereof and adapted to enclose the lower portion of said pocket with marginal portions of the plies of the envelope adjacent said one edge covering and outside the lower portions of said panels adjacent said lower end, said one open edge disposed transversely across said pocket, said other open edge of said envelope being adjacent one side edge of said panel, strips of heat



bondable adhesive secured to the inside surfaces of said marginal portions of said plies adjacent said one edge and adapted to contact and be heat bonded to said panels whereby to secure the envelope to the pocket, and a fabric closure member for folding over said other open edge of said envelope, said closure member having heat bondable adhesive adhered thereto on the folded portions which contact with said envelope whereby to permit bonding of the closure member to the envelope by heat to complete the repaired pocket.

3,163,868

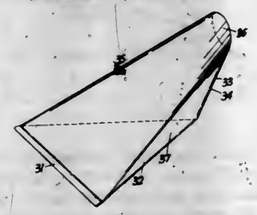
### URINE BOTTLE

Geoffrey Carter Steel, 14 Roehampton Gate, London SW. 15, England, and Harold Alfred Doherty, Oak Trees, Cockfosters Road, Barnet, Hertfordshire, England

Filed June 6, 1962, Ser. No. 200,480

Claims priority, application Great Britain, June 7, 1961, 20,601/61

1 Claim. (Cl. 4—110)

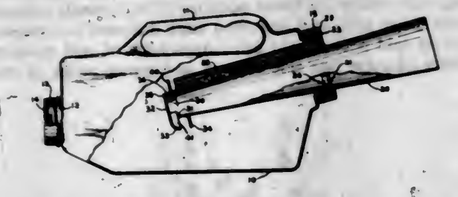


A bottle erected from a blank constructed of flexible water-resistant sheet material doubled on itself and secured along its edges to form a flat tube closed at one end and having lines of weakness along its side edges, one wall of the tube being cut away at the other end to V-

form, the apex of the V being on the center line of the wall; this wall being creased along two lines running from the apex to the corners of the closed end of the tube, the erected bottle having the side of the V-form drawn together and secured, a triangular base bounded by said closed end and said crease lines, triangular side walls sloping upwardly and outwardly from the sides of the base formed by the crease lines and provided by the portions of the blank between the crease lines and the side edges of the tube, and a top wall consisting of the opposite wall of the tube, the top wall being flat at the closed end of the tube, attached along lines of weakness to the upper edges of the side walls and being of progressively increasing outwardly convex curvature from the closed end and terminating in a closed ring aperture at the other end of the wall above the level of the base.

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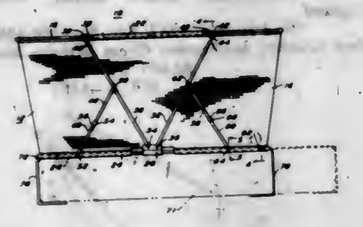
**3,163,869**
**PORTABLE URINAL**
Ernest K. Johnson, Rte. 1, Box 147, Springfield, Oreg., and Austin Ernest Elmore, South Pasadena, Calif.; said Elmore assignor to said Johnson
Filed Feb. 3, 1964, Ser. No. 341,901
10 Claims. (Cl. 4—110)



6. A urinal comprising a container having an inlet neck on one end thereof, a removable inlet tube having an eccentric collar arranged to fit in said neck, a flange concentric with said collar arranged to seat on the end of said neck, a coupling having threaded engagement with said neck for clamping said flange against the end of said neck, and a vent tube extending along the outside of said inlet tube and having a passageway extending through said collar and flange, the inner ends of said tubes being disposed at the volumetric center of the container.

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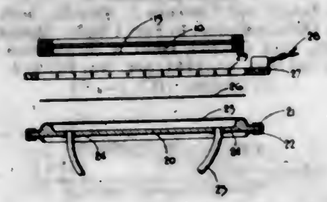
**3,163,870**
**COLLAPSIBLE INFANT ENCLOSURE**
Ralph C. Scotney III, 8310 W. Chester Pike, Upper Darby, Pa.
Filed Aug. 28, 1962, Ser. No. 219,919
9 Claims. (Cl. 5—99)



1. A collapsible enclosure comprising one-piece rectangular top and bottom rails, collapsible fabric side and end walls connecting said top and bottom rails, two pair of oppositely divergent retaining struts, said pairs of struts being disposed on opposite sides of said enclosure, each strut of a pair having one end pivotally secured to a side edge of said bottom rail intermediate the ends of said side edges, longitudinal guide means on side edges of said top rail, the other end of each strut of a pair being pivotally secured to said guide means, and extensible brackets connected to said bottom rail adapted to be pivoted from a horizontal position to a vertical position below said bottom rail.

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**3,163,871**
**APPARATUS FOR THE EXTRACTION OF VENOM FROM BEES**
Deryck Jack Palmer, "Birchfield," Wolverhampton Road, Codsall, England
Filed May 11, 1962, Ser. No. 193,990
1 Claim. (Cl. 6—12)



Apparatus for collecting bee venom which includes a collecting vessel having an opening, a thin sheet of silicone rubber which extends across said opening and a sheet of moist tissue paper mounted on the silicone rubber sheet on the side thereof opposite to said opening, means being provided for applying an electrical shock to bees which have settled on the moist tissue paper so that the bees sting through the sheet of tissue paper and through the thin sheet of silicone rubber so that bee venom is excreted in globules on the underside of the sheet of silicone rubber, which globules crystallise on exposure to the atmosphere so as to enable the bee venom to be collected from the underside of the sheet of silicone rubber.

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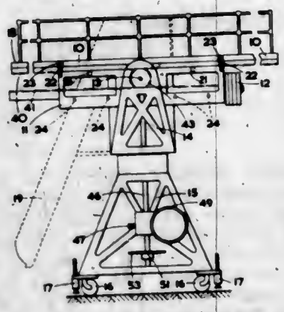
**3,163,872**
**METHOD OF FORMING SPIRAL THREAD LOCK**
José Rosán, San Juan Capistrano, and Albert Jack La Torre, Santa Ana, Calif., assignors to Rosán Engineering Corporation, Newport Beach, Calif., a corporation of California
Original application July 25, 1960, Ser. No. 45,055, now Patent No. 3,081,808, dated Mar. 19, 1963. Divided and this application Aug. 28, 1961, Ser. No. 134,282
9 Claims. (Cl. 10—86)



1. The method of making a threaded insert with an internal lock, comprising the steps of: forming external and internal threads in a metal body with the external thread one size larger than the internal thread and with a wall thickness between the root diameters of said internal and external threads of not less than .008"; heat treating the body to harden the same; and cold-rolling in a spiral pattern through at least one convolution, the root portion only of said external thread which is disposed opposite a crest of an internal thread so as to depress the same to a depth below the original root diameter of said thread, whereby to displace corresponding portions of the internal thread to reduce the crest diameter thereof to provide an internal locking thread.



**3,163,873**
**GANGWAYS**
Kenneth William Hopkins, London, England, assignor to BP Tanker Company Limited, London, England, a British joint-stock corporation
Filed Mar. 21, 1961, Ser. No. 97,363
Claims priority, application Great Britain, Mar. 30, 1960, 11,193/60
3 Claims. (Cl. 14—71)



1. A means of access providing communication between a first location and a second location, said first location being movable in any direction relative to said second location, said means of access comprising, in combination:
a single segment gangway having a platform, said gangway adapted at its one end to be removably secured to said first location;
a gangway holder;
said gangway slidably movable on and supported by said gangway holder;
a movable undercarriage adapted to be located on said second location and removably secured thereto;
a turntable supported by said undercarriage and rotatable thereon about a vertical axis;
said gangway holder pivotally supported on said turntable for movement about a horizontal axis;
said gangway longitudinally slidable with respect to its length in said gangway holder to span the distance between said first and second locations as said locations move with respect to each other from their respective positions at the time the said gangway was secured to said first location;
counterbalance means supported on said gangway holder, a mechanical interlinkage between said counterbalance means and said gangway such that said counterbalance means is responsive to changes in said gangway position, said interlinkage consisting of double racks operatively associated with a pinion, one of said racks connected to the underside of the gangway and the other of said racks connected to the counterbalance means whereby movement of the gangway is transmitted to the counterbalance means, and the appropriate opposite counterbalance forces are automatically applied to counterbalance the position of the gangway and maintain the center of gravity of said gangway, gangway holder, and counterbalance means at the said horizontal axis at all times and whereby substantially the whole weight of the means of access is taken by the second location.

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**3,163,874**
**TOOTHBRUSH**
Frederick Bauer, 615 12th St., Wausau, Wis.
Filed Nov. 22, 1963, Ser. No. 325,564
3 Claims. (Cl. 15—167)

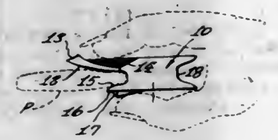
3. A toothbrush comprising a handle, a bristle holder carried by the handle, said bristle holder being of substantially continuous loop form including sides which are substantially equidistantly spaced throughout their lengths and connecting end portions, said bristle holder having an overall configuration conforming approximately to the complete dental arch of a human, and a multiplicity of



bristles anchored to said bristle holder and projecting radially thereof with at least some of the bristles extending above and below the plane in which the bristle holder lies and other bristles extending in opposed interfitting relation from said sides and none of the bristles extending beyond the outer faces of said sides.

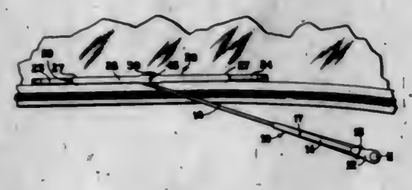
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**3,163,875**
**SCOURING PAD HOLDER AND CONTAINER**
Paul Campana, Jr., 104 Webster St., Vallejo, Calif.
Filed June 13, 1962, Ser. No. 202,154
1 Claim. (Cl. 15—209)



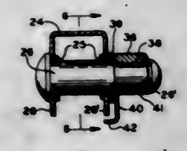
A hand holder for a steel wool pad formed entirely of flexible material comprising an intermediate solid body portion, an upper finger engaging flange integral with said body portion and extending from one side thereof, a lower thumb engaging flange integral with said body portion and extending from said one side thereof and with said upper finger engaging flange defining a slot adapted to receive a portion of a steel wool pad such that pressure applied by the fingers and thumb will flex the respective flanges toward each other to grip the steel wool pad therebetween, said thumb engaging flange being considerably shorter than said finger engaging flange to provide a maximum exposed area of said steel wool pad, and at least one cushioning flange formed integral with said body portion at the side thereof opposite said finger and thumb engaging flanges to fit within the palm of the hand, wherein said thumb engaging flange is of a width considerably less than the width of the finger engaging flange, the outer surfaces of said flanges lying substantially coextensive respectively, with the upper and lower surfaces of said body portion, a peripheral rib extending around each said finger and thumb flanges on the outer surface thereof, and said outer surface of each said finger and thumb flanges having a ribbed or roughened portion to prevent slippage, wherein the inner edge portion of each flange is tapered, whereby said slot flares outwardly, and said body portion including the finger and thumb flanges at one side thereof, and the at least one cushioning flange on the other side thereof, being of substantially rectangular formation.

3,163,876
ARM AND BLADE CONNECTOR
Leo J. Wubbe, Beverly Shores, Ind., assignor to The Anderson Company, a corporation of Indiana
Filed Dec. 5, 1960, Ser. No. 73,666
4 Claims. (Cl. 15—250.32)



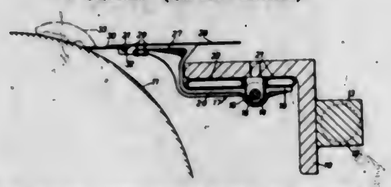
1. In a windshield wiper arm-and-blade assembly, an arm adapted to be oscillated by a pivot shaft across a surface to be wiped, an outer end portion of said arm having an axis disposed at an angle to the longitudinal axis of the major portion of the arm, a wiper blade connected to said outer end portion of the wiper arm and being adapted to conform to the surface being wiped, said wiper blade having a channel-shaped portion with transversely aligned apertures through which said end portion of the arm extends, and means fixedly fastened to said end portion of the arm and having spaced-apart portions selectively engaging with said channel-shaped portion of the blade assembly for limiting movement of said blade relative to said arm.

3,163,877
ARM AND BLADE CONNECTOR
Leo J. Wubbe, Beverly Shores, Ind., assignor to The Anderson Company, a corporation of Indiana
Filed June 29, 1962, Ser. No. 206,402
5 Claims. (Cl. 15—250.32)



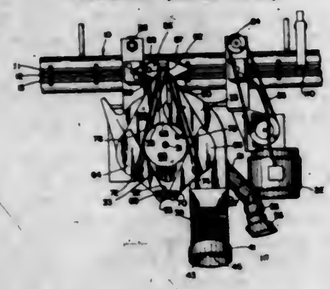
1. A windshield wiper and arm assembly comprising in combination:
a windshield wiper having an elongate flexible squeegee and a pressure-distributing superstructure therefor,
an oscillatable pressure-applying wiper arm having one portion pivotally connected to the superstructure and another portion adapted to be connected to an oscillatable driving mechanism for driving the wiper across a windshield surface,
said one portion of the arm extending at an oblique angle with respect to said another portion of the arm,
said one portion disposed parallel with and to one side of said superstructure,
said superstructure adapted to be pivotal about its connection in a plane substantially parallel to said one portion,
and cam means on said one portion of the arm adapted to engage spaced-apart cam means on said superstructure for alternate engagement to prevent pivotal movement of the blade beyond a predetermined angle with respect to the one portion.

3,163,878
DOCTOR KNIVES
Eric Smith, Bury, and Thomas Scholes, Holcombe Brook, near Bury, England, assignors to D. S. T. Pattern and Engineering Company Limited, a British company of Great Britain, Northern Ireland, and the Isle of Man
Filed Dec. 4, 1962, Ser. No. 242,246
7 Claims. (Cl. 15—256.51)



1. Roll doctor apparatus adapted to be used with a roll, said apparatus comprising, in combination, a substantially rigid carrier having a flange directed towards the roll with which said apparatus is to be used; a shaft positioned substantially parallel to the axis of the roll and secured to said flange with capacity for localized flexure and radial movement; a plurality of identical rocking levers fulcrummed side-by-side upon said shaft and having corresponding arms cranked away from the roll so as to clear the free edge of said flange; a flexible plate secured to the cranked ends of said levers; a doctor blade detachably secured to said flexible plate and projecting beyond the said flexible plate towards the roll; and inflatable tubes interposed between said levers and said flange at opposite sides of said shaft.

3,163,879
TRAVELING CLEANER WITH AIR INTAKE SHUTTER
Charles F. Lamb, Cleveland, N.C., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Apr. 4, 1963, Ser. No. 270,650
4 Claims. (Cl. 15—312)

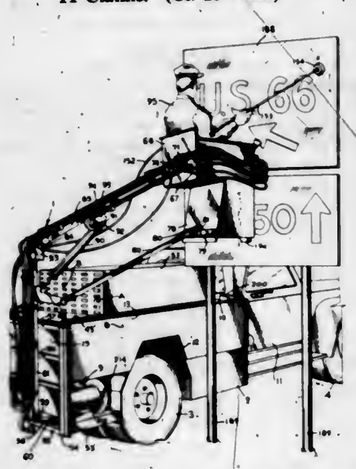


1. In a traveling cleaner having a carriage movable upon a track supported over an aisle between two rows of aligned machines, said cleaner comprising two centrifugal blowers including outer casings arranged in spaced parallel relation substantially parallel to the path of travel of said cleaner and having a common electric motor for driving a fan in each blower, each of said blowers having an intake opening through its outer casing; the combination therewith comprising:
(A) a flat mounting plate joined to the outside of each blower and each having an intake hole therethrough superimposed over the intake opening of its corresponding blower,
(B) a pair of matched shutter plates pivotally fastened at their lower portions to each of said mounting plates for pivotal movement parallel to their respective mounting plates in a scissor-like action apart and together in a closed abutting relation over the opening of the respective mounting plate,



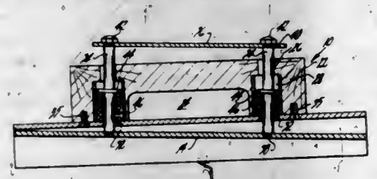
(1) each pair of said shutter plates having springs adjacent the fastenings and between the two plates of each pair to aid the opening and closing action of each pair of plates,
(C) an elongated rod pivotally joined at one end to each of said shutter plates,
(1) the opposite ends of the two rods joined to each pair of shutter plates being pivotally joined to a cam plate,
(a) one said cam plate being slideably connected to each mounting plate,
(D) electrically operated means operable at desired intervals along the course of travel of said cleaner for urging one cam plate upwardly to close the shutter plates connected to said cam plate, independently of the other cam plate,
(1) said springs on said shutter plates operating to aid in the closing action once the cam movement has been initiated,
(E) fixed means at desired intervals along the course of travel of said cleaner for restoring the closed shutter plates to an open position by urging the cam plate connected thereto downwardly,
(1) said springs on said shutter plates operating to aid in the opening action once the cam movement has been initiated.

3,163,880
MOBILE LIQUID SPRAY UNIT
Edwin L. Johnson, Ottawa, Kans., assignor to Young Spring & Wire Corporation, Beverly Hills, Los Angeles, Calif., a corporation of Michigan
Filed June 17, 1963, Ser. No. 288,359
11 Claims. (Cl. 15—526)



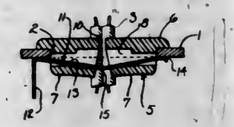
1. A washing unit carried by a vehicle having a frame and side members comprising,
(a) a fluid tank,
(b) means resiliently mounting said tank on said side members,
(c) a post vertically and swingably mounted on said frame,
(d) an arm pivotally mounted on the upper end of said post,
(e) a seat on the outer end of said arm,
(f) means for swinging said seat transversely of the vehicle and for raising and lowering the same,
(g) valve means carried by said seat,
(h) a line connecting said valve means and said tank, a mixing chamber in said line from said tank,
(i) a pump carried by said frame and having a line connected to the mixing chamber,
(j) and a brush having a line connected to said pump, whereby upon operation of said valve means and pump fluid may be drawn from said tank and supplied to said brush.

3,163,881
MORTAR DISPENSER
Nicholas Apicella, Linkfield Road, Watertown, Conn.
Filed June 11, 1964, Ser. No. 374,491
8 Claims. (Cl. 15—555)



1. A mortar dispenser comprising an elongated pair of spaced vertical side walls between which a supply of mortar may be received, a dispensing plate located between said side walls and extending along substantially the full length thereof, a handle fixed relative to said side walls and located above said dispensing plate, said handle including a generally horizontal grip portion and two generally vertical end portions located respectively at either end of said grip portion and extending downwardly beyond said grip portion to define a finger opening below said grip portion and between said end portions, each of said end portions having a vertical opening passing therethrough, a generally horizontal squeeze member located above said handle, two vertical posts each extending through a respective one of said vertical openings in said end portions of said handle and each fixed at its upper end to said squeeze member and at its lower end to said dispenser plate so that movement of said squeeze member relative to said handle results in movement of said dispenser plate relative to said side walls, and spring means for biasing said dispenser plate and squeeze member and posts to a raised position relative to said side walls, said openings in said end portions being of such size relative to said posts to permit said posts to be tilted relative to the vertical axis of said openings so that by exerting a greater pressure on one or the other ends of said squeeze member said dispenser plate may be inclined relative to the horizontal axis of said side walls to exert a wedging action on the mortar as said dispenser is moved forwardly and said dispenser plate downwardly.

3,163,882
GROMMET ASSEMBLY
Gustave F. Falkenberg, Brookfield, Wis., assignor to Dimensional Products, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 17, 1963, Ser. No. 281,109
7 Claims. (Cl. 16—2)



4. A grommet assembly comprising: a block-like grommet formed of a soft, resilient material and having a front face, an outwardly extending seating flange adjacent the front face, a pair of holding ridges rearwardly spaced from the flange and disposed on opposite sides of the grommet to define with the flange a pair of relatively wide grooves on opposite sides of the grommet, a cord opening extending through the grommet from

front to rear, an outwardly opening slot communicating with the cord opening along the entire length of the opening to provide a cord receiving slot along one side of and extending from the front to the rear of the grommet; and a U-shaped clip member formed of resilient sheet material and having an upstanding manually engageable tab member at its base and resilient, humped legs disposed in the grooves to straddle the grommet, the height of the humps in the legs of the clip being approximately equal to the width of the grooves in the grommet, said assembly being characterized in that it is adapted to close off a cord passageway through a wall with the flange in engagement with one surface of the wall and the ridges and clips disposed on the other side of the wall with the legs of the clip engaging the ridges and wall to urge the flange tightly against the wall.

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**3,163,883**
**HINGE MEANS FOR INTERCONNECTING HATCH COVER SECTIONS AND THE LIKE**
**Nils Hugo Olsson, Goteborg, Sweden, assignor to International MacGregor Organization (I.M.G.O.), Monte Carlo, Monaco, a corporation of Monaco**
**Filed Oct. 7, 1960, Ser. No. 87,473**
**Claims priority, application Sweden Oct. 10, 1959**
**11 Claims. (Cl. 16—163)**



1. A device for hingedly interconnecting a pair of adjacent movable panels, such as folding hatch cover sections, adapted to be extended in flat co-planar aligned relationship in their hatch closing position and to be swung each one in either direction relative to the other panel through angles exceeding 180°, comprising at least one pair of substantially parallel registering hinge pins directly integral with each one of said panels respectively and parallel to the joint therebetween and near the opposed edges of said joint, a pair of toothed wheels carried by and coaxial with said hinge pins and fixedly secured thereto respectively, a single rigid link means carried by and pivotally connecting said hinge pins substantially at right angles thereto, whereby the distance between centers thereof is greater than the sum of the outer radii of said wheels, and positive gear transmission means carried by said link means for operatively interconnecting said pair of toothed wheels and adapted to allow a relative reciprocal rotation of any one of said panels through an angle of up to 360° so as to come close and approximately parallel to the other panel.

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**3,163,884**
**ELECTRICAL STUNNING OF SMALL STOCK**
**Robert E. Dunaway, Nashville, Tenn., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois**
**Filed July 11, 1962, Ser. No. 209,005**
**4 Claims. (Cl. 17—1)**

1. An improved electrical stunning instrument for rendering animals unconscious, said instrument comprising: a pair of pivotally connected tong members, one of said tong members consisting of two parts, each part being pivotally connected to the other tong member; a spring connected between the two parts of said one tong member so as to transmit force between said parts and permit separate angular displacement of said parts when forces are applied to one end of said tongs; a switch mounted on one of said parts to be actuated when a certain force is applied across said spring; electrodes connected to one end of each of said tongs, said electrodes being opposingly mounted for engaging the sides of an animal's head, and being electrically connectable with a source of power by said switch upon said certain force



being applied across said spring; a reciprocable power actuating means connected to ends of said tongs opposite said one end thereof, operable to pivot said tongs to move said electrodes toward one another; and means connected to at least one of said actuating means and tong members to normally urge said electrodes apart.

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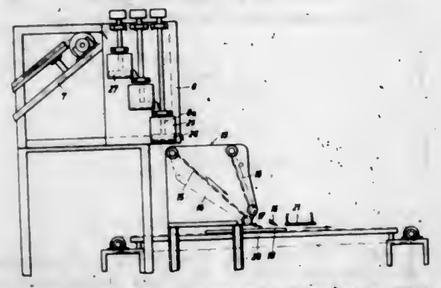
**3,163,885**
**FISH SKINNING TOOL**
**Philippe Dumas and Vianney Marcoux, both of 4468 Delorimier, Montreal, Quebec, Canada**
**Filed July 11, 1962, Ser. No. 209,093**
**Claims priority, application Canada, Aug. 22, 1961, 830,268, Patent 650,325**
**4 Claims. (Cl. 17—7)**



1. A fish skinning tool comprising a pair of elongated members pivotally interconnected intermediate their ends and defining hand grips at one end portion and jaw members at their opposite end portions, said jaw members coacting and pivoting in a common plane, said jaw members being substantially symmetrical and each comprising a substantially straight portion and an inwardly curved outer end portion, said curved end portions directed towards each other and each terminated by a bevelled flat end face defining an outer transversely extending cutting edge, the cutting edge of one jaw being offset relative to the cutting edge of the other jaw and abutting against the bevelled end face of the opposite jaw in the closed position of said jaws, said bevelled end faces being substantially equally inclined relative to the long axis of said tool, on each side of said axis, in the closed position of said jaws.



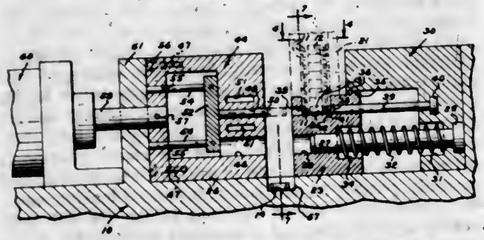
**3,163,886**
**APPARATUS FOR MANUFACTURING LIGHT CONSTRUCTION PANELS**
**Klaus Dieter Wilke, Bahnhofstrasse 32, Herzberg, Germany**
**Original application Aug. 9, 1960, Ser. No. 48,429. Divided and this application July 24, 1961, Ser. No. 126,335**
**6 Claims. (Cl. 18—4)**



1. Mechanism for continuously foaming a mass of foam-forming material that is inherently spreadable but non-fluid, to decrease its density to a desired value, and then to form the same continuously into a thin broad sheet, said mechanism comprising a plurality of stirrers arranged in cascade, each including a generally cylindrical pot having a side outlet above its bottom, a unidirectionally rotative stirring device located generally below its outlet, whereby the mass is moved from its center and about the inside peripheral wall of the pot, a baffle at the outlet projecting into the path of the rotating mass and inclined relative to its direction of rotation, and of a size proportioned to intercept from the mass and to divert through its outlet a substantially continuous rope from the mass, to fall freely into the next lower pot, an inclined chute arranged to receive the rope exiting from the lowermost pot, for its movement down the chute at least in part by gravity, said chute being arranged to guide such movement while the rope spreads and thins generally to the desired width and thinness, and horizontal conveying means advancing beneath the chute's lower end at a rate consonant with the rate of advance of the material delivered from the chute to receive and advance the eventual thin broad sheet.

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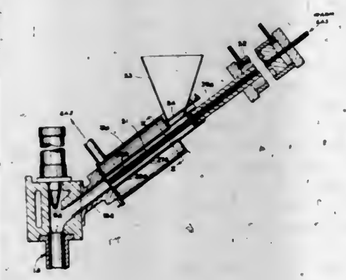
**3,163,887**
**COMPRESSION MOLDER**
**Frank A. Schultz, Pompano Beach, Fla., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed July 16, 1962, Ser. No. 210,010**
**3 Claims. (Cl. 18—5)**



2. Apparatus for compression molding of a preformed component, which comprises:
- a pair of movable blocks spaced apart when in open positions and each having a bore therethrough axially aligned with the bore in the other, the bore in a first one of the blocks being arranged to receive the preformed component to be molded;
- a pair of opposed coacting plungers, one slidably received in each of the bores in said blocks, the plunger in said first block being fixed in the apparatus and projecting only a limited distance into said first block when in open position to permit reception of the component in the bore in said first block intermediate said plungers;
- reciprocal means for moving the other of said blocks toward said first block first to abut thereagainst and then to displace said first block a sufficient distance relative to said fixed plunger to transfer the component and to project said fixed plunger into the bore in said other block;
- the plunger in said other block being movable with respect thereto during initial advancement of said other block to abut and displace said one block, whereby said plunger may yield a prescribed distance relative to said other block to permit said fixed plunger to transfer the component into the bore in said other block;
- means for limiting movement of said plunger relative to said other block during advancement of said other block to cause compression of the component against said fixed plunger upon further advancement of said other block;
- said plunger being movable with said other block during initial opening movement of said other block until said blocks have been separated by a substantial distance; and
- means for limiting movement of said plunger with said other block during opening movement of said other block to cause ejection of the molded component from the bore in said other block upon continued retraction of said other block.

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**3,163,888**
**PROCESS AND APPARATUS FOR HEATING PLASTIC GRANULES**
**Robert Shattuck, Parkersburg, W. Va., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed June 28, 1961, Ser. No. 120,407**
**11 Claims. (Cl. 18—30)**



3. In a plastic injection molding machine having an inlet opening for raw plastic material, the improvement comprising in combination:
- wall means defining an elongated preheating zone of constant cross section arranged substantially as a continuation of and of the same diameter as said inlet opening, at least a substantial portion of said wall means thereof being perforated;
- a perforated tube having a central opening therein, said tube being located within said zone and arranged with its axis parallel with the axis of said zone;
- means for introducing warm gas into the central opening of said tube;

a gate removably blocking the lower end of said zone and a vertically movable piston surrounding said tube and axially slidably arranged within the upper end of said zone;

means for receiving and exhausting spent fluid from within said zone.

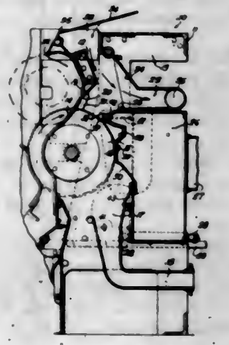
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3,163,889

## COTTON GIN WITH MOTE CHAMBER HAVING SEPARABLE UNIT INCLUDING MOTE DUCT, AIR PRESSURE CHAMBER AND MOTING AND DOFFING NOZZLES

Jeffrey John Wallace, Amite, La., assignor, by mesne assignments, to John T. Gordin, J. R. Gillian, and Geo. Garrison Potts, jointly, all of Dallas, Tex.

Filed Sept. 18, 1962, Ser. No. 224,425
8 Claims. (Cl. 19—59)



1. In a cotton gin including the following members, a casing and within said casing a roll box, ginning ribs and a saw cylinder having saws, and a mote duct normally contiguous to said casing, said members being positionally correlated to define a mote chamber, the ginning ribs and roll box being at one side of said chamber, the mote duct being at the opposite side, and at the bottom, the saw cylinder, the saws of which intersect the roll box and interleave with the ribs, the locus of intersection of their peripheries with said ribs defining a ginning point, said mote duct having a flaring mouth with upper and lower sides, the lower side being positioned to confront the trajectory path of motes centrifugally thrown from the saw cylinder at the ginning point, and means forming a nozzle adjacent said lower side positioned to direct a blast of air across said lower side and substantially parallel thereto, for intercepting said motes before they contact said side, and taking them into said mote duct, an enclosure constituting an air pressure chamber normally contiguous to said casing, positioned beneath said mote duct and being unitary therewith, said pressure chamber being in communication with said nozzle, said pressure chamber and mote duct being separable as a unit from said casing along a rectilinear reciprocative path.

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3,163,890

## WALL PANEL STRUCTURE

Roger Pichon, 22 Ave. du General Clavery, Paris, France

Filed Feb. 17, 1961, Ser. No. 90,008
2 Claims. (Cl. 20—4)

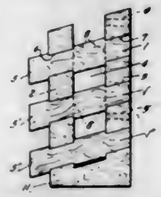
1. A wall panel constituted of a series of superposed boards and brackets, each of the brackets being positioned within grooves in the adjacent boards, wherein

(*a*) each of said boards and brackets has a first dimension substantially parallel and disposed at an angle of from 5° to 30° to the horizontal, and a second dimension substantially vertical;

(*b*) at least two spaced brackets are interposed between each pair of superposed boards thereby defining a number of interior spaces within the wall panel, each of which spaces is bounded by a pair of boards and a pair of brackets;

(*c*) at least some of the boards are traversed by apertures connecting the interior spaces adjacent thereto;

(*d*) at least one channel extends transversely of and through one of the brackets and connects one of said interior spaces with the atmosphere; and



(*e*) one of the edges of each board is in alignment with the outer sides of one series of the superposed brackets forming a plane, inner lateral face of the wall panel, and the opposite edge of each board extends beyond the outer side of a second series of the superposed brackets by a distance equal to from 0.8 to 1.2 times the height of the brackets to define an indented, outer lateral face of the wall panel, the upper and lower faces of said boards being inclined downwardly from the plane lateral face of the panel to the indented lateral face thereof.

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3,163,891

## WINDOW CONSTRUCTION

Glenn F. Seliger, Marathon, Wis., assignor to Marmet Corporation, Wausau, Wis., a corporation of Wisconsin

Filed Nov. 13, 1961, Ser. No. 151,923
10 Claims. (Cl. 20—53)



1. A casement window unit, compriaing a frame section having an opening and having a pair of opposed jambs bordering the opening, a sash section disposed within the opening and hingedly connected to a first of the jambs of the frame section, said frame section having an abutment extending laterally from the second of said jambs toward the sash section and said sash section having a complementary abutment extending laterally toward the second jamb and adapted to bear against said abutment when the sash section is in the closed position, a rod rotatably secured to one of said sections and disposed generally parallel to said jambs, a pair of locking members connected at spaced locations to the rod with each locking member disposed at an angle with respect to the axis of the rod, an actuating member disposed in direct engagement with one of said locking members and movable in a plane substantially parallel to the plane of the jamb, said actuating member disposed to pivot said locking member about the axis of the rod when said actuating member is moved in a plane substantially parallel to said jambs, and an operating member operably connected to



the actuating member for moving said actuating member within the plane to thereby pivot each locking member into engagement with the abutment on the other of said sections to draw the abutments together and lock the sash section to the frame section.

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3,163,892

## RADIATIVE HEAT SWITCH

Nathaniel E. Hager, Jr., Manheim Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Jan. 25, 1960, Ser. No. 4,364
2 Claims. (Cl. 20—62)



1. A heat switch comprising in combination, a frame, two elements having emissivities to infrared radiation greater than about 0.9 and having substantially parallel surfaces enclosing said frame, and a series of louvers of high reflectivity to infrared radiation and having emissivities to infrared radiation less than about 0.1 rotatably supported by said frame intermediate said parallel surfaces, said louvers, when in positions substantially parallel to said parallel surfaces, forming a substantially continuous reflective surface which defines two compartments in combination with the two parallel surfaces and the frame.

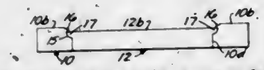
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3,163,893

## SHUTTER STRUCTURE

Knute B. Norenberg, 1502 10th Ave. S., Minneapolis, Minn.

Filed Aug. 7, 1961, Ser. No. 129,745
5 Claims. (Cl. 20—62)



1. Frame structure which includes two frame members joined together in edge abutting relationship, one of said members having a portion extending laterally from its abutting edge portion in overlapping relationship to the abutting edge portion of the other member, said last named abutting edge portion being an extension of an outer face of said other member, said face being exposed to view in the finished article embodying said frame structure, the underside of said overlapping portion which communicates with the marginal edge thereof and is opposed to said face being in spaced apart relationship therewith.

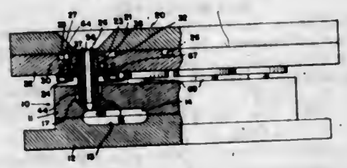
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3,163,894

## BLOW PLATE ASSEMBLY

Robert E. Bego, Bloomfield Hills, William J. Thomas, Birmingham, and Anthony N. Voltattorni, Detroit, Mich., assignors to Progress Pattern Co., Southfield, Mich., a corporation of Michigan

Filed Apr. 3, 1963, Ser. No. 270,425
5 Claims. (Cl. 22—10)



5. A blow plate assembly for the forming of sand core and like elements, comprising a pair of plates secured in liquid-tight face-to-face sealing engagement with one another to provide a plate unit, a meeting face of at least one of said plates being formed to provide therein elongated passage portions closed by the other plate to constitute an elongated liquid circulating passage between the plates, said plate unit having counterbored holes extending therethrough and at least one of said plates having ports adjacent said respective holes which communicate with said passage, and blow tube units carried by said plate unit to receive material to be formed from one side of said plate unit and to discharge said material at the opposite side of the plate unit, each of said blow tube units being fabricated of a plurality of component parts, including an inner blow tube part, a tubular jacket part surrounding said tube part and providing a liquid circulating space about the latter, and an adapter part, said parts being secured in fixed relation to one another, the adapter part having an end portion received in a counterbored hole of the plate unit and an enlarged flange portion adjacent said end portion received in the counterbore of said hole and secured directly to the plate unit, said adapter part also having liquid supply and return passages through said flange portion opening externally thereof to communicate said circulating space in said jacket part with passage of said plate unit through the port adjacent said hole of the latter, the passage of the plate unit including supply and return legs in communication with the exterior of said plate unit, said supply and return legs being arranged for a parallel flow of cooling liquid from the supply leg through the respective supply and return passages of the blow tube adapter part to the return leg of the passage of the plate unit.

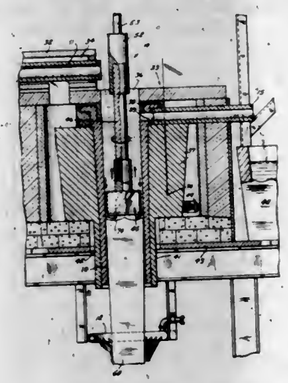
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3,163,895

## CONTINUOUS CASTING

John L. Dewey, Florence, Ala., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Dec. 16, 1960, Ser. No. 76,236
7 Claims. (Cl. 22—57.2)



1. Method of continuous casting of aluminum ingot having throughout its length a purity continuously maintained at a substantially uniform level above the purity level of the molten feed metal which comprises feeding molten metal into the inlet of a pass-through molding chamber, maintaining the molten condition of the metal in that part of the molding chamber which is nearest the inlet and maintaining a frozen condition of the metal in that part of the molding chamber which is nearest the outlet, continuously withdrawing the frozen portion from the outlet of the molding chamber while causing the molten portion to flow rapidly over the interface between the molten and frozen metal and withdrawing from the molding chamber at the molten metal side of the interface as

casting progresses a substantial portion of the molten metal including metal which has flowed over the interface and contains a higher percentage of impurities than is present in the feed metal, the relationship between (*a*) rate of feeding molten metal, (*b*) rate of withdrawing the frozen portion from the molding chamber and (*c*) rate of withdrawing molten metal from the molding chamber, being maintained substantially constant each relative to the others.

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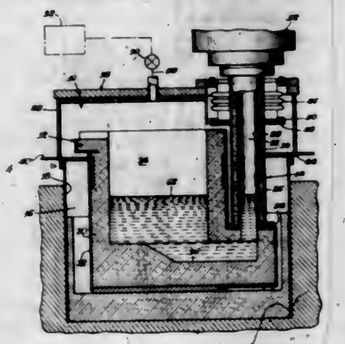
**3,163,896**
**COATED BELT AND METHOD OF MAKING SAME FOR CONTINUOUS METAL CASTING PROCESS**
**Stanley Herbert Rochester and Stanton Evan Jack, Kingston, Ontario, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada**
**Filed June 23, 1961, Ser. No. 119,131**
**7 Claims. (Cl. 22—57.4)**




1. An article of manufacture suitable for use in the continuous casting of aluminum-containing metal comprising a flat, endless mild steel belt, the outside surface of said belt being provided with a priming coat comprising polyvinyl butyral resin containing finely-divided zinc chromate dispersed therein and a second coat deposited on said priming coat and comprising fibrous alumino-silicate, said alumino-silicate having a fiber length below 0.25", the thickness of said second coat comprising fibrous alumino-silicate being about 0.002".

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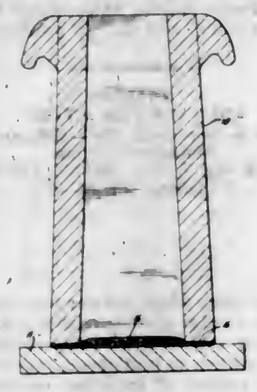
**3,163,897**
**METHOD AND APPARATUS FOR CASTING METAL ARTICLES**
**Edmund Q. Sylvester, Shaker Heights, Ohio (% Amsted Industries Inc., 1000 Prudential Plaza, Chicago 1, Ill.)**
**Filed May 21, 1962, Ser. No. 196,264**
**11 Claims. (Cl. 22—69)**



11. A method of pressure pouring cast metal articles with a ladle having an open top and an upwardly extending pouring tube in communication at its lower end with an orifice formed in a lower portion of said ladle comprising the steps of filling the ladle with molten metal, securing relatively easily disintegratable sealing means to the uppermost end of said upwardly extending pouring tube, pneumatically connecting the interior of said pouring tube to a source of superatmospheric pressure fluid by means of a first conduit, creating a first superatmospheric pressure within said pouring tube sufficient to substantially depress the level of the molten metal within said pouring tube, utilizing said sealing means for closing said first conduit against flow of molten metal thereinto, transporting said filled ladle to a pit and lowering said ladle into said pit so that the uppermost end of said pouring tube projects a distance thereabove, positioning a cover member over said ladle and first conduit and about said pouring tube, pneumatically connecting the interior of said pouring tube to said source of superatmospheric pressure fluid by means of a second conduit placed above said cover member, disconnecting said first conduit while maintaining said first superatmospheric pressure within said pouring tube with said second conduit, lowering said cover onto and about said pit so as to seal said pit from the ambient atmosphere, placing a suitable mold structure into functional engagement with said uppermost end of said pouring tube, reducing said first superatmospheric pressure, and applying a second superatmospheric pressure to said sealed pit to cause said molten metal within said ladle to flow outwardly through said orifice, upwardly through said pouring tube and disintegrate said sealing means and flow therethrough into said mold structure.

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**3,163,898**
**SEALING RING AND MAT FOR INGOT MOLD**
**Raymond J. Demaison, Bronx, N.Y., assignor to Quigley Company, Inc., a corporation of New York**
**Filed May 6, 1960, Ser. No. 27,408**
**3 Claims. (Cl. 22—139)**



1. A steel ingot mold and stool having a combined seal and cushion to prevent the escape of molten steel from the mold cavity and to control the splashing and the chilling of the teemed metal, said combined seal and cushion being in the form of a preformed mat completely covering the upper surface of the stool within the boundary of the mold cavity and having a peripheral portion sandwiched between the bottom face of the mold and the upper face of the stool, said mat consisting essentially of a dense mass of resilient mineral fibers with its peripheral portion compressed by the weight of the mold and conforming to any irregularities in the opposed faces of the mold and stool.

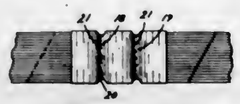
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**3,163,899**
**PACKAGE TIE**
**Thomas J. Karass, St. Laurent, Quebec, Canada, assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware**
**Original application Dec. 22, 1959, Ser. No. 861,253, now Patent No. 3,028,281. Divided and this application July 27, 1961, Ser. No. 132,255**
**4 Claims. (Cl. 24—16)**

1. A binding device comprising a flat weftless fabric strap consisting essentially of a plurality of cords adhered to one another side-by-side to form a strap several cords wide and one cord thick, said strap having end portions



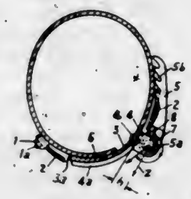
lapped upon each other face to face, a metal sleeve completely embracing the lapped end portions of the strap, said sleeve having opposed faces in overall contact with the strap in the direction widthwise of the strap, and said



sleeve and the therewith contacted portions of the strap being crimped entirely across the width of the strap whereby a snubbing action is applied to each of the cords of the strap.

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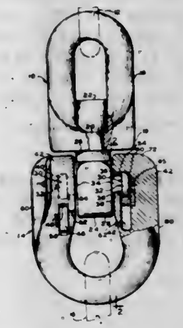
**3,163,900**
**LACING SYSTEM FOR FOOTWEAR, PARTICULARLY SKI-BOOT FASTENER**
**Hans Martin, Volkmarstrasse 6, Zurich, Switzerland**
**Filed Jan. 12, 1962, Ser. No. 165,786**
**Claims priority, application Switzerland, Jan. 20, 1961, 728/61**
**5 Claims. (Cl. 24—70)**



1. In a clamping arrangement for boots, or the like, particular ski-boots of the type having a pair of closure flaps, a plurality of separate traction members attached to one of said closure flaps, a plurality of fastening bracket means attached to the other of said closure flaps and corresponding in number to the number of traction members, each said fastening bracket means comprising a contact plate provided at the region of one end with spaced upright end flanges, a pivot bolt supported by said end flanges, an eccentric collar rotatably mounted at said pivot bolt and laterally confined between said upright and flanges, a tensioning lever having one end freely rotatably supported by said eccentric collar, each tensioning lever being capable of actuation independent of the other tensioning levers, each tensioning lever being provided with at least one pair of clasping hooks for engaging an associated traction member and holding the latter in a clamping position, an operating lever cooperating with said eccentric collar extending radially therefrom for rotating said eccentric collar, said eccentric collar having a geometric center spaced radially away from said pivot bolt by a distance approximately equal to one quarter the spacing between a pair of clasping hooks whereby when said operating lever is actuated, said eccentric collar will rotate to displace said geometric center to the opposite side of said pivot bolt, thus moving said geometric center through substantially two one-quarter spacings and thereby displacing said tensioning lever a distance approximately corresponding to one half the spacing between a pair of clasping hooks and into another clamping position for finer adjustment of said clamping arrangement.

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**3,163,901**
**CARGO HOOK**
**Franklin M. Brawand, 7706 SW. Florence Lane, Portland, Oreg.**
**Filed June 5, 1963, Ser. No. 285,766**
**10 Claims. (Cl. 24—123)**



1. In a draft hook,
an elongated draft line member including a block and a pair of aligned pins projecting from the block,
and a U-shaped load line holder provided with arms having opposed, aligned first sockets therein and parallel, arcuate, first slots leading from the sockets permitting movement of the pins through the slots to the sockets,
the ends of the pins being provided with parallel, elongated keys extending across the ends of the pins transverse to the longitudinal axis of the draft line member,
the arms having locking sockets concentric with the first sockets, second slots generally parallel with the first slots and of a width sufficient to clear the keys and constricted portions joining the locking sockets and second slots adapted to prevent movement of the locking sockets away from the keys except when the holder is in a position substantially at right angles relative to the member.

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**3,163,902**
**ROPE CLAMPS**
**Frantz Adolph Bernburg, Copenhagen, and Knud Aage Faber, Bronshoj, Denmark, assignors to Malodan A/S, Copenhagen, Denmark, a company of Denmark**
**Filed July 27, 1962, Ser. No. 212,947**
**Claims priority, application Denmark July 28, 1961**
**10 Claims. (Cl. 24—126)**

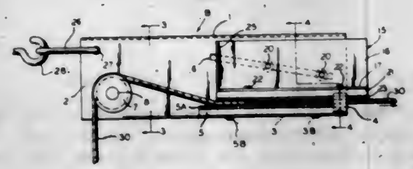


1. A rope clamp for gripping or securing at least one rope or cable portion, comprising at least two clamp members adapted to be pressed towards each other, and means adapted to keep said two clamp members pressed towards each other, an internal groove extending through the length of each said clamp member, said grooves cooperating when said two clamp members are together to form a

passage for receiving the rope or cable portion or portions, each said groove being adapted receive a rope or cable portion, at least one of said grooves being formed with a first, a second and a third groove portion, said second groove portion having a transverse cross section differing from the transverse cross section of said first groove portion and different from the cross section of said third groove portion thereby that said second groove portion has a major width greater than the major width of said first groove portion as well as of said third groove portion but a major depth smaller than the major depth of said first groove portion as well as of said third groove portion.

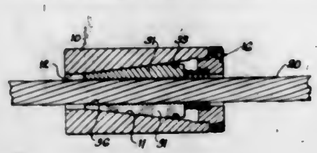
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**3,163,903**
**LINE GRIPPING AND TENSION DEVICE**
**Frank R. Knaebe, 6048 N. 114th St., Milwaukee, Wis.**
**Filed Apr. 8, 1963, Ser. No. 271,123**
**1 Claim. (Cl. 24—126)**



A line gripping and tensioning device, the combination of a base member comprising an elongated side wall portion having a top flange integral therewith and projecting in normal relation from one side thereof and having also a bottom flange integral therewith and projecting in normal relation from the opposite side of said wall portion, a guard integral with said bottom flange spaced from said wall portion at one end thereof and projecting from said bottom flange in parallel relation to said wall portion, pulley rotatably mounted on said other side of said wall portion adjacent the other end thereof and disposed above a plane coincident with said bottom flange, an eye pivotally mounted on said wall portion at said other end of said wall portion and above said pulley, said bottom flange terminating at a point short of said other end of said wall portion and beneath said pulley, an elongated bar mounted on and secured to said bottom flange and having a resilient strip extending the length thereof and secured thereto, said side wall portion having an elongated slot extending from a point adjacent said one end of wall portion and diverging relative to said bottom flange to a point substantially midway of said wall portion, and a clamping member having adjacent and parallel to said wall portion on said other side thereof, a plate-like portion, and having a flange integral therewith and normal thereto disposed above said bottom flange, relatively spaced guide pins mounted on the plate-like member and projecting through said slot in said side wall portion and jointly disposed in a plane diverging from said bottom flange at an angle substantially coinciding with the angle of divergence of said slot, an elongated bar secured to the flange on said plate-like portion of said clamping member on a side thereof most adjacent said bottom flange, and an elongated resilient strip secured to said last mentioned elongated bar on a side thereof most adjacent said first mentioned resilient strip, the wall portion of said base member being disposed in a vertical plane when in use, whereby a line disposed between said resilient strips and over said pulley extends at an angle diverging from a plane coinciding with said bottom flange and over said pulley.

**3,163,904**
**STRAND CHUCKS**
**Ronald P. Ziolkowski, Chicago, Ill., assignor to Supreme Products Corporation, Chicago, Ill.**
**Filed June 24, 1963, Ser. No. 289,924**
**5 Claims. (Cl. 24—126)**



3. A strand chuck for the purpose described comprising a body having a frusto-conical bore of some predetermined angle of taper and a plurality of generally wedge-shaped jaws operating as a set jointly movable axially in said bore into converging relation, said jaws each having an arcuate exterior surface for abutting engagement with the wall of the bore and an interior surface gripping the strand upon convergence of the jaws, said interior surfaces, when in gripping relation with the strand, lying on a common, substantially cylindrical surface, the exterior slant surface of a longitudinal portion of each jaw extending inwardly from the smaller end of the jaw a distance of substantially one-third to one-half of the axially-measured length of the jaw having a taper, measured when the jaws are not converged into said gripping relation, which is of some angle greater than the taper of the bore, the remainder of said exterior jaw surface measured in the same manner, having the same taper as the bore, all tapers being referred as acute angles to the common longitudinal axis of the bore and jaws whereby, when the jaws are fully converged, the said exterior jaw portions are deformed radially outwardly into abutting relation with the wall of the bore.

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**3,163,905**
**ADJUSTABLE WEBBING ADAPTER**
**John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a corporation of California**
**Filed Sept. 20, 1962, Ser. No. 225,072**
**11 Claims. (Cl. 24—196)**



1. In an adjustable webbing adapter having a loop frame insertable in a sleeve, the improvement of
(*a*) spaced opposite sides forming said sleeve
(*b*) each side of said sleeve having a pair of perpendicularly spaced transverse slots, the slots on the opposite sides of the sleeve being generally in registry for threading the webbing through two slots along one side of said sleeve and then through said loop frame and through the slots along the other side of said sleeve returning said webbing again through said loop frame to the area of the original insertion and



(*c*) gripping seats below the registering slots nearer to the end of the sleeve through which the webbing is introduced for threading, said gripping seats being adapted to be engaged by said loop frame for gripping the return portion of the webbing, said webbing being gripped having a portion introduced into said sleeve and extending through said nearer slot on one side and along a portion of the same side and through the spaced parallel slot on the same side and then through the opposite spaced slot on the other side and along a portion of the other side and through the nearer slot of the other side through the loop frame and back along the top of the loop frame and underlying the portion of said web introduced into said sleeve so that the load on the loop frame tightens the grip on said webbing and so that said grip can be loosened by relative movement of the sleeve to the loop frame.

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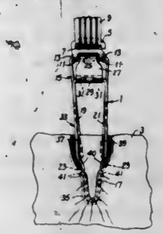
**3,163,906**
**SLIDE FASTENERS**
**Theodore M. Wright, 934 Haddon Ave., Camden, N.J.**
**Filed Jan. 10, 1963, Ser. No. 250,610**
**3 Claims. (Cl. 24—205.11)**



3. In a slide fastener of the type including a pair of opposed tapes having corresponding front and rear surfaces, each of said tapes being provided with a longitudinal bead along an edge thereof, said tapes being arranged with their said beads in proximate relation, complementary interlocking teeth secured respectively to said tapes along said beads, and a slider movable along said teeth to control the interlocking of said teeth for uniting said tapes and the unlocking of said teeth for separating said tapes depending on the direction of movement of said slider, the improvement comprising an auxiliary, separable fastener for retaining said teeth in interlocked relation when said slider has brought them into said last named relation, said auxiliary fastener comprising cooperable hook and eye elements each comprising a length of stiff wire having tapered, pointed ends and a substantially reverse bend intermediate the length thereof to provide a loop portion and leg portions beyond said loop portion, each said loop portion including a part disposed against the front surface of a different one of said tapes, said loop portions overlapping and extending somewhat beyond their respective said beads in aligned relation transversely of said tapes for interlocking engagement thereof, said leg portions of said lengths of wire each having a first reverse bend extending through the associated tape from said front surface thereof and a first part beyond said bend which lies firmly against the rear surface of its said tape, each said leg also having a second bend therein beyond its said first part, said second bend extending around the associated said bead in snug engagement therewith and terminating in a terminal part beyond said second bend which ends in said pointed ends, each said terminal part lying on and being clinched firmly against said front surface of the associated tape to thereby securely attach said hook and eye elements to their respective said tapes, and said tapered ends of said wires lying alongside said loop portions with the tapers thereof snugly abutting their respective said loop portions.



**3,163,907**
**HOSE SUPPORTER CLASP**
**Herbert I. Finch, Jr., 424 Park Road, Webster Groves 19, Mo.**
**Filed June 20, 1963, Ser. No. 289,368**
**10 Claims. (Cl. 24—248)**



1. A clasp, particularly for use as a hose supporter clasp, comprising a pair of elongate generally flat jaws and a generally flat link, one of said jaws constituting an inner jaw and the other constituting an outer jaw, said link having a pivotal connection to one end of the inner jaw constituting the upper end of the inner jaw for swinging movement of the link relative to said inner jaw about a first axis transverse to the inner jaw at its upper end, said outer jaw having a pivotal connection at one end thereof constituting its upper end to the link for swinging movement of the outer jaw relative to the link about a second axis generally parallel to the first axis, said inner jaw being longer than the outer jaw, having a length corresponding generally to the length of the outer jaw plus a distance corresponding to the spacing of said axes, the lower end portion of said inner jaw being in the form of a generally U-shaped loop with a widened entrance portion at the upper end thereof, the lower portion of said outer jaw being wider than the opening bounded by said U-shaped loop but narrower than the width of said entrance portion, whereby the lower portion of said outer jaw may be moved through said entrance portion and positioned with the side margins of the lower portion of the outer jaw located laterally outward from the interior boundary of the U-shaped loop and substantially coplanar therewith.

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**3,163,908**
**MOLD FOR CASTING TEST SAMPLES**
**Holly V. Lawmaster, 5841 Meinhart Road, Westminster, Calif.**
**Filed July 6, 1962, Ser. No. 208,045**
**2 Claims. (Cl. 25—118)**



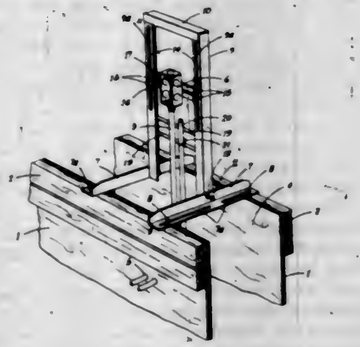
1. A reusable plastic mold for casting cylindrical concrete test samples comprising:
a pair of complementary mold sections of plastic material having vertical edges which interengage to define a cylindrical mold cavity, the outer surface of said mold sections being frusto-conical when said vertical edges are interengaged;

a plastic bottom plate that interengages the bottom edges of said mold sections when the vertical edges of the latter are interengaged to thereby define the bottom of said mold cavity;

and a peripherally continuous overshot plastic sleeve substantially the height of said mold sections and having its inner surface of frusto-conical form corresponding to the frusto-conical taper of the outside surface of said assembled mold sections, said sleeve fitting snugly over said assembled mold sections to hold the latter together during casting and setting of a concrete test sample in said mold cavity, said sleeve being thereafter pulled upwardly off said mold sections whereby said mold sections and said bottom plate may be removed from said concrete test sample.

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**3,163,909**
**CONDUIT AND OUTLET BOX LOCATING UNIT**
**Harvey M. Williams, 6310 Melrose Drive, North Highlands, Calif.**
**Filed Nov. 18, 1963, Ser. No. 324,469**
**3 Claims. (Cl. 25—118)**

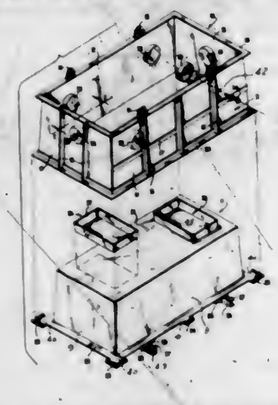


3. In combination with stationary concrete-foundation forms, an outlet box locating unit for maintaining such box in a fixed position between the forms and a predetermined distance above the same; the unit comprising a pair of uprights connected in rigid relation above and spaced lengthwise of the forms, means supported from the uprights for detachable clamping engagement with the back of the outlet box, beams straddling and resting on the forms and detachably secured thereto; and means securing the uprights at their lower ends on the beams intermediate the ends thereof for controlled lateral swinging movement between an outlet box clamping position and a position back from the outlet box when the clamping means is detached.

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**3,163,910**
**SEPTIC TANK FORMS**
**Tudor C. Greene, Rte. 2, Box 278, Radford, Va.**
**Filed Nov. 27, 1963, Ser. No. 326,517**
**4 Claims. (Cl. 25—130)**

1. A casting apparatus for casting an inverted box-like article comprising an outer mold, and an inner mold, said outer mold being adapted to fit over said inner mold to define a mold cavity, said outer mold having an open top and an open bottom and comprising four side walls rigidly attached to one another to form a rectangular member, at least one side wall having a hole therein, brace means attached to the outer surfaces of said side walls, a bottom flange attached to and extending outwardly from the bottom edges of said side walls, a top flange attached to the top edges of said side walls, a void forming core member of predetermined shape, attaching means, one end portion of which extends through said hole and removably attaches said core member to the inner surface of a side wall for projection into said mold cavity, said one end portion of said attaching means being adapted to be withdrawn from said mold cavity to seal said hole in said wall, said outer mold having means to enable lifting thereof, said inner mold comprising a top panel, two side panels and two end panels, the top side and end panels being rigidly attached to each other to form an inverted box-like member, said outer mold side walls being higher than said top panel to enable casting of a horizontal slab portion for said cast article, said outer mold side walls and said inner mold side panels and end panels being downwardly and outwardly tapered, a base flange extending outwardly from and attached to the bottom of said side panels and said end panels for receiving and



supporting said bottom flange of said outer mold, offset corner portions on said base flange, aligning means on said offset portions for matingly engaging said bottom flange and aligning the outer mold relative to said inner mold to form said mold cavity, said bottom flange extending horizontally outwardly beyond portions of the base flange between said offset portions thereof, foundation means attached to and extending below said base flange, said foundation means having anvils spaced beneath said bottom flange by the thickness of said base flange, said anvils and the bottom flange thereabove providing prying surfaces for freeing said outer mold from the cast article and the inner mold, said anvils being predeterminely spaced to receive impacts to accomplish separation of the inner mold from the cast article when the cast article and inner mold are lifted, the inner mold then being free to fall and seat on its foundation.

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**3,163,911**
**WALL FORM SYSTEM**
**William H. Kenney, Teaneck, N.J., assignor, by mesne assignments, to William H. Kenney, Middletown, Ohio**
**Filed Nov. 16, 1961, Ser. No. 152,830**
**8 Claims. (Cl. 25—131)**

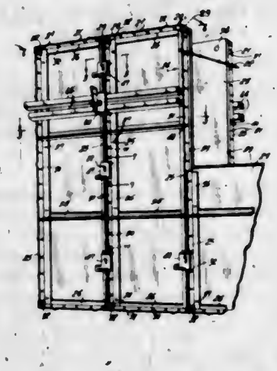
1. A panel locking accessory for use in concrete forms which have panel face members and angular frame members with legs extending away from said panel face members, said accessory comprising a plate, a bifurcated portion extending away from said plate and adapted to engage adjacent frame members, a tie-engaging opening in the plate, a laterally extending ear on the plate, an elongated slot in the plate and ear, a captive key member slidably carried within the slot, and a wedge on the key member engageable with openings in said legs, to secure the accessory to the frame of adjacent panel structures.

2. A liner clamp assembly comprising an elongated bar of angular shape throughout a portion of its length, a



laterally extending pin carried at one end of the bar, a bearing surface on said angular shaped portion of said bar, said surface being spaced from said end carrying said pin, and parallel to said pin, the opposite end of the bar having a slot, a wedge member freely carried wtihin said slot, and a flanged liner embracing member having an opening to receive said bar and a face to be engaged by said wedge.

4. A wall form system comprising spaced panels, each of said panels comprising a panel face member, a frame on one side of said member, said frame comprising L-shaped angular metal members, each having a leg lying parallel to and extending inwardly of the edges of said panel face member and a leg extending outwardly from said panel face member at substantially a right angle thereto, said last mentioned legs being spaced inwardly from the lateral edges of said panel face member, said last mentioned legs also having spaced perforations de-



signed to mate with perforations in equivalent legs of other panels, said last mentioned legs having at intervals adjacent their outer edges V-shaped, outwardly extending indentations designed to mate with similar indentations on equivalent legs of the frames of adjacent panel structures so as to maintain said legs in parallel, spaced positions for the passage of tie rods therebetween, the lateral edges of the panel face member being notched to permit passage of the rods, a tie and panel locking accessory comprising a plate, a bifurcated portion extending away from said plate and adapted to engage adjacent frame members, a tie engaging opening in the plate, a laterally extending ear on the plate, an elongated slot in the plate and ear, a captive key member slidably carried within the slot, and a wedge on the key member engageable with said perforations in said legs extending away from said panel face member, to secure the accessory to the frame of adjacent panel structures.

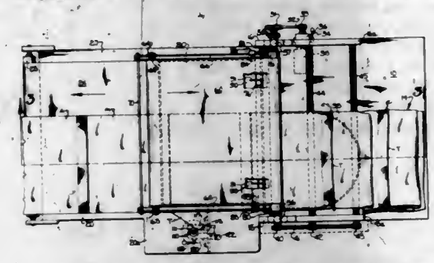
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**3,163,912**
**METHOD AND APPARATUS FOR SEPARATING TEXTILE ARTICLES**
**Howard L. Loflen, Mount Airy, N.C., assignor to Pine State Knitwear Company, Inc., Mount Airy, N.C., a corporation of North Carolina**
**Filed July 26, 1962, Ser. No. 212,503**
**10 Claims. (Cl. 28—17)**

1. An apparatus for separating successively connected textile articles which are joined together by transversely extending removable connector threads extending from one edge of the articles to the opposite edge, said apparatus comprising the combination of

(1) means for moving the connected articles along a predetermined path of travel and for maintaining the articles in a predetermined substantially flattened condition, and

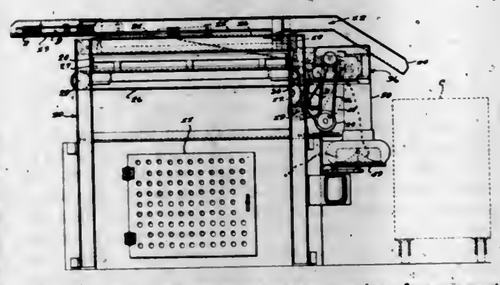
(2) rotatable means operatively associated with said means and positioned adjacent thereto for successive engagement with the connector threads at one edge



of of the articles for pulling the connector threads from the articles and thus separating the articles from each other while the articles are maintained in their substantially flattened condition.

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**3,163,913**
**METHOD AND MEANS FOR STRIPPING ROVING BOBBINS AND CONDITIONING THE STRIPPED ROVING**
**Eugene C. Gwaltney, Alexander City, Ala., and James L. Brown, Jr., and Richard Ferguson, Charlotte, N.C., assignors to The Terrell Machine Company, Charlotte, N.C., a corporation of North Carolina**
**Filed June 22, 1962, Ser. No. 204,480**
**12 Claims. (Cl. 28—19)**



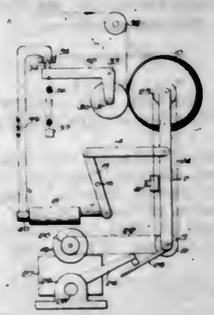
5. A method of stripping waste roving from spent bobbins and converting the stripped roving to the general condition of opened raw stock without damaging the fiber or shortening the staple length thereon, which method comprises progressively advancing spent bobbins in longitudinal alignment through a stripping station, stripping said waste roving as individual strands from the aligned bobbins as they advance through the stripping station, imposing a high speed loosening draft on the stripped roving strands at a common drafting station adjacent the end of said stripping station toward which the bobbins advance, discharging the commonly loosened roving freely from said drafting station, and commonly subjecting the free loosened roving discharge from said drafting station to an unopposed brushing disruption and recovery handling in a manner causing general separation of the loosened roving fiber to said opened raw stock condition.

12. Bobbin stripping apparatus comprising elongated nip forming means arranged to support a plurality of spent roving bobbins for progressive advance along the nip formed thereby, said nip forming means being driven to rotate supported bobbins at a relatively high surface speed for causing the free end of waste roving thereon to be thrown loose centrifugally so as to enter the nip of said means and result in concurrent withdrawal of individual waste roving strands from each supported bobbin, high speed drafting means disposed adjacently for concurrently receiving the waste roving strands thus withdrawn from

said bobbins and imposing a draft thereon at a draft spating above the roving fiber staple length and at a draft ratio sufficient to remove substantially all twist from the roving strands so as to discharge loosened roving fiber, an unopposed brush roll located in the path of loosened roving fiber discharge from said drafting means and rotated at a surface speed exceeding the discharge rate of said loosened fiber so as to apply a disruptive brushing action thereto, and suction means for recovering the thus conditioned fiber from said brush roll.

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**3,163,914**
**BEAMING MACHINES**
**William Harry Kimpton, 22 Alton Road, Wilmslow, England**
**Filed Dec. 11, 1962, Ser. No. 243,899**
**Claims priority, application Great Britain Dec. 23, 1961**
**14 Claims. (Cl. 28—35)**



1. A beaming machine including a beam, a presser roller engaging said beam, means adapted to detect increments in the overall diameter of said beam due to the build-up of material thereon, and means adapted to be actuated by said first mentioned means so as to allow said beam to move away from said presser roller, whereby to maintain a substantially constant pressure between the periphery of the material on said beam and said presser roller throughout the beaming operation, whilst said presser roller remains in a substantially fixed position, said second mentioned means comprising an hydraulic cylinder adapted to contain an hydraulic fluid, a piston slidable in said cylinder, means secured to said piston and adapted to support said beam in position, and valve means responsive to said first mentioned means and adapted to bleed hydraulic fluid from said cylinder so as to allow said beam to move away from said presser roller.

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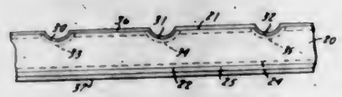
**3,163,915**
**METHOD OF FABRICATING SURFACE-BARRIER DETECTORS**
**Richard J. Fox, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Sept. 15, 1961, Ser. No. 138,533**
**2 Claims. (Cl. 29—25.3)**



1. A method of making silicon surface-barrier nuclear particle detectors comprising the steps of slicing n-type silicon crystals to a thickness of .0.10 inch to produce wafers, etching one surface of the wafer to produce a clean surface free of crystal damage, rinsing the wafer with a cleaning liquid, machining a ceramic holder to provide a wafer receiving recess, firing the holder and applying a conductive coating to the faces, coating the recess with a room temperature curing epoxy resin, mounting the wafer in the recess in contact with the resin, aging the unit to cure the epoxy and oxidize the silicon, then vapor depositing an electrical conductive surface of gold on the faces of the silicon and on the adjacent surfaces of the ceramic holder, and applying a compressed spring to the conductive coating.

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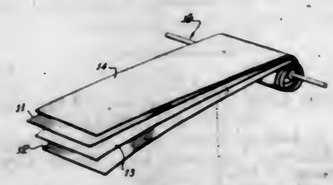
**3,163,916**
**UNIJUNCTION TRANSISTOR DEVICE**
**John M. Gault, Manhattan Beach, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California**
**Filed June 22, 1962, Ser. No. 204,391**
**4 Claims. (Cl. 29—25.3)**



1. The method of making a semiconductor device comprising the steps of preparing a large area wafer of semiconductor material for receiving a doping agent, forming a thin impurity layer of one of the conductivity types on the opposing surfaces of said wafer, forming a plurality of parallel spaced grooves on the opposing surfaces of said wafer to a depth below the depth of said impurity layers on said opposing surfaces; forming a layer of one of the other conductivity types in a plurality of said grooves on one of said surfaces; attaching electrode means to at least said grooves in said one of said surfaces; and on the opposing sides of said grooves in the other of said surfaces, cutting said wafer into strips parallel to said groove and which include at least a portion of one of said grooves on the opposing sides of said strip; and then cutting each of said strips perpendicularly to form a plurality of bars.

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**3,163,917**
**MINIATURE CAPACITOR ASSEMBLY METHOD**
**Donald L. Bilsing and Marvin G. Kesler, Ogallala, Nebr., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Euclid, Ohio, a corporation of Ohio**
**Filed May 22, 1962, Ser. No. 196,712**
**4 Claims. (Cl. 29—25.42)**



1. The method of fabricating a strip wound miniature electrical capacitor, comprising the steps of:

(*a*) simultaneously winding flexible electroconductive material and flexible dielectric material upon a mandrel to form a capacitor body; each winding layer including two ribbons of flexible electroconductive material insulatively separated by a ribbon of flexible dielectric material and with adjacent winding layers insulatively separated by another ribbon of flexible dielectric material;



(*b*) rigidly securing one end of a first electrical lead wire to one end of a member of electrical insulating material of a predetermined outside dimension less than the transverse dimension of said mandrel, and rigidly securing one end of a second electrical lead wire to the other end of said member to thereby form a rigid lead assembly;

(*c*) removing the wound capacitor body from said mandrel and inserting said rigid lead assembly within said capacitor body so that said member of electrical insulating material is disposed coaxially within said capacitor body with said first lead wire projecting from one end of said capacitor body and said second lead wire projecting from the other end of said capacitor body;

(*d*) ohmically bonding said first lead wire to one of said ribbons of electroconductive material; and,

(*e*) ohmically bonding said second lead wire to the other of said ribbons of electroconductive material.

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**3,163,918**
**GROOVING TOOL**
**Carl Emmons, Tarpon Springs, Fla., assignor to U.S. Tool & Cutter Co., Franklin, Mich., a partnership**
**Filed Nov. 19, 1962, Ser. No. 238,574**
**11 Claims. (Cl. 29—95)**

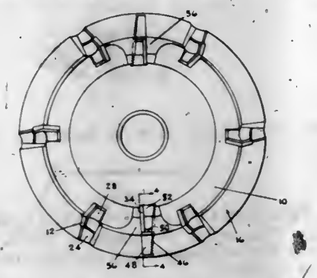


1. A tool bit for cutting grooves in work pieces, the tool bit being of the type adapted to be seated in a tool holder having a triangularly shaped recess therein, said tool bit comprising a triangularly shaped body portion having a pair of flat parallel opposite side faces and three flat edge faces which are triangularly related, said edge faces being perpendicular to said side faces and intersecting at the corners of the triangularly shaped body portion to form cutting edges, said cutting edges being perpendicular to said side faces and extending straight across the full width of said body portion, each of said cutting edges being defined in part by a small land on an adjacent edge face of the body portion providing end clearance for said cutting edge, said land being flat and lying in a plane perpendicular to said side faces, said land forming with the edge face of the body adjacent the edge face on which the land is formed an included angle of less than 90°, said side faces adjacent each cutting edge being relieved to provide side clearance of each cutting edge.

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**3,163,919**
**ROTARY CUTTING TOOLS**
**William Turner, Woodsetts, England, assignor to The Sheffield Twist Drill & Steel Company Limited, Sheffield, England, a company of Great Britain and Northern Ireland**
**Filed Apr. 2, 1963, Ser. No. 270,049**
**Claims priority, application Great Britain, Apr. 17, 1962, 14,836/62**
**5 Claims. (Cl. 29—105)**

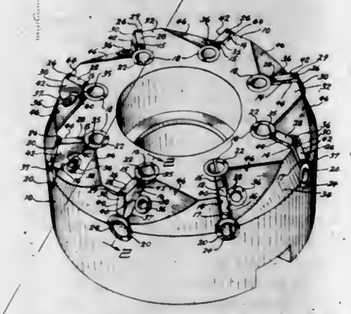
1. In a face milling cutter, a body portion having a first set of tapered slots equally spaced around its circumference and a second set of tapered slots also equally spaced around its circumference, each slot of said second set being disposed between two adjacent slots of said first set, serrations extending along one side wall of each slot, inserts fixedly secured in the narrower ends of the slots to provide locating faces therein, a first set of cutter bits acommodated in said first set of slots and abutting against the locating faces therein for operating at a common circumferential line, a second set of cutter bits accommodated in said second set of slots and abutting against the locating faces therein for operating at



another circumferential line which is of smaller diameter than and in axially advanced relation to that of said first set of cutter bits, and serrated wedges for retaining the cutter bits in their respective slots.

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**3,163,920**
**MILLING CUTTER WITH THROWAWAY CUTTING INSERTS**
**Henry W. Stier, Dearborn Heights, Mich., assignor to Willeys's Carbide Tool Company, Detroit, Mich.**
**Filed Mar. 18, 1964, Ser. No. 352,867**
**4 Claims. (Cl. 29—105)**



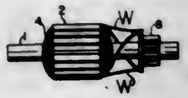
1. A rotary cutting tool of the inserted tooth type comprising a rotatable body member having at least one pocket opening through the side and one end thereof, said pocket having two substantially parallel planar side walls disposed substantially along a radius of said body member and two arcuate end walls defined by the outer surface of cylindrical pins pressed in bores in said body member disposed at a predetermined angle, a cutting insert snuggly disposed within said pocket and having angularly disposed consecutive sides providing cutting edges exposed at the side and at the end of said body member and two other sides abutting against said cylindrical pins, and means for clamping said cutting insert in said pocket.

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**3,163,921**
**ARMATURE WINDING METHOD**
**Robert B. Applegate, North Olmsted, Ohio, assignor to Cleveland Electrical Equipment Co., Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Aug. 28, 1961, Ser. No. 134,499**
**7 Claims. (Cl. 29—155.5)**

1. The method of making an armature having a slotted body and commutator mounted in axially spaced relation on a shaft which comprises placing the beginning ends of wires in the slots of said commutator; winding coils in the slots of said body and across the ends thereof; and aligning the finishing ends of the wires with the slots of

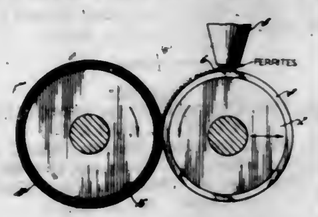
said commutator adjacent the slots in which said wires were originally placed; directly thereafter placing the



finishing ends of the wires in such slots of said commutator.

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3,163,922
**PROCESS FOR ORIENTING FERRITES**
Vladimir Brailowsky, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 8, 1960, Ser. No. 74,511
3 Claims. (Cl. 29—155.6)

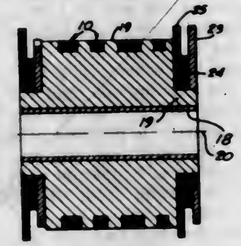



1. In a method of fabricating ferrite bodies, the steps of preparing ferrite crystals having an inherent permanent magnetization, feeding said ferrite crystals on to the surface of a ferromagnetic drum in substantial quantity to which they align and adhere magnetically, rotating and bringing said drum surface retaining the ferrite crystals into proximity with a second drum having on its surface a sheet of flexible adherent deformable binder material capable of being self-supporting and having a thickness at least several times that of the crystals in which as the surfaces rotate together separated at distance less than the combined thickness of the binder material on said second drum and the crystals on said ferromagnetic drum the crystals from the ferromagnetic drum surface become imbedded to a sufficient density after a plurality of revolutions of the drums forming a mixture of binder material and layers of magnetically oriented ferrite crystals, rolling the resultant mixture out in sheet form from the drum, said crystals remaining in oriented layers therein, cutting said flexible, deformable binder sheet material with the imbedded ferrites into desired final body shape, firing said cut out bodies to burn out the flexible, deformable binder material, and sintering the ferrite crystals to obtain a hard oriented ferrite body.

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3,163,923
**METHOD OF MAKING A CODED DRUM**
Anthony Lehmann, Jr., West Caldwell, and Frank Peer, Jr., Boonton, N.J., assignors to General Precision, Inc., a corporation of Delaware
Filed Dec. 31, 1959, Ser. No. 863,290
4 Claims. (Cl. 29—155.55)

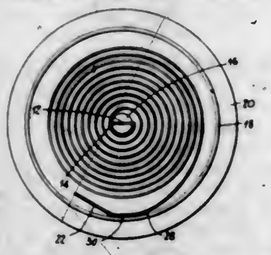
1. A method of fabricating a rotary analog-to-digital converter drum, comprising:
providing a thin-walled hollow cylinder of electroconductive material;
forming a plurality of circumferential slots in said cylinder precisely spaced, dimensioned, and arranged to define a predetermined digital code pattern, all of said slots having a circumferential dimension smaller than the circumference of the cylinder;
disposing the cylinder coaxially about a shaft of smaller diameter than the interior of the cylinder; and
embedding the cylinder and shaft in a hardenable, dielectric material, completely enveloping the exterior of the cylinder and filling the slots therein and the



volume between the shaft and interior surface of the cylinder; and
removing excess dielectric material from the exterior surface of the cylinder so as to leave cylindrical surface regions of dielectric material in said slots flush with the outer surface of the cylinder.

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3,163,924
**METHOD OF MAKING A HEATING UNIT**
Arthur W. Schnick, Meriden, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 14, 1961, Ser. No. 138,035
2 Claims. (Cl. 29—155.62)



1. A method of making a heating unit for an electric cigar lighter comprising the steps of winding into a substantially flat spiral coil a metallic ribbon, turning the outer extremity of said coil inwardly from the general direction of said spiral, permitting the outermost tip of said extremity to bear on the next preceding course of said spiral so as to radially extend the outer course from said spiral, inserting said coil in a retainer cup so that the said outer course engages the inner side of said cup, welding said outer course to said retainer cup and turning said outermost coil extremity in a radially outward direction from its contact with said coil.

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3,163,925
**METHOD OF FORMING A RIGID STEEL RACK BAR FOR AUTOMOBILE JACKS**
Russell K. Ulm, Butler, Ind., assignor to Universal Tool & Stamping Company, Inc., Butler, Ind., a corporation of Indiana
Original application Dec. 1, 1961, Ser. No. 156,398. Divided and this application Sept. 17, 1962, Ser. No. 224,049
4 Claims. (Cl. 29—159.2)

1. The method of forming a rigid steel rack bar for jacks which consists in taking a ribbon of flat steel stock, forming centrally along said ribbon longitudinally thereof a series of indented teeth with side flanges protruding beyond the outermost edges of said teeth, subsequently bending the stock laterally of said teeth to provide trackways facing in the same direction as the teeth and which



trackways protrude substantially beyond the outermost edges of said teeth, and subsequently bending the ribbon



into a tube of polygonal cross section and welding the outermost edges of said strip together.

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3,163,926
**CABLE HARNESS PRODUCTION APPARATUS**
Edward W. Gray, Galion, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Jan. 18, 1963, Ser. No. 252,472
6 Claims. (Cl. 29—203)

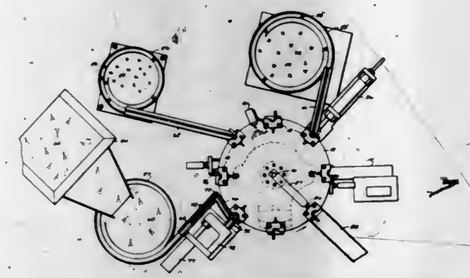


1. Apparatus for making a cable harness of a plurality of wires, comprising a base, a plurality of pins mounted on said base in projecting relation arranged in predetermined order, an electric lamp mounted adjacent each of said pins, means defining a circuit through each lamp including a pair of terminals biased toward contacting engagement to close said lamp circuit, means for connecting a source of electricity in each of said lamp circuits, and a plurality of circuit control means each of insulating material in sheet-like form and each engageable between the terminals of lamp circuits to effect open condition of the circuits, each of said control means having apertures therein located to permit contact of the terminals of selected terminal pairs for closing the corresponding lamp circuits to light at least certain of said lamps to illuminate the pin adjacent each lighted lamp for indicating the path along the pins to be followed by the indicated wire or wires, said plurality of control means being successively disposable between the terminals for guiding the successive laying of wires in the harness.

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3,163,927
**APPARATUS FOR LOADING PARTS IN CANS**
Fritz V. Brosselt, Kansas City, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 20, 1963, Ser. No. 266,687
10 Claims. (Cl. 29—203)

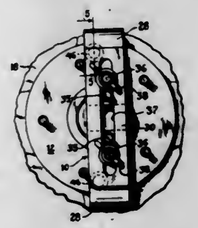
1. An apparatus for loading parts in cans having open ends comprising:
a turret mounted for rotation about an axis,
loading units mounted on the turret at equally spaced centers about the turret,
means operable to move the turret intermittently to successively locate the loading units at various stations located at fixed positions about the turret,
a part feeding unit mounted at one of the stations and operable to feed the parts successively to the loading units when the loading units are located at said station,



a can feeding unit mounted at another of the stations and operable to feed the cans successively to the loading units when the loading units are located at said station,
a nest disposed in each loading unit to receive and support a can from the can feeding unit,
a loading pin movably disposed in each loading unit and actuable at the part feeding station to remove a part therefrom, and
means to actuate the loading pins successively to locate the parts successively in the cans through the open ends thereof.

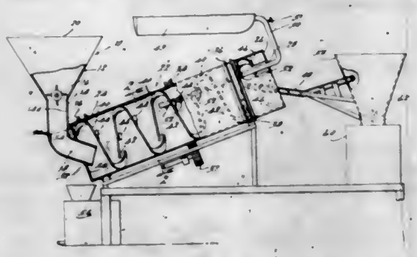
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3,163,928
**AXLE PULLER**
Hubert R. Shafer, 909 NW. A St., Richmond, Ind.
Filed Feb. 15, 1962, Ser. No. 173,449
5 Claims. (Cl. 29—259)



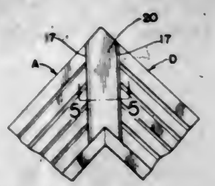
1. A puller for removing a flanged rear axle from a combined axle housing and back-up plate of the rear axle of an automotive vehicle, comprising clamp means having a body adapted to be received transversely adjacent the outer surface of said axle flange and formed with oppositely disposed radially inwardly turned ends receivable over the axle flange at opposite sides thereof, a bolt fixed to each of said ends radially inwardly of the periphery of the axle flange and extending generally axially toward the axle plate in the mounted position of said clamp means with an inner end of said bolt positioned for direct force applying contact against the inside surface of the axle flange, fastening means on said clamp means for securing said clamp means on the axle flange, and means threaded on said bolts and movable by a wrench against the back-up plate in said mounted position to force said bolts against the flange effecting withdrawal of the axle from the housing.

**3,163,929**
**CHIP CLEANING METHOD**
**Sanders A. Goodstein, 6301 N. Dort Highway, Flint, Mich.**
**Filed Mar. 28, 1962, Ser. No. 183,210**
**14 Claims. (Cl. 29—403)**



14. The method of cleaning metal chips comprising the steps of depositing chips to be cleaned in a wash of hot detergent-laden water, conveying the chips out of the wash, spraying the chips out of the wash with detergent-laden steam, washing portions of the chips being conveyed by flowing the condensate of the detergent-laden steam over a portion of the chips, tumbling and agitating the chips while carrying the chips through the spray of detergent-laden steam to expose thereby the various surfaces of the chips, compressing batches of the cleaned chips under a high pressure to form thereby briquettes of substantially oil-free chips.

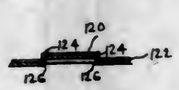
**3,163,930**
**METHOD OF FABRICATING JOINTS ON ALUMINUM DOORS OR THE LIKE**
**Alton D. Stanley, Albia, Iowa, assignor to The Moloney Company, Albia, Iowa, a corporation of Ohio**
**Filed Sept. 30, 1960, Ser. No. 59,575**
**3 Claims. (Cl. 29—471.1)**



2. The art of welding extruded tubular aluminum doors which includes the steps of cutting the ends of pieces of extruded aluminum stock having the cross sectional form of the door stiles and the top and the bottom rails of the ultimate door structure whereby the cut ends when abutted afford a right angled joint between a stile piece and a rail piece, abutting the cut edges, welding the abutting edges of the pieces with application of metal while causing the metal to bulge inwardly and to build up outwardly along the abutment, bounding the edges of the weld thus produced by parallel grooves formed in the metal to lie within the width of the bulged metal and simultaneously removing the surplus of built up welded metal between the grooves.

**3,163,931**
**METHOD OF JOINING STRIP**
**John E. Nielsen, Downers Grove, Ill., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Filed July 28, 1960, Ser. No. 45,883**
**5 Claims. (Cl. 29—509)**

1. In a method for joining sheet members composed of metal or like material, the steps of displacing adjoining superimposed portions of the members inwardly from the ends thereof to form adjoining, oppositely directed hollow protuberances; simultaneously shearing the members between said protuberances to provide a shear line defining the common marginal edges thereof and stretching the displaced portions in a direction perpendicular to



said shear line, the adjoining sides of said protuberances extending angularly toward the plane of the sheet members from opposite sides thereof in substantially tangential relation to each other and terminating in the sheared edges; and flattening said protuberances whereby said edges expand outwardly in overlapping relationship.

**3,163,932**
**ADJUSTABLE SIZE RATCHET HANDLE PIPE CUTTER**
**John H. Adams, 1801 21st St., Kingsburg, Calif.**
**Filed July 16, 1962, Ser. No. 209,952**
**3 Claims. (Cl. 30—101)**



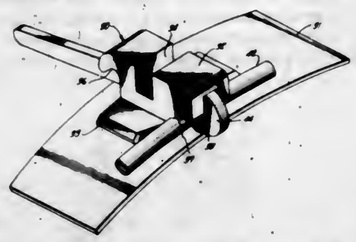
1. A pipe cutter comprising a pair of jaws adapted to be disposed about a pipe, a pipe engaging cutter element on one jaw, a pipe engaging backing element on the other jaw, means pivoting the jaws together at one end for relative approaching movement, and means to detachably connect the jaws when closed at the other end thereof, said detachable connecting means comprises a T-bar having a shank and a cross arm on one end thereof, a cross head on said other end of one jaw, the cross head having an opening therethrough, the T-bar shank slidably extending intermediate its ends through the opening and with the cross arm disposed in the direction of the other jaw, a nut adjustably threaded on said shank beyond the cross head in the opposite direction, a compression spring about the shank between the cross head and nut, and means in part on the cross arm arranged to detachably secure the same to said other jaw.

**3,163,933**
**ORTHODONTIC BRACKET**
**Percy Raymond Begg, Springfield, South Australia, Australia (170 North Terrace; Adelaide, South Australia, Australia), and Arthur Chun-Hoon, 350 Alexander Young Bldg., Honolulu 13, Hawaii**
**Filed Apr. 3, 1961, Ser. No. 100,415**
**Claims priority, application Australia Sept. 12, 1960**
**4 Claims. (Cl. 32—14)**

2. In orthdontic apparatus for use in the application of lightwire and edgewise corrective techniques and including a tooth band, a solid metal bracket body, archwire, tie wire to fasten the archwire to the bracket in the application of the edgewise technique, lightwire, and a locking pin to fasten the lightwire to the bracket in the application of the lightwire technique, the improvement comprising said bracket body of solid metal having

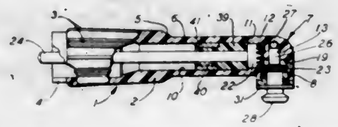


(*a*) a labial surface, gingival and occlusal side surfaces and a relatively flat base surface for attachment to the tooth band,
(*b*) a recess extending across the base opening at the gingival side surface and of such size to receive alternately the lightwire and tie wire,



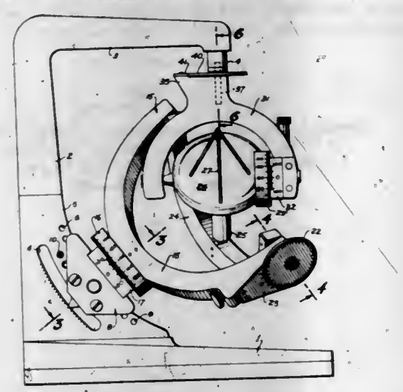
(*c*) a slot extending transversely therethrough generally perpendicularly to and opening into the recess, the slot being shaped to receive and house the locking pin,
(*d*) a groove in the labial surface extending parallel to the recess and shaped to receive and hold the archwire, and
(*e*) a channel in the occlusal side surface extending parallel to the labial groove, the channel and recess serving as complementary anchors for the tie wire to fasten the archwire to the bracket.

**3,163,934**
**DENTAL PROPHYLAXIS RIGHT ANGLE HAND PIECE**
**Adolph D. Wiseman, 1075 Baker St., San Francisco, Calif.**
**Filed Sept. 14, 1962, Ser. No. 223,784**
**4 Claims. (Cl. 32—27)**



1. A dental prophylaxis right angle hand piece comprising:
(*a*) an elongated tubular member having a bore therein extending axially thereof opening outwardly of said member at one end thereof and a hollow, right angle nose portion formed integrally with said tubular member at the end thereof opposite to said one end providing a gear chamber with said bore opening into the latter;
(*b*) an opening formed in one side of said nose portion opening into said gear chamber at a right angle to the axis of said bore;
(*c*) a drive spindle rotatably supported in said bore having a drive gear at said nose portion;
(*d*) a nose assembly including a driven spindle having a driven gear secured on one end portion thereof; means for holding a dental implement on the other end, and a seal-bearing coaxial with said spindle between said drive gear and said means;
(*e*) said opening being of sufficient diameter to pass said driven gear therethrough into said gear chamber;
(*f*) the sides of said opening and said seal-bearing having complementarily formed interengaging means movable into holding and sealing relation upon said nose assembly being bodily moved axially of said spindle to pass said driven gear through said opening into said chamber to driving relation with said drive gear, and said interengaging means being in said interengaging relation with said driven gear in said driving relation with said drive gear for being driven thereby and with said means for holding said dental implement projecting from said nose portion.

**3,163,935**
**MECHANICAL COORDINATE CONVERTER**
**James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Richard M. Beckwith**
**Filed Dec. 26, 1962, Ser. No. 247,419**
**2 Claims. (Cl. 33—1)**

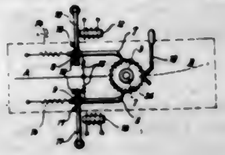


2. A mechanical converter, comprising:
(*a*) a frame structure including a base, a pedestal extending upwardly therefrom, and a support extending laterally from said pedestal over said base;
(*b*) a journal at the extremity of said support defining an azimuth axis;
(*c*) a journal on said pedestal defining a polar axis intersecting said azimuth axis;
(*d*) a semicricular polar axis gimbal journaled at its midpoint by said polar axis journal;
(*e*) a semicircular azimuth axis gimbal journaled at its midpoint by said azimuth axis journal;
(*f*) a semicircular declination axis gimbal journaled at its extremities between the extremities of said polar axis gimbal;
(*g*) said gimbals being of graduated size to internest and to share a common center point at the intersection of said azimuth and polar axes;
(*h*) and a structure interconnecting said azimuth and declination gimbals, including pivot means connected to the extremities of said azimuth gimbal to define an elevation axis, and pivot means perpendicular to said elevation axis and said declination axis joined to said declination gimbal.

**3,163,936**
**DIRECTION-BOUND ENGRAVING TOOL WITH PROGRAM CONTROL**
**Konrad Zuse, Im Haselgrund, Hunfeld, Rhon, Germany**
**Filed Aug. 15, 1962, Ser. No. 216,936**
**Claims priority, application Germany, Aug. 31, 1961, Z 8,945**
**5 Claims. (Cl. 33—18)**

1. Engraving device adapted to be fastened to the head of a coordinate designing apparatus adapted to be controlled by programmed electrical signals from a source and adapted to be guided over the surface to be engraved, comprising a rotatable engraving shaft, a cutting edge being provided on said engraving shaft, electromagnets being connected and adapted to be energized and de-energized by said programmed electrical signal, ratchet

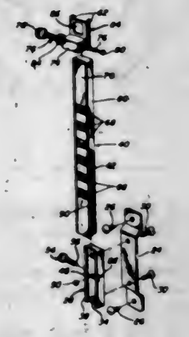
wheels mounted on said engraving shaft, ratchet pawls mounted in cooperative relation with ratchet wheels and



controlled by said electromagnets, said engraving shaft being rotatable by said ratchet pawls, so that said cutting edge is given the planned engraving direction.

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**3,163,937**
**SIGHTING DEVICE**
**Robert J. Reynolds, Montgomery County, Ohio (115 W. Lowery Ave., Dayton 49, Ohio)**
**Filed Dec. 13, 1960, Ser. No. 75,589**
**2 Claims. (Cl. 33—46)**

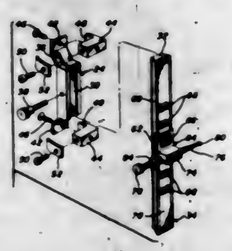


2. A sighting device for a bow or the like comprising:
a base, the base having a dovetail channel therein,
a range member adjustably carried within the dovetail channel of the base,
the base and the range member having complementary compensation indicia thereon for indicating the position of the range member with respect to the base,
there being a socket in the base in communication with the channel,
a ball disposed within the socket and partially movable into the channel to engage the range member,
a pin carried by the base and adjustably movable into engagement with the ball to force the ball in a direction from the socket and into engagement with the range member to secure the range member with respect to the base,
the range member having a plurality of range indicia thereupon, an indicator member adjustably carried by the range member and positionable in alignment with any of the range indicia thereof,
a sight member carried by the indicator member and adjustable with respect thereto.

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**3,163,938**
**ARCHER'S SIGHTING DEVICE**
**Robert J. Reynolds, Montgomery County, Ohio (115 W. Lowery Ave., Dayton, Ohio)**
**Filed Mar. 14, 1962, Ser. No. 179,684**
**2 Claims. (Cl. 33—46)**

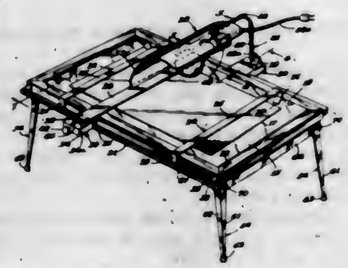
1. A sighting device for attachment to a bow comprising:
a base member,
the bow having a midportion provided with rabbets in opposed surfaces thereof,
means for clamping said base member to said midportion of the bow within the rabbets thereof,
a range member,
connector means for adjustably connecting said range member to said base member for support thereby,
said connector means having a dovetail flanged portion,
said base member having a complementary channel-section portion within which the dovetail flanged



portion of the connector means is slidably and adjustably movable, the channel-section portion having opposed side edges,
said base member being longitudinally slotted to permit change in transverse dimension between the opposed side edges of said channel-section portion,
and means for varying a transverse dimension of said channel-section portion whereby to secure said range member and base member in desired adjustable relative positions.

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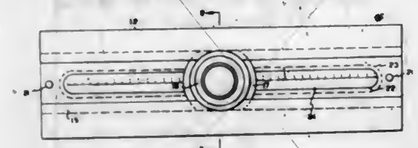
**3,163,939**
**SCOPE BOARD**
**Arthur J. Heyer, Oak Park, Ill., assignor, by mesne assignments, to Heyer Inc., Chicago, Ill., a corporation of Illinois**
**Filed Aug. 27, 1959, Ser. No. 836,534**
**5 Claims. (Cl. 33—76)**



1. A portable scope board comprising, in combination, a main board member including a light transmitting plate having an upper working surface, foldable leg means on the board member for supporting it in elevated position, a rail secured to the board member at each of opposite edges and extending along and spaced from the respective edge throughout most of the length of the edge, a connector mounted on each rail for sliding movement therealong, an instrument secured to one of the connectors and positioned over the board member for cooperation with said working surface, and a lamp, each said connector having means for releasably securing the lamp thereon in either of mutually reversed positions above or below the board member.



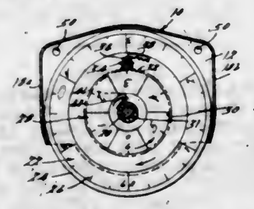
**3,163,940**
**RAPID COMPARATOR**
**Ralph D. Geiser, Troy, N.Y., assignor to W. & L. E. Gurley, Troy, N.Y., a corporation of New York**
**Filed May 29, 1962, Ser. No. 198,634**
**4 Claims. (Cl. 33—107)**



1. A measuring instrument comprising
(*a*) a transparent body having an upper surface and a planar, lower surface with a slot therein, at least a portion of the slot being spaced from the margins of the lower surface;
(*b*) a pair of spaced, parallel guideways carried by the upper surface of the body;
(*c*) a slide mounted between the guideways for movement along the upper surface;
(*d*) an optical magnifier mounted on the slide for movement therewith and having a narrow field of view relative to the width of the body;
(*e*) a transparent insert having upper and lower faces and being secured within the slot so that its lower face is parallel with but slightly recessed from the lower surface of the body; and
(*f*) the lower face of the insert being inscribed with a series of evenly spaced marks perpendicular to the guideways and with an index line perpendicular to the marks, portions of the index line and the marks being within the field of view of the magnifier as it moves along the guideways.

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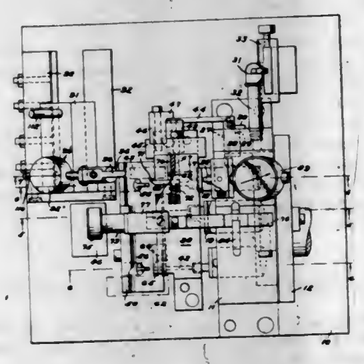
**3,163,941**
**ROLLER CONTACT DISTANCE MEASURING DEVICE**
**Joseph E. Presley, 543 St. Ann St., New Orleans, La.**
**Filed Aug. 25, 1961, Ser. No. 133,923**
**5 Claims. (Cl. 33—141)**



1. A portable pocket-sized measuring device comprising a casing formed with an open bottom and including a pair of spaced side edges connected by a face having an indicator thereon, a shaft mounted in said casing centrally between said side edges thereof, a first disk rotatably mounted on said shaft having a portion thereof projecting through said open bottom for rolling contact with an article to be measured, said first disk provided with indicia extending therearound and disposed adjacent to the periphery thereof, a second disk rotatably mounted on said shaft adjacent to said face of said casing, said second disk provided with indicia extending therearound and disposed adjacent to the peripbery thereof, a circular gear mounted concentrically on said second disk, a pinion gear rotatably mounted in said casing and disposed in constant meshing engagement with said circular gear, a gear segment disposed along an arcuate portion of said first disk and adapted to mesh with said pinion gear during a portion of each revolution of said first disk for rotating said second disk a fraction of a revolution in a direction opposite to the direction of rotation of said first disk, and coacting means indexed on said first and said second disks operative to provide rotation of said first and said second disks relative to each other when said first disk is rotated in one direction and to rotatably interlock said first and said second disks when the zero marks of said indicia thereon are disposed in radial alignment upon rotation of said first disk in the opposite direction providing for concurrent rotation of said first and said second disk to a reset zero stop point wherein said gear segment is disposed in blocking contact with said pinion gear and the zero marks of said indicia are aligned with said indicator on said face.

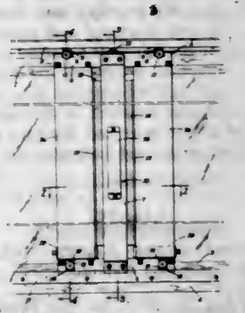
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**3,163,942**
**PREDICTION GAGE**
**James W. Rowland, Jackson County, Mich., assignor to Kelsey-Hayes Company, Detroit, Mich., a corporation of Delaware**
**Filed Jan. 26, 1959, Ser. No. 788,994**
**2 Claims. (Cl. 33—174)**



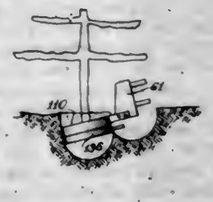
1. A gage comprising a support for rockably supporting a workpiece, a casing having a chamber therein for hydraulic fluid, a pluralJty of spaced axially reciprocable plungers sildably supported on said casing and extending into said chamber to displace the hydraulic fluid therein, all of said plungers except one being directly engageable with spaced portions of a workpiece on said support, a piston connected to the said one of said plungers in spaced parallel relation thereto, said piston having contact means engageable with another portion of the workpiece on said support, said plungers being of predetermined different diameters depending on the portions of the workpiece to be engaged thereby so that certain plungers displace more fluid than others for a given axial movement thereof, means for measuring the volume of hydraulic fluid displaced by all of said plungers including a fluid column communicating with said chamber to receive the displaced hydraulic fluid, a guide block having passages slidably receiving and axially guiding said piston and all of said plungers except the said one thereof, spring means urging all of said plungers except the said one thereof in a direction for engagement with the workpiece on said support, spring means urging said one plunger in a direction for engagement of said contact means with the workpiece on said support, means for angularly moving the workpiece on said support and for fixing the same in adjusted position including a clamping arm pivoted on said casing having a longitudinally adjustable workpiece engaging part thereon, threaded means on said clamping arm for longitudinally adjusting said part, and a mechanical gage operated by the axial movement of one of said plungers to indicate the angular position of the workpiece.

3,163,943
MECHANICAL BLACKBOARD ERASER
John W. Bell, 24 Pasatiempa Drive, Santa Cruz, Calif.
Filed Aug. 17, 1962, Ser. No. 217,694
11 Claims. (Cl. 35—62)



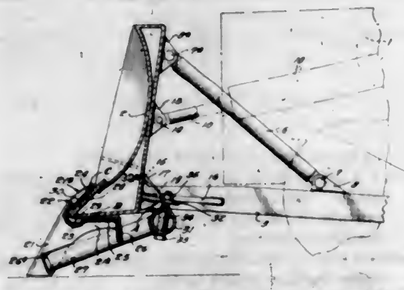
1. A blackboard erasing device comprising a frame, means mounting the frame for movement along the blackboard from one end to the other in either direction, a handle on the frame for manipulating the same, a vertical-axis rotary drum mounted on the frame and faced with yieldable chalk-erasing material normally engaged with the blackboard, and dust catching receptacles mounted on the frame on opposite sides of the drum opening from top to bottom to the drum with their vertical edges engaging the drum at circumferentially spaced points thereon.

3,163,944
METHOD FOR DIGGING AND BALLING BUSHES OR TREES
Lee Whitcomb, 719 Illinois St., Plainfield, Ill., assignor to Robert Whitley, Joliet, Ill., and Lee Whitcomb, Plainfield, Ill.
Original application Apr. 14, 1960, Ser. No. 22,279, now Patent No. 3,045,368, dated July 24, 1962. Divided and this application May 14, 1962, Ser. No. 179,598
1 Claim. (Cl. 37—2)



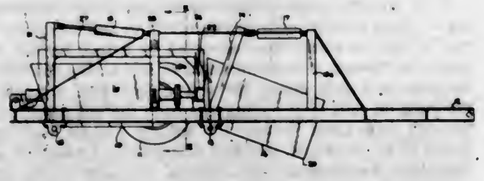

The method of removing or balling a tree which consists of the steps of moving a pair of closed semi-circular cutter heads at the lower end of a boom down at an angle to the surface of the ground adjacent a tree, swinging semi-circular knife blades down from said cutter heads and toward each other to cut out a section of earth, then lifting the same and dropping it way from the tree, then opening the cutter heads about a pivot near one meeting edge of the same, moving the open cutter heads forward above the earth around the base of the tree, swinging the two semi-circular knife holders together to form a circular ring around the base of the tree, moving said semi-circular knives downwardly and cutting into the earth at an angle at the end of the boom and then swinging said knives toward each other, cutting through the earth to cut out a section of earth larger than a semi-sphere and lifting the same together with the tree and moving it to a holder for burlapping.

3,163,945
BRUSH RAKE ATTACHMENT FOR BULLDOZER BLADE
Thurman T. Dooley, Greenville, Tex., assignor to Cougar Manufacturing Company, Inc., Greenville, Tex., a corporation of Texas
Filed Aug. 22, 1963, Ser. No. 303,760
5 Claims. (Cl. 37—2)



5. In combination with a bulldozer having a moldboard thereon with a substantially V-shaped portion extending along the lower front edge thereof;
a brush rake attachment for said moldboard comprising,
a body;
a substantially V-shaped channel formed along the inner side of the body and receiving the said V-shaped edge portion of the moldboard;
a plurality of tines secured to the body and extending outwardly and downwardly with respect thereto;
a brace member secured to each tine and to the body,
said brace member extending rearwardly of the body;
a laterally extending bar secured to the inner ends of the brace members;
stop means attached to the rear side of the moldboard engageable with the bar to limit upward movement thereof;
and suspension means detachably suspending the bar to the rear side of the moldboard with the bar in position to contact the stop means.

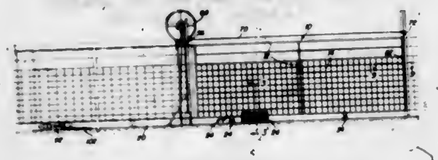
3,163,946
EARTH MOVING SCRAPER
Hendrik S. Potgieter, "Hooglande," Zastron, Orange Free State, Republic of South Africa
Filed Aug. 6, 1962, Ser. No. 215,137
Claims priority, application Republic of South Africa, Aug 7, 1961, R 61/992; Oct. 25, 1961, R 61/2,123
13 Claims. (Cl. 37—129)



1. An improved earth moving implement which comprises, a wheel chassis frame, at least three forwardly directed earth scoops pivotally mounted in the frame for tilting movement about transverse axes, each scoop having an earth digging lip at its leading end for self-loading purposes; power operated means for controlling tilting movement of said scoops to and from their loading and load carrying positions; a transverse wall mounted for longitudinal displacement along each of said scoops between the side walls thereof; power operated means for operating said transverse walls along the respective scoops to cause discharge of loads of material carried therein from the ends thereof; and wherein two scoops of those provided are of reduced width and are arranged in side-by-side laterally spaced relationship.

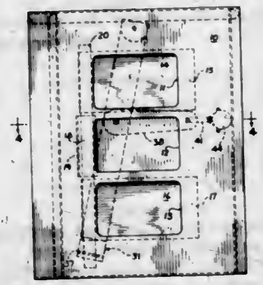


3,163,947
AUTOMATIC GATE
Alvin E. Gandy, P.O. Box 1271, Eden, Tex.
Filed Apr. 10, 1963, Ser. No. 272,092
6 Claims. (Cl. 39—25)



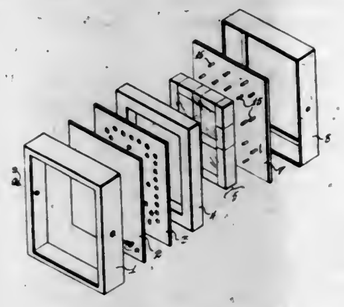
6. An automatic gate structure consisting of a gate, a pair of rigid spaced vertical standards provided at one end of the opening to be closed by said gate, first and second aligned ramps provided on opposite sides of said gate, said ramps being pivotally mounted at their remote ends, a transverse shaft, means rotatably mounting said shaft between the standards above said gate, means on said shaft for effecting a movement of the gate between the standards on a rotation of the shaft, means operatively connecting the ramps and the shaft for effecting a rotation of the shaft upon a downward movement of either of the ramps under a superimposed load, said means on the shaft for effecting a movement of the gate including an enlarged wheel mounted vertically above the plane of the gate and a tensioned cable having the intermediate portion thereof wound about the wheel and the ends thereof secured to the opposite ends of the gate, whereby a rotation of the wheel will produce a horizontal movement of the gate, and a counterweight and an elongated cable suspending the counterweight from the shaft, said cable being wound about the shaft upon the rotation of the shaft effected by the aforementioned load on a ramp, and said counterweight rotating the shaft in a reverse direction upon a removal of the superimposed load.

3,163,948
DISPLAY DEVICE
Leonard G. Peretti, Chicago, Ill., assignor to Arvey Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 16, 1962, Ser. No. 166,515
2 Claims. (Cl. 40—30)



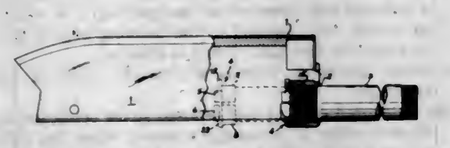
1. A display device comprising,
a frame formed with a plurality of parallel sight openings,
a separate strip of flexible display sheet material adapted to overlie each sight opening disposed rearwardly of said frame,
at least one of said strips being endwise secured adjacent one defining edge portion of the opening it is adapted to overlie,
and at least one other strip endwise secured adjacent a defining edge portion of the opening it is adapted to overlie and opposed to the defining edge portion to which the first named strip is attached,
a roller extending transversely across each of said openings,
the unsecured ends of said secured strips being secured to said roller in a manner whereby when the roller is reciprocally rolled across said sight openings said first secured strip is alternately rolled up and unrolled and the other strip is alternately unrolled and rolled up,
support means for said frame, and
means for continuously reciprocating said roller comprising,
a rocker arm pivoted at one end to a panel carried by said support means parallel to said frame, and
means carried by the unpivoted end of said rocker arm freely embracing one end portion of said roller for reciprocating movement of the latter thereby.

3,163,949
DIGITAL ILLUMINATED DISPLAY DEVICE
Paul R. Gley, Hillsdale, N.J., assignor to Dependable Printed Circuit Corp., Wayne, N.J., a corporation of New Jersey
Filed Nov. 30, 1962, Ser. No. 241,258
3 Claims. (Cl. 40—130)



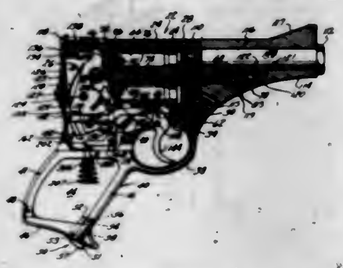
3. A digital illuminated display device comprising an assembly of lamp cell blocks of plastic characterized by Lucite and Plexiglas, the cell blocks being adjacent each other and in rows, and the blocks being laterally light-shielded one from the other, each cell block being apertured centrally thereof, a lamp in each cell block and adapted for electrical illumination, electrical circuit means rearwardly of the cell block assembly and connected to one pole of each said lamp, a projecting contact member connected to the second pole of each of said lamps, whereby selected lamps may be illuminated by circuit closing members applied to the appropriate projecting contact members, a master pattern screen at the outer face of said cell block asesmbly, the screen being provided with a substantially greater number of light-emitting openings for each of the majority of lamps of the cell block appropriate thereto and providing for a plurality of discrete light emissions from each of the majority of the lamps in said cell block assembly.

3,163,950
**MAGAZINE TUBE-RECEIVER JOINT STRUCTURE**
Henry A. Into, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 1, 1963, Ser. No. 269,516
7 Claims. (Cl. 42—49)



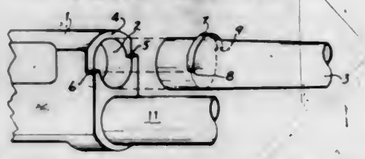
1. In a firearm having a receiver and a tubular magazine, a split-ring connector formed from a resilient material and adapted to securely fasten one end of said tubular magazine to the receiver, said connector including a generally cylindrical body portion adapted to substantially surround one end of said magazine tube and to be compressed between said tubular magazine and said receiver, said body portion being split longitudinally throughout its length to facilitate positioning said body portion around said one end of said tubular magazine, ridges and grooves formed on the internal surface of said body portion adapted to interlock with a plurality of ridges and grooves on the outer surface of said tubular magazine, deformable ridges and grooves formed on the external surface of said body portion to facilitate deformation of said connector as it is compressed between the tubular magazine and the receiver during assembly, and flange means integral with said body portion to position said magazine relative to said receiver.

3,163,951
**FIREARM FIRING MECHANISM**
Karl R. Lewis, 2450 Grant Ave., Ogden, Utah
Filed Nov. 23, 1960, Ser. No. 71,339
43 Claims. (Cl. 42—65)



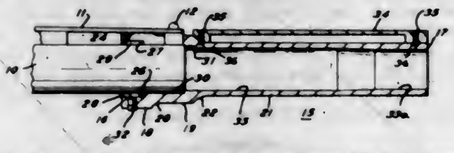
2. The combination in a firearm of: a frame, a hammer movable relative to said frame between a neutral and a cocked position and biased toward said neutral position, cocking means movable relative to said frame away from and toward an initial position and which means is releasably engageable with said hammer during movement away from said initial position to drive the hammer from said neutral position to said cocked position, said cocking means being movable independently of said hammer in the other direction of its movement, a sear movable relative to said frame and engageable with said hammer to releasably hold the latter in cocked position, a stop for limiting the movement of said sear toward said hammer, said stop being selectively movable between a position at which said sear is permitted to engage and releasably hold said hammer and a position at which said sear is prevented from engaging and releasably holding said hammer, an arm on said cocking means operable to release said cocking means from said hammer, a movable abutment, and means for moving said abutment out of the path of said arm when said sear is permitted to engage and hold said hammer and for moving said abutment into the path of said arm so as to engage and operate the same to release said cocking means from said hammer during the cocking movement of said cocking means when said sear is prevented from engaging and holding said hammer.

3,163,952
**BARREL-RECEIVER MOUNTING FOR FIREARMS**
Henry A. Into, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed May 24, 1963, Ser. No. 282,988
5 Claims. (Cl. 42—75)



1. In a firearm including a receiver and a barrel removably secured to said receiver, said receiver having an opening in a forward face thereof to receive a rear portion of said barrel, flange means partially surrounding said rear portion of said barrel, a recess in the forward face of said receiver providing step means, said step means operatively engaging the extremities of said flange means to align said barrel with said receiver in assembled condition and prevent rotation of said barrel relative to said receiver.

3,163,953
**EXTENSION FOR SHOTGUN BARREL**
Edward W. Bridge, Sr., 1507 Foulkrod St., Philadelphia, Pa.
Filed Mar. 23, 1964, Ser. No. 353,814
10 Claims. (Cl. 42—79)



1. An attachment for a shotgun comprising a sleeve having an enlarged external rim at one end thereof and a slot extending inwardly from said one end, said sleeve having one end for the reception of the muzzle end of a shotgun barrel, said one end having an internal bore within said rim, a ring in said bore for clamping engagement with the exterior of said muzzle end, fastening members in said rim for urging said ring into engagement with said muzzle end, said sleeve having a bore extending inwardly from the other end for controlling the shot pattern.

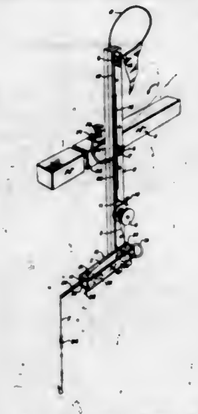
**ERRATUM**

For Class 43—4 see:
Patent No. 3,164,067

3,163,954
**FISHING APPARATUS WITH AUTOMATIC BOBBING MECHANISM**
Sven Westin, P.O. Box 505, Elm Grove, Wis.; Ludmilla Westin, executrix of said Sven Westin, deceased
Filed June 13, 1962, Ser. No. 202,115
10 Claims. (Cl. 43—17)

1. In a fishing device equipped with a fishing line, support means extending beneath the surface of the water, a float connected to the support means for oscillatory pivotal movement in the water relative to the support means and including a flotation chamber, means on said float to carry the fishing line to effect bobbing of the line upon oscillatory pivotal movement of said float, a source of gas, and means for continuously introducing gas from said source into the chamber to buoy the float upwardly, said chamber having means to release at least a portion





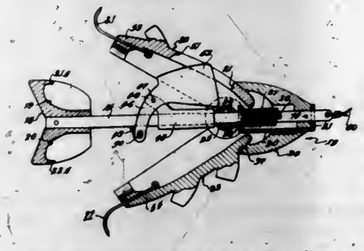
of the gas from said chamber after the float has been buoyed upwardly to a predetermined position and to displace the released gas with water whereupon said float loses some of its buoyancy and pivots downwardly to a lowered position, the continuous flow of gas into the chamber with intermittent release of gas from the chamber providing for oscillation of the float to bob the fishing line.

3,163,955
**RETRIEVER**
Ival Lee Lockwood, 361 4th St., Clifton, Colo.
Filed Oct. 15, 1963, Ser. No. 316,230
2 Claims. (Cl. 43—17.2)



2. A retriever assembly for fishing equipment, the retriever assembly comprising:
(*a*) an annular body portion;
(*b*) the body portion having overlapped end portions including an upper end portion and a lower end portion;
(*c*) the lower end portion having handle means thereon to permit spreading of the end portions;
(*d*) the body portion including side portions;
(*e*) chain means, comprising a plurality of link chains secured to each side portion in spaced relation to one another and including links;
(*f*) an upstanding rope connection means comprising one upwardly and inwardly angled arm secured to the body portion between the side portions and a second upwardly and inwardly angled arm secured to the lower end portion between the side portions adjacent the handle means, inward force on said second arm spreading the end portions;
(*g*) a loop integrally connecting the arms; and
(*h*) a heavy rope secured to the loop.

3,163,956
**FISHLURE DEVICE**
John Krutsch, 4065 W. Cermak Road, Chicago, Ill.
Filed Sept. 17, 1962, Ser. No. 223,902
6 Claims. (Cl. 43—35)

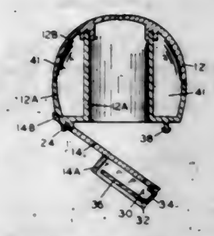


4. A fish lure device comprising an elongated leader shaft having forward and rearward portions, a tail member secured to the rearward portion of the leader shaft having a fin extending outwardly from the leader shaft, said fin having a recess extending therein confronting the forward portion of the leader shaft and having a shoulder spaced from the leader shaft generally parallel thereto, a head member slidably disposed on a forward portion of the leader shaft, a pin mounted on the head member and disposed normal to the leader shaft in a plane normal to the axis between the recess of the tail member and the leader shaft, a body member pivotally mounted on the pin and adapted to extend between the tail member and the head member on the side of the leader shaft of the recess in the tail member, said body member having a slot therein extending parallel to the leader shaft, a hook extending from the body member and adapted to extend into the recess and engage the shoulder thereof, spring bias means engaging the body member and the leader shaft urging the body member away from the leader shaft, a second spring bias means engaging the leader shaft and the head member urging the head member toward the tail member, and a release element pivotally mounted on the leader shaft between the tail member and the head member and extending through the slot in the body member, said release element engaging the head member and on actuation thereof urging the head member away from the tail member to release the hook of the body member from the tail member.

3,163,957
**BAIT CASTING DEVICE**
Orval Barrett, 3931 W. Easton, Tulsa, Okla.
Filed June 10, 1963, Ser. No. 286,709
2 Claims. (Cl. 43—41.2)

2. A bait casting device for affixing to a fishing line, and projecting onto water comprising:
a hollow body of floatable material having a bait receiving chamber therein and a fishing line receiving opening therein opposite and in communication with said bait receiving opening;
a door;
a hinge means pivotally supporting said door to said body whereby in the closed position said door substantially closes said bait receiving chamber of said body, there being an external recess in said door;
a latch lever pivotally supported to said door, said latch lever having a hook portion defining a hook to one side of the pivot and an impact receiving

means on the opposite side of said pivot, said impact receiving means of substantially flat configuration and movably housed within said recess in said door; and



a latch bolt extending from said body opposite said hinge means, said latch bolt releasably receiving said hook portion of said latch lever to retain said door in closed position, said door released to pivot to the opened position when said impact receiving portion of said latch lever is engaged upon impact with said water.

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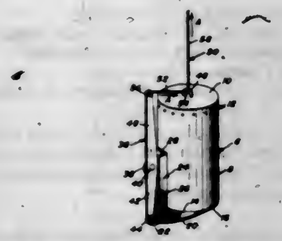
**3,163,958**
**FISH LURE AND BAIT HOLDER**
**Clayton Ervin Quinn, Rte. 1, Roebuck, S.C.**
**Filed Nov. 21, 1963, Ser. No. 325,383**
**3 Claims. (Cl. 43—42.06)**



1. A fish lure comprising a unitary substantially circular disc body portion formed of substantially rigid material, said disc body portion having a central axial through opening of sufficient size to pass over the barb of a fish hook and to be loosely held upon the shank of said hook, said body portion brightly colored, and the outside diameter of the body portion being somewhat smaller than the diameter of a circle centered on the fish hook shank and circumscribed at said barb.

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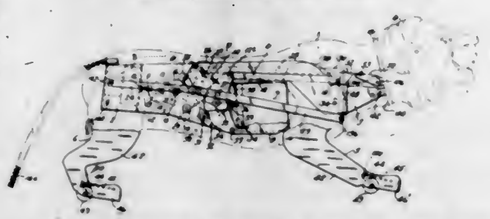
**3,163,959**
**FISH FEEDING DEVICE**
**George E. Hollar, 115 D St. SW., Quincy, Wash.**
**Filed Sept. 20, 1963, Ser. No. 310,395**
**4 Claims. (Cl. 43—44.99)**



3. A fish feeding device comprising a container having a body portion provided adjacent an upper end thereof with perforations, having an imperforate top, said container being open at its bottom, a lid normally covering and closing the bottom, and means hingedly mounting a portion of said lid on a cooperating bottom portion of said container, said means comprising a bracket fixedly mounted on said container, a lever having a median portion pivoted on said bracket, said lever constituting a latch and having trippable engagement at a lower end thereof with detent means provided therefor on said lid, a lifting, lowering and latch-tripping line having a lower portion slidingly connected to the top of said container and having a terminal end portion operatively connected with a cooperating upper trippable end of said lever.

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**3,163,960**
**WALKING TOY FIGURE**
**Keikichi Iwaya and Shigeaki Kuramochi, Tokyo, Japan, assignors to Louis Marx & Company, Inc., New York, N.Y., a corporation of New York**
**Filed Feb. 28, 1962, Ser. No. 176,236**
**17 Claims. (Cl. 46—247)**



7. A toy simulating an animal of the cat family, said toy comprising a body, a head pivoted on the body for side-to-side movement and up-and-down movement, forward legs pivoted on the body, rear legs pivoted on the body, a small wheel at the bottom of each leg, pawls to prevent reverse movement of the wheels, simulated foot pads extending forward at the lower end of each leg, said foot pads being pivoted on the leg to remain generally horizontal, a first gear train, a crank shaft driven by said first gear train and having opposed cranks at the sides of the toy, links extending forward from the cranks to the forward legs, links extending rearwardly from the cranks to the rear legs, another crank driven by said first gear train, a link extending forward from the latter crank to the head to move the head from side to side as the toy walks, a sound-producing device, a second gear train which drives the sound-producing device and also drives a cam at slower speed, a cam follower, said cam follower being connected to the head to move it up and down and also being connected to make the sound-producing device operative or inoperative, motor means to drive either of said gear trains, a hand-held remote control unit including a battery case and a control means, and a flexible connection from said unit to said toy whereby either gear train may be operated.

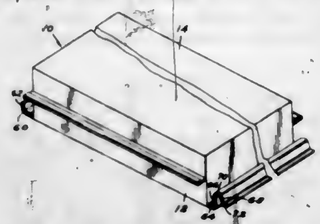
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**3,163,961**
**ACOUSTICAL STRUCTURE**
**William G. Kemp, Pontiac, Mich., assignor to The Soundlock Corporation, Hazelhurst, Ga., a corporation of Delaware**
**Filed June 11, 1962, Ser. No. 201,696**
**7 Claims. (Cl. 50—101)**

4. An acoustical panel, comprising a substantially flat perforated member, a substantially flat second member extending over said perforated member in spaced parallel relation thereto, a relatively rigid honeycomb core between said members, means connecting said members and core together in a permanent assembly, said core resisting warping of the panel, said panel having along one edge thereof an outward marginal extension terminating in an upturned flange, said panel having along the opposite edge thereof a downwardly opening generally U-shaped hook having a free leg and a leg joined to the said opposite edge



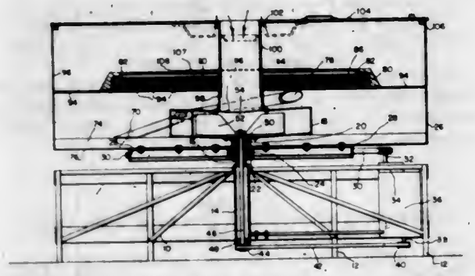
of the panel, said outward marginal extension and upturned flange and said hook constituting integral extensions of at least one of said members, said hook being adapted to engage over the flange of a like adjacent panel,



the free leg of said hook being of a length to engage the extension of the adjacent panel and support the first-mentioned panel so that the base of the hook thereof is above and clear of the upturned flange of the adjacent panel.

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**3,163,962**
**AUTOMATIC MATRIX CLEANER**
**Carl P. Williams, P.O. Box 561, and Oziel H. Heitt, 7146 N. 59th Drive, both of Glendale, Ariz.**
**Continuation of application Ser. No. 227,174, Oct. 1, 1962. This application Aug. 12, 1963, Ser. No. 313,138**
**14 Claims. (Cl. 51—9)**



1. In an abrasive cleaning device the combination of: a frame; a main housing thereon; an impeller housing therein and having an air inlet; and impeller in said impeller housing; a bottom of said main housing adapted to support abrasive material thereon; a bar carried by said impeller housing and disposed to screed and level abrasive material to a predetermined surface level above said bottom; means mounting one of said housings rotatably relative to the other; nozzle means forming outlets for said impeller housing; aspirator tube means communicating with said nozzle means and having an open portion carried in close proximity to said surface level of said abrasive; support means in said housing for holding articles to be cleaned outwardly of said nozzle means; means for driving one of said housings rotatably at a low speed relative to the other housing; and means for rotating said impeller at a relatively high speed in said impeller housing.

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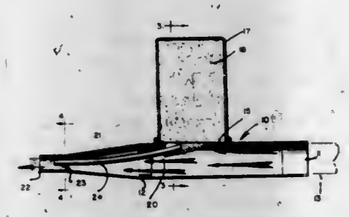
**3,163,963**
**BLASTER DEVICE**
**Racine Caron, 42 Whitworth St., Thompsonville, Conn.**
**Filed Oct. 4, 1963, Ser. No. 313,926**
**1 Claim. (Cl. 51—11)**

A blaster device comprising a barrel having tubular rear and forward end portions and an inlet port at its rear end for connection to a source of air under pressure and having a trough formed in its upper side wall behind its tubular forward end portion sloping downwardly and forwardly into the barrel,

a forwardly tapering nozzle having a tubular rear end portion frictionally fitted telescopically on the forward end portion of said barrel to form an extension thereof,

an imperforate receptacle of inverted cup shape for pulverulent material removably mounted in airtight relation on the upper side wall of the barrel above the trough,

a pulverulent material feed tube of smaller diameter than the barrel having its rear end slidably seated in and communicating with the trough and its forward end mounted in the nozzle behind the forward end thereof,

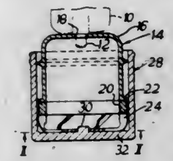


and a spider formed in the nozzle behind the forward end of the feed tube and slidably supporting the feed tube substantially axially in the nozzle,

whereby pulverulent material contained in the receptacle will fall into the trough and be aspirated through the feed tube by an air stream moving forwardly through the barrel and be entrained in the air stream in the forward portion of the nozzle to discharge from the nozzle a blast whose characteristics can be adjusted by sliding the feed tube axially in the trough and spider and by varying the degree of overlap of the telescoped end portions of the barrel and nozzle.

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**3,163,964**
**HONING UNIT FOR ROTARY SHAVERS**
**Raymond R. Wheeler, 114 18th St. S., Great Falls, Mont.**
**Filed Jan. 31, 1963, Ser. No. 255,244**
**14 Claims. (Cl. 51—125)**

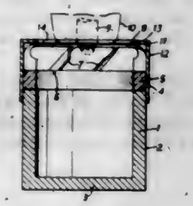


1. A honing unit comprising a mount embodying a rigid upstanding cup adapted to be fixedly held in the hand of a user, anchoring means projecting from the internal surface of said cup, the anchoring means, and the internal configuration of said cup self-centeringly supporting and holding a spoked rotary shaver cutter so that the shaver cutter rests within the cup with the blade-cutting edges all lying in a common plane perpendicular to the axis of said cup and adjacent to the wall of said cup, an elongated cup-shaped tool provided with means for receiving a projection, and an annular abrading surface projecting from and carried by said tool, said tool being disposed within said cup so that the abrading surface simultaneously engages said blade-cutting edges when a spoked rotary shaver cutter is self-centeringly supported within said cup.

### 3,163,965
### HONING UNIT

Raymond R. Wheeler, 114 18th St. S., Great Falls, Mont.

Filed Apr. 1, 1963, Ser. No. 269,536
8 Claims. (Cl. 51—156)

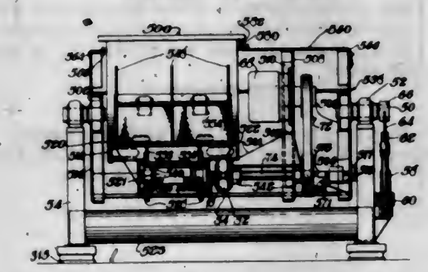


1. A honing unit for honing a cutter comprising, in combination, an elongated carrier having a cylindrical external surface adjacent one of its ends, an abrading ring mounted at said end of the carrier and having an exposed abrading surface normal to the axis of the cylindrical surface of the carrier, and a retaining cap; including an apertured end wall for admission of drive means, and a depending side wall to guide a cutter engaged by said drive means and held within said cap, engaging externally the cylindrical external surface of the carrier and pressing the cutter against said abrading surface.

### 3,163,966
### VIBRATORY FINISHING

Ralph W. Moore, Hagerstown, Md., assignor, by mesne assignments, to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware

Filed Jan. 23, 1962, Ser. No. 168,146
Claims priority, application Great Britain, Jan. 23, 1961, 2,575/61
3 Claims. (Cl. 51—163)



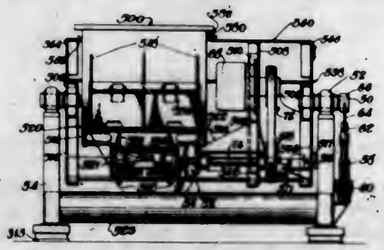
1. An apparatus for subjecting work articles to vibratory finishing treatment, said apparatus having a supporting base, a framework journaled to said base, a work container resiliently supported from said framework and adapted for gyratory movement, said framework enclosing the sides of the apparatus, and an apron covering the top of the apparatus around the container, the container having a top edge flange, and the apron having an upwardly directed lip positioned adjacent and under the flange to keep materials from dropping into the interior of the apparatus.

### 3,163,967
### VIBRATORY FINISHING

Ralph W. Moore, Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware

Filed Feb. 13, 1964, Ser. No. 344,763
Claims priority, application Great Britain, Jan. 23, 1961, 2,575/61
5 Claims. (Cl. 51—163)

1. An apparatus for subjecting a mass of work articles to vibratory finishing treatment, said apparatus having a supporting framework, a work container resiliently supported by the framework by means of air cushions effectively below the container, vibratory elements secured to the container for gyration when driven to cause the container to also gyrate, drive mechanism secured to the framework in a fixed position, a generally horizontally extending flexible drive coupling connecting the drive mechanism to the vibratory elements to cause these ele-



ments to be driven by the drive mechanism notwithstanding some difference in height between them and to thereby gyrate the work container while the drive mechanism remains in said fixed position, and height balancing means connected to vary the pressure inside the air cushions and thereby keep said difference in height within bounds for different container loads.

### 3,163,968
### GRAPHITE COATED ABRASIVE BELTS

Roscoe E. Nafus, 1130 N. 2nd St., Kelso, Wash.

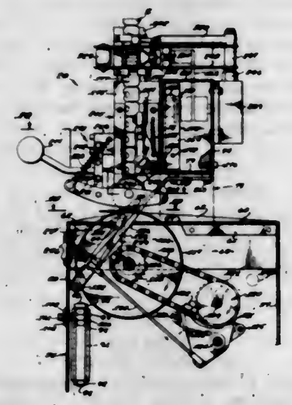
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,264
4 Claims. (Cl. 51—394)

1. An abrasive sander belt having a surface coating on the side opposite to that containing the abrasive material comprising a lubricating, low-friction, adherent binder and powdered amorphous graphite.

### 3,163,969
### METHOD AND APPARATUS FOR APPLYING BAG CLOSURES

Jere F. Irwin, Allen D. Paxton, and Floyd G. Paxton, Yakima, Wash., assignors to Kwik Lok Corporation, Yakima, Wash., a corporation of Washington

Filed Oct. 11, 1962, Ser. No. 232,920
16 Claims. (Cl. 53—14)



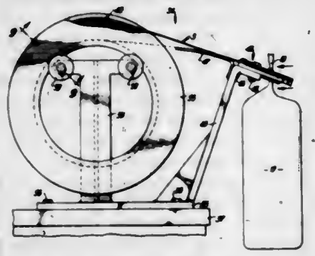
8. A method of closing the neck portion of a partially filled flexible plastic bag, said method including the steps of conveying the bag with a continuous movement along a given path with said bag disposed at right angles to the direction of said movement and with said bag neck disposed in a given direction from said bag, flattening said bag neck in a plane which is parallel with the direction of said movement, pinching the leading edge of said flattened bag neck at two fixed spaced positions in said plane as soon as said leading edge arrives opposite said positions by virtue of its movement with said bag along said path, pulling in said direction a short distance the portions of said bag neck thus pinched and then releasing the same, repeating said pinching and pulling action on portions of said bag neck disposed progressively further from said leading edge portions until a section of said flattened bag neck extending from the leading edge to the trailing edge thereof has been thus pinched, pulled a short distance in said direction and released, increment by increment, presenting a closure having an open mouth with a narrow entrance opening lying in said plane between said positions and facing the advancing bag neck whereby said increments of the bag neck are delivered through said opening and into said closure mouth and the entire section aforesaid of said bag neck is bunched within said mouth thus effectively applying said closure to said bag, said increments of said flattened bag neck being pulled in said direction at approximately twice the speed of travel of said bag along its path whereby the application of said closure to said bag neck will be completed when said bag has travelled only approximately half way past said closure, and releasing said closure, allowing it to remain assembled with said bag and travel therewith along said path.



### 3,163,970
### METHOD AND APPARATUS FOR MAKING BAG CLOSURES UNITED IN STRIP FORM AND DISPENSING INDIVIDUAL BAG CLOSURES

Floyd G. Paxton, P.O. Box 2098, Yakima, Wash.

Original application Mar. 7, 1961, Ser. No. 93,888. Divided and this application Apr. 2, 1962, Ser. No. 184,472
6 Claims. (Cl. 53—19)

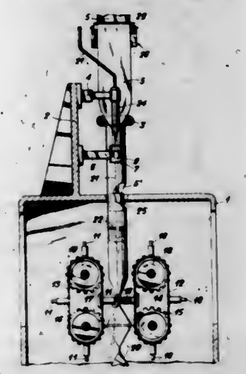


1. A method of forming bag closures from a flat strip of thin, springy sheet plastic material and applying said bag closures to flexible bag necks which comprises the steps of uniformly die-cutting said strip at uniformly spaced intervals therealong to divide said strip into a series of closures each having a bag-neck-confining mouth with a narrow passage connecting said mouth with an external edge of said closure to provide opposed jaws on opposite sides of said passage, and with adjacent closures integrally united by partible portions of said strip, said mouth passage and jaws being at the front end of each closure and symmetrical with its longitudinal axis, holding the foremost closure in said strip against backward movement, introducing a bag neck through said passage into said mouth in said closure, pulling forwardly on said bag neck to advance said strip until the next closure has advanced to the position originally held by said foremost closure, holding said next closure in said strip against forward movement, pulling forwardly on said bag neck to pull apart said partible strip portions connecting said foremost and next closures and thus separate said foremost closure from said strip, and repeating successively on each of the closures remaining in said strip, as it becomes the new foremost closure thereof, the steps aforesaid by which the first foremost closure was applied to a flexible bag neck and separated from said strip.

### 3,163,971
### METHOD OF STERILE PACKING OF STERILE GOODS

Willi Löliger, Konolfingen, and Walter Regez, Muri, near Bern, Switzerland, assignors to Alpura AG, Bern, Switzerland, a corporation of Switzerland

Filed Dec. 8, 1961, Ser. No. 158,170
Claims priority, application Switzerland Dec. 16, 1960
8 Claims. (Cl. 53—28)



1. In a method of sterile packing of sterile goods wherein a vertical tube is continuously formed from longitudinally moving striplike, flexible packing material, the tube is closed by compression transverse to the longitudinal axis of the tube, and the goods are filled into the tube, whereupon the tube is closed again by compression transverse to the longitudinal axis of the tube, the steps of:

heating the interior of the formed tube at a location above the goods for sterilizing the interior of the tube,

moistening, before the packing material reaches said heating location, at least the side of the packing material which forms the inside of the tube,

retaining the moisture on the packing material until the packing material reaches said heating location, and

evaporating the moisture by part of the heat which heats the interior of the formed tube to reduce the initial temperature rise in the heated packing material and to produce a vapor cushion adjacent said heating location.

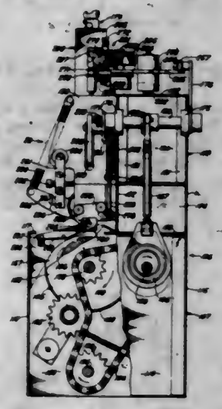
### 3,163,972
### BAG CLOSING APPARATUS

Jere F. Irwin, Yakima, Wash., assignor to Kwik Lok Corporation, Yakima, Wash., a corporation of Washington

Filed Nov. 22, 1963, Ser. No. 325,683
11 Claims. (Cl. 53—138)

6. A flexible bag closing machine comprising: means for conveying a succession of bags to a closing station; a pair of wheels positioned at said station, to receive and advance the bag necks between them, said wheels being in such close peripheral proximity as to flatten the bag material; means functioning, in timed relation with the advancing of bag necks by said wheels, for feeding a succession of preformed closures, an edge of each of which is provided with a bag neck receiving opening, to a location at said station where the flattened bag material passes from between said wheels with the opening of the foremost closure positioned to receive and gather

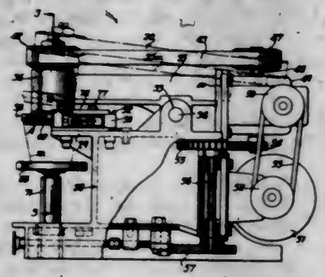
the flattened material; deflecting means in the path of each closure as it arrives at said location so as to be engaged by said closure, whereby said means deflects



a portion of said closure to temporarily enlarge the closure opening and thereby facilitate the delivery of said bag material into said opening; and means for releasing the closures and associated bags from said station.

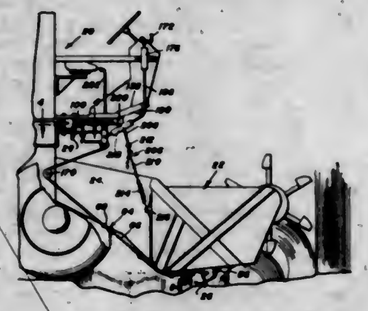
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3,163,973
CUP SEALING APPARATUS
David L. St. Clair, Commack, N.Y., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 186,142
11 Claims. (Cl. 53—329)



1. Apparatus for sealing a cap on to a receptacle or the like, comprising upper jaw means and cooperating lower jaw means adapted with respect to each other to receive therebetween and mutually engage a protruding portion of the conjoining peripheral edges of the cap and receptacle when the cap is substantially in capped position on the receptacle, means for opening and closing said upper and lower jaw means with respect to each other, said lower jaw means comprising a heated portion adapted to heat a length of such received cap and receptacle protruding edge portion when said upper and lower jaw means are in closed position, said lower jaw means further comprising a cool portion in substantially coplanar tandem relation with its said heated portion, at least said cool portion of said lower jaw means being adapted with respect to said upper jaw means, when the jaws are in such closed position, to apply crimping pressure to said length of the cap and receptacle protruding edge portion when subsequently received therebetween, and means for moving said length of the cap and receptacle protruding edge portion from said heated portion of the lower jaw means to said cool portion of the lower jaw means when said upper and lower jaw means are in closed position.

3,163,974
AUTOMATIC HEIGHT CONTROL FOR COMBINE HEADER
Carl L. Mack, R.R. 3, Wapakoneta, Ohio
Filed Oct. 5, 1962, Ser. No. 228,680
7 Claims. (Cl. 56—214)



1. Apparatus for automatically maintaining a constant cutting height for a pivotally mounted combine header controlled by pump supplied hydraulically operated ram means during a continuous operation of the pump so as to cause a constant flow of fluid, comprising, ground variation sensing means and control means for operatively connecting a pump with the hydraulic ram means, said control means, under a constant flow of fluid from the pump, having a raising position wherein the fluid is introduced under pressure into the ram means, a hold position wherein the flow of fluid from the pump freely circulates back to the pump and the fluid previously introduced into the ram means is locked therein, and a lowering position wherein the fluid locked within the ram means is released and the header lowers under its own weight, said control means consisting of a control valve, a pressure introducing pump line in communication therewith, a ram line extending from said control valve to the hydraulic ram means, a return line from said control valve to a fluid supply, said control valve containing a spool shiftable so as to assume the raising position, lowering position and holding position, said spool in the raising position communicating the pump line with the ram line and closing off said return line, said spool in the lowering position communicating both the pump line and the ram line with the return line, and said spool in the hold position sealing said ram line and communicating said pump line with said return line for a free flow of fluid therebetween, said spool, in moving from the hold position to raising position, first shuts off the return line completely and subsequently communicates the pump line with the ram line, and a by-pass one-way valve communicating the pump line directly to the ram line whereby when said spool is in a position closing both the return line and the ram line and introduction of a pressure build-up to the ram line resulting from a shutting off of the return line is achieved regardless of whether the spool moves sufficiently so as to communicate the pump line with the ram line within the control valve.

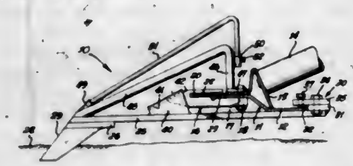
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3,163,975
CROP LIFTER ASSEMBLY
Arthur S. Lightsey, P.O. Box 39, Cantua Creek, Calif.
Filed May 13, 1963, Ser. No. 279,846
4 Claims. (Cl. 56—313)

1. A crop lifter assembly adapted to be rigidly clamped to the sickle bar of a harvesting machine with the forward end of said assembly projecting forwardly of the sickle bar and effective to elevate foliage of a crop above the sickle knife while its stalk is being severed, said crop lifter assembly having an elongated rigid main body



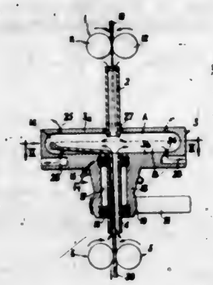
adapted to be clamped against the underside of the sickle bar, with its rear end embracing the rear lateral edge of the sickle bar, clamping means including set screw means adjustably carried in the end of said main body for high pressure clamping engagement with the upper surface and rear edge of the sickle bar, socket means on the upper side of the midportion of said main body positioned to seat snugly over the forward end of a sickle guard member, the forward end of said main body being reinforced and supporting a vertically-disposed ground-penetrating



foliage lifting blade having its forward edge inclined upwardly and rearwardly toward the sickle bar, and foliage lifting means of inverted V-shape overlying said main body strip with its forward end welded to said main body above said ground penetrating blade, the rear end of said foliage lifting means having a flat portion lying parallel to the upper surface of the sickle bar and having an opening in alignment with a guard bolt hole through the sickle bar and adapted to be rigidly anchored to the sickle bar by the guard mounting bolt for the guard having its forward end seated in said socket means.

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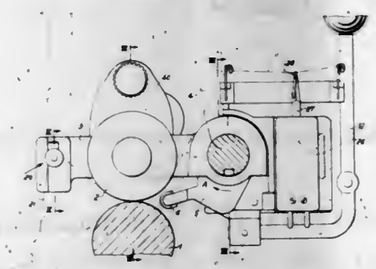
3,163,976
SPINNING DEVICE
Yves Juillard, Mulhouse, Haut-Rhin, France, assignor to Societe Alsacienne de Constructions Mecaniques, Mulhouse, Haut-Rhin, France, a company of France
Filed May 14, 1963, Ser. No. 280,292
Claims priority, application France May 25, 1962
11 Claims. (Cl. 57—58.89)



1. A device for spinning yarn comprising a rotor having a cavity defining two opposite parallel flat sides and a peripheral surface of revolution; means for rotating the rotor; the rotor having axial passages of substantially the same diameter connected to said opposite sides thereof and communicating with said cavity; the rotor having peripheral aperture means communicating with the cavity whereby rotation of the rotor will draw in air through both passages into said cavity and discharge said air through said aperture means by centrifugal force thereby creating opposed airstreams meeting on a transverse plane of said cavity to establish thereat two boundary layers separated by a neutral pressure zone; means for feeding a sliver of fibre through one passage into said cavity for shredding by the related airstream and projection of the shredded fibre against said peripheral surface as an evenly spread layer; and means for drawing spun yarn from said cavity through the other axial passage, said spun yarn growing by accretion at its extremity engaging said surface through pick-up of fibre thereat, and said neutral pressure zone acting to separate said yarn from the incoming fibre.

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3,163,977
AUTOMATIC KNOCK-OFF DEVICE FOR TWISTING FRAME DELIVERY MECHANISM
Raphael Weiss, Kempten, Allgau, Germany, assignor to Allma, Allgäuer Maschinenbau G.m.b.H., Kempten, Allgau, Germany, a corporation of Germany
Filed May 29, 1963, Ser. No. 284,122
7 Claims. (Cl. 57—34)



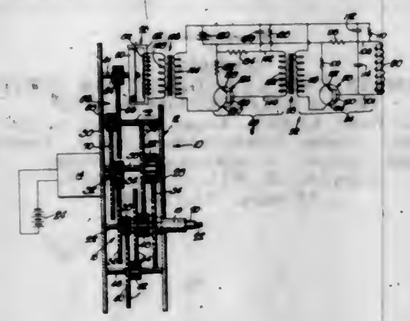
1. Apparatus for moving the pressure roller of the supply mechanism of twisting frames or the like upon breaking of a thread, comprising:
a machine frame;
a bearing shaft mounted on the machine frame;
a bearing bracket pivotally mounted on said bearing shaft;
a pressure roller rotatably mounted on said bearing bracket;
a spring-urged movable support lever pivotally mounted on said bearing shaft and engageable with said pressure roller for effecting movement of same;
a housing mounted on said bearing bracket and fixed against rotation with respect thereto;
electromagnetically operable means mounted in said housing and including locking means engageable with said support lever for normally holding said support lever spaced from said pressure roller;
at least one feeler engageable with the thread and connected to said electromagnetically operable means so that operation of said electromagnetically operable means is responsive to the condition of the thread and serves to release said locking means from engagement with said support lever.

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3,163,978
CORDLESS CLOCK OF COMMERCIAL POWER-FREQUENCY SYNCHRONIZED TYPE
Walter Kohlhagen, 818 Oakley Ave., Elgin, Ill.
Filed Jan. 29, 1962, Ser. No. 169,394
5 Claims. (Cl. 58—23)

1. In a clock, the combination with a movement, of a non-synchronous motor connected with said movement for operating the same, but at excessive speed; and a device for synchronizing said motor with the frequency of a power distribution system nearby without electrical circuit connection therewith, said device comprising an escapement having a permanent-magnet rotor with pole faces and an associated multi-polar field with a coil in flux-inducing relation therewith, of which said rotor is drivingly connected with said motor, and power amplifying means and associated field sensing means for amplifying electromotive force of the frequency of and produced by said distribution means and picked up from the field in space by said sensing means in said field, with said coil being supplied with said amplified electromotive force, and said escapement acting as a self-energized

generator and exerting a braking force which is the product of the permanent and induced magnetic forces in the



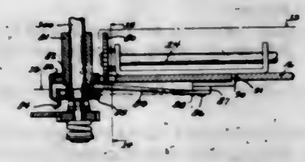
escapement, thereby requiring minimum power amplification.

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3,163,979
## DEVICES FOR AUTOMATIC REGULATION OF TIMEPIECES

Thomas P. Dolby, Fontana, Wis., assignor, by mesne assignments, to Amphenol-Borg Electronics Corporation, Broadview, Ill., a corporation of Delaware

Filed Sept. 8, 1955, Ser. No. 533,106
3 Claims. (Cl. 58—85.5)



1. For a timepiece having a hand equipped movement and a movement regulator, a hand setting shaft mounted for manual reciprocation and oscillation, a regulator actuator shaft the axis of which is at an angle to the axis of the hand setting shaft, a radially extending member on each of said shafts positioned to approach each other as the hand setting shaft moves toward hand setting position, and a resilient member having one portion extending into the path of movement of the radially extending member on the hand setting shaft and having another portion shaped to impinge upon the radially extending member on the regulator actuator shaft for movement thereof when the hand setting shaft is reciprocably and rotatably moved, the radially extending members comprising a star wheel upon the regulator actuator shaft and a crown wheel upon the hand setting shaft, the resilient member being elongated and disposed approximtaely parallel with the regulator actuator shaft in position to extend one end thereof slightly inwardly of the crown of the crown wheel, said crown wheel having teeth to receive the resilient member therebetween, the radius of the crown wheel being of such limited extent that upon rotation of the crown wheel the resilient member is released from its said position between the teeth.

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3,163,980
## WATER JET PROPULSION

James J. Turner, 215 Fairfax Road, Alexandria, Va.

Filed Jan. 23, 1963, Ser. No. 253,514
6 Claims. (Cl. 60—35.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A propulsion device for operation in water comprising:

a hollow stream-lined body member having an inlet nozzle and an exit nozzle;

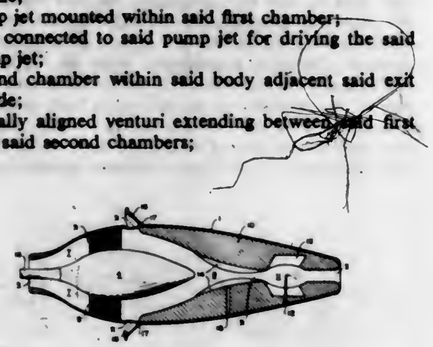
a first chamber within said body adjacent said inlet nozzle;

a pump jet mounted within said first chamber;

means connected to said pump jet for driving the said pump jet;

a second chamber within said body adjacent said exit nozzle;

an axially aligned venturi extending between said first and said second chambers;



means for varying the cross sectional area of the said venturi whereby the throat of the venturi is made smaller to make the system more efficient at slow speeds;

means within said second chamber for imparting energy to the water passing through said body; and

means to selectively provide a water bypass for said pump jet;

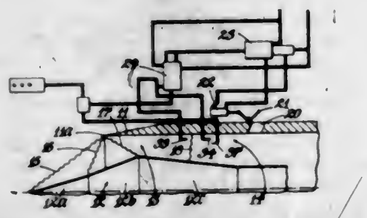
whereby said device may be converted from operation as a low speed jet to operation as a ram jet.

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3,163,981
## INTERNAL SHOCK WAVE POSITIONING CONTROL SYSTEM FOR AIR INTAKES FOR SUPERSONIC AIRCRAFT

Donald George Goodall, Hucknall, Norman George Hatton, Mapperley, and Norman Roberts, Hucknall, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed Jan. 24, 1961, Ser. No. 84,552
Claims priority, application Great Britain, Jan. 26, 1960, 2,873/60
9 Claims. (Cl. 60—35.6)



1. A supersonic intake for aircraft power plant, said intake being of the class in which there is both external and internal shock compression and comprising an intake duct within which a final shock wave occurs and means maintaining the desired position of said final shock wave within the intake duct comprising a bleed vent from said intake duct at a position downstream from said final shock wave, a vent valve member cooperating with said bleed vent to vary its outlet area, a ram connected to move said valve member, a pressure fluid supply connectible alternately to each end of said ram, a fluid outlet path from said ram, a restrictor connectible in said fluid outlet, a valve mechanism which operates to connect said restrictor in said fluid outlet only when said ram moves said valve member in the sense of reducing the outlet area of the bleed vent, and means sensing the position of the final shock wave and producing a signal pressure which increases if said final shock wave moves upstream from its desired position and which decreases if said shock wave moves downstream from its desired position, said valve mechanism comprising a cylinder with a piston valve movable therein, said piston valve having three lands defining the said cylinder two end chambers an two intermediate chambers, one end chamber being open to said signal pressure and a return conduit containing fluid at low pressure to which the other end chamber is open, said restrictor comprising a restrictive drilling connecting the intermediate chamber which is next to the one end chamber to said other end chamber, the intermediate chamber next to said other end chamber being open to said pressure fluid supply; spring means loading said piston valve to a neutral position; a first outlet connected to the smaller area side of said ram piston, which outlet is covered in the neutral position of the piston valve by the land separating said intermediate chambers, and a second outlet connected to the larger area side of said ram piston and covered in the neutral position of said piston valve by the land which separates said other end chamber from the intermediate chamber next to it, which land has a smaller width than the other two lands, so that, when the final shock wave moves downstream from its desired position said smaller area side of the ram piston is connected to said return conduit through said restrictive drilling, whereby slow closing of the vent valve is effected.

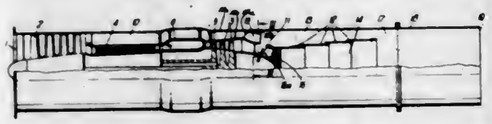


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3,163,982
## BY-PASS GAS TURBINE ENGINE

Robert Arthur Rice, Burton-upon-Trent, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Continuation of application Ser. No. 112,899, May 26, 1961. This application July 14, 1964, Ser. No. 384,031
Claims priority, application Great Britain, June 11, 1960, 20,618/60
5 Claims. (Cl. 60—35.6)



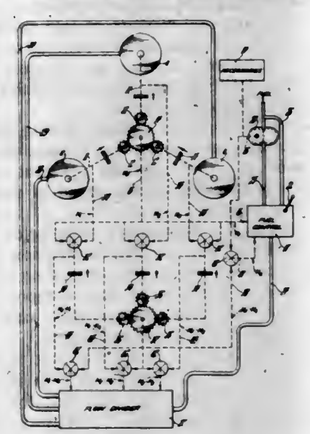
1. A by-pass gas turbine engine comprising in flow series, compressor means, combustion equipment, and turbine means, a jet pipe through which the turbine exhaust gases are directed to atmosphere, means forming a by-pass passage arranged to receive through its upstream end part of the air compressed by the compressor means to direct the same to by-pass the combustion equipment and turbine means, a partition casing disposed radially inwardly of said jet pipe and forming an inner wall of said by-pass passage, the upstream end of said partition casing being positioned downstream of said turbine means so that turbine exhaust gases flow inwardly and outwardly of the partition casing, the by-pass passage communicating with the space between the jet pipe and the partition casing so that the by-pass air mixes with the turbine exhaust gases flowing outwardly of the partition casing, reheat fuel injector means disposed inwardly of the upstream end of the partition casing for injecting reheat fuel solely into the interior of the partition casing for combustion in the turbine gases flowing therethrough, said partition casing having ports disposed along its length arranged to direct part of the by-pass air free of any reheat fuel from the by-pass passage into the interior of the partition casing to effect film cooling thereof, the downstream end of the jet pipe commingling the remainder of the by-pass air with the gases emerging from the downstream end of the partition casing.

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3,163,983
## LOAD COUPLING AND FUEL CONTROL MEANS FOR A PLURALITY OF ENGINES

Thomas F. Donohue, Cincinnati, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 6, 1961, Ser. No. 115,264
6 Claims. (Cl. 60—39.15)



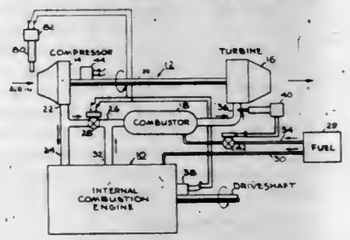
1. In a plural engine power plant, in combination, a plurality of engines, a shaft driven by each engine, an overrunning clutch driven by each said shaft, a first shaft driven by the said overrunning clutches at a speed proportional to that of the fastest engine, a differential device for each engine having an input driven concurrently with the first shaft and an input driven by the respective engine, each differential device having an output proportional to the difference of speeds of the fastest engine and the respective engine, an overrunning clutch driven by each said differential device, a common output driven by the second-recited overrunning clutches at a speed proportional to the difference of speeds of the fastest and slowest engines, and a subtracting differential device having an input driven by the said common output and an input driven concurrently with the first shaft and having an output proportional to the speed of the slowest engine.

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3,163,984
## SUPERCHARGED INTERNAL COMBUSTION ENGINE ARRANGEMENT

Lincoln B. Dumont, 5850 W. 88th St., Los Angeles, Calif.

Filed Nov. 13, 1962, Ser. No. 237,069
3 Claims. (Cl. 60—13)




1. A supercharged internal combustion engine comprising, in combination:

an internal combustion engine adapted to burn a mixture of compressed air and fuel;

a turbo supercharger comprising an air compressor driven by a hot gas turbine and a combustor;

means for dividing the compressed air discharged by

said air compressor into a first part and a second part;

means for delivering said first part of said compressed air to said internal-combustion engine and for delivering said second part of said compressed air to said combustor;

means for delivering exhaust gases from said integral combustion engine to said combustor;

means for burning said mixture of said compressed air with said exhaust gases in said combustor to thereby generate a turbine driving gas mixture including means for admitting fuel at a controllable flow rate into said combustor;

means for delivering said turbine driving gas mixture to said turbine for driving said turbine and said air compressor at a substantially constant speed substantially independent of the speed of said internal combustion engine;

detection means for detecting a preselected operating characteristic of said internal combustion engine;

flow divider control means for controlling the amount of air in said first part of said compressed air in response to said detected operating characteristics of said internal combustion engine; and

baffle means adjacent the air inlet on said air compressor for varying the amount of air flow into said air compressor in response to said detected operating characteristic of said internal combustion engine.

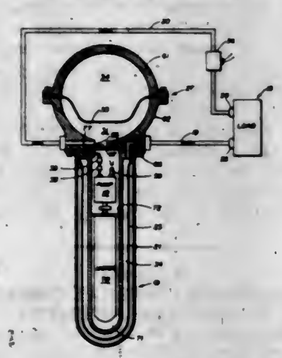
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**3,163,985**

## HYDRAULIC ENERGY STORAGE SYSTEM

**John V. Bouyoucos, 10 Blossom Circle E., Rochester 10, N.Y.**

**Filed July 31, 1962, Ser. No. 213,739**
**17 Claims. (Cl. 60—51)**



1. In a hydraulic energy storage system for supplying hydraulic flow energy to a load having high and low pressure terminals upon passage of a fluid through said load, a fluid medium of relatively large volume, means for hydraulically coupling said high pressure terminal to said fluid medium in a region of high pressure established at a predetermined depth within said fluid medium of relatively large volume, and a low pressure reservoir coupled to said low pressure terminal for receiving said fluid from said load.

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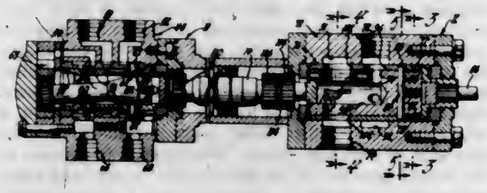
**3,163,986**

## HYDRAULIC STEERING SYSTEM

**Alvin A. Rood, Willoughby, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Nov. 14, 1963, Ser. No. 323,819**
**8 Claims. (Cl. 60—52)**

1. A hydraulic steering system for a vehicle, comprising a fluid cylinder for effecting steering of said vehicle, a fluid reservoir, a pump drawing fluid from the reservoir, a full power steering control valve for selectively connecting said pump to opposite ends of said fluid cylinder, a steering wheel for actuating said steering control valve, a flow control valve connected to the reservoir and interposed between the pump and the steering control valve, said flow control valve providing a predetermined fluid flow to said steering control valve with excess fluid flow



generated by said pump being directed to said reservoir, valve means located between said flow control valve and the reservoir for blocking said excess fluid flow therebetween whenever said flow control valve sticks to cause substantially the entire fluid flow to bypass the steering control valve, and means for connecting said entire fluid flow with the steering control valve when said valve means blocks said fluid flow.

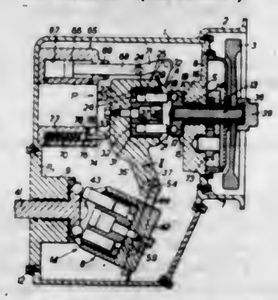
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**3,163,987**

## HYDROSTATIC POWER TRANSMISSION

**George H. Dowty and Thomas D. H. Andrews, near Cheltenham, England, assignors to Dowty Technical Developments Limited, Brockhampton Park, near Andoversford, England, a British company**

**Filed June 21, 1963, Ser. No. 289,601**
**Claims priority, application Great Britain, June 22, 1962, 24,047/62; May 4, 1963, 17,724/63**
**11 Claims. (Cl. 60—53)**



1. A hydraulic power transmission comprising a tilting head pump and a tilting head motor hydraulically connected to said pump, the two tilting heads being arranged with their tilt axes in substantially parallel relationship and with the drive shafts of pump and motor non-coaxially arranged, a lever forming part of one of the tilting heads, and a link pivotally connected at spaced positions along its length to the lever and to the other tilting head, whereby adjustment of the pump tilting head about its tilt axis will cause adjustment of the motor tilting head about its tilt axis.

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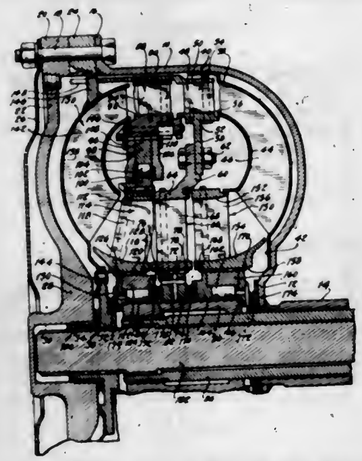
**3,163,988**

## MULTIPLE ELEMENT HYDROKINETIC TORQUE CONVERTER

**Martin G. Gabriel, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**

**Filed June 13, 1963, Ser. No. 287,693**
**2 Claims. (Cl. 60—54)**

1. A hydrokinetic torque converter mechanism comprising a bladed impeller, a plurality of bladed turbines and a plurality of bladed stators situated in toroidal fluid flow relationship in a common torus circuit, said bladed impeller being located at a radial outflow region of said circuit, a first turbine located at a radially outward region of said circuit adjacent the flow exit section of said impeller, a first stator located at said radially outward region adjacent the flow exit section of said first turbine, a second turbine located at a radial inflow region of said circuit, the fluid flow path extending from the flow exit section of said impeller to the flow entrance section of said second turbine being at a substantially constant and maximum radius, a second stator and a third turbine located at a radially inward region of said circuit, said turbines being connected together for rotation in unison,



and a third stator situated in said radially inward region between the flow exit section of said third turbine and the flow entrance section of said impeller, the fluid flow path extending from the flow exit section of said second turbine to the flow entrance section of said impeller being at a substantially constant and minimum radius. said turbines forming a composite bladed torque transmitting assembly with two turbine blade discontinuities, one discontinuity being located at the portion of said outward region that is occupied by said first stator, and the second discontinuity being located at the portion of said inward region that is occupied by said second stator, each discontinuity being characterized by a substantially constant operating radius of the path of the mean toroidal fluid flow that passes through it.

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**3,163,989**

## APPARATUS FOR IMPARTING RECIPROCATING MOTION TO A STRUCTURE

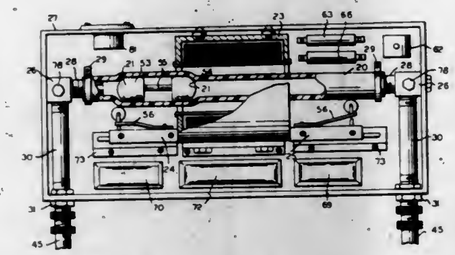
**Palmer M. Maxwell, 522 E. 46th St., Savannah, Ga.**

**Filed Apr. 26, 1961, Ser. No. 105,710**
**9 Claims. (Cl. 60—54.5)**

1. A device for alternately exerting pressure on either of two enclosed fluids comprising, in combination, a resilient cylindrical tube having two ends and a hollow interior with a diameter; a rod component positioned inside a portion of the resilient tube between the ends of the resilient tube, said rod component having a length and a diameter which is sufficiently greater than the diameter of the interior of the tube to cause the tube to bulge in the portion surrounding the rod component; two microswitches, one positioned adjacent to the tube between one end of the tube and the portion of the tube surrounding the rod component and the other positioned adjacent to the tube between the other end of the tube and the portion of the tube surrounding the rod component and both



having an operating contact; two actuating levers, one attached at one end to one microswitch and the other attached at one end to the other microswitch and each positioned so that the unattached end is contiguous to the tube in that tube portion adjacent to its associated microswitch and will be moved by the bulge in the tube to operate the contact of its associated microswitch; a solenoid surrounding the tube and having the midpoint of



its length approximately coinciding with the mid point of the rod component length; means for supplying electrical current to the solenoid; means for reversing the flow of electrical current to the solenoid from the supply means, said means being responsive to the alternate operation of the microswitches; two fluids, one filling the interior of the tube between one end of the tube and the rod component and the other filling the interior of the tube between the other end of the tube and the rod component.

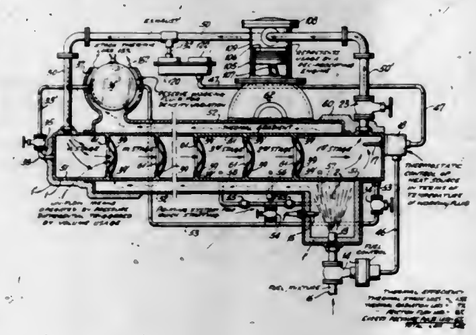
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**3,163,990**

## CLOSED THERMAL CIRCUIT INCORPORATING A THERMAL DILATING AND PULSING UNIFLOW COMPRESSOR AND A SYSTEM OF USAGE THEREFOR

**Nathaniel B. Wales, 230 E. 48th St., New York, N.Y.**

**Filed June 27, 1963, Ser. No. 290,978**
**18 Claims. (Cl. 60—59)**

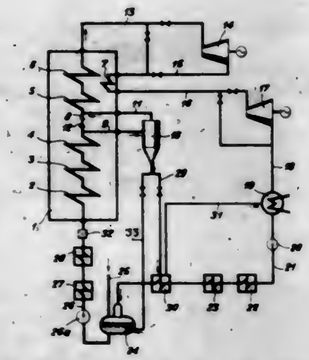


1. A closed cycle heat engine comprising a ducting circuit; a mass of working fluid in said circuit; a plurality of sequently communicating dilation chambers comprising a portion of said ducted circuit; uniflow valve means located in said duct circuit between each of said chambers; a usage device for converting a pressure drop of said working fluid along said ducting circuit into mechanical work; heat input means for maintaining a temperature gradient along said sequence of heat dilating chambers such that the temperature descends from the supply exit end to the entrance end of said chambers; and means to introduce a periodic pulsation throughout the working fluid in said circuit.

### 3,163,991
### METHOD AND APPARATUS FOR STARTING A STEAM POWER PLANT

Detlev Capitaine, Kronshagen, near Kiel, Germany, assignor to Sulzer Frères, S.A., Winterthur, Switzerland, a corporation of Switzerland

Filed Jan. 23, 1963, Ser. No. 253,392
Claims priority, application Germany, Jan. 30, 1962, M 51,616
6 Claims. (Cl. 60—107)



1. A method of starting a steam power plant including a forced flow steam generator and a turbine receiving steam therefrom, comprisifg, in combination:

heating the feedwater of said steam generator by means of steam from a source other than said steam generator,

conducting the heated feedwater as operating medium through the steam generator,

separating water from operating medium flowing through and before leaving the steam generator,

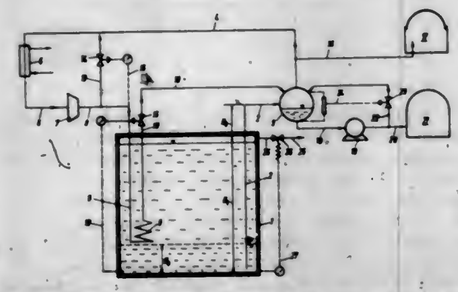
conducting steam remaining after separation of the water through a portion of the steam generator, and

conducting seperated water in heat exhange relation with the feedwater before the feedwater is heated by steam from a source other than the steam generator.

### 3,163,992
### PROCESS AND APPARATUS FOR EMPTYING LOW TEMPERATURE LIQUEFIED GASES FROM TANKS AND TANKERS

Rudolf Becker, Munich, Solln, Germany, assignor to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Wiesbaden, Germany

Filed June 24, 1963, Ser. No. 290,092
Claims priority, application Germany, July 5, 1962, G 35,385
10 Claims. (Cl. 62—55)

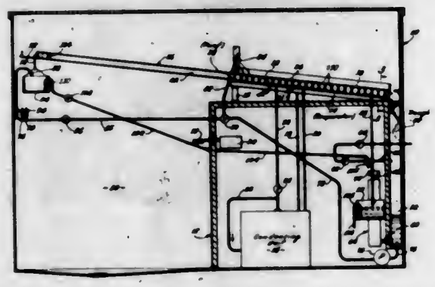


1. A method of emptying liquefied gas from a tank, preferably a tanker, which method comprises; generating a gas in a liquid storage tank having substantially the same or only a little higher temperature than the liquid accumulating above the liquid at such a higher pressure that the liquid is expelled from the bottom zone of the tank up through the tank and is collected above the tank in a collection zone from which vaporized gas can be withdrawn and liquid can be delivered to other or onshore tanks; withdrawing the vaporized gas from the collection zone, heating the withdrawn vaporized gas compressing the heated gas, passing at least a portion of the compressed gas in indirect heat transfer relationship with the liquid in the tank, thereby vaporizing the liquid into said gas; further condensing the compressed gas which is passed in indirect heat transfer relationship with the liquid in the tank, passing the condensed gas out of the tank through a throttle valve, and delivering the condensed gas from the throttle valve to the collection zone.

### 3,163,993
### MACHINE FOR MAKING ICE CUBES

Russell C. Johnson, Pomona, Calif.
(3436 Bonanza St., Springfield, Mo.)

Filed Aug. 19, 1963, Ser. No. 303,017
13 Claims. (Cl. 62—138)



2. In a machine of the character described for producing ice cubes, the combination of:

means providing a supply quantity of water;

pump means to withdraw water from the supply;

means connected to the output side of the pump means to spray the water in a freezing zone to form ice cubes;

means directing the unfrozen water from the freezing zone back to the supply water for recycling whereby the supply quantity is progressively reduced by the formation of the ice cubes;

means responsive to a predetermined reduction of the supply quantity to initiate replenishment of the supply quantity and to divert the pumped water to a second zone;

means responsive to the diverted water to harvest the ice cubes;

and means responsive to replenishment of the supply quantity of water to terminate the replenishment and to terminate the diversion of the water.

### 3,163,994
### CRYOGENIC REFRIGERATOR

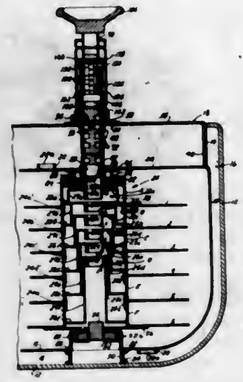
Wilfried Haumann, Indianapolis, Moses Mendez, West Lafayette, John J. Mikolicezak, Indianapolis, and George E. Heavilin, Danville, Ind., assignors to Union Carbide Corporation, a corporation of New York

Filed June 5, 1961, Ser. No. 114,888
13 Claims. (Cl. 62—218)

1. In a thermally insulated liquefied-gas refrigerator having an opening in the upper end for access therein, thermally insulated cover means positioned in said opening, means for storing and indexing within the refrigerator a plurality of storage receptacles which comprises a hollow, segmented, vertically aligned, rotatably



mounted, central drive shaft so constructed that each of such segments are rotatable independently of the others and at least one such segment has a rotatable receptacle tray connected thereto; rotatable drive shaft segment actuating means located within the hollow drive shaft and connected to said hollow drive shaft for independent ro-

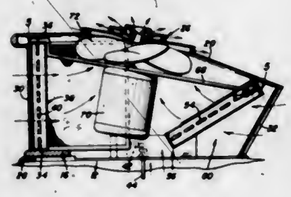


tation of said segments; rotatably mounted drive shaft engaging means vertically aligned within said hollow drive shaft and extending through said cover means for engaging said rotatable drive shaft segment actuating means within said hollow drive shaft and rotating said segments from the exterior of the refrigerator.

### 3,163,995
### VEHICLE AIR CONDITIONER CONDENSER

Ronald L. Maier, Oklahoma City, Okla., assignor to Fleet-Air Manufacturing, Inc., Oklahoma City, Okla., a corporation of Oklahoma

Filed July 17, 1962, Ser. No. 210,420
8 Claims. (Cl. 62—241)

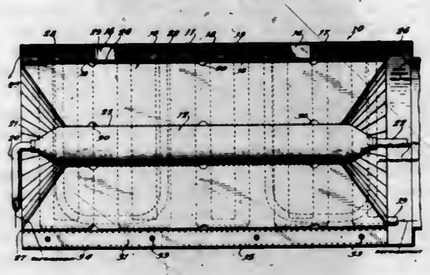


1. In an air conditioning system for an automotive vehicle having a space enclosing structure externally exposed to the free flow of air in response to movement of the vehicle, a refrigerant condensing unit arrangement on said structure for exposure to the air comprising, housing means mounted in sealed relation on said structure having front and rear openings through which a rapid flow of air is conducted in one direction in response to movement of said vehicle above a predetermined speed, a plurality of interconnected refrigerant conducting coil sections respectively mounted adjacent to said openings in spaced apart relation within said housing means for sequential surface exposure to said rapid flow of air sufficient to remove heat from all coil sections, and forced air flow inducing means mounted within said housing means to produce air flow through said coil sections independently of each other for removal of heat during movement of said vehicle below said predetermined speed.

### 3,163,996
### TUBULAR EVAPORATOR

Alan J. Koch, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware

Filed Mar. 11, 1963, Ser. No. 264,280
12 Claims. (Cl. 62—276)

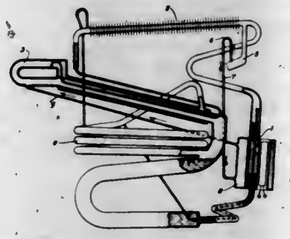


1. An evaporator comprising: a tubular evaporator sheet; a tubular accumulator coaxially within said evaporator sheet, said accumulator and sheet defining a passage therebetween for flow therethrough of a fluid to be refrigerated; and means for conducting fluid refrigerant in heat transfer association successively with said evaporator and accumulator.

### 3,163,997
### METHOD OF AND APPARATUS FOR DEFROSTING ABSORPTION COOLING SYSTEMS

Hans Stierlin, 15 Rainweg, Schlieren, Zurich, Switzerland

Filed July 6, 1960, Ser. No. 41,162
Claims priority, application Switzerland, July 10, 1959, 75,590/59
11 Claims. (Cl. 62—278)



1. A closed absorption refrigeration apparatus comprising a main system including a generator from which refrigerant vapor is driven off, a condenser in which said refrigerant vapor is condensed to a liquid, and an evaporator in which a part of the liquid refrigerant evaporates, the improvement for defrosting comprising an auxiliary system including a branch pipe which leads part of the liquid refrigerant to a reservoir in which said part of the liquid refrigerant collects, a siphon connected to the reservoir for emptying the reservoir of liquid refrigerant when the liquid refrigerant therein accumulates to a given level, a first tubing connected to the siphon outlet and having a portion thereof forming a heat exchanger with the generator, and a second tubing connecting the top of the heat exchanger so formed to the evaporator.

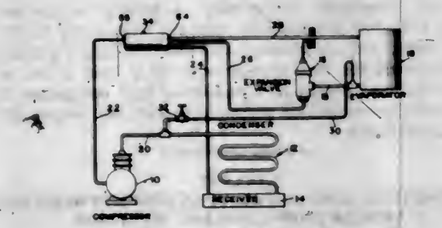
### 3,163,998
### REFRIGERANT FLOW CONTROL APPARATUS

Daniel D. Wile, Whittier, and Shizuo R. Adachi, Glendale, Calif., assignors to Recold Corporation, Los Angeles, Calif., a corporation of California

Filed Sept. 6, 1962, Ser. No. 221,771
2 Claims. (Cl. 62—278)

1. In combination with a refrigeration system, including a compressor, a condenser, and an evaporator, means for defrosting said evaporator without shutting off the

compressor, said means including: a liquid refrigerant flow retarding unit interposed in the suction line between the evaporator coil and the compressor for retarding liquids in the refrigerant flowing from the evaporator to the compressor during defrosting operations, said unit comprising a tank sealed at both ends by cap members and incorporating first and second baffle members that divide said tank into a separation chamber, a flow control chamber and a discharge chamber, a heat exchanger chamber, with a discharge segment of the evaporator outlet line extending thereto for discharging refrigerant in mingling liquid and vapor form from the evaporator thereinto, a discharge chamber with an intake segment of the compressor suction line connected therein; a metering aperture enclosed with a fine mesh screen member for preventing the ingress of extraneous matter thereinto from the lowermost region of said separation chamber, the outlet of which is supported in said first baffle member

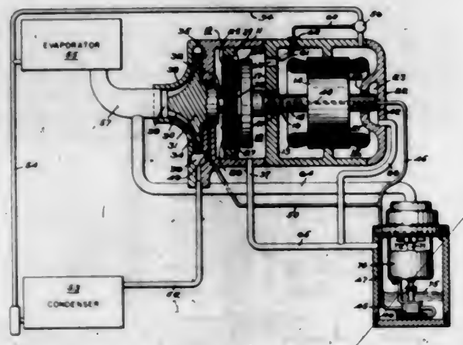


in fluid communication with the flow control chamber in consequence whereof liquid ingredients of the refrigerant discharged into said flow control chamber flow onwardly to the compressor via the intake segment of the suction line; an entrance opening into said flow control chamber for vapors flowing from the separation chamber, said opening being formed in consequence of a segment being removed from said first baffle member at the top thereof; said second baffle member interpolated between said first baffle member and the discharge chamber cap member whereby to form the flow control chamber and discharge chamber said second baffle member including: a body portion provided centrally adjacent to the lowermost region thereof with an opening, formed by the removal of a segment thereof, an annular laterally projecting flange integral with said body portion for mounting the baffle in said tank, said opening formed in said body portion for establishing communication between said flow control chamber and said discharge chamber.

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**3,163,999**
**CENTRIFUGAL COMPRESSOR LUBRICATING AND MOTOR COOLING SYSTEMS**
**John L. Ditzler and Robert T. Kirchner, Staunton, Va., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Aug. 1, 1962, Ser. No. 214,046**
**4 Claims. (Cl. 62—469)**

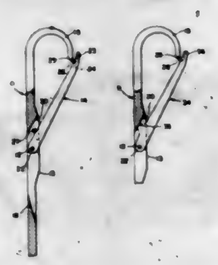
1. A hermetic, centrifugal, refrigerant compressor comprising a casing, a motor compartment in one end of said casing, an electric motor having a rotor in said compartment, a compressor compartment in the opposite end of said casing, said compressor compartment having a gas inlet and a gas outlet, a centrifugal rotor in said compressor compartment, a gear compartment in said casing between said motor and compressor compartments, meshed gears in said gear compartment, said casing having a first partition between said compressor and gear compartments and having a second partition between said gear and motor compartments, bearings in said partitions, drive means extending from said centrifugal rotor through said bearing in said first partition and connected to one of said gears, said motor rotor having a shaft extending through said bearing in said second partition and connected to another one of said gears, said casing having a connection for supplying refrigerant from an external condenser into said motor compartment, said second partition having an opening for passing refrigerant from said motor compartment into said gear compart-



ment, said casing having oil inlet means for receiving oil from external said casing, and means forming passages connecting said oil inlet means to said bearings, said casing having an outlet at the bottom of said gear compartment for draining mixed oil and refrigerant from said gear compartment.

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**3,164,000**
**KNITTING NEEDLE**
**John M. Ashe, Philadelphia, Pa., assignor to Textured Yarn Co., Inc., Philadelphia, Pa., a corporation of Pennsylvania**
**Filed May 7, 1962, Ser. No. 192,686**
**5 Claims. (Cl. 66—121)**

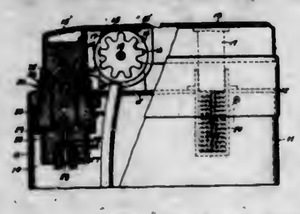


1. Knitting needle of latch type having a body with a head portion terminating in a hook configuration and having a latch pivoted thereon with the tip or free end of the latch adapted to lie adjacent the tip of the hook in the closed position, including means effective to space the tip of the latch from the tip of the hook in the closed position.

2. Knitting needle of latch type having a body with a head portion terminating in a hook configuration and having a latch pivoted thereon with the tip or free end of the latch adapted to lie adjacent the tip of the hook in the closed position, including means effective to space the tip of the latch from the tip of the hook in the closed position, the spacing means comprising a pin carried on the head portion of the needle body and adapted, upon pivoting of the latch from an open position toward the closed position, to abut the latch with the tip of the latch remaining spaced from the tip of the hook.



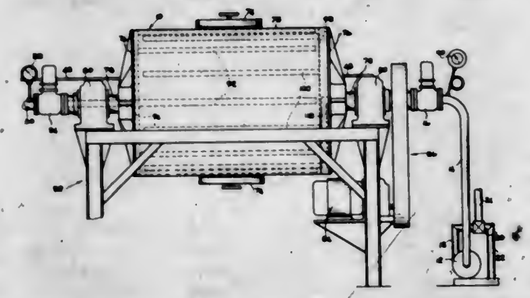
**3,164,001**
**GAS FUELED CIGAR LIGHTER**
**Masajiro Yoshinaga, Tokyo, Japan, assignor to Prince Sangyo Kabushiki Kaisha, Taito-ku, Tokyo, Japan**
**Filed Jan. 31, 1963, Ser. No. 255,354**
**Claims priority, application Japan, Feb. 7, 1962, 37/3,818**
**8 Claims. (Cl. 67—7.1)**



1. A gas fueled lighter comprising a casing having a chamber therein for holding a gaseous fuel under pressure, a valve mechanism in said casing having a fuel passageway opening out of said chamber, said valve mechanism comprising a movable magnet valve member movable between a position in which it closes the fuel passageway and a position in which it leaves the fuel passageway open, the valve member being adapted to be moved to open said fuel passageway by gas pressure within said chamber, and said lighter further comprising a closure member movable from a position in which it overlies the outer end of the fuel passageway to a position in which it is clear of the outer end of the fuel passageway, said closure member having a magnet therein which in the position of the closure member over the end of the fuel passageway exerts a magnetic force on said movable magnet member which moves said movable magnetic member to the position which closes the fuel passageway.

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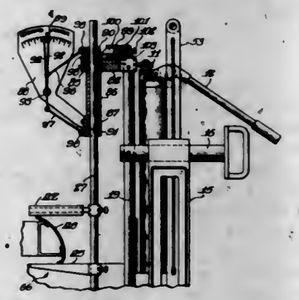
**3,164,002**
**APPARATUS FOR TREATING HIDES**
**Angelo Joseph Rossi, Mount Road Township, Port Elizabeth, Republic of South Africa, assignor to Osmocure (Proprietary) Limited, Mount Road Township, Port Elizabeth, Republic of South Africa**
**Filed July 30, 1962, Ser. No. 213,394**
**2 Claims. (Cl. 69—30)**



1. Apparatus for treating hides of slaughtered animals prior to delivery to the curing sheds, which includes
(*a*) a pressure-tight vessel in the form of a round cylindrical shell and end walls, and adapted to receive hides and wash liquor, and mounted to rotate about a horizontal axis, and having
(*i*) a closable charging opening
(*ii*) coaxial hollow journals fast with the end walls, a journal being provided at each end, and
(*iii*) a gland in each of the hollow journals,
(*b*) drive means to rotate the vessel
(*c*) evacuating means to evacuate wash liquor from the vessel and to reduce the pressure inside the vessel to a value below atmospheric pressure and including
(*i*) a series of suction pipes spaced circumferentially around the inner surface of the shell, the suction pipes having outwardly directed suction openings,
(*ii*) a suction header inside the vessel and connected to the series of suction pipes, and
(*iii*) a suction pump and suction connections connecting the suction pump to the suction header, the suction connections comprising a pipe passing into the suction header through the hollow journal and through one of the glands wihch is adapted to permit rotation of the suction header relative to the suction pump,
(*d*) curing fluid charging means which includes
(*i*) a series of pressure pipes spaced circumferentially around the inner surface of the shell, the pressure pipes having inwardly directed spray outlet openings
(*ii*) a pressure header inside the vessel and connected to the series of pressure pipes, and
(*iii*) a curing fluid pump and pressure connections connecting the pump to the pressure header, the pressure connections comprising a pressure pipe passing through the gland in the other hollow journal, this gland being adapted to permit rotation of the pressure header relative to the pump;
whereby, by rotating the vessel and under the action of centrifugal force, wash liquor may be extracted from hides contained in the vessel, the wash liquor passing into the outwardly directed suction openings of the suction pipes, and whereby curing fluid may be ejected in spray form from out of the spray outlet openings to impinge on the hides within the vessel.

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**3,164,003**
**PORTABLE SHOCK ABSORBER TESTER**
**Charles W. MacMillan, Rock Island, Ill., assignor to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware**
**Filed Feb. 19, 1960, Ser. No. 9,944**
**4 Claims. (Cl. 73—11)**

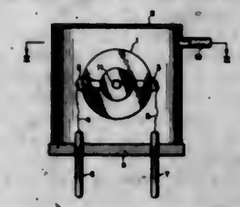


1. A portable device for testing automobile shock absorbers in situ upon an automobile having a sprung portion and supporting wheels, said device comprising, a movable support, an automobile jack carried by said support for raising the sprung portion of an automobile to lift a portion of the weight thereof from the wheels, means connected to said jack for instantaneously disengaging the jack from said sprung portion of the automobile to permit free fall and vertical oscillation of said sprung portion of the automobile upon the wheels, a vertically movable member mounted upon said support, engaging means rigidly mounted upon said member for engaging the sprung portion of the automobile, said engaging means being responsive to the oscillatory rise

and fall of said sprung portion after it has been permitted to drop, a gauge support frictionally carried upon said movable member, annular elements frictionally carried upon said movable member in contacting relationship with the top and bottom of said gauge support, means carried by said movable support for locking said gauge support and rendering it immovable with respect to said movable support, and means carried by said gauge support for indicating the displacement of said annular elements from said gauge support after oscillation of said movable member.

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3,164,004
**COATED PIEZOELECTRIC ANALYZERS**
William H. King, Jr., Florham Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed May 15, 1961, Ser. No. 110,189
22 Claims. (Cl. 73—23)

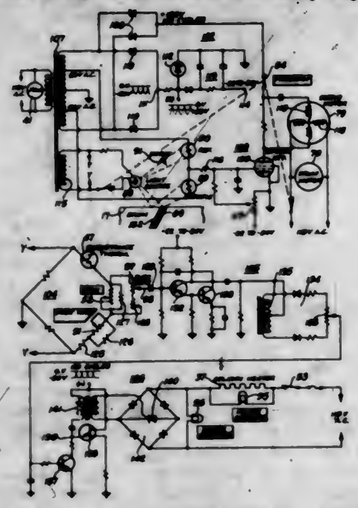


1. An analyzer which comprises in combination a housing, inlet and outlet means adapted to permit gas flow through said housing, a piezoelectric material mounted within said housing, an electronic oscillator circuit means which is controlled by said piezoelectric material, a substrate coated on said piezoelectric material, said substrate being adapted to interact with at least one component of a gas to be analyzed, means for oscillating said piezoelectric material, and means for detecting changes in the oscillations of said circuit.

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3,164,005
**GAS CHROMATOGRAPH**
Maurice R. Burnell, Fullerton, and Otto Hasnold, Whittier, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Apr. 3, 1961, Ser. No. 100,396
3 Claims. (Cl. 73—23.1)

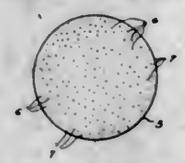
1. In a gas chromatograph having a chromatographic column, an inlet line with a carrier gas inlet and a sample inlet coupled thereto, and an outlet line coupled to a detector, the combination of:
a heat insulated enclosure;
means for supporting the column within said enclosure;
a variable heat source positioned within said enclosure;
a program carrier drum having a continuous temperature indicating edge thereon;
means for rotating said drum;
an edge follower servo for generating a first electrical signal as a function of a desired temperature set point for said enclosure, said servo including a photocell positioned adjacent the surface of said drum, means for translating said photocell for following said indicating edge as the drum rotates, and a potentiometer having a slider movable with said photocell, with the position of said slider determining the volume of said first electrical signal corresponding to the desired temperature set point;
means for generating a second electrical signal as a function of the temperature within said enclosure, said second electrical signal generating means including a temperature sensitive resistor connected as one arm of a bridge circuit, with the bridge circuit having a second resistor in the adjacent arm, a third resistor connected between said temperature sensitive resistor and said second resistor, and a fourth resistor connected in parallel with said third resistor, with said potentiometer slider of said edge follower servo traversing said fourth resistor to provide the variable temperature set point, and with said second resistor being variable to set the initial temperature independent of said indicating edge, and



with said third resistor being variable to said magnitude of change of said first electrical signal produced by said servo as it follows said edge; and
control means responsive to the difference between said first electrical signal corresponding to said temperature set point and said second electrical signal corresponding to said actual enclosure temperature for controlling the energy coupled to said heat source.

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3,164,006
**EVALUATION PERFORMANCE OF LIQUID PENETRANT TRACER MATERIALS**
James R. Alburger, 5007 Hillard Ave., La Canada, Calif.
Filed Apr. 16, 1962, Ser. No. 187,876
10 Claims. (Cl. 73—53)



5. A test block for evaluating the performance capabilities of liquid penetrant tracer materials comprising a solid block, said block having a ceramic-like surface having a uniform predetermined statistical distribution of pits and pores of a depth ranging from substantially 500 millimicrons to substantially 10 millimicrons.

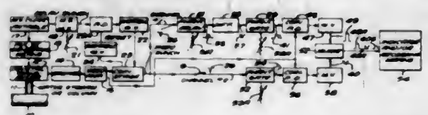
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3,164,007
**MEANS AND TECHNIQUES FOR PRODUCING INDICATIONS OF FLAWS IN METAL INSPECTION**
Larry O. Stebbins, Temple City, and Takeo C. Sato, Los Angeles, Calif., assignors, by mesne assignments, to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Apr. 3, 1961, Ser. No. 100,217
4 Claims. (Cl. 73—67.9)

1. In an inspection system of the character described wherein it is desired to produce indications of an in-



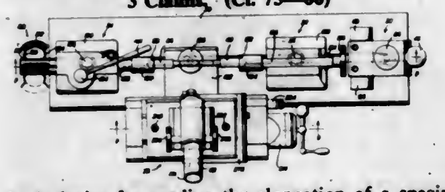
homogeneity in a material and or excessive thinness of the material, the combination comprising, a transducer couplable to said material for transmitting energy pulses to said material and for receiving resulting echo signals therefrom in the form of a train of video signals, the first of which corresponds to a reflection from the front surface of the material facing the transducer; pulse-generating means coupled to said transducer; a source of timing pulses coupled to said generating means for periodically operating said pulse-generating means; receiving means coupled to said transducer for amplifying said video signals; first means coupled to said source of timing pulses for initiating a first voltage wave in response to one of said timing pulses; a first coincidence stage coupled to both said first means and said receiving means and functioning to develop a first signal upon time coincidence of said first voltage wave and said first video signal; a first and a second channel each coupled to said coincidence stage and each being receptive to said first signal; said first channel incorporating second means for initiating a second voltage wave in response to said signal; said first channel incorporating a second coincidence stage coupled to both said second means and said receiving means and



functioning to produce a second signal upon time coincidence of said second voltage wave and a video signal which succeeds in time said first video signal; said first channel incorporating third means for initiating a third voltage wave in response to said second signal; said second channel incorporating fourth means for initiating a fourth voltage wave in response to said first signal; said second channel incorporating a third coincidence stage coupled to both said fourth means and said receiving means and functioning to produce a third signal upon time coincidence of said fourth voltage wave and a video signal which succeeds in time said first viedo signal; fifth means coupled to said third coincidence stage for initiating a fifth voltage wave in response to said third signal; a mixer stage coupled to said third and fifth means and producing an output voltage representative of said third and fifth voltage waves; and indicating means coupled to said mixer stage and receptive to said output voltage for producing an indication in response to said output voltage, said first channel being separate from said second channel and incorporating delay means for delaying the initiation of said second voltage wave with respect to initiation of said fourth voltage wave.

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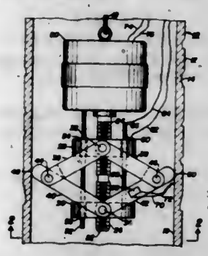
3,164,008
**APPARATUS FOR MEASURING ELONGATION**
John E. Nielsen, Downers Grove, Ill., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 5, 1959, Ser. No. 844,469
3 Claims. (Cl. 73—88)



1. A device for reading the elongation of a specimen of material having two spaced marks thereon, said device comprising: a foundation; an intermediate support movably positioned on said foundation; a microscope platform movably positioned on said intermediate support for movement in a path beside the position to be occupied by the specimen, a microscope mounted on said microscope platform and having a graticule calibrated in the units of elongation of the specimen; means for moving said intermediate support along said foundation to a first point where one of the marks on the specimen will be aligned with the zero indicium on said graticule; stop means secured to said intermediate support and extending into the path of movement of said microscope platform; constant-force spring means yieldingly urging said microscope platform against said stop means but permitting the movement of said microscope platform away from said stop means to open a gap between said stop means and said microscope platform; and a gauge block insertable into said gap and having a length equal to the distance initially separating the marks on the specimen prior to elongation; whereby, upon insertion of said gauge block into said gap and release of said microscope platform, said spring means returns said microscope platform and said microscope to a second point where the other mark on said specimen is aligned with a position on said graticule corresponding to the elongation of said specimen.

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3,164,009
**APPARATUS FOR MEASURING THE WALL THICKNESS OF TUBING**
Edward Schaschl and Glenn A. Marsh, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed Oct. 7, 1960, Ser. No. 61,199
3 Claims. (Cl. 73—88.5)



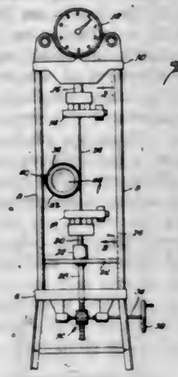
1. An apparatus insertable within a hollow cylindrical body for determining the localized wall thickness thereof comprising an electric motor, a shaft driven by said motor, said shaft having formed thereon a pair of axially spaced threads of opposed pitch, a pair of opposed nut members associated with said threads, a plurality of arms pivotably secured at one end to one said nut member, an equal number of arms pivotably secured at one end to the other said nut member, the other end of each said arm being pivotably secured to the other end of an arm secured to the opposite nut member, means for measuring the relative movement of said nut members, and means for measuring the stress in at least one said arm.

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3,164,010
**PAPER CORE CRUSH OR COMPRESSION TESTER AND METHOD**
William C. Jones, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 189,092
6 Claims. (Cl. 73—94)

1. A device for testing the compressive resistance of cylindrical elements comprising in combination, a frame means, a pair of gripping means supported in spaced relation upon said frame means, a strap affixed at each end to one of said gripping means, said strap being arranged to provide a loop which decreases in internal dimension

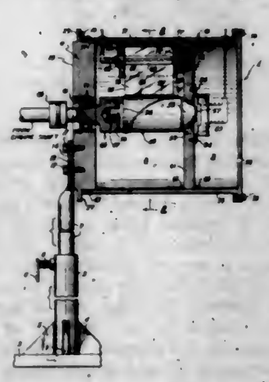
as the ends of the strap are moved apart, a tension gage supported upon the frame and arranged for connection with the first of said gripping means, a power transmission mechanism supported upon the frame means and arranged for connection with the second of said gripping means to



provide movement of the second gripping means relative to said first gripping means, and a compressible sleeve positionable in the loop of said strap, said sleeve having an internal diameter substantially equal to the external diameter of a cylindrical element to be tested in the device.

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**3,164,011**
**PHOTOELECTRIC TRANSDUCER UNIT**
**Salvador Casillas, El Paso, Tex., assignor to El Paso Natural Gas Company, El Paso, Tex., a corporation of Delaware**
**Filed May 18, 1962, Ser. No. 195,853**
**11 Claims. (Cl. 73—116)**



4. A piston-displacement function generator, comprising:

(*a*) a housing having an end wall provided with a circular peripheral surface and a cylindrical wall mounted on said end wall, said cylindrical wall being received on said circular peripheral surface and extending outwardly therefrom;

(*b*) a mandril extending through an opening in said end wall and being adapted for rotation therein, the outer end of said mandril being adapted to be connected to the drive shaft of an engine being tested;

(*c*) a cylindrical light-conducting member mounted on the inner end of said mandril within said housing, said light-conducting member having the property of conducting light along its length and emitting light at an end thereof;

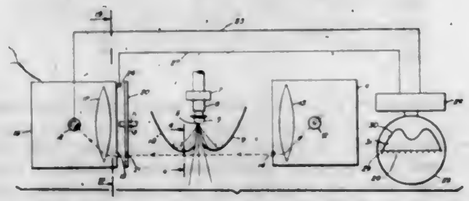
(*d*) means mounted upon the cylindrical wall of the housing for directing a beam of light of substantially constant intensity along a restricted path on the periphery of said cylindrical light-conducting member parallel to its axis of rotation;

(*e*) masking means on the periphery of the light-conducting member for masking a portion of said light beam during rotation of said member in a pattern proportional to piston displacement of an engine being tested; and

(*f*) photoelectric means disposed at the light-emitting end of said light-conducting member for sensing the quantity of light conducted by said member during rotation thereof and providing an electrical signal proportional thereto.

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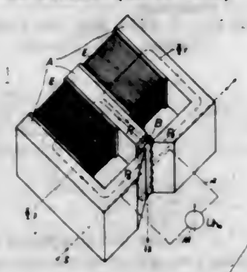
**3,164,012**
**METHOD AND APPARATUS FOR TESTING THE SPRAY PATTERN OF A SPRAY NOZZLE**
**Elbert Barth Childs, Hastings on Hudson, N.Y., assignor to Socony Mobil Oil Company, Inc., a corporation of New York**
**Filed Aug. 14, 1961, Ser. No. 131,333**
**3 Claims. (Cl. 73—119)**



1. An instrument for examining the pattern of the spray formed by a nozzle for the spraying of a liquid comprising: means to mount said nozzle with its spray-forming orifice at a preselected position, means to segregate for examination a central portion of said spray restricted in one dimension but extending throughout the whole of the spray pattern in the direction normal to the restricted dimension, light beam means to pass transversely through the spray at points in a path disposed along its unrestricted dimension, and means to sense variations in the intensity of light transmitted through said spray at said points as a measure of the density of said spray at said points.

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**3,164,013**
**DISPLACEMENT INDICATOR ARRANGEMENT**
**Josef Schmahl, Leverkusen-Wiesdorf, and Hermann Roelig, Leverkusen, Germany, assignors, by mesne assignments, to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany**
**Filed May 13, 1960, Ser. No. 28,996**
**Claims priority, application Germany, May 20, 1959, F 28,473**
**10 Claims. (Cl. 73—141)**

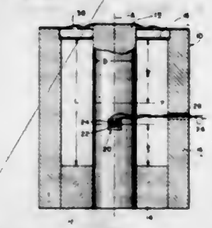


1. Displacement indicator arrangement, comprising, in combination, magnetic force exerting means for setting up a magnetic field having at least a portion wherein a gradient of said field is oriented in a predetermined plane, said magnetic force exerting means including a twin magnetic circuit arrangement having a pluraltiy of pole pieces determining between themselves a gap in which the lines of force of said field are oriented in parallel with each other and constitute magnetic fluxes having relatively opposed directions; Hall plate means mounted movably in said portion of said field for generating, depending on a displacement thereof in direction of said gradient, a corresponding output potential, said Hall plate means being arranged in said gap; electric means for applying an operating current to said Hall plate means; moving means for displacing said Hall plate means in a direction parallel with said gradient; and indicating means operatively connected with said Hall plate means for indicating variations of said output potential indicative of the amount of displacement of said Hall plate means causing such variations.



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**3,164,014**
**LOAD CELL INDEPENDENT OF NON-AXIAL LOADING EFFECTS**
**Salomon Redner, Norristown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Aug. 22, 1962, Ser. No. 218,728**
**6 Claims. (Cl. 73—141)**

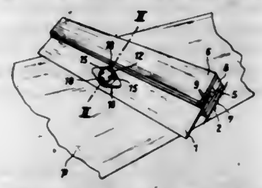


1. A load cell combination comprising a cylindrical spring element column, a rigid base fixing one end of said column, a rigid shell fixed to said base and encompassing said column, a lateral diaphragm flexible longitudinally of said column attached to said column and to said shell hinging said column for rotation and restraining said column against lateral deflection, said diaphragm and said base defining therebetween an active length for said column, the cross-sectional configuration of said column being constant over said active length, and strain gauging means operatively attached to said column symmetrically of the circumferential column position spaced one third of the active length of said column from said base.

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**3,164,015**
**APPARATUS FOR DETECTING SURFACE IMPERFECTIONS ON MOVING WEBS, ESPECIALLY OF PAPER**
**Helmut Schäfer, Neuffen, Wurttemberg, Germany, assignor to Hans Biel, Wurttemberg, Germany**
**Filed Nov. 8, 1962, Ser. No. 236,236**
**Claims priority, application Germany, Nov. 16, 1961, B 64,811**
**5 Claims. (Cl. 73—159)**

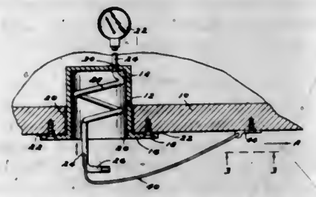
1. An apparatus for detecting surface imperfections in moving webs of sheet materials, especially of paper, comprising a rigid slide member having good sound transmitting qualities and a length essentially equal to the width of said moving web, means for mounting said slide member in contact with the surface of said moving web including insulating means for preventing the application of outer vibrations to said slide member by way of said mounting means, an electrical signal transmitter secured to and acted upon by said slide member including a light-weight body freely suspended within said electrical signal transmitter and responsive to vibrations in said slide member, and control means connecting said light-



weight body to said signal transmitter for controlling the signal output of said transmitter in correspondence with the movements of said light-weight body responsive to the vibrations in said slide member.

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**3,164,016**
**SPEED INDICATOR**
**Robert C. Dinsmore, Flint, Mich., assignor to Dinsmore Instrument Company, Flint, Mich., a corporation of Michigan**
**Filed Feb. 23, 1961, Ser. No. 91,201**
**2 Claims. (Cl. 73—182)**



1. A speed indicator mechanism for water craft which comprises:

(*a*) means forming in the bottom of said craft a recess open to the supporting fluid for said craft and sealed from the interior of the craft,

(*b*) a Pitot tube to be suspended adjacent said recess and movable from a position within said recess to a position below the bottom of said craft,

(*c*) supporting means for said tube comprising a resilient tube in said recess mechanically connected at a distal end to said Pitot tube and adapted to be pneumatically associated therewith and with a registering indicator within the craft on the other end and mechanically supported at said other proximal end in said recess, said resilient tube having a length bent upon itself and disposed in said recess such that it serves as a resilient expanding and contracting moving mount for said Pitot tube to permit the tube to be displaced into the recess or supported below it, and

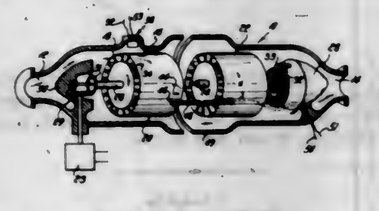
(*d*) means to guide and guard said Pitot tube comprising an extending element mounted at one end on said craft forward of said Pitot tube and fastened to said Pitot tube at the other end to guide said Pitot tube into and out of said recess, said last means depending below said tube at one portion to protect the tube against contact with foreign objects in the supporting fluid.

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**3,164,017**
**FLOW MEASURING APPARATUS**
**Henning Karlby, Pittsburgh, William P. Caywood, Jr., Murrysville, and Henry Earnest Lehman, Pittsburgh, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 7, 1957, Ser. No. 694,968**
**4 Claims. (Cl. 73—194)**

1. In a mass rate meter having an impeller mounted for rotation to impart a change in velocity of the fluid mass

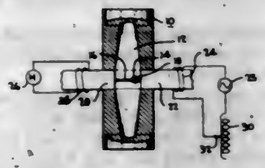
in a direction and of such magnitude so as to be substantially independent of the flow rate of the mass through the meter, means for driving said impeller, a reaction member mounted for rotational movement in the fluid flow path, restraining means connected to said reaction member for causing said reaction member to deflect through an angle proportional to the product of the mass rate of fluid flow and said imparted change in velocity, transducer



means including magnetic means mounted for rotation with said impeller, fixed magnetic pick-up means, and movable magnetic pick-up means mounted on said reaction member, each responsive to said magnetic means, for sensing said angle of displacement, means connected to said transducer means for producing a signal having a time duration proportional to said angle, and operative means responsive to said signal to indicate the flow rate.

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**3,164,018**
**FLOW-METER**
**Donald C. Bennett, 7 Sullivan Way, East Brunswick, N.J.**
**Filed Mar. 14, 1962, Ser. No. 179,654**
**12 Claims. (Cl. 73—228)**

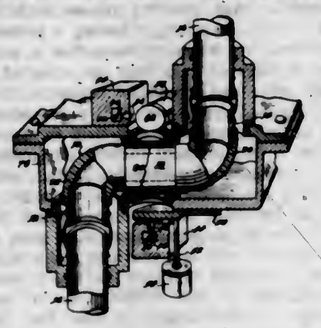


1. A device or measuring fluid flow comprising a conduit having a fluid passage therein and through which fluid flows, a ferromagnetic vane rotatably mounted in said conduit, electromagnetic means coupled to said vane for producing a restoring force on said vane, and means coupled to said electromagnetic means for indicating the reluctance of the magnetic path around said vane, said last mentioned means including means for indicating the rate of fluid flow.

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**3,164,019**
**MASS FLOW MEASURING DEVICE**
**Glenn M. Burgwald, Belmont, Calif., Leonard Reiffel, Chicago, Ill., and William K. Genthe, Menomonee Falls, and Clayton Fyfe, Fox Point, Wis., assignors to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Oct. 26, 1961, Ser. No. 147,998**
**7 Claims. (Cl. 73—228)**

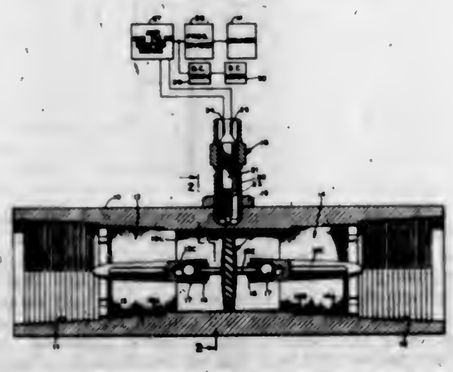
1. A device for providing a measure of the square of the mass flow rate divided by the density of a fluid flowing in a pipe comprising a tube having two end portions and a central portion lying in one plane, the central portion of said tube being offset from the two end portions thereof, means for elastically coupling said tube to said pipe, a pivot connected to the central portion of said tube, said pivot being rotatable with said tube in the plane thereof responsive to fluid flow through said tube, means for applying a restoring torque to said pivot to cause said tube to remain in a null position, and means for measuring the applied restoring torque, which torque is proportional to



the square of the mass flow rate divided by the density of the fluid flowing in the pipe.

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**3,164,020**
**FLOWMETER**
**Edward L. Groner and Charles L. Boyd, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware**
**Filed Aug. 17, 1961, Ser. No. 132,181**
**6 Claims. (Cl. 73—231)**



2. In a flow-measuring device of the character described comprising a body through which the fluid to be measured flows, a rotor rotatably supported in said body, said rotor comprising a plurality of radially extending helically pitched blades, and a continuous magnetizable shroud ring encircling said blades and being rotatable therewith, said shroud ring having at least one external grooved portion, said body being of nonmagnetic material, a permanent magnetic structure mounted on said body and producing a magnetic field through said shroud ring, and a coil on said magnetic structure sensing the changes in magnetism effected by said grooved portion.

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**3,164,021**
**COMPENSATION RADIATION PYROMETER**
**Jan de Jong, Rijswijk, and Pieter Esser, Delft, Netherlands, assignors to Nederlandse Centrale Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek, The Hague, Netherlands, a corporation of the Netherlands**
**Filed Sept. 16, 1960, Ser. No. 56,528**
**Claims priority, application Netherlands, Sept. 21, 1959, 243,557**
**2 Claims. (Cl. 73—355)**

1. Compensation radiation pyrometer for measuring the surface temperature of objects, the contact with which

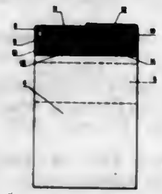


is for physical reasons either impossible or unpractical, and comprising:

a multiple differential thermocouple comprising two thin plate ribbons of flat electrical insulation material having a very slight heat-conducting characteristic;

a measuring thermocouple being positioned between the two ribbons;

the whole being enveloped by a plurality of turns of constantan wire forming a helix, corresponding half-turns of which are coppered and forming a radiation receiver;



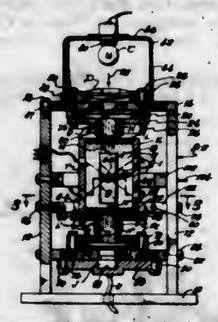
said helix being positioned in such a way that the junctions of the coppered helical half-turns are disposed substantially in the middle of each flat side; and

a heating element being disposed juxtaposed under and parallel to said radiation receiver and adjacent to the cold junctions of said helix;

insulation means encompassing a substantial portion of the radiation receiver and also interposed between the radiation receiver and the heating element and the entire structure being assembled into one single unit.

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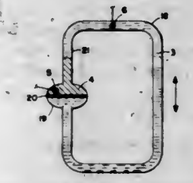
**3,164,022**
**ACOUSTICALLY SUPPORTED MOTION SENSOR AND METHOD**
**Donald Luther Ensley, 2057 Province Lane, Dallas, Tex., assignor of one-third to Space Age Development Corporation, Hawthorne, Calif., a corporation of California and one-third to Harvest Queen Mill & Elevator Company, Dallas, Tex., a corporation of Texas**
**Filed May 29, 1961, Ser. No. 113,546**
**24 Claims. (Cl. 73—505)**



2. A sensing system which comprises an acoustic transmission medium in which density is a function of pressure, source means for generating a symmetrical radially divergent sound field in said medium having symmetry relative to a selected axis, means including a geometrical solid supported in said medium for free movement relative to said source means in said medium and having opposed surface portions facing said source means for modifying by interaction with said sound field the time average pressure gradient in said field, said force field being of magnitude sufficient normally to restrain said solid at a reference position both in inertial space and with respect to said medium with said surface portions in zones of negative pressure gradient, and means for sensing relative movement between said solid and said field.

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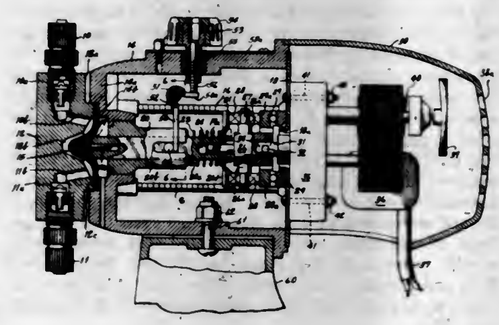
**3,164,023**
**MOTION SENSING TRANSDUCER**
**Oscar C. Holderer, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army**
**Filed Sept. 10, 1962, Ser. No. 222,747**
**4 Claims. (Cl. 73—516)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



3. A transducer comprising: a sealed tubular member having a substantially rectangular configuration and a leg having an enlarged portion; an elastic membrane dividing said enlarged portion; a pool of mercury disposed on one side of said membrane and extending into said leg; a liquid having an electrical resistance greater than that of said mercury substantially filling said tubular member and disposed on the other side of said membrane; a first electrode mounted in said enlarged portion and in contact with said mercury; and a second electrode mounted in said tubular member and in contact with said liquid, whereby an acceleration force applied against said tubular member varies the height of mercury in said one leg and thus alters the electrical conductivity between said first and second electrodes.

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**3,164,024**
**DRIVE MECHANISM AND DIAPHRAGM PUMP EMPLOYING SAME**
**Eldred G. Tarry, Westfield, William C. Conkling, Essex Fells, and Lawrence R. Mitchell, Fort Lee, N.J., assignors to Wallace & Tiernan Inc., a corporation of Delaware**
**Filed Oct. 21, 1960, Ser. No. 64,098**
**2 Claims. (Cl. 74—56)**

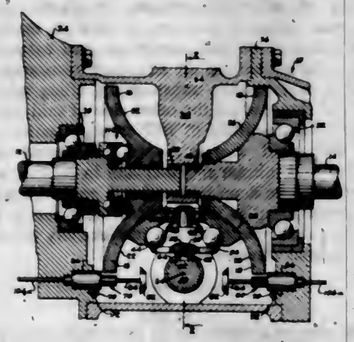


2. Apparatus comprising a fixed housing, a plunger shaft within said housing and mounted for reciprocating to-and-fro translational movement, a plunger bearing supporting said shaft for sliding translational movement therein, a cam plate fixed to one end of said plunger shaft, said cam plate being provided with a cam surface on one side thereof disposed substantially perpendicular to the longitudinal axis of said plunger shaft, said cam

surface having formed thereon a cam lobe and a cam valley, a spring intermediate the other side of said cam plate and said plunger bearing and in contact with one end of said plunger bearing and said other side of said cam plate, a rotatable member positioned axially of said plunger shaft disposed adjacent said one side of said cam plate, an anti-friction bearing mounted on said rotatable member and in contact with said cam surface, a thrust bearing fixed to said housing and in contact with said anti-friction bearing, means to rotate said rotatable member, a pin transversely carried by said plunger shaft and extending therethrough into slots provided in said plunger bearing and stop means fixed to said housing effective upon contact with said pin to arrest the movement of said plunger shaft carrying said pin.

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**3,164,025**
**TOROIDAL DRIVE HYDRAULIC STOP**
**William H. Francisco, Jr., Morris Plains, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware**
**Filed Mar. 20, 1963, Ser. No. 266,550**
**5 Claims. (Cl. 74—200)**

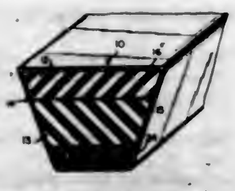


1. A variable speed transmission having co-axial input and output members with facing toric surfaces and a plurality of circumferentially-spaced rollers disposed between and in driving contact with said surfaces for transmitting torque from the input member to the output member, support means for each roller providing for speed-ratio changing pivotal movement of said rollers across said toric surfaces and including means providing for independent second movement for initiating speed-ratio changing pivotal movement of said rollers, a plurality of stop means, one for each roller and engageable therewith for limiting speed-ratio changing pivotal movement of each roller beyond a predetermined position in one speed-ratio changing direction, each said stop means including a piston member, and passage means filled with fluid and interconnecting one side of each piston member to oppose inward movement of each stop means such that engagement of one roller with its associated stop means to inwardly move said stop means is effective through said fluid and pistons to urge each of the other stop means in an outward direction toward engagement with their respective rollers.

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**3,164,026**
**TRANSMISSION BELT AND METHOD OF MANUFACTURE**
**Hugh D. Terhune, Springfield, Mo., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio**
**Filed Oct. 3, 1962, Ser. No. 228,109**
**8 Claims. (Cl. 74—233)**

8. A transmission belt comprising a tension section and a compression section consisting of elastomeric material and enclosed by a stretched outer cover, a portion only of one of said sections consisting of blown elastomeric material.



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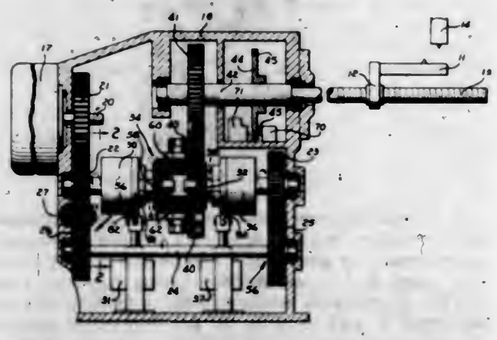
**3,164,027**
**BELT TIGHTENER**
**William E. Rood, Jr., Phoenix, Ariz., assignor to Garland Sales Company, Phoenix, Ariz., a corporation of Arizona**
**Original application Feb. 16, 1961, Ser. No. 89,695. Divided and this application Nov. 16, 1962, Ser. No. 238,100**
**2 Claims. (Cl. 74—242.12)**



1. In a cotton retrieving apparatus, a belt tightening device comprising: a plurality of pulleys each for mounting a different one of a plurality of belts, a drum for mounting all of said belts, a first transverse bar rotatably supporting said drum, a second transverse bar in fixed spaced-apart relation to said first transverse bar, and a plurality of spring biasing means, each pivotally connected at one end thereof to said second transverse bar and connected at the opposite end thereof to a respective one of said pulleys.

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**3,164,028**
**APPARATUS FOR INDEXING WORK PARTS**
**Geoffrey D. Green, Oak Park, Ill., and Heinz F. Runge, Madison, Wis., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Nov. 9, 1960, Ser. No. 68,276**
**4 Claims. (Cl. 74—365)**



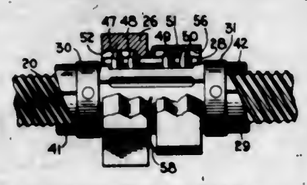
1. Apparatus for indexing a work part, which comprises:
rotating means for selectively moving the work part in one of two opposite directions along a predetermined path;
means rotated by said rotating means for indicating in prescribed increments the distance traveled by the work part from an initial position thereof;



photoelectric means for producing an output pulse for each indication of an increment in work part travel;
means for counting such output pulses continuously to provide a measure of the total distance traveled by the work part; and
clutch means, responsive to said counting means, for rotating said rotating means and including braking means for arresting the movement of the work part when the work part has been indexed a predetermined distance in the preselected direction.

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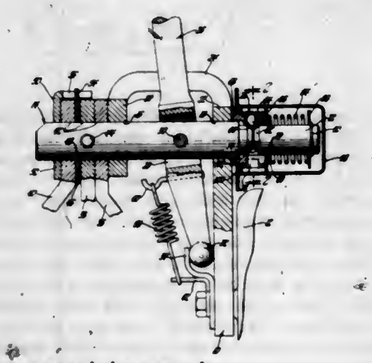
**3,164,029**
**SCREW-NUT DEVICE**
**Jack E. Martens, Gary, Ind., assignor to The Anderson Company, a corporation of Indiana**
**Filed Mar. 7, 1961, Ser. No. 94,041**
**7 Claims. (Cl. 74—424.8)**



1. A motion-transmitting mechanism comprising in combination: first and second members adapted for relatively linear movement and respectively attachable to members to be relatively moved, one of the members fixedly carrying a nut and the other member rotatably carrying a screw member operatively received within the nut member, said nut member including a housing having an annular raceway and a portion of reduced diameter to define axial abutment means, elongate rotatable bearing elements interposed between the threads of the screw member and the raceway and adapted to engage the axial abutment means thereby establishing driving contact between the screw and nut whereby rotation of the screw moves the nut axially therealong, and means rotatable with respect to said nut and urged axially with respect thereto for applying frictional drag to the rotatable elements thereby impeding involuntary rotation.

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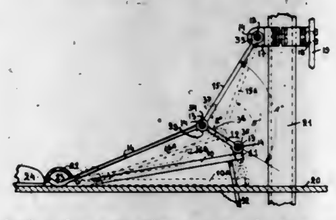
**3,164,030**
**TRANSMISSION CONTROL**
**James W. Fodrea, Rochester, Virgil W. Owen, Madison Heights, and George Popovich, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 16, 1963, Ser. No. 273,454**
**20 Claims. (Cl. 74—476)**



1. In a transmission control,
(A) support means,
(B) a shaft rotatably and axially slidably mounted in said support means,
(C) means for axially moving said shaft between a plurality of shift positions,
(D) first shift inhibitor means providing a low force resisting movement of said shaft in one axial direction from one to another of said plurality of shift positions,
(E) and second shift inhibitor means providing a high force resisting initial movement of said shaft from one shift position to said another shift position and after initial movement permitting relatively free movement to said another position.

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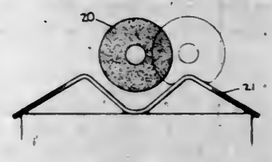
**3,164,031**
**LINK SYSTEM FOR AN ACCELERATOR PEDAL**
**George A. Rubissow, 420 Riverside Drive, New York 25, N.Y.**
**Filed May 3, 1961, Ser. No. 107,470**
**8 Claims. (Cl. 74—513)**



1. A device for actuating an accelerator pedal of a vehicle comprising a first support rigidly affixed in respect to said vehicle, a first link, one end of which is pivotally mounted through a first bearing means on said support and the other end of which is pivotally mounted through a second bearing means upon one end of a second link provided therefor, the other end of said second link being pivotally mounted through a second support rigidly in respect to said pedal through a third bearing means, the longitudinal axis interconnecting said first and said second bearing means forming an angle with the longitudinal axis passing through said second and said third bearing means, a pusher-member link being pivotally mounted by its inner end upon said second bearing means and having a common pivoting axis with it, the free end of said member being freely slidably mounted upon the floor of said vehicle and adapted to be contacted by a foot wear of the driver which consequently can push it to and fro thus actuating said accelerator pedal.

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**3,164,032**
**BI-DIRECTIONAL DETENT MECHANISM**
**Harold G. Abbey, 189—10 Aberdeen Road, Jamaica 23, Long Island, N.Y.**
**Filed Dec. 24, 1962, Ser. No. 246,720**
**4 Claims. (Cl. 74—527)**



1. A bi-directional detent mechanism for checking the displacement of a first part movable relative to a second part, comprising a roller element mounted on said first part and formed of concentric inner and outer cylindrical metallic rings and a resilient member interposed between said rings and connected thereto, a shaft extending through said inner ring and attached to the first part to permit

rotation of said roller, whereby when said roller is subjected to pressure said outer ring may be forced to occupy an eccentric position relative to the inner ring, an inflexible detent element fixedly mounted on said second part to engage said roller element at a given relative position of said parts, said detent element having a double-humped configuration to define a central recess which accommodates said roller element, said roller element yielding in either direction of movement to pass over said humps into said recess.

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3,164,033
## GUIDED ROLLER-LEVER ACCELERATOR PEDAL
George A. Rubissow, 420 Riverside Drive, New York 25, N.Y.
Filed May 3, 1961, Ser. No. 107,469
12 Claims. (Cl. 74—562.5)

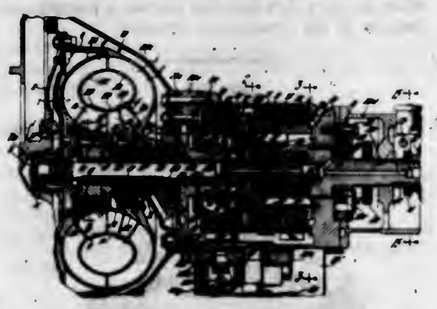


1. A device for actuating an accelerator pedal of a vehicle comprising a lever one end of which is mounted rotatably in respect to the accelerator pedal through the intermediary of bearing means concentric with a first axis of rotation of a first shaft mounted on said pedal, one part of which bearing means is rigid in respect to said pedal and another part of which bearing means is rigid in respect to said lever, a free end of said lever being provided with a roller spaced from the end of said lever freely rotatable around the longitudinal axis of said lever, a pusher member attached pivotally by its one end to a part of said free end of said lever and having its other free end resting freely upon an area of its displacement upon the floor of said vehicle, a guide means affixed by a support rigidly in respect to the body of said vehicle and having an inclined runway provided upon its lower surface inclined under an angle in respect to the floor of said vehicle, said runway forming an arc concentric to said first axis of rotation and being provided in the proximity of said pedal in such a manner that the upper surface of said roller contacts uninterruptedly said runway while said lever is pivoted to and fro around the axis of its said bearing means whereby said roller automatically forces said pedal to move, thus actuating the throttle of said vehicle to any desired degree when said pusher member is pushed by the footwear of the drive to and fro upon said area of displacement and is held in any desired position without exerting any muscle effort.

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3,164,034
## MULTIPLE STAGE TORQUE CONVERTER DRIVE
Oliver Kenneth Kelley, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of application Ser. No. 790,950, Dec. 11, 1947. This application May 24, 1954, Ser. No. 431,868
38 Claims. (Cl. 74—732)

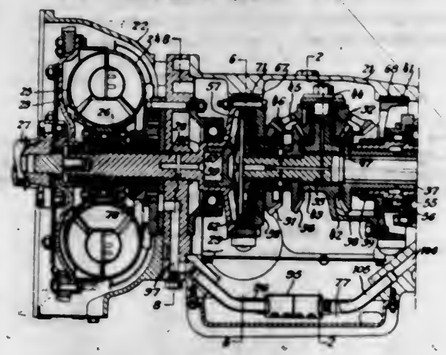
37. A variable speed power transmission mechanism comprising the combination of a hydraulic torque converter and an epicyclic gear unit equipped with fluid pressure actuators, a common pressure supply source for said converter and said actuators, control valving operative for maintaining fluid pressure in the working space of said converter at a given pressure, and supplied from said source, lubrication delivery passages connected to said space and to said source, a plurality of pressure delivery passages for said actuators, said latter passages being supplied from said source, selector valving operative to select the delivery of said pressure to said actuator



passages for the purpose of establishing a plurality of forward drive ratios by said mechanism, one of said ratios being one-to-one and another ratio being less than one-to-one, and pressure regulator valving for providing a plurality of selective line pressures for said actuators, said last-named valving being operative to provide a high pressure during drive at less than one-to-one, and to provide a lower pressure during one-to-one drive.

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3,164,035
## POWER TRANSMISSION SYSTEMS PROVIDING AUTOMATIC CHANGES OF GEAR RATIO
Frederick Edward Ellis, Peter John Standbridge, and Maurice Taylor, Leamington Spa, England, assignors to Automotive Products Company Limited, Leamington Spa, England, a British company
Filed Mar. 27, 1961, Ser. No. 98,686
10 Claims. (Cl. 74—757)



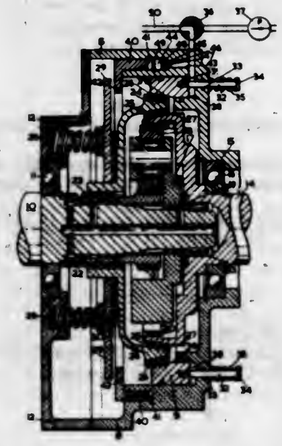
1. An automatic change-speed gearbox comprising an input shaft, an output shaft and constantly meshed speed reduction gearing through which rotation is transmitted from said input shaft to said output shaft, a first intermediate shaft coaxial with said input shaft, a second intermediate shaft rotatably mounted on said first intermediate shaft and a rotatable carrier assembly mounted on said first intermediate shaft, said speed reduction gearing including at least two intermediate gear assemblies mounted on said carrier assembly and each consisting of a large bevel gear and a small bevel gear fixed together to rotate as one about an axis radial to said intermediate shaft, an input bevel gear mounted on said input shaft and meshing with the large bevel gears of said intermediate



gear assemblies, a pair of output bevel gears mounted respectively on the first and second intermediate shafts and meshing with the small bevel gears of said intermediate gear assemblies at opposite ends of a diameter of said small bevel gears, first and second selectively operable clutch means to connect said first and second intermediate shafts respectively to said output shaft, means acting on said carrier to hold it against rotation when either one of the said clutch means is operable to provide forward and reverse drives at the same speed ratio, a first brake acting on said second intermediate shaft through a free wheel to hold said shaft against backward rotation, a second brake acting on said second intermediate shaft to hold said shaft against any rotation in either direction, and means operable to lock said gears together to rotate as one.

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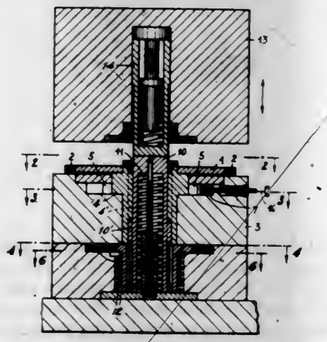
3,164,036
## PLANETARY DRIVE TRANSMISSION DEVICE
Alan S. Lamburn, Kenco tt, via Lechlade, and Randle L. Abbott, Leamington Spa, England, assignors to Axel Wickman, Transmissions Limited, Warwickshire, England
Filed May 9, 1963, Ser. No. 279,281
Claims priority, application Great Britain May 17, 1962
8 Claims. (Cl. 74—781)



1. A planetary drive transmission device, for optionally providing a drive at unit or another ratio, comprising a power input shaft, a power output shaft, an axially-movable friction engaging means, a sun wheel element, an annulus wheel element, a planet wheel, a planet carrier element supporting said planet wheel, said planet wheel arranged to transmit drive between said sun wheel element and said annulus wheel element, driving means connecting one of said elements to said power input shaft, driving means connecting another of said elements to said power output shaft, driving means connecting the remaining said element to said axially-movable friction engaging means, a first member defining a first coacting surface, driving means connecting said first member to one of said shafts, a second member defining a second coacting surface, means arranged to prevent rotation of said second member, said axially-movable friction engaging means adapted optionally to engage said first coacting surface to provide a drive at unit ratio or to engage said second coacting surface to provide a drive at said another ratio, a bias arranged to urge said axially-movable friction engaging means into engagement with one of said coacting surfaces to provide a drive at one of said ratios, a fluid-pressure-operated means operable to move said axially-movable friction engaging means against said bias to disengage said one coacting surface and to engage the other said coacting surface to provide a drive at the other said ratio, a fluid-pressure-operated baulking member operable to coact with said axially-movable friction engaging means to prevent the engagement of said axially-movable friction engaging means and said one coacting surface, a body defining an exhaust passage, a fluid-flow restrictor arranged in said exhaust passage, and valve means operable to connect said fluid-pressure-operated baulking member to said exhaust passage when said fluid-pressure-operated means is de-energised whereby said fluid-pressure-operated baulking member will delay the engagement of said axially-movable friction engaging means and said one coacting surface.

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3,164,037
## INDEXING DEVICE
Heinz Feldmann, Weingarten-Wurttemberg, Germany, and Guilleaume Schaming, Le Perreux, France, assignors to Caltexa Trust, Vaduz, Liechtenstein
Filed Sept. 8, 1961, Ser. No. 136,827
Claims priority, application Germany, Sept. 8, 1960, C 22,304
8 Claims. (Cl. 74—826)

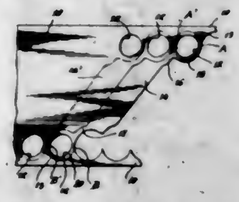


1. In a machine tool having a reciprocable tool slide and a workpiece turret mounted for angular indexing in a direction transverse to the direction of reciprocation of the tool slide: turret indexing means comprising, in combination, a relatively fixed support mounting said turret for angular indexing; releasable latch means interconnecting said support and said turret and providing for relative rotation of said turret in one direction while inhibiting relative rotation of said turret in the opposite direction; a relatively elongated sleeve element secured coaxially to said turret for rotation therewith; a relatively elongated bushing element slidable in said sleeve element through a predetermined stroke; said sleeve element having internal, inclined formations extending from its end nearest said tool slide for less than the length of said sleeve element; said bushing element having external, inclined formations intermeshable with said internal formations and having a length so as to be intermeshed with the latter during only a portion of said stroke and disengaged from said internal formations during the remainder of said stroke; said formations having a length and inclination such that, during relative sliding of said elements with said formations intermeshed, said elements are rotated relatively to each other through substantially the indexing angle of said turret; abutment means coacting with said bushing element and said support and limiting relative oscillation of said bushing element to substantially said indexing angle; means biasing said bushing element outwardly of said sleeve element toward said ram in its retracted position, with said formations fully intermeshed; said ram, in its advance toward said turret, engaging said bushing element and moving the latter inwardly of said sleeve

element; the inclination of said formations being oriented so that such inward movement of said bushing element tends to rotate the latter in said opposite direction, whereby said bushing element is rotated in said one direction until said formations are disengaged; and biasing means operatively connected to said support and said bushing element and charged by rotation of the latter in said opposite direction, said last-named biasing means, upon disengagement of said formations, rotating said bushing element in said one direction through its limit of oscillation as determined by said abutment means; said first-named biasing means, as said ram is retracted from said turret, moving said bushing outwardly of said sleeve element to reengage said formations whereby, due to said abutment means inhibiting further rotation of said bushing element in said one direction, said sleeve element is rotated in said one direction to advance said turret through the indexing angle.

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**3,164,038**
**METHOD OF MAKING SCISSORS**
**Fred E. Ahlbin, 3663 Congress St., Greenfield Hill, Conn.**
**Filed Dec. 12, 1962, Ser. No. 244,081**
**2 Claims. (Cl. 76—104)**



1. The steps in the method of making scissors comprising cutting a series of blanks side by side from sheet metal of the desired thickness, the blanks each comprising a double blade portion having first and second back edges laterally spaced, a generally ring-shaped finger loop at each end thereof each having an outer convex edge and being connected to one end of the double blade portion at a different one of said back edges by a curved shank bowed in a direction toward the other back edge with a concave inner edge, the blanks being cut from the sheet metal in adjacent relationship on common lines, the inner concave edge of each shank of each blank being cut on a common line and of the same shape as the outer convex edge of a loop of the adjacent blank; shaping each of said blanks to the configuration of a pair of scissors members, said double blade portion including a first blade portion and a second blade portion interconnected by a central web, each of said blade portions terminating in one of said curved shanks; substantially simultaneously removing the central web to separate said blank into a pair of scissors members and piercing each of said scissors members to form a pivot hole in the shank end of its blade portion; and pivotally interconnecting pairs of pierced members to form scissors.

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**3,164,039**
**INTERNAL TUBE FINISHING MACHINE**
**Donald B. Woods, Huntington, W. Va., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed Aug. 31, 1962, Ser. No. 220,721**
**3 Claims. (Cl. 77—1)**

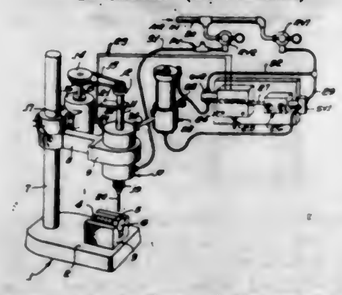
1. A pull type reaming apparatus for use in reaming an unmachined, substantially cylindrical, inside surface of a tubular workpiece comprising an elongated body having a forward end and a rearward end, an oil-resistant cutting-tool pilot characterized by an annular ringlike configuration attached to the body intermediate the said forward and rearward ends and having an outside diameter at least equal to the diameter of the unmachined inside surface of the workpiece, said annular ringlike cutting-tool pilot being of a material possessing high resiliency whereby the pilot is particularly adapted to respond by self-adjustment to irregularities of the said inside surface, a floatable end-cutting tool having a cutting portion facing toward the pilot and being rigidly attached to the body rearward of the annular ringlike pilot whereby the floating action of the cutting tool in conjunction with said annular ringlike pilot results in the cutting tool being evenly



aligned within the said workpiece as it passes therethrough, thus providing for the attainment of a reamed tubular hole characterized by a high degree of surface smoothness and of substantially constant dimension throughout the length thereof, drive-attaching means on the body and forward of the pilot, pull-type longitudinal driving means for exerting tension force attached to the drive-attaching means, at least one coolant exit port in the body intermediate the pilot and the cutting tool, coolant-receiving means in the body forward of the pilot and coolant-carrying means in communication with said exit port and said coolant-receiving means.

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**3,164,040**
**HYDRO-PNEUMATIC DRILLING CONTROL SYSTEM**
**Rollin A. Reynolds, Palos Verdes, Calif., assignor to Dyna Systems Inc., Torrance, Calif., a corporation of California**
**Filed Apr. 4, 1960, Ser. No. 19,616**
**16 Claims. (Cl. 77—32.3)**



3. Apparatus for feeding a spindle toward a work piece, comprising: a spindle; hydraulic fluid pressure operated means for feeding said spindle in the direction of said work piece; and means for effecting slight reciprocation of said spindle relative to said work; said spindle reciprocating means including fluid pressure operated fluid moving means for bleeding a quantity of hydraulic fluid from said spindle feeding means to move the spindle away from the work piece and reinjecting said quantity of hydraulic fluid into said spindle feeding means to move the spindle towards the work piece.

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**3,164,041**
**BORING BAR**
**Ragnar L. Caristedt, Ligonier, Pa., assignor to Kennametal, Inc., Latrobe, Pa., a corporation of Pennsylvania**
**Filed Nov. 13, 1962, Ser. No. 237,188**
**7 Claims. (Cl. 77—58)**

1. In a boring bar; an elongated hollow cemented carbide shank, a steel cutting element support member at one end of said shank, a drawbar fixed to said support member and extending through the shank, means at the end of the drawbar opposite the support member for preloading said drawbar in tension to a predetermined measured

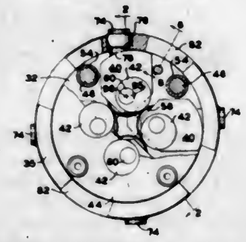




degree, and a ring-like key member disposed between the support member and the adjacent end of said shank having lug means on opposite sides thereof drivingly engaging both the shank and the support member.

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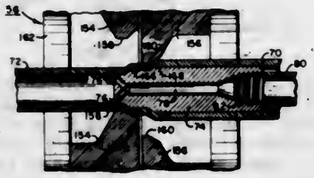
**3,164,042**
**APPARATUS FOR ROLL FORMING WORKPIECES**
**Edward C. Hanna, Blue Ridge Summit, and Donald E. Youtz and Jacob S. Rojahn, Waynesboro, Pa., assignors to Landis Machine Company, Waynesboro, Pa., a corporation of Pennsylvania**
**Filed Dec. 6, 1960, Ser. No. 74,160**
**8 Claims. (Cl. 80—6)**



1. A head for roll forming workpieces comprising a body adapted to be attached to a drive spindle, a plurality of die holders mounted on said body for pivotal movement about axes parallel to the axis of said body, dies mounted on the respective die holders for rotation about axes spaced from the pivotal axes of said die holders radially projecting operating members on said die holders, and means movable axially of said body displacing the outer ends of said operating members circumferentially of said body to thereby pivot each of said die holders simultaneously and equally about their respective pivotal axes to displace said dies radially of said body.

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**3,164,043**
**TUBE REDUCING MACHINE**
**Elmer D. Dilling, Las Vegas, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware**
**Filed Dec. 7, 1961, Ser. No. 157,745**
**6 Claims. (Cl. 80—11)**

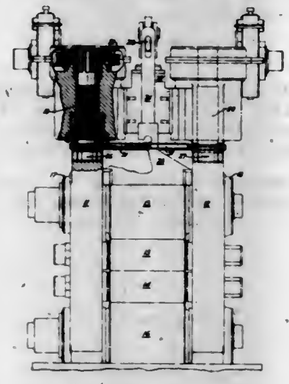


1. A tube reducing machine comprising:
(*a*) a frame,
(*b*) a tool rotatably mounted on said frame, said tool having a plurality of circular working elements in axially spaced relationship and with their axes parallel to the axis of a metal workpiece tube passing therethrough,
(*c*) means for rotating said tool around said metal workpiece tube,
(*d*) a stepped mandrel having a plurality of shoulders disposed inside said workpiece tube, and
(*e*) means for applying tension to an end of said workpiece tube to draw it through said tool,
each of said shoulders of said mandrel being aligned with one of the working elements of said tool, an edge of each of said working elements being adapted to cause plastic deformation of the metal of said workpiece tube onto a step of said mandrel and following the shoulder of said mandrel with which each is aligned, to produce reduction of the internal diameter of said workpiece tubing.



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**3,164,044**
**ROLLING MILLS**
**George E. Trapp, Bethel Park, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed July 14, 1961, Ser. No. 124,170**
**5 Claims. (Cl. 80—56)**



1. For use in combination with a rolling mill having a housing;
a pair of rolls arranged in said housing;
roll adjusting means for at least one of said rolls mounted in said housing for moving said one roll toward and away from the other;
an insert element arranged between and cooperating with said roll adjusting means and the adjustable roll;
apparatus comprising:
a platform for carrying said insert element and supported by said roll adjusting means, and
means for moving said insert element from between said roll adjusting means and said adjustable roll to a position where said element is carried by said platform.

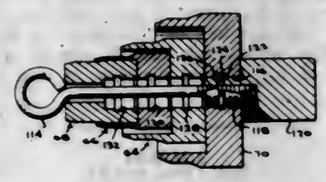
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**3,164,045**
**TUBE SWAGING TOOL**
**Michael Lee Kennedy, Denver, Colo. (89 Broadway, San Francisco, Calif.)**
**Filed June 8, 1961, Ser. No. 115,738**
**1 Claim. (Cl. 81—15)**

A compound swaging tool for swaging the ends of tubular members, the tool comprising:
(*a*) an end wall having an axial bore formed therein and having an internal groove opening on the bore;
(*b*) impact receiving means extending outwardly from one side of the end wall;
(*c*) the impact receiving means including a head having a shank extended into the end wall bore and hav-

ing a snap ring engaged in said groove, the impact receiving means extending outwardly from said side of said end wall;

(*d*) at least one tubular swaging wall projecting outwardly from the other side of the end wall;

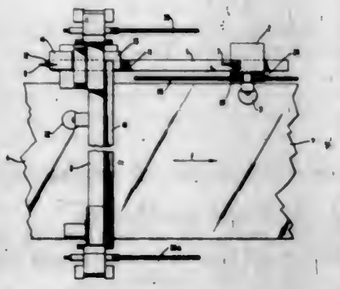


(*e*) the swaging wall including an outer guide section and an inner swaging portion; and

(*f*) a sloping cam wall connecting the guide section and swaging portion.

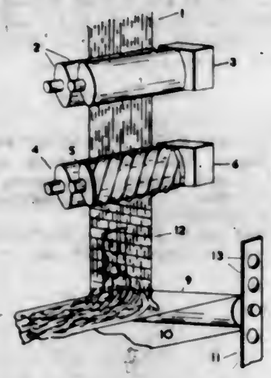
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**3,164,046**
**METHOD AND APPARATUS FOR AUTOMATICALLY CUTTING A STRIP OF GLASS**
**Robert Arnaud, La Celle-Saint-Cloud, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Seine, France**
**Filed June 14, 1960, Ser. No. 36,036**
**Claims priority, application France June 19, 1959**
**20 Claims. (Cl. 83—7)**



1. A method of cutting lengths of glass from a ribbon of glass moving in the direction of its length by means of a scoring tool mounted for travel along a guideway adapted to transverse the ribbon of glass and to be movable lengthwise of the ribbon, comprising directly securing to the ribbon a measuring means adapted to enter into locking engagement with the guideway before and after each measuring operation carried out by a relative displacement between the measuring means and the guideway over a predetermined distance corresponding to the required length of the piece of glass to be cut, securing the guideway directly to the glass ribbon and to the measuring means, to thereby position the scoring tool relatively to the glass ribbon for the cutting operation, moving the scoring tool along the guideway in contact with the glass for scoring the ribbon transversely while the guideway is directly secured to the glass ribbon, releasing the guideway from the ribbon and measuring means after the scoring tool has completed its movement across the ribbon, and moving the guideway through said predetermined distance along and relatively to the measuring means and ribbon while maintaining the measuring means directly fixed to the ribbon.

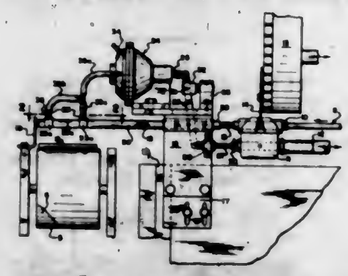
**3,164,047**
**METHOD OF CUTTING FILAMENT TOW AND CONVEYING THE SLIVERS AWAY**
**Jack Albert Spicer, Coventry, and Harold Oatridge Farmer, Rugby, England, assignors to Courtaulds Limited, London, England, a British company**
**Filed Nov. 15, 1961, Ser. No. 152,570**
**Claims priority, application Great Britain, Nov. 15, 1960, 39,146/60; Dec. 15, 1960, 43,159/60**
**8 Claims. (Cl. 83—23)**



1. A method for converting continuous filament tows to slivers of staple fibres comprising feeding a substantially flat band of tow of continuous filaments, cutting the fed tow at uniformly spaced intervals, to produce a coherent continuous band of cut tow and feeding the band of cut tow downwardly continuously collecting the downwardly fed cut tow as a sliver and conveying the sliver in the general direction parallel to the plane of the band of cut tow and transverse to its direction of travel.

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**3,164,048**
**CUTTING AND HANDLING OF CIGARETTES**
**William E. Wray and Wilburn F. Simerson, Reidsville, N.C., assignors to The American Tobacco Company, New York, N.Y., a corporation of New Jersey**
**Filed May 2, 1963, Ser. No. 277,586**
**3 Claims. (Cl. 83—98)**



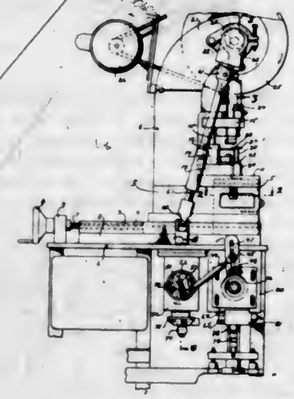
1. In a cigarette making machine wherein a cigarette rod is supported in a reciprocating ledge moving axially of the cigarette rod while the rod is cut transversely into a cigarette length portion by a travelling knife and the cut cigarette is discharged onto a moving carrier belt, a cigarette dropper for deflecting a cut cigarette from the path of the cigarette rod to the path of the carrier belt which comprises a trough-shaped receptacle open in the direction in which the cigarette is to be deflected and adapted to receive a cut cigarette moving along the path of the cigarette rod, an air inlet positioned approximate each end of the receptacle and extending into the interior thereof, air tubes communicating between the ends of the air inlets and the discharge side of a diaphragm



pump, and a rocker arm one end of which is connected to the diaphragm of the pump and the other end of which is connected to the reciprocating ledger.

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**3,164,049**
**PUNCH PRESS HAVING RADIALLY EXPANSIBLE JAWS TO RECEIVE A CENTRALLY APERTURED WORKPIECE**
**Donald F. Nettleton and Stanley L. Anderson, both % A. N. Tool & Die, 518 S. Fair Oaks, Pasadena, Calif.**
**Filed Oct. 18, 1962, Ser. No. 231,491**
**2 Claims. (Cl. 83—206)**



1. A punch press for punching a ring of apertures in a circular blank, comprising:

(*a*) a rotatable collet assembly including a collet chuck having radially expansible jaws to receive a centrally apertured blank, and a centrally disposed push bar for expanding said jaws to grip said blank;

(*b*) means for journaling said collet means for rotation of said blank about a vertical axis;

(*c*) means for indexing said collet means and blank;

(*d*) a punch press including a punch and die set having an axis of operation parallel to and radially offset from the axis of rotation of said blank;

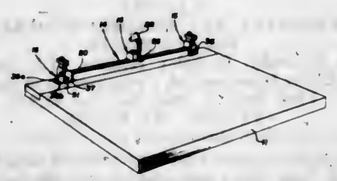
(*e*) a bed structure for said punch press including guide ways and adjustment means to shift said punch press and die set radially with respect to said blank;

(*f*) a drive assembly connecting said punch press and said collet means, said drive assembly including indexing means to turn said blank through a predetermined arc with each operation of said punch press;

(*g*) and means for actuating said push bar on indexing said blank through a complete circle to release said blank.

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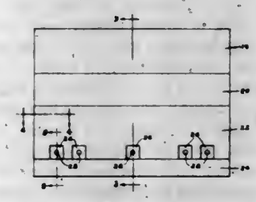
**3,164,050**
**MULTIPLE HOLE PUNCH**
**Harold H. Allds, 3066 Stelling Drive, Palo Alto, Calif.**
**Filed June 27, 1961, Ser. No. 120,026**
**1 Claim. (Cl. 83—387)**



In a multiple hole punch for punching holes in sheets of material, a base, said base having a relatively large upwardly facing work supporting surface which is planar throughout its entire area, a plurality of spaced punch heads mounted on said base adjacent one margin of the base, each of the punch heads having a vertically reciprocable male die, a common operating shaft connecting said punch heads, one of the punch heads being located at each end of the common operating shaft, a handle affixed to said shaft for rotation of the shaft, cooperative means carried by the shaft and vertically reciprocable male dies whereby as the shaft is rotated back and forth by the handle affixed thereto, the vertical reciprocable male dies are raised and lowered, female dies mounted on the base adjacent the punch heads and adapted to receive the male dies as they are lowered, and hold-down means mounted on the male dies and reciprocable with the male dies, said hold-down means comprising a single unitary elongate L-shaped hold-down member extending between all of the punch heads and being connected at least two of the vertically reciprocable male dies so that the male dies and the hold-down member are movable in unison, the L-shaped hold-down member having one leg with a planar lower surface lying in a plane parallel to the planar upwardly facing work surface of the base and having a portion thereof underlying said male dies, said leg of the L-shaped hold-down member being provided with holes in alignment with the male dies to permit the male dies to pass therethrough, said hold-down member being positioned on the male dies so that as the male dies are moved downwardly by operation of the handle affixed to said shaft, the hold-down member is first moved into engagement with the sheet of material to be punched to grasp and hold the sheet before the male dies are moved into contact therewith and to apply an even pressure to the sheet of material as the male dies are being advanced therethrough into the female dies to thereby remove any tendency of the sheet of material to curl or crawl while the holes are being punched by the male dies.

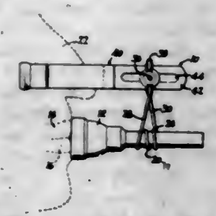
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**3,164,051**
**POSITIONING DEVICE**
**Harrison Dunham, 71 Symphony Road, Suite 3, Boston, Mass.**
**Filed Apr. 13, 1961, Ser. No. 102,704**
**3 Claims. (Cl. 83—441)**



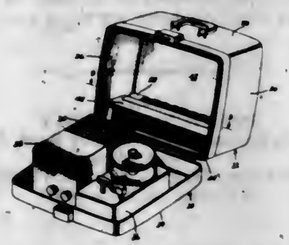
1. A positioning device comprising a base, a guide member having a portion only above the bottom thereof attached to said base and having a fold at one side and at the bottom, said bottom fold and a portion of said guide member above it being free of said base, and a locating member attached to said guide member and movable therewith and having a guide cut-out therein extending from the bottom edge thereof inwardly and opposite a lower portion of said guide member adapted to receive a punch member, the bottom edges of said guide member and said locating member being in substantial horizontal alinement, whereby said punch member is adapted to punch a hole in a predetermined position in a sheet extending into said guide member and opposite said cut-out.

**3,164,052**
**ADJUSTABLE SUPPORT FOR WIND INSTRUMENTS**
**Haig A. De Mire, 17361 Roseland, Southfield, Mich.**
**Filed Apr. 30, 1964, Ser. No. 363,714**
**7 Claims. (Cl. 84—398)**



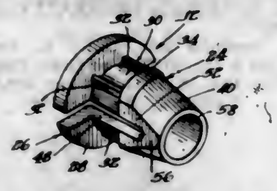
1. An adjustable support for a musical wind instrument having a mouthpiece comprising a first support member connectable to the instrument adjacent the mouthpiece and extending upwardly therefrom, a second support member having a forwardly extending arm and two laterally spaced rearwardly extending arms, the rear ends of said spaced arms mounting compressive resilient pads engageable with the bilateral bone supported cheek portions of the person playing the instrument, and means securing the first support member for angular and linear adjustment longitudinally of the forward arm of said second support member.

**3,164,053**
**APPARATUS FOR DISPLAYING COLORED LIGHT**
**Orvil F. Shallenberger, 2512 Cle Elum Drive, Fort Wayne, Ind.**
**Filed May 2, 1961, Ser. No. 107,082**
**10 Claims. (Cl. 84—464)**



1. Apparatus for displaying colored light comprising an enclosure having a hinged cover, said cover having a back wall and two opposite side walls, an extended area flat display screen mounted on said back wall and having opposite side edges and top and bottom edges, a sheet-like mask element having one longitudinal edge disposed adjacent to said display screen and to said bottom edge, said mask element lying in a plane which intersects said screen at an angle of approximately ninety degrees, said mask element extending in a direction between said side edges and having a plurality of apertures arranged in a row in said direction, an upright partition spaced from said back wall in substantial parallelism therewith and depending from said mask element, said partition having a plurality of colored windows extending in a row between the opposite side walls of said cover, a plurality of divergent beam light sources disposed adjacent to said colored windows respectively on the side opposite said back wall, and an inclined mirror positioned in the space between said partition and said back wall and extending between said side walls, the angle of inclination of said mirror being such as to reflect light from said sources upwardly onto said screen at an acute angle with said screen, reflected light from said mirror passing upwardly through the apertures of said mask element before impinging said screen.

**3,164,054**
**BUSHING WITH RIB AND SHOULDER MEANS**
**Donald L. Biesecker, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware**
**Filed Apr. 13, 1962, Ser. No. 187,401**
**3 Claims. (Cl. 85—8.8)**



1. A device of the type described for connecting a first workpiece having a shank element with a second workpieee having an aperture therethrough, said device comprising a member having a shank portion for extending through the workpiece aperture, and a head portion integral with a trailing end of said shank portion for overlying one side of the apertured workpiece, means providing a bore extending through said head portion and into said shank portion for receiving said shank element of the first workpiece, said member having generally axially extending slot means transversing said head and shank portion and terminating short of the entering shank extremity, said shank portion including a first section adjacent said head portion intersected by said slot means and having a predetermined outer diameter, a plurality of circumferentially spaced generally longitudinally extending, relatively narrow, radially deformable ribs on and projecting laterally of said first section to a limited extent for enabling the device to fit snugly within the workpiece apertures of various diameters, means on said shank portion providing laterally extending relatively rigid shoulder means spaced a predetermined distance from said head and located substantially at entering ends of said ribs for projecting behind the apertured workpiece when the device is applied thereto, said shoulder means integrally joined with and extending circumferentially from opposite sides of a complementary rib, the circumferential extent of said shoulder means being substantially greater than the circumferential width of said rib whereby to provide the required support for said rib, said ribs being deformable and also providing shoulder means engageable behind the apertured workpiece when the apertured workpiece has a thickness less than said predetermined distance, said shoulder means providing a rigid shoulder surface having a diameter at least substantially as great as a diameter of a circle defined by radially outer edges of said ribs for enabling said last named means to protect said ribs against premature deformation during application of the device to the apertured workpiece, and means projecting inwardly from a wall of said bore in the vicinity of said relatively rigid shoulder surface and engageable in a recess provided in said shank element for positively resisting withdrawal of the shank element from the bore.

**3,164,055**
**SHEET-METAL NUT FORMED WITH SEALER ESCAPE PORTS**
**William B. Duffy, Berkeley Heights, N.J., assignor to United-Carr Incorporated, a corporation of Delaware**
**Filed July 28, 1960, Ser. No. 45,928**
**3 Claims. (Cl. 85—32)**

1. In a one-piece sheet-metal nut in which (*a*) an upstanding shell provides a circumferentially-disposed series of wrench faces, (*b*) a web extends inwardly from the top of the shell, (*c*) the web has a central hole, (*d*) the metal around the hole is formed to make threaded engagement with a bolt, (*e*) an annular washer-like base extends outwardly and downwardly from the bottom of the shell, (*f*) the outer edge of the washerlike base is substantially circular and undulates axially of the nut, and (*g*) a circumferentially-disposed series of facets are formed on the washerlike base, one facet opposite each of said wrench faces; the improvement which comprises:

(I) each facet being a downwardly-bent local-portion of the washerlike base and being radially spaced from the wrench face with which it is aligned,

(II) the wrench-face-confronting boundary of each facet being an arc the convexity of which is toward the wrench face and the ends of which are at spaced points on the outer edge of the washerlike base,

(III) the outer edge of the washerlike base drooping downwardly between said spaced points and defining the opposite boundary of the facet,



(IV) the center of each said arc being opposite, and radially spaced from, the center of the wrench face with which the facet is aligned,

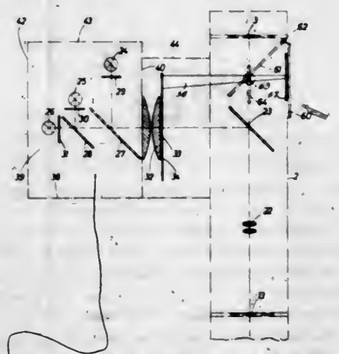
(V) the lowermost portions of the downwardly-drooping configurations at the outer edge of the washerlike base lying substantially in a common plane that is substantially perpendicular to the nut axis,

(VI) the top surface of the washerlike base being smooth and continuous, broken only by said facets, said facets taken collectively occupying at least the major portion of the outer edge of the washerlike base,

(VII) and the top surface of the washerlike base including a smooth and continuous annular zone completely surrounding the shell of the nut and extending from the shell to the facets, the surface of said zone being at an unchanging level as said zone is traversed circumferentially of the nut.

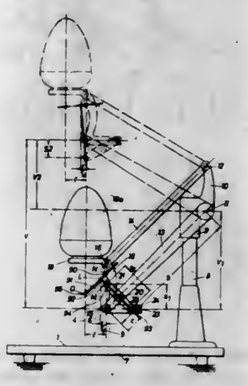


**3,164,056**
**PHOTOGRAPHIC COPYING MACHINE**
**Richard Wick, Am Dullanger 3, Grunwald, near Munich, Germany, and Hans-Ado Brandt, Scharfreiterplatz 40, Munich, Germany**
**Filed Mar. 22, 1960, Ser. No. 16,756**
**Claims priority, application Germany, Mar. 26, 1959, A 31,690**
**7 Claims. (Cl. 88—24)**



1. In a photographic printer, in combination, a light source; objective means for projecting light from said source to a light-sensitive paper for exposing the latter and producing a print thereon; measuring means for measuring the light directed by said objective means to the paper; and means between said measuring means and objective means for projecting to said measuring means an image of the exit pupil of said objective means.

**3,164,057**
**FOCUSING DEVICE FOR ENLARGERS AND THE LIKE**
**August Seizinger, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany**
**Filed July 28, 1961, Ser. No. 127,719**
**Claims priority, application Germany, July 30, 1960, A 35,242**
**22 Claims. (Cl. 88—24)**



1. In a photographic enlarger, copier, or the like, in combination, objective means having an optical axis and being movable therealong; bearing means providing a turning axis perpendicular to a plane which includes said optical axis and spaced therefrom by a distance equal to the focal length of said objective means; drive means; moving means operatively connected to said drive means for moving and locating said drive means at all times along a first straight line, in said plane, parallel to said optical axis and intersecting said turning axis; and lever means operatively connected with said objective means, bearing means and drive means for turning about said turning axis and moving said objective means along said optical axis in response to movement of said drive means along said first straight line, said lever means maintaining the intersection between a second straight line, in said plane and interconnecting said objective means and turning axis, and a third straight line, also in said plane and perpendicular to said second straight line and passing through said drive means, at all times in a fourth straight line which is parallel to and located between said optical axis and first straight line.

**3,164,058**
**FILM PROJECTOR AND OPTICAL SYSTEM THEREFOR**
**Leo K. Kosowsky, Bridgeport, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York**
**Filed Dec. 1, 1960, Ser. No. 72,915**
**2 Claims. (Cl. 88—26)**

1. A film projector comprising a housing, a light source mounted near the rear of the housing including a reflector for projecting straight substantially parallel rays of light forwardly within the housing, a support member fixed within the housing in front of the light source at a location in the path of the straight substantially parallel rays adapted to slidably receive a film holder in the direction transverse to the path of light, a film holder adapted to be received in the support member and ar-

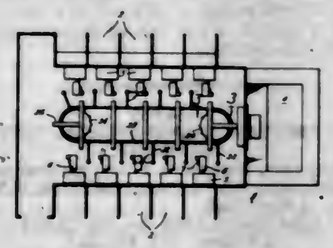
ranged to hold a piece of film having a given maximum dimension of the picture area in the path of the substantially parallel rays, first lens means comprising a plano-convex lens element having a diameter no less than approximately the maximum dimension of the picture area, fixed in position on the support member immediately in front of the path of the film holder and with its plane surface directed rearwardly, detent means in the support member and the film holder to releasably position the film holder in the transverse direction with respect to the first lens means, the first lens means being arranged to condense the parallel rays of light from the source in a forwardly converging cone after they have passed through



the piece of film, second lens means having a smaller diameter than the first lens means mounted for axial adjustment in the housing and positioned to be substantially entirely within the converging cone and adapted, in conjunction with the first lens means to project an image of a piece of film mounted in the film holder, wherein the housing comprises a lower portion supporting the light source, the support member and the first and second lens means, an upper portion comprising a cover to enclose the part of the housing to the rear of the path of the film holder, and a front cover portion to enclose the part of the housing in front of the path of the film holder, the upper portion and the front cover portion being removably affixed to the lower housing portion.

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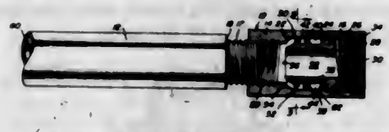
**3,164,059**
**MICROFILM SELECTOR**
**Robert E. Turrentine, Jr., 4542 Bellaire Blvd., Bellaire, Tex.**
**Filed Dec. 27, 1960, Ser. No. 78,638**
**14 Claims. (Cl. 88—28)**



11. A record filing and finding system including a series of stations each containing a microfilm viewer having a film magazine receiver, an endless conveyor having a travel circuit traversing said stations and comprising a succession of vertically tiered magazine storing cells, power operated means to effect travel of the conveyor, mechanism controlling the application of power to said means and for bringing any tier of cells into operating relation with any station selectively, magazine transfer mechanism at each station operative to transfer a magazine between the viewer receiver and any selected cell of a vertical tier positioned at the station and a central control station having control devices selectively operable to effect operation of the power applying mechanism and of the magazine transfer mechanism.

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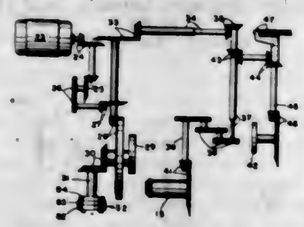
**3,164,060**
**GUN RECOIL, FLASH AND SOUND REDUCER ASSEMBLY**
**Edwin G. Dahl, Rte. 2, Billings, Mont.**
**Filed Feb. 20, 1963, Ser. No. 259,811**
**6 Claims. (Cl. 89—14)**



1. A gun recoil, flash and sound reducer assembly comprising an outer elongate cylindrical hollow imperforate tubular housing arranged to fixedly extend at its rear end from the forward end of a gun barrel, a relatively smaller inner elongate hollow tubular plug disposed concentrically within and in partly annular spaced relationship to said housing, imperforate annular means sealably securing said plug to said housing at their forward ends remote from the gun barrel affixing end, the rear end of said plug adjacent the gun barrel end being somewhat spaced therefrom providing an annular gas flow passage from the gun barrel bore to the annular space between said plug and housing, said plug having a bore in axial alignment with the bore of the gun, and a plurality of annular flange baffle means extending outwardly from said plug into said annular space toward and in snug contact with said housing each of said baffle means having a flat peripheral portion axially displaced with respect to the flat peripheral portion on adjacent baffle means.

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**3,164,061**
**GENERATOR AND METHOD OF GENERATION FOR SPUR, STRAIGHT BEVEL OR LIKE GEARS**
**Harry Pedersen, Rochester, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York**
**Filed Dec. 26, 1962, Ser. No. 247,220**
**10 Claims. (Cl. 90—3)**

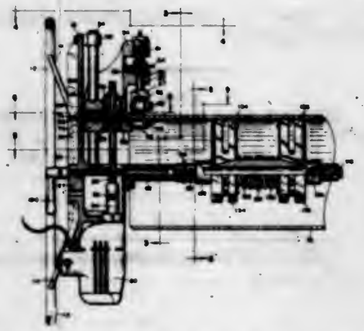


1. A generator for a gear whose teeth extend substantially in planes containing the gear axis, comprising a tool support upon which tool means are mounted for cutting motion on opposite tooth sides and a work support rotatable about said axis, said supports being mounted for relative generating motion, including a rotation about said axis, to roll a gear on the work support upon said tool means which represent tooth surfaces of a generating member, said supports also being mounted for relative advance and withdrawal in a direction approximately depthwise of a gear tooth at a mean point of generation, actuating means for effecting said generating motion and, in time therewith, effecting said relative advance and withdrawal, said actuating means being arranged to effect the relative withdrawal during the initial phase of the generation, while an end portion of the profile of one tooth side is being generated, and to effect the relative advance during the concluding phase of the generation, while the corresponding end portion of the profile of the opposite tooth side is being generated, and to maintain said supports against relative motion in said depthwise direction throughout the middle portion of the generation occurring between said withdrawal and advance, while major portions of the opposite tooth sides are being generated.



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**3,164,062**
**PIPE CUTTER**
**John D. Hogden, 802 Ave. A, and Joe B. Lovett, 506 Ave. A, both of Sweeny, Tex.**
**Filed June 30, 1961, Ser. No. 121,197**
**7 Claims. (Cl. 90—12)**



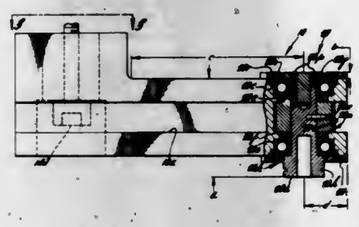
1. A machine for cutting bevels on the extremities of pipe comprising: a frame; power means mounted on the frame; a rotatable shaft operatively connected to the power means and extending in a plane parallel to the frame; two adjacent cutters slidably mounted on the rotable shaft, with one cutter being of shorter radius than the other; a roller bearing wheel support; means adapted to permit slidable movement of the roller bearing wheel support along a plane parallel to the frame means upon which a roller bearing wheel is mounted and including a rod which extends from said roller bearing wheel support and parallel to the frame; and a compression spring mounted within said roller bearing wheel support and about said rod and adapted to give with variations in thickness around the perimeter of the pipe, so that the cutter can be placed on the edge of the pipe, the power means operated, and the frame turned to form the bevel.

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**3,164,063**
**EXTENSION MILLING HEAD**
**Harold W. Sherman, Inglewood, Calif., assignor to The J. & M. Co., Inglewood, Calif., a corporation of California**
**Filed Mar. 11, 1963, Ser. No. 264,185**
**3 Claims. (Cl. 90—17)**

1. An extension milling head for a milling machine having a drive spindle with a connected drive pulley and a spindle housing surrounding the spindle, the combination comprising:

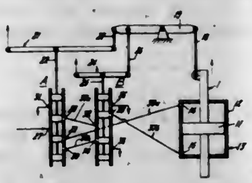
a cutting tool assembly comprising a cutting tool support shaft, a pulley mounted to said shaft for rotation thereof, and a bearing positioned on both sides of said pulley for rotatably mounting said shaft; a rigid and elongated mounting member including bearing housing for each bearing for mounting the bearings at substantially a first end of the member, the bearing housings including a portion having a smaller diameter in between the faces of the mounted bearings for rotatably mounting said shaft and preventing motion of the shaft in the member parallel with the axis of the shaft and a recess extending parallel with the length and in between sides of the elongated member for allowing free rotation of the cutting shaft pulley and to allow a drive belt to be



coupled to the pulley and move clear of the first end of the member; an adapter arranged for rigidly connecting the member at substantially a second end thereof to a milling machine spindle housing with the first end of the member projecting outwardly from and perpendicular to a plane through the axis of such milling machine spindle; and a drive belt arranged for coupling the rotation of a drive pulley connected to the milling machine spindle to the cutting shaft pulley.

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**3,164,064**
**FLUID-ACTUATED SERVOMECHANISM WITH MULTIPLE INPUTS**
**Robert L. Carson, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Nov. 7, 1963, Ser. No. 322,193**
**6 Claims. (Cl. 91—20)**



1. A fluid-actuated servomechanism with multiple control means comprising:

a servomotor with a double-acting fluid-responsive movable output member,

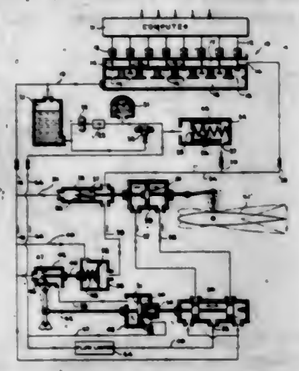
a source of fluid under pressure,

a plurality of servo valves controlling admission of fluid to said servomotor, each of said valves having a movable stem member arranged to provide communication between first and second pairs of ports when in a first position to one side of a neutral position and to provide communication between third and fourth pairs of ports when in a second position to the other side of said neutral position,

a plurality of first conduits connecting said valves in series flow relation through each of said first pairs of ports from said source to said servomotor, and

a plurality of second conduits connecting said valves in the same sequence through each of said second pairs of ports from said servomotor to drain.

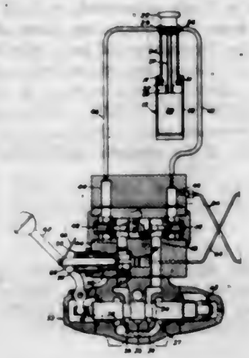
3,164,065
**INCREMENTAL DIGITAL FLUID ACTUATOR**
William Frantz, Winter Park, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Dec. 29, 1961, Ser. No. 163,292
16 Claims. (Cl. 91—365)



1. A digital input hydraulic actuator system comprising a circuit having two fluid paths, each having a variable area restriction therein, and a relatively incompressible fluid adapted to flow through said fluid paths, one of said fluid paths having a plurality of orifices therein sized in binary fashion, means for selecting the total orifice area through which fluid may flow, thus to establish an input command to the system by changing the quantity of flow through said one fluid path, the other of said fluid paths having an orifice area which varies inversely as the effective area in said one fluid path so that the sum of the areas of the restrictions of the two fluid paths remains constant, means for supplying a constant regulated flow of relatively incompressible fluid to flow in parallel through said fluid paths and therefore through said rectrictions, means for sensing the pressure difference across said two restrictions in parallel, and means for altering the restriction in said second fluid path so as to maintain constant said pressure difference, while at the same time producing a commensurate output motion.

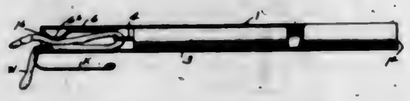
3,164,066
**HYDRAULIC MINE ROOF SUPPORTING DEVICES**
Colin M. Frye, St. Andrews, Milton, near Tewkesbury, Herbert Milburn, Drakes Bridge, Eckington, Pershore, and Richard H. B. Winder, Prestbury, Cheltenham, England, assignors to Dowty Mining Equipment Limited, Ashchurch, England, a British company
Filed Mar. 20, 1961, Ser. No. 96,746
Claims priority, application Great Britain, Mar. 23, 1960, 10,341/60
8 Claims. (Cl. 91—412)

1. In combination, a pair of double-acting hydraulic motors arranged in parallel relationship to one another, a pair of selector valves each hydraulically connected to the opposite sides of an individual motor to apply hydraulic pressure from a pressure source in alternate fashion to such sides, a pair of isolating valves in the hydraulic connections between the selector valves and corresponding sides of the motors, said isolating valves being biased to close the connections against the application of pressure to the aforesaid corresponding sides of the motors, and responsive to a predetermined pressure thereon to open the connections against such bias, and a pair of cross controls between the isolating valves and the other sides of the motors, each of which interconnects the aforesaid other side of one motor with the isolating valve in the hydraulic connection to the other motor, to communicate the pressure on the other side of the one motor to the isolating valve and to cause the latter to



open the connection when such pressure reaches the predetermined magnitude.

3,164,067
**DEVICE FOR BAITING FISH HOOKS**
Frank E. Hurst, 820 Piney Wood Drive, La Grange, Ga.
Filed May 7, 1962, Ser. No. 192,641
6 Claims. (Cl. 43—4)



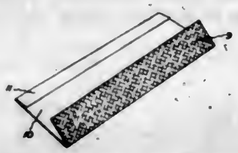
1. A device for use in baiting fish hooks or the like, comprising a casing having an open end and having an elongated opening in its wall; a plunger slidable within the casing; means extending through said elongated opening for shifting the plunger into retracted position within the casing and into projected position wherein the outer end of the plunger projects beyond the open end of the casing; an open hook on the outer end of the plunger adapted when the latter is projected to be engaged with the bait and to pull same partially within the casing when the plunger is retracted; and means on the casing adjacent its open end for normally locally constricting the diameter of the casing and for yieldably engaging the bait when the plunger is retracted, the bait being forced out of the open end of the casing by the plunger when next projected and caused to be impinged upon a fish hook held stationary at the said open end.

3,164,068
**METHOD OF MAKING A CONTAINER FOR PERISHABLE COMMODITIES**
Frederick David Linacre, Elwood, Melbourne, Victoria, and Ronald Lloyd Berriman, Essendon, Melbourne, Victoria, Australia, assignors to McFarlane and Burns Proprietary Limited, Richmond, Melbourne, Victoria, Australia
Filed Aug. 14, 1962, Ser. No. 216,822
Claims priority, application Australia, Aug. 18, 1961, 8,244/61
1 Claim. (Cl. 93—35)

A method of making pouches bearing printed matter comprising the steps of reversely printing said matter on one side of a first zone of a sheet of pliable, transparent, thermo-plastic material, folding said sheet so as to superimpose a second zone thereof upon said first zone so as to cover the reversely printed matter thereon and form a double layer and a protruding lip edge zone, folding about

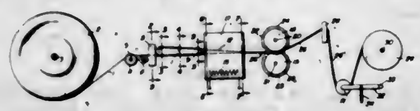


one-third of said double layer upon itself and heat sealing the edges of said folded over double layer to form an



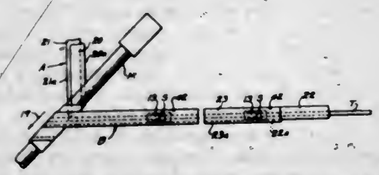
open mouthed pouch wherein the printed matter is untouchable.

3,164,069
**PAPER YARN AND METHODS AND APPARATUS FOR MAKING SAME**
Robert C. Wilkie, Millis, and John R. Swanton, Jr., Newton, Mass., assignors to Ludlow Corporation, Needham Heights, Mass.
Filed Sept. 17, 1962, Ser. No. 224,196
7 Claims. (Cl. 93—84)



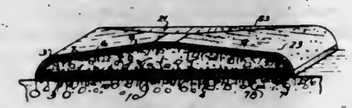
1. Apparatus for making paper yarn from paper strip comprising a paper supply from which a strip of paper is continuously withdrawn, means for continuously folding the opposite edge portions of the strip tightly upon themselves and conforming the strip into substantially circular cross-section; means for compacting and continuously reducing the diameter of the strip, means for drawing the paper strip from said supply through the folding and compacting means, comprising means for drawing the paper stock from said supply through the folding and compacting means comprises, a pair of rotatable members having opposed teeth which intermesh with each other but are spaced apart, each of the said pair of rotatable members having a circumferential flange extending beyond the teeth on the member, said spaced teeth and flanges defining a serpentine path through which the strip is drawn while being vertically and laterally compressed and crimped.

3,164,070
**CONTAINER OPENING PROVISION AND METHOD OF MAKING SAME**
Samuel A. Freese, Warson Woods, Mo., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Original application Jan. 2, 1962, Ser. No. 163,757, now Patent No. 3,093,293, dated June 11, 1963. Divided and this application Mar. 28, 1963, Ser. No. 268,790
9 Claims. (Cl. 93—94)



1. A method of making a container body with tear to open means simultaneously built thereinto during the winding step, said method including the steps of winding an inner wall layer in a spiral winder, winding an outer wall layer over said inner wall layer, and prior to winding said layers together, feeding a tear means upon the outer wall layer, forming a starting pull tab in said outer wall layer and in said tear means, and exposing the end of the pull tab by folding a portion of said outer wall layer to form a gap space in said outer wall layer.

3,164,071
**TRAFFIC MARKERS**
David Rubenstein, 2750 2nd Ave., San Diego, Calif.
Filed Aug. 19, 1960, Ser. No. 50,767
15 Claims. (Cl. 94—1.5)



1. A traffic control marker secured to a road surface comprising a porous supporting core, said core comprising a mixture of concrete and rubber, particles, and a composite stressed skin layer disposed about said core, said skin layer comprising a resilient polymeric resin with at least a portion of said core being penetrated and permeated and integrally bonded by said resin, and a fibrous reinforcement coextensive with said core and embedded in said resilient resin, and fillers and pigments disposed in said resin layer, said particles of fillers comprise hard, faceted particles providing light reflective surfaces to light striking said surfaces from headlights of moving vehicles and providing warning and traffic control.

3,164,072
**CONCRETE FINISHING APPARATUS**
James Leslie Blankenship and Elmore Fred Blankenship, Salem, Va., assignors to True-Line Corporation, Roanoke, Va., a corporation of Virginia
Filed Aug. 17, 1961, Ser. No. 132,175
4 Claims. (Cl. 94—45)

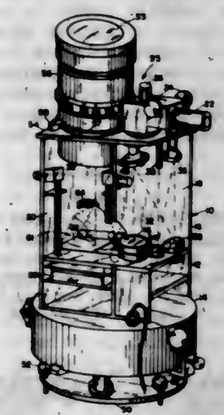


1. Concrete finishing apparatus for finishing a concrete surface adapted to be moved along a preselected path over the concrete surface comprising a pair of wheeled trucks adapted to run on a pair of transversely spaced parallel supporting tracks laid over the concrete surface, a truss framework fixed at its opposite ends to said wheeled trucks for bridging the space between said wheeled trucks and forming a rigid substantially horizontal supporting span extending transversely of the path and spaced above the concrete surface, an elongated and relatively flexible screed member extending transversely of the path below the truss framework for working the concrete surface, means carried by said truss framework for reciprocating said screed member and said trucks including manually adjustable means for selectively adjusting the height of said truss framework to a first level supporting the screed member in operative contact with the concrete surface and a second level wherein the truss framework occupies a position spacing the screed member out of operative engagement with the concrete surface, a plurality of vertically adjustable screed hanger means fixed to said truss framework movably supporting the screed member for transverse reciprocative movement relative to said path at a plurality of spaced positions along the screed member, each of said screed hanger means including manually adjustable means for vertically fixing the position of the adjacent portion of said screed member at selected distances from said truss framework for varying the contour of said screed member to produce selected crown con-

figurations on the concrete surface, said screed hanger means further including a pair of transversely spaced rollers mounted on the manually adjustable means and rotatable about horizontal axes parallel to the path of travel carried by the lower ends of the manually adjustable means, said screed member having a pair of inwardly facing channel-shaped track members for each of said pairs of rollers, said track members fixed to the screed member, the rollers confined to rolling engagment within the limits of the channel-shaped track which provides a track above and below the rollers to prevent vertical movement and in fore and aft directions relative to the path of travel and supporting the screed member for transverse reciprocative movement from said manually adjustable means.

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3,164,073
## ZENITH CAMERA
Everett L. Merritt, Falls Church, Va., assignor, by mesne assignments, to Raytheon Company, a corporation of Delaware
Filed June 9, 1961, Ser. No. 125,316
3 Claims. (Cl. 95—1.1)

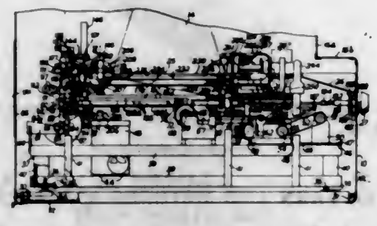


1. An astronomical camera comprising a housing having two compartments, one compartment carrying vertical autocollimator means embodying a folded optical system, a light source at one end of the system, a reflecting medium permanently located at the other end of the system, and viewing means for viewing images reflected by the reflecting medium, the second compartment carrying an optical lens system independent of said folded optical system, film retaining means in the optical path of said lens system, shutter means positioned between the film retaining means and the lens system, and means for rotating said housing about a first vertical axis, said viewing means being mounted on said housing for rotation about a second vertical axis whereby viewing may be accomplished simultaneously with rotational movement of the housing about said first axis.

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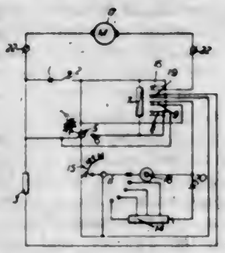
3,164,074
## ELECTROPHOTOGRAPHIC REPRODUCTION MACHINES
Frederick George Francis, London, Norman Charles Huxford and John Albert Seaward, Enfield, and George Herbert Burton, Bridlington, England, assignors to Carbonum Limited, London, England, a company of Great Britain
Filed June 22, 1960, Ser. No. 38,057
Claims priority, application Great Britain June 24, 1959
2 Claims. (Cl. 95—1.7)

1. An electrophotographic copying machine comprising a housing containing copy material supply means for supplying light-sensitive copy material in strip form, cutter means for cutting said copy material strip into copy sheets, exposure means for producing images of an original on said copy sheets, developing means for developing said images on said copy sheets, and means for passing said copy sheets through said exposure means and said developing means and manually adjustable sheet length selector means extending from said housing and coupled to cutter means for conditioning said cutter means to cut sheets of selectively variable length from said strip.



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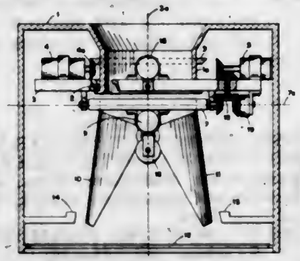
3,164,075
## AUTOMATIC BATTERY TEST AND CONTROL CIRCUIT FOR PHOTOGRAPHIC CAMERAS
Heinz Schulze, Dresden, Germany, assignor to VEB Kamera- und Kinowerke Dresden, Dresden, Germany
Filed Oct. 27, 1961, Ser. No. 148,147
3 Claims. (Cl. 95—10)



3. In a photographic camera having a moving coil galvanometer connectible to a battery and an electric device drivable by said battery, the provision of a first circuit comprising a first switch, a first resistor and said galvanometer whose moving coil deflects to a predetermined operating position in the case of adequate battery charge when said first circuit is completed by actuation of said first switch, a second circuit comprising a self-holding relay device having an operating winding, the battery and a second switch operable by said moving coil when the latter reaches said predetermined operating position, said second circuit being completed on actuation of said second switch, said relay device having a first set of contacts in said first circuit and arranged so as to break on operation of said relay device and a second set of contacts to connect the battery to the electric device on operation of said relay device, and a third circuit comprising a third set of contacts of said relay device, which third set of contacts close on operation of said relay device, a photoelectric cell, a resistor connectible to a further battery, said galvanometer, and selecting means for alternately operatively connecting said photo-cell and said resistor together with said further battery in said third circuit for effecting change of current through said galvanometer whereby the latter receives a current proportional to the relevant exposure factor, said third circuit being effective on the operation of said relay device.



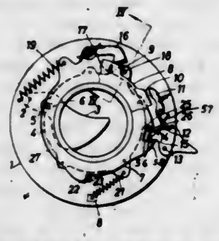
3,164,076
## IMAGE INTERCEPT TRACKING DEVICE
David J. Sweigart and Phillip W. Carmack, Huntsville, Ala., assignors to The United States of America as represented by the Secretary of the Army
Filed Jan. 14, 1963, Ser. No. 251,450
10 Claims. (Cl. 95—36)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An image intercept tracking device for simultaneously obtaining trajectory traces for a plurality of missiles comprising: a camera for recording the missile trajectories and images; a lens mounted on said camera; a film plate carried by said camera; a plurality of telescopes movably mounted for rotation about an axis adjacent said camera for tracking said missiles, said telescopes having their rotational axes lying upon a line passing through the rear nodal point of said lens; means within said camera defining a plurality of apertures for restricting the exposed portions of said plate to a small area immediately surrounding the images; and control means interconnecting said aperture defining means and said telescopes and responsive to the movement of said telescopes for forcing said apertures to duplicate precisely the motion of said telescopes.

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3,164,077
## SHUTTER-DIAPHRAGM ASSEMBLY FOR CAMERAS
Albert Mulats, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed May 21, 1962, Ser. No. 196,210
Claims priority, application Germany, May 19, 1961, A 16,708
7 Claims. (Cl. 95—63)



1. In a shutter-diaphragm assembly for a camera, in combination, support means; a plurality of shutter blades turnably carried by said support means for movement between closed and open positions; shutter ring means turnably carried by said support means and operatively connected to said blades for turning the latter from said closed to an open position when said shutter ring means turns in one direction from a given rest position thereof and for returning said blades to said closed position thereof when said shutter ring means returns to said rest position thereof; first spring means cooperating with said shutter ring means for returning the latter to said rest position thereof; cocking ring means also supported for rotary movement by said support means and turnable from a given rest position to a given end position and then back to said rest position thereof; second spring means, stronger than said first spring means, urging said cocking ring means to return to said rest position thereof; manually operable means cooperating with said cocking ring means for turning the latter in opposition to said second spring means from said rest position to said end position and for then releasing said cocking ring means for return by said second spring means to said rest position thereof; coupling means operatively connected to both of said ring means for coupling said cocking ring means to said shutter ring means during return of said cocking ring means to said rest position thereof, said second spring means acting through said cocking ring means, said coupling means, and said shutter ring means to turn the latter away from said rest position thereof in opposition to said first spring means, whereby the blades move from their closed position and become opened to a progressively increasing degree as said shutter ring means turns with said cocking ring means while the latter returns to its rest position; and manually adjustable means for providing a selected opening within a given range of openings and cooperating with said coupling means for uncoupling said ring means from each other when said shutter ring means has turned with said cocking ring means through an angle at which said blades will provide any preselected opening within said range in accordance with the adjustment of said manually adjustable means, whereby upon uncoupling of said rings from each other said first spring means returns said shutter ring means to said rest position thereof so as to return said blades to their closed position, so that the extent to which the blades are opened is preselected to enable the blades to act also as a diaphragm.

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3,164,078
## TENT VENTILATING DEVICE
Hung Tao Sheng, 748 Alexander St. SE., Grand Rapids, Mich.
Filed Apr. 23, 1962, Ser. No. 189,571
1 Claim. (Cl. 98—37)



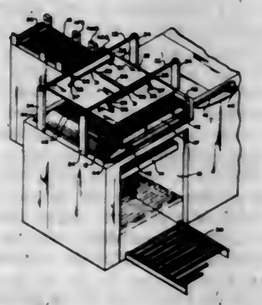
A device for ventilating a tent constructed of canvas or other flexble material, comprising: a rigid molded plastic body of upwardly tapering form having a front wall and a rear wall, said walls being connected at their sides and being bowed apart between the sides to provide an air passage between the open bottom and the open top of said rigid body, said front wall extending upwardly beyond the rear wall and having its upper part adapted for insertion through a slit in a tent wall upwardly from the outside of the tent to the interior thereof whereby the front wall of the device flexes the material of the tent above said slit outwardly and the rear wall of the device flexes the material of the tent below said slit inwardly thus to maintain the slit in open condition, said upper part of the front wall of the device having an aperture therethrough to facilitate its attachment to the inside of the tent wall above the slit therethrough, and a screen across the open bottom of said body.

**3,164,079**
**MINE SAFETY APPARATUS**
**Arnold F. Ross, 2448 S. 7th St., Columbus, Ohio**
**Filed Apr. 18, 1963, Ser. No. 273,887**
**4 Claims. (Cl. 98—50)**



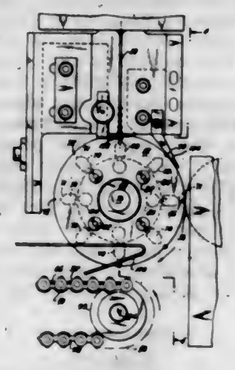
1. A safety apparatus for use in a mine having a shaft and at least one elongated tunnel with a floor and a roof and communicating with said shaft comprising a main conduit means having an end extending through said shaft to the exterior of said mine, a branch conduit means extending along said tunnel and having one end in communication with said main conduit means, a plurality of emergency stations positioned along said branch conduit means, means for providing air and vacuum to each of said stations from the exterior of said mine, means for providing water to each of said stations from the exterior of said mine including a water outlet secured to said branch conduit means at each of said stations, a water supply line extending through said branch and main conduit means to a source of water supply exterior of said mine, branch water lines extending from said water supply line and having a free end projecting through each of said water outlets, manually operable petcock means secured to said free end of each of said branch water lines, each of said water outlets including a T-fitting having an internally threaded opening defined therein, an externally threaded plug member receivable in said opening, said plug member having an aperture defined therethrough including a conical portion and an internally threaded portion, an apertured conical sealing member formed of a malleable material receivable in said conical portion and an externally threaded, apertured pressure member receivable in said internally threaded portion in pressing relationship to said sealing member, said branch water line extending through the apertures in said sealing member and in said pressure member.

**3,164,080**
**BAG PALLETIZER**
**Frank H. Miller, Jr., Louisville, Ky., assignor to Miller Engineering Corporation, Louisville, Ky., a corporation of Kentucky**
**Filed June 9, 1961, Ser. No. 116,062**
**11 Claims. (Cl. 100—35)**



1. In a process for automatically loading bags onto pallets, in which a patterned bag layer is automatically transferred from a receiving member onto an elevator platform and in which the elevator platform is incrementally lowered to receive successive patterned bag layers; the improvement which comprises the steps of moving the receiving member away from said patterned bag layer so as to remove said receiving member from beneath said patterned bag layer, engaging the top surface of said patterned bag layer and applying vertical pressure thereto in order to maintain a horizontal planar surface on said patterned bag layer and to hold said patterned bag layer intact while the receiving member is being removed.

**3,164,081**
**ELECTRONIC COMPONENT PRINTER HAVING ROTATING MAGNETIC CHUCK**
**Bela T. Vincze, South Bellingham, Mass., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey**
**Filed Oct. 26, 1962, Ser. No. 233,329**
**5 Claims. (Cl. 101—38)**

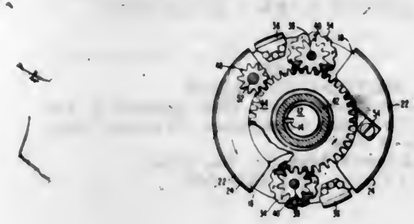


1. Apparatus for handling small electronic components having a glass body with oppositely extending lead wires made of metal which is at least partially ferromagnetic, said apparatus comprising a rotatable chuck, a magazine above the chuck with its lower end at the periphery of the chuck for feeding components to the chuck, said chuck comprising a rotatable hub, a pair of discs carried thereby, said discs being spaced apart an amount greater than the length of the body of the component, but much less than the length of the lead wires, a plurality of permanent magnets disposed around the discs, the peripheries of the discs being notched at each magnet to receive the lead wires, said notches being too small to receive the body, the maagnets being located on a circle of smaller radius than that of the notches and close enough to the notches to attract and hold the lead wires in the notches, and a stationary bias finger following the magazine and located near one disc for yieldably bearing against the end of the body of a component and urging said body toward the other disc as the components pass said bias finger.

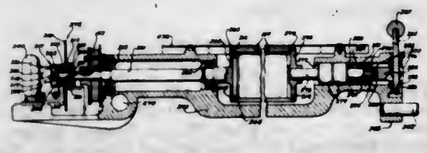
**3,164,082**
**SELECTIVE ROTARY PRINTING APPARATUS**
**Robert Kelly, Clawson, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed June 22, 1962, Ser. No. 204,405**
**4 Claims. (Cl. 101—91)**

1. In a printing apparatus, a driven rotatable member, a print wheel carried by said rotatable member radially outwardly from the axis of rotation of the latter, said print wheel being rotatable relative to said rotatable member to position a selected one of a plurality of peripherally spaced print elements in printing position, a ratchet wheel rotatably mounted on said rotatable member coaxially thereof and in mesh with said print wheel, an arm journaled on said rotatable member coaxially thereof, a pawl in mesh with said ratchet wheel and carried by said arm, a cam member on said arm, and cam means mounted on said rotatable member and movable axially thereof against said cam member to impart rotation to said arm in said one direction.



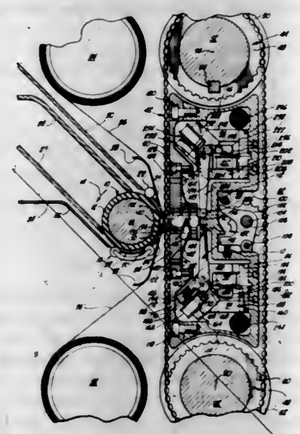


**3,164,083**
**MEANS FOR MOUNTING A REMOVABLE PRINT DRUM**
**James M. Irvine, Jr., Detroit, Mich., assignor, by mesne assignments, to Holly Computer Products Company, Warren, Mich., a corporation of Michigan**
**Filed Sept. 25, 1961, Ser. No. 140,455**
**7 Claims. (Cl. 101—93)**



6. In an electro-mechanical printer having a continuously rotated drive shaft, a first disk formed on the end of said drive shaft, said first disk having a locating lug at the conical periphery thereof, a hollow cylindrical print drum having characters formed on the outer surface thereof and having conical inner surfaces adjacent the ends thereof, one of said ends having a notch therethrough for cooperation with said locating lugs when one of said conical inner surfaces of said print drum is manually placed on said first disk, a cylinder bore in said printer opposite said drive shaft, a second shaft slidably located in said cylinder bore, said second shaft having a second disk fixedly attached to one end thereof, said second disk having a conical outer periphery suitable for insertion into the second end of said print drum, a cap member fixedly attached to the other end of said second shaft, said cap member having an annular groove and collar at the end thereof, a locking member slidably mounted on said cap member, said locking member having an outer shoulder slidably located in said cylinder bore, a seat member surrounding said second shaft and being slidably mounted in said cylinder bore, a resilient means retained between said outer shoulder and said seat member for biasing said second disk against said other end of said print drum, an off-center pin extending through and fixedly attached to said locking member, said off-center pin being positioned in said groove of said cap member for at times abutting against said collar, a lever pivotally fastened to said printer by a fixed pivot pin, and a second pivot pin connecting said lever to said locking member, said second pivot pin being located intermediate the ends of said lever.

**3,164,084**
**HIGH SPEED BELT PRINTER WITH INTERNAL HAMMER**
**Walter Griffin Paige, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Jan. 18, 1962, Ser. No. 167,019**
**10 Claims. (Cl. 101—93)**

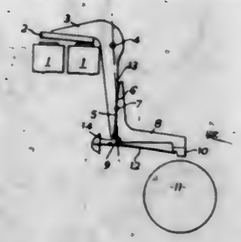


1. A high speed printer comprising:
a platen;
a plurality of continuous, flexible belts, each belt having type characters disposed on its outer surface;
means for moving each belt to pass type characters in succession adjacent to the platen;
a support member mounted internal to the belts;
a plurality of lightweight elongated hammers aligned in a common plane and mounted for sliding movement on the support member substantially normal to the platen, each hammer having a forward face aligned with and immediately adjacent to a different belt;
a first plurality of electromagnets coupled to the support member on one side of the plane of the hammers, the electromagnet of the first plurality of electromagnets each having an armature, the armatures of the first plurality of electromagnets being hinged to strike a rear face of alternate ones of the hammers to propel the alternate hammers against alternate belts toward the platen;
a second plurality of electromagnets coupled to the support member on an opposite side of the plane of the hammers, the electromagnets of the second plurality of electromagnets each having an armature, the armature of the second plurality of electromagnets being interlaced with the armatures of the first plurality of electromagnets and hinged to strike a rear face of alternate hammers to propel the alternate hammers against alternate belts toward the platen.

**3,164,085**
**MECHANICAL LINKAGES TO ELECTRO-MAGNETS AND SOLENOIDS CONTROLLING PRINT HAMMER MECHANISMS**
**Marcus J. Hawkins, Farnborough, England, assignor to The Solartron Electronic Group Limited, Farnborough, England**
**Filed Dec. 10, 1962, Ser. No. 243,279**
**Claims priority, application Great Britain, Dec. 20, 1961, 45,682/61**
**7 Claims. (Cl. 101—93)**

1. An electrically-operated print-hammer mechanism comprising in combination:

an electro-magnetic device having an attracted armature;
a print-hammer;
a mechanical linkage coupling said armature to said print hammer, said linkage including a first pivotally-mounted lever carrying said armature and a second pivotally-mounted lever carrying the print hammer, the two said levers having touching surfaces shaped to roll against each other without sliding as



movement is transmitted from said armature to said print-hammer, the point of contact between the said surfaces moving with attraction of the armature so as to decrease the mechanical advantage from the said armature of said print-hammer, the length of said first pivotally-mounted lever being such that when said armature is in its fully attracted position the point of contact between the touching surfaces of said lever is adjacent the pivot of said second lever.

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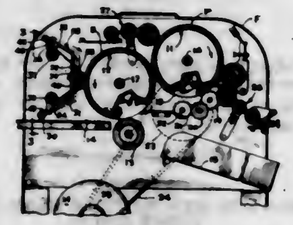
**3,164,086**
**POSITIVE DRIVE CONTROL FOR ENDLESS BAND PRINTERS**
**Harold P. Keck, 420 Charlotte St., Crystal Lake, Ill., assignor of one-third to Jack W. Robbins and one-third to Bernard Robbins, both of Chicago, Ill.**
**Filed July 30, 1962, Ser. No. 213,327**
**6 Claims. (Cl. 101—111)**



1. A printing unit for a hand stamp comprising a supporting frame, a first gear positioned adjacent one end of said frame, a second gear positioned adjacent the opposite end of said frame, and an intermediate gear in mesh with said first and second gears, a printing band having printing characters spaced therearound and having inwardly extending teeth under tension and in positive driving engagement with said first and second gears and adapted to be driven by said gears, a ratchet member coaxial with one of said gears and rotatable with said gear, a movable member rotatably supported on the same axis as said ratchet member and engaging said ratchet member and having means extending radially outward therefrom so that manual rotation of said movable member will engage said ratchet member to rotate said gear when moved in one direction only in increments corresponding to character spaces on said band, said gear when rotated adapted to rotate said other gears in positive driving engagement and positively drive said printing band.

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**3,164,087**
**PRINTING MACHINES**
**Arthur E. J. Oweh, Gates Mills, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Ohio**
**Filed June 9, 1960, Ser. No. 35,046**
**5 Claims. (Cl. 101—142)**



1. In an offset printing machine wherein an image carried by a master mounted on a plate cylinder is transferred to a blanket on a blanket cylinder and from thence to a sheet fed between the blanket and a cooperating impression cylinder, a blanket secured to said blanket cylinder having the image-receiving surface thereof composed of polytetrafluoroethylene.

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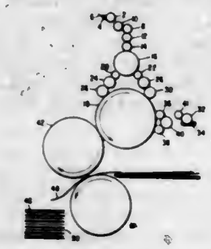
**3,164,088**
**MACHINE FOR PRINTING ON SHEETS INCLUDING EXPANSIBLE SHEETS SUCH AS TEXTILES**
**Jacques Lucien Vechot, Lyon, Rhone, France, assignor to Societe Alsacienne de Constructions Mecaniques, Haut-Rhin, France, a company of France**
**Filed Nov. 30, 1961, Ser. No. 156,012**
**Claims priority, application France Dec. 7, 1960**
**5 Claims. (Cl. 101—212)**



1. A printing machine comprising means for supporting a length of sheet material; means for intermittently advancing the supporting means in a longitudinal direction; a plate member having a generally flat pattern surface stationarily supported to one side of said material and substantially in a common plane therewith, inking means including a movable inking roll for supplying ink to said plate surface; said inking roll being movable across said plate member in a direction parallel to said longitudinal direction, an ink transfer member movable in a transverse direction from a position engaging said plate member to take up ink therefrom and into engagement with said sheet material to transfer said ink thereto; and means operable in timed relationship with said advancing means for moving said inking roll and said transfer member so as to ink said plate member and transfer ink from said plate member to said material in accordance with said pattern during a stationary period of said material supporting means.



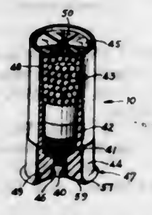
**3,164,089**
**METHOD OF PRINTING ON NON-ABSORBENT MATERIAL**
**Leslie John Browning, Kingswood, Wootton under Edge, England, assignor to Inchbrook Printers Limited, Kingswood, Wootton under Edge, Gloucester, England, a company of Great Britain and Northern Ireland**
**Filed Aug. 24, 1962, Ser. No. 219,194**
**Claims priority, application Great Britain, Aug. 28, 1961, 30,973/61**
**4 Claims. (Cl. 101—426)**



4. A method of offset printing employing a blanket cylinder arranged adjacent an impression cylinder, a plate roller arranged to wipe the blanket roller once during every operation of the blanket cylinder, and thin interleaving sheets of a size to pass between the blanket cylinder and impression cylinder without receiving an impression, comprising interleaving a plurality of the thin interleaving sheets with sheets to be printed and directing the interleaved sheets between the impression cylinder and the plate cylinder whereby the thin interleaving sheets are passed between the rollers without receiving an impression and the sheets to be printed receive an impression only after a plurality of revolutions of the blanket cylinder in contact with the plate cylinder.

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**3,164,090**
**PLASTIC AMMUNITION CARTRIDGE**
**Charles O. Williams and Charles E. Miller, Hamden, and John S. Metcalf, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia**
**Filed Sept. 18, 1961, Ser. No. 138,870**
**5 Claims. (Cl. 102—43)**



3. A metal-headed, resinous plastic shot shell case having a relatively thick generally cylindrical base portion, a relatively thin tubular wall portion extending from one end of said base portion longitudinally to at least a final finished length terminating in an open end, and a rim flange portion extending radially from the other end of said base portion, said portions being integral, said case being formed from a blank comprising in assembly
(1) a core of resinous plastic material in the solid state having a construction such as to include a height in excess of the thickness of said base but less than said length and to include a sufficiency of said material to be longitudinally and radially deformable out of said core to provide said wall portion to at least said length and to provide said flange portion, respectively, while forming said base portion and
(2) a cup-shaped piece of metal containing said core and being of a size so as to adapt said piece to receive said core and be received with said core concentrically in a die for simultaneous deformation with said core in said die having the final finished configuration of the finished case, said metal piece having the configuration of a partially formed shot shell head and being at least in part bulgeable radially by said plastic material,
said blank being thereby adapted to be formed into a case with said portions including a finished metal head locked in place about said flange portion.

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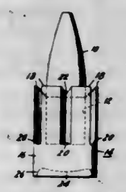
**3,164,091**
**CONSTRUCTION OF PROJECTILES**
**José Luis Amilibia Urdapilleta, Calle Miramar No. 4, San Sebastian, Spain**
**Filed Sept. 14, 1953, Ser. No. 379,780**
**Claims priority, application Spain Sept. 29, 1952, 205,572**
**3 Claims. (Cl. 102—64)**



2. A hand grenade comprising an explosive charge and an external housing therefor, said housing comprising spaced walls at least the inner one of which is provided with grooves therein, and a metal bar wound spirally between said walls transversely to said grooves and surrounding said explosive charge to define therewith a predetermined pattern of fragmentation.

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**3,164,092**
**AMMUNITION SABOT**
**David S. Reed, Stratford, Rex E. Dickey, Huntington, and Roland L. Bescher, Jr., Fairfield, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware**
**Filed Nov. 13, 1962, Ser. No. 237,217**
**4 Claims. (Cl. 102—93)**

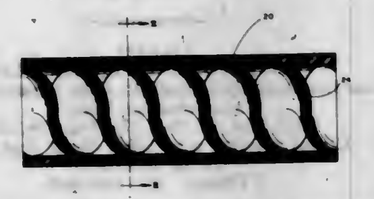


1. A unitary plastic sabot for projection through a rifled gun barrel, said sabot comprising a cylindrical member having a central recess in one end thereof, thus forming a continuous, ring-type projection, a plurality of V-shaped grooves on the outer periphery of said projection, said grooves being radially spaced and extending axially on said projection to form a plurality of wall segments held together by weakened connecting portions, said sabot being made of a plastic which is flexible enough to permit an interference fit of a projectile in said central recess and of sufficient impact strength to prevent disintegration of said sabot within the bore of the gun upon firing of a cartridge with the sabot and projectile so that upon being explosively projected out of the bore of the gun, the weakened connecting portions rupture to permit the wall segments to peel back like a mushroom, without

becoming disconnected from the sabot, thus providing a substantially greater wind-resisting area which cooperates with the wind resistance to strip the sabot cleanly from the projectile.

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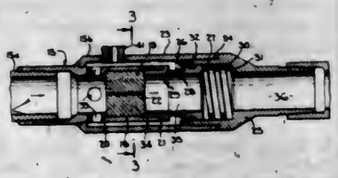
**3,164,093**
**PROPELLANT GRAIN**
**Allen L. Holzman, Palo Alto, and David Altman, Menlo Park, Calif., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed May 6, 1963, Ser. No. 278,166**
**4 Claims. (Cl. 102—98)**



1. A propellant grain comprised of a substantially cylindrical body having an axial perforation and a twisted planar body extending longitudinally through and across said perforation whereby gases passing through the perforation traverse a substantially helical path.

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**3,164,094**
**METHOD AND APPARATUS FOR USE WITH COMPENSATING TUBING ANCHOR**
**Martin B. Conrad, P.O. Box 1026, Downey, Calif.**
**Filed Feb. 1, 1963, Ser. No. 255,534**
**5 Claims. (Cl. 103—1)**

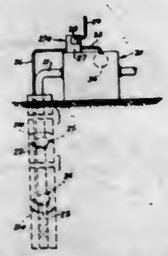


1. For use with an oil well pump installation having a tubing string extending into a well casing from a well head and having a reciprocating pump connected to the tubing string, and having a compensating anchor device operable to prevent upward movement of the tubing string relative to the well casing during operation of the pump, the well head having a flow conduit leading from the tubing string, the improvement comprising: a hollow member, means for removably connecting said hollow member to the flow conduit to receive the full flow of gas-containing well fluid discharged from the tubing string through the well head, means including a flow-restricting element mounted in said hollow member to impose a back pressure on pumped fluid in the tubing string and thereby cause the anchor device to tension the tubing string, said element being formed of material adapted to be slowly dissipated by the well fluid, whereby free flow is thereafter permitted through said hollow member in the absence of said element.

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**3,164,095**
**AUTOMATIC OIL WELL PUMPING AND TIMING DEVICE**
**Verl E. Williams, Box 25, Kellerville, Tex.**
**Filed Apr. 2, 1962, Ser. No. 184,427**
**3 Claims. (Cl. 103—26)**

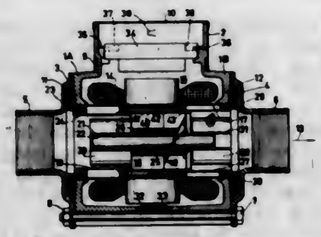
1. Apparatus for controlling the pumping of oil wells through pump means operatively connected to tubes extending into said wells and having a plurality of perforations adjacent their lower ends comprising a first float switch assembly pivotally mounted on the tube in a well directly above the perforations therein, a second float switch assembly pivotally mounted on the tube a desired distance above said first float switch assembly, said first float switch assembly including a first mercury switch having a pair of spaced contacts and a quantity of mercury sufficient to close said contacts when said first float switch assembly is tilted downwardly by droppage of the fluid level in the well below said first float switch assembly, said second float switch assembly including a second mercury switch having a pair of spaced contacts and a quantity of mercury sufficient to close said last-mentioned contacts when said second float switch assembly is tilted upwardly by rising of the fluid level in the well above said second float switch assembly, a motor to drive the pump means



operatively connected to the tube, means defining a motor circuit, a pair of contact fingers having normally spaced contacts in said motor circuit, a first solenoid coil operatively connected to said contact fingers to close the space between said last-mentioned contacts, means defining an actuating circuit including the contacts in said second mercury switch and said first solenoid coil to energize said first solenoid coil and thereby close said motor circuit when said second switch assembly is tilted upwardly, latch means normally biased to hold said contacts on said fingers in closed relationship, an additional solenoid coil operatively connected to said latch means to release the same, and means defining a latching circuit including said contacts in said first mercury switch and said additional solenoid coil to energize said additional solenoid coil and thereby release said latch means when said first mercury switch is tilted downwardly.

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**3,164,096**
**PUMPS WITH INCORPORATED MOTOR**
**Stig Lennart Hallerbäck, Södertälje, Sweden, assignor to Aktiebolaget W. Dan Bergman, Södertälje, Sweden, a Swedish corporation**
**Filed Feb. 18, 1963, Ser. No. 259,210**
**Claims priority, application Sweden, Sept. 24, 1962, 10,246/62**
**6 Claims. (Cl. 103—87)**

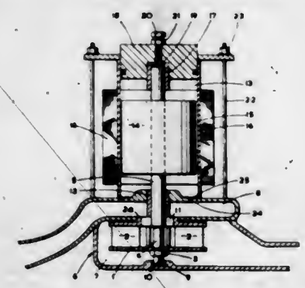


1. In a pump having an incorporated electric drive motor a pump housing divided perpendicularly to the pump axis in two substantially like parts, said housing being formed with a laterally offset portion covered by a removable lid, said offset portion being symmetrically divided by the plane dividing the pump housing in two parts, electrical connecting terminal plate means provided inside said laterally offset portion to be supported thereby, a thin-walled fluid-tight sleeve member defining a central fluid passage through said pump housing, shaft means and bearing means therefor, a combined rotor and impeller assembly mounted on said shaft means for rotation thereon, stator means disposed within said pump housing outside of said sleeve member, end plate members adapted to support between themselves said pump housing, clamping bolt means, adapted to engage and join said end plate members to compress and support said pump housing therebetween, said end plates being formed with outwardly projecting pipe union members opposite the ends of said fluid passage, a packing ring of a soft material disposed between each of said end plate members and the pump housing concentrically of said central passage, a non corrosive sheet metal assembly having an outer jacket formed with a radial end flange having its flange clamped and rigidly retained between said packing ring and the housing, said jacket projecting into said central passage, guide vanes being provided between said outer jacket and a hub member formed centrally thereof, said hub members being adapted to hold rigidly said shaft means at each end thereof, said rotor and impeller assembly formed with a bearing bush adapted to rotate on said shaft means, thrust bearing means being provided to absorb axial forces, said bearing bush supporting impeller blading.



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**3,164,097**
**PUMPS**
**Walter Lyon Gordon Nicoll, 37 Upper Addison Gardens, Kensington, London, England**
**Filed Feb. 9, 1962, Ser. No. 172,152**
**Claims priority, application Great Britain Feb. 13, 1961**
**4 Claims. (Cl. 103—97)**



1. A circulating pump unit of the centrifugal type comprising in combination, an electric motor having a rotor and a stator, a floating shaft to which the rotor of said motor is secured a pump assembly secured to one end of said electric motor so that said shaft also extends into said pump assembly, said pump assembly including a housing having an inlet means and an outlet means, an impeller secured directly to said shaft within said pump assembly with its inlet side towards said electric motor, said impeller's inlet side defining a gap with the inlet means of said housing, a single thrust bearing for said electric motor shaft, said bearing being axially movably mounted relative to said stator at the opposite end of said electric motor from said pump assembly, the shaft being held, during operation, against said bearing by the working pressure generated by the impeller and acting upon the area of the undersurface of said impeller, and an operating member mounted externally of the stator of said electric motor and operable to move said bearing axially relative to the stator of said electric motor, either with or against said working pressure generated during operation, so as to enable the axial position of said shaft and said impeller to be adjusted in order to vary the output of said pump assembly, without altering the flow pattern of the output of the pump, by allowing a variable fraction of the pump output to flow back to the inlet side of the impeller through said gap defined by the inlet surface of the impeller and the housing.

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**3,164,098**
**PUMP**
**Frank H. P. Sully, La Mirada, Calif., assignor to Western Brass Works, Los Angeles, Calif., a corporation of California**
**Filed Apr. 8, 1963, Ser. No. 271,187**
**9 Claims. (Cl. 103—120)**



1. A variable flow pump comprising:
a plate having a generally rectangular aperture therein;
a housing slidably mounted in said generally rectangular aperture whereby said housing may move in said aperture relative to said plate, said housing having a pumping chamber therein and inlet and outlet openings communicating with said chamber;
a driving shaft extending through said aperture in said plate into said pumping chamber;
an impeller mounted on said shaft in said chamber, said impeller having a plurality of radially extending flexible blades, said blades being in engagement with, and flexed by, the interior wall of said housing;
an adjusting plate mounted on said plate, said adjusting plate having an aperture therein for receiving said housing; and
means cooperating with said adjusting plate and said plate to cause said adjusting plate and said housing to move laterally with respect to said plate when said adjusting plate is rotated.

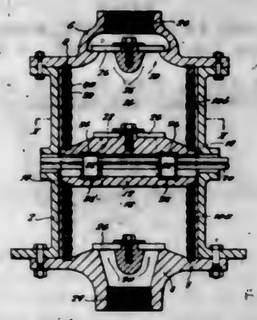
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**3,164,099**
**TOOTHED PROFILES OF ROTORS OF GEAR PUMP**
**Hitosi Iyoi, 470 1-chome, Okubocho, Narashino, Chiba, Japan**
**Filed July 31, 1962, Ser. No. 213,710**
**Claims priority, application Japan, Aug. 9, 1961, 36/28,703**
**3 Claims. (Cl. 103—128)**



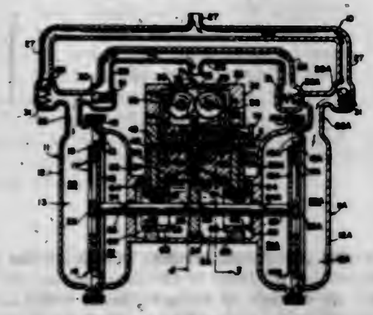
1. In a gear pump, intermeshing helical toothed gears, the respective helical teeth of the gears having an angle of advance on the face of the gears equal to the circular pitch of the teeth and a continuity to provide a continuous driving action between the engaging teeth, the flanks of each tooth being involute and the tip and base of each tooth being an arc of a circle with the center of the arc being on the pitch circle.

3,164,100
FLUID PUMPS
Cecil Hughes, Chandlers Ford, near Eastleigh, England, assignor to Kelston Engineering Company Limited, Bristol, England, a company of Great Britain and Northern Ireland
Filed Jan. 16, 1962, Ser. No. 166,539
Claims priority, application Great Britain, Jan. 27, 1961, 3,172/61; Feb. 20, 1961, 6,080/61
16 Claims. (Cl. 103—148)



1. A pump comprising, in combination, two spaced end covers and a cylindrical, axially extensible and compressible intermediate casing extending between said covers to define therewith the pump body, inlet and outlet porting in the respective covers, a member axially movable relative to said end covers sealingly secured to said casing intermediate its extent forming inlet and outlet chambers in the body, porting in said member communicating with said chambers, first and second non-return flow means respectively disposed upon said member porting and said inlet porting, said intermediate casing comprising a series of circumferentially directed rigid elements having side bearing surfaces and at least one extensible and compressible elastic element having cylindrical inner and outer peripheral surfaces engaged at axially spaced intervals by said side bearing surfaces and being radially supported thereby, the rigid elements maintaining the cylindricality of said internal peripheral surface of the casing constant.

3,164,101
DIAPHRAGM PUMP
Gerrit Van Nederynen, Sayre, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 27, 1962, Ser. No. 226,666
10 Claims. (Cl. 103—152)



1. A pump comprising
(a) at least one pumping means including a housing and a fluid displacement means disposed for actuation in said housing,
(b) supply means communicating with the interior of said housing for conducting fluid to be pumped to said housing,
(c) discharge means communicating with the interior of said housing for conducting pumped fluid out of said housing, and
(d) fluid actuating means for actuating said fluid displacement means within said housing to cause fluid to be drawn into said housing through said supply means and to force fluid from said housing through said discharge means,
(e) said fluid actuating means including
(1) a fluid pump to provide fluid under pressure,
(2) a control means responsive to fluid pressure for actuation from one position to another for controlling flow of fluid under pressure so as to effect actuating of said fluid displacement means and thereby alternately draw fluid to be pumped into said housing and discharge said fluid from the housing,
(3) means forming a fluid chamber,
(4) passage means communicating said fluid chamber with said control means, and
(5) piston means disposed for slidable movement in said fluid chamber and for engagement with said fluid actuating means and slidable movement to compress the fluid in said fluid chamber and thereby effect actuation of the control means from said one position to another.

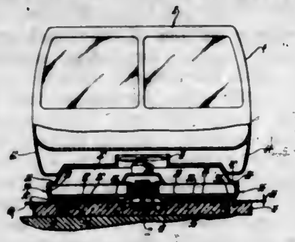
3,164,102
OIL WELL PUMP
Benjamin F. Schmidt, 450 Fairview St., Sierra Madre, Calif.
Filed July 16, 1962, Ser. No. 209,891
17 Claims. (Cl. 103—155)



6. An oil well pump comprising: a tubular pump body; a tubular upper bellows coupled at one end to one end of said pump body; means sealing the other end of said upper bellows; a tubular lower bellows coupled at one end to the other end of said pump body; means sealing the other end of said lower bellows; said pump body and said two bellows constituting a sealed pump unit adapted to be positioned in tubing of a well in spaced relation thereto to define therebetween a flow passage for well fluid; means providing below said lower bellows a foot valve assembly for intaking well fluid into said flow passage; means providing an upwardly opening check valve assembly in said well tubing in surrounding relation to said pump body between said upper and lower bellows and for forming a seal with said body and said well tubing; fluid displacing means movable in said pump body between said bellows and forming therein two sealed chambers separated by said displacing means and with each chamber including one of said bellows; separate bodies of hydraulic fluid sealed in said chambers and operable in response to movements of said displacing means to expand and contract said bellows; and operating means connected to said displacing means operable from the exterior of said pump body for moving said displacing means to displace said fluid bodies and thereby expand and contract said bellows.

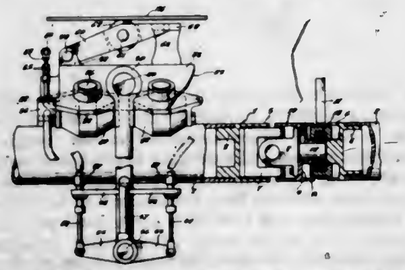


3,164,103
HIGH SPEED TRANSIT SYSTEM AND VEHICLE THEREFOR
Michael W. Lathers, Birmingham, Mich., and David M. Lyon, La Grange, Ill., assignors to General Motors Corporation, Detroit Mich., a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 269,904
11 Claims. (Cl. 104—134)



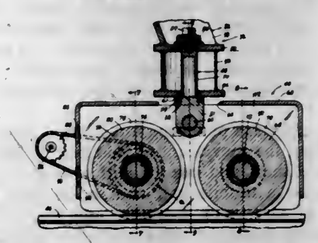
1. A transit system comprising, a substantially flat roadbed, a horizontally extending vertically projecting rail secured to said roadbed, a vehicle movable over said roadbed in the path defined by said rail, said vehicle including a pair of low unit loading air bearings disposed at opposite sides of said rail in proximate relation to said roadbed, air flow generating means for energizing said air bearings to support said vehicle in frictionless spaced relation from said roadbed, driving means on said vehicle including wheels engaging said rail in laterally opposed relation, and motor means operable to impart rotation to said wheels to propel said vehicle along the path defined by said rail.

3,164,104
TRANSPORTER MEANS
William Allen Hunt, Northumberland, England, assignor to Joseph Cook, Sons & Company (1930) Limited, Washington, England, a company of Great Britain and Northern Ireland
Filed July 2, 1962, Ser. No. 206,600
Claims priority, application Great Britain July 4, 1961
13 Claims. (Cl. 104—166)



1. Transporter means comprising a continuous series of rotatable cylindrical elements connected together by universal joints, drive means for rotating said series of elements, disposed at spaced intervals, a travelling rider comprising at least two spaced sets of freely rotatable bearing means mounted so that each set bears upon the upper arcs of said cylindrical elements, said bearing means pivotally mounted for turning about axes radial to the axis of said cylindrical elements and linkage means connecting said bearing means together in parallel disposition so as to be angularly displaceable between attitudes wherein the axes of said rotatable bearing means are oblique to the cylindrical element on which the rotatable means bear, when a longitudinal driving effort is transmitted to the rider by friction between the cylindrical element and said rotatable bearing means, and attitudes wherein the axes of said rotatable bearing means are parallel to that of the cylindrical element, when no driving effort is transmitted, and wherein said rider has a laterally extending boss, a rigid depending member pivotally supported on said boss, load carrying means mounted at the lower part of said depending member, and actuating control means for said linkage means mounted on said depending member.

3,164,105
GANTRY CRANE
Robert W. Erlbacher, 920 N. Fountain, Cape Girardeau, Mo.
Filed July 21, 1961, Ser. No. 125,767
6 Claims. (Cl. 105—27)



6. A gantry crane frame having four legs supported by four rectangularly positioned trucks, said trucks each comprising a housing, a pair of axles each carrying a wheel journalled in tandem in said housing, shaft means connecting the truck housings to said legs for relative rocking movement about a horizontal shaft secured to the housing in parallel relation to said axles, said wheels having a pair of axially spaced circumferential flanges adapted to contact the opposite sides of a track upon which the crane may be carried, means mounting said truck housing ing to a leg in pivotal relation about a vertical axis to permit turning of the crane, said means comprising a vertical shaft element connected at a lower end to said truck housing and secured for rotation relative to the bottom of the gantry leg at its upper end, and means to permit axial shifting of said wheels with respect to the gantry legs to accommodate tracks of varying gauge, said last named means comprising an element connected to the bottom of said vertical shaft and receiving in laterally sliding relation the aforementioned horizontal shaft secured to said housing, and means for propelling said crane along the track comprising a motor mounted upon one of said trucks and having means connecting a power shaft of said motor to a first one of said axles and power take off means connecting said first axle with the second axle.

3,164,106
MOTIVE POWER UNIT FOR MODEL RAILROADS AND THE LIKE
James H. Hahn, Glenview, Ill., assignor to Paul W. Lindberg, Skokie, Ill.
Filed Oct. 9, 1961, Ser. No. 143,854
4 Claims. (Cl. 105—101)

1. In a vehicle for scale model railroads, the combination with an elongated frame having a longitudinal axis in the direction of motion of said vehicle, a truck assembly supporting said frame in spatial relation above

track of said scale model railroad and comprising a plurality of wheeled axles, said frame having an opening therein extending therethrough and over said truck assembly;

of an electrically energized motive power unit comprising a high-speed low-torque electric motor supported on said frame,

a drive shaft rotatably journaled on said frame,

mechanical coupling means interconnecting an output shaft of said motor to said drive shaft for communicating motive power thereto,

linking means connecting said drive shaft to one of said wheeled axles for transmitting power from said drive shaft to said wheeled axles,

said linking means comprising an endless drive belt



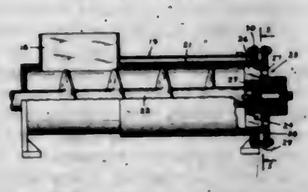
bighted about said drive shaft and about said one of said wheeled axles,

and fair lead means comprising a bell-shaped upstanding inverted funnel secured to and supported at its base on said truck assembly and extending upwardly through said opening in said frame and into a housing surrounding said opening and extending thereabout,

said fair lead means providing low friction guide means for guiding the movement of said belt bighted about said drive shaft and one of said wheeled axles and constituting a mobile ball and socket type floating joinder of said truck assembly and the said frame to pivotally connect said truck assembly and said frame.

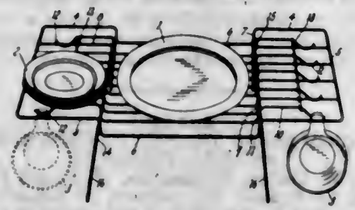
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**3,164,107**
**APPARATUS FOR MAKING DOUGH**
**Earle Thomas Oakes, Islip, Lewis Garth Doom, East Islip, Paul Albert McElligott, Greenlawn, and Paul E. Sandheim, Bayport, N.Y., assignors to The E. T. Oakes Corporation, Islip, N.Y., a corporation of New York**
**Filed May 10, 1961, Ser. No. 109,177**
**7 Claims. (Cl. 107—30)**



1. Apparatus for making cracker dough and the like comprising a plurality of proportional feeders for supplying dry and liquid ingredients of dough, screw conveying means for receiving said ingredients and advancing them, a mixer communicating with said conveying means for receiving said ingredients therefrom and mixing them to form dough, said mixer having a rotor with flat radial blades lying in radial planes extending axially of said rotor and a fixed orifice plate through which said dough is discharged in at least one stream, an elongated trough for receiving said dough stream from said mixer, at least one shaft extending lengthwise of and rotatable relative to said trough, a plurality of paddles on and inclined to the axis of said shaft for kneading said dough and advancing it lengthwise of and discharging it from the trough at a place remote from said mixer, and means for actuating said feeders, screw conveying means, mixer, and shaft.

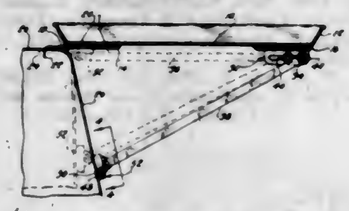
**3,164,108**
**DISPLAY RACKS**
**Victor R. Romero, Albion, Mich., assignor to Union Steel Products Company, Albion, Mich.**
**Filed Dec. 18, 1961, Ser. No. 159,953**
**4 Claims. (Cl. 108—28)**



1. A display rack of the class described comprising a frame having integral substantially parallel side members and end members, the side members having downwardly offset intermediate portions of substantial length, a first series of laterally spaced longitudinal members having downwardly offset intermediate portions corresponding to the downwardly offset portions of said frame side members and having their ends fixedly secured to the said frame end members, a second series of longitudinal members disposed between said frame side and said first series of longitudinal members in laterally spaced alternate relation thereto and having corresponding downwardly offset intermediate portions and terminating at their ends in downwardly offset upwardly facing hooks disposed inwardly relative to the said frame end members with their tips disposed below the plane of said first series of longitudinal members, crossbars disposed on the underside of and fixedly secured to said first and second series of longitudinal members at the inner sides of said hooks, and inverted U-shaped leg members disposed with their bight portions on the outer sides of the upright portions of said downward offsets of said frame side and said longitudinal members and fixedly secured thereto.

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**3,164,109**
**MEANS FOR MOUNTING A SERVING TRAY WITHIN A VEHICLE**
**A. W. Atkinson, Box 436, Gatesville, Tex.**
**Filed Jan. 14, 1963, Ser. No. 251,155**
**2 Claims. (Cl. 108—44)**



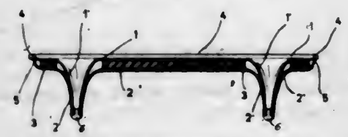
1. A serving tray for use in the interior of a vehicle comprising a platform portion formed of thermo-plastic material, a pair of straps connected to one margin of said platform portion and extending beyond said margin, said straps being imbedded in said thermo-plastic material and being bent whereby they are adapted to be received within cooperating slots formed in a structural portion of said vehicle, said straps being substantially equidistant from the geometric center line of said platform portion, a bracket having a portion thereof imbedded in said thermo-plastic material at an opposite margin thereof and at a position adjacent to said geometric center line, a supporting leg, an adjustable connection between one end of said supporting leg and said bracket, said adjustable connection accommodating an adjustment of said one end in a direction parallel to the plane of said platform portion,



said adjustable connection providing also angular adjustment of said leg with respect to the plane of said platform portion, a friction foot carried by the other end of said leg, said friction foot being adapted to engage a stationary structural part of said vehicle, the adjustable connection between said one end of said leg and said platform portion comprising an angle bracket having one side thereof secured to said platform portion and a right angle side thereof secured to said one end of said leg, said right angle side being formed with an elongated slot, and a bolt received in said slot and through a cooperating opening in said leg whereby compound adjustment of said leg with respect to said platform portion can be accommodated.

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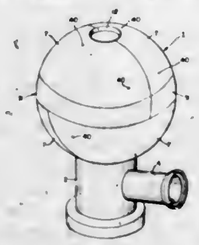
**3,164,110**
**COMPOSITE STRUCTURAL ELEMENT AND METHOD OF MAKING THE SAME**
**Rudolf Bofinger, Ilsfeld, near Heilbronn (Neckar), Germany**
**Filed Oct. 2, 1962, Ser. No. 227,871**
**Claims priority, application Germany, Oct. 6, 1961, B 64,270**
**8 Claims. (Cl. 108—161)**



1. In a piece of furniture, in combination, a lower shell formed of synthetic sheet material and including a peripheral rim portion and a plurality of downwardly extending hollow supporting portions; an upper shell formed of synthetic sheet material and including a peripheral portion directly contacting said peripheral rim portion of said lower shell and directly connected to said lower shell at said rim portion and including also a plurality of downwardly extending portions arranged in the region of said hollow supporting portion of said lower shell and directly supported by said lower shell in the region of said hollow supporting portions, said directly connected upper and lower shells defining therebetween a free space; and reinforcing means located in said free space filling the same at least partly and contacting said upper and lower shells.

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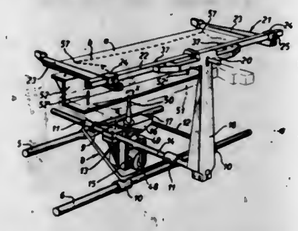
**3,164,111**
**BOMB SHELTER**
**Daniel G. Lanni, 251 Bonnie Brae Ave., Rochester, N.Y.**
**Filed July 13, 1962, Ser. No. 209,685**
**5 Claims. (Cl. 109—1)**



3. A bomb shelter comprising a substantially spherical casing formed with a compartment therein and having casing walls formed for shielding and protecting occupants of the casing from the effects of nuclear explosions, said casing being formed with an entrance to provide access to said compartment, closure means for said entrance, a plurality of small passages formed in said casing walls opening in said compartment at the inner ends, extending in angular relation to each other and opening at the outer sides of said casing to form probe holes, said probe hole passages being spaced at intervals throughout all sides of said spherical casing so that in any position to which said casing may be displaced as a result of an explosion, at least one of said probe holes will extend approximately upwardly from the top of the displaced casing, and closure means for each of said small passages detachably mounted on said casing wall at the inner side thereof in said compartment.

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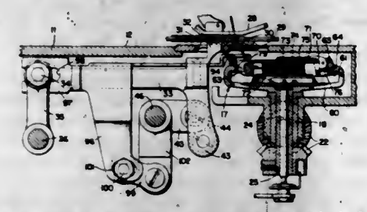
**3,164,112**
**APPARATUS COMPRISING A MAGNETIC PATTERN AND FOLLOWER FOR SHAPED SEWING**
**Luigi Bono, Milan, Italy, assignor to Necchi Societa per Azioni, Pavia, Italy**
**Filed Dec. 27, 1962, Ser. No. 247,640**
**Claims priority, application Italy, Apr. 4, 1962, 6,498/62**
**6 Claims. (Cl. 112—2)**



1. An apparatus for sewing a predetermined pattern comprising a sewing machine having a support, a fabric holder, means mounting said fabric holder for two directional movements relative to said support, a pattern member releasably mounted on said support, a follower for following said pattern member, and a motor connected to said mounting means for movement therewith, and means connected to said motor to drive said follower whereby said follower simultaneously guides and drives said fabric holder, said pattern member being in the form of parallel magnetic material plates separated by non-magnetic material, and at least one magnet across said plates for creating a magnetic field along said plates with said plates having opposite polarity, said follower serving as a magnetic bridge between said plates whereby magnetic flux from one plate can pass through said follower and into the opposite plate.

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**3,164,113**
**BOBBIN THREAD PULL-OFF FOR SEWING MACHINES**
**Stanley J. Ketterer, Morris Plains, N.J., assignor to The Singer Company, a corporation of New Jersey**
**Filed May 14, 1963, Ser. No. 280,281**
**6 Claims. (Cl. 112—242)**



1. In a lockstitch sewing machine having stitch forming instrumentalities including a thread carrying needle, a loop taker carrying a supply of under thread and cooperating with said needle in the formation of lock stitches, and a drop feed mechanism including a feed bar, means for imparting advance and return movements to said feed bar and means for imparting rising and falling movements to said feed bar, and under thread pull-off mechanism

comprising a thread pull-off member, under thread engaging means on said thread pull-off member, means supporting said thread pull-off member on said feed bar for rising and falling movement therewith and for movement relatively thereto in the direction of said feed bar advance and return movements, and mechanism operating in timed relation with said stitch forming instrumentalities for shifting said thread pull-off member relatively to said feed bar.

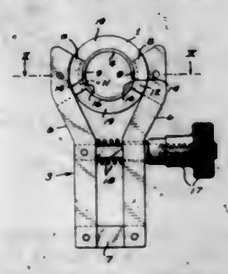
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**3,164,114**

**CLAMP FOR SPACING AND HOLDING TUBE ENDS IN A BUTT WELDING OPERATION WITH MEANS FOR POSITIONING BACKING RINGS DEPENDING FROM THE CLAMP**

**Raymond C. Whitman, Wayland, and William J. Bowles, Hornell, N.Y., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York**

**Filed June 12, 1962, Ser. No. 201,948**
**4 Claims. (Cl. 113—102)**



1. A clamp for use in welding a pair of tube ends disposed in end to end coaxial alignment and having a cylindrical backing ring disposed inward thereof in telescoping alignment with the tube ends,

the clamp comprising a plurality of holding members,

wedge means depending from each of said holding members including a surface adapted to engage the external surface of the backing ring,

means arranged to position said holding members on approximately opposite sides of the backing ring so that said wedge means firmly grip the backing ring, the wedge means penetrating the gap between the tube ends radially relative to the tube ends,

said wedge means further including arcuate surfaces arranged to engage the end surfaces of the tube ends when the latter are brought into telescoping alignment with the backing ring to define the root gap between the tube ends, the backing rings masking the gap between the tube ends.

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**3,164,115**

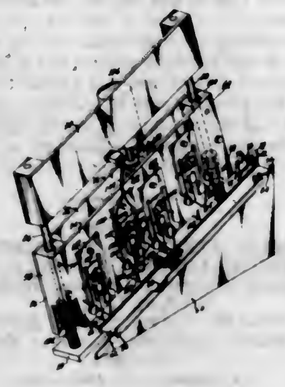
**ELECTRON TUBE MOUNTING APPARATUS**

**Walter T. Ackermann, Millington, N.J., assignor to Radio Corporation of America, a corporation of Delaware**

**Filed Apr. 18, 1961, Ser. No. 103,923**
**12 Claims. (Cl. 113—127)**

1. In combination, a geared work holder and a welding apparatus comprising a gear track along which said geared work holder may move mounted along a plane, a plate mounted for motion in a plane perpendicular to the first mentioned plane, a welder mounted on said plate, said plate being so positioned that said welder overlies said track, a stop fixed to said plate, and means for moving said plate to a position where said stop is near to said track for stopping motion of said work holder along said track.

8. A stem and cage holder comprising a stem gear, a stem holder mounted on said stem gear, a cage gear, a cage holding means mounted on said cage gear, rods extending from one of said stem gear and said cage holding means, the other of said stem gear and said cage holding means having axially directed holes slidably receiving said rods, said holes having means therein for



locking said rods within said holes, whereby a stem held in said stem holder and a cage held in said cage holder will be positioned in predetermined oriented position upon inserting said rods into said holes.

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**3,164,116**

**HYDROFOILS**

**Robert Lopez, Williamsport, Pa., assignor to Aqua-Flite Hydrofoil Corporation, New York, N.Y., a corporation of New York**

**Filed Mar. 25, 1960, Ser. No. 17,669**
**20 Claims. (Cl. 114—66.5)**



1. In a water craft including a boat having a power plant that develops a forward thrust, hydrofoils that extend downwardly and inwardly with respect to the boat and to a level substantially lower than the boat, the positions and lifts of the hydrofoils being correlated with the weight and power of the boat so that the hydrofoils extend part way out of the water when the boat is foilborne at substantially full power, and means connecting the hydrofoils to the boat including a strut connected to each hydrofoil and extending upwardly and inwardly, the improvement which comprises the strut being connected to the hydrofoil above the portion of the hydrofoil that is submerged when the boat is foilborne under substantially full power and the length of each hydrofoil below its connection to the strut being a cantilever and having its lower end spaced from the boat and from the lower end of the other hydrofoil.

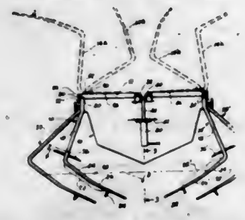


**3,164,117**

**HYDROFOIL SYSTEM**

**Robert Lopez, Williamsport, Pa., assignor to Aqua-Flite Hydrofoil Corporation, New York, N.Y., a corporation of New York**

**Filed Sept. 19, 1962, Ser. No. 224,814**
**12 Claims. (Cl. 114—66.5)**



1. The combination with a boat having a hull and power means for propelling the hull, of hydrofoils on opposite sides of the hull, the foil on each side of the hull including a strut connected with the hull, a dihedral portion of the foil extending as a cantilever from said strut and sloping inwardly and downwardly for a substantial portion of its length, both the leading and trailing edges of the dihedral portion of the foil where the foil enters the water at the foilborne water line sloping rearwardly as they slope inwardly and downwardly and continuing the slope rearwardly and inwardly and downwardly to the free end of the cantilever structure, that part of the dihedral portion below the foilborne water line extending along a line that changes in direction so that an upper portion of the cantilever slopes at a greater angle than a lower portion whereby the angle of attack of said upper and lower portions change in different amounts as the result of yielding of the cantilever structure with change of load.

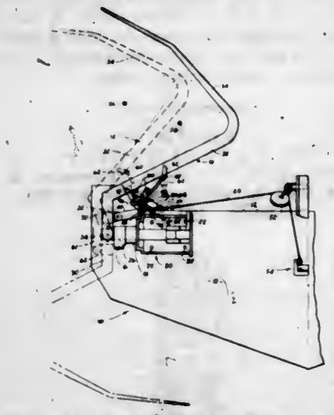
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**3,164,118**

**HYDROFOIL SYSTEM FOR OUTBOARD BOAT**

**Robert Lopez, Williamsport, Pa., assignor to Aqua-Flite Hydrofoil Corporation, New York, N.Y., a corporation of New York**

**Filed Sept. 19, 1962, Ser. No. 224,815**
**17 Claims. (Cl. 114—66.5)**



1. In a boat having a hull, hydrofoils, means connecting the hydrofoils with the hull, including bearings on which the hydrofoils swing between working and retracted positions, and in the latter position extend over part of the boat hull, rest supported from the hull and on which the hydrofoils are supported when in retracted position, each of the rests being movable orbitally about an axis extending generally fore-and-aft, and a spring operably connected with each rest and resisting orbital movement of the rest by the weight of the hydrofoil that is supported by that rest.

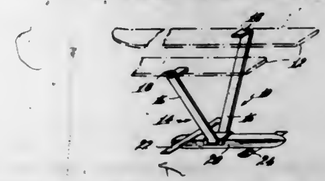
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**3,164,119**

**HYDROFOIL LIFT**

**Lucas L. Emmanuel, Newton Highlands, and Walter R. Woodward, Carlisle, Mass., assignors to Cosmo Dynamics, Inc., Newton Upper Falls, Mass., a corporation of Massachusetts**

**Filed Mar. 26, 1963, Ser. No. 268,052**
**17 Claims. (Cl. 114—66.5)**



1. A hydrofoil lifting device for elevating an aquatic structure from the water when moved therealong comprising a totally submerged wing foil having a positive lift effect, a totally submerged stabilizing foil having a negative lift effect, a strut extending downwardly from the underside of the structure, and means rigidly secured to the lower end of the strut, said means extending forwardly and rearwardly thereof and said wing and stabilizer foils being secured transversely thereof in spaced parallel relation to each other with the wing ahead of the strut and the stabilizer behind the strut.

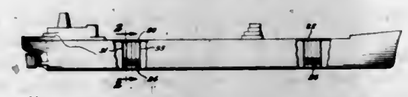
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**3,164,120**

**FLUME STABILIZATION SYSTEM FOR TANKERS AND THE LIKE**

**Sheldon B. Field, Floral Park, N.Y., assignor to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York**

**Filed June 13, 1963, Ser. No. 287,703**
**14 Claims. (Cl. 114—125)**



1. A liquid cargo tanker comprising a hull, at least one liquid-tight transverse bulkhead extending across the hull, at least one longitudinal bulkhead disposed normal to said at least one transverse bulkhead, said transverse and longitudinal bulkheads extending vertically throughout the depth of the hull, said transverse and longitudinal bulkheads defining with the hull at least two tanks arranged across the hull, a stabilization system defined by said tanks comprising a plurality of openings in said at least one longitudinal bulkhead vertically spaced in aligned defined areas, a body of fluid in said tanks at a level in repose which is at least above the lowest of said openings so that a portion of said fluid flows through said openings in response to the rolling motion of the vessel, said openings causing a substantial energy dissipation from said fluid flowing therethrough.

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**3,164,121**

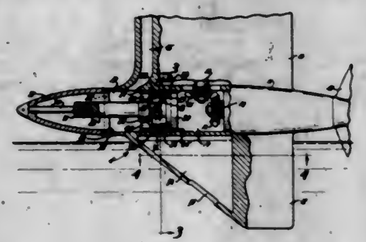
**WATER-COOLANT SUPPLY MEANS FOR AN OUTBOARD PROPULSION UNIT**

**Charles F. Alexander, Jr., Oshkosh, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware**

**Filed Sept. 28, 1962, Ser. No. 226,804**
**5 Claims. (Cl. 115—17)**

1. In an outboard propulsion unit for watercraft, said unit having a lower portion including a gear case for

rotatably supporting a generally horizontal shaft carrying a propeller rearwardly of the gear case, a cooling water circulation system in said unit and including a hollow skeg extending downwardly from said gear case and having a heat exchange surface constituting a wall of said gear case and water inlet means in said skeg supplying water to said system through the hollow interior of said skeg and spaced substantially beneath said gear case.



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3,164,122
MARINE POWER PROPULSION ASSEMBLIES
Louis J. Fageol, deceased, late of San Diego, Calif., by Caryl Morris Fageol, executrix, La Mesa, Calif., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 26, 1962, Ser. No. 177,695
11 Claims. (Cl. 115—18)

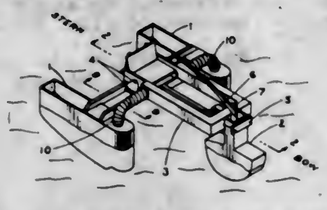


1. Apparatus for mounting a power and propulsion assembly outside a boat hull having a transom, the combination comprising a compartment watertight at least at the sides and bottom thereof, means for securing said compartment on the outside of the transom, as an extension of the hull, a mount assembly adapted to detachably support a power plant vertically in said compartment, an opening through the bottom of said compartment below the hull waterline, a socket construction mounted in the bottom of said compartment adjacent said opening, a ball construction carrying said mount assembly and received in said socket for universal movement therein with respect to the compartment, a propulsion assembly disposed below the bottom of said ball construction, driving connections between said propulsion assembly and power plant, said driving connections extending through said ball and means sealing said opening to maintain watertightness of said compartment.

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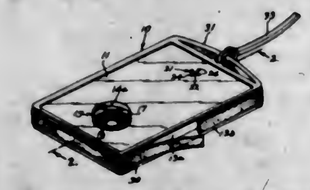
3,164,123
MARINE PROPULSION
Charles T. Sundquist, 827 Louise Drive, Sunnyvale, Calif.
Filed Jan. 8, 1964, Ser. No. 336,497
12 Claims. (Cl. 115—26)

1. A boat propulsion system comprising two propulsion floats and one stabilizing float, an interconnecting structure with means for controlling the attitudes of the propulsion floats, each propulsion float having in the water inverted troughing inclined upwardly to the stern, a source of pressurized gases, a means of distributing variable portions of the pressurized gas flow to the propulsion floats, and ducts for conducting the pressurized gases to the inverted troughing, whereby said gases pass sternwardly and upwardly to exert propulsive thrust on the propulsion floats.




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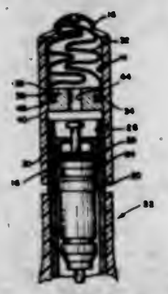
3,164,124
SIGNAL MIRROR
Frederick Ehrman, Rte. 662, Oley, Pa.
Filed July 2, 1963, Ser. No. 292,244
8 Claims. (Cl. 116—20)



1. A signal mirror comprising a substantially planar upper and lower portion spaced from one another but having portions in mating relationship to form a waterproof hollow outer shell, sheet-like elements having an outwardly directed mirrored surface, each of said planar portions supporting one of said elements and substantially coexistensive therewith, said shell being of lighter weight than an equal volume of water whereby it floats, said shell having external dimensions such that when said mirror is floating at least one of said mirrored surfaces is positioned upwardly to reflect light impinging thereupon, coextensive offset portions recessed in said upper and lower portions respectively, confronting one another and defining a sighting window, said sighting window comprising a retroreflective element interposed and held in place between said confronting offset portions, said retroreflective element conforming in configuration to said offset portion, a sighting aperture in said retroreflective element adapted to enable sighting of a target to which it is desired to reflect light from said reflecting means.

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3,164,125
TIRE VALVE SAFETY CAP
James L. Stuart, 3633 N. 97th St., Milwaukee 22, Wis.
Filed Sept. 20, 1962, Ser. No. 225,021
2 Claims. (Cl. 116—34)



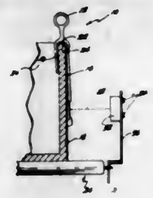
1. A removably attachable air leak indicator for the air valve of a vehicle tire comprising



a cylindrical housing having a central axial passage closed at one end by a frangible cap and interiorly threaded at the other end for mounting on the valve,
an expandable member positioned within said passage next to said frangible cap,
means for sealingly engaging said expandable member within the walls of said passage interiorly of said threaded end,
and means for mounting said indicator on said valve with the interior of said expandable member in communication with the valve whereby air leaking through said valve will expand said member and break said cap so that the member is visible to the eye.

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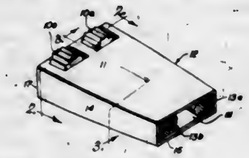
3,164,126
SIGNAL CLIP
Richard T. Matel, Clayton H. Vander Meer, and William R. Allen, Grand Rapids, Mich., assignors to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 22, 1963, Ser. No. 267,119
2 Claims. (Cl. 116—114)



1. A signal clip for attachment to open-top-box-like articles to route them on a conveyor, comprising: a resilient clip portion for removably attaching said signal clip to the rim of a vertical wall of said article; a plurality of leg portions each having at least one band of light-reflective material disposed on the outside thereof at predetermined spacings from said clip portion.

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3,164,127
PORTABLE HAND-HELD SIGNAL GENERATOR
Richard G. Schmid, Norridge, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 2, 1962, Ser. No. 170,690
17 Claims. (Cl. 116—137)



1. A portable hand-held signal generator comprising:
a support member;
a vibrator rod mounted on said member;
a mechanical exciter movable between an operative position where it is aligned with the axis of said rod and a second position where said exciter is displaced transversely from said axis;
actuating means for moving said exciter between said operative position and said second position;
spring means for biasing said exciter towards said rod in a direction parallel to said axis of said rod when said exciter is in said operative position;
and means mounted on said support member for storing energy in said spring means when said exciter is in said second position and for releasing said energy to propel said exciter into impact with said rod when said exciter is in said operative position.



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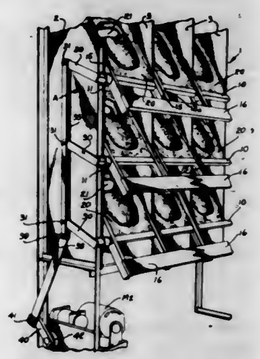
3,164,128
POULTRY FEEDER
Kenneth W. Arledge, 901 Kerry Lane, Azle, Tex.
Filed Nov. 23, 1962, Ser. No. 239,545
3 Claims. (Cl. 119—18)



1. In combination with a row of cages having a feeding trough along one side thereof,
a dispensing hopper having a dispensing spout extending into said trough,
means moving said hopper along the length of said trough, and
a scraper carried by said dispensing spout positioned to scrape the wall of said trough adjacent said cages.

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3,164,129
AUTOMATIC NEST GUARD
Preston D. Rigterink, Holland, Mich., assignor to Automatic Poultry Feeder Company, Zeeland, Mich., a corporation of Michigan
Filed Feb. 15, 1960, Ser. No. 8,793
13 Claims. (Cl. 119—45)



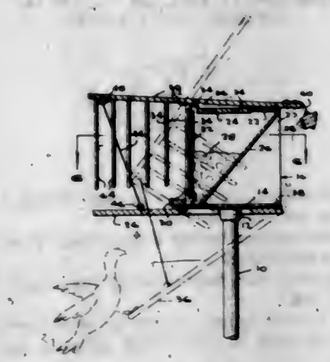
1. In a poultry nest assembly including a plurality of individual nesting enclosures each including side and rear closure means and a nest forming bottom means, said nest forming bottom means being movably mounted within each of said enclosures, said nest forming bottom means in one operative nesting position lying within said enclosure providing support for poultry and in another position forming a barrier at the front of said enclosure to prevent poultry from nesting within said enclosure.

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3,164,130
BIRD FEEDER
Wilfred A. Curtis, Depot St., North Woodstock, N.H., and James F. Keating, Jack O'Lantern, Woodstock, N.H.
Filed Oct. 11, 1963, Ser. No. 315,625
3 Claims. (Cl. 119—51)

1. A bird feeding station comprising a support, an open front bin having a bottom wall fixed upon the support, said bin having means active to feed bird food forwardly gravitationally toward its open front, said bin having side walls, a normally horizontal platform positioned beneath

and extending forwardly beyond the open front of the bin, said platform being hinged, at its rear end to the bin, at the rear end of the bin, a normally horizontal top plate overlying the bin and extending forwardly beyond the open front of the bin, said top plate being pivoted intermediate its ends on the bin side walls adjacent to the open front of the bin, said top plate being arranged to be swung



forwardly and downwardly to closure relation to the open front of the bin, automatic elevating means operatively connected to the top plate for returning the top plate to horizontal position from a depressed position, and connecting means extending between and connected to the top plate and the platform at locations near their forward ends.

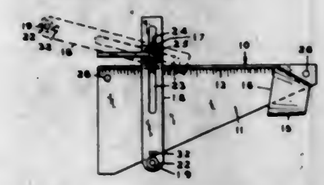
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3,164,131

## DEVICE FOR FAVORABLY POSITIONING AN ANIMAL FOR CASTRATION

David L. Bradshaw, Brice Rte., Box 115, Lebanon, Mo.

Filed Sept. 23, 1963, Ser. No. 310,713
1 Claim. (Cl. 119—103)



A device which is designed to support an animal on its side, the snout of the animal being confined in a muzzle, a jig manually operated to compress the belly of the animal toward one side of the device with the back of the animal thrust against the mentioned one side of the device, the jig manually operated to thrust the upper rear leg of the animal forwardly and closely toward the upper forward leg of the animal to spread the rear legs of the animal and force the testicles of the animal in a protruded position relative to the belly of the animal for the access of a castrator; the device comprising:

(*a*) a supporting surface on said device adapted for supporting an animal,

(*b*) an upwardly extended surface on said device located to one side of said supporting surface and adapted to receive the thrust of a back of an animal,

(*c*) a muzzle,

(*d*) said muzzle being secured to one end of said device and having an opening facing toward and extended above the mentioned supporting surface adapted to receive a snout of an animal,

(*e*) a pivot,

(*f*) said pivot being on said device and located on a level spaced above said upwardly extended surface,

(*g*) said pivot being spaced from said muzzle,

(*h*) an arm,

(*i*) said arm being pivoted on said pivot to sweep horizontally over said supporting surface in spaced relation thereto,

(*j*) a rod,

(*k*) said rod being secured uprightly to said arm,

(*l*) said rod being extendable downwardly toward said supporting surface and adapted to compress the belly of an animal toward said upwardly extended surface and press the upper rear leg of the animal forwardly and close to the upper forward leg,

(*m*) means for fixing a selected position of said arm on said pivot,

(*n*) and said means releasably securing the mentioned fixed position of said arm on said pivot.

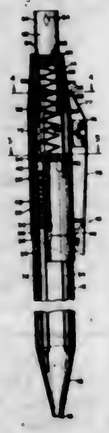
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3,164,132

## RETRACTABLE MULTIPLE UNIT WRITING INSTRUMENT

Walter C. Ganz, Jackson Heights, N.Y., assignor, by mesne assignments, to Chromatic Corporation, Brooklyn, N.Y., a corporation of New York

Filed July 13, 1962, Ser. No. 209,701
2 Claims. (Cl. 120—42.13)



1. A multiple unit writing instrument comprising an elongated cylindrical body portion having two ends with an aperture at one end, a rack having a plurality of longitudinally extending compartments therein, means fixedly mounting said rack on the other end of said body portion, a plurality of cylindrical writing implements mounted on said rack and each in a corresponding compartment and projecting within said body portion, retractile means cooperating with said rack and said implements, a cap removably mounted on said rack, said cap having an opening in its end farthest from said body portion, selector means reciprocably mounted in said cap and having an arm extending through said opening in said end of said cap, said selector means having a shoulder at the base of said arm for engaging the inner surface of said cap when said arm is fully extended through said opening in said cap, means biasing said selector means away from said writing implements, said selector means having a finger extending toward said writing implements and being rotatable to selectively position said finger above a selected writing implement, whereby in response to depressing said arm of said selector means a selected writing instrument is projected through said aperture in said body portion into writing position, stop means mounted on said cap and biased radially inwardly to automatically engage said shoulder on said selector means when said arm of selector means is depressed and retaining said selector means in its depressed position, and means for releasing said stop means to permit the selected writing implement to retract.



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3,164,133

## HEAT RECOVERY UNITS

Pierre Henri Pacault and Jean Frederic Tillequin, Paris, France, assignors to Babcock & Wilcox, Limited, London, England, a company of Great Britain

Filed Feb. 9, 1961, Ser. No. 88,205
Claims priority, application France, Feb. 20, 1960, 819,105
11 Claims. (Cl. 122—34)



1. A vapor generating and superheating unit comprising wall means forming a vertically elongated pressure vessel of circular cross section and adapted to contain a body of vaporizable liquid having a liquid level separating an upper vapor space from a lower liquid space, plate means co-acting with said pressure vessel wall to form an annular vapor-liquid collection chamber above said liquid space, said plate means having a lower portion of reduced diameter forming a tubular downcomer extending co-axially with said pressure vessel to the lower portion of said liquid space and forming an annular vapor generating chamber between said downcomer and said pressure vessel wall, said vapor generating chamber communicating at its upper end with said vapor-liquid collection chamber, a plurality of tubes constituting an annular bundle arranged to substantially fill said annular vapor generating chamber, vapor-liquid separating means arranged to separate a vapor-liquid mixture received from said annular vapor-liquid collection chamber, said separating means arranged to discharged separated liquid to said downcomer and separated vapor to said vapor space, a heating fluid inlet extending coaxially with said pressure vessel through said vapor space to the uppermost portion of said tubular downcomer and communicating with the upper end of said annular tube bundle, means for passing a heating fluid through said heating fluid inlet and said tubes, and means for superheating said separated vapor.

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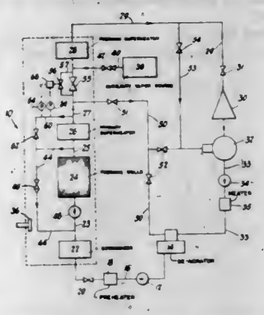
3,164,134

## APPARATUS AND METHOD FOR OPERATING A FORCED FLOW ONCE-THROUGH VAPOR GENERATOR

Edward L. Kochey, Jr., Colebrook, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Nov. 20, 1962, Ser. No. 238,887
9 Claims. (Cl. 122—406)

1. A method of starting up a forced flow modified once-through vapor generator having a first heating section including vapor generating furnace walls and a primary superheater and having a second heating section including a finishing superheater said heating sections being serially arranged for flow of a vaporizable fluid therethrough; the invention comprising feeding vaporizable fluid to said first heating section only; heating said vaporizable fluid by supplying heat to said first and second heating sections; permitting a first overflow of heated vaporizable fluid from said first heating section to a point of lower pressure; discontinuing the feeding of vaporizable fluid to said first section while recirculating said fluid from the outlet of



said furnace walls to the inlet thereof to maintain the flow velocity in said furnace walls above a predetermined minimum velocity; permitting a second overflow from the outlet of said primary superheater to the inlet of said furnace walls while discontinuing said first overflow; obtaining an indication of the temperature and pressure of said second overflow; gradually establishing flow from said primary superheater to said finishing superheater when the temperature and pressure of said second overflow reach predetermined values; and re-establishing a flow of vaporizable fluid to said vapor generator generally proportional to the flow from said finishing superheater.

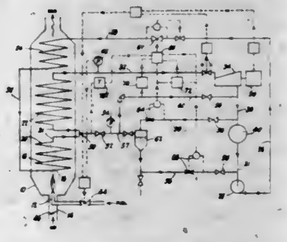
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3,164,135

## MONOTUBE BOILER FEEDWATER AND STEAM TEMPERATURE CONTROL

Harold von Beck, Malvern, Pa., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Jan. 27, 1961, Ser. No. 85,335
14 Claims. (Cl. 122—451)



7. In a fluid heating circuit producing throughout the normal operating load range thereof a vapor in the supercritical pressure range, the method of controlling the unheated fluid fed to said circuit, comprising the steps of heating said fluid to an exit temperature in excess of the critical temperature and at a pressure in excess of the critical pressure, extracting throughout said normal operating load range a portion of said fluid, said portion being independent of the load demand and reducing the pressure thereof from a pressure in excess of the critical pressure to a predetermined pressure below the critical pressure to cause said fluid portion to form a two-phase mixture of liquid and vapor, separating the vapor from

the liquid, effectively determining the fluid flow rate in at least one of said phases while maintaining said predetermined pressure, and adjusing said unheated flow rate in response to variations in the fluid flow rate in one of said phases.

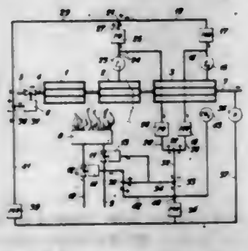
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3,164,136

## METHOD OF AND APPARATUS FOR REGULATING A FORCED FLOW STEAM GENERATOR

Fritz Läubli, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland

Filed Feb. 12, 1962, Ser. No. 172,449
Claims priority, application Switzerland, Feb. 15, 1961, 1,992/61
8 Claims. (Cl. 122—479)



1. A method of controlling a forced flow steam generator including a final superheater, and control means for the supply of feedwater, of fuel and of combustion air, comprising:

producing a first control signal having a PID characteristic and corresponding to the temperature of the steam superheated in the final superheater,

producing a second control signal having a PD characteristic and corresponding to the temperature of the operating medium of the steam generator upstream of the final superheater with respect to the flow of the operating medium through the steam generator,

combining said first and said second control signals and controlling the feedwater supply in response to the combined first and second control signal for increasing the feedwater supply upon an increase of the combined signal, and conversely,

producing a third control signal having a PID characteristic and corresponding to the temperature of the steam superheated in said final superheater,

producing a fourth control signal having a PD characteristic and corresponding to the temperature of the operating medium of the steam generator upstream of the final superheater, and

combining said third and said fourth signal and controlling the fuel and combustion air supply in response to the combined third and fourth signal for increasing the fuel supply and the air supply upon a decrease of the combined signal, and conversely.

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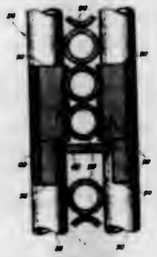
3,164,137

## SHIELDING OF TUBE SUPPORT FOR FURNACE TUBE PANELS

Henry Liesienberg, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed July 5, 1962, Ser. No. 207,548
1 Claim. (Cl. 122—510)

In combination a furnace means to produce hot combustion gases in said furnace, a roof and side walls for said furnace, a heat exchanger positioned in the upper portion of said furnace, said heat exchanger comprising a plurality of vertically spaced, parallel tube means; support structure for the heat exchanger, said support structure including first, second, third and fourth fluid-cooled vertical tube means that are supported adjacent their upper ends and which extend from the roof of said furnace to a point below said heat exchanger, said first and second vertical tube means being on one side of the heat exchanger, and said third and fourth vertical tube means being on the other side of said heat exchanger, first and second support means secured to said vertically spaced fluid-cooled tube means on opposite sides thereof, third support means secured to said first and second vertical tube means, fourth support means secured to said third and fourth vertical tube means, said first and second support means resting on top of and being supported by said



third and fourth support means, respectively; first shielding means secured between said first and second vertical tube means, second shielding means secured between said third and fourth vertical tube means, third shielding means secured to said first, second, third and fourth vertical tube means below said first and second support means; said first, second, and third shielding means being positioned such that they, in conjunction with the third and fourth support means and all of the vertical tube means, substantially enclose the first and second support means on the bottom and all four sides, thereby preventing said first and second support means from being directly exposed to the flowing hot combustion gases and from radiant heat within the furnace.

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3,164,138

## METHOD OF OPERATING AN INTERNAL COMBUSTION ENGINE AND MOTOR FUEL THEREFOR

Robert M. Reuter, Fishkill, and George W. Eckert, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,370
11 Claims. (Cl. 123—1)

1. A method of operating a spark-ignited internal combustion engine which comprises burning in said engine a motor fuel comprising a hydrocarbon mixture boiling in the gasoline boiling range containing an oil-soluble viscosity improving aluminum soap of a branched chain aliphatic monocarboxylic acid in which said aliphatic radical has from 8 to 30 carbon atoms in an amount effective to increase the viscosity of said motor fuel measured as Kinematic Viscosity in centistokes at 0° F. by at least 10 percent to 200 percent over the viscosity of said hydrocarbon mixture.

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3,164,139

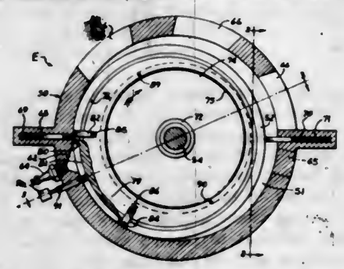
## ROTARY ENGINE OF THE SLIDING VANE TYPE

Arthur I. Appleton, Northbrook, Ill.
(1713 Wellington Ave., Chicago, Ill.)

Filed Feb. 23, 1961, Ser. No. 91,169
2 Claims. (Cl. 123—14)

1. A rotary internal combustion engine of the sliding vane type and comprising, in combination, a block having a rotor chamber defined therein, a rotor journaled within said rotor chamber, means defining a combustion chamber in the outer peripheral wall of said rotor chamber, means defining a pair of laterally spaced intake ports in the outer peripheral wall of said rotor chamber situated substantially opposite said combustion chamber, said intake ports being adapted to admit a charge of fuel and air mixture into said rotor chamber, means defining at least one exhaust port in the outer peripheral wall of said rotor chamber between said combustion chamber and said intake ports, a pair of power lobes mounted on said rotor, a pair of sliding vanes mounted transversely of said rotor and disposed respectively in leading and trailing relation with each said power lobe, said vanes being adapted to sealingly engage the inner peripheral wall of said rotor chamber and portions of the rotor chamber





side walls adjacent thereto, means defining an impulse shoulder and expansion pocket in each said power lobe between its associated pair of sliding vanes, said pocket communicating with the outer periphery of said rotor but not with the lateral extremities thereof, a first sliding abutment mounted in said block adjacent the trailing end of said combustion chamber and adapted to follow the outer periphery of said rotor, a second sliding abutment also mounted in said block between said one exhaust port and said intake ports and also adapted to follow the outer periphery of said rotor, a third sliding abutment mounted in said block adjacent the leading end of said combustion chamber and adapted to follow the contour of each said expansion pocket, and means for igniting the charge of fuel and air in said combustion chamber.

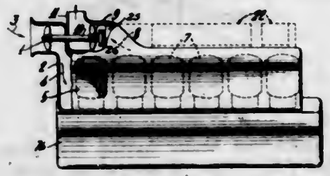
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3,164,140

## COOLING HEAT TURBINE FOR ENGINES

Clifford J. Nuttall, Jr., Rock Hall, Md., assignor to Stevens Institute of Technology, Hoboken, N.J., a corporation of New Jersey

Filed Aug. 2, 1963, Ser. No. 306,973
4 Claims. (Cl. 123—41.65)



1. In combination with a high temperature internal combustion engine having a combustion cylinder driving an engine crankshaft,

an air cooling system comprising a shroud which forms a plenum chamber containing at least a substantial part of said cylinder, said chamber having an air inlet for conducting cooling air into the chamber and also having an air outlet for exhausting heated air from the chamber, said chamber forming an air flow path wherein air flowing from the inlet to the outlet is directed past the cylinder to extract heat therefrom,

a rotary intake blower mounted in said path adjacent the chamber inlet to force air in through said inlet,

a rotary turbine mounted in said path adjacent the outlet to extract energy from the heated air,

a rotary power transmitting shaft separate from the said crankshaft and connected to the blower to drive the blower,

means connecting the turbine to the blower shaft so that the blower is driven by the turbine,

an engine exhaust manifold leading into the plenum chamber in position to heat the air after it has been heated by the cylinder and before it reaches the turbine,

starting means to rotate the blower shaft on starting of the engine, and

means to disconnect the blower shaft from the said starting means upon attaining sufficient heat in the chamber for the turbine alone to drive the blower shaft.

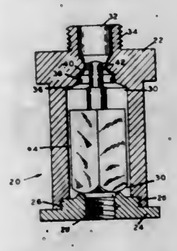
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3,164,141

## VOLUMETRIC CONTROLLED CRANKCASE VENTILATION SYSTEMS

Oscar F. Jones, 1716 Andover Court, Oklahoma City, Okla.

Filed Nov. 6, 1961, Ser. No. 152,709
1 Claim. (Cl. 123—119)



A volumetric control valve for metering internal combustion engine crankcase vapors into the intake manifold as a function of the no-load and load vacuum therein comprising the combination of,

a valve body having a cylindrical bore between a lower inlet and upper beveled surface directed upwardly and inwardly to an outlet control orifice;

a valve piston,

said piston having a triangular cross-section body portion centrally terminating its upper end with axial first and second cylindrical restricting portions operable within said control orifice at no-load and load vacuum respectively, said first portion of diameter slightly less than said control orifice, and said second portion above said first and of diameter slightly less than said first portion, said piston operable within said bore from a load condition resting on said lower inlet to a no-load condition wherein said upper triangular corners abut said upper beveled surface.

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3,164,142

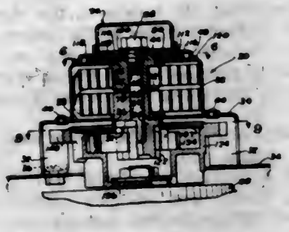
## SPRING ACTUATED STARTER FOR ENGINES

Douglas G. Anderson and Eugene Kawecki, Detroit, Mich., assignors, by mesne assignments, to Sturdevant Manufacturing Corporation, Detroit, Mich., a corporation of Michigan

Filed July 5, 1962, Ser. No. 207,684
9 Claims. (Cl. 123—179)

1. In a coil spring type starter having a housing which mounts a spring winding shaft, a spring driven shaft connectible wih said engine or the like to be started and means for releasably storing energy in the spring tending to rotate the spring driven shaft, improved structure wherein each of said shafts has an outer end journaled on said housing, the inner ends of said shafts engaging

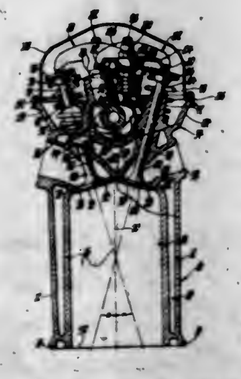
a common bearing member supported by said shafts, said spring having ends, one of which is operably connected



with said wind-up shaft and the other of which is operable connected with said driven shaft.

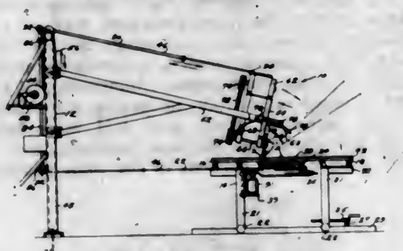
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3,164,143
INTERNAL COMBUSTION ENGINE
John Dolza, 810 State St., Fenton, Mich.
Filed Mar. 11, 1964, Ser. No. 350,956
11 Claims. (Cl. 123—195)



1. A one-piece engine block and cylinder head construction for an internal combustion engine comprising:
an engine block portion having a plurality of cylinders formed therein and being open at the lower end thereof;
a cylinder head portion having inlet and exhaust passages formed therein and communicating with said cylinders and terminating in said cylinders with valve seats, said valve seats being angularly disposed relative to a vertical longitldinal median plane of said cylinder head portion to permit machining thereof through said open end of said engine block portion;
valve guide bosses formed in said cylinder head portion and having valve steam receiving bores formed therethrough, said bores being angularly disposed relative to a vertical longitudinal plane of said cylinder head portion and opening into said intake and exhaust passages, said bosses being adapted to receive intake and exhaust valves reciprocable therein and seatable on said valve seats;
means formed in said cylinder head portion for rotatably receiving and supporting a camshaft, said means being disposed along a longitudinal axis of said cylinder head portion and between said bosses;
and bridge means extending inwardly from one of said bosses and over said axis and adapted to receive the actuating mechanism for the valves mounted in said bosses.

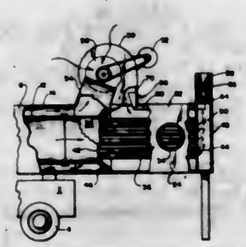
3,164,144
CUTTING APPARATUS
Madison B. Adams, Jr., 1701 2nd Ave. N., Jacksonville Beach, Fla.
Filed May 3, 1963, Ser. No. 277,807
11 Claims. (Cl. 125—13)



1. Apparatus for cutting material along a predetermined curved line comprising in combination, movable support means for supporting the material to be cut, support moving means for moving said support means in a path having the configuration of the predetermined curved line cut to be made, a substantially flat planar circular cutting blade spaced above said support means a distance sufficient to receive said material to be cut, means to move said cutting blade into operative cutting engagement with the material to be cut and means coordinated with the movement of said support means for pivoting said blade in a direction perpendicular to the plane of said blade and about a point lying in the lowermost peripheral extent of said blade whereby said blade will cuttingly engage said material at a predetermined angle coordinated with the radius of curvature of the predetermined curved line being cut so as to cut said material along said predetermined curved line.

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3,164,145
AIR HEATING APPARATUS
Charles G. Tolson, Rock Island, Ill., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,378
6 Claims. (Cl. 126—110)

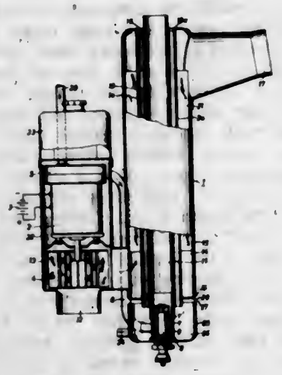


1. The combination of:
(*a*) a direct-fired heater having first blower means forcing a first draft of air through both a combustion chamber and a separate ventilating air passage in heat exchanging relation with said combustion chamber; and,
(*b*) apparatus adapted to be releasably coupled to said direct-fired heater for converting it to an indirect-fired heater, comprising;
(*c*) a casing containing a heat exchanger connected to receive interiorly combustion gases from said combustion chamber and conduct said gases to an outlet;
(*d*) second blower means including an inlet open to atmosphere creating a second draft of air separate from said first draft;
(*e*) means directing a major part of said second draft of air and that part of said first draft existing from said ventilating air passage into said casing around said heat exchanger to a ventilating air outlet; and
(*f*) means for discharging the remaining part of said second draft in a downstream direction into the flow of said combustion gases.



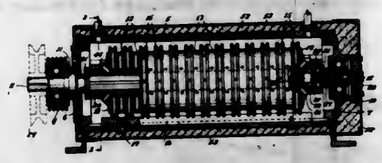
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3,164,146
HEATING DEVICES OPERATED WITH LIQUID FUEL
Reiner Friedl, Starnberg, Upper Bavaria, and Robert von Linde, Grafelfing, near Munich, Germany, assignors to Webasto Werk G.m.b.H., Stockdorf, near Munich, Germany
Filed Apr. 1, 1963, Ser. No. 271,835
Claims priority, application Great Britain Mar. 9, 1960
1 Claim. (Cl. 126—116)



A liquid fuel operated heating device comprising in combination:
a heat exchanger including means defining a first channel having a circular cross-sectional area for combustion gases and means defining a second channel having an annular cross-sectional area substantially surrounding said first channel for a heat transfer medium;
a burner, said burner including a chamber having an annular cross-sectional area coaxial with said first channel and communicating therewith, said chamber being formed by a pair of coaxially arranged cylindrical wall members, the inner one of said wall members projecting within and spaced from the outer one of said wall members, and thereby defining a first annular zone of one volume between the outer surface of the inner surface of the outer wall member and a second cylindrical zone of an increased volume defined by the inner surface of the outer wall member, said first zone being in communication with said second zone, the means defining said first channel forming a generally lineal axial extension of the outer wall member, and means for igniting fuel disposed coaxially within the inner wall member;
a positive displacement pump for furnishing the total air and fuel necessary for combustion to said burner, said pump having a pressure side and a suction side; driving means for said positive displacement pump; and
a supply pipe connected to the pressure side of said positive displacement pump and with a discharge into said annular chamber within the first annular zone between the outer surface of the inner wall member and the inner surface of the outer wall member.

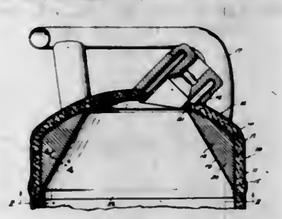
3,164,147
FRICTION HEAT GENERATOR
Herbert W. Love, Waterfront Park, South Coventry, Conn., and Alfred H. Tully, 1600 W. Main St., Willimantic, Conn.
Filed Feb. 9, 1962, Ser. No. 172,229
13 Claims. (Cl. 126—247)



1. A friction heat generator including a casing having end walls, a drive shaft journaled in said end walls, a plurality of stationary friction discs keyed to said casing, a plurality of rotatable friction discs keyed to said shaft to be driven thereby and disposed between said stationary discs in frictional contact therewith, said stationary and rotatable discs having spaced side walls and inner and outer concentric annular walls forming heating chambers therein, said discs being formed with openings extending through said walls communicating with said chambers.

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3,164,148
INSULATED CONTAINER
Joseph Tolcias, Bayside, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 15, 1964, Ser. No. 337,963
5 Claims. (Cl. 126—375)



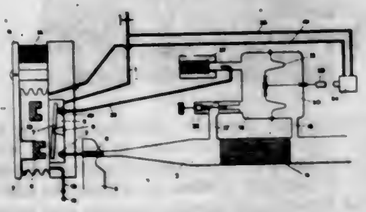
1. In a fluid container having inner and outer cylindrical side walls, insulation material between said walls, and at least one end wall merging therewith at an angle; the improvement comprising an annular partition fixed to said inner side and end walls to provide therewith an annular chamber which is substantially triangular in cross section and includes therein contiguous portions of said side and end walls, and a body of fusible heat stabilizing compound sealed in said annular chamber and filling the same.

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3,164,149
APPARATUS FOR CONTROLLING OR ASSISTING RESPIRATION
Gerald Alfred White, Brookhouse, near Lancaster, and Ian George Baxter, Harlow, England, assignors to The British Oxygen Company Limited, a British company
Filed Feb. 3, 1961, Ser. No. 86,903
Claims priority, application Great Britain, Feb. 3, 1960, 3,823/60
4 Claims. (Cl. 128—29)

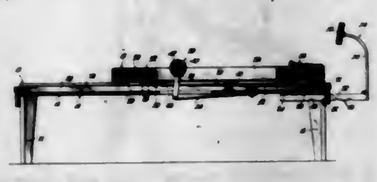
1. An automatic ventilator comprising a source of fluid under pressure, means defining a primary chamber, an inlet for conducting fluid under pressure from said source into said primary chamber, an outlet for conducting fluid under pressure out of said primary chamber magnetically responsive primary valve means movable between open and closed positions to control the discharge of fluid under pressure from said primary chamber through said outlet in accordance with variations in a pressure condition, a pressure responsive member magnetically coupled to said

primary valve means movable in responses to a predetermined increase in said pressure condition to magnetically actuate said primary valve means from said open to said closed position, said pressure responsive means automatically movable upon a predetermined decrease in pressure to magnetically actuate said primary valve means back to said open position to discharge fluid under pressure from said chamber, conduit means connected to said outlet in said chamber for conducting said discharged fluid away from said chamber, and a flow meter downstream of said primary vale means connected to the conduit means and in the path of said discharged fluid under pressure, said flow meter including means for selectively connecting and disconnecting said source of fluid under pressure to said pressure responsive member.



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3,164,150
**MASSAGE AND EXERCISE TABLE**
Jack T. Reid, Rte. 3, Miami, Okla.
Filed Apr. 9, 1962, Ser. No. 186,009
1 Claim. (Cl. 128—57)



Apparatus for massaging the human body, said apparatus comprising

(*a*) a base having supporting legs and a platform, there being a slot formed in said platform;

(*b*) a frame shiftably carried by said base in overlying relationship thereto, said frame being reciprocable with respect to said base, there being an aperture formed in said frame, said aperture partially overlying said slot;

(*c*) at least one resilient member secured to the base and the frame to bias the latter in one direction with respect to the base;

(*d*) a pedal carried by the base and adapted to be engaged by the feet of a person on the frame for shifting the frame in the opposite direction with respect to the base;

(*e*) massage means carried by the base and extending through said slot and said aperture for engaging the body of a person on the frame, said massage means including a leaf spring having one end thereof secured to said platform, a bracket secured to the other end thereof, said bracket extending through said slot and into said aperture and a roller journalled on the free end of said bracket and positioned to engage the body of a person on the frame; and

(*f*) adjusting means for regulating the position of said massage means, said adjusting means being in the form of a screw carried by the base and engageable with said leaf spring intermediate the ends thereof.

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3,164,151
**INFLATABLE SPLINT**
Esmond D. Vere Nicoll, Whippoorwill, R.F.D. 5, Charlottesville, Va.
Filed Dec. 14, 1962, Ser. No. 244,678
2 Claims. (Cl. 128—75)



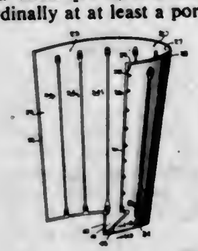
1. An inflatable collar or brace for supporting the neck and head of the wearer, comprising a sheet of flexible air-impermeable plastic material, said sheet being generally symmetrical about an axis of symmetry extending longitudinally of its length and having curved side edges with a width in its middle region less than the width of its end regions, and folded along said axis of symmerty to form a folded straight side edge; means sealing together adjacent edges of said folded sheet along the ends the curved side thereof so as to form an elongated enclosed chamber having a folded straight side edge, a curved sealed side edge, two sealed end edges and two opposing side walls having a central region narrower than the end regions; means further sealing together the said opposing side walls of said chamber at a plurality of spaced strips, said strips extending generally transversely to the length of said chamber and intermediate the ends thereof and of a length less than the width of said chamber at the location of said strip; adjacent pairs of said strips forming with the portions of the opposing said side walls located therebetween an inflatable cell; said strips further providing means for curving said chamber when inflated; generally enclosed tubular channels being also formed extending interiorly longitudinally of said chamber, from one of said end edges to the other of said end edges, one of said tubular channels extending along said folded side edge, and the other of said tubular channels extending along said sealed side edge, each of said channels being in open communication with each of said cells; means permitting inflation of said chamber to inflate said cells and said channels whereby a plurality of substantially parallel generally vertical air columns extending transversely of the length of said chamber are formed, said air columns terminating at their ends in the inflated channels extending along the edges of said chamber, resistance to compression of said inflated air columns providing vertical support to the head of the wearer and at the same time providing gentle lateral support to the neck of the wearer, through the resting of said inflated channels against the shoulder and head of the wearer, and said central narrower region of said chamber supporting and partially surrounding the chin of the wearer to restrict rotational movement of the same; and fastening means for connecting and disconnecting the ends of said chamber to each other and to secure said collar about the neck of the wearer.

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3,164,152
**INFLATABLE SPLINT**
Esmond D. Vere Nicoll, 400 Locust Ave., Charlottesville, Va.
Filed Feb. 5, 1962, Ser. No. 171,198
2 Claims. (Cl. 128—87)

1. An inflatable splint for supporting an injured leg and substantially immobilizing the injured portions thereof comprising two sheets of pliable gas impervious plastic material of substantially the same size and shape and having upper and lower end edges and side edges and sealed along said edges to form an inflatable space therebetween, a plurality of laterally spaced narrow single heat-welded seams spaced from said edges and extending longitudinally and generally parallel to said side edges and each other, said seams thereby further joining said two sheets of plastic material together and separating the said enclosed space into a plurality of inflatable, generally parallel, longitudinally extending tubular portions, each of said tubular portions being substantially wider than said seams, said tubular portions forming when inflated a plurality of stiffening pieces to shape the splint on inflation and from support for the leg of the wearer, fastening means for releasably attaching one of said side edges to the other of said side edges to form from said sheets a generally cylindrical splint for completely encasing the leg therein, the portion of said sheets between said fastening means forming a main panel, and an extension panel extending longitudinally at at least a portion of the lower

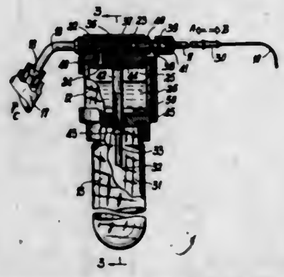




edge of said main panel, said tubular portions extending substantially to the lower edge of said main panel, said tubular portions being thereby adapted when said splint is associated with the leg of the wearer to extend below the ankle of the wearer and laterally restrict the movement of the ankle, said extension panel having an interior chamber in communication and inflatable with said tubular portions, and means joining the lower edge of said extension panel to itself for at least a portion of the said extension panel lower edge centrally of the panel thereby forming a generally concave pocket adapted when the inflatable interior chamber and tubular splint portions are inflated to receive and conform to the foot of the wearer, at least partially encasing the same, and to cooperate with the said main panel of the splint to support the foot against the leg and to restrict movement of the foot as well as the leg.

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3,164,153
**DENTAL APPARATUS**
Carlo Zorzi, 6 Via Candoglia, Milan, Italy
Filed Sept. 19, 1962, Ser. No. 224,718
Claims priority, application Italy, Sept. 20, 1961, 16,981/61
5 Claims. (Cl. 128—224)

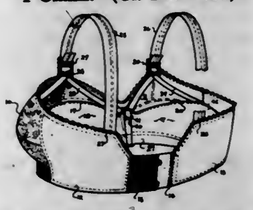


1. An apparatus for treating tooth cavities comprising, in combination, an upper head portion; first chamber means adapted to contain a medicated liquid to be discharged into a tooth cavity to be treated; second chamber means adapted to receive liquid and extraneous matter from the tooth cavity, said first and second chamber means being arranged beneath said upper head portion, said second chamber means arranged beneath said first chamber means; means connecting said second chamber means to said first chamber means; means connecting said first chamber means to said upper head portion; a main duct formed in said head portion and having an open end communicating with the atmosphere; inlet means adapted to be connected to a source of compressed air and communicating with the other end of said main duct; first passage means providing communication between said main duct and said first chamber means so that compressed air entering said main duct through said inlet means will pass into said first chamber means to provide pressure on a liquid therein; Venturi means located in said main duct downstream of said first passage means and communicating through said open end of said main duct with the atmosphere, said Venturi means forming in said head portion a suction chamber; second passage means providing communication between said suction chamber and said second chamber means so as to provide during flow of compressed air through said Venturi means a partial vacuum in said second chamber means; first feed duct means having an upper portion extending substantially normal to said common axis and being formed at least in part in said head portion and a lower portion extending in said first chamber means below the level of liquid therein; second feed duct means having an upper portion extending substantially normal to said common axis and being formed at least in part in said head portion and a lower portion extending into said second chamber means; and a pair of hollow needles fluid-tightly connected at one end thereof and carried by said upper portions of said first and second feed duct means, respectively, said feed ducts and said needles are located above said first chamber means, said needles having free ends adapted to be located in the tooth cavity to be treated and said free ends being when said apparatus is held in a substantially vertical position located at a higher elevation than the level of liquid in said first chamber means.



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3,164,154
**BRASSIERE**
Carl G. Simonsen, 826 S. Winchester Road, San Jose, Calif.
Filed June 22, 1962, Ser. No. 204,488
1 Claim. (Cl. 128—486)



A brassiere having a breast supporting hammock inner structure and a covering cup outer structure having backward extensions, said hammock structure including a contoured shelf formed into two adjacent sections joined together at a mesne area and each adapted to assume a rounded pocket form to undergird a breast of a wearer, and each said section having a top edge curved lengthwise thereof and extending from a position lateral of a breast when worn to said mesne junction area, a pair of shoulder straps, each strap having a back end and a front end, each shoulder strap adapted to loop over an opposite shoulder of a person wearing such brassiere, each strap having its back end secured to a backward extension and a length adjusting buckle secured to the front end of such strap for adjustment of the buckle along such strap, each said buckle having a plurality of spaced apart bars parallel to each other so that said buckle has exterior bars and interior bars, and such strap being looped around one of

said interior bars of such buckle, a double loop keeper having two exterior bars and an interior bar, a link strap loop looping an exterior bar of said keeper and an interior bar of said buckle and not looping other bars, a pair of flat ribbon hangers, one each slidably looped over the interior bar but not an exterior bar of said keeper, each ribbon hanger formed with a half twist from end to end thereof, one end of each of said ribbon hangers being secured to said mesne area and the other ends to separate lateral extensions of said shelf, and means for securing one of said covering cups to an exterior bar of each of said buckles.

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**3,164,155**
**BRASSIERE**
**Carl G. Simonsen, 2304 The Alameda, San Jose, Calif.**
**Filed Oct. 11, 1962, Ser. No. 229,843**
**6 Claims. (Cl. 128—486)**



1. A brassiere having a breast support part formed as a continuous piece of woven yarn fabric, said part, when in a planar condition, having: legs which give it a V-shaped form with interior and exterior edges with the general form of the interior edge of said part being an angle of between seventy and ninety degrees, the legs of said V-shaped part joining together at what may be called the sternal line of said support part, such sternal line bisecting such interior angle and being parallel to a yarn direction of weave of said fabric, the interior edge of each leg of said support part being concave, the exterior edge of each such leg being concave adjacent the sternal line to an adjacent ogee point and convex remote from such point, said interior and exterior edges being divergent with respect to each other from the ogee point, said support part divergent portions being of a length and width to encompass areas of the inframammary and mammary regions of a wearer from the sternalis to below the armpits, and each leg formed with a web which is narrow with respect to the widest width of said part, each web having an edge which is a continuation of the interior edge of a such leg.

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**3,164,156**
**ARCH SUPPORT**
**John Gordon Macdonald, London, England, assignor to Laboratories for Applied Biology Limited, London, England, a British company**
**Filed Feb. 14, 1963, Ser. No. 258,498**
**5 Claims. (Cl. 128—599)**



1. A support for an arch of a foot consisting of a flexible pad shaped to fit inside a shoe at a fixed location and at least one arch support unit comprising a strip of bendable ductile metal bent to arch form, means securing the external surface of the arch strip to the pad, and a tension member extending between the ends of the arch strip and consisting of a further metal strip the ends of which are bent and hooked over the ends of the arch strip to prevent separation of said ends.

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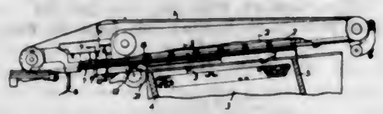
**3,164,157**
**FILTER TYPE CIGARETTE AND METHOD OF MAKING SAME**
**Herbert A. Lebert, Millbrae, Calif., assignor to MacFarland, Aveyard & Company, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 15, 1961, Ser. No. 91,568**
**4 Claims. (Cl. 131—10)**



3. In a cigarette, a self-contained assembly comprising a tubular wrapper, a body of fibrous material in said wrapper longitudinally oriented for smoke passage longitudinally through the cigarette, and means comprising a generally circular metal band located inside of and secured to said wrapper, said circular band being manually compressible from annular to elliptical form to thereby compactingly compress the body fibers into a venturi restriction passageway through which smoke must travel at an accelerated high speed when moving from a downstream to an upstream side of the constriction, the metal being of such a characteristic as to take a set after being compressed so as to maintain the fibers in a compacted position, the fibers of the body on the downstream side of the constriction providing an impingement barrier against which the high speed smoke impinges, whereby high temperature tars are collected on the barrier fibers and the smoke then moves on downstream through the body minus such tars.

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**3,164,158**
**TOBACCO MANIPULATING MACHINES**
**Francis Auguste Maurice Labbé, Paris, France, assignor to Molins Machine Company Limited, London, England, a British company**
**Filed May 31, 1961, Ser. No. 113,775**
**Claims priority, application Great Britain, June 21, 1960, 21,715/60**
**4 Claims. (Cl. 131—84)**



1. In a cigarette making machine, the improvement comprising walls forming a passage through which flows an air stream having tobacco particles entrained therein, an elongated flat, air pervious conveyor band traversing said pasasge generally normal to the flow of said air stream, said conveyor intercepting the flowing particles in said stream at one end of said passage to build up on said conveyor band a tobacco filler, a suction source communicating with said passage through said pervious conveyor to hold the thus-formed filler to the band surface by air pressure, the end of said passage adjacent the band including side guides defining a tobacco filler-receiving trough with said band, the surfaces of said side guides being formed with alternating lands and grooves extending lengthwise of said trough, said lands and grooves modifying the flow of particles in the vicinity of the band to improve the uniformity of said filler on said band and serving to guide the formed filler as said conveyor leaves said passage.



**3,164,159**
**CURLING IRON**
**Alfred Recknagel, deceased, late of Solingen, Germany, by Ingeburg Recknagel, legal representative, Rathausstrasse 12, Solingen, Germany**
**Filed Oct. 26, 1959, Ser. No. 849,424**
**5 Claims. (Cl. 132—32)**



1. In a curling iron, in combination, a pair of metallic handles each having a first and a second end; pivot means for connecting the first ends of said handles; a metallic sleeve rotatably mounted on each of said handles; means provided at the second end of each handle for holding the respective sleeve against movement in a direction away from said pivot means; and heat insulating cover means surrounding and connected for rotation with each of said sleeves, each said cover means comprising a cupped end portion fully enclosing the second end of the respective handle whereby the handles are heat insulated from the hand of an operator, said cupped end portions being rigid with and thus sharing rotary movements of the respective cover means.

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**3,164,160**
**TILTABLE SUPPORT FOR UMBRELLAS**
**Samuel N. Small, Valley Stream, N.Y., assignor to Alfred G. Cohen and Paul Weiss, both of Flushing, N.Y.**
**Filed Oct. 6, 1961, Ser. No. 143,373**
**4 Claims. (Cl. 135—46)**

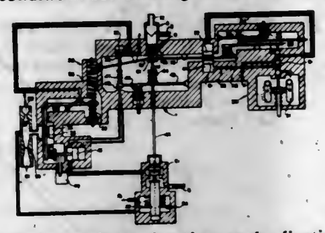


2. In tiltable umbrellas having an umbrella post, a tubular support having at its end a key bushing, including a plurality of circumferentially spaced sockets, a tilting element fixed to and projecting beyond the post, said element having a rod extending into the post through said bushing, a spring coupled with the rod and the support, said spring urging said post in the direction of said support in securing the umbrella post to the support, said element including means normally seating on and arranged in said bushing in support of the post in alined position with the support, key means on the rod of said element adapted to be positioned in one of said sockets in support of the umbrella post in tilted position with respect to the support, and each of the sockets having means engaging the rod of said element when supported therein to retain the post in tilted position.

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**3,164,161**
**CONTROLS FOR GAS TURBINE ENGINES OR OTHER APPARATUS**
**Stanley R. Tyler, Cheltenham, England, assignor to Dowty Fuel Systems Limited, Cheltenham, England**
**Filed Mar. 26, 1962, Ser. No. 182,305**
**Claims priority, application Great Britain, Mar. 28, 1961, 11,341/61; Oct. 2, 1961, 35,518/61**
**4 Claims. (Cl. 137—29)**

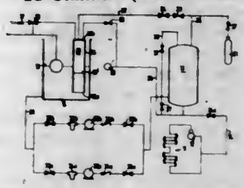
1. Fuel-flow control apparatus for an engine, including means for supplying fuel to the engine, means to control the rate of fuel flow to the engine and operable to maintain the engine at a predetermined speed, said control means being variable to effect positive or negative acceleration, limiting means responsive to engine operating conditions for limiting the rate of fuel flow to



the engine during such acceleration, and adjusting means responsive to the rate of fuel flow required to maintain the engine at a predetermined speed arranged to continually adjust said limiting means in proportion to said rate of fuel flow.

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**3,164,162**
**LIQUID FEED ARRANGEMENT**
**Jack N. Saunders, Wilmslow, England, assignor to Warmac Limited, a company of Great Britain**
**Filed Sept. 6, 1961, Ser. No. 136,723**
**Claims priority, application Great Britain, Sept. 9, 1960, 31,067/60**
**11 Claims. (Cl. 137—209)**



1. In a liquid feed arrangement wherein liquid is fed to a container or the like in a manner which causes the surface of the liquid in the container to become turbulent or agitated, a localized enclosure defining a confined space above the region of turbulence or agitation, means for maintaining an atmosphere of gas within said confined space, said gas being chemically inert in relation to the material of the enclosure and any other part of the liquid feed arrangement with which such gas, when absorbed by the liquid, comes into contact, and means for replenishing said gas as necessary to maintain the pressure thereof within given limits.

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**3,164,163**
**VALVE CONSTRUCTION**
**Alton D. Oliver, Houston, Tex., assignor to M & J Engineering Co., Houston, Tex., a partnership**
**Filed Apr. 25, 1962, Ser. No. 190,147**
**4 Claims. (Cl. 137—315)**



1. In a gate valve, a valve body having aligned openings in its side walls, a gate comprising separate solid

and ported portions, and means comprising spring type straight pins engaging in holes in both said portions and serving releasably to retain said portions together.

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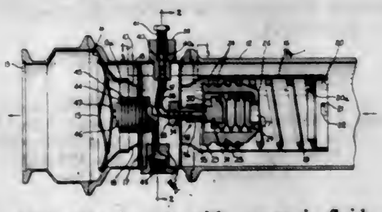
3,164,164
## PRESSURE-RESPONSIVE VALVES
David B. Pall, Roslyn Heights, and Harry D. Cordes, Wantagh, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Feb. 2, 1960, Ser. No. 6,150
12 Claims. (Cl. 137—467)



3. A pressure-responsive valve comprising a housing, intercommunicating inlet and outlet passages therein, a valve seat positioned across the line of fluid flow between said passages, and a substantially nondistensible bowed annular spring disk valve, a portion of whose surface seals against the valve seat, and is spring biased thereagainst to close off the line, the disk being responsive to a predetermined fluid-pressure differential across the disk at an annular portion thereof exceeding the spring resistance of the portion adjacent the seal, the spring disk being constructed to snap and reverse the direction of bow, to swing said annular portion out of engagement with the valve seat and open an annular passage between it and the valve seat, and to remain in the reverse direction until manually reset, whereby an increase in pressure differential between opposite sides of the valve disk exceeding the sping resistance of a portion thereof causes the valve to open and increased fluid to flow from the inlet to the outlet passage tending to equalize the fluid pressures acting on opposite sides of the valve disk.

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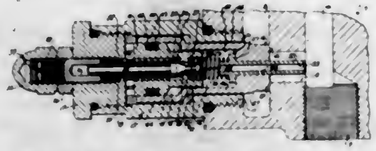
3,164,165
## RELIEF VALVE FOR USE WITH CRYOGENIC FLUIDS
Zola Fox, Verona, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed May 11, 1962, Ser. No. 193,919
5 Claims. (Cl. 137—468)



1. A relief valve for use with cryogenic fluids comprising a tubular valve body of circular cross-section having upstream inlet and downstream outlet ends and an annular downstreamwardly facing valve seat located inwardly adjacent to said outlet end, a poppet-type movable valve member mounted for axial movement in the valve body and being constructed and arranged to fit tightly against the valve seat of said body in closed position, a thin can-type tension member of tubular construction extending axially upstreamward from the movable valve member with its downstream end in closed connection to said member and its upstream end open to flow of the conducted fluid stream to immerse internal working parts therein, said tension member being provided with diametrically opposed longitudinal slots in its side wall, a backing strut extending laterally through the slots in the tension member in spaced relation to the ends of said slots to permit axial play therein, the ends of the backing strut being anchored in the valve body, stop means located at the upstream end of the tension member, a helical compression spring extending axially inside the tension member in interposed relation to said stop means and backing strut to restrain the movable valve member against its seat, spring rate initial adjustment means including an open-ended tubular member arranged coaxial with respect to the tension member and contained compression spring and being of a diameter to fit inside said spring, the said tubular member being provided with a semicircular helical thread in its outer periphery to engage downstream end convolutions of the compression spring, whereby the effective length of the active freely compressible portion of said spring may be predetermined to achieve spring rate adjustment, axial thrust means interposed between the said tubular member and the backing strut, said backing strut being hollow with its interior sealed from the flow path for cryogenic fluid in the valve body and can-type tension member, and wherein the axial thrust means includes a tubular bushing integral with said strut and having an axial through bore, a head projecting into the interior of the tubular member of the spring rate adjustment means and exerting thrust against said member, said head being axially adjustable toward and away from the tubular bushing on the backing strut, and relief pressure adjustment means extending through the interior of said strut and the lateral wall of the valve body and being constructed and arranged to permit axial adjustment of said head.

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3,164,166
## PILOT OPERATED PRESSURE AND VACUUM RELIEF VALVE
Francis H. Tennis, Milwaukee, Wis., assignor to Hydraulic Unit Specialties Company, Pewaukee, Wis., a corporation of Wisconsin
Filed June 14, 1962, Ser. No. 202,508
8 Claims. (Cl. 137—491)



1. A relief valve mechanism of the type comprising a body having a chamber that is communicable with a fluid supply line or other source of fluid at high pressure, an exhaust passage leading from said chamber, a pilot poppet biased to a closed position blocking said exhaust passage but movable to a chamber venting position in consequence of the force which supply line fluid in said chamber exerts thereon whenever its pressure rises to a predetermined relief value, and poppet mechanism having an inner surface upon which pressure fluid in said chamber acts to normally hold the poppet mechanism in a closed position blocking a relief path between said high pressure supply line and a low pressure return line, as long as the pilot poppet remains in its closed position, said poppet mechanism having an outer surface upon which supply line fluid may act to move the poppet mechanism out of said closed position whenever the pilot poppet is opened and fluid is free to exhaust from said chamber, said valve mechanism being characterized by the following features:

A. means in the poppet mechanism providing a control passage to substantially unrestrictedly communicate said chamber with the supply line;

B. means on the poppet mechanism defining a surface upon which fluid in the return line may act to effect opening of the poppet mechanism whenever the pressure of fluid in the supply line and the chamber with which it communicates drops to a value below that of fluid in the return line, so as to allow fluid to flow from the return line to the supply line;

C. and flow restricting means for said control passage comprising cooperating elements carried by the poppet mechanism and the pilot poppet and relatively movable into passage restricting relation in response to the drop in chamber pressure that results from opening of the pilot poppet.

7. Relief valve mechanism which opens when fluid pressure in a high pressure fluid supply line drops to a value only slightly below that of fluid in a low pressure fluid return line to prevent further pressure drop in the supply line, comprising:

A. means defining a body having

(1) a supply passage providing a part of the high pressure fluid supply line,

(2) a return passage providing a part of the low pressure fluid return line, and having a portion which is adjacent to a portion of the supply passage,

(3) a bypass communicating said adjacent portions of the supply and return passages,

(4) and an annular valve seat in said portion of the return passage defined by a surface adjacent to that wall thereof which is closest to the supply passage, said seat defining surface facing away from the supply passage, being coaxial with the bypass, and surrounding the adjacent end thereof;

B. a normally closed hollow relief poppet having a tubular rear portion by which the poppet is mounted in the body, coaxially of and opposite the valve seat, for fore and aft sliding motion toward and from a closed forward position blocking the bypass, said relief poppet having

(1) a reduced front portion with an end surface to engage the seat and close the bypass, an inner portion of said end surface that is surrounded by the seat being exposed to high pressure fluid in the bypass which thereby normally exerts force on the poppet tending to move it rearwardly off its seat,

(2) means providing a substantially unrestricted control passage through said front portion of the poppet by which fluid may be freely transferred between the supply passage and the hollow interior of the poppet.

(3) and rearwardly facing surfaces on the poppet which have an area larger than that of said inner portion of the poppet end surface;

C. cooperating means on the body and on the poppet providing a pressure chamber which is in part defined by said rearwardly facing poppet surfaces, and which chamber is communicated with the supply passage through the control passage so that fluid at normally high pressure fills the chamber and exerts force on said rearwardly facing poppet surfaces to hold the poppet closed against the opening force which fluid at the same high pressure exerts on said inner portion of the poppet end surface, and from which chamber fluid can be substantially unrestrictedly expelled through the poppet control passage to the supply passage in consequence of opening motion of the poppet;

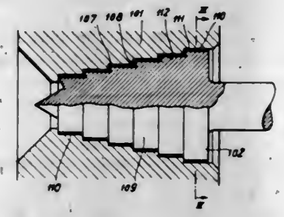
D. annular shoulder means on the exterior of the poppet located between its tubular rear and reduced front portions, providing forwardly facing surfaces upon which fluid in the return passage exerts force to open the poppet whenever the pressure of fluid in the supply passage, and accordingly in the pressure chamber, drops to a value slightly less than that of fluid in the return passage, and below which valve a void tends to form in a cylinder supplied with fluid from the supply line with which the supply passage is communicated, said seat engaging surface of the poppet moving rearwardly away from said wall of the return passage during such opening of the poppet so as to quickly establish a substantially unrestricted flow path along which a large volume of fluid can flow from the return passage to the supply passage via the bypass for void prevention, and such poppet opening motion being substantially unhindered by concomitant expulsion of fluid from the pressure chamber to the bypass to thereby assure fast opening motion of the poppet;

E. and said poppet control passage comprising a tubular member that forms part of the mechanism and extends a distance forwardly from said end surface of the poppet and into the bypass, said forwardly extending tubular member being substantially smaller in outside diameter than the bypass so as to present little obstruction to bypass flow of fluid from the return passage to the supply passage, and assuring against turbulence that tends to produce undesirable pressure buildup at a zone immediately ahead of the poppet, due to said bypass flow, that would otherwise cause the pressure in the chamber to rise accordingly and create a tendency for premature closure of the poppet.

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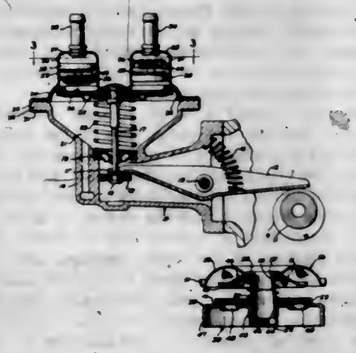


3,164,167
## APPARATUS FOR HOMOGENIZING LIQUIDS AND PULPS
Max Hermann Maragg, Sevelen, Switzerland, assignor to Etablissement Albina, Vaduz, Liechtenstein
Filed Jan. 19, 1961, Ser. No. 83,740
11 Claims. (Cl. 137—516.25)




1. Apparatus for homogenizing liquids and pulps having a homogenizing head adapted for being passed by said liquid and said pulps, respectively, in one direction of flow, said apparatus comprising a male part and a female part cooperating with each other, the female part comprising a bore having steps, the male part comprising a valve member having corresponding steps, adjustable resilient pressure means forcing said male part into said female part, the diameter of said steps of said male part and of said female part increasing in said direction of flow, the front annular faces of the steps of said male part being conically inclined towards the axis of the male part in the direction of increasing diameter of said male part, said inclined face of each step extending to the diameter of the respective step, thereby producing annular linear cutting edges and deflecting said liquids and pulps at each step by an angle of more than 90°; the cone apices lying on the longitudinal axis of the male part behind the respective steps in said direction of flow, and means guiding the male part in the female part so that it is movable axially but remains centered relative to said female part and free from tilting.

3,164,168
COMBINED CHECK VALVE AND STRAINER UNIT FOR FUEL PUMPS
William A. Bradley, University City, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed July 12, 1961, Ser. No. 123,572
9 Claims. (Cl. 137—544)



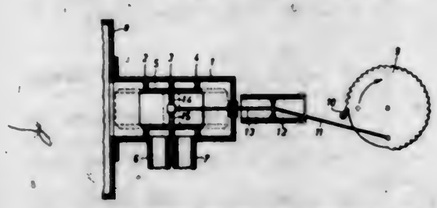
1. A combined check valve and strainer unit for a fuel pump having a cylindrical fuel passage in communication with a pumping chamber, said unit comprising a valve cage including a valve seat adapted to be mounted in said fuel chamber, said valve seat being provided with a central aperture and a port radially spaced from said aperture, a valve retainer including a tubular stem having one end mounted in and closing said central seat aperture and an annular spring seat portion on the other end of said stem, a disk valve slidably mounted on said stem and closing said port, a compression spring engaged between said spring seat portion and said disk valve, an annular strainer fitted coaxially on said other stem end, said strainer having an outer peripheral flange adapted to engage the cylindrical fuel passage, and a tubular eyelet press-fitted into said stem and clamping the inner peripheral portion of said strainer against said spring seat portion.

3,164,169
BALL FAUCETS
Aurelio Pareto, Genoa, Italy, assignor to Fabbrica Italiana Plastici s.r.l., Sori-Genoa, Italy
Filed June 14, 1961, Ser. No. 117,063
Claims priority, application Italy, Mar. 29, 1961, Patent 646,308
7 Claims. (Cl. 137—556)



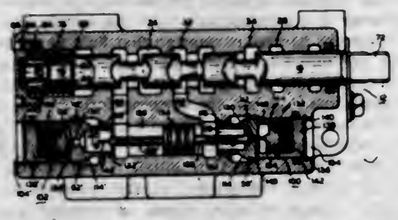
1. A ball faucet valve comprising a tubular valve body having an axial bore therethrough, a ball-shaped valve member having a flow opening therethrough and mounted within the valve body for rotation to control flow through the valve, a pair of sleeves slidably received in the bore of said valve body for connection of the valve to a pair of pipes, a pair of seat seals carried one at the inner end of each of said sleeves for sealing engagement with the ball-shaped valve member, said valve body having an axially directed slot on its tubular wall at each end, said sleeves each having a radial tooth guided in said slots and visible from the exterior of said valve body, and securing means adjustably mounted on said valve body to engage and move said sleeves inwardly of the valve body whereby to press said seat seals firmly against said valve member.

3,164,170
SYSTEM FOR EXHAUSTING CONTAINER
Ernst Glitter, Oberkochen, Wurttemberg, Germany, assignor to Carl Zeiss, Wurttemberg, Germany
Filed Oct. 26, 1961, Ser. No. 147,971
Claims priority, application Germany, Nov. 2, 1960, Z 8,328
8 Claims. (Cl. 137—567)



1. A valve system having two alternately acting valves, comprising a cylindrical housing, one end of said cylinder being closed, the other end of said cylinder being in communication with the container of a vacuum installation, a first, second and third annular packing gland positioned in said cylinder at spaced locations therein, a first and second connecting line respectively coupled between said first and second and said second and third glands, a high vacuum and a pre-vacuum pump coupled respectively to said first and second connecting lines, a piston, said piston being open on both ends and reciprocally mounted in said glands and being of sufficient length to sealingly contact all of the glands simultaneously when in a rest position, and reciprocating means operatively connected to said piston to displace said piston in a reciprocation cycle from the rest position in which said piston contacts all glands thereby closing said two connecting lines into a first position in which said piston contacts only said first and second glands thereby opening the connection between said pre-vacuum pump and said container and then into the second position in which said piston contacts said second and third glands thereby opening the connection between said high vacuum pump and said container.

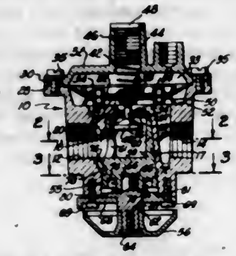
3,164,171
DIRECTIONAL CONTROL VALVE
Woodrow A. Hasbany, South Bend, Ind., assignor to Clark Equipment Company, a corporation of Michigan
Filed Jan. 30, 1961, Ser. No. 85,612
17 Claims. (Cl. 137—596.12)



1. A valve for controlling a single acting hydraulic cylinder and a double acting hydraulic cylinder, comprising a body having two parallel bores therein and containing a passage for supply fluid, a passage for fluid return, a passage for connection to one end of the single acting cylinder and a passage for connection to each end of the double acting cylinder, a spool in each of said bores for controlling the flow of fluid through said passages to and from the cylinders, a spring means for centralizing said spools in neutral hold position, each of said last mentioned passages having a cylindrical chamber with a port and valve seat at one end, and a poppet valve in each of said chambers, including a cylindrical valve element having a frusto-conical portion adjacent the valve seat subjected to the pressure of fluid in the passage between the chamber and cylinder tending to unseat said element, a hollow center open-end stem on said element extending into said port and having a plurality of graduated holes therethrough for controlled fluid flow, said element having a hollow interior and an orifice connecting said interior with the hollow center of said stem and a restricted orifice connecting said interior with the passage to the cylinder, a valve means in said element for controlling the flow of fluid through said first mentioned orifice, a spring urging said valve means to its closed position, a stem for opening said valve means, a double acting piston responsive to supply pressure for operating the stem of the poppet valves in each passage for the double acting cylinder, and a mechanical linkage including a bifurcated lever operated by the movement of the spool controlling the flow of fluid to the single acting cylinder for operating the stem of the poppet valve in said passage.

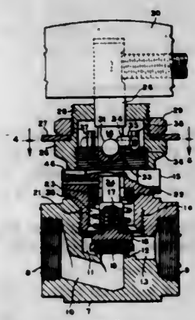


3,164,172
COMBINATION PRESSURE REGULATOR AND MANUAL ON-OFF VALVE
Walter S. Lee, % Major Controls Co., P.O. Box 537, Corona, Calif.
Filed Mar. 11, 1960, Ser. No. 14,445
3 Claims. (Cl. 137—612.1)



1. A combination valve, comprising: a housing containing a diaphragm chamber and a central cavity in communication with a valve seat therebetween; a diaphragm member forming an outer wall of said diaphragm chamber; a first valve member responsive to the movement of the diaphragm member and movable between a closed position in which it is in sealing engagement with the valve seat and an open position in which it is spaced from the valve seat toward the central cavity; a main inlet in the housing in communication with the central cavity; a main outlet in the housing in communication with the diaphragm chamber; a pilot inlet in the housing between the main inlet and the central cavity; a pilot outlet in the housing in communication with the central cavity; a cup-like second valve member including a side wall and a bottom portion pivotally mounted in said central cavity and providing a main chamber which receives said first valve member when it is in the open position, said second valve member being movable among a fully open position, a pilot open position, and a closed position; a port in the side wall of said second valve member which registers with the main inlet when said second valve member is in the open position to provide communication between the main inlet and the main chamber, and which is spaced away from the main inlet when the second valve member is in either of the other two positions whereby said side wall closes off the main inlet; passage means in the bottom portion of said second valve member providing communication between the pilot inlet and the pilot outlet when said second valve member is in both the fully open position and the pilot open position, and which is spaced from the pilot inlet when said second valve member is in the closed position so as to close off the pilot inlet; and control means operable from outside the housing for moving the second valve member between said positions.

3,164,173
QUICK-OPENING VALVES
Albert L. Semon, Short Hills, N.J. (260 S. 20th St., Newark 3, N.J.)
Filed Mar. 18, 1963, Ser. No. 265,680
12 Claims. (Cl. 137—625.26)

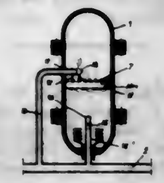


1. In a quick-opening valve, a casing having an inlet and an outlet, a valve seat in the casing between the inlet and outlet, a stem rotatably and slidably mounted in the casing and extending axially of the valve seat with the end portion projecting from the casing, a valve member secured to the opposite end of the stem to engage and disengage the valve seat by the sliding movement of the stem, a plurality of balls secured in the casing circumferentially of the stem, projections fixed to and extending laterally from the stem, abutments fixed in the casing to extend parallel of the stem and between the balls and in the circumference on which the balls are secured and one of the abutments being adjacent to one of the balls, and a spring urging the stem toward the valve seat to engage the valve member with the valve seat and position the axes of the projections in a plane below a plane extending tangentially of the uppermost surfaces of the balls, and a slight turning of the stem moving the projections over the balls and positioning one of the projections between an abutment and its adjacent ball causing sliding movement of the stem and the valve member to disengage the valve member from the valve seat and retain same in said disengaged position.

3,164,174
THERMAL EXCESS-PRESSURE DEVICE
Louis Berthod, 22 Rue du Commandant Bulle, Grenoble, France, and Michel Grenon, 6 Rue Saint Vincent de Paul, Paris, France
Filed Apr. 19, 1961, Ser. No. 104,074
Claims priority, application France Apr. 29, 1960
6 Claims. (Cl. 138—30)

1. A thermal excess-pressure device comprising: means defining a closed chamber; conduit means for introducing water into said chamber and for draining water from said chamber; said conduit means including at least one tube extending into said chamber and having a nozzle portion in the upper region of said chamber, and drain means communicating with the lower portion of said chamber; means connecting said conduit means to a hydraulic circuit; and heater means in the lower portion of said chamber for heating water therein and maintaining a body of

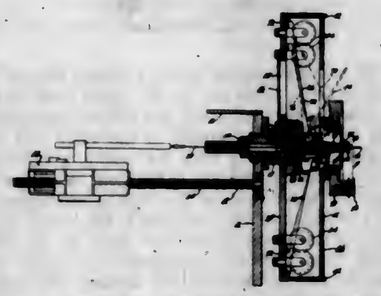
saturated steam in the upper portion thereof; said conduit means defining flow paths from said hydraulic circuit into said upper region and said lower portion of said chamber, respectively, the flow path leading to said lower portion being of such restricted area relative to that leading to



said upper region that the major portion of incoming water is dispensed in the upper portion thereof, above the highest level of the free surface of liquid in said chamber, through said nozzle to rapidly condense steam therein.

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**3,164,175**
**METHOD OF MAKING WIRE-WOUND GRIDS FOR ELECTRON TUBES**
Otto H. Schade, Sr., West Caldwell, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,073
4 Claims. (Cl. 140—149)

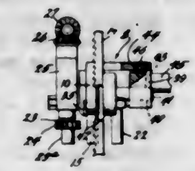


1. A method of threading a plurality of fine wires through passageways in a nose piece, said method utilizing a wire guide comprising an annular member having a plurality of slots therein, and a slidable member mounted on said annular member partially closing said slots, said method comprising extending a wire from a spool along a first path to said nose piece, threading said wire through a passageway therein and securing the threaded end of said wire to prevent subsequent dethreading, disposing an intermediate length of said extended wire through a slit in said slidable member and into a slot in said annular member, and sliding said slidable member to move said slit past said slot to maintain said wire portion therein, whereby the path of said wire from said spool to said nose piece is other than said first path.

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**3,164,176**
**SAW GUIDE FOR BAND SAW MACHINES HAVING WORK GUIDE MEANS**
Havilah S. Hawkins, Sedgwick, Maine
Original application June 23, 1960, Ser. No. 38,280, now Patent No. 3,068,913, dated Dec. 18, 1962. Divided and this application June 1, 1962, Ser. No. 208,162
2 Claims. (Cl. 143—161)

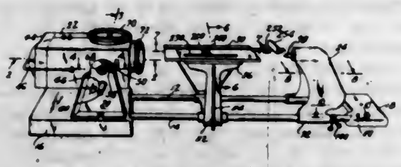
1. A saw guide for band saws comprising a body member of generally inverted U-shaped, having front and rear spaced depending wall members providing an open ended passageway therebetween, said body member being adapted to be mounted on a saw machine with said open ended passage extending perpendicularly to the plane of the saw and aligned with path of movement of a carriage mounted on the machine for reciprocation transversely of the plane of the saw and carrying work engaging guide rollers movable in paths transversely of the plane of the saw blade and spaced fore and aft with respect to the front wall of the body member whereby the carriage may move transversely of the plane of the saw blade to dispose spaced guide rollers carried thereby in fore and aft relation to said saw blade, a saw blade receiving slot opening through the front wall thereof and through the bottom edge of said wall, a saw blade guide member pivotally mounted on the slotted wall of the body member at each side of the slot and providing saw blade engaging surfaces at the opposite edges of the slot, said guide members being gener-



ally J-shaped in longitudinal cross section and having lower hooked ends, said guide members being positioned with the lower hooked ends thereof embracing the lower edge of the slotted front wall of the hollow member, one of said J-shaped members being positioned on each side of the slot respectively with the long leg of the J disposed inside of the body member and the short leg thereof being disposed on the outer face of said body member, and a pair of clamping plates secured to the outside surface of the slotted face of the body member and respectively overlying the short legs of the J-shaped guides, means for clamping the guide members between the clamping plate and the front wall of the body member to secure the guide members in adjusted position, and means for mounting the saw guide on a band saw machine.

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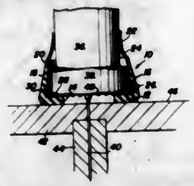
**3,164,177**
**TOY CONVERTIBLE POWER SHOP**
Carl Meri, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed July 24, 1962, Ser. No. 211,982
12 Claims. (Cl. 144—1)



1. A toy convertible power shop comprising a motor head support, a motor head tiltably mounted on said support, said motor head having a motor and a power shaft driven thereby, a releasable lock for locking the motor head with the power shaft either horizontal or vertical, a work table, and duplicate means on two perpendicularly related sides of the motor head to detachably and fixedly receive the table with the table disposed horizontally when the shaft is either horizontal or vertical, said means serving as the sole support for the table in either position of the motor head, said means including a rigid undercut ring, a flexible dish having an undercut rim mating with the ring, and a stiffening plate inside the flexible dish to hold the flat portion of the dish.



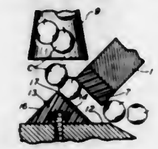
**3,164,178**
**HAMMER ATTACHMENT**
Truly M. Belgard, P.O. Box 6, Alexandria, La., assignor of two-thirds to J. Harry Henderson, Jr., and Robert L. Roland, jointly, both of Alexandria, La.
Filed June 8, 1961, Ser. No. 115,654
3 Claims. (Cl. 145—29)



1. A rubber boot-type attachment comprising a cover for enclosing an attachment for the head and neck portions of a conventional-type hammer head, said cover embodying a compressibly resilient annular base having a substantially flat exterior surface adapted to be struck against a vulnerable work surface, and an interior flat surface with which the customary striking surface of said hammer head is normally in contact, and reinforcing and rigidifying means embedded in the interior surface of said base and having an annular anvil-like rigid metal surface exposed for metal-to-metal contact with the striking surface of said head, the inner peripheral edge of said annular anvil-like surface being spaced radially outward from the inner peripheral edge of the annulus defining said annular base.

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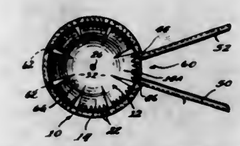
**3,164,179**
**CHERRY SEPARATOR**
Henry Aguilar, 1500 Judah St., and Salvador A. Minera, 1309 27th Ave, both of San Francisco, Calif.
Filed Dec. 19, 1962, Ser. No. 245,781
4 Claims. (Cl. 146—1)



1. Apparatus for separating pairs of cherries that are grown together at a point on one of their sides, comprising:
(*a*) a pocket into which said cherries are adapted to be fed having substantially corresponding lateral sidewalls correspondingly positioned about a central vertical axis and an open lower end through which said cherries are adapted to pass from said pocket;
(*b*) a member coaxial with said axis at the lower open end of said pocket and extending generally radially therefrom defining the lower walls of passageways communicating with said lower open end of said pocket, and
(*c*) means extending laterally from said open lower end of said pocket defining the upper walls of said passageways whereby said upper and said lower walls define a pair of opposed walls between which cherries from the lower open end of said pocket are adapted to be moved;
(*d*) said pair of walls being layers of relatively soft foam-like material having the resilient characteristics of foam rubber and spaced apart a distance for yieldingly engaging the upper and lower surfaces of cherries adapted to enter said passageways from said lower open end of said pocket, and for moving said cherries generally radially outwardly of said axis and for rolling them upon movement of one wall of each pair thereof laterally relative to the other where their surfaces are in vertically opposed relation;
(*e*) means connected with one of the walls of each pair thereof for so moving said one of said walls laterally relative to the other; and
(*f*) means supporting said one of the walls of each of said pairs thereof for said movement thereof,
(*g*) said one of said walls of each pair thereof being the tread of a wheel movable generally radially outwardly relative to said axis upon rotation of said wheel in one direction.

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**3,164,180**
**EGG OPENING DEVICE**
Norbert Leopoldi, 4180 Marine Drive, Chicago, Ill.
Filed Feb. 6, 1963, Ser. No. 256,660
2 Claims. (Cl. 146—2)

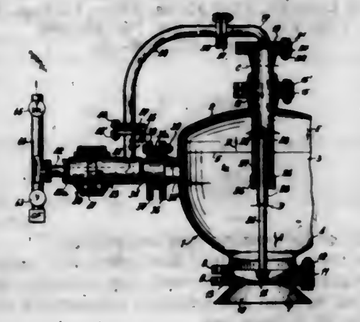


1. A device for opening eggs comprising:
a cup shaped, substantially hemispherically contoured, egg engaging member formed from resiliently flexible sheeting material and defining a substantially annular rim about its open end,
said member open end being proportioned to be received over one end of an egg,
said member being split along equally spaced meridian lines of said member from said rim thereof toward but short of the axial center of said member to define resilient fingers,
said fingers at the portions thereof lying along said rim of said member being formed to define inwardly directed serrations with adjacent fingers being equally spaced at said portions thereof to permit movement of said serrations inwardly of the rim of said member,
and an actuator device for releasably forcing said serrations of said finger portions against the egg,
said actuator device comprising:
an open looped resiliently flexible camming member defining an arcuate portion that is received about said rim of said egg engaging member in camming engagement with said fingers,
said camming member arcuate portion substantially complementing the rounded configuration of said egg engaging member rim and defining an inner concave spherically contoured camming surface that abuts said portions of said fingers,
with the ends of said camming member portion being disposed in adjacent spaced relation and thereby defining a gap between said camming member portion ends,
and handle means operably connected with said camming member portion ends for contracting said camming member against said finger portions to force said finger portion serrations against an egg when the latter is received within the rim of said egg engaging member,
each of said fingers at said portions thereof being proportioned circumferentially of said rim to span the gap between said camming member ends in the extended and contracted portions of said camming member, with said egg engaging member being oriented with respect to said camming member to dispose one of said finger portions across said gap,
said camming member defining a protuberance pro-

jecting into one of the spaces between two adjacent fingers of said fingers that are disposed substantially oppositely of said gap across said rim.

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3,164,181
APPARATUS FOR TREATING MATERIALS WITH COMPRESSED FLUID
Paul Kunz, Dottenfeld ueber Altenkirchen, Westerwald, Germany
Filed Jan. 8, 1963, Ser. No. 250,154
Claims priority, application Germany, Jan. 8, 1962, K 45,735
25 Claims. (Cl. 146—47)

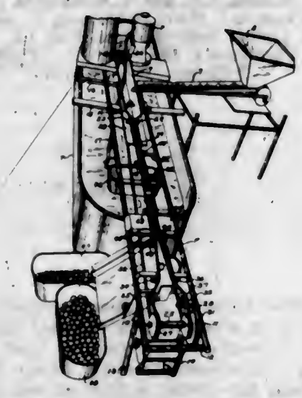


1. An apparatus for treating materials by contact with compressed fluid, comprising a source of compressed fluid; a pressure vessel having an internal chamber and a material admitting opening and comprising a closure for said opening, said closure being movable between an open and a sealing position; and actuating means for moving said closure to sealing position, said actuating means comprising a valved conduit connected with said source and having a portion communicating with said chamber, and a piston reciprocably received in said conduit and operatively connected with said closure to move the closure to said sealing position in response to admission of compressed fluid to said conduit, said piston sealing said conduit portion from said source when the closure is in open position whereby the fluid can enter said chamber only when the closure seals said opening.

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3,164,182
MACHINE FOR STEM-CUTTING AND SIZING OF MUSHROOMS
Donald H. Hughes, Newark, Del., and William E. Larsen, Tucson, Ariz., assignors to The American Mushroom Institute, Kennett Square, Pa., a non-profit association
Filed Oct. 26, 1960, Ser. No. 65,880
3 Claims. (Cl. 146—81)

1. A machine for processing mushrooms harvested with roots intact from growing beds, comprising a feed hopper and a vibratory discharge chute leading from said hopper, a mushroom collector trough formed to position the collected mushrooms with the stems downward, high velocity fluid feed jets positioned at the end of said collector trough for forcing said mushrooms forward from the discharge end of said trough, spaced endless conveyor belts having the starting end of their respective upper reaches mounted below the discharge end of said trough, adjustable guide means spaced along each respective side of each of said members so positioned and so arranged as to permit said mushrooms adjacent the terminal end of the belts to drop from between the said belts according to the size of the mushroom caps, said belts being tubular, and belt rolling means for each of said conveyor belts imparting axial turning of the same in opposite directions downwardly toward each other, to



thereby pull downward on the stems of the mushrooms being conveyed.

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3,164,183
PARING AND CORING DEVICE
James S. Kirkpatrick, 5936 Oakman Blvd., Detroit, Mich.
Filed Feb. 8, 1963, Ser. No. 257,152
10 Claims. (Cl. 146—204)



1. An appliance of the type described, comprising a tool including a manually portable rotative cutter and cutter drive motor unit, an elongated electrical conductor connected to said unit to electrically energize the same, a casing having a spool therein about which said conductor is wound and an opening at which said unit is removably supported and through which said conductor may be drawn from the spool when the tool is remote from said casing, and means to energize said conductor, comprising electrical slip ring means rotatable with said spool and electrically connected to said conductor, and electrical connector means connecting said slip ring means with a voltage source.

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3,164,184
COLLAPSIBLE CONTAINER
Richard E. Fogarty, Wayne, N.J., and Frederick T. Voorhees, New York, N.Y., assignors to Barlow Manufacturing Company, Amsterdam, N.Y., a corporation of New York
Filed Apr. 19, 1963, Ser. No. 274,285
6 Claims. (Cl. 150—.5)

1. A collapsible container comprising a rigid base pan, a flexible tubular wall attached to said pan and foldable to a position enclosed by said pan, a top cover attached to the top end of said wall and movable therewith toward and away from said pan, inlet and outlet means for said contaner, and bracing means detachably disposed



between said pan and said top cover outwardly of said wall for maintaining said container erect.

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3,164,185
TUBULAR GOLF BAG
Robert C. Ingoldt, Hydro Lane, Chippewa, Wis.
Filed May 31, 1960, Ser. No. 32,859
4 Claims. (Cl. 150—1.5)



1. A golf bag comprising, a plurality of tubes, a bottom plate having sockets to receive one end of each of said tubes, a top plate having open centered sockets to receive the other end of each of said tubes, means engaging said tubes intermediate of their ends to hold them in fixed lateral relationship, and means holding said top and bottom plates together engaged with said tubes to hold the latter in column compression.

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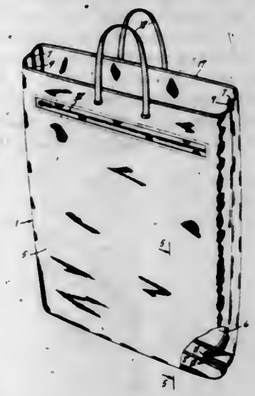
3,164,186
PLASTIC CONTAINER
Eberhard E. H. Weber and Imogene D. Abrams, both of 1233 N. New Hampshire, Los Angeles, Calif.
Filed July 13, 1962, Ser. No. 209,562
5 Claims. (Cl. 150—3)



1. A receptacle formed of flexible sheet material including:
a lower bag-like portion;
an upper funnel-like tubular portion for enabling fluid to be filled into said lower bag-like portion and for temporarily holding any excess fluid which may overflow from said lower bag-like portion;
a pair of strip members each having a plurality of rows of interlocking teeth formed on the respective inner surfaces thereof to act as a pressure-responsive sealing means extending across the receptacle and disposed between said lower bag-like portion and said upper tubular portion, said sealing means serving to seal off said lower bag-like portion into a closed container for fluid filled into said lower portion through said upper tubular portion.

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3,164,187
CONVERTIBLE HANDBAG
Eleanor M. Simmons, 30 E. 23rd St., New York 10, N.Y.
Filed Oct. 17, 1961, Ser. No. 145,663
7 Claims. (Cl. 150—35)



1. A convertible handbag comprising a first pocket having opposite walls formed of flexible sheet material of substantially rectangular shape joined at the side edges and bottom of said pocket while leaving the top open, handle means attached to upper portion of opposite walls of said pocket, means defining a second pocket on one side wall of said first pocket and opening near the top of said first pocket, said second pocket extending laterally less than the full width of said first pocket and extending downwardly a distance not exceeding half the vertical dimension of said first pocket, said first pocket being foldable about the bottom of said second pocket to a position in which the bottom of said first pocket approximately coincident with the opening of said second pocket and means for releasably securing the bottom of said first pocket in said folded position whereby said handbag constitutes a purse when said first pocket is folded and a shopping bag when said first pocket is unfolded, the lower corner portions of said first pocket being folded inwardly and permanently secured at the corners to the bottom junction of said first pocket whereby said first pocket lies flat and is tapered with said bottom narrower than the top when in folded position and opens up to an elongated prismatic form with a square bottom when in unfolded position.

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3,164,188
COMBINED BILLFOLD AND CHANGE PURSE
Carmella Cicerello, 548 Geiger Ave. SW., P.O. Box 472, Massillon, Ohio
Filed Dec. 10, 1963, Ser. No. 329,484
1 Claim. (Cl. 150—35)

A combined billfold and change purse, comprising a longitudinally elongated generally rectangular body mem-

ber portion of greater length than width and composed of a single thickness of relatively flexible material of slightly larger size than standard paper currency, said body member portion being foldable on a transverse line at about the mid-point between the opposite lateral ends thereof, one end of said body member portion being foldably connected with a closure flap transversely foldable to overlie on the outer face of the body member portion when the latter is folded upon itself at its mid-point, cooperative fastener means on the closure flap and the outer face of the body member portion for releasably securing the end closure flap in its overlying position aforesaid, a generally rectangular change purse overlying the inner face of the body member portion at the end of the latter opposite to the end closure flap aforesaid when the body member portion is unfolded to a flat condition, said change purse having the form of a centrally folded blank of flexible material with the blank doubled upon itself to form walls and to form a closed edge at one lateral side thereof and extending transversely of the body member portion at the mid-point fold line of the body member portion, and the other edges of the folded blank being registered with the bottom, end and top edges, respectively, of the body member portion, a retainer flap formed of material corresponding to that of the change purse, said retainer flap being generally rectangular and relatively narrow in form and extending transversely



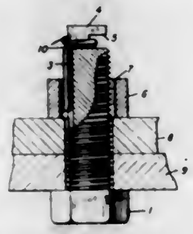
across the inner face of the body member portion from its bottom edge to its top edge and lying adjacent to but laterally spaced from the change purse and the end closure flap of the body member portion, respectively, a continuous row of stitching extending completely about the outer marginal edges of the combined body member portion and end closure flap, said stitching securing the bottom and outer lateral edges of the folded change purse blank to each other and also to the bottom and lateral edges respectively, of the body member portion, but leaving the upper edges of the folded blank free to form the mouth of a double-walled coin pocket closed along three edges and having its mouth disposed at the upper edge of the folded blank and lying approximately at the top longitudinal edge of the body member portion, with the folded edge and mouth of the change purse being unattached to the body member portion so as to allow limited displacement of the change purse, as well as displacement of the retainer flap away from the body member portion for the reception of paper currency between the change purse and retainer flap at one side and the body member portion at the other side of the currency, a closure flap extended from one wall of the change purse at the mouth of the latter and being foldable to overlie the outer face of the opposite wall so as to close the mouth of the change purse, and fastener means for releasably securing the latter closure flap to said opposite wall of the change purse.

**3,164,189**
**EXTENSIBLE DEVICE FOR GUN CASE**
**Maurice H. O'Link, St. Cloud, Minn., assignor to Stearns Manufacturing Company, St. Cloud, Minn., a corporation of Minnesota**
**Filed May 28, 1963, Ser. No. 283,845**
**6 Claims. (Cl. 150—52)**



1. An extensible attachment for a gun case having in combination,
an internally threaded sleeve, said sleeve having a portion of reduced outer diameter forming a shoulder with the remaining portion thereof,
an open-ended annular slot extending inwardly axially of said shoulder,
the muzzle end portion of a gun case embracing said reduced portion of said sleeve and extending into said annular slot,
a locking ring encircling said end portion of said gun case and said sleeve portion embraced thereby,
an elongated threaded tubular member receivable in said sleeve for axial movement thereof, and
means sealing the free end of said tubular member.

**3,164,190**
**SCREW WITH LOCKNUT**
**Romulo de Cruylles Peratallada, Rambla Cataluna 66, Barcelona, Spain**
**Filed July 31, 1962, Ser. No. 213,778**
**1 Claim. (Cl. 151—8)**



A screw bolt having a shank with threads extending to the end thereof, said shank having a longitudinal slot and a bifurcated end forming a diametrical notch in continuation of said longitudinal slot in cooperation with a nut having a plurality of longitudinal slots and a key-wire inserted in the conduit formed by the coincidence of two corresponding slots, said bolt including a transverse slot at right angles to said notch cut in the bolt at the opposite side of said bolt from said longitudinal slot and in a plane coinciding with the bottom of said diametrical notch, said transverse slot being spaced from the end of said shank and opening to the external surface of said bolt on both sides of said notch said diametrical notch dividing the end portion of the bolt over said transverse slot, the protruding portion of said key-wire being bent into said diametrical notch and then threaded through one end of said transverse slot and the free end of said key-wire being bent around said shank and across said longitudinal slot and into the opposite end of said transverse slot, preventing said key-wire from becoming accidentally detached.

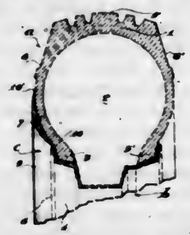


**3,164,191**
**SNAP-OUT FASTENER AND CHANNEL ASSEMBLY**
**David W. Grimm and Jack Rath, Pico-Rivera, Calif., assignors to Kaynar Mfg. Co., Inc., Rivera, Calif., a corporation of California**
**Filed Oct. 12, 1960, Ser. No. 62,167**
**11 Claims. (Cl. 151—41.71)**



1. In a gang channel of the type wherein a plurality of fastener assemblies including screw threaded portions are removably retained in a resilient channel member by virtue of the extension of laterally directed retaining lugs on the fastener assemblies into slots in both side flanges of the channel member, the improvement comprising base flange means carried by said assemblies and having portions extending laterally to limit lateral floating movement of said fastener assemblies in said channel, said slots having upper and lower edges, said lugs being integral with a pair of said portions and extending upwardly and outwardly therefrom, the length of said lugs being such that the end edges thereof are removably engageable under the upper edges of said slots in both of said flanges.

**3,164,192**
**ATTACHABLE SIDE WALL COVERING FOR TIRES**
**José Kaslo, Cuenca 277P, and Rosa Martinez de Garcia, Belen 729, both of Buenos Aires, Argentina**
**Filed Sept. 28, 1962, Ser. No. 227,022**
**5 Claims. (Cl. 152—353)**



1. A pneumatic tire for vehicles in general, which comprises on one of the sidewalls thereof an annular projecting coupling means, intermediate the beaded portion and outer tread portion thereof, arranged in matching relationship with a similarly shaped annular groove formed in the inner wall of a detachable annular sidewall covering, midway the inner and outer peripheries thereof, so that the fitting of said annular projection into said annular groove will define the fastening of said covering flatly to said tire sidewall.

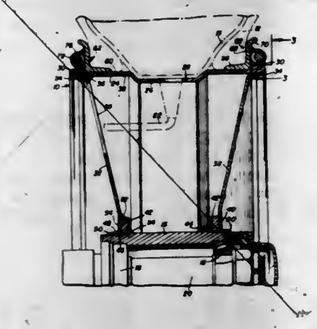
**3,164,193**
**PNEUMATIC TIRES**
**Hiroshi Uotani, Sasayama-machi, and Hiroyasu Iwamoto, both of Kurume, Japan, assignors to Bridgestone Tire Company Limited, Tokyo, Japan, a corporation of Japan**
**Filed Sept. 19, 1961, Ser. No. 139,304**
**Claims priority, application Japan Dec. 30, 1960**
**1 Claim. (Cl. 152—356)**

In a pneumatic rubber tire for a vehicle, said tire having a carcass section of flattened profile wherein the carcass height is between 0.95 to 0.6 of the carcass width at the inside surface of said carcass, and wherein said carcass section defines a pair of sidewall portions, a crown portion between said sidewall portions and a side bead in each sidewall portion opposite from said crown, an oppositely biased cord structure in said carcass section comprising a plurality of carcass plies, at least one-half of said carcass plies extending between the opposite side beads of the tire and secured thereto, and the remaining carcass plies being disposed transversely of the tire crown




and having a width of progressively smaller dimension in a direction toward the outer surface of said crown, the widest of said remaining carcass plies extending downwardly on opposite sides thereof to a point in the sidewall portion of the tire.

**3,164,194**
**SUGAR CANE CART WHEEL**
**Arcadio M. Diaz, Hialeah, Fla., assignor to Inter-American Transport Equipment Co., Miami, Fla., a corporation of Florida**
**Filed June 28, 1963, Ser. No. 291,392**
**5 Claims. (Cl. 152—407)**

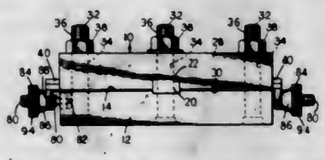


1. A wheel construction for pneumatic tires comprising a hub, a cylindrical rim surrounding said hub and having a continuous smooth convex outer surface broken only by a drop center consisting of a medial, radially inwardly recessed portion for seating a tire inner tube thereon, means fixedly securing said rim to said hub, the marginal edges of said rim being folded through 180° back upon the convex outer surface of said rim and providing fixed marginal flanges upon said outer cylindrical surfaces, a pair of L-shaped retaining flanges having an axially extending cylindrical wall and a radially extending annular wall, said annular walls embracing the outside walls of the beads of a pneumatic tire therebetween and abutting said marginal flanges, said flanged cylindrical walls slidably embracing said cylindrical rim and being disposed beneath said tire beads, said retaining flanges each comprising a split ring which is sufficiently circumferentially and radially expansible and deformable for movement in its expanded condition over said marginal flanges and slidable freely transversely of said rim continuous smooth surface, a releasable fastener secured to each retaining flange on opposite sides of the split thereof for radially contracting said retaining flange into a fixed, non-slipping compressive engagement upon said rim.

### 3,164,195
### APPARATUS FOR STRAIGHTENING KNITTING MACHINE NEEDLES AND THE LIKE

Fred P. Pincsak, 256 Holyoke Road, Westfield, Mass.

Filed Mar. 4, 1963, Ser. No. 262,409
7 Claims. (Cl. 153—32)



1. Apparatus for straightening knitting machine needles, comprising:

(*a*) a base having a support surface for receiving knitting needles thereon,

(*b*) means forming an abutment against which a stack of aligned needles are adapted to be thrust when disposed on said support surface,

(*c*) pusher means for bearing against one end of a stack of said aligned needles which are held at the opposed stack end by said abutment,

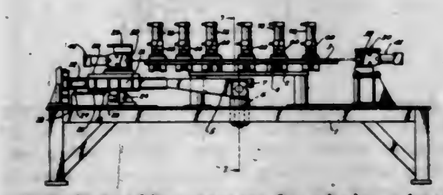
(*d*) biasing means coacting with said pusher means and including a connection therebetween which provides for limited angular movement of said pusher means and thereby providing edge-to-edge conformable engagement between said pusher means and the stack end of said needles; and,

(*e*) a cover including clamping members whereby complementary surfaces of the cover member are brought into clamping relation with opposed surfaces of said knitting machine needles which are thereby confined during compression by said pusher means to effect a straightening action thereon.

### 3,164,196
### APPARATUS FOR STRETCH FORMING AND PUNCHING METAL STOCK AND STOCK GRIPPING HEAD THEREFOR

Stanley M. Dolney, Parma, Ohio, assignor to The Cyril Bath Company, Solon, Ohio, a corporation of Ohio

Filed May 18, 1961, Ser. No. 110,931
1 Claim. (Cl. 153—35)

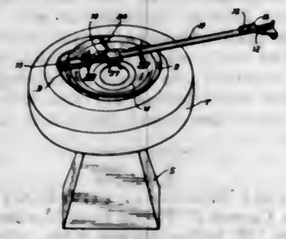


A stock stretching apparatus for gripping a length of sheet metal stock and applying stretch forming tension thereto in one dimension, and comprising a gripping head including a rigid body having a forward end, means supporting the body for movement forwardly and rearwardly, power operable stretch forming means connected to the body and operative to urge the body rearwardly to apply stretch forming tension to stock gripped by the head, a pair of gripping jaws having complementary stock gripping surfaces, respectively, the gripping surface of one of said jaws being smooth and the gripping surface of the other of said jaws being rough, supporting means on the body supporting the jaws with the smooth gripping surface below, and facing upwardly toward, the rough gripping surface, and for guided movement of the jaws relative to each other along predetermined paths, which are fixed relative to the body, in a direction away from each other to a released position and in an opposite direction toward each other to a stock gripping position, said supporting means constraining the jaws to a position wherein the complementary surfaces are parallel to a common plane and are aligned endwise of said predetermined path with each other, in said stock gripping position, and power operable closure means mounted on the body and operatively connected to the jaws for moving the jaws relative to each other, independently of the movement of the body by the power operable stretch forming means, along said predetermined fixed paths, to gripping position, and operable to apply pressure for holding them in said gripping position sufficiently tightly for stretch forming of the stock by said movement of the body.

### 3,164,197
### TIRE TOOL

Walter A. Bishman, Minneapolis, and Walter F. Ruhland, Shakopee, Minn., assignors to Bishman Manufacturing Company, Osseo, Minn., a corporation of Minnesota

Filed May 10, 1963, Ser. No. 279,510
3 Claims. (Cl. 157—1.3)

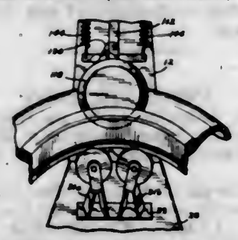


1. In a tire tool for moving a tire bead relative to the rim of a wheel on which the tire is mounted, an elongated tool bar having a work portion at one end for engagement with the tire bead, a pivot bracket, means for mounting said bracket in fixed position on the tool bar adjacent said work portion, a tension arm having a hook portion at one end for gripping engagement with the wheel rim, the other end of said arm being pivotally connected to the bracket on an axis perpendicular to the bar, said arm extending laterally from the bar and movable about said axis between a rest position at substantial right angles to the bar and forward position toward the work portion of the bar, and spring means acting between the arm and bracket to yieldably retain the arm in its rest position.

### 3,164,198
### TIRE CHANGER

Walter A. Bishman, Minneapolis, and Walter F. Ruhland, Shakopee, Minn., assignors to Bishman Manufacturing Company, Osseo, Minn., a corporation of Minnesota

Filed Nov. 23, 1962, Ser. No. 239,602
11 Claims. (Cl. 157—1.17)



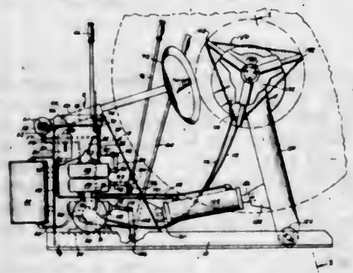
1. A tire repair apparatus comprising in combination a supporting framework, an actuator mounted upon said framework, said actuator including a piston slidably mounted therein, an actuator rod rigidly connected to said piston, a stop assembly mounted for reciprocal movement with respect to said actuator, said stop assembly having a portion adapted to operatively engage said piston whereby said stop assembly will move with said piston when the piston has been moved into engagement with the stop assembly, a bearing means rigidly mounted upon said stop assembly, a press wheel rotatably mounted upon said bearing means and a means operatively connecting said actuator rod and said press wheel for rotating said press wheel when said piston moves relative to said stop assembly, and means on said apparatus for rotatably supporting a tire upon said apparatus.



### 3,164,199
### TIRE CHANGER

William E. Swenson, St. Paul, Walter F. Ruhland, Shakopee, and Victor N. Albertson, St. Louis Park, Minn., assignors to Bishman Manufacturing Company, Osseo, Minn., a corporation of Minnesota

Filed Sept. 26, 1961, Ser. No. 140,915
2 Claims. (Cl. 157—1.24)

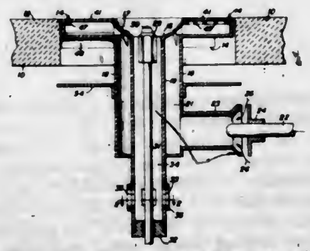


1. A tire changer comprising in combination a frame, a generally upward extending boom having its lower end pivotally mounted on the frame for movement about a horizontal axis, a wheel chuck mounted at the free end of the said boom for rotation on an axis parallel to said horizontal axis, drive means mounted on the free end of the boom and connected to the chuck to rotate said wheel chuck upon said boom, a drive means connected to the boom to pivot said boom on said frame about said horizontal axis, tool support carriage mounted upon said frame for movement along a path parallel to said axis, and a tire tool mounted upon said tool support carriage for mounting or demounting a tire from a rim coaxially mounted on the chuck when said wheel chuck is thus caused to rotate.

### 3,164,200
### MULTIPLE FUEL BURNER

Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware

Continuation of abandoned application Ser. No. 622,603, Nov. 16, 1956. This application June 27, 1962, Ser. No. 205,771
4 Claims. (Cl. 158—11)

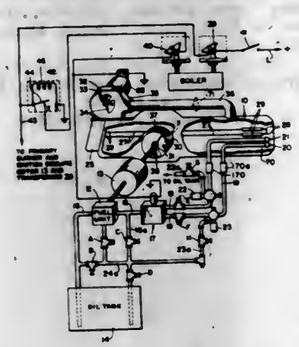


1. A multiple fuel burner comprising, a spider type burner head including a plurality of hollow arms arranged in radially disposed positions about the burner head, longitudinally extending downstream extremities of said arms arranged substantially at right angles to the axis of said burner head and in a substantially common plane, means for supplying a gaseous fuel mixture into said hollow arms adjacent said axis, each arm having ports therein for the escape of the fuel mixture in directions generally downstream of the respective arms, an upstream face of each arm disposed at an acute angle with respect to said plane, each face sloping downstream from one edge to the other edge of each arm in the same direction in proceeding in one direction circumferentially about the axis of said burner head, means guiding air into engagement with said faces which deflect the air in swirling movement about the axis of the burner head downstream of said arms, and means for discharging atomized liquid fuel downstream from the burner head from the vicinity of the axis thereof and into the swirling air.

### 3,164,201
### HIGH FLAME-LOW FLAME BURNERS

William R. Irwin, P.O. Box 155, Boulevard Station, Bronx, N.Y.

Continuation of abandoned application Ser. No. 196,414, May 21, 1962. This application Nov. 29, 1963, Ser. No. 327,145
20 Claims. (Cl. 158—28)



1. A high rate, low rate heating system having in combination: burner means, fuel pumping and pressure regulating means, excess fuel bypass means associated with said pressure regulating means, a flow directing valve, fuel conduit means extending from the output side of said pumping means to intake port means of said valve, a normally opened and a normally closed passageway through said valve, automatically actuable means to close said normally opened passageway and to simultaneously open said normally closed passageway, said burner means including a first fuel conduit extending from the exit port of said normally opened passageway of said valve, a first calibrated nozzle at the terminus of said first fuel conduit, a second fuel conduit extending from the exit port of said normally closed passageway of said valve, a second calibrated nozzle at the terminus of said second fuel conduit, an air blast tube leading to said nozzles to deliver combustion air to the fuel emitted thereby, a primary blower having means for the intake of ambient air and air rate regulation means and with air discharge means connected to said blast tube, an auxiliary blower having means for the intake of ambient air and air rate regulation means and with air discharge means connected to said blast tube, a first constant speed electric motor for actuating said pumping means and said primary blower, a second constant speed electric motor for actuating said auxiliary blower, first automatic control means individual to said first electric motor, and second automatic control means common to said second electric motor and the automatically actuable means associated with said passageways; and, responsive to a requirement for a low

rate, low flame heating condition, said first automatic control means being adapted to cause the energization of said first electric motor and the actuation thereby of said primary blower and said pumping means to cause a defined, low rate of fuel to issue from said first calibrated nozzle and with said primary blower discharging a defined, low rate of air through said blast tube to support said low rate of fuel in combustion; and, responsive to a requirement for a high rate, high flame heating condition, said second automatic control means being adapted to cause the energization of said second electric motor and said automatically actuable means to thereby open said normally closed passageway and to simultaneously close said normally opened passageway of said valve and to cause a defined, high rate of fuel to issue from said second calibrated nozzle, and with the actuated auxiliary blower discharging a defined rate of air into said blast tube to augment the defined rate of air discharged by said primary blower, the combined air discharge rates of said primary and auxiliary blowers issuing from said blast tube as a defined, high rate of air to support said high rate of fuel in combustion.

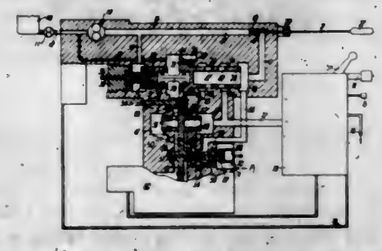
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**3,164,202**

## GAS TURBINE ENGINE FUEL SYSTEM

**Christopher Linley Johnson, Allestree, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain**

**Filed Nov. 20, 1961, Ser. No. 153,405**
**Claims priority, application Great Britain, Dec. 14, 1960, 43,119/60**
**4 Claims. (Cl. 158—36.4)**



1. A gas turbine engine fuel system comprising a constant displacement pump, means for supplying the low pressure side of the pump with fuel at a low pressure, a high pressure conduit communicating with the high pressure side of the pump, restrictor means for restricting flow through the high pressure conduit, a fuel passage adapted to be connected to the engine burners so as to supply the latter with fuel, a spill passage leading to the low pressure side of the pump, metering valve means whose position controls the relative quantities of fuel which may flow from said high pressure conduit to the fuel passage and spill passage respectively, said metering valve means having a first pressure surface, which is open to the high pressure conduit downstream of the restrictor means, and second pressure surfaces which are oppositely disposed with respect to the first pressure surface and which are respectively open to the high pressure conduit upstream of the restrictor means and to the spill passage, a spill pressure control valve whose position controls fuel pressure in the spill passage, oppositely facing pressure surfaces on said spill pressure control valve being respectively open to the pressures prevailing in said spill passage and fuel passage respectively immediately downstream of the said metering valve means, whereby the pressure in the spill passage upstream of the spill pressure control valve is always closely equal to the pressure in the fuel passage, a supply duct communicating with the high pressure conduit and with the spill passage upstream of the spill pressure control valve, and a flow adjustment valve means in said supply duct to control flow therethrough in response to fluid pressure functionally related to the inlet pressure of the engine compressor.

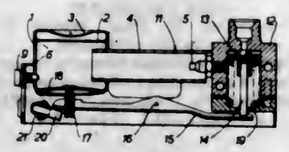
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**3,164,203**

## GAS BURNERS WITH SAFETY CUT-OFF

**John E. Sherlock, Shepperton, England, assignor to The British Thermostat Company Limited, Sunbury-on-Thames, England, a British company**

**Filed Apr. 3, 1961, Ser. No. 100,201**
**Claims priority, application Great Britain Apr. 7, 1960**
**4 Claims. (Cl. 158—140)**



1. In a gas burner assembly characterized by a gas burner connected by a mixing tube to a valve that controls supply of gas through the tube to the burner, an operating member for the valve, a pivotally mounted motion transmitting arm having one end operably connected to said valve operating member and extending between the valve operating member and said burner, and thermally sensitive means for closing said valve when the burner is not ignited comprising a flexible bi-metallic element mounted on the opposite end of said arm in contact with said burner so as to be deflected in one direction by heat from said burner to exert a valve opening action through said arm and said member when the burner is ignited and at operating temperature, said element when said burner becomes cool deflecting in the opposite direction and reacting against said burner to exert a valve closing force through said arm and said valve operating member.

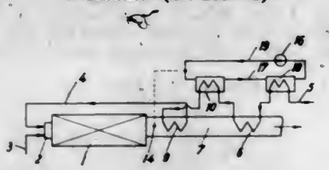
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**3,164,204**

## METHOD AND APPARATUS FOR PREHEATING FURNACE COMBUSTION AIR

**Rudolf Hingst, deceased, late of Kassel-Wilhelmshohe, Germany, by Erika Hingst, heir and guardian of minor heir, Kassel-Wilhelmshohe, Germany, assignor to Schmidt'sche Heissdampf-Gesellschaft, Kassel-Wilhelmshohe, Germany**

**Filed Feb. 17, 1960, Ser. No. 9,301**
**Claims priority, application Germany, Feb. 18, 1959, 25,550**
**7 Claims. (Cl. 165—1)**



1. A method for maintaining a substantially uniform combustion air temperature for a furnace having at least an initial air preheater and a final air preheater in the waste gas exhaust flue of the furnace, comprising cooling said combustion air outside of said flue as it flows from said initial to said final preheater by cold combustion air before said air reaches said initial air preheater with the intensity of cooling being varied according to the operating load conditions of the furnace so as to pass the combustion air at a substantially uniform temperature into the furnace.

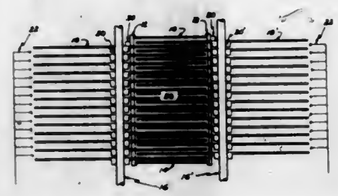


**3,164,205**

## APPARATUS FOR QUENCHING HOT GASES

**George W. Dingus, Pampa, Tex., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware**

**Filed Feb. 21, 1961, Ser. No. 90,718**
**3 Claims. (Cl. 165—6)**



1. In a substantially gas tight apparatus for quenching gases without the direct addition thereto of foreign substances in substantial amounts comprising a substantially gas tight vertical walled conduit having means for introducing a hot gaseous stream at one end thereof and for withdrawing the cooled gaseous stream at the other end thereof, the improvement which comprises providing in at least one vertical wall of said conduit a section comprised of a plurality of laterally restrained continuous filler strips composed of a heat resistant material, said strips being free to slide vertically but being spaced apart from one another in a directly superimposed vertical arrangement by means of a series of substantially circular metal plates mounted in a vertically superimposed stack one above another with each plate thereof slidably attached and rotatably connected onto a common vertical, rotatable shaft located immediately to the outer side of the said vertical arrangement of strips so that a substantial portion of each plate passes between two adjacent filler strips and is supported by the strip directly beneath same, and means to seal against the flat coplanar side faces of said strips and the circumferential surface of the plate passing therebetween.

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**3,164,206**

## METHOD AND PRODUCT FOR PRODUCING FLOW IN DEAD WELLS

**Thomas I. Sharp, 3742 Durness Way, Houston, Tex.**

**Filed Aug. 21, 1961, Ser. No. 132,853**
**7 Claims. (Cl. 166—38)**



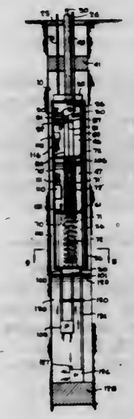
1. An article of manufacture consisting of a foam stick for treating wells to induce flow of fluid therefrom, said stick comprising an elongated body of foaming agent soluble in a well fluid of a well to be treated thereby and having a cavity therein, an effervescent agent in said cavity adapted to effervesce when contacted with such well fluid, and a plug retaining said effervescent agent in said cavity.

**3,164,207**

## METHOD FOR RECOVERING OIL

**Wayne H. Thessen, 129 Totten Hollow, Bradford, Pa., and William J. Spry, 17537 Daleview Ave., Lakewood 7, Ohio**

**Filed Jan. 17, 1961, Ser. No. 83,348**
**2 Claims. (Cl. 166—39)**



1. A method for heating a subterranean petroleum-bearing strata having a bore hole extending thereinto comprising providing a source of heat including heat exchange means in said bore hole, providing a body of heat conductive liquid within said bore hole in contact with said heat exchange means to heat the liquid in the bore hole with the liquid also being disposed adjacent said petroleum-bearing strata and in intimate contact with an uninterrupted portion of the bore hole wall throughout a substantial length of the bore hole wall adjacent said petroleum-bearing strata and continuously circulating substantially the entire body of liquid longitudinally of the bore hole between the upper and lower levels of said body of liquid so as to substantially continuously move the liquid along uninterrupted bore wall portions throughout a substantial length of the bore hole wall and in intimate contact therewith so as to heat a large area of the bore hole wall to a substantially uniform temperature to effectively provide a line source of heat to the adjacent strata.

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**3,164,208**

## INCREASING PERMEABILITY OF SUBSURFACE FORMATIONS

**William J. McGuire, Jr., College Station, and Loyd R. Kern, Irving, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Feb. 13, 1961, Ser. No. 88,635**
**13 Claims. (Cl. 166—42)**

1. In a method for increasing the permeability of a subsurface earth formation having a fracture extending from a well bore into said subsurface formation the improvement comprising injecting into the well bore and thence into said fracture a carrier fluid containing solid particles of a generally spherical propping agent having an average particle diameter between about 0.03 and 0.25 inch, said carrier fluid being capable of suspending said propping agent so that said propping agent will settle at a rate of less than 0.1 foot per minute through said carrier fluid and the concentration of said propping agent in said carrier fluid being equal to

$$C=231\,\frac{mn}{d}$$

where C is the concentration of said propping agent in pounds per gallon of suspension, $m$ is the average mass

per particle of said propping agent in pounds, $d$ is the average particle diameter of said propping agent in inches, and $n$ is a selected number of particles of said propping agent per square inch of fracture face between

$$n=\frac{1}{d^2}$$

and

$$n=\frac{p}{s}$$

where $p$ is the pressure of the fracture walls in pounds per square inch and $s$ is the average load in pounds at which individual particles of said propping agent will crush into small fragments and discontinuing injecting of said carrier fluid containing said propping agent before the last increment of said carrier fluid and said propping agent reaches a point in the well bore opposite the top of said fracture.

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**3,164,209**
**WELL BORE CLEANING TOOL**
Lloyd Owen, Seminole, Tex., assignor to Hole Hog, Inc., Dallas, Tex., a corporation of New Mexico
Filed Aug. 18, 1961, Ser. No. 132,431
8 Claims. (Cl. 166—107)



1. A well bore cleaning tool comprising an elongated tube terminating at its lower end in a hollow bit and providing a cylindrical chamber above the bit, a check valve mounted between the bit and the chamber for passing material from the bit into the chamber and holding material in the chamber, suction means in the chamber comprising a sleeve slidable in sealing contact with the inner wall of the chamber and having a radially instanding annular shoulder, stem means axially slidable in the sleeve and having axially spaced upper and lower radially outstanding annular shoulders respectively positioned above and below the annular shoulder of said sleeve and limiting the downward and upward movement of said stem means relative to said sleeve, a fluid port in said stem means, said fluid port being located in said stem means to provide a fluid passage through said sleeve when said upper annular shoulder of said stem means engages said annular shoulder of said sleeve, said stem means preventing fluid flow through said sleeve when said lower annular shoulder of said stem means engages said annular shoulder of said sleeve, abutment means forming parts of said elongated tube and positioned adjacent the upper and lower ends of said tube for respectively limiting the upward and downward reciprocatory movements of said sleeve and stem means, and means connected to said stem means to receive a suspension cable for reciprocating said stem means and said sleeve in said elongated tube and for lowering and raising said tool in the well.

**3,164,210**
**RETRIEVABLE BRIDGE PLUG**
Francis Clifford Lewis, P.O. Box 4161, Wichita Falls, Tex.
Filed June 13, 1961, Ser. No. 116,874
5 Claims. (Cl. 166—121)



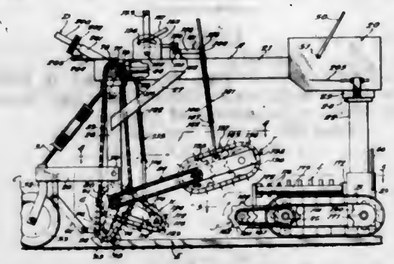
1. An improved well plugging device comprising an upper and a lower tubular mandrel, said upper tubular mandrel having a stop on the lower end thereof and said lower tubular mandrel having a stop on the upper end thereof, an upper cone having a central bore therethrough attached to said upper mandrel, upper drag springs attached to said upper cone, upwardly facing cup-shape packing fixed to said upper cone and coacting therewith, an upper spring loaded sleeve valve attached to said upper cone, an upper sleeve around said upper mandrel and above said upper mandrel stop, upper conduit engageable slip means, upper slip reins connecting said upper sleeve and upper conduit engageable slip means, said upper cone and upper conduit engageable slip means coacting to anchor the said well plugging device against downward movement; a lower cone having a central bore therethrough attached to said lower tubular mandrel, a tubular latching thimble attached to the lower end of said lower cone, a lower spring loaded check valve attached to said tubular latching thimble, a downwardly facing cup-shaped packing fixed to the lower end of said lower cone and coacting therewith, a lower sleeve around the said lower tubular mandrel above the said lower cone and below the said lower mandrel stop, lower conduit engageable slip means, lower slip reins connecting said lower sleeve and lower conduit engageable slip means, said lower cone and lower conduit engageable slip means coacting to anchor the said well plugging device against upward movement; main drag springs expandable and compressible laterally and attached at their lower ends to the lower sleeve and at their upper ends to the upper sleeve; a control rod passing through the well plugging device and actuating the lower valve with downward motion and actuating the upper valve with upward motion.

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**3,164,211**
**MACHINE FOR FORMING SOD ROLLS**
Chester Emerson Scott, Huntley, Ill., assignor to Benedict O. Warren
Filed June 6, 1962, Ser. No. 200,535
13 Claims. (Cl. 172—19)

7. A machine for forming a length of sod into a sod roll, comprising: a movable frame adapted to be directed forwardly over the length of sod on the ground; pickup means positioned transversely of the frame closely spaced from the ground for engaging the free end of the sod length on the ground and lifting said free end upwardly from the ground; and sod rolling means on the frame positioned forwardly of said pickup means, said sod rolling means having movable portions positioned for forward and downward movement when engaging the upwardly directed free end of the sod length and for rolling said free end downwardly toward the ground upon the remainder of the sod length on the ground to closely compact the initial convolution of the sod length, the

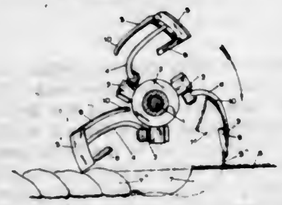




movable portions continuing to engage the succeeding portions of the sod length as the frame moves forwardly thereover to roll the sod length into a sod roll having a plurality of convolutions.

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**3,164,212**
**MACHINE FOR CULTIVATING THE SOIL**
Herbert Vissers, Nieuw Vennep, Netherlands, assignor to Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands, a Dutch manufacturing company
Filed Feb. 24, 1964, Ser. No. 346,677
Claims priority, application Netherlands Feb. 25, 1963
3 Claims. (Cl. 172—94)

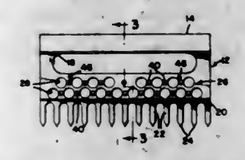


1. In a machine for cultivating or digging soil of the type including a frame supported for movement over the ground surface, at least one hub mounted for rotation on said frame, each hub carrying at least one arm to turn with the hub in a digging plane, said arms being supported on said hub to rotate with respect thereto as well as about the axis of the hub, said arms each terminating in a digging blade, and means for turning each arm to tilt its blade with respect to the digging plane as the arm rotates with the hub so as to deposit a soil cut raised by the blade, the improvements comprising a cutting edge on each blade generally perpendicular to the digging plane as the blade enters the soil, each blade also having a pair of side edges formed at angles to the cutting edge and extending rearwardly thereof with respect to the movement of the blade during digging, and a rim extension on and prolonging rearwardly that side edge of each blade which lowers during tilting of the blade, said rim extension having a portion projecting toward said hub as the blade enters the soil whereby to support cuts of soil for a predetermined portion of the tilting movement of the blade.

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**3,164,213**
**SOIL CONDITIONING TOOL**
William Lutz, 3769 20th St., San Francisco, Calif.
Filed Oct. 1, 1962, Ser. No. 227,367
1 Claim. (Cl. 172—375)

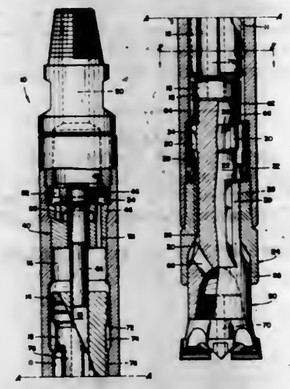
A tool head for conditioning soil and adapted to be attached to one end of an elongate handle, said tool head comprising a central planar body portion having first and second surfaces, means for mounting a handle to said first surface approximately normal thereto, a plurality of tines extending from one edge of said central body portion and formed integrally therewith, said body portion having a plurality of spaced apart holes therethrough intermediate said tines and said handle mounting means for forming a soil-pervious refuse-impervious area in said central body portion, a plurality of protuberances extending perpendicularly from said second surface of said body portion between said holes to define a pulverizing



and compacting segment, a cultivator blade extending from an edge of said central body portion opposite said tines and integral with said central body portion, said body portion having an elongate slot therethrough intermediate said blade and said handle mounting means for providing a passage through said body to clear refuse from said blade, the first surface of said tool head being smooth intermediate said tines and said holes and intermediate said blades and said elongate slot to afford substantially unimpeded passage of material over said first surface.

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**3,164,214**
**ROCK DRILL**
Erwin S. Oelke, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 25, 1963, Ser. No. 275,710
10 Claims. (Cl. 173—73)



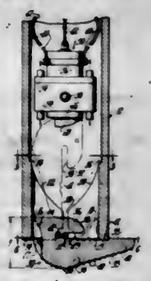
1. A rock drill comprising:
(*a*) a casing;
(*b*) valve means within the rear end portion of said casing;
(*c*) drill bit support means mounted within the forward end portion of said casing to support a drill bit;
(*d*) said valve means and said drill bit support means defining a chamber in said casing;
(*e*) a reciprocal hammer member within said chamber having a passage therethrough;
(*f*) a tube having one end supported by said valve means and having the other end sealingly extending into said passage for constant communication between said tube and said passage;
(*g*) said valve means adapted to alternatively valve motive fluid into the forward end portion of said

chamber through said tube and said passage and into the rear end portion of said chamber; and

(*h*) means to conduct the spent motive fluid from said chamber exteriorly along said hammer member and exteriorly along at least a portion of said drill bit support means to the exterior of said casing.

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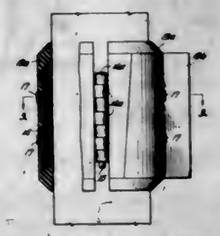
**3,164,215**
**RETRACTABLE DRILL BIT AND ASSOCIATED STRUCTURES**
**Howard L. Johnson, Los Angeles, Calif. (Box 5413, Inglewood, Calif.)**
**Filed Apr. 26, 1961, Ser. No. 105,590**
**18 Claims. (Cl. 175—261)**



4. The combination comprising a drill bit attachment-collar disposable as the terminal segment of a tubular, rotary drill stem, and a retractable drill bit characterized by a length greater than the inner diameter of the collar and a width less than said diameter, said collar having internal rotational means for locating said bit at alternate positions approximately 180° apart adjacent an end of said collar, and other means for swinging such rotated bit approximately 90° transverse to its axis of rotation whereby the bit may be moved between a longitudinal, retractable position within the collar, and a transverse drilling position partially projecting therefrom, and anchoring means for selectively holding said bit in said transverse drilling position for joint rotation with said collar.

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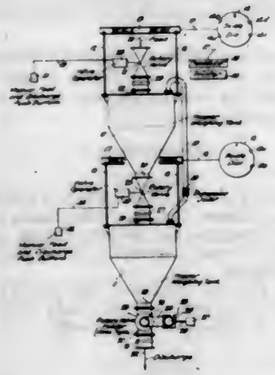
**3,164,216**
**DRILL PIPE PROTECTOR**
**Jesse E. Hall, Sr., James E. Harrison, and Donald H. Parker, Weatherford, Tex., assignors, by mesne assignments, to Trojan, Inc., Panama, Panama, a Panamanian corporation**
**Filed Mar. 27, 1963, Ser. No. 268,361**
**3 Claims. (Cl. 175—323)**



1. In a drill pipe protector and well fluid circulator, the combination with a rigid cylindrical frame member whose inside diameter is larger than the outside diameter of the pipe upon which it is to be mounted, a resilient protector member covering the cylindrical member and having a plurality of circumferentially spaced vanes covering the outside of the protector, attachment tabs or tongues punched from the wall of the cylindrical member, reinforcement ribs for the cylnidrical member at the location of said tabs and set screws in threaded holes in said reinforcement ribs outside of the tabs adapted to bend the tabs inwardly whereby an area of the cylindrical portion of the resilient member beneath the tabs frictionally engages the pipe.

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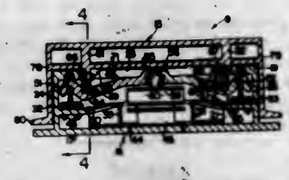
**3,164,217**
**WEIGHING DEVICE**
**John E. Peirce, State College, Pa., and Jack H. Phillips, Tulsa, Okla., assignors to Ozark-Mahoning Company, Tulsa, Okla., a corporation of Delaware**
**Filed July 5, 1962, Ser. No. 207,560**
**5 Claims. (Cl. 177—1)**



1. A process of weighing fluent materials on an intermittent input basis and a continuous output basis comprising flowing fixed tare weights of the fluent material into a first weighing tank and a second weighing tank, then feeding a weigh amount of the fluent material into the first weighing tank, weighing and recording the weight of the first weighing tank, thereafter flowing fluent material from the first weighing tank into the second weighing tank, stopping said flow when the residual amount in the first weighing tank approximates the tare weight therein, then weighing and recording the weight of the first weighing tank, and flowing fluent material from the second weighing tank at a controlled rate simultaneously with the flow into said second tank from the first weighing tank.

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**3,164,218**
**PORTABLE FIELD SCALE**
**Jay S. McClimon, 1118 Castleton Road, Cleveland, Ohio**
**Filed June 23, 1961, Ser. No. 119,095**
**8 Claims. (Cl. 177—134)**

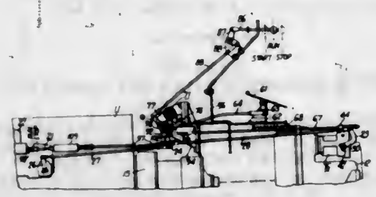


1. A portable weighing scale comprising an open top box-like base having upstanding walls, a load cell mounted centrally in said base, stiffening means surrounding said load cell, inwardly directed shelves in said base extending from said walls, scale beams extending between said shelves and load cell, and a weighing platform supported on said beams comprising a double-plate platform structure with stiffening means therebetween, and a peripheral skirt adapted to telescope over the walls of said box-like base.



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**3,164,219**
**CONTROL MECHANISM FOR VEHICLE ENGINES**
**Bobby J. Orr, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Jan. 31, 1962, Ser. No. 170,033**
**8 Claims. (Cl. 180—82.1)**



1. A control for an engine connected to an output shaft through a torque converter, comprising: engine control means for increasing engine speed in response to decreasing output shaft speed and for decreasing engine speed in response to increasing output shaft speed, manually adjustable means for varying the sensitivity of said engine control means to thereby change output shaft speed, means biasing said manually adjustable means toward an increased output shaft speed setting, friction means for releasably limiting movement of said manually adjustable means toward an increased output shaft speed setting and a lost motion connection between said friction means and said manually adjustable means permitting deceleration of said engine without moving said friction means and permitting resetting of said friction means through predetermined movement of said manually adjustable means.

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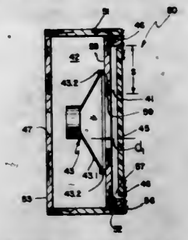
**3,164,220**
**AUTOMATIC SPEED-LIMITER FOR VEHICLES, IN PARTICULAR AUTOMOBILES**
**Willy Würgler, Kirchenfeld 1, Zurich, Switzerland**
**Filed Dec. 19, 1962, Ser. No. 245,906**
**3 Claims. (Cl. 180—82.1)**



1. In a motor control system for a vehicle having an accelerator pedal, a carburetor with a throttle lever operated by said accelerator pedal and a speedometer device for reflecting operation of said carburetor by said accelerator pedal, the improvement comprising in combination, a first rod pivotally connected to said accelerator pedal, a dog fixed to said first rod, a second rod pivotally connected to the free end of said throttle lever, a spring-loaded locking device interconnecting said first and second rods, said locking device being controlled by said speedometer device and adapted to disconnect at a predetermined speed registered on said speedometer, and a third rod pivotally connected to said throttle lever between its free end and its swivelling axle and cooperating with the dog fixed to said first rod, an abutment at the free end of the third rod, said dog being adapted to strike against said abutment positioned at the free end of said third rod after a predetermined relative movement between said first and said third rod caused by the disconnection of said locking device.

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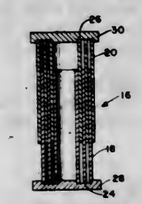
**3,164,221**
**LOW FREQUENCY LOUDSPEAKER SYSTEM**
**Stanley R. Rich, West Hartford, Conn., assignor, by mesne assignments, to Alfred H. Rosen, Newton, Mass.**
**Filed June 6, 1961, Ser. No. 115,171**
**13 Claims. (Cl. 181—31)**



1. Loudspeaker system comprising a diaphragm, a mass of gas, means including said diaphragm substantially totally enclosing said mass of gas, and means to apply to said mass of gas elastic wave vibrations in a prescribed frequency band, said diaphragm being substantially rigid and aperiodic at all frequencies throughout said band, the acoustical path length from any point in said vibrations applying means to the nearest point in said diaphragm being approximately one-twentieth the wavelength of sound in said gas at the highest frequency in said band, whereby said gas is substantially a noncompressible fluid with respect to said vibrations.

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**3,164,222**
**NON-REUSABLE KINETIC ENERGY ABSORBER**
**Earl W. Conrad, Berea, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**
**Filed Jan. 4, 1963, Ser. No. 249,540**
**10 Claims. (Cl. 188—1)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A non-reusable kinetic energy absorbing device comprising

a first rigid member, and

a second rigid member having non-resilient portions in sliding frictional contact with portions of said first rigid member to accommodate longitudinal displacement of said rigid members relative to one another whereby the areas of said portions in sliding frictional contact progressively change during said displacement,

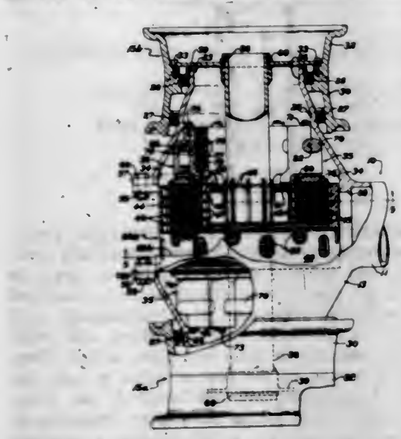
said portions of said first and second rigid members in sliding frictional engagement with one another being generally parallel to the direction of said longitudinal displacement for preventing deformation of the said first and second rigid members.

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**3,164,223**
**CARTRIDGE DISC BRAKE**
**Willard E. Kemp, Troy, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**
**Filed Feb. 23, 1960, Ser. No. 10,186**
**6 Claims. (Cl. 188—17)**

1. A disc brake mechanism in the form of an integral cartridge which is adapted to be installed on or removed

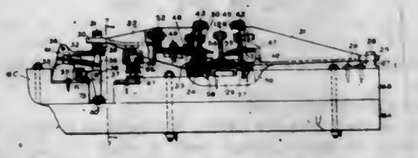
as a complete unit from a housing mounting a wheel assembly, the mechanism consisting of a cylindrical outer shell with external lug members thereon for fastening the entire mechanism as well as said shell to said housing, a first series of annular disc-like braking members in splined engagement at their outer periphery with the interior of said shell, a hub member concentric with



said first series of braking members and said outer shell and enclosed within the envelope of said shell, a second series of annular disc-type braking members in splined engagement at their inner periphery with said hub and interleaved with said first series, and means on said hub and on said shell for mounting said mechanism for relative rotation between their respective disc-like braking members.

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3,164,224
## CAR RETARDER FOR RAILROADS
Robert B. Williamson and Isaac A. De Kramer, Rochester, N.Y., assignors to General Signal Corporation, a corporation of New York
Continuation of application Ser. No. 857,941, Dec. 7, 1959. This application July 30, 1962, Ser. No. 215,239
2 Claims. (Cl. 188—62)



1. A car retarder associated with a track rail in a stretch of railway track comprising:

(*a*) brake beams disposed on both sides of the track rail for engagement with car wheels

(*b*) a plurality of pairs of opposing levers laterally spaced and disposed longitudinally on top of respective railway ties of said stretch rail for operating the brake beams and supporting the track rail,

(*c*) one of the opposing levers of each pair extending beneath the track rail and having an integral hook formed upwardly in one end and having its other end bearing on a support point on the top of the associated railway tie,

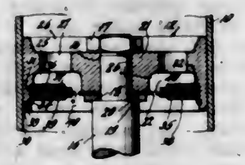
(*d*) the other of said levers of each pair having an integral hook formed downwardly in one end and having its other end bearing on a support point on the top of the associated railway tie, and

(*e*) means for connecting the brake beams to the levers, the beam on the inside of the track rail being connected to one lever of each pair, and the beam on the outside of the track rail being connected to the other lever of each pair,

(*f*) said hooked ends of the levers of each pair being connected together in a manner to permit articulation of the hooked ends of the levers elevationally whereby the track rail is supported by the levers at a point between the bearing points of the levers on their respective support points and the spreading of the brake beams by the passage of a car wheel raises the track rail elevationally to permit application of baking pressure to a car wheel in proportion to the pressure exerted by a car on the track rail.

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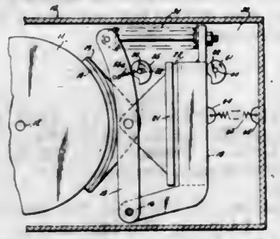
3,164,225
## SHOCK ABSORBERS HAVING ANNULAR DISC VALVING
Christian-Marie-Lucien-Louis Bourcier de Carbon, 64 Blvd. Maurice Barres, Neuilly-sur-Seine, France
Filed July 26, 1962, Ser. No. 212,589
Claims priority, application France, Sept. 6, 1961, 872,483, Patent 1,307,945
4 Claims. (Cl. 188—100)



1. In a direct-acting piston-and-cylinder shock absorber, a cylinder containing damping fluid, a piston disposed for reciprocation therein, means in said piston defining an annular slit of variable width and concentric with the axis of the piston for the controlled passage of damping fluid from one side of the piston to the other, said means comprising a fixed circular edge providing one margin of said slit, and a stack of flexible annular valve discs normally lying flat in contact with each other substantially throughout their areas and having inner and outer completely circular edges, means fixedly carried by said piston for supporting said stack of discs by contact top and bottom with one of its circular edges, said contact being along a narrow line at the extreme edges of said stack so as to avoid gripping, clamping, or encasement of the edges of the stack, the other circular edge comprising the other margin of said slit and adapted to flex in at least one direction upon being subjected to force of damping fluid upon movement of said piston at a predetermined rate, to vary the effective passageway afforded by said slit, said stack of discs being supported at its outer peripheral edge and the flexure for varying the size of the slit occurring at the inner edge, said fixed circular inner edge of the slit being comprised by a radially projecting thin plate, and said stack of valve discs comprising at least three thin discs the central one in repose being substantially co-planar with said thin plate and having its inner circular edge surrounding and in close proximity to the edge of said plate to provide the annular slit of extremely narrow dimensions, the inner edge portion of said central valve disc extending radially inwardly somewhat farther than those of the adjacent discs, whereby pressure of fluid in one axial direction causes the inward portions of the central disc to flex away from the initial plane of the plate to open the slit to a degree depending upon the pressure of said fluid and also to flex the other valve disc on one side of the central disc, and pressure of fluid in the opposite axial direction causing the central disc to flex in the other direction and causing similar flexure of the adjacent valve disc on the other side of the central disc.



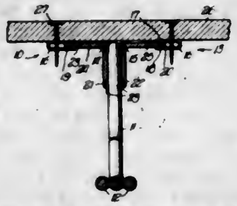
3,164,226
## SELF-ADJUSTING SPRING SET BRAKE
Roman Lewyckyj, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1963, Ser. No. 263,907
5 Claims. (Cl. 188—171)



1. In a spring set brake comprising a brake drum, a brake shoe, an operating arm, a solenoid and an armature, and a spring braking means; said operating arm being pivotally mounted at one end thereof, said solenoid being pivotally mounted at one end thereof; said brake shoe and said armature being connected to said operating arm; said brake shoe being positioned adjacent said brake drum and being movable between engagement and disengagement with respect thereto responsive to movement of said operating arm; said armature being mounted adjacent said solenoid and being movable from a predetermined air gap spacing when said brake shoe engages said brake drum to engagement therewith responsive to energization of said solenoid; said spring means being operatively connected to said control arm to bias said control arm to a predetermined position; an automatic air gap adjusting structure; said automatic air gap adjusting structure comprising first and second stop means operatively connected to said operating arm and said solenoid respectively; said first stop means having stop position control means connected thereto for readjusting the stop position of said first stop means when said air gap between said armature and said solenoid exceeds some predetermined value.

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3,164,227
## NAILABLE METAL JOIST
Augustine Davis, Jr., and James A. Nichols, Washington, D.C., assignors to Davisbilt Steel Joist, Inc., Washington, D.C., a corporation of Delaware
Filed Oct. 4, 1960, Ser. No. 60,454
6 Claims. (Cl. 189—37)



3. The combination of a nailable metal joist comprising an elongated web means, a chord joined to said web means along one edge thereof, said chord having a longitudinally extending outer extremity, an elongated, hollow nailing member substantially U-shaped in configuration secured to said outer extremity, said U-shaped member having spaced apart, parallel walls of nail penetrable sheet metal extending substantially normal to said web means, a collateral structure member disposed adjacent to and supported by said chord, and driven frictional fastening elements passing through said collateral member and also successively through said spaced apart walls of said nailing member, thus passing entirely through said hollow nailing member of said chord, said driven fastening elements being retained securely in place by their frictional contact with the distorted margins of the openings formed in the spaced apart walls of the nailing member by the driving of said fastening elements combined with the locking effect of the slight deflection of at least one of said parallel walls, due to the inherent slight unhindered resilience thereof under the driving force of the fastening element.

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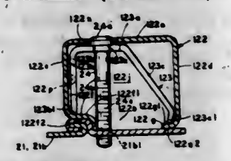
3,164,228
## STORM DOORS
Valfredo Segre, Montreal, Quebec, Canada (6 Princeton St., Garden City, N.Y.)
Filed Nov. 23, 1962, Ser. No. 239,489
Claims priority, application Canada, Sept. 15, 1962, 858,069
3 Claims. (Cl. 189—46)



1. A storm door assembly including a door frame, a door case and a plurality of door hinges, the knuckle portions of one side of said hinges being formed as part of the door frame extrusion and disposed within the thickness of said door frame, and the knuckle portions of the other side of said hinges projecting outwardly from the outer surface of the door case extrusion and being disposed in alignment with the knuckle portions of said door frame, the knuckle portions of the other side of said hinges each comprising a tubular portion having an axial slot therethrough, one side of said axial slot extending into a hooked lip portion which rigidly interlocks with a cooperating lip on said outer surface of said door case extrusion, the other side of said axial slot extending into a hinge leaf portion which is rigidly attached to a second surface of said door case extrusion, and hinge pin means fitted therethrough, and interconnecting, said aligned knuckles.

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3,164,229
## NON-BUCKLING MOLDING STRUCTURE
George M. Grady, Minneapolis, Minn., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed June 14, 1962, Ser. No. 202,629
3 Claims. (Cl. 189—78)



2. An assembly, comprising:

(*a*) a sheet member forming a channel, being at least generally C-shaped in cross section, and adapted to have the open side of the C-shape pulled against a base surface,

(*b*) said member including in cross section:

(1) first and second legs connected respectively to opposite ends of a third leg, and

(2) fourth and fifth legs connected respectively to said first and second legs remote from said third leg with each fourth and fifth leg having a surface bearing against said base surface,

(*c*) a retainer clip of generally inverted U-shape with the distal ends of the legs of said U-shape respective-

ly bearing against the surfaces of said fourth and fifth legs remote from said base surface,

(*d*) said third leg and the cross bar of the U-shaped retainer clip having aligned holes, and

(*e*) a headed fastener extending through said holes, having its shank extending through the hole in said clip, and secured in said base surface with the head of said fastener contiguous to said third leg,

(*f*) whereby driving of said fastener will secure said member against said base surface by having the fourth and fifth legs pushed against said base surface by the distal ends of the retainer clip so that the head of the said fastener does not inwardly bow said third leg by the securement force,

(*g*) said hole in said third leg having a cross sectional area greater than the head of said fastener,

(*h*) the head of said fastener being located in the plane of said third leg,

(*i*) whereby the full fastening force exerted by the head of said fastener is carried by said retainer clip instead of by said third leg.

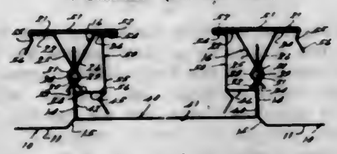
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**3,164,230**

## ACOUSTICAL CEILING CONSTRUCTION

George C. Adams, Detroit, Mich., assignor to Rollform, Incorporated, Detroit, Mich., a corporation of Michigan

Filed Sept. 4, 1959, Ser. No. 838,098
4 Claims. (Cl. 189—85)



3. An acoustical ceiling construction for a span of ceiling comprising a plurality of rectangular metal pans of fixed length and width disposed side by side in edgewise abutting engagement, said span being of greater dimension than a whole number multiple of the length or width of said pans, means for supporting said pans from above, an elongated module strip having a lateral dimension less than the length or width of said pans for completing said span comprising a flat sheet metal pan having upwardly folded longitudinal edges terminating in re-entrantly folded flanges, said edges being disposed in side by side abutting engagement with aligned ones of said pans and a plurality of spring clips engageable with and supported by said supporting means and having a pair of depending fingers, one of said fingers of each clip engageable with said flanges, respectively, on said module strip.

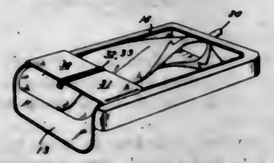
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**3,164,231**

## CARRYING BAG CONSTRUCTION

Louis F. Kryznoski, Trenton, N.J., assignor to Atlantic Production Corporation, Trenton, N.J., a corporation of New Jersey

Filed Jan. 5, 1962, Ser. No. 164,559
4 Claims. (Cl. 190—43)



1. A folding luggage bag comprising, in combination, an inner panel, an outer panel, a web connected to corresponding end edges of said panels and spacing said panels to form a garment compartment, a flap formed in said inner panel and providing access to said garment compartment, fastening means for securing the side edges of said flap to the adjacent edges of said panel, and retaining flap means secured to the inside portion of said flap, said retaining flap means having a relatively small length along said flap, said retaining flap means being securable with respect to said flap to enclose lower ends of garments laid on top of the inner portion of said flap; said retaining flap means comprising a first and second flap portion being directly sewn to and extending from opposing sides of said flap, the outer ends of said first and second flap portions being securable together.

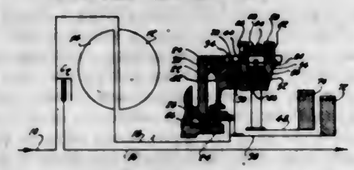
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**3,164,232**

## SEQUENTIALLY OPERABLE CLUTCH ASSEMBLY AND FLUID COUPLING

Norman T. General, Orchard Lake, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,338
2 Claims. (Cl. 192—3.2)



2. In a torque transmitting mechanism capable of establishing dual torque delivery paths from a driving member to each of two driven members, an annular clutch servo cylinder, first and second reaction discs carried by said cylinder, means for normally biasing said reaction discs apart, one reaction disc being shiftable relative to the other against the influence of the biasing means, separate clutch disc assemblies situated adjacent each of said reaction discs, one clutch disc assembly being connected to one driven member and the other clutch disc assembly being connected to the other driven member, the pressure force applied to said piston being distributed to each disc assembly to establish sequentially a driving connection between said cylinder and each driven member, the outer periphery of said cylinder having an axial extension, axial slots formed in said extension, an annular piston disposed in said cylinder, said reaction discs having radial projections extending through said slots, said clutch disc assemblies being disposed on each side of one reaction disc, said one reaction disc being shiftable axially by said piston as pressure is supplied to said cylinder thereby causing sequential engagement of said friction discs and said reaction discs, said biasing means comprising compression springs engageable with the radially outwardly extending portion of said one reaction disc at locations spaced radially outwardly from said cylinder whereby the operating radius of said clutch disc assemblies is a maximum, a hydrokinetic fluid coupling means forming in part a driving connection between said driving member and said cylinder and a selectively engageable friction clutch means for connecting directly said driving member to said driven member to establish a direct driving relationship therebetween when each of said clutch disc assemblies is disengaged.

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**3,164,233**

## PLURAL REVOLUTION CLUTCH

Nils H. Swanson, La Grange, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 17, 1962, Ser. No. 245,076
5 Claims. (Cl. 192—33)

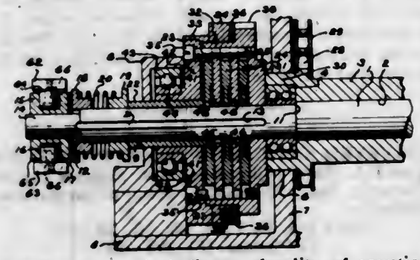
1. In a clutch including a rotatable driving portion, a rotatable driven portion and means for coupling the driving portion to the driven portion, the combination of

a circular cam fixed to the driven portion for rotation therewith and having a notch in the periphery thereof,



a second circular cam mounted for rotation about the driven portion and having a recess in the periphery thereof alignable with said notch,

a detent engageable with said recess and said notch for restraining said driven portion against rotation only when said notch and recess are aligned, and



disabling means including a plurality of counting detents engageable with said recess for successively arresting the rotation of said second cam and preventing the alignment of said notch and said recess until said driven portion has completed a predetermined number of revolutions.

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**3,164,234**

## SPRAG CLUTCH WITH ELECTRIC ENERGIZER

Carl A. Tamarin, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Nov. 21, 1960, Ser. No. 70,900
9 Claims. (Cl. 192—40)



1. In an overrunning clutch, the combination comprising: driving and driven races disposed in spaced concentric relationship; a plurality of detents disposed between said races for engagement therewith to establish a motion-transmitting relationship therebetween and disengagement therefrom to interrupt the motion-transmitting relationship; adjustable cage means operative to maintain predetermined spacing of said detents; and magnetic means operative when energized to utilize the movement of one of said races to cause the adjustment of said cage means to position said detents in motion-transmitting relation with said races.

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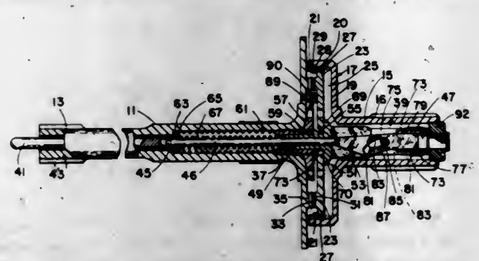
**3,164,235**

## TOGGLE ACTUATED CLUTCH

Frederick A. Seelig, New Hartford, and Neal Rothfuss, Clinton, N.Y., assignors to The Bendix Corporation, Utica, N.Y., a corporation of Delaware

Filed Apr. 3, 1961, Ser. No. 100,245
6 Claims. (Cl. 192—101)

1. A disconnect device for releasably coupling an engine to a driven accessory comprised of an externally-splined hollow drive shaft having a radially-extending cup-like flange, a driven shaft having a radially-extending flange facing said cup-like flange, said driven shaft flange having curvic teeth projecting toward said cup-like flange, said cup-like flange including an annular part having internal splines, a connecting plate having peripheral splines engaging the internal splines of said annular part of said cup-like flange, said connecting plate having curvic teeth engaging the curvic teeth of said driven shaft flange, said cup-like flange providing clearance travel recess for said connecting plate, releasable locking means carried



by said driven shaft and extending into said hollow drive shaft, said locking means contacting said connecting plate and normally maintaining said curvic teeth in engagement, said locking means having actuator means arranged to be moved axially to release said locking means, said locking means having a locking member normally abutting said connecting plate and moveable axially on release of said locking means to permit full separation of said curvic teeth.

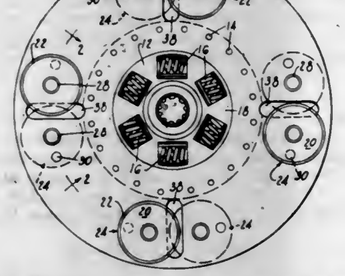
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**3,164,236**

## CLUTCH PLATES AND THE LIKE

Gene P. Baynes and Edward W. Drislane, Green Island, Troy, N.Y., assignors to The Bendix Corporation, Green Island, Troy, N.Y., a corporation of Delaware

Filed June 22, 1961, Ser. No. 118,915
3 Claims. (Cl. 192—107)

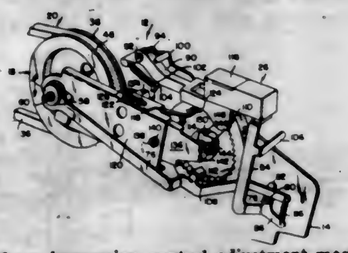


1. A circular clutch plate and the like for sandwiching between parallel opposing surfaces which rotate about a common axis and comprising: a circular plate member having a central axis of rotation and a plurality of equally spaced generally narrow radially extending openings therethrough; a pair of opposing friction producing members for each opening, one member of each pair being positioned on one side of said plate member with a portion projecting over one side of said opening, and the other member of each pair being positioned on the opposite side of said plate with a portion projecting over the opposite side of said opening, said opening extending to the periphery of said circular plate, said opening including portions extending circumferentially along the radially inner edges of said pair of opposing friction producing members, and a marcel shaped spring and abutment member positioned in said opening between said pair of opposing friction producing members to bias them apart and limit movement of said pair toward each other.

### 3,164,237
### IMPRESSION CONTROL MECHANISM IN POWER DRIVEN TYPEWRITERS

Samuel D. Cappotto, Syracuse, N.Y., assignor to SCM Corporation, a corporation of New York

Filed Sept. 29, 1961, Ser. No. 141,794
9 Claims. (Cl. 197—17)



8. Uniform impression control adjustment mechanism for a power driven typewriter, comprising: a type element actuating rotatable power member having a split pulley mounted on one end thereof; constant speed power source means operably connected to said pulley; a rotary member provided with a plurality of internal teeth; a motion transmitting member continuously operated by said power member and having a portion arranged to engage one of said internal teeth and thereby move said member a pre-selected angular distance for each revolution of said power member; means arranged to bias said member into engagement with said teeth; means operated by said rotary member for varying the effective diameter of said split pulley as said rotary member is rotated; and means for selectively connecting said motion transmitting member in driving relationship to the internal teeth of said rotary member, said connecting means including a pivoted key member and means biasing said motion transmitting member to an inoperative position wherein said key member precludes said motion transmitting member biasing means from biasing said motion transmitting member into engagement with said teeth, said key member being selectively pivotable to an alternative operative position wherein said motion transmitting member biasing means may bias said motion transmitting member into engagement with said teeth.

### 3,164,238
### CONTINUOUS CONVEYORS

Morris Behan McCullagh, 23 Wallaroy Road, Double Bay, New South Wales, Australia

Filed June 11, 1962, Ser. No. 201,549
Claims priority, application Australia, June 16, 1961, 5,900/61
4 Claims. (Cl. 198—19)

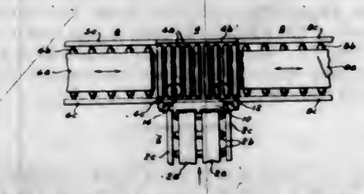


1. A continuous conveyor, comprising a continuous belt having the longitudinal edge portions of one surface thereof opposed to and in contact with each other for most of the length of the belt, teeth on the longitudinal edge portions of the other surface of the belt, a plurality of pairs of grooved pulley wheels mounted for rotation about vertical axes and having laterally opening grooves in the edges thereof opposed to each other, said pairs of pulley wheels being spaced along the length of said continuous belt and having the teeth on said belt engaged in said grooves in the pulley wheels for supporting the belt and the material being conveyed and guiding the edges of the belt, toothed drive means engaging the teeth on said belt at at least one point along the length of said belt for driving the belt, a loading station having means for spacing the opposed contacting edges of the belt and supporting the one surface so that it faces upwardly for receiving material to be conveyed, and a discharge station having means for spacing the opposed contacting edges of the belt and supporting one edge of the belt at a level lower than the other edge of the belt for discharging the material conveyed by the belt.

### 3,164,239
### CONVEYED ARTICLE CONTROLLING DEVICES

Reginald A. Reed, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 29, 1962, Ser. No. 233,813
12 Claims. (Cl. 198—20)



1. In a conveyor system having a first conveyor for conveying articles therealong and a second conveyor for receiving such articles from the first conveyor, the improvement comprising:

(*a*) shock absorbing and control means mounted at the junction of the first and second conveyors for absorbing the shock imparted to each article by the second conveyor as it enters the latter and for controlling movement of the article from the first conveyor to the second conveyor, said means comprising:

(*b*) a guide means having a mounting end and a free end;

(*c*) means rotatably supporting said guide means at its mounting end on a fixed point at the junction between said conveyors;

(*d*) and means resiliently biasing said guide means for limited rotary movement of its free end about said pivot in the path of turning movement of the article to apply a resilient counteracting force to the article to slow down its movement when it enters said second conveyor.

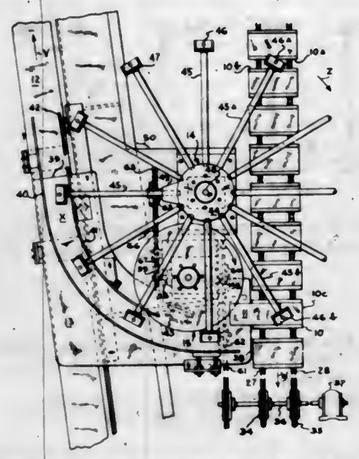
### 3,164,240
### TRANSFER CONVEYOR FOR A PAPER-MAKING MACHINE

Charles T. Banks, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Nov. 16, 1962, Ser. No. 238,149
6 Claims. (Cl. 198—25)

1. In material handling mechanism, the combination of a conveyor for carrying a series of articles disposed side to side in predetermined spaced relation along a predetermined path, a member rotatable about a predetermined axis carrying a plurality of pusher elements spaced on radii of predetermined length from said axis and spaced predetermined distances arcuately of the member, said axis of rotation being located closer to said conveyor than the lengths of said radii and in such position that said pusher elements sweep across said path from the side of said axis to the opposite side and recross said path to the side of said axis as said member rotates, and means for driving said member and said conveyor in a predetermined speed relationship so that said pusher elements move between articles on said conveyor as the elements pass from said axis side to said opposite side of the conveyor and engage the articles on their ends and push them off the conveyor in a direction transverse of said path as the elements move from said opposite side back to said axis side.

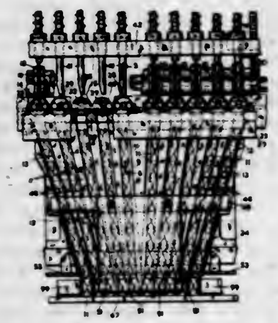




### 3,164,241
### PACKAGING APPARATUS

Arthur Henry Atkinson, Gainsborough, England, assignor to Rose Brothers (Gainsborough) Limited, Gainsborough, England, a British company

Filed Dec. 13, 1962, Ser. No. 244,327
Claims priority, application Great Britain Dec. 14, 1961
5 Claims. (Cl. 198—30)

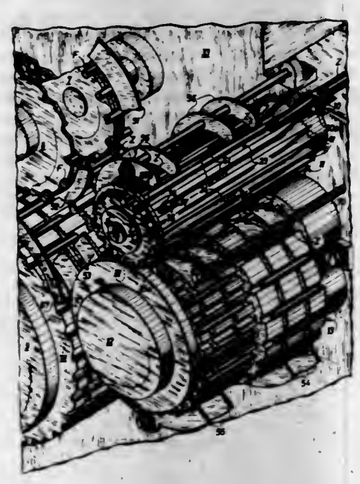


1. Packaging apparatus for the purpose specified, comprising means for feeding a plurality of separate single files of articles towards a collecting station, a plurality of pivotal transfer members each formed with an open-ended slot adapted freely to receive the successive leading articles from a given file, means for pivoting the transfer members through substantially 90° to cause the slots to extend downwardly, an open-topped hopper formed with a series of downwardly extending chutes, one for each transfer member, adapted to receive the articles in succession from the respective transfer members, after the pivoting action, for the articles to gravitate to the bottom of the hopper, a transfer support adapted to receive the lowermost articles in the hopper to form successive batches for further conveyance to a wrapping machine, a series of ejectors, one for each transfer member and means for causing the ejectors to pass through the slots of the transfer members while the slots are extending downwardly.

### 3,164,242
### COMBINED DISTRIBUTING AND REALIGNING ARRANGEMENT FOR CIGARETTE STICKS AND THE LIKE

Bernhard Schubert and Willy Rudszinat, Hamburg-Lohbrugge, Germany, assignors to Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany

Filed Dec. 27, 1961, Ser. No. 162,432
Claims priority, application Germany, Dec. 27, 1960, H 41,325
20 Claims. (Cl. 198—31)



1. A combined distributing and realigning arrangement for cigarette sticks and the like, comprising movable distributor means having a plurality of equally spaced parallel grooves; means for consecutively conveying cigarette sticks into said grooves; stop means provided on said distributor means for arresting the sticks conveyed into alternate grooves in two axially spaced groups; a pair of movable realigning means each having a plurality of equally spaced parallel grooves, the spacing between the grooves of one of said realigning means and between the grooves of said distributor means equal to one-half the spacing between the grooves of the other realigning means, both said realigning means disposed at the downstream side of said conveying means and forming with said distributor means a first transfer station at which the sticks of one group are transferred into consecutive grooves of said other realigning means and the sticks of the other group are transferred into alternate grooves of said one realigning means; and movable stick receiving means having a plurality of parallel grooves whose spacing equals the spacing between the grooves of said other realigning means, said stick receiving means located at the downstream side of said distributor means and forming with said realigning means a second transfer station at which the grooves of said stick receiving means receive sticks from each of said realigning means.

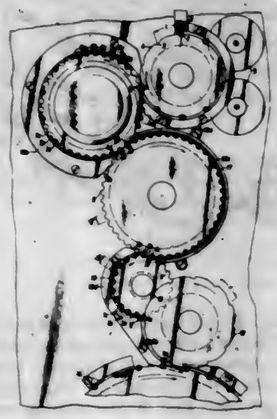
### 3,164,243
### METHOD AND APPARATUS FOR MAKING FILTER PLUGS FOR FILTER TIP CIGARETTES

Willy Rudszinat and Bernhard Schubert, Hamburg-Lohbrugge, Germany, assignors to Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany

Filed Oct. 6, 1960, Ser. No. 60,929
Claims priority, application Germany Oct. 7, 1959
11 Claims. (Cl. 198—32)

1. An apparatus for transforming rows of rod-shaped articles each of which contains a plurality of coaxial articles into a single file of axially parallel articles, com-

prising a first conveyor having equidistant row-receiving holders and being arranged to advance consecutive rows of articles in a direction at right angles to the longitudinal extensions of the rows; a second conveyor spaced from said first conveyor and having equidistant article-receiving carriers, said second conveyor being arranged to advance axially and transversely staggered articles in parallelism with themselves; a third conveyor disposed between and respectively defining with said first and second conveyors a first and a second transfer station, said third conveyor comprising a plurality of conveying elements, one for each article of a row, and means for driving said conveying elements at substantially the same speed, each of said conveying elements including a section extending between said transfer stations and having equidistant article-receiving retainers which advance in a direction from said first toward said second transfer station, said sections including a longest section and a shortest section



and the difference in the length of said sections being equal to the distance between a pair of consecutive carriers, the arrangement of said conveying elements being such that the retainers of one of said elements consecutively reaching said first station are aligned with one retainer of each other conveying element so that each of such aligned retainers may receive one article of a given row of articles and that the retainers thereupon deliver the respective articles into consecutive carriers whereby each carrier receives a single article while passing along said second station and the articles received in consecutive carriers are staggered axially and transversely with respect to each other; and shifting means adjacent to said second conveyor for arranging such axially and transversely staggered articles in a single file while the articles advance in said carriers.

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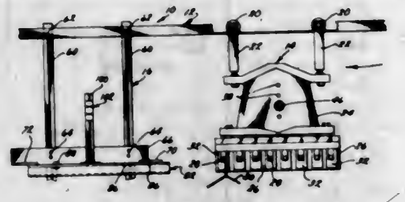
3,164,244

## SELECTION AND TRANSFER DEVICE FOR CONVEYORS

Mario T. Sgriccia, Detroit, Mich., and Thomas C. McGow, Summit, N.J., assignors to Rapistan-Keystone, Detroit, Mich., a corporation of Michigan

Filed Nov. 14, 1961, Ser. No. 152,202
8 Claims. (Cl. 198—38)

1. A selector mechanism for a conveyor comprising: a first preset sensitizing selection means mounted adjacent said conveyor and associating with preset codes on passing code-bearing carriers and forming an interengagment with a predetermined preset code to select a predetermined carrier; a plurality of article supporting means on each of said carriers and a second preset selection means sensitized by said interengagement of said first selection means to select predetermined articles on



said article supporting means of said selected carrier, and cause a function to be performed with respect thereto.

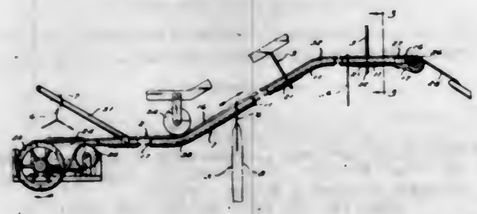
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3,164,245

## CONVEYOR

Victor A. Juengel, Middleburg Heights, Ohio, assignor to Juengel V-Matic Systems, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Mar. 25, 1960, Ser. No. 17,528
1 Claim. (Cl. 198—129)



A conveyor comprising two elongated tubular carrier members, each of said carrier members having a closed tubular wall the upper wall portion of which defines a continuous longitudinally extending external upwardly facing belt-supporting surface and a continuous longitudinally extending shoulder adjacent to and extending transversely of said upwardly facing belt-supporting surface for guiding a belt longitudinally of said carrier member, the lower wall portion of said carrier member defining an internal upwardly open channel located below said external channel and extending longitudinally of and within said tubular carrier member, said internal channel having a continuous upwardly facing belt-supporting surface, said tubular carrier members being disposed in spaced relation at an angle to each other with their upwardly facing belt-carrying surfaces substantially in a common plane and with one end of each of said carrier members adjacent one end of the other; a single, narrow, thick endless belt supported by both of said carrier members with its upper run slidably carried by said belt-supporting surfaces of both said tubular carrier members with the top surface of said upper belt run projecting above the shoulders of said tubular carrier members and with the upper run of said belt being guided longitudinally of said carrier members solely by sliding engagement of said belt run with said external channels of said carrier members, and with its lower run passing through both said tubular carrier members and slidably carried in guided relation on said belt-supporting surfaces of said internal channels thereof; and separate guide means disposed between said adjacent ends of said tubular carrier members to support and guide the upper run of said belt, the lower run of the belt, and the load carried by the upper run of the belt passing between said external belt-supporting surfaces of said carrier members; said belt is a V-belt of trapezoidal cross section the maximum thickness dimension of which is a major portion of its maximum width dimension, said V-belt being slidably supported on its narrower surface in said



external channels of said carrier members and on its wider surface in said internal channels of said carrier members; and in which said guide means comprises a rotatable pulley disposed between said adjacent ends of said tubular carrier members and having a circumferential groove of V-shaped cross section in which the upper run of said belt passing between said external channels of said carrier members travels with its narrower surface facing the bottom of said groove and also having a plurality of recesses extending transversely of said pulley between said belt and said pulley, and a guide member extending between said adjacent ends of said tubular carrier members in close proximity to the circumference of said pulley, whereby a load-carrying hook which is hooked over the upper surface of said upper run of said belt and moved thereby toward said pulley engages and is slidably moved along said guide member from one tubular carrier member to the other while the free end of said hook is disposed in and moved by one of said transversely extending recesses of said pulley.

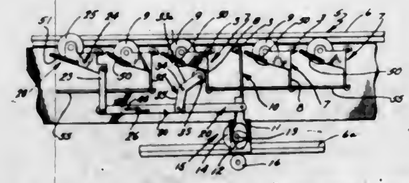
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3,164,246

## RECIPROCATING PROPELLING MEMBER CONTROL

Maynard J. De Good, Grand Rapids, Mich., assignor to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan

Filed Aug. 29, 1963, Ser. No. 305,248
6 Claims. (Cl. 198—160)



1. In a conveyor for articles, said conveyor having an article conveying surface and an endless driven article propelling member, said propelling member having a forward run and a return run; a pivotally mounted support element for said forward run of said propelling member, said support element being movable to shift said propelling member from an article propelling position to an article non-propelling position; a driven actuation member; a bar engaging said actuation member and reciprocated thereby; a finger on said bar; a slidable arm having a first slot and a second slot, the ends of said slots overlapping and communicating through a common channel to form a somewhat Z-shaped opening receiving said finger, said channel being of such size that said finger may move therethrough from one slot to the other; said arm having means secured thereto which in one position of said arm permits said support element to hold said propelling member in article propelling position and in a second position pivoting said support element to shift said propelling member to article non-propelling position; contfol means for said actuation member for shifting said finger through said channel from one slot to the other; said finger when in one of said slots reciprocating without shifting said arm and when in the other of said slots shifting said arm to its other said positions.

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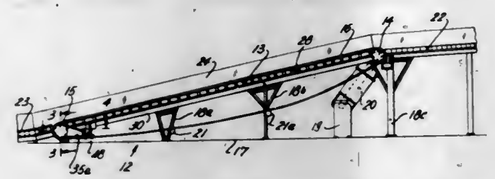
3,164,247

## APPARATUS FOR GUIDING WIDE BELTS

Raymond L. Hall, Caldwell, N.J., assignor to Ski-Dek Corporation, Caldwell, N.J., a corporation of Delaware

Filed Nov. 14, 1961, Ser. No. 152,303
9 Claims. (Cl. 198—202)

1. Apparatus for controlling a continuous web comprising a roller in contact with the web and having at least one groove therein with smooth sides inclined inwardly towards each other, an auxilary belt mounted for movement between the web and groove in the roller, said belt having opposite sides adapted to contact and slide on the smooth sides of the groove and a friction



surface at its outer periphery for frictional contact with the web to be controlled, and a guide spaced from the roller for guiding the auxiliary belt at an angle to the path of movement of the web to produce a lateral force on the web as the auxiliary belt is jammed into the groove along an inclined side thereof.

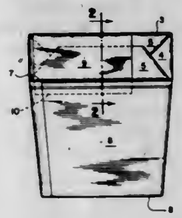
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3,164,248

## CIGARETTE PACKAGE

James J. Cunningham, Manhasset, N.Y., assignor to The American Tobacco Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 16, 1963, Ser. No. 316,690
5 Claims. (Cl. 206—41)



5. In a cigarette package comprising an inner wrapper and an outer wrapper, the inner wrapper being wrapped about a group of cigarettes and being folded over at both ends of the cigarettes to form a complete enclosure therefor, the outer wrapper of paper being wrapped about the inner wrapper with one end portion folded over one end portion of the inner wrapper but terminating adjacent the other end portion of the inner wrapper, the improvement which comprises an outer wrapper end closure band matching the paper of the outer wrapper and being placed over said other end of the inner wrapper with the ends of the band positioned between the inner wrapper and the terminal portion of the outer wrapper on each of two opposite sides of the package, the ends of the band being adhesively secured to the inner surface of the outer wrapper.

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## ERRATUM

For Class 206—56 see:
Patent No. 3,164,695

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3,164,249

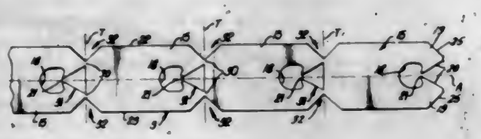
## BAG CLOSURES UNITED IN STRIP FORM

Floyd G. Paxton, P.O. Box 2098, Yakima, Wash.

Filed Mar. 7, 1961, Ser. No. 93,888
3 Claims. (Cl. 206—56)

1. A matrix in strip form for consecutively producing a series of bag closures comprising a strip of relatively thin and stiff but springy flat sheet plastic material, said strip being weakened at regularly spaced longitudinal

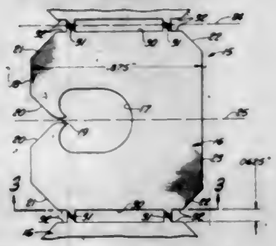
intervals along a transverse line normal to the side edges of said strip by means eliminating the material of said strip bordering said transverse line, with the exclusion of a pair of narrow webs located on said line, said means including a hole bordering said line and having opposite extremities located on said line, said webs being readily frangible upon the imposition of a moderate amount of



traction to said strip on opposite sides of said line to separate said strip along said line, said strip having, adjacent each of said holes, an internal aperture which communicates with said hole through a narrow passageway, whereby the separation of said strip along a given line as aforesaid, converts the portion of said strip adjacent said line having said aperture into a bag closure.

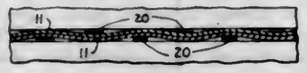
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**3,164,250**
**POLYSTYRENE MULTI-CLOSURE STRIP ADAPTED FOR SEPARATION INTO INDIVIDUAL CLOSURES**
**Floyd G. Paxton, % Kwik Lok Corp., P.O. Box 2098, Yakima, Wash.**
**Filed Nov. 22, 1963, Ser. No. 325,665**
**5 Claims. (Cl. 206—56)**



1. In a multi-closure strip, wherein the closures each may have a bag confining mouth and a narrow opening located in a longitudinal side edge thereof and communicating with said mouth for admitting a bag neck into the latter; the structure comprising: a multiple of closures of transversely stiff, thin, sheet material comprising polystyrene or the like, arranged consecutively with their transverse edges in closely spaced relation; and web means integrally connecting with each consecutive pair of closures in frangible areas of union located between opposite ends of said web means and said closely spaced edges of said consecutive closures, said frangible areas being spaced far enough apart length-wise of said strip and being sufficiently restricted in the cross sectional dimension thereof measured transversely of said strip, that compressive forces applied in the plane of said strip from opposite directions respectively to said consecutive closures and through said closures to opposite ends of said web means without causing said closures to buckle, will cause the material of said strip to substantially simultaneously crack in said frangible areas of union at the opposite ends of said web means and thus separate said web means from said closures and said closures from each other.

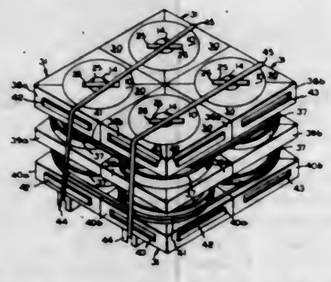
**3,164,251**
**TIGHTLY BUNDLED PACKAGE ASSEMBLAGE AND METHOD OF PACKAGING**
**Ross A. Easter and Bob K. Davis, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware**
**Filed Oct. 18, 1960, Ser. No. 63,329**
**4 Claims. (Cl. 206—65)**



2. A package assemblage comprising, a stack of bundled articles presenting exteriorly facing side walls, a sheet overwrap extending around said stack closely adjacent said side walls, and a layer of heat expanded material adhered to the inner surface of said sheet overwrap and exerting compressive force against said stack of articles whereby to place the sheet overwrap under tension and tightly retain the articles in their stacked condition.

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**3,164,252**
**SPOOL PACKAGE**
**Hugh W. Hosbein, Fort Wayne, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan**
**Filed Oct. 25, 1961, Ser. No. 147,551**
**6 Claims. (Cl. 206—65)**

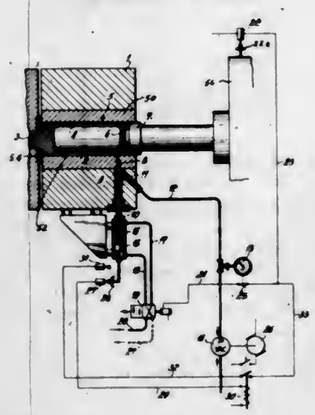


4. A spool package comprising a spool having a generally cylindrical barrel and integral disc shaped upper and lower end flanges; a winding of wire between the flanges of said spool; a generally cylindrical cover formed of two substantially identical semi-cylindrical sections; each extending between said flanges and forming with said spool a substantially complete enclosure for said winding; said sections being of substantially the same length as said spool; the diameter of the inner surface of each section being increased near the ends thereof to provide recessed ends adapted to seat against the peripheral edges of said flanges; said sections each having a plurality of flat integral pads projecting laterally of the outer side of said sections giving the package a generally rectangular contour enabling a plurality of said packages to be stacked in side by side relation; each of said cover sections having a first laterally spaced pair of said pads which lie in a direction transverse of the axis of the section with a lug projecting from each pad of said first pair; each of said sections having a second laterally spaced pair of said pads which lie at substantially right angles to said first pair of pads; said second pair of pads having notches formed therein which are longitudinally spaced and dimensioned to receive said lugs on said first pair of pads so that when one spool package is placed beside another spool package, the lugs and notches on adjacent spool packages interlock to prevent relative shifting of such spool packages; said spool and said sections each being formed of a low density, substantially rigid cellular plastic having substantial resistance to compression; and means for holding said sections in engagement with said spool.



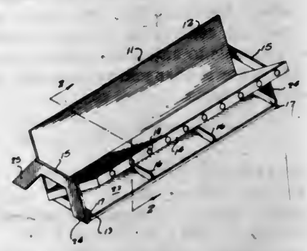
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**3,164,253**
**EXTRUSION DEVICES**
**Ernst Müller, Duisburg, Germany, assignor to Hydraulik G.m.b.H., Duisburg, Germany**
**Filed Aug. 2, 1962, Ser. No. 214,251**
**Claims priority, application Germany, Aug. 5, 1961, H 43,335**
**3 Claims. (Cl. 207—15)**



1. A metal extrusion press comprising, in combination, a billet container having a billet receiving passage with an inner diameter greater than that of a billet to be extruded; a ram reciprocable axially into and out of said container passage; a seal on the end of said ram engageable with the inner surface of said passage to seal the entry end thereof when a billet in the container is engaged by said ram prior to extrusion; a relatively small diameter radial venting bore formed through the container wall axially inwardly of the initial position of said seal and communicating with the billet passage; a relatively large diameter second bore communicating with the outer end of said venting bore and coaxial therewith; a venting passage communicating laterally with said second bore adjacent its junction with said venting bore; a plunger reciprocable axially of said bores and having a reduced diameter extension which, in one position of said plunger, enters and conformingly seals said venting bore, in the inner end of said reduced diameter extension being formed to conform to the inner surface of the billet passage; said plunger being movable to a second position establishing communication between said venting bore and said venting passage; double acting piston and cylinder means operable to move said plunger between its two said positions; and an electrically energized valve controlling connections of opposite sides of the piston of said piston and cylinder means to exhaust and to a source of fluid under pressure, said valve, when de-energized, being biased to a position controlling the connections of said piston and cylinder means to move said plunger to said one vent bore sealing position; an electric motor driven vacuum pump connected to said venting passage; means operable, responsive to movement of said ram into the billet passage to engage a billet therein prior to extrusion, to energize said valve to reverse the connections to said piston and cylinder means to move said plunger to its retracted second position; and means operable by said double acting piston and cylinder means, responsive to movement of said plunger to its retracted second position, to close an energizing circuit for the motor of said vacuum pump.

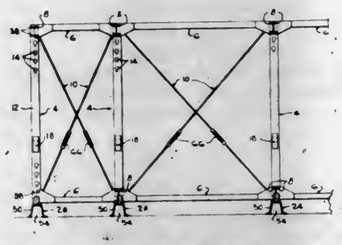
**3,164,254**
**RACK DEVICE FOR USE ON A DESK**
**Johnny F. Gore, Palmer, Alaska (7200 Caluin Drive, Citrus Heights, Calif.)**
**Filed Sept. 14, 1962, Ser. No. 223,659**
**3 Claims. (Cl. 211—42)**



3. A rack device comprising a horizontal bottom shelf member, spaced transverse partition means on said bottom shelf member defining a plurality of spaced compartments, an upwardly and rearwardly inclined rear wall member rigidly secured to the rear margin of said bottom shelf member, an upwardly and forwardly inclined intermediate shelf member extending substantially perpendicular to said rear wall member and being rigidly secured to the junction of the bottom edge of said rear wall member and said rear margin, said rear wall member and intermediate shelf member defining a supporting trough therebetween, the front margin of said intermediate shelf member being formed with a plurality of bores of substantial depth extending perpendicular to the front edge of said intermediate shelf member for receiving writing implements, and respective inverted U-shaped vertical end supports rigidly secured to the end edges of said shelf members and rear wall member, said end supports including downwardly and rearwardly inclined rear legs extending rearwardly from the end edges of the rear wall member.

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**3,164,255**
**MODULAR CANTILEVER ARM RACK**
**Richard S. Jay, Evanston, Ill., assignor to Jarke Manufacturing Company, a corporation of Illinois**
**Filed Apr. 26, 1962, Ser. No. 190,459**
**19 Claims. (Cl. 211—60)**



1. A modular cantilever arm rack comprising a first and a second spaced apart column, each column having a face in which is defined a plurality of vertically arrayed keyholes and connecting means defined at the top and bottom of each face, each said connecting means having a pair of horizontally spaced connector engaging means, each of said connector engaging means being horizontally spaced the same distance from the center line of said face;

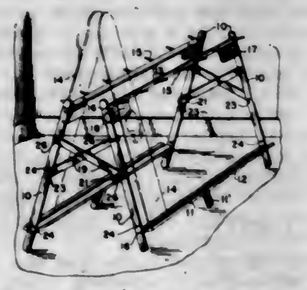
a top spacer and a bottom spacer each attached at its opposite end to those connecting means on each column which are offset from the face center line of each said column toward the other said column;

a plurality of cantilever arms removably mounted on each column by engaging said keyholes and having

at least a portion of the upper side of each arm extending upwardly;
and a base attached to the bottom of each said column and extending outwardly from said face and being disposed below said bottom spacer;
all being arranged so that modular expansion of the rack is enabled by attaching other spacer elements to the remaining connecting means and extending such other elements to an added column and vertical rack storage space is changed by changing the number of cantilever arms.

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3,164,256
**WATER SKI DISPLAY RACK**
William N. Bennett, Winter Haven, Fla., assignor to Cypress Gardens Skis, Inc., Cypress Gardens, Fla.
Filed July 23, 1962, Ser. No. 211,749
1 Claim. (Cl. 211—60)



A rack for the display of water skis, said rack comprising duplicate generally rectangular frames with each frame having opposed sides and ends, one side having an inwardly facing groove in which the ends of the supported skis can be received and the other side having spacing means for the skis, a member having one end portion pivotally connected to each end of each frame, means whereby the opposite end of said member can be secured to the end of the duplicate frame with the frames back to back, and means whereby said member can be secured in fixed depending relation to provide a support to maintain one frame in inclined position independently in line with the other.

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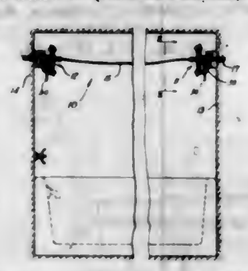
3,164,257
**FOOD CARRIER**
William N. Foy, 369 Decatur St., Brooklyn, N.Y.
Filed May 3, 1963, Ser. No. 277,751
3 Claims. (Cl. 211—74)



1. A food carrier comprising a panel having a central portion, said central portion having openings for receiving articles, a pair of hinge members swingably connected at one end to opposite sides of said central portion and extending in opposite directions, and tray portions located at each end of said central portion and swingably connected to the other ends of said hinge members, said tray portions being swingable from a first position wherein it is in planar alignment with said central portion to a second position parallel spaced a distance above said central portion, each of said tray portions having a handle, said handle being pivoted to said tray portion at opposite sides thereof.

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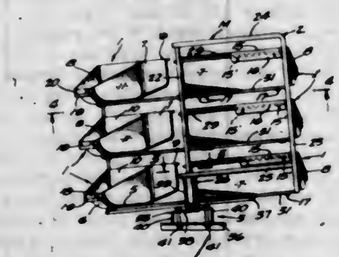
3,164,258
**CLOTHESLINE**
Frank Louis Cavalieri, 760 67th St., Brooklyn, N.Y.
Filed July 22, 1963, Ser. No. 296,845
2 Claims. (Cl. 211—119.16)



2. A clothesline comprising a pair of parallel arranged, spaced apart channel members having inturned edges, a lazy-tongs mechanism associated with each of said channel members, each of said lazy-tongs mechanism comprising a plurality of pairs of interconnected arms, a separate shaft supporting each pair of arms at an intermediate portion, roller members enclosing each shaft and being loosely supported in said channel members, each of said lazy-tongs mechanisms being movable in said channel members from a retracted position wherein said pairs of arms are arranged in folded up alongside adjacent relation to an extended position wherein said pairs of arms are arranged in end on end relation and align with the pairs of arms in the other lazy-tongs mechanism, and a plurality of support lines connected with and extending between the aligned pairs of arms in each of said lazy-tongs mechanisms.

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3,164,259
**PARTS CONTAINER AND MOUNTING MEANS THEREFOR**
Godfrey L. de'Caccia, Long Beach, Calif., assignor, by direct and mesne assignments, to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,347
14 Claims. (Cl. 211—131)



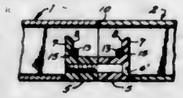
1. A frame for supporting trays one above the other in tiers, comprising: upright main frame members disposed in opposed spaced relation to one another; a plurality of tray-engaging members extending transversely between and joined to said main frame members at predetermined vertically spaced intervals with each tray-engaging member disposed to engage the upper portions of a pair of said trays when the latter are positioned side-by-side thereagainst; and a plurality of tray-supporting members projecting laterally outwardly from said main frame members with their ends joined to said main frame members; said tray-supporting members being disposed



in spaced relation to said tray-engaging members with portions thereof disposed to engage the undersides of trays engaged by said tray engaging members and cooperate therewith to retain the trays against lateral movements.

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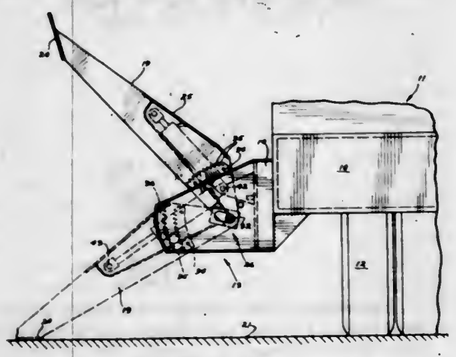
3,164,260
**DISPLAY RACK CONSTRUCTION**
Werner Seeman, 48 Lilienstrasse, Munich, Germany
Filed May 9, 1963, Ser. No. 279,146
Claims priority, application Germany, July 17, 1962, S 80,446
10 Claims. (Cl. 211—177)



1. A wedge-clamp connection connecting together flat abutting end surfaces of a pair of longitudinally alined frame members whose proximal ends, at least, are hollow; said connection comprising:
(*a*) a body fitting in the hollow proximal ends of said members and including a pair of longitudinally spaced first clamping surfaces extending substantially parallel with, spaced from, and facing toward said abutting end surfaces,
(*b*) a wedging member carried by each frame member, each wedging member having a second clamping surface facing away from said abutting surfaces and engageable with the corresponding first clamping surface, and also being spaced from and extending substantially parallel with said abutting surfaces, and
(*c*) said first clamping surfaces each extending at an angle relative to said abutting surfaces such that the wedge-clamp connection is self-locking.

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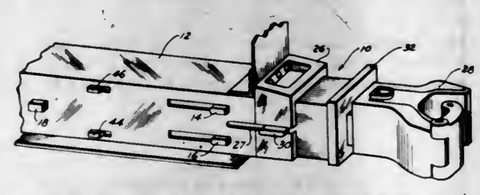
3,164,261
**STABILIZING LEG ASSEMBLAGE**
Robert W. Larson, Ashland, Wis., assignor to Beloit Corporation, a corporation of Wisconsin
Filed Jan. 21, 1963, Ser. No. 252,895
9 Claims. (Cl. 212—145)



1. In combination with a body having means thereunder providing normal support for said body, said body requiring stabilizing support under forces applied thereto, a stabilizing leg assemblage comprising,
(*a*) a bracket secured to said body,
(*b*) a leg extending from said bracket and terminating outwardly in an end support,
(*c*) means mounting the inner end portion of said leg to said bracket and permitting pivotal and limited lateral shifting movement relative thereto,
(*d*) a load bearing interlocking joint in a laterally spaced relation from said mounting means and having a first locking portion secured to said leg and a second locking portion secured to said bracket, said first and second locking portions lying in confronting relation, and
(*e*) a powered extensible and retractable actuator secured respectively at its working ends to said bracket and said leg, said actuator first pivoting said leg and its end support into supporting position, then shifting the leg outwardly relative to said bracket for engaging and interlocking said confronting first and second locking portions.

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3,164,262
**LONG STROKE DRAFT GEAR WITH FULL DRAFT HYDRAULIC ACTION**
William G. Price and Howard J. May, South Bend, Ind., assignors, by mesne assignments, to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 23, 1962, Ser. No. 189,349
9 Claims. (Cl. 213—8)



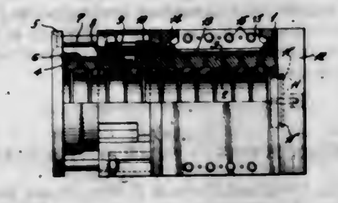
1. In a railroad car, a draft gear comprising:
a coupler;
a center sill forming a housing for the draft gear attachable to the underside of said car;
a slidable member mounted in one end of said center sill and having hollowed portions at both ends, which member receives said coupler in one of said hollow portions;
a means attaching said coupler to said center sill and said member, said means allowing longitudinal movement of said coupler and said member relative to said center sill;
a center filter structure mounted within said center sill;
a tubular member mounted to said center filler and to said center sill, which tubular member extends into the other of said hollowed portions at the end opposite that portion which receives said coupler and hydraulic means in said members to dissipate energy applied to said slidable member through said coupler.

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3,164,263
**DRAFT GEAR FOR AUTOMATIC COUPLERS OF RAILWAY ROLLING STOCK**
Ivan Nikolaevich Novikov, Victor Grigorievich Golovanov, Nickolay Grigorievich Bespalov, Vadim Alexandrovich Shilov, and Konstantin Serafimovich Starostin, all of Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky Institute Zheleznodorozhnogo Transporta, Moscow, U.S.S.R.
Filed Aug. 27, 1962, Ser. No. 222,985
2 Claims. (Cl. 213—29)

1. A draft gear for automatic couplers of railway rolling stock, said draft gear comprising a hollow housing, a closure on one end of said housing with the opposite end open, a cylinder slidably received in the open end of said housing, a plate fixed to the outer end of said cylinder and closing the same, means for limiting outward movement of said cylinder with respect to said housing, a diaphragm fixed to said cylinder and housing to provide a fluid tight seal, an annular spring compris-

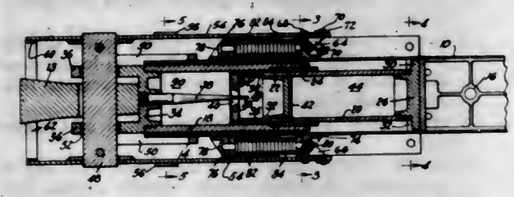
ing a plurality of axially spaced external and internal interengaging rings disposed in said housing and cylinder with one end of said spring engaging said closure and the opposite end of said spring engaging said plate, said rings, closure and plate providing a chamber, said housing having an internal recess opening toward said external rings, an expansible diaphragm closing said recess, said closure



having an orifice communicating with the space within said internal rings, said closure having ducts communicating with said orifice and the space between said flexible diaphragm and said external rings and hydraulic fluid filling said chamber whereby upon movement of said plate toward said closure and axial collapse of said spring fluid will be forced through said orifice and ducts to expand said expansible diaphragm into said recess to absorb shock.

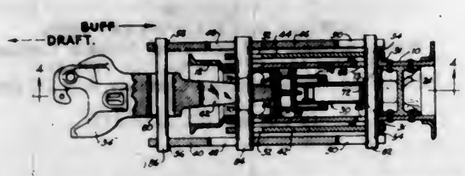
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**3,164,264**
**CAR CONSTRUCTION**
**William G. Price and Howard J. May, South Bend, Ind., assignors, by mesne assignments, to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey**
**Filed June 13, 1962, Ser. No. 202,197**
**6 Claims. (Cl. 213—43)**



1. In a railroad car having an underframe with a slotted center sill and cushioning device having slotted ears projecting therefrom,
a coupler having a slotted portion;
a slidable member adapted to slide along said center sill, said slidable member including an inverted hat-shaped structure having an inwardly projecting structure which rests on a portion of said center sill, a pair of stop means mounted adjacent the rear edge of said hat-shaped structure, one on each vertical side, and a slot at the forward end of said hat-shaped member in the vertical sides thereof;
a key adapted to slide along the slot of said center sill and of a size to fixedly unite said coupler, said cushioning device and said slidable member through the slots thereof;
an abutment mounted to said center sill;
a stop mounted to said center sill in spaced relationship with said abutment to fit between said stop means of said slidable member; and
a shock absorbing device mounted between said abutment and said center sill stop means and engageable by said slidable member stop means.

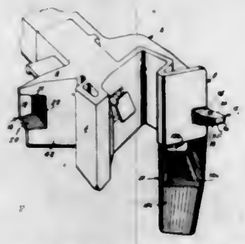
**3,164,265**
**RAILROAD DRAFT GEAR**
**William G. Price, South Bend, Ind., assignor, by mesne assignments, to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey**
**Filed Apr. 2, 1962, Ser. No. 184,074**
**8 Claims. (Cl. 213—64)**




6. In a railroad car draft gear, a center sill extending throughout the length of the railroad car, said center sill having spaced slots in the sides thereof;
a sliding sill within said center sill and spaced from said center sill by bearing members, said sliding sill having spaced slots in the sides thereof coextensive with the slots in said center sill;
a coupler mounted to said sliding sill and said center sill by a first pin means, which first pin means is operatively associated with one of said slots in said sliding sill and said center sill;
an energy dissipative device connected with said sliding sill at the end of said sliding sill opposite that which receives the coupler, said energy dissipative device being grooved at its forward end, which groove is coextensive with a pair of said slots in said sliding sill and said center sill; and
a second pin means extending through said pair of slots in said sliding sill and said center sill and resting in said groove of said energy dissipating device, said second pin means in cooperation with said slots of said sliding sill and said center sill forming buff limit stops for said draft gear.

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**3,164,266**
**CAR COUPLER**
**Kenneth L. De Pentl, Mayfield Heights, and Donald Willison, Lyndhurst, Ohio, assignors to National Castings Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Mar. 19, 1962, Ser. No. 180,769**
**7 Claims. (Cl. 213—100)**

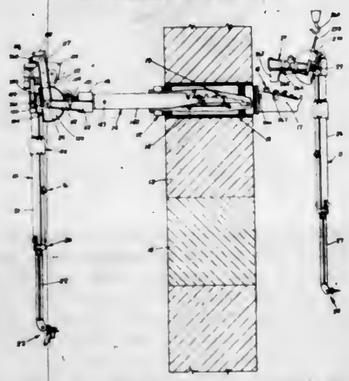


1. A car coupler of the rigid-jaw type comprising:
a head having a pulling jaw member and a buffing jaw transversely disposed on opposite sides of the longitudinal center line of the coupler, said jaw and jaw member being interengageable with the jaw member and the jaw of an opposed similar coupler;
an aligning wing member extending laterally outwardly from the head at the rear of the buffing jaw;
a gathering-and-aligning horn mounted under the pulling jaw member and having frontwardly thereof an aligning surface sloping forwardly and downwardly; said wing member having a lower extremity adapted to slide upwardly and rearwardly on a similar aligning surface of an opposed coupler to effect vertical alignment of the couplers as the coupling thereof progresses; and
on one side of said center line, projecting spacing means engageable between the jaw member and the aligning wing member of opposed similar couplers, and, at the other side of said center line, disposing said lower extremity of the wing member of the lower coupler in engaged slidable relation with said horn aligning surface of the higher coupler, under a condition of vertical misalignment of the couplers.



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**3,164,267**
**SEALED MASTER-SLAVE MANIPULATOR**
**Demetrius G. Jelatis, Robert A. Olsen, and Lester W. Haaker, all of Red Wing, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota**
**Filed Mar. 27, 1961, Ser. No. 98,372**
**25 Claims. (Cl. 214—1)**

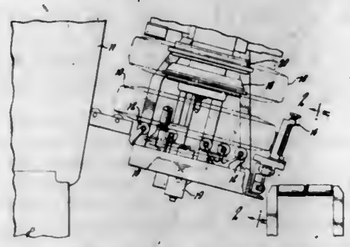


1. A remote control master-slave manipulator adapted for operation through a barrier wall separating different environments, said manipulator comprising a pivoted master arm assembly adapted to be positioned on one side of a barrier wall, a pivoted slave arm assembly adapted to be positioned on the other side of the barrier wall, and a seal tube assembly adapted to extend through the barrier wall and be sealed therein, said master arm assembly and said slave arm assembly being pivoted on independent axes which are perpendicular to the longitudinal axis of said seal tube assembly, said seal tube assembly including a closed wall member separating the environments, a plurality of rotary mechanical seals extending through the closed wall of said seal tube assembly and interconnecting said master and slave arm assemblies, said rotary mechanical seals having spaced apart independent axes, one end of each of said rotary mechanical seals being responsive to manipulator motions of the master arm, said rotary mechanical seals being adapted to transmit said motions to the opposite end of said rotary mechanical seals, manipulator movements in the slave arm being responsive to rotation of said rotary mechanical seals.

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**3,164,268**
**POST-INFLATING APPARATUS**
**Merrill D. Ericson, Dearborn, Mich., assignor to Firwood Manufacturing Company, Inc., Dearborn, Mich., a corporation of Michigan**
**Filed May 8, 1961, Ser. No. 108,368**
**12 Claims. (Cl. 214—1)**

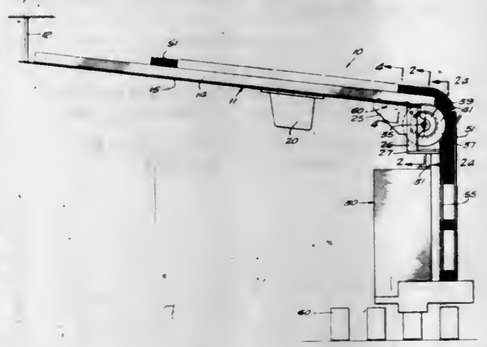
1. A tire processing machine comprising in combination a tire support for receiving a tire, means for positioning the tire on the tire support and means for lifting the tire from the tire support, said positioning means including a stop having a surface adapted to contact the surface of a tire and a support for the stop, said stop support restraining the stop in a direction parallel to the tire support while permitting movement of the tire-contacting surface of the stop in a direction transverse to the tire support, and said



stop support including means for positively moving the tire-contacting surface of the stop away from the tire in response to movement of the tire-contacting surface and tire in a direction transverse to the tire support.

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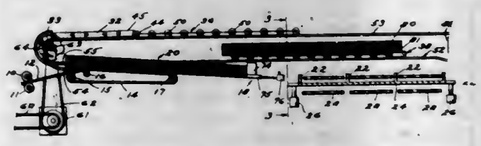
**3,164,269**
**CAN END FEEDER**
**Richard A. Roosevelt, La Mirada, Calif. (4909 E. Florence Ave., Bell, Calif.)**
**Filed Oct. 24, 1960, Ser. No. 64,580**
**6 Claims. (Cl. 214—6)**



1. A magnetic wheel for use in a feeding apparatus for can ends, said wheel comprising a shaft and at least two spaced flanges carried on said shaft for rotation therewith, said flanges containing a core of magnetic rubber, the outer ends of said flanges being inwardly bevelled to contact separated edge portions of a can end, and at least the outer ends of said flanges being spaced apart in the air a sufficient distance to receive a substantial portion of the circumference of a can end therebetween.

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**3,164,270**
**APPARATUS FOR COLLECTING, STACKING AND HANDLING SHEET MATERIAL**
**Clarence C. Kinker, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio**
**Filed Jan. 4, 1962, Ser. No. 164,339**
**23 Claims. (Cl. 214—6)**



1. Apparatus for collecting, stacking and handling material delivered in successive sheets from the discharge end

of a machine such as a corrugator, said apparatus including:

(*a*) means forming a receiving station having stop means adapted to be engaged by the leading edge of each sheet;

(*b*) feeding means for forming a pile of sheets by moving each sheet delivered from said machine into said receiving station underneath a preceding sheet, such movement being arrested by engagement between each sheet and said stop means;

(*c*) a transfer station adjacent said receiving station;

(*d*) conveying means for separating a stack of sheets from said pile at the receiving station and picking up and transporting a stack to said transfer station;

(*e*) means for driving said conveying means in synchronism with the sheet forming operation of said machine;

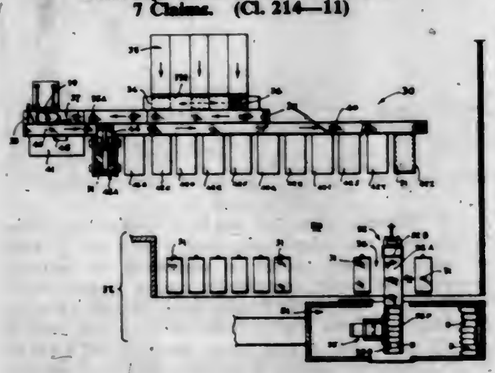
(*f*) means for supporting a stack at the receiving station with a portion of the bottom of the lower sheet thereof exposed and overhanging the entrance to the receiving station;

(*g*) said conveying means including a stack carrier and means mounting said carrier for movement on a conveying run entering the receiving station under the overhanging portion of said lower sheet and extending upwardly at an angle to said supporting means whereby a stack is segregated and picked up by said carrier; and,

(*h*) means for unloading a stack from said carrier at said transfer station.

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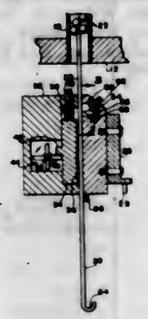
**3,164,271**
**SYSTEM FOR HANDLING BAGGED MAIL**
**Joseph E. McWilliams, 1345 Canterbury Lane, Glenview, Ill.**
**Filed Sept. 20, 1961, Ser. No. 139,526**
**7 Claims. (Cl. 214—11)**



3. In a system for handling random assortments of loaded and labeled mail bags, an initial gathering area upon which random assortments of mail bags may be dumped, said initial gathering area having a depressed walkway along one edge thereof, a first conveyor extending along the other side of said walkway at a level substantially below the level of said edge of said area, said first conveyor having a section thereof that extends at an upward inclination, and a further section thereof that extends horizontally at a substantial elevation with respect to said walkway, a distributing conveyor running parallel to the elevated portion of said first conveyor, means for transferring mail bags one-by-one from said first conveyor to said distributing conveyor while maintaining the same orientation of the bag that is transferred, means providing a plurality of collecting stations along the distributing conveyor at which hand trucks may be disposed to receive bags from the distributing conveyor, and means at the respective stations disposed over the tops of the trucks and at a level that is not higher than the distributing conveyor for receiving bags from the distributing conveyor and depositing the bags in transverse relation on such trucks.

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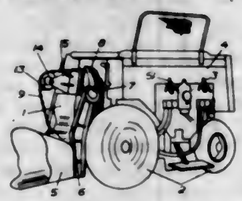
**3,164,272**
**CATALYST UNLOADING DEVICE**
**John M. Oliver, Port Arthur, Tex., assignor to Houston Chemical Corporation, New York, N.Y., a corporation of Texas**
**Filed Jan. 17, 1962, Ser. No. 166,824**
**9 Claims. (Cl. 214—17)**



1. Apparatus for removing catalyst particles from at least one reactor tube comprising rodding means movable through said tube, and moving means for frictionally engaging and moving said rodding means through said tube except when the rodding means encounters some of said particles lodged in said tube sufficiently tight to present a counter force on the rodding means greater than the frictional engaging force between the said moving means and rodding means at which time said moving means slippingly moves relative to said rodding means to prevent overcoming the said counter force and thereby to prevent possible damage to the reactor tube walls by the rodding means.

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**3,164,273**
**SHOVEL LOADERS WITH CHAIN OPERATED BUCKET STRUCTURE**
**Sven Erik Eriksson, Orebro, Sweden, assignor to Atlas Copco Aktieboleg, Nacka, Sweden, a corporation of Sweden**
**Filed Apr. 10, 1962, Ser. No. 186,500**
**13 Claims. (Cl. 214—131)**

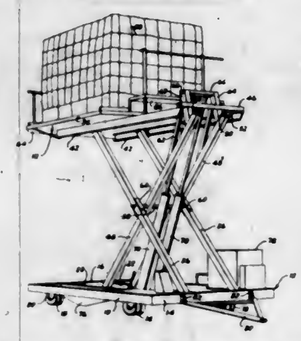


1. In an arrangement of the character described for providing shock-absorbing resiliency in a link chain drive for shovel loading apparatus having a bucket movable from a loading position to a discharge position, the combination which comprises a non-resilient link chain, means for connecting one end thereof to said bucket, power take-up means on said apparatus and connected to said chain adjacent the end thereof opposite to said bucket for taking up said chain and moving said bucket from said loading to said discharge position, means forming a break point for said chain at a point therealong between said take-up means and said bucket and dividing said chain into two segments which meet at an angle of less than 180°, and resilient means associated with said chain and at least one of said power take-up and break point and bucket connection means for providing shock-absorbing resiliency to both said segments of said chain.



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**3,164,274**
**HIGH LIFT TRAILER**
**Thomas R. Herrmann, Pacific Grove, Calif., assignor to Cochran Equipment Company, Salinas, Calif., a corporation of California**
**Filed Sept. 25, 1961, Ser. No. 140,516**
**3 Claims. (Cl. 214—512)**

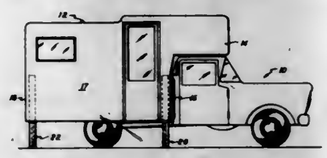


1. Low overhead, high lift apparatus comprising: a lower section comprising a chassis, ground engaging wheels on said chassis for supporting said chassis closely adjacent to the ground, a pair of generally parallel arms each having a first end pivotally connected to said chassis and a second end with a roller mounted on said second end, and a pair of channel members mounted on said chassis generally parallel to said arms with said channel members and said arms lying in substantially the same horizontal plane; an upper section comprising a support frame positioned above said chassis with a load supporting platform portion thereof adjacent to one end of said chassis and a relieved portion adjacent to the other end of said chassis, a second pair of generally parallel arms each having a first end pivotally connected to said support frame and a second end with a roller mounted on said second end and received in one of said channels, and a second pair of channels mounted on said support frame generally parallel to said second arms and receiving said rollers on said first arms, with said second pairs of arms and channels lying in substantially the same plane as said first pairs; rigid extension means mounted on said second set of arms extending therefrom into said relieved portion of said support frame; pivot means pivotally connecting each of the arms of one pair to one of the arms of the other pair at a point intermediate of said ends of said arms; and lift means for raising said upper section above said lower section comprising ram means pivotally connected to said lower section at an area under said platform portion and pivotally connected to said extension means in said relieved portion with the direction of action of said ram means being inclined to said plane.

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**3,164,275**
**COMBINED CAMPER LIFT AND COUPLING**
**Leopold F. Schatzl, 704 E. Granada Court, and Harry R. Riggs, 744 E. "I" St., both of Ontario, Calif.**
**Filed July 18, 1963, Ser. No. 295,891**
**2 Claims. (Cl. 214—515)**

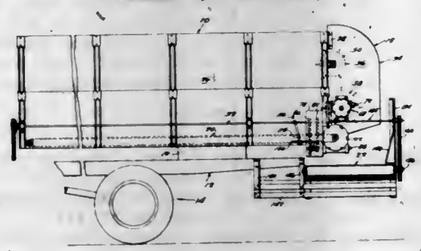
1. In combination, a vehicle comprising a chassis, a camper body supported rearwardly of said chassis and adapted to be detachable therefrom, latching bolts on said trailer, pivotal latching hooks arranged at the forward end of said camper body, solenoid actuated means for pivoting said hooks into latching engagement with said bolts for locking said body on said chassis, means to operate said solenoid actuated means, vertically disposed substantially rectangular channel members at each corner of said body, vertically disposed substantially rectangular T-shaped lifting legs slidably arranged in said members, said legs having flat outer surfaces thereon flatly engageable with said channel members, and guide means in said members engageable with said lifting legs for guiding said legs relative to said members, reversible cable drums on



the underside of said body, power means for rotating said drums, pulleys mounted on each of said channel members, cables connected to each leg and its respective drum, the cables for each leg being trained over the respective pulleys and connected to the upper and lower ends of the respective legs, said cables being wound in opposite directions on the respective drums, means for controlling said power means, and said drum, whereby said camper body may be vertically raised relative thereto whereupon the vehicle is driven away from the self-supported body.

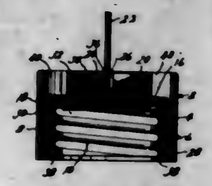
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**3,164,276**
**BALER FEEDER**
**Milton L. Bastian, Egbert, Wyoming**
**Filed May 10, 1963, Ser. No. 279,446**
**4 Claims. (Cl. 214—519)**



3. A device of the character described, comprising a box having a bottom, side walls, and an open front end, a housing mounted on and extending forwardly from said front end, said housing opening into said open front end, said housing having a front wall spaced forwardly from the box and side walls, a closed casing supported beneath said housing, a transverse shaft journaled at its ends in walls of said casing, said transverse shaft having a wormwheel fixed thereon, a longitudinal driven shaft supported on the box and journaled through the housing above the wormwheel, said driven shaft having a worm in mesh with said wormwheel, upper and lower transverse rollers mounted within said housing and operatively connected together, means operatively connecting the driven shaft to the lower roller, a transverse conveyor assembly supported beneath the said casing, said assembly comprising a conveyor belt, upper and lower rotary members carrying said conveyor belt, said driven shaft being operatively connected at its forward end to the upper conveyor belt member, a longitudinal worm shaft supported in mesh with the underside of said wormwheel, and change speed means operatively connected between the worm shaft and said driven shaft.

### 3,164,277
### SAFETY BOTTLE CAP
Oscar W. Reading, 126 E. Linwood Blvd., Kansas City, Mo.
Filed Aug. 20, 1963, Ser. No. 303,236
2 Claims. (Cl. 215—9)



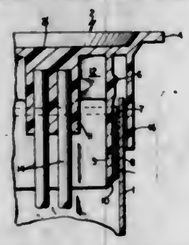
1. A safety bottle cap comprising:
(*a*) a cup-shaped inner cap adapted to engage and seal the neck of a bottle and including:
(1) a cylindrical side wall,
(2) a generally planar end wall, and
(3) a cylindrical post attached to and extending outwardly from said end wall in coaxial relationship with said side wall, said post having a slot formed diametrically therein and opening through the outer end and sides thereof, the entire area of the outer end of said post being recessed, and
(*b*) a cup-shaped outer cap including:
(1) a cylindrical side wall encircling the side wall of said inner cap and being rotatable thereon, and
(2) a generally planar end wall overlying the outer surface of the end wall of said inner cap and being rotatable thereon, the end wall of said outer cap having a circular hole formed centrally therein in which said post rotates, said post extending generally flush with the outer surface of said outer cap end wall, said outer cap end wall having a slot formed diametrically in the outer surface thereof in intersecting relation with said hole, and adapted to be moved into and out of angular alignment with the slot in said post by relative rotation of said inner and outer caps.

### 3,164,278
### STOPPER FOR CLOSING CONTAINERS, SUCH AS BOTTLES, FLASKS AND THE LIKE
Hardy Löhrer, 16 Hellmundstrasse, Wiesbaden, Germany
Filed July 23, 1963, Ser. No. 297,112
Claims priority, application Germany, May 9, 1963, L 44,850
1 Claim. (Cl. 215—41)



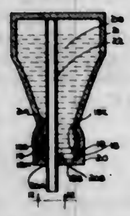
A stopper of elastic material for containers comprising an external cap having an end wall terminating in a depending peripheral skirt, said skirt including an inwardly directed peripheral locking bead, and an internal peripheral indentation below said bead whereby a lowermost skirt portion of said skirt can be removed incidental to the removal of the stopper from a container with which the stopper is associated, said end wall having a central portion joined to said skirt by a top wall portion having a thickness appreciably less than the thickness of said central portion, an integral open-bottomed plug depending axially downwardly from said thickened central portion of said end wall and terminating short of a lowermost edge of said skirt, said plug having internal and external surfaces, said internal surface being substantially cylindrical and merging with a large radius into the central portion of said end wall, said external surface having a first surface portion flaring radially downwardly and outwardly and a second surface portion flaring radially inwardly and downwardly to define with said internal surface a relatively sharp edged conical bottom lip, said internal and external surfaces setting off wall thicknesses of said plug which are relatively thin adjacent said central portion of the end wall, thicker to a maximum at the juncture of the first and second flaring portions, and thin appreciably at said bottom lip.

### 3,164,279
### TEST TUBE CLOSURE
Edward J. Towns, Livingston, N.J., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Oct. 16, 1963, Ser. No. 316,744
6 Claims. (Cl. 215—47)



1. A closure for a therapeutic test tube designed and adapted particularly as a culture container, said closure comprising a top and a pair of depending axially aligned skirts one within the other, the inner skirt being fitted for insertion within the tube and having two external circumferential longitudinally spaced beads adapted closely to contact the tube with a sealing fit, the longitudinally inner bead being interrupted while the longitudinally outer one is continuous, together with a longitudinally disposed groove in the exterior of the inner skirt that extends from the extremity thereof through the longitudinally inner bead but terminates short of the longitudinally outer bead.

### 3,164,280
### CONTAINER VALVULAR CAP
Clancy B. Ford, 16901 Schoolcraft St., Van Nuys, Calif.
Filed Sept. 17, 1962, Ser. No. 224,145
3 Claims. (Cl. 215—79)

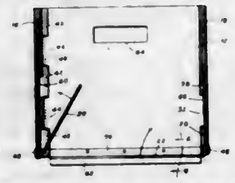


1. A closure for an open mouth of walled container comprising a plurality of rubber-like disks mounted one over another, a first of said disks having a plurality of holes therethrough, a first of said holes adapted for inserting therethrough a suction straw and being circular and of slightly smaller diameter than the outside diameter of said straw, a second of said rubber-like disks having pierced therethrough configurations forming therein a plurality of elastic flaps located in said second disk respectively corresponding to locations of respective holes in the first disk and each respectively of larger surface than



thereto corresponding hole, a cap-like structure housing said disks and having a top-wall and descending sidewall, the latter adapted for securing the cap-like-structure with side wall of the container, said top-wall having a plurality of holes therethrough corresponding respectively to the respective holes of said first disk, and a first hole in the top-wall corresponding with the first hole in the first disk and being of slightly larger diameter than the outside diameter of the suction straw, said first and second disks mounted within the side-wall of the cap-like-structure, the first disk mounted against the inner face of the top-wall of the cap-like-structure, the holes of the first disk respectively in alignment with respective holes of the top-wall, the second disk mounted over and against said first disk and facing the container open mouth, the flaps of the second disk respectively in alignment with respective holes of the first disk for respectively overlapping and sealing said respective holes against pressure from within the container and for remaining susceptible of being forcibly flapped into container mouth via the respectively aligned holes in said top-wall and the first disk respectively.

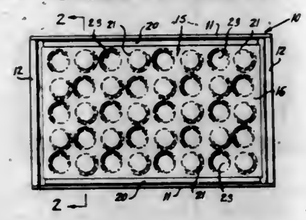
### 3,164,281
### COLLAPSIBLE CONTAINER
Allen R. Williams, Jr., Goodale St., Peabody, Mass.
Filed June 1, 1962, Ser. No. 199,538
3 Claims. (Cl. 217—14)



1. A collapsible container open at its upper end comprising four side walls hingedly connected together, and a bottom wall including opposed bottom closure flaps hingedly connected to the lower edges of two opposed side walls, and means extending inwardly from the lower edges of the two adjacent side walls for supporting the marginal side edges of the flaps when the container is in its open condition said flap supporting means arranged to be folded under the adjacent side walls when the container is in a closed position, said bottom closure flaps being foldable upwardly parallel to their side walls, said side walls being recessed to receive the upwardly folded flaps to present the outer surfaces thereof flush with the inner surfaces of their respective side walls, the hinge structure at two diagonally opposed corners including pivot pins disposed at the intersection of their respective walls, and the hinge structure at the other two diagonally opposed corners including pivot pins disposed in offset relation to the intersection of their respective walls whereby to permit inward folding of the side walls at said last named diagonally opposed corners to present two adjacent side walls flat against the other two adjacent side walls when the container is in its collapsed condition, said offset pivot pins being disposed a distance of one-half the thickness of the side walls from the inner face of their respective side walls.

### 3,164,282
### PACKING MAT
Robert A. Pahl, Roanoke Rapids, N.C., assignor to Wise-Pak Corporation, a division of the American Package Corporation, Murfreesboro, N.C., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,062
2 Claims. (Cl. 217—26.5)

1. A packing mat comprised of spaced cover layers of yieldable material secured along their opposite edges, and packing between said layers, said mat being provided with alternate convex and concave dimples in longitudinally and transversely extending rows, said yieldable material comprising stretch paper and said packing comprising shredded paper, stiffening members comprising a rope-like structure impregnated with resin-hardened material



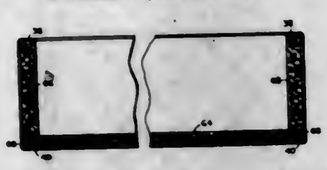
positioned and extending along at least two opposite parallel edges of said mat, the adjacent edges of each cover layer being brought around over the side of said rope-like structure and secured to each other and to said rope-like structure, and means connecting said cover layers together at spaced points of their surfaces.

### 3,164,283
### POWER RIVET GUN
Glenn V. Olson, 1220 Bradley, St. Paul, Minn.
Filed May 15, 1963, Ser. No. 280,565
9 Claims. (Cl. 218—47)



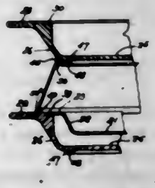
1. A power rivet gun comprising a hollow body in the form of a tubular housing having a longitudinal bore therein, a nozzle secured to one end of said bore and having a restricted bore axially aligned therewith, said restricted bore being adapted to receive the headless shank end of a mandrel having an enlarged head at its opposite end for engaging the headless end of a hollow rivet supported on the mandrel, means in the longitudinal bore of the body for gripping a mandrel, said gripping means comprising opposed jaws and means longitudinally movable within said tubular body to engage said jaws and move them longitudinally within the tubular body, a first fluid pressure chamber secured to the opposite end of said longitudinal bore, first piston means in said chamber connected to said gripping means to operate the same, further composite piston means in said chamber to actuate said first piston, said longitudinally movable means for engaging the gripping jaws including an actuating rod, said actuating rod being connected to said first piston, a further fluid pressure chamber in the end of the actuating rod remote from said nozzle, said further piston means including a smaller piston movable in said further fluid pressure chamber and connected to a larger piston movable in said first fluid pressure chamber, and means for introducing fluid under pressure to said first chamber to actuate said further composite piston means to thereby actuate said first piston, said gripping means being operative upon successive actuation of both of said piston means to draw the mandrel into the nozzle to cause the head on the mandrel to expand the walls of a hollow rivet and separate from the headless end of the mandrel.

3,164,284
KNOCK-DOWN BOX CONSTRUCTION
George G. Bergh and Robert G. Bergh, North Attleboro, Mass., assignors to Bergh Bros. Co., Inc., North Attleboro, Mass., a corporation of Massachusetts
Filed Feb. 7, 1963, Ser. No. 257,842
2 Claims. (Cl. 220—4)



1. A knock-down box construction comprising the combination of: a plurality of prefinished wall members having upper and lower flanges extending inwardly from the upper and lower edges thereof; means for interconnecting said wall members to provide a continuous side wall enclosure for said box; a bottom member subject to dimensional changes caused by variations in environmental conditions positioned within said wall enclosure and supported by said lower flanges, the peripheral edge of said bottom member spaced from the inner surface of said wall enclosure; and means for wedging said bottom member downwardly against said lower flanges while permitting free expansion and contraction thereof.

3,164,285
INSULATED HOT PLATE ASSEMBLIES
Edwin G. Melich, Chicago, Ill., assignor to Melco Foundry & Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 14, 1962, Ser. No. 179,646
1 Claim. (Cl. 220—17)



An insulated hot plate assembly, comprising a molded insulated plate holder formed out of plastic and provided with a flat circular bottom and an upwardly and outwardly sloping side wall on its outside and with a generally cylindrical chamber on its inside, said side wall having a thickened radial upper wall portion, provided on said radial wall portion with a pair of oppositely extending handle flanges, said handle flanges comprising rectangular portions for handling the hot plate assembly, said insulating plate holder having, adjacent the outer edge of said circular bottom, a downwardly projecting annular rib, having a lower plane surface and an outer cylindrical anchoring surface, said upper radial wall portion having an annular rectangular upwardly open groove having inner and outer cylindrical groove surfaces, and said radial wall portion having a depressed circular recess, spaced from said groove and being open upwardly and open into said cylindrical chamber for receiving the outer radial upper edge of a hot plate, a bright polished metal hot plate of light colored metal comprising a good reflector and a poor radiator, and having an upper circular flange fitting in said depressed circular recess, said hot plate having a depending side wall spaced from the insulating plate holder, and said depending wall carrying a circular bottom wall spaced from the bottom of said insulating holder, and a sheet metal cover member, said cover having a frusto conical side wall terminating at its lower edge in a narrow cylindrical wall portion, fitting in said rectangular upwardly open groove and having frictional engagement with one of the cylindrical surfaces of said open groove to hold the cover against unintentional separation of the cover and the insulating holder, the said cover having an upper plane central wall provided with a hole for an insertion to pull the cover off the holder, said upper central wall of said cover being surrounded by an upwardly extending annular pressed rib having an inner cylindrical wall fitting frictionally against the outer cylindrical surface on said downwardly projecting rib on said insulating holder to anchor the cover to the insulating holder which is above the cover.

3,164,286
CONTAINER FOR FINELY DIVIDED MATERIAL
Richard L. Kole, Milwaukee, Wis., assignor to Kolmar Laboratories, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 185,962
5 Claims. (Cl. 220—33)



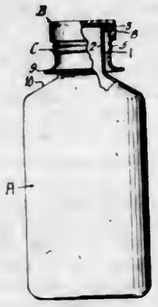
1. A container for finely divided material comprising,
(a) a base adapted to contain a quantity of finely divided material and including a bottom wall and a side wall extending upwardly from said bottom wall and having an open upper end, the inner surface of the side wall having a groove therein,
(b) a closure member attached to the upper portion of said side wall above said groove and partially enclosing said open upper end with a sector of the base being open, said closure member including a pair of radially extending edges bordering said open sector,
(c) a door having an edge disposed within the groove and mounted for pivotal movement on said base from a closed position in alignment with said open sector to an open position out of alignment with said open sector, and
(d) a flexible sealing member secured to the closure member adjacent the open sector and disposed to engage the adjacent surface of said door when said door is in the closed position to prevent leakage of said material from the container.

3,164,287
METAL CONTAINER HAVING A CAP CLOSURE
Robert D. Williamson, Montclair, N.J., assignor to American Aluminum Company, Mountainside, N.J., a corporation of New Jersey
Filed Mar. 29, 1962, Ser. No. 183,600
1 Claim. (Cl. 220—39)

A closure construction for a container comprising a neck having an opening therethrough formed with a straight and smooth interior surface and a circumferential outturned flange at the extremity of said neck, one side of said flange providing an outer annular sealing surface disposed in a plane approximately normal to the axis of said opening, a cap for closing said opening through the neck, an adaptor sleeve circular and rigid in cross-section and having an internal diameter greater than the external diameter of said neck, said adaptor loosely encircling said neck exteriorly thereof and being movable longitudinally of the neck providing for abutment of one end of said adaptor with said flange at the side of the

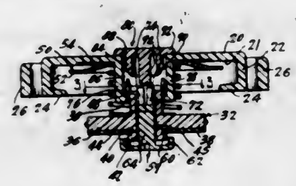


flange opposite said sealing surface upon movement of the adaptor in one direction, there being means for limiting movement of said adaptor in the other direction, said cap and said adaptor having complemental fastening means for connecting the cap to the adaptor and for drawing the adaptor into contact with said flange and the cap into contact with said sealing surface upon relative rotation of the cap and the adaptor, said adaptor being a



thin-walled sleeve formed of one piece of metal and having rolled screw threads adjacent its outer end, said cap comprising a top portion and a skirt having threads complemental to said rolled threads of the adaptor, said adaptor also having an inturned continuous circular flange at its outer end to abut said flange on the neck and also having an outturned flange at its opposite end for manipulating the adaptor on the neck, and said adaptor being freely rotatable and tiltable on said neck.

3,164,288
CLOSURE AND VALVE CONSTRUCTION
C. J. Boomgaard, 1418 Pennoyer, Grand Haven, Mich.
Filed Jan. 10, 1963, Ser. No. 250,698
11 Claims. (Cl. 220—44)



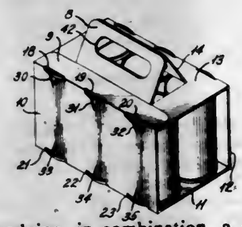
11. A closure for a receptacle having a filling aperture defined by an upwardly extending filler neck fashioned with a valve seat and an opening in the filler neck communicating with the atmosphere, said closure comprising a cap having lugs engageable with cam surfaces on the filler neck for removably securing the cap to the filler neck, said cap being formed with a hollow hub portion, a valve member having a hub portion arranged to extend into the interior of the hub portion on the cap, said hub portions being formed with laterally extending means arranged to be interengaged by distortion of one of said hub portions whereby said hub portions are maintained in interlocked but relatively movable relation, a gasket on the valve member engageable with the valve seat formed on the filler neck, spring means disposed between the cap and the valve member biasing the valve member toward valve closing position, a pressure relief member associated with the valve member, and a plunger associated with the cap member for effecting relative movement of the pressure relief member to vent the receptacle, said cap, valve member, plunger and pressure relief member being formed of molded polyoxymethylene.

3,164,289
HERMETICALLY SEALABLE CONTAINER LID
Thomas A. Cocchiarella, 43—31 40th St., Sunnyside, N.Y.
Filed Dec. 14, 1962, Ser. No. 244,658
3 Claims. (Cl. 220—93)



1. In combination with an open top container having substantially smooth and vertically nonconvergent interior side walls a reusable ad hermetically sealable lid for said container which comprises
(a) a centrally disposed main portion of substantially rigid imperforate sheet material the outer dimensions of which are less than the interior dimensions of the horizontal cross section of the container,
(b) a gasket of resilient, substantially flat sheet material capable of forming a hermetic seal against the interior side wall of the container said gasket being secured to the periphery of the main portion of the lid and disposed substantially in the plane of said main portion, the outer dimensions of said gasket being greater than the interior dimensions of the horizontal cross section of the container, whereby the periphery of the gasket bears against the interior side wall of the container and bends upwardly to form a hermetic seal thereagainst when said lid is inserted in said container, and
(c) lid lifting means positioned on the upper surface of the main portion of the lid.

3,164,290
CAN CARRIER
Armando B. Paredes, Box 623, Bayamon, Puerto Rico
Filed July 30, 1962, Ser. No. 213,526
1 Claim. (Cl. 220—112)

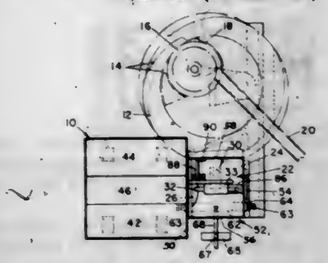


A carrier embodying, in combination, a carton comprising a strip of flexible material which is foldable at predetermined positions thereon to provide a carton body having a bottom portion at its center region for engaging the bottoms of containers and side members extending from each opposite edge of said bottom portion and foldable upwardly at said edge to form side walls of the carton, the upper portions of said side members being foldable to provide a first top portion parallel to and of the same dimensions as said bottom portion and a second top portion overlying a part of said first top portion and bonded thereto, a first handle member defined in said first top portion, a second handle member adjoining said second top portion, said handle members being spaced apart at their contact points with said top of said carrier and meeting to form a triangle with said top, a plurality of article receiving apertures in each of said side members adjacent the junctions thereof with the bottom portion and with the top portions, and a slit associated with each of said apertures, each slit extending to its associated aperture and opening thereinto.

### 3,164,291
### CLOSURE HANDLING MACHINE

Walter S. Sterling, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 721,591, Mar. 14, 1958. This application Apr. 26, 1961, Ser. No. 105,774
7 Claims. (Cl. 221—10)

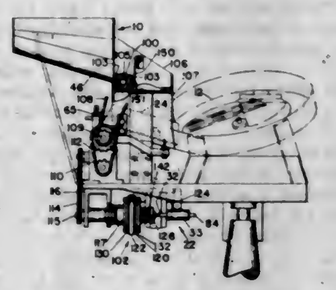


7. In an article handling machine, in combination, an article orienting device including a continuously moving carrier, means for delivering articles by gravity to said carrier from a bulk supply to form a group thereof from which articles are withdrawn at random, said delivery means comprising a supply hopper, an intermediate compartment open at top and bottom having a discharge opening in a side wall thereof adjacent said carrier and a pivotally mounted and counterweighted bottom wall, a normally open gate for controlling the flow of articles from said supply hopper, said articles normally flowing freely across said bottom wall, through said discharge opening onto said carrier, and control means operatively connected to said gate and actuated by the movement of said bottom wall in response to an accumulation of articles at rest on said bottom wall when impeded by a surplus of articles on said carrier to close said gate and terminate delivery of said articles to said compartment, and to open said gate when said articles are again permitted to flow freely across said bottom wall and through the opening to the carrier by removal of the impeding articles on the carrier, said control means preventing excessive accumulation of articles in said compartment and thus avoiding bridging and jamming of the articles at said side opening.

### 3,164,292
### CLOSURE HANDLING MACHINE

Walter S. Sterling, Quincy, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts

Original application Mar. 14, 1958, Ser. No. 721,591. Divided and this application Apr. 26, 1961, Ser. No. 105,775
4 Claims. (Cl. 221—10)

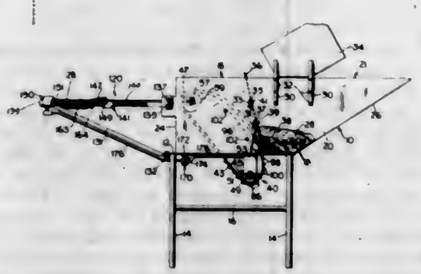


1. In a closure handling machine for orienting and feeding closures, in combination, a continuously rotated inclined carrier, means for delivering closures at a controlled rate and in a substantially continuous stream onto said continuously rotated inclined carrier to form a group thereof from which the closures are withdrawn at random and at an indeterminate rate, said delivery means including a bulk supply hopper having an inclined bottom wall and having a discharge opening in an end wall thereof, a driven feed roll disposed at said discharge opening for controlling said continuous stream delivery and arranged to terminate delivery when rotation of the feed roll is discontinued, an intermediate compartment disposed below the level of said supply hopper for receiving said closures, said compartment having side walls and being open at top and bottom, one of the side walls having an opening therein communicating with said inclined carrier, said driven feed roll providing a substantially continuous and uniform flow of closures through said compartment and through said side wall opening to the carrier, and control means operatively connected to said feed roll including a pivotally mounted inclined counterweighted plate closing the bottom of said compartment and arranged to guide the closures through said compartment side wall opening in a continuously moving stream to join the group on the continuously rotated inclined carrier, said group being arranged to impede the continuous flow of closures across said inclined plate when the group on the carrier is increased beyond a predetermined amount, said control means being responsive to the weight of an accumulation of closures in said compartment impeded in their travel on said plate for discontinuing rotation of said feed roller to terminate delivery of closures from said supply hopper, and for initiating rotation of said feed roller to start delivery of closures when the group is decreased below said predetermined amount to permit said free flow of closures across the plate whereby to maintain a substantially uniform group of closures on said carrier commensurate with the indeterminate rate of withdrawal and to prevent an excessive accumulation of closures in said compartment whereby to maintain a free flow of closures through said side wall opening of the compartment when the closures on the carrier are decreased.

### 3,164,293
### APPARATUS FOR STACKING STICKS AND LIKE ARTICLES

Jean Paul Beaudoin, Grand Mere, Quebec, Canada, assignor to Joe Lowe Corporation, New York, N.Y., a corporation of Delaware

Filed July 2, 1962, Ser. No. 206,929
3 Claims. (Cl. 221—13)



1. Apparatus of the character described, comprising a hopper having a discharge slot through which sticks may gravitate into a pick-up station, a delivery conveyor operating upwardly through said pick-up station, said delivery conveyor having a series of stick receiving pockets adapted to be filled each with one stick as said pockets pass through said pick-up station, a transfer device mounted on the delivery end of said delivery conveyor for receiving sticks and transferring them to a stacking trackway, a stacking trackway extending forwardly of said transfer device for receiving said sticks and supporting them in a stacked row on their edges, means including a control switch for operating said delivery conveyor, and a reciprocating carriage mounted movably on said stacking trackway, said carriage being movable forwardly by said advancing stacked row of sticks, said carriage having means for engaging said control switch to stop said delivery conveyor when said trackway becomes filled with stacked sticks, means for retracting said carriage when a supply of stacked sticks is removed from said trackway, whereby said engaging means for said control switch will be disengaged therefrom to permit said delivery conveyor to be restarted for replacing the sticks removed from said trackway.



### 3,164,294
### ELECTRICALLY OPERATED MERCHANDISE VENDING MACHINE

William C. Phillips, Roderick W. Phillips, and William H. Callahan, Aurora, Ill., assignors to Lektro-Vend Corp., Aurora, Ill., a corporation of Delaware

Filed Jan. 21, 1963, Ser. No. 252,630
19 Claims. (Cl. 221—84)

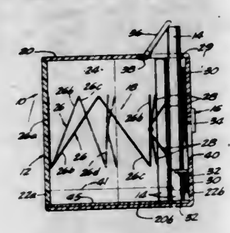


1. A rotatable storage unit comprising:
a rail support member forming a pair of spaced rails extending in a closed loop pattern;
a plurality of individual shelf units each comprising a vertical surface and a horizontal surface and each of said vertical surfaces hingedly connected one to the other in an endless chain arrangement and each being provided with a pair of spaced rail engaging elements and each of said rail engaging elements positioned in said pair of spaced rails in said rail support member;
a drive mechanism positioned between said pair of spaced rails in said rail support member and comprising,
a first driving means and
a first driven means selectively engageable with one another for coupling motion from said first driving means to said first driven means,
said first driven means engageable with at least one of said plurality of shelf units along at least one hinge connection for driving said plurality of shelf units in said pair of spaced rails in said rail support member, and
actuating means for causing said first driving means to couple with and engage its associated driven means whereby said endless chain arrangement of shelves is driven in said spaced rails of said rail support member.

### 3,164,295
### CIGARETTE CASE

Samuel W. Shwarz, 537 S. Gramercy Place, Los Angeles, Calif.

Filed Oct. 22, 1962, Ser. No. 232,228
3 Claims. (Cl. 221—116)

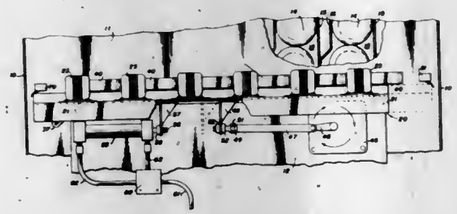


2. A cigarette case comprising the combination of a generally rectangular enclosure sufficiently large to accommodate a plurality of cigarettes in side-by-side relation to one another and including a pair of opposite end walls adapted to lie at either end of the cigarettes, a pair of opposed relatively wide side walls extending between said end walls, and a pair of opposed relatively narrow side walls extending between said end walls and said relatively wide side walls, one of said end walls including exit means to permit end-wise removal of an individual cigarette from said enclosure, said exit means being disposed adjacent to a first of said narrow side walls, manually operable ejector means on said first narrow side wall for at least partially ejecting an individual cigarette through said exit means, and collapsible spring means in said enclosure and secured to the inside of the narrow side wall opposite said first narrow side wall and adapted to urge the cigarette in the case into position to be ejected from the enclosure by the operation of said ejection means, and removable platform means positionable within said enclosure to provide a raised bottom therein whereby the case is adaptable for regular or king size cigarettes, said manually operable ejection means including a foot member forming a lift movable to a position below the end of a cigarette for ejecting it from the said enclosure.

### 3,164,296
### BOTTLED DRINK VENDING MACHINE

Carlton L. Barnhart, 2928 W. Lancaster, Fort Worth, Tex.

Filed Apr. 29, 1963, Ser. No. 276,466
4 Claims. (Cl. 221—129)

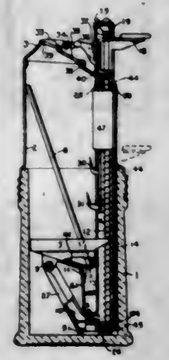


1. In a vending machine having parallel tiltable shelves for supporting merchandise to be dispensed thereon, said shelves being aligned relative to each other, the combination comprising an elongate carriage transversely positioned with reference to the length of said shelves, arms connected with said shelves and projecting therefrom, solenoids mounted on said carriage, means selectively co-

acting said solenoids with said arms, and means reciprocating said carriage in the direction of the length thereof.

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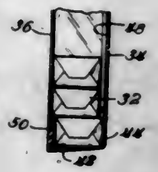
**3,164,297**
**SANITARY SIPPING-STRAW DISPENSER**
Leonard Atlee Wills, P.O. Box 7354, Benjamin Franklin Station, Washington, D.C.
Filed Feb. 7, 1962, Ser. No. 171,618
4 Claims. (Cl. 221—202)



1. A straw dispenser comprising a straw receptacle, a substantially long vertical frame bar having a portion thereof positioned in said receptacle, a straw supporting cup mounted on said frame bar, said cup being formed with a narrow slot adjacent said frame bar, an ejector bar slidably mounted on said frame bar, spring means to move said ejector bar upwardly, guide means on said frame bar for said ejector bar, further guide means within the frame bar for said spring means, and straw-engaging pin means on said ejector bar, said pin means being movable vertically through said slot, a sizable portion of said frame bar being located essentially exterior to the side wall of the upper portion of the straw receptacle.

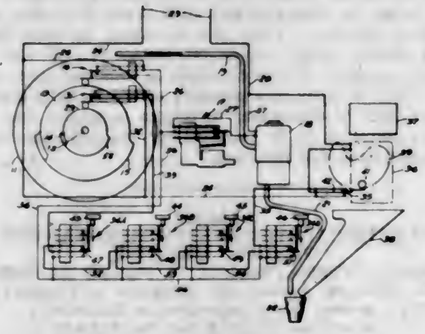
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**3,164,298**
**DISPENSING PACKAGE**
John P. Repko, Parma, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 26, 1961, Ser. No. 112,848
5 Claims. (Cl. 221—282)



1. A package for sequentially dispensing unitized articles comprising wall portions arranged to enclose a plurality of said articles, said package being formed with an opening in adjoining wall portions, said opening having a width approximating one dimension of said articles and having a thumb finger clearance hole on one wall surface and another finger clearance hole on the other wall surface extending from said opening, and a projection on the inner surface of one wall portion adapted to urge one of the articles toward said opening.

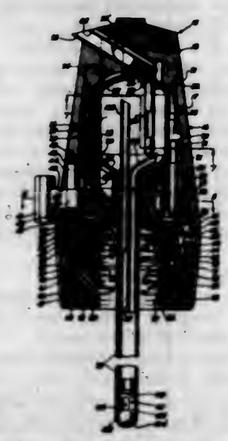
**3,164,299**
**MACHINE FOR VENDING DRINKS WITH OR WITHOUT ICE**
Mahlon W. Kenney, Oak Park, Ill., assignor, by mesne assignments, to The Seeburg Corporation, a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,419
6 Claims. (Cl. 222—76)



1. In a cold drink vending machine: first means, including an electrically operated valve and a circuit leading thereto, for dispensing a liquid ingredient of the drink; second means, including an electrically-controlled actuating element and a circuit leading thereto, for dispensing a portion of ice into the drink; a drink selector button; third means whereby momentary depressing of said selector button closes both of said circuits and causes delivery of a drink in the form of a predetermined quantity of liquid ingredient with ice; and fourth means whereby holding said button in a depressed position during the vending cycle opens the circuit to said actuating element, thus preventing dispensing of ice during such cycle.

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**3,164,300**
**BOTTLE TOP METERING DISPENSER AND MEANS FOR LOCKING THE SAME ON A BOTTLE**
George D. Doucette, 1749 Linnet Lane, Sunnyvale, Calif.
Filed Apr. 18, 1963, Ser. No. 274,042
13 Claims. (Cl. 222—153)



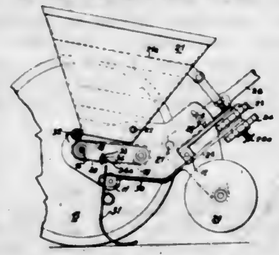
1. In a beverage dispenser adapted to be lockingly secured to the open top of a bottle for dispensing measured quantities of fluid therefrom; a main body providing a cylindrical housing co-axially of said bottle, a pouring and venting top on said body having a pouring spout and a venting tube communicating with said housing and an



inverted saucer like recess co-axially of and facing said housing, a central bearing unit in said body having a passage communicating with said bottle and a saucer shaped surface co-axially of and facing said housing, a tank having dome-like upper and lower ends journaled between said saucer like recess and said saucer shaped surface for turning movement about the axis of said cylindrical housing, said dome-like upper and lower ends of said tank being ported to register with the pouring spout and venting tube when said tank is turned to tank discharging position and to register with said bottle during non-pouring tank filling position of said tank relative to said bottle, a spring loaded lever means including a manually operated pad exteriorly of said main body and a lever arm interiorly of said housing partially circumscribing said tank, means for pivotally mounting said lever means on said main body for rocking movement about an axis parallel to said cylindrical housing, a yoke on the side wall of said tank, and a rod carried by said lever arm and disposed within said yoke for rocking said tank about the axis of said cylindrical housing between tank filling and tank discharging positions.

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**3,164,301**
**WHEELED DISTRIBUTOR WITH IMPERFORATE CONVEYOR BAND**
Derek B. Hargreaves, "Wych Cottage," Wych Lane, Adlington, Macclesfield, Cheshire, England, and Eric Staniforth, Gatley, Cheshire, England (9 Ward Ave., Bollington, Macclesfield, Cheshire, England)
Filed Sept. 14, 1961, Ser. No. 138,197
12 Claims. (Cl. 222—163)

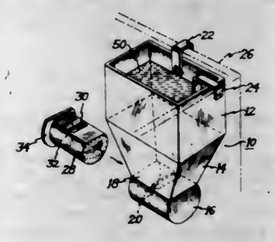


1. A distributor comprising a wheeled chassis having side frames, an imperforate conveyor band and supporting rollers therefor mounted on the side frames, means for driving the conveyor band at a speed which is a function of the speed of movement of the wheeled chassis, and a hopper over the conveyor band for supplying to the conveyor band the material to be distributed, the hopper being tiltably mounted on said side frames, and means for defining the depth of material on the conveyor band as it passes from below the hopper, said means comprising a non-yielding depth-defining edge on the forward or leading edge of the hopper, and manually adjustable means for tilting the hopper to various angular positions in order to vary the clearance of said edge from the conveyor band, said adjustable means being mounted on the side frames and connected to the hopper, the said imperforate band being formed with material-holding grooves defining a minimal rate of delivery at zero clearance of the depth-defining edge.

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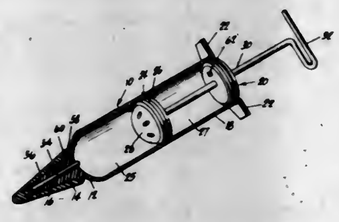
**3,164,302**
**DISPENSING APPARATUS FOR WATER CLOSETS AND THE LIKE**
Arpe Gladys Indjian, 25 Arlington St., Pittsfield, Mass.
Filed Sept. 27, 1961, Ser. No. 141,088
1 Claim. (Cl. 222—181)

A dispensing apparatus for dispensing a measured amount of a solution into the tank of a water closet comprising; a body member adapted to hold a supply of solution, mounting means on said body member for mounting said body member in the tank of a water closet, said body member being provided with a lower portion separated from said body member by a wall, said wall having a slot therein for communication between said body member and said lower portion, a valve member seating within said lower portion and movable out of said lower portion, said valve member being a closed hollow member having inner and outer end walls, a slot means in said valve member which is aligned with said first slot when said valve is in seating relation with said lower portion, said valve member having another slot means, said other slot means being in dispensing position when said valve member is moved out of seating relation with said lower portion, a sloping internal wall in said valve member sloping from said inner end wall to said other slot means to provide positive dispensing of a solution from said valve member, actuating means spring connected to said valve member and connectible to the flush mechanism of a water closet for moving said valve member out of seating relation with said lower portion, and resetting means for returning said valve member into seating relation with said lower portion, whereby when said valve member is in seating relation with said lower portion said valve member is charged with a measured amount of solution and when said valve member is moved out of seating relation with said lower portion said measured amount of solution is dispensed through said other slot means into the tank of a water closet.



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**3,164,303**
**STORAGE AND MIXING CARTRIDGE**
Herbert L. Trautmann, San Marino, Calif., assignor to Semco Research, Inc., Inglewood, Calif., a corporation of California
Filed Dec. 4, 1961, Ser. No. 156,898
16 Claims. (Cl. 222—190)

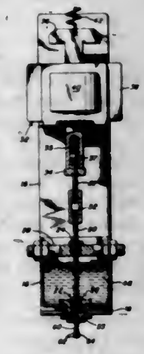


1. A dual compartment container for separately storing two ingredients, subsequently intermixing them, and later dispensing the mixture, comprising: an elongate cylindrical shell to contain the two ingredients and having a normally closed dispensing outlet at one of its ends; and end wall closing the other end of the shell and cooperating with the shell to form a container; a partition extending generally diametrically across the entire span of said shell at an intermedite point in the length of the latter to divide it into two compartments at opposing

ends of said shell to store said two ingredients separately; said partition having a sealing edge in contact with the cylindrical inner wall of said shell around its periphery and having a central axially extending bore therethrough; a dasher extending across at least a major portion of the span of said shell and having an elongate handle passing freely through the bore in the partition and extending slidably through said end wall; the bore in said partition having a smooth annular wall in the end thereof confronting the dasher and having a thread formed in its remote end; and a central boss on said dasher surrounding said handle and confronting said partition; said boss having an annular portion to engage the annular portion of said bore to completely seal said partition and having a threaded portion to engage the threaded portion of said bore to secure said partition and said dasher together in sealing relation for storage purposes.

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**3,164,304**
**LIQUID DISPENSING APPARATUS FOR SMALL QUANTITIES**
**Holger Niel Jager, Quincy, Walter Needre, Randolph, Donald E. Gillis, Hingham, and Thomas M. N. Wood, Foxboro, Mass., assignors to Standard-Thomson Corporation, Waltham, Mass., a corporation of Delaware**
**Filed May 8, 1961, Ser. No. 108,559**
**6 Claims. (Cl. 222—192)**



1. Liquid dispenser apparatus for applying a small quantity such as a drop or so of liquid solder or the like to a work-piece comprising:

a container having an opening therein,

a reciprocally axially movable rod slidably disposed within said opening, the rod being substantially vertically disposed,

the rod having a recess therein, the rod being movable to position the recess within the container, the rod being movable to position the recess outside of the container,

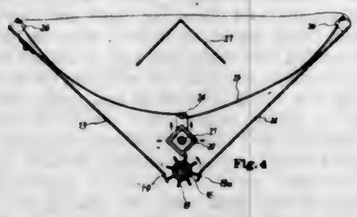
the rod having a lower end portion exterior of the container, the end portion being provided with a plurality of annular peripheral grooves, the lower end portion of the rod being in spaced relation from the recess,

the rod having a lower end surface which is engageable with a work-piece,

a small quantity of liquid being disposed in the recess within the container and moved from the container when the rod is moved downwardly to move the recess to a position outside the container, the small quantity of liquid flowing downwardly upon the rod and being retained by the lower end portion until the lower end surface is moved into engagement with a work-piece to permit the small quantity of liquid to flow from the end portion of the rod to the work-piece.

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**3,164,305**
**SPREADING MECHANISM FOR PULVERULENT MATERIAL**
**William B. Stevens, Terrace Park, Ohio (1214 E. Rookwood, Cincinnati 8, Ohio)**
**Filed Oct. 17, 1962, Ser. No. 231,255**
**6 Claims. (Cl. 222—197)**


Fig. 4

4. A spreading device for pulverulent materials comprising a hopper having a discharge opening, metering means in communication with said discharge opening, said metering means comprising a shaft rotatably journaled in said hopper and disposed in said discharge opening, a plurality of blades extending the full length of said shaft and projecting radially outwardly therefrom, said blades being spaced circumferentially about said shaft a substantially equal distance apart, means for rotating said shaft and blades, a vibrating bar mounted for rotational movement in said hopper immediately above and in parallel relationship to said metering means, and resilient means operatively connected to said vibrating bar for agitating the pulverulent material in said hopper, said resilient means comprising a plurality of resilient arms pivotally connected at one end to said vibrating bar at spaced apart intervals throughout the length thereof, the opposite ends of said arms being pivotally connected to said hopper at spaced apart points so that said arms lie in generally parallel relationship to each other.

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**3,164,306**
**BOTTLE CLOSURE**
**Donald M. Kitterman, Kansas City, and Wallace F. Magers, Shawnee Mission, Kans., and Robert L. Daniel, Raytown, Mo., assignors, by mesne assignments, to Pacific Industries, Inc., San Francisco, Calif., a corporation of California**
**Filed Jan. 17, 1963, Ser. No. 252,168**
**14 Claims. (Cl. 222—498)**



1. A dispensing closure for a mouth of a container adapted to contain flowable materials comprising,

(*a*) a closure body of resilient material for connection to said container at the mouth thereof,

(*b*) said closure body having an end portion with an opening arranged substantially centrally thereof and communicating with the interior of the mouth of said container with marginal portions around said opening converging inwardly to an edge defining said opening,

(*c*) a dispensing valve element mounted for swinging movement at said end portion, said valve element embodying a disc-like member having opposed faces with a peripheral portion therebetween for sealing engagement with said edge defining said opening, said valve element having outwardly extending peripheral lips for resisting swinging movement of said valve element,

(*d*) a flexible hinge member of relatively small cross-section connecting the valve element periphery with said end portion edge at a point thereof,

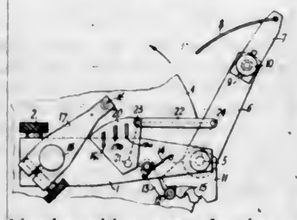
(*e*) means on said valve element adjacent a side thereof spaced from the hinge member for lifting said side of the valve element to swing same on said hinge member to open position;

(*f*) and means depending from said valve element for engaging said edge in response to swinging of said valve element to open position to limit said opening swinging movement.



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**3,164,307**
**PIVOTED DISTRIBUTOR ARM SUPPORTING A DISCHARGE HOSE IN A LIQUID DISPENSING DEVICE**
**Jiří Hrdina, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague Czechoslovakia, a corporation of Czechoslovakia**
**Filed Nov. 14, 1962, Ser. No. 237,561**
**Claims priority, application Czechoslovakia, Nov. 18, 1961, 6,832/61**
**6 Claims. (Cl. 222—527)**



1. In combination with a rotary fraction collector dispensing means for supplying liquids to stationary receiving vessels placed evenly spaced in a plurality of circular rows centered on the rotatable central shaft of the collector, particularly for use in preparatory chromatography, said dispensing means comprising

(*a*) a two-part distributor arm including an arm base fixed for stepwise rotation to the central shaft of the collector and an arm extension jointed with one end to the arm base;

(*b*) a supply hose for carrying liquid to the receiving vessels;

(*c*) holding means for the discharge end of the supply hose at the free end of the arm extension;

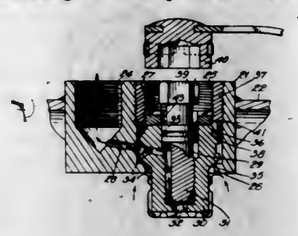
(*d*) spring catch means between the arm base and the arm extension to hold these distributor arm parts temporarily in different angular relation and thus to vary the effective rotational radius of the discharge end of the supply hose;

(*e*) and indexing means associated with the distributor arm parts and adapted to change the said angular relation after each full revolution of the arm base, thereby placing the discharge end of the supply hose in operational position relative to the receiving vessels arranged in concentric circular rows.

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**3,164,308**
**CONTAINERS FOR LIQUIFIED FUEL GAS**
**Isaac Marcovitch and Jacob Marcovitch, both of 31 Bitcon Road, Village Deep, Johannesburg, Transvaal, Republic of South Africa**
**Filed Feb. 26, 1962, Ser. No. 175,572**
**Claims priority, application Republic of South Africa, Feb. 28, 1961, 61/811**
**4 Claims. (Cl. 222—549)**

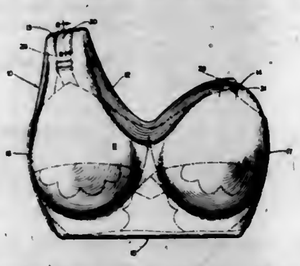
1. A tank having an outlet socket for fluid, a second socket having a dispensing passage communicating with the outlet socket, said second socket communicating with the interior of the tank, a valve in said second socket for controlling flow of fluid from the interior of the tank to said outlet socket, the valve including a valve casing having a flow passage therethrough and a valve member movable in the casing between open and closed positions, the



valve casing having a seat surrounding the flow passage and against which the valve member bears in closed position to close the flow passage, a ring in the second socket securing the valve casing in the second socket, and an element detachably secured to the ring for maintaining the valve member in the valve casing.

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**3,164,309**
**STORE DISPLAY FORM CONSTRUCTION**
**Karl M. Rollius and Raymond L. Thompson, both of Canton, Ohio, assignors to Old King Cole, Inc., Louisville, Ohio, a corporation of Ohio**
**Filed Feb. 11, 1964, Ser. No. 344,059**
**10 Claims. (Cl. 223—66)**



1. Store display form construction for displaying brassieres having side and shoulder straps, including, a three-dimensional form of at least the upper trunk of a female, the form having sides and an upper end and a back, horizontally spaced strap holding means mounted at the form back, each strap holding means having generally vertically extending horizontally adjacent members constructed to resiliently resist horizontal separation for receiving the brassiere side straps extending around the form sides therebetween and resiliently gripping said side straps against movement, and each strap holding means having hook means formed thereon constructed for receiving and gripping the brassiere shoulder straps extending over the form upper end and holding said shoulder straps against movement.

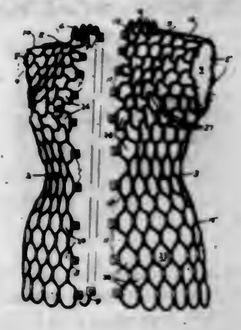
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**3,164,310**
**ADJUSTABLE DRESS FORM**
**Frank S. Sander, 56 Magee Ave., Stamford, Conn.**
**Filed May 31, 1962, Ser. No. 199,143**
**11 Claims. (Cl. 223—68)**

1. An adjustable dress form including portions for a part of the body of the wearer above the waist and adjacent the neck, arms, chest and back and for a part of the body of the wearer below the waist comprising

a dress form mesh of substantially non-resilient flexible plastic material capable of holding the shape of the wearer to which it is bent by a user and formed with undulations in the region of the neck and arms of the wearer, the waist and lower body portion of

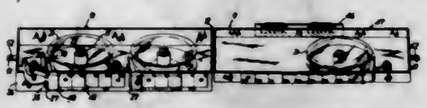
said dress form comprising interstices of polygonal configuration formed by substantially straight rod portions and the upper body portion of said dress form comprising interstices of irregular configura-



tion each formed by four rod portions each bent to form a substantially right angle, two of which are bent inwardly at substantially right angles into the interstice and two of which are bent outwardly at substantially right angles into adjacent interstices.

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**3,164,311**
**DISPENSER FOR STAMPS OR OTHER CONTINUOUS STRIP MATERIAL**
**Jacob W. Van Vliet, Wyckoff, N.J., and William C. Emerick, Ardsley, N.Y., assignors to The Great Atlantic & Pacific Tea Company, New York, N.Y., a corporation of Maryland**
**Filed Nov. 21, 1963, Ser. No. 326,325**
**10 Claims. (Cl. 225—16)**

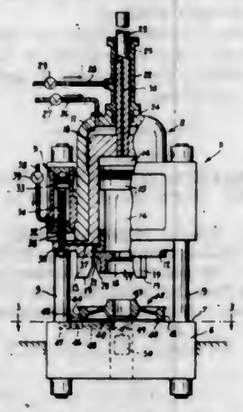


1. A strip dispensing device comprising, in combination, two box-shaped casings with side walls and a bottom but open-faced, hingedly connected together, the casings being constructed and adapted to have their open faces juxtaposed to each other when in folded condition thereby forming a closed structure, each casing having means for rotatably supporting therein a reel of strip material, the axes of said reels being in parallel relationship when the casings are in folded condition, said supporting means being constructed to permit the ready insertion and removal of a reel when the device is in its open unfolded condition, means securing said reels against axial movement, and each casing having a narrow aperture in a side wall thereof associated with a corresponding reel for the passage therethrough of the strip material, said apertures being in side walls of said casings which form a common face of the dispenser when the casings are in folded condition, strip cutting means disposed adjacent each aperture, and a measuring scale with divisions marked thereon extending longitudinally from each cutting means.

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**3,164,312**
**APPARATUS FOR BREAKING WHEELS**
**Stanislaw Antoni Purski, 1430 Depatie, St. Laurent, Quebec, Canada**
**Filed July 15, 1963, Ser. No. 295,137**
**5 Claims. (Cl. 225—94)**

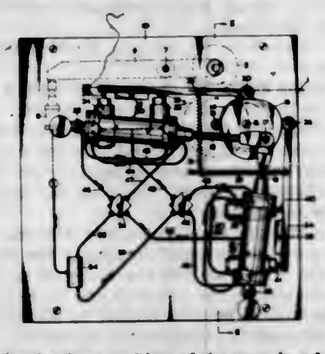
1. Apparatus for breaking solid type railway car wheels into parts of approximately equal weight, the said apparatus comprising a press unit and an anvil unit axially aligned with each other, and means to notch the rim of the wheel to be broken at equally spaced intervals, the said anvil unit including a base member and a series of support blocks adapted to support the rim of the wheel midway between the notches in the rim of the wheel, the said press unit including a series of press fingers equally spaced around the axis of the press unit and in alignment with the notches in the rim of the wheel, and an annular



press ring on said press unit, the said annular press ring being axially aligned with the axis of the wheel in a position between the hub and rim thereof, means to move the said press fingers into breaking contact with the rim of the wheel, and means to move the said annular press ring into breaking contact with one of the broken pieces of the wheel containing the wheel hub and a portion of the rim of the wheel to break off the wheel hub.

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**3,164,313**
**PACKAGING MACHINE**
**Pieter Arnoldus van de Bilt, Maartensdijk, Netherlands, assignor to N.V. Metaverpa, Maartensdijk, Netherlands, a Dutch corporation**
**Filed Oct. 30, 1961, Ser. No. 148,649**
**8 Claims. (Cl. 226—181)**



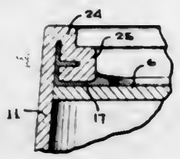
1. In a packaging machine of the type in which a wire or band is fed through the guide channel of a guiding frame and is tightened around the package after which the ends of the wire or band are interconnected; means for feeding the wire comprising two pressure rollers, one disposed on each side of the wire or band, each of said rollers being mounted on shaft means, a pneumatic plunger motor disposed adjacent said rollers and comprising at least two double-acting piston and cylinder units arranged at an angle with respect to each other, eccentric means mounted contiguous said units, means operatively connecting said eccentric means to one of the shaft means to drive same, means for pivotally connecting one end of



said units at a point remote from said eccentric means, and means for pivotally connecting the other end of said units to said eccentric means whereby when one unit is at the end of its operative stroke the other unit will be at the beginning of its operative stroke.

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**3,164,314**
**PAPER CUP BOTTOM STRUCTURE AND METHOD OF FORMING SAME**
**Edmund A. Waycie, River Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**
**Filed Apr. 21, 1961, Ser. No. 104,619**
**7 Claims. (Cl. 229—1.5)**




1. A paper cup comprising a tapered tubular body having a lower portion of reduced cross section as compared to the upper portion thereof; a bottom disk recessed within the lower portion of said body and having a peripheral edge engaging the interior of said body; and a liquid proof film bridging between said body and said bottom disk and being bonded to the interior of said body below said bottom disk and to the underside of said bottom disk; said body having a lower extension including a reversely turned portion folded over the film on said body and forming a double walled lower end on said body, an inwardly turned portion connected to said reversely turned portion, and an outwardly turned portion connected to and reversely turned relative to said inwardly turned portion, said inwardly turned portion and said outwardly turned portion combining to define a double wall seat for said bottom disk, and said film having adhesive qualities and bonding said reversely turned portion to said body and said inwardly turned portion to said bottom disk and said outwardly turned portion.

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**3,164,315**
**CARTON CONSTRUCTION**
**Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Crystal Preforming and Packaging, Inc., Warsaw, Ind., a corporation of Indiana**
**Filed Oct. 3, 1962, Ser. No. 228,118**
**3 Claims. (Cl. 229—17)**



1. In a container construction fashioned from a blank of coated sheet material, said container construction including four side walls and a bottom wall arranged to define a substantially rectangular compartment open at one end thereof, structure for closing the open end of said container construction, comprising:

four substantially rectangular panels integral with and extending respectively from the ends of the side walls adjacent the open end of the container construction, the junction between said panels and said side walls being defined by first fold lines lying substantially within a plane parallel with the bottom wall, each panel being coated with a film of thermoplastic material and being connected to the adjacent panels and such connections being defined by second fold lines transverse of said first fold lines, and each panel extending from its first fold line a distance less than the length of the first fold line associated with an adjacent panel;

a third fold line extending across each end panel parallel with said first fold lines, the third fold lines defining edge portions on said panels spaced from said first fold lines a distance greater than half the length of a first fold line associated with an adjacent panel;

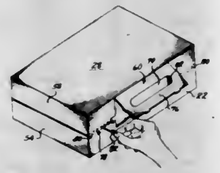
means defining in one panel a pair of fold lines converging from the opposite ends of its first fold line to the midpoint of the free edge of its respective edge portion; means defining in the two panels adjacent said one panel a pair of fold lines converging from the opposite ends of their first fold lines to the midpoints of their respective third fold lines;

a flap integral with, and extending from the edge portion of, the panel opposite said one panel, said flap being engageable with the outer surface on the edge portion of said one panel when the edge portions of said panels are substantially perpendicular to said plane and adjacent to each other, and said one panel and said opposite panel are at acute angles to said plane; and

means defining a substantially U-shaped cut in said outer surface on said edge portion of said one panel, said cut extending along the adjacent parts of the second and third fold lines on said one end panel and pentrating the film on said outer surface whereby the coating on said surface of said one panel within the zone defined by said cut is removed with said flap when the closure structure is opened.

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**3,164,316**
**CARTON**
**William A. Wurster, Tacoma, Wash., and Vernon H. Collins, Merchantville, N.J., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington**
**Filed May 21, 1962, Ser. No. 196,229**
**17 Claims. (Cl. 229—51)**



10. A carton comprising

top and bottom walls;

a first end wall extending between said top and bottom walls,

said first end wall having a series of discontinuous slits therein forming a handle having a pivotable connection with said first end wall,

said first end wall having a tear strip therein extending across said handle portion, said tear strip being in three aligned portions which abut at the side edges of said handle portion and form a pair of tear strip

members extending outwardly of said handle and a reinforcing member for said handle,
said handle having a hand hole forming flap therein between said reinforcing member and said pivotable connection, said flap being pivotable toward said reinforcing member,
said first end wall being divisible into top and bottom sections by said tear strips and said handle;
a second end wall opposite said first end wall and extending between said top and bottom walls,
said second end wall having a transverse score line therein dividing said second end wall into top and bottom sections, said transverse score line and said tear strip being in a plane that is substantially parallel with said top and bottom walls; and
side walls extending between said top and bottom walls and between said end walls,
said side walls being divisible into top and bottom sections along a line of demarcation extending between said transverse score line and said tear strip.

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**3,164,317**
**ADVERTISING DEVICE**
**Morton A. Bogen, 19 Kay St., Jericho, N.Y.**
**Filed May 20, 1963, Ser. No. 281,730**
**2 Claims. (Cl. 229—73)**

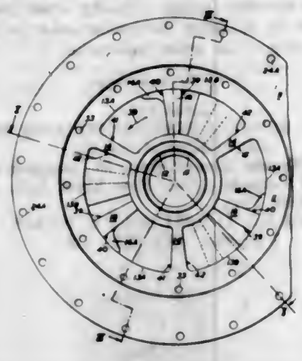


1. A container device of the type described comprising an envelope having front and rear wall portions, the extremities of said wall portions defining an access mouth, a generally rectangular flap member having a marginal edge in common with said front wall portion and outwardly lapping said rear wall portion to form a closure for said mouth, the surface of said flap adjacent said rear wall portion being coated with a cohesive surface layer, a pair of weakened lines extending transversely across said flap adjacent the lateral side edges thereof to define a spaced pair of severable strips, a longitudinally extending tear line formed in said flap and intersecting each of said first mentioned weakened lines, said rear wall of said container being provided with cohesively coated portions in registry with said strips of said flap and a fold line on said flap parallel to said weakened lines and medially disposed therebetween, said flap, when separated from said envelope and folded over on itself along said fold line to bring said cohesive surfaces into contact, forming a stiffened mailing card or the like.

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**3,164,318**
**PRESSURE EXCHANGERS**
**John Anthony Barnes, Wokingham, and John Percy Vickery, Farnborough, England, assignors to Power Jets (Research & Development) Limited, London, England, a British company**
**Filed Sept. 13, 1961, Ser. No. 137,862**
**Claims priority, application Great Britain Sept. 21, 1960**
**10 Claims. (Cl. 230—69)**

1. A pressure exchanger incorporating hub means, a ring of open-ended cells mounted on the hub means, end-plate structure effective to close each end of the cells but having ports therein to control admission of fluid to and removal of fluid from the cells, ducts in communication with the ports, means to cause relative motion between the cells and the end-plate structure, a member positioned in one of the ports to divide that port and adjustably mounted to vary the proportions of the division, and means projecting from the member into the corresponding



duct thereby dividing the duct and providing two discrete variable flow paths communicating with the cells of the rotor.

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**3,164,319**
**BLOWER WHEEL AND METHOD OF MAKING SAME**
**Robert A. Mayne, 42 Forrer Road, Dayton 19, Ohio; Ruth D. Mayne, executrix of said Robert A. Mayne, deceased**
**Filed Oct. 19, 1959, Ser. No. 847,112**
**8 Claims. (Cl. 230—134)**



7. A double inlet fan wheel comprising a double walled substantially centrally disposed radially extended disc, an end ring positioned on each side of the centrally disposed disc and spaced therefrom, a plurality of longitudinally extending narrow blades forming a cylindrical blower wheel, the blades being disposed at an angle radially and having inner and outer blade edges and being curved transversely to provide concave working surfaces, the opposite longitudinally spaced ends of the blades being secured to the end rings, the inner edges of the blades being contoured substantially midway longitudinally of the blades to provide notches having tangs near the outer edges of the blades, the peripheral edges of the double walled central disc having apertures and projecting radially into the notches in the blades and extending axially in opposite directions, the tangs on the blades projecting into contact with the apertures of the discs to positively lock the blades to the discs, and the outer margins of the discs engaging the sides of the notches to provide a four point support for each blade.

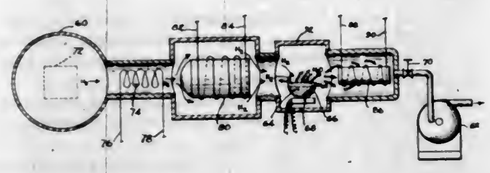
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**3,164,320**
**VACUUM PUMPING SYSTEM**
**John T. Welbourn, Xenia, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force**
**Filed July 10, 1962, Ser. No. 208,973**
**2 Claims. (Cl. 230—69)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. A method for pumping a gaseous material comprising the steps of heating a first gaseous material consisting



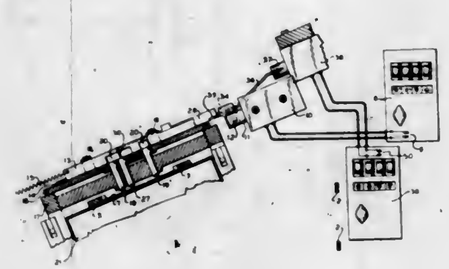
essentially of hydrogen, mixing said first gaseous material with an evacuated closed vessel with stoichiometric proportions of a second gaseous material consisting essentially of oxygen which has been derived by raising



the temperature of iron oxide to red heat, reacting the resultant gaseous mixture to form a vaporous reaction product, solidifying said vaporous reaction product to its solid state thereby reducing the pressure in said closed vessel to produce a pumping action.

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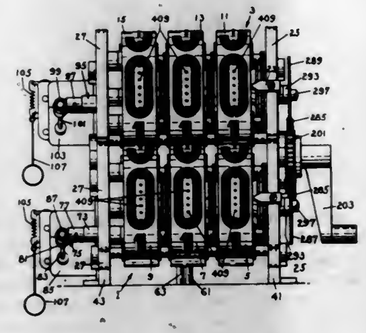
**3,164,321**
**TAG BATCHING MEANS**
**Charles A. Parker, East Orange, N.J., assignor to A. Kimball Company, Brooklyn, N.Y., a corporation of New York**
**Filed Dec. 14, 1962, Ser. No. 244,642**
**9 Claims. (Cl. 234—18)**



1. In a tag processing machine including means for feeding and ejecting successive tags therefrom to form a stack pile within a magazine, the combination therewith of means for differentiating said tags in batch form said means comprising:
a tag perforating punch normally operable in successive operations thereof to indent an edge portion of the successively fed tags;
a control member adapted for adjustment to selective positions for disabling and enabling the said indenting operations of said punch;
operating means for said control member;
a counter selectively settable for determining a selected number of tags to comprise ab atch;
means operable during successive operations of said punch for stepping said counter to zero registering condition;
and means operable by said counter upon movement to zero registering condition for effecting operation of said operating means to automatically adjust said control members for disabling the successive indenting operations of said punch in a given operation thereof corresponding in number to any said selected amount as set up on said counter.

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**3,164,322**
**LARGE NUMERAL REGISTERING MECHANISM**
**George W. Wright, Yoder, and Robert J. Jauch, Christian W. Kruckeberg, and Joseph D. Clymer, Fort Wayne, Ind., assignors to Tokheim Corporation, Fort Wayne, Ind., a corporation of Indiana**
**Filed Apr. 29, 1963, Ser. No. 276,410**
**27 Claims. (Cl. 235—125)**



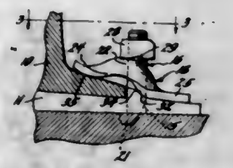
1. A registering mechanism comprising a basic module and a register module mounted thereon, said basic module including a frame,
(*a*) first and second shafts rotatably mounted on said frame, a resetting gear disposed to be driven by said second shaft,
(*b*) a differential mechanism comprising three coacting rotary elements, means connecting one of said elements for operation by said first shaft, a first count advancing gear connected with a second element,
(*c*) said register module including a number of count indicating mechanisms arranged in successive orders, transfer means connecting each lower order to advance the next higher order mechanism, a resetting shaft associated with all of said indicating mechanisms for resetting them to zero,
(*d*) means connecting said first gear to advance the lowest order mechanism, means connecting said resetting gear to drive said resetting shaft,
(*e*) releasable brake means operatively associated with the third rotary element for normally holding said element against rotation to cause said first shaft to actuate said first gear through said first and second rotary elements,
(*f*) means responsive to the rotation of said second shaft for releasing said brake means prior to the operation of said resetting gear, to free said first gear and said second rotary element for operation independently of said first shaft during the operation of said resetting means.

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**3,164,323**
**RAIL ANCHORS**
**James R. Steele and Stephen M. Lounsberry, Jr., Owego, N.Y., assignors to Moore & Steele Corporation, Owego, N.Y., a corporation of Delaware**
**Filed Aug. 15, 1961, Ser. No. 131,605**
**7 Claims. (Cl. 238—349)**

1. A rail anchor for clamping a railroad rail to a tie plate comprising a resilient clamping member of concavo-convex configuration in cross section, the central portion of said clamping member being of sharp curvature of short radius and the end portions being of shallow curvature of long radius, said radii being measured in planes parallel to the rail axis, a bolt adapted to be in-

serted in one of the spike holes in said tie plate and having an offset hook portion on the lower end thereof for engaging the underside of said tie plate whereby said bolt may be coupled to said tie plate, the central portion of said clamping member being provided with an aperture for accommodating the upper end of said bolt, said clamping member being adapted to be disposed on said bolt with the concave side thereof facing downwardly and with the



end portions thereof engaging the top surfaces of said tie plate and the base flange of said rail, respectively, and a nut adapted to be mounted on a threaded upper portion of said bolt for depressing the central portion of said clamping member adjacent to said aperture to flex said clamping member and thereby clamp said rail to said tie plate, and means for locking said nut against rotation when said clamping member is flexed.

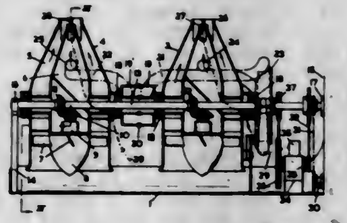
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**3,164,324**

## SPRAYING VEHICLE

**Josephus Fredericus Dominicus Bruinsma, Dodewaard, Netherlands, assignor to Kiekens-Wervelwind-Holland (Kiekens-Whirlwind-Holland) (KWH) N.V., Wadenoijen, Netherlands**

**Filed May 17, 1963, Ser. No. 281,267**
**Claims priority, application Netherlands, May 18, 1962, 278,614**
**1 Claim. (Cl. 239—77)**



In a spraying vehicle, the combination comprising a single longitudinal extending shaft, two fan units each having axial fans, said fan units having nozzles disposed one behind the other in the longitudinal direction of the vehicle and arranged for rotary adjustment relative to each other about said longitudinal shaft and having their axes of rotation and said nozzles directed transversely to said shaft, drive means provided in each fan unit drivingly connecting said shaft to each of said axial fans to generate a conveying air stream through said nozzles, duct means terminating in an inner housing of the fan unit, a blower unit means mounted on said vehicle and adapted to generate a spraying air stream through said duct means independent of but concurrent with said conveying air stream and of a pressure independent of and higher than the pressure of the conveying air stream, a plurality of liquid nozzles to discharge spraying material spacingly arranged in each inner housing, said nozzles and said inner housing having a terminal flattened form flaring outwardly in the peripheral direction about said longitudinal shaft.

**3,164,325**

## SPRAY PAINTING APPARATUS

**Harland V. Veum, Whittier, Calif., assignor to Edwards S. Sawyer, Eugene, Oreg.**

**Filed Oct. 1, 1962, Ser. No. 227,473**
**11 Claims. (Cl. 239—126)**

1. In a coating composition pressurizing and spraying system, apparatus comprising:

a pump means including means for withdrawing actuating fluid from a reservoir containing actuating fluid and for discharging same therefrom under pressure through a first discharge means;

means for receiving coating composition from a container and conveying same under a given pressure to a pressurizing inlet means;

pressurizing means for receiving coating composition from said pressurizing inlet means at said given pressure and simultaneously discharging same through a second discharge means at an increased pressure, said pressurizing means including:

a pressurizing cylinder,

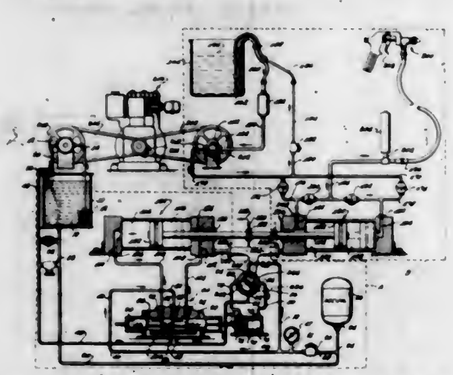
a pressurizing piston reciprocably contained in said pressurizing cylinder;

actuating means operative by actuating fluid received thereby under pressure from said first discharge means of said pump means for actuating said pressurizing means,

said actuating means including:

an actuating cylinder,

an actuating piston reciprocably contained in said actuating cylinder,



said pressurizing and actuating pistons being interconnected by a common means for simultaneous reciprocating movement respectively in said pressurizing cylinder and actuating cylinder;

pilot valve means;

control means actuated by said pistons, including lost motion means, for shifting said pilot valve means to opposite positions only adjacent the end of each opposite reciprocative travel of said pistons;

control valve means responsive to said shift of said pilot valve means for complete movement to opposite valving positions upon each said opposite shift of said pilot valve means, said pilot valve including means for receiving actuating fluid under pressure from said first discharge means and when in one such shifted position thereof admitting such actuating fluid under pressure to a first end of said actuating cylinder to urge said actuating piston to move in a direction therein toward the second end thereof, while permitting discharge of actuating fluid from the second end of said actuating cylinder to such reservoir, and when in the opposite such shifted position admitting such actuating fluid under pressure to said second end of said actuating cylinder to urge said actuating piston to move in a direction therein toward the first end thereof, while permitting discharge of actuating fluid from said first end of said actuating cylinder to such reservoir;

means including valve means operative in connection with said pressurizing cylinder for admitting coating composition from said pressurizing inlet means to a first end of said pressurizing cylinder, and for simultaneously discharging coating composition under pressure from the second end of said pressurizing cylinder to said second discharge means when said actuating piston and thereby said pressurizing piston is being urged in one direction, therein;

and for admitting coating composition from said pressurizing inlet means to said second end of said pressurizing cylinder, and for simultaneously discharging coating composition under pressure from said first end of said pressurizing cylinder to said second discharge means when said actuating piston and thereby said pressurizing piston is being urged in the other direction therein,

the movement of said pressurizing piston and consequently the movement of said actuating piston being controlled by and occurring only upon dicharge of coating composition from said second discharge means,

and means for connecting coating composition release and spray forming means to said second discharge means.

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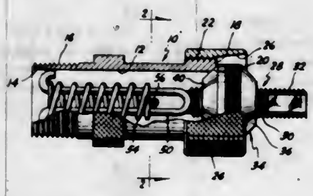


**3,164,326**

## LIQUID PRESSURE OPENED VALVE FOR A SPRAY NOZZLE

**Vincent S. Buraas, Box 176, Northwood, N. Dak.**

**Filed Feb. 27, 1963, Ser. No. 261,315**
**4 Claims. (Cl. 239—453)**



1. A spray nozzle comprising:

(*a*) a generally cylindrical body provided with a longitudinal passage extending therethrough having an inlet at one end adapted to be connected to a supply of liquid under pressure and an outlet at the other end forming an annular valve seat;

(*b*) a relatively short threaded stud member centrally disposed within said outlet end;

(*c*) valve head means threadedly carried on said stud for axial adjustment therealong;

(*d*) a U-shaped member having a generally parallel leg and a connecting bight portion, said bight portion being secured to one end of said stud;

(*e*) a coil spring encircling said legs;

(*f*) a transverse member having its ends secured to said body and extending across said passage between said legs adjacent said bight portion so that one end of said spring is restrained thereby, and

(*g*) means on said legs in a spaced relation with respect to said transverse member for restraining the other end of said spring,

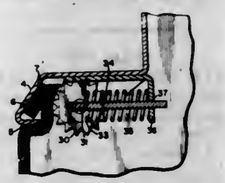
(*h*) whereby said spring acts in a direction to normally cause said valve head means to engage said valve seat and to yield under sufficient liquid pressure to permit said valve head means to be forced away from said seat to produce a conical spray pattern.

**3,164,327**

## LUMINAIRE FOR FLUORESCENT LAMPS

**Josef Müller and Karl Löwenstein, Neheim-Husten, Germany, assignors to Trilux-Lenze K.G., Neheim-Husten, Germany, a firm of Germany**

**Filed July 27, 1962, Ser. No. 212,778**
**Claims priority, application Germany Dec. 14, 1961**
**3 Claims. (Cl. 240—128)**



1. A luminaire for fluorescent lamps comprising in combination:

(*a*) an upper supporting frame structure;

(*b*) a light-diffusing trough arranged at the lower side of said frame structure, said trough including an inwardly slanting lateral edge portion at the side thereof adjacent said frame structure;

(*c*) an abutment surface integral with said frame structure adapted to be engaged by a portion of said trough;

(*d*) a bracket integral with said frame structure defining a pair of spaced parallel substantially horizontal slots open at one end thereof and closed at the other end thereof, said bracket including a spring abutment surface arranged at right angles to the planes within which said pair of slots are situated and defining an additional slot therein;

(*e*) a substantially T-shaped supporting element including a pair of flange portions having ends inserted into and slidably arranged within said pair of slots, said supporting element further including a web portion inserted into and slidably arranged in said additional slot;

(*f*) trough clamping means integral with said supporting element engaging said slanting edge portion of said trough; and

(*g*) a helical spring mounted on said web portion of said supporting element resting with one end thereof against said spring abutment surface and resting with the other end thereof against said pair of flange portions of said supporting element.

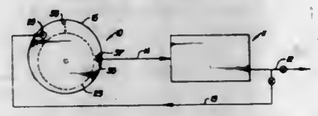
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**3,164,328**

## METHOD FOR PRODUCING SEED CRYSTALS

**Edward M. Van Dornick, 3716 E. Corta Calle, Pasadena, Calif.**

**Filed Apr. 8, 1963, Ser. No. 271,138**
**4 Claims. (Cl. 241—21)**



1. The method of producing seed crystals from relatively larger crop crystals, that includes,

(A) flowing a liquid slurry of the crop crystals through a passage formed between the inner surface of an outer tubular roll and the outer surface of an inner roll within and axially offset from the outer roll so that said passage progressively converges to a location of narrow minimum clearance between the rolls,

(B) rotating said surfaces at substantially the same speed and in the direction of the slurry flow between them so that the crop crystals become progressively

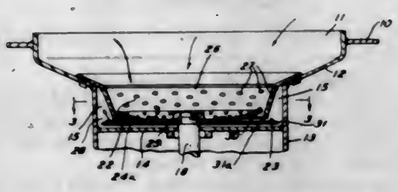
crushed by direct non-shearing compression between the surfaces to a dimension predetermined by said clearance,

(C) conducting the crushed crystal slurry to a crystallizing zone and therein forming enlarged crystals using the crushed crystals as seed, and

(D) passing a slurry of the enlarged crystals as crop crystal feed to said passage.

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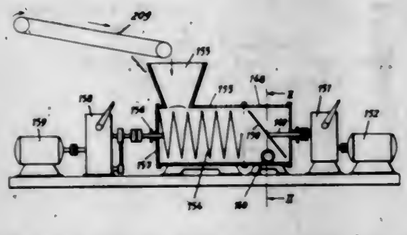
**3,164,329**
**WASTE DISPOSAL APPARATUS**
**Kurt Wandel, Downingtown, Pa., assignor to Somat Corporation, Coatesville, Pa., a corporation of Delaware**
**Filed Nov. 1, 1962, Ser. No. 234,652**
**4 Claims. (Cl. 241—74)**



1. A waste disposal unit comprising an annular wall and a bottom forming a tank for receiving waste material and water, a concave disk impeller in said tank circumferentially spaced from said wall, material disintegrating cutters on the concave face of said impeller, a planar disk attached to said impeller on the face opposite said concave face, a sieve in the form of a tubular member having through apertures supported in said tank concentric with and encircling said impeller, a discharge space formed between said sieve and said wall to receive material passed through said sieve, said sieve being spaced from said planar disk providing a passage therebetween, and means to rotate said impeller and said disk together.

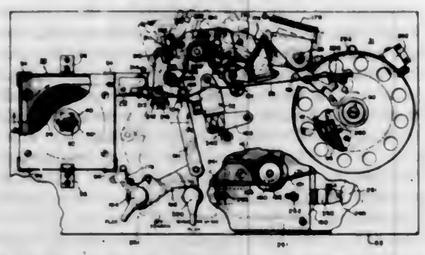
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**3,164,330**
**ROTARY-PUMP APPARATUS**
**Georg Neidl, Uferstrasse 5–6, Berlin N. 65, Germany**
**Filed Aug. 30, 1961, Ser. No. 134,964**
**Claims priority, application Germany, Sept. 6, 1960, N 18,866; Oct. 21, 1960, N 19,066; Aug. 3, 1961, N 20,408**
**9 Claims. (Cl. 241—186)**



1. A system for displacing and mixing viscous fluent materials comprising a housing forming a generally cylindrical pump chamber; a disk journaled in said chamber for rotation about the axis thereof, said disk being inclined to said axis and having a periphery closely juxtaposed with the wall of said chamber; and a screw conveyor journaled in said housing for rotation about an axis codirectional with the axis of rotation of said disk for feeding said viscous material to said disk, said wall being provided with an outlet through which said material is displaced by said disk.

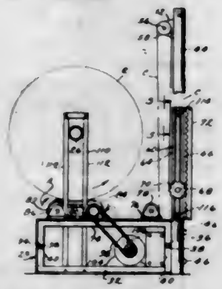
**3,164,331**
**TAPE RECORDER**
**Maurice E. Hardy, Evanston, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware**
**Filed July 10, 1961, Ser. No. 122,934**
**4 Claims. (Cl. 242—55.12)**



1. Winding and reeling apparatus employing a leader and an extractor coupled thereto for moving a flexible tape between a storage reel and a take-up reel, said apparatus comprising: a transport mechanism including a capstan for moving said tape between said reels; a roller having a rest position spaced from said capstan but movable to an operating position to effect transport of said tape by said capstan; additional means independent of said capstan and including said extractor for initially threading said tape from said storage reel through said transport mechanism; means for retaining said roller in said rest position but releasable to allow said roller to move to said operating position; and time-delay means for inhibiting the movement of said roller to said operating position upon release of said retaining means for a predetermined time exceeding that required for said additional means to thread said extractor past said capstan.

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**3,164,332**
**CLOTH TAKE-UP APPARATUS**
**Christie O'Neal Walker and Raymond G. Sessoms, Stonewall, Miss., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware**
**Filed Aug. 23, 1963, Ser. No. 304,144**
**1 Claim. (Cl. 242—66)**



In an apparatus for winding textile fabric in an open width onto a core from a source of supply feeding the textile fabric at a normally constant speed:

a frame structure, said frame structure having a pair of horizontally-spaced vertical, upwardly-extending standards thereon;

a take-up roll;

guide means on said standards for receiving the ends of said take-up roll and guiding the same when said take-up roll moves vertically between upper and lower predetermined limits;

a freely rotatable guide roll carried by said standards above said vertically movable take up roll;

a second freely rotatable roll carried by said frame structure beneath said first guide roll;



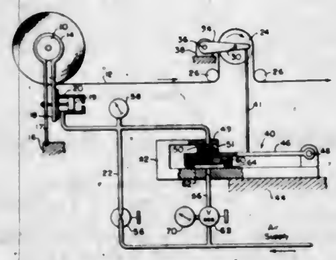
a pair of driven rolls carried by said frame structure and having parallel axes and displaced horizontally from said second guide roll;

electric motor means to drive the driven rolls wherein fabric is wound on the core at a faster speed than the speed at which the fabric is delivered from the source;

and means to selectively operate said electric motor means while the textile fabric is passing downwardly from the source beneath said take-up roll, upwardly over said first guide roll and downwardly under said second guide roll and onto said core, where said last-mentioned means includes a first switch means actuated by said take-up roll at its lowermost position for starting said electric motor and a second switch means actuated by said take-up roll for stopping said electric motor when said take-up roll is in its uppermost position, whereby tension is normally maintained on said textile fabric while it is being fed from a source and said core is automatically stopped when the feeding of the textile fabric is interrupted.

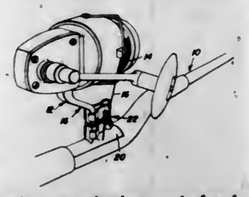
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**3,164,333**
**TENSION CONTROL SYSTEM FOR WEB-FEEDING MECHANISMS**
**John D. Robertson, Taunton, Mass., assignor to Mount Hope Machinery Company, Taunton, Mass., a corporation of Massachusetts**
**Filed Mar. 17, 1964, Ser. No. 353,317**
**8 Claims. (Cl. 242—75.43)**



1. A tension control system for use with web-feeding mechanisms, comprising: a force-balancing valve unit, including a valve member movably mounted thereon, a fixed orifice formed in said valve unit and valved by said member to form a fluid-release orifice therebetween, and means forming a pressure support cylinder for biasing said member; means for applying a force, proportional to the tension in a web fed by said mechanism, to said valve member in a direction opposite to the bias of said pressure support cylinder; fluid supply means; first conduit means including pressure-regulating means for delivering fluid from said fluid supply means to said support cylinder under a predetermined regulated pressure to balance said tension force for varying the area of said fluid-release orifice as a continuous function of the relationship between the regulated pressure and the applied tension force; second conduit means connected with said fluid-release orifice; orifice means connected for delivering fluid from said supply means at a limited rate of flow to said second conduit means for control of the pressure therein by the opening of said fluid-release orifice; and web tension control means connected for control by the pressure in said second conduit means to maintain the web tension substantially at a predetermined mean value dependent upon the level of the regulated pressure delivered to said support cylinder.

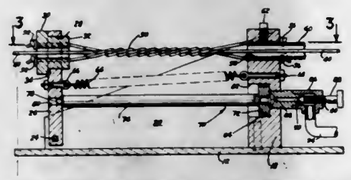
**3,164,334**
**SPINNING REEL LINE RETAINER**
**Celester Silvio Gris, 436 Fortier St., Kimberley, British Columbia, Canada**
**Filed Jan. 3, 1962, Ser. No. 164,005**
**4 Claims. (Cl. 242—84.1)**



3. In combination, a spinning reel shank designed and adapted to be mounted for use on a fishing rod, a fishing line retainer designed and adapted to provide a conveniently accessible place for temporarily attaching a free end portion of said fishing line when the latter is not being used, said line retainer embodying a pair of coplanar longitudinally spaced socket members carried by and lateral to the lengthwise axis of said shank, the opposed faces of said members providing cooperating sockets, and a coil spring parallel with an adjacent to said shank and having opposite end portions thereof seated telescopically and retained in the respectively cooperating sockets, said coil spring providing selectively usable convolutions which may be singly and collectively used for placement of the free end portion of said line therebetween to be frictionally gripped thereby.

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**3,164,335**
**WIRE TENSIONING APPARATUS**
**Raymon H. Dammar, Minneapolis, Minn., assignor to Possis Machine Corporation, Minneapolis, Minn., a corporation of Minnesota**
**Filed Apr. 18, 1963, Ser. No. 273,999**
**8 Claims. (Cl. 242—147)**



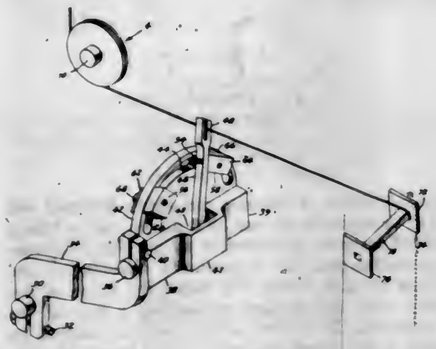
1. A wire tensioning device comprising in combination, a framework including a pair of spaced apart support members at least one of which is movable, a plurality of elongated flexible spaced tensioning elements connected between said members, means for passing a wire through said apparatus longitudinally of said element, means for twisting said flexible tensioning elements, about said wire and into contact therewith and power means secured to a stationary portion of said framework and said movable support member for moving said movable support member and thereby changing the spacing between said support members to thereby substantially reduce and apply fully the tension exerted by said tensioning elements on said wire selectively.

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**3,164,336**
**COIL WINDING APPARATUS**
**Frank B. Redman, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania**
**Filed Oct. 18, 1960, Ser. No. 63,362**
**6 Claims. (Cl. 242—158)**

1. In a coil winding apparatus, a bobbin to be wound, reciprocatable wire guiding means to direct a wire to said

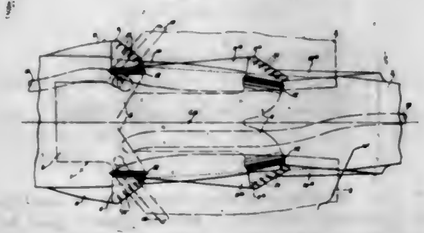
bobbin, said wire guiding means having a path of movement corresponding to the length of said bobbin, and unidirectional magnetic attracting means adjacent the ends of the path of movement of said guiding means, said attracting means acting on said wire guiding means only



over the end portions of said path of movement, said attracting means exerting maximum attractive force on said guiding means at the ends of its path of movement so as to hold said guiding means stationary for short periods of time at the ends of its travel to insure even winding of wire at the ends of said bobbin.

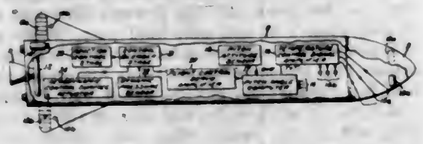
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**3,164,337**
**JET AIRCRAFT WITH ORIENTABLE NOZZLES FOR VERTICAL OR FORWARD MOVEMENT**
**Ralph Spenser Hooper, Hampton Hill, England, assignor to Hawker Aircraft Limited, Kingston-upon-Thames, Surrey County, England, a British company**
**Filed Sept. 29, 1959, Ser. No. 843,302**
**2 Claims. (Cl. 244—12)**



1. An aircraft having a fuselage, a wing, other normal flying control surfaces and a gas turbine including a compressor within said fuselage at about the center of gravity of the aircraft and having mounted thereon a pair of nozzles situated forward of the center of gravity and a second pair of nozzles situated aft of the center of gravity, the forward and aft pairs of nozzles being disposed at about the same distance from the center of gravity, the nozzles comprising each pair projecting from the fuselage on opposite sides thereof disposed around the periphery of said wing for the purpose of minimizing ground suction effect during vertical takeoff or when hovering near the ground, the forward pair of nozzles discharging air from the compressor of the gas turbine, the aft pair of nozzles discharging efflux gases from the gas turbine, means mounting the nozzles for simultaneous orientation, whereby the whole volume of air and efflux gases discharged fom the four nozzles can be directed rearwardly when used for forward propulsion or directed downwardly to produce vertical lift.

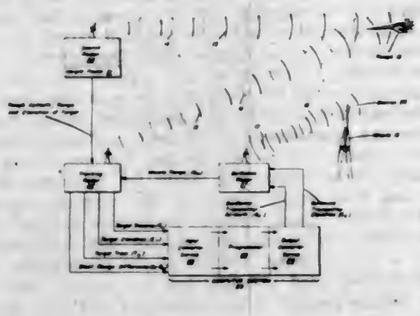
**3,164,338**
**ATMOSPHERE RE-ENTRY SYSTEM FOR SPACECRAFT**
**James M. Cooper, Schenectady, and Joseph D. Welch, Troy, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed June 29, 1959, Ser. No. 823,546**
**4 Claims. (Cl. 244—14)**



1. A system for controlling the re-entry trajectory of a space craft which traverses atmospheric strata of varying density which includes sensor means mounted to detect temperature changes occasioned in a portion of said craft by passage through said atmospheric strata and produce electrical signals responsive thereto, amplifier means connected to receive and scale said electrical signals received from said sensor means, pitch attitude sensor means mounted within said craft to produce a voltage which reflects the instantaneous pitch angle thereof, pitch angle computer means connected to sample the ouput signal from said amplifier means and the voltage from said pitch attitude sensor means and produce an output potential jointly responsive thereto, and means connected responsive to said output potential from said computer means to regulate the trajectory of said space craft during re-entry to reflect said temperature changes occurring in said portion of said space craft.

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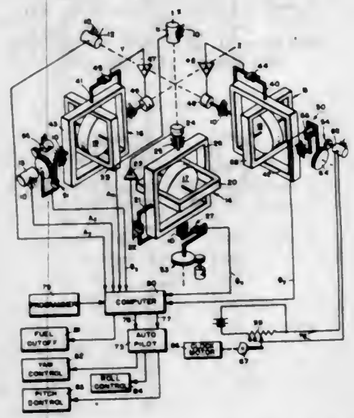
**3,164,339**
**MISSILE PROGRAMMER COAST MODE PROVISION**
**Irvin H. Schroeder, Simpsonville, Melvin E. Hosea and Leo C. Miller, Silver Spring, and Frederick F. Hiltz, Kensington, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Jan. 31, 1961, Ser. No. 86,267**
**14 Claims. (Cl. 244—14)**



11. In an apparatus for controlling the flight trajectory of a guided missile, a guidance computer comprising first and second integrating amplifiers, a third integrating amplifier for receiving as inputs the output voltages from said first and second integrating amplifiers, normally inactivated means to maintain the rate of change of output signals from said third integrating amplifier constant during periods of loss of target track.



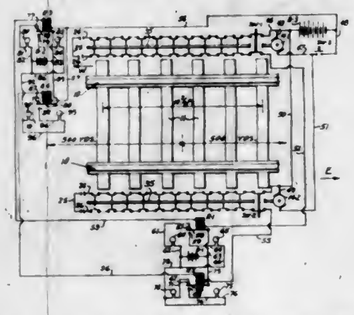
**3,164,340**
**INERTIAL GUIDANCE SYSTEM USING VEHICLE FIXED INERTIAL ELEMENTS**
**John M. Slater, Fullerton, and Robert B. Horsfall, Jr., Whittier, Calif., assignors to North American Aviation, Inc.**
**Filed Mar. 4, 1957, Ser. No. 644,191**
**19 Claims. (Cl. 244—77)**




17. In combination with a vehicle having an autopilot including a plurality of gyroscopes which have output signals indicative of short period angular deviations of said vehicle from a set of axes defined by said gyroscopes; a plurality of accelerometers fixedly mounted to said vehicle; computer means responsive to the outputs of said gyroscopes and accelerometers for generating long period control signals indicative of deviation of the vehicle linear vector velocity from a predetermined value thereof; and means for controlling the attitude of said vehicle in response to both said gyroscope output signals and said long period control signals.

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**3,164,341**
**BROKEN WHEEL DETECTOR FOR RAILWAY CARS**
**Victor H. Phillips, 1406 65th Ave., Sacramento, Calif.**
**Filed Oct. 17, 1961, Ser. No. 145,638**
**5 Claims. (Cl. 246—169)**

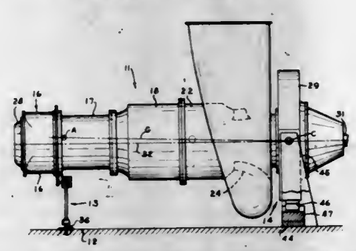


1. A system for indicating a broken railway wheel flange, which system is adapted to be secured to the rails that such wheels traverse, comprising a plurality of detectors, each of said detectors having a normally closed switch, each of said detectors including means for opening its respective switch in response to the passage of every other unbroken wheel flange passing over a predetermined section of at least one of said rails and for closing said switch in response to the passage of every other unbroken wheel flange passing over said section, a voltage source and an indicator circuit in series circuit with each of said switches, said indicator circuit including indicating means activated in response to opening of any of said switches for a predetermined time period, said indicator means indicating the presence of a broken wheel flange, said time period being greater than the time it normally takes adjacent wheels on the same truck to pass over each of said sections.



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**3,164,342**
**ENGINE MOUNT**
**Johannes Jacobsen, San Diego, Calif., assignor to Solar Aircraft Company, San Diego, Calif., a corporation of California**
**Filed June 19, 1962, Ser. No. 203,537**
**3 Claims. (Cl. 248—3)**



1. In combination, a turbine engine having a longitudinal centerline and a center of gravity line extending at an angle to said centerline; and an engine mount for so mounting said engine on a flexible base as to avoid transmission to the engine of twisting and bending stresses induced by the flexing of said base comprising first and second assemblies for supporting said engine upon said base, the respective assemblies being located at spaced points along said base and at the forward and rear ends of said turbine engine; said second assembly comprising trunnion mount means including two independent trunnions fixed to opposite sides of said engine and extending horizontally therefrom with their longitudinal axes aligned and intersecting the center of gravity line of said engine and a pair of upstanding, laterally spaced pillow blocks rotatably journalling said trunnions, said first assembly comprising a pair of substantially inextensible links, first nondeformable link connections connecting said links at one end to said base at laterally spaced points, and second nondeformable link connections connecting the opposite ends of said links at laterally spaced points to said engine, the relative disposition of said first and second link connections being such that the longitudinal axes of said links intersect said center of gravity line, and said connections being ball and socket connections having their centers lying in a common, laterally related plane and disposed in related pairs at opposite sides of said engine to thereby constrain the relative movement between said links and said base and said links and said engine to free pivotal movement.

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**3,164,343**
**GRAVESTONE FLOWER SUPPORT**
**Ralph Cucullo, 118 Mount Joy Place, New Rochelle, N.Y.**
**Filed June 19, 1963, Ser. No. 289,036**
**3 Claims. (Cl. 248—27.8)**

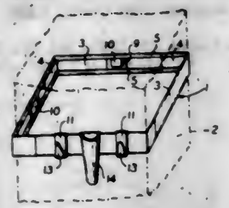
1. A gravestone flower support comprising
a metal band adapted to surround and be secured to a gravestone,
said metal band having two free ends which are adapted to be connected together in a plurality of relative positions thereof,

connecting means at each of said free ends for connecting said free ends together,

the upper and lower longitudinal edges of said metal band being bent over to form beads at the top and the bottom of the metal band with the beads adjacent one free end being adapted to slidably receive the beads adjacent the other free end therebetween,

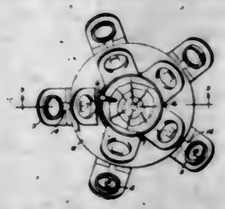
said connecting means comprising at least one crosswise disposed cut in the beads adjacent on of said free ends in order to bend a group of portions of said beads into an angular position relative to the plane of said metal band,

and a plurality of longitudinally spaced, crosswise disposed cuts in the beads adjacent the other of said free ends in order to bend longitudinally spaced groups of portions of said beads adjacent the other of said free ends into angular positions relative to the plane of said metal band, so that upon sliding said one free end of said metal sheet over said other free end thereof by interengagement of said beads, the group of bent portions of the beads on said one free end may be interlocked with any desired group of the groups of bent over portions on the beads of said other free end to connect the said free ends together in relative positions thereof corresponding to the longitudinal spacing of the said desired group from the said other free end.



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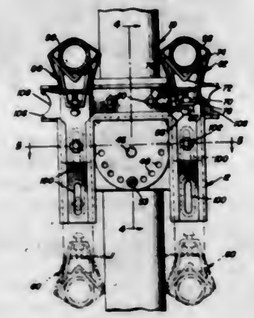
3,164,344
ARTIFICIAL CHRISTMAS TREE BRANCH HOLDER
Albert J. Whyte, West Springfield, Mass., assignor to National Metal Specialties Co., Inc., Enfield, Conn., a corporation of Massachusetts
Filed Feb. 21, 1963, Ser. No. 260,241
4 Claims. (Cl. 248—39)



1. An assembly having a plurality of units, each for detachably holding a rigid member at an angle projecting from a vertical support, said units being integrally formed of substantially rigid sheet material, and each comprising: a centrally disposed portion adapted to be supported adjacent the vertical member, a lower arm portion projecting outwardly and at an angle to the base of said central portion and provided with an opening therein, and an upper arm portion projecting outwardly from a position near the upper end of said central portion, said upper arm having a terminal portion disposed at the same angle to the central portion as the lower arm but being outwardly spaced a greater distance away from said central portion than the lower arm, and said terminal portion being provided with an opening in alignment with the opening in the lower arm, said units being disposed in a radial arrangement with respect to said vertical support and providing a central vertically disposed opening for accommodating said vertical support, and means for interconnecting said units together.

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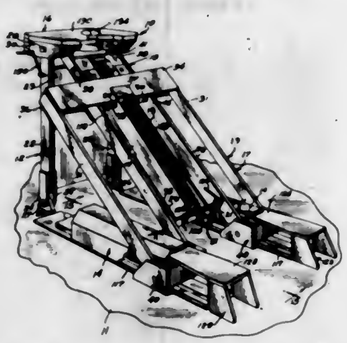
3,164,345
PIPE HANGER SUPPORT BRACKET
Henry E. Menser, Drakesboro, Ky.
(2637 165th St., Hammond, Ind.)
Filed June 21, 1962, Ser. No. 204,225
10 Claims. (Cl. 248—68)



1. A pipe hanger support bracket comprising a mounting bracket adapted to be secured to a support element, a support member, means pivotally mounting said support member on said mounting bracket and including means for securing said support member in adjusted rotated positions relative to said mounting bracket, a plurality of pipe hanger supports, means mounting said hanger supports on said support member for adjustable positioning laterally of the axis of rotation of said support member, each of said hanger supports including means adapted to clampingly engage an elongated pipe section.

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3,164,346
RETRACTABLE STANCHION
Norman E. Bateson, Munster, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 2, 1962, Ser. No. 191,976
17 Claims. (Cl. 248—119)

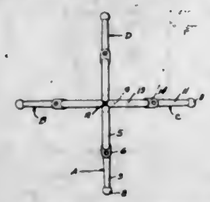


14. A stanchion for hitching a trailer on a railway car, said stanchion comprising a base, a vertical strut pivotally connected at one end to said base, a diagonal strut assembly including a lower strut means having transversely spaced strut legs, an upper strut means including transversely spaced upper strut means telescopingly received within said lower strut means, means pivotally connecting said lower strut means to said base, means pivotally connecting said upper strut means to said other end of said vertical strut, and elevating means connecting said upper and lower strut means to telescopingly extend and contract said upper strut means relatively to said lower strut means.



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3,164,347
TUBULAR PEDESTAL BASE
Robert A. McMasters, Birmingham, Ala., assignor to Southeastern Metals Company, North Birmingham, Ala., a corporation of Alabama
Filed Nov. 1, 1962, Ser. No. 234,757
3 Claims. (Cl. 248—159)



1. A furniture pedestal base comprising a plurality of similar tubular legs, said legs each having a straight medial portion and end portions extending on an angle therefrom, said legs further each having the medial portion thereof fixedly joined to and abutting the medial portion of a second leg forming leg pairs, a tube fixedly mounted on and between the medial portions of one of said leg pairs and extending longitudinally thereof, a second tube fixedly mounted on and between the medial portion of a second of said leg pairs and having a threaded bore, said second tube having one end superimposed on one end of said first tube, and a headed and threaded member extending through said first tube bore and being in threaded engagement with said second tube bore detachably retaining said tubes in end to end engagement.

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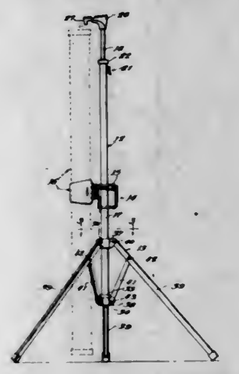
3,164,348
STAND FOR MOVIE SCREEN DEVICE
Lee John Armstrong, Chicago, Ill., assignor to Knox Manufacturing Co., a corporation of Illinois
Filed May 20, 1963, Ser. No. 281,586
16 Claims. (Cl. 248—171)



1. A stand adapted to be maintained in upright position upon a supporting surface, comprising: an elongated standard; a plurality of leg members swingably mounted on the lower end portion of the standard for movement together between a closed position adjacent the standard and a spread-apart supporting position in which the standard is maintained uprightly; a bracing link pivotally secured at each of its opposite ends to one of the leg members and to the lower end of the standard; spring means positioned at the lower end of the standard; a lever pivoted on the lower end of the standard, one arm of the lever engaging the bracing link and the other arm of the lever engaging the spring means; and means for imparting stress to the spring means to exert forces on the other arm of the lever whereby, when the stand is removed from the supporting surface, the lever is rotated pivoting the bracing link and the leg members inwardly to closed position adjacent the standard.

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3,164,349
STAND FOR PORTABLE MOVIE SCREEN
Lee J. Armstrong, Chicago, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois
Filed Oct. 15, 1963, Ser. No. 316,240
15 Claims. (Cl. 248—171)



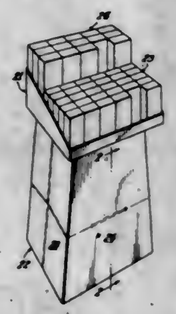
1. A portable stand adapted to be maintained in an upright position upon a supporting surface, comprising: an elongated standard having a lower end portion provided with a plunger, the plunger being constructed and arranged to move upwardly and downwardly with respect to said lower end portion and being normally urged in an upward direction; a pair of brackets spaced axially of the lower end of the standard and being mounted for relative movement axially of the standard with respect to each other; a leg unit on the lower end of the standard for supporting said standard in an upright position, the leg unit having a plurality of leg members swingable between a closed position adjacent the standard and an outwardly spread supporting position, each leg member being provided with a bracing link and being pivotally secured to the upper bracket, the bracing links each being pivotally secured to the lower bracket and to its respective leg member at least one bracing link and the plunger being positioned to cooperate with each other to move the brackets away from each other and to fold the leg members and bracing links in closed position adjacent to the standard when the plunger is moved downwardly with respect to the lower end portion of the standard; and spring means for exerting thrust on the plunger to move the plunger downwardly when the stand is removed from the supporting surface thereby automatically to swing the leg members and bracing links to closed position, the weight of the stand maintaining the leg unit in supporting position in opposition to the spring means when the leg unit rests upon the supporting surface.

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3,164,350
MERCHANDISE DISPLAY STAND
Ronald H. Taub, Highland Park, Ill., assignor to Creative Displays Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 7, 1961, Ser. No. 129,853
11 Claims. (Cl. 248—174)

1. In a collapsible display stand base of the type having front and rear walls and a pair of side walls foldable

inwardly accordionwise, the improvement enabling multiple corrugated cardboard walls of the collapsed display stand to be folded over which comprises: one of said front and rear walls having generally horizontal longitudinally aligned cuts extending from the lateral edges of said wall across a portion only of said wall and dividing said wall into an upper and a lower section, the uncut



intermediate portion thereby forming a hinge; and the other of said front and rear walls having at least one score line adjacent to and substantially coextensive with said cuts and a pair of parallel score lines adjacent to and substantially coextensive with said hinge, whereby folding said structure so that the hinge is on the outside causes the cardboard portion defined by said parallel score lines to collapse and thereby constrict in volume.

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3,164,351
**EXTENSIBLE SUPPORT LEG**
Leo F. Rembowski, Rte. 2, Box 226, Barrington, Ill.
Filed Jan. 8, 1962, Ser. No. 164,706
3 Claims. (Cl. 248—188.5)



1. In an extensible leg structure wherein upper and lower tubular leg sections have adjacent ends disposed in vertically overlapping telescoping relation and constituting outer and inner leg sections, the outer leg section having a series of wall openings spaced therealong, a rigid poppet element movably mounted in an intermediate wall opening of the inner section, and a tubular sleeve of resiliently yieldable material disposed in snug fit relation in said inner section in register with said wall opening thereof to normally bias said poppet element to project partially outwardly thereof for engagement with any one of the wall openings of said outer section, said tubular sleeve being yieldable upon manually forcing said poppet element inwardly thereagainst to accommodate inward movement of the poppet element of sufficient extent to disengage the outer section and permit relative sliding movement between said sections.

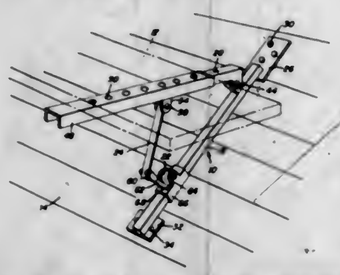
3,164,352
**FLOWER VALANCE**
Joan Weaver, 235 W. Lewis, 14 Stafford Apts., Pocatello, Idaho
Filed Sept. 25, 1961, Ser. No. 140,468
1 Claim. (Cl. 248—214)



A readily removable and replaceable floral valance set for a curtain rod and the curtain supported thereon comprising a plurality of three dimensional floral members of semi-soft washable plastic, and means for attaching said floral members to the curtain rod and the curtains supported on the rod, said rod attaching means comprising hook members mounted off center on the back of some floral members, said curtain attaching means comprising pairs of cooperating magnetic members, each magnetic member being enveloped in a fabric net, one member of each pair having its fabric net secured to the back of a floral member, the other magnetic member of the pair being a separate member adapted to be placed on the rear of the curtain to cooperate magnetically with said floral member mounted magnetic member placed on the front of the curtain to thereby attach the floral member to the curtain free of any mechanical perforation of the curtain, said off center mounted hook being also hooked over the curtain rod to hold the floral member in vertically extending position over the curtain rod.

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3,164,353
**VARIABLE PITCH ROOF BRACKET**
Ralph René, Clifton, N.J.
(455 Paulison, Apt. 3, Passaic, N.J.)
Filed Jan. 7, 1963, Ser. No. 249,657
5 Claims. (Cl. 248—237)



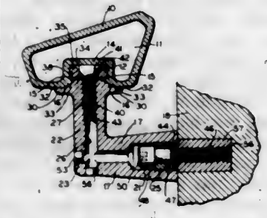
1. A variable pitch roof bracket consisting of an elongated base member, a platform support arm pivotally secured adjacent the upper end of said base member, a cam guide slidably mounted on said base member, a locking cam pivotally mounted on said guide and engageable with the base member so as to lock the guide relative thereto, and rigid pivotally connected linkage means interconnecting said support arm and the cam for effecting a locking of the cam upon a pivotal movement of the arm toward the base member, said arm upon the locking of the cam being rigidly fixed relative to the base member, said linkage means consisting of a cam arm integral with and projecting from said locking cam, and an elongated rod having one end pivotally secured to



the outer end of the cam arm and the other end pivotally secured to an intermediate portion of the platform support arm.

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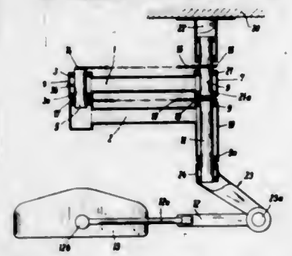
3,164,354
**STADIUM RAIL**
Robert H. Murdock, Kensington, Calif., assignor to American Metal Climax, Inc., a corporation of New York
Filed Mar. 6, 1963, Ser. No. 263,160
5 Claims. (Cl. 248—251)



1. An L-shaped bracket assembly for attaching a handrail to a support surface comprising an L-shaped member having contiguous vertical and horizontal legs, through bores axially of each of said legs, a clamping member for slidable retention within a non-communicating flanged channel of a handrail, concealed screw means within the bore of said vertical leg for securing said clamping member in position within the rail channel with respect to said leg and concealed screw means within said bore of the horizontal leg for securing said horizontal leg to a supporting surface.

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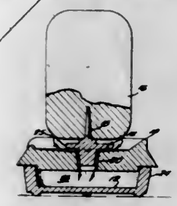
3,164,355
**SUSPENDING ARRANGEMENT**
Ernst O. Seitz and Hans Ulrich Klippert, Hanau am Main, Germany, assignors to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany
Filed May 8, 1963, Ser. No. 278,898
Claims priority, application Germany, May 9, 1962, Q 712
11 Claims. (Cl. 248—324)



1. A suspending arrangement for supporting a piece of operating room equipment in an operating room, comprising a supporting member adapted to be fixed to a ceiling of an operating room; a first pivot having a vertical axis and forming part of said supporting member; a first supported member including an arm having a first end portion rotatably mounted on said pivot and a second end portion; a second supported member comprising a second pivot having an axis which is parallel to the axis of said first pivot, said second pivot being rotatably received in said second end portion; means on one of said members for supporting a piece of operating room equipment; and a transmission connecting said pivots to each other and arranged to compel said first supported member to rotate about the axis of said first pivot when the second supported member is caused to rotate about the axis of said second pivot or vice versa whereby a piece of operating room equipment supported by said one member moves in a substantially horizontal plane.

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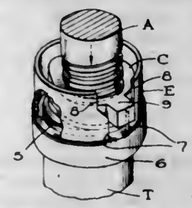
3,164,356
**SOAP HOLDER**
Walter Zajaczkowski, Forest Road, Allendale, N.J.
Filed Nov. 14, 1963, Ser. No. 323,732
5 Claims. (Cl. 248—359)



1. A soap holder comprising an upper dish having a central hole therein, a collecting dish having sides disposed for supporting said upper dish and for providing a collecting chamber therebetween in communication with the central hole, and an insert disposed for frictional engagement at one end thereof with a bar of soap, the central hole disposed for receiving the other end of said insert.

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3,164,357
**CHAIR SEAT ADJUSTING DEVICE**
Carl H. Hage, Poland, and Harris E. Hanser, Youngstown, Ohio, assignors to The General Fireproofing Company, Youngstown, Ohio, a corporation of Ohio
Filed Aug. 27, 1962, Ser. No. 219,687
9 Claims. (Cl. 248—406)



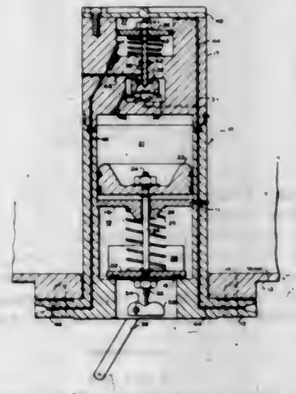

1. In a swivel chair, the combination including,
a base
a seat supporting screw post mounted in the base,
a stationary brake member carried by the base and an expansible and contractible clutch element surrounding the post and a member of the screw post cooperating with the axial movement thereof, whereby,
when the post is loaded, the brake and clutch elements disengage to permit the post to rotate freely without axial movement and when the post is lifted the post will move up or down in the direction of its axis when rotated.

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3,164,358
**SAFETY FLOW VALVE**
Charles MacSporran, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 17, 1960, Ser. No. 50,166
6 Claims. (Cl. 251—29)

1. A unitary valve structure for controlling ingress and egress of a fluid product to and from a container, said valve structure comprising: a tubular valve casing provided with a product ingress and egress opening at one end thereof; a pilot valve body attached to and closing the other end of said casing; a valve seat within said casing adjacent said one end thereo; a chamber within said

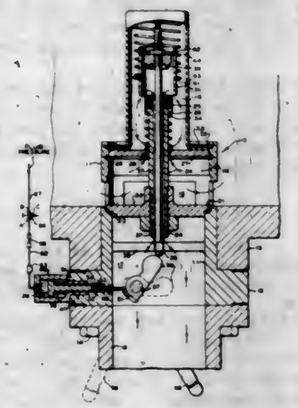
casing defined by said valve seat and said pilot valve body; a valve head disposed within said chamber; means including a pressure receiving member disposed within said chamber, connected to, and operable to move said valve head into and out of engagement with said valve seat; mechanical means within said chamber for biasing said valve head to normally closed position at said valve seat; an opening in the wall of said chamber on one side of said pressure receiving member and adjacent said valve



seat; conduit means communicating with said chamber on the other side of said pressure receiving member for admitting fluid pressure of said product to and venting fluid pressure of said product from said chamber; and pilot valve means, operated by fluid pressure of said product, within said pilot valve body, and operatively connected into said conduit means for controlling flow of fluid pressure of said product to and from said chamber through said conduit means.

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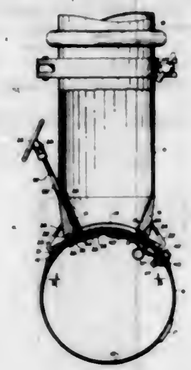
**3,164,359**
**SAFETY FLOW VALVE**
**Alvah F. Dyer, Caney, Kans., and Edwin E. Reed and Richard J. Bennett, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**
**Filed Oct. 10, 1960, Ser. No. 61,413**
**9 Claims. (Cl. 251—68)**



1. In a valve structure comprising, in combination: a generally tubular valve body having means at one end thereof for securing said body to a container; a first chamber formed in said body adjacent said one end; a second chamber formed within said body adjacent said first chamber and having an opening in the wall thereof; a valve seat intermediate said first and second chambers; a valve head disposed in said second chamber and adapted to engage said valve seat; a hollow valve stem slidably mounted in said second chamber and attached to said valve head; a first spring mounted around said stem and acting between said stem and said valve body to normally bias said valve head out of engagement with said valve seat; a valve shaft extending from within said first chamber to within said second chamber, said shaft extending slidably through said valve head and said valve stem with a clearance providing a bleed passage connecting said first and second chambers; a lost motion connection between said valve stem and said valve shaft; means connected to said valve shaft for closing said bleed passage when said shaft is in valve closing position; a second spring mounted around said shaft and acting between said shaft and said valve body to normally bias said valve head into engagement with said valve seat; valve operating means extending into said first chamber and into engagement with said shaft for moving said shaft in a direction against the tension of said second spring to a valve opening position; the improvement comprising: holding means extending into said first chamber adjacent said valve operating means and operable to engage said valve operating means so as to hold same in engagement with said shaft.

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**3,164,360**
**FLUID CONDUIT AND BRANCH OUTLET CONSTRUCTION**
**Robert R. Stafford, Rte. 4, Box 177D, Eugene, Oreg.**
**Filed Dec. 26, 1962, Ser. No. 247,130**
**9 Claims. (Cl. 251—146)**



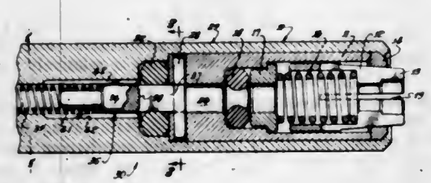
6. Fluid conduit apparatus, comprising:
a main conduit having an outlet opening through the side thereof;
a branch conduit having an end shaped to conform to said outlet opening;
fastening means for releasably attaching said end of said branch conduit to said main conduit so that the interior of said branch conduit can be placed in fluid communication with the interior of said main conduit through said outlet opening;
a valve plate movably mounted on said main conduit adjacent said outlet opening;
bias means for resiliently urging said valve plate toward a normally closed position to prevent the flow of fluid from said main conduit into said branch conduit through said outlet opening; and



control means for gradually pivoting said valve plate in a progressive manner against the force of said bias means and the force of the fluid pressure in said main conduit to move one side of said valve plate toward an open position while maintaining another side of said plate in a closed position to allow the flow of said fluid from said main conduit into said branch conduit and providing for gradual movement of said one side of said valve plate from an open position toward said closed position in a controlled manner.

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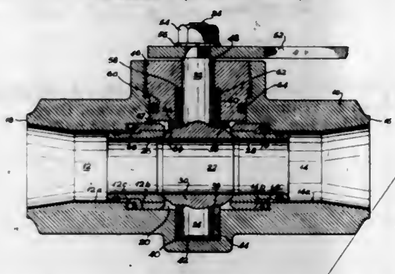
**3,164,361**
**VALVED COUPLER**
**Kenneth Max Pruett, San Diego, Calif., assignor to J. C. Pemberton, doing business as Scanivalve Company, San Diego, Calif.**
**Filed Oct. 2, 1962, Ser. No. 227,741**
**2 Claims. (Cl. 251—149.6)**



1. A quick connect coupler for a fluid conduit, comprising:
a tubular housing having an open entrance end;
a plurality of jaws having radially interior surfaces jointly defining a cylindrical cradle lying around a common axis of the housing and jaws;
said jaws movably mounted within said tubular housing for longitudinal movement between a first position protruding from said entrance end, and a second position retracted therefrom;
said jaws having exterior cam follower surfaces;
said housing having cam means therein for coacting with the said cam follower surfaces to cause said jaws to close radially as they move from said second toward said first position and to open as the jaws travel in the opposite direction;
an annular piston within said housing axially aligned with the said axis and positioned at the end of said jaws opposite said protruding ends, in drive exerting relationship to move said jaws toward said first position upon activation by fluid under pressure;
said cradle and piston defining a through passageway for the receipt of a tube member inserted therein through said jaws, said piston including means forming a fluid tight seal with said tube;
fluid supply valve means positioned on the side of said piston opposite said jaws and in a position to be contacted by an elongated member inserted through said cradle, said valve means having an open condition upon contact by such elongated member and a closed condition when released; and
passageway means from said valve means to said piston;
whereby, an elongated member must be inserted through said jaws and piston to open said valve means and thereby cause a grip movement of the jaws to take place fully upon said member, and whereby the grip of the jaws can be broken only by applying external force to the jaws against the action of said piston to move from said first toward said second condition.

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**3,164,362**
**TRUNNION MOUNTED BALL VALVES HAVING SPRING BIASED SEATS**
**Francois I. Lavigueur, New London County, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware**
**Filed Oct. 7, 1960, Ser. No. 61,279**
**1 Claim. (Cl. 251—174)**



A valve, comprising a housing having a central space and a pair of generally cylindrical longitudinally aligned end passages each communicating with said central space and with the exterior of said housing, said housing having a generally cylindrical opening through one side thereof and communicating with said central space and an annular internal recess in the side thereof directly opposite said opening, the axis of said opening being transverse to the axis of said end passages, the walls of one of said end passages forming a valve seat including a first annular axially extending surface, a second annular axially extending surface located axially inwardly of said first axially extending surface and having a larger diameter than said first axially extending surface and an annular radially extending surface interconnecting said first and second axially extending surfaces; an elongated annular seat seal mounted for axial movement in said one end passage, said seat seal having a generally radially extending sealing surface at the inner end thereof, a first outer axially extending surface, a second outer axially extending surface arranged to contact the first annular axially extending surface of said valve seat and an outer radially extending surface interconnecting said first and second outer seat seal surfaces, said seat seal having an integral construction affording a continuous internal fluid contacting surface extending from the outer end thereof to and including said sealing surface at the inner end thereof; a removable annular closure member having an annular space located in and closing said opening; an elongated valve member positioned in said central space and having a ball portion, a first trunnion extending through said opening in the side of said housing and through the annular space in said closure member and a second trunnion extending into said annular recess; bearing means in said annular space and said recess contacting said trunnions and, through said contacting, for supporting said valve member for rotational motion but preventing axial motion thereof with respect to said housing, said bearing means including an annular thrust bearing surrounding said first trunnion and arranged to contact said ball and said closure member to prevent motion of said ball toward said opening, said thrust bearing and said ball having cooperating flat surfaces in surface contact with each other in transmitting thrust from said ball to said thrust bearing, said ball portion having a fluid passage adapted to be aligned with said end passages to provide communication between said end passages in one rotational position of said ball and to be out of alignment with said end passages to prevent communication between said end passages in another rotational position of said ball, said ball portion having an outer convexly curved surface arranged to engage in sealing contact with said radially extending sealing surface of said seat seal, said

sealing contact between said convexly curved surface and said radially extending sealing surface of said seat seal affording the entire sealing contact between said ball and said seat seal, spring means arranged to act between said valve seat and said seat seal to urge said seat seal axially inwardly into said sealing contact with said ball portion; and means connected to said first trunnion for rotating said valve member between said positions thereof.

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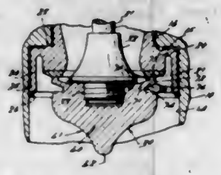
**3,164,363**
**VALVE HAVING SEAT-CARRYING FLANGE**
**John L. Williams, P.O. 162, Oswego, Oreg.**
**Filed Jan. 24, 1963, Ser. No. 254,045**
**4 Claims. (Cl. 251—328)**



1. A valve comprising
a body having a flow passage intersecting a gate blade channel,
a gate blade movable in said channel between an opened and a closed position and projecting from said body,
a packing assembly around said blade at the place it projects from said body and establishing a predetermined plane of movement for said blade,
said body including a main body portion and a removable flow passage member,
said flow passage member including a tubular flow passage portion,
said main body portion having a bore in which said tubular flow passage removably fits,
said tubular flow passage portion defining part of said flow passage,
said flow passage member including an annular flange portion bearing against said main body portion outwardly of said tubular flow passage portion,
threaded means for securing said flow passage member to said main body portion,
said tubular flow passage portion terminating short of the plane of movement of said blade,
said tubular flow passage portion having an annular groove formed on its inner end,
a circular elastomer sealing member having a body portion fitting in said groove and having a blade engaging portion projecting into the plane of movement of said blade to engage said blade and be compressed thereby to form a seal with said blade,
said blade engaging portion being of lesser width than the body portion of said sealing member and being disposed intermediate the inner and outer edges of such body portion so that said blade engaging portion is surrounded by a matrix of elastomer material so that said blade engaging portion can readily be deformed laterally without danger of rupturing it,
said portion being rounded for camming contact with said blade and said blade having a slight bevel on the edge thereof next to said sealing member for mutual camming contact with said rounded portion so that repeated engagements between said blade and sealing member will cause only a minimum of wear on the latter despite the predetermined plane of movement of said blade.

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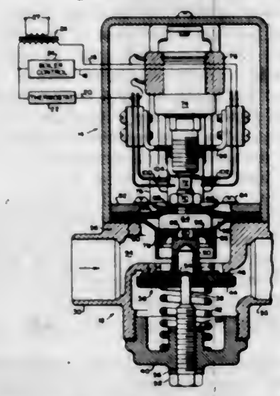
**3,164,364**
**DEFORMABLE VALVE HEAD AND SEAT CONSTRUCTION**
**William McColl, Southampton, Hants, England, assignor to Diamond Power Specialty Corporation, Lancaster, Ohio**
**Filed Oct. 4, 1962, Ser. No. 228,329**
**6 Claims. (Cl. 251—334)**



1. In a valve having a relatively movable valve seat and valve disk, said valve disk having a relatively rigid body, that improvement which consists of an annular flange portion flared outwardly and toward said valve seat and rooted on said body and terminating in an angular portion extending toward said seat having a substantially flat contact face the plane of which is substantially perpendicular to the center axis of said valve disk, said flange portion being provided with relatively flexible bending zones adjacent its root and adjacent said contact face to permit said flange portion to bend in a plurality of planes under pressure contact with said valve seat to present said contact face thereto in a plane substantially parallel to the plane of said valve seat and to maintain a substantially uniform pressure on the surface of said contact face as said flange deforms under pressure.

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**3,164,365**
**DIAPHRAGM SEALED VALVE**
**John H. White, Barrington, and William B. Drury, Providence, R.I., assignors to Taco, Inc., Cranston, R.I., a corporation of New York**
**Filed June 22, 1962, Ser. No. 204,553**
**11 Claims. (Cl. 251—335)**

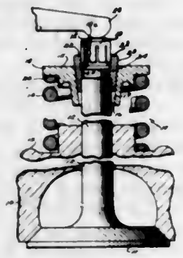


1. In a poppet valve having a valve stem and a sleeve of substantially greater diameter to receive the stem, a seal for the stem including a flexible diaphragm sealing the sleeve and stem, an annular flexible seal member in the general shape of a washer frictionally received in the sleeve about the stem and having a loose fit on the stem, and a plug member having an annular surface on the stem in the space between the diaphragm and seal member, the seal member being dimensioned so as to provide a leakage path for limited fluid flow to and from said space when the diaphragm is intact and to seat against said surface to seal the sleeve when the diaphragm is ruptured.



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**3,164,366**
**VALVE TIP CONSTRUCTION**
**Max J. Tauschek, Lyndhurst, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Dec. 27, 1961, Ser. No. 162,372**
**3 Claims. (Cl. 251—337)**

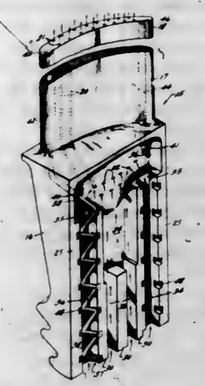


2. A valve assembly comprising in combination:
(*a*) a valve having a stem terminating in a tip having a continuous cylindrical surface;
(*b*) a wear member including a wear-resistant disc portion disposed at an end face of said stem against said tip, said wear member having a series of at least four integral resilient fingers extending within the axial extent of and grasping said cylindrical surface of said stem, said fingers frictionally holding said wear member thereon of themselves;
(*c*) a plurality of no more than three separate valve retainer locks jointly encircling and engaging at least four of said resilient fingers; and
(*d*) a spring retainer operative in response to an axially directed spring force thereagainst to urge said locks radially against said four engaged resilient fingers to provide forces thereagainst which supplement the grasping forces of said resilient fingers against said stem tip.

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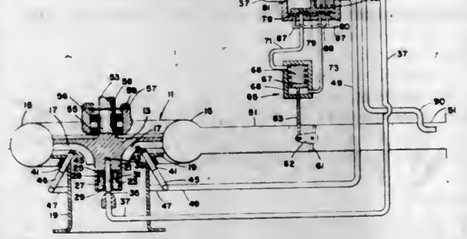
**3,164,367**
**GAS TURBINE BLADE**
**Henry E. Lynch, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York**
**Filed Nov. 21, 1962, Ser. No. 240,203**
**5 Claims. (Cl. 253—39.15)**

1. In a rotor blade for a hot gas turbomachine:
an airfoil portion having leading and trailing edges and a tip portion;
a blade root portion having a cavity substantially enclosed thereby, said cavity having an opening therein for the supply of a first heat exchange medium thereto;
a first plurality of passages in said airfoil portion in flow communication with said cavity;
a second plurality of passages located in said leading and trailing edges of said airfoil portion;
and heat exchanger means in said cavity, said heat exchanger means containing a second heat exchange medium in flow communication with said second plurality of passages, wherein at least a portion of said first heat exchange medium is in a heat exchange relationship with said second heat exchange medium during passage of said first medium through said cavity and into said first plurality of passages.



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**3,164,368**
**GAS TURBINE CONTROL**
**Bernard Klein, Clinton, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware**
**Filed May 28, 1962, Ser. No. 198,199**
**3 Claims. (Cl. 253—52)**



1. A gas turbine and single pneumatic control therefor adapted to shut down the turbine in event of eccentric turbine rotation as a result of a bearing failure or in the event of overspeed of the turbine comprised of:
a radial-flow turbine wheel having a shaft extending from one side and blades and an axial projection on the other side,
bearing means supporting said turbine wheel shaft for normal rotation in a fixed transverse plane,
a tubular exhaust duct encasing said turbine blades and said turbine axial projection,
an annular manifold constructed and arranged to supply gas to said turbine blades,
a gas supply pipe connected to said manifold and having a butterfly valve mounted therein,
pneumatic means fluidly connected to said gas supply pipe upstream of said butterfly valve and constructed to open said butterfly valve when subject to a predetermined-pressurized gas from said gas supply pipe,
a plurality of tubes projecting from said exhaust duct at least three equi-spaced locations and terminating in frangible tips adjacent the blades of said turbine wheels,

said frangible tips sealing the ends of said tubes and being constructed to break when contacted by said blades upon eccentric rotation of said turbine wheel to provide an outlet for said tubes,

vent conduit means connecting said tubes to said pneumatic means to provide a vent flow path from said pneumatic means to said exhaust duct when one of said frangible tips is broken,

said pneumatic means being constructed to close said butterfly valve when said vent flow path is provided upon breaking of one of said frangible tips as a result of eccentric rotation of said turbine wheel,

a gas escape conduit having an open end axially-aligned with and spaced from said axial projection of said turbine wheel,

said gas escape conduit being connected to said pneumatic means to provide a gas escape flow path to said exhaust duct during normal operation,

a speed-responsive plunger having centrifugal flyweights axially mounted in the projection of said turbine wheel,

said plunger being movable to close said gas escape conduit when said turbine wheel rotates above a predetermined speed,

said pneumatic means being constructed to close said butterfly valve when said plunger closes said gas escape conduit whereby said turbine is prevented from overspeeding.

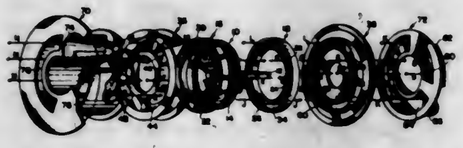
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**3,164,369**

## MULTISTAGE MULTIPLE-REENTRY TURBINE

**Warner L. Stewart, Parma, and David G. Evans, Avon Lake, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**

**Filed Oct. 24, 1962, Ser. No. 232,914**
**4 Claims. (Cl. 253—68)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A multistage multiple reentry reaction turbine with a fluid entry at the upstream side and a fluid exit at the downstream side of each stage, said turbine comprising,

a single rotor having a plurality of rotor blades thereon and being mounted for rotation about the normal axis thereof,

a pair of stator rings,

each of said rings being in substantial juxtaposition with said rotor on opposed sides thereof,

a plurality of first stator blades having converging passages therebetween mounted in one of the said stator rings adjacent said rotor blades at the upstream side of the first stage for accelerating fluid flow into said rotor blades,

a plurality of second stator blades having converging passages therebetween mounted in the other of said stator rings adjacent said rotor blades at the upstream side of the second stage for accelerating fluid flow into said rotor blades,

a plurality of third stator blades having converging passages therebetween mounted in said one of the said stator rings adjacent said rotor blades at the upstream side of the third stage for accelerating fluid flow into said rotor blades,

a plurality of fourth stator blades having converging passages therebetween mounted on said other of said stator rings adjacent said rotor blades at the upstream side of the fourth stage for accelerating fluid flow into said rotor blades,

a first casing in engagement with said one stator ring and having a plurality of first unobstructed passages therein for conveying fluid to the first and third stages and from the second and fourth stages,

a second casing in engagement with said other stator ring and having a plurality of second unobstructed passages therein for conveying fluid to the second and fourth stages and from the first and third stages,

a front housing in contact with said first casing and having an unobstructed chamber therein for placing one of said first unobstructed passages at the downstream side of the second stage in communication with another of said first unobstructed passages at the upstream side of the third stage whereby the fluid has unobstructed flow from the rotor blades at the downstream side of the second stage to said third stator blades, and

a rear housing in contact with said second casing and having a pair of unobstructed chambers therein for placing one of said second unobstructed passages at the downstream side of the first stage in communication with another of said second unobstructed passages at the upstream side of the second stage whereby the fluid has unobstructed flow from the rotor blades at the downstream side of the first stage to said second stator blades and for placing still another of said second unobstructed passages at the downstream side of the third stage in communication with a remaining second unobstructed passage at the upstream side of the fourth stage whereby the fluid has unobstructed flow from the rotor blades at the downstream side of the third stage to said fourth stator blades.

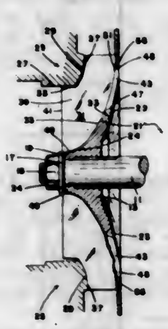
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**3,164,370**

## RADIAL-FLOW TURBINE SAFETY

**Russell T. De Muth, deceased, late of Marcy, N.Y., by Ethel K. De Muth, executrix, Marcy, N.Y., assignor to The Bendix Corporation, a corporation of Delaware**

**Filed July 22, 1963, Ser. No. 297,182**
**6 Claims. (Cl. 253—77)**



1. A radial-flow turbine wheel adapted to provide a controlled failure at a predetermined speed comprised of:

a turbine wheel disc having a hub, an outwardly-diverging surface and radial openings extending radially-inwardly from the peripheral part of the disc,

radial-flow turbine blades having disc edges extending along said disc surface and having shear extensions inserted in said disc radial openings for holding said blades,

restraining means at said hub contacting said blades arranged to prevent lateral movement of said blades and axial movement of said blades away from said disc, and

said shear extensions being constructed and arranged to separate from the remainder of said blades by shearing at a predetermined speed of said turbine wheel, whereby said blade will pivot about said restraining means at said hub away from the outer part of said disc.



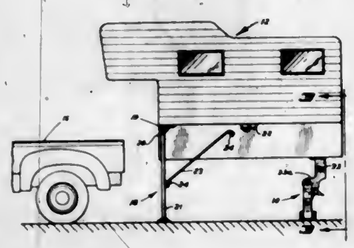
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**3,164,371**

## COACH ELEVATING AND SUPPORTING STRUCTURE

**Clarence A. Royle, 7949 Harriet Ave. S., Minneapolis, Minn.**

**Filed June 18, 1963, Ser. No. 288,809**
**2 Claims. (Cl. 254—45)**



1. An elevating and supporting structure for a demountable vehicle supported body having in combination,

a pair of links depending from the rear end portion of said body spaced transversely thereof,

a pair of links respectively pivoted to said last mentioned links and depending therefrom,

said pairs of pivoted links respectively having a combined length greater than the height of the supporting surface of said vehicle,

a ground-engaging elongated plate member carried at the free ends of said last mentioned links,

a tubular member extending between said last mentioned links spaced inwardly of said plate member,

a screw rod pivotally depending from the rear end portion of said body,

said tubular member being apertured to receive the free end portion of said screw rod,

a gear housing carried by said tubular member,

a worm gear carried in said housing, said worm gear being axially tapped to have said screw rod threaded therethrough whereby said worm gear will travel on said screw rod,

a worm wheel journaled in said housing engaging said worm gear, and

a crank removably engaging said worm wheel to rotate the same.

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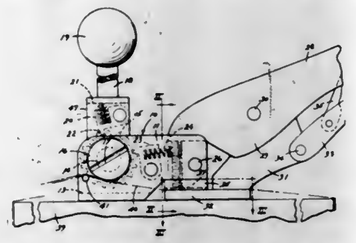
**3,164,372**

## STRAP TENSIONING TOOL

**Michael O. Derrickson, Norwood, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware**

**Filed Dec. 21, 1962, Ser. No. 246,389**
**5 Claims. (Cl. 254—51)**

1. In a strap, tensioning tool adapted for use with cord strapping, a pair of relatively movable members having elongated parallel areas facing one another and adapted to engage opposite faces of a flat strap adjacent one end of the elongated areas, means for applying a strap gripping force to said members out of alignment with the end engaging the strap whereby the interposition of the strap between the members tends to cause the facing areas of the members to move out of parallelism under the action of the gripping force, and means interposed between the parallel areas of said members at a point



remote from the strap to prevent the areas from being forced out of parallelism.

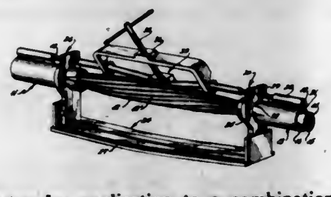
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**3,164,373**

## SLACK MAKER APPARATUS FOR FACILITATING CABLE CONNECTIONS

**Edward Hudzinski, Durham, N.C., assignor to Jameson Corporation, Charlotte, N.C.**

**Filed July 13, 1961, Ser. No. 123,836**
**1 Claim. (Cl. 254—67)**



Apparatus for application to a combination message transmission cable and a messenger cable for attaching wires to said message transmission cable comprising a terminal connector having spaced brackets for attachment in spaced location to said message transmission cable to which the wires are to be connected and an intermediate depending portion joining said spaced brackets, a cable tightening device for application to the messenger cable in generally parallel relation to said intermediate depending portion, said cable tightener comprising a yoke having spaced end portions and a central transversely threaded portion, said end portions having slots for the reception of said messenger cable, said slots being inclined toward the outer extremity of said end portions and having a curved inner portion for receiving said messenger cable and a threading shaft, the threads of which engage the threaded part of said central portion generally parallel to said end portions, a messenger cable engaging shoe rotatably mounted on the end of said threaded shaft between said end portions, said shoe having a concavity in alignment with said inner portion of said end portions of said yoke, an antifriction thrust bearing between said threaded shaft and said shoe, and means at the opposite end of said shaft by means of which the latter may be rotated.

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**3,164,374**

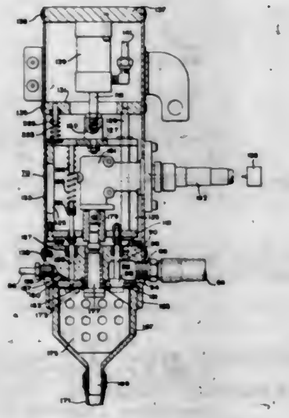
## APPARATUS FOR PRODUCING WHIPPED FOAM

**Herman S. Ralph, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Apr. 19, 1961, Ser. No. 104,104**
**9 Claims. (Cl. 259—2)**

7. Apparatus for producing whipped foam including a foaming head provided with a mixing chamber having an outlet for the whipped foam and being provided with a beater within the mixing chamber, said head being provided with a first inlet and first inlet valve means for

foam and a second inlet and a second inlet valve means for gelling agent, and automatic means for consecutively



opening said first and second valves and for consecutively closing said second and first valves in the order named.

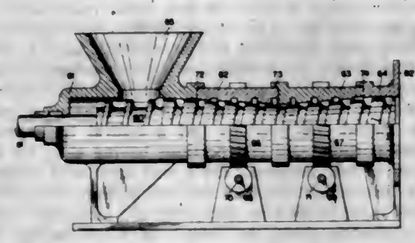
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3,164,375

## APPARATUS FOR INTENSIVE MIXING

Meyer S. Frenkel, London, England, assignor to Frenkel C-D Aktiengesellschaft, Vaduz, Liechtenstein, Basel, Switzerland, a company of Liechtenstein

Filed May 29, 1961, Ser. No. 113,255
Claims priority, application Great Britain, June 22, 1955, 18,115; Oct. 14, 1955, 29,431; Dec. 6, 1955, 35,024; Feb. 14, 1956, 4,661; Apr. 10, 1956, 10,955; May 15, 1961, 17,535
10 Claims. (Cl. 259—3)



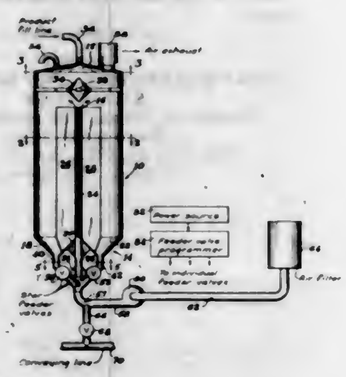
1. In apparatus for intensive mixing, a barrel component and a worm component co-axial with said barrel, said barrel having an inner and said worm having an outer helical thread each with lands between adjacent thread groove convolutions so that the lands are of at least equal width as said grooves and the lands of the worm face the lands of the barrel, said threads being of different lead at least in direction, the cross-sectional areas of opposite thread groove portions varying the one from a maximum to a minimum value and the other one from a minimum to a maximum value so that said portions complement each other to form a continuous passage having an entrance and an exit end for the medium to be mixed, the lands of said barrel thread being located on a first conical surface and the lands of the worm thread being located on a second conical surface parallel to the first one, said worm being adapted to be axially shifted in relation to said barrel thereby to vary the spacing of said surfaces from each other, at least one of said components being rotatable in the direction of the lead of its thread, so as to convey the medium towards said exit end.

3,164,376

## BLENDING APPARATUS

Claude A. Clark, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 14, 1963, Ser. No. 265,244
15 Claims. (Cl. 259—4)



1. Blending apparatus comprising a hollow chamber having side walls, an upper end, a lower end, a longitudinal axis, and a plurality of compartments therein, said compartments being separated one from another by a plurality of partitions, said partitions being generally parallel with the longitudinal axis of said chamber, the partitions extending from the lower end of said chamber a substantial part of the way to said upper end, each of said compartments having a hopper communicating with the lower part, a hollow riser member, said riser member being disposed generally parallel with and along the longitudinal axis of said chamber and extending through the lower end of said chamber and also at least nearly to the upper end part of said partitions, a plurality of discharge lines, each of said discharge lines having a star feeder type valve coupled across it, one of said discharge lines being coupled between each of said hoppers and said riser pipe at a point below said hoppers, valved conduit means for sequentially applying gas under pressure into the part of said riser member which is below where the discharge lines are coupled to it in one direction and for withdrawing material from said chamber through the part of said riser member which lies below where the discharge lines enter it, means for feeding particulated materials into said compartments from the upper end of said chamber, and means for randomly dispersing into said compartments particulated materials which are blown from said riser pipe as gas is applied under pressure to said constricted part.

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3,164,377

## IMPELLER-FED DISPERSION MILL

Frank B. Cramer, Jr., Reseda, Calif., assignor to North American Aviation, Inc.

Filed Dec. 4, 1959, Ser. No. 857,287
1 Claim. (Cl. 259—7)

A dispersion mill comprising:

a housing having a mixing chamber therein,

at least two inlet ports formed in said housing at a first end thereof connected to said chamber and adapted to introduce constituents to be mixed therein,

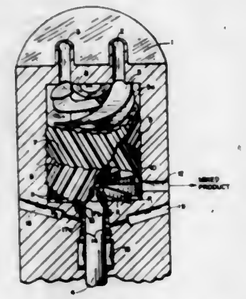
a shaft extending into said chamber through a second end of said housing and rotatably mounted on bearing means adjacent said housing,

chopping means mounted on the extremity of said shaft adjacent said inlet ports and adapted to pre-mix and accelerate the introduced constituents,



helically shaped high shear means mounted adjacent said blade means and adapted to complete the mixing of the introduced constituents,

means on said housing operatively connected between said mixing chamber and said bearing means for preventing the mixed constituents in the mixing chamber from contacting said bearing means, said means on said housing comprising a first seal fixed to said housing surrounding said shaft adjacent said bearing means and a second seal lying in a clearance



formed in said housing adjacent to and connected to said mixing chamber, said second seal being loosely mounted on said rotatable shaft,

an inlet port connected to said mixing chamber by said clearance formed in said housing and adapted to supply a flushing agent to said second seal and to said chamber whereby said flushing agent is adapted to flow to said chamber and away from said bearing means,

means for discharging the mixed constituents.

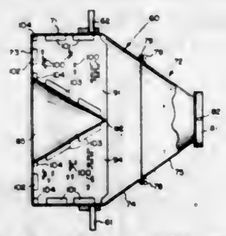
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3,164,378

## PARTICLE BLENDING APPARATUS

John L. Hager, Buffalo, N.Y., assignor, by mesne assignments, to Liberty National Bank and Trust Company, Buffalo, N.Y., a national banking association

Filed Aug. 7, 1962, Ser. No. 215,340
9 Claims. (Cl. 259—89)



1. Apparatus for blending particulate materials, comprising

(*a*) a rotatable container for holding said materials,

(*b*) a plurality of spaced baffles secured in said container,

(*c*) said baffles comprising a plurality of perforated plates secured in said container adjacent one end thereof, and extending inwardly from the sides of said container in planes which intersect one another along a line transverse to the axis of rotation of said container,

(*d*) each of said baffles having a plurality of parallel rows of spaced apertures therein, the apertures in any one row being offset in the direction of the row relative to the apertures in the adjacent rows,

(*e*) said baffles being positioned in said container so that at least a portion of the particles of the material pass successively through apertures in at least two of said spaced baffles,

(*f*) a cone-shaped element secured at its base to said container at said one end thereof, and extending at its opposite end into said container centrally thereof and into engagement with the edges of said plates remote from the sides of said container,

(*g*) means for rotating said container end over end.

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3,164,379

## APPARATUS AND METHOD FOR PURIFICATION OF LIQUIDS

Oscar V. Lindell, New Canaan, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Nov. 21, 1960, Ser. No. 70,461
31 Claims. (Cl. 259—100)



1. In a horizontal liquid treatment tank through which a liquid flows from an influent end to an effluent end, agitating apparatus comprising, a bank of substantially horizontal and substantially parallel agitator elements of ribbon-shaped configuration consisting of a flexible and relatively thin material extending in said tank between the influent end and the effluent thereof; a first supporting frame located at said influent end of the tank and mounted for swinging movement about a horizontal axis extending transversely of the flow through the tank, said frame extending downwardly into said tank and having a transverse member spaced from said horizontal axis for attachment thereto of one end of said agitator elements; a second supporting frame located at said effluent end of the tank and mounted for swinging movement about a horizontal axis extending transversely of the flow through the tank, said frame extending downwardly into said tank and having a transverse member spaced from said horizontal axis for attachment thereto of the other end of said agitator elements; and actuating means for oscillating said swingable frames substantially in unison while maintaining said agitator elements horizontally oriented whereby said bank of agitator elements is moved reciprocatively up and down in said tank to effect flocculation inducing agitation in the liquid by said elements.

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3,164,380

## DEVICE FOR CHARGING AND PREHEATING GRANULAR MATERIAL PASSING INTO A KILN

Rudolf Kus, Bochum, Germany, assignor to Westfalia Dinnendahl Groppel Aktiengesellschaft, Bochum, Germany, a corporation of Germany

Filed Nov. 27, 1961, Ser. No. 155,135
Claims priority, application Germany Nov. 25, 1960
3 Claims. (Cl. 263—32)

3. Device for charging and preheating granular material into a rotary kiln, comprising a vertical shaft structure having opposed vertical walls, inlet means at the bottom of said shaft for receiving hot gases from the kiln for upward flow through the shaft space, means at the top of said shaft structure for feeding said granular material into said shaft structure in continuous and trickling gravity flow in counter-current to said hot gases, said shaft structure having a multiplicity of lateral step structures protruding alternately from opposite shaft walls in mutually staggered relation, said step structures having

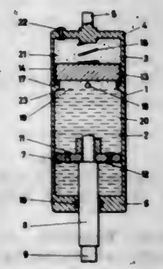
horizontal upper surfaces extending from a respective step-supporting wall of said shaft structure at most up to the vertical center axis of the shaft space, each of said step structures having a bottom surface defining at least one generatrix line parallel to said horizontal upper surface and curving downwardly to form said bottom surface into concave configuration, said bottom surfaces of the step structures on a respective one of said opposed



vertical walls being vertically spaced from the upwardly facing horizontal surface of the next lower step structure extending from said one wall so as to define together with said one wall a whirling chamber for said gases, the open horizontal width of said chamber throughout its vertical length and measured perpendicular to said one wall being not less then the horizontal length of said step structures extending from said one wall.

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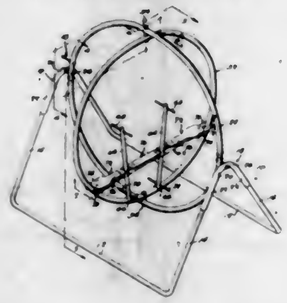
**3,164,381**
**VIBRATION DAMPING SHOCK ABSORBERS**
**Franz Tuczek, Eltorf, Sieg, Germany, assignor to Boge G.m.b.H., Eltorf, Sieg, Germany**
**Filed Nov. 14, 1962, Ser. No. 237,592**
**Claims priority, application Germany, Nov. 22, 1961, B 64,872**
**12 Claims. (Cl. 267—64)**



1. A hydro-pneumatic shock absorber comprising means forming a cylindrical oil-containing working space, a main piston movably mounted in said working space, and a closed equalizing space in the working space containing with gas under pressure above the oil, a separating body in the area of the separating surface between the oil and the gas under pressure, said separating body comprising a solid substantially non-porous member extending substantially across the unobstructed interior of the equalizing space and having between its outer edge and the interior of the wall of the equalizing space an open annular gap of capillary dimension, said separating body being urged in one direction, said working space forming means and said separating body having cooperating means therein located substantially at the upper level of the oil in the working space to limit the movement of the separating body in the direction in which it is urged.

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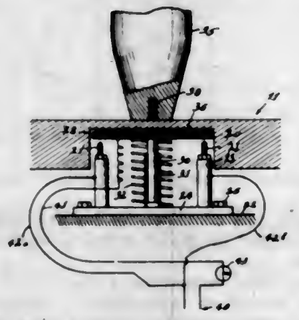
**3,164,382**
**GYRO SWING**
**Charles G. Johnson, Fort Worth, Tex. (P.O. Box 658, Everman, Tex.)**
**Filed Jan. 11, 1963, Ser. No. 250,824**
**3 Claims. (Cl. 272—33)**



1. A gyro swing comprising a stand having upstanding end members, an outer open frame positioned between the end members and pivoted to the end members on horizontally aligned axes disposed above the center of gravity of the outer frame, an inner open frame smaller in size than and positioned within the outer frame, said inner frame being pivoted to the top and bottom of the outer frame on aligned axes perpendicular to the horizontally-aligned axes, and a seat assembly extending across the lower part of the inner frame, said seat assembly comprising a plurality of seats disposed in aligned spaced relation with an upstanding handle rod between adjacent seats.

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**3,164,383**
**MAGNETIC PIN DETECTION SWITCH**
**Donald E. Roop, Columbus, and George R. Riley, Grove City, Ohio, assignors, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Nov. 24, 1961, Ser. No. 154,555**
**4 Claims. (Cl. 273—52)**



2. In a bowling pin detecting device, means providing an upwardly facing surface for supporting a bowling pin in a standing position on a predetermined pinspot corresponding in size to the base of the pin and in a predetermined area surrounding the spot, and a pin detecting switch disposed beneath said spot including relatively movable switch contact means, at least one of which includes magnetic material responsive to a magnetic field from a source above said surface at said spot for causing relative movement of the contact means between switch open and switch closed positions dependent upon the presence and absence of said field, the magnetic material being disposed throughout an area in excess of the pin base area and responsive to the presence of a field at the spot and in said predetermined offspot area surrounding the spot.



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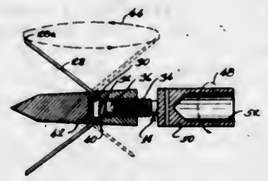
**3,164,384**
**ARCHERY TARGET**
**Marvin L. Stewart, Maplewood, Mo., assignor, by direct and mesne assignments, to M. L. Stewart Enterprises, Inc., Belleville, Ill., a corporation of Illinois**
**Filed Sept. 14, 1961, Ser. No. 138,120**
**2 Claims. (Cl. 273—102.4)**



1. An archery target comprising first and second pads, each of said pads being comprised of substantially the same rubberized composition having a plurality of hair-like strands randomly suspended in situ therein, said hair-like strands consisting of at least one member of the group consisting of cow hair, horse hair and hog hair, the composition being self-sustaining, said second pad being under relatively greater compression than said first pad, said first pad having a removable centrally located core having a composition essentially the same as said first and second pads.

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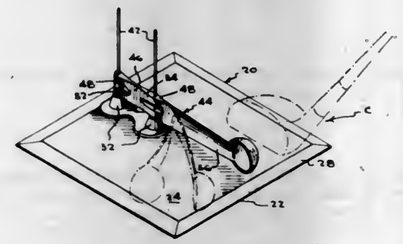
**3,164,385**
**DIRECTIONALLY CONVERTIBLE ARROW TIP**
**Raymond L. Shure, 2420 S. 11th Ave., Broadview, Ill.**
**Filed Mar. 12, 1962, Ser. No. 179,166**
**6 Claims. (Cl. 273—106.5)**



4. An arrow tip comprising a point member having a sharp point at its forward end, said point member being provided with a substantially cylindrically shaped aperture intermediate said forward end and a trailing end portion and angularly disposed to a longitudinal axis in said point member, a barb member having a pivotal portion freely disposed in and slidably engaging the walls of said cylindrical aperture, said barb member also having a vane portion integrally connected to said pivotal portion and extending outwardly from said cylindrical aperture, said vane portion being always disposed in spaced relationship from said longitudinal axis, a locking member disposed upon said trailing end portion of said point member, the pivotal portion of the barb member being disposed in substantially simultaneous engagement relationship between said locking member and a wall of said cylindrical aperture opposite said locking member, and means disposed intermediate said locking member and said trailing end portion for fixing and maintaining said locking member against said barb member pivotal portion to secure said barb member in a fixed position relative to said point member as said vane portion extends outwardly from said point member in any oblique direction.

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**3,164,386**
**PRACTICE GOLF BALL REMOVABLY TETHERED TO A MAT**
**Louis Fink, Reading, Pa. (4925 Collins Ave., Miami Beach, Fla.)**
**Filed Aug. 23, 1963, Ser. No. 304,005**
**5 Claims. (Cl. 273—198)**



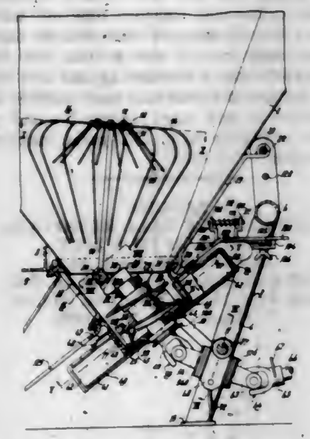
1. A golf swing practice device adapted for use on a floor or like surface, the device comprising:
(*a*) a generally rectangular, flat mat element having an upper side and an underside;
(*b*) a substantially U-shaped pin member, having a bight portion and a pair of arms, the bight portion being positioned adjacent the underside of the mat and the pin arms extending through the mat and projecting vertically from the upper side thereof;
(*c*) elevation means about the pin arms adjacent the mat;
(*d*) a removable, flexible ball support including a support section and a projecting arm having an outer end;
(*e*) the support section having a pair of openings formed therein removably receiving the pin arms therethrough; and
(*f*) a ball member secured to the outer end of the arm.

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**3,164,387**
**IMPLEMENTS FOR SPREADING MATERIAL OVER THE GROUND**
**Cornelis van der Lely, Zug, Switzerland, assignor to Patent Concern N.V., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands Antilles**
**Filed July 18, 1961, Ser. No. 124,825**
**Claims priority, application Netherlands July 27, 1960**
**17 Claims. (Cl. 275—8)**

1. An implement for spreading material over the ground, comprising a movable frame with a container for said material, spreader means disposed below said container for spreading material, said container being provided with a bottom part substantially inclined at an angle between the horizontal and vertical, a shaft extending through said bottom part into the lower end of the container, a screw-like feeding member being associated with said shaft for feeding material through one

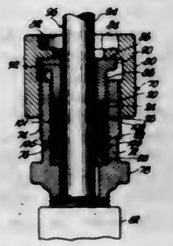
or more outlet ports in the side wall of said container near said bottom port, said shaft extending at least sub-



stantially perpendicular to said bottom and said member being in alignment with said shaft.

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**3,164,388**
**PACKING APPARATUS FOR STUFFING BOXES**
**Warren E. Ellis, Rte. 2, Madison, Kans., assignor of one-fourth to Lloyd J. Ellis, Lamont, Kans.**
**Filed Mar. 27, 1961, Ser. No. 98,674**
**9 Claims. (Cl. 277—18)**

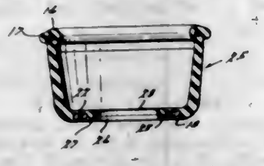


1. A stuffing box packing member comprising a body of resilient stuffing material having a pair of end surfaces, an outer stuffing box engaging surface, and an inner surface defining an opening therethrough extending between said end surfaces for slidably receiving a reciprocable rod; continuous groove means on said inner surface presenting a reservoir for lubricating fluid; continuous groove means on said outer surface presenting a reservoir for lubricating fluid; and passage means in said body placing said reservoirs in communication with each other.

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**3,164,389**
**SEAL FOR BALL JOINT STUD**
**Paul P. Thomas, Detroit, Mich., assignor to American Metal Products Company, Detroit, Mich., a corporation of Michigan**
**Filed Nov. 22, 1960, Ser. No. 71,031**
**2 Claims. (Cl. 277—212)**

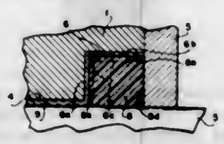
1. A sealed assembly comprising in combination: a generally cylindrical member and a round member surrounding said generally cylindrical member in spaced relationship thereto; an annular member of an organic polymeric material having a generally cylindrical flange portion sealingly engaging said generally cylindrical member, an annular flange extending radially outwardly from said cylindrical flange adjacent one end thereof, said annular flange having an axially offset outer peripheral portion thereby providing an annular recess between said offset flange portion and said cylindrical flange; and a resilient generally cup-shaped member having a portion at one end thereof sealingly engaging said round member



and a portion at the other end thereof embedding said offset flange portion and extending into said recess and against said cylindrical flange portion to assist in biasing said cylindrical flange portion into its sealing engagement with said generally cylindrical member.

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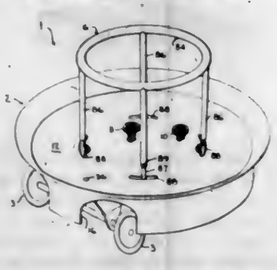
**3,164,390**
**FLUID SEAL**
**Robert N. Miller, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.**
**Filed Nov. 2, 1959, Ser. No. 850,189**
**2 Claims. (Cl. 277—235)**



1. A fluid seal for a movable member extending through an opening of a pressurized fluid chamber comprising first and second porous metal matrices located perimetrically around the member, and a high viscosity sealing material filling at least a portion of said second porous matrix, the fluid chamber opening of a size to provide a radial gap between the confronting opening and member surfaces, said gap permitting passage of the pressurized fluid from the chamber to the first porous matrix, said first porous matrix distributing the pressurized fluid to at least one surface of the second porous matrix for forcing the sealant material therethrough into sealing contact with the confronting portion of the member.

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**3,164,391**
**FLYING PLATFORM VELOCIPEDE**
**Don O'Neal, 2349 S. 8th St., Springfield, Ill.**
**Filed Aug. 4, 1961, Ser. No. 130,727**
**4 Claims. (Cl. 280—1.12)**

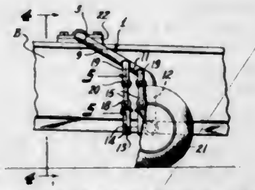


4. A vehicle comprising in combination
a platform having openings therein;
ground engaging means for supporting said platform above the ground for motion relative to the ground, said ground engaging means including at least one guide wheel revolvable about a horizontal axis and guide wheel mounting means for supporting said guide wheel to turn relative to said platform through a horizontal arc thereby to guide the vehicle;
a steering cage assembly movably supported from said platform and including first and second closed members respectively disposed above and below said platform, said first closed member defining a closed cockpit in a central region on said platform and said second closed member being operatively secured to said ground engaging means, columnar members extending through said platform openings and secured at each end to said closed members to maintain said closed members in vertical spaced-apart relationship and bearing means connected between said platform and said columnar members for movably supportion said steering cage assembly; and
a steering linkage means connected between said second closed member of said steering cage assembly and said guide wheel for revolving said guide wheel in respone to, and in the same direction, as said steering cage assembly,
one way reciprocating drive means supported from said platform and operable from within said cockpit and connected to said ground engaging means for transmitting driving force to said ground engaging means during the first stroke of a two stroke reciprocating drive cycle and for returning to a starting position during a following second stroke of the drive cycle,
whereby said vehicle is capable of being propelled by applying a manual driving force to said drive means while being steerable by the application of a manual force to said steering means while the operator is positioned within said cockpit, and whereby said driving force may be increased by utilizing the leverage of said steering means to achieve additional thrust.



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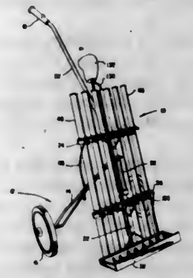
**3,164,392**
**BOAT SUPPORTING DOLLY**
**Frank B. Lane, Annapolis, Md., assignor to Berliner Development Company, a corporation of Maryland**
**Filed Dec. 29, 1961, Ser. No. 163,303**
**2 Claims. (Cl. 280—47.13)**



1. In combination: a boat; a frame member of inverted U-shape straddling said boat centrally along the length thereof; said frame member including a transverse bight portion disposed across the top of said boat and a pair of legs extending downwardly and rearwardly from the opposite end portions of said bight portion adjacent the sides of said boat; ground engaging wheels mounted on the lower end portions of said legs; means for rotatably and releasably securing said bight portion against fore and aft movement across the top of said boat while permitting rotation of said bight portion with respect thereto; and flexible sling means secured at either end to said legs at points spaced below the level of said bight portion and extending between said legs to pass under the bottom of said boat, said sling means being of sufficient length to pass loosely below the bottom of said boat when said frame member is moved into a generally upright position but being sufficiently short to clamp said boat in position against said transverse bight portion when said legs are inclined rearwardly to an angled position wherein said boat may be towed.

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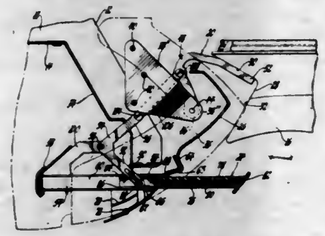
**3,164,393**
**GOLF CLUB CARRYING DEVICE**
**Frank K. Upham II, NAS, Corpus Christi, Tex.**
**Filed July 30, 1962, Ser. No. 213,847**
**9 Claims. (Cl. 280—47.19)**



1. A golf club holding device comprising a first elongated member, second and third elongated members attached to said first member and spaced in substantially parallel relation to one another, said second and third elongated members being positioned at substantially right angles relative to said first member and being attached thereto at positions proximate to their midpoints, a first series of magnet means carried by said second member on a first lateral side thereof and a second series of magnet means carried by said third member on a first lateral side thereof, and golf club head receiving means attached to said first member at a spaced position from said second and third members and substantially parallel thereto for receiving the heads of golf clubs having shafts removably held in position on said holding device by said first and second series of magnet means, said magnet means comprising individual movably mounted magnets for each club shaft on both said second and third members, each said magnet having a pair of golf club engaging ferromagnetic pole pieces attached thereto, and each magnet having substantially parallel surfaces, said pole pieces comprising metal plates engaging said surfaces and having substantially linear and parallel club engaging heads spaced from said magnet.

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**3,164,394**
**EXTENSIBLE STEP FOR STATION WAGON AND LIKE VEHICLES**
**Waino L. Husko, Detroit, and Louis Pappas, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 19, 1962, Ser. No. 238,500**
**8 Claims. (Cl. 280—166)**



8. In a motor vehicle including a body having a door opening in one end thereof,
a closure member hinged on the body for swinging movement about a substantially horizontal axis between a substantially horizontal opened position and a retracted vertically inclined position closing the door opening,
a bumper member mountable transversely of the vehicle in spaced relation to the lower portion of the door

opening and having an opening therethrough spaced laterally outwardly of the door opening,

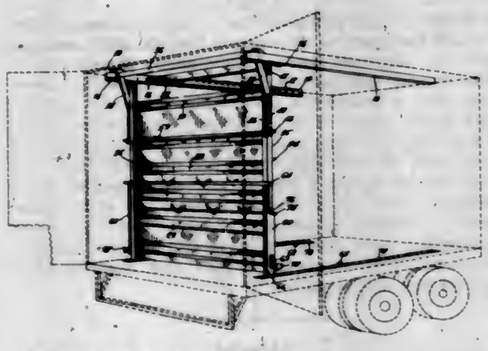
means for mounting the bumper member in such spaced relation to the vehicle body including a bumper supporting guide member aligned with the bumper opening and extending between the body and bumper member,

a step slidably mounted by the bumper supporting guide member for movement between a retracted position housed between the body and bumper member and a horizontally extended position projecting outwardly of the bumper member to facilitate access through the door opening,

and motion translating means connecting the extensible step with the hinged closure member and operable to actuate the step between its retracted and extended positions in accordance with hinged swinging movement of the closure member between its retracted closing position and its extended opened position.

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**3,164,395**
**CARGO GATE**
**James B. Burch, Beech Grove, and Joseph A. White, Greenwood, Ind., assignors to Hugh J. Baker & Company, Indianapolis, Ind., a corporation of Indiana**
**Filed Sept. 17, 1962, Ser. No. 224,015**
**9 Claims. (Cl. 280—179)**



1. In a cargo gate for a vehicle,

(*a*) a pair of parallel tracks mounted within said vehicle along the opposed upper edges thereof and provided with pluralities of longitudinally spaced abutments,

(*b*) a pair of carriers each of which is carried in one of said tracks, for movement therealong,

(*c*) a gate swingably interconnected to said carriers on a transverse axis for movement therewith and movement relative thereto between a retracted horizontal position adjacent the plane of said tracks and a vertical operative position,

(*d*) biasing means urging said gate into retracted position,

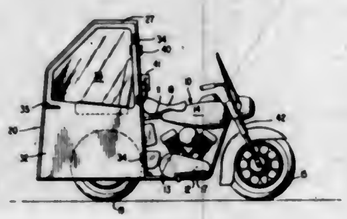
(*e*) a pair of arms swingably connected to said carriers and to the opposed sides of said gate adjacent the upper ends on a slidable transverse pivot axis and having fingers projecting outwardly therefrom,

(*f*) said arms being swingable and slidable relative to said carriers and gate between an operative position in which said fingers selectively engage said abutments for advancing said carriers and gate along said tracks and for locking the carriers and gate in selected fixed position along said tracks and retracted positions in which said fingers are out of contact with said abutments, and

(*g*) means on said gate releasably locking said arms in said operative position.

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**3,164,396**
**TWO-WHEELED MOTOR VEHICLE WITH SINGLE PASSENGER COMPARTMENT**
**Thomas M. Morris, Ridgefield Park, N.J. (420 E. 89th St., New York, N.Y.)**
**Filed May 3, 1963, Ser. No. 277,900**
**1 Claim. (Cl. 280—202)**



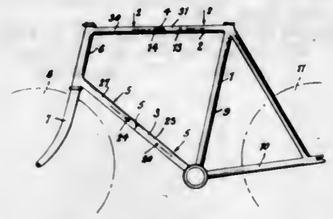
A two-wheeled compact taxicab vehicle of the motorcycle type adapted to seat a driver and a single passenger, said vehicle comprising a generally conventional motorcycle chassis including handle bar steering means for the front wheel of said chassis and an open driver's seat of the saddle type rearwardly of the handle bar means and intermediate the front and rear wheels of the chassis, an upright box-like enclosed single passenger cab rigidly secured to the frame of said chassis adjacent the rear wheel thereof and including a forward substantially vertical wall immediately rearwardly of the driver's seat and extending thereabove for a substantial distance and being of a width on opposite sides of the driver's seat to substantially equal the width of said handle bar means, said cab having a roof portion of sufficient height to clear the head of a passenger seated in said cab and also including a rear generally vertical wall spaced rearwardly of the rear wheel of said chassis and extending from said roof to a point below the axle of the rear wheel, said cab also having a horizontal floor portion at the bottom of said rear wall and between the rear wall and said rear wheel, said cab including a pair of side walls, at least one of which comprises a horizontally swinging side opening door extending for substantially the full height of the cab and the full length thereof longitudinally of the chassis, and a single passenger seat within said cab near the vertical center thereof and mounted upon the chassis frame immediately above said rear wheel and being rearwardly facing and having a substantially horizontal seat portion and a substantially vertical back rest portion, said back rest portion being close to the forward wall of the cab and the rear edge of the seat portion terminating near the rear side of said rear wheel, whereby the passenger may place his feet on said floor portion between the rear wheel and rear cab wall, the side walls of the cab being spaced apart a sufficient distance to confortably accommodate the shoulders of said passenger, there being panel elements on said cab beneath the passenger seat forming a well within which the rear wheel of the chassis operates.

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**3,164,397**
**COME APART BICYCLE**
**George McQ. Kilmer, % Veterans' Administration Hospital, Fort Howard, Md.**
**Filed Sept. 11, 1963, Ser. No. 308,166**
**3 Claims. (Cl. 280—287)**

1. A bicycle having a frame provided with a top tube and an angular bottom tube, said tubes being each transversely severed to thereby divide the frame into a separate front part and a rear part, an insert fitted in each tube and bridging the joint between the front and rear parts thereof, at least one of the inserts being engaged by clamping means having legs passed completely through

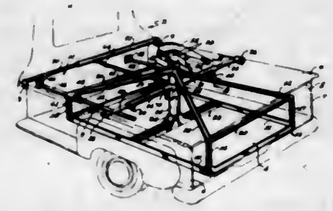




parts of the insert and through parts of the tube on opposite sides of the division of the tube in which said one insert is disposed.

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**3,164,398**
**SEMI-TRAILER COUPLING UNIT**
**Max J. Lugash, Los Angeles, Calif., assignor to Maxon Industries, Inc., Los Angeles, Calif., a corporation of California**
**Filed Aug. 20, 1962, Ser. No. 217,854**
**10 Claims. (Cl. 280—423)**

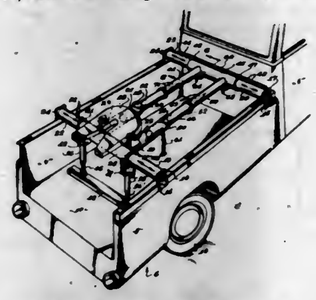


1. A rapidly attachable and detachable unit for a truck for coupling said truck to a trailer comprising a box-type rectangular frame having upper and lower corners and adapted to be positioned on the bed of said truck, a standard on said frame, a trailer connection element at the upper end of said standard, brace members extending from said standard to said upper corners of said frame, a longitudinally adjustable transverse member connected to said standard and adapted to be attached to the sides of said truck, means for adjusting the height of said transverse member on said standard, and adjustable means for attaching said frame to said truck in a fixed lengthwise position thereon.

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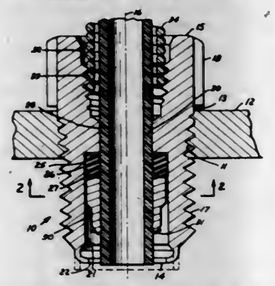
**3,164,399**
**HINGED SEMI-TRAILER COUPLING UNIT**
**Max J. Lugash, Los Angeles, Calif., assignor to Maxon Industries, Inc., Vernon, Calif., a corporation of California**
**Filed Nov. 19, 1962, Ser. No. 238,522**
**11 Claims. (Cl. 280—423)**

1. A coupling unit for connecting a trailer to a truck comprising a pair of parallel longitudinally adjustable members transversely positioned with respect to the bed of said truck and fixedly hinged to one side of the frame of said truck at one end of each of said members and having the other ends of each of said members detachably locked to the other side of the frame of said truck, a pair of parallel longitudinally adjustable members interconnecting said first-mentioned members, all of said members being horizontal when in a trailer-connecting position and a trailer-connecting element mounted on said second-mentioned pair of parallel longitudinally adjustable members, said unit being rotatable to a vertical position when said first mentioned members are detached from said other side of said frame.



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**3,164,400**
**CONNECTOR FOR FLEXIBLE TUBE TO PORTED PLATE**
**Paul J. Weaver, Pasadena, Calif., assignor to Stanley G. Harwood, South Pasadena, Calif.**
**Filed Feb. 7, 1961, Ser. No. 87,616**
**3 Claims. (Cl. 285—114)**



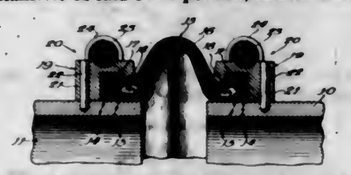
1. A tube connector for connecting a flexible tube to a port comprising: a body having an axis and being adapted to fit in the port, said body having an axial passage therethrough, and a free and unimpeded counterbore at a first end, said tube passing through the passage and projecting into the counter-bore; a sealing ring in the counter-bore extending and sealing between the tube and the wall of the counter-bore; a ferrule in said counter-bore which encircles said tube, said ferrule lying closer to the first end than the sealing ring; a lip on said ferrule which lip is crimped inwardly permanently to indent into the wall of the tube; an external shoulder on the ferrule, which shoulder is shorter than the length of the counter-bore and which has outer radial dimensions that are no greater than respective radial dimensions of the counter-bore, whereby the ferrule can shift axially in the counter-bore; and a lip on said body adjacent to the said first end, which latter lip is crimped inwardly into the path of the ferrule shoulder to retain the ferrule in the counter-bore, the ferrule retaining the tube in the body, those portions of the tube axially aligned with the connector being radially deformed only where they are indented by the ferrule.

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**3,164,401**
**EXPANSION JOINT**
**Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois**
**Filed Feb. 20, 1961, Ser. No. 90,562**
**8 Claims. (Cl. 285—229)**

1. A coupling for use in connecting axially spaced, juxtaposed pipes, comprising: an annular resilient sleeve

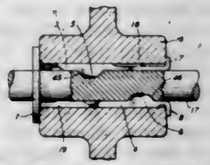
having axially opposite radially enlarged end portions adapted to extend about the opposed ends of axially spaced pipes, said sleeve having an arched portion projecting radially outwardly between said end portions and defining a radially outwardly opening annular recess adjacent each of said end portions; a pair of annular retainers for securing the sleeve end portions to the pipe ends, each of said retainers comprising at least three end-to-end aligned arcuate segments each having an axially outer portion adapted to extend circumjacent the pipe end axially outwardly of one sleeve end portion, said outer portion having a radially inner cylindrical surface, an axially extending middle portion having an inner diameter greater than the inner diameter of said outer portion, and an inner por-



tion, said inner portion being spaced radially outwardly of the pipe end a distance less than the spacing of the middle portion radially outwardly of the pipe end; means for drawing the segments into a tight annular configuration about the pipe end with the inner cylindrical surface of said outer portion of the segments engaging the pipe end, the enlarged end portion of the sleeve being disposed between said mid-portion of the segments and the pipe end, the portion of the sleeve defining said annular recess being disposed between said inner portion of the segments and the pipe end and being tightly compressed therebetween, said inner portion of the segments abutting the adjacent enlarged end portion and arched portion of the sleeve; and means for retaining the segments against movement axially of the pipe end.

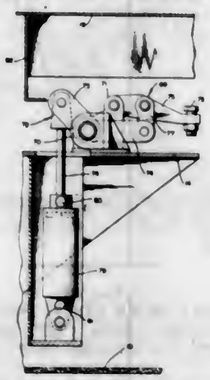
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**3,164,402**
**SHAFT KEY**
**Garland R. Jobe, Greensboro, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Dec. 11, 1962, Ser. No. 243,905**
**2 Claims. (Cl. 287—52.05)**



2. A unitary shaft key, thrust bearing and hub retainer comprising an annular thrust bearing member having a central opening to receive a shaft, a plurality of rods, each having one end integral with said bearing and extending substantially perpendicular to the plane defined by a lateral surface of said bearing, the other end of each rod having a reduced cross section extending over a substantial length thereof to facilitate bending it against a face of said hub, a surface of each rod being flush with the inner periphery of said central opening and parallel to the longitudinal axis thereof, and a protuberance extending radially inwardly from said flush surface of each rod and intermediate the ends of each rod, each protuberance being at a distance from said bearing different from that distance for the protuberances on all the other of said plurality of rods, a portion of each rod between said hearing and its protuberance being of reduced cross section to facilitate bending said rod.

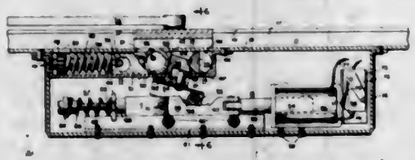
**3,164,403**
**HATCH COVERS**
**Jack Jerome, East Williston, and Robert E. Wright, Jr., Garden City, N.Y., assignors to Marine Steel Corporation, New York, N.Y.**
**Continuation of application Ser. No. 813,522, May 15, 1959. This application Feb. 20, 1963, Ser. No. 259,921**
**6 Claims. (Cl. 292—256.5)**



1. Apparatus for locking cover sections to a hatch comprising a support adjacent an edge of the hatch, a crank having a first arm and a second arm and being pivotally mounted to said support, a lever having one end pivotally mounted to said support, a link pivotally connected to said second arm and pivotally connected to said lever and actuating means connected to the first arm of said crank whereby said crank is pivotally movable through an angle of substantially 90 degrees while said lever is pivotally movable through an angle of substantially 180 degrees.

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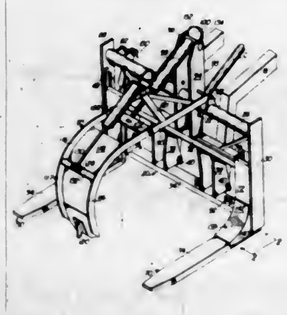
**3,164,404**
**AUTOMATIC HOLD-OPEN RELEASE**
**Robert P. Arnold, Yorkville, Ill., assignor to Rixson, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed Mar. 8, 1963, Ser. No. 263,764**
**10 Claims. (Cl. 292—273)**



1. An automatically releasable door hold-open mechanism comprising, a slide element adapted for reciprocable movement relative to a door and along a predetermined path, a link arm pivoted at one end to the slide element and having its other end adapted for pivotal connection at a fixed location for effecting the reciprocation of the slide element along said path into and out of a retracted door hold-open position by movement of the door, latch means shiftable into and out of the path of the slide element for normally retaining the slide element in its retracted position, electric motor means for normally holding the latch means in the path of the slide element so long as the motor means is energized, said motor means being adapted to release said latch means upon being de-energized, and resiliently yieldable means normally co-acting with said motor means to support said latch means in the path of said slide element and adapted to yield for retraction of said latch means upon the application of a predetermined force against the latch means by said slide element being urged along said path by said link arm.



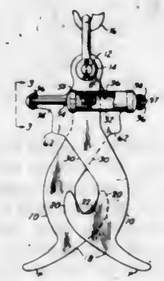
**3,164,405**
**MULTI-PURPOSE CARRIAGE FOR MOBILE LOADERS**
**Le Grand H. Lull, 5501 Woodlawn Blvd., Minneapolis, Minn.**
**Filed July 9, 1962, Ser. No. 208,410**
**11 Claims. (Cl. 294—67)**



1. In a load carrier for mobile loaders and the like, a transverse frame carried by the forward end of a boom, said frame including vertical side supports at each end thereof, a vertical structural member adjacent one of said side supports, means defining a way on the inner vertical surfaces between said vertical structural member and its adjacent side support, a lift fork slidably mounted in said way means, fluid pressure means connected to said frame operable to raise and lower said lift fork within said way means, and a lift fork fixedly attached to said frame in spaced horizontal relation to said slidable lift fork.

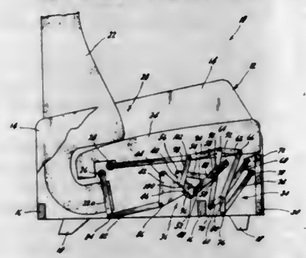
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**3,164,406**
**AUTOMATIC HOLDING DEVICE**
**Leonard D. Barry, 19300 Pennington Drive, Detroit 21, Mich.**
**Filed Sept. 7, 1960, Ser. No. 54,541**
**10 Claims. (Cl. 294—88)**



1. A device for holding an object comprising in combination, pieces for supporting the object, said pieces being pivotally secured together to support the object from opposite sides, a first cam means on the bottom of each piece for opening the pieces when said pieces are let down on the object, second cam means located above said first cam means for further opening the pieces under the weight of the device, said pieces being arranged to close by gravity, and time delay means for delaying the closing of the pieces until they can be lifted off the object.

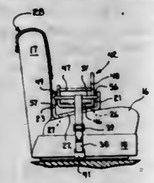
**3,164,407**
**RECLINING CHAIR AND CONTROL ARRANGEMENT**
**Fridtjof F. Schliephacke, Berlin-Schmargendorf, Germany, assignor to Anton Lorenz, Boynton Beach, Fla.**
**Filed June 28, 1963, Ser. No. 292,211**
**10 Claims. (Cl. 297—85)**



1. An improved leg-rest and seat control arrangement for a reclining chair of the type including a support, body-supporting means including a back-rest and seat movably mounted on said support for reclining and inclining movement respectively, a leg-rest, means operatively connected to and mounting said leg-rest for movement into various elevated leg-supporting positions, said arrangement comprising leg-rest actuating means operatively coupling said leg-rest with said body-supporting means, said actuating means including a suspended control member, first and second suspending means mounted on said support and carrying said control member therebetween, said suspending means cooperating with said control member to provide a four-bar suspending linkage independent of said body-supporting means for guiding said control member for displacement relative to said support, means operatively connecting said control member with said body-supporting means for displacement of said control member in response to movement of said body-supporting means, first coupling means operatively connecting a first control point on said control member to a first controlled point on said leg-rest, said suspending means being connected at such spaced points on the control member and said first control point being so spaced from said spaced points as to cause said first controlled point on said leg-rest to initially move rapidly in response to a first phase of the movement of said body-supporting means, and then to be retarded in response to a second phase of movement of said body-supporting means, and second coupling means operatively connecting a second control point on said control member to a second controlled point on said body-supporting means, and serving as a control means such that said body-supporting means is inclined at a relatively fast rate of movement during said first motion phase and at a relatively slower rate of movement during said second motion phase.

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**3,164,408**
**CAR SEAT CADDY**
**Frederick H. Bassett, R.R. #1, Carmel, Ind.**
**Filed July 25, 1963, Ser. No. 297,615**
**5 Claims. (Cl. 297—188)**



1. The combination comprising:
a motor vehicle seat assembly having a seat mounted on a seat base, and a seat back;

a static unit having members disposed on and supported by said seat and having a front carriage support device and a rear carriage support device and having a right hand end member, the overall length of said static unit measured from the right-hand end thereof to the left-hand end thereof being less than three-quarters of the overall length of said seat measured between the right-hand end and left-hand end thereof;

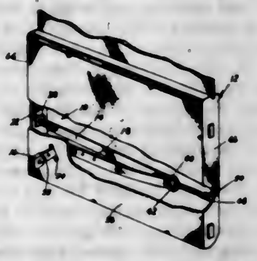
adjustable fastener means securing said end member to a portion of said seat assembly at a point at an elevation below said static unit, to prevent lateral tipping of said static unit;

hook means extending over the top of the back of said seat assembly and secured to said static unit to prevent forward tipping of said static unit;

and a carriage unit having an overall length substantially equal to the overall length of said static unit and mounted on said carriage support means and movable thereon in translation with respect to said static unit to a cantilever position where most of the weight of said carriage unit is disposed to the left of the left-hand end of said static unit.

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**3,164,409**
**SEAT BELT ASSEMBLY**
**Richard K. Rumble, 1640 Laurel S.E., Grand Rapids, Mich.**
**Filed Apr. 20, 1962, Ser. No. 189,128**
**4 Claims. (Cl. 297—388)**

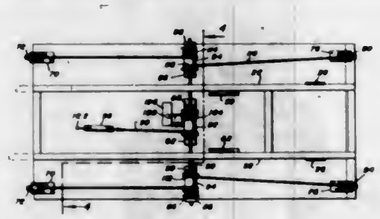


1. In a vehicle having opposite doors with rigid, structural elements and inner decorative panels, and a seat, a seat belt assembly comprising, a pair of belt portions having interconnecting means on their inner ends; a pair of openings in said respective inner panels in said opposite doors adjacent the base of said seat; said belt portions extending through said openings into the base of said doors; the outer ends of said belt portions being rigidly affixed to said rigid structural elements of said doors behind said panels; and retraction means inside said doors operably engaged with the central sections of said belt portions and adapted to retract all of said belt portions except said interconnecting means behind said panels, in a manner such that said portions can be extended out said openings and interconnected, with the stress on said belts being applied to said rigidly affixed outer ends.

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**3,164,410**
**DUMP TRUCK SCRAPER PLATE**
**Benjamin F. Robinson and Bennie F. Robinson, Jr., both of 5240 Forest Road, Columbus, Ga.**
**Filed July 17, 1963, Ser. No. 295,756**
**9 Claims. (Cl. 298—1)**

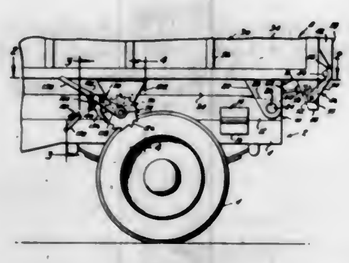
1. An automatic cleaning device for a dump box, said box being pivotally secured to a frame, comprising: cleaner plate means receivable within said box, and slidable longitudinally thereof; operating cable means secured to said cleaner plate means; drum means attachable to the bottom of said box, and connected to said operating cable means; said drum means comprising a transversely extending shaft supported under said box; a drive drum carried by and secured to said shaft; and at least one lateral drum carried by and secured to said shaft, and spaced from said drive drum; and means connected with said drum means for rotating the same in opposite directions in response to pivotal movement of said box toward and away from said frame, respectively, said means for rotating said drum means including an advancing cable, one



end of said advancing cable being wrapped about and secured to said drive drum, and the other end thereof being secured to said frame; resilient means secured to said box; and a return cable, one end of said return cable being connected to said resilient means, and the other end thereof being wrapped about said drive drum in a direction opposite to that in which said advancing cable is wrapped, and being secured thereto.

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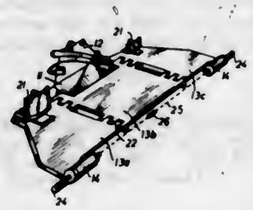
**3,164,411**
**TAILGATE UNLATCHING DEVICE FOR DUMP TRUCK**
**Benjamin F. Robinson, 5240 Forest Road, Columbus, Ga.**
**Filed July 26, 1963, Ser. No. 297,822**
**11 Claims. (Cl. 298—23)**



6. In combination: a frame; a dump box pivotally connected adjacent its lower, rear edge to said frame; a tailgate pivotally mounted adjacent the opposite ends of its upper edge across the rear of said dump box; latch means on said dump box arranged to hold said tailgate in a closed position; an actuator arm pivotally secured to said box, and including a first lever arm portion and a second lever arm portion disposed at an angle to said first lever arm portion; means connecting said actuator arm to said latch; trip means on said frame, and engageable with said first lever arm portion upon elevation of said dump box above said frame, to move said actuator arm and said connecting means to effect opening of said latch, and engageable with said second lever arm portion upon lowering of said dump box from an elevated position, to move said actuator arm and said connecting means to effect closing of said latch; means connected to said trip means and operable to render it ineffective; and manually operable means connected to said actuator arm for effecting latching and unlatching movements thereof when said trip means has been rendered ineffective.



**3,164,412**
**PLANER HAVING PIVOTALLY MOUNTED SIDE PLATES**
**Alois Hanschopp, Werne an der Lippe, and Wulff Rösler, Aklunen, Germany, assignors to Gewerkschaft Eisenhütte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a German corporation**
**Filed Feb. 14, 1962, Ser. No. 173,260**
**12 Claims. (Cl. 299—34)**



1. Planer arrangement adapted to be conducted in even and uneven horizontal direction along a mine face for extraction of mineral therefrom by engagement of the planer therewith, which comprises a central planer plate having a longitudinal axis and having a planer situated substantially centered thereon for extractive engagement with a mine face, a first side plate and a second side plate attached pivotally to opposite sides respectively of said planer plate about a corresponding substantially horizontal axis of pivot substantially transverse to said longitudinal axis, and means defining guide bearings on said first and second side plates, said plates and guide bearing means together defining a guiding channel for traveling engagement with a conducting rail means disposed thereover for travel along the mine face, in even and uneven horizontal direction depending on the nature of the mine seam while under the tractive force of traction means attached to the side plates at the corresponding portions thereof remote from the mine face, with the planer in extractive engagement with the mine face without deviation of the planer from the normal position of travel even under the resistance of the mine face to said planer.

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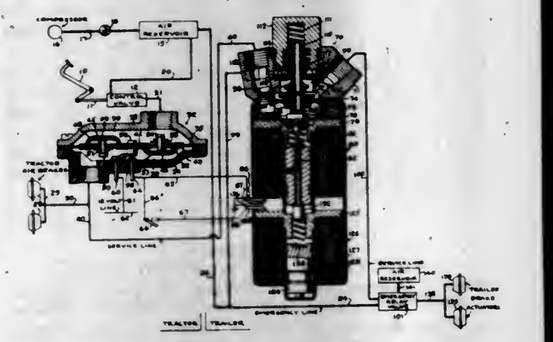
**3,164,413**
**WHEEL BALANCER**
**Virgil H. Salathiel, Oklahoma City, Okla., assignor to Todd Engineering Co., Inc., Oklahoma City, Okla., a corporation of Oklahoma**
**Filed Aug. 12, 1963, Ser. No. 301,376**
**3 Claims. (Cl. 301—5)**



1. In a dynamic wheel balancing attachment the combination with a vehicle wheel having a rim and a tire mounted thereon, said rim having a peripheral flange turned arcuately outward and forming an annular recess on the outer surface of said rim, of: an endless ring formed of cellulose acetate butyrate and having a circular cross section throughout its entire periphery with the radius of the cross section substantially smaller than the cross section radius of the out-turned flange forming the annular recess, the overall diameter of said ring being slightly greater than the inside diameter of the annular recess formed by said flange, whereby the axis of the toric diameter of said ring is offset, inwardly of the wheel, with respect to the axis of the diameter formed by the point of radius of the annular recess, the cavity in the interior of the ring being of uniform size and of circular formation throughout the entire length of the ring; clip means interposed between and gripping said ring and said out-turned flange for holding said ring within the annular recess formed by said out-turned flange; a quantity of steel balls of relatively large mass disposed and freely movable within the annulus of said ring, the diameter of said steel balls being greater than one-half the cross section diameter of the annulus of said ring, said balls, when positioned in point contact with each other, extending through and occupying substantially one-third of the circumferential distance of the annulus of said ring; and a fluid of relatively low viscosity, in combination with the balls, filling substantially three-quarters of the annulus of said ring, the viscosity of said fluid and its incomplete filling of the annulus of said ring forming an evenly distributed air space along the periphery of said ring and permitting movement of said balls and an even distribution of the fluid around the balls along the inner periphery of the ring providing a dampening effect against quick movement of said balls, whereby centrifugal force disperses said low viscosity fluid and said steel balls around said ring in wheel and tire balancing position, said steel balls having a higher density than the fluid.

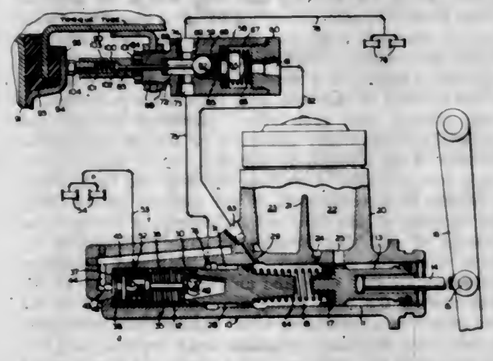
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**3,164,414**
**ELECTRICALLY CONTROLLED TRAILER BRAKE SYSTEM**
**William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware**
**Filed Aug. 9, 1961, Ser. No. 130,344**
**3 Claims. (Cl. 303—6)**



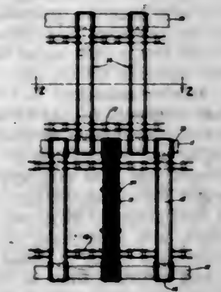
1. In a fluid pressure system, a first fluid pressure operable device, a second fluid pressure operable device, a valve mechanism operable for effecting the admission of pressure to said second pressure operable device, electromagnetic means for operating said valve mechanism, a controlled fluid inlet line, a fluid outlet line connected to said first pressure operable device, and a control device having an inlet chamber connected to said inlet line and an outlet chamber connected to said outlet line, a switch, a pressure responsive diaphragm in said control device, said switch being in said outlet chamber and having mechanical engagement with said diaphragm to be closed thereby to energize said electro-magnetic device when pressure in said inlet chamber increases, said diaphragm having an aperture, and a normally closed valve controlling said aperture and biased to closed position against said diaphragm with sufficient force so that said pressure responsive element will close said switch prior to the opening of said valve for the flow of fluid from said inlet chamber to said outlet chamber.

3,164,415
## VEHICLE BRAKE MECHANISM
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Michigan
Filed Jan. 17, 1962, Ser. No. 166,815
14 Claims. (Cl. 303—6)



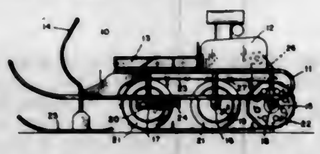
1. In a brake system for use on a vehicle having two sprung parts inertia-responsive to move linearly relatively oppositely longitudinally of the vehicle and arranged so that said relative movement accurately represents the retarding force of the brakes of the vehicle, a fluid pressure generating device, separate fluid pressure lines connected to said device and extending respectively to different sets of wheel cylinders of the vehicle, and a valve device having a housing fixed to the one of said parts of the vehicle which is movable relatively rearwardly under vehicle decelerating conditions, a passage through said valve housing connected in one of said fluid lines and including a valve seat, a normally open valve engageable with said seat and biased toward engagement therewith, and means controlled by the other of said parts of the vehicle for normally maintaining said valve off its seat whereby, when said one part of the vehicle moves relatively rearwardly under vehicle decelerating conditions, said seat will move relatively rearwardly into engagement with said valve to close it and thus close communication through said one line to limit the supply of pressure fluid to the associated set of wheel cylinders.

3,164,416
## WIDE TRACK FOR POWERED SLEDS
Allan E. Hetteen, David E. Johnson, Vernon L. Johnson, Albin R. Erickson, and Orien D. Johnson, Roseau, Minn., assignors to Polaris Industries, Inc., Roseau, Minn., a corporation of Minnesota
Filed Feb. 14, 1963, Ser. No. 258,495
10 Claims. (Cl. 305—16)



1. An endless track type drive, a first track unit comprising a first set of spaced apart elongated flexible endless driving members, cleats spaced along and secured to said spaced apart endless driving members, the spacing between cleats being wider than the cleats, a second identical track unit including a second set of spaced apart elongated flexible endless driving members arranged beside said first track unit and with the cleats on one of said track units positioned opposite the spaces between cleats on the other track unit, and means associated with both sets of spaced apart elongated endless driving members to maintain the cleats of one set misaligned with reference to the cleats of the other set, and supporting slideways engaging and supporting each of said track units.

3,164,417
## DRIVE MEANS FOR ENDLESS-BELT UNITS
John M. Howes, Star Rte. #4, Box 312, Hibbing, Minn.
Filed Mar. 6, 1963, Ser. No. 263,295
5 Claims. (Cl. 305—32)



1. A drive for endless-belt units, comprising: a wheel rotatably mounted on a framework to support same; a polygon-shaped drive wheel having flat peripheral faces, rotatably mounted on said framework, aligned with and in spaced relation from said support wheel; a flexible endless belting encircling said wheels, for rotation of the support wheel by the drive wheel through said belting; bars secured across the inner face of the endless belting, in spaced relationship therealong and for contact with the support wheel in the movement of the belting therearound; and said bars positioned for variable contact on the flat faces of the drive wheel and to space the belting therefrom in the movement of the belting around the drive wheel.

3,164,418
## PLASTIC ROLLER
Donald L. Biesecker, Elgin, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed Aug. 19, 1957, Ser. No. 678,928
1 Claim. (Cl. 308—3.8)



A device made of resinous plastic material and adapted to be mounted in an aperture formed in a complementary panel structure and comprising a grommet portion including a head of larger diameter than the aforementioned aperture, at least a pair of radially resilient jaws extending axially from said head, and an axial bore through said head and jaws, an outer surface of each of said jaws presenting a tapered cam surface at each of their terminal ends for leading said jaws into the complementary aperture, said cam surfaces terminating in reversely pitched retaining surfaces situated between said head and said cam surfaces for retaining said grommet portion in said panel, and a locking member integrally joined initially to said grommet portion by a rupturable shear section, said locking member including a substantially rigid solid drive pin with a head on one end and with an enlargement thereon in the vicinity of said rupturable shear section axially aligned with said bore, the dimension of said enlargement approximating the dimension of said bore, said drive pin being adapted for telescopic movement into said bore upon rupture of said shear section when said retaining surfaces are in engagement with the edges of the aperture in the complementary workpiece whereby to assure secure mounting of said grommet portion on said panel structure, said enlargement on said drive pin spaced from said head portion a distance not less than the over-all axial height of the grommet member so that the enlargement extends axially beyond the terminal ends of the jaws of said grommet portion to prevent withdrawal of said drive pin relative to the grommet member, said drive pin being of smaller diameter than said bore and being rotatable therein and said head comprising a roller integral with and disposed coaxially relative to said drive pin.

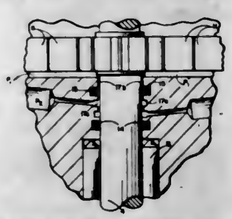


3,164,419
## DRAWER SLIDE MECHANISM
Carlyle Michaelson, Sunland, Calif., assignor to Holga Metal Production Company, Van Nuys, Calif., a corporation of California
Filed Jan. 9, 1961, Ser. No. 81,533
8 Claims. (Cl. 308—3.8)



1. The combination of a structure having a drawer receiving compartment open at one end; a drawer horizontally disposed in said compartment and movable in the opening of said compartment; and a slide mechanism at each side of said drawer, each of said slide mechanisms comprising a drawer race formed of sheet material in the general cross sectional shape of a C, said race having a closed vertical back wall secured to the adjacent side of the drawer, upper and lower horizontal walls, a depending flange at the outer edge of the upper wall and an upstanding flange from the outer edge of the lower wall, the free edges of said flanges being spaced apart and having their adjacent edge portions turned inwardly, the flanges, respective upper and lower horizontal walls and adjacent portions of the back wall forming upper and lower longitudinally extending channels; an upper and a lower ball bearing in respective upper and lower channels, the diameters of said balls being somewhat greater than the width of the respective flanges and the inturned free edge portions of said channels retaining said balls in said channels, the drawer races extending rearwardly of said drawers; means limiting movement of the lower ball in its channel comprising an inturned rear free corner of the upstanding flange of the lower channel to limit rearward movement of the lower ball in said channel and an ear upturned into the lower channel in longitudinally forwardly spaced relation to the rear end thereof, said ear being so spaced from the inturned corner of the lower channel as to permit a predetermined free rolling movement of the lower ball in its channel to thereby normally limit the movement of the drawer from its closed position to a predetermined open position; means limiting movement of the upper ball in its channel comprising a pair of ears downturned into the upper channel and having substantially the same effective spacing relative to each other as the spacing of the inturned free corner of the lower flange and the upturned ear in the lower channel, said downturned ears being spaced forwardly of the rear end of the drawer race; a cabinet race for each drawer race, each cabinet race being generally T-shaped in cross section and having a horizontal stem portion extending into the drawer race through the space between the free edges of the flanges thereof and engageable by the upper and lower balls for rolling movement relative to the respective top and bottom sides of said stem; and oppositely extending flanges at the outer edge of the stem, said flanges being normal to the plane of the stem and being secured to said structure, the positioning of the stop means for limiting rolling movement of the upper ball being so related to the stop means for limiting rolling movement of the lower ball that said upper and lower balls are always in staggered relationship relataive to each other throughout the various operative movements of the drawer.

3,164,420
## BEARING AND SEAL
Frank B. Cramer, Jr., Reseda, Calif., assignor to North American Aviation, Inc.
Original application Dec. 4, 1959, Ser. No. 857,287. Divided and this application Aug. 27, 1962, Ser. No. 227,623
2 Claims. (Cl. 308—36.3)



1. A sealing arrangement adapted to prevent the combustible mixed constituents of a propellant mixing mill from contacting friction creating surfaces comprising: a housing; a rotatable shaft mounted in said housing and rotatably mounted on bearing means adjacent said housing; first seal means encircling said shaft adjacent said bearing means and fixed to said housing so as to provide a near positive seal between said housing and said shaft; a second seal lying in a clearance formed in said housing, said second seal loosely encircling said shaft adjacent said first seal; an inlet port formed in said housing and connected to said clearance; an outlet port formed in said housing and connected to said clearance; means adapted to supply a pressurized flushing agent identical to one of the mixed constituents to said clearance and said second seal, said means also adapted to recirculate the agent to said inlet port.

3,164,421
## JOURNAL-TYPE STAFF BEARINGS FOR MOVEMENTS AND THE LIKE
Walter Kohlhagen, Elgin, Ill., assignor to Amphenol-Borg Electronics Corporation, Delavan, Wis., a corporation of Delaware
Filed July 28, 1961, Ser. No. 127,536
5 Claims. (Cl. 308—121)

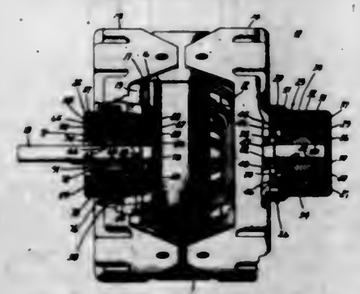


5. In a movement, the combination with a support plate having an aperture, and a rotary staff, of a self-lubricating end bearing of combined journal and thrust type comprising a metal shell having a central axis and open at one end and closed at the other end, said metal shell having a wall of substantially uniform thickness, said wall having a cylindrical wall length, said wall length being immediately adjacent to said open shell end, a peripherally enlarged lubricant reservoir immediately adjacent said cylindrical wall length and extending to said closed end of said shell, said reservoir having a substantially greater

cross sectional area than said cylindrical wall length, said cylindrical wall length being mounted in said plate aperture with a pressfit, and said reservoir being on one side of and abutting said plate, said staff extending in said shell throughout the axial extent of the same to and in bearing contact with said closed end, said staff being received with a clearance fit within said cylindrical wall length so that lubricant is supplied thereto by capillary action from said reservoir and said reservoir is thereby sealed from the outside by said clearance fit, said reservoir being enlarged by axial upsetting of its wall into substantially part-circular section axially of said shell.

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**3,164,422**
**BEARING LUBRICATING AND SUPPORT ASSEMBLIES FOR DYNAMOELECTRIC MACHINES**
**Paul B. Shaffer and Charles W. Otto, De Kalb, Ill., assignors to General Electric Company, a corporation of New York**
**Filed Sept. 23, 1963, Ser. No. 310,536**
**6 Claims. (Cl. 308—132)**

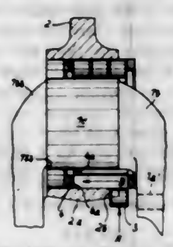


1. A bearing support and lubricating assembly for use in an electric motor comprising: an end shield member formed with a central hub portion having apertures formed therein, said central hub portion having a bearing socket therein; means including a cover member defining a lubricant chamber adjacent said hub portion; a mass of lubricant absorbent material disposed within said first lubricant chamber; a bearing member formed with a seating portion engaged in the bearing socket and with a central bore for receiving the shaft journal, said bearing member having a first and second pair of axially spaced slots at the ends of the bearing member; a pair of wick elements, each formed with a pair of radial fingers and a contact portion, one pair of radial fingers being disposed in the first pair of slots for contact with the shaft journal and the other pair of radial fingers being disposed in the second pair of slots for contact with the shaft journal, and the contact portion of said wick elements contacting said lubricant absorbent material to provide for the passage of lubricant thereto.

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**3,164,423**
**ARRANGEMENT OF A CONNECTING ROD ON A CRANKSHAFT**
**Ernst Hatz, Jr., and Karl Heinz Neser, Ruhstorf, near Passau, and Wilfried Rein, Egllsarting, near Munich, Germany, assignors to Motorenfabrik Hatz G.m.b.H., Passau, Germany, a corporation of Germany**
**Filed May 1, 1963, Ser. No. 277,364**
**Claims priority, application Germany, May 21, 1962, M 52,934**
**4 Claims. (Cl. 308—207)**

1. The combination comprising a unitary crankshaft having at least one radially offset crankpin, a unitary connecting rod journalled at its big end to said crankpin, said big end having an internal cylindrical bearing surface and having roller bodies fitted in a unitary cage movably disposed in said internal cylindrical bearing surface, said unitary cage comprising a unitary tube having a collar at either end and slots disposed between said collars to retain said roller bodies, said unitary cage further having an axial length substantially corresponding to the axial length of said big end, each crankpin being axially longer



than the axial length of cylindrical bearing surface by a distance approximately equal to the axial length of one of said roller bodies, and at least one fillet having a thickness substantially equal to the length of one of said roller bodies and being detachably connected to said crankshaft bearing against and holding in position the cage and the big end of the connecting rod on said crankpin of the crankshaft.

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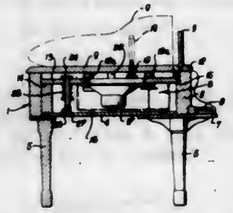
**3,164,424**
**RAILWAY JOURNAL BOX LUBRICANT DISTRIBUTOR**
**James J. Hennessy, Jr., Chambersburg, Pa., assignor to Hennessy Lubricator Co., Inc., Chambersburg, Pa., a corporation of Delaware**
**Filed May 21, 1962, Ser. No. 196,402**
**2 Claims. (Cl. 308—243)**



1. A railway journal lubricator pad comprising an elongated strip of woven fabric with spaced zones of loosely tufted yarn loops projecting from one face of the fabric, the strip including sections of unequal length between said zones, individual sections being doubled along lines extending transversely of the strip intermediate the ends of the section and the doubled sections being disposed upright, means securing the ends of adjacent doubled sections together at points spaced from their folds to form upright passageways between walls defining adjacent compartments of different heights across the pad, there being shorter compartments at opposite sides of the pad and a plurality of taller compartments and adjacent passageways intermediate said shorter compartments, all of said compartments being provided with individual cores of elastic material rectangular in vertical cross section and varying in height to fit within respective compartments and distend the same and cooperating with said means to maintain compartment walls between the cores contiguous for their full height, said strip having a section extending continuously horizontally across the bottom of all of said compartments and secured to said folds and forming the bottom wall of the pad, the tufted zones of the strip facing upwardly, downwardly and outwardly of the pad.



**3,164,425**
**CABINET FOR MINIATURE RADIO RECEIVERS**
**Lester K. Franklin, 390 S. Hauser Blvd., Los Angeles, Calif.**
**Filed July 16, 1962, Ser. No. 210,144**
**1 Claim. (Cl. 312—7)**

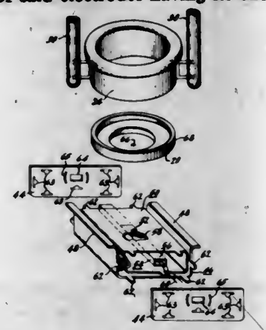


In a cabinet having the form of a baby grand piano: a hollow body having a straight front wall portion and a curved wall portion, the ends of the curved wall portion respectively joining the ends of the straight wall portion, and defining therewith a hollow interior space; said wall portions having top edges defining a plane; a bottom wall portion closing the bottom of said space; a cover hingedly mounted on said curved wall portion for pivotal movement about the hinge axis located laterally of said space, said cover being movable to close and uncover said space and through an angle in excess of 90°; means forming a groove extending along the inside of the front wall portion and located above the bottom of said space and beneath the edges thereof; said groove having upper and lower walls with the upper wall diverging upwardly and outwardly; a bearing member extending along the inside of the curved wall portion opposite said front wall; said bearing member having an upper surface located at the level of said lower groove wall; a radio receiver panel having a peripheral edge conforming to the contour of said space, a portion of said being received in said groove, and the remaining portions of said edge extending along the inside surfaces of said curved wall portion beneath the top edges of said space; said panel resting upon said bearing member; a latching pin extending through an opening in said panel and retractable therethrough; a spring urging the latching pin inwardly of the panel; and a resilient catch mounted on the bottom wall portion for detachably cooperating with said latching pin; the panel mounting parts located entirely beneath the plane of the top edges of said wall portions to permit movement of the cover to closed position; said panel being removable from said space when said cover is moved in excess of 90° from closed position.

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**3,164,426**
**ELECTRON GUN**
**Robert E. Benway, Marion, Ind., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed Dec. 21, 1960, Ser. No. 77,446**
**3 Claims (Cl. 313—82)**

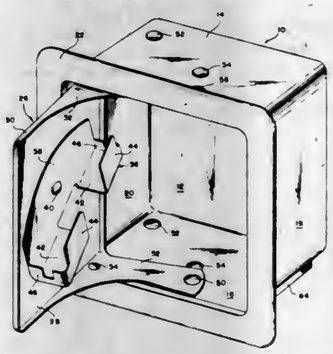
1. An electron gun comprising first and second subassemblies, said first subassembly including a pair of spaced parallel insulator plates, a U-shaped channel member having outwardly extending flanges lying in a common plane at the free ends of the U arms along the open side thereof, said channel member being mounted between said plates axially perpendicular thereto, a tubular control grid member disposed in said channel and out of contact therewith and mounted between said plates, said control grid having an aperture in the side wall portion facing out of said channel, an elongated cathode mounted between said plates within said tubular control grid opposite said aperture, and a shallow cup having in its base a central aperture approximately equal in diameter to said control grid aperture, said cup being mounted across the top of said channel on said flanges with the exterior of its base in contact with said flanges and with its aperture axially aligned with said control grid aperture, said second subassembly including a plurality of axially aligned tubular electrodes mounted in fixed spaced relation along at least one insulator rod, an end one of said electrodes having its end remote with



respect to the adjacent one of said tubular electrodes seated in said shallow cup of said first subassembly and fixed thereto to form therewith an integrated 2-piece centrally apertured cup electrode, whereby prior to the integration of said 2-piece electrode said apertures are accessible to be directly aligned by insertion of an alignment mandrel thereinto.

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**3,164,427**
**ELECTRIC SHAVER CABINET**
**Eric A. Norman, 4456 W. Mercer Way, Mercer Island, Wash.**
**Filed Jan. 17, 1963, Ser. No. 252,184**
**1 Claim. (Cl. 312—209)**



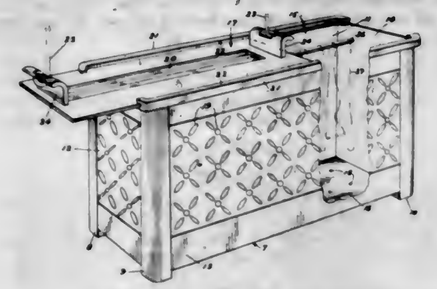
A cabinet for wall mounting to provide a storage facility for electric shavers or the like, comprising:

an open, upright front, right-rectangular, housing suitably proportioned to receive for inactive storage an electric shaver or the like, the outer walls of said housing being externally unobstructed,

a door mounted within the open upright front of said housing and so pivotally associated therewith that its pivot axis is adjacent and within one margin of said open front, and

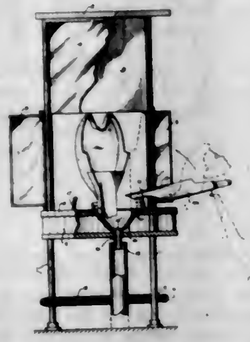
a storage cradle pivotally mounted substantially at the center of the inner surface of said door to rotate perpendicular to said surface and adapt the same to receive and cradle an electric shaver or the like irrespective of whether said housing is wall mounted so that said door pivot is vertically to the left or to the right or horizontal.

3,164,428
## STORAGE RECEPTACLE FOR WET ARTICLES
Mary N. Kesh, 18982 Ardmore, Detroit, Mich.
Filed July 22, 1963, Ser. No. 296,536
1 Claim. (Cl. 312—213)



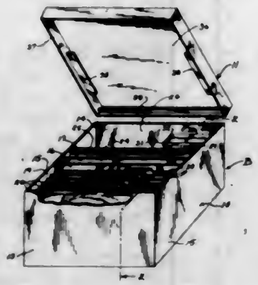
A receptacle of the character described, comprising a perforated bottom, front, back and end walls, each having spaced flat, parallel areas, cut out elements in the spaces defined by said parallel areas, said cut out elements being arranged to serve as decorative elements and means to ventilate the interior of said receptacle, rods on the interior of said receptacle extending from end to end thereof and supported on the inside faces of the parallel areas of said end walls, and a closure for said receptacle comprising a top member slidable in channels formed along the upper edges of said front and back walls, said closure having an inverted J shaped handle near each end, each handle having a cut out portion arranged to receive an element depending from the top wall of a cabinet, whereby the device may be supported in elevated position on the inside of said cabinet.

3,164,429
## STANDING EQUIPMENT UNITING A NUMBER OF WORK SPACES FOR HAIRDRESSERS
Theodor Kohl, Schwarze Barenstr. 6, Regensburg, Germany
Filed Jan. 8, 1963, Ser. No. 250,067
9 Claims. (Cl. 312—227)



1. A free standing unit for providing a plurality of work spaces for hair dressers, comprising:
an upstanding base having a substantially horizontal work surface mounted thereon;
a plurality of mirrors on the base and defining the sides of a polygon, said polygon being above said work surface, and means mounting said mirrors for movement to expose the interior of the polygon;
collection means mounted inside of said polygon;
a plurality of wash basins each associated with one of said mirrors and positioned in the interior of the polygon behind its associated mirror, said wash basins being mounted for movement independently of the mirrors and being movable to a position outside of the polygon and above the work surface when the interior of the polygon is exposed, each basin having an outlet for directing liquid into said collection means when said wash basin is in said position.

3,164,430
## HOME FILE BOX
Geraldine K. Beem and Owen W. Beem, both of 10727 W. York Place, Wauwatosa, Wis.
Filed May 7, 1962, Ser. No. 192,805
3 Claims. (Cl. 312—234.4)



1. A home bill and bank file comprising a body and a removable cover, said body including a plurality of transversely extending partitions, said partitions being grouped adjacent to the center of the body defining a front large compartment and a rear large compartment and center small compartments, said front large compartment defining a space for bills and statements and having formed on its bottom a pair of spaced longitudinally extending ribs provided with transverse slits, said rear compartment having in one corner thereof small compartments for the reception of stamps of different denominations, a removable cover for the stamp compartments, said remaining portion of said rear large compartment being adapted to receive envelopes of different sizes, and certain of said partitions being bridged by a transversely extending arcuate wall defining a rest for pens and the like, and relatively thin flexible separators in said front large compartment having their lower edges detachably fitted and held in said slits, said separators bearing indicia indicating classes of bills.

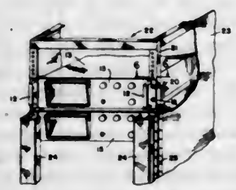
3,164,431
## CABINET
Warren R. Black, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Oct. 6, 1960, Ser. No. 60,891
5 Claims. (Cl. 312—282)

1. A bedside cabinet of the type having a lower compartment for the storage of utensils or the like and an upper compartment accessible to the bed occupant for the storage of his personal effects, said cabinet comprising: An upright housing open at the top; a partition secured within the housing and dividing the interior thereof into an upper compartment and a lower compartment, said housing fully enclosing the upper compartment at the sides while giving access to said upper compartment through the open top of the housing, and said housing having a doorway opening through a lower side thereof giving access to the lower compartment through said doorway; and a unitary top pivotally mounted at one side of the upper compartment for swinging moving about a vertical axis to a position closing the open top of the housing and to open positions giving access to said upper compartment, said top when in its closing position being spaced slightly above the uppermost rim of the housing so that only a slight sidewise push against the top effects free swinging movement thereof to open position, said housing being of vertically elongated cylindrical form and said unitary top being circular, said cabinet having a cylindrically formed segmental door pivotally mounted in said lower compartment for turning movement about a vertical axis through the center of the housing to a position closing the doorway and to positions giving access to said lower compartment, the pivotal mounting of said circular top in the upper compartment comprising a tubular bearing member secured to and extending upwardly from said partition adjacent the side wall of the upper compartment, and a pintle secured to and depending from the underside of said circular top adjacent a side edge thereof, said pintle being turnably and removably disposed in said tubular bearing; and in which a circular flange extends outwardly from the upper end of said tubular bearing member and is provided with locating depressions which are engageable by locating projections on the underside of the top for releasably maintaining the top in closed or open positions, said depressions and projections being relatively shallow so that they may be disengaged, and the top swung between its closed and open positions, with a slight push or pull on the top.



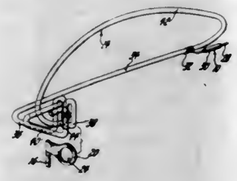


3,164,432
## APPARATUS TRANSPORTING HANDLE
Murray H. Feigenbaum, Jackson Heights, N.Y., assignor to Polarad Electronics Corporation, Long Island City, N.Y., a corporation of New York
Filed May 3, 1963, Ser. No. 277,909
5 Claims. (Cl. 312—320)



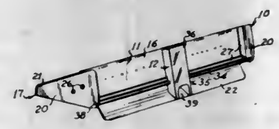
1. A handle member for apparatus units of the type including a front panel of substantially the width of the unit, said handle unit adapting the unit for use on a bench or the like and for mounting on a rack wider than the unit, said handle member comprising, in combination, an angle piece having a substantial length adapted to extend along the panel end, a handle fixed to one leg of said angle piece, elongated openings in the other leg of said angle piece, said openings being adapted to receive fasteners to fasten said angle piece to the side of said unit with either the inner or outer surface of said other leg of said angle piece adjacent the side of said unit whereby said handle member may be mounted with said one leg of said angle overlying said panel for bench use or said one leg extending outwardly substantially flush with the panel for rack mounting.

3,164,433
## WIRING CONNECTOR
Lester E. Adams, Oak Creek, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 12, 1962, Ser. No. 179,071
6 Claims. (Cl. 339—258)



1. A fastener installation comprising:
a ring-shaped member;
and a clip including a shank portion, a ring engaging member extending from one end of said shank portion and bent such that it forms positioning loops which extend over said ring-shaped member and engage said ring-shaped member on both faces thereof with the faces of the ring substantially perpendicular to the shank portion, and a spring portion extending from the other end of said shank portion alongside the shank portion and formed such that it bows back relative to the shank portion and extends between said positioning loops of said ring engaging member and presses into and against said ring-shaped member in a direction substantially parallel to said shank portion to secure said clip to said ring-shaped member.

3,164,434
## INDICATING DEVICE
Fred C. Bolick, Jr., 1440 Pineway Drive NE., Atlanta, Ga.
Filed Feb. 25, 1963, Ser. No. 260,780
5 Claims. (Cl. 346—76)



1. A device for indicating the presence of information on a portion of the recording medium of a dictating ma-

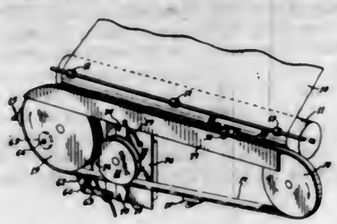
chine, said device comprising, in combination, a scale having a surface which changes appearance in the presence of heat; a heating element arranged for motion adjacent to the surface of the scale and to bear against said scale; means responsive to the portion of the recording medium on which recording is occurring for positioning the heating element with respect to the surface of the scale; means to connect a capacitor alternately to a source of voltage and to said heating element for causing said heating element to conduct a predetermined surge of heat to said scale.

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3,164,435
**FACSIMILE RECORDERS**
Paul Louis Grafstein, Brooklyn, N.Y., and Walter J. Harshbarger, Somerville, N.J., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed May 11, 1962, Ser. No. 193,951
9 Claims. (Cl. 346—139)

9. In a recorder of the kind employing a recording sheet or web, in combination,

means for advancing said sheet or web,
a marking element,
means including a magnetic type circuit-closer for controlling the energization of said marking element,



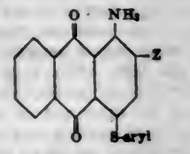
a movable magnet for intermittently operating said circuit-closer, and common means for moving said magnet and for propelling said marking element cyclically across the width of said recording sheet or web at a uniform rate.

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# CHEMICAL

3,164,436
**PROCESS FOR DYEING OR PRINTING HYDROPHOBIC FIBROUS MATERIALS**
Hans Altermatt, Reinach, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Jan. 24, 1962, Ser. No. 168,547
Claims priority, application Switzerland, Jan. 31, 1961, 1,149/61
6 Claims. (Cl. 8—39)

1. A process for dyeing and printing hydrophobic textile material, wherein there is used as dyestuff an arylmercaptoanthraquinone of the formula

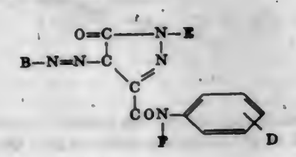



wherein aryl is phenyl, and Z is a member selected from the group consisting of hydrogen, bromine, methyl, lower alkoxyalkoxy and cyano.

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3,164,437
**PROCESS FOR THE COLORATION OF POLYETHYLENE TEREPHTHALATE TEXTILE MATERIALS**
Alistair Howard Berrie, Harold Seaman, and Raymond Windle, all of Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 1, 1962, Ser. No. 213,902
Claims priority, application Great Britain, Aug. 28, 1961, 30,932
6 Claims. (Cl. 8—41)

1. A process for the coloration of aromatic polyester textile material which comprises applying thereto a water-insoluble dyestuff of the formula




wherein B is selected from the class consisting of radicals of the benzene, naphthalene, thiazole and benzthiazole series, E represents a radical of the benzene series, F is selected from the class consisting of hydrogen atoms, lower alkyl radicals; and D is selected from the class consisting of hydrogen atoms, and lower alkoxy and alkoxyalkoxy radicals.

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3,164,438
**PROCESS FOR DYEING POLYPROPYLENE FIBERS WITH AZOIC DYES**
Walter W. Thomas, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 29, 1962, Ser. No. 183,382
1 Claim. (Cl. 8—46)

The process of dyeing stereoregular polypropylene fibers which comprises

(1) immersing stereoregular polypropylene filamentary material having a polyvalent metal compound uniformly distributed therein in an essentially aqueous composition having a pH between about 8 and about 12 and containing an azoic diazo component and an azoic coupling component to effect absorption of said azoic diazo component as the free amine into the fibers, said azoic diazo component and said azoic coupling compent each being devoid of strongly ionizable substituent groups;

(2) thereafter adjusting the pH of said aqueous composition to a value below about 7.5 to effect absorption into the fibers of the azoic coupling component having a free hydroxyl in the coupling position;

(3) immersing the filamentary material containing absorbed azoic diazo component and absorbed azoic coupling component in the presence of each other with a diazotizing composition having a pH below about 5 to effect diazotization of said azoic diazo component and coupling of the resulting diazotized component with said azoic coupling component to develop an azoic dye in the filamentary material whereby the metal atoms of said polyvalent metal compound chelate with the thus developed azoic dye.



3,164,439
**PROCESS OF POLYISOCYANATE MODIFICATION OF POLYURETHANE ELASTOMERS**
Cornelius Mühlhausen, Leverkusen, and Wilhelm Kallert, Cologne-Stammheim, Germany, assignors of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany, and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Mar. 1, 1957, Ser. No. 643,249
Claims priority, application Germany Mar. 23, 1956
6 Claims. (Cl. 8—115.5)

1. The method of improving the tensile strength and elongation of preformed polyurethane threads which comprises treating the preformed polyurethane thread with a solution containing an organic polyisocyanate.

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3,164,440
**GAS-SOLIDS CONTACTING METHOD**
Ralph P. Levey, Jr., Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 31, 1961, Ser. No. 150,613
7 Claims. (Cl. 23—1)

1. A method of carrying out a fluidization process for contacting a bed of particulate solids with a gas comprising the steps of:

(*a*) establishing a bed of particles in a fluidizing zone, said bed having a top surface and a bottom surface;

(*b*) introducing said gas upwardly into said bed of particles at a rate sufficient to lift said bed as a compact mass to a position where the top surface of said bed is from 1.5 to 2 times as high, with reference to the position of the bottom surface of the bed at rest, as said upper surface of the bed at rest;

(*c*) immediately reducing the flow of said gas into said bed to a rate insufficient to support said particles, whereby said particles fall; and

(*d*) repeating the cycle of steps (*b*) and (*c*) after the upper surface of said bed has fallen a distance of at least 25 percent of the height of the bed at rest and before said bed has reached a quiescent state.

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3,164,441
**PROCESS FOR THE PRODUCTION OF METAL BOROHYDRIDES**
Dieter Goerrig, Lohmar, Germany
(% Farbenfabriken Bayer A.G., Leverkusen, Germany)
No Drawing. Filed July 20, 1959, Ser. No. 828,056
Claims priority, application Germany Aug. 9, 1958
4 Claims. (Cl. 23—14)

1. A process for the preparation of a metal borohydride having the formula $M(BH_4)_n$ wherein M is a member selected from the group consisting of alkali and alkaline earth metals and *n* is an integer number selected from the group consisting of 1 and 2, corresponding to the valence of M, which comprises reacting a member selected from the group consisting of alkali metal and alkaline earth metal metaborates, orthoborates and tetraborates; mixtures of boric acid anhydride with a member selected from the group consisting of alkali metals, alkali metal oxides and alkaline earth metal oxides; mixtures of boric acid with a member selected from the group consisting of alkali metals, alkali metal oxides, alkaline earth metal oxides, alkali metal hydroxides and alkaline earth metal hydroxides; and mixtures of a member selected from the group consisting of alkali metal and alkaline earth metal metaborates, orthoborates and tetraborates with a member selected from the group consisting of alkali metal oxides, alkaline earth metal oxides, alkali metal hydroxides, alkaline earth metal hydroxides, alkali metal hydrides and alkaline earth metal hydrides; with a member selected from the group consisting of silicon, silicon alloys and binary compounds of silicon and a metal, said group member having reducing activity and hydrogen, at a pressure of from about 10 to 300 atmospheres and at a temperature of from about 200 to about 800° C. to obtain the borohydride.

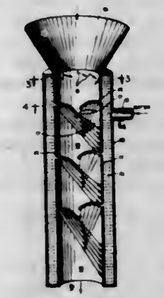
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3,164,442
**FLAME SYNTHESIS OF FINELY DIVIDED ALUMINUM BORATES AND PHOSPHATES**
Heinrich Bommer, deceased, late of Altenhain, Taunus, Germany, by Helene Bommer, widow and heir, and legal representative of minor heirs, Altenhain, Taunus, Germany, Heinz Dieter Bommer, heir, Altenhain, Taunus, Germany, and Helmut Brünner, Rheinfelden, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Nov. 22, 1961, Ser. No. 154,938
Claims priority, application Germany, Nov. 25, 1960, D 34,814
5 Claims. (Cl. 23—59)

1. A process for the production of a finely divided salt selected from the group consisting of aluminum phosphates and aluminum borates which comprises vaporizing an aluminum halide, vaporizing an acid halide selected from the group consisting of phosphorus halides and boron halides, mixing the vapors thus produced in proportions which are stoichiometric for the salt formation, supplying such mixture of vapors to a flame produced by the combustion of a hydrogen containing gas and oxygen wherein such mixture of vapors undergoes a hydrolyzation reaction with the formation of the solid salt in aerosol form and separating the salt thus produced from the gaseous reaction products.

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3,164,443
**APPARATUS FOR WETTING GRANULAR OR PULVERIZED MATERIALS**
William R. Watson, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 2, 1960, Ser. No. 67,451
7 Claims. (Cl. 23—267)

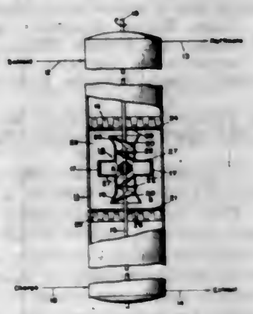


1. An apparatus for wetting particles of a given material which comprises: a vertically arranged cylindrical conduit having an inlet and outlet end for said particles, said inlet being at the top of said conduit and said outlet being at the bottom of said conduit, a tubular member within said conduit and adjacent one wall of said conduit, said member being connected to a suitable water source, said tubular member containing a series of downwardly directed slots extending partially around said member which connect the interior of said member and said conduit, said slots being constructed and arranged so that water passing from said tubular member to the conduit forms layers of moving water within said conduit, means for delivering said particles of said material to said conduit, and means for removing said particles from said conduit after they are thoroughly wet.

### 3,164,444
### APPARATUS FOR COUNTERCURRENT LIQUID-LIQUID CONTACTING

Craig R. Andersson, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Feb. 21, 1961, Ser. No. 90,834
3 Claims. (Cl. 23—270.5)



1. An apparatus for countercurrently contacting liquids of relatively different densities comprising

(1) A vertical chamber with liquid inlets for said liquids near top and bottom, respectively, and liquid outlets near top and bottom, respectively,

(2) At least two separate, perforated, horizontally disposed baffles within said chamber, each of said baffles having a centrally disposed opening and extending inwardly from the walls of said chamber, which baffles define at least one contacting zone in said chamber,

(3) A vertical shaft passing through said chamber,

(4) A vertical cylindrical housing within said chamber and concentric with said shaft,

(5) Helices on said shaft within said housing in fixed relation thereto, with a central space between said helices, said helices being so disposed as to force liquid downwardly through the upper part of said housing and upwardly through the lower part of said housing,

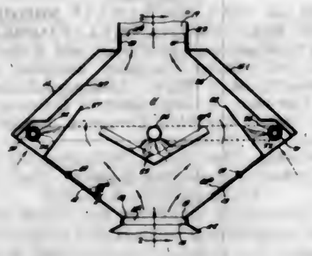
(6) Horizontally disposed outflow channels communicating with said central space, and having openings at their outer ends, and

(7) Means for rotating said shaft about the axis thereof.

### 3,164,445
### GREASE VAPOR INCINERATOR

Thomas E. Hampel, Shaker Heights, Ohio, assignor to American Gas Association, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 7, 1961, Ser. No. 150,834
8 Claims. (Cl. 23—277)

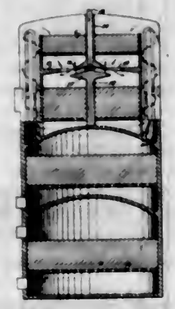


1. A grease vapor incinerator for the disposal of particulate matter from cooking operations, comprising a chamber providing a tortuous course for a main air stream with an open inlet, an outlet connected to an exhaust system, imperforate baffle means above the inlet transversely arranged relative to the directions of flow of the main air stream entering the inlet and large enough to deflect substantially all of said main air stream and cause separation and collection by impingement of the particulate matter upon the side of the baffle means exposed to said main air stream, and heating means located on the opposite side of said baffle means and shielded from said main air stream whereby the baffle means is heated to a temperature above the ignition point of said particulate matter collected on said baffle means so that said particulate matter is removed therefrom as gaseous products of combustion.

### 3,164,446
### MIXING DEVICE FOR MULTIPLE BED REACTOR

Herbert Drechsel and Hugo Grimm, both of Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a German corporation

Filed Sept. 6, 1961, Ser. No. 136,320
Claims priority, application Germany Sept. 8, 1960
9 Claims. (Cl. 23—288)



1. In a reactor for the catalytic treatment of a gaseous substance in stages wherein an additional gaseous substance is introduced into the gaseous product resulting from catalytic treatment of said gaseous substance in a prior stage, the improvement which comprises at least one mixing means interposed in said reactor for mixing said gaseous product and said additional gaseous substance, said mixing means including a central inlet of predetermined flow-cross sectional area for flow of one gaseous substance axially terminating in a multiple-opening nozzle, said nozzle having a plurality of substantially radially extending outwardly diverging passages, an annular ring for flow through of another gaseous substance having an inner edge radially spaced from the radially outermost ends of said passages to form an annular mixing chamber therebetween, and a radially extending convex surface defining an opposing deflecting member for gaseous substance, said convex surface being spaced axially from the axial terminus of said central inlet and further defining the portion of said radially extending nozzle passages axially remote from such axial terminus of said central inlet; said convex surface terminating radially intermediate the outermost ends of said passages and the inner edge of said annular ring to provide an annular flow cross-sectional area thereat between the radial terminus of said convex surface and the inner edge of said annular ring substantially larger than the flow cross-sectional area of said central inlet.



### 3,164,447
### FLINT

Frederick V. Hunt, Belmont, Mass.

Filed June 5, 1962, Ser. No. 200,163
4 Claims. (Cl. 29—193)



1. A rod-like flint for a lighter, said flint having at least one longitudinal groove of concave cross-section, the transverse periphery of said groove occupying a major portion of the transverse periphery of said flint at one side of an axial plane through said flint, whereby in engagement of an end of said flint with a rotating striking wheel, the effective area for the emission of hot flint particles is increased and the ineffective area is reduced.

### 3,164,448
### PREPARATION OF METALLIC SURFACES FOR CLADDING WITH COMMINUTED METALS AND THE PRODUCTS SO CLAD

Rolfe Pottberg, Baltimore, Md., assignor to Peen Plate, Inc., Baltimore, Md., a corporation of Maryland

No Drawing. Filed Nov. 15, 1960, Ser. No. 69,297
13 Claims. (Cl. 29—194)

6. An article having a base metal surface and a permanent metallic coating thereon, the coating consisting essentially of:

a relatively thin, ionized salt solution deposited crystalline coat of a first metal adhering directly to the base metal surface; and

a relatively thick coat of built up layers of mechanically distorted and closely interfitting discrete and distinct powder particles of a second and different metal superimposed directly on the first coat, the second metal having a solution potential higher than the solution potential of the first metal.

### 3,164,449
### ANTHRAQUINONE DYES FOR GASOLINE

Edwin C. Buxbaum, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 1, 1961, Ser. No. 92,465
11 Claims. (Cl. 44—59)

1. An amorphous mixture of at least two anthraquinone compounds having the formula



where at least one X but no more than two X's are —NHR radicals in which R is an aliphatic hydrocarbon radical of from 8 to 18 carbon atoms free from acetylenic unsaturation; and the remaining X and Y members are selected from the group consisting of bromine, chlorine, amino, hydroxy, alkylamino having 1–5 carbon atoms, methoxy, ethoxy, 2-hydroxyethylamino, anilino, toluidino and hydrogen, the sum of said remaining X and Y members selected from said group other than hydrogen is no greater than four, wherein the preponderant anthraquinone compound in said mixture is present in a maximum amount of no greater than 90% by weight.

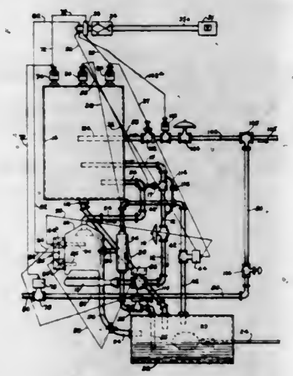
2. An amorphous mixture of at least two anthraquinone compounds as described in claim 1 wherein the —NHR radicals in each of the anthraquinone compounds in said mixture are different and the remaining X and Y members in each of the anthraquinone compounds in said mixture are the same.

8. A colored composition consisting of gasoline and an amorphous mixture of anthraquinone compounds as defined in claim 2, said mixture of anthraquinone compounds being present in an amount sufficient to obtain a colored gasoline.

### 3,164,450
### APPARATUS TO CONVERT OIL TO GAS

Daniel F. Buckley, 17 Frederick St., Belmont, Mass.

Filed Jan. 30, 1962, Ser. No. 169,742
10 Claims. (Cl. 48—106)



1. Apparatus to convert oil to gas comprising in combination:

(*a*) a storage tank to store gas,

(*b*) a supply receptacle to supply oil and gas and to receive gas from said storage tank,

(*c*) a mixing chamber to receive gas and oil from said supply receptacle,

(*d*) a retort to receive mixed oil and gas from said mixing chamber,

(*e*) a burner adapted to heat said retort and to receive oil-gas from said storage tank,

(*f*) a conduit from said storage tank to said burner,

(*g*) a conduit from said retort to said storage tank,

(*h*) a conduit to carry oil from a portion of said supply receptacle, to said mixing chamber,

(*i*) a conduit to carry oil-gas from a portion of said supply receptacle to said mixing chamber,

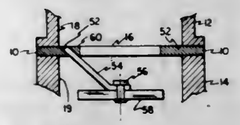
(*j*) a conduit to carry oil-gas from said storage tank to said supply receptacle, and

(*k*) a conduit from said mixing chamber to said retort.

### 3,164,451
### FUEL ATOMIZING DEVICE

Edgar W. Almquist, % Almquist Engineering Co., Milford, Pa.

Filed Oct. 12, 1961, Ser. No. 144,693
1 Claim. (Cl. 48—180)



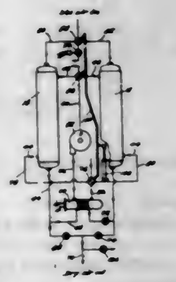

An atomizing device for a combustion engine of the type which includes a carbuertor having a discharge throat and a manifold having an intake throat,

said discharge throat and said intake throat constituting a continuous passage,

said device including:
a plate clamped between said carburetor and said manifold and having an opening formed therein smaller than said intake throat,
the rim of said opening being serrated,
an annular trough formed in the upper surface of said plate and surrounding said rim,
a downwardly inclined gutter carried by said plate and extending into said intake throat, and
freely rotatable fan blades carried by the lower end of said gutter and rotatable by the flow of atomized fuel downwardly through said intake throat,
the upper end of said gutter communicating with said trough to conduct liquid fuel from said trough to said blades.

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3,164,452
METHOD AND APPARATUS FOR DRYING A GASEOUS MEDIUM
Herbert W. Westeren, Barrington, and Andrew J. Syska, Cranston, R.I., assignors to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island
Filed May 29, 1961, Ser. No. 120,846
8 Claims. (Cl. 55—33)

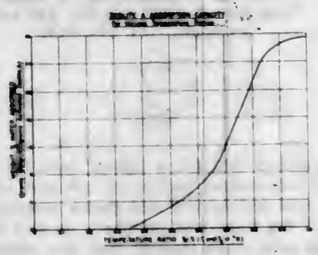


2. In a method of removing moisture from an operating fluid comprising the steps of passing the fluid to be processed downwardly in a drying chamber through a series of tubes having a drying agent therein, cooling the exterior of said tubes by passing air into contact therewith thereby increasing the drying action of said drying agent, simultaneously regenerating a similar drying chamber during the processing of said fluid by diverting a portion of the dried fluid through a heater for raising the temperature thereof and then passing the heated processed air through the tubes of the drying chamber being reactivated for removing the moisture from the drying agent, withdrawing said ambient gas from the processing chamber, raising the temperature of the withdrawn ambient air, and heating the exterior of said tubes during the regeneration cycle by passing the heated ambient air through the shell of the chamber being regenerated and out of contact with the diverted dried fluid, the isolated streams of heated air and dried fluid cooperating to reduce the period of the regenerating cycle.

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3,164,453
WATER REMOVAL FROM GAS MIXTURES
Robert M. Milton, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 18, 1959, Ser. No. 860,599
3 Claims. (Cl. 55—35)

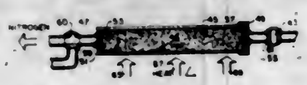
1. A process for separating water from a vapor mixture containing water and at least one olefinic hydrocarbon having less than four carbon atoms per molecule, which comprises contacting said vapor mixture with a bed of at least partially dehydrated crystalline zeolite A adsorbent material having pores sufficiently large to receive



the olefin, and thereafter discharging the water-depleted vapor stream from said bed.

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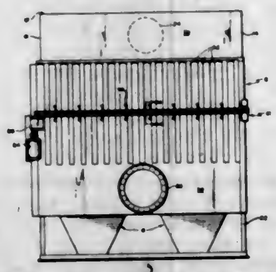
3,164,454
METHOD OF SEPARATING OXYGEN FROM AIR
E. Milton Wilson, Altadena, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Sept. 25, 1959, Ser. No. 842,315
1 Claim. (Cl. 55—68)



A method of separating oxygen from air which comprises: alternately forcing the air into a bed of crystalline zeolite material having pore openings at least large enough to admit molecules having a critical diameter of about 5 A., while operating said bed at substantially normal atmospheric temperature whereby the oxygen molecules in the air are forced through the cavities in the bed and the nitrogen molecules are entrapped within said cavities, and substantially freeing the zeolite bed of the nitrogen molecules entrapped therein.

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3,164,455
AIR CLEANING APPARATUS
Karl L. Westlin, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed June 29, 1961, Ser. No. 120,716
7 Claims. (Cl. 55—273)

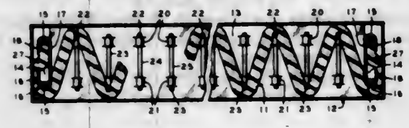


1. In an air clearner: a dust box into which dust laden air is admitted; a series of air filter pockets disposed in spaced face-to-face relation in said dust box to filter said dust laden air as the air flows from the outside to the inside of said pockets, each pocket having an open front end; an air control box on the front side of said dust box having a set of first chambers in registry with and connected to said open front ends of said pockets and a set of companion second chambers alternating with said first set, said second chambers being connected in common with a suction source; valve means for each first chamber operable, in a first position to open each first chamber to its companion second chamber and to close each first chamber to atmosphere, and in an alternate position to close each first chamber to its companion second chamber and to open each first chamber to atmosphere; and means for operating the valve means of each successive first chamber to said alternate position for a time interval overlapping at least a part of the time intervals during which the valve means of the immediately preceding and succeeding adjacent first chambers are in said alternate positions whereby a reverse flow of air is induced through those successive pairs of filters pockets connected with said first chambers having valve means in said alternate position.



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3,164,456
AIR FILTER
Alfred G. Brainerd, Jr., 6913 Glenwood, and Guy E. Morgan, 5701 Belmont, both of East St. Louis, Ill.
Filed Jan. 25, 1962, Ser. No. 168,780
6 Claims. (Cl. 55—500)



1. A filter comprising an inner frame and an outer frame, the inner frame comprising side plate members and end plate members, a pair of parallel rows of rods fastened to the side plate members and extending therebetween, a sheet of flexible Urethane foam having its ends fastened to the outer side of the end plate members and being wound about alternate ones of the rods to dispose the Urethane foam in a corrugated sheet, the outer frame having two parallel channel sides and two parallel ends opposite the side plate members and the end plate members respectively, the channel ends compressing the ends of the Urethane foam sheet between them and the end plate members, the rods having means to hold the side plate members in position relative to the end plate members, and flanges on the ends of the side plate members for interlocking with the end plate members.

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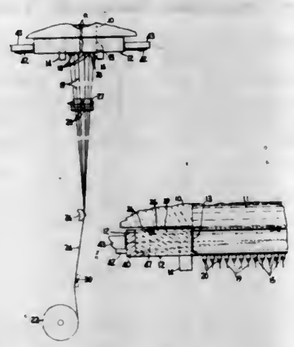
3,164,457
FIBER PRODUCING BUSHING
Paul H. Mitchell and Hazel D. Brewer, Shelbyville, Ind., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1962, Ser. No. 164,570
1 Claim. (Cl. 65—1)



A bushing unit for producing thermoplastic fibers which comprises a bushing, a frame in spaced relation to the bushing, a preformed strip-like insulating material along the sides of the bushing and spaced from the frame, and a refractory material cast in situ between the insulating material and bushing and the frame forming a rigid sealed unit, the bushing ends, the insulating material and the frame being adhered to the refractory material and the bushing and the frame being thermally insulated from each other.

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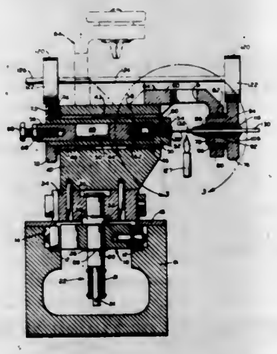
3,164,458
BUSHING FOR THE PRODUCTION OF THERMOPLASTIC FIBERS
Paul H. Mitchell, Shelbyville, Ind., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 8, 1960, Ser. No. 74,688
1 Claim. (Cl. 65—12)



A bushing unit for producing thermoplastic fibers which comprises a bushing, a frame in spaced relation to the bushing, and a mass of refractory material cast in situ between the bushing and the frame forming a rigid sealed unit, the bushing and the frame being adhered to the refractory material and thermally insulated from each other.

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3,164,459
APPARATUS FOR ASSEMBLING ELECTRONIC PARTS
Richard R. Bower, Palo Alto, Calif., assignor, by mesne assignments, to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,454
4 Claims. (Cl. 65—155)



1. Apparatus for connecting separate parts together by the application of heat, the apparatus comprising an elongated track, a source of heat adjacent the track, a movable carriage mounted on the track, a body mounted on the carriage, first holding means on the body for holding a first part, a head spaced from the body, second holding means on the head for holding a second part, means mounting the head on the carriage to be movable from a first position to a second position and bring the second part into connecting position with the first part, means for rotating the two parts in the connecting position simultaneously in the same direction and at the same speed, and means for moving the carriage along the track

relative to the source of heat to move the two parts in the connecting position into heat transfer relationship with the heat source.

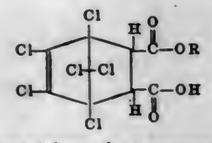
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3,164,460
## METHOD OF CONTROLLING UNDESIRABLE PLANT GROWTH

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,963
12 Claims. (Cl. 71—2.6)

1. A method of destroying growing weeds which comprises contacting said weeds with a herbicidal composition comprising an inert carrier and, in a quantity which is herbicidally toxic to said weeds, a compound of the formula



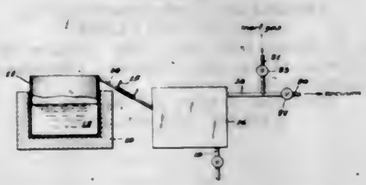
wherein R is selected from the group consisting of alkyl, haloalkyl, alkenyl, and haloalkenyl containing up to ten carbon atoms.

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3,164,461
## PRODUCTION OF HIGH PURITY CESIUM

Robert J. Moolenaar, Robert S. Karpiuk, and Marshall P. Neipert, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 15, 1962, Ser. No. 166,336
3 Claims. (Cl. 75—66)



1. A method for the production of cesium having a purity of at least 99 percent, consisting essentially of heating to a temperature of from about 350 to about 800 degrees centigrade at an absolute pressure below about ten millimeters of mercury, a dry reaction mixture comprising a halide of cesium selected from the group consisting of cesium chloride and cesium bromide, together with lithium, whereby said halide is reduced to the free cesium metal, and recovering the so-formed cesium metal from the reaction mixture by distillation.

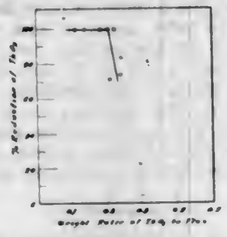
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3,164,462
## PREPARATION OF THORIUM METAL FROM THE OXIDE

James B. Knighton, Joliet, Alleppey V. Hariharan, Westmont, Robert K. Steunenberg, Naperville, and Wesley H. Hanschildt, Hinsdale, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed June 24, 1963, Ser. No. 290,268
1 Claim. (Cl. 75—84.1)

A process of reducing thorium dioxide to thorium metal comprising dispersing thorium dioxide in a molten flux consisting of 90 m/o of magnesium chloride and 10 m/o of magnesium fluoride in an inert atmosphere and at a temperature of between 825 and 875° C., the weight ratio of $ThO_2$:flux ranging up to 0.2; adding an exces of a magnesium-zinc alloy containing between 10 and 15% by weight of magnesium to the solution formed, whereby thorium dioxide is reduced to the metal and the latter is dissolved in the excess alloy to form a final alloy, whereby a final thorium-zinc-magnesium alloy is obtained



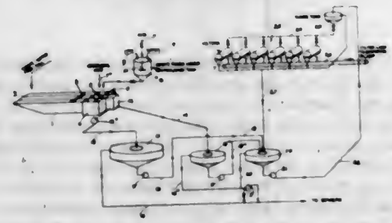
containing about 12% by weight of thorium; and separating a thorium-depleted flux from a thorium-magnesium-zinc alloy.

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3,164,463
## PROCESS FOR HANDLING IRON LADEN WASTES IN STEEL MILLS

Harold M. Graham and James R. Sharpe, Pittsburgh, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 10, 1961, Ser. No. 144,158
2 Claims. (Cl. 75—97)



1. A method for recovering suspended iron oxide dusts and iron bearing compounds from mill waste water and concurrently neutralizing the sulphuric acid of spent pickle liquor, comprising the steps of

separately mechanically mixing substantially equal quantities of water, spent pickle liquor and a lime slurry to neutralize the sulphuric acid of the spent pickle liquor and provide the reaction products ferrous hydroxide and calcium sulphate, with the calcium sulphate in quantities greatly in excess of its solubility in the water,

adding the mixture to collected mill waste water and vigorously aerating to convert the soluble ferrous hydroxide to insoluble ferric hydroxide and to dissolve substantially all the calcium sulphate in the aerated water,

collecting and separating the aerated mixture into a clear effluent containing the dissolved calcium sulphate and a precipitated sludge, then

dewatering the sludge in filters and passing the filter cake to a sintering furnace.

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3,164,464
## METHOD OF INTRODUCING MAGNESIUM INTO GALVANIZING BATHS

John A. Heath, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 9, 1961, Ser. No. 81,239
2 Claims. (Cl. 75—135)

1. A method for the introduction of magnesium into a galvanizing bath which comprises; (1) immersing for about one minute a magnesium metal source in an acid pickling solution, said pickling solution being an aqueous acid solution selected from the group consisting of



(*a*) sulfuric acid of from about 0.5 to about 15 volume percent concentration,

(*b*) hydrochloric acid of from about 0.25 to about 15 volume percent concentration,

(*c*) nitric acid of from about 0.5 to about 10 volume percent concentration,

(*d*) orthophosphoric acid of from about 1 to about 10 volume percent concentration,

(*e*) acetic acid of from about 1 to about 10 volume percent concentration,

(*f*) chromic acid of from about 1 to about 5 volume percent concentration, and

(*g*) mixtures thereof, said acid mixtures being characterized in that the total acid concentration of a mixture does not exceed the maximum concentration for any of the given acids in said mixture,

said pickling solution removing surface contamination from said magnesium metal but not leaving residues detrimental to the process thereon and said magnesium being a member selected from the group consisting of chemically pure magnesium, cell magnesium, commercial magnesium-based alloys, magnesium-zinc alloys containing up to 65 weight percent zinc and other magnesium alloys wherein magnesium is present in a concentration of at least 50 weight percent; (2) water rinsing and drying the cleaned magnesium metal; (3) placing the chemically cleaned magnesium into a molten zinc galvanizing bath prior to the time detrimental oxidation products again reform on the surface of the cleaned and pickled magnesium metal source whereupon a magnesium-zinc alloy forms which is molten at the bath temperature; and, (4) dispersing said alloy into the zinc galvanizing bath.

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3,164,465
## NICKEL-BASE ALLOYS

Rudolf H. Thielemann, Portland, Oreg., assignor to Martin Metals Company, a corporation of Delaware

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,390
9 Claims. (Cl. 75—171)

1. A metal alloy consisting essentially of, by weight, from about 6% to about 17% of chromium, from about 5% to about 20% of tungsten, from about 0.25% to about 3% of at least one of the metals selected from the group consisting of columbium and tantalum, from about 2% to about 8% of aluminum, from about 0.1% to about 3% of titanium with the provision that the amount of titanium does not exceed the amount of aluminum, from about 2% to about 15% of cobalt, at least one of the metals in the amounts indicated selected from the group consisting of from about 0.001% to about 0.5% of zirconium and from about 0.001% to about 0.2% of boron, from about 0.02% to about 0.35% of carbon, and the remainder being nickel and incidental impurities, said nickel content being in the range of about 45% to about 77%, and said chromium, tungsten, titanium, aluminum and metal selected from the group consisting of columbium and tantalum being present in said alloy in weight percentages corresponding to the following equation:

$$1\ Cr+1.1\ W+3.4Cb\ (Ta)+4.3\ Ti+6\ Al=60\text{–}70$$

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3,164,466
## METHOD OF PRODUCING CATHODES FOR HOLLOW CATHODE LAMPS OF SPECTROSCOPIC ANALYZERS

Kazuo Yasuda, Katsuta-shi, and Makoto Ousawa and Hisasuke Takeuchi, Hitachi-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed Dec. 7, 1962, Ser. No. 242,891
Claims priority, application Japan, Dec. 9, 1961, 36/44,614
4 Claims. (Cl. 75—200)

1. A process of manufacturing a cathode for hollow cathode lamps in spectroscopic analyzers, which comprises mixing the powders of a high-melting elemental metal and a low-melting elemental metal, molding the mixture and sintering the same, thereby obtaining said high-melting metal in sponge form and the low-melting metal filling the interstices of said sponge; and further obtaining line spectra equal to the individual powdered metals used in kind and number; and forming a cathode from the sintered mixture.

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3,164,467
## ULTRAVIOLET SENSITIVE PRINT-OUT COMPOSITIONS AND PROCESS FOR IMAGE-WISE EXPOSURE AND FIXING OF SAME

Robert H. Sprague, Chagrin Falls, and Morris C. Roscow, Cleveland, Ohio, assignors to Horizons Incorporated, a corporation of New Jersey

No Drawing. Filed Mar. 14, 1963, Ser. No. 265,079
11 Claims. (Cl. 96—48)

1. A composition printing out an image directly when exposed to a suitable dosage of ultraviolet, said image exhibiting relatively good blue absorption, said composition being physically supported in an inert carrier and said composition consisting essentially of (1) at least one organic bromine compound selected from the group consisting of compounds represented by the general formula

$$R—C—Br_3$$

wherein R is selected from the group consisting of Br, alkyl, aryl, aralkyl, and aroyl such that the compound is normally a solid at room temperature and (2) an indole compound selected from the group consisting of 3-methylindole, 3-methyl-5-phenylindole and mixtures of indole with at least one substituted indole selected from the group consisting of indole-3-carboxaldehyde, 5-bromoindole-3-carboxaldehyde, 1-methyl-2-phenylindole and N-phenyl pyrrole; there being between 0.5 and 10 parts by weight of said organic bromine compound for each part by weight of said indole compound and indole in said composition.

11. The process which comprises preparing the composition of claim 1 in a thin dry layer, photographically exposing said composition to a dosage of ultraviolet radiation and fixing the resultant image by heat.

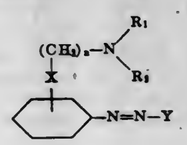
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3,164,468
## PHOTOMECHANICAL REVERSAL PROCESS AND FOIL AND DYES FOR USE THEREIN

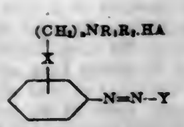
Mark L. Moskowitz, Endicott, and Ralph G. D. Moore, Chenango Forks, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 6, 1960, Ser. No. 33,914
12 Claims. (Cl. 96—49)

11. A process of producing a reversed color print which comprises coating a base with a solution comprising a copolymer of alkyl vinyl ether and maleic anhydride and drying to form a layer, overcoating said layer with a solution comprising a mixture of a light-sensitive diazo oxide and a water insoluble resin and drying, exposing the thus formed film under an original, removing the exposed portions of the overcoating, and rendering the portions of the layer therebeneath hydrophilic by treatment with an aqueous solution of a polyhydroxy compound and a base, dyeing the foil with a solution of a dye opaque to actinic light and substantive to the hydrophilic material of said layer and selected from the class consisting of those of the following formulae:



and



wherein $R_1$ and $R_2$ are both lower alkyl; X is a bivalent radical selected from the group consisting of oxy, thio, imino, carbonyloxy and methylene; A is an anion of an acid; Y is the radical of a low molecular coupling compound wherein cyclic nuclei when present are monocyclic; and *n* is an integer from 1 to 3, and removing the unexposed portions of said overcoating.

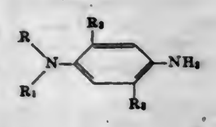
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### 3,164,469
### ONE-COMPONENT DIAZO PROCESS

Hans Bohmenburg, Wiesbaden-Biebrich, and Martin Glos, Wiesbaden, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed Mar. 3, 1961, Ser. No. 93,048
Claims priority, application Germany, Mar. 4, 1960, K 40,080
5 Claims. (Cl. 96—49)

1. A process for making a copy of a single-component diazo-type material comprising a support and a photosensitive material consisting essentially of a photosensitive thermosensitive diazonium compound of a paraphenylene diamine as the sole essential image forming material disposed on said support, said diamine having the general formula:



where R and $R_1$ are members of a group selected from the groups consisting of:

Group A wherein R is a member selected from the group consisting of alkyl, aralkyl, acyl, and aryl radicals, and $R_1$ is a member selected from the group consisting of hydrogen, alkyl, aralkyl, and aryl; and

Group B wherein R and $R_1$ are members of the same hererocyclic ring,

and where $R_2$ and $R_3$ are members selected from the group consisting of hydrogen, halogen, alkyl, and alkoxy, said process comprising the steps of:

exposing said material imagewise to decompose and bleach out said compound where light struck; and

heating said material to at least 100° C. to form a light-stable, visible, colored dyestuff in the unexposed areas.

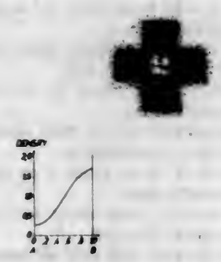
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### 3,164,470
### CONTACT SCREENS FOR REPRODUCTION PHOTOGRAPHY

Werner Rebner, Cologne-Stammheim, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Dec. 28, 1960, Ser. No. 78,902
4 Claims. (Cl. 96—116)

1. In a contact halftone screen having a multiplicity of closely spaced relatively opaque dots separated by more transparent areas, the improvement according to which the relative gradient of light absorption density along the axes running from minimum to maximum absorption increases monotonically from between 0.7 and 0.2 at a location 1/10 of the way along the axes, to between 1.8 and 2.5 at a location 9/10 of the way along the axes.



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### 3,164,471
### PRODUCTION OF IMPROVED FISH PROTEIN

Wilson Monroe Whaley, Chicago, Ill., and Raymond Joseph Mosby, Westport, Conn., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,257
4 Claims. (Cl. 99—18)

1. A process for removing solvent from a non-bland, solvent-extracted proteinaceous fish flour characterized by a short shelf-life and a fish-like aroma and taste which comprises humidifying said flour from an initial moisture level of 4% to 12% to a moisture content of 10% to 30% the moisture content of said flour being increased by from 5 to 20 percent during the humidification step and redrying said moistened flour at a product temperature of below 132° F. to a moisture content of 5% to 8% to thereby obtain a bland fish flour characterized by its lightness of color, long shelf-life and substantial freedom from fishy odor.

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### 3,164,472
### TREATMENT OF WORT WITH ZINC

Irwin M. Stone, Staten Island, N.Y., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Filed Aug. 22, 1962, Ser. No. 218,558
2 Claims. (Cl. 99—52)

1. In the process of producing, by yeast fermentation of wort, fermented malt beverages of improved flavor and increased resistance to the photochemical production of sulfidic-type odors comprising the steps of adding zinc ions to the wort in amounts of from about 0.5 to 5.0 parts of zinc per million parts of wort prior to commencement of the fermentation and then fermenting with yeast.

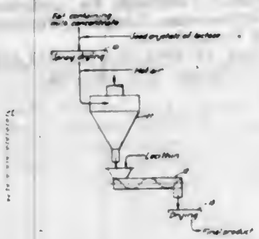
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### 3,164,473
### DRY MILK PRODUCT AND PROCESS OF MANUFACTURE

John B. Shields, Sunnyvale, Louis J. Nava, Redwood City, and Clayton A. Kempf, Berkeley, Calif., assignors to Dairy Foods Incorporated, Oakland, Calif., a corporation of California

Continuation of application Ser. No. 672,893, July 19, 1957. This application May 28, 1963, Ser. No. 283,822
8 Claims. (Cl. 99—56)

1. In a method for the processing of fat-containing milk solids, the steps of causing moist porous aggregates of said solids to be contacted with added extraneous lecithin, the aggregates having a moisture content of the order of 7 to 16%, causing the aggregates to be at a temperature level above ambient to promote distribution of the lecithin, and removing excess moisture from the aggregates to form the final product, the amount of lecithin



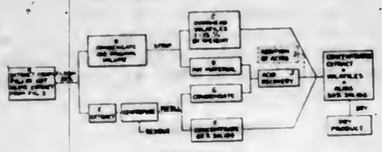
added being sufficient to provide a lecithin content of from 0.1 to 1% of the final dry product.

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### 3,164,474
### METHOD OF MAKING COFFEE EXTRACT

Maurizio A. Gianturco, Atlantic Highlands, and John M. Miller, Mountainside, N.J., assignors to Tenco, a Division of The Coca Cola Company, Linden, N.J., a corporation of Delaware

Filed Mar. 3, 1961, Ser. No. 93,158
23 Claims. (Cl. 99—71)



1. The method of producing an extract of ground roasted coffee which extract, on dilution to beverage strength, has a taste and an aroma substantially indistinguishable from that of a fresh brew of said coffee, comprising the steps of:

(1) extracting freshly roasted and ground coffee with hot water to obtain an original hot dilute extract having between about 3% and about 8% concentration of coffee solids, said water being at a temperature between about 180 and about 210° F.,

(2) separating volatile coffee principles from said extract by flashing,

(3) centrifuging and concentrating said extract,

(4) concentrating said volatile coffee principles by stripping under a pressure condition between vacuum and atmospheric, and collecting the overhead as concentrated volatile principles, and

(5) mixing said concentrated coffee extract with said concentrated volatile principles.

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### 3,164,475
### RICE PROCESS

James Taylor Willock, Solihull, England, assignor, by mesne assignments, to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 29, 1961, Ser. No. 155,797
5 Claims. (Cl. 99—80)

1. A process for the production of a modified rice in the form of grains which comprises contacting milled rice grains with water at a temperature below the gelatinization point of the starch in said grains for a period of 10–30 minutes to raise the moisture content uniformly throughout said grains to about 18 to 30% by weight and heating said rice grains at a temperature of 90°–120° C. while avoiding gelatinization of said rice to cause a rapid expulsion of moisture and a reduction in the moisture content of the grains to about 10–14% by weight, thereby effecting a modification in the structure of the grains.



### 3,164,476
### EMULSIFIER FOR CAKE BATTERS

Gaston Dalby, New York, N.Y., and Harry C. Fisher, Rocky River, Ohio, assignors to The H. C. Fisher Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed July 3, 1962, Ser. No. 207,394
5 Claims. (Cl. 99—92)

1. An emulsifier for cake batters which comprises the following:

| | | |
|---|---|---|
| Glyceryl monostearate | lbs. | 9–13 |
| Glycerine | lbs. | 1½–3½ |
| Sorbitan polyoxyethylene monostearate | lbs. | 11–15 |
| Sorbitan monostearate | lbs. | 7–10 |
| Water | lbs. | 65–75 |
| Sodium propionate | oz. | 6–15 |

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### 3,164,477
### PROCESS FOR PREPARING SOFT CHEESES WITH SUCRESTERS

Luciano Nobile, Milan, Italy, assignor to Ledoga, S.p.A., Milan, Italy

No Drawing. Filed May 3, 1962, Ser. No. 192,078
2 Claims. (Cl. 99—116)

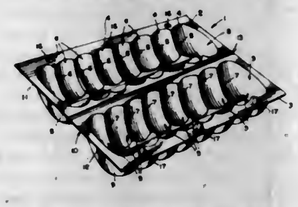
1. Process for preparing soft cheeses of improved stability and of high nutritive value, which comprises adding to the milk, during cheese preparation, a product obtained by transesterification of sucrose with a member of the group consisting of edible natural triglycerides and lower alkyl esters of edible aliphatic acids containing from 6 to 30 carbon atoms, said product being substantially free from unreacted sucrose.

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### 3,164,478
### DOUGHNUT PACKAGE

John Donald Bostrom, Niles, Ill., assignor to Poster Packaging, Inc., Chicago, Ill., a corporation of Delaware

Filed Dec. 15, 1961, Ser. No. 159,661
4 Claims. (Cl. 99—172)



1. A transparent plastic display package comprising an integrally molded blister type top covering having arcuate segmental grooves therein and a blister type bottom having arcuate segmental grooves therein, arcuate projection means coextensive with said grooves and having a diameter less than the major diameter of said grooves, said top and bottom grooves opposing one another and together with said projecting means providing separated substantially identical supporting compartments for doughnuts, a doughnut in each opposing pair of grooves retained in an upright position when the package is closed, said top cover having a flange portion extending outwardly from the base of the grooves therein and said bottom having a flange portion extending outwardly from the top of the grooves therein, said flange portions being integrally united with a longitudinal extending groove at their juncture, said groove facing inwardly when the package is closed and said flanges together with said groove forming a hinge between said top cover and said bottom, whereby said top cover may be opened and closed by moving it about said hinge, and means securing said top cover and said bottom cover together, said last named means comprising a flange extending outwardly from the base of the grooves in said top cover on a side other than the hinged side and a mating flange extend-

ing outwardly from the top of the grooves in said bottom, aperture means in one of said last named flanges and means forming a mating projection in the other of said last named flanges.

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3,164,479
MANUFACTURE OF MEAT-CURING SALT COMPOSITION
Louis Sair, Evergreen Park, and Carroll L. Griffith, Chicago, Ill., assignors to The Griffith Laboratories, Inc., Chicago, Ill., a corporation of Illinois
No Drawing. Filed Feb. 12, 1964, Ser. No. 342,839
4 Claims. (Cl. 99—222)

4. The method of producing a curing salt composition, which comprises bonding to caked forms by application of effective mechanical pressure a fine-grained particulate mass of substantially uniform composition consisting essentially of a major portion of sodium chloride crystals and a minor portion of salt selected from the group consisting of alkali-metal nitrite, alkali-metal nitrate, and mixtures thereof, which mass has not more than 6% by weight of water, the sodium chloride being present in amount not over that to be used with the curing salt content, and reducing the size of said caked forms which are substantially dry and contain not more than 1.5% of water to provide a free-flowing granular mass of compaction-bonded agglomerates of such particle-size-distribution that all the size fractions thereof have a substantially uniform composition.

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3,164,480
MANUFACTURE OF MEAT-CURING SALT COMPOSITION
Louis Sair, Evergreen Park, and George R. Reschke, Palos Park, Ill., assignors to The Griffith Laboratories, Inc., Chicago, Ill., a corporation of Illinois
No Drawing. Filed Feb. 19, 1964, Ser. No. 344,464
13 Claims. (Cl. 99—222)

1. The method of producing a curing salt composition which method comprises forming an initial free-flowing particulate mass having up to 4% by weight of water which mass is substantially uniform in composition by combining with a major proportion of homogeneous sodium chloride crystals a minor proportion of salt selected from the group consisting of alkali-metal nitrite, alkali-metal nitrate, and mixtures thereof, the sodium chloride being present in amount not over that to be used with the curing salt content, bonding said mass to cake forms by application of effective mechanical pressure, and reducing the size of said caked forms which have not more than 2% by weight of water to provide a granular mass of compaction-bonded agglomerates of such particle-size-distribution that all the size-fractions thereof have a substantially uniform content.

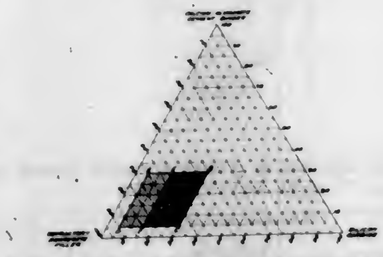
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3,164,481
ANTISTATIC AGENTS
William J. Shibe, Jr., Riverton, N.J., assignor to Hollichem Corporation, Camden, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 18, 1961, Ser. No. 132,286
4 Claims. (Cl. 106—10)

1. A method of providing antistatic properties in electrically non-conductive substances which comprises physically combining a quaternary ammonium benzosulfimide with a non-conductive substance selected from the group consisting of paper, glass, textiles, leathers, furs, waxes and plastics in such a manner that at least about 1% by weight of the quaternary ammonium benzosulfimide is present in that portion of the substance with which it is directly combined, while maintaining the physical dominance of the non-conductive substance in the combination.

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3,164,482
REFRACTORY LINING
Albert Lajos Renkey, Pittsburgh, Pa., assignor to Harbison Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1962, Ser. No. 224,488
10 Claims. (Cl. 106—44)



1. A particulate refractory batch composition consisting essentially of calcium aluminate cement binder, silicon carbide, and selected refractory filler, in substantially the proportions, by weight, falling within the area A—B—C—D of the attached ternary diagram, the silicon carbide substantially all being —28 mesh with a major portion thereof being —100 mesh, the calcium aluminate cement being substantially all —65 mesh, from about 30 to 50% of the total batch passing a 65 mesh screen, the remainder of the batch being —3 +65 mesh, said batch being free of material which will vitrify at temperatures of about 2100° F.

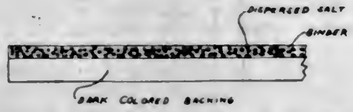
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3,164,483
PARTICULATE REFRACTORY MATERIAL
Donald O. McCreight, Bethel Park, and Albert L. Renkey and Ben Davies, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1963, Ser. No. 311,247
13 Claims. (Cl. 106—44)

1. A particulate, unformed refractory material, consisting essentially of, by weight, about 70 to 95% of at least one ingredient material selected from the group consisting of alumina, aluminum ores, and fire clay, said ingredient material being 80 to 90% —3 mesh with 50 to 90% thereof being +65 mesh, and about 5 to 30% of silicon carbide, said silicon carbide being —100 to —325 mesh, said refractory material being free of ingredients which will vitrify at temperatures of about 2100° F.

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3,164,484
HEAT-SENSITIVE COPYING SHEET
Donald J. Lazzarini, North Bergen, N.J., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Jan. 16, 1962, Ser. No. 166,686
8 Claims. (Cl. 117—36.7)

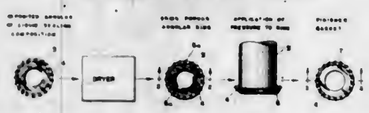



1. A heat-sensitive copying sheet comprising a non-metallic supporting base and a visibly opaque heat-sensitive coating of contrasting color thereon comprising a thin film of a transparent film-forming organic binder having a dispersion therein consisting essentially of particles of a hydrated salt selected from the group consisting of hydrated aluminum sulfate, hydrated monobasic calcium phosphate, hydrated ferrous sulfate, hydrated magnesium acetate, hydrated sodium acetate and hydrated potassium sodium tartrate from 3 to 7 parts by weight of said hydrated salt being present for each part of the binder.



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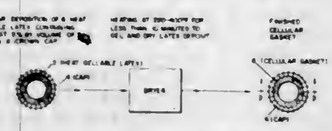
3,164,485
METHOD OF FORMING POLYETHYLENE GASKETS IN CONTAINER CLOSURES
John D. Nagle, Belmont, and Charles W. Simons, Bedford, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Oct. 31, 1962, Ser. No. 234,494
3 Claims. (Cl. 117—43)



1. A method for preparing a gasket for a closure element which comprises depositing in the closure element an organic liquid sealing composition composed of 50 to 90 percent by weight of solid finely-divided polyethylene dispersed in a volatile organic solution of an isobutylene polymer, said polyethylene having a molecular weight of at least 6000, evaporating the liquid from the deposited composition at a temperature ranging from about 200 to 400° F. to soften and plasticize the polyethylene and form a residue comprised of a multiplicity of interconnected cells and having an open porous surface, and compressing the residue with means to concurrently cool the softened polyethylene and form a substantially solid coherent gasket of a form-stable configuration.

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3,164,486
METHOD OF PRODUCING GASKETS FOR CONTAINER CLOSURES
Michael Pezzuto, Burlington, and Allen B. Foye, West Bridgewater, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed May 9, 1962, Ser. No. 193,623
9 Claims. (Cl. 117—43)



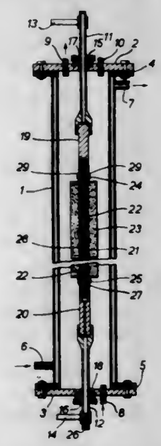
1. A method of making a gasket for a container closure which includes the essential steps of applying to the closure an annulus of an aqueous liquid gasketing composition which comprises a heat-gellable latex having at least 5 percent by volume of a gas dispersed as fine bubbles therein, and drying said composition in not more than 10 minutes by heating said annulus to a temperature in the range of about 220° to 400° F. whereby gelling of said composition is initiated during the first half of the drying cycle thereby leaving on said closure an annular gasket containing a multiplicity of interconnected small cells and a smooth unblistered surface.

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3,164,487
METHODS OF PRODUCING CARBON-IMPREGNATED ARTEFACTS
Kenneth Wallace Carley-Macauly, Harwell, and Malcolm MacKenzie, Wantage, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 21, 1961, Ser. No. 104,670
Claims priority, application Great Britain, Apr. 26, 1960, 14,665/60; Nov. 29, 1960, 40,903/60
17 Claims. (Cl. 117—46)

1. A method of producing a carbon impregnated artefact, comprising the steps of forming a body having an open porosity of at least 60% by volume and low thermal conductivity, the body being of a material selected from the group consisting of silica, alumina and carbon; placing the body in an atmosphere of hydrocarbon gas, the gas permeating the body; heating a fixed first zone of the body to a first temperature at which carbon from the hydrocarbon gas permeating the body is deposited in the first zone until the first zone is fully impregnated; and then further heating the first zone to progressively raise the temperature of the impregnated first zone at a controlled rate and create a moving boundary zone along the body in which the temperature of the moving boundary is the said first temperature wherein carbon is deposited at the moving boundary from the permeating hydrocarbon gas, the rate of rise of temperature of said first zone being controlled such that the boundary zone in its movement along the body is fully impregnated.

6. A method of producing a carbon impregnated nuclear fuel element comprising the steps of forming a



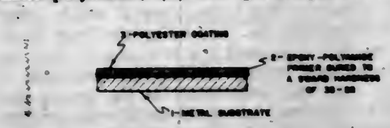
body having an open porosity in excess of 60% by volume and low thermal conductivity, such body consisting essentially of a mixture of carbon particles and nuclear fuel material particles; placing the body in an atmosphere of hydrocarbon gas to permeate the body with the hydrocarbon gas; heating a fixed first zone of the body to a first temperature at which carbon from the hydrocarbon gas permeating the body is deposited in the first zone until the first zone is fully impregnated; and thereafter heating the first zone to progressively raise the temperature of the impregnated first zone at a controlled rate and create a boundary zone moving along the body in which the temperature of the moving boundary zone is the said first temperature wherein carbon is deposited at the moving boundary zone from the permeating hydrocarbon gas, the rate of rise of temperature of said first zone being controlled such that the boundary zone in its movement along the body is fully impregnated.

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3,164,488
PROCESS FOR BONDING POLYESTER COATINGS TO METAL SUBSTRATES USING A CURED EPOXY PRIMER AND PRODUCT OBTAINED THEREBY
Clayton E. Workman, Kankakee, Ill., assignor to General Mills, Inc., a corporation of Delaware
Filed Feb. 15, 1962, Ser. No. 173,527
11 Claims. (Cl. 117—75)

1. A method of bonding a polyester coating to a metal substrate which comprises: (1) applying to the substrate, a primer comprising 10 to 90% by weight of an epoxy resinous material containing terminal epoxy groups

and 90 to 10% by weight of a polymeric polyamide, said polyamide being the reaction product of polymeric fat acids containing at least 2 carboxyl groups and an aliphatic polyamine; (2) curing said primer to a Sward



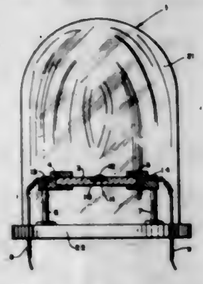
Hardness of 38–56; (3) applying to the primed substrate, a polyester coating comprising a polymerizable ethylenically unsaturated polyester; and (4) curing the composite coating.

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3,164,489
## SILICON IMPREGNATED GRAPHITE PART AND PROCESS FOR PRODUCING SAME

Arthur J. Tinsper, Torrance, Calif., assignor, by mesne assignments, to Lear Siegler Inc., Santa Monica, Calif., a corporation of Delaware

Filed Dec. 26, 1961, Ser. No. 161,971
10 Claims. (Cl. 117—212)



1. A process for treating a graphite part comprising the steps of

(1) coating the surface with silicon;

(2) heating the coated graphite part until the silicon is melted and absorbed by the graphite to form a treated graphite part with a silicon impregnated surface;

(3) cooling said treated part to a temperature below the melting point of silicon, and

thereafter repeating the cycle of steps (1), (2) and (3) until no further silicon is absorbed by the graphite.

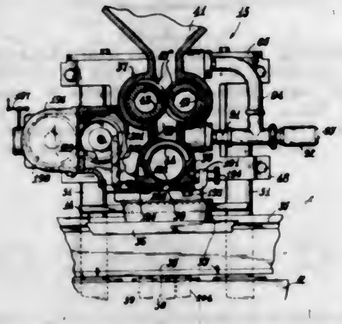
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3,164,490
## AUTOMATIC COATING DEPOSITOR

Clifford E. Evanson, Highland Park, Gustaf Albert Marberg, Oak Park, and Jesus Richard Mota, Mundelein, Ill., assignors to Kitchens of Sara Lee, Inc., Chicago, Ill., a corporation of Maryland

Filed Dec. 4, 1961, Ser. No. 156,769
23 Claims. (Cl. 118—25)

1. In apparatus icing cakes and the like, conveyor means for advancing cakes through said apparatus, an icing extrusion assembly arranged above said conveyor and beneath which said cakes advance, means to supply icing to said extrusion assembly, valve means in said extrusion assembly, pump means operable to deliver icing from said supply means to said valve means, an extrusion orifice in the extrusion assembly and through which icing delivered by said valve means is discharged onto a cake passing therebeneath, a common source of power for synchronously operating said conveyor, valve means and pump means, first drive means driven by said common source of power for driving said pump means at a relatively constant angular speed, second drive means driven by said common source of power for driving said pump means at a constantly varying angu-



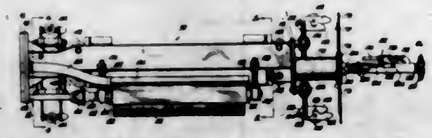
lar speed, and means for selecting either of said first drive means or said second drive means.

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3,164,491
## APPARATUS FOR INTERNALLY CLEANING AND COATING PIPE

Jay K. Brockett and William B. Handwerk, Tulsa, Okla., assignors to Cross-Perrault Equipment Corporation, Tulsa, Okla., a corporation of Oklahoma

Filed Aug. 22, 1960, Ser. No. 51,184
4 Claims. (Cl. 118—72)



2. In apparatus for internally treating a tubular element, cleaning means for loosening matter from the internal surface of said element; means for producing a fluid flow for transporting loose matter; means for coating said internal surface; means for moving said cleaning means, fluid flow producing means, and said coating means through said element; and positioning means mounted on said means for moving said cleaning means, fluid flow producing means, and said coating means and engageable with said internal surface for disposing said means for moving said cleaning means, fluid flow producing means and said coating means centrally of said element, said matter loosened from said element being removed therefrom by said fluid flow producing means, said positioning means including first ring means, fixedly mounted on said means for moving said cleaning means, fluid flow producing means, and coating means, and second ring means coupled with said first ring means and rotatable thereabout permitting relative rotation between said element and said means for moving said cleaning means, fluid flow producing means, and coating means.

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3,164,492
## SYSTEM AND APPARATUS FOR TRUEING DOCTOR BLADE HOLDERS ON DOCTOR BACKS

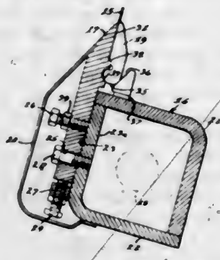
Arnold J. Schmitt, Beloit, Wis., and Irving J. Phillips, South Beloit, Ill., assignors to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin

Filed Sept. 22, 1961, Ser. No. 139,939
8 Claims. (Cl. 118—100)

4. In a doctor back assembly, a doctor back, a doctor blade holder extending along said doctor back, said doctor blade holder having first and second intersecting blade engaging surfaces substantially normal lying in first and second planes, first jacking means extending



along said blade holder and having jacking engagement between said doctor back and said holder applying positive nonpielding forces in said plane for trueing said blade engaging faces, and second jacking means extending along said doctor back and applying positive non-yielding



forces in said second plane between said blade holder and said back for trueing the other of said blade engaging faces, each of said jacking means applying forces in either direction in its plane and being variably adjustable along the length of the blade holder.

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3,164,493
## METHOD OF APPLYING AN OXIDE COATING TO A METAL TUBE

John E. Lindberg, 1211 Upper Happy Valley Road, Lafayette, Calif.

Filed Apr. 23, 1962, Ser. No. 189,433
7 Claims. (Cl. 148—6.3)



2. A method of making an insulated metal tube having a very low hydrogen diffusition rate from a tube of bare metal having a substantial amount of nickel therein, comprising,

passing hydrogen gas into said bare metal tube under pressure enough greater than atmospheric to cause passage of hydrogen through the tube walls while

heating said tube walls in an oxygen containing atmosphere at a temperature sufficient to cause oxidation, and

subsequently fusing thereto a ceramic coating.

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3,164,494
## BRIGHT FINISHED ALUMINUM ALLOY SYSTEM

John B. English, La Grange Park, Ill., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

No Drawing. Filed Oct. 19, 1960, Ser. No. 63,503
15 Claims. (Cl. 148—31.5)

1. An aluminum alloy especially suitable for chemical and electrolytic brightening, consisting essentially of magnesium up to about 1.20%, copper, .01–.08%, manganese .03% max., iron .01–12%, and silicon .01–.08%, in weight percent, balance aluminum.

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3,164,495
## ULTRA HIGH STRENGTH ALLOY STEELS

Clyde A. Furgason, Milwaukee, Wis., assignor to Ladish Co., Cudahy, Wis., a corporation of Wisconsin

No Drawing. Filed Sept. 26, 1961, Ser. No. 140,674
1 Claim. (Cl. 148—36)

An improved alloy steel consisting essentially of about .40–.55% carbon, about .57 to .93% manganese, about .23–.45% silicon, about .35–.70% nickel, about .87–1.23% chromium, up to .010% phosphorus, up to about .010% sulfur, about 1.88–2.27% molybdenum in combination with about .49–.61% vanadium to produce a secondary hardening characteristic, and the remainder being iron with incidental impurities, and the metal having the ability to maintain high strength considering its low alloy content for prolonged periods of elevated temperatures with accompanying good ductility, there being an absence of temper brittleness when tempered at low tempering temperatures, said alloy steel having been heat treated by austenitizing at 1800° F.–1900° F. followed by quenching, and subsequent tempering between 1000° F. to 1100° F.

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3,164,496
## MAGNETIC MATERIAL AND METHOD OF FABRICATION

Walter R. Hibbard, Jr., Schenectady, and John L. Walter, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Sept. 20, 1956, Ser. No. 610,909
3 Claims. (Cl. 148—120)

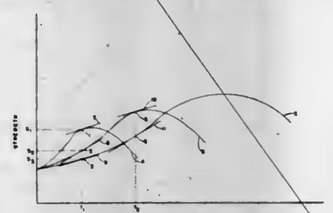
1. A method for preparing cube texture soft magnetic sheet metal comprising the steps of providing a casting consisting essentially of iron comprising a plurality of elongated columnar grains having their longitudinal axes extending substantially in a single direction, reducing the casting into sheet metal by a plurality of rolling passes in the majority of which rolling passes the longitudinal axes of the columnar grains are maintained substantially perpendicular to the projected axes of the working rolls and at an angle which is substantially a whole number multiple of 90° to the rolling plane and heat treating the rolled sheet metal to recrystallize the worked metal.

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3,164,497
## PROGRESSIVE SLOPE AGING PROCESS

Takashi Matsuda, Los Angeles, Calif., assignor to North American Aviation, Inc.

Continuation of application Ser. No. 34,973, June 9, 1960. This application Feb. 8, 1963, Ser. No. 257,312
10 Claims. (Cl. 148—142)



1. A metal heat treatment process for hardening a metallic specimen capable of increasing its hardness by isothermal aging at a plurality of different temperatures wherein the amount of such increase at a first aging temperature varies in direct proportion to the duration of the aging period until a first peak value of hardness is reached, after which continued aging at said first aging temperature results in decreasing hardness, said specimen being further capable of increasing its hardness by isothermal aging wherein the amount of such increase at a second aging temperature varies in direct proportion to the duration of the aging period until a second peak value of hardness is reached, after which continued aging at said said second aging temperature results in decreasing hardness, said second aging temperature being less than said first aging temperature and said second peak value being greater in amount of hardness than said first peak value, said second peak value requiring a longer aging period to achieve than the aging period required to achieve said first peak value, said process comprising the steps of: heating said specimen in a furnace to said first tempera-

ture, continually exposing said specimen to said first temperature for a period of time sufficient to obtain a substantial increase in the hardness of said specimen and no greater than the period at which maximum hardness of said specimen results from said temperature, thereafter lowering the heat in said furnace to said second temperature and continually maintaining said specimen at said second temperature for another predetermined period of time sufficient to obtain a substantial increase in the hardness of said specimen and no greater than the period at which maximum hardness of said specimen results from said second temperature, whereby superior physical properties of said specimen are produced in a total period of time less than that which would be required to produce equivalent properties by isothermal heat treatment of said specimen at either said first or said second aging temperature alone.

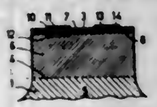
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3,164,498

## METHOD OF MANUFACTURING TRANSISTORS

Hans Walter Loeb, London, and Mervyn Charles Lovell, Faringdon, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1962, Ser. No. 186,384
Claims priority, application Great Britain Apr. 10, 1961
8 Claims. (Cl. 148—177)



1. A method of manufacturing a transistor, comprising the steps of diffusing an impurity of one conductivity-forming type into a region of a semiconductive body of the opposite conductivity type to form a first base zone of said one type and of substantial thickness having a relatively low concentration of said impurity of said one type, thereafter forming on said first base zone a second surface base zone having a thickness smaller than that of said first base zone and having a concentration of impurity of said one type considerably greater than that present in said first base zone, contacting the surface of the second base zone with the higher impurity concentration to form a base connection and contacting the adjacent original region of the body to form a collector connection, and alloying an impurity of said opposite conductivity type into and through the second base zone to form within the first base zone an emitter region of said opposite conductivity type forming an emitter junction with the first base zone containing the lower impurity concentration, whereby the resultant transistor exhibits high emitter efficiency and low base resistance.

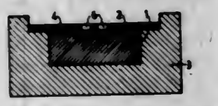
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3,164,499

## METHOD OF PROVIDING ALLOY CONTACTS ON SEMI-CONDUCTOR BODIES

Else Kooi, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 12, 1961, Ser. No. 137,606
Claims priority, application Netherlands Sept. 13, 1960
6 Claims. (Cl. 148—179)



1. In the manufacture of a semiconductor device, a method of making an alloy contact to a selected surface portion of a semiconductive body, comprising providing on the said surface portion a very thin layer of a solution of an adhesive which will substantially completely volatilize upon heating and selected from the group consisting of oils, greases and fats in a solvent, which solvent rapidly evaporates at room temperature leaving a thin layer of a member of the said group as an adhesive behind, providing a jig containing an aperature over the said selected surface portion but spaced therefrom and disposing in said aperture onto the adhesive-coated surface portion a mass of contact material capable of producing one of an ohmic and rectifying contact to the semiconductive body to cause the mass to adhere to the said selected surface portion where the contact is to be made, thereafter removing the jig, thereafter heating the body with the adhering mass at a temperature at which the mass melts, wets and fuses to the said body surface portion and the adhesive volatilizes and is substantially completely removed from the body, and thereafter cooling the melt forming the desired alloy contact at the selected surface portion of the semiconductor.

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3,164,500

## METHOD OF PRODUCING AN ELECTRONIC SEMICONDUCTOR DEVICE

Hansjochen Benda, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Siemensstadt, Germany, a corporation of Germany

Filed May 10, 1961, Ser. No. 109,192
Claims priority, application Germany, May 13, 1960, S 68,499
7 Claims. (Cl. 148—186)



1. The method of producing an electric semiconductor device having a crystalline semiconductor body with regions of respectively different conductance type, which comprises the steps of doping a surface layer of a semiconductor body having a given conductance type with a conductance-type reversing dope substance, said doping being effected down to a depth smaller than ultimately required and with a dope concentration higher than ultimately required; then etching into the reversely doped surface layer a groove of sufficient depth to divide the doped layer into a plurality of separate doped zones, the etching depth being smaller than said ultimate doped zone depth; and thereafter heating the body to diffusion temperature a sufficient length of time to diffuse the doping substance down to said required depth beyond the depth of said groove, said groove being sufficiently wide to maintain zone separation after diffusion.

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3,164,501

## METHOD OF DIFFUSING BORON INTO SEMI-CONDUCTOR BODIES

Julian Robert Anthony Beale, Reigate, Henry Edward Brockman, Horley, and Peter Eric Krebs, Purley, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 16, 1962, Ser. No. 173,669
Claims priority, application Great Britain Feb. 20, 1961
11 Claims. (Cl. 148—189)



1. A method of diffusing boron into a semiconductive body, comprising providing in a container a solid supply



of a substantially oxygen-free solid, substantially involatile substance selected from the group consisting of elemental boron and boron compounds reactable with one of water vapor and oxygen to produce a volatile boron oxide, flowing over said supply an inert gas containing a selected amount of an oxidant selected from the group consisting of water vapor and oxygen, heating said supply while the said gas is flowed over at a temperature at which the oxidant causes oxidation of the supply and the production and volatilization of a volatile oxidized boron compound, passing the same inert gas now containing the oxidized boron compound over the semiconductive body, and heating the body while the oxidized boron compound containing inert gas is flowing over to cause boron to diffuse into the body and establish a boron concentration therein dependent upon the said amount of the oxidant initially provided in the inert gas.

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3,164,502

## SOLID PROPELLANT CONTAINING IMPROVED ASPHALT BLACK

Robert J. Convery, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Dec. 14, 1962, Ser. No. 244,588
2 Claims. (Cl. 149—18)

2. A solid composite propellant composition comprising a homogeneous mixture of from 65–95 wt. percent of a solid inorganic oxidizing salt and from 5–35 wt. percent of asphalt black prepared by the process of contacting a heavy asphaltic petroleum fraction having an initial boiling point of from about 500–1500° F. with zinc chloride at a temperature in the range of 220–500° C. and recovering the asphalt black.

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3,164,503

## AQUEOUS EMULSIFIED AMMONIUM NITRATE BLASTING AGENTS CONTAINING NITRIC ACID

Neil E. Gehrig, Schuylkill Haven, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 13, 1963, Ser. No. 280,128
19 Claims. (Cl. 149—18)

1. A granular blasting composition consisting essentially of

100 parts by weight of ammonium nitrate,

from about 3 to about 13 parts by weight of an aqueous solution of nitric acid containing from about 30% to about 80% by weight of nitric acid, and

from about 4 to about 13 parts by weight of an insensitive carbonaceous fuel material.

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3,164,504

## MONOPROPELLANTS CONTAINING LIQUID FLUOROCARBONS

William D. White, Pasadena, Doris M. Chin, Los Angeles, and John L. Jones, Pasadena, Calif., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 24, 1958, Ser. No. 723,610
6 Claims. (Cl. 149—22)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A high energy, high density monopropellant consisting essentially of from 20 to 40 percent by weight of a metal powder from the class consisting of magnesium, aluminum and boron having a particle size ranging from about 1 micron to about 300 microns; and the remainder a liquid fluorocarbon selected from the group consisting of perfluorotributylamine, perfluorocyclic ether, perfluorodimethylcyclohexene, benzotrifluoride, and polytrifluorochloroethylene having a viscosity of 60–70 at 210° F.

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3,164,505

## GELLING OF HYDRAZINE

Paul Y. Hsieh and James V. Cartmell, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,153
8 Claims. (Cl. 149—36)

1. A substantially anhydrous, self-supporting, gelled fuel composition comprising:

(1) A major amount of hydrazine, and

(2) A minor amount of fatty acid ester selected from the group consisting of:

(*a*) fatty acid esters of sorbitan selected from the group consisting of the monooleate, dioleate, trioleate, monostearate, and monopalmitate ester of sorbitan,

(*b*) fatty acid esters of polyethylene glycol selected from the group consisting of the monostearate and the dilaurate ester of polyethylene glycol, said polyethylene glycol being liquid at room temperature and having an average molecular weight range from 200 to 600, and

(*c*) mixture of fatty acid esters in (*a*) and (*b*).

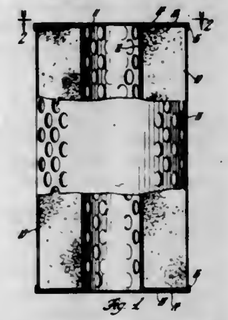
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3,164,506

## METHOD OF BONDING END CLOSURES TO PAPER FILTER ELEMENTS

David P. Lake, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 4, 1961, Ser. No. 107,704
5 Claims. (Cl. 156—69)



1. The process for making paper filter elements comprising the steps of forming a tubular paper filter element, placing an end plate adjacent an end of said filter element, applying a layer of adhesive comprising a vinyl plastisol including small amounts of resorcinol and hexamethylenetetramine between said paper element and said end plate, and heating the assembly at a temperature and for a time sufficient to fuse said vinyl plastisol and to cause a reaction and cure of the resorcinol with the formaldehyde resulting from the decomposition of the hexamethylenetetramine.

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3,164,507

## METHOD OF MAKING CYLINDERS FOR RAISING AND TRANSPLANTING SEEDLINGS OF FARM CROPS

Akiyoshi Masuda, Shimoinada, Kawanishi-cho, Obihiroshi, Hokkaido, Japan, assignor to Nippon Tensai Seito Kabushiki Kaisha, Tokyo, Japan

Filed Mar. 6, 1962, Ser. No. 177,819
Claims priority, application Japan, July 31, 1961, 36/27,305
2 Claims. (Cl. 156—197)

1. A method of producing an assemblage of cylinders for raising and transplanting seedlings of farm crops, comprising steps of producing a number of bottomless cylinders of a film of a porous and antiseptic material like

paper which has been cut into strips of a convenient width, by pasting a vertical edge of said strip on the opposite edge thereof by a water-insoluble paste; flattening said bottomless cylinders; subassembling series of said cylinders by pasting one of said flattened cylinders on another by a water-soluble paste in such a manner that one-third along the right edge of the front outer surface of a first flattened cylinder is overlapped on one-third along the left edge of the rear outer surface of a second flattened cylinder, of which one-third along the right edge of said rear outer surface is overlapped on one-third along the left edge of the front outer surface of a third flattened cylinder, and repeating said pasting successively; cutting



said series into a plurality of units having a predetermined height; and assembling an assemblage of cylinders by pasting one of said units on another by said water-soluble paste in such a manner that one-third along the left edge of the front outer surface of the second flattened cylinder of the first unit is overlapped on one-third along the right edge of the rear outer surface of the first flattened cylinder of the second unit and one-third along the right edge of the front outer surface of said second flattened cylinder of said first unit is overlapped on one-third along the left edge of the rear outer surface of the third flattened cylinder of said second unit, and repeating the second-named pasting successively, whereby an assemblage of cylinders expansible into a honeycombed construction is made.

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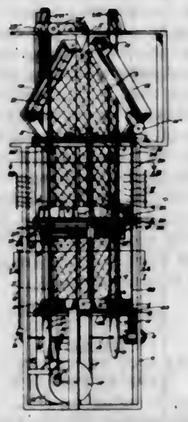
**3,164,508**
**METHOD FOR BONDING PLASTIC MATERIALS OF THE THERMOPLASTIC TYPE**
**Stephen D. Marcey, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**No Drawing. Filed Oct. 19, 1961, Ser. No. 146,330**
**3 Claims. (Cl. 156—273)**

1. The method of bonding plastic materials of the thermoplastic type comprising the steps of coating the surfaces to be bonded with a gel solution composed of a resin of the plastic to be bonded dispersed in a dielectric solvent material having a boiling point temperature at least as high as the melting point temperature of the plastic to be bonded, dielectrically heating the coated surfaces to the boiling point of the gel solution, and placing the heated surfaces to be bonded in intimate contact with each other until bonded.

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**3,164,509**
**APPARATUS FOR FABRICATING NON-WOVEN MULTISTRAND FABRICS**
**Neil L. Olken, 76 Robbins Road, Watertown, Mass.**
**Filed May 31, 1960, Ser. No. 33,002**
**11 Claims. (Cl. 156—426)**

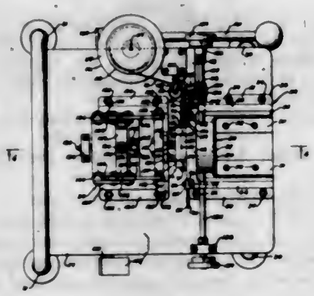
1. Apparatus of the character described having, in combination, first and second means for rotating in opposite directions respective first and second substantially cylindrical arrays of strands disposed upon the said means, the arrays of strands being laterally displaced along a predetermined direction along the axis of rotation of the said means, a plurality of at least three continuous conveyor pick-up means extending and moving substantially along the said direction and disposed at predetermined points within each cylindrical array, the first and second arrays rotating about the pick-up means to form therealong, respectively, a first tubular polygonic-cross-section array of strands extending along the said direction and a second co-extensive tubular polygonic-cross-section array of strands crossing the first tubular array at an angle, and means for securing the tubular



arrays together to form a tubular polygonic-cross-section fabric.

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**3,164,510**
**APPARATUS FOR MOUNTING INSERTS IN CARDS**
**Stanley T. Stoothoff, Glen Rock, and William W. Stoothoff, Ramsey, N.J., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**Original application Nov. 8, 1956, Ser. No. 621,152, now Patent No. 3,034,388, dated May 15, 1962. Divided and this application Apr. 5, 1962, Ser. No. 185,375**
**8 Claims. (Cl. 156—514)**

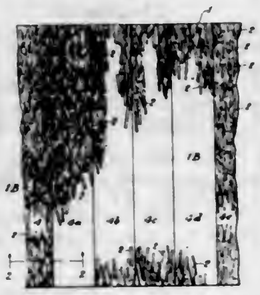


1. In apparatus for cutting sections of a predetermined length from a supply strip of relatively thin flexible material and mounting said sections in rectangular apertures in cards, a fixed planar die having a rectangular opening therethrough of substantially the same width as that of the strip and the aperture in the card and substantially of the same length as that of said card aperture, the opposed edges of said die opening defining the length of said die opening being formed as cutting edges, a reciprocable punch arranged at one side of said die coaxially with said die opening and corresponding in transverse cross-section to the size and shape of said die opening, said punch having spaced cutting edges cooperating with the cutting edges of said die, means for advancing the strip between said die and said punch across said die opening and past said cutting edges, opposed movably mounted guides normally projecting into said die opening and extending across the latter substantially from cutting edge to cutting edge thereof to engage the opposed longitudinal edges of the strip and guide said strip for movement in the plane thereof across said die opening, means arranged at the opposite side of said die for supporting a card against facewise displacement away from said die and with the aperture in said card aligned with said die opening, means for operating said punch toward the strip to sever a section from said strip and move said section through said die opening into the aperture in the card, and means associated with said guides and said punch for moving said guides away from each other clear of the advanced and guided strip and clear of said die opening to enable movement of said punch past the cutting edges of said die and severance and mounting of the section in the card thereby.

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**3,164,511**
**ORIENTED STRAND BOARD**
**Armin Elmendorf, 860 Charleston Road, Palo Alto, Calif.**
**Filed Oct. 31, 1963, Ser. No. 320,331**
**12 Claims. (Cl. 161—57)**



4. A structural board comprising at least three laminae bonded together, each lamina consisting of wood strands bonded together, the average length of the strands being at least three times greater than their average width, the strands having an average thickness in the range of .005 to .020 inch, the strands having an average length of at least one-half inch, but not greater than six inches, the fibers of the strands extending generally parallel to the surface and to the length of the strands, substantially all of the strands in both outer laminae crossing at least one other strand in the same lamina at an acute angle, the average of all acute angles of strands that contact and cross each other in said outer laminae being less than about 40 degrees, the average direction of the bisectors of said acute angles being substantially parallel to one edge of the board, the weight of the strands being substantially greater than the weight of the binder in the panel.

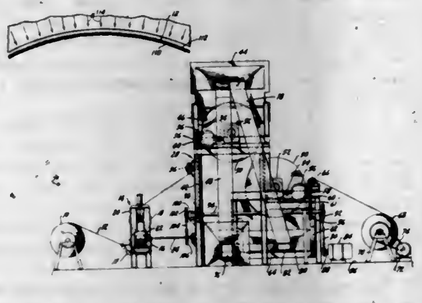
6. The structure of claim 4 wherein the strands in an intermediate lamina extend transversely of the orientation of the strands of the face laminae.

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**3,164,512**
**METHOD AND MEANS FOR FORMING A COCKLE FINISH IN PAPER**
**Henry P. Dixson, John C. Nelson, Arnold G. Beaman, and Marvin H. Buhner, Appleton, Wis., assignors to Fox River Paper Corporation, Appleton, Wis., a corporation of Wisconsin**
**Filed Aug. 3, 1962, Ser. No. 214,753**
**11 Claims. (Cl. 162—112)**

1. A method of forming a patterned finish in paper including the steps of bringing a continuous web of paper to a suitable moisture content for providing said patterned finish without rearranging the fibers in the paper, directing high velocity, high temperature air against one side of the web as it moves with a moving patterned surface so that the web is pressed against the surface as it dries, thereafter directing high velocity, high temperature air at the opposite side of the web as it moves with a second moving patterned surface so that the opposite side of the web is pressed against the surface as it dries.

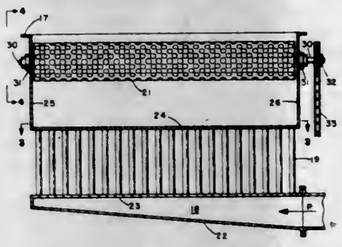
9. Apparatus for forming cockle finish paper from a continuous web of paper including means for adding moisture to the paper web, a first cockle patterned roller and means for rotating said first roller, means opposite said roller for directing high temperature, high velocity air at the web of paper moving with said first roller, a second cockle patterned roller, spaced from said first



roller, and means for rotating said second roller, means for directing high temperature, high velocity air at the web of paper moving with said second roller, said first roller presenting one side of the web to the high temperature, high velocity air and said second roller presenting the opposite side of the web to the high temperature, high velocity air.

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**3,164,513**
**DISTRIBUTOR SYSTEM FOR A PAPER MACHINE HEADBOX**
**Girard L. Calehuff, Covington, Va., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware**
**Filed Dec. 14, 1961, Ser. No. 159,396**
**10 Claims. (Cl. 162—212)**



1. A distributor system for delivering dilute paper stock uniformly to a paper machine headbox comprising:

(*a*) a headbox inlet chamber extending the width of the headbox and opening into the headbox along the full width thereof, and having a transition wall extending the width of the headbox and forming the upstream boundary of said headbox inlet chamber opposite said opening, all cross-sectional areas of said headbox inlet chamber measured in any plane therein parallel to the said transition wall and perpendicular to the direction of flow of dilute paper stock therethrough being substantially equal to each other and substantially equal to the area outlined by the boundaries of said transition wall,

(*b*) a perforated mixing roll mounted within said headbox inlet chamber in spaced parallel relationship to said transition wall,

(*c*) a mixing portion of said headbox inlet chamber defined by the upstream surface of said perforated mixing roll as its downstream boundary and the said transition wall as its upstream boundary, said mixing portion having the same cross-sectional area

measurements as defined above for the said headbox inlet chamber,

(*d*) a multiplicity of rows of pipes of equal diameter and of considerable length compared to diameter, having their outlet ends received by said transition wall in a patterned systematic manner throughout the area of said transition wall, said pipe outlet ends being spaced equally apart from each other by a separating distance of at least one times and not more than five times the internal diameter of one of said pipes, said pipes extending upstream for at least a portion of their length perpendicularly away from the said transition wall, and

(*e*) a tapered manifold extending the full length of the said headbox inlet chamber and having a wall receiving the inlet ends of said pipes and an opening at its wider end for receiving the dilute paper stock.

8. The method of obtaining a uniform flow of dilute paper stock across the width of a paper machine headbox which comprises the steps of:

(*a*) flowing a single stream of dilute paper stock in a path toward the headbox and parallel to the width thereof into an area of gradually reducing size causing the dilute paper stock to be subjected to a relatively constant pressure,

(*b*) dividing and simultaneously redirecting the flow of the single stream of dilute paper stock into a multiplicity of rows of separate and parallel streams flowing substantially perpendicularly to the direction of flow of the single stream,

(*c*) flowing said streams through resistance elements while still in separate and parallel relationship at such velocity of turbulent flow that an energy loss of about 2 to 5 feet of water occurs so that pressure surges and deviations are reduced, the velocity of the flow of the streams is substantially equalized, and the dilute paper stock in the streams is deflocculated by the fully turbulent conditions existing,

(*d*) impinging the streams after they have issued from the said resistance elements in the form of individual jets immediately after the jets have begun to merge together against a flow restricting non-continuous surface in a mixing zone to blend the streams without causing any substantial redirection of the total flow and without causing any expansion of the flow except that resulting from a blending of the individual jets,

(*e*) flowing the blended streams through the flow restricting non-continuous surface to blend them further into one stream of substantially constant velocity, again without causing any substantial redirection of the total flow and without causing any further expansion of the flow, as the stream approaches the inlet opening of the headbox.

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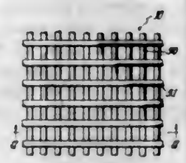
**3,164,514**

**PAPERMAKING MACHINE FORMING MEMBER**

**Winterton U. Day, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**

**Filed Mar. 22, 1961, Ser. No. 97,492**
**7 Claims. (Cl. 162—348)**

1. An endless fabric belt for Fourdrinier type papermaking machines which is adapted to be supported by and to travel over a pair of spaced rotatable rolls and to receive and drain a fluent mass of fibers and water to form a paper web on the belt, said belt comprising a first set of filaments extending parallel to each other and longitudinally of the belt and a second set of filaments all disposed on the same side of the belt and extending parallel to each other and crosswise of the belt in contact with and all at a certain angle to the filaments of said first set, the filaments of each of said sets being equal in diameter and being equally spaced and the filaments



of said two sets being bonded together at intersections of the filaments.

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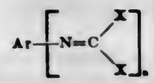
**3,164,515**

**METHOD OF COMBATING NEMATODES WITH ARYL ISOCYANIDE DIHALIDES**

**Bernhard Homeyer, Opladen, Engelbert Kühle, Cologne-Stammheim, and Hugo Malz, Leverkusen-Wiesdorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed May 15, 1962, Ser. No. 194,969**
**Claims priority, application Germany May 30, 1961**
**7 Claims. (Cl. 167—30)**

1. Method of combating nematodes which comprises applying to soil an isocyanide-dihalide of the formula



in which Ar is a member selected from the group consisting of phenyl, lower alkyl-substituted phenyl, chloro-substituted phenyl and bromo-substituted phenyl, X is a member selected from the group consisting of chlorine and bromine and *n* is 1 to 2.

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**3,164,516**

**INSECTICIDAL COMPOSITIONS CONTAINING LIGNIN SULFONIC ACID**

**Robert J. Geary, Vero Beach, Fla., assignor to Plant Products Corporation, Blue Point, N.Y., a corporation of New York**

**No Drawing. Filed Apr. 7, 1960, Ser. No. 20,558**
**4 Claims. (Cl. 167—42)**

1. An insecticidal composition in particulate form consisting essentially of about 50 to 75% of a water dispersible lignin sulfonic acid, and 50 to 25% of 1,2,3,4,10,10-hexachloro-6,7-epoxy - 1,4,4a,5,6,7,8,8a - octahydro-1,4-endo,exo-5,8-dimethanonaphthalene.

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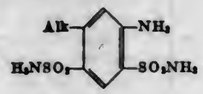
**3,164,517**

**PROCESS OF EFFECTING DIURESIS WITH LOWER ALKYL DISULFAMYLANILINE COMPOUNDS**

**Frederick C. Novello, Berwyn, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Original applications Feb. 7, 1957, Ser. No. 638,701, and Dec. 23, 1959, Ser. No. 854,580. Divided and this application Feb. 13, 1962, Ser. No. 172,884**
**3 Claims. (Cl. 167—51.5)**

1. The process of effecting diuresis which comprises administering a diuretic amount of a disulfamylaniline compound of the formula



wherein Alk is lower alkyl.



**3,164,518**

**PROCESS FOR TREATING INDIGESTION IN RUMINANTS**

**Josef Mussill, Salzburg, Austria, and Rudolph Selden, Kansas City, Mo., assignors to Haver-Lockhart Laboratories, Incorporated, Kansas City, Mo., a corporation of California, and Friedrich Jacoby & Co., Hallein-Kaltenhausen, Austria, a corporation of Austria**

**No Drawing. Filed July 2, 1962, Ser. No. 207,067**
**12 Claims. (Cl. 167—53)**

1. A process for treating indigestion and alimentary intoxication associated therewith in a ruminant comprising orally administering to the ruminant so afflicted, a quantity of a composition including a sufficient amount of sodium formaldehyde sulfoxylate to support the development of the digestive organisms normally present in the rumen of the animal, and an effective quantity of an antispasmodic selected from the group consisting of aminopyrine and dipyrone.

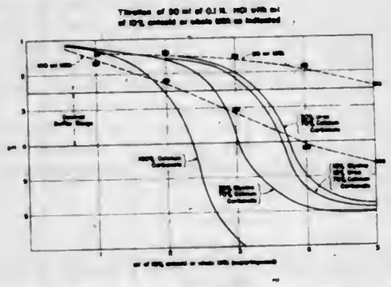
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**3,164,519**

**ANTACID COMPOSITION AND METHOD OF USING SAME**

**Bruno Puetzer, White Plains, Leonard Mackles, New York, and Martin Perl, Brooklyn, N.Y., assignors to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware**

**Filed Apr. 19, 1962, Ser. No. 188,623**
**9 Claims. (Cl. 167—55)**



1. An antacid composition that comprises from 15 parts to 40 parts by weight of urea, 60 parts to 85 parts by weight of calcium carbonate, and from 0 to 15 parts by weight of glycine.

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**3,164,520**

**INJECTABLE STEROID COMPOSITIONS CONTAINING AT LEAST 75% BENZYL BENZOATE**

**Raymond Charles Huber, Martinsville, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Filed Oct. 29, 1962, Ser. No. 233,931**
**4 Claims. (Cl. 167—58)**

4. A method of administering a large single dosage of a steroid which comprises parenterally administering to the patient being treated a composition comprising a steroid selected from the group consisting of 17-hydroxyprogesterone, the caproate ester of 17-hydroxyprogesterone, testosterone, the enanthate ester of testosterone. the palmitate ester of testosterone, estradiol, progesterone, and $\Delta^1$-testololactone, and a pharmaceutical carrier, said carrier being at least 75% by volume of benzyl benzoate.

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**3,164,521**

**ANTIMYCOTIC COMPOSITIONS COMPRISING CHLOROMETHYL 5-NITRO-2-FURYL KETONE**

**Joseph Edward Gray and Russell Yonker Mosher, Norwich, N.Y., assignors to The Norwich Pharmacal Company, a corporation of New York**

**No Drawing. Filed Aug. 22, 1962, Ser. No. 218,517**
**5 Claims. (Cl. 167—64)**

1. An antimycotic vaginal suppository comprising a base of polyoxyethylene wax and about 0.05% by weight thereof of chloromethyl 5-nitro-2-furyl ketone.

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**3,164,522**

**METHOD OF USING DIPHENYLAZO COMPOUNDS AS DIRECT DYES IN ALKALINE MEDIA ON HUMAN HAIR**

**Roger Charle, Soisy-sous-Montmorency, and Jean Gascon and Robert Lantz, Paris, France, assignors to Societe Anonyme dite: L'Oreal, Paris, France**

**No Drawing. Filed May 15, 1961, Ser. No. 133,000**
**Claims priority, application France, May 17, 1960, 827,470, Patent 1,292,212**
**11 Claims. (Cl. 167—88)**

1. A method of dyeing live human hair, which consists in; bringing said fibres into contact with an aqueous solution containing an azo benzene selected from the group consisting of 2:3:4-trihydroxyazobenzene, 3:4:5-trihydroxyazobenzene, 2:4:6-trihydroxyazobenzene, 2:4:2'-trihydroxyazobenzene, 2:4:4'-trihydroxyazobenzene, 2-amino - 4:2' - dihydroxyazobenzene, 4-amino-2:2'-dihydroxyazobenzene, 2-amino-4:4'-dihydroxyazobenzene, 4-amino-2:4'-dihydroxyazobenzene, and 2:4:6:4'-tetrahydroxyazobenzene, said solution being adjusted to a pH of 7 to 11, and being allowed to remain in contact therewith for approximately 20 minutes, then shampooing, rinsing and drying.

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**3,164,523**

**COMPOSITION FOR SKIN BEAUTIFICATION AND TREATMENT**

**Charles Fox, Fair Lawn, Fred S. Morshauser, Pompton Plains, and Paul Thau, Westfield, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware**

**No Drawing. Filed Mar. 22, 1961, Ser. No. 97,440**
**4 Claims. (Cl. 167—90)**

1. A nonaqueous gel-forming system adapted to form a tough, elastic film at a slow and controlled rate when mixed with water comprising:

(A) About 1 to 12 parts by weight of a partially water soluble calcium salt selected from the group consisting of calcium citrate, calcium sulfate, tricalcium phosphate and dicalcium phosphate;

(B) About 4 to 50 parts by weight of an alginate selected from the group consisting of the alkali metal and ammonium salts of alginic acid; and

(C) About 20 to 85 parts by weight of a nonaqueous inert liquid vehicle selected from the group consisting of:

(*a*) Ethylene glycol, propylene glycol, hexylene glycol and glycerine;

(*b*) Polyoxyethylene glycol;

(*c*) Ethoxylated lauryl alcohol;

(*d*) Polyethylene glycol laurate and polyethylene glycol palmitate;

(*e*) Nonylphenoxypolyoxyethylene; and

(*f*) A water dispersible liquid system comprising a a mixture of:

(*a'*) a wetting agent selected from the group consisting of ethoxylated lauryl alcohol, ethoxylated oleyl alcohol, ethoxylated lanolin fatty alcohols, polyethylene glycol monolaurate, polyethylene glycol monooleate and nonylphenoxypolyoxyethylene;

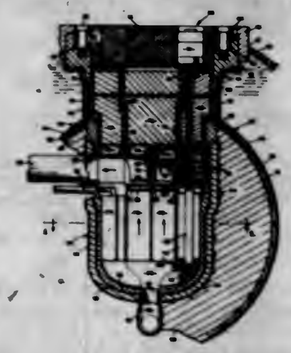
(*b'*) mineral oil; and

(*c'*) a fatty acid ester selected from the group consisting of isopropyl stearate and isopropyl myristate.

3,164,524
ORAL ANTISEPTIC
Theodore L. Fund, Convent, Fred C. Ninger, Livingston, and Morris E. Stolar, Mount Freedom, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Feb. 27, 1961, Ser. No. 91,624
2 Claims. (Cl. 167—93)

1. An improved oral antiseptic preparation comprising an aqueous solution of ethanol containing 20 to 30 percent ethanol by volume and for each 100 milliliters of said preparation about 10 to about 100 milligrams of benzoic acid, about 2 to about 3 grams of boric acid, about 10 to about 100 milligrams of methyl salicylate, about 50 to about 100 milligrams of thymol, about 20 to about 60 milligrams of menthol and about 5 to about 150 milligrams of eucalyptol, and containing at least 0.15 milligram of 2,2'-thiobis-(4,6-dichlorophenol) in each 100 milliliters of said preparation.

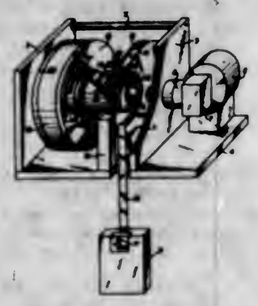
3,164,525
COMPACT MOBILE NUCLEAR POWER PLANT
Joseph R. Welch, Woodland Hills, and Herman M. Dieckamp and Monte V. Davis, Canoga Park, Calif., assignors to North American Aviation, Inc.
Filed May 4, 1960, Ser. No. 26,903
20 Claims. (Cl. 176—33)



1. A nuclear reactor comprising a vessel, a core within said vessel, means for passing water into said core, means for producing an epithermal neutron energy spectrum in said core and boiling said water, said last-named means including a plurality of fuel elements in said core containing a zirconium hydride and enriched uranium mixture, said zirconium hydride being in the alpha-plus-delta phase and having a hydrogen-to-zirconium ratio of from about 0.6 to about 1.4, a nickel reflector surrounding said core, control means in said reflector, and means for rotating said control means to effectuate reactor core control.

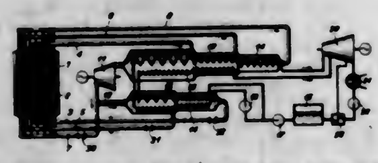
3,164,526
REEL TYPE CONTROL ROD BRAKE
Pierre Girard, Saint-Gratien, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Nov. 22, 1961, Ser. No. 154,275
Claims priority, application France, Dec. 6, 1960, 846,865/60
8 Claims. (Cl. 176—36)

1. A device for the transmission of kinetic energy at the time of instantaneous stopping of a body in motion, comprising: a horizontally disposed shaft supported for rotary movement; a drum rigidly mounted on said shaft for rotation therewith; a nonextensible, flexible tie, fixedly secured at one end thereof to said drum and wound thereon; a body, vertically movable between an elevated and a lowered position, fixedly secured to the other end of said flexible tie; housing means rotatably mounted on said shaft; an inertia flywheel rotatably mounted on said housing; an elastic coupling connecting said housing means and said flywheel limiting relative movement therebetween; a lever rotatably mounted on said shaft for movement between a first and a second position; one-way clutch means connecting said lever and said housing means together for simultaneous rotation in one direction upon rotation of said lever in said one direction from said first to said second position; fixed abutment means rigid with said drum for engaging said lever



in said first position and rotating said lever in said one direction from said first to said second position; and a fixed stop cooperating with said fixed abutment means limiting rotation of said drum in said one direction, whereby rapid movement of said body from said elevated position to said lowered position rotates said drum in said one direction to said limit of rotation in said one direction with the kinetic energy of said descending body at the instant when said fixed abutment means contacts said stop being wholly and nonreversibly transmitted to said flywheel.

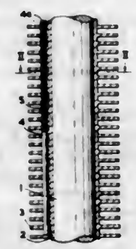
3,164,527
NUCLEAR REACTOR VAPOR GENERATING PLANT
Alfred Brunner, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland
Filed Mar. 26, 1962, Ser. No. 182,204
Claims priority, application Switzerland Apr. 28, 1961
5 Claims. (Cl. 176—59)



1. A nuclear reactor vapor generating plant comprising:
a nuclear reactor including a plurality of nuclear fuel elements forming a plurality of heating zones generating different amounts of heat,
means for passing a gaseous coolant in separate streams through said heating zones,
heat exchange means having a first portion including a plurality of consecutive heating zones operating at different temperatures,
means for conducting the coolant stream passing through the reactor heating zone generating the greatest amount of heat into the relatively coolest heating zone of said portion of said heat exchange means,
means for conducting the coolant stream passing through the reactor heating zone generating the lowest amount of heat into the relatively hottest heating zone of said portion of said heat exchange means,
a coolant circulating pump connected to the relatively coolest heating zone of said portion of said heat exchange means for receiving the coolant therefrom,
said heat exchange means having a second portion, said second portion including a plurality of consecutive heating zones operating at different temperatures,
the hottest heating zone of said second portion being connected to said pump for receiving coolant therefrom,
the hottest heating zone of said second portion being connected to said means for passing coolant through a heating zone of said reactor generating a relatively small amount of heat for conducting coolant thereto,
the coolest heating zone of said second portion being connected to said means for passing coolant through the reactor heating zone generating the greatest amount of heat, for conducting coolant thereto,
tubular conduit means extending through said second portion of said heat exchange means consecutively through heating zones thereof operating at consecutively increasing temperatures and subsequently extending through said first portion of said heat exchange means consecutively through heating zones thereof operating at consecutively increasing temperatures, and
means for flowing an initially liquid operating medium through said tubular conduit means in the direction of the extension of said tubular conduit means through said portions of said heat exchange means for evaporating said operating medium.

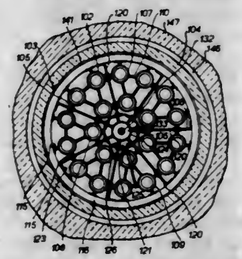


3,164,528
NUCLEAR REACTOR FUEL ELEMENTS
William Paul White, Saughall, near Chester, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Sept. 2, 1960, Ser. No. 53,826
Claims priority, application Great Britain, Jan. 14, 1960, 1,387/60
6 Claims. (Cl. 176—67)



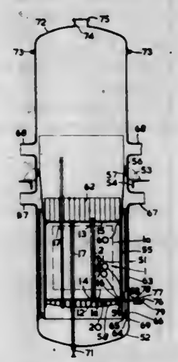
1. A nuclear reactor fuel element comprising a nuclear fuel member and a protective sheath enclosing the fuel member in combination with a strain indicator therefor fixed to the outside of the fuel element, the strain indicator comprising a hollow impermeable frangible body separate from the fuel element and attached to the sheath intermediate its ends so that localized swelling of the sheath in the vicinity of said body applies a bending moment to the body to fracture the body, a substance detectable in nuclear reactor coolant for the fuel element being contained within the body, said substance being released from the body into the reactor coolant on fracture of the body due to swelling of the fuel element sheath.

3,164,529
FUEL ELEMENTS FOR NUCLEAR REACTORS
Peter Waine, Padgate, Warrington, and James Duncan Waters, Lymm, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 16, 1962, Ser. No. 187,884
Claims priority, application Great Britain May 24, 1961
3 Claims. (Cl. 176—78)



1. An end support structure for a cluster of fuel elements, said end support structure comprising a first group of relatively thin webs, said webs having trough portions, intermediate portions and end portions, said intermediate portions of adjacent webs being juxtaposed and secured together, said trough portions of a group of said webs forming spaced openings providing a means for locating ends of fuel elements by push fit, a second group of relatively thick webs, an outer support ring, said second group of relatively thick webs being secured to said outer support ring, the end portions of certain of said first group of relatively thin webs being secured to the second group of relatively thick webs, the end portions of the remainder of said first group of relatively thin webs being secured to the outer support ring, whereby a grid structure comprising the first group of webs is relatively thin, locates the fuel elements and is relatively weak in a direction parallel to the axes of the fuel elements, and the second group of webs and the outer support ring are relatively thick and reinforce the grid structure against stresses tending to dish the end support structure.

3,164,530
NUCLEAR REACTOR CORE WITH FUEL LOCKING MEMBERS
Othniel Neil Banks, Culcheth, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Sept. 5, 1961, Ser. No. 135,844
Claims priority, application Great Britain Sept. 5, 1960
3 Claims. (Cl. 176—87)



1. In a nuclear reactor: a grid structure defining a lattice of space openings, a plurality of upright-disposed nuclear fuel containers of tubular form end-located by

the openings of the grid structure, a plurality of separate groups of fuel elements disposed within each of the containers, a first series of locking members associated with the fuel containers and each operatively interposed between the separate groups of fuel elements and adapted to releasably secure in common all of the separate groups in a container against movement withdrawing them from the container, at least one first actuating member operatively connected to each locking member of said first series and adapted to displace locking member of said first series from a position securing separate groups of fuel elements to a position whereby said separate groups are withdrawable from the container, a second series of locking members associated with the fuel containers and each operatively interposed between the located end of a fuel container and the grid structure and adapted to releasably secure said located end of the fuel container to the grid structure against movement withdrawing said fuel container from the grid structure and at least one second actuating member connected to each locking member of said second series and adapted to displace the locking members of said second series from a position securing the fuel container to the grid structure to a position whereby said fuel container is withdrawable from said grid structure.

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**3,164,531**

## PROCESS FOR PREPARING L-GLUTAMIC ACID

**Hiroshi Okada, Tokyo, Koichi Takinami and Haruo Tsuri, Kanagawa-ken, Isamu Shiio, Tokyo, and Toshinao Tsunoda, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., and Sanraku-Ocean Co., Inc., Tokyo, Japan**

**No Drawing. Filed Oct. 12, 1962, Ser. No. 230,275**
**Claims priority, application Japan, Oct. 19, 1961, 36/37,315; June 27, 1962, 37/26,269**
**10 Claims. (Cl. 195—47)**

1. A process for preparing L-glutamic acid which comprises culturing a microorganism capable of producing L-glutamic acid from a nitrogen source and from sucrose as a carbon source on a medium containing as a carbon source a material selected from the group consisting of molasses, raw juice, and raw sugar derived from sugar beets and sugar cane, said medium further containing an effective amount of a non-ionic surface active agent smaller than the amount of said surface active agent which inactivates the glutamic acid producing enzyme in said microorganism.

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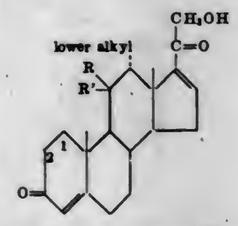
**3,164,532**

## PRODUCTION OF 12α-ALKYL-21-HYDROXY-PROGESTERONE DERIVATIVES

**Patrick A. Diassi, Westfield, Pacifico A. Principe, South River, and Josef Fried, Princeton, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia**

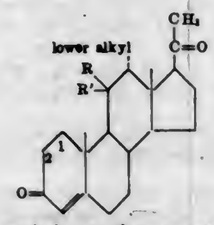
**No Drawing. Filed May 31, 1963, Ser. No. 284,313**
**7 Claims. (Cl. 195—51)**

1. A process for the production of a member of the group consisting of a compound of the formula

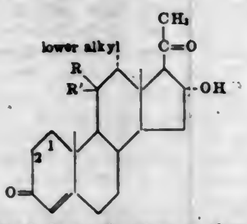



wherein R is hydrogen when R' is β-hydroxy and R and R' together are keto,

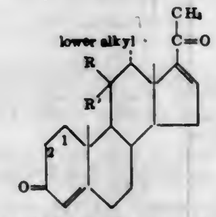
and the 1-dehydro derivatives thereof which comprises hydroxylating in the 16α-position a compound of the formula




wherein the symbols are the same as above, by subjection to the enzymes of the organism *Streptomyces roseochromogenus* to produce a compound of the formula




wherein the symbols are the same as above, reacting the last compound with aluminum alkoxide at elevated temperature in an organic solvent and inert atmosphere to form a compound of the formula




wherein the symbols are the same as above, and hydroxylating the last named compound in the 21-position by subjection to the enzymes of a mircoorganism of the group consisting of *Wojnowicia graminis, Ophiobolus herpotrichus* and *Aspergillus niger*.

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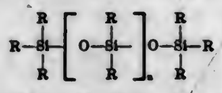
**3,164,533**

## PRODUCTION OF *MYCOBACTERIUM PHLEI*

**Donald Paul Kronish, Bronx, N.Y., and Raam R. Mohan, Randolph Township, Dover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware**

**No Drawing. Filed Feb. 25, 1963, Ser. No. 260,851**
**3 Claims. (Cl. 195—96)**

1. Process for the production of *M. phlei* by submerged aerobic culture, which comprises inoculating a vegetative inoculum of said *M. phlei* into a sterile medium containing at least one ammonium salt together with assimilable sources of carbon, complex organic nitrogen and also sulfate, phosphate, and ferric ions, maintaining the surface tension of said medium at about 40 to 50 dynes/cm. by the addition of an organo-polysiloxane of the formula:



wherein R is methyl and *n* is an integer of 1 to 1000 and allowing the culture to grow at 37° C. under agitation and aeration.



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**3,164,534**

## DIAGNOSTIC COMPOSITION

**Alfred H. Free, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana**

**No Drawing. Filed Apr. 13, 1954, Ser. No. 422,977**
**3 Claims. (Cl. 195—103.5)**

1. A method for detecting the presence of glucose in urine which comprises contacting the urine which is to be tested with a bibulous material which has been impregnated with a glucose-free composition comprising glucose-oxidase and an indicator material which undergoes a color change induced by a reaction product formed when said enzyme is contacted with glucose in the presence of oxygen.

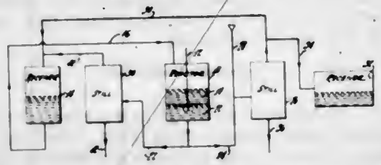
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**3,164,535**

## RECOVERY OF HIGH PURITY NITROSODIMETHYLAMINE BY DISTILLATION AND PHASE SEPARATION BOTH WITH CAUSTIC

**Louis H. Diamond, Yardley, Pa., and William B. Tuemmler, Catonsville, and John W. Getz, Baltimore, Md., assignors to FMC Corporation, a corporation of Delaware**

**Filed Jan. 16, 1961, Ser. No. 82,983**
**4 Claims. (Cl. 202—57)**



1. A process of producing an aqueous nitrosodimethylamine solution of high purity, comprising adding to an aqueous solution of nitrosodimethylamine produced by nitrosation of dimethylamine and containing dimethylamine, sufficient caustic to provide a concentration of caustic in said solution of about 3 to 40%, and distilling the resulting solution first to remove dimethylamine until the overhead comprises not more than about 10% by weight of dimethylamine, and thereafter distilling the residue from said first distillation to produce a distillate rich in nitrosodimethylamine, and collecting said distillate rich in nitrosodimethylamine.

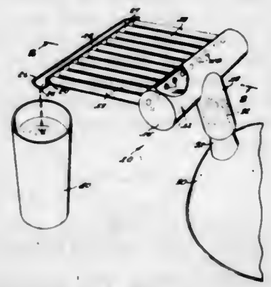
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**3,164,536**

## STILL

**Edwyn E. Melby, Los Angeles, Calif., assignor to Our Creator's Temple, Los Angeles, Calif., an unincorporated religious association**

**Filed May 28, 1962, Ser. No. 198,119**
**3 Claims. (Cl. 202—185)**



1. In a still adapted to distill water vapor produced in a teakettle having an upwardly inclined spout, the combination of: a horizontal manifold pipe opposite ends of which are closed, said pipe having a relatively large inlet hole opening downwardly therefrom midway between said ends, and a multiplicity of relatively small holes opening from said pipe, the axes of said small holes lying in an approximately horizontal plane; a spout connection pipe integrally united with said manifold pipe to connect with said inlet hole and to extend downwardly therefrom in telescopic relation with said spout, when said still is in use; a yieldable packer for making a sealed connection between said connection pipe and said spout and through which said still is supported on said spout when in use with said still extending in cantilever fashion away from over said teakettle; a multiplicity of parallel condensing tubes connecting respectively with said small holes in said manifold pipe and integrally united with the latter, said tubes inclining slightly downward from horizontal; and a substantially horizontal trough connecting integrally with outer ends of said condensing tubes to receive and collect condensate flowing from said tubes, one end of said trough being closed whereby condensate flows exclusively from the opposite end of said trough.

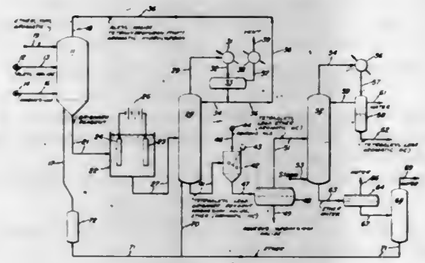
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**3,164,537**

## RECOVERY OF TETRAALKYL LEAD FROM ELECTROLYTIC REACTION MIXTURES

**Jack Linsk, Highland, and Ralph W. Carl, Hammond, Ind., and Edmund Field, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana**

**Filed Dec. 30, 1960, Ser. No. 79,845**
**7 Claims. (Cl. 204—59)**



1. A process for recovering a tetraalkyl lead product and solvent from the electrolytic reaction mixture obtained by electrolyzing an alkyl Grignard reagent with a lead anode in a solvent comprising excess alkyl halide, a high boiling ether, tetrahydrofuran, and an aromatic hydrocarbon, which process comprises: distilling said mixture to obtain an overhead containing excess alkyl halide, tetrahydrofuran, and aromatic hydrocarbon, together with a bottoms containing tetraalkyl lead product, unreacted Grignard reagent, magnesium halide, and said high boiling ether; recovering said overhead; hydrolyzing the bottoms with aqueous hydrochloric acid; separating the resulting aqueous phase containing magnesium halide from an organic phase containing tetraalkyl lead product and said high boiling ether; and distilling said organic phase to separate tetraalkyl lead product as an overhead from the high boiling ether as bottoms.

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**3,164,538**

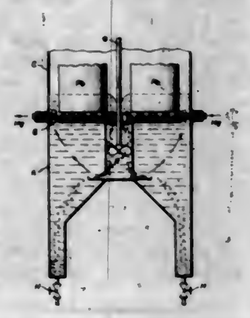
## ELECTROLYTIC PRODUCTION OF METAL ALKYLS

**Karl Ziegler, Kaiser Wilhelm Platz 1, Mulheim (Ruhr), Germany, and Herbert Lehmkuhl, Mulheim (Ruhr), Germany; said Lehmkuhl assignor to Karl Ziegler, Mulheim (Ruhr), Germany**

**Filed Aug. 3, 1961, Ser. No. 129,009**
**Claims priority, application Germany, Aug. 11, 1960, Z 8,197**
**35 Claims. (Cl. 204—59)**

1. A process for producing an alkyl of a metal selected from the group consisting of beryllium, magnesium, mer-

cury and metals of main groups III to V of the periodic table by electrolysis of aluminum-organic compounds, which comprises subjecting compounds of the general formula $Me[AlR_3R']$ wherein R is an alkyl radical, R' is a member selected from the group consisting of alkyl,



alkoxy and cycloalkoxy radicals and fluorine, and Me is a metal selected from the group consisting of sodium, potassium and mixtures of sodium and potassium, to electrolysis at current densities in excess of 2 a./dm.$^2$ with the use of anodes of the metal whose alkyls are to be produced and a mercury cathode.

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**3,164,539**
**PROCESS FOR PREPARING PHOTOPOLYMERIZABLE COMPOSITIONS**
**Charles Walter Smith, Little Silver, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Mar. 29, 1961, Ser. No. 99,072**
**9 Claims. (Cl. 204—158)**

1. A process for making uniform photopolymerizable compositions which comprises

(*a*) admixing the following constituents

(1) a celluluose ester of a saturated aliphatic monocarboxylic acid containing 2-4 carbon atoms,

(2) a dicarboxylic acid anhydride,

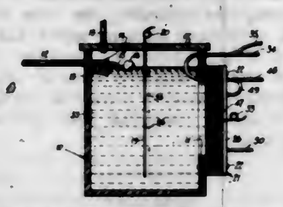
(3) a non-gaseous addition polymerizable ethylenically unsaturated compound containing at least one terminal ethylenic ($CH_2$=C<) group, having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer rapidly by free-radical photoinitiated, chain-propagated addition polymerization, and

(4) an addition polymerization initiator activatable by actinic light within the range 120 to 700 millimicrons and having no significant thermal activity at the temperature utilized in the esterification and within the range 50° C. to 180° C.,

with a compatible, inert, water-miscible liquid organic solvent for said cellulose derivative, said solvent having a boiling point from about 55° C. to about 180° C., in an amount sufficient to form a slurry which can be stirred readily to form a unifrom mixture, and

(*b*) heating the admixture to a temperature within the range 50° C. to 180° C., while stirring the admixture, until the desired degree of esterification with the dicarboxylic anhydride is obtained and a uniform solution is formed.

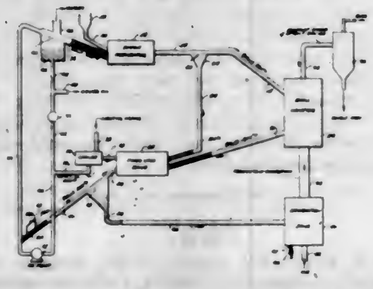
**3,164,540**
**ELECTRODIALYZER**
**Milton Sheldon Mintz, Stamford, Conn., assignor to American Machine and Foundry Company, Inc., a corporation of New Jersey**
**Filed Feb. 17, 1961, Ser. No. 90,025**
**12 Claims. (Cl. 204—301)**



1. A fluid treatment device comprising, in combination, an electrodialysis stack having membranes defining fluid treatment compartments, at least some of said membranes being ion selective, an electrode disposed beyond said membranes, a tank having a volume at least twice that of the total volume of all the fluid treatment compartments of said stack, said tank having an aperture over which said electrodialysis stack is secured, a second electrode disposed within said tank and means to maintain a predetermined level of an electrolyte in said tank whereby the tank aperture is submerged.

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**3,164,541**
**TRANSPORT OF BALLS BY OIL**
**Herbert E. Linden, Beverly Hills, Calif., and Thomas D. Nevens, Denver, Colo., assignors, by direct and mesne assignments, to The Oil Shale Corporation, Beverly Hills, Calif., a corporation of Nevada**
**Filed Aug. 8, 1960, Ser. No. 48,152**
**17 Claims. (Cl. 208—11)**



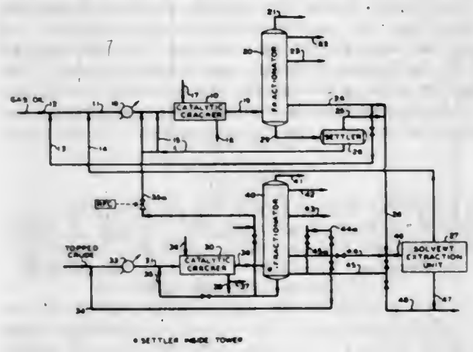
1. A continuous cyclic process for producing oil from solid oil-bearing material, which comprises: heating said oil-bearing material by means of hotter solid bodies to produce oil vapors and gases as an effluent; at least partially condensing said oil vapors; forming a moving stream of said condensed oil; and recycling said solid bodies, at least part of their travel being upward in said moving stream of oil, for their reheating and for admixture of additional oil-bearing material said moving stream of oil carrying said solid bodies during their upward travel in said moving stream.

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**3,164,542**
**CATALYTIC PROCESS FOR THE CRACKING OF HYDROCARBON OILS CONTAINING METALLIC CONTAMINANTS**
**Norris W. Mitchell, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Oct. 8, 1962, Ser. No. 228,893**
**5 Claims. (Cl. 208—78)**

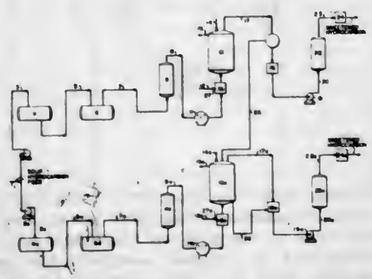
1. In a process for treating hydrocarbon fluids wherein a gas oil stream having a low metal contaminant content is catalytically cracked in a severe first catalytic cracking zone and a topped crude stream having a high metal contaminant content is catalytically cracked in a mild second catalytic cracking zone and the effluent from each cracking zone is fractionally distilled in a distillation zone to produce a metal contaminated catalyst-containing bottoms product, cycle oils and lighter hydrocarbons, the improvement comprising recovering the light cycle oil and lighter hydrocarbons from said first and second cracking zones as products of the process; recovering and passing a minor portion of the bottoms product from said second cracking zone to said first cracking zone; recovering and solvent extracting the heavy cycle oil and remaining bottoms product recovered from said first and second cracking zones; passing the raffinate from said solvent extraction step as feed to said first cracking zone; adding new catalyst to said first cracking zone; passing used catalyst from said first cracking zone to said second cracking zone; and recovering the aromatic extract from said solvent extraction step as an additional product of the process whereby the metal contaminated catalyst does not adversely affect the new catalyst in said first cracking zone.





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**3,164,543**
**COPPER SWEETENING**
**Marcus Bernard Shirley, Bournemouth, and David Tonge, Brokenhurst, England, assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Feb. 7, 1963, Ser. No. 256,917**
**Claims priority, application Great Britain Feb. 14, 1962**
**5 Claims. (Cl. 208—193)**



1. A process for sweetening a sour petroleum hydrocarbon by removal of sulfur impurities present therein as mercaptans utilizing a reaction zone containing a supported cupric chloride catalyst characterized by having a one end and an other end, said process comprising flowing a feed stream of a mixture including said sour hydrocarbon and an oxygen-containing gas from one end to the other end of said reaction zone, discharging a sweetened hydrocarbon stream as a primary effluent from said other end of said reaction zone, continuing flowing said feed stream for a time period less than that required to completely dehydrate said catalyst at said other end of said reaction zone, thereafter discontinuing said flow of said mixture, passing at least a portion of said sweetened hydrocarbon primary effluent in reverse flow from said other end to said one end of said reaction zone, discharging a sweetened hydrocarbon stream as a secondary effluent from said one end of said reaction zone and continuing said reverse flow from said other end to said one end for a time period sufficient to rehydrate said catalyst.

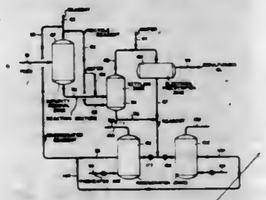
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**3,164,544**
**OXIDATIVE SWEETENING WITH BASE AND QUATERNARY AMMONIUM COMPOUND**
**Rolland G. Bowers, Perrysburg, Ohio, assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey**
**No Drawing. Continuation of applications Ser. No. 137,717, Sept. 13, 1961, and Ser. No. 170,510, Feb. 1, 1962. This application Feb. 26, 1963, Ser. No. 261,196**
**13 Claims. (Cl. 208—206)**

13. Process for reducing mercaptan content of hydrocarbons which comprises contacting hydrocarbons containing mercaptans with an alkaline catalyst and a quaternary ammonium compound containing at least one hydrocarbon radical selected from the group consisting of aliphatic and cycloaliphatic radicals and having at least 12 carbon atoms, in the presence of oxygen, said compound being selected from the group consisting of quaternary ammonium nitrites and quaternary ammonium halides.

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**3,164,545**
**DESULFURIZATION PROCESS**
**William Judson Mattox, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Dec. 26, 1962, Ser. No. 246,907**
**30 Claims. (Cl. 208—230)**



1. The process of removing sulfur impurities from a liquid hydrocarbon stream which comprises contacting said liquid hydrocarbon stream in the liquid phase with molten potassium hydroxide containing 5 to 30 wt. percent water based on total reagent, said contacting being conducted at a temperature in the range of 300° F. to 900° F.

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**3,164,546**
**TWO STAGE PROCESS OF REFINING DIESEL FUEL**
**Allen F. Millikan, William L. Fierce, and Roger L. Weichman, all of Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio**
**No Drawing. Filed Dec. 22, 1961, Ser. No. 161,374**
**13 Claims. (Cl. 208—236)**

1. In the treatment of fuel oils of the diesel-fuel boiling range by contacting the oil at 0°–40° C. with sufficient nitrogen dioxide to improve the cetane number thereof, the improvement of

(*a*) contacting the treated oil with a solvent selected from the group consisting of nitromethane, dimethyl-

formamide, pyridine, acetonitrile, glycolonitrile, ethylene glycol, ethanolamine, and phenol; and obtaining a raffinate phase predominating in said treated oil and

(*b*) washing the resulting raffinate phase with water to remove any dissolved solvent.

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**3,164,547**

## PROCESS FOR REFINING HYDROCARBON OILS SO AS TO OBTAIN ONLY REFINED OIL AND PURE OIL SOLUBLE SULPHONATES

**Henri Brunel, 9 Rue du General Niox, Paris, France**

**No Drawing. Filed June 9, 1960, Ser. No. 36,370**
**Claims priority, application France July 8, 1959**
**6 Claims. (Cl. 208—273)**

1. In a process for refining hydrocarbon oils the steps comprising

providing a hydrocarbon oil mixture containing fractions of at least two of the following groups, (*a*) hydrocarbons adapted to be easily sulfonated by 66° Bé. sulfuric acid, (*b*) hydrocarbons adapted to be sulfonated by 98–100% sulfuric acid, and (*c*) hydrocarbons adapted to be sulfonated by oleum but not by 98–100% sulfuric acid,

sulfonating said hydrocarbon oil mixture with no more than 15% of that sulfuric acid set forth above which has the lowest concentration to react with the sulfonatable hydrocarbon fraction of said oil while maintaining the temperature of the reaction mix, below 35° C.,

substantially immediately thereafter neutralizing the mixture, before any separation, whereby only two phases are formed, an oil phase and an acid phase, said oil phase containing substantially all of the hydrocarbon sulfonates,

separating the phases,

extracting oil soluble sulfonates from the separated oil phase, and

treating the extracted oil phase with that sulfuric acid set forth above which has the next higher concentration to react with the next more difficultly sulfonatable hydrocarbon fraction remaining in said oil.

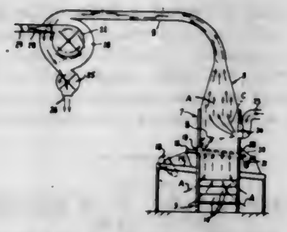
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**3,164,548**

## TOWER TYPE PNEUMATIC SEPARATOR

**Lorne Archibald Rowell, Lachine, Quebec, and Peter Alfred Tillich, Montreal, Quebec, Canada, assignors to Imperial Tobacco Company of Canada Limited, Montreal, Quebec, Canada**

**Filed June 19, 1961, Ser. No. 117,923**
**Claims priority, application Canada June 15, 1961**
**5 Claims. (Cl. 209—139)**



1. Apparatus for separating heavy and light particles from each other comprising a tower type separator having a material feed inlet, means for establishing and maintaining an upward flow of air through the tower at a predetermined velocity which is substantially uniform across the area of the tower, duct means connected to the said inlet for conveying a mixture of particles to said tower, a rotary bladed impeller in said duct means, the height of said inlet being less than one half the diameter of said impeller, a portion of the periphery of said duct means being curved to conform to the peripheral path of the blade tips of said rotary impeller and a portion of said duct means adjacent said inlet being horizontal, centrifugal force thrusting the particles against said curved duct means whereby the particles are contacted by the end portions of the impeller blades, the particles being carried by the impeller blades and being thrust along the horizontal portion of the duct means and being ejected from the duct through the inlet into the tower at a tangent to the impeller blades in a substantially horizontal direction and at a substantially uniform velocity, and means for maintaining a relationship between the velocity of the upflowing air and the velocity of travel of said particles across the tower such that the lighter particles are entrained and carried upwardly by the upflowing air while the heavier particles travel across the tower from the inlet opening towards the opposite wall of the tower and thence downwardly from the zone of separation, and means for removing the heavier particles from the tower.

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**3,164,549**

## FLOTATION SEPARATION OF PHOSPHATE ORES

**James E. Seymour, Lake Wales, Fla., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware**

**No Drawing. Filed July 31, 1961, Ser. No. 127,854**
**3 Claims. (Cl. 209—166)**

1. In a process for the separation of phosphatic ores by froth flotation and for the recovery of phosphate values from the froth, the step of conditioning a water suspension of finely-divided phosphate ore with fuel oil and dodecyl benzene sulfonic acid.

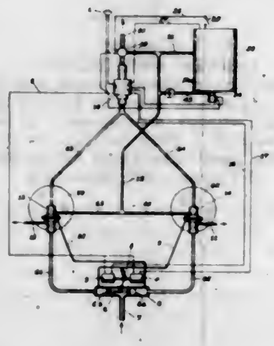
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**3,164,550**

## APPARATUS FOR SOFTENING WATER

**James E. Lamkin, 5169 E. 27th Place, Tulsa, Okla., assignor of thirty-five percent to Wiley W. Lowrey, Jr., and William M. Majors, Jr., jointly, and five percent to Marion E. Lamkin, all of Oklahoma City, Okla.**

**Filed Aug. 29, 1961, Ser. No. 134,750**
**7 Claims. (Cl. 210—89)**



1. A water softening apparatus comprising: a water source, two containers containing an ion exchange resin, a selector valve for allowing water from said water source to flow through said containers selectively, two hydraulically-actuated valves each being connected with one of said containers and adapted to be actuated by said selector valve, an outlet line in communication with each hydraulically-actuated valve, said outlet lines being connected to form a single outlet pipe, a brine solution source, control means and responsive to a predetermined quantity of water flowing therethrough to actuate said selector valve whereby after said predetermined quantity of water has passed through one of said containers said selector valve is activated and said water is caused to pass through said other container and a predetermined quantity of aqueous sodium chloride solution is caused to flow into said first mentioned container, means for draining said sodium cholride solution from said first mentioned container after a predetermined time, means for removing excess sodium chloride from said first mentioned container, said control means being arranged for reactivating said selector valve after said predetermined quantity of water has passed through said second container whereby the flow of water is directed to pass through said first mentioned container and a predetermined quantity of aqueous sodium chloride is caused to flow into said second mentioned container, means for draining said sodium chloride solution therefrom after a predetermined time, means for removing excess sodium chloride therefrom and means for repeating the water softening-resin reactivation cycle alternately with containers one and two.



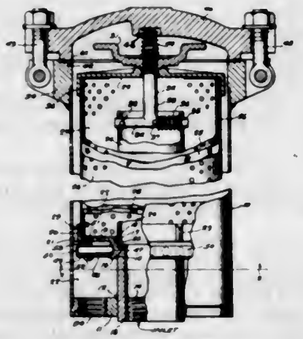
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**3,164,551**

## MAGNETIC CLEANER FOR FLUIDS

**Corliss D. Nugent, Winnetka, Ill., assignor to Wm. W. Nugent & Co. (Inc.), Skokie, Ill., a corporation of Illinois**

**Filed Aug. 2, 1960, Ser. No. 47,097**
**4 Claims. (Cl. 210—223)**



3. In a device for removing foreign particles from a flowing stream of fluid, the combination of an outer axially vertical tubular casing, a partition mounted in the lower end of said casing and providing an outlet-chamber between the bottom end of said casing and said partition, said partition having its outer periphery spaced from the wall of said casing to provide a peripheral duct for conducting fluid into said chamber, an inner basket strainer within said casing and having an outer foraminous, tubular, axially vertical strainer-screen spaced from said casing, the lower end of said basket being mounted on said partition and having its upper end located at the upper end of said casing, a feed pipe extending within the basket from the lower end of said casing to an upper level in the basket and comprising two separable parts, the lower part of the pipe being integrated with the casing and the upper part being integrated with the basket, said casing having at its lower end, below said partition, an outlet for discharging fluid from said chamber, and said casing being provided with a movable closure element at its upper end so that when said closure is removed, the basket and the partition may be withdrawn as a unit from the casing, without disturbing the outlet or the lower part of the feed pipe.

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**3,164,552**

## PROCESS FOR CONTROLLING THE GROWTH AND REPRODUCTION OF MICROORGANISMS

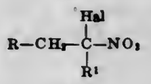
**Leonard L. Wolfson, Tinley Park, Ill., assignor to Nalco Chemical Company, a corporation of Delaware**

**No Drawing. Filed Dec. 24, 1958, Ser. No. 782,635**
**18 Claims. (Cl. 252—8.55)**

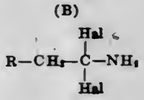
1. The method of controlling the growth of sulfate reducing bacteria in a liquid aqueous medium containing dissolved inorganic salts which comprises treating said bacteria in such medium with a biologically active amount of a halogen substituted nitroparaffin containing from 2 to not more than 6 carbon atoms in chain length.

7. In a flooding process for the recovery of oil from oil-bearing subterranean formations, the improvement which comprises flooding the oil-bearing subterranean formation with an aqueous liquid containing in excess of about 2–5 parts per million of a halogen substituted nitroparaffin having the structural formula from the group consisting of:

(A)



(B)



where R and $R^1$ are from the group consisting of hydrogen and lower acyclic hydrocarbon groups with the proviso that the sum of R and $R^1$ is not greater than 4 carbon atoms, and Hal represents halogen.

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**3,164,553**

## PROCESS OF TREATING SYNTHETIC LUBRICATING OILS WITH UREA

**Robert A. Cupper, Ridgefield, Conn., and Carl A. Wolf, Jr., New York, N.Y., assignors to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Dec. 16, 1960, Ser. No. 76,118**
**17 Claims. (Cl. 252—51.5)**

1. A process which comprises contacting a synthetic lubricant base fluid with from 0.05 to 1.0 weight percent of urea, based on weight of said synthetic lubricant base fluid, at an elevated temperature, for a period of time sufficient to produce a synthetic lubricant having reduced corrosive tendencies to metals, said synthetic lubricant base fluid being of the group consisting of organic polyesters and organic ethers which are composed only of carbon, hydrogen, and oxygen.

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**3,164,554**

## SOLS OF ACTINIDE METAL OXIDES

**Wayne T. Barrett, Severna Park, Moises G. Sanchez, Glen Burnie, and Milton C. Vanik, Brookeville, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Filed May 2, 1960, Ser. No. 25,847**
**5 Claims. (Cl. 252—301.1)**

1. The method of preparing a hydrothermally stable metal oxide clad sol of a hydrous oxide selected from the group consisting of thoria, urania, plutonia and mixtures thereof comprising the steps of slowly adding a solution of a soluble salt of a monobasic acid of a metal selected from the group consisting of zirconium and titanium to an aqueous dispersion of the hydrous oxide at a concentration of 5 to 10%, concentrating the resulting product, passing the product through a mixed bed ion exchange resin to remove ions and recovering the metal oxide clad sol.

3,164,555

## METHOD FOR PRODUCING HEAT RESISTANT SEMICONDUCTOR MATERIALS FROM NITRILES

Valentin Alexeevich Kargin, ul. Gaydara 7, Apt. 4, and Victor Alexandrovich Kabanov, ul. Petrovka 26, Apt. 330, both of Moscow, U.S.S.R.

No Drawing. Filed Feb. 16, 1961, Ser. No. 90,904
7 Claims. (Cl. 260—2)

1. A method for producing heat resistant semi-conductor polymers comprising heating acetonitrile in an inert atmosphere in the presence of a catalyst soluble in said nitrile and selected from the group consisting of chlorides of the metals of group II, III, IV, V and VIII of the periodic system to a temperature between 150° C. and 300° C. for between 8 and 18 hours, the temperature and duration of said heating being sufficient to yield a solid polymer as a result of said heating.

3,164,556

## PHOSPHONITRILIC POLYMERS AND PROCESS FOR THEIR PREPARATION

Martin Apley, Altrincham, and James Ronald Alexander, Bolton, England, assignors to The Walker Chemical Co. Limited, Bolton, England, a British company

No Drawing. Filed May 29, 1961, Ser. No. 113,127
14 Claims. (Cl. 260—2)

10. The polymeric resinous substance which results from the steps of (1) adding a polyphosphonitrilic compound having the formula:

$$[PN(OR)_{m-1}(OH)_{3-m}]_n$$

wherein R represents a group selected from alkyl groups having 1 to 4 carbon atoms and benzyl groups, $m$ represents an integer from 1 to 3 and $n$ has an average value from 3 to 10; to a compound selected from the group which consists of orthophosphoric acid, orthophosphoric acid anhydride, sulphuric acid, alkyl esters of phosphoric acid and of sulphuric acid, aromatic sulphonic acids, boric acid, boric anhydride, and a mixture of at least two members selected from the group which consists of orthophosphoric acid, orthophosphoric acid anhydride, sulphuric acid, alkyl esters and alkyl acid esters of phosphoric acid and of sulphuric acid, aromatic sulphonic acids, boric acid and boric anhydride, to form a mixture, and (2) heating said mixture to a temperature of from 100 to 220° C. for about 3 hours to effect reaction between the components of said mixture to produce a polymeric resinous substance.

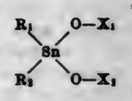
3,164,557

## POLYURETHANE PRODUCTION CATALYZED BY AN ORGANO-TIN COMPOUND, WHICH COMPOUND CONTAINS TERTIARY NITROGEN

Rudolf Merten, Cologne-Mulheim, and Gunther Loew, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1960, Ser. No. 1,870
Claims priority, application Germany Jan. 17, 1959
12 Claims. (Cl. 260—2.5)

1. Process for the production of a polyurethane from an organic polyisocyanate and polyol which comprises making said reactants with a catalytic amount of a compound of the following formula:



wherein $R_1$ and $R_2$ are hydrocarbon radicals; and $X_1$ and $X_2$ are organic radicals, and at least 1 of $X_1$ and $X_2$ contains a tertiary nitrogen atom.

3,164,558

## SELF-EXTINGUISHING URETHANE POLYMER COMPOSITIONS

Jacob Eichhorn, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 10, 1960, Ser. No. 13,983
25 Claims. (Cl. 260—2.5)

1. A composition of matter comprising a polyurethane resin containing intimately admixed therewith from 2 to 30 parts based on the weight of the resin of an organic compound having a plurality of bromine atoms attached to the carbon atoms of a radical selected from the group consisting of cyclohexyl and aliphatic radicals, the bromine atoms constituting at least 45 perecent by weight of the compound, and from 1 to 20 parts based on the wegiht of the resin of an inorganic oxide selected from the group consisting of $Sb_2O_3$, $As_2O_3$, $As_2O_5$, $P_2O_5$ and mixtures thereof.

3,164,559

## PROCESS FOR PREPARING FRAGMENTS OF A FOAMED UREA-FORMALDEHYDE RESIN

James J. Eberl, Moylan, and Sydney Coppick, Ridley Park, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 10, 1961, Ser. No. 109,020
3 Claims. (Cl. 260—2.5)

1. A process for preparing fragments of foamed urea-formaldehyde resin structure comprising the steps of:

(*a*) compressing the resin foam
(*b*) shredding the compressed foam structure
(*c*) forming an aqueous suspension thereof
(*d*) milling the aqueous suspension
(*e*) effecting a partial disintegration of the resin foam contained therein
(*f*) classifying in a centricleaning zone the disintegrated product to eliminate therefrom granular particles and oversize residues
(*g*) collecting the centricleaned product having a mesh size of from about 48 to about 150 and thereafter drying the separated fragments.

3,164,560

## GELATIN-POLYETHER COMPOSITIONS

John F. Suter, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 2, 1960, Ser. No. 73,217
8 Claims. (Cl. 260—6)

1. A composition comprising an aqueous solution of gelatin and poly(alkylene oxide) resin having a molecular weight in the range between about twenty thousand and ten million, said composition having a pH in the acid range.

3,164,561

## AQUEOUS COATING COMPOSITION OF DIALDEHYDE, A PENTAERYTHRITOL AND HALF ESTER AND PROCESS OF INSULATING WIRE THEREWITH

Robert E. Kass, Springfield, Albert H. Markhart, Wilbraham, and Edward Lavin, Longmeadow, Mass., assignors to Shawinigan Resins Corporation, Springfield, Mass., a corporation of Massachusetts

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,202
20 Claims. (Cl. 260—29.2)

1. An aqueous coating composition comprising (A) an aqueous solution of (1) a dialdehyde selected from the group consisting of glutaraldehyde, succinaldehyde, hydroxadipaldehyde and mixtures thereof, and (2) a pentaerythritol selected from the group consisting of monopentaerythritol, dipentaerythritol and mixtures thereof, in which solution the dialdehyde and pentaerythritol are present in the ratios of 1–2 moles dialdehyde and 1–2 moles pentaerythritol, and (B) a half-ester reaction product of an alcohol with a polycarboxylic cyclic anhydride material selected from the group consisting of anhydrides and dianhydrides, in which coating composition the half-ester is present in the amount of 1–30% of the total combined weight of the dialdehyde and pentaerythritol, said alcohol being selected from the group consisting of methyl alcohol, ethyl alcohol, and aliphatic diols and triols having 2–8 carbon atoms, and said anhydride material being selected from the group consisting of pyromellitic anhydride, methyl succinic anhydride, maleic anhydride and hexachloroendomethylene tetrahydrophthalic anhydride.



3,164,562

## VINYL ACETATE EMULSION

Carolyn E. Breed, Chestnut Hill, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Oct. 14, 1960, Ser. No. 62,545
6 Claims. (Cl. 260—29.6)

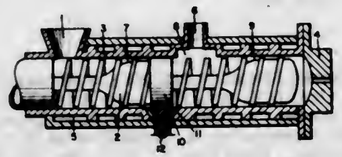
1. A vinyl acetate polymer emulsion comprising an aqueous dispersion of a surfactant and an interpolymer comprising vinyl acetate 0.2 to 5.0 weight percent of an $\alpha,\beta$-unsaturated amide containing 3 to 5 carbon atoms and 0.05 to 5.0 weight percent of an $\alpha,\beta$-unsaturated carboxylic acid containing 3 to 6 carbon atoms, said amide and acid being based on the weight of the vinyl acetate.

3,164,563

## PROCESS FOR THE PRODUCTION OF MOULDING COMPOSITIONS

James Maxwell and Alan Rutherford, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed June 20, 1962, Ser. No. 203,987
Claims priority, application Great Britain, June 20, 1961, 22,241/61; Feb. 26, 1962, 7,369/62
10 Claims. (Cl. 260—37)



1. A process for the production of granules suitable for use in thermoplastic moulding processes which comprises the steps of feeding glass fibers most of which are at least ¼ inch long and a particulate synthetic organic thermoplastic polymer, the weight ratio of said glass fibers to said polymer lying between 5:100 and 100:100 to the feed pocket of a vented screw extruder, masticating said polymer in the plastic state with said fibers in the extruder whereby said fibers are broken into lengths most of which are less than 0.07 inch long, removing from the resulting mixture while still in the plastic state any material volatilized during the mastication step, extruding the mixture and comminuting the extrudate, the rate at which said polymer and said fibers are fed to said feed pocket being proportionated to the rate at which the said mixture is extruded whereby the building up of a head of material in the feed pocket is prevented.

9. Moulding pellets comprising an intimate mixture of polyhexamethylene adipamide and glass fibers most of which are less than 0.07 inches long, the weight ratio of said glass fibers to said polymer in said composition lying between 20:100 and 80:100, said composition having a tensile strength (measured by the method of ASTM D638–58T) of at least 20,000 p.s.i. and a flexural modulus (measured by the method of ASTM D790–58A) of at least $1.0\times10^6$ p.s.i.

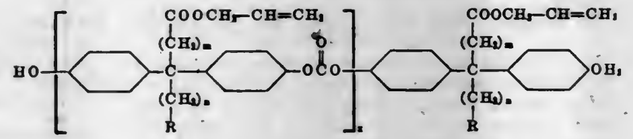
3,164,564

## UNSATURATED LINEAR POLYCARBONATE

Richard Butterworth, Manor Township, Lancaster County, and John A. Parker, Lancaster Township, Lancaster County, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 21, 1961, Ser. No. 104,532
8 Claims. (Cl. 260—47)

6. A linear polycarbonate having the formula



wherein R is selected from the group consisting of hydrogen and a methyl group, $m$ and $n$ are numbers from 0 to 7, such that $m+n\leq7$, and $x$ is a number between 30 and 1,000.

3,164,565

## WATER-SWELLABLE POLYURETHANES FROM A POLYALKYLENE ETHER GLYCOL AND AN OXYALKYLATED DIPHENOL

James A. Calamari, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 6, 1962, Ser. No. 185,535
9 Claims. (Cl. 260—47)

1. A polyether polyurethane resin which is soluble in organic solvents but insoluble in water and which is the reaction product of an organic diisocyanate with a mixture of at least two diols, a first said diol being a water-soluble polyoxyalkylene glycol having an average molecular weight of about 3000 to 30,000 and a second diol being an oxyalkylated diphenol containing from 2 to about 20 oxyalkylene groups, each such group containing 2 to about 4 carbon atoms, the weight ratio of said first diol to said second diol being about 5:1 to 100:1, the molar ratio of said diisocyanate to the total diol being about 0.75:1 to 1:1.

3,164,566

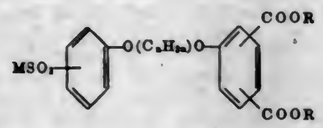
## DYEABLE LINEAR POLYESTERS MODIFIED BY A METALLOSULFOPHENOXYALKOXY-SUBSTITUTED AROMATIC DICARBOXYLIC ACID OR ESTER

Christian F. Horn, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 1, 1961, Ser. No. 149,205
18 Claims. (Cl. 260—49)

1. A dyeable linear polyester consisting essentially of the condensation product of (*a*) a dicarboxylic acid compound selected from the group consisting of the monocyclic aromatic dicarboxylic acids and the dialkyl esters thereof; (*b*) an aliphatic glycol containing from 2 to 10 carbon atoms; and, based upon the total amount of said

dicarboxylic acid compound, (*c*) from about 0.1 to about 10 mole percent of a compound of the formula:



wherein M is an alkali metal; *n* is an integer of from 1 to 12; and R is selected from the group consisting of hydrogen and alkyl.

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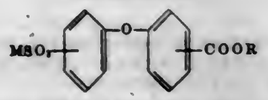
**3,164,567**

**DYEABLE LINEAR POLYESTERS MODIFIED BY A METALLOSULFOPHENOXY - SUBSTITUTED BENZOIC ACID OR ESTER**

**Christian F. Horn, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Nov. 1, 1961, Ser. No. 149,227**
**18 Claims. (Cl. 260—49)**

1. A dyeable linear polyester consisting essentially of the condensation product of (*a*) a dicarboxylic acid compound selected from the group consisting of the monocyclic aromatic dicarboxylic acids and the dialkyl esters thereof; (*b*) an aliphatic glycol containing from 2 to 10 carbon atoms; and, based upon the total amount of said dicarboxylic acid compound, (*c*) from about 0.1 to about 3.5 mole percent of a compound of the formula:



wherein M is an alkali metal and R is selected from the group consisting of hydrogen and alkyl.

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**3,164,568**

**POLYURETHANES FROM ESTERIFIED OR AMIDATED POLYETHERS**

**Herbert Nordt, Leverkusen, and Günther Loew, Cologne, Germany, assignors of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany, and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware**

**No Drawing. Filed Nov. 18, 1958, Ser. No. 774,611**
**Claims priority, application Germany Nov. 22, 1957**
**4 Claims. (Cl. 260—75)**

1. A method for making a polyurethane plastic which comprises reacting an organic polyisocyanate with a polyhydric polyalkylene ether having a molecular weight of at least about 500, a hydroxyl number of not more than about 225 and being predominately terminated in groups selected from the class consisting of primary amino and primary hydroxyl groups, said polyalkylene ether having been prepared by reacting the secondary hydroxyl groups of a polyalkylene ether having a molecular weight of at least about 200 with a polycarboxylic acid and then esterifying the resulting terminal carboxyl groups with a member selected from the class consisting of polyhydric alcohols having primary hydroxyl groups and free from amino groups, amines having at least one free hydrogen atom but free from hydroxyl groups, and amino alcohols having primary amino groups and primary hydroxyl groups.

**3,164,569**

**LINEAR POLYESTERS OF A GLYCOL CONTAINING A p-DIOXANE RING**

**Kozo Ide, Amagasaki, Japan, and Kentaro Noguchi, Hamburg, Germany, assignors to Kanegafuchi Spinning Co., Ltd., Tokyo, Japan**

**No Drawing. Filed Sept. 18, 1961, Ser. No. 138,560**
**Claims priority, application Japan, Sept. 27, 1960, 35/39,932**
**1 Claim. (Cl. 260—75)**

A fiber-forming linear polyester which is the polycondensation product of the reactants consisting essentially of (*a*) an acid selected from the group consisting of terephthalic acid, terephthalic acid lower alkyl ester, isophthalic acid, isophthalic acid lower alkyl ester, and mixtures thereof, and (*b*) a glycol, 5–100 mole percent of said glycol being selected from the group consisting of para-dioxane-2,6-dimethanol, para-dioxane-2,6-diethanol, para-dioxane-2,5-dimethanol, para-dioxane-2,5-diethanol and mixtures thereof, and the remainder of said glycol being selected from the group consisting of ethylene glycol, cyclohexane dimethanol, and mixtures thereof.

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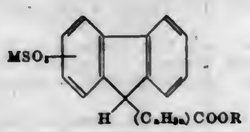
**3,164,570**

**DYEABLE LINEAR POLYESTERS MODIFIED BY A METALLOSULFOFLUORENYL-SUBSTITUTED ALKANOIC ACID OR ESTER**

**Christian F. Horn, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Nov. 1, 1961, Ser. No. 149,204**
**19 Claims. (Cl. 260—75)**

1. A dyeable linear polyester consisting essentially of the condensation product of (*a*) a dicarboxylic acid compound selected from the group consisting of the monocyclic aromatic dicarboxylic acids and the dialkyl esters thereof; (*b*) an aliphatic glycol containing from 2 to 10 carbon atoms; and, based upon the total amount of said dicarboxylic acid compound, (*c*) from about 0.1 to about 3.5 mole percent of a compound of the formula:



wherein M is an alkali metal, *n* is an integer of from 1 to 12, and R is selected from the group consisting of hydrogen and alkyl.

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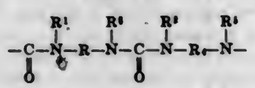
**3,164,571**

**POLYUREAS FROM N-PHENYL, PHENYLENE BIS-CARBAMYL HALIDE AND A DIAMINE**

**Robert J. Cotter, New Brunswick, N.J., assignor to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Dec. 31, 1959, Ser. No. 863,092**
**5 Claims. (Cl. 260—77.5)**

1. A thermoplastic, linear polyurea having a tensile strength in excess of about 5,570 p.s.i. consisting of a plurality of repeating units which have the general formula:



wherein $R^1$ and $R^2$ are phenyl radicals, R is a phenylene radical, $R^4$ is a divalent hydrocarbon radical and $R^3$ and $R^5$ are selected from the group consisting of hydrogen and monovalent hydrocarbon radicals.



**3,164,572**

**BLENDED GLYCOL LIQUID POLYURETHANE**

**Seymour L. Axelrood, Trenton, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan**

**No Drawing. Filed Apr. 6, 1961, Ser. No. 101,062**
**19 Claims. (Cl. 260—77.5)**

1. A liquid, curable polyurethane casting composition obtained by heating to a temperature of about 60° to about 160° C. for a period of about 1 to 24 hours (*a*) 1.0 molar proportion of a polypropylene ether glycol having a molecular weight of from about 1,000 to 2,500, (*b*) 0.2 to 10 molar proportions of a diol having a molecular weight in the range between about 76 to about 1,000 and having the general formula $HO(GO)_nH$ wherein G is a divalent hydrocarbon radical selected from the group consisting of saturated aliphatic hydrocarbon radicals having 3 to 4 carbon atoms and isopropylidene-bis-cyclohexyl radical, wherein n is 1 when G is isopropylidene-bis-cyclohexyl and n is from 1 to 18 when G is a divalent saturated aliphatic hydrocarbon radical having 2 to 4 carbon atoms, and (*c*) 2.4 to 22 molar proportions of an organic diisocyanate, with the proviso that the ratio of the molecular weight of (*a*) to the molecular weight of (*b*) is at least 2.0, the average molecular weight of (*a*) and (*b*) combined is in the range between about 500 to about 1,750, and the NCO/OH ratio is in the range between 2 to 2.5.

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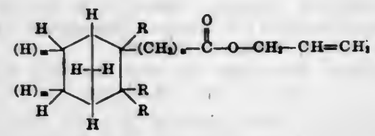
**3,164,573**

**ALLYL ESTERS OF BICYCLIC CARBOXYLIC ACIDS AND POLYMERS THEREOF**

**George C. Schweiker, Mountainside, N.J., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois**

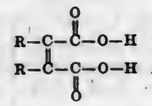
**No Drawing. Filed Feb. 16, 1961, Ser. No. 89,653**
**15 Claims. (Cl. 260—78.5)**

1. A compound of the formula:



wherein R is selected from the group consisting of hydrogen and an alkyl group containing from 1 to 4 carbon atoms, *m* is an integer from 0 to 1, provided that when *m* is 0 a carbon-to-carbon double bond is present between the 5- and 6-postion ring carbon atoms, and *n* is an integer from 0 to 10.

14. A new composition of matter comprising a solid copolymer formed by reacting under polymerization conditions in the presence of a free radical polymerization catalyst at a temperature of from about 25° C. to about 200° C., a compound of claim 1 with a compound having the formula



wherein R is selected from the group consisting of hydrogen and an alkyl radical containing from 1 to 4 carbon atoms, and their anhydrides.

**3,164,574**

**ACRYLONITRILE VINYLSULFONIC ACID COPOLYMERS**

**Josef Witte, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed Nov. 8, 1960, Ser. No. 67,894**
**Claims priority, application Germany Nov. 11, 1959**
**1 Claim. (Cl. 260—79.3)**

Water-soluble copolymers of acrylonitrile and at least 65% by weight of vinylsulfonic acid.

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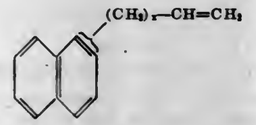
**3,164,575**

**POLYMERS OF ALKENYL NAPHTHALENE AND METHOD OF MAKING SAME**

**Frank J. Welch and Charles W. McGary, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed June 18, 1958, Ser. No. 742,703**
**10 Claims. (Cl. 260—93.5)**

1. Solid crystalline polymers of alkenyl naphthalene, said polymers being a polymerization product of monomers represented by the following general formula:



wherein *x* is an integer having a value of 1 to about 12.

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**3,164,576**

**PRODUCTION OF COPOLYMERS OF POLYCYCLIC AROMATIC COMPOUNDS**

**George F. Hardy, Drexel Hill, Pa., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed Mar. 14, 1961, Ser. No. 95,515**
**14 Claims. (Cl. 260—93.5)**

1. A process which comprises polymerizing a mixture of a polycyclic aromatic hydrocarbon monomer selected from the group consisting of anthracene, alkyl derivatives of anthracene and naphthacene and a comonomer selected from the group consisting of conjugated diolefins, vinyl aromatic compounds, esters of saturated alcohols with unsaturated acids and unsaturated nitriles in the presence of a catalyst selected from the group consisting of alkali metals, alkali metal hydrides, alkali metal alkyls, alkali metal aryls and addition compounds of alkali metals with polynuclear aromatic hydrocarbons, and recovering a copolymer containing up to 50 mol percent of the polycyclic aromatic hydrocarbon from the resulting polymerization mass.

11. A process which comprises polymerizing a mixture of a polycyclic aromatic hydrocarbon monomer selected from the group consisting of anthracene, alkyl derivatives of anthracene and naphthacene and a comonomer selected from the group consisting of conjugated diolefins, vinyl aromatic compounds, esters of saturated alcohols with unsaturated acids and unsaturated nitriles in the presence of (1) a catalyst selected from a group consisting of alkali metals, alkali metal hydrides, alkali metal alkyls, alkali metal aryls and addition compounds of alkali metals with polynuclear aromatic compounds, (2) an inert organic diluent and (3) a small amount of an ether selected from the group consisting of alkyl monoethers containing at least one methyl group, dialkyl ethers of ethylene glycol, dialkyl ethers of polyethylene

glycols and tetrahydrofuran as activator, and recovering a copolymer containing up to 50 mol percent of the polycyclic aromatic hydrocarbon from the resulting polymerization mass.

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3,164,577

## PROPYLENE POLYMERIZATION CATALYST

Samuel Liebman, Silver Spring, and Frank X. Werber, Kensington, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Oct. 12, 1960, Ser. No. 62,089
5 Claims. (Cl. 260—93.7)

4. The process of polymerizing propylene which comprises subjecting propylene in a liquid hydrocarbon reaction medium at a temperature in the range 20 to 150° C. and a pressure ranging from atmospheric up to 400 p.s.i. to the action of a catalyst consisting essentially of triethyl aluminum in combination with the solid residue obtained from washing in an inert atmosphere a co-crystallized $TiCl_3$—$AlCl_3$ complex in a $TiCl_3$:$AlCl_3$ mole ratio of 3.5 to 2.5:1 respectively with a solution of triethyl aluminum in an inert hydrocarbon solvent, the triethyl aluminum:$TiCl_3$ mole ratio in said catalyst being 2.5 to 1:1 respectively.

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3,164,578

## RECOVERY PROCESS FOR POLYOLEFINS

Bertsil Burgess Baker, West Chester, Pa., and Kenneth Martin Brauner, Grendon Farms, and Alan Norton Oomler, Highland Woods, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 26, 1962, Ser. No. 212,715
10 Claims. (Cl. 260—94.9)

1. A process for removing metallic catalyst residues from a polymer of a terminally unsaturated olefin obtained on polymerizing said terminally unsaturated olefin in an inert liquid hydrocarbon with a catalyst formed by admixing a halide selected from the group consisting of titanium halides and vanadium halides with a compound of aluminum having an aluminum to hydrocarbon bond which comprises reacting at a temperature of at least 125° C. a fatty acid with a polymerization mixture containing said polymer dissolved in said inert liquid hydrocarbon and a residue of said catalyst, the quantity of said fatty acid being at least stoichiometric with the metals of said catalyst residue, thereafter contacting the mixture at a temperature of at least 125° C. with an adsorbent selected from the group consisting of silica and alumina, and recovering a polymer solution essentially free of metallic catalyst residues.

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3,164,579

## THIOUREA ADDUCTS OF DIMETHYLNAPHTHALENES

Charles L. Thomas, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 3, 1960, Ser. No. 66,929
8 Claims. (Cl. 260—96.5)

1. Process for concentrating dimethylnaphthalene isomers which comprises: contacting a mixture of (1) a hydrocarbon material selected from the group consisting of 2,6 - dimethylnaphthalene, 2,7 - dimethylnaphthalene and mixtures of 2,6-dimethylnaphthalene and 2,7 - dimethylnaphthalene and (2) a dimethyl naphthalene isomer of said hydrocarbon material, with thiourea to form a solid adduct with said hydrocarbon material; and separating said adduct.

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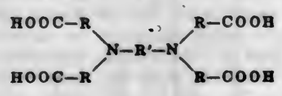
3,164,580

## PHOSPHOSULFURIZED ESTERS OF AMINO ACIDS

Howard J. Matson, Harvey, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Original application July 5, 1962, Ser. No. 207,807, now Patent No. 3,097,170, dated July 9, 1963. Divided and this application Jan. 25, 1963, Ser. No. 258,096
2 Claims. (Cl. 260—132)

1. A phosphosulfurized mineral oil-soluble tetraester of an unsaturated aliphatic alcohol of from 4 to 22 carbon atoms having carbon to carbon double bond unsaturation only and a carboxylic acid of the formula:




wherein R is a divalent hydrocarbon radical of 1 to 5 carbon atoms and R' is a divalent hydrocarbon radical 2 to 6 carbon atoms said phosphosulfurized tetraester being the reaction product of said tetraester and about 1 to 10% by weight of a phosphosulfurizing phosphorus-sulfur compound.

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3,164,581

## METHOD FOR DERIVING GLYCYRRHIRIC PRODUCTION

Ivan Alexeevich Muravjev, Rubin St. 5, Apt. 1, and Veniamin Danilivich Ponomarev, Dzerzhinsky St. 22, Apt. 7, both of Pjatigorsk, U.S.S.R.

No Drawing. Filed June 10, 1963, Ser. No. 286,452
3 Claims. (Cl. 260—210.5)

1. A method of producing glycyrrhiric acid from liquorice comprising extracting ground dried rhizomes of the liquorice with acetone acidified with $HNO_3$ and then treating the resulting liquid extract with ammonia; recovering the ammonium glycyrrhizate so produced; recrystallizing the ammonium glycyrrhizate from glacial acetic acid, dissolving the recrystallized salt in hot water, precipitating lead glycyrrhizate from the solution by the addition of the lead acetate, suspending the lead glycyrrhizate in alcohol; passing $H_2S$ through the resulting suspension; separating the alcohol solution of the resulting glycyrrhiric acid from the accompanying precipitate, removing the alcohol from said alcohol solution by heating the solution; and recrystallizing of the glycyrrhiric acid from acetic acid and alcohol.

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3,164,582

## CYANOCOBALAMIN COMPLEXES

David R. Walters, New Brunswick, and Oleh T. Ratych, Edison, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 29, 1962, Ser. No. 206,157
3 Claims. (Cl. 260—211.5)

1. Crystalline cyanocobalamin-cresol complex, wherein the cresol is para-cresol.



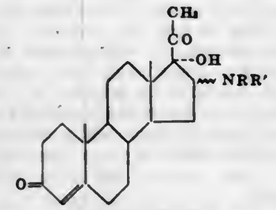
3,164,583

## DERIVATIVES OF 3-KETO STEROIDS

Laszlo Varghe, Marta Radoz, and Laszlo Szporny, Budapest, Hungary, assignors to Richter Gedeon Vegyészeti Gyár Rt., Budapest, Hungary

No Drawing. Filed Apr. 4, 1963, Ser. No. 271,554
5 Claims. (Cl. 260—239.5)

1. A steroid derivative of the formula




wherein NRR' represents a member selected from the group consisting of di-(lower alkyl)-amino, piperidino, piperazino, pyrrolidino and morpholino.

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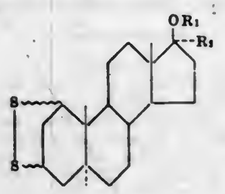
3,164,584

## SULFUR-CONTAINING ANDROSTANE DERIVATIVES

Karl-Heinz Bork, Griesheim, near Darmstadt, and Klaus Bruckner, Darmstadt-Eberstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany

Filed Dec. 24, 1963, Ser. No. 333,046
Claims priority, application Germany, Dec. 24, 1962, M 55,244
9 Claims. (Cl. 260—239.5)

1. A compound of the formula




wherein

$R_1$ is selected from the group consisting of hydrogen and an acyl group, said acyl group being derived from a hydrocarbon carboxylic acid of 1–18 carbon atoms, said acid being selected from the group consisting of monocarboxylic and dicarboxylic acids; and

$R_2$ represents a member of the group consisting of hydrogen and hydrocarbon of 1–3 carbon atoms.

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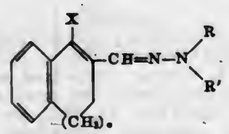
3,164,585

## HYDRAZONES OF CYCLICHALOVINYL-ALDEHYDES

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,875
6 Claims. (Cl. 260—240)

1. A member of the class consisting of a compound of the formula:




(I)

wherein X is selected from the group consisting of chlorine and bromine, *n* is an integer from 1 to 2, and R and R' taken separately are selected from the group consisting of hydrogen and loweralkyl and together with the nitrogen are saturated heterocyclic amino selected from the group consisting of unsubstituted and mono- and polyalkyl substituted piperidino, morpholino, thiamorpholino, piperazino, pyrrolidino, hexamethyleneimino, heptamethyleneimino, octamethyleneimino, and homomorpholino wherein each alkyl is of from 1 to 4 carbon atoms, inclusive, and the addition salts thereof.

5. 1-[(1-chloro - 3,4 - dihydro-2-naphthyl)methyleneamino]hexamethyleneimine.

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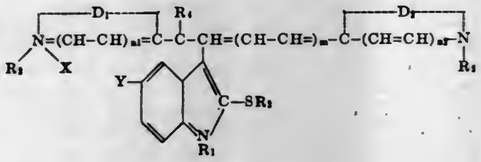
3,164,586

## TRINUCLEAR CYANINE DYES

Geoffrey Ernest Ficken, Ilford, Essex, England, assignor to Ilford Limited, Ilford, Essex, England, a British company

No Drawing. Filed Feb. 7, 1962, Ser. No. 171,598
Claims priority, application Great Britain, Feb. 16, 1961, 5,827/61; May 31, 1961, 19,701/61; June 14, 1961, 21,473/61
11 Claims. (Cl. 260—240.1)

1. A cyanine dye selected from the group consisting of (A) a dye of the formula




wherein $R_1$ is selected from the class consisting of alkyl and aryl, $R_3$ is alkylene-X wherein X is selected from the group consisting of —COOH, —$SO_3H$, —$OSO_3H$, —OH, lower alkoxy, alkanoyloxy, lower alkoxycarbonyl, —CN, amino, lower alkyl amino and carbomyl, $R_4$ is selected from the class consisting of hydrogen and alkyl, $R_2$ and $R_5$ are each selected from the class consisting of alkyl, hydroxyalkyl where the alkyl moiety contains 1 to 6 carbon atoms and aralkyl where the alkyl moiety contains 1 to 6 carbon atoms, *m*, $n_1$ and $n_2$ are each selected from nought and one, X is an acid radical, Y is selected from the class consisting of hydrogen and lower alkoxy and $D_1$ and $D_2$ each represent the atoms necessary to complete the heterocyclic nucleus selected from the group consisting of a thiazole nucleus, benzothiazole nucleus, naphthothiazole nucleus, benzoxazole nucleus, naphthoxazole nucleus, benzoselenazole nucleus, pyridine nucleus, quinoline nucleus, α-naphthoquinoline nucleus, β-naphthoquinoline nucleus, indolenine nucleus, diazole nucleus, thiazoline nucleus and diazine nucleus; (B) corresponding dyes of the said formula but in which the X radical in a hydrogen atom of an acid group contained in $R_3$ are eliminated; and (C) corresponding acid addition salts of those of the said dyes in which $R_3$ carries an amino group.

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3,164,587

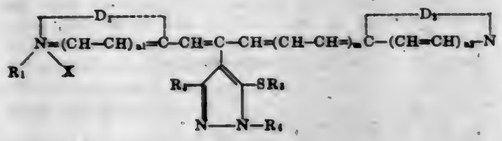
## CYANINE DYES AND TO THE PRODUCTION AND USE THEREOF

Geoffrey Ernest Ficken, Ilford, England, assignor to Ilford Limited, Ilford, England, a company of Great Britain

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,435
Claims priority, application Great Britain, Nov. 17, 1961, 41,316/61
5 Claims. (Cl. 260—240.1)

1. Bis-(3-methyl - 2 - benzothiazole) β-(3-methyl-1-phenyl-5-2'-sulphoethylthio-4-pyrazolyl)-trimethincyanine iodide.

3. A cyanine dye of the formula

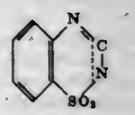


wherein $R_1$ and $R_2$ are each selected from the class consisting of lower alkyl, hydroxy-alkyl where the alkyl moiety contains 1 to 6 carbon atoms and aralkyl where the alkyl moiety contains 1 to 6 carbon atoms, $R_3$ is selected from the class consisting of hydrogen and lower alkyl, $R_4$ is selected from the class consisting of phenyl and naphthyl, $R_5$ is substituted alkyl wherein the substitution is selected only from the group consisting of —OR, —NRR, —$SO_3R$, —$OSO_3R$, —COOR, —$CONH_2$ and —CN wherein R is selected from the group consisting of hydrogen and alkyl containing 1 to 6 carbon atoms, $m$, $n_1$ and $n_2$ are each selected from nought and one, X is an acid radical and $D_1$ and $D_2$ each represent the atoms necessary to complete a heterocyclic nucleus selected from the group consisting of a thiazole nucleus, benzothiazole nucleus, naphthothiazole nucleus, benzoselenazole nucleus, benzoxazole nucleus, naphthoxazole nucleus, pyridine nucleus, quinoline nucleus, γ-naphthoquinoline nucleus, β-naphthoquinoline nucleus, indolenine nucleus, diazole nucleus, thiazoline nucleus and diazine nucleus and corresponding anhydro dyes of the said formula in which the X radical and a hydrogen atom of an acid group contained in $R_5$ are eliminated.

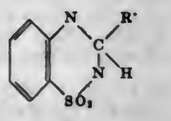
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**3,164,588**
**METHOD FOR THE PREPARATION OF 1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDE COMPOUNDS**
**John Sidney Irons, London, and Trevor Morgan Cook, East Barnet, England, assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**
**No Drawing. Filed June 10, 1960, Ser. No. 35,143**
**Claims priority, application Great Britain June 19, 1959**
**7 Claims. (Cl. 260—243)**

1. A method for saturating the heterocyclic ring of a benzothiadiazine having the nuclear formula



wherein unsaturation occurs at one of the positions 2(3) and 3(4) by heating said compound at about reflux with a carbonyl compound selected from the group consisting of an aldehyde of the formula R·CHO, acetal and aldol in the presence of a polar solvent and under mildly alkaline conditions not exceeding about pH 9 to give the corresponding dihydrobenzothiadiazine having the nuclear formula



wherein in each of the foregoing compounds R· is selected from the group consisting of hydrogen, lower alkyl, halo-lower alkyl, lower alkoxy-lower alkyl, and nitro-lower alkyl.

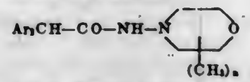
**3,164,589**
**PROCESS FOR THE PREPARATION OF 1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDES**
**James M. Sprague, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**
**No Drawing. Filed Apr. 7, 1961, Ser. No. 101,332**
**3 Claims. (Cl. 260—243)**

1. A process wherein disulfamylaniline compounds having one sulfamyl group in ortho-position to the amino group and having at least one additional substituent attached to the benzene ring selected from the group consisting of halogen, lower alkyl, lower alkoxy and nitro is heated with chloral in the presence of a trace amount of base to give a 1,2,4-benzothiadiazine-1,1-dioxide compound having a sulfamyl group and at least one additional substituent selected from the group consisting of halogen, lower alkyl, lower alkoxy, and nitro attached to its benzene moiety.

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**3,164,590**
**HYDRAZIDES OF 4-AMINOMORPHOLINE**
**Calvin H. Lovell, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Aug. 23, 1962, Ser. No. 218,836**
**4 Claims. (Cl. 260—247.1)**

1. A compound of the formula



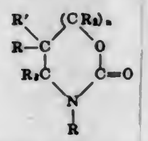
wherein $Ar_2CH$— is selected from the group consisting of benzhydryl, 9-fluorenyl, 9,10-dihydro-9-anthryl, 9-xanthyl, 9-thioxanthyl, and 2-chloro-9-thioxanthyl; and $n$ is a whole number between 0 and 2 inclusive.

4. N-morpholino-9-thioxanthenecarboxamide.

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**3,164,591**
**PREPARATION OF CYANURIC ACID**
**Wilhelm E. Walles, Midland, and Stanley S. Leff, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed May 15, 1961, Ser. No. 109,857**
**6 Claims. (Cl. 260—248)**

1. A process for making cyanuric acid which comprises mixing a substance selected from the group consisting of urea, biuret, and mixtures thereof with a solvent of the formula



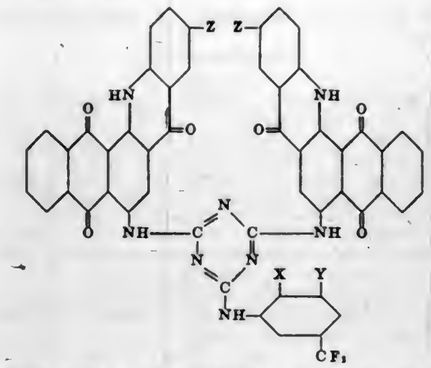
wherein each R is independently selected from the group consisting of hydrogen and lower alkyl groups containing 1–4 carbon atoms, R' is selected from the group consisting of hydrogen, lower alkyl groups containing 1–4 carbon atoms, and phenyl, and $n$ is 0–1, heating the thereby formed mixture at a temperature of about 150 to 250° C. for a period of time sufficient to form a substantial quantity of cyanuric acid, and separating the cyanuric acid product.

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**3,164,592**
**ANTHRAQUINONE VAT DYESTUFFS OF THE PHTHALOYLACRIDONE SERIES**
**Eduard Moergeli, Muttenz, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**
**No Drawing. Filed Dec. 26, 1962, Ser. No. 247,294**
**Claims priority, application Switzerland, Jan. 5, 1962, 119/62**
**4 Claims. (Cl. 260—249)**

1. An anthraquinone vat dyestuff of the formula



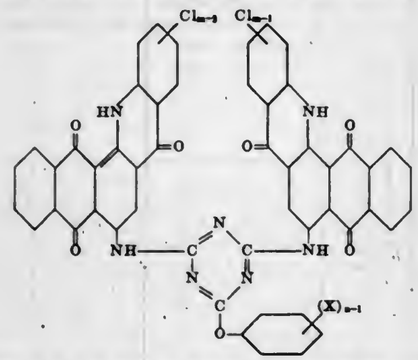


in which X and Z each represents a member selected from the group consisting of hydrogen and chlorine, and Y a member selected from the group consisting of hydrogen and trifluoromethyl.

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**3,164,593**
**ANTHRAQUINONE VAT DYESTUFFS OF THE PHTHALOYLACRIDONE SERIES**
**Eduard Moergeli, Muttenz, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**
**No Drawing. Filed May 20, 1963, Ser. No. 281,812**
**Claims priority, application Switzerland, May 28, 1962, 6,459/62**
**6 Claims. (Cl. 260—249)**

1. An anthraquinone vat dyestuff of the formula

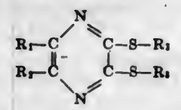


in which X is a member selected from the group consisting of chlorine and trifluoromethyl, $m$ is a whole number of at most 2 and $n$ is a whole number of at most 3.

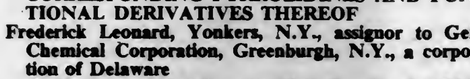
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**3,164,594**
**DERIVATIVES OF DIMERCAPTO-PYRAZINES**
**Karlfried Dickore, Leverkusen, Klaus Sasse, Cologne-Stammheim, and Richard Wegler, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Original application Nov. 21, 1961, Ser. No. 154,059. Divided and this application Dec. 12, 1963, Ser. No. 338,544**
**Claims priority, application Germany Nov. 20, 1960**
**6 Claims. (Cl. 260—250)**

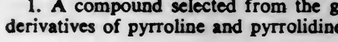
1. A compound of the formula



wherein $R_1$ and $R_2$ are members selected from the group consisting of hydrogen and lower alkyl and $R_3$ is a member selected from the group consisting of



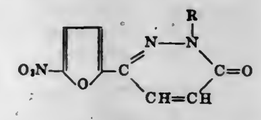
and



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**3,164,595**
**6-(5-NITRO-2-FURYL)-3-PYRIDAZINONES**
**Homer Albert Burch and Louis Edmond Benjamin, Norwich, N.Y., assignors to The Norwich Pharmacal Company, Norwich, N.Y., a corporation of New York**
**No Drawing. Filed Jan. 21, 1964, Ser. No. 339,099**
**5 Claims. (Cl. 260—250)**

1. A compound of the formula:



wherein R represents a member of the group consisting of hydrogen and lower alkyl.

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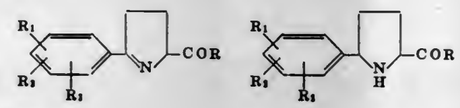
**3,164,596**
**NOVEL PROCESS FOR PREPARING HETEROCYCLIC COMPOUNDS**
**Irwin J. Pachter, Erdenheim, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**
**No Drawing. Filed Feb. 13, 1962, Ser. No. 172,888**
**8 Claims. (Cl. 260—251.5)**

6. A process for preparing a 4,7-diamino-6-pteridinecarboxamide comprising reacting α-benzoylacetamide-α-pyridinium bromide with a 4,6-diamino-5-nitrosopyrimidine in the presence of cyanide ions.

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**3,164,597**
**5-CARBOXYLIC ACID-2-PHENYL-PYRROLINES, CORRESPONDING PYRROLIDINES AND FUNCTIONAL DERIVATIVES THEREOF**
**Frederick Leonard, Yonkers, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware**
**No Drawing. Filed Dec. 17, 1962, Ser. No. 244,903**
**14 Claims. (Cl. 260—268)**

1. A compound selected from the group consisting of derivatives of pyrroline and pyrrolidine of the formulae:



wherein

R is a member selected from the group consisting of hydroxy, lower alkoxy, lower aralkoxy, amino, hydrazino, lower alkylamino, di(lower)alkylamino, pyrrolidino, piperidino, morpholino, piperazino, 4-methylpiperazino and 4-phenylpiperazino;

$R_1$, $R_2$ and $R_3$ are chosen from the group consisting of hydrogen, chlorine, bromine, hydroxy, amino, lower alkyl, lower alkoxy and lower alkylenedioxy, and the pharmaceutically acceptable acid addition salts thereof.

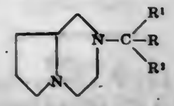
10. 1-[2-(3,4-dimethoxyphenyl)pyrroline-5-carbonyl]-4-phenylpiperazine.

### 3,164,598
### SUBSTITUTED 1,4-DIAZABICYCLO(4.3.0)NONANES AND METHODS FOR THEIR PREPARATION

Meier E. Freed, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,696
7 Claims. (Cl. 260—268)

1. A compound having the formula:



and the non-toxic acid addition salts thereof wherein R represents a substituent selected from the group consisting of hydrogen and lower alkyl; $R^1$ and $R^2$ each represent an organic radical selected from the group consisting of cycloalkyl containing up to about 6 carbon atoms, phenyl, and substituted phenyl containing as substituents therein at various positions of substitution on the phenyl ring a substituent selected from the group consisting of lower alkyl, halo, and lower alkoxy.

### 3,164,599
### BIS-NITROGEN HETEROCYCLIC COMPOUNDS AND A METHOD OF THEIR PREPARATION

Henry Rapoport, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Nov. 28, 1960, Ser. No. 71,887
4 Claims. (Cl. 260—288)

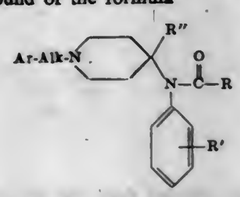
1. A process for preparing bis-nitrogen heterocyclic compounds selected from the class consisting of 2,2'-biquinolyl, 2,2'-binaphthyridyl, 2,2'-bipyridyl, 1,2-di-2-quinolylethane, 2,2'-bipyrrole, and substituted members thereof which comprises heating at reflux temperature in the presence of a palladium hydrogenation catalyst a compound possessing a boiling point between about 110°–400° C. selected from the class consisting of quinoline, naphthyridine, pyridine, 2-methylquinoline, pyrrole, and substituted members thereof, said substitutents being located on ring positions above 3 and being selected from the class consisting of lower alkyl, lower alkoxy, and phenyl.

### 3,164,600
### 1-ARALKYL-4-(N-ARYL-CARBONYL AMINO)-PIPERIDINES AND RELATED COMPOUNDS

Paul A. J. Janssen, Vosselaar, near Turnhout, Belgium, assignor to Research Laboratorium Dr. C. Janssen, N.V., Beerse, Belgium, a company of Belgium

No Drawing. Filed Oct. 10, 1961, Ser. No. 144,059
16 Claims. (Cl. 260—293.4)

1. A compound of the formula



wherein Ar is a member of the class consisting of cyclohexyl, phenyl, halophenyl, methoxyphenyl, aminophenyl, nitrophenyl, pyridyl, furyl and thienyl; Alk is a member of the class consisting of ethylene and propylene; R is a member of the class consisting of lower alkyl, lower alkoxy, dimethylamino, cyclopropyl, morpholino, pyrrolidino and piperidino; R' is a member of the class consisting of hydrogen, methyl and methoxy; and R'' is a member of the class consisting of hydrogen and lower alkyl.

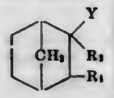
10. N-[1—(β-thienylethyl)-4-piperidyl]propionanilide.

### 3,164,601
### ANALEPTICALLY ACTIVE N-SUBSTITUTED AMINONORCAMPHANE DERIVATIVES AND THEIR ACID ADDITION SALTS AND QUATERNARY AMMONIUM COMPOUNDS

Jan Thesing, Georg Seitz, Rudolf Hotovy, and Siegmund Sommer, all of Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed Oct. 9, 1961, Ser. No. 143,578
Claims priority, application Germany, Oct. 13, 1960, M 46,811
11 Claims. (Cl. 260—294.7)

1. A compound selected from the group consisting of: (1) a compound of the formula



wherein

$R_1$ is selected from the group consisting of phenyl, naphthyl, phenyl alkyl of 7 to 8 carbon atoms, cyclohexyl, pyridyl, piperidyl, thienyl-2', dihydroxyphenyl, monohydroxyphenyl, halophenyl, dihalophenyl, dimethoxyphenyl, alkoxyphenyl wherein the alkoxy substituent is of 1–3 carbon atoms, and alkylphenyl wherein the alkyl substitutent is of 1–3 carbon atoms;

$R_2$ is selected from the group consisting of hydrogen and alkyl of 1–2 carbon atoms;

Y is selected from the group consisting of 2-oxopiperidino, 3-oxopiperidino, 4-oxopiperidino, 3-methyl pyrrolidino, 4-hydroxy piperidino, 4-chloropiperidino, and



in which:

$R_3$ is selected from the group consisting of vinyl, allyl, crotyl, propargyl, pentenyl, ethynyl, butynyl, butadienyl, 2-hydroxy ethyl, 3-hydroxy propyl, 3-hydroxy butyl, 3,5-dihydroxy pentyl, bromo ethyl, chloro ethyl, 4-chlorobutyl, methoxy ethyl, ethoxy pentyl, propoxy pentyl, methyl thioethyl, methyl thiobutyl, ethyl thioethyl, amino ethyl, 5-aminopentyl, dimethylamino ethyl, dimethylamino propyl, dimethylamino butyl, diethylamino propyl, pyrrolidino ethyl, 3-pipiperidino propyl, 4-piperidino butyl, 2-ethyl cyclopentyl, p-hydroxy cyclohexyl, p-methoxy benzyl, and 2,4-dichlorophenyl ethyl, and

$R_4$ is selected from the group consisting of hydrogen, alkyl of 1–3 carbon atoms and $R_3$;

(2) the non-toxic pharmaceutically acceptable acid addition salts thereof; and

(3) the quaternary ammonium salts thereof obtained by reacting the free base with a member selected from the group consisting of alkyl halides, aralkylhalides and dialkyl sulfates.

5. 2-phenyl-3-γ-hydroxypiperidino-bicyclo-[2,2,1]-heptane.

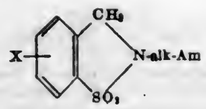
### 3,164,602
### NOVEL BENZISOTHIAZOLINE DIOXIDES

Scott J. Childress, Newtown Square, and Thomas Baum, Bryn Mawr, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 5, 1962, Ser. No. 228,729
4 Claims. (Cl. 260—301)

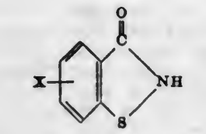
1. A compound selected from the group consisting of bases having the formula





where X represents a member of the group consisting of chlorine, bromine, methyl, and hydrogen, alk represents a member of the group consisting of polymethylene containing from two to six carbon atoms, and polymethylene containing from 2 to 6 carbon atoms having at least one methyl substituent, and Am represents a member of the group consisting of diethylamino, dimethylamino, dipropylamino, morpholino, piperidino, pyrrolidino, N-methylpiperazino, diethanolamino and N-(hydroxyethyl)piperazino, and the acid addition salts of said bases with pharmaceutically acceptable acids.

4. A process of preparing a 1,2-benzisothiazoline 1,1-dioxide which comprises reducing a benzoylsulfimide having the formula:



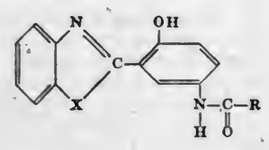
wherein X represents a member of the group consisting of chlorine, bromine, methyl and hydrogen with a stoichiometric excess of lithium aluminum hydride in the presence of a solvent selected from the group consisting of tetrahydrofuran, dioxan, diethyl ether, di-isopropyl ether and 1,2-dimethoxyethane, adding a hydroxylic solvent selected from the group consisting of water, glycol and a lower alkanol to decompose unreacted lithium aluminum hydride, and thereafter recovering from the reaction mixture a 1,2-benzisothiazoline 1,1-dioxide.

### 3,164,603
### CERTAIN 2-(2'-HYDROXY-5-ACYLAMIDOPHENYL)-BENZOXAZOLES AND BENZOTHIAZOLES

Edward A. McCafferty, Cincinnati, Ohio, assignor to The National Marking Machine Company, a corporation

No Drawing. Original application July 15, 1960, Ser. No. 42,959. Divided and this application Sept. 8, 1964, Ser. No. 395,059
17 Claims. (Cl. 260—304)

1. A normally colorless compound which fluoresces yellow to orange in ultraviolet light and is characterized by the formula



wherein X is selected from the group of divalent oxygen and divalent sulfur and R is selected from the group consisting of

hydrogen,
1 to 6 carbon alkyl,
arylmethylene,
methoxyaryl,
aryloxymethylene, and
aryl

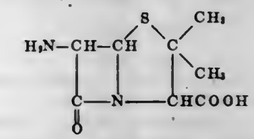
wherein all of said aryl groups are hydrocarbon groups of 1 to 2 rings.

### 3,164,604
### 6-AMINOPENICILLANIC ACID

Frank Peter Doyle, Betchworth, John Herbert Charles Nayler, Catford, London, and George Newbolt Rolinson, Brockham Park, Betchworth, England, assignors to Beecham Research Laboratories Limited, Betchworth, England, a British company

No Drawing. Original application July 22, 1958, Ser. No. 750,075, now Patent No. 2,941,995, dated June 21, 1960. Divided and this application Aug. 14, 1959, Ser. No. 833,680
Claims priority, application Great Britain Aug. 2, 1957, 24,607/57
1 Claim. (Cl. 260—306.7)

Solid, nonhygroscopic 6-aminopenicillanic acid having the structural formula



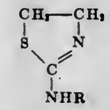
and melting at about 209–210° C.

### 3,164,605
### PREPARATION OF 2-ANILINO-2-THIAZOLINES

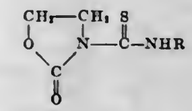
Richard C. Sovish, Ben Lomond, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,801
4 Claims. (Cl. 260—306.7)

1. A process for making a 2-anilino-2-thiazoline of the formula



which comprises heating a compound of the formula



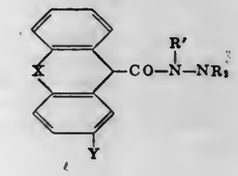
wherein R is in each of the above formulas a phenyl radical free of substituents other than halogen, nitro, alkyl, and alkoxy at a temperature of about 50° C. to about 150° C. in the presence of a small but effective amount of a tertiary amine base.

### 3,164,606
### HYDRAZIDES OF XANTHENECARBOXYLIC ACID AND THIOXANTHENECARBOXYLIC ACID

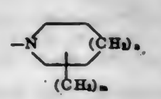
John W. Cusic, Skokie, and Calvin H. Lovell, Morton Grove, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,835
7 Claims. (Cl. 260—326.3)

1. A compound of the formula



wherein X is an element of periodic group VI of an atomic weight below 40; R' is selected from the group consisting of hydrogen and methyl; —$NR_2$ is selected from the group consisting of amino (lower alkyl) amino, di(lower alkyl)amino, phenyl(lower alkyl)amino, and



wherein *n* and *m* are whole numbers between 0 and 2 inclusive; and Y is selected from the group consisting of hydrogen and chlorine.

7. N-(1-pyrrolidinyl)-9-xanthenecarboxamide.

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**3,164,607**

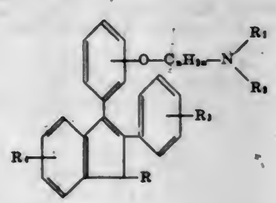
**2-PHENYL-3-(TERTIARY AMINO ALKOXY) PHENYL-INDENES**

**Daniel Lednicer, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Filed Jan. 10, 1961, Ser. No. 81,703**

**26 Claims. (Cl. 260—326.5)**

1. A compound selected from the class consisting of (*a*) compounds having the formula:



wherein R is selected from the class consisting of hydrogen and lower-alkyl, $R_1$ and $R_2$ taken individually represent lower-alkyl and $R_1$ and $R_2$ taken together with the attached nitrogen atom represent a heterocyclic radical selected from the class consisting of pyrrolidino, 2-methylpyrrolidino, 2,2-dimethylpyrrolidino, piperazino, 4-methylpiperazino, 2,4-dimethylpiperazino, morpholino, piperidino, 2-methylpiperidino, 3-methylpiperidino, hexamethyleneimino, homopiperazino, and homomorpholino, $R_3$ and $R_4$ each represent at least one substituent selected from the class consisting of hydrogen, trifluoromethyl, lower-alkyl, lower mono-olefinic alkenyl from 2 to 8 carbon atoms, inclusive, hydroxy, lower-alkoxy from 1 to 8 carbon atoms, inclusive, lower mono-olefinic alkenyloxy from 2 to 8 carbon atoms, inclusive, unsubstituted aryloxy from 6 to 12 carbon atoms, inclusive, halogen, lower-alkylmercapto from 1 to 8 carbon atoms, inclusive, and unsubstituted arylmercapto from 6 to 12 carbon atoms, inclusive, and $C_nH_{2n}$ represents an alkylene group from 2 to 6 carbon atoms, inclusive;

(*b*) the addition salts of the compounds of the above formula with pharmacologically acceptable acids;

(*c*) the N-oxides of compounds of the above formula;

(*d*) the addition salts of the N-oxides of compounds of the above formula with pharmacologically acceptable acids; and

(*e*) the quaternary ammonium salts obtained by reacting the free bases of the above formula with a member selected from the group consisting of lower-alkyl halides, allyl halides, di(lower-alkyl)sulfates, phenylalkyl halides, benzhydryl halides and methyl toluenesulfonate.

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**3,164,608**

**PROCESS FOR THE PREPARATION OF SULTONES**

**Bruno Blaser, Dusseldorf-Urdenbach, Germany, assignor to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany**

**No Drawing. Filed Dec. 5, 1962, Ser. No. 242,361**

**Claims priority, application Germany, Dec. 9, 1961, H 44,357**

**8 Claims. (Cl. 260—327)**

1. A process for the preparation of a sultone which comprises the steps of reacting about one mol of an α-olefin of the formula

$$R_3R_2R_1C—CH_2—CH=CH_2$$

wherein $R_1$, $R_2$, and $R_3$ are selected from the group consisting of hydrogen and aliphatic hydrocarbon, said olefin containing from 4 to 30 carbon atoms, with about 1 mol to about 3 mols of sulfur trioxide to form a reaction mixture, and recovering said sultone by directly distilling said sultone from said reaction mixture under vacuum.

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**3,164,609**

**PROCESS FOR THE PREPARATION OF SULTONES**

**Manfred Voss and Horst Baumann, Hilden, Rhineland, and Werner Stein, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany**

**Filed Dec. 5, 1962, Ser. No. 242,563**

**Claims priority, application Germany, Aug. 9, 1962, H 46,593**

**10 Claims. (Cl. 260—327)**

1. A process for the production of a sultone which comprises the steps of reacting about one mol of an α-olefin having the formula

$$R_3R_2R_1—C—CH_2—CH=CH_2$$

wherein $R_1$, $R_2$ and $R_3$ are selected from the group consisting of hydrogen and aliphatic hydrocarbon, said α-olefins having from 4 to 30 carbon atoms, with from 0.1 to 0.8 mol of sulfur trioxide at a temperature between about —30° C. and about 80° C. and recovering said sultone.

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**3,164,610**

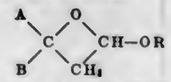
**FLUORINATED OXETANES**

**Horace R. Davis, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**

**No Drawing. Filed Feb. 16, 1962, Ser. No. 173,808**

**4 Claims. (Cl. 260—333)**

1. An oxetane of the formula:



wherein each of A and B is a perhaloalkyl group of 1 to 7 carbon atoms fully substituted on the α-carbon atom by halogen atoms selected from the group consisting of fluorine and chlorine, at least one of said halogen atoms being fluorine, and R is a member of the group consisting of alkyl of 1 to 18 carbon atoms, haloalkyl of 1 to 18 carbon atoms, cycloalkyl of 5 to 6 carbon atoms, aryl of 6 to 10 carbon atoms and haloaryl of 6 to 10 carbon atoms.

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**3,164,611**

**OXIDATION OF PRIMARY AND SECONDARY ALCOHOLS TO THE CORRESPONDING CARBONYL COMPOUNDS USING A TERTIARY AMINE CHROMIUM TRIOXIDE COMPLEX**

**Lewis H. Sarett, Princeton, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Filed July 26, 1956, Ser. No. 600,163**

**13 Claims. (Cl. 260—340.9)**

6. A process for preparing 4b-methyl-7-ethylenedioxy-1,2,3,4,4a,4b,5,6,7,8,10,10a - dodecahydrophenanthrene-1-ol-4-one-1-acetate which comprises intimately contacting 4b - methyl - 7 - ethylenedioxy - 1,2,3,4,4a,4b,5,6,7,8,10,10a - dodecahydrophenanthrene - 1,4 - diol - 1 - acetate with pyridine-chromium trioxide complex at a pH in excess of 7.0 and recovering 4b-methyl-7-ethylenedioxy-1,2,3,4,4a,4b,5,6,7,8,10,10a - - dodecahydrophenanthrene-1-ol-4-one-1-acetate from the resulting reaction mixture.

9. In the process of oxidizing an alcohol having at least one hydrogen atom attached to the carbon atoms bearing the hydroxyl substituent to the corresponding carbonyl compound, the improvement which comprises intimately contacting said alcohol at a pH in excess of 7 with a tertiary amine-chromium trioxide complex, wherein the tertiary amine is a member from the group consisting of pyridine, lower alkyl substituted pyridines, and benzo-substituted pyridines, and recovering the carbonyl compound from the resulting reaction mixture.



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**3,164,612**

**PROCESS FOR PREPARING ALPHA-CHLOROALDEHYDES AND ALPHA-CHLOROKETONES**

**Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware**

**No Drawing. Filed May 28, 1962, Ser. No. 197,872**

**7 Claims. (Cl. 260—340)**

1. A process for preparing alpha-chloroaldehydes and alpha-chloroketones of the formula $R^1R^2CClC(O)R^3$ wherein $R^1$ is selected from the class consisting of the hydrogen atom, halogen atoms and alkyl having not more than 8 carbon atoms and $R^2$ and $R^3$ are selected from the class consisting of cycloalkyl having from 5 to 8 carbon atoms in the ring when taken together and when taken singly hydrogen atoms and alkyl having not more than 8 carbon atoms, comprising contacting a chloronitrate of the formula $R^1R^2CClCX(ONO_2)R^3$ wherein $R^1$, $R^2$ and $R^3$ are as defined hereinabove and X is a halogen atom with at least a catalytic amount of a strong Lewis acid.

6. A process of claim 1 wherein said chloronitrate is 1-nitrato-1,2-dichloroethane, said Lewis acid is $SnCl_4$ which is used in at least about an equal molar amount to said chloronitrate, and the temperature at which the process is carried out is between about 15° and 30° C.

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**3,164,613**

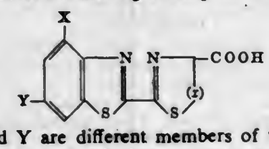
**HYDROXYBENZOTHIAZOLES AND METHODS OF PREPARING SAME**

**William D. McElroy, 220 Ridgewood Road, and Emil H. White, 1713 Waverly Way, both of Baltimore, Md.**

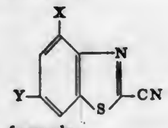
**No Drawing. Filed Aug. 8, 1961, Ser. No. 129,963**

**6 Claims. (Cl. 260—243)**

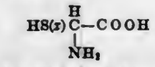
1. The process for making a compound of the formula



where X and Y are different members of the class consisting of hydrogen and hydroxy groups and *x* is selected from the class consisting of $>CH_2$, $>C(CH_3)_2$ and $—CH_2CH_2—$, that comprises intimately contacting a benzothiazole of the formula



with an acid of the formula



where X, Y and *x* are as defined above.

6. 2[2'-(4'-carboxy) - 5,6 - dihydro-4H-1,3-thiazinyl]-6-hydroxybenzothiazole.

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**3,164,614**

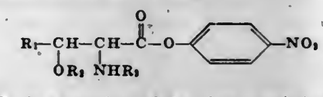
**NEW REAGENTS FOR PEPTIDE SYNTHESIS**

**Ernest D. Nicolaides and Horace A. De Wald, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan**

**No Drawing. Filed May 18, 1961, Ser. No. 110,861**

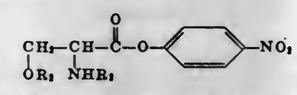
**11 Claims. (Cl. 260—345.8)**

1. A compound of the formula



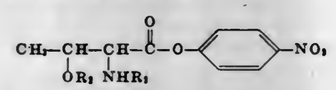
wherein $R_1$ is a member of the class consisting of hydrogen and methyl, $R_2$ is a member of the class consisting of hydrogen, lower alkanoyl, halo-substituted lower alkanoyl, benzyl, carbamyl, and tetrahydropyranyl, and $R_3$ is a member of the class consisting of carbobenzoxy, p-chlorocarbobenzoxy, p-nitrocarbobenzoxy, and phthaloyl.

2. A compound of the formula



wherein $R_2$ is a member of the class consisting of hydrogen, lower alkanoyl, halo-substituted lower alkanoyl, benzyl, carbamyl, and tetrahydropyranyl, and $R_3$ is a member of the class consisting of carbobenzoxy, p-chlorocarbobenzoxy, p-nitrocarbobenzoxy, and phthaloyl.

7. A compound of the formula



wherein $R_2$ is a member of the class consisting of hydrogen, lower alkanoyl, halo-substituted lower alkanoyl, benzyl, carbamyl, and tetrahydropyranyl, and $R_3$ is a member of the class consisting of carbobenzoxy, p-chlorocarbobenzoxy, p-nitrocarbobenzoxy, and phthaloyl.

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**3,164,615**

**MIXTURES OF BLUE DISPERSE DYESTUFFS OF THE ANTHRAQUINONE SERIES**

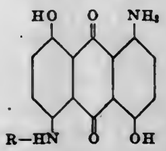
**Paul Buecheler, Reinach, Basel-Land, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland**

**No Drawing. Filed Nov. 30, 1959, Ser. No. 856,021**

**Claims priority, application Switzerland, Dec. 4, 1958, 66,911**

**6 Claims. (Cl. 260—376)**

1. Blue disperse dyestuff mixtures consisting of the halogenation product of an anthraquinone compound of the formula:



wherein R represents a member selected from the group consisting of unsubstituted and substituted primary lower alkyls, the substituents being chosen from the group consisting of cyano and lower carboalkoxy, said mixtures containing an average of from 0.5 to 1.5 atoms of halogen selected from the group consisting of chlorine and bromine per anthraquinone molecule.

### 3,164,616
### PROCESS FOR PREPARING $\Delta^{11}$-STEROID COMPOUNDS

**Kekhusroo R. Bharucha, Toronto, Ontario, Canada, assignor to Canada Packers Limited, Toronto, Ontario, Canada**

**No Drawing. Filed Sept. 17, 1963, Ser. No. 309,404**
**21 Claims. (Cl. 260—397.1)**

1. A process for preparing a $\Delta^{11}$-steroid compound from a 12-hydroxy steroid comprising reacting said 12-hydroxy steroid with a sulfonating agent to provide a 12-sulfonate group and treating the resulting compound with a strong metallic alkoxide base in a dipolar aprotic solvent medium to remove the sulfonate group and introduce $\Delta^{11}$-unsaturation.

12. A process for preparing 3α-hydroxy-$\Delta^{11}$-cholenic acid from 3α-acetoxy-12α-hydroxy-methyl cholanate comprising esterifying the 12α-hydroxy group of said compound with an organic sulfonyl chloride to provide the corresponding 12α-organo-sulfonate ester and treating said ester with a strong metallic alkoxide base in a dipolar aprotic solvent medium to dehydrosulfonate said ester with accompanying saponification of the 3-acetoxy and methyl ester groupings.

### 3,164,617
### 17α-BUTADIYNYL-17β-HYDROXY DERIVATIVES OF PERHYDROCYCLOPENTENOPHENANTHRENE AND PROCESS FOR PREPARATION OF SAME

**Peter Feather and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited**

**No Drawing. Filed Jan. 29, 1963, Ser. No. 254,606**
**Claims priority, application Great Britain Feb. 2, 1962**
**28 Claims. (Cl. 260—397.4)**

1. A 17α-butadiynyl-17β-hydroxy steroid compound selected from the group consisting of 17α-butadiynl-17β-hydroxy steroid compounds of the androstane and oestrane series.

8. 17α-butadiynyl-androst-4-en-17β-ol-3-one.

### 3,164,618
### ALKYLATED STEROIDS

**Richard Rausser, Union, and Eugene P. Oliveto, Bloomfield, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey**

**No Drawing. Filed May 8, 1958, Ser. No. 733,843**
**23 Claims. (Cl. 260—397.45)**

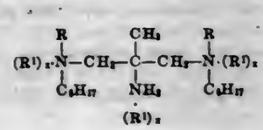
1. The pregnene having a keto group at the 3- and 20-positions, hydroxy at the 17α-position, a member of the group consisting of hydroxy and pharmaceutically acceptable esters thereof at the 21-position, a member of the group consisting of hydrogen and halogen at the 9α-position and characterized by a member of the group consisting of keto and β-hydroxy at the 11-position, a lower alkyl group at the 16β-position and the presence of a double bond between positions selected from the group consisting of (4,5) and (1,2;4,5).

### 3,164,619
### TRIAMINE ACID ADDITION SALTS OF CAPRYLIC, PROPIONIC AND UNDECYLENIC ACIDS

**Michael G. Mulinos, Westfield, N.J., assignor to Commercial Solvents Corporation, a corporation of Maryland**

**No Drawing. Filed Sept. 19, 1960, Ser. No. 56,661**
**9 Claims. (Cl. 260—404.5)**

1. As a composition of matter, triamine acid salts having the following formula:



wherein R represents a member selected from the group consisting of hydrogen and methyl, with the proviso that if one R is methyl then the other R must be hydrogen; and $R^1$ represents a member selected from the group consisting of caprylic, propionic and undecylenic acids, and $x$ is selected from the class consisting of 0 and 1, with the proviso that a least one $x$ is 1.

### 3,164,620
### PREPARATION OF CHROMIUM ALKYL SALICYLATE ANTI-STATIC AGENTS

**Johan L. van der Minne and Pieter H. J. Hermanie, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Aug. 22, 1961, Ser. No. 133,056**
**Claims priority, application Netherlands, Sept. 28, 1960, 256,332**
**9 Claims. (Cl. 260—438)**

1. Process for the preparation of an anti-static agent for hydrocarbon fuels which comprises heating an alkali metal salt of a $C_{8-30}$ alkyl salicyclic acid with 1–1.15 equivalents of a chromium trihalide per equivalent of said acid, whereby a chromium alkyl salicylate is formed, and exposing the salicylate to a temperature of 100–200° C. in the presence of 1.0–15% by weight of an oxidizing agent of the group consisting of (*a*) a nitrohydrocarbon selected from the group consisting of $C_{1-4}$ nitroalkanes containing 1–4 nitro groups and mono- to di-nitro-aromatic hydrocarbons having 6–20 carbon atoms per molecule, (*b*) an inorganic nitrate selected from the group consisting of ammonium and chromium nitrate and (*c*) a peroxide selected from the group consisting of hydrogen, acyl and alkyl peroxides, whereby an anti-static agent having increased conductivity characteristics is formed.

### 3,164,621
### CYCLO-OCTADIENE IRON SUBGROUP METAL CARBONYLS

**Kryn G. Ihrman, Oak Park, and Thomas H. Coffield, Farmington, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Filed Apr. 12, 1963, Ser. No. 272,528**
**5 Claims. (Cl. 260—439)**

1. Organometallic compounds having the formula

$$QM(CO)_3$$

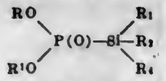
wherein Q is a cyclooctadiene molecule having up to about 18 carbon atoms and M is an iron subgroup metal.

### 3,164,622
### COMPOUNDS CONTAINING SILICON AND PHOSPHORUS

**Michael John Newlands, Romiley, England, assignor to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania**

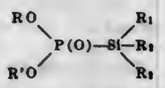
**No Drawing. Filed Mar. 10, 1961, Ser. No. 94,668**
**Claims priority, application Great Britain, Mar. 17, 1960, 9,537/60**
**4 Claims. (Cl. 260—448.2)**

1. Compounds of the general formula:



wherein R, $R^1$, $R_2$, $R_3$ and $R_4$ are aryl groups.

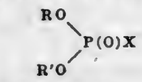
3. A process for preparing compounds of the general formula



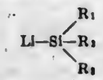
where R and R′ are groups selected from the class consisting of alkyl groups having 1 to 20 carbon atoms, cyclo-



alkyl groups having 5 and 6 carbon atoms, aryl groups and aralkyl groups, where $R_1$, $R_2$ and $R_3$ are selected from the class consisting of hydrogen, alkyl groups having 1 to 20 carbon atoms, cycloalkyl groups having 5 and 6 carbon atoms, aryl groups and aralkyl groups, comprising reacting a compound of the formula



with a compound of the formula



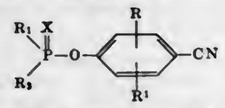
wherein X is a halogen atom and R, R′, $R_1$, $R_2$, and $R_3$ have the meanings set forth above.

### 3,164,623
### O-CYANOPHENYL ESTERS OF ALKYLPHOSPHONIC, ALKYLTHIOPHOSPHONIC, DIALKYLPHOSPHINIC, AND DIALKYLTHIOPHOSPHINIC ACIDS

**Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

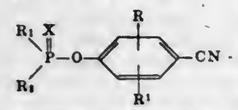
**No Drawing. Filed Mar. 19, 1962, Ser. No. 180,822**
**Claims priority, application Germany Mar. 28, 1961**
**5 Claims. (Cl. 260—461)**

1. A compound of the formula



wherein $R_1$ stands for lower alkoxy, $R_2$ stands for lower alkyl, R and $R^1$ stand for lower-alkyl having up to 4 carbon atoms and X stands for a chalcogen of an atomic weight less than 40.

2. A compound of the formula



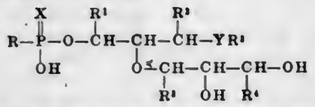
wherein $R_1$ and $R_2$ stand for lower alkyl, R and $R^1$ stand for lower alkyl having up to 4 carbon atoms and X stands for a chalcogen of an atomic weight less than 40.

### 3,164,624
### DIHYDROXYALKOXYHYDROCARBYL HYDROCARBONTHIOPHOSPHONATES

**David D. Reed, Glenham, and James M. Petersen, Fishkill, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**

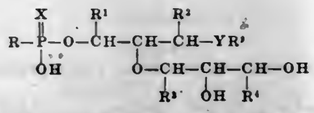
**No Drawing. Filed Oct. 18, 1962, Ser. No. 232,651**
**15 Claims. (Cl. 260—461)**

1. A dihydroxyalkoxyhydrocarbylchalcaalkyl hydrocarbonthiophosphonate of the formula:

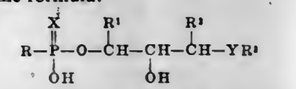


where R is hydrocarbyl derived from an aliphatic polyolefin having an average molecular weight between 250 and 50,000, $R^1$, $R^2$, $R^3$ and $R^4$ are selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, $R^5$ is an organic member of not more than 20 carbons selected from the group consisting of alkyl, phenyl, alkylphenyl, phenylalkyl, haloaryl and alkenyl, X is selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen and Y is a chalcogen selected from the group consisting of sulfur and oxygen.

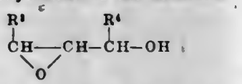
9. A method of preparing a dihydroxyalkoxyhydrocarbylchalcaalkyl hydrocarbonthiophosphonate of the formula:



where R is hydrocarbyl derived from an aliphatic polyolefin having and average molecular weight between 250 and 50,000, $R^1$, $R^2$, $R^3$ and $R^4$ are selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons, $R^5$ is an organic member of not more than 20 carbons selected from the group consisting of alkyl, alkenyl, phenyl, alkylphenyl, phenylalkyl and haloaryl, X is selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen and Y is a chalcogen selected from the group consisting of sulfur and oxygen, said method comprising contacting a hydrocarbylchalcahydroxyalkyl hydrocarbonthiophosphonate of the formula:



with a hydroxyepoxyalkane of the formula:



where $R^1$, $R^2$, $R^3$, $R^4$, $R^5$, X and Y are as heretofore defined in the presence of an acid catalyst selected from the group consisting of $BF_3 \cdot C_2H_5OC_2H_5$, $BF_3$, HF, $AlCl_3$, $SnCl_4$, $TiCl_4$, $ZnCl_2$, $H_2SO_4$, $H_3PO_4$, and $CCl_3CO_2H$ at a temperature between about 50 and 125° C. and a mole ratio of hydroxyepoxyalkane to thiophosphonate reactant to catalyst of between about 0.1:1:0.01 and 5:1:0.1.

### 3,164,625
### SUBSTITUTED DI-p-XYLYLENES

**Dale F. Pollart, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Mar. 1, 1962, Ser. No. 176,796**
**2 Claims. (Cl. 260—465)**

1. As a composition of matter, mono-cyano-di-p-xylylene.

2. As a composition of matter, mono-carboxamido-di-p-xylylene.

### 3,164,626
### CATALYTIC PRODUCTION OF ACRYLONITRILE FROM A GASEOUS MIXTURE CONTAINING PROPYLENE

**Saburo Minekawa, Shohei Hoshino, Atsushi Shibata, and Naoya Kominami, all of Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan**

**No Drawing. Filed Mar. 22, 1960, Ser. No. 16,662**
**Claims priority, application Japan, Apr. 21, 1959, 34/12,876; Feb. 6, 1960, 35/3,669**
**13 Claims. (Cl. 260—465.3)**

1. A process for direct production of acrylonitrile from propylene which consists essentially of contacting at a temperature of from 300° to 480° C. (*a*) a gaseous admixture of propylene, ammonia and molecular oxygen with (*b*) oxidizing catalyst, the oxidizing catalyst being a member selected from the group consisting of binary mixture of tellurium oxide:molybdenum oxide, binary mix-

ture of tellurium oxide:phospho-molybdic acid, ternary mixture of tellurium oxide:phospho-molybdic acid:vanadium oxide, ternary mixture of tellurium oxide:phospho-molybdic acid:stannic oxide, ternary mixture of tellurium oxide:phospho-molybdic acid:nickel oxide, ternary mixture of tellurium oxide:molybdenum oxide:vanadium pentoxide and ternary mixture of tellurium oxide-molybdenum oxide:nickel oxide.

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### 3,164,627
### METHOD FOR PREPARING UNSATURATED ALIPHATIC NITRILES

**Saburo Minekawa, Shobei Hoshino, Atsushi Shibata, and Naoya Kominami, all of Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan a corporation of Japan**

No Drawing. Filed Sept. 7, 1960, Ser. No. 54,380
Claims priority, application Japan, Mar. 9, 1960, 35/7258
7 Claims. (Cl. 260—465.3)

1. A one-step catalytic process for making olefinic nitrile which consists essentially of contacting (*a*) a gaseous mixture of ammonia, molecular oxygen and unsaturated olefin selected from the group consisting of propylene and isobutylene with (*b*) catalyst which consists of tellurium oxide, said ammonia and olefin being in a molar ratio of from 1:1 to 1:2, and said molecular oxygen in the mixture being the equivalent of about 83.8 to 90% by volume of air.

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### 3,164,628
### METHOD FOR PREPARING ACRYLONITRILE

**Saburo Minekawa, Shobei Hoshino, Atsushi Shibata, and Naoya Kominami, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan**

No Drawing. Filed June 13, 1961, Ser. No. 116,678
Claims priority, application Japan, June 21, 1960, 35/28,375
5 Claims. (Cl. 260—465.3)

1. Process for making acrylonitrile comprising contacting gaseous mixture of propylene, ammonia, and molecular oxygen with catalyst at a temperature between 300 and 480° C. in a single step, said catalyst being a member selected from the group consisting of

(1) tellurium oxide, molybdenum oxide and alumina, and

(2) tellurium oxide, phosphomolybdic acid and alumina, said catalyst being preheated at between 300 and 1000° C.

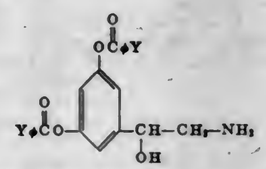
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### 3,164,629
### 3',5'-DIALKANOYLOXYPHENYL-2 AMINO-ETHANOL-(1) SALTS

**Gerhard Zölss and Rudolf Kilches, Linz, Otto Schmid, near Linz, and Karl Wismayr, Linz, Austria, assignors to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria**

No Drawing. Filed June 12, 1962, Ser. No. 201,750
Claims priority, application Austria, June 21, 1961, A 4,796/61
4 Claims. (Cl. 260—479)

1. A salt of a non-toxic acid and a diacylated phenyl ethanol amine of the formula



wherein Y is an alkyl group of from one to five carbon atoms.

### 3,164,630
### PROCESSES FOR THE PRODUCTION OF POLYMERIZABLE SALTS OF XYLYLENE DIAMINES AND DICARBOXY ACIDS

**Edward W. Pietrusza, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

No Drawing. Filed June 17, 1960, Ser. No. 36,746
8 Claims. (Cl. 260—501)

1. The process for the production of a polymerizable salt of a xylylene diamine which comprises contacting a solution of a cyano compound selected from the group consisting of meta- and para-cyanobenzylamines, isophthalonitrile and terephthalonitrile with hydrogen in the presence of a hydrogenation catalyst and an organic dicarboxy acid until said cyano compound is hydrogenated to the corresponding xylylene diamine and a solution of the polymerizable salt of said xylylene diamine and said dicarboxy acid is formed, said dicarboxy acid having the structure HOOC—R—COOH wherein R is a divalent organic radical selected from the group consisting of saturated aliphatic radicals containing at least two carbon atoms in an alkylene carbon chain connecting the two carboxy groups, bis-(alkylene)aromatic radicals and saturated cycloaliphatic and arylene radicals in which the two carboxy radicals are on separate nonadjacent carbon atoms in the ring structure, said cyano compound and said dicarboxy acid being present in about a 1 to 1 mol ratio and being dispersed in a solvent for said cyano compound and said dicarboxy acid, which solvent, under hydrogenating conditions is not reactive with said cyano compound, said dicarboxy acid, said xylylene diamine and said polymerizable salt.

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### 3,164,631
### SODIUM SALTS OF CHLORINATED $C_{19}$-α-ALKYLDICARBOXYLIC ACIDS

**Hans Feichtinger, Dinslaken, and Hans-Joachim Tomuschat, Oberhausen-Sterkrade-Nord, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany, a German corporation**

No Drawing. Filed Sept. 2, 1959, Ser. No. 837,590
Claims priority, application Germany Sept. 6, 1958
1 Claim. (Cl. 260—514)

A foam-improving agent consisting essentially of a water-soluble sodium salt of a chlorinated $C_{19}$-α-alkyldicarboxylic acid prepared by reacting a solution of a $C_{19}$-α-alkyldicarboxylic acid with chlorine in carbon tetrachloride as solvent, recovering the chlorinated dicarboxylic acid thereby formed and saponifying said chlorinated dicarboxylic acid with sodium hydroxide to produce the corresponding sodium salt.

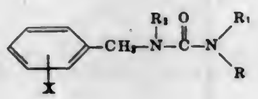
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### 3,164,632
### BENZYL UREAS

**Arthur Berger, Skokie, and Edeltraut E. Borgaes, Chicago, Ill., assignors to Baxter Laboratories Inc., Morton Grove, Ill., a corporation of Delaware**

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,159
6 Claims. (Cl. 260—553)

1. A compound of the formula:



in which X is a member of the group consisting of halogen and methyl, R is selected from the group consisting of hydrogen and methyl, $R_1$ is a methyl, and $R_2$ is selected from the group consisting of hydrogen and methyl.

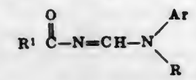


### 3,164,633
### ARYLALKYLACYLFORMAMIDINES

**David H. Clemens, Willow Grove, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware**

No Drawing. Filed Oct. 19, 1961, Ser. No. 146,337
5 Claims. (Cl. 260—558)

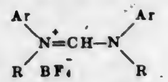
1. A method for preparing a compound of the formula



in which R is a lower alkyl group, $R^1$ is selected from the group consisting of a lower alkyl and phenyl, and Ar is an aryl substituent selected from the group consisting of toluidyl, phenyl, naphthyl, and nitrophenyl which comprises reacting an alkali metal salt of an amide of the formula

$$R^1C(O)NH_2$$

with a formamidinium salt of the formula



in which R, $R^1$, and Ar are defined above and in which the alkali metal salt has an atomic number of 3 to 55.

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### 3,164,634
### AMINE-HALOGENATED POLYPHENYL REACTION PRODUCTS

**Bart J. Bremmer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

No Drawing. Filed Oct. 11, 1962, Ser. No. 229,982
11 Claims. (Cl. 260—570.5)

1. A compound of the formula

$$(A—C_mH_{2m})(NHC_mH_{2m})_bNH\{C_6H_nX_{4-n}\}_y NH(C_mH_{2m}NH)_b(C_mH_{2m}—A)$$

wherein *b* and *n* are numbers from zero to about 3, *m* is a number from two to about six, *y* is a number from two to about three, X is halogen of atomic number from 17 to 35, and A is selected from the group consisting of OH and $NH_2$.

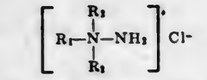
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### 3,164,635
### PROCESS FOR PREPARING ACYCLIC HYDRAZINIUM SALTS

**George L. Braude, Linthicum, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,205
8 Claims. (Cl. 260—583)

1. In the process for preparing hydrazinium chlorides of the formula



wherein $R_1$ is an aliphatic hydrocarbon residue having from 8 to 20 carbon atoms and selected from the group consisting of alkyl, alkenyl, and alkadienyl radicals, and $R_2$ and $R_3$ are members selected from the group consisting of alkyl radicals having from 1 to 20 carbon atoms, alkenyl radicals having from 2 to 20 carbon atoms, and alkadienyl radicals having from 4 to 20 carbon atoms, by reacting chloramine with a tertiary amine of the formula





wherein $R_1$, $R_2$ and $R_3$ are defined above, conducting said reaction in a reaction medium consisting of a lower alkanol, the improvement which comprises agitating the reaction product liquor while adding sufficient amounts of water thereto to dissolve the ammonium chloride contained therein, ceasing agitation and maintaining the mixture thereby produced quiescent until two liquid phases are formed, and separating the two phases.

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### 3,164,636
### UNSATURATED ALIPHATIC AMINO-DIOLS

**Jean Druey and Erwin Friedrich Jenny, Riehen, Switzerland, assignors to Ciba Corporation, a corporation of Delaware**

No Drawing. Filed Aug. 3, 1959, Ser. No. 831,028
Claims priority, application Switzerland, Aug. 15, 1958, 62,944/58
9 Claims. (Cl. 260—584)

1. A member selected from the group consisting of erythro-1,3-dihydroxy-2-amino-nonadec-4-yne and addition salts thereof with pharmaceutically acceptable acids.

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### 3,164,637
### FLUORO COMPOUND SYNTHESIS

**Henry R. Nychka, Randolph Township, Morris County, and Cyril Woolf, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

No Drawing. Filed Sept. 26, 1962, Ser. No. 226,440
7 Claims. (Cl. 260—593)

1. The process which comprises contacting vaporous starting material—said starting material consisting of at least one perhalogenated acetone containing two to five fluorine atoms and wherein all halogens are selected from the group consisting of chlorine and fluorine—at disproportionation temperature substantially in the range of about 200° to about 500° C. with dichromium trioxide catalyst derived from hydrous chromic oxide formed by precipitation from a trivalent chromium salt solution and subjected to heat treatment substantially in the range of 300–400° C. for not less than about one hour, to effect formation of reaction product containing a mixture of $C_2OCl_{6-x}F_x$ compounds, where *x* is an integer of from 1 to 6, at least one of said compounds having a fluorine content greater than that of any perhalogenated acetone in said starting material.

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### 3,164,638
### METHOD FOR PREPARATION OF REACTION PRODUCTS OF DIBORANE AND CONJUGATED DIOLEFINS

**Eugene J. De Lorenzo, Bronx, N.Y., and Robert V. Wright, North Highland, Calif., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia**

No Drawing. Filed Apr. 20, 1961, Ser. No. 104,471
5 Claims. (Cl. 260—606.5)

4. A method for the preparation of non-pyrophoric reaction products of diborane and a conjugated diolefin hydrocarbon which compries (1) reacting from about 2 to 10 moles of diborane per mole of a conjugated diolefin hydrocarbon containing 4 to 5 inclusive carbon atoms under autogenous pressure at a temperature of from about —10° C. to about 150° C. while the reactants are in admixture with from about 0.1 to about 10 moles of dimethyl ether per mole of diborane, (2) heating the reaction mixture thus formed under autogenous pressure at a temperature of from about 60° C. to about 150° C. for about 2 to about 4 hours and (3) recovering the non-pyrophoric reaction product.

### 3,164,639
### PREPARATION OF LIQUID BOROHYDROCARBONS

**Earl A. Wellmeester, Kenmore, and Joel A. Zaslowsky, Niagara Falls, N.Y., assignors, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia**

**Filed Jan. 19, 1956, Ser. No. 560,114**
**5 Claims. (Cl. 260—606.5)**

5. A process for the production of liquid borohydrocarbons which comprises reacting acetylene and ethylene with diborane at an elevated temperature and recovering the product of the reaction.

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### 3,164,640
### PRODUCTION OF p,p'-ISOPROPYLIDENEDIPHENOL CRYSTALS HAVING LOW PHENOL CONTENT

**Logan C. Bostian, William D. Griffin, and Zalik Oser, all of Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed May 2, 1961, Ser. No. 107,074**
**3 Claims. (Cl. 260—619)**

1. A continuous process for producing p,p'-isopropylidenediphenol crystals containing less than 10% by weight phenol which comprises continuously introducing a mixture consisting of phenol, acetone and an acidic condensation catalyst into a reaction zone, maintaining said reactants in the reaction zone under conditions forming a reaction mixture containing p,p'-isopropylidenediphenol, at least part of which is in solution in unreacted phenol, continuously withdrawing a portion of the reaction mixture from the reaction zone, recovering p,p'-isopropylidenediphenol crystals containing less than 10% by weight phenol from the withdrawn reaction mixture, the weight ratio of dissolved p,p'-isopropylidenediphenol to phenol in the liquor in equilibrium with the crystals being maintained at at least 2.0 to 1, and continuously adding make-up phenol and acetone to the reaction zone.

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### 3,164,641
### CATALYTIC PROCESS FOR THE DIRECT HYDRATION OF GASEOUS OLEFINS TO ALCOHOLS

**Pietro Bazzarin, Milan, Italy, assignor to Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy**

**Filed Aug. 10, 1959, Ser. No. 832,851**
**Claim priority, application Italy Sept. 9, 1958**
**6 Claims. (Cl. 260—641)**

4. A process for direct hydration of a gaseous olefin to an alcohol, which comprises reacting an olefin hydrocarbon having 2 to 4 carbon atoms with liquid water at a temperature of about 180° to 300° C. under a pressure of between about 100 to 340 atmospheres in the presence of an aqueous suspension of a catalyst selected from the group consisting of $Al(OH)_3$ in the form of gel, and finely divided $Al_2O_3$, said catalyst suspension having a pH of between 2 and 6 as adjusted by addition of a mineral acid.

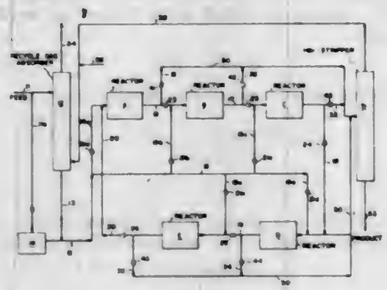
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### 3,164,642
### PARAFFIN HYDROCARBON ISOMERIZATION USING SWING REACTOR SYSTEM

**Richard Franklin Stringer and Kenneth Earl Draeger, Baton Rouge, La., and Maurice A. Bergougnou, Metuchen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**

**Filed Sept. 14, 1960, Ser. No. 55,980**
**4 Claims. (Cl. 260—683.7)**

1. In the isomerization of a light naphtha hydrocarbon stream in the presence of aluminum bromide on a support and in the presence of aluminum bromide dissolved in said hydrocarbons wherein the isomerization reaction is carried out in the liquid phase, the improvement which comprises continuously flowing said hydrocarbons in the same direction of flow through a train of at least three reaction zones in series, wherein the temperature of the isomerization reactions taking place in the reaction zones are of decreasing magnitude gradually from a temperature of about 125° F. to a temperature of about 105° F. in the successive isomerization reaction zones, all of said zones except the last one initially containing said aluminum bromide on said support, the last reaction zone of the series initially containing said support substantially devoid of aluminum bromide, maintaining hydrocarbon isomerization conditions in at least all of said reaction zones except said last zone, continuing hydrocarbon flow through said series of zones wherein the entire hydrocar-



bon effluent from the preceding zones are fed to the last zone in series until sufficient aluminum bromide has been absorbed from said hydrocarbon stream by the support in said last zone to catalyze isomerization in said last zone, thereafter discontinuing hydrocarbon flow through the first of said zones and removing said first zone from said train, and conducting hydrocarbon flow through the remaining zones and through an additional zone in series, said additional zone initially containing said support substantially devoid of aluminm bromide, replenishing a zone removed from said train with said support substantially devoid of aluminum bromide and then adding this zone as the last zone in the series and then conducting hydrocarbon flow of the entire hydrocarbon effluent from the preceding zones through said replenished last zone.

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### 3,164,643
### POLYSULFIDE PRODUCT AND METHOD OF PREPARING THE SAME

**Bruce W. Hubbard, Oak Park, Ill., assignor to Ideal Roller and Manufacturing Company, Chicago, Ill., a corporation of Illinois**

**No Drawing. Filed Nov. 15, 1960, Ser. No. 69,271**
**17 Claims. (Cl. 260—830)**

1. The process which comprises admixing a polysulfide polymer with a catalytic amount of a compound having the general formula:

$$MO_2$$

wherein M is a substituent selected from the group consisting of tellurium, selenium, sulfur and the radical



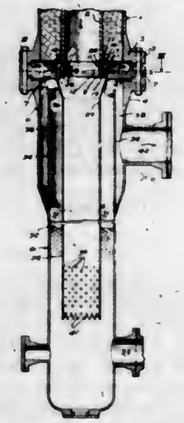
wherein R is an alkylene group containing from 2 to about 8 carbon atoms and a minor amount of an amine selected from the group consisting of primary and secondary amines and subjecting the resulting admixture to reaction conditions.



### 3,164,644
### LIQUID COOLED PORT

**Kenneth A. De Ghetto, Glen Rock, N.J., Edward J. Lansing, Lockport, Ill., and Robert A. McCallister, Hackensack, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York**

**Filed May 7, 1962, Ser. No. 192,643**
**9 Claims. (Cl. 261—159)**



1. In a flow arrangement, a parent structure defining a port suitable for passing a hot fluid therethrough and comprising

a protective conduit which lines the interior of the port, the conduit having a high temperature surface exposed to the temperature of the hot fluid,

means dividing the conduit along its length into a trough-like inward chamber inward relative the port and an outward chamber, the inward chamber being adjacent the high temperature surface,

inflow means for introducing cooling fluid to the inward chamber, whereby a flow of fluid is maintained in substantially uniform contact with said high temperature surface,

passage means for passing overflow cooling fluid from the inward chamber to the outward chamber,

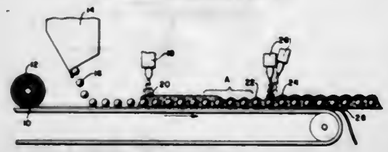
exhaust means for removing the cooling fluid from the outward chamber.

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### 3,164,645
### METHOD OF MAKING REFLEX REFLECTIVE SHEETING

**Eduard R. de Vries, Huntingdon, and William H. Riley, Jr., Altoona, Pa., assignors to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania**

**Filed Oct. 11, 1961, Ser. No. 144,425**
**6 Claims. (Cl. 264—1)**



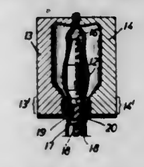
1. A method of making a reflex reflective sheeting which comprises applying a mono layer of small transparent glass spheres onto a flat, slightly tacky surface, said surface being non-drying and temporarily holding said spheres thereon without substantial embeddment therein applying a transparent binder material onto said spheres until said spheres are completely embedded in said binder material with a thin layer of said binder material uniformly covering the upper surfaces of said spheres, said spheres having an average diameter in the range of 3–40 mils, said binder material being a substance capable of hardening with some shrinkage so that the spacing layer of binder over the spheres assumes the curvature of the upper surfaces of the spheres when the binder material has hardened, the thickness of the covering layer of binding material being less than the radius of said spheres, applying a thin reflective coating onto the upper surface of said spacing layer of binder so that said reflective coating also assumes the curvature of the upper surface of the spheres and is evenly spaced from said spheres by said layer of binder material, and stripping said sheeting from said tacky surface to yield a flat top sheeting wherein said spheres are in point contact with the upper flat surface of said sheeting.

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### 3,164,646
### METHOD AND APPARATUS FOR THE PRODUCTION OF BOTTLES AND SIMILAR HOLLOW BODIES FROM THERMOPLASTIC SYNTHETIC SUBSTANCES

**Rainer Fischer, Lohmar, near Cologne, Germany**

**Filed Nov. 21, 1961, Ser. No. 153,798**
**Claims priority, application Germany Nov. 24, 1960**
**9 Claims. (Cl. 264—98)**



7. The method of producing containers or the like with finished neck dimensions from a tubular parison of workable material employing a mandrel having a portion with a reduced diameter and another portion of a larger diameter, and a partable blow-mold, including the steps of:

(*a*) positioning the tubular parison within the parted blow-mold,

(*b*) urging the mandrel at least partially within said parison until the reduced diameter portion of said mandrel is in a position between the areas of said mold which will form the neck of the container,

(*c*) expanding said parison within the mold after the mold is closed,

(*d*) and finishing the internal dimension of the parison in the area of the neck of the container by urging said mandrel at least partially out of said parison whereby a larger diameter portion of said mandrel will be between the areas of the mold which will form the neck of the container.

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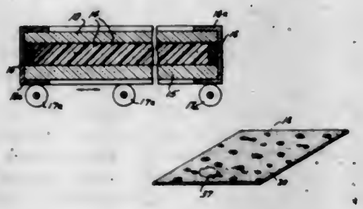
### 3,164,647
### PATTERNED CAST SYNTHETIC RESIN OF INTEGRAL SHEEN

**Daniel A. Fischler, New Hyde Park, N.Y., assignor to Emsig Manufacturing Co., New York, N.Y., a partnership**

**Filed Sept. 27, 1961, Ser. No. 141,146**
**4 Claims. (Cl. 264—108)**

1. The method of molding a flowable synthetic resin compound containing nacreous filler in a form having a surface, to provide sheets or like articles shaped to conform to said surface, said articles having a patterned, pearlized finish to provide an integral sheen, comprising the steps of applying to said surface spottings of a material which will induce slippage between the surface and the resin in the area of said spottings during cure of the resin, introducing a batch of said resin compound into

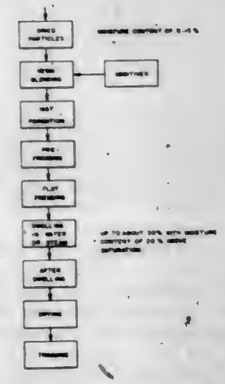
said form so that the resin contacts said surface, and thereafter moving said form as a unit in a direction to in-



duce a flow of said compound with respect to said surface and to orient said filler while polymerizing said batch.

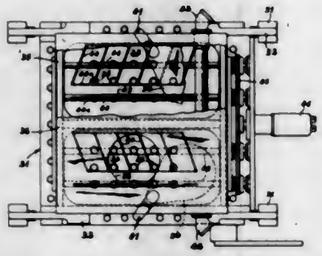
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**3,164,648**
**METHOD IN THE PRODUCTION OF COMPRESSION MOULDED OBJECTS**
**Jan Rolf Frankson, Nacka, Sweden, assignor to Aktiebolaget Casco, Stockholm, Sweden, a Swedish joint-stock company**
**Filed Oct. 16, 1961, Ser. No. 145,500**
**Claims priority, application Sweden, Oct. 24, 1960, 10,189/60**
**5 Claims. (Cl. 264—109)**



1. In the manufacture of compressed cellulosic particle board consisting of non-defibrated wood chips having a moisture content of from 3 to 15%, said chips having different moisture swelling characteristics along the direction of the cellulosic fibers than transverse thereto; said wood chips in the dry state being surface treated with a water resistant thermosetting synthetic resin binder selected from the class consisting of phenol formaldehyde resin, urea-formaldehyde resin, and melamine formaldehyde resin and thereafter formed as a sheet by molding under heat and pressure; that improvement for stabilizing the thickness dimension of the molded particle board after molding and prior to storing and using consisting of uniformly impregnating the molded particle board with moisture for a period of time of at least several hours until an amount of water of at least about 20 up to 100% by weight of said board is picked up by said board to thereby swell the thickness from about 7% to about 30%, then drying the moisture treated board until the moisture content is reduced below 20% and down to 6% by weight of said dry sheet and trimming the dried sheet to reduce the thickness to the pre-determined value whereby a dimensionally stabilized board is produced.

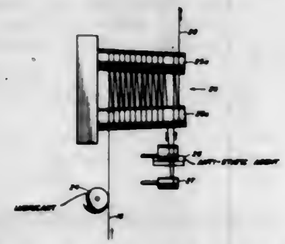
**3,164,649**
**METHOD OF FORMING HIGH DENSITY MASSES OF PULVERULENT MATERIAL**
**Robert F. Poole, Palos Park, and Corliss C. Ward, Chicago, Ill., assignors to Chisholm, Boyd & White Company, a corporation of Illinois**
**Filed Mar. 28, 1962, Ser. No. 183,230**
**4 Claims. (Cl. 264—121)**



1. The method of forming a high particle density mass of ceramic material, refractory material, and the like, comprising the steps of: placing the material in a loading chamber; agitating the material in the loading chamber while concurrently passing air therethrough to entrain the material in the air; passing the air and entrained material downwardly from the loading chamber into a compacting chamber, said agitation being arranged to preclude formation of continuous direct air passages through the material whereby only air with said entrained material may pass downwardly into the compacting chamber; extracting the material from the air in the compacting chamber by reversing the air flow; exhausting the air from the compacting chamber at the top thereof; compacting the material in the compacting chamber by applying compacting forces to boundary portions thereof to form a compact having sufficient green strength to permit removal thereof fully from the means defining the compacting chamber.

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**3,164,650**
**ART OF DEHYDRATING FIBERS WITH LUBRICATING AND ANTISTATIC COATINGS**
**Witold Roman Kocay, Stamford, Alfred George Comolli, Greenwich, and John Andrew McKee, Norwalk, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine**
**Filed Dec. 18, 1961, Ser. No. 159,946**
**7 Claims. (Cl. 264—130)**



1. In the process of producing shaped articles from polymerization products which includes the formation of a wet uncollapsed structure, and the subsequent dehydration of such structure in contact with a moving heated surface, the improvement comprising: lubricating said wet uncollapsed structure with a lubricant; dehydrating said wet uncollapsed structure in contact with a moving heated surface with the lubricant thereon to produce a collapsed polymer structure; and applying an antistatic agent to said collapsed polymer structure.



**3,164,651**
**CASTING OF POLYCARBONATE DOPES WHICH CONTAIN A SMALL AMOUNT OF AN ALCOHOL**
**James Chen-Fan Chu, Ridley Park, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Nov. 16, 1960, Ser. No. 69,569**
**4 Claims. (Cl. 264—216)**

1. The process of casting polycarbonate film while avoiding the occurrence of snap bars, which comprises casting on a hydrolyzed hydroacetate surface a stable casting dope consisting of polycarbonate resin, an organic solvent therefor and from about .02 to 1% by weight of said casting dope of a small amount with respect to said organic solvent of an alcohol selected from the class consisting of lauryl alcohol, myristyl alcohol, benzyl alcohol and mixtures of lauryl alcohol and myristyl alcohol, drying to remove the solvent and stripping the film from the cast surface.

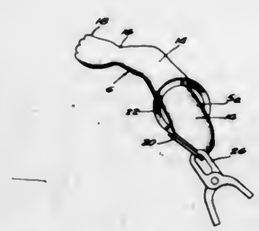
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**3,164,652**
**METHOD OF PRODUCING PLATENS FOR TYPEWRITERS**
**Edward Victor Byers, 16 Barrack Lane, The Park, Nottingham, England**
**Filed Feb. 28, 1961, Ser. No. 92,297**
**2 Claims. (Cl. 264—262)**

1. A method of producing composite plastic and rubber platen rollers for typewriters which consists in extruding rubber on to a cylindrical mandrel having a highly finished surface, curing the rubber whilst on the mandrel, removing the tube thus formed from the mandrel and turning it inside out, placing a length of the tube in a cylindrical mould having a smooth cylindrically accurate inner surface, inserting a second mandrel in the tube concentric with the inner surface of the mould and forcing plastic material in a molten state into the space between the tube and mandrel to fill the said space and force the outer surface of the tube into close contact with the inner surface of the mould and removing the tube and plastic material from said second mandrel and said mould as a unit.

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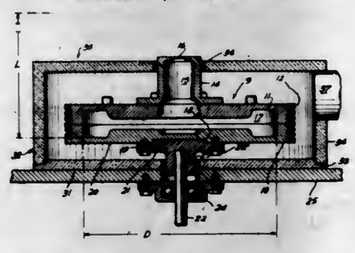
**3,164,653**
**METHOD OF TUMBLE MOLDING**
**Seitaro Inouye, 39 Shiba-Shirokane Sarumachi, Minato-ku, Tokyo, Japan**
**Filed Aug. 3, 1962, Ser. No. 214,553**
**Claims priority, application Japan, June 9, 1962, 37/23,698**
**3 Claims. (Cl. 264—310)**



1. A method for making articles from a thermoplastic material comprising the steps of: placing a quantity of such material in a mold, heating and rotating the mold for a sufficient length of time and in several different planes to permit the material due to the motion and the elevated temperature to take the shape of the mold and be cured within the mold into an article of relatively determined dimensions, cooling the mold to lower the temperature of the molded article in the mold to substantially ambient temperature and solid state and reheating the mold to raise the temperature of the article to at least about that temperature at which it begins to soften, and removing the molded article from the mold while at said reheated temperature.

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**3,164,654**
**PROCESS FOR CASTING THERMOPLASTIC MATERIALS**
**Charles D. Spencer, Whippany, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York**
**Filed Apr. 18, 1960, Ser. No. 22,857**
**5 Claims. (Cl. 264—311)**



1. The method of producing massive castings, such as gears, bushings, bearings, pulleys and propellers, of substantially uniform density, from thermoplastic resinous material which is subject to shrinkage upon phase change due to cooling of the molten thermoplastic material, which method comprises:

(*a*) employing a mold having a mold cavity conforming to the shape of the casting, which mold has a reservoir chamber at its vertical axis, with the vertical axis of the reservoir chamber coincident with the vertical axis of the mold cavity and with the mold cavity extending in a generally horizontal direction radially away from the base of said reservoir chamber in open communication with the mold cavity;

(*b*) heating said mold to a temperature above the melting point of the thermoplastic material;

(*c*) feeding molten thermoplastic material into the mold cavity through said reservoir chamber while rotating said mold about its vertical axis;

(*d*) continuing said feeding until said mold and at least a portion of said reservoir are filled with said molten material to level in said reservoir such as to supply the mold with enough of the molten material to take care of all shrinkage within the mold due to phase change upon cooling of the thermoplastic material;

(*e*) continuing said rotation about said vertical axis to effect centrifugal compaction of said molten material in a radial direction toward the periphery of said mold cavity while cooling the mold and its contents, the mold cavity being maintained full of thermoplastic material fed thereto from said reservoir chamber as shrinkage occurs due to phase change within the mold cavity throughout said cooling;

(*f*) maintaining the thermoplastic material in the reservoir chamber in molten condition at least until (1) substantial solidification of the molten thermoplastic material in the mold cavity has taken place and (2) substantially no further shrinkage of the thermoplastic material in the mold cavity can occur due to phase change upon cooling; and

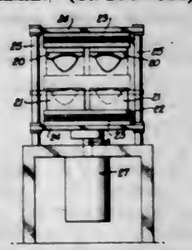
(*g*) rotating said mold and its contents about a second axis at right angles to said vertical axis, with the distance between said second axis and the portion of the mold cavity nearest thereto greater than the distance between said second axis and the inlet to the reservoir chamber, and with the inlet to the

reservoir chamber spaced a substantial distance from said second axis so that rotation of said mold about said second axis effects feed of molten thermoplastic material into said mold cavity from said reservoir chamber through the open base of said reservoir chamber to maintain said mold cavity full notwithstanding phase change within said mold cavity during the cooling and effect compaction of the contents of the mold cavity in a direction at right angles to said radial direction and in a direction toward the base of said mold cavity and away from said reservoir chamber, the said mold being so dimensioned that substantially the entire contents thereof in a direction away from said reservoir is compacted to form a casting of uniform density.

### 3,164,655
### METHOD OF MAKING BREAST PADS, CUPS AND FRONTS

**Jack E. Howard and Lewis A. Kaplan, both of Los Angeles, Calif., assignors to United Cellular Products Corp., Los Angeles, Calif., a corporation of California**

**Continuation of application Ser. No. 109,935, May 15, 1961. This application May 1, 1964, Ser. No. 365,237**
**8 Claims. (Cl. 264—321)**

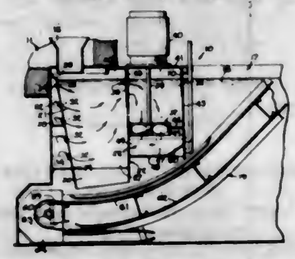


1. The method of forming a unitary seamless breast pad from completely cured polyurethane foam material comprising providing a thin hollow generally conical blank of integral foam material only slightly greater in cross sectional thickness than the pad being formed, the inside and outside surfaces of said blank having the same porosity as said foam material, placing said blank between the parts of a two-part mold, said mold parts engaging the inside and outside surfaces of said blank, said mold parts defining between them the cross-sectional and peripheral configuration of the pad being formed, applying pressure to said mold parts to compress the cells of said blank and deform said blank into said configuration, applying heat to said mold parts simultaneously with said pressure, said heat being applied to the inside and outside surfaces of said blank, said heat penetrating substantially completely through the cells of said blank to cause said cells to become permanently reformed into their compressed positions.

### 3,164,656
### QUENCHING APPARATUS FOR METALLIC ARTICLES

**Harold N. Ipsen, % Ipsen Industries, Inc., P.O. Box 500, Rockford, Ill.**

**Filed Dec. 31, 1962, Ser. No. 248,664**
**6 Claims. (Cl. 266—6)**



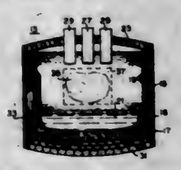
2. Quenching apparatus for a controlled atmosphere furnace including, in combination, a tank for holding a body of quenching liquid and having an open top, an upright baffle supported in said tank and having an open upper end for receiving workpieces to be quenched from said furnace and an open lower end spaced above the bottom of said tank for discharging workpieces into the tank after the workpieces have gravitated through the liquid in said baffle, a conveyor in said tank having a lower end portion disposed beneath said baffle to receive workpieces gravitating through the baffle and an upper end portion extending upwardly out of the tank outside the baffle, means defining inlet and outlet ports in said baffle spaced apart across the latter, means defining a flow passage segregated from the liquid in the tank outside the baffle and communicating at its opposite ends with the respective ports, means for inducing a flow of liquid from the interior of said baffle and successively through said outlet port, through said passage, back to said baffle through said inlet port, and across the interior of the baffle and the path of gravitation of workpieces to said outlet port, means for cooling the liquid flowing through said passage, and means for maintaining a protective atmosphere in said tank above said baffle and segregating the protected area of the top of the tank from the area through which the upper end portion of the conveyor extends.

## ELECTRICAL

### 3,164,657
### ELECTRIC FURNACE CONSTRUCTION

**Richard B. Shaw and William G. Connor, Natrona Heights, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania**

**Filed May 28, 1962, Ser. No. 198,248**
**3 Claims. (Cl. 13—9)**



1. In a three-phase electric arc furnace composed of a steel tank-like shell lined on its inside walls with refractory brick and disposed to receive three electrodes lowered from the top so as to effect electric arcing between a metal charge within said furnace and said electrodes, the improvement of providing at least one opening in said shell in the area adjacent at least one of said electrodes, said area being located at a hot spot caused by arc deflection so as to provide an air passageway from the normally dead air space between the refractory brick and the shell to the outside of the furnace.

### 3,164,658
### APPARATUS FOR USE IN INTERCEPTING LEAKAGE OF FUMES AND DUST FROM ELECTRIC-ARC FURNACES

**Rokuro Yagi, 48 Hakusan, Narumi-cho, Aichi-gun, Aichi-ken, Japan**

**Filed Aug. 20, 1962, Ser. No. 217,941**
**1 Claim. (Cl. 13—9)**

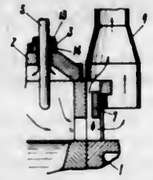
In an electric arc furnace including a roof having electrode receiving openings extending therethrough, electrodes extending through said openings, and electrode cooling means disposed about said electrodes, the improvement comprising:

a dust and fume exhaust system effective to minimize contact of hot combustion gases with said roof to prevent attack of said roof and said electrodes by corrosive fumes and dust generated in said furnace, and to prevent escape of fumes and dust through annular spaces between said electrodes and walls defining said openings in said roof, said system comprising:

a first hood covering said furnace roof,

a second hood in communication therewith,

gas baffle means interposed between said first and said second hoods whereby gas flow therebetween is only through an opening substantially below said roof of said furnace,



a dust and fume collecting pipe surmounting said second hood and a cinder notch and a cinder notch door therebelow,

annular pipes encircling said electrodes exteriorly of said roof and concentric with said openings therethrough and with said annular spaces formed between said electrodes and said roof,

gas propelling means for delivering gas under pressure to said annular pipes,

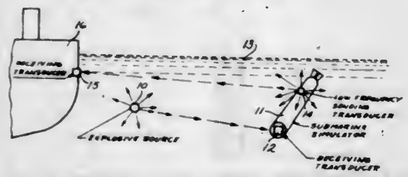
said pipes having spaced gas flow apertures in a radially inward wall thereof to direct gas issuing therefrom into and through said annular openings to deliver said gas into said furnace to prevent fumes and dust from escaping upwardly past said electrodes, to cool said roof and to obviate corrosive attack thereof, to maintain a positive gas pressure in said furnace, and to carry said fumes and said dust through said cinder notch and said cinder notch door and into said dust collecting pipe.



### 3,164,659
### ACOUSTIC SYSTEM

**Bernard W. Abrams, South Euclid, Ohio, assignor to Clevite Corporation, a corporation of Ohio**

**Filed Nov. 16, 1961, Ser. No. 152,824**
**2 Claims. (Cl. 35—10.4)**

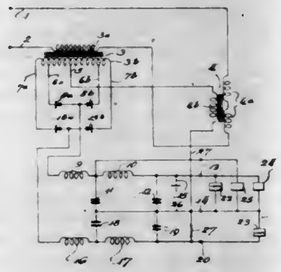


1. In an underwater simulated target acoustic echo repeating system, a relatively small underwater device intended to simulate a submarine, an electroacoustic receiving transducer on said device, an electroacoustic sending transducer on said device, and circuit means on said device connected between the receiving transducer and the sending transducer and comprising a high pass filter coupled to the output of said receiving transducer for passing only those signals received by the latter which are above a predetermined cutoff frequency, a local oscillator, means for heterodyning said local oscillator against the signals passed by said high pass filter, a low pass filter coupled to the output of said heterodyning means and having a cutoff frequency substantially below said cutoff frequency of the high pass filter, means coupling the output of said low pass filter to the input of said sending transducer, and amplifier means in the circuit between said receiving transducer and said sending transducer.

### 3,164,660
### VOLTAGE REGULATOR

**Thomas B. Gibbs, Delavan, Wis., assignor to Gibbs Manufacturing & Research Corporation, a corporation of Wisconsin**

**Filed Dec. 14, 1959, Ser. No. 859,397**
**4 Claims. (Cl. 84—1.18)**

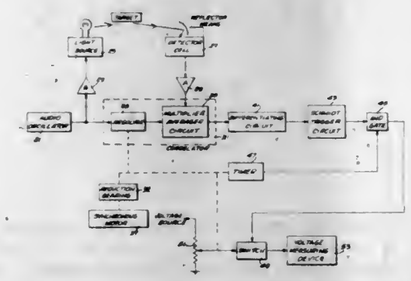


1. In an electronic musical instrument having light responsive tone generating means including a plurality of groups of lamps, the amplitude of the tone representing electrical signal generated being a function of the intensity of light from said lamps, a power supply comprising: a source of a plurality of potentials for energizing of a respective group of lamps, the lamps of each group being selectively connectable with a respective potential; means connected to said source for deriving a potential opposite to each of said plurality of potentials and responsive to the amplitude of current flowing through all of said lamps for regulating the amplitude of said potential to each group for maintaining the intensity of light from each lamp substantially constant; and a bleeder associated with one of said potential outputs for maintaining a minimum control current flow.

### 3,164,661
### DISTANCE MEASURING SYSTEM BY IRRADIATING A TARGET WITH LIGHT AND SENSING THE REFLECTED LIGHT

**Franklin Dellon, Bronx, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware**

**Filed Aug. 22, 1961, Ser. No. 133,175**
**2 Claims. (Cl. 88—1)**



1. A distance measuring system, comprising in combination,

a light source for irradiating a target and be reflected thereby;

an audio oscillator to modulate said light source so as to produce a light signal modulated in phase, frequency and amplitude;

detector cell means with reflector means for focussing said reflected light thereon, said detector cell means translating said detected light into an amplitude modulated electric signal whose amplitude and frequency correspond to that of both the light source and the detected signal but whose phase corresponds only to the detected signal;

resolver means connected to said audio oscillator, receiving a signal therefrom, corresponding in amplitude to that supplied by said detector cell and shifting the phase of said signal through 360° by the rotation thereof, including motor means to rotate said resolver means;

a multiplier averager circuit to which is applied the output from the detector cell means and resolver means, and multiplying said two inputs;

trigger means responsive to said multiplier averager circuit, said trigger means being enabled only when said multiplied product is at its maximum;

AND gate means, one input of which is responsive to said trigger means;

timer means connected between said resolver motor means, and the other input to said AND gate means, supplying an output to enable said AND gate means only through those angle positions in which the phase shift provided by a resolver is between 0° and 180°;

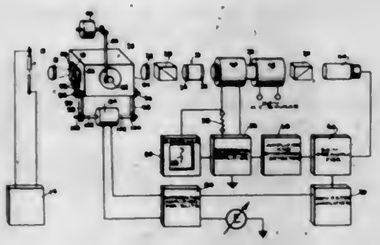
potentiometer means, said potentiometer means being likewise rotated by resolver motor means including a line for connection to a voltage source;

voltage measuring means responsive to the voltage from a voltage source across said potentiometer measuring means; and

switch means enabled by said AND gate means between said potentiometer means and said voltage measuring means so that the information provided by said voltage measuring means corresponds to the distance between said light source and said target.

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**3,164,662**
**REGISTERING SPECTRO-POLARIMETER**
**Marc Grosjean, Paris, Andre Lucam, Chaville, and Maurice Legrand, Paris, France, assignors to Roussel-UCLAF, Societe Anonyme, a corporation of France**
**Filed July 13, 1960, Ser. No. 42,688**
**Claims priority, application France, Dec. 18, 1959, 813,474**
**5 Claims. (Cl. 88—14)**



1. A recording spectro-polarimeter for recording the curve of variation of the rotary power of an optically active material as a function of the wave-length, comprising the combination of

(1) an optical system having a single beam optical path comprising a light source emitting light in a broad spectrum of wave-lengths at one end of said path and photoelectric light-receiving means at the opposite end of said path adapted to ultimately receive light from said optical system and convert the same into an electrical signal,

monochromator means inserted in said path for receiving the light from said source and including means to continuously vary the wave-length of the monochromatic light beam issuing therefrom so as to scan said broad spectrum of wave-lengths,

polarizer means for receiving said monochromatic light beam for imparting thereto a fixed plane of polarization, means for holding a sample of the said optically active material in the path of said plane polarized monochromatic beam so as to vary the plane of polarization from the rotation imparted by said sample to said monochromatic plane polarized beam,

means utilizing the Faraday effect for modulating the plane of polarization of said beam issuing from said sample to impart to said plane of polarization an alternating cyclical variation at predetermined phase and frequency,

said means also including further means utilizing the Faraday effect to compensate for the said modulation effect,

and analyzer optical means inserted between the output of said modulating means and said photoelectric light-receiving means,

(2) and of

means for detecting that part only of the said electrical signal which has the same phase and frequency as those of the said modulating means,

means coupled to said monochromator for coning said detected part of the electrical signal to said modulation compensating means,

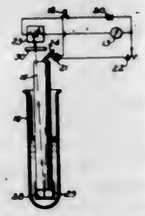
(3) and of

a recorder, having two directions of displacement, means coupled to said monochromator for controlling one direction of displacement of said recorder as a function of the variation of wavelength from said monochromator means,

and means coupled to said detecting means for controlling the other direction of displacement of said recorder as a function of the variation of said detected part of the electrical signal.

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**3,164,663**
**PROBE FOR COLORIMETRIC MEASUREMENT**
**George P. Gale, Orange, Calif., assignor to Beckman Instruments, Inc., a corporation of California**
**Filed Oct. 27, 1960, Ser. No. 65,394**
**1 Claim. (Cl. 88—14)**

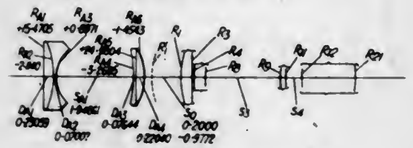


In a photoelectric probe, the combination of: a housing; a radiation conductor mounted in said housing and projecting therefrom for insertion into a fluid; a radiation source mounted in said housing for directing a beam into said conductor; a radiation sensing device mounted in said housing for receiving a beam from said conductor, a bracket in the form of a U-shaped clip engaging and suspended from the projecting end of said conductor; radiation reflector means carried in said bracket in the light path and defining a radiation path from said source through said conductor to said reflector means and back through said conductor to said sensing means, said bracket being movable along said shaft to vary the spacing between said radiation reflector means and the projecting end of said conductor thereby defining a variable gap permitting fluid to enter said radiation path; an electric power source; an output indicating meter; a variable resistor; first circuit means for connecting said power source, said radiation source and said variable resistor in series for controlling the radiation intensity of said radiation source; and second circuit means for connecting said power source, said radiation sensing device and said meter in electrical series circuit.



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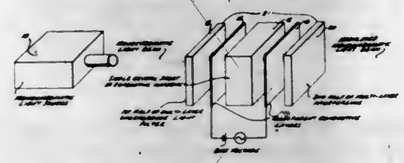
**3,164,664**
**OPTICAL SYSTEMS OF VARIABLE EQUIVALENT FOCAL LENGTH**
**Gordon Henry Cook, Leicester, England, assignor to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company**
**Filed Dec. 27, 1960, Ser. No. 78,744**
**Claims priority, application Great Britain, Jan. 1, 1960, 11 Claims. (Cl. 88—57)**



1. A variable focal length optical length system for projecting an image of an object on to a generally rectangular image-receiving area in a stationary image plane, comprising an objective of variable equivalent focal length having a front assembly and a rear assembly, said front assembly including members relatively movable for effecting continuous variation of the equivalent focal length of the objective within a predetermined range while maintaining the resultant image position always in the stationary image plane throughout the range, said front assembly also including members relatively movable for effecting focussing of the objective for different object distances independently of the relative movements for varying the equivalent focal length, and a substantially afocal wide angle attachment which can be placed at will in front of the objective for increasing the angular field and decreasing the effective values of the equivalent focal length of the objective in accordance with the telescopic power of the attachment without reducing the effective back focal distance of the objective, the said wide angle attachment comprising a divergent front member and a convergent rear member axially spaced behind such divergent front member, the distance between the rear nodal plane of the front member and the front nodal plane of the rear member being substantially equal to the difference between the equivalent focal length of the two members, such divergent front member comprising a doublet having a divergent element behind a convergent element whose material has a mean refractive index exceeding that of the material of the divergent element by at least 0.1, the internal contact in such doublet being concave to the front, the rear surface of such doublet being convex to the front, the convergent rear member of the attachment consisting of a doublet having a convergent element behind a divergent element made of a material whose mean refractive index exceeds that of the convergent element by between 0.05 and 0.20, the internal contact in such doublet having radius of curvature greater than $3f_{A2}$, where $f_{A2}$ is the equivalent focal length of the convergent rear member, the rear surface of such doublet being concave to the front with radius of curvature between $0.2f_{A2}$ and $0.5f_{A2}$ and having clear diameter between 1.0 and 1.25 times the ratio of the maximum value of the equivalent focal length of the objective to the $f$-number of the objective, the equivalent focal length $f_{A2}$ of the convergent rear member of the attachment lying between 2.5 and 5.0 times such ratio the Abbé V number of the material of the rear element of each of the doublets of the wide angle attachment exceeding that of the associated front element by at least 20.

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**3,164,665**
**ELECTRO-OPTICAL LIGHT SHUTTER**
**Phyllis E. Stello, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed July 30, 1962, Ser. No. 213,236**
**8 Claims. (Cl. 88—61)**



1. An optical apparatus for controlling the passage of light within a discrete range of wavelengths of the light spectrum, said apparatus comprising:

(*a*) a spacer layer of material having crystallite orientation and of a uniform thickness, said thickness being an integral number of no less than 100 one-half predetermined wavelengths within said discrete range of wavelengths;

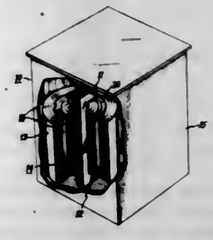
(*b*) means responsive to an electrical signal for producing a uniform controllable potential gradient across said spacer layer;

(*c*) a plurality of layers each one-quarter of said predetermined wavelength thick and of a first index of refraction disposed on both sides of said spacer layer; and

(*d*) a layer one-quarter of said predetermined wavelength thick and of a second index of refraction disposed intermediate each adjacent pair of said plurality of layers of said first index of refraction on both sides of said spacer layer and intermediate said spacer layer and the immediately adjacent layers of said first index of refraction, said second index of refraction being different from said first index of refraction.

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**3,164,666**
**FLUID INSULATED ELECTRICAL APPARATUS**
**Guglielmo Camilli, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York**
**Filed June 26, 1961, Ser. No. 131,034**
**15 Claims. (Cl. 174—17)**

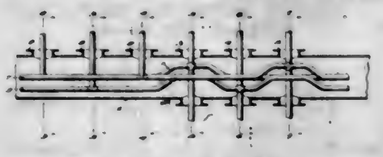


1. Electrical apparatus having spaced-apart portions at different electrical potentials, an enclosure containing said apparatus, an insulating fluid occupying said enclosure including the space between said spaced-apart portions, and means maintaining the entire body of fluid within said space at a higher pressure than the fluid oc-

cupying the remainder of said enclosure, said higher pressure being sufficient to increase significantly the insulating strength of said fluid.

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3,164,667
**ENCLOSED PRESSURE-GAS INSULATED BUSBAR SYSTEM WITH LATERALLY EXTENDING TAPS**
Egbertus Adrianus Frowein, Nussbaumen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Nov. 16, 1962, Ser. No. 238,192
Claims priority, application Switzerland Nov. 20, 1961
1 Claim. (Cl. 174—27)



A tubular enclosed pressure-gas insulated busbar system with three conductors and wherein two of said conductors are located on a first diametral plane through the tubular enclosure while the third conductor is located on a second diametral plane perpendicular to said first diametral plane, characterized in that taps are provided on two opposite sides in said second diametral plane in relation to the longitudinal axis of said tubular enclosure, these taps being arranged in pairs in the extension of each other, and that the taps for the conductors lying in said first diametral plane and for said third conductor are each displaced in the same direction by 90° from their initial position.

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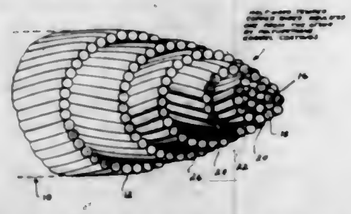
3,164,668
**TERMINAL PEDESTAL FOR BURIED WIRING SYSTEMS**
John J. Skubal, West Allis, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 27, 1959, Ser. No. 836,513
9 Claims. (Cl. 174—45)



3. In a free-standing terminal pedestal for supporting a terminal block upon a terminal strip for connecting telephone wires and accessories in an underground telephone system, a shallow channel-shaped stake of a rigid metal having one end driven into the ground in use, a terminal strip having offset legs secured to the upper end of the stake to dispose the terminal block supporting surface generally aligned with the outer edges of the stake to dispose the terminal block outwardly of the stake, a deep channel-shaped front cover telescoped over the stake coextensively of the terminal strip and releasably secured to the stake, a ground-line cover corresponding in cross-section to the front cover and telescoped over the stake from the lower end of the front cover into the earth adjacent the buried end of the stake, a barrier plate having a series of telephone wire openings to accommodate said telephone wires and having an edge portion clamped between the front cover and the ground-line cover to establish a continuous wall sealing the housing defined by the front cover from the earth, and a cap secured to the front cover and adapted to extend over the upper end of the stake to weather-and-insect proof the upper end of the pedestal.

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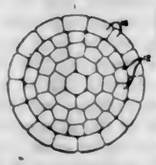
3,164,669
**ENAMEL STRAND CONDUCTOR FOR PIPE TYPE CABLE**
Louis Meyerhoff, Metuchen, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Sept. 18, 1961, Ser. No. 138,986
6 Claims. (Cl. 174—114)



1. A cable conductor for pipe cable which has good solderability and a combined skin effect and proximity effect loss much lower than conventional concentrically stranded cable in the same environment, said conductor comprising concentrically stranded copper wires, each of said wires having a half-hard temper, and each of said wires being insulated from adjacent wires by an insulation layer of cured polyurethane enamel which cures at a temperature below the copper annealing temperature and which, after being cured, will decompose at a temperature of the order of molten solder to provide a fluxing action and facilitate soldering.

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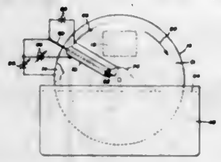
3,164,670
**ELECTRICAL CONDUCTOR**
Sigmund Ege, Hastings on Hudson, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed July 31, 1961, Ser. No. 128,144
2 Claims. (Cl. 174—128)



1. An electrical conductor comprising:
(A) a compact core of circular cross-section comprising a plurality of layers of compacted wires, and
(B) a plurality of keystone-shaped wires forming a helical layer directly surrounding said core,
(*a*) each of said keystone-shaped wires having the same cross-sectional shape throughout its length, and
(*b*) said keystone-shaped wires being in continuous electrical contact with said core substantially throughout the length of said conductor.



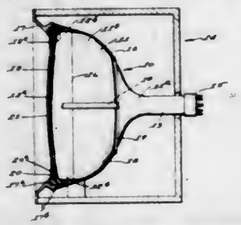
3,164,671
**LIGHT VALVE MEDIUM CONTROL**
Edmund F. Schilling, De Witt, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 21, 1962, Ser. No. 239,163
6 Claims. (Cl. 178—7.5)



1. In a projection system including a deformable medium extending across an electric charge deposition area and electron beam means for applying a pattern of electric charge to said deformable medium in said charge deposition area to produce light diffracting deformations of said deformable medium, means for moving the deformable medium relative to said electron beam means to advance a fresh surface of the deformable medium into the charge deposition area, and means for directing a sheet electron beam into impingement with the surface of said deformable medium to smooth said deformable medium, said sheet electron beam impinging upon an area extending generally transverse to the direction of movement of said deformable medium and adjacent the leading edge of said charge deposition area.

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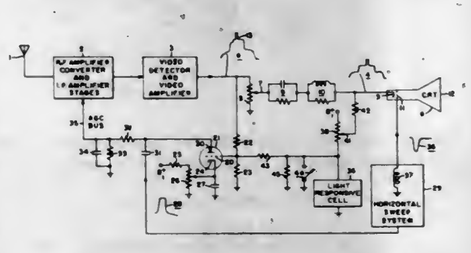
3,164,672
**CONTROLLING IMPLOSIONS IN CATHODE-RAY AND OTHER TUBES**
Burton W. Spear and Elgin M. Tom, Toledo, Ohio, assignors, by mesne assignments, to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 14, 1960, Ser. No. 62,786
4 Claims. (Cl. 178—7.82)



1. A mounting arrangement for retaining a sealed cathode-ray television picture tube in a receiver cabinet to control destructive implosion-explosion of said tube, said tube having an evacuated envelope fabricated substantially of glass, said envelope having a generally frusto-pyramidal body portion, a substantially rectangular image-forming display portion attached to the larger end of said body portion and a neck portion attached to its smaller end, said mounting arrangement comprising a substantially rectangular bezel member rigidly supported by said cabinet and having an inner configuration generally complemental to the peripheral region of said tube display portion, an annular resilient gasket member interposed essentially fully between said bezel member and a peripheral region of said display portion, a light-transmitting protective panel disposed adjacently and extending coextensively with the said tube display portion having its periphery retained by said gasket member, and means for retaining said gasket member in firm engagement with said bezel member and the peripheral region of said tube display portion, said gasket member being unrestrained by said bezel member when said protective panel is subjected to a disturbing force directed toward the image-forming display portion of said cathode-ray tube.

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3,164,673
**AUTOMATIC BRIGHTNESS AND CONTRAST CONTROL CIRCUIT**
Al U. Sharon, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 5, 1961, Ser. No. 157,114
4 Claims. (Cl. 178—7.5)



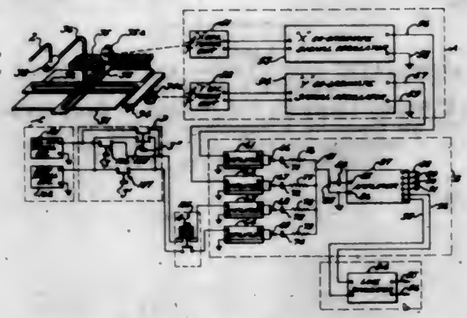

1. In a television receiver having means for receiving a transmitted signal, a picture tube having a viewing face and first and second input electrodes including a cathode electrode, means for automatically varying picture contrast and brightness comprising: an automatic gain control circuit for maintaining the voltage level of a video signal coupled to an input electrode of said picture tube at a preselected constant level when variations in the intensity of the received signal occur; said automatic gain control circuit including an amplifying device having a control electrode; means for providing a contrast and brightness control voltage which varies in accordance with the intensity of light striking said viewing face; said control voltage means including a light-dependent element positioned relative to said television receiver in a manner for being struck by light of substantially the same intensity as ambient light which strikes the face of said picture tube; said light-dependent element having an electrical characteristic which is proportional to the intensity of light striking the element; means direct-current coupling said control voltage to said cathode of said picture tube for varying the brightness thereof; and means connecting said control voltage to said control electrode of said amplifying device in said automatic gain control circuit.

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3,164,674
**METHODS FOR ELECTRONIC TRANSMISSION AND REPRODUCTION OF DATA IN GRAPHIC FORM**
Vincent E. Lally, King of Prussia, Pa., and Charles F. Campen, Jr., Wayland, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Original application Oct. 22, 1956, Ser. No. 617,660, now Patent No. 2,923,770, dated Feb. 2, 1960. Divided and this application Aug. 21, 1959, Ser. No. 835,379
6 Claims. (Cl. 178—19)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The method of transmitting meteorological data to one or more remote receiving stations for reproduction thereat, which comprises the steps of (*a*) causing an image of a geographical map with meteorological data inscribed thereon to be displayed at a position displaced from said map, (*b*) initiating mechanical motions in accordance with visual observations made by an observer reading the meteorological inscriptions on said image map, (*c*) converting said motions into electrical signals, (*d*) utilizing said electrical signals to produce visible traces in superimposed relationship to said meteorological

inscriptions and simultaneously transmitting said electrical signals to remote receiving stations for conversion in-



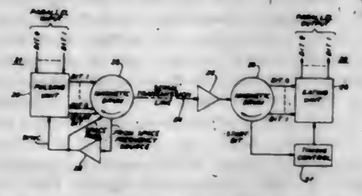
to duplicate mechanical motions for transcription of said meteorological data on duplicates of said geographical map.

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3,164,675
## DATA TRANSMISSION SYSTEM

Frederick G. Buhrendorf, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 21, 1961, Ser. No. 153,920
15 Claims. (Cl. 178—66)



3. An electromechanical frequency-shift data conversion device comprising a fixed stator structure having a plurality of evenly spaced salient poles, a plurality of individual windings encompassing groups of two and four of said stator poles, a smooth cylindrical rotor operable at synchronous speed within said stator, a magnetizable surface on said rotor, said individual windings encompassing groups of four poles of said stator when pulsed impressing a magnetic flux pattern on said surface corresponding to a given frequency determined by the pole spacing and when excited by said same magnetic pattern generating an output pulse, and said individual windings encompassing two poles of said stator being capable of effecting electrical to magnetic and magnetic to electric signal conversions with respect to the magnetic flux patterns on said rotor.

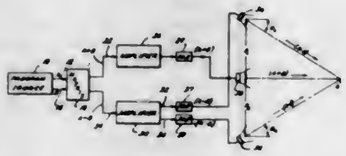
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3,164,676
## STEREOPHONIC SYSTEM EMPLOYING AUDIO MATRIXING

David H. Brunner, Abington Township, Montgomery County, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Mar. 13, 1961, Ser. No. 95,394
12 Claims. (Cl. 179—1)

9. A stereophonic signal reproducing system comprising input means for providing at first and second outputs electrical signals representative of the instantaneous sum and the instantaneous difference, respectively, of two stereophonically related program signals, a first electro-acoustic wave transducer arranged to direct acoustic wave energy in a selected path, means coupling said first output to said first electro-acoustic wave transducer, said first transducer producing an acoustic wave representative of said instantaneous sum of said two stereophonically related program signals in response to signals supplied at said first output, additional electro-acoustic wave transducer means, additional means coupling said second output to said additional electro-acoustic wave transducer means, said additional transducer means producing in



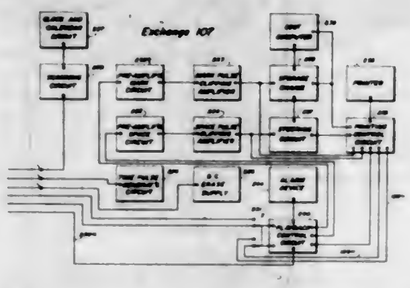
response to the signals supplied at said second output two differently directed, oppositely phased acoustic waves representative of said instantaneous difference of said two program signals, said last-mentioned two acoustic waves being directed differently than the acoustic energy wave produced by said first transducer.

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3,164,677
## TOLL CHARGE COMPUTER

Frank A. Morris, Fishers, James D. Comfeld, Rochester, and Howard L. Foote, Fairport, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Application Feb. 11, 1957, Ser. No. 639,447, which is a division of application Ser. No. 348,202, Apr. 13, 1953, now Patent No. 2,886,642. Divided and this application Oct. 12, 1959, Ser. No. 845,912
7 Claims. (Cl. 179—7.1)



1. In a computing device for determining the total charge for a variable number of units, wherein there is a first given charge for any number of units up to a predetermined number of base units and a second given charge for each unit in excess of said predetermined number of base units, said device comprising register means for storing said variable number of units as a series of signals equal in number to the number of units stored, normally closed gating means, a normally enabled base unit counter, a charge counter, means for priming said charge counter to a count manifesting said first given charge, means coupled between said register and said base unit counter for sequentially advancing the count of said base unit counter in response to each stored unit, means coupling said base unit counter to said gating means for opening said gating means in response to the count of said base unit counter having been advanced by said predetermined number of stored units and for disabling said base unit counter in response to the opening of said gating means, and means including said gating means coupled to said charge counter and said register for sequentially advancing the count of said charge counter by an amount equal to said second given charge only when said gating means is opened in response to each stored unit in excess of said predetermined number of base units.

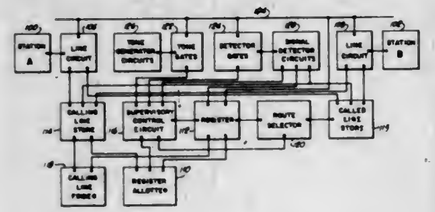
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3,164,678
## ELECTRONIC SWITCHING SYSTEM HAVING A DATA REGISTER INCLUDING CIRCULATING MEMORY MEANS

Barrie Brightman, Webster, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Feb. 27, 1961, Ser. No. 92,050
1 Claim. (Cl. 179—15)

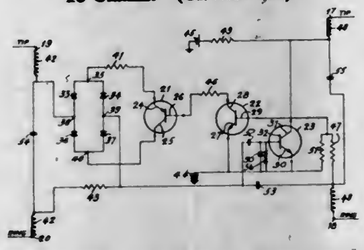


In a time division multiplex system wherein each of a given plurality of successive time intervals is divided into an even predetermined number of successive sub-intervals and each of said sub-intervals consists of first and second successive portions, delay means having an input and an output for reproducing at its output a signal applied to its input after a given time delay at least equal to the sum of said plurality of time intervals minus one-half of a time interval, means for applying a synchronizing pulse having only one polarity with respect to a given reference level to the input of said delay means during solely each and every first portion of each sub-interval of each of said plurality of successive time intervals and for applying an information pulse having only a polarity opposite to that of said synchronizing pulse with respect to said reference level to solely each of preselected ones of said second portion of the first-occurring one-half of the sub-intervals of each of said plurality of time intervals, a cyclic steering counter having a count capacity equal to one-half said predetermined number coupled to the output of said delay means and responsive to pulses having solely said one polarity for counting said synchronizing pulses, a first switch having a set condition and a reset condition coupled to said counter for setting said first switch at the termination of each odd cycle of said counter and resetting said first switch at the end of each even cycle of said counter, a group of bistable second switches each corresponding to a different count of said counter coupled to the output of said delay means and said counter to effect the setting of only that second switch corresponding to the count then manifested by said counter to a set condition only in response to the presence of an information pulse at the output of said delay means, utilization means coupled to said first switch and said group of second switches for producing an output in accordance with the binary value manifested by the settings of said group of second switches only in response to said first switch being in a set condition, recirculating means including clock means coupling said counter, said first switch and said groups of second switches to the input of said delay means for reapplying an information pulse only during the second portion of a sub-interval and only in response to said first switch being in a set condition and that second switch corresponding to the count then manifested by said counter being in a set condition, and means for effecting the resetting of all of said second switches in response to the resetting of said first switch.

3,164,679
## BI-DIRECTIONAL AMPLIFYING SYSTEMS

Phillip J. Read, Ottawa, Ontario, Canada, assignor to Northern Electric Company, Limited, Montreal, Quebec, Canada, a corporation of Canada

Continuation of application Ser. No. 109,905, May 15, 1961. This application June 15, 1964, Ser. No. 376,295
18 Claims. (Cl. 179—16)



1. In an automatic switching telephone system, which includes a central office which includes a direct current source of reversible polarity, a ringing current source, selection switches, a subscriber's station, and a transmission line comprising a tip and ring lead, an intermediate circuit for relaying supervisory signals over the transmission line comprising:

a first and second transistor which are a complementary pair,

a solid bridge rectifying bridge circuit consisting of a first and second semi-conductor diode, an electrode of one being connected to a like electrode of the other to form a first junction point, a third and fourth semi-conductor diode connected in series with and in the same sense with the first and second diode respectively to form a second and third junction point respectively, the remaining unconnected electrodes being connected together to form a fourth junction point,

a means for connecting the first and fourth junction point to the emitter and collector electrodes of the first transistor respectively,

a first coupling means for connecting the second and third junction points to the tip and ring leads extending to the central office, respectively, means included in the coupling means to by-pass audio frequencies,

a first and second energy source opposite in polarity,

a means for connecting the collector and emitter electrodes of the second transistor to the base electrode of the first transistor and to the first source respectively,

a second coupling means for connecting the subscriber's station ring lead to the base electrode, through a first load resistor, of the second transistor, the junction point of such electrode and resistor forming a fifth junction point which is connected to the first energy source,, and to the third junction point and for connecting the tip lead, through a second resistor, to the second energy source, means included in the second coupling means to by-pass audio frequency.

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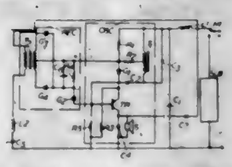
3,164,680
## SIGNALLING SYSTEM FOR SUBSTATION APPARATUS

Hans Helmut Adelaar, Frans Clemens, and René De Smedt, all of Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 12, 1961, Ser. No. 116,550
Claims priority, application Netherlands, July 21, 1960, 254,029
9 Claims. (Cl. 179—84)

1. Telephone station apparatus for receiving and transmitting signals over a direct current supplied telephone

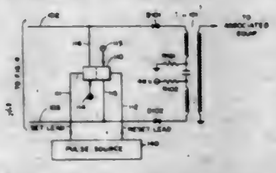
line interconnecting said station with a central exchange comprising a frequency selective signal receiver for receiving voice frequency signals of a predetermined frequency over said line, a rectifier circuit for rectifying said received signals and for producing an output voltage in accordance therewith, a signal generator powered by the direct current on said line when said generator is activated,



means responsive to the said output voltage reaching a predetermined amplitude for activating said signal generator to generate voice frequency ringing signals of a frequency distinct from said predetermined voice frequency signals received over said line, and a signal-responsive device controlled by said signals generated by said signal generator for producing audible signals.

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**3,164,681**
**SIGNALING GENERATOR**
**Barrie Brightman, Webster, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware**
**Filed Nov. 21, 1961, Ser. No. 153,843**
**2 Claims. (Cl. 179—84)**

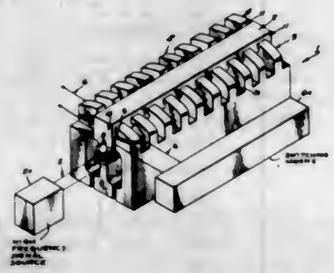


1. In a telephone system, a two-conductor telephone line for extending a connection from a telephone exchange to a telephone instrument, a telephone ringer for said telephone instrument, a capacitance, means for serially connecting said ringer and said capacitance between said two conductors of said line, a direct current voltage source of given magnitude, means including a first unidirectional conducting device poled to be forward biased for connecting one pole of said voltage source to one of said two conductors, means including a second unidirectional conducting device poled to be forward biased for connecting the other pole of said voltage source to the other of said two conductors, and a ringing current source for said ringer including a two-state device having a set condition and a reset condition, means coupled to said device for switching said device back and forth between its set and reset conditions at a predetermined frequency, and means effective only when said device is in its set condition for applying a ringing voltage across said two conductors of said line having a magnitude and polarity with respect to the magnitude and polarity of the voltage from said direct current voltage source for reverse biasing both said first and second unidirectional conducting devices.

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**3,164,682**
**MAGNETIC TRANSDUCER**
**Marvin E. Anderson, Chicago, Ill., assignor to IIT Research Institute, a corporation of Illinois**
**Filed Aug. 20, 1959, Ser. No. 834,977**
**13 Claims. (Cl. 179—100.2)**

1. A multichannel high frequency magnetic head assembly comprising: first, second and third magnetic core structures, said first core structure comprising a member having upper and lower portions, the lower portion of said first core structure defining a solid continuous body of magnetic material, the upper portion of said first core structure defining a plurality of spaced members of magnetic material integral with said first lower core portion, an individual bias winding separately wound on each of the spaced members of the upper portion of said first core structure, said second core structure defining a solid body of magnetic material having continuous upper and lower surfaces, a signal translating coil wound on said second core, said third core structure comprising a member having upper and lower portions, the lower portion of third core structure defining a solid continuous body of magnetic material, the upper portion of said third core structure defining a plurality of spaced members of mag-



netic material integral with said third core lower portion, an individual bias winding wound on each of said third core upper portions, the lower surfaces of said second core structure abutting effectively magnetically contacting a lower portion of the first and third core sturctures respectively on opposite sides thereof, the upper portions of said first and third core structures being respectively spaced on opposite upper surfaces of the second core structure thereby defining individual signal translating gaps therewith, means for applying a high frequency signal to the second core structure coil, and means for predeterminately sequentially applying recording bias to the individual bias windings on the upper portions of the first and third core structures.

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**3,164,683**
**ROTARY HEAD POSITION DETERMINING APPARATUS**
**John W. King, Palo Alto, and Robert F. Pfost, Mountain View, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California**
**Filed Sept. 30, 1959, Ser. No. 843,493**
**7 Claims. (Cl. 179—100.2)**



1. Apparatus for determining the spacing of a plurality of transducer units mounted on a rotary member which comprises a member having a relatively narrow predetermined track recorded thereon, means for causing the transducer units to successively sweep substantially transversely across said relatively narrow recorded track at a substantially constant rate, each of said transducers serving to form a pulse as it crosses the recorded track, and means for determining the time interval between pulses.



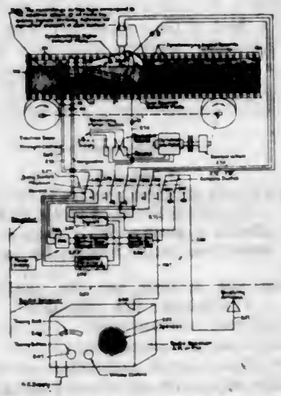
**3,164,684**
**TRANSDUCER SYSTEM AND METHOD**
**David E. Wiegand, Villa Park, Ill., assignor to IIT Research Institute, a corporation of Illinois**
**Filed Apr. 25, 1960, Ser. No. 24,477**
**15 Claims. (Cl. 179—100.2)**



1. A recording head comprising magnetic core means having a magnetic signal flux path including a recording gap for coupling with a magnetic record medium and including variable reluctance portions of magnetic material, signal coupling means coupled to said magnetic signal flux path, means whereby said signal coupling means produces a signal flux in said magnetic signal flux path which is ineffective by itself to permanently substantially affect a magnetic record medium at said recording gap, excitation coupling means coupled to said variable reluctance portions, means for delivering current pulses to said excitation coupling means to generate exciting fluxes in the respective variable reluctance portions which are opposed with respect to said magnetic signal flux path and substantially balanced at said gap to produce a net magnetic flux at said gap which is ineffective by itself to substantially permanently affect a magnetic record medium at said gap, means whereby said variable reluctance portions are maintained in a magnetic condition substantially below saturation and are periodically shifted by said magnetic exciting fluxes to net magnetic flux densities of respective opposite polarity with respect to said magnetic signal flux path, and means whereby a signal flux from the signal coupling means is effective to unbalance said opposed magnetic exciting fluxes and to produce a recording on said record medium in accordance with said signal flux.

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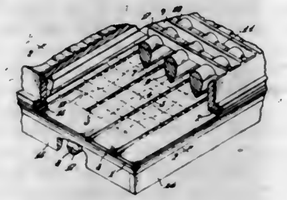
**3,164,685**
**WIDE BAND RECORDING SYSTEM**
**Thomas A. Banning, Jr., 5520 South Shore Drive, Chicago 37, Ill., and Emil L. Ranseen, deceased, late of Chicago, Ill., by Agnes J. Ranseen, executrix, Evanston, Ill., assignors, by direct and mesne assignments, to Thomas A. Banning, Jr., Chicago, Ill., as trustee**
**Original application May 4, 1954, Ser. No. 427,428, now Patent No. 2,976,354, dated Mar. 21, 1961. Divided and this application Mar. 9, 1961, Ser. No. 94,651**
**19 Claims. (Cl. 179—100.11)**



7. A signal recording and translating system including in combination a tape constituted for the reception of intelligence, means to move said tape linearly, means to produce force emitting cross scans at successive spacings along the tape, means to receive radio frequency incoming signals including carrier waves of at least one carrier wave frequency, connections between said radio frequency incoming signal receiving means and the cross scan producing means constituted to cause the cross scan producing means to produce the cross scans of varying strength corresponding to the varying strengths of the radio frequency carrier wave signals received by the incoming signal receiving means, means to receive and tune signals of said carrier wave frequency, signal sensing means in proximity to the tape constituted to successively sense the strengths of the forces emitted along the successive cross scans on the tape, and connections between said sensing means and the radio frequency receiving and tuning means, the radio frequency receiving and tuning means being constituted to tune the carrier wave frequency of the incoming carrier wave signals.

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**3,164,686**
**ELECTRODYNAMIC TRANSDUCER**
**George C. Tibbetts, Camden, Maine, assignor to Tibbetts Industries, Inc., Camden, Maine, a corporation of Maine**
**Filed Sept. 21, 1959, Ser. No. 841,280**
**10 Claims. (Cl. 179—115.5)**



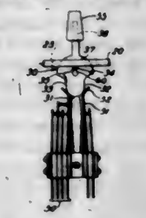
1. A transducer comprising a support, a flexible diaphragm held at its edges by the support, a thin flexible conductor adhering to said diaphragm for conducting current edgewise the diaphragm along a predetermined path, and magnetic means including magnetic poles mounted on said support adjacent the diaphragm with said poles lying in a plane spaced from and parallel to the diaphragm for producing a magnetic field edgewise the diaphragm which extends across said path always in the same direction, relative the path throughout the length of the path, the conducting path reversing direction periodically, the conducting path being arranged in two series of parallel bands, one series on each side of the diaphragm, each band being spaced from the adjoining bands on the same side of the diaphragm by a distance slightly less than the width of a band and each band being connected at one end to one of said adjoining bands and at the other end to the other of said adjoining bands, and bands on the opposite sides of the diaphragm being staggered so that there is a slight overlap.

7. A transducer comprising a support, a flexible diaphragm held at its edges by the support, the diaphragm being linearized flexurally by dimples bulged up from the substance of the diaphragm in a quilted pattern, a thin flexible conductor adhering to said diaphragm for conducting current edgewise the diaphragm along a predetermined path, and magnetic means including magnetic poles mounted on said support adjacent the diaphragm with said poles lying in a plane spaced from and parallel to the diaphragm for producing a magnetic field edgewise the diaphragm which extends across said path always in the same direction relative the path throughout the length of the path.

3,164,687
## MOLDED PLASTIC LEVER KEY FOR LOCKING OR NON-LOCKING OPERATION

Arthur M. Blackaller, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Apr. 18, 1961, Ser. No. 103,746
1 Claim. (Cl. 200—1)

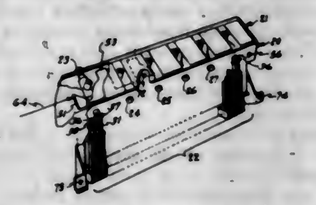


In a lever key switch, an escutcheon plate having a slot therein, a framework secured to and depending from said plate, a molded lever key, two switching springs mounted on said frame on opposite sides thereof and each having a flat end portion, said key having integrally molded therewith a thin flat upper shank portion extending upward through said slot and including a threaded portion to which a handle may be attached, and having a lower portion of greater thickness than said upper portion, a pin extending through said lower portion for pivotally mounting said key in said frame, said lower portion forming a first cam surface at the lower end thereof for engaging said flat end portions of said switching springs thereby to actuate the corresponding spring, and forming at the upper end thereof second and third cam surfaces on opposite sides of said pin to stop the pivoting movement of said pin, said second and third cam surfaces being asymmetrical to each other and being respectively located in relation to said pin so as to enable said key, when rotated in one direction to permit said first cam surface to move along the corresponding flat portion sufficiently to reach a locking position where the force of said flat end portion against said first cam surface is directed substantially through said pin, and, when rotated in the other direction, to restrict the movement of said first cam surface to where the corresponding flat portion urges said key back to its neutral position.

3,164,688
## MANUALLY OPERATED, MULTI-BUTTON INTERLOCKING PUSHBUTTON KEY SET

Leon B. Josefowski, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Feb. 13, 1961, Ser. No. 88,919
9 Claims. (Cl. 200—5)

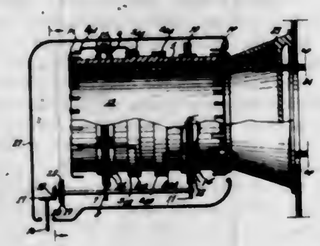


1. A manually operated, multi-button key set comprising a row of a plurality of two-position pushbuttons adjacent contact spring assemblies, said pushbuttons being adapted to move to either a raised or a lowered position, said springs being closed by said buttons when in said lowered position and opened by said buttons when in said raised positions, and means comprising a standardized three-pushbutton logic component for linking non-adjacent keys so that either one of said two non-adjacent keys may be pushed individually but both of said two keys may not be pushed simultaneously, said component comprising a plate having a pair of oppositely disposed cam shoulders including an inclined profile which translates downward motion from one of said non-adjacent pushbuttons into upward motion on the other of said non-adjacent pushbuttons, and a cutout portion in said plate for precluding operation of intermediate pushbuttons by said non-adjacent pushbuttons.

3,164,689
## VOLTAGE REGULATION TAP SELECTOR SWITCH WITH RADIAL CONTACT MEANS

René Pennis, Jumet, Belgium, assignor to Ateliers de Constructions Electriques de Charlerol (ACEC), Brussels, Belgium

Filed Mar. 23, 1961, Ser. No. 133,536
1 Claim. (Cl. 200—11)



A tap selector for switches used in the voltage regulation of loaded three-phase transformers having regulating taps distributed on the upper portion of the transformer windings, said selector comprising: an insulating cylinder; evenly spaced tap contacts divided into two groups, one group located at one end of said cylinder and comprising the odd-numbered tap contacts of each phase of the transformer and one second group located at the other end of the cylinder and comprising the even-numbered tap contacts of each phase of the transformer; the effective surface of each said tap contacts being located outside said cylinder and the connecting lug of said tap contacts being located inside said cylinder; a rotatable annular ring surrounding said cylinder near each group of tap contacts; supporting means for said rings disposed to roll on the outer surface of said cylinder; means for rotating said rings each after the other by successive angular displacements corresponding to the spacing of the adjacent tap contacts; three arcuate conducting segments secured on said cylinder opposite the tap contacts with respect to each ring; said segments encircling substantially a third of the circumference of said cylinder but being electrically insulated from each other by sufficient gaps; a brush corresponding to each segment, fixed to said ring; said brushes being spaced 120° from each other and adapted to successively join the tap contacts to the segments.

3,164,690
## ROTARY TYPE ELECTRIC SWITCH WITH WAFER PLATE SHORTING STRUCTURE

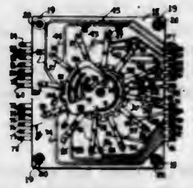
Stanford M. Helde, Kenosha, Wis., assignor to Chicago Dynamic Industries, Inc., Chicago, Ill., a corporation of Illinois

Filed Apr. 4, 1962, Ser. No. 185,110
10 Claims. (Cl. 200—11)

1. An electric switch comprising
(*a*) a circuit bearing wafer plate,
(*b*) a plurality of circuit conductors on each face of said wafer plate with certain circuit conductors on one face connected in series with certain corresponding circuit conductors on the opposite face of said wafer plate,



(*c*) means carried by one face of said wafer plate and removably contacting each of said certain circuit conductors thereon for establishing a short circuit between said certain circuit conductors on each face of said plate that are connected in series,
(*d*) means provided by said switch for simultaneously contacting selected circuit conductors on each face

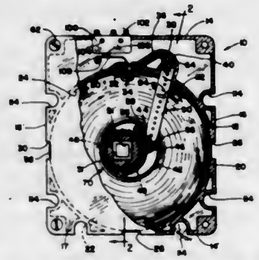


of said wafer plate for completing an electric circuit therethrough,
(*e*) means provided by the contacting means for removing said shorting means from the selected circuit conductors connected in series so as to complete a circuit through the selected circuit conductors connected in series.

3,164,691
## SELECTIVE ELECTRICAL PROGRAMMING DEVICE

Maurice A. Blouin, P.O. Box 158, Gardner, Mass.

Filed May 31, 1961, Ser. No. 113,910
8 Claims. (Cl. 200—46)



1. A selective electrical program device comprising: an endless roll of program tape with an outer loop and program means disposed therealong in predetermined pattern; housing means with tape-roll recess and tape guidances that guide said program tape from the outer turn past a program readout means thence across the roll surface and adjacent to an arc of a tape drive wheel on to the inner turn of said roll; said tape drive wheel placed within said roll and rotatably mounted in said housing for moving said tape in its endless cycles; and said program readout means, carried in said housing means adjacent to said outer loop, that is used to detect and convert said program means to electric signals.

3,164,692
## PUNCHED-CARD CONTROLLER FOR WASHING MACHINES AND THE LIKE

Gottfried Leuenberger, Schlieren, Zurich, Switzerland, assignor to Maschinenfabrik Ad. Schulthess & Co. A.G., Zurich, Switzerland, a firm

Filed Aug. 13, 1962, Ser. No. 216,540
7 Claims. (Cl. 200—46)

1. A punched-card controller for washing machines and the like, comprising a unit casing having a top wall, a guide plate and a cover plate therefor at the upper side of the unit casing with a space therebetween for the passage of a punched card, a depending side wall on the unit casing, a plate pivotally mounted on the side wall, a toothed transport wheel mounted on the pivoted plate, said top wall of the unit casing, and guide and cover plates having transversely aligned openings therein, make and break contact balls in said openings with the openings and balls offset relative to each other, ball take-up points

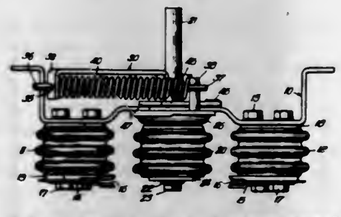


in the cover plate aligned with the perforations in the punched card, switch devices operated by said contact balls and electrical means for operating the switch devices.

3,164,693
## TRANSFORMER SWITCH WITH SNAP ACTION OPERATOR

James H. Nicholas, Flossmoor, George E. Lusk, Downers Grove, and Howard E. Swanson, Chicago, Ill., assignors to G & W Electric Specialty Company, Blue Island, Ill., a corporation of Illinois

Filed May 10, 1961, Ser. No. 109,210
7 Claims. (Cl. 200—48)

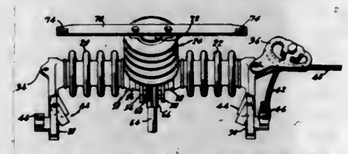


1. In switch mechanism of the character described, the combination with a mounting bracket, of a pair of insulators fixed to the bracket in spaced relation, a stationary contact carried by each insulator, a third insulator located between the fixed insulators, a shaft mounting the third insulator on the bracket for rotation, a switch blade fixed to the third insulator in alignment with the stationary contacts for coaction therewith, said stationary contacts having contact surfaces perpendicularly disposed to the axis of rotation of the third insulator, a pin extending from the third insulator and disposed substantially parallel to the axis of said insulator, and toggle means in associated relation with and having operative contact with the pin and with said shaft for effecting oscillating movements of the third insulator whereby to cause the switch blade to coact with the stationary contacts.

3,164,694
## DOUBLE BREAK HIGH VOLTAGE DISCONNECT SWITCH

Edmond B. Gorman, Campbell, and Stephen B. Sprague, San Jose, Calif., assignors, by mesne assignments, to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Nov. 13, 1961, Ser. No. 151,725
8 Claims. (Cl. 200—48)



1. A high voltage disconnect switch including an elongated insulating and supporting structure having laterally spaced insulators whose longitudinal axes extend in gen-

erally opposite directions, means at the outer end of each of said insulators for anchoring transmission lines extending in said generally opposite directions, fixed contact arms upstanding from the outer ends of said insulators, a movable upstanding insulator pivotally carried by said elongated supporting structure midway between said contact arms and extending in the direction which bisects the angle formed by the longitudinal axes of said insulators, and a bridging contact member carried by said insulator and cooperable with said contact arms.

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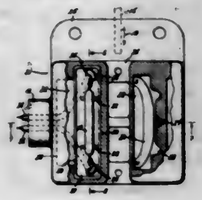
**3,164,695**
**DISPOSABLE PACKAGES**
**Dominic A. Sanni, 31 Ledgetree Road, Medfield, Mass.**
**Filed Oct. 9, 1961, Ser. No. 143,753**
**2 Claims. (Cl. 206—56)**



1. A sealed commodity package comprising rectangular front and rear walls sealed together along their edges to form a sealed pouch, said package containing a fluid commodity within said pouch and a single bendable bend-retaining wire, said wire captivated between said walls in the seal along one edge thereof, said wire extending for the full length of said one edge, and an edge slit extending across said seal and dividing said wire into two discrete pieces, whereby to facilitate tearing open one end of said package to permit dispensing of said fluid commodity.

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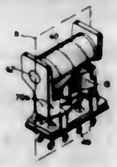
**3,164,696**
**VANE OPERATED MAGNETIC REED SWITCH**
**Robert Andrew Pusch, Le Roy, Ill., assignor to General Electric Company, a corporation of New York**
**Filed Aug. 4, 1961, Ser. No. 129,374**
**2 Claims. (Cl. 200—87)**



1. In a vane-operated switch, a nonmagnetic housing formed with a pair of spaced pockets opening at a common side of the housing and a slot between the pockets, a pair of generally U-shaped permanent magnets each having magnetic poles of opposite polarity and exhibiting different pole strengths, the stronger one of said magnets being mounted within one of said pockets with its pole faces facing said slot, a mounting member including an open box portion having a base and a flexible leg spaced from the base, said mounting member being positioned within the other of said pockets with the box portion opening away from the open end of the associated pocket and with the flexible leg spaced from the base towards the open end of the associated pocket, the weaker one of said magnets being positioned between said leg and said base with its pole faces facing said base, the poles of the two magnets being relatively disposed to establish a magnetic field in the slot creating a force of attraction between the magnets, a magnetic switch within said box portion including a pair of elongated, overlapping magnetic contacts extending substantially in the direction of spacing of the poles of the weaker magnet, said magnetic switch being positioned externally of the magnetic field so that substantially no magnetic flux traverses the contacts whereby the contacts are normally open in the absence of a magnetic vane in said slot, said contacts being closed by mutual attraction in response to passage of magnetic flux from the weaker magnet through the contacts resulting from passage of the vane through the slot, and means attached to the housing closing the open ends of said pockets.

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**3,164,697**
**ROTARY ARMATURE MINIATURE RELAY**
**Frank R. Bridges, Needham, Mass., assignor to S. H. Couch Company, Inc., Quincy, Mass., a corporation of Massachusetts**
**Filed Aug. 9, 1961, Ser. No. 130,370**
**3 Claims. (Cl. 200—87)**



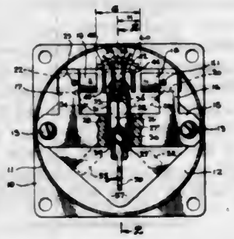
1. In a relay construction, a rotor having a symmetrical shape, said rotor having opposed major faces lying generally parallel to and on either side of the axis of said rotor, a pair of stator members, each having integral lower and upper portions with the lower portions lying entirely on opposite sides of a vertical plane passing through the axis of said rotor and with said lower portions having a height greater than the height of said rotor and each having a face complementary to one of said rotor faces, said stator faces being substantially coplanar, said upper portions having widths greater than the widths of said lower portions and extending on either side of said vertical plane and a thickness less than said lower portion whereby said portions form inwardly extending shoulders at the junctions thereof, a pivot coaxial with the axis of and supporting said rotor, means pivotally supporting said pivot including a cross brace lying in a plane normal to said faces and secured at opposite ends to said shoulders, and a bridge on the side opposite said rotor to said cross brace, said bridge having a platform parallel to the plane of said cross brace and supporting the lower portions of said stator members at either end thereof, said cross brace and platform engaging said pivot, a header having contacts formed therein, said bridge having integral legs projecting normally from said platform and secured at their ends to said header thereby securing it in spaced relation to said platform, contact actuators secured at one end to said rotor and adapted to engage said contacts at the other end, and an electromagnetic coil having a core extending axially therethrough with the axis of said coil and core lying in said vertical plane with the ends of the core secured to the upper portions of said stator members.

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**3,164,698**
**MAGNETIC ROTARY PULSE SWITCH**
**Warren L. Perrine, 12671 Babbling Well Road, Santa Ana, Calif.**
**Continuation of application Ser. No. 106,632, May 1, 1961. This application Apr. 19, 1962, Ser. No. 188,758**
**5 Claims. (Cl. 200—87)**

1. A rotary pulse switch device comprising a mounting plate, a mounting block on the plate and a switching member on the block comprising a stationary contact and a reciprocating armature mounted in said member with a free end movable into and out of engagement with said stationary contact, a permanent magnet comprising magnetic pole pieces on said block, said pole pieces being of opposite polarity and mounted respectively on opposite sides of the free end of said armature and forming a magnetic path across said free end of said armature, said pole pieces being in balanced relationship on said mounting block, magnetic flux guide elements extending transversely across said magnetic path on respective opposite sides of said switching member, said guide elements having ends thereof forming a gap therebetween at a location

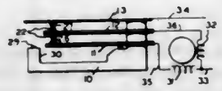




on one side of said path, a rotary switch actuator shaft on the plate, a pulsing member mounted for rotation on said actuator shaft, a rotary input means operatively connected to said actuator shaft, said pulsing member comprising a plurality of vane means of high permeability-low retentivity magnetic material extending radially outwardly in balanced relationship on said actuator shaft, said vane means having a path of rotation parallel to said magnetic path and on one side of said pole pieces and said armature and adjacent said gap, said vane means upon rotation having a periodic modifying effect on said magnetic path whereby to effect reciprocation of said armature into and out of engagement with said contact point.

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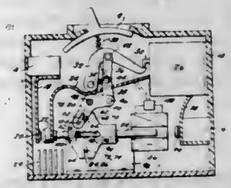
**3,164,699**
**STARTING AND OVERLOAD CONTROL FOR MOTORS**
**Willard B. Whitler and Robert E. Prouty, Logansport, Ind., assignors to Essex Wire Corporation, a corporation of Michigan**
**Filed Oct. 17, 1961, Ser. No. 145,588**
**2 Claims. (Cl. 200—113)**



1. A combined starting and overload protection control for an electric motor having starting and running windings comprising: a supporting member; a conductive spring strip carrying a first contact and having a first terminal connectable to a supply conductor; a first bimetal strip carrying a double contact and having a second terminal connectable to said running winding; a second bimetal strip carrying a second contact and having a third terminal connectable to said starting winding; said strips being arranged to extend generally in the same direction in laterally spaced relation with said first bimetal strip being between the other two strips; each strip being supported by said supporting member at one end so that the free ends of said strips are movable relative to each other; said two bimetal strips each being arranged to move in a direction away from said spring strip when heated; said spring strip being biased to urge said first contact into engagement with said double contact when said first bimetal strip is cool and to urge said first contact into following engagement with said double contact as said first bimetal strip moves; stop means supported by said supporting member limiting following movement of said spring strip in a direction toward said second bimetal strip upon movement of said first bimetal strip beyond a predetermined position; said first bimetal strip being responsive to initial current flow therethrough to move said double contact into contact with said second contact; said second bimetal strip being responsive to current flow therethrough to move said second contact away from said double contact; said second bimetal strip maintaining said second contact separated from said double contact while heated by said first bimetal strip; said first bimetal strip being responsive to a continued abnormally high current flow therethrough to move beyond said predetermined position whereby said double contact is moved away from said first contact; and snap-acting means carried by said strips to effect quick engagement and separation of said contacts.

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**3,164,700**
**CURRENT LIMITING CIRCUIT BREAKER WITH IMPROVED AUXILIARY TOGGLE MECHANISM**
**August Bodenschatz, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Apr. 13, 1959, Ser. No. 806,041**
**11 Claims. (Cl. 200—116)**

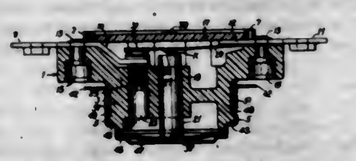


11. A current limiting circuit breaker, said current limiting circuit breaker including a pair of cooperating contacts movable between an engaged and a disengaged position with respect to one another, a main operating mechanism, biasing means operatively connected between said main operating mechanism including a first toggle means movable to a first position for moving said cooperating contacts towards an engaged position; said biasing means including a second toggle means and a spring; said second toggle having outer ends operatively connected to said main operating mechanism, and having said outer ends connected to each other by said spring; said second toggle having a knee operatively connected to one of said pair of cooperating contacts; said biasing means being adapted to urge said cooperating contacts into firm engagement when said main operating mechanism is in said first position, auxiliary operating means operatively connected independently of said main operating mechanism to said one of said pair of cooperating contacts; said auxiliary operating means being operable responsive to pre-determined fault conditions to initiate opening of said pair of cooperating contacts before said main operating mechanism operates; said auxiliary operating means being operatively connected to said biasing means and being adapted to defeat said biasing means initially disengaging said cooperating contacts while said main operating mechanism remains in said first position and said biasing means thereafter aiding said auxiliary operating means to disengage and hold said cooperating contacts in disengaged position.

3,164,701
## METHOD OF ASSEMBLING THERMOSTATIC SWITCHES

Frederick A. Kirchhubel, Versailles, Ky., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 29, 1961, Ser. No. 113,498
2 Claims. (Cl. 200—138)

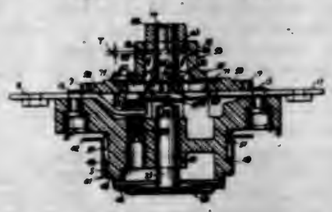


1. The method of locating a transfer member for lost-motion transmission of movement from a snap-acting thermostatic element to an adjustable spring-supporting means for a movable contact engageable with an adjustable fixed contact in the housing of a thermostatic switch; comprising adjusting the position of said spring-supporting means in a direction to engage the transfer member with deflection of the spring-supporting means to apply a predetermined force to the transfer member while the member is held with an equal and opposite force in a predetermined location relative to the housing, adjusting the fixed contact to engage the movable contact while the spring-supporting means is in its deflected position, releasing the holding force on the transfer member, and attaching the thermostatic element to the housing, said predetermined location of the transfer member having been chosen that after attachment of the thermosatic element the transfer member has sufficient lost motion between the spring-supporting means and the thermostatic element to take up initial creep movement of the thermostatic element without initial transfer of said movement to said contacts, but thereafter upon snap movement to transfer snap action thereto.

3,164,702
## THERMOSTATIC SWITCH AND METHOD OF ASSEMBLY

Raymond Joseph Ruckriegel and Frederick A. Kirchhubel, Versailles, and John O. Moorhead, Lexington, Ky., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 29, 1961, Ser. No. 113,502
2 Claims. (Cl. 200—138)

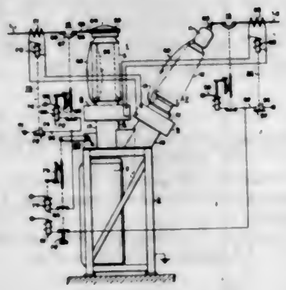


1. A thermostatic electric switch comprising a support, a transfer pin supported for axial movement longitudinally along an axis in the support, a cantilever spring extending transversely across a first end of said pin and mounted on one side of the pin axis on a first bendable means carried on the support, a snap-acting thermostatic member on the support opposite the second end of the pin and movable by gradual action from either of two opposite extreme configurations through at least one intermediate critical configuration for snap action, a movable contact mounted on said spring on the other side of said axis, a fixed contact also mounted on the other side of said axis adjacent the movable contact, a second bendable means mounting said fixed contact, a set screw in the support for bending said second bendable means, said first bendable means being adjusted to produce a desired contact pressure between said contacts by movement of the spring, the second bendable means being adjusted by said set screw to position the contacts when closed to space the cantilever spring from the first end of the transfer pin sufficient to allow movement from one of its extreme configurations to a critical snap-acting configuration without transfer of movement to said spring sufficient to open the contacts, and thereafter under snap action to transfer sufficient movement to the spring for rapid contact disengagement, a reset pin carried on said support for axial movement on said axis to and from the transfer pin, a second spring biasing the reset pin away from the transfer pin, head means on one end of the reset pin adapted for axial adjustment thereon, stop means on said structure for said head means, said head means being adjustably positioned relative to said reset pin to produce a clearance between the other end of the reset pin and the spring sufficient only when the thermostatic member is in its other extreme configuration and the contacts open to transmit movement from the reset pin through the transfer pin to the thermostatic member for moving the latter from said second extreme configuration to a critical configuration for snap action without closing the contacts.

3,164,703
## CIRCUIT INTERRUPTER OF THE SINGLE-BUSHING TYPE WITH CANTED TERMINAL-BUSHING CONSTRUCTION

Robert E. Friedrich, Baldwin, Carl G. Lentjes, Churchill, and George B. Cushing, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 15, 1959, Ser. No. 840,133
7 Claims. (Cl. 200—148)



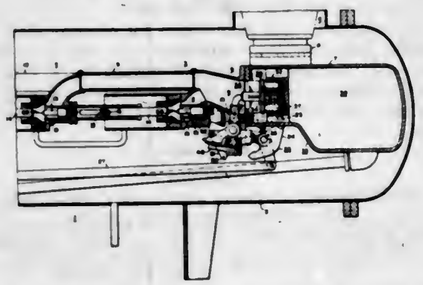
1. A circuit interrupter of the single-bushing type including an upstanding insulating cylindrical interrupter housing, a relatively stationary contact disposed interiorly within the upper end of said cylindrical interrupter housing, a longitudinally movable puffer cylinder carrying a movable contact disposed interiorly within said cylindrical interrupter housing, the movable contact being cooperable with the relatively stationary contact to establish an arc, the movement of the puffer cylinder forcing fluid under pressure toward the established arc to effect the extinction thereof, a grounded mechanism housing disposed below said upstanding cylindrical interrupter housing and serving to support the same, a canted terminal bushing of conventional type supported by said grounded mechanism housing, the angle between the axial center lines of the interrupter housing and the terminal bushing being less than 180°, and a removable cover plate secured to the bottom of the mechanism housing to effect downward withdrawal of the movable puffer cylinder for service and maintenance.



3,164,704
## BLAST-VALVE MECHANISM FOR COMPRESSED-GAS CIRCUIT INTERRUPTER

Russell N. Yeckley, Monroeville, Joseph Sucha, Port Vue, and Roswell C. Van Sickle, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 17, 1960, Ser. No. 63,201
9 Claims. (Cl. 200—148)

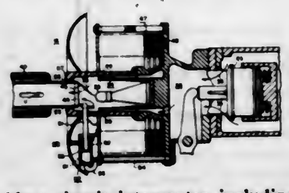


1. A compressed-gas circuit interrupter including contact means separable to establish an arc, a compressed-gas reservoir chamber, blast-valve means for controlling a flow of compressed gas from said compressed-gas reservoir chamber to effect extinction of said arc, said blast-valve means including a blast valve, a pivotally mounted blast-valve operating lever having a ratchet portion, a pawl for engaging said ratchet portion, and means responsive to opening motion of said contact means for effecting thru said pawl the opening movement of the blast-valve.

3,164,705
## FLUID-BLAST CIRCUIT INTERRUPTERS WITH RETRACTABLE IMPEDANCE PROBE

Charles F. Cromer, Level Green, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 1, 1961, Ser. No. 92,677
7 Claims. (Cl. 200—148)



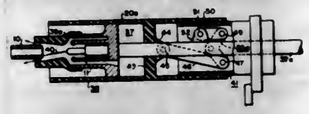
1. A gas blast circuit interrupter including separable main contacts separable to establish a main current arc, a gas blast actuated impedance probe assembly including a retractable probe and a shunting impedance connected therewith, gas blast means for not only effecting extinction of the main current arc but also actuation of the probe assembly to insert the impedance in shunt relationship across the main current arc, and said retractable probe being out of proximity of the region between the separable main contacts during the closing stroke of the interrupter.

3,164,706
## MECHANICAL OPERATING MEANS FOR FLUID-BLAST CIRCUIT INTERRUPTER

Frederick B. Johnson, Pleasant Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 3, 1961, Ser. No. 149,951
5 Claims. (Cl. 200—148)

1. A circuit interrupter of the fluid-blast type including a relatively stationary contact, a movable contact separable from the relatively stationary contact to establish an arc, a movable contact rod having said movable contact affixed thereto, operating means for effecting opening and closing movement of the movable contact rod for effecting corresponding contact separation and contact reengagement, puffer means for compressing fluid to effect arc extinction including a movable cylinder part and a movable piston part, the movable piston part being movable within the movable cylinder part for the compression of an arc-extinguishing fluid therein, a mechanical linkage including a pivotally mounted operating lever mechanically interconnecting said movable contact rod with one of said movable parts, said movable contact rod being secured to the other of said movable parts, whereby said two movable parts will move in opposite directions to very rapidly decrease the compressible volume within the movable cylinder during the opening operation of the interrupter.



3,164,707
## PUSH BUTTON SWITCH WITH LEAF SPRING CONTACTS

Roger H. Fink, Lancaster, Ohio, assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed July 18, 1961, Ser. No. 124,983
2 Claims. (Cl. 200—159)



1. In an electric switch, the combination of:
(*a*) a hollow housing having a front end and a rear end;
(*b*) a push button operator disposed within said housing and having a portion extending out of the front end of said housing;
(*c*) a bridging contact of sheet metal having a flat contact portion disposed within said housing and axially shiftable with said operator;
(*d*) means within said housing for guiding movement of said contact portion along a single plane coextensive with the plane of said contact portion;
(*e*) spring means within said housing urging said inner end of said operator and said bridging contact away from the rear end of said housing;
(*f*) a pair of spaced, elongated, stationary spring contact members having front and rear portions, the rear portions of said contact members being mounted at the rear end of said housing on opposite sides of said single plane, the front portions of said contact members extending in spaced relation toward the front end of said housing for resilient bridging engagement with the contact portion of said bridging contact;
(*g*) each front portion of said contact members comprising a first generally flat portion inclining forwardly and inwardly toward said single plane from said rear portion and a second generally flat portion inclining forwardly and outwardly of said single plane from said first portion of the respective contact member on the same side of said single plane as said first portion of the respective contact member, said first portions inclining in opposite directions and

said second portions inclining in opposite directions, and said front portions being offset laterally and having portions crossed and aligned relative to each other in a direction lengthwise of the contact portion of said bridging contact to be tensioned by engagement of the latter therebetween.

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3,164,708
**PRECIOUS METAL TIP FOR STROWGER SWITCH WIPERS**

Dale D. Theobald, Berkeley, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Oct. 27, 1960, Ser. No. 65,538
1 Claim. (Cl. 200—166)



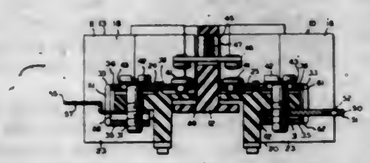
A wiper spring for use in a switch in which the wiper spring moves over stationary contacts to make contact therewith, said spring punched from a base metal strip having a precious metal insert therein, said spring formed so as to have a narrow neck portion connecting a relatively wide head portion to the main body of the spring, said head portion having a depressed center portion at the point where it engages the stationary contacts, said head portion having the precious metal insert entirely included therein with its front curved edge coinciding with the front edge of the head portion and having a curved rear edge extending back or a short distance from said front edge and entirely surrounded by a section of the base metal head, said precious metal insert providing the contact making surface and the remainder of the head and neck being formed of base metal to provide the proper resiliency for the spring.

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3,164,709
**TERMINAL BLOCK CONNECTOR ASSEMBLY**

Salvatore E. Gentile, Logansport, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed May 5, 1961, Ser. No. 108,053
4 Claims. (Cl. 200—166)



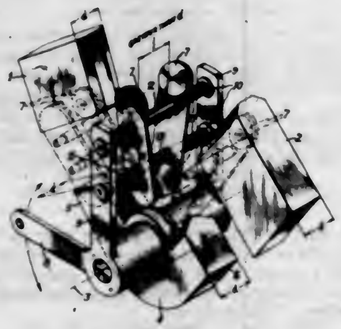
1. A terminal block connector assembly comprising an insulator block member having first and second parallel surfaces and an opening therethrough; said block member having an open ended channel formed in said first surface in communication with said opening; a clamping member in clamping engagement with said block member; said clamping member consisting of a metal strip bent to U-shape with first and second parallel arms and a connecting portion; said first arm overlying said first surface and extending over said channel to form therewith a receptacle for a conductor member; said first arm being provided with an internally threaded aperture in alignment with said opening in said block member; said second arm overlying said second surface and having an aperture in alignment with said aperture in said first arm; said connecting portion of said clamping member being provided with a slot aligned with the open end of said channel for insertion of a conductor member therethrough into said receptacle; and a screw extending through said apertures in said arms and said opening in said block member; said screw being threaded in said aperture of said first arm and having a head portion cooperating with said second arm for drawing said arms together into clamping engagement with said block member; said clamping engagement developing a clamping force to hold a conductor member inserted through said slot into said channel in electrical connection with said arm.

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3,164,710
**REVERSING SWITCH FOR TAP CHANGING TRANSFORMER REGULATOR**

Piero B. Macelloni, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Apr. 12, 1962, Ser. No. 187,062
5 Claims. (Cl. 200—170)



1. In an electric switch a pair of spaced apart contacts, a bridging contact, means for causing relative movement in a given plane between said bridging contact and said pair of contacts for causing selective bridging engagement and disengagement between said bridging contact and said pair of contacts, means mounting said bridging contact to cause engagement of said bridging contact first with only one of said pair of contacts with said bridge contact and the other of said pair of contacts being in spaced apart overlying relation and means cooperating with said mounting means for causing relative movement between said bridging contact and said pair of contacts in a plane perpendicular to said given plane for next causing said bridging contact to engage said other of said pair of contacts.

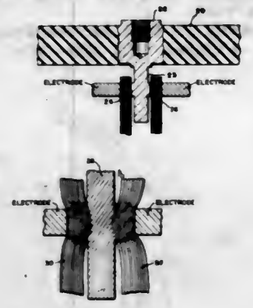
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3,164,711
**WELDING METHOD**

Karl P. Shetterly, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 13, 1962, Ser. No. 216,629
3 Claims. (Cl. 219—93)

1. In a method for welding a plurality of thin metal straps to a heavier workpiece of the same metal the steps comprising; providing a thin substantially flat-faced welding projection on said workpiece, stacking said straps in juxtaposed relation, holding the stacked strap against said flat-faced projection, applying high pressure thereto by means of opposed welding electrodes to establish good electrical contact throughout the stack and the projection and then passing a high welding current through said electrodes, straps and said projection for causing said



projection to integrate into a continuous weld with said juxtaposed straps, said projection being dimensioned to be substantially absorbed into the welded joint.

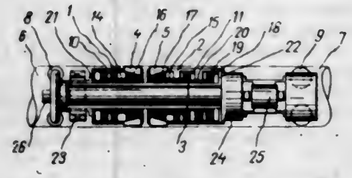


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3,164,712
**WELDING HEAD FOR THE ELECTRICAL CONTACT WELDING OF LARGE DIAMETER TUBES CIRCULAR (ANNULAR) JOINTS**

Boris Evgenievich Paton, Vladimir Konstatinovich Lebedev, Nickolai Gerasimovich Ostapenko, Rafail Ivanovich Lashkevich, Platon Ivanovich Sevbo, Vasily Alexeevich Sakharnov, Mark Davydovich Litvinchuk, and Grigory Vasilievich Gorbunov, all of Kiev, U.S.S.R., assignors to Institute Elektrosvarki imeni E. O. Patona, Kiev, U.S.S.R.

Filed Mar. 20, 1962, Ser. No. 181,088
3 Claims. (Cl. 219—101)



1. A welding device for electrical contact resistance welding of butt joints between the ends of aligned tubes, said device comprising a self-propelled structure to be received within the tubes, driven rollers on said structure for engaging the inner walls of the tubes, a central rod mounted on said structure, a pair of axially spaced welding head portions slidably mounted on said rod, an expansible clamp on each head portion, means on each head portion for operating said clamp to engage the inner walls of the tubes at opposite sides of the joint to be welded, means on one head portion for moving said head portions toward and away from each other, a welding transformer mounted on said structure and connected to said clamps and a motor mounted on said structure for driving said rollers.

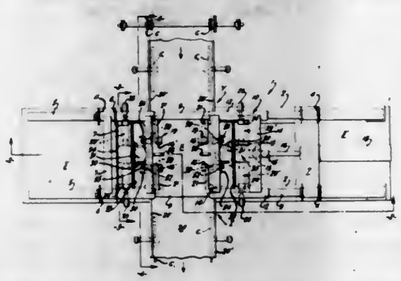
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3,164,713
**BEAM WELDING APPARATUS**

John V. Banks, San Marino, and Robert F. Falge, Berkeley, Calif., assignors to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada

Filed May 14, 1962, Ser. No. 194,610
19 Claims. (Cl. 219—124)

1. Apparatus for welding beams comprising the combination of a framework, a first support means mounted on said framework for slidably supporting a first beam component, a second support means on said framework for slidably supporting a second beam component at a predetermined angle with respect to said first beam component, a welding head means affixed to said framework and disposed adjacent the point where said components contact each other while being supported on said support means, back-up roll means including a floatingly mounted back up roll mounted on said framework for engaging one of said components and for pressing said one of said beam components into clamping contact with the other of



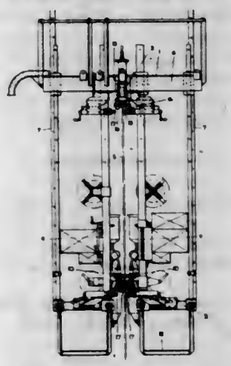
said beam components, means driving said roll means including said floatingly mounted back up roll and in turn said beam components in clamped condition past said welding head means, and means for holding said floatingly mounted back-up roll in constant pressure contact with said one of said components at all times during the driving of said floatingly mounted back up roll and while said components are driven in a clamped condition past said welding head means by said back-up roll means.

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3,164,714
**WELDING APPARATUS**

Allan Henry Barye Swan, Woking, Surrey, and Ivor Rowland Waller, Forrest Hall, Newcastle-upon-Tyne, England, assignors to The British Oxygen Company Limited

Filed Apr. 16, 1962, Ser. No. 187,488
12 Claims. (Cl. 219—126)

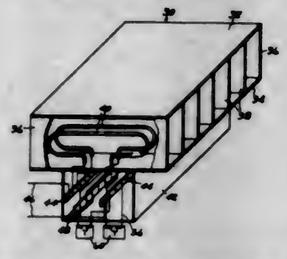


1. Apparatus for use in welding the edges of substantially vertical plates to form a curved shell structure comprising a carriage, two wheel mountings located forwardly and rearwardly of the carriage, two wheels mounted one in each mounting to enable the carriage to run along the upper edge of the plates or a track running parallel thereto, means for pivoting the wheels to align them tangentially to said upper edge or track at their point of contact, a first framework suspended from the carriage to support welding means for depositing weld metal at a welding point on the shell structure, and positioning means for adjusting the wheels transversely of the carriage to retain the welding means at a substantially constant distance from the welding point when welding shell structures of different curvature, said positioning means comprising two arms

mounted on the carriage to extend forwardly and rearwardly therefrom, each arm carrying one of said corresponding wheel mountings.

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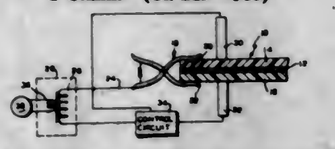
3,164,715
## ELECTRIC SPACE HEATING UNIT
Louis C. Cotts, 2512 Oak St., Michigan City, Ind.
Filed Jan. 27, 1961, Ser. No. 85,464
4 Claims. (Cl. 219—364)



1. An electric air heating unit adapted to be interposed in an air treating system having a housing, a forced air circulating device and a plurality of discharge ducts, comprising a structure adapted to be carried by said housing and defining a plurality of juxtaposed open ended passages each adapted to communicate at one end with said air circulating device and at its opposite end with a discharge duct, at least one electrical heating element removably mounted in each passage, electrical circuit means comprising a first elongated conductor, a second elongated conductor and an elongated non-conductor carrying a plurality of spaced terminal means thereon, carried by said structure externally of and adjacent to said passages, said first and second conductors each adapted for connection with a side of a power supply line, each heating element being electrically connected at one end to one of said first and second conductors and at the other end to an individual one of said spaced terminal means, means for electrically connecting selected ones of said spaced terminal means together in groups, means electrically connecting each of said groups of spaced terminal means to the other of said first and second conductors whereby only selected heating elements are energized when said first and second conductors are energized from said power supply line.

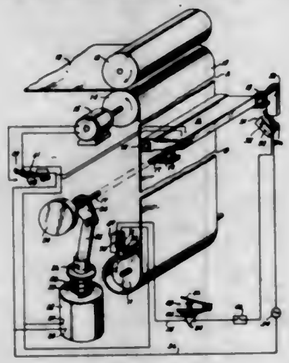
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3,164,716
## METHOD OF EXPOSING INSULATED CONDUCTORS
Henry Schenker and Hans Graichen, Norwalk, Conn., assignors to Burndy Corporation, a corporation of New York
Filed Jan. 16, 1961, Ser. No. 83,064
1 Claim. (Cl. 219—383)



The method of stripping synthetic plastic insulation from a portion of a conductor in a flat cable, which comprises: positioning an electrode on the insulation of the conductor at the portion to be stripped; applying an insulation piercing contact to the flat cable to electrically engage the conductor to be stripped; and thereafter passing a high voltage current between the contact and the electrode producing a high voltage flashover causing the insulation to be stripped from the conductor in the area underneath the electrode.

3,164,717
## HEATING CONTROL DEVICE
Arthur L. Kaufman, Westport, Conn., assignor to Bohn Business Machines, Inc., New York, N.Y., a corporation of New York
Filed Oct. 23, 1962, Ser. No. 232,554
4 Claims. (Cl. 219—388)



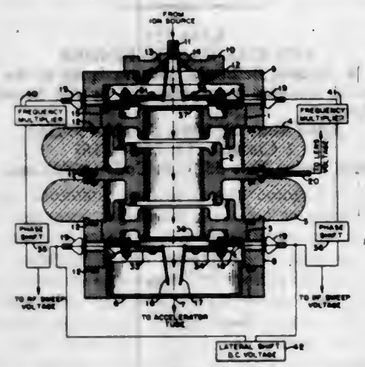
1. In a sheet processing apparatus having electrically controlled components for moving and processing a sheet material, a heating control device comprising a heating element, constraining means operable to direct said heating element alternately toward and away from said sheet material at a given point, resilient restraining means biased to force said heating element away from said sheet material, an electromagnetic holding device including a movable element connected to move with said heating element and a fixed element located in magnetic holding positional relationship to said movable element when said heating element is directed toward said sheet material, and first and second electrical switching means, said first electrical switching means having normally opened contacts arranged to be closed upon the positioning of said heating device toward said sheet material, said second electrical switching means having switch contacts arranged to be closed during normal operation of said apparatus, the contacts of said first and second electrical switching means being together connected in series circuit relationship with said electromagnetic holding device and with said electrically controlled components for controlling the flow of electrical power thereto.

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3,164,718
## ION PULSE GENERATOR COMPRISING DEFLECTOR MEANS TO SWEEP AN ION BEAM ACROSS AN APERTURED MEMBER
Rutledge F. King, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 11, 1962, Ser. No. 187,182
2 Claims. (Cl. 250—41.9)

1. In a device for generating periodic, short-duration groups of highly energetic particles comprising means for generating continuously relatively low energy ions of different masses in an ion source, a housing provided with an entrance aperture an an exit aperture, means for forming said ions into a continuous stream directed along a straight path and through said entrance aperture, means disposed in said housing for focussing said stream into a relatively narrow beam, first deflecting means disposed in said housing for deflecting said stream away from said path prior to said focussing, second deflecting means displaced 90° from said first deflecting means for deflecting a portion of said beam prior to its arrival at said exit aperture in said housing subsequent to focussing, and a source of focussing voltage coupled to said focussing means, the improvement comprising a first source of oscillatory voltage with a first frequency $f$ coupled to said second deflecting means, a second source of oscillatory voltage with a second frequency of a selected multiple of said first frequency and being coupled to said first deflecting means and being adjustable in phase with respect to said first source, said first and second sources of oscillatory voltage deflecting said beam to produce a separate Lissajous-type beam sweep within said housing for





each of the ion masses provided by said ion source, an adjustable source of D.C. voltage coupled to said second deflecting means to provide a selected lateral shift to said beam sweeps such that only the beam of a selected mass crosses said exit aperture once during each cycle of the sweep of the selected mass, and means for removing and accelerating the ions of said selected mass from said exit aperture as the beam periodically crosses said exit aperture and directing said selected ions upon a primary target.

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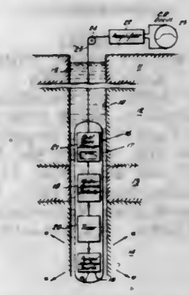
3,164,719
## LUMINESCENT SCREEN HAVING A PROTECTIVE FILM
Herbert Bauer, Metuchen, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 17, 1961, Ser. No. 145,748
7 Claims. (Cl. 250—80)

1. A luminescent screen comprising a support and a layer of luminescent particles dispersed in a coherent film-forming macromolecular polymer binder bearing a protective film characterized in that the film is a thin, flexible coherent film composed of a vinyl fluoride polymer containing at least 75% by weight of vinyl fluoride, any remaining percentage being a different monoethylenically unsaturated monomer copolymerizable therewith and having an activated surface, which activated surface is adhesively joined to said layer by a stratum of a polyester adhesive, said polyester corresponding to the reaction product of a glycol of the formula $HO(CH_2)_nOH$ where $n$ is 2 to 6, and terephthalic acid, isophthalic acid and at least one saturated aliphatic dicarboxylic acid of 6 to 10 carbon atoms, said latter ester-forming components being present in the mol percents of 20 to 60, 15 to 50, and 10 to 50, respectively.

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3,164,720
## RADIOACTIVITY BORE HOLE FLUID LOGGING
Fontaine C. Armistead, Darien, Conn., assignor to Texaco Development Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 186,589
27 Claims. (Cl. 250—83.3)

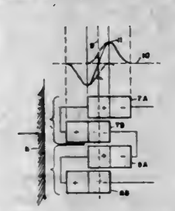
1. The method of logging a well bore which comprises passing through the bore an instrument containing an abruptly controlled source of nuclear radiation and a detector of radiation, irradiating the contents of the well bore with neutrons in a manner characterized by an abrupt change in source rate, and selectively detecting and measuring radiation emanating from the bore hole



contents as a result thereof to the substantial exclusion of interference due to radiation from the formations which results from said irradiation.

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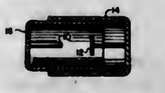
3,164,721
## NON-SCANNING EDGE DETECTOR
Robert W. Astheimer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,477
6 Claims. (Cl. 250—83.3)



1. An instrument for determining movement of a line of radiation discontinuity comprising in combination,
(*a*) at least one pair of differential radiation detectors of uniform detector element width and reversed outputs the detectors in alternating pairs being displaced with respect to the other by a detector element width,
(*b*) the detector elements being in the same plane, and means for imaging a line of radiation discontinuity onto the plane of the detector pairs, the image of the line being at right angles to the direction of displacement of the detector pairs.

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3,164,722
## RADIOACTIVE TRANSDUCER FOR SENSING PRESSURE AND THE LIKE HAVING A SOURCE OF PRIMARY RADIATION AND A TARGET FOR PRODUCING SECONDARY RADIATION
Arthur T. Biehl, Walnut Creek, and Gustave A. Linenberger, Alamo, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed May 2, 1962, Ser. No. 191,971
15 Claims. (Cl. 250—83.3)



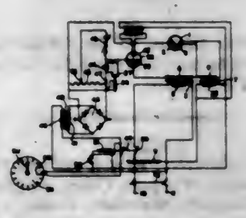
13. A method of measuring strain within a material sample comprising placing within the material sample a pressure sensitive transducer which emits secondary gamma and neutron radiation proportional to physical stresses of the material sample within which the trans-

ducer is placed, and monitoring and translating the secondary radiation at a receiver external to and physically unconnected to said material sample.

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3,164,723
## VOLTAGE REGULATING CIRCUIT FOR X-RAY TUBES

Willem Hendrik Beldjugh, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Original application Mar. 3, 1959, Ser. No. 796,925, now Patent No. 3,027,460, dated Mar. 27, 1962. Divided and this application Nov. 9, 1961, Ser. No. 163,002
Claims priority, application Netherlands Mar. 11, 1958
9 Claims. (Cl. 250—103)

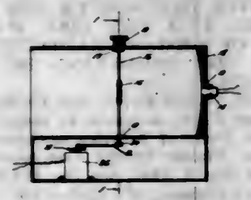


4. Apparatus for supplying an operating voltage to an X-ray tube having an anode and a cathode, the desired operating voltage of said X-ray tube being dependent upon the characteristics of an object to be X-rayed, said apparatus comprising input means for a source of electrical energy including means for applying an operating voltage to said anode of said X-ray tube, means for varying said operating voltage independently of the cathode heater current through a range of voltages between an end voltage of a predetermined minimum value and an end voltage of a predetermined maximum value during the time of exposure of said object to be X-rayed, electrical circuit means for adjusting one of said end voltage values, said circuit means being connected to said voltage varying means, and means for disconnecting said X-ray tube from said means for applying an operating voltage at the end of an exposure.

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3,164,724
## SCANNING APPARATUS FOR DETECTING A RADIANT ENERGY SOURCE

Charles B. Aiken, R.D. 1, Wilton, Conn.
Filed Sept. 7, 1946, Ser. No. 695,568
3 Claims. (Cl. 250—216)

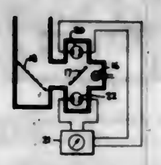


1. In scanning apparatus for detecting a radiant energy source, the combination of a curved reflecting member adapted to be directed towards said source of radiant energy, a small plane reflector located to receive radiant energy from said reflecting member, means for imparting a systematic oscillating movement to said plane reflector, and a radiant energy receiver located substantially on the axis of said curved reflecting member, the total distance from said reflecting member to said reflector and back to said receiver being substantially equal to the focal length of said reflecting member, whereby a beam of radiant energy from said plane reflector is swept across said receiver in such fashion that the receiver views adjacent zones in space successively and systematically in accordance with said to and fro movement.

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3,164,725
## OPTICAL RANGE FINDER

Harold W. Straub, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 29, 1961, Ser. No. 99,321
1 Claim. (Cl. 250—216)
(Granted under Title 35, U.S. Code (1952), sec. 266)



An improved and highly sensitive optical rangefinder designed for optimum performance with targets at distances not in excess of a fixed predetermined distance D, comprising:

(*a*) optical receiving means having quasi-parallel beam sensitivity characteristics out to said distance D, said receiving means comprising:
- (1) a lens of diameter L and focal length *f*;
- (2) a phototube having an effective sensitive diameter I;
- (3) means for causing light from a target on the axis of said lens to impinge on the center of the sensitive area of said phototube;
- (4) said phototube being at an optical distance *d* from said lens, as determined by the relation

$$\frac{1}{d}+\frac{1}{D}=\frac{1}{f}$$

- (5) the ratio of I to L being determined by the relation

$$\frac{I}{L}=\frac{D}{d}$$

(*b*) aiming means for aligning said receiving means with a desired target so that the target lies on the axis of said lens;

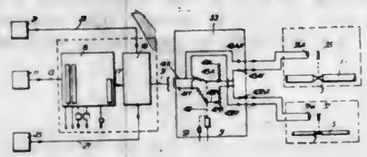
(*c*) optical projection means for illuminating said target with a beam of modulated light that is quasi-parallel out to said distance D, the quasi-parallel projection pattern of said projection means being substantially coincident with the quasi-parallel sensitivity pattern of said receiving means, said projection means comprising:
- (1) said lens;
- (2) a light source having the same effective diameter I as said photo tube;
- (3) means holding said light source in optical alignment with the axis of said lens;
- (4) said light source located at the same optical distance *d* as said phototube from said lens; and

(*d*) means responsive to the output of said phototube for comparing the phase of the received light with the phase of the projected light, thereby furnishing an indication of target distance.



3,164,726
## DUAL CHANNEL LIQUID FLOW REGULATION CONTROL

James W. Pegrum, London, England, assignor to Babcock & Wilcox Limited, London, England, a British company
Filed May 10, 1960, Ser. No. 28,134
Claims priority, application Great Britain May 14, 1959
6 Claims. (Cl. 307—38)

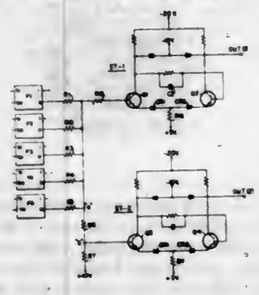


1. An automatic control system comprising two electrically operated regulators arranged to normally regulate a common variable at different times and to normally provide continuous and complete regulation of the common variable by either one or the other of the regulators, each regulator including an operating coil, means for establishing an electric signal representative of the magnitude of the variable, a common automatic controller for effecting operation of both regulators and responsive to said variable representative signal for continuously producing an output control signal having a predetermined functional relationship to said variable representative signal, and transfer switch means continuously receiving the electrical output control signal from said controller and normally applying that output to the operating coil of a selected one of the two regulators to effect positioning of said regulators, the transfer means being operative to transfer in a progressive manner the entire electrical output of the controller from the operating coil of one regulator to the operating coil of the other regulator.

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3,164,727
## ERROR DETECTOR FOR REGISTERS

Kenneth C. Hayda, Woburn, Mass., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Sept. 21, 1961, Ser. No. 139,730
4 Claims. (Cl. 307—88.5)

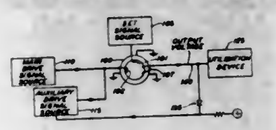


1. An error detecting arrangement for a set of bistable registers, comprising a network in which each register has an output terminal connected by an individual resistor to a first point, a resistor connecting the first point to a second point, and a resistor connecting the second point to a source of bias potential;
- a first trigger device having an input terminal connected to the first point;
- a second trigger device having an input terminal connected to the second point;
- so constructed and arranged that the voltages at said first and second points cause said trigger devices to be in different states from each other if and only if a given number of the registers are in one given state and the remaining registers are in the opposite state.

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3,164,728
## MAGNETIC SWITCHING CIRCUIT

Philip A. Harding, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 30, 1962, Ser. No. 183,941
5 Claims. (Cl. 307—88)

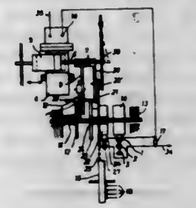


1. In combination in a switching circuit, a magnetic element characterized by a substantially rectangular hysteresis curve which exhibits maximum positive and negative magnetic remanent states and an intermediate zero magnetization region, means for setting said element to one of said magnetic remanent states, means for switching said element from said one state to the other remanent state, and means responsive to the element being switched between its remanent states for providing an output voltage signal, said switching means including an input winding inductively coupled to said element and a first source for supplying to said winding signals each of which is sufficient to switch said element between its remanent states, said switching means further including a second source for supplying to said input winding during the time in which the element is in the immediate vicinity of its zero magnetization region a signal which exhibits a relatively large time rate of change of current during said time and which signal is insufficient by itself to switch said element.

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3,164,729
## DRIVING MEANS OF A PROGRAM CONTROL APPARATUS FOR WASHING MACHINES

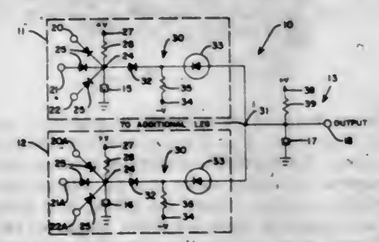
Walter Holzer, Meersburg (Bodensee), Germany
Filed Mar. 16, 1960, Ser. No. 15,389
Claims priority, application Germany, Mar. 20, 1959, H 35,924; June 1, 1959, H 36,522; June 15, 1959, H 36,665; July 25, 1959, H 37,020; Oct. 24, 1959, H 37,772
16 Claims. (Cl. 307—141)



1. Driving apparatus for a program and timed pulse control device in a washing machine, comprising: an electric motor having an axially displaceable armature capable of assuming a first and a second axial position; a rotatable pulse device for operating upon stationary contacts; a rotating step switching device; a first gearing means coupling said armature to said pulse device for rotation thereof; a second gearing means coupling said armature to said step switching device only when said armature is in said first position; means actuated by said step switching device for recoiling said pulse device to its starting position when said second gearing means is drivingly coupled to said step switching device; mechanical control means for shifting said rotor from said first to said second position; and electric control means actu-

ated upon by said pulse device and connected to said electric motor to increase magnetization of said armature and shifting it axially from said second to said first position for starting said step switching device.

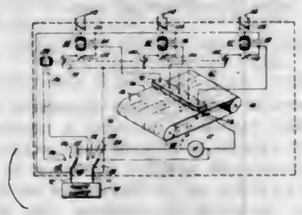
3,164,730
ESAKI DIODE LOGIC CIRCUIT
Roger A. Urban, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,899
5 Claims. (Cl. 307—88.5)



1. Asymmetrical conducting means particularly adapted for performing logical data processing operations comprising at least two logical legs and a condition responsive output stage arranged to indicate the state of said legs, said logical legs being disposed in electrical parallel relationship with said condition responsive stage, each leg comprising a plurality of inputs, an input responsive means for indicating the state of said inputs, a logical leg output means, and a current steering means arranged intermediate said input responsive means and said logical leg output means, said current steering means including first and second unilateral conductive devices arranged in back-to-back relationship on either side of a current sink and having substantially different forward conductive characteristics whereby substantially lower impedance to current flow is encountered in said first unilateral conducting device than is encountered in said second unilateral conducting device, the input responsive stage in each logical leg and the condition responsive stage each including an asymmetrical conducting apparatus having the first stable positive impedance operating potential range and a second higher stable positive impedance operating potential range, said stable positive impedance operating potential ranges being separated by an unstable operating potential range of negative impedance, the operating potential range of the asymmetrical conducting apparatus of said input responsive means being determined by the status of said plurality of inputs, the operating potential range of the asymmetrical conducting apparatus of said condition responsive stage being determined by the operating potential range of the input responsive asymmetrical conducting apparatus.

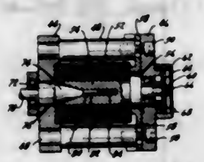
3,164,731
TAPE CONTROLLED PROGRAMMER
Robert J. Long, Pasadena, Calif., assignor to Crestmont Consolidated Corporation, San Marino, Calif., a corporation of California
Filed Feb. 27, 1961, Ser. No. 91,803
2 Claims. (Cl. 307—115)

1. A tape controlled programmer comprising: a control tape having holes punched therein, said holes being aligned to form a plurality of tape channels; an electrical contact means; means for moving said control tape over said electrical contact means; a read head assembly including a plurality of read contacts, at least one read contact being associated with each tape channel, said read contacts being positioned to make an electrical contact with said electrical contact means when said read contacts impinge upon holes in said control tape; a plurality of latching type relays, each including a control winding and a first and a second initially open switch, said first initially open switch being connected to a pair of output terminals and said second initially open switch being connected to a first terminal of said control winding; means for connecting said first terminal of the control winding to each of said latching type relays to a different read contact; a reset relay having a control winding and a plurality of normally open switches, each normally open switch being connected in series with the



second initially open switch of a different latching type relay; a source of electrical signals; means for connecting each of the normally open switches of the reset relay to the source of electrical signals; means for connecting the source of electrical signals to the second terminal of the control winding of each latching type relay; and a master control switch having at least first and second positions, the first position connecting the source of electrical signals to the electrical contact means and the second position connecting the source of electrical signals across the control winding of the reset relay to cause the normally open switches of the reset relay to momentarily close.

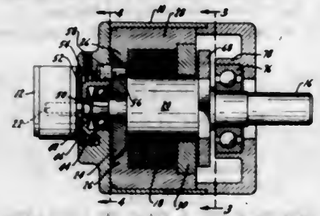
3,164,732
ROTARY SOLENOID HAVING A STEPPED OUTPUT
Arvid A. Molitor, 1136 Morningside Drive, Elgin, Ill.
Filed Nov. 6, 1961, Ser. No. 150,240
4 Claims. (Cl. 310—37)



1. A rotary solenoid including a rotary core and a pair of pole pieces, concentric with the core, and circumferentially spaced, one from the other, the core having an armature portion positioned between and in general radial alignment with the pole pieces, said armature portion having spiral-like outer surfaces positioned opposite said pole pieces, said pole pieces each having spiral-like surfaces positioned opposite the spiral-like surfaces on the armature, a magnetic coil positioned to form a magnetic field between the pole pieces and armature and to rotate the armature within the pole pieces with the spiral-like surfaces on the armature moving, in one direction, toward engagement with the spiral-like surfaces of both pole pieces, a spring arranged to move said armature in the opposite direction, an output shaft, a clutch effective to connect said output shaft to said core when the coil is energized and to disengage said shaft when the coil is deenergized so that said output shaft only rotates in one direction.



3,164,733
ROTARY SOLENOID
Arvid A. Molitor, 1136 Morningside Drive, Elgin, Ill.
Filed Sept. 4, 1962, Ser. No. 221,226
4 Claims. (Cl. 310—37)



1. A rotary solenoid including a rotary core and a pair of pole pieces, concentric with the core, and circumferentially spaced, one from the other, an armature positioned between and in general radial alignment with the pole pieces, said armature having spiral-like outer surfaces positioned opposite said pole pieces, said pole pieces each having spiral-like surfaces positioned opposite the spiral-like surfaces on the armature, a magnetic coil positioned to form a magnetic field between the pole pieces and armature and to rotate the armature within the pole pieces with the spiral-like surfaces of the armature moving, in one direction, toward the spiral-like surfaces of both pole pieces, a spring arranged to move said armature in the opposite direction, an output shaft, detent means connected to said output shaft, yielding means holding said detent means and output shaft in a stationary angular position, and means connecting said output shaft to said armature when the coil is energized including a spring member effective between said shaft and core, rotary movement of said armature and core caused by energizing said coil applying a turning force to said spring member, which turning force overcomes the yielding means holding said detent means after a given rotation of said armature and core.

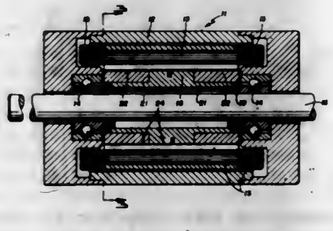
3,164,734
SYNCHRONOUS MOTOR WITH NOTCHED POLE PIECES TO FACILITATE STARTING
Robert A. Heinzen, Manitowoc, Wis., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 2, 1961, Ser. No. 128,831
2 Claims. (Cl. 310—156)



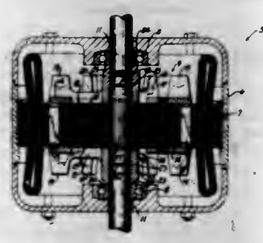
1. In a synchronous motor having a permanent magnetized rotor, an alternating current coil for generating a concentrated magnetic flux in a path between the coil and rotor, a magnetically permeable pole piece adjacent said rotor in said path and including a digital pole piece body located immediately adjacent said rotor and positioned to have an end thereof in said concentrated flux path, said pole piece end being notched on one side only with magnetically permeable material removed therefrom.

3,164,735
INDEXING SYNCHRONOUS MOTOR
Abraham Lichowsky, San Carlos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 16, 1961, Ser. No. 131,887
7 Claims. (Cl. 310—156)

1. A synchronous motor comprising: a stator producing a rotating flux; and a rotor mounted for rotation about the axis of said rotating flux, said rotor having a first portion composed of hysteresis material and presenting a surface conforming to and immediately adjacent said stator for starting said rotor at the beginning of operation, and a second portion solidly affixed to said first portion and composed of permanently magnetized material presenting a pair of diametrically opposite poles immediately adjacent said stator, whereby it is ensured that said rotor pulls into synchronism at operating speed with said rotor having a predetermined and unvarying orientation with respect to said rotating flux.

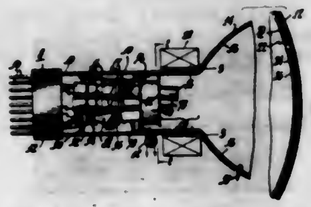


3,164,736
SQUIRREL CAGE ROTOR
Edward B. Sleeter, Wausau, Wis., assignor to Marathon Electric Manufacturing Corporation, Wausau, Wis., a corporation of Wisconsin
Filed Mar. 2, 1960, Ser. No. 12,366
2 Claims. (Cl. 310—211)



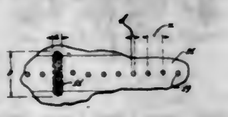
1. In a squirrel cage rotor for a dynamoelectric machine, of the type comprising a coaxial stack of substantially similar annular laminations, an end ring coaxially overlying the outer face of each end lamination in the stack, and conductor bars connecting the end rings and extending across the stack of laminations in circumferentially spaced apart slots in the peripheral portion of the stack: a shaft having a diameter along substantially its entire length which is substantially equal to the diameter of the central holes in the laminations, the medial portion of the shaft being tightly received directly in the central holes of the laminations; a hub overlying the outer face of each endmost lamination and snugly embracing the adjacent portion of the shaft; and substantially radially disposed spokes extending from each hub to the adjacent end ring and bearing directly against the adjacent endmost lamination of the stack; the hubs, spokes, end rings and conductor bars being one integral casting so that the two hubs cooperate with the end rings, the conductor bars and the closely confined laminations to stiffen the medial portion of the shaft, and the hubs serve as axial thrust receiving members by which the rotor is held against shifting axially in bearings in which it may be journalled.

3,164,737
**CATHODE RAY TUBE**
Paul J. Messineo, Skillman, and Josef Gross, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,431
10 Claims. (Cl. 313—69)



5. A cathode ray tube comprising an envelope, a luminescent screen disposed on a portion of the internal surface of said envelope, said luminescent screen including a plurality of phosphors which upon electron excitation emit light whose color is dependent upon the velocity of the exciting electrons, a plurality of electron guns within said envelope which are adapted to project different velocity electron beams toward said screen, and an electromagnetic deflection zone between said guns and said screen in the paths of said beams, said guns including a plurality of substantially identical coaxially arranged electrodes, a first tubular magnetically permeable beam shield surrounding and extending along the beam path of one of said guns and having a given length thereof positioned in said deflection zone, a second tubular magnetically permeable beam shield surrounding and extending along the beam path of another of said guns and having a length thereof greater than said given length positioned in said deflection zone.

3,164,738
**DIRECT WRITING CATHODE RAY TUBE USING A FAN SHAPED BEAM**
Norman F. Fyler, Menlo Park, Calif., assignor to Litton Industries of California, Beverly Hills, Calif.
Filed July 20, 1960, Ser. No. 44,206
5 Claims. (Cl. 313—73)

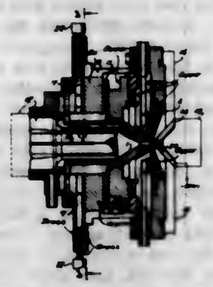


1. A cathode-ray writing system for printing information on a dieletcric recording material, said combination comprising: an evacuated envelope including a base plate at one end having a row of conductors therein, each of said conductors having a diameter substantially equal to a first predetermined dimension and the spacing between adjacent ones of said conductors being substantially equal to a second predetermined dimension, each of said conductors having an exterior end outside said envelope and an interior end within said envelope; a cathode positioned within said envelope opposite said base plate and operable for generating a pencil shaped electron beam; shaping apparatus for operating upon the electrons in said beam to rearrange the electrons so that said beam has a substantially rectangular transverse cross-section with a first pair of parallel sides substantially normal to said row of conductors, and a second pair of parallel sides substantially parallel to said row of conductors, said first pair of parallel sides being substantially longer than said first predetermined dimension so that said electron beam covers said interior end of each of said conductors regardless of conductor misalignment, said second pair of parallel sides being shorter than said second predetermined dimension so that said electron beam strikes only one of said conductors in said row of conductors at a time and a deflecting means positioned within said envelope intermediate said shaping apparatus and said base plate for deflecting said electron beam in a direction substantially normal to said first pair of sides to selectively strike said conductors.

**ERRATUM**

For Class 313—82 see:
Patent No. 3,164,426

3,164,739
**ION SOURCE OF A DUO-PLASMATRON**
Heinz Werner, Dresden, Germany, assignor to VEB Vakutronik, Dresden, Germany
Filed July 20, 1960, Ser. No. 44,054
9 Claims. (Cl. 313—161)



1. An ion source wherein an electrical discharge between two magnetic members having a potential difference is spatially limited by means of a magnetic pole piece lens formed by said members, one of said members being inwardly of the other member, and wherein a permanent magnet is included in the magnetic circuit to provide the magnetic flux for said lens, the improvement comprising a movable magnetic member in said magnetic circuit, means for progressively moving said movable magnetic member from a position wherein the flux of said circuit is maximum to a postion of minimum magnetic flux.

3,164,740
**ELECTRON TUBE GRIDS AND METHOD OF MAKING THE SAME**
John Joseph Moscony, Lancaster, and Robert William Etter, Lititz, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 29, 1960, Ser. No. 25,682
11 Claims. (Cl. 313—348)

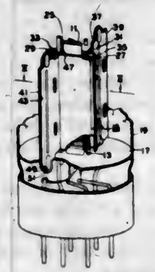


1. A grid for an electron tube comprising a refractory metal structure having a first coating thereon of rhodium having a thickness of from $5\times10^{-7}$ to $5\times10^{-6}$ inch and a second coating of a material having a relatively high work function on said first coating.

10. In a method of coating a molybdenum electrode work piece with a relatively thick layer of platinum, the steps of coating said work piece with a relatively thin intermediate layer of rhodium and heat treating the said intermediate layer in a reducing atmosphere at a temperature up to 750° C., said rhodium layer being sufficiently thin for diffusion of appreciable and different portions only thereof into said work piece and said platinum coating, respectively, at said temperature.

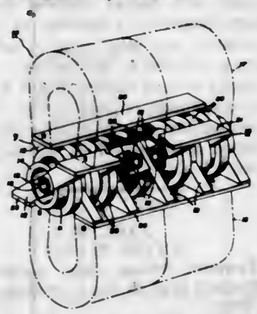


3,164,741
**ELECTRON DISCHARGE DEVICE HAVING AN ANODE WITH IMPROVED THERMAL EXPANSION CHARACTERISTICS**
William E. Polster, Evanston, Ind., assignor to General Electric Company, a corporation of New York
Filed Feb. 20, 1961, Ser. No. 90,446
4 Claims. (Cl. 313—356)



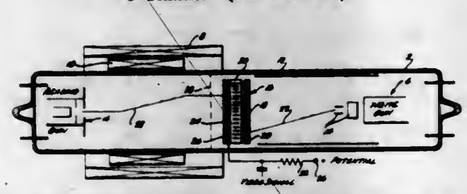
1. An electron discharge device comprising a longitudinally extending cathode, a longitudinally extending tubular anode surrounding said cathode and having a noncircular cross section, said anode having two substantially planar electron receiving surfaces of which the central portions normally are heated to excessively high temperatures, said anode being formed of sheet material to provide oppositely-directed radiators next adjacent said electron receiving surfaces, the junction of said radiators and said surfaces defining two longitudinally extending seam portions, said seam portions being offset from each other and from the said high temperature portions an amount sufficient to minimize discontinuities in said electron receiving surfaces and simultaneously to effect high heat radiation therefrom.

3,164,742
**HIGH FREQUENCY ENERGY INTERCHANGE DEVICE**
Ervin J. Nalos, Regensdorf, Zurich, Switzerland, assignor to General Electric Company, a corporation of New York
Filed Dec. 27, 1960, Ser. No. 78,593
5 Claims. (Cl. 315—3.5)



3. A unitary magnetic and radio frequency electric circuit for producing radio frequency fields and a periodic magnetic field along a common path including a periodically loaded waveguide structure having a series of longitudinally spaced bars of magnetically permeable material extending out through opposite sides thereof, said series of bars including two sets, each of said sets of bars having the longitudinal axes of its respective bars in a single plane which intersects a plane occupied by the longitudinal axes of the other set of bars along a line intermediate the ends of said bars, the bars of said sets being intercalated, at least one pair of magnet members positioned on opposite sides of said series of bars and magnetically coupled thereto in such a manner that a magnetic force of one polarity is coupled to the opposite ends of one of said sets of bars and a magnetic force of the opposite polarity is coupled to the opposite ends of said other set of bars whereby a periodic magnetic field is provided along the axis of said waveguide structure, and a series of annular ring shaped magnets magnetized in a direction parallel to said line and individually placed between each pair of adjacent ones of said bars and coaxially positioned with axes along the said line intermediate the ends of said bars, said ring shaped magnets being disposed with the opposite faces thereof abutting the corresponding bars, the magnetic polarity of said ring shaped magnets at each face thereof being the same as the polarity of the magnetic force coupled to the one of said bars abutting thereto by said magnet members.

3,164,743
**SCAN-CONVERSION CATHODE RAY TUBE HAVING A PHOTOCONDUCTOR STORAGE ELEMENT OF THE FIELD-SUSTAINED CONDUCTIVITY TYPE**
Nobuo J. Koda, Vista, and Leon S. Yaggy, North Carlsbad, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 21, 1962, Ser. No. 174,775
6 Claims. (Cl. 315—8.6)

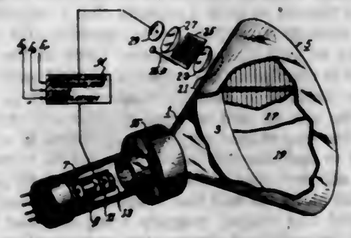


6. A cathode ray tube comprising an envelope, a first electron gun disposed in said envelope for forming a first electron beam, a second electron gun disposed in said envelope for forming a second electron beam, a target assembly disposed in said envelope and including a photoconductor element and a bombardment-induced-conductivity element, said photoconductor element being characterized by having at least two states of conductivity, the state of higher conductivity being established by electromagnetic energy applied to said photoconductor element and being sustained by an electric field across said photoconductor element, means for modulating said first electron beam and for scanning said bombardment-induced-conductivity element with said modulated electron beam at a first frequency, and means for scanning said photoconductor element with said second electron beam at a frequency different from said first frequency, and means for deriving output electrical signals from said tube in accordance with said states of conductivity in said photoconductor element.

3,164,744
**COLOR TUBE BEAM INDEXING WITH ULTRA-VIOLET RAYS**
John D. Bowker, Princeton Junction, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 23, 1961, Ser. No. 111,949
7 Claims. (Cl. 315—10)

5. In combination, an evacuated envelope containing an electron-gun, a line-like mosaic of color-phosphors

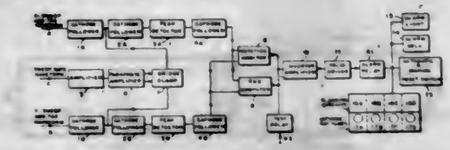
mounted within said envelope in a position to be scanned by a beam of electrons from said gun, said mosaic having coextensively associated in area therewith a phosphor that emits ultra-violet rays in response to the impact of said electron beam thereon, and optical stencil means



disposed to receive rays from said phosphor that emits ultra-violet rays, said stencil having some portions transparent to said ultra-violet rays and other portions opaque to said ultra-violet rays, said portions being arranged in a pattern systematically related to said mosaic.

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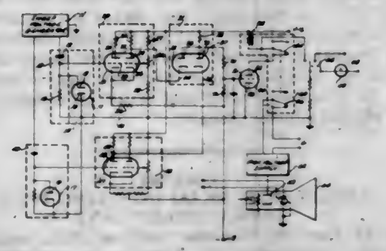
**3,164,745**
**SWEEP COLLAPSE AND ROTATION FAILURE ALARM SYSTEM FOR PPI DISPLAY DEVICE**
**Abraham Steinman, Queens Village, N.Y., assignor to the United States of America as represented by the Secretary of the Army**
**Filed May 2, 1961, Ser. No. 119,757**
**13 Claims. (Cl. 315—20)**



1. In a PPI radar system, a sweep collapse alarm system comprising: a rotation monitor; an R.M.S. computer; means to apply two input signals to both said monitor and said computer, an amplifier coupled to said monitor and said computer; a relay driver coupled to said amplifier; and a relay coupled to said driver.

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**3,164,746**
**SWEEP PROTECTION CIRCUIT**
**Gordon E. Broomhall, Escondido, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed July 2, 1962, Ser. No. 206,877**
**3 Claims. (Cl. 315—20)**



1. In combination with a cathode ray tube including an accelerating electrode, a sweep voltage generating means, having a slow sweep output voltage including a pair of waveforms of opposite polarity and a high voltage supply for said accelerating electrode, said protection circuit comprising:

a pair of differentiating means each connected to said slow sweep voltage generating means to receive a different one of said waveforms and to differentiate each of said waveforms to produce waveforms including in each cycle thereof a first portion and a second portion of less magnitude than said first portion;

a pair of electron discharge means each connected to a different one of said differentiating means and controllable by the second portion of said waveforms to vary the degree of conduction when the maximum amplitude of the second portion of said waveform drops below a predetermined value;

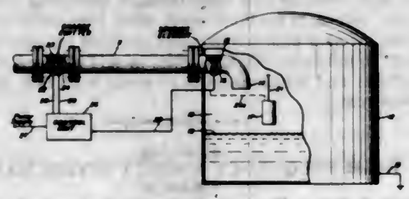
control means coupled with each of said electron discharge means, including a pair of electron discharge devices each nonconductive when the maximum amplitude of the second portion of a different one of the differentiated waveforms is above a predetermined level and conductive when the maximum amplitude of the second portion of a different one of said differentiated waveforms is below a predetermined level;

and switch means included in said control means, and coupled with said electron discharge devices to disconnect said high voltage supply from said accelerating electrode when either of said electron discharge devices is conducting,

whereby the high voltage supply for said cathode ray tube is disabled.

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**3,164,747**
**STATIC CHARGE CONTROL SYSTEM**
**Robert L. Yahnke, Munster, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana**
**Filed Oct. 18, 1961, Ser. No. 145,924**
**9 Claims. (Cl. 317—2)**

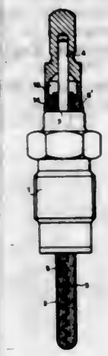


1. Apparatus for controlling the electrical charge in a liquid which comprises means for sensing the polarity and magnitude of electrical charges accumulated in a liquid contacted with and moved relative to a solid body; charge emitter means for imparting an electrical charge of known polarity and magnitude to said liquid; power supply means connected to said emitter means; electrical means connected to said emitter means for regulating the polarity and magnitude of said charge imparted to said liquid by said emitter means to effectively maintain the electrical charge accumulated in said liquid at a predetermined level.

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**3,164,748**
**GLOW PLUGS**
**Francesco Testerini, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy**
**Filed June 20, 1961, Ser. No. 118,456**
**Claims priority, application Italy June 28, 1960**
**1 Claim. (Cl. 317—98)**

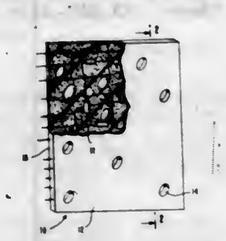
A glow plug for use in internal combustion engines, said glow plug comprising an elongated body having an axial bore hole extending therethrough, a tubular sheath supported in the bore hole of said elongated body and extending beyond the ends thereof, said tubular sheath being closed at one end and having an opening at the other end, an internal resistor firmly connected with the first mentioned end of said tubular sheath and extending a distance axially within said tubular sheath, a current inductor located concentrically within said sheath at the open end thereof and extending a distance beyond said sheath, said current inductor being connected with said internal resistor, an insulation powder filling said sheath, a deformable non-conductive bushing engaging one end of said elongated body and concentrically enclosing said sheath at the



open end thereof, said bushing having a cylindrical portion engaging said elongated body and an inwardly tapering portion of lesser diameter than said cylindrical portion and extending away from said elongated body, and a terminal cap enclosing said bushing and having a lower portion firmly engaging the cylindrical portion of said bushing, said terminal cap having an inner tapered portion firmly engaging and compressing the tapered portion of said bushing, said terminal cap further having an axial recess for receiving said current inductor, said terminal cap providing an air tight closure for said current inductor.

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**3,164,749**
**ELECTRONIC COMPONENT PACKAGING**
**Ralph I. Berge, Endicott, Anthony B. Cistola, Vestal, and Charles O. Wilson, Chenango Bridge, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Feb. 13, 1961, Ser. No. 88,926**
**4 Claims. (Cl. 317—101)**

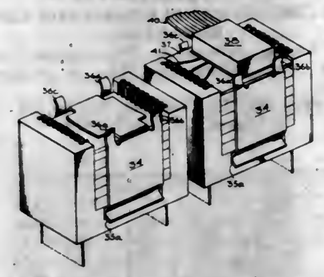


1. An electronic component package comprising, in combination, a plurality of discrete electronic circuit components having individual lead wires arranged in a lattice-like network with said lead wires interconnected in a predetermined configuration to provide a substantially integral member, and a flexible sheet-like body in surrounding and intimate contacting relation to said network and interconnections whereby an integral flexible sheet-like circuit package is formed.





**3,164,750**
**ELECTRONIC PACKAGING APPARATUS**
**Jack V. Miller, Azusa, Calif., assignor to Electro-Optical Systems Inc., Pasadena, Calif.**
**Filed July 30, 1962, Ser. No. 213,450**
**13 Claims. (Cl. 317—101)**



1. Apparatus for receiving circuit wafers, said apparatus comprising:

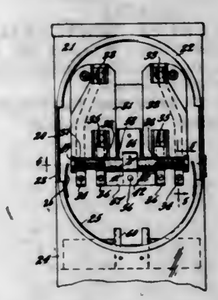
(*a*) U-shaped structure having slots facing each other along the inner surfaces of its walls and a U-shaped cavity in its base between the walls;

(*b*) A T-shaped metal block mounted in said cavity, said block respectively having a pair of grooves in the sides thereof facing outwardly of said U-shaped structure;

(*c*) and conductive members equal in number to the number of wafers that may be received by the apparatus mounted one above the other in said slots and adapted to make electrical contact with the circuit wafers therebetween.

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**3,164,751**
**BY-PASS ARRANGEMENT FOR A METER**
**Morgan J. Lewis, 147 Righter St., Philadelphia 28, Pa.**
**Filed May 15, 1962, Ser. No. 194,764**
**7 Claims. (Cl. 317—108)**



1. An electric watt hour meter box having plug sockets for a meter, a cover separated and provided with separated portions of a socket ring for uniting to the meter, and bypass conductors connected to the meter plug sockets including electric line terminals and load terminals, in combination with a shorting device comprising a set of aligned spring clips connected respectively to the bypass electric line terminals and load terminals, said clips being adapted to receive and support a rotor element, the rotor element extending throughout the line of spring clips and having insulation for preventing current flow from one set of line and load terminals to the other set and also preventing current flow across from the line to the load in either side in one position of rotation of the rotor, separate shorting bar means positioned longitudinally at each side of the rotor element and extending from each line to each load connection in one angular position of the rotor, and handle means connected to the rotor and adapted to manipulate the rotor between

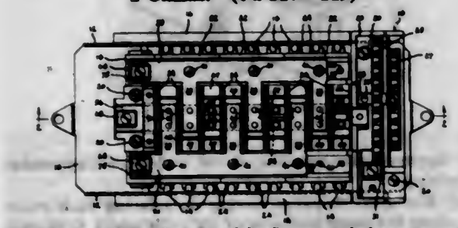
a position in which the line and load at each side are not cross connected and a position at which the line and load of each side are cross connected.

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3,164,752
## MULTI-CIRCUIT PANELBOARD FOR CIRCUIT BREAKERS

Martin F. Koenig, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed July 29, 1960, Ser. No. 46,248
2 Claims. (Cl. 317—119)



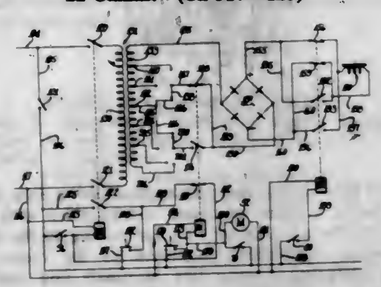
1. A panelboard comprising a metal base member, a plurality of intermediate insulating blocks having interlocking portions for alining said blocks in a unit and each having on opposite sides thereof spaced apart projections, said base member having spaced apart tabs overlying said intermediate block projections to hold said blocks against said base, and ground and terminal blocks secured to said base and holding said intermediate blocks in position on said base therebetween, said tabs having a spacing therebetween somewhat greater than the spacing between said intermediate block projections to afford interleaving of the latter spaces between said tabs to permit insertion or withdrawal from said base of an intermediate block when one or the other of said ground and terminal blocks are removed from said base.

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3,164,753
## MAGNETIC CHUCK DEMAGNETIZER

Kenneth W. Schroeder, Mount Prospect, Ill., assignor, by mesne assignments, to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

Filed Mar. 13, 1956, Ser. No. 571,208
22 Claims. (Cl. 317—123)



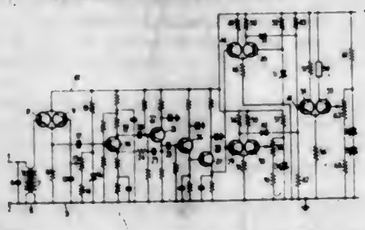
1. Apparatus for demagnetizing an electromagnet comprising a source of alternating current including first circuit means, rectifying means for converting the alternating current to direct current, circuit means for transmitting the direct current to the electromagnet; cycling means operable through a predetermined cycle, means controlled by said cycling means and operable at a predetermined number of intervals in a cycle of operation for interrupting said first circuit means and thus the alternating current at full voltage value of the alternating current and reestablishing it, and maintaining the alternating current so established for such period of time and at such value of voltage at the respective ones of said intervals that the magnetization imposed on the electromagnet is progressively decreased in successive ones of said intervals, and means operable during each interruption for reversing the polarity of the direct current transmitted to the electromagnet, said controlled means maintaining the alternating current for time periods of successively reduced duration between successive interruptions of said first circuit means in a cycle of operation.

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3,164,754
## ELECTRIC CIRCUITS

Bernard Garland, near Coventry, and Hans Karl Pfyffer, Coventry, England, assignors to The General Electric Company Limited, London, England

Filed Dec. 27, 1961, Ser. No. 162,394
Claims priority, application Great Britain, Dec. 29, 1960, 44,683/60
8 Claims. (Cl. 317—148.5)



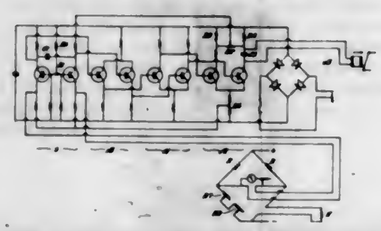
1. An electric circuit comprising a differencing network, means arranged to supply a direct current signal of substantially constant level to said network, means arranged to supply an alternating current input signal to said network whereby, during operation, said network supplies an alternating current output signal the amplitude of which is dependent upon the amount by which the peak value of the alternating current input signal exceeds the value of the direct current signal, means to rectify said alternating current output signal to provide a direct current output signal, and means to give an indication and/or effect a control if the level of the direct current output signal differs from a predetermined level by more than a prescribed amount.

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3,164,755
## INSTRUMENT FOR THE SENSING OF TEMPERATURE

Herbert Bruce William Holt, Surbiton, and Peter Deree Saw, Staines, England, assignors to Tyer and Company Limited, Guildford, England, a British company

Filed May 31, 1961, Ser. No. 113,866
6 Claims. (Cl. 317—153)



1. A device for sensing temperature comprising a Wheatstone bridge circuit, one resistance of the Wheatstone bridge being disposed in a temperature sensing element, a second resistance of the bridge having an adjustable preset resistance section, a manually adjustable resistance section whereby the bridge may be balanced by manual adjustment at a required temperature within a predetermined range, deviations from the said required temperature unbalancing the bridge so that potentials are set up across the bridge, a relay operable by said potentials, the adjustable preset resistance section in one arm of the bridge being used to vary the predetermined range of temperature over which the device operates and the maximum value of the adjustable preset resistance section being selected at such a value that, taken in conjunction with the minimum value of the manually adjustable resistance, it will permit adjustment of the instrument to operate at the maximum temperature within the predetermined range.

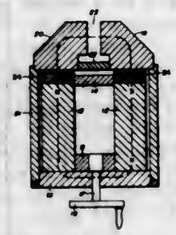


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3,164,756
## ADJUSTABLE PERMANENT MAGNET

Erich A. Steingroever, Bonn, Germany, assignor to Elektro-Physik Hans Nix & Dr. Ing. Steingroever, Cologne-Niehl, Germany

Filed May 16, 1962, Ser. No. 195,129
3 Claims. (Cl. 317—159)



1. An adjustable permanent magnet holding system comprising

(1) a permanent magnet unit consisting of two parallel permanent magnets having an arcuate shape in cross-section and arranged with their poles in opposite directions, and non-magnetic means joining said magnets, said unit benig rotatable around its longitudinal axis,

(2) a cylindrical stationary non-magnetic housing surrounding said unit, and a magnetic feed back plate, said plate forming the bottom of said housing and supporting said permanent magnet unit,

(3) stationary feromagnetic pole pieces arranged to form a magnetic circuit with opposite poles of said two permanent magnets, and a non-magnetic spacing member connecting said pieces to a unit, said pole pieces defining an air gap and being supported on said housing in close spaced relationship but out of direct contact with said permanent magnets, and

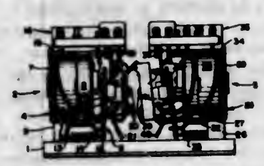
(4) manipulating means mechanically connected to said permanent magnet unit for rotational displacement thereof.

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3,164,757
## ELECTROMAGNETIC OPERATORS

Jack V. Foster, Fort Branch, Ind., assignor to American Machine & Foundry Co., a corporation of New Jersey

Filed Dec. 12, 1961, Ser. No. 158,694
6 Claims. (Cl. 317—187)



1. In an electromagnetically powered operator of the type comprising

a support; and

two alternately energized motor devices each including

an electromagnet;

an armature mounted adjacent the electromagnet for pivotal movement, about an axis transverse to the axis of the electromagnet, toward and away from the electromagnet; and

a spring connected to the armature to bias the same away from the electromagnet,

the motor devices being mounted on the support in at least generally end-to-end relation with the armatures adjacent each other and the pivotal axes of the armatures in parallel spaced relation to each other,

the combination of

a pair of latch members each mounted on a different one of the armatures and each extending generally along the length of the armature on which it is mounted and away from the pivotal axis of the armature,

each of said latch members having a tip portion spaced from the pivotal axis of the armature on which such latch member is mounted, said tip portions generally opposing each other across the space between said latch members,

each of said tip portions comprising a pair of transverse faces extending parallel to the pivotal axes of the armatures and spaced apart in a direction extending at an oblique angle to the armature on which the latch member is mounted, the directions of spacing of said pairs of transverse faces converging toward each other away from the pivotal axes of the armatures,

said tip portions each having a longitudinally extending face interconnecting said transverse faces, said longitudinally extending faces of each of said tip portions being directed toward the other of said tip portions,

the outermost one of said pair of transverse faces of one of said latch members engaging said longitudinally extending face of the other of said latch members in each actuated condition of the operator,

said pair of faces and said longitudinally extending face of at least one of said latch members being of antifriction material,

energization of one of the motor devices causing the one of said latch members mounted on the armature of that motor device to pivot away from the other of said latch members, the spring of the other motor device then causing the armature thereof to pivot toward said one latch member, the outermost one of said transverse faces of said other latch member then riding along said longitudinally extending face of said one latch member and the innermost one of said transverse faces of said one latch member serving as a stop to limit the pivotal movement of said other latch member and the armature on which it is mounted.

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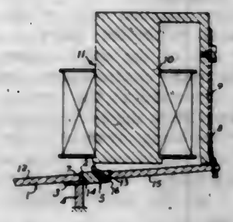
3,164,758
## ARMATURE FOR ELECTROMAGNETICALLY WOUND CLOCKS

Roland Siefert, Schwenningen (Neckar), Germany, assignor to Kienzle Uhrenfabriken A.G., Schwenningen (Neckar), Germany, a corporation of Germany

Filed July 6, 1962, Ser. No. 207,871
5 Claims. (Cl. 317—194)

1. In an electromagnetically wound clock, an electromagnet to be intermittently energized; an armature hinged for movement toward and away from the magnet; an abutment substantially fixed relative to the magnet for limiting movement of the armature away from the magnet; and an integral piece of soft elastic material on the armature and having a first portion between the armature

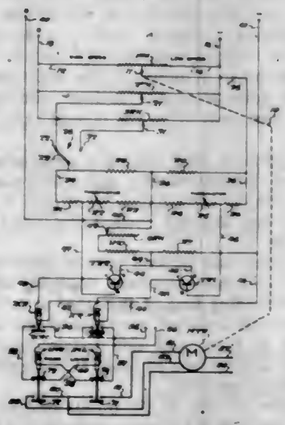
and magnet to prevent noisy contact and adhesion of the armature on the magnet, and said piece having a second



portion between the armature and the abutment to avoid noise when the armature moves toward the abutment.

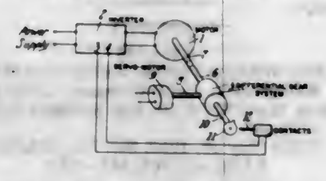
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**3,164,759**
**SELECTIVE POSITION CONTROLLER CIRCUIT**
**William D. Connors, Horseheads, N.Y., and Marshall E. Evans, Millerton, Pa., assignors to Hardinge Brothers, Inc., Elmira, N.Y.**
**Filed Aug. 7, 1962, Ser. No. 215,421**
**15 Claims. (Cl. 318—28)**



1. In a selective position control system of the type having a reversible motor whose shaft is coupled to and positions an element by its angular displacement that circuit which comprises a plurality of potentiometers each having a slidable contact arm, a voltage source connected directly across each of said potentiometers, drive means coupling said shaft and the slidable contact of one of said potentiometers for relative movement therewith, a pair of transistors each having an emitter, a base and a collector electrode, a resistive voltage divider network having a center tap, and having one end thereof connected to the slidable contact of said one potentiometer, switch means selectably operable for connecting individually one of the slidable contacts of the remaining potentiometers to the other end of said divider network, first means responsive to the conduction of one of said transistors to cause said motor to rotate in one direction, second means responsive to the conduction of the other of said transistors to cause said motor to rotate in the opposite direction, said center tap connected to the emitters of both transistors, the base electrode of said one transistor connected intermediate said center tap and one end of said divider, the base electrode of said other transistor connected intermediate said center tap and the other end of said divider, whereby said motor will be caused to rotate to a position at which the potentials at the slide contacts of the potentiometers connected across said divider network will be equal.

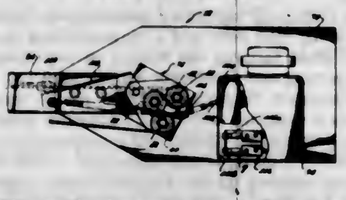
**3,164,760**
**CONTROL FOR VARIABLE SPEED ELECTRICAL MOTOR SYSTEMS**
**Kenneth G. King, London, England, assignor to Westinghouse Brake and Signal Company Limited, London, England**
**Filed Sept. 21, 1961, Ser. No. 139,765**
**Claims priority, application Great Britain, Oct. 27, 1960, 36,870/60**
**5 Claims. (Cl. 318—72)**



1. A control system for a variable speed motor system comprising an induction motor, an inverter connected to supply a variable frequency output to said induction motor, a servo-motor, a control device having a first component and a second component, means for rotating said first component at a first speed dependent upon the speed of said induction motor, means for rotating said second component at a second speed dependent upon the speed of said servo-motor, said control device being arranged to provide an output having a frequency dependent upon the sum of said first and second speeds, and means for triggering said inverter at a frequency dependent upon said output frequency of the control device.

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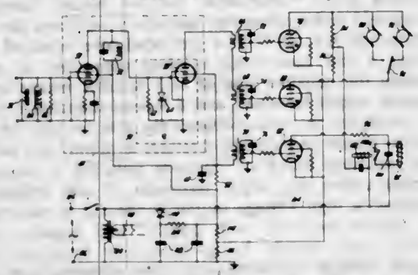
**3,164,761**
**LOAD-RESPONSIVE, AUTOMATIC-STOP DRIVE MECHANISM**
**Moscow K. Richmond, 2819 Butler Ave., Los Angeles, Calif.**
**Filed Oct. 20, 1959, Ser. No. 847,497**
**12 Claims. (Cl. 318—266)**



5. A drive mechanism comprising a frame structure, a support pivotally mounted on said structure for rocking between two limiting positions, a rotary driver rotatably mounted on said support with its rotation axis offset from the pivot axis of the support, a rotary member rotatably mounted on said structure for turning on an axis spaced from said pivot axis, a long flexible power transmission element trained about said driver and member in driving engagement with said driver, whereby said element is driven in its lengthwise direction by rotation of said driver and the tension in said element creates a torque on said support tending to rock the latter toward one limiting position while said element is being driven in one lengthwise direction and to rock said support toward the other limiting position while said element is being driven in the other lengthwise direction, drive means including a reversible motor for rotating said driver when said support occupies either limiting position and in a direction wherein the torque on said support tends to rock the latter toward the opposite limiting position, snap-action means operatively connected between said structure and support for yieldably retaining said support in said limiting positions, respectively, and means for controlling said drive means in response to rocking of said support between said limiting positions.



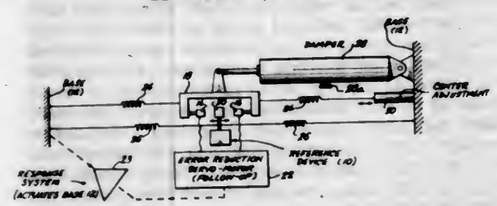
**3,164,762**
**REMOTE CONTROL APPARATUS**
**Abraham A. Goldberg, Stamford, and Arthur Kaiser, Trumbull, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York**
**Filed Mar. 18, 1960, Ser. No. 16,096**
**6 Claims. (Cl. 318—460)**



1. In a remote-control system, a receiver including a direct-current reversible motor, a pair of electric power supply terminals, a pair of thyratrons connected to each other and to one of said supply terminals as two adjoining arms of a four-armed bridge, and a pair of resistors connected to each other and to the other of said supply terminals as respective loads of said thyratrons, such resistors constituting the other two arms of the bridge, said motor being connected across the resistors, a pair of frequency-selective control channels connected in control relation to said thyratrons, respectively, said motor being operative in one direction or the other selectively in response to a control signal in only one of said channels and being inoperative in response to broad-band noise providing concurrent spurious signals in both said channels, a third thyratron, a third frequency-selective control channel, and a control electromagnet, a pair of normally open contacts arranged when closed to short-circuit and thus disable the electromagnet, and a relay interposed between said other of said supply terminals and the junction of said series resistors so that, if either thyratron or both thyratrons of the four-armed bridge should be fired in response to a spurious broad-band sginal, the third thyratron would be rendered ineffective to operate the control electromagnet.

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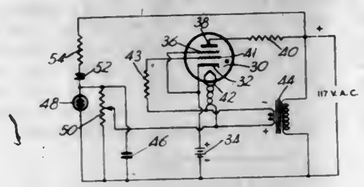
**3,164,763**
**STABILIZING DEVICE FOR CONTROL SYSTEMS**
**Robert M. Kelley, Wichita, Kans., assignor to Boeing Airplane Company, Seattle, Wash., a corporation of Delaware**
**Filed Apr. 13, 1961, Ser. No. 102,739**
**11 Claims. (Cl. 318—489)**




1. In a control and follow-up system including a system base element and an associated positional reference element, the two elements being subject to relative displacement in either of opposite senses from a predetermined neutral positional relationship, reversible drive means operable to effect relative movement between said elements from opposite relatively displaced positions in a sense to restore said neutral relationship, cooperable control means, including a first such control means mounted movably in relation to one such element, resilient centering and restraining means connecting said first control means to said one element and constraining it normally to move conjointly therewith while being yieldable to permit relative displacement therebetween, a second such control means being positionally associated with the other such element, one of said first and second control means including positionally spaced control members alternatively engageable by the other of said first and second control means upon predetermined relative displacement occurring between said elements in either sense and thereupon, with continuation of such relative displacement, to effect movement of said first control means relative to said one element against the restorative recoil force of the yieldable resilient means, means controllingly connecting the control members to the drive means to effect relative restorative movement between the elements back toward neutral relationship in response to such engagement of either of said control members, and a retarding device connected between said one element and said one control means to retard the restorative movement of said one control means effected by recoil of the resilient means whereby the other control means overtakes the said one control means to engage the other of said control members to reverse the drive means in anticipation of completion of the restorative movement.

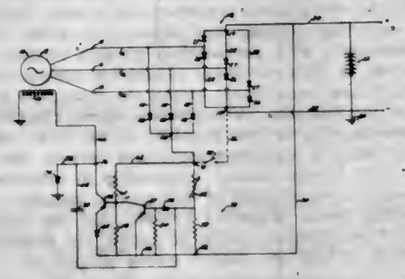
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**3,164,764**
**CELL CHARGING DEVICE**
**Paul A. Marsal, deceased, late of Rocky River, Ohio, by Jeannette Y. Marsal, executrix, Rocky River, Ohio, and Andrew Tasch, Lakewood, Ohio, assignors to Union Carbide Corporation, a corporation of New York**
**Filed July 10, 1958, Ser. No. 747,703**
**9 Claims. (Cl. 320—53)**



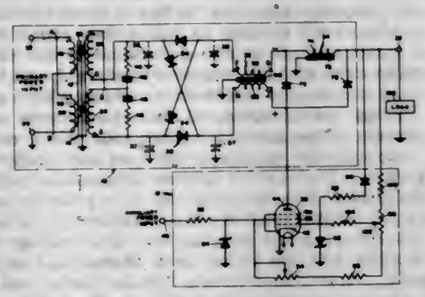

1. A battery charger capable of charging a battery from a fully discharged to a fully charged condition at a substantially constant current and at a voltage that varies from the voltage of the discharged battery to that of the battery when fully charged, which battery charger comprises, in combination, a rectifier having an anode, a cathode and means for controlling the flow of current between said anode and said cathode; an A.C. current source connected across said anode and said cathode of said rectifier and in series with the battery to be charged, said battery being connected in series with the said rectifier; a current limiting resistor connected in series between said A.C. current source and said rectifier, said resistor being of a value such that the current fed from said rectifier to said battery to be charged is substantially constant and below that at which the elements of said battery may be damaged; and voltage regulating means connected across said A.C. current source and including a reference voltage device in series with said battery to be charged and means connected across said reference voltage device and in series with said means for controlling the flow of current through said rectifier whereby said rectifier is biased to conduct said current to said battery to be charged when the voltage of said battery is below a predetermined voltage and to cut off said current to said battery when the voltage of said battery is above said predetermined voltage.

3,164,765
ELECTRIC GENERATING SYSTEM WITH VOLTAGE REGULATOR
Bob O. Burson, Longmeadow, Mass., assignor, by mesne assignments, to Elcl Products Corporation, Carolina, Puerto Rico, a corporation of Puerto Rico
Filed Dec. 14, 1961, Ser. No. 159,299
9 Claims. (Cl. 320—57)



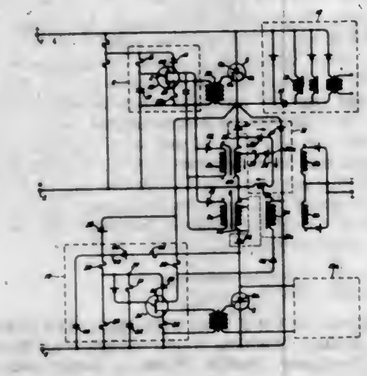
4. A generating system for a vehicle having a direct current load circuit including a storage battery, said system comprising a three-phase alternator having three output terminals and also have a field winding adapted for energization by a direct current potential, a rectifier means connected with said output terminals of said alternator for converting the alternating current potential output thereof into a direct current potential and including two output terminals adapted for connection with said load circuit, a voltage regulator having two input terminals and adapted to control the energization of said field winding in response to the potential appearing across said input terminals, one of said regulator input terminals being connected to one of the output terminals of said rectifier, three lines each connected between the other of said regulator input terminals and a respective one of said output terminals of said source, and three diodes each located in a respective one of said lines and arranged to conduct current in the same direction with respect to said other regulator input terminal.

3,164,766
HIGH VOLTAGE, NEGATIVE POLARITY, REGULATED POWER SUPPLY
Richard G. Lacobbon, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Apr. 12, 1960, Ser. No. 21,822
6 Claims. (Cl. 321—18)



1. A high voltage, negative polarity power supply, comprising: a low-ripple balanced transformer having a grounded core; a first primary winding and a first secondary winding on said core and having similar polarity; a second primary winding and a second secondary winding on said core and having opposite polarity; said primary windings being interconnected in parallel aiding relation and being connected to a source of power input; said secondary windings being connected in series aiding relation, whereby said transformer produces high voltage low-ripple A.C. potential; RC damping networks coupled between the ends of said secondary windings and their common center connection; rectifier means connected across said series-connected secondary windings for converting said A.C. to D.C.; a grounded core balanced filter having a first inductance winding connected in series between the negative side of said rectifier means and a negative output terminal, and a second inductance winding connected in series between the positive side of said rectifier means and a positive output terminal; said inductance windings being of opposite polarity; a capacitor coupled across the output terminals of said inductance windings; a high voltage output connected to said negative output terminal; both positive and negative sides of the power supply being electrically insulated from ground; voltage regulating means connected between said positive output terminal and ground; and a load connected between said high voltage output and ground.

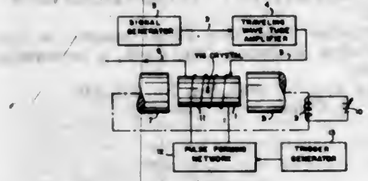
3,164,767
SYNCHRONIZATION AND LOCKOUT CONTROL SYSTEM FOR CONTROLLED RECTIFIERS
Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 10, 1961, Ser. No. 101,858
5 Claims. (Cl. 321—35)



1. In combination, relatively positive, negative and intermediate voltage supply terminals, a first solid state controlled rectifier having an anode, a cathode and a gate electrode and having its anode-cathode circuit connected to said positive and intermediate terminals, a second solid state controlled rectifier having its anode cathode circuit connected to said intermediate and negative terminals, master and slave pulsers, each comprising a unijunction transistor having an emitter and first and second base electrodes and a resistance capacitor timing circuit connected to said emitter and one of said bases, means for supplying voltage to said transistors and said timing circuits, electrical connections from the output of said master pulser to the cathode and gate of said first rectifier and from said slave pulser to the cathode and gate of said second rectifier and means for synchronously relating the initiation of the timing cycles of said timing circuits comprising a voltage divider connected between a point in the anode cathode circuit of said first rectifier and said negative terminal and connections from the capacitor of said slave pulser to points of voltage difference on said divider.

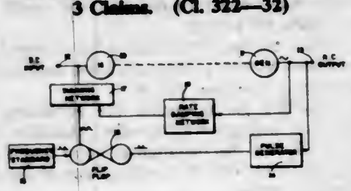


3,164,768
GARNET MICROWAVE PULSE GENERATOR
Martin R. Stiglitz and Frederic R. Morgenthaler, Waltham, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 16, 1960, Ser. No. 69,778
4 Claims. (Cl. 321—69)
(Granted under Title 35, U.S. Code (1952), sec. 266)



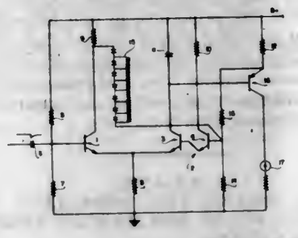
1. A microwave pulse generator comprising: an enclosed transmission line type device; means for applying high frequency energy to said device; a crystal of a ferromagnetic material in said device, said crystal having no dimension exceeding a small fraction of the wavelength of said energy; means for establishing a continuous magnetic field in said device of such density as to cause said crystal to resonate at the frequency of said energy; means for superimposing a pulse of magnetic flux on said field that is uniform and unidirectional throughout said crystal and that has a duration many times greater than the period of said energy, whereby pulses of microwave energy of frequency higher than that of the high frequency energy applied to said device are generated in said device; and an output circuit for said microwave pulses coupled to said device.

3,164,769
FREQUENCY REGULATOR
George C. Anderson, Whittier, Calif., assignor to North American Aviation, Inc.
Filed Oct. 17, 1960, Ser. No. 62,907
3 Claims. (Cl. 322—32)



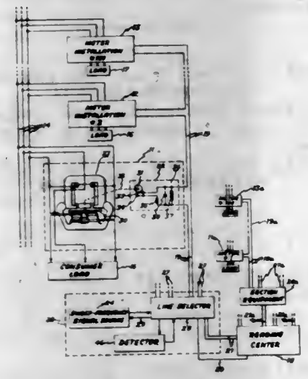
3. In a frequency regulator circuit for controlling the speed of an inverter having a motive source and a generator driven by said motive source for producing alternating current comprising, a pulse generator responsively connected to the output of said generator for producing pulse signals indicative of the frequency of said generator, and including means for shifting the phase of the output of said generator a predetermined amount, frequency reference means for producing pulse signals indicative of a predetermined standard frequency, a transistorized flip flop having two states, said flip flop responsively connected to be alternately switched from one state to the other by the pulse signals indicative of said phase shifted generator frequency and the pulse signals indicative of said standard frequency, a rate damping network responsively connected to the output of said generator for producing a signal indicative of the rate of change of frequency of said generator, means for summing the outputs of said flip flop and said rate damping network to provide a speed control signal to said motive source.

3,164,770
FREQUENCY METER COMPRISING A LOGARITHMIC MULTIVIBRATOR, INTEGRATOR AND METER
Loyce A. Turner, Smyrna, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 3, 1960, Ser. No. 60,139
5 Claims. (Cl. 324—78)



2. A monostable multivibrator for use in a counter of random pulses comprising first and second emitter connected transistors, means applying random pulses to the base electrode of said first transistor which is normally conducting to thereby render said first transistor nonconducting and said second transistor conducting an R-C network having a logarithmic decay connected between the collector of said first transistor and the base of said second transistor, feedback means connected between the collector and base electrodes of said second transistor to thereby provide an output current proportional to the logarithm of the frequency of said input random pulses.

3,164,771
APPARATUS FOR CENTRAL RECORDING OF REMOTE METER DATA BY PERIODIC AND SEQUENTIAL METER INTERROGATION
Richard E. Milford, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Dec. 8, 1960, Ser. No. 74,728
18 Claims. (Cl. 324—113)



1. Automatic metering apparatus comprising a meter installation including a meter unit having an output member the movements of which are related to the supply of electrical energy to a consumer load by service mains and having a predetermined maximum capacity for measuring the rate of the supply to the load, whereby only one predetermined amount of the supply which represents an acceptable resolution in measurement of the supply to the load can be measured through said meter unit within a predetermined period, switching means actuated between two switching states by successive movements of said output member which are each related to the passage of said predetermined amount of supply to the load through said

meter unit, generator means remote from said meter installation producing successive electrical interrogation signals recurring at a periodicity equal to said predetermined period, a communication link applying said recurring interrogation signals to said meter installation, electrical signalling means forming a part of said meter installation coupled with said communications link and controlled by said switching means exhibiting in said communication link responsive to said interrogation signals different electrical output characteristics when said switching means is in different ones of said switching states, and means remote from said meter installation recording the changes in said output characteristics appearing in said communication link.

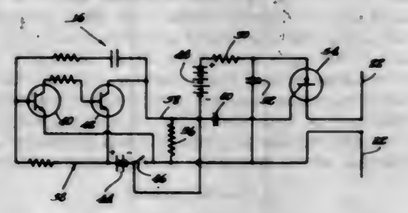
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3,164,772

## PORTABLE MEANS FOR REPELLING SHARKS UTILIZING PULSE DISCHARGES THROUGH A DIPOLE ANTENNA

John Hicks IV, Fairfax, Va., assignor to Phillips E. Hicks, Fairfax, Va.

Filed Jan. 24, 1962, Ser. No. 168,442
9 Claims. (Cl. 325—118)



9. The method of repelling sharks and the like which comprises securing a source of electric power, a capacitor and an antenna to a body to be floated in sea water, floating said body in sea water with said antenna immersed in and exposed to said sea water, and charging said capacitor from said power source and repetitively discharging said capacitor to said antenna immersed in and exposed to sea water.

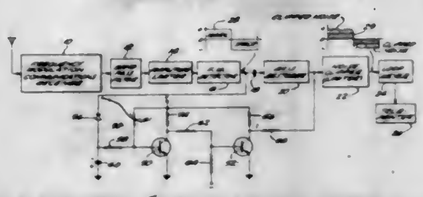
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3,164,773

## FREQUENCY SHIFT CONVERTER MARK RESTORER CIRCUIT

Richard E. Daniel, Rollings Hill, Calif., assignor to Hoffman Electronics Corporation, a corporation of California

Filed Nov. 19, 1962, Ser. No. 238,434
10 Claims. (Cl. 325—320)



1. Mark restorer circuit means for a frequency shift converter circuit, comprising:

(*a*) a detector for producing a series of pulses having first and second polarities with respect to a reference axis,

(*b*) axis-restorer means coupled to said detector and including a series-connected capacitor.

(*c*) utilization means coupled to said axis-restorer means, and

(*d*) a control circuit coupled between said detector and said utilization means and responsive to the output of said detector for supplying to said utilization means a potential of said first polarity only so long as the output of said detector has both said first polarity and a duration extending beyond a predetermined interval.

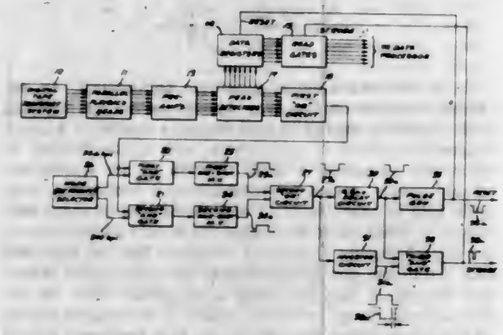
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3,164,774

## READOUT CONTROL CIRCUIT FOR DIGITAL DATA GENERATING SHORT-DURATION PULSES PREDETERMINED TIME INTERVAL AFTER RELATIVELY LONG-DURATION PULSES

Martin W. Fletcher, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Aug. 14, 1962, Ser. No. 216,826
6 Claims. (Cl. 328—61)



1. A circuit for providing a short interval strobing and reset for substantially parallel binary data signals reproduced at high speed from binary data recorded with high density on magnetic tape and including means responsive to each group of binary signals for providing a common signal initiated by a selected characteristic of the selected binary bit of a parallel character, comprising:

one-shot pulse generator means responsive to the common signal for generating a rectangular pulse having a width approximately one-half the width of the binary data bit period;

passive delay means providing a delay interval of predetermined relatively short duration and coupled to receive the rectangular pulses;

means including gating means for generating strobe pulses each having a leading edge coincident with the trailing edge of the rectangular pulse and a trailing edge coincident with the trailing edge of the delayed rectangular pulse;

resettable data register means coupled to receive each group of substantially parallel data signals;

gating means responsive to the data register means and coupled to be controlled by the strobe pulses; and

means responsive to the trailing edge of the delayed rectangular pulses for resetting the data register means.

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3,164,775

## CLAMPING CIRCUIT

Harry C. Morgan, Woodland Hills, Calif., assignor to North American Aviation, Inc.

Original application Nov. 9, 1956, Ser. No. 621,397, now Patent No. 3,071,762, dated Jan. 1, 1963. Divided and this application Jan. 26, 1961, Ser. No. 89,601
7 Claims. (Cl. 328—98)

7. A clamping circuit comprising

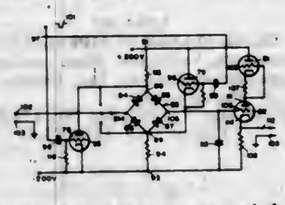
a diode array,

first and second resistors connecting respective ends of the array to first and second points of fixed potential,

a condenser connected to said array and to one of said resistors for providing an output signal,



an input signal terminal connected to the array, and means for causing the signal on the condenser to momentarily follow a signal on the input terminal comprising first switch means for selectively shunting said



array and said first resistor, second switch means for selectively shunting said array and said second resistor, and means for simultaneously and momentarily operating both said switches to shunt both resistors and said array.

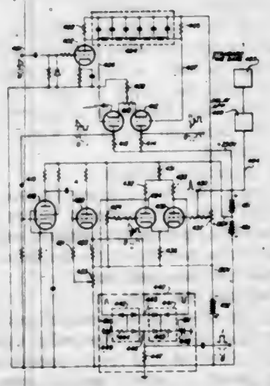
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3,164,776

## ARRANGEMENT FOR DISCRIMINATING BETWEEN THE TWO STATES OF A BINARY SIGNAL

Jacques Marcel Dondoux, Paris, France, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed May 9, 1960, Ser. No. 27,664
Claims priority, application France, May 26, 1959, 795,687, Patent 1,235,437
11 Claims. (Cl. 328—116)



1. An arrangement for discriminating between signals appearing at a terminal and representing a first and a second condition, respectively, the signal representing said first condition having a high transitory amplitude near the beginning of the signal and the signal representing said second condition having a lower amplitude than the signal representing said first condition, both of the signals being subject to variations in maximum amplitudes said discriminating arrangement comprising: signal delay means; signal comparing means having a first and a second input point and an output point, said first input point being connected to said terminal directly and said second input point being connected to said terminal through the medium of said delay means; and sampling means connected to said output point, said sampling means including gating means having an input connection, an output connection and a control point, and signal control means including circuit connections to said control point of said gating means, said gating means operated in response to the coincidence of a signal from said signal comparing means and a signal, delayed in time with respect to said signals representing said first and second conditions, by an interval corresponding to the delay introduced by said delay means, from said signal control means to produce at the output connection of said gating means an output signal representing the signal appearing at said terminal.

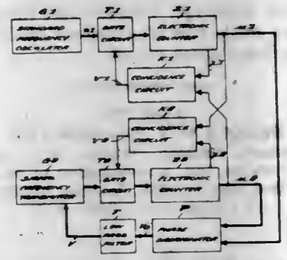
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3,164,777

## MEANS FOR THE PRODUCTION OF A VOLTAGE WHICH DEPENDS UPON THE DIFFERENCE BETWEEN TWO FREQUENCIES

Gustav Guanella, Zurich, Switzerland, assignor to Patelhold Patentverwertungs- & Elektro-Holding A.-G., Glarus, Switzerland

Filed Feb. 9, 1960, Ser. No. 7,715
Claims priority, application Switzerland Feb. 18, 1959
4 Claims. (Cl. 328—134)



1. In a frequency control system, a first and a second generator of oscillations, the frequency of oscillation of said second generator being controlled by a regulating voltage depending upon the difference between the frequencies of oscillation of said generators, a counter coupled to each of said generators by means of a normally open gate circuit whereby after the arrival of a constant number of cycles of oscillaton each of said counter emits an output pulse bringing the counter into zero position for immediate start of the next counting cycle, a phase discriminator coupled to the output of each counter for producing a regulating voltage according to the phase difference of said output pulses, said regulating voltage being fed to the second generator through a low-pass filter, two coincidence circuits, the output of each coincidence circuit being connected with the control input of one of said gate circuits, one input of each coincidence circuit being connected crosswise with the output of one of said counters and the other input of each coincidence circuit being connected with means for producing pulses preceding the output pulses of said counters in time, whereby an output pulse of one of said coincidence circuits closes one of said gate circuits.

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3,164,778

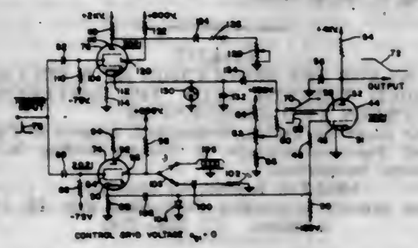
## LINEAR SWEEP CIRCUIT

George L. Clark and John J. Hickey, Hawthorne, Calif., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 21, 1961, Ser. No. 132,928
14 Claims. (Cl. 328—183)

2. A sweep generator circuit comprising: an electron discharge tube including a cathode, a control grid, a screen grid, and an anode; a source of high positive potential connected to said anode; a source of positive potential connected to said screen grid; a bias source connected to said control grid to maintain said discharge tube normally nonconducting; a capacitor connected across said anode and said cathode and adapted to be charged to the potential of said anode during the nonconducting condition of said tube; means connected to apply to said control grid a rectangular voltage waveform of sufficient magnitude to drive said tube into conduction, whereby to initiate a discharge of said capacitor through said tube; and means con-

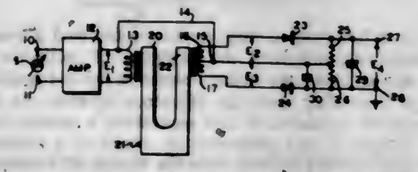
nected to apply to said screen grid a positive linearly increasing voltage of a predetermined slope to render the current through said tube substantially constant during



said capacitor discharge, whereby the voltage on said capacitor and anode falls at a constant rate to produce a high voltage linear sweep output.

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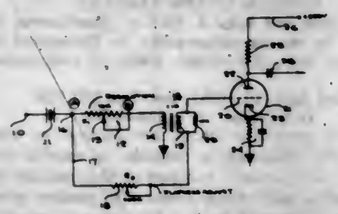
3,164,779
**FREQUENCY TRANSDUCER**
Myron Pleasure, Jackson Heights, N.Y., assignor to Litton Systems, Inc., a corporation of Maryland
Filed May 6, 1960, Ser. No. 27,393
15 Claims. (Cl. 329—137)



10. A transducer for converting variable frequency input signals into corresponding direct current output voltages, comprising a tuning fork input and output coils respectively coupled to said tuning fork, said tuning fork being driven by the input coil for transferring wave energy to said output coil and means connected to said coils to develop a minimum direct current output voltage at the input signal frequency coinciding with the resonant frequency of the fork.

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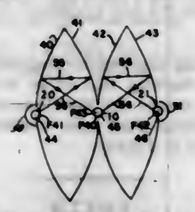
3,164,780
**VARIABLE BAND WIDTH CONSTANT AMPLITUDE FILTER**
Bela Ranky, Flushing, N.Y., assignor, by mesne assignments, to The Singer Manufacturing Company, a corporation of New Jersey
Filed Jan. 10, 1961, Ser. No. 81,875
15 Claims. (Cl. 330—157)



1. In combination, a band-pass filter having an input and an output, means for variably loading said filter to vary the band-pass characteristic of said filter, means connected to said filter output for deriving first and second responses of said filter to signals applied to said filter output, said first response being a current response of said filter, said second response being a voltage response of said filter, means for converting said current response to a voltage response proportional to said current response, and means for additively combining the first mentioned and last mentioned voltage responses.

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3,164,781
**OPTICAL MASER PUMPING SYSTEM**
Seymour Goldberg, Lexington, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Mar. 7, 1962, Ser. No. 178,087
1 Claim. (Cl. 331—94.5)



In an optical maser having a cylindrical solid medium that can be optically excited to produce maser action, two straight-line flashtubes for optically exciting said medium, and an electric discharge circuit for simultaneously flashing said flashtubes, the improved system for coupling the light output of said flashtubes to said medium, said system comprising:

a first parabolic cylinder
having a focus, a reflective concave surface and a slot located at its vertex in which one of said flashtubes is mounted;

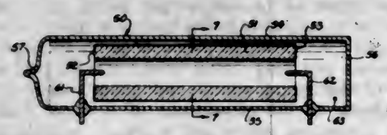
second and third parabolic cylinders
each having reflective concave surfaces, disposed back to back, having a common vertex coincident with the focus of said first parabolic cylinder, and having a common slot located at said common vertex in which said medium is mounted;

a fourth parabolic cylinder
having a reflective concave surface, a focus coincident with said common vertex of said second and third parabolic cylinders, and a slot located at its vertex in which the other of said flashtubes is mounted; and

two cylindrical reflectors
each mounted adjacent one of said flashtubes, one behind said first parabolic cylinder and the other behind said fourth parabolic cylinder, and disposed to reflect optical power through the slots of said first and fourth parabolic cylinders, respectively, toward said medium and through the focii of said second and third parabolic cylinders, respectively, toward the reflective surfaces thereof.

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3,164,782
**GAS-FILLED ENVELOPE FOR SOLID LASER TUBE HAVING INTERNAL ELECTRODES**
Fred D. Ordway, Jr., 5205 Elmore Ave., Bethesda 14, Md.
Filed Jan. 31, 1963, Ser. No. 256,191
1 Claim. (Cl. 331—94.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



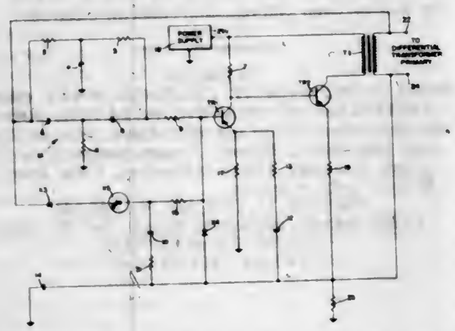
In combination, a tube of solid laser material, said tube having a bore, an outer surface, and first and second



substantially parallel, flat end surfaces, said first and second end surfaces having reflective and semi-reflective films, respectively, disposed thereon, said outer surface being surrounded by a reflective member, a pair of electrodes disposed in said bore, the diameters of said electrodes each being less than the diameter of said bore, a sealed envelope surrounding said tube and electrodes, said electrodes extending through said envelope, said envelope having a transparent window portion adjacent said second end surface of said tube to permit the laser beam to emerge therefrom, said envelope being filled with a gaseous medium for conducting an electrical charge applied to said electrodes to produce a luminous discharge of pumping light in said tube, the volume of said envelope being substantially larger than the volume of said bore, to provide a reservoir of said gaseous medium and thereby minimize the clean-up of said gaseous medium.

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3,164,783
**AMPLITUDE CONTROLLED OSCILLATOR**
Grover K. Houpt, Lansdale, Pa., assignor to Automatic Timing & Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Sept. 5, 1961, Ser. No. 136,709
6 Claims. (Cl. 331—109)

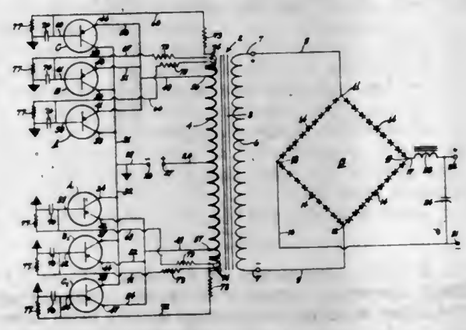


1. An oscillator circuit comprising: first and second direct-coupled transistors, a frequency determining and signal polarity-reversing means constructed and arranged to feed the output signal of said second transistor in opposite polarity back to the input of said first transformer coupled between the output of said second transistor, said means for feeding back including a transistor and said polarity-reversing means, and means including means continuously responsive to principally the positive half-cycles of said output signal for diverting selected amounts of said feedback signal from the input of said first transistor, said diverting means including D.C. developing means responsive to selected amplitude and polarity portions of said second transistor output signal.

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3,164,784
**PUSH-PULL OSCILLATOR POWER SUPPLY HAVING PARALLEL-CONNECTED TRANSISTORS**
Jo Emmett Jennings, San Jose, Calif., assignor, by mesne assignments, to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 2, 1960, Ser. No. 6,143
6 Claims. (Cl. 331—113)

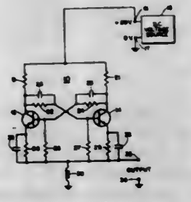
1. An electrical power supply comprising a D.C. source having two poles, a semiconductor oscillator, a transformer having a primary and a secondary winding, and a load circuit; the active elements of said oscillator comprising two groups of equal-numbered pluralities of semiconductor devices, said semiconductor devices having control electrodes and corresponding first and second noncontrol electrodes; means connecting said first noncontrol electrodes of said semiconductor devices at a first point, means connecting said second noncontrol electrodes of said semiconductor devices of one of said groups at a second point, and means connecting said second noncontrol electrodes of said semiconductor devices of the other of said groups at a third point; said transformer primary winding comprising a single winding having a centertap and two end terminals; means connecting said first point to one pole of said D.C. source, means connecting the other pole of said D.C. source to said centertap of said primary winding, means connecting said second point to one end terminal of said primary winding, and means



connecting said third point to the other end terminal of said primary winding; said transformer secondary being connected to said load circuit; and feedback means connecting the output of said oscillator with each said control electrode, said feedback means comprising a transformer feedback winding corresponding to each said semiconductor device, one end of each said transformer feedback winding being connected to the control electrode of its corresponding semiconductor device, and the other end of each said transformer feedback winding being connected to that end terminal of said transformer primary winding to which is connected a noncontrol electrode of its corresponding semiconductor device.

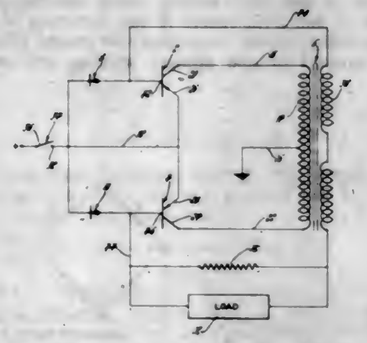
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3,164,785
**TRANSISTOR PULSE GENERATOR WITH INDUCTIVE MEANS**
Roger N. Blunt, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,963
7 Claims. (Cl. 331—113)



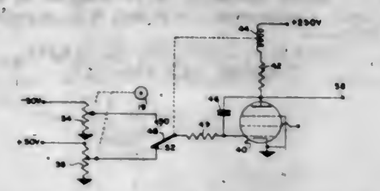
1. A pulse generator comprising a free-running multivibrator having a pair of cross-coupled transistors, each transistor having an output circuit coupled to the input circuit of the other transistor by a shunt capacitive-resistive network, said networks constituting the sole feedback path for said transistors, each of said transistors having a current-carrying circuit a portion of which is common to both of said transistors, and an inductive element connected in said common portion of said current-carrying circuit across which output pulses may be derived.

3,164,786
**TRANSISTOR OSCILLATOR INVERTER WITH SERIES LOAD IN FEEDBACK CIRCUIT**
Douglas G. Wilson, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 20, 1961, Ser. No. 160,845
2 Claims. (Cl. 331—113)




1. A circuit arrangement for changing D.C. to A.C. voltage comprising, a transformer having a primary and a secondary winding, said primary winding being center tapped and grounded, a pair of transistors having emitter, collector and base electrodes, conductance means connecting the collector electrodes to opposite ends of the primary winding of the transformer, a source of D.C. voltage connected to both the emitter electrodes, a rectifier means connected between each base electrode and the source of D.C. voltage, a series output circuit including a load and the secondary winding connected across the base electrodes of the two transistors to provide feedback switching voltage for square wave output, and a resistance in shunt to the load to assist oscillation at light loads.

3,164,787
**SONOBUOY SIMULATOR**
Robert R. Fontaine, East Riverdale, Md., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed July 15, 1960, Ser. No. 43,228
3 Claims. (Cl. 331—143)



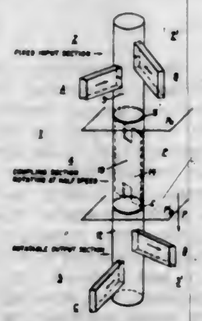
1. A cyclic operating apparatus comprising an electron discharge tube having a cathode and anode and a control grid in the discharge path between the cathode and anode, a voltage source and a resistor connected in a series circuit between said cathode and anode, a capacitor connected between the anode and grid, a biasing circuit connected between the grid and cathode, said biasing circuit including a resistor and a source of voltage connected in series between the grid and cathode, a relay having a winding connected serially with said voltage source and resistor between the anode and cathode, said relay including switching means operated by said winding and connected to said biasing circuit for changing the bias, and an output circuit connected to the circuit between the anode and cathode for deriving sawtooth voltage pulses therefrom.

3,164,788
**TEMPERATURE COMPENSATED TRANSISTOR TRANSLATING CIRCUITS**
Weldon Vlasak, La Puente, Calif., assignor to Airpax Electronics Incorporated, Fort Lauderdale, Fla., a corporation of Maryland
Filed Feb. 8, 1960, Ser. No. 7,142
2 Claims. (Cl. 332—9)



1. A modulator circuit comprising a pair of matched transistors having their collector electrodes connected together and their base electrodes connected together, an input drive transformer having its primary winding connected to receive the signal to be modulated and its secondary winding connected between said base and collector electrodes, means connected between the emitter electrodes of said transistors for applying a modulating signal to said transistors, means in the emitter circuit of said transistors for obtaining a modulated output signal, and a semiconductor diode connected in series between one of the transistors and said secondary winding of said input drive transformer for limiting the reverse leakage current flow between said base and collector electrodes.

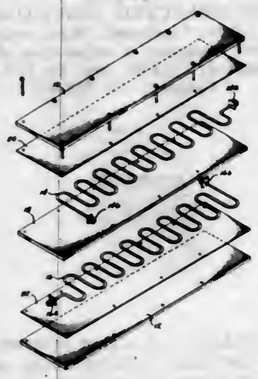
3,164,789
**DUAL INDEPENDENT CHANNEL WAVE GUIDE SYSTEM INCORPORATING ROTATING JOINT**
Marcel Grosbois, Thiers par Mitry-Mary, Seine et Marne, and Guy Billon, Brunoy, France, assignors to Compagnie Francaise Thomson-Houston, Paris, France, a French body corporate
Filed Oct. 16, 1961, Ser. No. 145,141
Claims priority, application France, Oct. 21, 1960, 841,796, Patent 1,277,416
1 Claim. (Cl. 333—6)



A wave guide system comprising a circular emitting guide, two input guides connected to said circular emitting guide, a circular load guide, two output guides connected to said circular load guide, said circular emitting and load guides being coaxial, an intermediate circular guide coaxial with said emitting and load guides, rotatable joints respectively connecting said emitting and load guides to said intermediate guide to enable said load guide to rotate relative to said emitting guide, said wave guide system being adapted to be fed through said input guides with two waves having planes of polarisation perpendicular to one another and said waves propagating from the emitting guide to the load guide through said intermediate guide, and a half-wave plate disposed within said intermediate guide whereby both waves are transmitted independently and unaltered, said intermediate circular guide having means to rotate it at half the speed of the load guide.

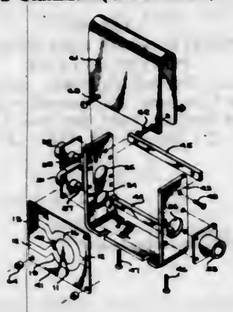


3,164,790
**SINUOUSLY FOLDED QUARTER WAVE STRIP-LINE DIRECTIONAL COUPLER**
Luis L. Oh, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 12, 1963, Ser. No. 258,049
5 Claims. (Cl. 333—10)



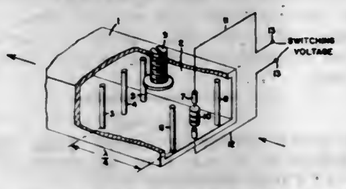
1. A broadband directional coupler comprising two transmission line conductors each substantially one-quarter wavelength long at the mid-frequency of the band, said conductors being of sinuously folded form of substantially equal pitch distance, a pair of ground plane conductors defining a transmission line space therebetween, means mounting said line conductors in mutually superimposed substantially co-phased relationship sandwiched between said ground plane conductors, said line conductors being insulatively spaced from each other and from the respectively adjacent ground plane conductors, and transmission line coupling means having co-operable elements connected to the ends of the respective transmission line conductors and to the ground plane conductors for conducting of energy to and from said transmission lines base.

3,164,791
**STRIP LINE HYBRID RING**
John R. Dent, Falls Church, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed May 5, 1961, Ser. No. 125,601
2 Claims. (Cl. 333—11)



1. A system for coupling energy in a predetermined microwave band with a center wavelength $\lambda$ between three coaxial conductors comprising an enclosure formed of a metal shield housing having a pair of planar, substantially parallel surfaces joined together by four walls, a dielectric board, means for maintaining said board in spaced parallel relation with said surfaces, said board including strip line conductors on either side thereof, said strip line conductors being in registration, each of said strip line conductors comprising; a substantially circular portion, a pair of adjacent points on said portion being insulated, a separate strip line tab connected to each of said adjacent points, a further strip line lead connected to said circular portion equidistant from said adjacent segments, the distance on said circular portion between said lead and each of said points being approximately $\lambda/4$, said strip line portions forming two $\lambda/4$ transmission lines having equal characteristic impedances; said board having a slot between said points, a resistor in said slot and being connected to said points, said resistor having an impedance equal to the characteristic impedance of one of said lines, a pair of coaxial connectors mounted in and extending through one of said walls, the inner conductor of each of said connectors being connected to one tab on each side of said board, the distances along said tabs between one of said points and one of said connectors and between the other of said points and the other one of said connectors being substantially equal, an additional coaxial connector mounted in and extending through another of said walls, said one and another walls being parallel, said leads on each side of said board being connected to the inner conductor of said additional connector.

3,164,792
**MICROWAVE SWITCH UTILIZING WAVEGUIDE FILTER HAVING CAPACITANCE DIODE MEANS FOR DETUNING FILTER**
Peter Georgiev, San Carlos, Calif., and Kenneth P. Ray, Lynchburg, Va., assignors to General Electric Company, a corporation of New York
Filed Jan. 31, 1962, Ser. No. 170,026
2 Claims. (Cl. 333—73)

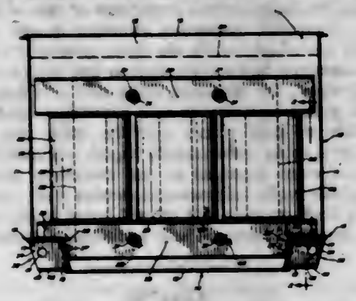



1. In a microwave switch for controlling the transmission of microwave energy along a waveguide, the combination comprising,
(*a*) a filter structure positioned in said waveguide and including a plurality of inductive post elements, said filter having a desired passband for transmitting microwave energy substantially without attenuation,
(*b*) a diode element incorporated in one of the posts forming said filter, said diode having a resistive and a reactive state,
(*c*) biasing means coupled to said diode element for selectively forward and reverse biasing said diode to place it in said resistive and reactive states respectively whereby said filter is detuned when said diode is in the reactive state and the microwave energy is reflected thereby preventing further transmission along said waveguide and has the desired passband when said diode is in the resistive state.

3,164,793
**SUPPORT FOR ELECTRICAL TRANSFORMER**
Morton M. Aronson, Bridgeville, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 5, 1959, Ser. No. 791,471
1 Claim. (Cl. 336—65)

An electrical transformer comprising, in combination, a core and coil assembly including a magnetic core having a plurality of upstanding leg portions connected by upper and lower yoke portions, at least one of said leg portions being surrounded by an electrical coil, and a pair of

elongated, longitudinally extending clamping members disposed on opposite sides of and secured to said lower yoke portion; a metallic casing surrounding said core and coil assembly and being adapted to rest upon and be pulled along a horizontal surface, said casing having a pair of horizontally spaced step-like shelf members extending transversely of said clamping members, said shelf members being integral with the end and side walls of said casing adjacent the lower end thereof, and a bottom plate connecting said shelf members and being secured to said side wall and together with said shelf members de-



fining the bottom walls of said casing, said clamping members having at the ends adjacent the bottom thereof cutout portions complementary to and interfitting with said step-like shelf members and blocking said clamping members and said lower yoke portion secured thereto against movement relative to said casing in a direction longitudinally of said clamping members, said lower yoke portion and the lower edges of said clamping members depending below the upper surface of said shelf members and terminating in spaced relation above said bottom plate.

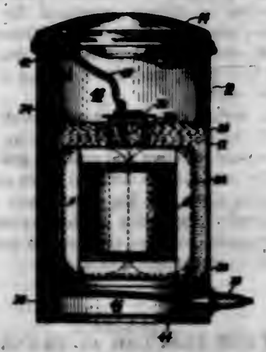
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3,164,794

## OIL-FREE COMPARTMENT FOR TRANSFORMER TANK FOR MOUNTING LOW VOLTAGE BUSHING

Michael Brovarman and Francis L. Woods, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

Filed Nov. 29, 1962, Ser. No. 240,958
5 Claims. (Cl. 336—92)



1. A transformer for mounting on a pole, comprising; a transformer tank having a wall, a cover member and a sealed base member, the wall of said tank extending below said sealed base member, a core and coil unit mounted in said tank on said sealed base member, a liquid dielectric in said tank completely covering said core and coil unit, a standpipe secured in a fluid-tight manner to said base within said tank, said standpipe extending from said base to point above the level of said liquid dielectric, and opening in said base within said standpipe, a bushing mounted on said extended wall of said tank and a secondary lead extending from said core and coil unit through said standpipe to said bushing.

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3,164,795

## PHOTOELECTRIC STRUCTURES

Clifford B. Luebbe, Cincinnati, Ohio, assignor to D. H. Baldwin Company, a corporation of Ohio

Filed July 27, 1961, Ser. No. 127,236
7 Claims. (Cl. 338—17)



2. In a photoelectric cell, a glass substrate, an electrode structure of chromium vaporized onto said substrate, and a coating of photosensitive substance on said electrode structure, said glass substrate being a borosilicate glass, the coating of photosensitive substance consisting essentially of a compound formed from a cationic material chosen from a group consisting of cadmium, lead, indium, mercury, gallium, zinc, aluminum, arsenic and antimony, and an anionic material chosen from a class consisting of sulfur, selenium, tellurium, antimony and arsenic, said coating of photosensitive substance being vaporized onto said electrode structure, there being metallic contact pins extending through said substrate and making electrical contact with selected portions of said electrode structure and providing means on the side of said glass substrate opposite said electrode structure for connection to electrical structures, said substrate having a coating of chromium in a marginal portion, said coating bearing a layer of metallic substance which is solderable, said photosensitive cell including a cover glass member bearing a coating of chromium and a solderable substance in a marginal portion, the said marginal portions being juxtaposed and soldered together, said solderable substance being stainless steel vaporized onto said chromium coating.

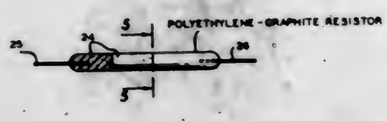
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3,164,796

## COMPOSITIONS OF GRAPHITE AND POLYETHYLENE

Henry O. Dixon, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 11, 1961, Ser. No. 137,248
2 Claims. (Cl. 338—28)




2. A pressure sensitive and temperature sensitive electrical resistor consisting essentially of an intimate mixture of about 10 to about 90 weight percent of solid polyethylene having a density of about 0.94 to about 0.99 gram per cc. and a crystallinity of at least about 85 percent, and about 10 to about 90 weight percent of finely divided natural flake graphite, formed at a temperature of about 340 to about 450° F. and a pressure of at least about 4000 p.s.i.; and having metal terminals secured thereto.

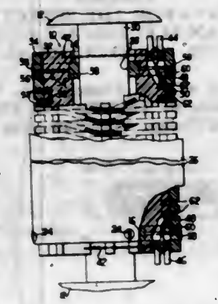


3,164,797

## WIRE WOUND ELECTRICAL RESISTOR

Joseph M. Raurath, Mattapan, Mass., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Dec. 5, 1963, Ser. No. 328,328
6 Claims. (Cl. 338—62)



1. In a resistor unit for immersion in an electrically nonconductive liquid medium, in combination, a pair of spaced apart perforated insulating end plates, each end plate being provided with a plurality of radially disposed slots, a plurality of insulating strips supported between said end plates, each strip being disposed in registering slots in said end plates, each strip having a plurality of notches in its outwardly facing edge, at least one coil of resistance wire wound on said strips so as to lie in the notches therealong, a pair of terminals at opposite ends of said resistor unit, each terminal being mounted adjacent the outer surface of a respective end plate and electrically connected to one end of said coil, means for securing said plurality of strips in the slots of said end plates, and an insulating housing enclosing said strips and said coil.

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3,164,798

## VOLTAGE DIVIDER

Merle L. Morgan, Portland, Oreg., assignor to Electro-Measurements, Inc., Portland, Oreg., a corporation of Oregon

Original application May 11, 1962, Ser. No. 195,661, now Patent No. 3,113,261, dated Dec. 3, 1963. Divided and this application May 22, 1963, Ser. No. 282,377
2 Claims. (Cl. 338—174)



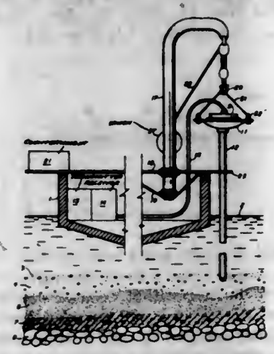
2. In a voltage divider having a potentiometer resistance member provided with spaced terminal ends, a brush member arranged for sliding engagement with the resistance member, and wherein the resistance member and the brush member are rotatable relative to each other, conductor means arranged for sliding engagement by the brush member and positioned between and spaced from said terminal ends a distance shorter than the contact width of the brush member, and impedance means interconnecting the conductor means and one of said terminal ends.

3,164,799

## APPARATUS FOR LOCATING AND MEASURING HARD STRATA BENEATH RIVERS AND OTHER WATER BASINS

Paul F. Minasian, 115 Plov Way, Vallejo, Calif.

Filed Apr. 24, 1961, Ser. No. 105,242
8 Claims. (Cl. 340—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



7. Apparatus for determining distances between a water basin floor and its underlying hard strata, comprising electro-acoustic transducer means, an elongated metal shaft acoustically coupled to and dependingly supported by said transducer means, means supported at the surface of said basin for suspending said transducer with its dependent shaft extending downwardly through the water into substantial contact with said basin floor, means for repetitively generating and receiving electric pulses, and means connecting said generating and receiving means to said transducer means whereby pulsed energy may be projected via said shaft to said hard strata and reflected energy from said strata may be received, said distance measurements being derivable from the lapse of time between said pulse projections and the receipt of said pulse reflections.

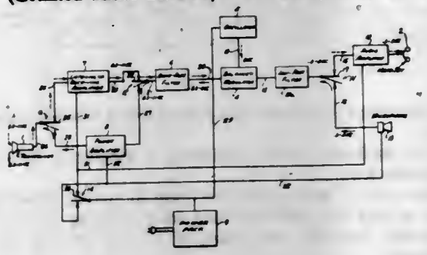
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3,164,800

## UNDERWATER TELEPHONY

John T. Kroenert, Utica, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 18, 1958, Ser. No. 729,482
20 Claims. (Cl. 340—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



13. An underwater transmitter for complex intelligence comprising means for converting complex intelligence into a corresponding complex electrical intelligence signal, modulator means for converting said intelligence signal into a single sideband amplitude modulation of a carrier signal, and a transducer for converting the sideband signal into acoustic energy and propagating the same into water, the modulator means being designed to provide a frequency band for said sideband signal of approximately 8–11 kc. when carrying intelligence having frequencies

up to about 3 kc., thereby providing for optimum intelligibility of the transmitted signal when received and demodulated.

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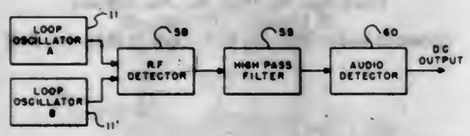
**3,164,801**
**AERIAL DELIVERY WIND AND LOCATION SIGNAL DEVICE**
**Thomas H. Nicholl, 9935 High Drive, Leawood, Kans.**
**Filed Mar. 19, 1962, Ser. No. 180,482**
**5 Claims. (Cl. 340—25)**



1. An aerial delivery wind and location signal device which is discharged from a flying aircraft and lowered to a surface with the disposition on said surface indicating wind direction comprising, an elongated flexible member, a weight member secured to said flexible member at one end thereof, a descent retarder connected to the other end of said flexible member, a plurality of lightweight markers spaced along the length of said elongate flexible member and connected thereto with said descent retarder, weight and markers each spaced apart from the others when said flexible member has a linear position, said markers being hollow bodies with thin resilient walls, and means in said markers enhancing the visibility thereof, said device upon release from an aircraft being lowered to the ground with the weight landing first and the markers and descent retarder in accordance with their spacing from the weight trailing and landing in sequence substantially downwind from said weight to form a signal indicating wind direction.

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**3,164,802**
**INDUCTIVE LOOP VEHICLE PRESENCE DETECTOR**
**Robert A. Kleist, Sunnyvale, and John Scarbrough, Palo Alto, Calif., assignors to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware**
**Filed Mar. 13, 1961, Ser. No. 95,236**
**3 Claims. (Cl. 340—38)**




1. Apparatus for sensing the presence of a vehicle, comprising:
a first oscillator circuit including a frequency determining loop;
means fixedly positioning said loop in spaced relation to a path for vehicles, said loop defining an area greater than the area occupied by any of said vehicles;
said frequency determining loop exhibiting a normal value of inductance which varies when a vehicle moves near and into said area defined by said loop thereby varying the frequency of oscillation generated by said circuit;
a substantially constant frequency oscillator circuit for generating a frequency different than any frequency generated by said first oscillator circuit;
means applying the frequencies generated by said first and said substantially constant frequency oscillator circuits to a detector, said detector providing an audio frequency equal to the difference in frequency between said generated oscillation frequencies; and
means coupled to said detector for providing a direct voltage level indicative of the instantaneous difference in frequency generated by said circuits.

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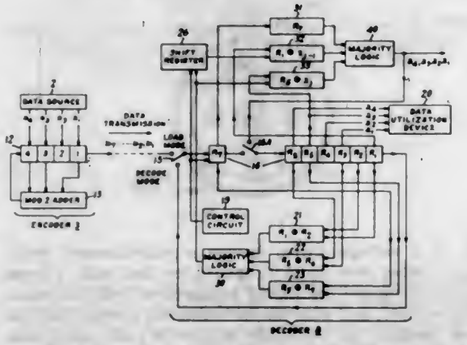
**3,164,803**
**CONTROL MEANS FOR THE SELECTIVE ENERGIZATION OF AN ELECTRICALLY ENERGIZABLE DEVICE FROM AN ELECTRICAL POTENTIAL SOURCE**
**Max Leichsenring, 4525 N. Francisco St., Chicago 25, Ill.**
**Filed June 19, 1964, Ser. No. 376,527**
**14 Claims. (Cl. 340—72)**



1. For use in an automotive vehicle, having a fluid pressure brake system, brake light circuit means including a brake light, a fluid pressure switch operated by said brake system and coacting with said circuit means to control energization thereof the combination comprising, a cycling switch in said circuit means for effecting intermittent flashing of said brake light in response to closing of said fluid pressure switch, a steady signal switch connected in parallel with said cycling switch and including time delay actuating means energized by said fluid pressure switch to effect a delayed closing of said steady signal switch and shunt said cycling switch to effect a delayed but steady energization of the brake light to produce a steady warning signal, and means for said time delay actuating means for opening said steady signal switch after the same has been closed for a predetermined length of time and effect de-shunting of said cycling switch to again effect through said cycling switch intermittent flashing of said brake light.

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**3,164,804**
**SIMPLIFIED TWO-STAGE ERROR-CONTROL DECODER**
**Coleman H. Burton and Michael E. Mitchell, Ithaca, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed July 31, 1962, Ser. No. 213,733**
**3 Claims. (Cl. 340—146.1)**




3. In data processing apparatus that processes code words having 7 binary digits in 7 respective positions in the word, of which 4 digits represent information bits, a decoder comprising:
(*a*) a shift register connected to receive the code words in such a manner that the bits of the code words are entered into positions of the shift register corresponding to their position in the code words;
(*b*) a first set of cyclic estimation logic circuits each of which computes the mod 2 sum of certain received bits in said shift register in a manner to provide the required number of independent estimation signals for the correct value of an intermediate binary estimation quantity as follows:

$$E_1=R_1\oplus R_2$$
$$E_2=R_3\oplus R_6$$
$$E_3=R_5\oplus F_7;$$

(*c*) a first majority logic circuit responsive to the estimate signals to provide an output bit signal in accordance with the majority of the estimate signals;
(*d*) a second set of cyclic estimation circuits which computes the mod 2 sum of certain received bits and said intermediate estimation quantities to provide the required number of independent estimation signals for the correct value of particular code bits as follows:

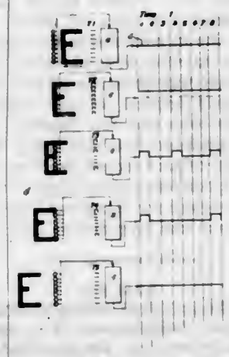
$$F_1=R_7$$
$$F_2=R_1\oplus X_{j-1}$$
$$F_3=R_5\oplus X_j;$$

(*e*) a second majority logic circuit responsive to the estimate signals from said second set of estimation circuits to provide an output bit signal in accordance with the majority of these estimate signals; and
(*f*) control circuitry to cyclically shift the bits in said shift register for $(k+l)$ bit decoding operations, to initiate a bit decoding operation after each shift, and to command information readout after shift operations.



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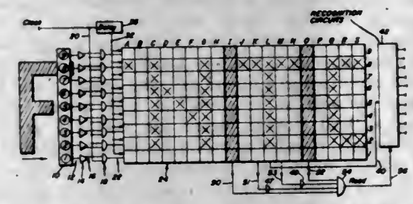
**3,164,805**
**SEQUENTIAL SCAN SYSTEM HAVING PARALLEL TO SERIAL CONVERSION**
**Arthur W. Holt, Silver Spring, Md., James D. Hill, Washington, D.C., and Henry Hironaka, Bethesda, Md., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota**
**Filed Aug. 19, 1960, Ser. No. 50,738**
**9 Claims. (Cl. 340—146.3)**



1. In a system for scanning a character on an area moving in one direction wherein the scanner is a row of photocells providing a group of outputs in parallel, a parallel to serial converter comprising a plurality of gates, each gate having one input from one photocell of said scanner with all gates fed in parallel, a multiple input point memory device having its input points connected with the outputs of said gates, means providing a scan trigger signal as a simultaneous input to each one of said gates, and each gate which is satisfied by inputs from both its photocell and said scan trigger signal conducting an information signal to said memory device.

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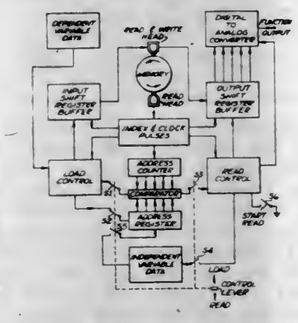
**3,164,806**
**CONTINUOUS REGISTER READING MACHINE**
**Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota**
**Filed Nov. 30, 1961, Ser. No. 156,055**
**12 Claims. (Cl. 340—146.3)**



3. In a reading machine for a line of characters having a contrasting background, an examination device to successively examine the characters and provide successive sets of outputs corresponding to the elemental areas of the characters and their background, and recognition means for the characters; the improvement comprising a register having an input terminal for each possible output of one of said sets, said register continuously loaded with successive sets of said outputs as the line of characters is examined by said examining device, said register having a capacity of more than one full character in the character line direction and the expected spaces at the front and rear thereof, means operative while said examination device continues to load said register for interrogating a part of said register at a predetermined position thereof in said line direction to detect one of the spaces between characters, means responsive to said detecting means for providing a first signal, additional detecting means to interrogate another part of said register to detect a portion of the character data in the register and provide another signal, and means to combine the last-mentioned signals to provide a timing signal for said recognition means.

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**3,164,807**
**FUNCTION GENERATOR**
**Styrk G. Reque, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York**
**Filed Dec. 31, 1959, Ser. No. 863,196**
**1 Claim. (Cl. 340—172.5)**

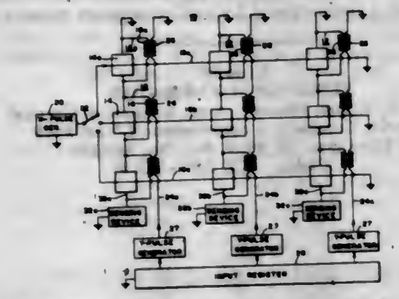



A system for generating a voltage signal as a function of time comprising: a first storage means having a plurality of memory locations designated by successive addresses expressed as a sequence of numbers, each number representing a value of time as the independent variable of said function, each location storing a group of digital signals representing a corresponding dependent variable; a

source of pulses recurring at predetermined intervals; a digital counter coupled to said source of pulses for counting said pulses and for producing an output signal each time a predetermined number of pulses are counted; a second storage means for storing a group of digital signals representing a given independent variable value; means coupled to said second storage means and to said digital counter for incrementing said given independent variable value stored in said second storage means in response to each output signal from said digital counter, thereby causing said group of digital signals stored in said second storage means to represent successively greater independent variable values with the passage of time; addressing means coupled to said first and second storage means for locating a memory location designated by an address expressed as a numerical value equal to said independent variable value stored in said second storage means; a third storage means for storing a group of digital signals; translating means coupled to said first and third storage means for translating a group of digital signals from a memory location to said third storage means; read-control means coupled to said addressing means and said translating means for causing said translating means to translate a group of digital signals from a memory location in said first storage means to said third storage means when said addressing means locates a memory location designated by said group of digital signals stored in said second storage means; and converting means coupled to said third storage means for converting a group of digital signals stored therein to an analog voltage signal whereby a voltage signal is generated as a function of time.

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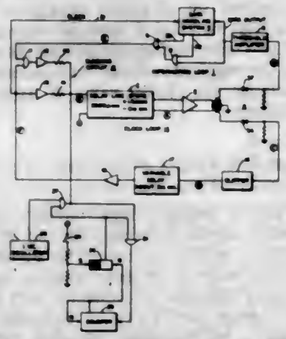
**3,164,808**
**SUPERCONDUCTIVE INFORMATION HANDLING ARRANGEMENT**
**John L. Rogers, Hermosa Beach, and Horace T. Mann, Palos Verdes Estates, Calif., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed May 2, 1960, Ser. No. 26,261**
**12 Claims. (Cl. 340—173.1)**



10. A superconductive structure, comprising: a closed loop of thin film superconductive material, with the path of the loop defining a given plane; a first thin film superconductor mounted adjacent to and registered with a first minor portion of said loop, said first superconductor being electrically insulated from said minor portion and forming a substantially non-inductive coupling with said loop; said first superconductor being magnetically coupled to said minor portion and operable to control the superconducting state thereof in response to signal current applied to said first superconductor; and a second thin film superconductor mounted adjacent to said loop and extending parallel to the path of said loop along and in register with a second major portion of the loop, thereby forming an inductive coupling between said second superconductor and said loop; said second thin film superconductor being operable to induce within said loop, in response to signal current applied to said second superconductor, a circulating current that is transient when said minor portion is resistant and that is persistent when said minor portion is superconducting.

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**3,164,809**
**SELF-SYNCHRONIZING DELAY LINE DATA RECIRCULATION LOOP**
**James Gordon Pearce, Webster, Hillel Pitlik, Rochester, and Guenter Sager, Fairport, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware**
**Filed Oct. 1, 1963, Ser. No. 312,961**
**6 Claims. (Cl. 340—173)**



1. In a delay line data storage system, an information loop, a clock loop, a delay line common to said information loop and said clock loop for storing a pulse train having first intelligence bearing portions including first and second types of signals and second timing portions intertwined with said first intelligence bearing portions, a write-in circuit common to both of said loops, means within said information loop for forwarding signals representative of said first portions emerging from said delay line to said write-in circuit, means within said clock loop for forwarding signals representative of said second portions emerging from said delay line to said write-in circuit substantially coincident with the forwarding of said signals representative of said first portions to said write-in circuit by said means for forwarding within said information loop, said write-in circuit further including means for causing first types of signals to be inserted into said delay line in response to the application of said second portions to said write-in circuit via said clock loop where signals representative of first types of signals are simultaneously applied to said write-in circuit via said information loop and for causing second types of signals to be introduced into said delay line in response to the application of said second portions to said write-in circuit via said clock loop where signals representative of second types of signals are simultaneously applied to said write-in circuit via said information loop.

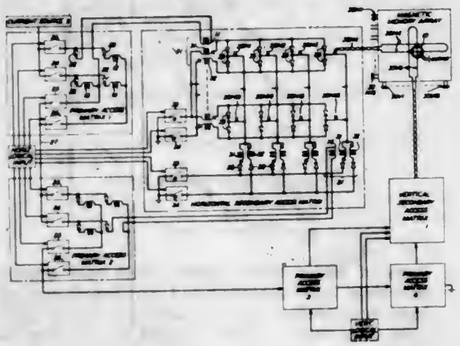
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**3,164,810**
**MATRIX ACCESS ARRANGEMENT**
**Philip A. Harding, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Jan. 9, 1961, Ser. No. 81,433**
**7 Claims. (Cl. 340—174)**

1. An access arrangement for providing logic signals for driving a coordinate memory array, said access arrangement comprising a pair of primary access coordinate switches, each of said primary switches of said pair having a plurality of primary windings of pulse transformers as primary crosspoint elements thereof; a single source of current; means for selectively connecting one



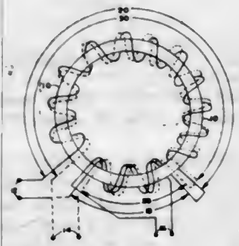
of said primary windings from each of said primary access coordinate switches in a single series circuit including said single source of current; a secondary access matrix having column and row coordinate conductors and secondary crosspoint means connected thereto, said secondary crosspoint means being coupled to said coordinate memory array for furnishing signals to said array; first coupling means in said secondary matrix connected to said column conductors and second coupling



means in said secondary matrix connected to said row conductors, said first and second coupling means being each inductively coupled to one of said primary windings in one of said primary switches of said pair; and grounding means connected to said first and second coupling means, said first and second coupling means when grounded being responsive to current flow from said single source through said single series circuit for providing bipolar currents through said secondary crosspoint means.

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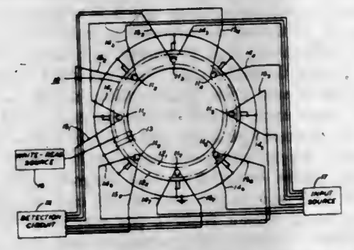
**3,164,811**
**SATURABLE MAGNETIC DEVICE**
**Robert E. Boylan, St. Paul, and Richard J. Petschauer, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Feb. 24, 1960, Ser. No. 10,679**
**5 Claims. (Cl. 340—174)**



5. A saturable magnetic core matrix switch, the combination comprising: a magnetic core; an output winding inductively coupled to said core; first and second substantially similar input windings inductively-coupled to said core with each input winding having first and second winding portions, said first portion having substantially less turns than said second portion; said output winding inductively coupled to said first and second input windings so as to provide substantially greater air coupling with said first portion than with said second portion; a bias winding inductively coupled to said core; bias signal means coupled to said bias winding for selectively placing the magnetic state of said core in a first substantially saturated condition; substantially similar first and second half-select signal means selectively coupled to said first and second input windings, respectively; said first and second half-select signal means individually incapable of driving the magnetic state of said core out of said first substantially saturated condition, but, when coincident, collectively capable of driving the magnetic state of said core out of said first substantially saturated condition into its condition of high incremental permeability; the arrangement being such that when the magnetic state of said core is placed in said first substantially saturated condition by said bias signal means the close coupling of said first and second input windings first portions and the remote coupling of said first and second input windings second portions, both with respect to the output winding, cause a cancellation of the induced noise in the output winding, which noise signal is caused by both air coupling and core coupling of the first and second input windings first and second portions to the output winding, when only said first half-select signal means is coupled to said first input winding driving the magnetic state of said core through the area of substantial saturation but not into the condition of high incremental permeability, but when said first and second half-select signal means are coincidentally coupled to said first and second windings the magnetic state of said core is driven into its condition of high incremental permeability causing an appreciable signal to be induced in said output winding.

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**3,164,812**
**MAGNETIC MEMORY CIRCUITS**
**Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Dec. 5, 1960, Ser. No. 73,669**
**22 Claims. (Cl. 340—174)**

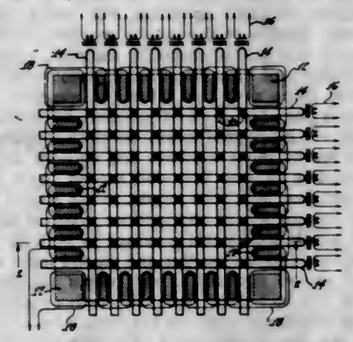


22. A memory device comprising a toroidal magnetic element of a material being capable of assuming stable remanent magnetic states, said element having a plurality of apertures therein arranged to divide said element in a first and a second annular flux path, a word drive winding coupled to said element and linking magnetic material defining both said first and said second flux path, means for applying a read pulse to said drive winding to induce a normal magnetic flux in the same direction in said first and second flux path at each of said apertures, a plurality of bit input windings threading respectively said plurality of apertures and coupled to material defining said first flux path, means for applying one write pulse to said drive winding, means for selectively applying other write pulses of one and the other polarity to said input windings coincidently with said one write pulse to cause flux reversals in said first or said second flux path at said apertures representative of binary information bits, and a plurality of output windings threading respectively said plurality of apertures energized responsive to flux reversals caused by said read pulse for generating output signals indicative of binary information bits stored in said magnetic device.

### 3,164,813
### MAGNETIC DEVICE

Jan A. Rajchman, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 30, 1950, Ser. No. 187,733
32 Claims. (Cl. 340—174)



12. A random access magnetic matrix memory comprising a plurality of cores made of easily saturable magnetic material, said cores being arranged in columns and rows, a common low-reluctance, magnetic return path for said cores, a plurality of coils, each of said rows and each of said columns being enclosed by one of said coils, means to selectively impress voltages on a desired one of said coils enclosing one of said rows and on a desired one of said coils enclosing one of said columns to cause the magnetomotive forces generated by both said selected coils to be applied to a core enclosed within the intersection of said coils, the polarity of said impressed voltages being such that the magnetomotive forces are aidingly applied by both said selected coils to said core at said intersection, each of said impressed voltages having a value sufficiently low to prevent the magnetomotive force generated by said coils upon which it is impressed from driving any of the cores enclosed by said coil to saturation and sufficiently high to permit said aiding magnetomotive forces to drive said core enclosed within said intersection of said coils to saturation, means to impress voltages upon each of the remaining coils, said voltage having an opposite polarity and a lower value than the respective voltages impressed upon each of said selected coils, coil means coupled to said magnetic return path to detect a change in the polarity of one of said cores which is being driven from a predetermined condition of saturation, a delay line having a time delay longer than the duration of the voltage which is applied to cause a one of said cores to be driven from a predetermined condition of saturation, means coupling the output of said coil means to said delay line input, and means coupling the output of said delay line to said means to selectively impress voltages upon the desired ones of said coils respectively enclosing in their intersection said last-named core to restore said core to its predetermined condition of saturation.

### 3,164,814
### MAGNETIC DEVICES

Eugene J. Hebert, Jr., Elkins Park, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 28, 1962, Ser. No. 206,061
10 Claims. (Cl. 340—174)

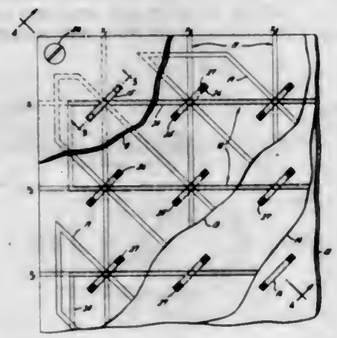
7. An electromagnetic memory unit comprising

a pair of generally rectangular, rigid plates of electrically insulative, non-magnetic material, one facing the other,

high remanence, high permeability magnetic core bars on each of said plates, oriented in general parallelism, in the planes of the plates and diagonally of the edges of the plates;

flexible sheeting of electrically insulative, non-magnetic material between said plates, with core plane windings imprinted on said sheeting; and

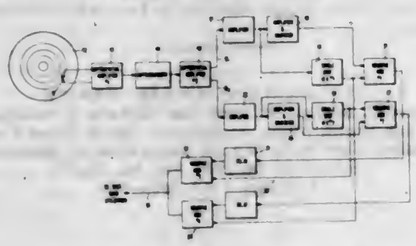
high permeability magnetic core slugs disposed in apertures of said sheeting spaced from said windings, said slugs interconnecting end portions of said core bars to unite each pair of core bars with a pair of core slugs into a closed magnet frame, with said windings extending through said frame to provide the memory unit.



### 3,164,815
### DIGITAL DATA DETECTION CIRCUITRY

James E. Applequist, Los Angeles, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 29, 1962, Ser. No. 206,426
6 Claims. (Cl. 340—174.1)



1. Apparatus for detecting the presence of binary signals in an electrical signal train from a magnetic reproducing element, said binary signals being represented in said signal train by pulses of one or the other polarity, comprising

means for differentiating said signal train to produce a differentiated signal train in which each of said pulses representing one of said binary signals appears as a full cycle signal having a zero crossing point correspondding to the peak of said binary pulse,

means for generating a gate pulse for each half cycle of each said full cycle signal in said differentiated signal train,

means for squaring said differentiated signal train, first comparing means for comparing said gate pulse for each half cycle with said squared signal train to produce a first compare pulse only when the amplitudes of said gate pulse and said squared signal have a predetermined relationship,

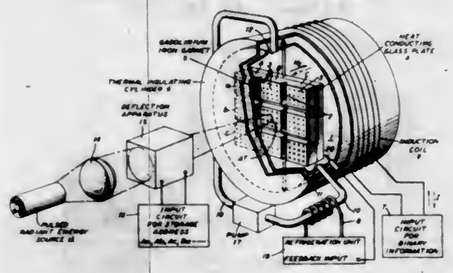
delay means for delaying said first compare pulse, and second comparing means for comparing said delayed compare pulse with said gate pulse generated during the opposite half cycle of the differentiated signal train to produce an output pulse from said second comparing means only when said gate pulse exists during said opposite half cycle.



### 3,164,816
### MAGNETIC-OPTICAL INFORMATION STORAGE UNIT AND APPARATUS

James T. H. Chang, Dunellen, Joseph F. Dillon, Jr., Morris Township, Morris County, and Umberto F. Gianola, Florham Park, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 18, 1963, Ser. No. 331,420
11 Claims. (Cl. 340—174)

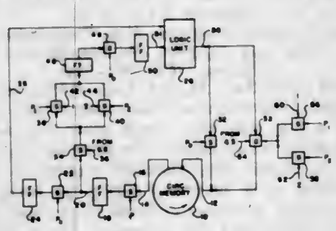


1. Information storage apparatus comprising a ferrimagnetic crystalline material having a characteristic of stable crystalline sublattice magnetizations attending a condition of negligible total spontaneous magnetization, said material having a plurality of storage sites, means for reducing the coercivity of said material at a selected one of said sites relative to the coercivity of said material at the remainder of said sites, and means external to said material for applying perpendicular to said surface a magnetic field having an input binary information responsive polarity and having a magnitude sufficient to align said sublattice magnetizations of said material at said selected site in a responsive polarity but insufficient to disturb said sublattice magnetizations in said material at the remainder of said sites.

### 3,164,817
### MEMORY SYSTEM

Howard M. Fleming, Jr., Basking Ridge, N.J., assignor to Monroe International Corporation, a corporation of Delaware

Filed June 25, 1958, Ser. No. 744,501
4 Claims. (Cl. 340—174.1)

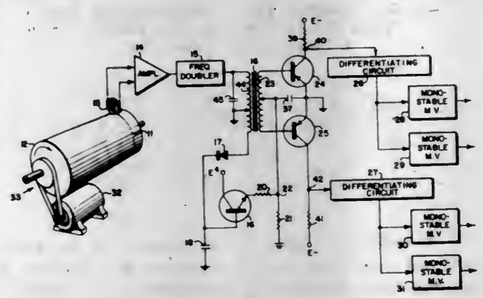


1. A memory circuit comprising a circulating memory member having an input and output means and including signal generating means for providing a separate train of interlaced timing pulses for each of a plurality of word pulse trains contained in a single channel of the memory, means for applying a first and second word pulse train to the input of said memory under control of their respective timing pulses so that said first and second word pulse trains are inserted in said memory in interlaced fashion, first gate means responsive to the coincidence of the said first word pulse train and the first word timing pulses for unlacing the said first word at the output of said memory, second gate means operative by the concidence of the second word pulse train and the second word timing pulses for unlacing the second word pulse train when it appears at the output of said memory, rephasing means including third gate means responsive to the said first word timing pulse train and the output of the second gate means for providing time coincidence between the outputs of the said first and second gate means, logic means responsive to the first and third gate means for performing computations therewith, fourth gate means interconnected between the output of the logic means and the input of the circulating memory member and gated in accordance with the first word timing pulse train for providing a first word pulse train to be restored in the memory, and fifth gate means interconnected between the output of the logic means and the input of the memory member and gated in accordance with the second word timing pulse train for providing a second word pulse train to be interlaced and recorded with said first word pulse train on the said memory member.

### 3,164,818
### TIMING PULSE GENERATOR

Charles A. Kingsford-Smith, Menlo Park, Calif., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Filed Apr. 29, 1960, Ser. No. 25,690
14 Claims. (Cl. 340—174.1)



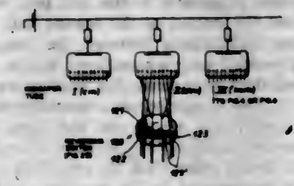
6. Apparatus for generating timed pulses synchronous with an alternating current wave, said apparatus comprising a means responsively coupled to the wave and operable to generate a direct current voltage having a value of a predetermined ratio to the amplitude of the wave, a controllable conduction device biasing means responsively coupled to the controllable conduction device, said biasing means being coupled to receive and combine the alternating current wave and the direct current voltage, said controllable conduction device being operable to assume a first conduction state when the instantaneous value of the wave exceeds the direct current voltage and being further operable to assume an opposite conduction state when the direct current voltage is less than the instananeous value of the wave, a differentiating means coupled to the controllable conduction device and operable to generate a pulse when the controllable conduction device changes its state of conduction.

3,164,819

## INSTRUMENT FOR INDICATING THE ADJUSTED POSITION OF A SLIDING HEAD IN A MACHINE TOOL

Kurt Räntsch, Wetzlar (Lahn), and Otto Ambrosius, Oberbiel, near Wetzlar, Germany, assignors to M. Hensoldt & Söhne, Optische Werke Aktiengesellschaft, Wetzlar (Lahn), Germany

Filed Sept. 20, 1961, Ser. No. 139,506
Claims priority, application Germany, Sept. 23, 1960, H 40,499; Aug. 5, 1961, H 43,334
8 Claims. (Cl. 340—212)



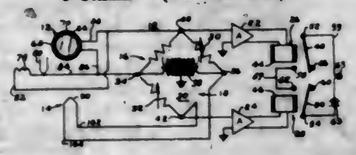
1. An apparatus for indicating the position of a sliding element relative to an element having a scale, comprising: a row of contacts spaced apart so as to define said scale, with each contact representing a digit; a brush connected to said sliding element and engaging said contacts so as to define the position of said sliding element; means for feeding electric current to said brush; and a plurality of numeral-read-out electron tubes each having a plurality of cathodes, said tubes having their respective cathodes connected to said contacts, and said brush thereby completing an electric circuit through a related cathode upon engaging the associated contact thereof.

3,164,820

## FROST, SNOW AND ICE DETECTOR

Jack Hulett, Houston, Tex., assignor to Kar-Trol Signal Co. Inc., Houston, Tex., a corporation of Texas

Filed Oct. 11, 1961, Ser. No. 144,479
6 Claims. (Cl. 340—234)



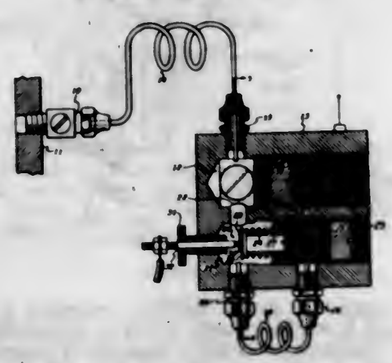
1. A system for detecting the presence of ice, snow, frost and icing conditions on a surface as a function of moisture and temperature and providing an indication of the existence of such conditions, comprising a moisture sensing transducer and a temperature sensing transducer mounted in said surface, a bridge circuit normally balanced in the absence of the conditions to be sensed having a plurality of impedance arms and including a pair of input terminals and a pair of output terminals, said terminals defining junctions between said impedance arms, an amplifier connected to each of the output terminals of the bridge circuit, a relay connected to each of said amplifiers, a power source for said bridge, an indicator, and circuit means controlled by said relays and connecting said indicator means in circuit when both of said relays are energized, said moisture sensing transducer being connected between one of said input and one of said output terminals of said bridge forming a part of one impedance arm thereof and said temperature sensing transducer being connected between the other of said input and the other of said output terminals of said bridge forming a part of another impedance arm thereof, each of said transducers producing an impedance change in its respective impedance arm to cause an unbalance in said bridge in response to the condition to be sensed whereby an output signal responsive thereto will appear at one of its respective output terminals causing the amplifier connected thereto to amplify said signal and energize the connected relay, whereby upon the simultaneous occurrence of the proper temperature and moisture conditions on said surface both of said relays will be energized and cause said indicator to be operated to provide an indication of the existence of said conditions.

3,164,821

## FLUID PRESSURE VIBRATION DETECTOR

Alan Broder, Glen Oaks, and Henry H. Wakeland, New York, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Dec. 28, 1960, Ser. No. 79,036
5 Claims. (Cl. 340—236)



3. A device for detecting characteristic fluid pressure vibrations at a source of fluctuating pressure including a closed end fluid flow line having an entrant pressure chamber connected to the pressure source through a first path of acoustic impedance for noncharacteristic pressure vibrations, an end pressure chamber connected to the entrant pressure chamber through a second path of acoustic impedance for noncharacteristic pressure vibrations, and vibratory means differentially responsive to the characteristic fluid pressure vibrations in the respective chambers and means for detecting the amplitude and frequency of the characteristic vibration including a frequency sensitive circuit having a switch with a movable terminal connected to the vibratory means and a stationary terminal normally spaced in relation to the movable terminal in accordance with the amplitude of the characteristic vibration of the vibratory means.

3,164,822

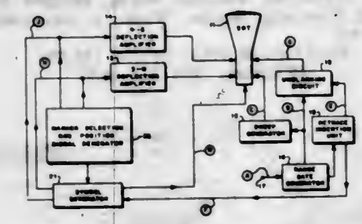
## DIODE WAVE FORM GENERATOR FOR SYMBOL GENERATION DURING THE RETRACE INTERVAL OF A CATHODE RAY TUBE

Frank B. Uphoff, Bustleton Pike, Churchville, Pa.

Filed Aug. 29, 1960, Ser. No. 52,748
6 Claims. (Cl. 340—324)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A symbol waveform generator comprising: a cathode ray tube; a gate generator; sweep generating means for said cathode ray tube coupled to be energized by said gate generator; a second gate generator coupled to said first gate generator to be energized during the sweep retrace interval; a signal generator comprising an input terminal coupled to said second gate generator, means coupled to said input terminal operable to generate a sinusoidal signal in response to application of a gate to said input terminal, phase shifting means coupled to said sinusoidal signal generating means operable to provide a pair of 90 degree phase displaced signals of sinusoidal waveform, a pair of output terminals coupled to said phase shifting means and coupled to the deflection elements of a cathode ray tube, wave shaping means coupled to said phase shifting means operable to convert said sinusoidal signals to signals of commensurate phase and frequency and having a rectangular waveform, differentiating means coupled to said wave shaping means, a first plurality of pulse generating means coupled to be energized by said differentiating means, inverter means coupled to said differentiating means, a second plurality of pulse generating means coupled to said inverter means; a symbol element selector circuit comprising a plurality of diode networks respectively coupled to the output circuits of said first and second pluralities of pulse generating means, each of said diode networks comprising a first





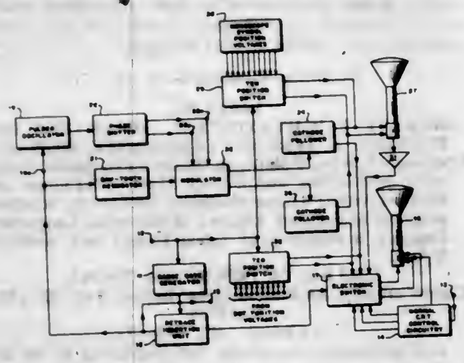
diode having one element thereof coupled to one of said pulse generating means, a plurality of diodes each having one corresponding element coupled to said one element of said first diode, means to apply a bias potential to the other element of said first diode, an output terminal means coupled to a modulating element of said cathode ray tube, circuit means coupling said output terminal means to the other element of said first diode in each of said diode networks, gate generating means operable to selectively apply an enabling gate to the other elements of said plurality of diodes in said diode networks; and symbol position signal generating means coupled to said gate generating means and coupled to the deflection system of said cathode ray tube.

3,164,823

## SYMBOL GENERATING SYSTEM FOR CRT DISPLAYS EMPLOYING RETRACE INSERTION

Frank B. Uphoff, Churchville, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 29, 1961, Ser. No. 120,804
8 Claims. (Cl. 340—324)
(Granted under Title 35, U.S. Code (1952), sec. 266)



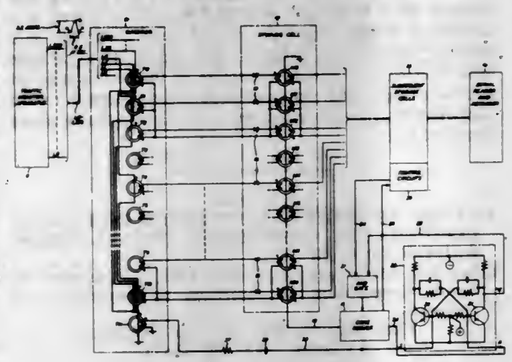
1. A symbol display system in a plan position indicator with a normal raster comprising: a cathode ray tube provided with electron beam control circuitry adapted to be coupled to a source of recurring trigger pulses whereby a sweep is initiated in said cathode ray tube coincidently with the occurrence of each trigger pulse; means coupled to said electron beam control circuitry and to said cathode ray tube operative to unblank the electron beam of said cathode ray tube for a portion of each retrace interval; symbol generating means including electron beam sweep voltage generating means coupled to said electron beam control circuitry to be energized during said retrace interval; said symbol generating means further comprising, a storage tube having a plurality of graphic symbols stored therein and wherein video signals corresponding to a symbol are obtained by operation of an electron scanning beam, circuit means coupling said electron beam sweep voltage generating means conjointly to said storage tube and to said cathode ray tube whereby rasters are synchronously generated therein, means coupled to said storage tube operative to select a stored symbol, circuit means coupling video signals corresponding to the selected symbol to said cathode ray tube, and means operative to apply selected beam positioning voltages to said cathode ray tube along with electron beam sweep voltages and video signals whereby a selected symbol is displayed and positioned on the screen of said cathode ray tube during said portion of said retrace interval.

3,164,824

## ENCODING AND STORAGE APPARATUS FOR TRAFFIC MEASURING

George W. Fredericks, Woodhaven, N.Y., and Wesley T. Wichman, Mountain Lakes, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 11, 1960, Ser. No. 1,603
14 Claims. (Cl. 340—347)

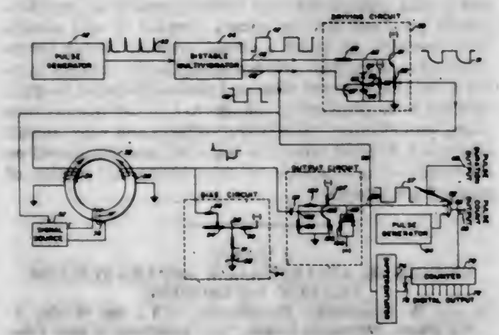


14. In a traffic measuring apparatus, a word organized memory including an encoder portion and a storage portion, said encoder portion comprising a plurality of transformer cores and a trigger core each provided with an output winding, said storage portion comprising a plurality of magnetic cores having stable states of magnetic remanence and each provided with an input winding and a common readout winding, said output winding provided to each of said transformer cores being connected to the input winding to the corresponding one of said plurality of magnetic cores, a plurality of input leads inductively coupled to selected ones of said plurality of transformer cores in accordance with a binary code and to said trigger core, means for directing a current pulse along a particular one of said input leads to provide a resultant voltage across the output windings of said transformer cores and said trigger core, means including said transformer core output windings for storing an equivalent binary notation in said storage portion, information transfer means connected to said storage portion, and variable delay means including means connected to said trigger core output winding and responsive to the voltage developed across said trigger core output winding

upon a decrease of current flow along said particular input lead for controlling the operation of said information transfer means.

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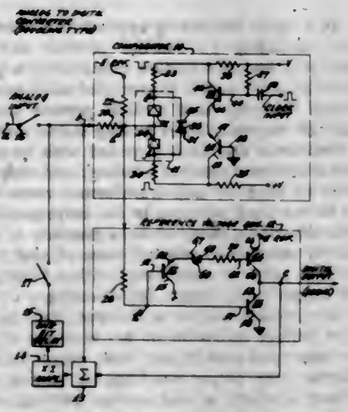
3,164,825
## SIGNAL CONVERTER SYSTEMS
Robert M. Crayford, Venice, Calif., assignor to Electro-Logic Corporation, Venice, Calif., a corporation of California
Filed Oct. 3, 1960, Ser. No. 60,195
11 Claims. (Cl. 340—347)



1. A system for converting an amplitude-representative signal to a time-modulated pulse, comprising: a saturable element having substantial retentivity; means for placing said element in a saturated state; means for driving said element away from said saturated state to a degree proportionate to the amplitude of said signal, whereby said element registers the value of said signal for a variable time interval; and means operative at the termination of said time interval for sensing the period required to return said element to said saturated state in the form of an electrical pulse.

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3,164,826
## ANALOG TO DIGITAL CONVERTER INCLUDING COMPARATOR COMPRISING TUNNEL DIODE BALANCED PAIR
Ellwood P. McGrogan, Jr., Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 31, 1962, Ser. No. 199,190
8 Claims. (Cl. 340—347)



7. In an electrical circuit, the combination comprising a pair of similarly poled tunnel diodes connected in series,

a transistor having input, output, and control electrodes,

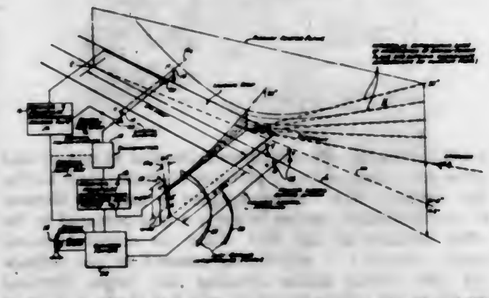
means connecting said input and output electrodes of said transistor across said pair of tunnel diodes,

means coupled to bias said transistor into conductivity, and

means coupled to apply pulses to said control electrode of said transistor to control the conductivity of said transistor to steer current from said biasing means either through said transistor or through said diodes.

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3,164,827
## AIRCRAFT NAVIGATION AND LANDING CONTROL SYSTEM
Fritz K. Preikschat, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,494
28 Claims. (Cl. 343—6.5)



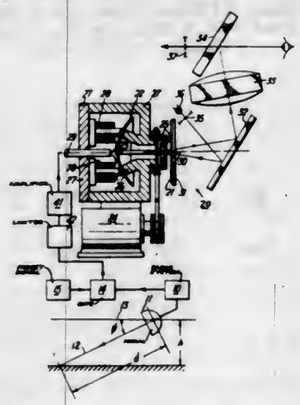
1. In an aircraft landing system, in combination with a landing strip, a pair of forwardly directed receiving antenna elements operable at the same electromagnetic wave energy frequency and disposed in an array which defines a composite antenna pattern characterized by a family of surfaces projecting longitudinally of the landing strip and converging rearwardly and into approximately parallel relationship with a selected aircraft touchdown path to the landing strip, each of said surfaces being defined by points from which there is a constant difference in the electrical distances to the respective antenna elements, and phase comparator means having inputs respectively connected to said elements and operable to convert into an electrical response the electrical phase difference between electromagnetic wave energy signals received by said elements from an aircraft in said pattern, and means responsively connected to said phase comparator means, operable to transmit information related to said response for indicating position of the aircraft transversely in relation to said surfaces.

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3,164,828
## AIRCRAFT FLIGHT-CONTROL APPARATUS DISPLAYING A TERRAIN CLEARANCE SIGNAL
Mallinson Powley, Edinburgh, James Boyd Smith, Portobello, Midlothian, and Donald Murdo McCallum and Michael Arthur Vivian Matthews, Edinburgh, Scotland, assignors to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Feb. 20, 1959, Ser. No. 794,763
Claims priority, application Great Britain, Feb. 22, 1958, 5,816/58
10 Claims. (Cl. 343—7)

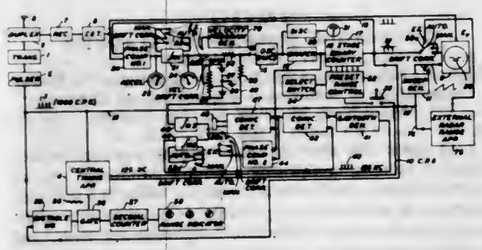
1. Flight-control apparatus for displaying in an aircraft at any given moment an indication of the course in elevation of the aircraft appropriate to profile flying at that moment including means including a gyro rotor for displaying said indication in the form of an optical image at infinity which is movable in elevation in dependence on any deviation of the axis of said rotor from a datum direction in elevation, a datum image located to coincide with said optical image when the axis of the rotor lies in said datum direction, means for applying constraints to the rotor by eddy currents induced in a part thereof by a magnetic system fixed with respect to that datum direction and lying entirely in the plane of elevation, a radar system for directing a beam transmission to the ground ahead of the aircraft and deriving from that transmission a height-indicating signal dependent on the range to the ground ahead of the aircraft and on the angle of depression of that range from the flight line, a comparison stage for deriving an error signal dependent solely on the extent and sense of the difference between said height-indicating signal and a predetermined value thereof appropriate to the desired height above the ground of said course, and means for so applying said error signal to energise said magnetic system and thereby vary the elevational inclination of the rotor axis as to displace said optical image above the datum image when the height of the aircraft falls below the desired height and vice versa, and to effect said displacement at a speed which is dependent on the magnitude of said error signal, whereby so long as said optical image is maintained in coincidence with said datum image the course of the aircraft in elevation is substantially a profile course.





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3,164,829
## TRACKING OF MOVING TARGETS
Schuyler Pardee, Jr., New Vernon, and Willard A. Robinson, Morris Plains, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 5, 1962, Ser. No. 186,298
15 Claims. (Cl. 343—7.3)



1. In a pulse echo ranging system, means for generating a primary train of pulses that recur at a preassigned fixed rate R,

means controlled by said pulses for projecting consecutive bursts of energy toward a target,

means for recovering energy burst echoes reflected from said target,

a high-stability self-oscillator proportioned to deliver a wave of frequency approximately $n$R where $n$ is an integer,

said oscillator having a controllably variable frequency-determining element,

a divider, of fixed division factor $n$, for developing from said wave a secondary train of range mark pulses of repetition rate approximately R,

said divider comprising a binary counter having a plurality of intercoupled stages, each having two different stable states,

a first comparator for comparing the phase of said secondary pulse train with that of the sequence of burst echoes to derive a first phase error signal,

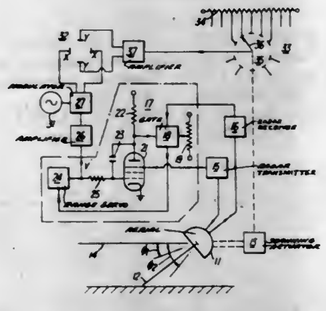
a first control path extending from said first comparator to the variable frequency-determining element of said oscillator,

said path including means for applying said phase error signal by way of said path to said element to alter the frequency of said oscillator in a sense to reduce the magnitude of said phase error signal,

whereby said secondary pulse train remains in synchronism with recovered burst echoes reflected from a selected target having a relative velocity toward or away from said echo recovering means.

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3,164,830
## AIRCRAFT FLIGHT-CONTROL APPARATUS
Mallinson Powley, Edinburgh, James Boyd Smith, Portobello, Midlothian, and Donald Murdo McCallum and Michael Arthur Vivian Matthews, Edinburgh, Scotland, assignors to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Apr. 9, 1959, Ser. No. 805,339
Claims priority, application Great Britain, Apr. 10, 1958, 11,474/58
6 Claims. (Cl. 343—11)



1. Flight-control apparatus for providing an observer in an aircraft with a head-up display at infinity to aid low-flying comprising radar means for producing in respect of each of a plurality of directions in elevation to the ground ahead of the aircraft relative to a datum direction in the aircraft a signal representative of the range to the ground in that direction, means responsive to said signals for producing images of a plurality of parallel straight lines equal in number to said directions, the order of and spacing between said lines corresponding to the order of and angular spacing between said directions and each line having a length inversely proportional to the range to the ground in the corresponding direction, and means for producing a head-up display at infinity of all of said lines simultaneously, with the lines normal to the plane of elevation in which said directions lie and with the shortest line uppermost, in register with the observer's view of the

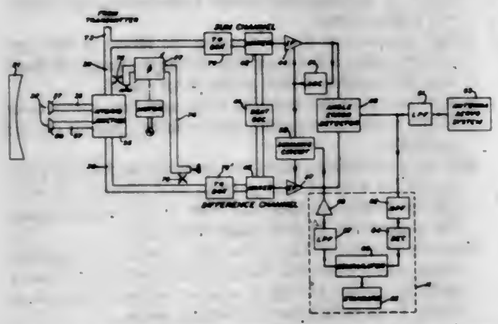
ground ahead of the craft, whereby said display indicates the undulations of the ground with which it is seen in registration.

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3,164,831
## AUTOMATIC GAIN CONTROL CIRCUITS FOR DIRECTIVE RECEIVING SYSTEMS

William L. Mraz, Morris Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 9, 1956, Ser. No. 583,658
8 Claims. (Cl. 343—16)



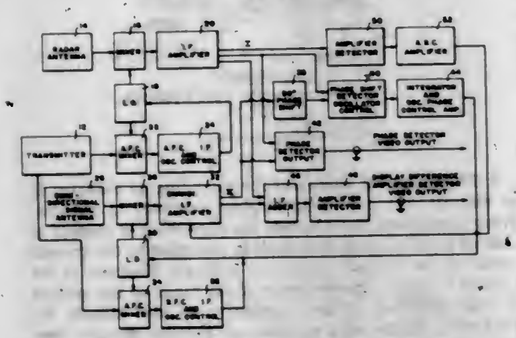
1. A monopulse radar system comprising a sum channel, a difference channel, means for providing a radio frequency crosstalk path including a variable phase shifter interconnecting said sum channel and said difference channel, means for periodically varying said phase shifter at a frequency higher than the frequency of the steering intelligence signals received by said radar system, an angle error detector coupled to said sum and difference channels, and automatic gain control circuit means coupled to the output of said angle error detector and responsive only to signals from said crosstalk path for generating a gain control voltage and applying it to said difference channel.

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3,164,832
## IF SIDELOBE CANCELLATION

Arthur A. Varela, Alexandria, Va., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 26, 1962, Ser. No. 247,413
10 Claims. (Cl. 343—17.1)



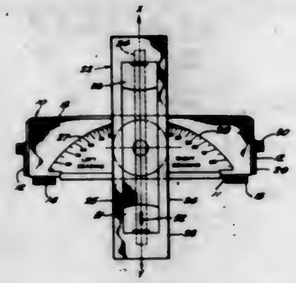
1. In a radar system having a transmitter and a receiver, means for cancelling noise modulated CW signal jamming components comprising:
an omnidirectional signal receiver for receiving noise modulated CW jamming signal components from any direction;
means for combining intermediate frequency signals from the radar receiver and intermediate frequency signals from the said omnidirectional signal receiver for producing an output indicating the difference in phase between noise signals;
control circuit means responsive to said combining means for controlling the intermediate frequency in said omnidirectional signal receiver;
whereby responsive to said control circuit means the noise modulated CW jamming signal components present in each channel are caused to cancel out.

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3,164,833
## DIRECTION FINDER

Sidney P. Held, 617 Illinois Court, Apt. 9, Segundo, Calif.

Filed Nov. 6, 1962, Ser. No. 235,712
5 Claims. (Cl. 343—115)



1. In a radio direction finder, the combination comprising:
a main housing adapted for containing a radio receiver, and having an elongated, substantially flat upper surface;
an antenna housing having an elongated substantially rectangular configuration in the horizontal plane and disposed upon said upper surface of said main housing;
an antenna disposed within said antenna housing;
means mounting said antenna housing from said main housing for pivotal movement in the horizontal plane about a vertical axis spaced inwardly from both longitudinal side edges of said antenna housing;
and a pair of sets of angular scale indications on said main housing upper surface, one on each end of said main housing, the inner ends of said sets of scale indications being separated by a distance equal to the width of said antenna housing whereby when the longitudinal axis of said antenna housing is disposed perpendicular to the longitudinal axis of said main housing each longitudinal side edge of said antenna housing is aligned with the inner end of the corresponding set of scale indications.

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3,164,834
## WAVEGUIDE TOWER WITH STACKED SLOT RADIATORS

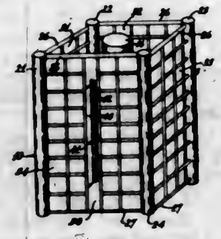
Nicholas Nikolayuk, Gibbsboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 25, 1960, Ser. No. 71,647
6 Claims. (Cl. 343—771)

2. A tower-like antenna for providing a predetermined radiation pattern, comprising a hollow conductor and an inner conductor, said hollow conductor being of fabricated construcion and having a plurality of substantially plane conductive members extending longitudinally from end to end of said antenna, a plurality of corner supports, one of said supports being located at and secured to each line of intersection of said substantially plane conductive members, each of said substantially plane conductive members having a plurality of elongated slots spaced along said hollow conductor and extending substantially longitudinally



along said conductor, a conductive coupler member positioned within said hollow conductor adjacent one of the longer edges of each of said slots, each of said coupler members being fastened to said hollow conductor of fabri-



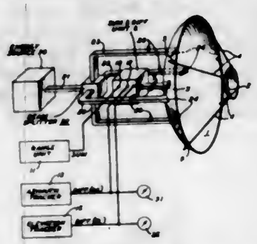
cated construction with its longitudinal axis substantially parallel to said one edge of its respective slot, and each of said coupler members being secured to said inner conductor whereby to provide mechanical support for said inner conductor.

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3,164,835
## ALIGNMENT OF MICROWAVE ANTENNA

Dietrich A. Alsberg, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 7, 1962, Ser. No. 202,041
8 Claims. (Cl. 343—779)



2. In combination with a microwave antenna comprising
a first member for gathering incoming radiation and a second member onto which gathered radiation is directed,
a symmetrical array of like sources of phase-coherent auxiliary radiation fixedly attached to said first member and disposed to direct their auxiliary beams toward said second member
and means for deriving electrical signals indicative of the phase relationships between said auxiliary beams at said second member.

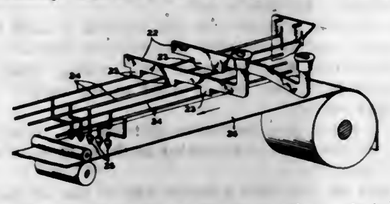
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3,164,836
## MAGNETIC DATA RECORDING APPARATUS

Loring P. Crosman, Wilton, Conn., assignor to Sperry Rand Corporation, a corporation of Delaware

Original application Nov. 20, 1953, Ser. No. 393,328, now Patent No. 2,939,758, dated June 7, 1960. Divided and this application Aug. 7, 1959, Ser. No. 846,220
4 Claims. (Cl. 346—74)

1. In a machine of the class described, the combination with a plurality of type bars, and a keyboard comprised of key levers operable for selectively actuating said type bars to print a selected character; of magnetizing means comprising permanent magnets actuable for completing magnetic circuits through related fixed core structures arranged to provide a flux pattern in a code configuration corresponding to the character printed by the associated type bar, permutation means operated by said key levers for selectively actuating said magnets combinationally in accordance with the code configuration assigned to the corresponding character, and a magnetizable recording



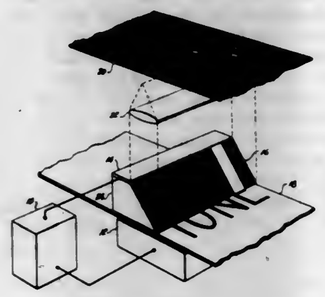
medium supported in operative recording relationship to said core structures for receiving the code flux pattern when a selected type bar is actuated.

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3,164,837
## ELECTROSTATIC PRINTING SYSTEM UTILIZING ILLUMINATED PHOTOCONDUCTIVE MATERIAL

Joseph T. McNaney, La Mesa, Calif., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Apr. 22, 1960, Ser. No. 24,050
14 Claims. (Cl. 346—74)




1. The combination comprising:: a sheet of photoconductive material having a given width; a first electrode in electrical contact with one longitudinal edge of said sheet; a second electrode spaced from the other longitudinal edge of said sheet; and means responsive to the impingement of light from a point for irradiating said photoconductive material in the form of a narrow transverse strip, said strip extending from said first electrode across said given width to said other longitudinal edge—whereby a potential applied to said first electrode may cause an electrical discharge between said second electrode and the ends of said strips.

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3,164,838
## PANNING AND TILTING MOUNT FOR A CAMERA

Ervin L. Heinrich, 4506 Paseo De Las Tortugas, Torrance, Calif.

Filed Sept. 28, 1961, Ser. No. 141,350
3 Claims. (Cl. 352—69)

1. Panning and tilting apparatus for mounting camera scanning equipment or the like, said apparatus comprising:
a weatherproof housing;
a base member below said housing and having a portion located within said housing;
a horizontally oriented pan gear located in said housing and fixed to said base member;
a reversible electric pan motor and a reversible electric tilt motor secured to said housing within the interior thereof;
a platform for mounting scanning equipment or the like;

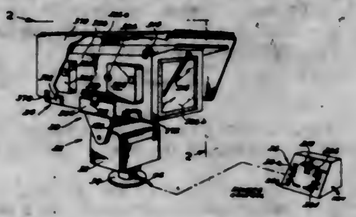
a horizontally oriented shaft fixedly mounting said platform and extending through said housing, said shaft being mounted to said housing for rotation about a horizontal axis;

a vertically oriented tilt gear located in said housing and fixed to said shaft for rotation therewith;

a pan worm gear located in said housing, meshed with said pan gear, and coupled to the output of said pan motor;

a tilt worm gear located in said housing, meshed with said tilt gear, and coupled to the output of said tilt motor;

a pair of pan limit switches and a pair of pan limit



stops therefor mounted to said base member and said housing, said pan limit switches being in electrical circuit with said pan motor, one of said switches being actuatable by one of said stops after a predetermined panning of said housing in one direction relative to said base member and the other of said switches being actuatable by the other of said stops after a predetermined panning of said housing in the opposite direction relative to said base member, the relative positions of said switches and said stops being adjustable to adjust the extent of said predetermined panning in either direction;

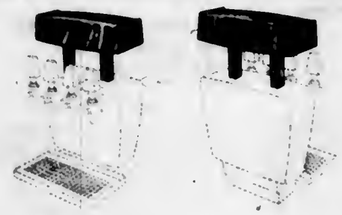
a pair of tilt limit switches and a tilt limit stop therefor mounted to said housing and said shaft, said tilt limit switches being in electrical circuit with said tilt motor, one of said switches being actuatable by said tilt limit stop after a predetermined tilting of said platform in one direction relative to said housing, and the other of said tilt limit switches being actuatable by said tilt limit stop after a predetermined tilting of said platform in the opposite direction relative to said housing, the relative positions of said tilt limit stop and said tilt limit switches being adjustable to adjust the extent of said predetermined tilting in either direction;

and remotely located control means electrically coupled to said pan and tilt motors and to said pan limit switches and said tilt limit switches and responsive to actuation of either of said pan limit switches to stop said pan motor and responsive to actuation of either of said tilt limit switches to stop said tilt motor, said control means including a manually operable control element and four control switches disposed about said element in substantially equally spaced relationship, said control switches being in electrical circuit with said pan and tilt motors whereby movement of said control element in one direction operates one of said control switches to effect rotation of said tilt motor in one direction and movement of said control element in the opposite direction operates the opposite one of said control switches to effect rotation of said tilt motor in the opposite direction, and whereby the remaining pair of control switches are similarly operable by said control element to effect rotation of said pan motor in opposite directions, said remotely located control means also including means operable independently of said control element in circuit with said pan motor and said pan limit switches for automatically reversing the rotation of said pan motor each time one of said pan limit switches is engaged by one of said pan limit stops.

# DESIGNS

## JANUARY 5, 1965

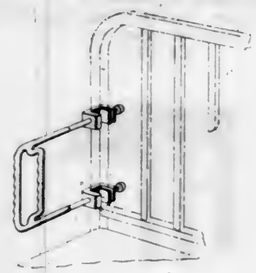
199,955
**BEVERAGE DISPENSER, OR SIMILAR ARTICLE**
Richard T. Cornelius, Minneapolis, and James Robert Reichow, Edina, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Jan. 3, 1964, Ser. No. 78,070
Term of patent 14 years
(Cl. D2—3)



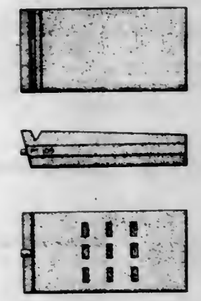
199,956
**CAP**
Walter E. Schuessler, 800 Redbud Lane, Wilmette, Ill.
Continuation of design applications Ser. No. 74,015, Mar. 18, 1963, and Ser. No. 74,171, Mar. 28, 1963. This application Sept. 14, 1964, Ser. No. 81,694
Term of patent 14 years
(Cl. D3—13)



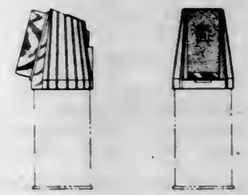
199,957
**HAND GRIP ATTACHMENT FOR A HOSPITAL-TYPE BED**
Joseph M. Bertoldo, 627 Salem St., Malden 48, Mass.
Filed Nov. 30, 1962, Ser. No. 72,664
Term of patent 14 years
(Cl. D5—2)



199,958
**BATHING AID SPONGE**
Dale W. Rowley, Firesteel, S. Dak.
Filed Mar. 5, 1963, Ser. No. 73,830
Term of patent 7 years
(Cl. D9—2)



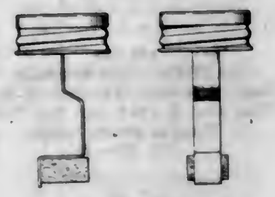
199,959
**COMBINATION FOAM DISPENSER AND BRUSH FOR CLEANING UPHOLSTERY OR THE LIKE**
Sheldon David Hulsh, New York, N.Y., assignor to Jerclaydon, Inc., Clifton, N.J., a corporation of Florida
Filed Mar. 8, 1963, Ser. No. 73,897
Term of patent 14 years
(Cl. D9—2)



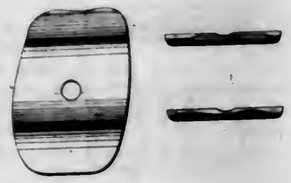
199,960
**TOOTHBRUSH AND CUP COMBINATION**
Lindsey Taylor, 4150 Mockingbird Lane, Dallas, Tex.
Filed June 23, 1964, Ser. No. 80,524
Term of patent 14 years
(Cl. D9—2)



199,961
SHOE SOLE DRESSING APPLICATOR
Homer M. Hare, Jr., 3836 Don Julio St., North Highlands, Calif.
Filed Apr. 6, 1964, Ser. No. 79,362
Term of patent 14 years
(Cl. D9—2)



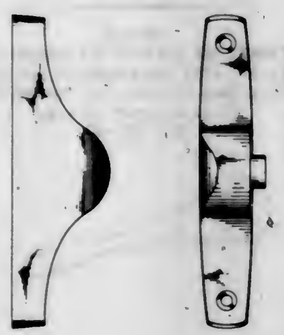
199,962
HAND HELD FLEXIBLE SCRAPER
Dana Peterson, P.O. Box 2141, San Diego, Calif.
Filed Jan. 22, 1964, Ser. No. 78,319
Term of patent 14 years
(Cl. D9—6)



199,963
PANIC BAR
John R. Foster, Indianapolis, Ind., assignor to Vonnegut Hardware Company, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 18, 1963, Ser. No. 74,497
Term of patent 14 years
(Cl. D10—8)



199,964
PANIC EXIT CASE
John R. Foster, Indianapolis, Ind., assignor to Vonnegut Hardware Company, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 18, 1963, Ser. No. 74,498
Term of patent 14 years
(Cl. D10—8)



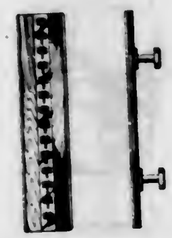
199,965
DRAWER PULL
Morris Loeb, 697 West End Ave., New York, N.Y.
Filed June 11, 1963, Ser. No. 75,309
Term of patent 14 years
(Cl. D10—8)



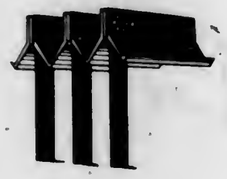
199,966
PANIC EXIT UNIT
John R. Foster, Indianapolis, Ind., assignor to Vonnegut Hardware Company, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 18, 1963, Ser. No. 74,509
Term of patent 14 years
(Cl. D10—8)



199,967
DOOR PULL
Robert Allyn Gelert, 811 Ferndale, Orange, Calif.
Filed Dec. 20, 1963, Ser. No. 77,881
Term of patent 14 years
(Cl. D10—8)

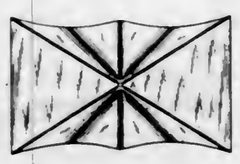


199,968
PORTICO
Richard D. Burke, Wichita, and Ben J. Kingdon, Haysville, Kans., assignors to Lazy R, Incorporated, Wichita, Kans., a corporation of Kansas
Filed Dec. 13, 1963, Ser. No. 77,776
Term of patent 14 years
(Cl. D13—1)





199,969
FACING PLATE
Edward C. Hallock, 86 Woodland Ave., Summit, N.J.
Filed Dec. 20, 1963, Ser. No. 77,880
Term of patent 14 years
(Cl. D13—1)



199,970
ARCHITECTURAL SANDWICH PANEL
Verne F. Goodrich, 1410 Monroe Ave., San Mateo, Calif.
Filed Jan. 2, 1964, Ser. No. 78,002
Term of patent 14 years
(Cl. D13—1)



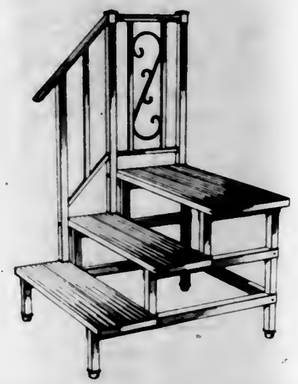
199,971
DIVING BOARD
John Hladchuk and Lawrence Raymond Sauerwein, Southfield, Mich. (both of 4763 Dixie Highway, Drayton Plains, Mich.)
Filed May 4, 1964, Ser. No. 79,789
Term of patent 3½ years
(Cl. D13—1)



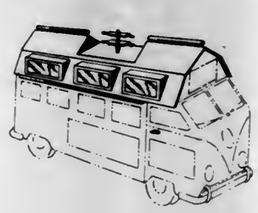
199,972
ENTRANCE STAIRCASE FOR MOBILE HOMES AND THE LIKE
Francis L. Struben, Baltimore County, Md., assignor to Silver Top Manufacturing Co., Inc., White Marsh, Md., a corporation of Maryland
Filed Mar. 10, 1964, Ser. No. 78,943
Term of patent 14 years
(Cl. D13—7)



199,973
ENTRANCE STAIRCASE FOR MOBILE HOMES AND THE LIKE
Francis L. Struben, Baltimore County, Md., assignor to Silver Top Manufacturing Co., Inc., White Marsh, Md., a corporation of Maryland
Filed Mar. 10, 1964, Ser. No. 78,945
Term of patent 14 years
(Cl. D13—7)



199,974
MOBILE TELEVISION AND PROJECTION DISPLAY VEHICLE
Myer Apfelbaum, 2757 N. 5th St., Philadelphia 33, Pa.
Filed Oct. 23, 1963, Ser. No. 77,124
Term of patent 14 years
(Cl. D14—3)



199,975
COMBINATION PORTABLE CAR CONSOLE AND ARM REST
Oliver H. Riedel, Willmar, Minn., assignor to Child's Play Products, Inc., Willmar, Minn., a corporation of Minnesota
Filed Sept. 27, 1963, Ser. No. 70,756
Term of patent 14 years
(Cl. D14—6)



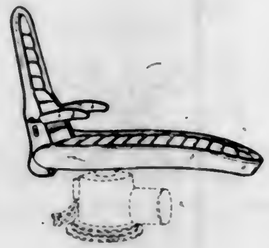
199,976
COMBINED TABLE AND SEATING UNIT
Barton M. Levoy, Great Neck, N.Y., assignor to Tura, Inc., Great Neck, N.Y., a corporation of New York
Filed Sept. 27, 1963, Ser. No. 76,772
Term of patent 14 years
(Cl. D15—1)



199,977
SWIVEL CHAIR
William Joseph Carr, Gardner, Mass., assignor to Heywood-Wakefield Company, Gardner, Mass., a corporation of Massachusetts
Term of patent 14 years
(Cl. D15—1)



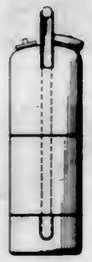
199,978
DENTAL CHAIR
William J. Carnese, 1946 SE. 25th St., Portland, Oreg.
Filed Aug. 9, 1963, Ser. No. 76,169
Term of patent 14 years
(Cl. D15—3)



199,979
STEP STOOL
Donald L. Bates and Jerry L. Neal, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Jan. 6, 1964, Ser. No. 78,073
Term of patent 14 years
(Cl. D15—8)

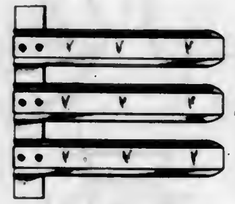


199,980
PORTABLE FIRE EXTINGUISHER
Charles K. Huthsing, Jr., 1685 Shermer Road, Northbrook, Ill.
Filed Aug. 11, 1961, Ser. No. 66,317
Term of patent 14 years
(Cl. D16—2)

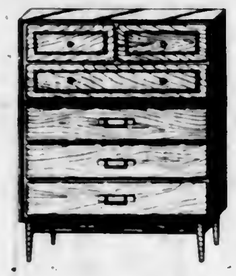




199,981
RACK FOR SUPPORTING COOKED FRANKFURTERS
Winferd W. Litton, 105 Lake Shore Drive, Charleston, W. Va.
Filed Sept. 12, 1962, Ser. No. 71,664
Term of patent 14 years
(Cl. D33—3)



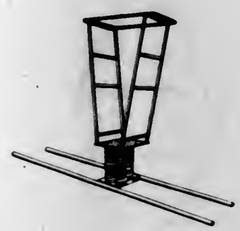
199,982
CHEST
William Joseph Carr, Gardner, Mass., assignor to Heywood-Wakefield Company, Gardner, Mass., a corporation of Massachusetts
Filed Mar. 25, 1964, Ser. No. 79,187
Term of patent 14 years
(Cl. D33—6)



199,983
TABLE
William Joseph Carr, Gardner, Mass., assignor to Heywood-Wakefield Company, Gardner, Mass., a corporation of Massachusetts
Filed Mar. 25, 1964, Ser. No. 79,168
Term of patent 14 years
(Cl. D33—14)



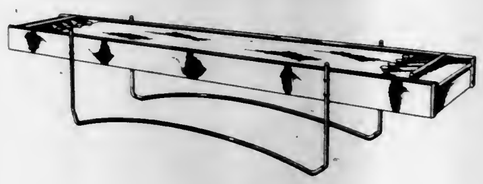
199,984
EXERCISING DEVICE
Duane E. Mitchell, Shandon Road, Paso Robles, Calif.
Filed June 12, 1964, Ser. No. 80,377
Term of patent 14 years
(Cl. D34—5)



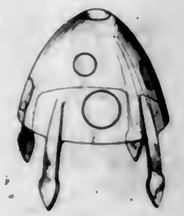
199,985
CRIBBAGE BOARD
Charles Scott, 2144–A W. Sono Ave., Anaheim, Calif.
Filed July 7, 1964, Ser. No. 80,734
Term of patent 7 years
(Cl. D34—5)



199,986
GAMEBOARD TABLE
Mancel F. Guthrie, 1810 Eye St., Bakersfield, Calif.
Filed Aug. 31, 1964, Ser. No. 81,506
Term of patent 7 years
(Cl. D34—5)



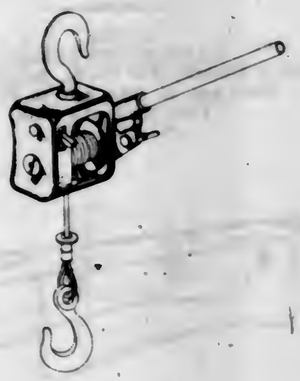
199,987
PLANT PROTECTOR
Robert J. Rosenvold and Lloyd K. Rosenvold, both of 1101 Main St., Montrose, Colo.
Filed Nov. 1, 1963, Ser. No. 77,233
Term of patent 14 years
(Cl. D35—1)



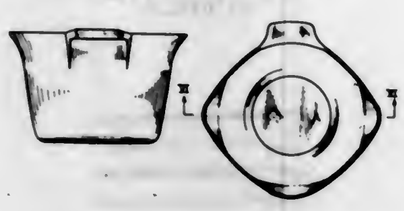
199,988
SADDLE RACK OR SIMILAR ARTICLE
Richard Joseph Kadison, 1828 Wyoming Ave., Forty Fort, Pa.
Filed Apr. 7, 1964, Ser. No. 79,387
Term of patent 7 years
(Cl. D38—1)



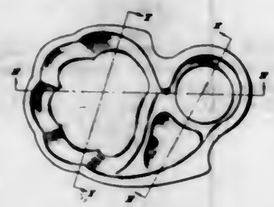
199,989
PORTABLE HOIST
Stephen J. Hoff, Richmond, Ind., assignor to Hoffco, Inc., Richmond, Ind., a corporation of Indiana
Filed Oct. 17, 1963, Ser. No. 77,013
Term of patent 14 years
(Cl. D41—1)



199,990
SAUCEPAN OR THE LIKE
Jerry E. Wright, 72 Catherine St., Corning, N.Y.
Filed Dec. 23, 1963, Ser. No. 77,908
Term of patent 14 years
(Cl. D44—1)



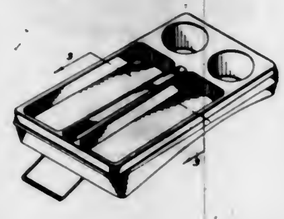
199,991
SERVING TRAY
Charles R. McManamey, 2500 Gary Ave., Lansing, Mich.
Filed June 18, 1964, Ser. No. 80,468
Term of patent 14 years
(Cl. D44—10)



199,992
ARTICHOKE HOLDER
Sebastian Sofio, 1519 Independence St., New Orleans, La.
Filed July 7, 1964, Ser. No. 80,744
Term of patent 14 years
(Cl. D44—10)



199,993
TRAY FOR A CAR SEAT REST
Frank B. Cohen, 156 Barbados, Tampa, Fla.
Filed July 10, 1964, Ser. No. 80,803
Term of patent 14 years
(Cl. D44—10)

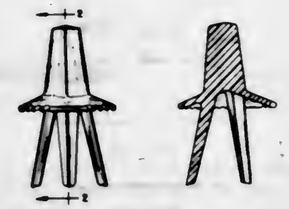




199,994
CONDIMENT DISPENSER OR THE LIKE
Ruediger W. Knodt, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 21, 1964, Ser. No. 80,950
Term of patent 14 years
(Cl. D44—22)



199,995
DISPENSING CLOSURE
Ruediger W. Knodt, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 21, 1964, Ser. No. 80,951
Term of patent 14 years
(Cl. D44—22)



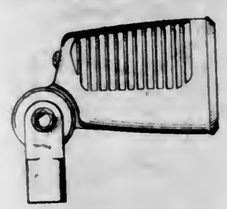
199,996
EARRING
Ralph Pintarelli, 83 Waterman Ave., Johnston, R.I.
Filed Dec. 16, 1963, Ser. No. 77,819
Term of patent 14 years
(Cl. D45—9)



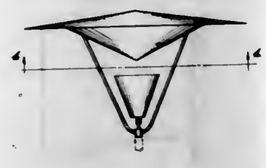
199,997
YARN CLEARER
Siegfried Peyer, Kantonsstrasse, Bach, Zurich, Switzerland
Filed July 22, 1963, Ser. No. 75,907
Term of patent 14 years
(Cl. D47—5)



199,998
LAMP HOLDER
Leonard Atkin, Springfield, and Richard Sangiamo, Roselle Park, N.J., assignors to Stonco Electric Products Company, a corporation of New Jersey
Filed Nov. 26, 1963, Ser. No. 77,556
Term of patent 14 years
(Cl. D48—20)



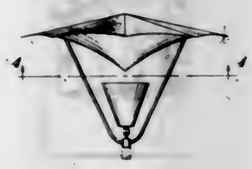
199,999
LIGHT FIXTURE
Peter Simon, 1255 W. Chippewa River Road, Midland, Mich.
Filed Apr. 4, 1963, Ser. No. 74,303
Term of patent 14 years
(Cl. D48—31)



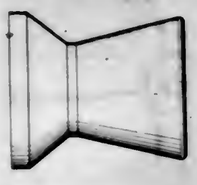
200,000
DISPENSING CONTAINER FOR TABLETS
Howard A. Richards and Jack L. Williams, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed Dec. 16, 1963, Ser. No. 77,824
Term of patent 14 years
(Cl. D58—12)



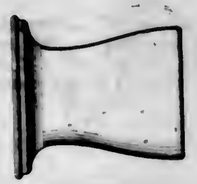
200,001
LIGHT FIXTURE
Peter Simon, 1255 W. Chippewa River Road, Midland, Mich.
Original design application Apr. 4, 1963, Ser. No. 74,303. Divided and this application June 22, 1964, Ser. No. 80,770
Term of patent 14 years
(Cl. D48—31)



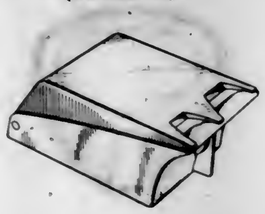
200,002
DOOR KNOB
Marron Kendrick, Atherton, Calif., assignor to Schlage Lock Company, a corporation
Filed July 31, 1964, Ser. No. 81,094
Term of patent 14 years
(Cl. D50—3)



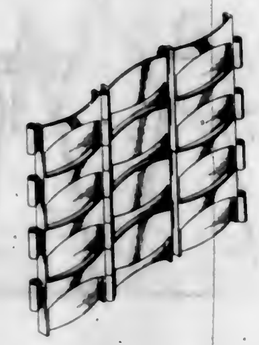
200,003
DOOR KNOB
Marron Kendrick, Atherton, Calif., assignor to Schlage Lock Company, a corporation
Filed July 31, 1964, Ser. No. 81,099
Term of patent 14 years
(Cl. D50—3)



200,004
DISPENSER FOR ADHESIVE BANDAGES
Henry A. Holzworth, Bayside, John D. Wark, Freeport, and Peter Schladermundt, Bronxville, N.Y., assignors to Johnson & Johnson, a corporation of New Jersey
Filed July 10, 1963, Ser. No. 75,735
Term of patent 14 years
(Cl. D52—2)



200,005
FOLDABLE TRAVERSING SCREEN
James Hirashiki, Los Angeles, Calif., assignor to Jayils Industries, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 21, 1963, Ser. No. 77,531
Term of patent 14 years
(Cl. D54—2)



200,006
SPOON OR SIMILAR ARTICLE
Albert J. Heintz, 328 Griden St., Buffalo, N.Y.
Filed Nov. 30, 1962, Ser. No. 72,668
Term of patent 14 years
(Cl. D54—12)



200,007
SPOON OR SIMILAR ARTICLE
Martin Schnur, West Orange, and Mel Appel, Murray Hill, N.J., assignors to Dake Plastics, Inc., Elizabeth, N.J.
Filed May 3, 1963, Ser. No. 74,734
Term of patent 14 years
(Cl. D54—12)

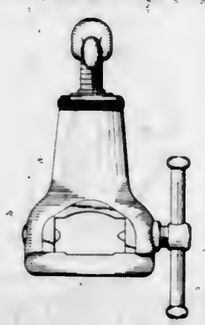




200,008
FORK OR SIMILAR ARTICLE
John C. Tatum, 224 Ryan Ave., St. Paul, Minn.
Filed June 17, 1963, Ser. No. 75,387
Term of patent 14 years
(Cl. D54—12)



200,009
FLARING TOOL
Anton J. Janik and William A. Lauck, Elyria, Ohio, assignors to The Ridge Tool Company, Elyria, Ohio, a corporation of Ohio
Filed Mar. 1, 1963, Ser. No. 73,775
Term of patent 14 years
(Cl. D54—13)



200,010
STORAGE BATTERY HOLD-DOWN BRACKET
Max Antritter, Mile Hill Road, Boylston, Mass.
Filed Mar. 8, 1963, Ser. No. 73,880
Term of patent 14 years
(Cl. D54—13)



200,011
SHOT GUN SHELL CARTRIDGE TRIMMER
George L. Strebler, 4015 Oregon, St. Louis 18, Mo.
Filed Oct. 28, 1963, Ser. No. 77,185
Term of patent 14 years
(Cl. D55—1)



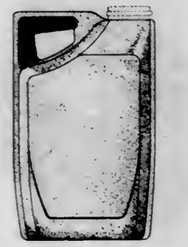
200,012
HEAD MEMBER FOR A TUBULAR VIBRATOR FOR VIBRATING UNSET CONCRETE
Ona Louis Whitman, Glendale, Calif., assignor to Viber Company, Burbank, Calif., a corporation of California
Filed Jan. 10, 1964, Ser. No. 78,154
Term of patent 14 years
(Cl. D55—1)



200,013
JUG
Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Apr. 15, 1964, Ser. No. 79,517
Term of patent 14 years
(Cl. D58—5)



200,014
JUG
Albert B. Mojonnier, 5357 NE. River Road, Chicago, Ill., and John S. Frazer, 2—04 Kenneth Ave., Fair Lawn, N.J., assignors of one-half to Albert Mojonnier, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 2, 1964, Ser. No. 80,684
Term of patent 14 years
(Cl. D58—5)



200,015
BOTTLE OR SIMILAR ARTICLE
Robert Adell, Detroit, Mich., assignor to Adell Chemical Corporation, Detroit, Mich., a corporation of Michigan
Filed June 5, 1963, Ser. No. 75,240
Term of patent 14 years
(Cl. D58—8)



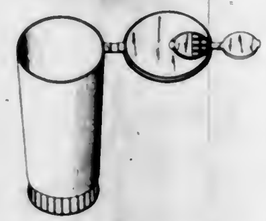
200,016
JEWELRY BOX
Jerome Shiffman, 128 Carthage Road, Scarsdale, N.Y.
Filed May 28, 1964, Ser. No. 80,194
Term of patent 7 years
(Cl. D58—12.7)



200,017
JEWELRY BOX
Veola Williams, 1821 Derby St., Berkeley, Calif.
Filed Sept. 8, 1964, Ser. No. 81,638
Term of patent 14 years
(Cl. D58—12.7)



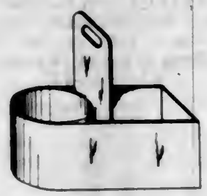
200,018
COMBINED CONTAINER AND DISPENSER
Karl Brocken, Aurora, Ill., assignor to Anfinsen Plastic Molding Inc., Aurora, Ill., a corporation of Illinois
Filed Feb. 26, 1963, Ser. No. 73,722
Term of patent 3½ years
(Cl. D58—17)



200,019
DISPENSING CONTAINER FOR POWDERED MATERIAL
Jerome Gould, Encino, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
Filed Mar. 23, 1964, Ser. No. 79,136
Term of patent 14 years
(Cl. D58—17)



200,020
CARRIER FOR LAUNDRY MATERIALS
Marshall Dale Reiss, 3225 Audubon, East St. Louis, Ill.
Filed May 1, 1963, Ser. No. 74,697
Term of patent 7 years
(Cl. D58—26)



200,021
END CLOSURE FOR A CONTAINER
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 77,120
Term of patent 14 years
(Cl. D58—26)





200,022
FLASK HOLDER
Carl N. Bean, 2510 Vanderbilt Ave., Raleigh, N.C.
Filed Oct. 29, 1963, Ser. No. 77,202
Term of patent 14 years
(Cl. D58—26)



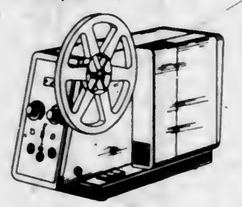
200,023
COMBINED DISPENSING AND CLOSURE CAP FOR THE NECK OF A CONTAINER
Alvin J. Porter, Excelsior, Minn., assignor to Product Design & Engineering, Inc., Minneapolis, Minn.
Filed Dec. 31, 1962, Ser. No. 72,998
Term of patent 14 years
(Cl. D58—26)



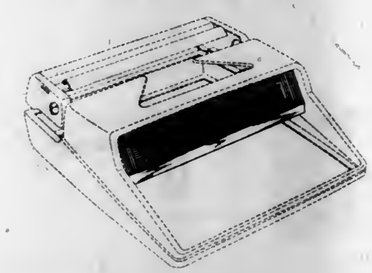
200,024
COMBINED CLOSURE, POURING SPOUT AND SIFTER
Anthony P. Lombardo, Baltimore, Md., assignor to Federal Tin and Paper Products, Inc., Baltimore, Md., a corporation of Maryland
Filed Apr. 14, 1964, Ser. No. 79,493
Term of patent 3½ years
(Cl. D58—26)



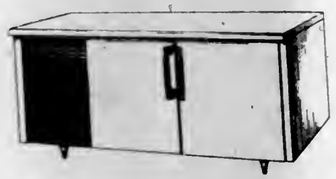
200,025
SOUND MOTION PICTURE PROJECTOR
Elmar Maier, Vaduz-Muhleholz, Liechtenstein, assignor to Carena S.A., Geneva, Switzerland
Filed Oct. 28, 1963, Ser. No. 77,204
Claims priority, application Switzerland June 5, 1963
Term of patent 14 years
(Cl. D61—1)



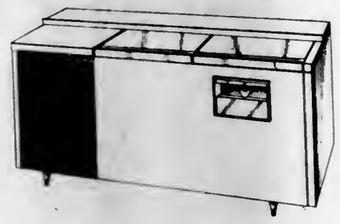
200,026
FRONT PANEL OF A HOOD PORTION OF A TYPEWRITER CASING
Otto Winter, Wilhelmshaven, Germany, assignor to Olympia Werke AG., Wilhelmshaven, Germany, a corporation of Germany
Filed June 26, 1961, Ser. No. 65,708
Term of patent 3½ years
(Cl. D64—11)



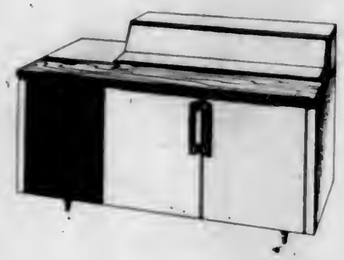
200,027
REFRIGERATOR CABINET OR SIMILAR ARTICLE
Anthony R. Costantini, Lafayette Hill, and Anthony Di Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Corp., Plymouth Meeting, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1963, Ser. No. 77,520
Term of patent 14 years
(Cl. D67—3)



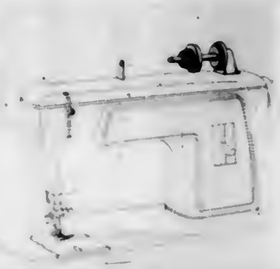
200,028
BEVERAGE COOLER CABINET
Anthony R. Costantini, Lafayette Hill, and Anthony Di Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Corp., Plymouth Meeting, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1963, Ser. No. 77,522
Term of patent 14 years
(Cl. D67—3)



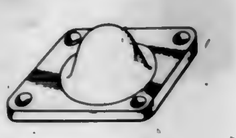
200,029
COMBINATION SANDWICH PREPARATION AND REFRIGERATOR CABINET
Anthony R. Costantini, Lafayette Hill, and Anthony Di Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Corp., Plymouth Meeting, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1963, Ser. No. 77,523
Term of patent 14 years
(Cl. D67—3)



200,030
SEWING MACHINE
Frederick G. Creter, Bricktown, N.J., assignor to The Singer Company, a corporation of New Jersey
Filed Apr. 8, 1963, Ser. No. 74,330
Term of patent 14 years
(Cl. D70—1)



200,031
VALVE DIAPHRAGM OR THE LIKE
Edmond Robert Parfonry, Brussels, Belgium, assignor to Societe Industrielle d'Etudes et de Realisations Scientifiques, Paris, France, a corporation of France
Filed July 28, 1961, Ser. No. 66,112
Term of patent 14 years
(Cl. D78—1)



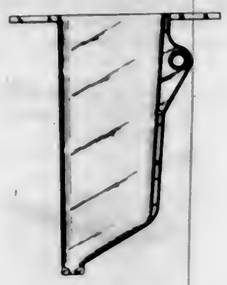
200,032
JEWELRY DISPLAY STAND
John W. Starke, 507 S. Lewis St., La Grange, Ga.
Filed Sept. 11, 1963, Ser. No. 76,559
Term of patent 14 years
(Cl. D80—9)



200,033
DISPLAY CABINET
Roger A. Schindler, Hampton Township, Allegheny County, Pa., assignor to Flannery and Associates, Inc., Springdale Township, Allegheny County, Pa., a corporation of Pennsylvania
Filed Feb. 15, 1963, Ser. No. 73,583
Term of patent 14 years
(Cl. D80—11)

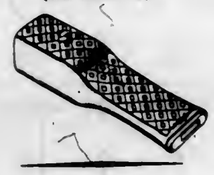


200,034
GAVAGE BAG OR SIMILAR DEVICE
Walter J. Zytko, Evanston, and Leonard F. Waldman, Jr., Niles, Ill., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 77,244
Term of patent 14 years
(Cl. D83—1)





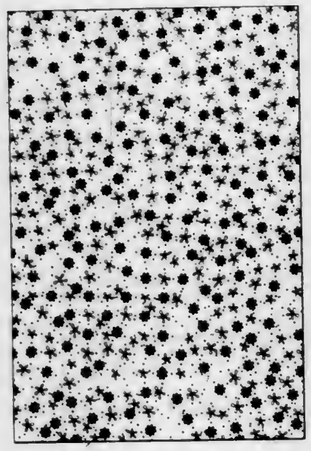
200,035
CIGAR HOLDER OR SIMILAR ARTICLE
Jack H. Mogulescu, New York, N.Y., assignor to Consolidated Cigar Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 73,111
Term of patent 14 years
(Cl. D85—8)



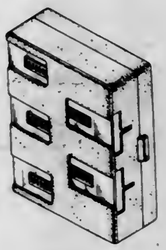
200,036
SHEET OF ELASTOMERIC MATERIAL OR SIMILAR ARTICLE
Granville H. Campbell, 2411 N. Cameron Ave., Covina, Calif.
Filed Sept. 26, 1962, Ser. No. 71,869
Term of patent 14 years
(Cl. D87—3)



200,037
SHEET OF ELASTOMERIC MATERIAL OR SIMILAR ARTICLE
Granville H. Campbell, 2411 N. Cameron Ave., Covina, Calif.
Filed Sept. 26, 1962, Ser. No. 71,870
Term of patent 14 years
(Cl. D87—3)



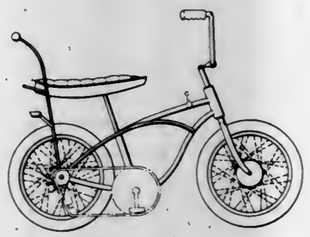
200,038
COMBINED BILL FOLD AND COIN HOLDER
Myron L. Wilner, 353 Leonard St., Brooklyn, N.Y.
Filed July 8, 1964, Ser. No. 80,766
Term of patent 14 years
(Cl. D87—3)



200,039
SHEET OF ELASTOMERIC MATERIAL OR SIMILAR ARTICLE
Granville H. Campbell, 2411 N. Cameron Ave., Covina, Calif.
Filed Sept. 26, 1962, Ser. No. 71,871
Term of patent 14 years
(Cl. D87—3)



200,040
BICYCLE
Robert O. Brown, 2179 Palm Place, Hayward, Calif.
Filed Apr. 15, 1964, Ser. No. 79,506
Term of patent 7 years
(Cl. D90—8)



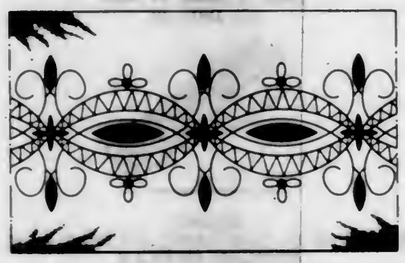
200,041
**LAWN SPRINKLER**
Eugene L. Boyd, 1930 Emerald St., San Diego, Calif.
Filed Aug. 27, 1962, Ser. No. 71,464
Term of patent 14 years
(Cl. D91—1)



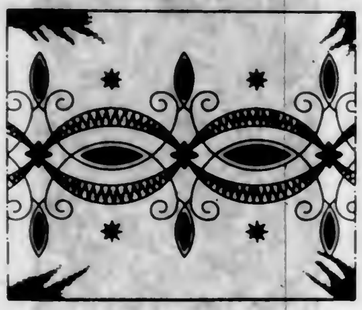
200,042
**LAVATORY FITTING OR SIMILAR ARTICLE**
Frederick Gordon Mackay and Gerald W. Schmidt, Tarzana, Calif., assignors to Price-Pfister Brass Mfg. Co., Los Angeles, Calif., a corporation of California
Filed Apr. 8, 1963, Ser. No. 74,348
Term of patent 14 years
(Cl. D91—3)



200,043
**EMBROIDERED FABRIC, OR SIMILAR ARTICLE**
Alvin A. Dubin, 432 Garden Blvd., Garden City, N.Y.
Filed Aug. 27, 1963, Ser. No. 76,365
Term of patent 3½ years
(Cl. 92—1)



200,044
**EMBROIDERED FABRIC, OR SIMILAR ARTICLE**
Alvin A. Dubin, 432 Garden Blvd., Garden City, N.Y.
Filed Aug. 27, 1963, Ser. No. 76,366
Term of patent 3½ years
(Cl. 92—1)



# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 5TH DAY OF JANUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

De Chelbor, William J., to General American Transportation Corp. Plastic carrying case for bottles. Re. 25,707, 1–5–65, Cl. 220—102.
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Campbell, Granville H. Sheet of elastomeric material or similar article. 200,037, 1–5–65, Cl. D87—3.
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Knodt, Ruediger W. 199,995.
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Costantini, Anthony R., and Di Angelus. 200,029.
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Foster, John R., to Vonnegut Hardware Co. Panic exit case. 199,964, 1–5–65, Cl. D10—88.
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Huthsing, Charles K., Jr. Portable fire extinguisher. 199,980, 1–5–65, Cl. D16—2.
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Jerclaydon Inc.: *See*—
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Johnson & Johnson: *See*—
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Knodt, Ruediger W., to Corning Glass Works. Dispensing closure. 199,995, 1–5–65, Cl. D44—22.

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# LIST OF PATENTEES

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Anderson, Douglas G., and E. Kawecki, to Sturdevant Mfg. Corp. Spring actuated starter for engines. 3,164,142, 1–5–65, Cl. 123—179.
Anderson, George C., to North American Aviation, Inc. Frequency regulator. 3,164,769, 1–5–65, Cl. 322—32.
Anderson, Marvin E., to IIT Research Institute. Magnetic transducer. 3,164,682, 1–5–65, Cl. 179—100.2.
Anderson, Stanley L.: *See*—
Nettleton, Donald F., and Anderson. 3,164,049.
Anderson, Craig R., to Sun Oil Co. Apparatus for countercurrent liquid-liquid contacting. 3,164,444, 1–5–65, Cl. 23—270.5.
Andrews, Thomas D. H.: *See*—
Dowty, George H., and Andrews. 3,163,987.
Apicella, Nicholas. Mortar dispenser. 3,163,881, 1–5–65, Cl. 15—555.
Apley, Martin, and J. R. Alexander, to The Walker Chemical Co. Ltd. Phosphonitrilic polymers and process for their preparation. 3,164,556, 1–5–65, Cl. 260—2.
Applegate, Robert B., to Cleveland Electrical Equipment Co., Inc. Armature winding method. 3,163,921, 1–5–65, Cl. 29—155.5.
Applequist, James E., to International Business Machines Corp. Digital data detection circuitry. 3,164,815, 1–5–65, Cl. 340—174.1.
Appleton, Arthur I. Rotary engine of the sliding vane type. 3,164,139, 1–5–65, Cl. 123—14.
Aqua-Flite Hydrofoil Corp.: *See*—
Lopez, Robert. 3,164,116.
Lopez, Robert. 3,164,117.
Lopez, Robert. 3,164,118.
Arledge, Kenneth W. Poultry feeder. 3,164,128, 1–5–65, Cl. 119—18.
Armistead, Fontaine C., to Texaco Development Corp. Radioactivity bore hole fluid logging. 3,164,720, 1–5–65, Cl. 250—83.3.
Armour and Co.: *See*—
Seymour, James E. 3,164,549.
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Butterworth, Richard, and Parker. 3,164,564.
Hager, Nathaniel E., Jr. 3,163,892.
Armstrong, Lee J., to Knox Mfg. Co. Stand for movie screen device. 3,164,348, 1–5–65, Cl. 248—171.
Armstrong, Lee J., to Knox Mfg. Co. Stand for portable movie screen. 3,164,349, 1–5–65, Cl. 248—171.
Arnaud, Robert, to Compagnie de Saint-Gobain. Method and apparatus for automatically cutting a strip of glass. 3,164,046, 1–5–65, Cl. 83—7.
Arnold, Robert P., to Rixson, Inc. Automatic hold-open release. 3,164,404, 1–5–65, Cl. 292—273.
Aronson, Morton M., to McGraw-Edison Co. Support for electrical transformer. 3,164,793, 1–5–65, Cl. 336—65.

Arvey Corp.: *See*—
Peretti, Leonard G. 3,163,948.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Minekawa, Saburo, Hoshino, Shibata, and Kominami. 3,164,626.
Minekawa, Saburo, Hoshino, Shibata, and Kominami. 3,164,627.
Minekawa, Saburo, Hoshino, Shibata, and Kominami. 3,164,628.

Ashe, John M., to Textured Yarn Co., Inc. Knitting needle. 3,164,000, 1–5–65, Cl. 66—121.

Astheimer, Robert W., to Barnes Engineering Co. Non-scanning edge detector. 3,164,721, 1–5–65, Cl. 250—83.3.

Ateliers de Constructions Electriques de Charleroi (ACEC): *See*—
Pensis, Rene. 3,164,689.

Atkinson, A. W. Means for mounting a serving tray within a vehicle. 3,164,109, 1–5–65, Cl. 108—44.

Atkinson, Arthur H., to Rose Bros. (Gainsborough) Ltd. Packaging apparatus. 3,164,241, 1–5–65, Cl. 198—30.

Atlantic Production Corp.: *See*—
Kryznoski, Louis F. 3,164,231.

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McGuire, William J., Jr., and Kern. 3,164,208.

Atlas Chemical Industries, Inc.: *See*—
Gebrig, Neil E. 3,164,503.

Atlas Copco Aktiebolag: *See*—
Eriksson Sven E. 3,164,273.

Automatic Electric Laboratories, Inc.: *See*—
Blackaller, Arthur M. 3,164,687.
Dondoux, Jacques M. 3,164,776.
Heyda, Kenneth C. 3,164,727.
Theobald, Dale D. 3,164,708.

Automatic Poultry Feeder Co.: *See*—
Rigterink, Preston D. 3,164,129.

Automatic Timing & Controls, Inc.: *See*—
Houpt, Grover K. 3,164,783.

Automation Industries, Inc.: *See*—
Stebbins, Larry O., and Sato. 3,164,007.

Automotive Products Co. Ltd.: *See*—
Ellis, Frederick E., Standbridge, and Taylor. 3,164,035.

Axel Wickman Transmission Ltd.: *See*—
Lamburn, Alan S., and Abbott. 3,164,086.

Axelrood, Seymour L., to Wyandotte Chemicals Corp. Blended glycol liquid polyurethane. 3,164,572, 1–5–65, Cl. 260—77.5.

B P Tanker Co. Ltd.: *See*—
Hopkins, Kenneth W. 3,163,873.

Babcock & Wilcox, Ltd.: *See*—
Pacault, Pierre H., and Tillequin. 3,164,133.
Pegrum, James W. 3,164,726.

Baker, Bertsil B., K. M. Brauner, and A. N. Oemler, to E. I. du Pont de Nemours and Co. Recovery process for polyolefins. 3,164,578, 1–5–65, Cl. 260—94.9.

Baker, Hugh T., & Co.: *See*—
Burch, James B., and White. 3,164,395.

Baldwin D. H., Co.: *See*—
Luebbe, Clifford B. 3,164,795.

Banks, Charles T., to Kimberly-Clark Corp. Transfer conveyer for a papermaking machine. 3,164,340, 1–5–65, Cl. 198—25.

Banks, John V., and R. F. Fulge, to Kaiser Steel Corp. Beam welding apparatus. 3,164,713, 1–5–65, Cl. 219—124.

Banks, Othniel N., to United Kingdom Atomic Energy Authority. Nuclear reactor core with fuel locking members. 3,164,530, 1–5–65, Cl. 176—87.

Banning, Thomas A., Jr., and E. L. Ranseen, deceased (by A. J. Ranseen, executrix); said Ranseen assor, to said Banning, as trustee. Wide band recording system. 3,164,685, 1–5–65, Cl. 179—100.11.

Bard, C. R., Inc.: *See*—
Towns, Edward J. 3,164,279.

Barlow Mfg. Co.: *See*—
Fogarty, Richard E., and Voorhees. 3,164,184.

Barnes Engineering Co.: *See*—
Astheimer, Robert W. 3,164,721.

Barnes, John A., and J. P. Vickery, to Power Jets (Research & Development) Ltd. Pressure exchangers. 3,164,318, 1–5–65, Cl. 230—69.

Barnhart, Carlton L. Bottled drink vending machine. 3,164,296, 1–5–65, Cl. 221—129.

Barrett, Orval. Bait casting device. 3,163,957, 1–5–65, Cl. 43—41.2.

Barrett, Wayne T., M. G. Sanches, and M. C. Vanik, to W. R. Grace & Co. Sols of actinide metal oxides. 3,164,584, 1–5–65, Cl. 252—301.1.

Barry, Leonard D. Automatic holding device. 3,164,406, 1–5–65, Cl. 294—88.

Bassett, Frederick H. Car seat caddy. 3,164,408, 1–5–65, Cl. 297—188.

Bastian, Milton L. Baler feeder. 3,164,276, 1–5–65, Cl. 214—519.

Bateson, Norman E., to Pullman Inc. Retractable stanchion. 3,164,346, 1–5–65, Cl. 248—119.

Bath Cyril Co., The: *See*—
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Bauer, Frederick. Toothbrush. 3,163,874, 1–5–65, Cl. 15—167.

Bauer, Herbert, to E. I. du Pont de Nemours and Co. Luminescent screen having a protective film. 3,164,719, 1–5–65, Cl. 250—80.

Baum, Thomas: *See*—
Childress, Scott J., and Baum. 3,164,602.

Baumann, Horst: *See*—
Voss, Manfred, Baumann, and Stein. 3,164,609.

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White, Gerald A., and Baxter. 3,164,149.

Baxter Laboratories Inc.: *See*—
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Stone, Irwin M. 3,164,472.

Baynes, Gene P., and E. W. Drislane, to The Bendix Corp. Clutch plates and the like. 3,164,236, 1–5–65, Cl. 192—107.

Bazzarin, Pietro, to Montecatini Societá Generale per l'Industria Mineraria e Chimica. Catalytic process for the direct hydration of gaseous olefins to alcohols. 3,164,641, 1–5–65, Cl. 260—641.

Beale, Julian R. A., H. E. Brockman, and P. E. Krebs, to North American Philips Co., Inc. Method of diffusing boron into semi-conductor bodies. 3,164,501, 1–5–65, Cl. 148—189.

Beaman, Arnold G.: *See*—
Dixson, Henry P., Nelson, and Beaman. 3,164,512.

Bear Mfg. Co.: *See*—
MacMillan, Charles W. 3,164,003.

Beaudoin, Jean P., to Joe Lowe Corp. Apparatus for stacking sticks and like articles. 3,164,293, 1–5–65, Cl. 221—13.

Becker, Rudolf, to Gesellschaft fur Linde's Eismaschenen Aktiengesellschaft. Process and apparatus for emptying low temperature liquefied gases from tanks and tankers. 3,163,992, 1–5–65, Cl. 62—55.

Beckman Instruments, Inc.: *See*—
Burnell, Maurice E., and Haunold. 3,164,005.
Gale, George P. 3,164,668.

Beckwith, Richard M.: *See*—
Webb, James E. 3,163,935.

Beecham Research Laboratories Ltd.: *See*—
Doyle, Frank P., Nayler, and Robinson. 3,164,604.

Beem, Geraldine K. and O. W. Home file box. 3,164,430, 1–5–65, Cl. 312—234.4.

Beem, Owen W.: *See*—
Beem, Geraldine K. and O. W. 3,163,430.

Begg, Percy R., and A. Chan-Heen. Orthodontic bracket. 3,163,933, 1–5–65, Cl. 32—14.

Bego, Robert R., W. J. Thomas, and A. N. Veltattorni, to Progress Pattern Co. Blow plate assembly. 3,163,894, 1–5–65, Cl. 22—10.

Behmenburg, Hans, and M. Gloe, to Knuffel & Esser Co. One-component diazo process. 3,164,469, 1–5–65, Cl. 96—49.

Belgard, Truly M., ⅓ to J. H. Henderson, Jr., and E. L. Roland, jointly. Hammer attachment. 3,164,178, 1–5–65, Cl. 145—29.

Bell, John W. Mechanical blackboard eraser. 3,163,943, 1–5–65, Cl. 35—62.

Bell Telephone Laboratories, Inc.: *See*—
Alsberg, Dietrich A. 3,164,685.
Bobeck, Andrew H. 3,164,812.
Bunrendorf, Frederick G. 3,164,675.
Chang, James T. H., Dillon, and Gianola. 3,164,816.
Fredericks, George W. and Wichman. 3,164,824.
Harding, Philip A. 3,164,728.
Harding, Philip A. 3,164,810.
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Mras, William L. 3,164,831.
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Beloit Corp.: *See*—
Larson, Robert W. 3,164,261.

Beloit Iron Works: *See*—
Schmitt, Arnold J., and Phillips. 3,164,492.

Benda, Hansjochen, to Siemens-Schuckertwerke Aktiengesellschaft. Method of producing an electronic semiconductor device. 3,164,500, 1–5–65, Cl. 148—186.

Bendix Corp., The: *See*—
Baynes, Gene P., and Drislane. 3,164,236.
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Klein, Bernard. 3,164,368.
Seelig, Frederick A., and Rothfuss. 3,164,235.

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Burch, Homer A., and Benjamin. 3,164,595.

Bennett, Donald C. Flow-meter. 3,164,018, 1–5–65, Cl. 73—228.

Bennett, Richard J.: *See*—
Dyer, Alvah F. Reed, and Bennett. 3,164,359.

Bennett, William N., to Cypress Gardens Skis, Inc. Water ski display rack. 3,164,256, 1–5–65, Cl. 211—60.

Benway, Robert E., to Radio Corp. of America. Electron gun. 3,164,426, 1–5–65, Cl. 313—82.

Berge, Ralph I., A. B. Ciatola, and C. O. Wilson, to International Business Machines Corp. Electronic component packaging. 3,164,749, 1–5–65, Cl. 317—101.

Berger, Arthur, and E. E. Borgaes, to Baxter Laboratories Inc. Benzyl ureas. 3,164,632, 1–5–65, Cl. 260—553.

Bergh Bros. Co., Inc.: *See*—
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Bergh, George G. and R. G., to Bergh Bros. Co., Inc. Knockdown box construction. 3,164,384, 1–5–65, Cl. 220—4.

Bergh, Robert G.: *See*—
Bergh, George G. and R. G. 3,164,284.

Bergman, W. Dan, Aktiebolaget: *See*—
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Bergougnou, Maurice A.: *See*—
Stringer, Richard F., Draeger, and Bergougnou. 3,164,642.

Berliner Development Co.: *See*—
Lane, Frank B. 3,164,392.

Bernburg, Frantz A., and K. A. Faber, to Malodan A/S. Rope clamps. 3,163,902, 1–5–65, Cl. 24—126.

Berrie, Alistair H., H. Seaman, and B. Windle, to Imperial Chemical Industries Ltd. Process for the coloration of polyethylene terephthalate textile materials. 3,164,437, 1–5–65, Cl. 8—41.

Berriman, Ronald L.: *See*—
Linacre, Frederick D., and Berriman. 3,164,068.

Berthod, Louis, and M. Grenon. Thermal excess-pressure device. 3,164,174, 1–5–65, Cl. 128—30.

Bescher, Roland L.: *See*—
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Bespalov, Nickolay G.: *See*—
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Bharucha, Kekhusroo B., to Canada Packers Ltd. Process for preparing Δ''-steroid compounds. 3,164,616, 1–5–65, Cl. 260—397.1.

Biehl, Arthur T., and G. A. Linenberger, to United States of America, Atomic Energy Commission. Radioactive transducer for sensing pressure and the like having a source primary radiation and a target for producing secondary radiation. 3,164,722, 1–5–65, Cl. 250—83.3.

Biel, Hans: *See*—
Schafer, Helmut. 3,164,015.

Biesecker, Donald L., to Illinois Tool Works Inc. Bushing with rib and shoulder means. 3,164,054, 1–5–65, Cl. 85—8.8.

Biesecker, Donald L., to Illinois Tool Works Inc. Plastic roller. 3,164,418, 1–5–65, Cl. 308—3.8.

Billon, Guy: *See*—
Grosbois, Marcel, and Billon. 3,164,789.

Bilsing, Donald L., and M. G. Kesler, to Thompson Ramo Wooldridge Inc. Miniature capacitor assembly method. 3,163,917, 1–5–65, Cl. 29—25.42.

Bishman Mfg. Co.: *See*—
Bishman, Walter A., and Ruhland. 3,164,197.
Bishman, Walter A., and Ruhland. 3,164,198.
Swenson, William E., Ruhland, and Albertson. 3,164,199.

Bishman, Walter A., and W. F. Ruhland, to Bishman Mfg. Co. Tire tool. 3,164,197, 1–5–65, Cl. 157—1.3.

Bishman, Walter A., and W. F. Ruhland, to Bishman Mfg. Co. Tire changer. 3,164,198, 1–5–65, Cl. 157—1.17.

Black, Warren E., to American Seating Co. Cabinet. 3,164,431, 1–5–65, Cl. 312—282.

Blackaller, Arthur M., to Automatic Electric Laboratories, Inc. Molded plastic lever key for locking or non-locking operation. 3,164,687, 1–5–65, Cl. 200—1.

Blankenship, Elmore F.: *See*—
Blankenship, James L. and E. F. 3,164,072.

Blankenship, James L. and E. F., to True-Line Corp. Concrete finishing apparatus. 3,164,072, 1–5–65, Cl. 94—45.

Blaser, Bruno, to Henkel & Cie. G.m.b.H. Process for the preparation of sultones. 3,164,606, 1–5–65, Cl. 260—327.

Blouin, Maurice A. Selective electrical programming device. 3,164,691, 1–5–65, Cl. 200—46.

Blunt, Roger N., to General Dynamics Corp. Transistor pulse generator with inductive means. 3,164,785, 1–5–65, Cl. 331—113.

Bobeck, Andrew H., to Bell Telephone Laboratories, Inc. Magnetic memory circuits. 3,164,812, 1–5–65, Cl. 340—174.

Bodenschatz, August, to I-T-E Circuit Breaker Co. Current limiting circuit breaker with improved auxiliary toggle mechanism. 3,164,700, 1–5–65, Cl. 200—116.

Boeing Airplane Co.: *See*—
Kelley, Robert M. 3,164,763.

Boeing Co., The: *See*—
Oh, Louis L. 3,164,790.
Preikschat, Fritz K. 3,164,827.

Bofinger, Rudolf. Composite structural element and method of making the same. 3,164,110, 1–5–65, Cl. 108—161.

Boge G.m.b.H.: *See*—
Tucsek, Franz. 3,164,381.

Bogen, Morton A. Advertising device. 3,164,317, 1–5–65, Cl. 229—73.

Bohn Business Machines, Inc.: *See*—
Kaufman, Arthur L. 3,164,717.

Boldingh, Willem H., to North American Philips Co., Inc. Voltage relating circuit for X-ray tubes. 3,164,723, 1–5–65, Cl. 250—103.

Bolick, Fred C., Jr. Indicating device. 3,164,434, 1–5–65, Cl. 346—76.

Bommer, Heinrich, deceased (by H. Bommer, legal representative of minor heirs, widow and heir, and H. D. Bommer, heir), and H. Brunner, to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler. Flame synthesis of finely divided aluminum borates and phosphates. 3,164,442, 1–5–65, Cl. 23—59.

Bommer, Heinz D.: *See*—
Bommer, Heinrich, and Brunner. 3,164,442.

Bommer, Helene: *See*—
Bommer, Heinrich, and Brunner. 3,164,442.

Bono, Luigi, to Necchi Societa per Azioni. Apparatus comprising a magnetic pattern and follower for shaped sewing. 3,164,112, 1–5–65, Cl. 112—2.

Boomgaard, C. J. Closure and valve construction. 3,164,288, 1–5–65, Cl. 220—44.

Borg-Warner Corp.: *See*—
Shattuck, Robert. 3,163,888.

Borgaes, Edeltraut E.: *See*—
Berger, Arthur. 3,164,632.

Bork, Karl-Heinz, and K. Bruckner, to E. Merck, Aktiengesellschaft. Sulfur-containing androstane derivatives. 3,164,584, 1–5–65, Cl. 260—239.5.

Bostian, Logan C., W. D. Griffin, and Z. Oser, to Allied Chemical Corp. Production of p,p'-isopropylidenediphenol crystals having low phenol content. 3,164,640, 1–5–65, Cl. 260—619.

Bostrom, John D., to Poster Packaging, Inc. Doughnut package. 3,164,478, 1–5–65, Cl. 99—172.

Bourcier de Carbon, Christian-Marie-Lucien-Louis. Shock absorbers having annular disc valving. 3,164,225, 1–5–65, Cl. 188—100.

Bower, Richard R., to Raytheon Co. Apparatus for assembling electronic parts. 3,164,459, 1–5–65, Cl. 65—155.

Bowers, Rolland G., to Sun Oil Co. Oxidative sweetening with base and quaternary ammonium compound. 3,164,544, 1–5–65, Cl. 208—206.

Bowker, John D., to Radio Corp. of America. Color tube beam indexing with ultra-violet rays. 3,164,744, 1–5–65, Cl. 315—10.

Bowles, William J.: *See*—
Whitman, Raymond C., and Bowles. 3,164,114.

Boyd, Charles L.: *See*—
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Boylan, Robert E., and R. J. Petschauer, to Sperry Rand Corp. Saturable magnetic device. 3,164,811, 1–5–65, Cl. 340—174.

Bradley, William A., to ACF Industries, Inc. Combined check valve and strainer unit for fuel pumps. 3,164,168, 1–5–65, Cl. 137—544.

Bradshaw, David L. Device for favorably positioning an animal for castration. 3,164,131, 1–5–65, Cl. 119—103.

Brallowsky, Vladimir, to General Motors Corp. Process for orienting ferrites. 3,163,922, 1–5–65, Cl. 29—155.6.

Brainerd, Alfred G., Jr., and G. E. Morgan. Air filter. 3,164,456, 1–5–65, Cl. 55—500.

Braude, George L., to W. R. Grace & Co. Process for preparing acyclic hydrasinium salts. 3,164,635, 1–5–65, Cl. 260—583.

Brauner, Kenneth M.: *See*—
Baker, Bertsil B., Brauner, and Oemler. 3,164,578.

Brawand, Franklin M. Cargo hook. 3,163,901, 1–5–65, Cl. 24—123.

Breed, Carolyn E., to W. R. Grace & Co. Vinyl acetate emulsion. 3,164,562, 1–5–65, Cl. 260—29.6.

Bremmer, Bart J., to The Dow Chemical Co. Amine-halogenated polyphenyl reaction products. 3,164,634, 1–5–65, Cl. 260—570.5.

Brewer, Hazel D.: *See*—
Mitchell, Paul H., and Brewer. 3,164,457.

Bridge, Edward W., Sr. Extension for shotgun barrel. 3,163,953, 1–5–65, Cl. 42—79.

Bridges, Frank R., to S. H. Couch Co., Inc. Rotary armature miniature relay. 3,164,697, 1–5–65, Cl. 200—87.

Bridgestone Tire Co. Ltd.: *See*—
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Brightman, Barrie, to General Dynamics Corp. Electronic switching system having a data register including circulating memory means. 3,164,678, 1–5–65, Cl. 179—15.

Brightman, Barrie, to General Dynamics Corp. Signaling generator. 3,164,681, 1–5–65, Cl. 179—84.

British Drug Houses Ltd., The: *See*—
Feather, Peter, and Petrow. 3,164,617.

British Oxygen Co. Ltd., The: *See*—
Swan, Allan H. B., and Waller. 3,164,714.
White, Gerald A., and Baxter. 3,164,149.

British Thermostat Co. Ltd., The: *See*—
Sherlock, John E. 3,164,203.

Brockett, Jay K., and W. B. Handwerk, to Crose-Perrault Equipment Corp. Apparatus for internally cleaning and coating pipe. 3,164,491, 1–5–65, Cl. 118—72.

Brockman, Henry E.: *See*—
Beale, Julian R. A., Brockman, and Krebs. 3,164,501.

Broder, Alan, and H. H. Wakeland, to Sperry Rand Corp. Fluid pressure vibration detector. 3,164,821, 1–5–65, Cl. 340—236.

Broomhall, Gordon E., to Hughes Aircraft Co. Sweep protection circuit. 3,164,746, 1–5–65, Cl. 315—20.

Brosselt, Fritz V., to Western Electric Co., Inc. Apparatus for loading parts in cans. 3,163,927, 1–5–65, Cl. 29—203.

Broverman, Michael, and F. L. Woods, to General Electric Co. Oil-free compartment for transformer tank for mounting low voltage bushing. 3,164,794, 1–5–65, Cl. 336—92.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Frowein, Egbertus A. 3,164,667.

Brown, James L., Jr.: *See*—
Gwaltney, Eugene C., Brown, and Ferguson. 3,163,913.

Browning, Leslie J., to Inchbrook Printers Ltd. Method of printing on non-absorbent material. 3,164,089, 1–5–65, Cl. 101—426.

Bruckner, Klaus: *See*—
Bork, Karl-Heinz, and Bruckner. 3,164,584.

Bruinsma, Josephus F. D., to Kiekens-Wervelwind-Holland (Kiekens-Whirlwind-Holland) (KWH) N.V. Spraying vehicle. 3,164,324, 1–5–65, Cl. 239—77.

Brunel, Henri. Process for refining hydrocarbon oils so as to obtain only refined oil and pure oil soluble sulphonates. 3,164,547, 1–5–65, Cl. 208—273.

Brunner, Alfred, to Sulzer Freres, S.A. Nuclear reactor vapor generating plant. 3,164,527, 1–5–65, Cl. 176—59.

Brunner, David H., to Philco Corp. Stereophonic system employing audio matrixing. 3,164,676, 1–5–65, Cl. 179—1.

Brunner, Helmut: *See*—
Bommer, Heinrich, and Brunner. 3,164,442.

Brunswick Corp.: *See*—
Roop, Donald E., and Riley. 3,164,383.

Buckley, Daniel F. Apparatus to convert oil to gas. 3,164,450, 1–5–65, Cl. 48—106.

Budd Co., The: *See*—
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Buecheler, Paul, to Sandoz Ltd. (also known as Sandoz A.G.). Mixtures of blue disperse dyestuffs of the anthraquinone series. 3,164,615, 1–5–65, Cl. 260—376.

Buhner, Marvin H.: *See*—
Dixson, Henry P., Nelson, and Beaman. 3,164,512.

Buhrendorf, Frederick G., to Bell Telephone Laboratories, Inc. Data transmission system. 3,164,675, 1–5–65, Cl. 178—66.

Buraas, Vincent S. Liquid pressure opened valve for a spray nozzle. 3,164,326, 1–5–65, Cl. 239—453.

Burch, Homer A., and L. E. Benjamin, to The Norwich Pharmacal Co. 6-(5-nitro-2-furyl)-3-pyridazinones. 3,164,595, 1–5–65, Cl. 260—250.

Burch, James B., and J. A. White, to Hugh T. Baker & Co. Cargo gate. 3,164,395, 1–5–65, Cl. 280—179.

Burgwald, Glenn M., L. Reiffel, W. K. Genthe, and C. Fyfe, to United States of America, Atomic Energy Commission. Mass flow measuring device. 3,164,019, 1–5–65, Cl. 73—228.

Burlington Industries, Inc.: *See*—
Walker, Christie O., and Sessoms. 3,164,332.

Burndy Corp.: *See*—
Schenker, Henry, and Graichen. 3,164,716.

Burnell, Maurice R., and O. Haupold, to Beckman Instruments, Inc. Gas chromatograph. 3,164,005, 1–5–65, Cl. 73—23.1.

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Kelly, Robert. 3,164,082.
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Burson, Bob O., to Elci Products Corp. Electric generating system with voltage regulator. 3,164,765, 1–5–65, Cl. 320—57.

Burton, Coleman H., and M. E. Mitchell, to General Electric Co. Simplified two-stage error-control decoder. 3,164,804, 1–5–65, Cl. 340—146.1.

Burton, George H.: *See*—
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Butterworth, Richard, and J. A. Parker, to Armstrong Cork Co. Unsaturated linear polycarbonate. 3,164,564, 1–5–65, Cl. 260—47.

Buxbaum, Edwin C., to E. I. du Pont de Nemours and Co. Anthraquinone dyes for gasoline. 3,164,449, 1–5–65, Cl. 44—59.

Byers, Edward V. Method of producing platens for typewriters. 3,164,652, 1–5–65, Cl. 264—262.

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Calamari, James A., Jr., to The Dow Chemical Co. Water-swellable polyurethanes from a polyalkylene ether glycol and an oxyalkylated diphenol. 3,164,565, 1–5–65, Cl. 260—47.

Calehuff, Girard L., to West Virginia Pulp and Paper Co. Distributor system for a paper machine headbox. 3,164,513, 1–5–65, Cl. 162—212.

California Research Corp.: *See*—
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Callahan, William H.: *See*—
Phillips, William C. and R. W., and Callahan. 3,164,294.

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Camilli, Guglielmo, to General Electric Co. Fluid insulated electrical apparatus. 3,164,666, 1–5–65, Cl. 174—17.

Campana, Paul, Jr. Scouring pad holder and container. 3,163,875, 1–5–65, Cl. 15—209.

Campen, Charles F., Jr.: *See*—
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Canada Packers Ltd.: *See*—
Bharucha, Kekbaroo R. 3,164,616.

Capitaine, Detlev, to Sulzer Freres, S.A. Method and apparatus for starting a steam power plant. 3,163,991, 1–5–65, Cl. 60—107.

Cappotto, Samuel D., to SCM Corp. Impression control mechanism in power driven typewriters. 3,164,237, 1–5–65, Cl. 197—17.

Caribonum Ltd.: *See*—
Francis, Frederick G., Huxford, Seaward, and Burton. 3,164,074.

Carl, Ralph W.: *See*—
Linst, Jack, Carl, and Field. 3,164,537.

Carley-Macauly, Kenneth W., and M. MacKenzie, to United Kingdom Atomic Energy Authority. Methods of producing carbon-impregnated artefacts. 3,164,487, 1–5–65, Cl. 117—46.

Carlstedt, Ragnar L., to Keunametal, Inc. Boring bar. 3,164,041, 1–5–65, Cl. 77—58.

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Sweigart, David J., and Carmack. 3,164,076.

Caron, Racine. Blaster device. 3,163,963, 1–5–65, Cl. 51—11.

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Cavalieri, Frank L. Clothesline. 3,164,258, 1–5–65, Cl. 211—119.16.

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Central Research Laboratories, Inc.: *See*—
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Ceskoslovenska akademie ved: *See*—
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Chang, James T. H., J. F. Dillon, Jr., and U. F. Gianola, to Bell Telephone Laboratories, Inc. Magnetic-optical information storage unit and apparatus. 3,164,816, 1–5–65, Cl. 340—174.

Charle, Roger, J. Gascon, and R. Lantz, to Societe Anonyme dite: L'Oreal. Method of using diphenylazo compounds as direct dyes in alkaline media on human hair. 3,164,522, 1–5–65, Cl. 167—88.

Chicago Dynamic Industries, Inc.: *See*—
Heide, Stanford M. 3,164,690.

Childress, Scott J., and T. Baum, to American Home Products Corp. Novel benzisothiazoline dioxides. 3,164,602, 1–5–65, Cl. 260—301.

Childs, Elbert B., to Socony Mobil Oil Co., Inc. Method and apparatus for testing the spray pattern of a spray nozzle. 3,164,012, 1–5–65, Cl. 73—119.

Chin, Doris M.: *See*—
White, William D., Chin, and Jones. 3,164,504.

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Poole, Robert F., and Ward. 3,164,649.

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Ciba Ltd.: *See*—
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Moergeli, Eduard. 3,164,593.

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Clevite Corp.: *See*—
Abrams, Bernard W. 3,164,659.

Clymer, Joseph D.: *See*—
Wright, George W., Jauch, Kruckeberg, and Clymer. 3,164,822.

Cocchiarella, Thomas A. Hermetically sealable container lid. 3,164,289, 1–5–65, Cl. 220—93.

Cochran Equipment Co.: *See*—
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Cohen, Alfred G.: *See*—
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Collins, Vernon H.: *See*—
Wurster, William A., and Collins. 3,164,316.

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Combustion Engineering, Inc.: *See*—
Kochey, Edward L., Jr. 3,164,134.
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Commercial Solvents Corp.: *See*—
Mulinos, Michael G. 3,164,619.

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Comolli, Alfred G.: *See*—
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Conkling, William C.: *See*—
Tarry, Eldred G., Conkling, and Mitchell. 3,164,024.

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Connors, William D., and M. E. Evans, to Hardinge Bros., Inc. Selective position controller circuit. 3,164,759, 1–5–65, Cl. 318—28.

Conrad, Earl W., to United States of America, National Aeronautics and Space Administration. Nonreusable kinetic energy absorber. 3,164,222, 1–5–65, Cl. 188—1.

Conrad, Martin B. Method and apparatus for use with compensating tubing anchor. 3,164,094, 1–5–65, Cl. 103—1.

Container Corp. of America: *See*—
Freese, Samuel A. 3,164,070.

Continental Can Co.: *See*—
Waycie, Edmund A. 3,164,314.

Control Data Corp.: *See*—
Holt, Arthur W., Hill, and Hironaka. 3,164,805.
Rabinow, Jacob. 3,164,806.

Convery, Robert J., to Sun Oil Co. Solid propellant containing improved asphalt black. 3,164,502, 1–5–65, Cl. 149—18.

Cook, Gordon H., to Rank Precision Industries Ltd., trading as The Organisation Rank Taylor Hobson Division. Optical systems of variable equivalent focal length. 3,164,664, 1–5–65, Cl. 88—57.

Cook, Joseph, Sons & Co. (1930) Ltd.: *See*—
Hunt, William A. 3,164,104.

Cook, Trevor M.: *See*—
Irons, John S., and Cook. 3,164,588.

Cooper, James M., and J. D. Welch, to General Electric Co. Atmosphere re-entry system for spacecraft. 3,164,338, 1–5–65, Cl. 244—14.

Coppick, Sydney: *See*—
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Cordes, Harry D.: *See*—
Pall, David B., and Cordes. 3,164,164.

Cosmo Dynamics, Inc.: *See*—
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Cotter, Robert J., to Union Carbide Corp. Polyureas from N-phenyl, phenylene biscarbamyl halide and a diamine. 3,164,571, 1–5–65, Cl. 260—77.5.

Cotts, Louis C. Electric space heating unit. 3,164,715, 1–5–65, Cl. 219—350.

Couch, S. H., Co., Inc.: *See*—
Bridges, Frank R. 3,164,697.

Cougar Mfg. Co., Inc.: *See*—
Dooley, Thurman T. 3,163,945.





Courtaulds Ltd.: *See*—
Spicer, Jack A., and Farmer. 3,164,047.

Cramer, Frank B., Jr., to North American Aviation, Inc. Impeller-fed dispersion mill. 3,164,377, 1–5–65, Cl. 259—7.

Cramer, Frank B. Jr., to North American Aviation, Inc. Bearing and seal. 3,164,420, 1–5–65, Cl. 308—36.3.

Crayford, Robert M., to Electro-Logic Corp. Signal converter systems. 3,164,825, 1–5–65, Cl. 340—347

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Crestmont Consolidated Corp. *See*—
Long, Robert J. 3,164,731.

Cromer, Charles F., to Westinghouse Electric Corp. Fluid-blast circuit interrupters with retractable impedance probe. 3,164,705, 1–5–65, Cl. 200—148.

Crose-Perrault Equipment Corp. *See*—
Brockett, Jay K., and Handwerk. 3,164,491.

Crosman, Loring P., to Sperry Rand Corp. Magnetic data recording apparatus. 3,164,836, 1–5–65, Cl. 346—74.

Crystal Preforming and Packaging, Inc.: *See*—
Kelly, Norman A. 3,164,315.

Cucullo, Ralph. Gravestone flower support. 3,164,343, 1–5–65, Cl. 248—27.8.

Cunningham, James J., to The American Tobacco Co. Cigarette package. 3,164,248, 1–5–65, Cl. 206—41.

Cupper, Robert A., and C. A. Wolf, Jr., to Union Carbide Corp. Process of treating synthetic lubricating oils with urea. 3,164,553, 1–5–65, Cl. 252—51.5.

Curtis, Wilfred A., and J. F. Keating. Bird feeder. 3,164,130, 1–5–65, Cl. 119—51.

Curtiss-Wright Corp.: *See*—
Francisco, William H., Jr. 3,164,025.

Cushing, George B.: *See*—
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Cusic, John W., and C. H. Lovell, to G. D. Searle & Co. Hydrazides of xanthenecarboxylic acid and Thioxanthenecarboxylic acid. 3,164,606, 1–5–65, Cl. 260—326.3.

Cutler-Hammer, Inc.: *See*—
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Cypress Gardens Skis, Inc.: *See*—
Bennett, William N. 3,164,256.

D.S.T. Pattern and Engineering Co. Ltd.: *See*—
Smith, Eric, and Scholes. 3,163,878.

Dahl, Edwin G. Gun recoil, flash and sound reducer assembly. 3,164,060, 1–5–65, Cl. 89—14.

Dairy Foods Inc.: *See*—
Shields, John B., Nava, and Kempf. 3,164,473.

Dalby, Gaston, and H. C. Fisher, to H. C. Fisher Co. Emulsifier for cake batters. 3,164,476, 1–5–65, Cl. 99—92.

Dammar, Raymon H., to Possis Machine Corp. Wire tensioning apparatus. 3,164,335, 1–5–65, Cl. 242—147.

Daniel, Richard E., to Hoffman Electronics Corp. Frequency shift converter mark restorer circuit. 3,164,773, 1–5–65, Cl. 325—320.

Daniel, Robert L.: *See*—
Kitterman, Donald M., Magers, and Daniel. 3,164,306.

Davies, Ben: *See*—
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Davis, Augustine, Jr., and J. A. Nichols, Davisbilt Steel Joist, Inc. Nailable metal joist. 3,164,227, 1–5–65, Cl. 189—37.

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Davis, Horace R., to Minnesota Mining and Mfg. Co. Fluorinated oxetanes. 3,164,610, 1–5–65, Cl. 260—333.

Davis, Monte V.: *See*—
Wetch, Joseph R., Dieckamp, and Davis. 3,164,525.

Davisbilt Steel Joist, Inc.: *See*—
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De'Ciaccia, Godfrey L., to Pendleton Tool Industries, Inc. Parts container and mounting means therefor. 3,164,259, 1–5–65, Cl. 211—131.

De Cruylles Peratallada, Romulo. Screw with locknut. 3,164,190, 1–5–65, Cl. 151—8.

De Garcia, Rosa M.: *See*—
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De Ghetto, Kenneth A., E. J. Lansing, and R. A. McCallister, to Foster Wheeler Corp. Liquid cooled port. 3,164,644, 1–5–65, Cl. 261—159.

De Good, Maynard J., to The Rapids-Standard Co. Reciprocating propelling member control. 3,164,246, 1–5–65, Cl. 198—160.

De Jong, Jan, and P. Euser, to Nederlandse Centrale Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek. Compensation radiation pyrometer. 3,164,021, 1–5–65, Cl. 73—355.

De Kramer, Isaac A.: *See*—
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Dellon, Franklin, to General Precision Inc. Distance measuring system by irradiating a target with light and sensing the reflected light. 3,164,661, 1–5–65, Cl. 88—1.

De Lorenzo, Eugene J., and R. V. Wright, to Olin Mathieson Chemical Corp. Method for preparation of reaction products of diborane and conjugated diolefins. 3,164,638, 1–5–64, Cl. 260—606.5.

Demalson, Raymond J., to Quigley Co., Inc. Sealing ring and mat for ingot mold. 3,163,898, 1–5–65, Cl. 22—139.

De Mire, Haig A. Adjustable support for wind instruments. 3,164,052, 1–5–65, Cl. 84—398.

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De Muth, Russell T., deceased, by E. K. De Muth, executrix, to The Bendix Corp. Radial-flow turbine safety. 3,164,370, 1–5–65, Cl. 253—77.

Denmark, Bernhart, to International Latex Corp. Decorated bathing cap. 3,163,866, 1–5–65, Cl. 2—68.

Dent, John R., to Melpar, Inc. Strip line hybrid ring. 3,164,791, 1–5–65, Cl. 333—11.

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De Penti, Kenneth L., and D. Willison, to National Castings Co. Car coupler. 3,164,266, 1–5–65, Cl. 213—100.

Derrickson, Michael O., to FMC Corp. Strap tensioning tool. 3,164,372, 1–5–65, Cl. 254—51.

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Diamond, Louis H., W. B. Tuemmler, and J. W. Getz, to FMC Corp. Recovery of high purity nitrosodimethylamine by distillation and phase separation both with caustic. 3,164,535, 1–5–65, Cl. 202—57.

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Diassi, Patrick A., P. A. Principe, and J. Fried, to Olin Mathieson Chemical Corp. Production of 12a-alkyl-21-hydroxyprogesterone derivatives. 3,164,532, 1–5–65, Cl. 195—51.

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Dickore, Karlfried, K. Sasse, and R. Wegler, to Farbenfabriken Bayer Aktiengesellschaft. Derivatives of dimercapto-pyrazines. 3,164,594, 1–5–65, Cl. 260—250.

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Falkenberg, Gustave F. 3,163,882.

Dingus, George W., to Cabot Corp. Apparatus for quenching hot gases. 3,164,205, 1–5–65, Cl. 165—6.

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Dinsmore, Robert C., to Dinsmore Instrument Co. Speed indicator. 3,164,016, 1–5–65, Cl. 73—182.

Ditsler, John L., and R. T. Kirchner, to Westinghouse Electric Corp. Centrifugal compressor lubricating and motor cooling systems. 3,163,999, 1–5–65, Cl. 62—469.

Dixon, Henry O., to Phillips Petroleum Co. Compositions of graphite and polyethylene. 3,164,796, 1–5–65, Cl. 338—28.

Dixon, Henry P., J. C. Nelson, A. G. Beaman, and M. H. Buhmer, to Fox River Paper Corp. Method and means for forming a cockle finish in paper. 3,164,512, 1–5–65, Cl. 162—112.

Doherty, Harold A.: *See*—
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Dolby, Thomas P., to Amphenol-Borg Electronics Corp. Devices for automatic regulation of timepieces. 3,163,979, 1–5–65 Cl. 58—85.5.

Dolney, Stanley M., to The Cyril Bath Co. Apparatus for stretch forming and punching metal stock and stock gripping head therefor. 3,164,196, 1–5–65, Cl. 153—35.

Dolza, John. Internal combustion engine. 3,164,143, 1–5–65, Cl. 123—195.

Donboux, Jacques M., to Automatic Electric Laboratories, Inc. Arrangement for discriminating between the two states of a binary signal. 3,164,776, 1–5–65, Cl. 328—116.

Donohue, Thomas F., to General Motors Corp. Load coupling and fuel control means for a plurality of engines. 3,163,983, 1–5–65, Cl. 60—39.15.

Dooley, Thurman T., to Cougar Mfg. Co., Inc. Brush rake attachment for bulldozer blade. 3,163,945, 1–5–65, Cl. 37—2.

Doom, Lewis G.: *See*—
Oakes, Earle T., Doom, McElligott, and Sundheim. 3,164,107.

Dorr-Oliver Inc.: *See*—
Lindell, Oscar V. 3,164,379.

Dousette, George D. Bottle top metering dispenser and means for locking the same on a bottle. 3,164,300, 1–5–65, Cl. 222—153.

Dow Chemical Co., The: *See*—
Bremmer, Bart J. 3,164,634.
Calamari, James A., Jr. 3,164,565.
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Eichhorn, Jacob. 3,164,558.
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Jones, William C. 3,164,010.
Moolenaar, Robert J., Karpiuk, and Neipert. 3,164,461.
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Wallis, Wilhelm E., and Leff. 3,164,591.

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Dowty, George H., and T. D. H. Andrews, to Dowty Technical Developments Ltd. Hydrostatic power transmission. 3,163,987, 1–5–65, Cl. 60—53.

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Frye, Colin M., Milburn, and Winder. 3,164,066.
Dowty Technical Developments Ltd.: *See*—
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Doyle, Frank P., J. H. C. Nayler, and G. N. Rollinson, to Beecham Research Laboratories Ltd. 6-aminopenicillanic acid. 3,164,604, 1-5-65, Cl. 260—306.7.
Dracka, Clarence L.: *See*—
Zetzer, George J., and Dracka. 3,163,865.
Draeger, Kenneth E.: *See*—
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Dravo Corp.: *See*—
Graham, Harold M., and Sharpe. 3,164,463.
Drechsel, Herbert, and H. Grimm, to Metallgesellschaft Aktiengesellschaft. Mixing device for multiple bed reactor. 3,164,446, 1-5-65, Cl. 23—288.
Drislane, Edward W.: *See*—
Baynes, Gene P., and Drislane. 3,164,236.
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Drury, William B.: *See*—
White, John H., and Drury. 3,164,365.
Duffy, William B., to United-Carr Inc. Sheet-metal nut formed with sealer escape ports. 3,164,055, 1-5-65, Cl. 85—32.
Dumas, Philippe, and V. Marcoux. Fish skinning tool. 3,163,885, 1-5-65, Cl. 17—7.
Dumont, Lincoln B. Supercharged internal combustion engine arrangement. 3,163,984, 1-5-65, Cl. 60—13.
Dunaway, Robert E., to Swift & Co. Electrical stunning of small stock. 3,163,884, 1-5-65, Cl. 17—1.
Dunham, Harrison. Positioning device. 3,164,051, 1-5-65, Cl. 83—441.
Du Pont de Nemours, E. I. and Co.: *See*—
Baker, Bertsil B., Brauner, and Oemler. 3,164,578.
Bauer, Herbert. 3,164,719.
Buxbaum, Edwin C. 3,164,449.
Smith, Charles W. 3,164,539.
Dyer, Alvah F., E. E. Reed, and R. J. Bennett, to Phillips Petroleum Co. Safety flow valve. 3,164,350, 1-5-65, Cl. 251—68.
Dyna System Inc.: *See*—
Reynolds, Rollin A. 3,164,040.
Easter, Ross A., and B. K. Davis, to The Pillsbury Co. Tightly bundled package assemblage and method of packaging. 3,164,251, 1-5-65, Cl. 206—65.
Eberl, James J., and S. Coppick, to Scott Paper Co. Process for preparing fragments of a foamed urea-formaldehyde resin. 3,164,559, 1-5-65, Cl. 260—2.5.
Eckert, George W.: *See*—
Reuter, Robert M., and Eckert. 3,164,138.
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Goldberg, Seymour. 3,164,781.
Ege, Sigmund, to Anaconda Wire and Cable Co. Electrical conductor. 3,164,670, 1-5-65, Cl. 174—128.
Ehrsam, Frederick. Signal mirror. 3,164,124, 1-5-65, Cl. 116—20.
Eichhorn, Jacob, to The Dow Chemical Co. Self-extinguishing urethane polymer compositions. 3,164,558, 1-5-65, Cl. 260—2.5.
Elci Products Corp.: *See*—
Burson, Bob O. 3,164,765.
Electro-Logic Corp.: *See*—
Crayford, Robert M. 3,164,825.
Electro-Measurements, Inc.: *See*—
Morgan, Merle L. 3,164,798.
Electro-Optical Systems Inc.: *See*—
Miller, Jack V. 3,164,760.
Elektro-Physik Hans Nix & Dr. Ing. Steingroever: *See*—
Steingroever, Erich A. 3,164,756.
Ellis, Frederick E., P. J. Standbridge, and M. Taylor, to Automotive Products Co. Ltd. Power transmission systems providing automatic changes of gear ratio. 3,164,035, 1-5-65, Cl. 74—757.
Ellis, Lloyd J.: *See*—
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Fredericks, George W., and W. T. Wichman, to Bell Telephone Laboratories, Inc. Encoding and storage apparatus for traffic measuring. 3,164,824, 1-5-65, Cl. 340—347.
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Groner, Edward L., and Boyd. 3,164,020.

Hamilton Watch Co.: *See*—
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Harding, Philip A., to Bell Telephone Laboratories, Inc. Matrix access arrangement. 3,164,810, 1–5–65, Cl. 340—174.

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Hardy, Maurice E., to Zenith Radio Corp. Tape recorder. 3,164,331, 1–5–65, Cl. 242—55.12.

Hargreaves, Derek B., and E. Staniforth. Wheeled distributor with imperforate conveyor band. 3,164,301, 1–5–65, Cl. 222—163.

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Hawkins, Havilah S. Saw guide for bank saw machines having work guide means. 3,164,176, 1–5–65, Cl. 143—161.

Hawkins, Marcus J., to The Solartron Electronic Group Ltd. Mechanical linkages to electro-magnets and solenoids controlling print hammer mechanisms. 3,164,085, 1–5–65, Cl. 101—93.

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Haumann, Wilfried, Mendez, Mikoliczeak, and Heavilin. 3,163,994.

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Heinrich, Ervin L. Panning and tilting mount for a camera. 3,164,838, 1–5–65, Cl. 352—69.

Heinsen, Robert A., to American Machine & Foundry Co. Synchronous motor with notched pole pieces to facilitate starting. 3,164,734, 1–5–65, Cl. 310—156.

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Hibbard, Walter R., Jr., and J. L. Walter, to General Electric Co. Magnetic material and method of fabrication. 3,164,496, 1–5–65, Cl. 148—120.

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Hill, James D.: *See*—
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Holt, Arthur W., Hill, and Hironaka. 3,164,805.

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Hogden, John D., and J. B. Lovett. Pipe cutter. 3,164,062, 1–5–65, Cl. 90—12.

Holderer, Oscar C., to United States of America, Army. Motion sensing transducer. 3,164,023, 1–5–65, Cl. 73—516.

Hole Hog, Inc.: *See*—
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Holga Metal Production Co.: *See*—
Michaelson, Carlyle. 3,164,419.

Hollar, George E. Fish feeding device. 3,163,959, 1–5–65, Cl. 43—44.99.

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Holt, Herbert B. W., and P. D. Saw, to Tyer and Co. Ltd. Instrument for the sensing of temperature. 3,164,755, 1–5–65, Cl. 317—153.

Holser, Walter. Driving means of a program control apparatus for washing machines. 3,164,729, 1–5–65, Cl. 307—141.

Holzman, Allen L., and D. Altman, to United Aircraft Corp. Propellant grain. 3,164,093, 1–5–65, Cl. 102—98.

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Hooper, Ralph S., to Hawker Aircraft Ltd. Direct lift fluid sustaining and propelling means for aircraft. 3,164,337, 1–5–65, Cl. 244—12.

Hopkins, Kenneth W., to B P Tanker Co. Ltd. Gangways. 3,163,873, 1–5–65, Cl. 14—71.

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Horn, Christian F., to Union Carbide Corp. Dyeable linear polyesters modified by a metallosulfo-phenoxy-substituted benzoic acid or ester. 3,164,567, 1–5–65, Cl. 260—49.

Horn, Christian F., to Union Carbide Corp. Dyeable linear polyesters modified by a metallosulfofluorenyl-substituted alkanoic acid or ester. 3,164,570, 1–5–65, Cl. 260—75.

Hosbein, Hugh W., to Essex Wire Corp. Spool package. 3,164,252, 1–5–65, Cl. 206—65.

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Howard, Jack E., and L. A. Kaplan, to United Cellular Products Corp. Method of making breast pads, cups and fronts. 3,164,655, 1–5–65, Cl. 264—321.

Howes, John M. Drive means for endless-belt units. 3,164,417, 1–5–65, Cl. 305—32.

Hrdina, Jiri, to Ceskoslovenska akademie ved. Pivoted distributor arm supporting a discharge hose in a liquid dispensing device. 3,164,307, 1–5–65, Cl. 222—527.

Hajeh, Paul Y., and J. V. Cartmell, to The National Cash Register Co. Gelling of hydrazine. 3,164,505, 1–5–65, Cl. 149—36.

Hubbard, Bruce W., to Ideal Roller and Mfg. Co. Polysulfide product and method of preparing the same. 3,164,643, 1–5–65, Cl. 260—830.

Huber, Raymond C., to Olin Mathieson Chemical Corp. Injectable steroid compositions containing at least 75% benzyl benzoate. 3,164,520, 1–5–65, Cl. 167—58.

Hudalnski, Edward, to Jameson Corp. Slack maker apparatus for facilitating cable connections. 3,164,373, 1–5–65, Cl. 254—67.

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Koda, Nobuo, and Yagy. 3,164,743.
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Hughes, Cecil, to Kelston Engineering Co. Ltd. Fluid pumps. 3,164,100, 1–5–65, Cl. 103—148.

Hughes, Donald H., and W. E. Larsen, to The American Mushroom Institute. Machine for stem-cutting and sising of mushrooms. 3,164,182, 1–5–65, Cl. 146—81.

Hulett, Jack, to Kar-Trol Signal Co. Inc. Frost, snow and ice detector. 3,164,820, 1–5–65, Cl. 340—234.

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Ide, Kozo, and K. Noguchi, to Kanegafuchi Spinning Co., Ltd. Linear polyesters of a glycol containing a p-dioxane ring. 3,164,569, 1–5–65, Cl. 260—75.

Ideal Roller and Mfg. Co.: *See*—
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Ihrman, Kryn G., and T. H. Comeld, to Ethyl Corp. Cyclo-octadiene iron subgroup metal carbonyls. 3,164,621, 1–5–65, Cl. 260—439.

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Ficken, Geoffrey E. 3,164,587.

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Oelke, Erwin S. 3,164,214.
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Ingoldt, Robert C. Tubular golf bag. 3,164,185, 1–5–65, Cl. 150—1.5.

Inouye, Seitaro. Method of tumble molding. 3,164,653, 1–5–65, Cl. 264—310.

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Inter-American Transport Equipment Co.: *See*—
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International Business Machines Corp.: *See*—
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Into, Henry A., to Olin Mathieson Chemical Corp. Magazine tube-receiver joint structure. 3,163,950, 1–5–65, Cl. 42—49.

Into, Henry A., to Olin Mathieson Chemical Corp. Barrel-receiver mounting for firearms. 3,163,952, 1–5–65, Cl. 42—75.

Ipsen, Harold N. Quenching apparatus for metallic articles. 3,164,656, 1–5–65, Cl. 266—6.

Irons, John S., and T. M. Cook, to Merck & Co., Inc. Method for the preparation of 1,2,4-benzothiadiazine-1,1-dioxide compounds. 3,164,588, 1–5–65, Cl. 260—243.

Irvine, James M., Jr., to Holly Computer Products. Means for mounting a removable print drum. 3,164,083, 1–5–65, Cl. 101—93.

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Irwin, William R. High flame-low flame burners. 3,164,201, 1–5–65, Cl. 158—28.

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Iwaya, Keikichi, and S. Kuramochi, to Louis Marx & Co., Inc. Walking toy figure. 3,163,960, 1–5–65, Cl. 46—247.

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Jager, Holger N., W. Needre, D. E. Gillis, and T. M. N. Wood, to Standard-Thomson Corp. Liquid dispensing apparatus for small quantities. 3,164,304, 1–5–65, Cl. 222—192.

Jameson Corp.: *See*—
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Janssen, Paul A. J., to Research Laboratorium Dr. C. Janssen, N.V. 1-aralkyl-4-(N-aryl-carbonyl amino)piperidines and related compounds. 3,164,600, 1–5–65, Cl. 260—293.4.

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Jay, Richard S., to Jarke Mfg. Co. Modular cantilever arm rack. 3,164,255, 1–5–65, Cl. 211—60.

Jelatis, Demetrius G., R. A. Olsen, and L. W. Haaker, to Central Research Laboratories, Inc. Sealed master-slave manipulator. 3,164,267, 1–5–65, Cl. 214—1.

Jennings, Jo E., to Jennings Radio Mfg. Corp. Push-pull oscillator power supply having parallel-connected transistors. 3,164,784, 1–5–65, Cl. 331—113.

Jennings Radio Mfg. Corp.: *See*—
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Jenny, Erwin F.: *See*—
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Johnson, Charles G. Gyro swing. 3,164,382, 1–5–65, Cl. 272—33.

Johnson, Christopher L., to Rolls-Royce Ltd. Gas turbine engine fuel system. 3,164,202, 1–5–65, Cl. 158—30.4.

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Johnson, Edwin L., to Young Spring & Wire Corp. Mobile liquid spray unit. 3,163,880, 1–5–65, Cl. 15—626.

Johnson, Ernest K., and A. E. Elmore to said Elmore assignor to said Johnson. Portable urinal. 3,163,869, 1–5–65, Cl. 4—110.

Johnson, Frederick B., to Westinghouse Electric Corp. Mechanical operating means for fluid-blast circuit interrupter. 3,164,706, 1–5–65, Cl. 200—148.

Johnson, Howard L. Retractable drill bit and associated structures. 3,164,215, 1–5–65, Cl. 175—261.

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Jones, William C., to The Dow Chemical Co. Paper core crush or compression tester and method. 3,164,010, 1–5–65, Cl. 73—94.

Josefowski, Leon B., to International Telephone and Telegraph Corp. Manually operated, multi-button interlocking push-button key set. 3,164,688, 1–5–65, Cl. 200—5.

Juengel, Victor A., to Juengel V-Matic Systems, Inc. Conveyor. 3,164,245, 1–5–65, Cl. 198—129.

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Karguin, Valentin A., and V. A. Kabanov. Method for producing heat resistant semiconductor materials from nitrides. 3,164,555, 1–5–65, Cl. 260—2.

Karlby, Henning, W. P. Caywood, Jr., and H. E. Lehman, to Rockwell Mfg. Co. Flow measuring apparatus. 3,164,017, 1–5–65, Cl. 73—194.

Karpiuk, Robert S.: *See*—
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Kasio, Jose, and R. M. de Garcia. Attachable side wall covering for tires. 3,164,192, 1–5–65, Cl. 152—353.

Kass, Robert E., A. H. Markhart, and E. Lavin, to Shawinigan Resins Corp. Aqueous coating composition of dialdehyde, a pentacrythritol and half ester and process of insulating wire therewith. 3,164,561, 1–5–65, Cl. 260—29.2.

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Kelley, Oliver K., to General Motors Corp. Multiple stage torque converter drive. 3,164,034, 1–5–65, Cl. 74—732.

Kelley, Robert M., to Boeing Airplane Co. Stabilizing device for control systems. 3,164,763, 1–5–65, Cl. 318—480.

Kelly, Norman A., to Crystal Preforming and Packaging, Inc. Carton construction. 3,164,315, 1–5–65, Cl. 229—17.

Kelly, Robert, to Burroughs Corp. Selective rotary printing apparatus. 3,164,082, 1–5–65, Cl. 101—91.

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Kennedy, Michael L. Tube swaging tool. 3,164,045, 1–5–65, Cl. 81—15.

Kenney, Mahlon W., to The Seeburg Corp. Machine for vending drinks with or without ice. 3,164,299, 1–5–65, Cl. 222—76.

Kenney, William H.: *See*—
Kenney, William H. 3,163,911.

Kenney, William H., to William H. Kenney. Wall form system. 3,163,911, 1–5–65, Cl. 25—131.

Kern, Loyd R.: *See*—
McGuire, William J., Jr., and Kern. 3,164,208.

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Kickhaefer Corp.: *See*—
Alexander, Charles F., Jr. 3,164,121.

Kiekens-Werwelwind-Holland (Kiekens-Whirlwind-Holland) (KWH) N.V.: *See*—
Bruinsma, Josephus F. 3,164,324.

Kienzle Uhrenfabriken A. G.: *See*—
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Kilches, Rudolf: *See*—
Zölss, Gerhard, Kilches, Schmid, and Wismayr. 3,164,629.

Kilmer, George McQ. Come apart bicycle. 3,164,397, 1–5–65, Cl. 280—287.

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Day, Winterton U. 3,164,514.

Kimpton, William H. Beaming machines. 3,163,914, 1–5–65, Cl. 28—35.

King, John W., and R. F. Prost, to Ampex Corp. Rotary head position determining apparatus. 3,164,683, 1–5–65, Cl. 179—100.2.

King, Kenneth G., to Westinghouse Brake and Signal Co. Ltd. Control for variable speed electrical motor systems. 3,164,760, 1–5–65, Cl. 318—72.

King, Rutledge F., to United States of America, Atomic Energy Commission. Ion pulse generator comprising deflector means to sweep an ion beam across an apertured member. 3,164,718, 1–5–65, Cl. 250—41.9.

King, William H., Jr., to Esso Research and Engineering Co. Coated piesoelectric analysers. 3,164,004, 1–5–65, Cl. 73—23.

Kingsford-Smith, Charles A., to General Precision, Inc. Timing pulse generator. 3,164,818, 1–5–65, Cl. 340—174.1.

Kinker, Clarence C., to Owens-Illinois Glass Co. Apparatus for collecting stacking and handling sheet material. 3,164,270, 1–5–65, Cl. 214—6.

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Kirchhubel, Frederick A., to Texas Instruments Inc. Method of assembling thermostatic swtiches. 3,164,701, 1–5–65, Cl. 200—138.

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Kitchens of Sara Lee, Inc.: *See*—
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Kitterman, Donald M., W. F. Magers, and R. L. Daniel, to Pacific Industries, Inc. Bottle closure. 3,164,306, 1–5–65, Cl. 222—498.

Klein, Bernard, to The Bendix Corp. Gas turbine control. 3,164,368, 1–5–65, Cl. 253—52.

Kleist, Robert A., and J. Scarbrough, to General Precision, Inc. Inductive loop vehicle presence detector. 3,164,602, 1–5–65, Cl. 340—38.

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Belts, Ernst O., and Klippert. 3,164,355.

Kluge, Herman D.: *See*—
Reed, David D., Petersen, and Kluge. 3,164,624.

Knaebe, Frank R. Line gripping and tension device. 3,163,903, 1–5–65, Cl. 24—126.

Knighton, James B., A. V. Hariharan, R. K. Steunenberg, and W. H. Hauschildt, to United States of America, Atomic Energy Commission. Preparation of thorium metal from the oxide. 3,164,462, 1–5–65, Cl. 75—84.1.

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Armstrong, Lee J. 3,164,349.

Kocay, Witold R., A. G. Comolli, and J. A. McKee, to American Cyanamid Co. Art of dehydrating fibers with lubricating and antistatic coatings. 3,164,650, 1–5–65, Cl. 264—130.

Koch, Alan J., to Whirlpool Corp. Tubular evaporator. 3,163,996, 1–5–65, Cl. 62—276.

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Gaylord, John A. 3,163,905.

Kochey, Edward L., Jr., to Combustion Engineering, Inc. Apparatus and method for operating a forced flow once-through vapor generator. 3,164,134, 1–5–65, Cl. 122—406.

Koda, Nobuo, and L. S. Yaggy, to Hughes Aircraft Co. Scan-conversion cathode ray tube having a photoconductor storage element of the field-sustained conductivity type. 3,164,743, 1–5–65, Cl. 315—8.6.

Koenig, Martin F., to Cutler-Hammer, Inc. Multi-circuit panelboard for circuit breakers. 3,164,752, 1–5–65, Cl. 317—119.

Kohl, Theodor. Standing equipment uniting a number of work spaces for hairdressers. 3,164,429, 1–5–65, Cl. 312—227.

Kohlhagen, Walter. Cordless clock of commercial power-frequency synchronized type. 3,163,978, 1–5–65, Cl. 58—23.

Kohlhagen, Walter, to Amphenol-Borg Electronics Corp. Journal-type staff bearings for movements and the like. 3,164,421, 1–5–65, Cl. 308—121.

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Minekawa, Saburo, Hoshino, Shibata, and Kominami. 3,164,627.
Minekawa, Saburo, Hoshino, Shibata, and Kominami. 3,164,628.

Kool, Else, to North American Philips Co., Inc. Method of providing alloy contacts on semi-conductor bodies. 3,164,499, 1–5–65, Cl. 148—179.

Kosowsky, Leo K., to Columbia Broadcasting System, Inc. Film projector and optical system therefor. 3,164,058, 1–5–65, Cl. 88—26.

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Beale, Julian R. A., Brockman, and Kreba. 3,164,501.

Kroenert, John T., to United States of America, Navy. Underwater telephony. 3,164,800, 1–5–65, Cl. 340—5.

Kronish, Donald P., and R. R. Mohan, to Warner-Lambert Pharmaceutical Co. Production of mycobacterium phlei. 3,164,533, 1–5–65, Cl. 195—96.

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Kryznoski, Louis F., to Atlantic Production Corp. Carrying bag construction. 3,164,231, 1–5–65, Cl. 190—43.

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Kus, Rudolf, to Westfalia Dinnendahl Groppel Aktiengesellschaft. Device for charging and preheating granular material passing into a kiln. 3,164,380, 1–5–65, Cl. 263—32.

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Irwin, Jere F., and A. D. and F. G. Paxton. 3,163,969.

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Lally, Vincent E., and C. F. Campen, Jr., to United States of America, Air Force. Methods for electronic transmission and reproduction of data in graphic form. 3,164,674, 1–5–65, Cl. 178—19.

Lamb, Charles F., to Grinnell Corp. Traveling cleaner with air intake shutter. 3,163,879, 1–5–65, Cl. 15—312.

Lamburn, Alan S., and R. L. Abbott, to Axel Wickman Transmission Ltd. Planetary drive transmission device. 3,164,036, 1–5–65, Cl. 74—781.

Lamkin, James E., 35% to W. W. Lowrey, Jr., and W. M. Majors, Jr., jointly, and 5% M. E. Lamkin. Apparatus for softening water. 3,164,550, 1–5–65, Cl. 210—89.

Lamkin, Marion E.: *See*—
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Landbouwwerktuigen- en Machinefabriek H. Vissers N.V.: *See*—
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Lâubli, Fritz, to Sulzer Freres, S.A. Method of and apparatus for regulating a forced flow steam generator. 3,164,186, 1–5–65, Cl. 122—479.

Lavigueur, François I., to General Dynamics Corp. Trunnion mounted ball valves having spring biased seats. 3,164,363, 1–5–65, Cl. 251—174.

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Lebedev, Vladimir K.: *See*—
Paton, Boris E., Lebedov, Ostapenko, Lashkevich, Sevbo, Sakharnov, Litvinchuk, and Gorbunov. 3,164,712.

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Lernicer, Daniel, to The Upjohn Co. 2-Phenyl-3-(tertiary amino alkoxy) phenyl-indenes. 3,164,607, 1–5–65, Cl. 260—326.5.

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Lee, Walter S. Combination pressure regulator and manual on-off valve. 3,164,172, 1–5–65, Cl. 137—612.1.

Leff, Stanley S.: *See*—
Wallen, Wilhelm E., and Leff. 3,164,591.

Legrand, Maurice: *See*—
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Leonard, Frederick, to Geigy Chemical Corp. 5-carboxylic acid-2-phenyl-pyrrolines, corresponding pyrrolidines and functional derivatives thereof. 3,164,597, 1–5–65, Cl. 260—268.

Leopoldi, Norbert. Egg opening device. 3,164,180, 1–5–65, Cl. 146—2.

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Levey, Ralph P., Jr., to United States of America, Atomic Energy Commission. Gas-solids contacting method. 3,164,440, 1–5–65, Cl. 23—1.

Lewis, Francis C. Retrievable bridge plug. 3,164,210, 1–5–65, Cl. 166—121.

Lewis, Karl R. Firearm firing mechanism. 3,163,951, 1–5–65, Cl. 42—65.

Lewis, Morgan J. By-pass arrangement for a meter. 3,164,751, 1–5–65, Cl. 317—108.

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Lichowsky, Abraham, to Ampex Corp. Indexing synchronous motor. 3,164,735, 1–5–65, Cl. 310—156.

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Linacre, Frederick D., and R. L. Berriman, to McFarlane and Burns Proprietary Ltd. Method of making a container for perishable commodities. 3,164,068, 1–5–65, Cl. 93—35.

Lindberg, John E. Method of applying an oxide coating to a metal tube. 3,164,493, 1–5–65, Cl. 148—6.3.

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Löhrer, Hardy. Stopper for closing containers, such as bottles, flasks and the like. 3,164,278, 1–5–65, Cl. 215—41.

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Lugash, Max J., to Maxon Industries, Inc. Hinged semi-trailer coupling unit. 3,164,399, 1–5–65, Cl. 280—423.

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Marsal, Paul A., deceased (by J. Y. Marsal, executrix), and A. Tasch, to Union Carbide Corp. Cell charging device. 3,164,764, 1–5–65, Cl. 320—53.

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Martin, Hans. Lacing system for footwear, particularly ski-boot fastener. 3,163,900, 1–5–65, Cl. 24—70.

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Martin Metals Co.: *See*—
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Price, William G., and May. 3,164,264.

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Yeckley, Russell N., Sucha, and Van Sickle. 3,164,704.

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Wubbe, Leo J., to The Anderson Co. Arm and blade connector. 3,163,877, 1–5–65, Cl. 15—250.32.

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# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 5, 1965 Volume 810 Number 1


# TRADEMARKS

## NOTICES

### United States Adopted Names

List No. 9

*July 1, 1964–October 31, 1964*

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

aletamine hydrochloride : sympathomimetic amine
benzindamine hydrochloride : analgesic; anti-inflammatory; antipyretic
cactinomycin : antineoplastic agent
carbamazepine : anticonvulsant
cephaloglycin : antibiotic
cephaloridine : antibiotic
coumermycin : antibiotic
deferoxamine : iron depleter
denatonium benzoate : denaturant
ethamsylate : hemostatic agent
follicle stimulating hormone, human : gonadotropin
furazolium chloride : antibacterial agent
hetacillin : antibiotic
hexedine : antibacterial
ioglycamic acid : radiopaque (cholecystographic and cholangiographic)
methyl cysteine hydrochloride : mucolytic agent
nitrodan : anthelmintic agent
peliomycin : antineoplastic agent
porfiromycin : antibiotic
prednazate : anti-inflammatory (veterinary)
proadifen hydrochloride : drug potentiator
quinbolone : anabolic agent
quingestanol acetate : progestational agent
sancycline : antibiotic
sodium acetosulfone : leprostatic agent
thiamiprine : anti-leukemic
triamcinolone hexacetonide : injectable glucocorticoid

## CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1964

| | |
|---|---|
| Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] | 15,498 |
| Date of oldest new application | Apr. 17, 1964 |
| Date of oldest amended application | Apr. 1, 1964 |

J. H. MERCHANT, Director, Trademark Examining Operation

| TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application: New | Oldest Application: Amended |
|---|---|---|
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44 | 5-25-64 | 5-13-64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 4-17-64 | 4-1-64 |
| Renewals (All Classes) | 11-2-64 | 11-17-64 |
| Sec. 12 (c) Publications (All Classes) | 11-5-64 | |

Applications filed during the month of November 1964—2026

Registrations Issued ---------- 411—No. 782,616 to No. 783,026
Renewals Issued ---------- 50


The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

## Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 22,406(a)** (COCA-COLA in script), The Coca Cola Company, Nutrient or tonic beverages; **Reg. No. 47,189(a)**, same, Tonic beverages and syrups for the manufacture of such beverages; **Reg. No. 238,145(a)** (COCA-COLA), same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146(a)**, (COCA-COLA in script), same, filed Oct. 7, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–1000, *The Coca-Cola Company* v. *Italian Snack Bar, Inc.* Same, Doc. 64C–1001, *The Coca-Cola Company* v. *Raymagen Foods, Inc.* Same, Doc. 64C–1002, *The Coca-Cola Company* v. *T & G Snack Bar, Inc.*

**Reg. No. 22,406(b)**; **Reg. No. 47,189(b)**; **Reg. No. 238,145(b)**; **Reg. No. 238,146(b)**; **Reg. No. 415,755** (COKE), The Coca Cola Company, Non-alcoholic maltless beverages and the syrups for making such beverages, filed May 4, 1964, D.C., M.D. Fla. (Jacksonville), Doc. 64–110–J, *The Coca-Cola Co.* v. *Fred Cotten's Bar-B-Q et al.* Defendant enjoined (notice Sept. 18, 1964). Same, filed Oct. 2, 1964, D.C., S.D.N.Y., Doc. 64/3013, *The Coca-Cola Company* v. *The Gallery Restaurant.* Judgment for plaintiff by default; defendant enjoined Nov. 12, 1964. Same, filed Oct. 26, 1964, D.C., S.D.N.Y., Doc. 64/3244, *The Coca-Cola Company* v. *Latin Palace Club.* Consent judgment; defendants enjoined Dec. 1, 1964. Same, filed Nov. 25, 1964, D.C., S.D.N.Y., Doc. 64/3605, *The Coca-Cola Company* v. *896 Restaurant, Inc.* Same, filed Dec. 2, 1964, D.C., S.D.N.Y., Doc. 64/3691, *The Coca-Cola Company* v. *J.E.F. Restaurant.*

**Reg. No. 47,189.** (See Reg. No. 22,406.)

**Reg. No. 82,124** (WALTHAM), Waltham Watch Company, Watches, watchcases, watch-movements, and parts thereof, filed Sept. 4, 1964, D.C., S.D.N.Y., Doc. 64/2745, *Waltham Watch Co.* v. *Alvin Messler et al.*

**Reg. No. 238,145.** (See Reg. No. 22,406.)

**Reg. No. 238,146.** (See Reg. No. 22,406.)

**Reg. No. 338,733** (DONNATAL), A. H. Robins Company, Inc., Medicinal preparation used in the treatment of gastro-intestinal disturbances, filed Nov. 27, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2149, *A. H. Robins Company, Inc.* v. *Gordon Drugs.* Final consent judgment; defendant enjoined Feb. 7, 1964. Same, filed Oct. 22, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 36702, *A. H. Robins Co., Inc.* v. *Wagner Pharmacy.* Final judgment in favor of plaintiff; injunction issued Nov. 23, 1964. Same, Doc. 36703, *A. H. Robins Co., Inc.* v. *Pepper Pharmacy.* Decree as above. Same, Doc. 36704, *A. H. Robins Co., Inc.* v. *Sneidman Pharmacy.* Same, Doc. 36705, *A. H. Robins Co., Inc.* v. *Galen Drug Store Co.*

**Reg. No. 346,426** (GRANT'S), William Grant & Sons Limited, Blended scotch whisky (in bottles only); **Reg. No. 574,152** (GRANT'S (in script) BEST PROCURABLE AND DESIGN), same, Scotch whisky; **Reg. No. 668,437** (GRANT'S (in script) STAND FAST AND DESIGN), same; **Reg. No. 747,756** (GRANT'S BP AND DESIGN), same, filed May 14, 1963, D.C., S.D.N.Y., Doc. 63/1393, *William Grant & Son, Ltd.* v. *Imported Brands, Inc. et al.* Order of dismissal Sept. 24, 1964.

**Reg. No. 415,755.** (See Reg. No. 22,406.)

**Reg. No. 444,792** (HERITAGE in script), Heritage Furniture, Inc., Furniture—namely, upholstered furniture for living rooms, namely, sofas, sofa beds, day beds, etc.; **Reg. No. 560,977**, same, Upholstered, wood, plastic, and metal furniture for household and public use—regular, sectional, day-bed couch and mobile sofas, etc., filed Jan. 5, 1959, D.C. Conn. (New Haven), Doc. 7607, *Heritage Furniture* v. *American Heritage, Inc. et al.* Trademarks held valid and infringed; defendants enjoined Sept. 30, 1964.

**Reg. No. 518,274** (GEORGE WASHINGTON'S CHOICE in script), Bates Manufacturing Company, Bedspreads; **Reg. No. 539,756** ("LOOMED TO BE HEIRLOOMED" in script), same, Bedspreads, draperies, sheets, napkins, table cloths, and pillow cases; **Reg. No. 618,799** (HEIRLOOM), same, filed Jan. 30, 1963, D.C., S.D.N.Y., Doc. 63/297, *Bates Manufacturing Company et al.* v. *Northwick Mills, Inc.* Consent judgment in favor of plaintiffs; counterclaims dismissed with prejudice Sept. 9, 1964.

**Reg. No. 519,290** (FIFTY FIFTY), The Miller-Becker Company, Maltless soft drinks and carbonated waters; **Reg. No. 675,316** (50 : 50), The Miller-Becker Co., doing business as Cotton Club Bottling Co., Soft drinks, filed Sept. 11, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 11,083, *The Cotton Club Bottling Co.* v. *Sol Lenzner Corporation.*

**Reg. No. 522,721** (JOY), The Procter & Gamble Company, Sudsing cleaner, cleanser and detergent, excepting soap in bar form, filed Nov. 23, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c2139, *Procter & Gamble Company* v. *Clinton Detergent Company.* Consent judgment; action dismissed without prejudice Sept. 24, 1963.

**Reg. No. 527,862** (DRAMAMINE), G. D. Searle & Co., Dimenhydrinate tablets useful in the prevention and treatment of motion sickness, nausea, and vomiting, and a histamine antagonist, filed Sept. 25, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–941, *G. D. Searle & Co.* v. *Dramamine Phar., Inc.*

**Reg. No. 530,826** (RED JACKET), Red Jacket Manufacturing Co., Gasoline and electric driven reciprocating shallow well pumps, deep well centrifugal pumps, shallow well centrifugal pumps, etc.; **Reg. No. 535,433**, same, Base exchange water treatment apparatus, water filters and parts thereof, filed Aug. 7, 1964, D.C., W.D. Pa. (Pittsburgh), Doc. 64–822, *Red Jacket Manufacturing Company* v. *Red Jacket Company, Inc.*

**Reg. No. 535,433.** (See Reg. No. 530,826.)

**Reg. No. 536,288** (SIGMA AND DESIGN), Sigma Instruments, Incorporated, Electrical relays and acoustic switches, filed July 18, 1962, D.C., S.D.N.Y., Doc. 62/2310, *Sigma Instruments, Inc.* v. *Sigma Electric Co., Inc.* Stipulation and order of dismissal Sept. 15, 1964.

**Reg. No. 539,760.** (See Reg. No. 518,274.)

**Reg. No. 554,811** (DACRON), E. I. du Pont de Nemours and Company, Synthetic polyester fibers for generalized use in the industrial arts; **Reg. No. 555,665**, same, Yarns of synthetic fibers, filed Sept. 16, 1964, D.C., S.D.N.Y., Doc. 64/2842, *E. I. du Pont de Nemours & Co.* v. *Grand Textile Corp et ano.*

**Reg. No. 555,665.** (See Reg. No. 554,811.)

**Reg. No. 574,152.** (See Reg. No. 346,426.)

**Reg. No. 575,391** (THE RED BOOK), The Reuben H. Donnelley Corporation, Classified telephone directories; **Reg. No. 588,850** (RED BOOK BUYERS' SERVICE), same, Providing buying information as to sellers of all kinds of merchandise and services and who advertise in the telephone directories known as "The Red Book," filed Sept. 22, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1309–WM, *The Reuben H. Donnelley Corporation* v. *The Geter Co., Inc. et al.*

**Reg. No. 577,125** (SINGER), The Singer Manufacturing Co., Renting of sewing machines to the public, and for engineering and consulting services to the needle-trade industries, etc.; **Reg. No. 578,282** (SPARTAN), Essel Import-Export Co., Inc., Sewing machines, sewing machine parts, sewing machine needles, and sewing machine attachments; **Reg. No. 583,337** (SINGER), The Singer Manufacturing Company, Thermoplastic material in the form of sheets and strips, dust bags for vacuum cleaners, traveling cases, emery cord, etc., filed Sept. 8, 1964, D.C., S.D.N.Y., Doc. 64/2753, *The Singer Company* v. *Gramatan Sewing Machine Co., Inc.*

**Reg. No. 578,282.** (See Reg. No. 577,125.)

**Reg. No. 583,337.** (See Reg. No. 577,125.)

**Reg. No. 588,850.** (See Reg. No. 575,391.)

**Reg. No. 590,977.** (See Reg. No. 444,792.)

**Reg. No. 606,582** (FORMULABS), Formulabs, Inc., Inks, filed Feb. 3, 1964, D.C.N.J. (Newark), Doc. 100–64, *Formulabs, Incorporated* v. *Louis A. Amy Co., Inc.* Case dismissed Sept. 10, 1964.

**Reg. No. 617,131** (VOLKSWAGEN), Volkswagenwerk G.m.b.H., Vehicles—Namely, automobiles and trucks, aircraft, boats, and parts and accessories for automobiles, etc.; **Reg. No. 631,649** (VW AND DESIGN), same; **Reg. No. 653,695** (VW), same, filed Sept. 23, 1964, D.C., M.D. Fla. (Ocala), Doc. 64–8–Oc, *Volkswagenwerk Aktiengesellschaft* v. *Lake Volkswagen Service.* Same, filed June 5, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–613, *Volkswagenwerk Aktiengesellschaft* v. *Roger Adams.* Case dismissed Oct. 8, 1964. Same, filed Sept. 4, 1964, D.C.N.J. (Newark), Doc. 830–64, *Volkswagenwerk Aktiengesellschaft* v. *Dilmark Motors, Inc.* Consent judgment for injunction Oct. 8, 1964. Same, filed Aug. 24, 1964, D.C., N.D. Tex. (Dallas), Doc. 3–654, *Volkswagenwerk Aktiengesellschaft* v. *Smitty's Auto Body Repair, also known as Smitty's Upholstery and Body Shop, also known as Smitty's Paint and Body Shop.* Cause dismissed without prejudice Sept. 29, 1964.



**Reg. No. 618,474** (PERMA-LITE), Perma-Lite Products Corporation, Awnings, door canopies, patio and terrace roofs, porch enclosures, etc., filed Sept. 16, 1964, D.C. Colo. (Denver), Doc. 8787, *Perma-Lite Roybern Mfg. Corp.* v. *Perma Lite, Inc.*

**Reg. No. 618,799.** (See Reg. No. 510,274.)

**Reg. No. 628,681** (INTERNATIONAL AND DESIGN), International Furniture Company, Furniture—namely, wood furniture, upholstery furniture, chairs, etc.; **Reg. No. 725,969** (INTERNATIONAL), Schnadig Corporation, same, filed Sept. 25, 1964, D.C., W.D.N.C. (Charlotte), Doc. 1944, *Schnadig Corporation* v. *International Furniture Company, Inc.*

**Reg. No. 631,649.** (See Reg. No. 617,131.)

**Reg. No. 635,111** (B-T LABS AND DESIGN), Blonder-Tongue Laboratories, Inc., Electrical apparatus—namely, audio and radio-frequency generators, oscillators, detectors, amplifiers, etc.; **Reg. No. 635,112** (B-T), same, filed Sept. 24, 1964, D.C., S.D.N.Y., Doc. 64/2928, *Blonder-Tongue Laboratories, Inc.* v. *Bell Television, Inc.*

**Reg. No. 635,112.** (See Reg. No. 635,111.)

**Reg. No. 653,695.** (See Reg. No. 617,131.)

**Reg. No. 655,568** (FROS-T-DOG in script), Rodney C. Hawkins, doing business as Rod Hawkins Co., Frozen confection—namely, fruit ices and ice cream in an elongate casing of a clear plastic film, filed Sept. 11, 1963, D.C., E.D. Wash. (Spokane), Doc. 2432, *General Industries Corporation et al.* v. *Harold L. Komberec et al.* Action dismissed with prejudice Sept. 1, 1964.

**Reg. No. 655,848** (FRIENDS), H. A. Friend & Company, Bond, parchment, and linen papers, filed Jan. 31, 1964, D.C., E.D. Ill. (Danville), Doc. 64c209, *H. A. Friend and Company, Incorporated* v. *Friend Paper Company.* Case dismissed Apr. 16, 1964.

**Reg. No. 664,428** (AUDIO FIDELITY), Audiofidelity, Inc., Mechanically grooved phonograph records, filed Aug. 11, 1958, D.C., S.D.N.Y., Doc. 136–325, *Audiofidelity, Inc.* v. *Cosnat Distributing Corporation.* Order of dismissal Sept. 23, 1964. Same, Doc. 136–326, *Audiofidelity, Inc.* v. *King Karol, Inc.* Decree as above.

**Reg. No. 675,316.** (See Reg. No. 519,290.)

**Reg. No. 687,256** (THE MICROWAVE JOURNAL AND DESIGN), Horison House, Inc., Bimonthly magazine, filed June 30, 1961, D.C., S.D.N.Y., Doc. 61/2326, *Horizon House-Microwave, Inc.* v. *Hayden Publishing Company, Inc.* Order of dismissal Sept. 23, 1964. Order vacated; action restored Oct. 8, 1964.

**Reg. No. 668,437.** (See Reg. No. 346,426.)

**Reg. No. 706,201** (E-Z MELT), East Coast Soap Corp., Compound for snow and ice removal, filed Sept. 25, 1964, D.C.N.J. (Newark), Doc. 893–64, *East Coast Soap Corporation* v. *Seaboard Industries, Inc.*

**Reg. No. 725,969.** (See Reg. No. 628,681.)

**Reg. No. 733,441** (ELECTRONIC PACKAGING & PRODUCTION), Milton S. Kiver Publications, Inc., Periodical trade magazine published bi-monthly, filed Mar. 16, 1964, D.C. Mass. (Boston), Doc. 64–182–W, *Benwill Publishing Corporation* v. *Milton S. Kiver Publications, Inc.* Stipulation of dismissal without prejudice Sept. 8, 1964.

**Reg. No. 738,657** (KUF 'N KOLAR AND DESIGN), Norsan Products, Inc., Liquid stain remover, filed Sept. 3, 1964, D.C., E.D. Wis. (Milwaukee), Doc. 64–C–245, *Norsan Products, Inc.* v. *R. F. Schucle Corp.*

**Reg. No. 743,572** (McDONALD'S), McDonald's Corporation, Drive-in resturant services; **Reg. No. 750,602** (McDONALD'S HAMBURGERS), same; **Reg. No. 764,837(a)** (REPRESENTATION OF A BUILDING), same; **Reg. No. 764,838(a)** (DESIGN OF YELLOW BUILDING ARCHES), same; **Reg. No. 764,841** (SIGN DESIGN), same, filed Apr. 7, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 10,878, *McDonald's Corporation* v. *Donald's Hamburgers.* Consent judgment; defendants enjoined Sept. 10, 1964.

**Reg. No. 747,756.** (See Reg. No. 346,426.)

**Reg. No. 750,602.** (See Reg. No. 743,572.)

**Reg. No. 757,514** (SCOTT), City Products Corporation, Retail variety store services, filed Dec. 30, 1963, D.C., S.D.N.Y., Doc. 63/3749, *City Products Corporation* v. *Scott Stores, Inc.* Consent judgment; defendant enjoined Sept. 24, 1964.

**Reg. No. 760,155** (CD), Consultants & Designers, Inc., Technical services to industry—namely, consultation and advice in the fields of product design, installation and operation of office and material handling system, research and analysis of marketing systems, filed Apr. 8, 1964, D.C., S.D.N.Y., Doc. 64/1090, *Consultants & Designers, Inc.* v. *Career Development Services, Inc.* Stipulation and order of discontinuance Sept. 17, 1964.

**Reg. No. 761,272** (COLORFORMS (in script) AND DESIGN), Colorforms, Equipment and apparatus sold as units for playing various card, board, children's and parlor games, cardboard folded toys, etc., filed Sept. 14, 1964, D.C., S.D.N.Y., Doc. 64/2818, *Colorforms* v. *Pressforms, Inc. et al.* Consent judgment; defendants enjoined Oct. 27, 1964.

**Reg. No. 762,441** (M AND DESIGN), McDonald's Corporation, Restaurant services; **Reg. No. 764,837(b)**; **Reg. No. 764,838(b)**, filed Nov. 10, 1964, D.C., E.D. Tex. (Tyler), Doc. 4341, *McDonald's Corporation* v. *Pack N Sack Corporation.*

**Reg. No. 764,837(a).** (See Reg. No. 743,572.)

**Reg. No. 764,837(b).** (See Reg. No. 762,441.)

**Reg. No. 764,838(a).** (See Reg. No. 743,572.)

**Reg. No. 764,838(b).** (See Reg. No. 762,441.)

**Reg. No. 764,841.** (See Reg. No. 743,572.)

**Reg. No. 769,910** (SEAL AND DESIGN), Marshall Tool Co., Keys and locks, filed Sept. 25, 1964, D.C., S.D.N.Y., Doc. 64/2943, *Marshall Tool Company* v. *Nulock Supply Co.*

# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 156,497. Industrial Electronics Laboratories, Inc., Toledo, Ohio. Filed Nov. 2, 1962.




**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electric Heaters, Solenoid Valves, Insulators and Tubing, Variable Transformers, Protection Tubes, and Wires.

**Class 26—Measuring and Scientific Appliances**

For Scientific and Measuring Equipment, Both New and Repaired—Namely, Ultrasonic Sensing Controls; Autotron Photo-Electric Controls; Temperature Controls; Industrial Timers; Cartridge, Immersion and Surface Pyrometers; Strip and Dial Charts for Industrial Recorders; Thermo-Couples, Accessories; Indicating, Controlling, and Recording Instruments.

First use October 1961.

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SN 164,879. GN Papers, Inc., Taftville, Conn. Filed Mar. 18, 1963.

Festive
PARTY PAPERS

The words "Party Papers" are disclaimed apart from the mark as a whole.

**Class 2—Receptacles**

For Paper Products—Namely, Paper Plates, Cups, and Forks and Spoons.
First use Jan. 25, 1963, on cups.

**Class 37—Paper and Stationery**

For Paper Products—Namely, Napkins, Table Covers, Center Pieces, Towels, Placemats, and Doilies.
First use Jan. 25, 1963, on napkins.

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SN 169,752. Northport Engineering, Inc., St. Paul, Minn. Filed May 27, 1963.



The mark consists of the letter "N" in design form, and the stipling on the drawing is for the purposes of shading only.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Capacitors; Computer Components, Connectors and Cases; Memory Cores, Frames and Systems; Switches; Diodes; Relays; Electric Motors; Transformers; Amplifiers; Indicators; Power Supplies and Converters.

**Class 26—Measuring and Scientific Appliances**

For Voltmeters; Oscilloscopes, Frequency Meters; Phase Angle, Voltage, D.C., Resolver and Synchro Standards; Tape Recorders; Potentiometers; Ratio Dividers; Recorders; Telemeters; Analysers and Resistor-Dividers.
First use Oct. 15, 1962.

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SN 180,031. The Singer Company, New York, N.Y. Filed Oct. 29, 1963.

SINGER

Owner of Reg. Nos. 49,599, 583,337, and others.

**Class 2—Receptacles**

For Dust Bags for Vacuum Cleaners and Oil Dispensing Cans.
First use prior to 1880 on oil dispensing cans.

**Class 4—Abrasives and Polishing Materials**

For Steel Wool Pads; Floor and Furniture Wax and Polish; Grinding Wheels; and Emery Cord.
First use 1925 on emery cord.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Belt Hooks; Cabinet and Furniture Hardware—Namely, Braces, Brackets, Handles and Hinges; and General Hardware—Namely, Bolts, Nuts, Pins, Screws, and Studs.
First use 1880 on cabinet and furniture hardware.

**Class 15—Oils and Greases**

For Lubricating Oil and Grease.
First use 1880.

**Class 19—Vehicles**

For Dollies and Work Trucks for Handling and Transporting Work and Equipment in Sewing Mills and the Like.
First use 1952.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electric Household Appliances—Namely, Vacuum Cleaners, Floor Polishers and Rug Cleaners; Radios; Electric Motors and Transmitters; Motor Controllers and Starting Devices; Electro-Mechanical Drives; Electronic Bonding Machines; Electric Lighting Components—Namely, Lamps, Lighting Fixtures, Lamp Sockets and Bulbs; Components for Electric Circuits, Appliances and Machines—Namely, Capacitors, Conductors, Connectors, Receptacles, Resistances, Switches, Switch Boxes and Covers, Terminal Boxes, Plugs, Insulators, Rheostats, Solenoids, Transformers, Wiring Harnesses, Inductors, Transducers, and Power Supplies; Microwave Components; and Parts, Accessories and Attachments for the Above.
First use 1915 on electric motors.





**Class 22—Games, Toys, and Sporting Goods**

For Toy Sewing Machines, Toy Perforating Machines; Carrying Cases for Toy Sewing Machines; and Toy Traveling Cases.
First use 1910 on toy sewing machines.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Sewing Machines; Typewriters; Machines for Fastening Articles to Garments and the Like; Cutting Machines; Fulling Machines; Grinding Machines; Heel and Wedge Slitting Machines; Labeling Machines; Pleating Machines; Pressing Machines; Thread Drawing Machines; Winding Machines; Knitting Machines; Cutlery—Namely, Knives, Scissors, Shears, Seam Rippers, and Stilettos; Hand Tools—Namely, Hole Punches, C-Clamps, Inspection Mirrors, Grease Guns, Magnetic Pick-Up Devices, Mallets, Screw Drivers, Tweezers and Wrenches; Machine Elements—Namely, Belt Tighteners, Pulleys, Shaft Hangers and Shafting; and Parts, Attachments and Accessories for the Above.
First use 1880 on sewing machines.

**Class 24—Laundry Appliances and Machines**

For Pressing Machines and Sleeve Board Covers and Pads.
First use 1903 on pressing machines.

**Class 25—Locks and Safes**

For Locks and Keys.
First use 1880.

**Class 26—Measuring and Scientific Appliances**

For Test Consoles and Calibration Equipment and Scale Drawing Machines for Electrical Instruments; Sensing Devices (Transducers) for Responding to Changes in Physical Conditions—Namely, Temperature, Pressure, Humidity, Vibration and Acceleration; Communications Analysers and Monitors; Electrical Instruments, Sources and Standards—Namely, Frequency Sources and Standards (Signal Generators and Oscillators), Swept Frequency Sources and Indicators, Frequency Meters and Spectrum Analysers, Ammeters, Galvanometers, Voltmeters, Power Meters, Magnetic Testing Instruments (Fluxmeters), Differential Measuring Instruments and Ratiometers, Potentiometers, Voltage Dividers and Multipliers, Radio Frequency Interference Measuring Instruments; Reference Standard Test Instruments—Namely, Standard Cells, Standard Magnets and Standard Shunts; Electro-Mechanical Timers; Equipment for Controlling the Relative Position of a Tool and a Work Piece in Accordance With a Program Encoded for Example on a Punched Tape; Electronic Data Processing Equipment; Thermocouples; and Patterns for Use in Marking Garments.
First use February 1963 on voltmeters and ammeters.

**Class 29—Brooms, Brushes, and Dusters**

For Buffing and Waxing Pads—Namely, Lamb's Wool Pads and Wool Felt Pads; and Brushes and Wax Applicators.
First use September 1959 on brushes.

**Class 32—Furniture and Upholstery**

For Furniture—Namely, Cabinets, Card Tables, Chairs, Stands, Stools and Tables.
First use 1880 on cabinets.

**Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires**

For Power Transmission Belts and Belting and Rubber Rings.
First use 1880 on power transmission belting.

**Class 37—Paper and Stationery**

For Tracing Paper.
First use November 1954.

**Class 38—Prints and Publications**

For Books and Pamphlets.
First use 1898.

**Class 40—Fancy Goods, Furnishings, and Notions**

For Sewing Aids—Namely, Needles, Darning and Embroidery Work Holding Devices, Needle Threaders, Sewing Boxes, Skirt Markers, Mending Kits, and Tracing Wheels; and Clothing Accessories—Namely, Buttons and Buckles.
First use 1880 on needles.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Textile Piece Goods Suitable for Wearing Apparel, Household Furnishings, Draperies and Other Uses.
First use April 1952.

**Class 43—Thread and Yarn**

For Thread.
First use 1880.

**Class 50—Merchandise Not Otherwise Classified**

For Dress Forms.
First use 1940.

**Class 52—Detergents and Soaps**

For Rug Cleaner and Wax Remover.
First use September 1959 on rug cleaner.

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SN 190,395. Helen Liebert, Inc., New York, N.Y. Filed Apr. 6, 1964.




"Helen Liebert" is the name of a particular living individual who has given her consent to registration.

**Class 51—Cosmetics and Toilet Preparations**

For Hair Lotion, Electric Pre-Shave Lotion, Roll Deodorant, Cologne, and After Shave Lotion.
First use August 1940.

**Class 52—Detergents and Soaps**

For Hair Shampoo.
First use 1959.

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SN 192,044. Kiddie King, Inc., Rochester, N.Y. Filed Apr. 27, 1964.

KIDDIE KING

**Class 32—Furniture and Upholstery**

For Infants' Furniture, Particularly Infants' Play Yards With Inserts Therefor, Dressing Tables, Infants' Feeding Tables and a Combination Dressing Table and Bath.

**Class 40—Fancy Goods, Furnishings, and Notions**

For Child's Safety Belts.
First use Aug. 25, 1960.

SN 194,486. Hawk Model Company, Inc., Chicago, Ill. Filed May 28, 1964.

Weird-ohs

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Plastic Juvenile Luggage and School Bags.

**Class 37—Paper and Stationery**

For Loose-Leaf Notebook Ring Binders.

First use Oct. 10, 1963.

SN 194,781. Container Stapling Corporation, Herrin, Ill. Filed June 3, 1964.



The mark comprises the letters "CSC."

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Fasteners—Namely, Staples.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Fastener Applying Machines—Namely, Stapling Machines.

First use May 11, 1964; August 1953 in a different form.

## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 179,348. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Oct. 18, 1963.

PORAL

For Porcelain Enamel Foil in Roll and Sheet Form for General Use in the Industrial Arts.

First use Sept. 19, 1963.

SN 186,039. Great Lakes Nursery Corp., Waukesha, Wis. Filed Dec. 23, 1963.



Applicant disclaims the word "Tree" apart from the entire mark as shown.

For Christmas and Nursery Trees.

First use June 1, 1963.

SN 190,312. The Connecticut Hard Rubber Company, New Haven, Conn. Filed Apr. 3, 1964.

CHR

For Elastomeric, Polymeric and Similar Materials, Expanded Solid and Liquid in Various Forms, Such as Sheet and Expanded Forms.

First use Jan. 2, 1956.

SN 192,218. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

FLOCOVYL

Priority claimed under Sec. 44(d) on French Reg. No. 512,944, dated Apr. 25, 1963 (Paris); Natl. Inst. No. 206,716.

(Claim based on co-pending application S.N. 175,441, filed in U.S. Aug. 20, 1963.) Owner of U.S. Reg. Nos. 778,220 and 778,262.

For Fibers and Fibrous Materials Used for Thermal and Sonic Insulation, Stuffing and Padding, for Mattresses, Bolsters and Pillows, Padded Jackets, Anoraks, Padded Wrappers, and Bedjackets.

SN 193,691. Numark Manufacturing Company, Magnolia, Ark. Filed May 18, 1964.

Magnolia

For Hickory Chips.

First use at least as early as Apr. 1, 1964.

SN 193,712. Shell Oil Company, New York, N.Y. Filed May 18, 1964.

THERMOLASTIC

For Rubber Polymer.

First use Apr. 3, 1964.

SN 194,322. Seton Leather Company, Newark, N.J. Filed May 26, 1964.

ANTALO

For Leather.

First use on or about Feb. 8, 1960.



SN 195,589. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.

For Synthetic Resins and Synthetic Resinous Compositions for Use in the Industrial Arts.

First use on or prior to May 14, 1964.

### Class 2—Receptacles

SN 189,803. Plas-Fab Corp., d.b.a. Plastic Container Corp., Los Angeles, Calif. Filed Mar. 27, 1964.

THERMALUX

For Cups Made of Expandable Plastics.

First use Jan. 15, 1964.

SN 192,195. Murray Bag & Paper Corp., Vernon, Calif. Filed Apr. 28, 1964.

JADE

For Grocery and Utility Paper Bags.

First use in or about April 1962.

SN 192,201. Phoenix Closet Accessories, Inc., d.b.a. Princess House, Newark, N.J. Filed Apr. 28, 1964.

ROYALTY HOUSE

For Garment Bags, and Storage Bags.

First use Mar. 31, 1964.

SN 204,210. Topco Associates, Inc., Skokie, Ill. Filed Oct. 16, 1964.

TOPCO

Owner of Reg. No. 766,539.

For Paper Sacks.

First use Aug. 7, 1964.

### Class 4—Abrasives and Polishing Materials

SN 189,089. Metal Textile Corporation, Roselle, N.J. Filed Mar. 19, 1964.



No claim is made to exclusive right to the representation of the goods apart from the mark as shown. Owner of Reg. Nos. 155,734 and 280,422.

For Pot Cleaners in the Form of Abrasive Wads or Pads.

First use about 1923.

SN 193,576. Purex Corporation, Ltd., d.b.a. Franklin Research, Lakewood, Calif. Filed May 15, 1964.

GRAND PRIX

For Liquid Water Emulsion Floor Finish for Use in Maintaining and Polishing the Surface of Resilient Floors.

First use Jan. 6, 1964.

SN 193,577. Purex Corporation, Ltd., d.b.a. Franklin Research, Lakewood, Calif. Filed May 15, 1964.

GLISTEN-ITE

For Liquid Water Emulsion Floor Finish for Use in Maintaining and Polishing the Surface of Resilient Floors.

First use Jan. 6, 1964.

SN 193,585. Simonis Company, Chicago, Ill. Filed May 15, 1964.

AUTO-SHEEN

For Cleaning and Polishing Composition for Use on Automotive Vehicles.

First use Mar. 10, 1964.

### Class 5—Adhesives

SN 193,633. The Cudahy Packing Company, Omaha, Nebr. Filed May 18, 1964.

DEXBOND

For Industrial Adhesives, Including Resin and Dextrine Adhesives, Adapted for Carton Manufacturing, Sealing and Labeling and Other Industrial Uses.

First use Jan. 24, 1964.

SN 195,590. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG WARNER

The drawing is lined for the color red but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183 and others.

For Adhesives for Binding Rubber to Rubber or to Other Materials.

First use on or prior to Mar. 9, 1964.

### Class 6—Chemicals and Chemical Compositions

SN 137,928. M & T Chemicals Inc., New York, N.Y., by merger and assignment from Metal & Thermit Corporation, Woodbridge Township, Middlesex County, N.J. Filed Feb. 14, 1962.

bioMεT

For Chemical and Chemical Compositions for Biocidal Use—Namely, Fungicides, Bacteriacides, and Anti-Foulants.

First use at least as early as July 26, 1961.

SN 165,860. Tenneco Corporation, Houston, Tex. Filed Apr. 1, 1963.

TENNECO

Owner of Reg. No. 713,035.
For Chemicals and Chemical Compositions Used in the Manufacture of Plastics, Resins, and Paints, for Antifreese, Liquefied Petroleum Gases, and Lighter Fuel.
First use June 23, 1961.

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SN 175,892. Etablissements Kuhlmann, Societe Anonyme, Paris, France. Filed Aug. 26, 1963.

## DIMACIDE

Owner of French Reg. No. 489,987, dated Aug. 11, 1960 (Paris); Natl. Inst. No. 149,324.
For Dyestuffs for Use in Dyeing Polyamide Fibers.

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SN 175,894. Etablissements Kuhlmann, Societe Anonyme, Paris, France. Filed Aug. 26, 1963.

## NEUTRICHROME

Owner of French Reg. No. 445,864, dated Sept. 2, 1954 (Paris); Natl. Inst. No. 42,698.
For Dyestuffs, Particularly for Coloring Animal Fibers and Polyamide Fibers.

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SN 187,930. Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Mar. 4, 1964.

## DEEP ROCK

Owner of Reg. Nos. 580,661 and 658,975.
For Anti-Freese, Lighter Fluid, and Absorption Oil for Stripping Heavier Hydrocarbons From Hydrocarbon Gases.
First use 1935.

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SN 188,353. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 10, 1964.

## GENAFIX

Owner of Reg. No. 613,339.
For Dyestuffs.
First use Dec. 19, 1963.

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SN 190,208. Sandoz, Inc., New York, N.Y. Filed Apr. 2, 1964.

## LYOGEN

For Chemical Preparation Recommended for Use in Promoting Level Dyeing of Textiles, Paper, and Leather.
First use Feb. 1, 1959.

SN 190,382. R. O. Hull & Company, Inc., Cleveland, Ohio. Filed Apr. 6, 1964.

## ROGARD

For Rust, Corrosion, and Scale Inhibitors for Use on Metal and Steel.
First use Sept. 16, 1963.

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SN 190,751. R-L Laboratories, Inc., New York, N.Y. Filed Apr. 8, 1964.

## X-TINCT

For House and Garden Bug Killer, Also, Used as Insect Spray, Ant and Roach Killer, and as Moth Proofer.
First use Apr. 26, 1963.

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SN 194,602. The Glidden Company, Cleveland, Ohio. Filed June 1, 1964.

## SYLVATAL

Owner of Reg. No. 733,990.
For Tall Oil.
First use Apr. 19, 1961.

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SN 196,002. Amway Corporation, Ada, Mich. Filed June 19, 1964.

## WITHER

For Vegetation Killing Spray.
First use on or about July 8, 1963.

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SN 197,282. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 7, 1964.

## SUPERSPERSE

Owner of Reg. No. 556,308.
For Dyestuffs.
First use Apr. 8, 1964.

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SN 197,326. Philadelphia Quartz Company, Philadelphia, Pa. Filed July 7, 1964.

## SUMMIT

For Laundry Sour.
First use on or about June 8, 1964.

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SN 197,652. Armour and Company, Chicago, Ill. Filed July 13, 1964.

## ARMOTAN

For Sorbitol Derived Carboxy Acid Esters and Their Polyalkoxylated Derivatives.
First use May 27, 1964.

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SN 197,665. California Research Corporation, San Francisco, Calif. Filed July 13, 1964.

## ISOCRACKING

Owner of Reg. No. 739,180.
For Catalysts Used in Petroleum Refining Processes.
First use May 12, 1961.

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SN 197,666. California Research Corporation, San Francisco, Calif. Filed July 13, 1964.

## HDN

For Catalysts Used in Petroleum Refining Processes.
First use May 12, 1961.



SN 197,948. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 16, 1964.

## ACODOL

For Chemical Compound Used as an Ingredient of Herbicides.
First use June 23, 1964.

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SN 197,949. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 16, 1964.

## APHODIN

For Chemical Compound Used as an Ingredient of Insecticides.
First use June 23, 1964.

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SN 197,950. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 16, 1964.

## FONGORENE

Owner of Reg. No. 734,768.
For Chemical Compound Used as an Ingredient of Herbicides.
First use June 23, 1964.

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SN 197,951. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 16, 1964.

## GESINAL

For Chemical Compound Used as an Ingredient of Herbicides.
First use June 23, 1964.

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SN 197,952. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 16, 1964.

## LUMETON

For Chemical Compound Used as an Ingredient of Insecticides.
First use June 23, 1964.

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SN 197,953. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 16, 1964.

## ROSPIN

For Chemical Compound Used as an Ingredient of Acarides.
First use June 23, 1964.

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SN 197,993. Shell Oil Company, New York, N.Y. Filed July 16, 1964.

## RABOND

For Insecticide.
First use June 4, 1964.

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SN 198,018. Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed July 17, 1964.

## VARITOLINE

Owner of German Reg. No. 782,090, dated Jan. 3, 1964; and U.S. Reg. No. 652,924.
For Photographic Developers.

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SN 198,229. Sel-Rex Corporation, Nutley, N.J. Filed July 20, 1964.

## ALAUTRONEX

Owner of Reg. No. 684,280.
For Electrolytes for Gold and Gold Alloy Processes.
First use May 21, 1964.



SN 198,337. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 22, 1964.

## F-114B2

Owner of Reg. Nos. 331,643, 742,551, and others.
For Dibromotetra-Fluoroethane, Being a Fluorinated Hydrocarbon Used as a Refrigerant, Fire Extinguishing Preparation, Solvent, Heat Transfer Medium and Chemical Intermediate.
First use May 22, 1964.

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# Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 200,901. Bryant Bigelow, South Yarmouth, Mass. Filed Aug. 31, 1964.

Rambi

For Smoking Pipe.
First use Dec. 26, 1963.

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# Class 11 — Inks and Inking Materials

SN 166,253. The Buckeye Ribbon & Carbon Co., Cleveland, Ohio. Filed Apr. 8, 1963.

Sheer-Clear

For Inked Ribbons.
First use June 22, 1961.

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SN 202,808. Kores Manufacturing Corporation, New York, N.Y. Filed Sept. 28, 1964.

## TWINCOTE

Owner of Reg. No. 670,771.
For Carbon Paper.
First use May 1, 1956.

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# Class 12 — Construction Materials

SN 126,472. Poron Insulation Ltd., Cornwall, England. Filed Aug. 22, 1961.

## PORON

Priority claimed under Sec. 44(d) on British Reg. No. 822,727, dated July 5, 1961.
For Expanded Polystyrene (or Foam) Insulation Construction Materials—Namely, Sheets, Ceiling Tiles, Coving, Panels, Buoyancy Panels, and Refrigeration.

SN 151,514. Onoda Cement Company Limited, Onoda, Yamaguchi, Japan. Filed Aug. 20, 1962.




The words "White Cement" and "Trademark" are hereby disclaimed except when used in connection with the remainder of the mark.
For White Cement.
First use June 1956.

SN 180,804. The Flintkote Company, New York, N.Y. Filed Oct. 24, 1963.

**FLINTITE**

Owner of Reg. Nos. 73,612, 757,094, and others.
For Asbestos Cement Pipes and Ducts and Related Accessories.
First use Apr. 14, 1962.

SN 180,965. Security Aluminum Corporation, Long Beach, Calif. Filed Nov. 12, 1963.



The mark comprises five stars arranged in two parallel rows.
For Windows and Glass Doors.
First use Oct. 4, 1963.

SN 181,406. Potlatch Forests, Inc., Lewiston, Idaho. Filed Nov. 18, 1963.

**GAP'n LAP**

For Pre-Cut Lumber for Fencing.
First use Feb. 21, 1963.

SN 182,873. The Flintkote Company, New York, N.Y. Filed Dec. 12, 1963.

**VAN-PACKER**

For Prefabricated Masonry Chimneys and Fittings, Ducts and Vents and Parts Therefor.
First use Sept. 1, 1947.

SN 183,632. Star Manufacturing Company, Oklahoma City, Okla. Filed Dec. 26, 1963.




For Metal Building Products—Namely, Metal Siding, Metal Panels, Metal Deck, Structural Members of Metal, and Prefabricated Buildings—Namely, Prefabricated Industrial, Farm, Amusement and Religious and Like Buildings.
First use Feb. 25, 1963.

SN 187,678. Modern Metal Products Company, Greensboro, N.C. Filed Feb. 28, 1964.

**MMP**

For Vending Shelters and Refreshment Patios (Without Vending Equipment) That Are Prefabricated.
First use March 1962.

SN 188,445. Ipik Door Company, Inc., Kenner, La. Filed Mar. 11, 1964.




Owner of Reg. No. 462,949.
For Flush Doors and Architectural Plywood.
First use Aug. 29, 1942.

SN 188,841. Calco Awning & Window Corporation of Roanoke, Roanoke, Va. Filed Mar. 17, 1964.




Applicant disclaims "Aluminum Storm-Screen Windows and Doors" and "More Exclusive Features Than Any Others," and the outline map of the United States and the representation of the goods.
For Aluminum Siding, Awnings, Windows, Doors, Storm-Screen Windows and Doors, and Component Parts Thereof.
First use Dec. 31, 1963.



SN 190,536. NTH Stone, Inc., Oklahoma City, Okla. Filed Apr. 7, 1964.

**NTH STONE**

No claim is made to the word "Stone" apart from the trademark as a whole. The trademark consists of a large capital letter "N" followed by the word "Stone," above which is placed the letters "TH."
For Precast Stone.
First use Apr. 6, 1963.

SN 194,563. G. Alfred Downs, Salem, Oreg. Filed June 1, 1964.

**DUAL-THERM**

For Storm Windows and Doors.
First use Apr. 29, 1964.

SN 194,642. Old-North Manufacturing Company, Inc., Lenoir, N.C. Filed June 1, 1964.

**VINYLPRENE**

For Asphalt for Foundation Coatings.
First use May 11, 1964.

SN 194,856. American Fire Clay & Products Company, Canfield, Ohio. Filed June 4, 1964.

**AMRAM**

For Refractory Ramming Mixes.
First use during January 1964.

SN 194,857. American Fire Clay & Products Company, Canfield, Ohio. Filed June 4, 1964.

**AMSET**

For Refractory Mortar.
First use January 1964.

SN 195,004. McNulty Bros. Company, Chicago, Ill. Filed June 5, 1964.

**62**

For Gypsum Plaster.
First use Apr. 28, 1964.

SN 195,117. Lamb Industries, Inc., Toledo, Ohio. Filed June 8, 1964.

**THERMBAR**

For Windows.
First use Oct. 7, 1963.

SN 195,205. A. W. Chesterton Company, Everett, Mass. Filed June 9, 1964.

**GOLD END**

For Joint Sealant.
First use at least as early as May 21, 1964.

SN 195,348. Weyerhaeuser Company, Tacoma, Wash. Filed June 10, 1964.

**PLY-GRIP**

For Plywood.
First use March 1962.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 165,679. Dresser Industries, Inc., Dallas, Tex. Filed Mar. 29, 1963.

**dmd**

For Pipe Couplings and Fittings.
First use Aug. 15, 1960.

SN 172,469. Cast Iron Soil Pipe Institute, Chicago, Ill. Filed July 5, 1963. COLLECTIVE MARK.

**NO-HUB**

The notation "No-Hub" is disclaimed apart from the mark as shown. Owner of Reg. No. 583,743.
For Cast Iron Soil Pipe, Pipe Joints, Gaskets, Clamps and Fittings.
First use June 20, 1963.

SN 189,748. Western Coupling Corporation, Burbank, Calif. Filed Mar. 26, 1964.




For Hose Assemblies, Couplings and Fittings.
First use May 24, 1963.

SN 190,786. Buckner Manufacturing Company, Inc., Fresno, Calif. Filed Apr. 10, 1964.



For Irrigation Sprinklers, Sprinkler Stands, Sprinkler Bearings, Irrigation Valves, and Timer Controls for Irrigation Systems.
First use 1959.

SN 193,246. William S. Wood, d.b.a. Cryolab Equipment Company, Los Osos, Calif. Filed May 11, 1964.

CRYOLAB SV

For Valves.
First use on or about Jan. 22, 1964.

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SN 199,006. The Barber-Webb Company, Inc., Los Angeles, Calif. Filed Aug. 3, 1964.

PARALINED

Owner of Reg. No. 668,517.
For Metal Pipe Which Has Been Provided With a Protective Plastic Coating on the Internal or External Surface Thereof.
First use Aug. 27, 1954.

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SN 199,034. Cyklop-Gesellschaft Emil Hoffmann, Rodenkirchen, near Cologne, Germany. Filed Aug. 3, 1964.




The drawing is lined for red. Owner of German Reg. No. 631,379, dated Dec. 11, 1952.
For Steel Strapping Material, Clamping Sleeves, Clasps, Tensioning and Locking Devices for Packing of Articles of All Kinds—Namely, Containers, Cases and Unwrapped Small Packages, Flat Bands and Wires Made of Steel, Natural Fibers and Synthetic Fibers, Twine.

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SN 199,133. Swingline, Inc., Long Island City, N.Y. Filed Aug. 3, 1964.

SWINGLINE NO. 888

For Staples.
First use June 26, 1964.

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SN 199,196. Garcy Corporation, Chicago, Ill. Filed Aug. 4, 1964.

JET-RAIL

For Hang Rail Assemblies and Parts Therefor.
First use on or about Feb. 13, 1964.

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SN 199,478. Monarch Die and Engineering Company, Dayton, Ohio. Filed Aug. 7, 1964.

SPENZAL

For Apparatus for Manually Dispensing Liquid and Paste Materials From a Collapsible Container.
First use June 24, 1964.

## Class 14—Metals and Metal Castings and Forgings

SN 185,076. Republic Steel Corporation, Cleveland, Ohio. Filed Jan. 21, 1964.

LOCOTE

For Steel Sheet and Strip, With an Electrical Insulative and Corrosion Inhibiting Coating.
First use Oct. 21, 1963.

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SN 202,523. Universal-Cyclops Steel Corporation, Bridgeville, Pa. Filed Sept. 23, 1964.

LCM

For Molybdenum.
First use Aug. 7, 1964.

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## Class 15—Oils and Greases

SN 202,670. Bayou State Oil Corporation, Shreveport, La. Filed Sept. 25, 1964.

Bio-Marine

Owner of Reg. Nos. 439,139, 337,228, and 514,043.
For Lubricating Oils.
First use May 20, 1964.

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## Class 16—Protective and Decorative Coatings

SN 168,651. William Zinsser & Co. Inc., New York, N.Y. Filed May 10, 1963.




The word "Brand" is disclaimed except in the combination shown.
For Enamels, Lacquers, Varnish Sizing, Varnish, Fillers, Ready-Mixed Paints, Prepared Shellacs, Varnish Gums.
First use about the year 1913.

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SN 184,454. Economics Laboratory, Inc., St. Paul, Minn. Filed Jan. 13, 1964.

SOILAX

Owner of Reg. Nos. 186,368, 634,189, and others.
For Protective Floor Finish for Industrial Use and Floor Undercoaters for Terrazzo, Marble and Resilient Tile for Industrial Use.
First use Jan. 11, 1962, on floor finishes.



SN 192,073. Proctor Paint and Varnish Co., Inc., Yonkers, N.Y. Filed Apr. 27, 1964.

BLAIR HOUSE

For Enamel Paints for Furniture, Cabinets, Toys, Tools, Shelving and the Like.
First use Mar. 9, 1964.

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SN 192,348. Herbert J. Atkinson, d.b.a. Sudbury Laboratory, South Sudbury, Mass. Filed Apr. 30, 1964.

365

Owner of Reg. No. 677,832.
For Paint.
First use October 1946.

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SN 194,125. Milton Bradley Company, Springfield, Mass. Filed May 25, 1964.

Vivi-Tone

For Artists' Powder Colors.
First use Jan. 15, 1921.

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## Class 17—Tobacco Products

SN 182,720. General Cigar Co., Inc., New York, N.Y. Filed Dec. 10, 1963.

F. LOZANO

The trademark "F. Lozano" is the name of a deceased founder of applicant's predecessor.
For Cigars.
First use on or about July 10, 1925.

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SN 185,048. La Primadora Cigar Corporation, New York, N.Y. Filed Jan. 21, 1964.

MARQUESA

For Cigars.
First use Jan. 20, 1964.

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SN 185,049. La Primadora Cigar Corporation, New York, N.Y. Filed Jan. 21, 1964.

FUTURILLO

For Cigars.
First use Jan. 20, 1964.

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SN 190,614. George W. Helme Company, New York, N.Y. Filed Apr. 8, 1964.

DIXIE

For Snuff.
First use Feb. 21, 1964.

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SN 192,984. British-American Tobacco Company (Nederland) N.V., Amsterdam, Netherlands. Filed May 8, 1964.

Cigaroma

Owner of Dutch Reg. No. 146,092, dated Nov. 19, 1962.
For Pipe Tobacco.

## Class 18—Medicines and Pharmaceutical Preparations

SN 193,812. The Progonasyl Company, Inc., Tulsa, Okla. Filed May 19, 1964.

PROGONASYL

For Medicinal Preparation for Rectal, Vaginal or Vesical Disorders.
First use Mar. 23, 1938.

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## Class 19—Vehicles

SN 184,958. Pullman Incorporated, Wilmington, Del. Filed Jan. 20, 1964.




The drawing is lined for the color orange. No claim is made to the exclusive right to use the term "The Mark of Progress in Freight Equipment" apart from the mark as shown. Owner of Reg. No. 765,797.
For Railway Freight Vehicles.
First use Mar. 20, 1963.

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SN 187,354. Standard-Thomson Corporation, Waltham, Mass. Filed Feb. 24, 1964.

SUPERSITE

Owner of Reg. Nos. 501,619 and 700,062.
For Rear View Mirrors for Automobiles.
First use July 7, 1947.

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SN 194,762. The White Motor Company, Cleveland, Ohio. Filed June 2, 1964.

PDQ

For Motor Trucks and Parts Therefor.
First use on or about Jan. 1, 1961.

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SN 196,171. Mallard Coach Corporation, West Bend, Wis. Filed June 22, 1964.

CANVASBACK

For Folding Tent Camper.
First use on or about Jan. 17, 1964.

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SN 196,172. Mallard Coach Corporation, West Bend, Wis. Filed June 22, 1964.

DECOY

For Folding Tent Camper.
First use on or about Jan. 17, 1964.

SN 199,556. Glass Marine Industries Inc., Costa Mesa, Calif. Filed Aug. 10, 1964.

Islander 24

The numeral "24" shown on the drawing is disclaimed inasfar as it is descriptive of the length of the boat, without waiver of applicant's common law rights in the composite mark.

For Cruising-Racing Sloops.
First use Mar. 31, 1961.
Subj. to Intf. with SN 188,686.

## Class 20 — Linoleum and Oiled Cloth

SN 194,958. Congoleum-Nairn Inc., Kearny, N.J. Filed June 5, 1964.

### DYNAMIC

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use May 21, 1964.

SN 194,959. Congoleum-Nairn Inc., Kearny, N.J. Filed June 5, 1964.

### MARATHON

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use May 21, 1964.

## Class 21 — Electrical Apparatus, Machines, and Supplies

SN 150,499. Bassani S.p.A., Milan, Italy. Filed Aug. 6, 1962.

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Priority claimed under Sec. 44(d) on Italian application filed Apr. 6, 1962; Reg. No. 160,116, dated Sept. 19, 1962. The drawing is lined for the color orange, but the color orange is disclaimed as an integral portion of the mark.

For Electrical Equipment for Use in Electric Power and Light Distribution—Namely, Switches, Commutators, Inverters, Relay Switches, Push-Buttons, Safety Fuses, Circuit Breakers, Relays, Main Switches for Switch Panels, Electric Signalling and Alarm Apparatus, Electric Conductors, Terminals, and Transformers.

SN 169,631. Hardlines Distributors, Inc., Norwood, Mass. Filed May 24, 1963.

### HD

For Battery-Operated Lights and Lanterns, and Bulbs and Dry Batteries for Use Therewith.
First use Feb. 15, 1963.

SN 182,452. Winegard Company, Burlington, Iowa. Filed Dec. 5, 1963.

### AUDIO-PIX

For TV and Music Outlet Systems and Kits Therefor, Line Splitters, and Couplers To Transfer the Signals From One Antenna to a Plurality of Receivers and Sound Reproduction Means.
First use May 20, 1963.

SN 182,742. Sel-Rex Corporation, Nutley, N.Y. Filed Dec. 10, 1963.

### SEL-REX

Owner of Reg. Nos. 524,387 and 631,544.
For Complete Electroplating Installations and Rectifiers for Electroplating Installations.
First use May 1948.

SN 183,316. Columbia Electric Mfg. Co., Inc., East St. Louis, Ill. Filed Dec. 20, 1963.




For Electrical Burglar Alarm for Automobiles.
First use on or before May 1, 1949.

SN 185,674. Harvey Hubbell, Incorporated, Bridgeport, Conn. Filed Jan. 30, 1964.

### VARILOAD

For Selectively Set Up Non-Interchangeable Detachable Wiring Devices—Namely, Receptacles, Outlets, Inlets, Connector Bodies, and Attachment Caps.
First use about September 1962.

SN 186,569. Rumar Heating Corp., Tacoma, Wash. Filed Feb. 12, 1964.

### PET PROTECTOR

For Electrically Energised Low Temperature, Long Wave, Radiant Heaters, for Use by Household Pets, as Dogs and Cats, in the Nature of Temperature Decrease Control With Added Heat Therapeutic Treatment.
First use Dec. 6, 1963.

SN 190,314. The Connecticut Hard Rubber Company, New Haven, Conn. Filed Apr. 3, 1964.

### CHR

Owner of Reg. No. 716,314.
For Electrical Insulating and Conductive Films, Tapes, Sponge Sheets, Gasketing, Liquids, and Sprays.
First use Jan. 2, 1956.



SN 190,762. Tandberg of America, Inc., Pelham, N.Y. Filed Apr. 9, 1964.

### TANDBERG

Owner of Reg. No. 661,884.
For Tape Recorders and Parts Thereof, and Radios and Parts Thereof.
First use 1949.

SN 190,763. Tandberg of America, Inc., Pelham, N.Y. Filed Apr. 9, 1964.

Tandberg RADIO

No claim is made to the word "Radio" apart from the mark shown. Owner of Reg. No. 661,884.
For Tape Recorders and Parts Thereof, and Radios and Parts Thereof.
First use 1949.

SN 190,881. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

### GAMMA-VU

For Indoor Antennas.
First use Mar. 20, 1964.

SN 190,883. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

### GAMMA-82

For Indoor Antennas.
First use Mar. 20, 1964.

SN 191,526. Eaton Manufacturing Company, Cleveland, Ohio. Filed Apr. 20, 1964.

### AJUSTO-BRAKE

Owner of Reg. No. 607,143.
For Electromagnetic Brakes and Controls Therefor.
First use Oct. 23, 1953.

SN 193,198. Mu Western Electronics Co., Redwood City, Calif. Filed May 11, 1964.

### PAGE ALERT

For Electronic Tone Signaling Systems and More Particularly Electronic Encoders, Decoders, Tone Generators, Tone Repeaters, and Filter, Cable and Switching Systems Associated Therewith.
First use Apr. 20, 1964.

SN 193,686. Micon Electronics, Inc., Garden City, N.Y. Filed May 18, 1964.

### EMSEAL

For Waterproof Electrical Connector.
First use Apr. 1, 1964.

SN 193,891. Mueller Electric Company, Cleveland, Ohio. Filed May 20, 1964.



For Electrical Connecting Clips.
First use Feb. 27, 1964.

SN 194,187. Japax Scientific Corporation, Palo Alto, Calif. Filed May 25, 1964.

### DEPOSITRON

For Electrical Depositing Machine.
First use Apr. 19, 1964.

SN 194,209. Opto-Electronic Devices, Inc., Mountain View, Calif. Filed May 25, 1964.

### GLO-DOT

For Opto-Electronic Relays.
First use Apr. 24, 1964.

SN 194,407. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 27, 1964.

### SCOTCHFLEX

Owner of Reg. No. 575,236 and others.
For Flat Electrical Cable, Cable Connectors, and Corner Covers.
First use at least as early as Dec. 31, 1963.

SN 194,414. J. C. Penney Company, New York, N.Y. Filed May 27, 1964.

### PENNCREST

Owner of Reg. Nos. 763,821 and 763,859.
For Electric Vacuum Cleaners, Floor Polishers, and Rug Shampooers.
First use Apr. 20, 1964.

SN 198,874. Phelps Dodge Copper Products Corporation, New York, N.Y. Filed July 30, 1964.

### SY-BONDEZE

Owner of Reg. No. 543,516.
For Solderable Magnet Wire.
First use on or about Jan. 1, 1958.

SN 199,603. J. C. Penney Company, New York, N.Y. Filed Aug. 10, 1964.

### PENNCREST

Owner of Reg. No. 763,821.
For Radios and Televisions.
First use Oct. 8, 1962.

## Class 22 — Games, Toys, and Sporting Goods

SN 162,471. John T. Metcalf, Jr. and Phyllis Metcalf (joint enterprise), d.b.a. Metcalf Industries, Lake Forest, Ill. Filed Feb. 11, 1963.

### GAY BLADES

For Footwear Covers, e.g., Skate Warmers.
First use June 15, 1962.

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SN 164,071. S & E Manufacturing Company, Fitchburg, Mass. Filed Mar. 6, 1963.

### KIDDIE

Owner of Reg. Nos. 153,354 and 655,475.
For Children's Wheeled Vehicles—Namely, Wagons, Walking Cars, Walkers With and Without Pusher Handles, and Foot Propelled Toys.
First use on or about Aug. 1, 1915.

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SN 167,454. Charles H. Colquitt, Shreveport, La. Filed Apr. 24, 1963.

### SPOTLUC

For Equipment Sold as a Unit for Playing a Board Game Comprised of Playing Boards, Dice, and Chips.
First use Apr. 18, 1963.

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SN 189,293. Hasenfeld Bros., Inc., Pawtucket, R.I. Filed Mar. 23, 1964.




Owner of Reg. No. 773,150.
For Toy Doll and Accessories Therefor.
First use on or about Jan. 24, 1964.

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## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 159,410. McDonough Power Equipment, Inc., McDonough, Ga. Filed Dec. 19, 1962.

### COMET

For Power Mowers.
First use at least as early as Sept. 5, 1962.

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SN 160,562. Sweetheart Plastics, Inc., Wilmington, Mass. Filed Jan. 11, 1963.

### GUILDWARE

Owner of Reg. No. 707,654.
For Plastic Spoons, Knives, and Forks.
First use July 16, 1962.

SN 168,622. Honeywell Inc., Minneapolis, Minn., by change of name from Minneapolis-Honeywell Regulator Company, Minneapolis, Minn. Filed May 10, 1963.

### VERSA-TRACE

For Electrohydraulic Machine Tool Tracer Control Systems and Components Thereof, Including Hydraulic Motors, and Valves.
First use Oct. 10, 1962.

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SN 171,219. Luigi Eigenmann, Milan, Italy. Filed June 17, 1963.

### SNOWFAST

Owner of Swiss Reg. No. 192,083, dated May 16, 1962.
For Machines for Applying Signalling Materials Onto Road Pavements.

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SN 172,968. Birch Brothers, Inc., Somerville, Mass. Filed July 15, 1963.

### UXBRIDGE

For Textile Machinery Consisting of Automatic Tacking Aligners.
First use January 1949.

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SN 181,668. R. J. Neill, d.b.a. Southern Automotive Products, Fort Lauderdale, Fla. Filed Nov. 21, 1963.




For Wheel Bearings and Universal Joints.
First use May 1, 1962.

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SN 181,874. Falcon Tool Company, Detroit, Mich. Filed Nov. 26, 1963.

### FALCON

Owner of Reg. Nos. 527,185 and 774,944.
For Metal Working Tools—Namely, Metal Cutting Tools, Tool Holders, and Chucks.
First use on or about Aug. 1, 1936.

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SN 182,356. Red Devil Tools, Union, N.J. Filed Dec. 4, 1963.

### KWICK KLAMP

For Clamping Devices Employed on Paint Conditioners.
First use Nov. 1, 1962.



SN 182,743. Sel-Rex Corporation, Nutley, N.J. Filed Dec. 10, 1963.




Owner of Reg. Nos. 524,387 and 631,544.
For Pumps for Electrolytes.
First use April 1955.

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SN 183,707. Seitz-Werke G.m.b.H., Bad Kreusnach, Germany. Filed Dec. 27, 1963.

### AETNA

Owner of German Reg. No. 96,883, dated Apr. 23, 1907.
For Cleaning Machines for Bottles, Cans, and Similar Vessels.

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SN 185,617. Owatonna Tool Company, Owatonna, Minn. Filed Jan. 29, 1964.

### DUALMASTER

For Two-Speed Hydraulic Hand Pumps.
First use April 1961.

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SN 186,561. Process Measurements Co., Inc., Belmont, Calif. Filed Feb. 12, 1964.

### POROTRON

For Accessory Attachments To Absorb and Reduce Electrostatic Disturbances in Mechanical and Electrical Apparatus.
First use on or about Oct. 1, 1963.

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SN 187,541. Universal Machine Co., Inc., Baltimore, Md. Filed Feb. 26, 1964.

### TWIN FILLER

Owner of Reg. No. 701,142.
For Machines for Manufacturing Confectionary Products.
First use on or about Feb. 9, 1959.

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SN 189,702. Hubbard Manufacturing Co., Inc., Farmland, Ind. Filed Mar. 26, 1964.




For Apparatus Comprising Elevating Platforms Rotatably Mounted on Motor Vehicles and Other Mobile Bases for Use in Performing Overhead Service and Maintenance Work and Other Overhead Operations.
First use on or about May 23, 1963.

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SN 189,735. Societe d'Etude et de Construction de Machines pour Toutes Industries—Secoma, Villeurbanne, France. Filed Mar. 26, 1964.

### SECOMA

Owner of French Reg. No. 33,972, dated Sept. 19, 1963 (Lyon); Natl. Inst. No. 212,290.
For Mining Machinery—Namely, Large Scale Movable Machines for Drilling and/or Boring, Designed Particularly for Use in Mining Operations.

SN 190,383. Industrial Bearing & Transmission Co., Inc., d.b.a. Industrial Bearing & Transmission Co., Kansas City, Mo. Filed Apr. 6, 1964.

### IBT

For Power Transmission Equipment—Namely, Bearings, Bushings, Seals, Drives, Pulleys, Couplings, Joints, Sprockets, Sheaves, Gears, Speed Reducers, and Parts and Components Thereof, and Screw Conveyors.
First use Feb. 26, 1956.

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SN 193,848. C. R. di Cappelli Raffaele & C. Societa Nome Collettivo, Turin, Italy. Filed May 20, 1964.

### LA NUOVA ALTEA

The Italian wording "La Nuova Altea" when translated into English means "the new height."
For Noodle Machines.
First use 1942; in commerce on or about June 15, 1958.

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SN 194,110. Acme Visible Records, Inc., Crozet, Va. Filed May 25, 1964.

### ORDA-FLO

For Automated Office Paper-Work Delivery Device.
First use Feb. 4, 1964.

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SN 194,782. Irl Daffin Associates Incorporated, Lancaster, Pa. Filed June 3, 1964.

### AIRCHUTE

For Mobile Supported Apparatus for Mixing and Delivering of Concrete Under Pressure.
First use Mar. 17, 1964.

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SN 195,850. Dresser Industries, Inc., Dallas, Tex. Filed June 17, 1964.

### KINGSIZE

For Rock Drilling Bits.
First use at least as early as May 14, 1964.

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SN 199,445. The Black Clawson Company, Hamilton, Ohio. Filed Aug. 7, 1964.



Owner of Reg. Nos. 376,006 and 736,750.
For Apparatus and Instruments for Making, Handling and Converting Paper, Paper-Board and Pulp Products and Cellulosic Fibrous and Web Materials—Namely, Agitators, Air Guides, Air Systems, Asphalt Dispersing Systems, Barkers, Bearings, Beaters, Bins, Blow Tanks, Breaker Traps, Calendars, Chests, Chippers, Cleaners, Clutches, Coaters, Conveyers, Couplings, Cutters, Cylinder Moulds, Deckers, Deckles, Defiberers, De-Inkers, Digesters, Dischargers, Doctors, Driers, Drivers, Drums, Embossers, Filters, Follmounters, Grinders, Gummers, Headboxes, Heat Exchangers, Hoods, Inlets, Jordans, Laminators, Machine Controls and Panels, Molds, Ovens, Paper Making Machines—Namely, Fourdrinier, Cylinder, Yankee, Wet, Structural Board; Pasters, Plastic Removal

Systems, Presses, Pulleys, Pulp Mill Systems, Pulpers, Pumps, Raggers, Recorders, Reels, Regulators, Refiners, Rolls, Roll Splitters, Rotors, Saturators, Screens, Separators, Shafts, Shakes, Showers, Slices, Slitters and Cutters, Slushers, Stretchers, Suction Boxes, Syphons, Tanks, Thickeners, Valves (Rotary, Gate, Slide); Vapor Absorption Systems, Vats, Ventilation Systems, Washers, Waxers and Finishers, Winders and Unwinders, and Wire Guides; Printing Presses; and Apparatus for Forming and Handling Plastic Materials—Namely, Blown Film Equipment, Cast Film Equipment, Cooling Equipment, Devolatizers, Die Cutters, Dies, Driers, Extruders, Machine Control and Control Panels and Systems, Mills for Compounding Rubber and Plastics, Pelletizers, Rubber Strainers and Cubers, Strainers, and Tubers; and Component and Repair Parts for the Foregoing.

First use at least as early as Aug. 1, 1962, on cleaners; 1963 as to "BC" in a different form.

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SN 201,274. Coats & Clark Inc., New York, N.Y. Filed Sept. 4, 1964.

## COATS & CLARK'S

Owner of Reg. Nos. 685,226, 710,005, and others.
For Textile Machinery Travellers.
First use at least as early as Aug. 1, 1962.

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SN 201,511. Belshaw Brothers Inc., d.b.a. Belshaw Bros. Inc., Seattle, Wash. Filed Sept. 9, 1964.

## MULTI-MATIC

For Doughnut Dough Extruding Machines.
First use Feb. 1, 1957.

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SN 201,518. Carmet Company, Pittsburgh, Pa. Filed Sept. 9, 1964.

## SIMPLOK

For Cutting Tools, Inserts and Tool Holders.
First use June 19, 1964.

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SN 201,773. The Youngstown Sheet & Tube Company, Youngstown, Ohio. Filed Sept. 11, 1964.

## COM-PAC

Owner of Reg. No. 629,906.
For Polished Rod Stuffing Box.
First use June 24, 1964.

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SN 202,121. Harold O. Bates, d.b.a. The Acromark Company, Elizabeth, N.J. Filed Sept. 16, 1964.

ACROMARK

For Marking Dies for Steel Stamps.
First use 1939.

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SN 203,697. Southern Machinery Company, Greer, S.C. Filed Oct. 9, 1964.

## POSI-TENSION

For Let-Off Mechanisms for Looms and Conversion Kits for Let-Off Mechanisms.
First use Sept. 8, 1964.

# Class 24 — Laundry Appliances and Machines

SN 185,516. Hoffman International Corporation, Long Island City, N.Y. Filed Jan. 28, 1964.

HOFFMAN

Owner of Reg. Nos. 72,889 and 230,637.
For Ironing and Pressing Machines and Auxiliary Equipment for Finishing Textile Materials and Garments; and Dry Cleaning and Laundering Equipment and Accessories Including Dry Cleaning Machines, Clothes Washing Machines, Heat Operated and Centrifugal Drying Machines and Steam and Hot Water Boilers for Use With Such Machines.
First use during June 1947.

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SN 202,405. American Felt Company, Glenville, Conn. Filed Sept. 23, 1964.

## ECONOPRESS

For Nylon Felt Pressing Pads.
First use June 30, 1964.

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SN 202,429. Filteration, Inc., Birmingham, Ala. Filed Sept. 23, 1964.

## TRIPLE·KLEEN

For Apparatus in the Nature of Filters for Clarifying and Purifying Dry Cleaning Solvents.
First use July 27, 1964.

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# Class 26 — Measuring and Scientific Appliances

SN 127,374. John H. Beauvais, Cambridge, Mass. Filed Sept. 7, 1961.

## BASIC LAB 1

For Educational Appliances for Teaching Science.
First use Aug. 30, 1961.

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SN 142,250. American Meter Company, Philadelphia, Pa. Filed Apr. 16, 1962.

## GASCLOK

For Gas Powered Instrument Timing Units for Integrating Orifice Meters, Gas Lift Meters, Strip Chart Recorders, Field Program Timers, All Other Circular Chart Instruments, and Any Instrument Requiring High Torque and Continuous Power.
First use January 1959.



SN 152,137. Kahl Scientific Instrument Corporation, El Cajon, Calif. Filed Aug. 29, 1962.

KAHLSICO

For Underwater Testing Equipment, and Components Thereof; Chemical Plant and Laboratory Equipment; Nuclear Radiation Measuring Instruments and Monitors; Pharmaceutical Filling Equipment; pH Meters; Dielectric Measuring Apparatus; Moisture Determining Equipment; Conductivity Meters; Hydrometers; Thermometers; Recording Transmissometers; Current Meters; Hermetic Seals; and Mercury Switches.
First use Nov. 1, 1961.

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SN 162,328. The Appraisal Company, d.b.a. Automotive Testing Company, Youngstown, Ohio. Filed Feb. 8, 1963.




The words "Auto Test" are disclaimed apart from the mark as shown, common law rights, however, being reserved.
Owner of Reg. No. 715,567.
For Automotive Performance Testing Instruments and Devices—Namely, Dynamometers, Engine Analyzers, and Ignition and Exhaust Analyzing Components.
First use June 15, 1962.

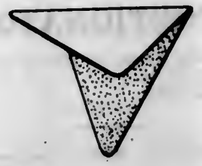
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SN 165,060. Kane Engineering Laboratories, Palo Alto, Calif. Filed Mar. 20, 1963.



The mark consists of a "Double K" design.
For Logarithmic Voltage Compressors, Cold Weld Pinch Off Devices for Pinching Off Vacuum Lines as for Example, in the Production of Vacuum Tubes and Laboratory Equipment—Namely, High Vacuum Valves, Fluid Reservoirs, Oil Vapor Molecular Sieve Traps, Stainless Steel Base Plates, Stainless Steel Bell Jars, Vacuum Systems, Bake Ovens, Dual Vacuum Exhaust Bake Out Equipment, Harmonic Absorption Filters, Harmonic Pads, Harmonic Calorimeters, Directional Couplers, Wave Guide Power Slitters, Wave Guide Power Combiners, Harmonically Broad Band Movable Wave Guide Dummy Loads and Harmonic Black Loads.
First use Oct. 25, 1960.

SN 169,739. Liberty Optical Manufacturing Co. Inc., Newark, N.J. Filed May 27, 1963.



For Spectacle Frames.
First use Mar. 25, 1963.

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SN 169,755. Organon Inc., West Orange, N.J. Filed May 27, 1963.

## TESTRAC

For Device for Holding Containers Used in Connection With Detection of Immuno-Diagnostic Principles.
First use Feb. 27, 1963.

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SN 174,366. John E. Hand, d.b.a. Electron Development Company, Springfield, Ill. Filed Aug. 5, 1963.

Lectro

For Photographic Devices—Namely, Slide Duplicator Attachments for Cameras.
First use Apr. 10, 1963.

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SN 176,374. Kay Electric Company, Pine Brook, N.J. Filed Sept. 5, 1963.

## MEMODIAL

For Resettable Dials for Use on Audio Spectrum Analyzers.
First use Feb. 13, 1963.

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SN 179,182. American Meter Company Incorporated, Philadelphia, Pa. Filed Oct. 17, 1963.

## DRI-FLO

For Orifice Meters of the Metallic Bellows Type for Differential Pressure Measurement.
First use September 1952.

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SN 179,878. The Electric Storage Battery Company, Philadelphia, Pa. Filed Oct. 28, 1963.

sportsman

Owner of Reg. Nos. 588,682 and 643,535.
For Sunglasses.
First use Sept. 15, 1959.

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SN 180,900. Kabushiki Kaisha Kako, Shinagawa-ku, Tokyo, Japan. Filed Nov. 12, 1963.

## KAKO

Owner of Japanese Reg. No. 594,402, dated Aug. 7, 1962.
For Photographic Flash Apparatus—Namely, Flash Guns, Electronic Flashes, and Parts and Accessories Thereof.

SN 181,544. Glenmarc Manufacturing Co., Northfield, Ill. Filed Nov. 20, 1963.

## PORTIONATOR

For Proportioning Pumps for Mixing and Metering Liquid Resins, Epoxy and Polyesters.
First use Oct. 21, 1963.

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SN 181,662. Terrence J. Mulligan, Aurora, Ill. Filed Nov. 21, 1963.

WAK O METER

For Coin-Operated Device for Use in Connection With Parked Automobiles To Permit the Occupant To Be Awakened at a Predetermined Time.
First use Oct. 15, 1963.

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SN 182,792. General Microwave Corporation, Farmingdale, N.Y. Filed Dec. 11, 1963.

## GENERAL MICROWAVE

For Microwave Measuring Equipment, Instruments, and Components—Namely, Power Meters, Power Levelers, Bolometers, Bolometer and Thermistor Mounts, Noise Generators, Noise Figure Meters, Signal Generators, Voltmeters, Microwave Tuners and Detector Mounts, Standing Wave Indicators, Slotted Lines, Frequency Meters, Calorimeters, Sliding Terminations, and Signal Samplers.
First use 1960.

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SN 182,838. Sigma Instruments, Inc., South Braintree, Mass. Filed Dec. 11, 1963.

## DATACEL

For Portable Amplifiers With Space and Wiring for Meters, Ammeters, Junction Boxes, Power Line Sensing and Related Equipment for Making Load Surveys of Electric Power Transmission and Distribution Systems.
First use Jan. 9, 1961.

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SN 183,213. Microvent Corporation, Forty Fort, Pa. Filed Dec. 18, 1963.



For Contact Lenses.
First use Nov. 9, 1963.

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SN 183,692. Manning, Maxwell & Moore, Incorporated, Stratford, Conn. Filed Dec. 27, 1963.

## ANGLE-VU

For Thermometers.
First use June 29, 1962.

SN 183,698. Manning, Maxwell & Moore, Incorporated, Stratford, Conn. Filed Dec. 27, 1963.

## MINI-TRAN

For Temperature and Pressure Transmitters.
First use Jan. 3, 1963.

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SN 184,889. Comptone Company, Ltd., New York, N.Y. Filed Jan. 20, 1964.

## BEAUTE VUES

For Eye Glasses, Sun Glasses, Spectacles, Frames and Parts Thereof, Including Lenses.
First use Dec. 28, 1963.

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SN 186,675. Almac Cryogenic Air Co., Oakland, Calif. Filed Feb. 14, 1964.

## CRYOFREEZE

For Control Equipment Including Temperature Sensing Elements, Valves, Conduits, and Liquid Level Controls for Handling Low Temperature Liquids.
First use Apr. 12, 1963.

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SN 187,958. Phylatron Corp., Columbus, Ohio. Filed Mar. 4, 1964.

PHYLATRON

For Solid State Electron Devices—Namely, Silicon Neutron Dosimeter and Readout Instrument.
First use June 15, 1963.

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SN 190,721. Harris-Intertype Corporation, Cleveland, Ohio. Filed Apr. 9, 1964.

## INTER-TROL

For Thermostatic Control for the Metal Pot of Typographical Linecasting Machines.
First use Jan. 1, 1964.

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SN 190,926. Hitachi Ltd., Chiyoda-ku, Tokyo, Japan. Filed Apr. 13, 1964.

## HITAC

Owner of Japanese Reg. No. 546,593, dated Jan. 14, 1960; and U.S. Reg. No. 701,266.
For Electronic Computers, Electron Microscopes, and Spectrophotometers.

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SN 191,828. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Apr. 23, 1964.

## DI-KAP

For Culture Tubes.
First use Oct. 22, 1963.



SN 191,831. The Bendix Corporation, Detroit, Mich. Filed Apr. 23, 1964.

## PRODUCT-O-RON

For Measurement Instruments—Namely, Roundness Measuring Equipment.
First use Apr. 30, 1962.

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SN 192,440. Triumph Werke Nurnberg Aktiengesellschaft, Nurnberg, Germany. Filed Apr. 30, 1964.

## EUCONTA

For Accounting Machines, Electro-Mechanical or Fully Electronic.
First use April 1955; in commerce Aug. 8, 1963.

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SN 192,523. Robertson Photo-Mechanix, Inc., Des Plaines, Ill. Filed May 1, 1964.

ROBERTSON MOTOPROMOTION

Owner of Reg. Nos. 610,654, 730,071, and 744,424.
For Copy Equipment Cameras and Parts Thereof.
First use Apr. 8, 1964.

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SN 192,587. General Motors Corporation, Detroit, Mich. Filed May 4, 1964.

## VOLT-O-CATOR

For Voltage Indicators for Testing the Charge Conditions of Storage Batteries and the Output of Voltage Regulators.
First use Mar. 13, 1964.

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SN 192,600. Kono Manufacturing Co. Inc., Woodside, N.Y. Filed May 4, 1964.

## EYE SHADOW

For Eyeglass Frames and Parts Therefor.
First use during February 1964.

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SN 193,053. Spiratone, Inc., Flushing, N.Y. Filed May 8, 1964.

## EXPANDAR

For Photographic Lenses.
First use Apr. 17, 1964.

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SN 193,054. Spiratone, Inc., Flushing, N.Y. Filed May 8, 1964.

## TEL-E-VERTER

For Photographic Lens Converters.
First use Apr. 18, 1964.

SN 193,102. Botany Industries, Inc., d.b.a. Renauld, Reno, Nev. Filed May 11, 1964.

## POLIMATIC

For Sunglasses.
First use about Apr. 23, 1964.

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SN 193,252. Airequipt Inc., New Rochelle, N.Y., assignee of Airequip Inc. (New York corporation), New Rochelle, N.Y. Filed May 12, 1964.

## AUTOSTACK

For Slide Projector of Photographic Transparencies.
First use Apr. 19, 1963.

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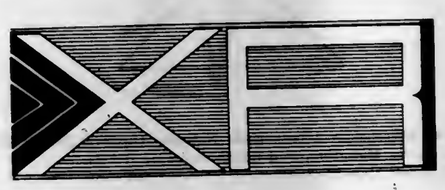
SN 193,560. Mandrel Industries, Inc., Houston, Tex. Filed May 15, 1964.

## AUTOMAN

For Geophysical Signal Recording Instruments.
First use February 1963.

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SN 194,585. Edgerton, Germeshausen & Grier, Inc., Bedford, Mass. Filed June 1, 1964.



The drawing is lined for blue.
For Sensitized Photographic Film and Plates.
First use in or about April 1964.

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SN 197,300. Ing. C. Olivetti & C., S.p.A., Ivrea, Italy. Filed July 7, 1964.

## TETRACTYS

For Calculating Machines and Parts Thereof.
First use Apr. 12, 1956; in commerce August 1956.

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SN 197,614. Pall Corporation, Glen Cove, N.Y. Filed July 10, 1964.

## AQUADEX

For Devices Indicating Moisture Content.
First use May 22, 1964.

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SN 197,758. Perini Electronic Corporation, Waltham, Mass. Filed July 13, 1964.

## DATACALL

For Apparatus for Data Storage, Retrieval and Data Introduction to Transmission Systems, Such as Telephone and Telegraph Lines.
First use June 17, 1964.

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SN 198,039. Alan H. Grant, Chevy Chase, Md. Filed July 17, 1964.

## S.C.A.L.

For Skindivers' Contact Air Lens and Solutions for Use in Mounting the Same Upon the Eyes of a Wearer.
First use Jan. 1, 1963.

SN 198,183. Lab-Line Instruments, Inc., Melrose Park, Ill. Filed July 20, 1964.

## SELECTRONIC

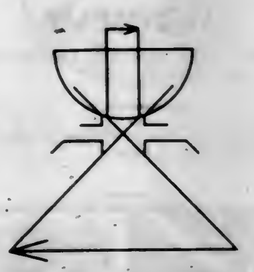
For Automatic Pipefitter.
First use May 1, 1964.

SN 198,319. Biological Research, Inc., Bridgeton, Mo. Filed July 22, 1964.

## PARALWALL

For Capillary Tubes.
First use January 1962.

SN 198,344. Ernest F. Fullam, Inc., Latham, N.Y. Filed July 22, 1964.



For Microscope Accessories—Namely, Dusters, Duster Refills, Spray Mounters, and Spray Mounter Refills.
First use Mar. 21, 1958.

### Class 28 — Jewelry and Precious-Metal Ware

SN 199,536. A. Cohen & Sons Corp., New York, N.Y. Filed Aug. 10, 1964.

## EVERGLO

Owner of Reg. No. 604,852.
For Finger Rings Made of Precious Metal.
First use on or about July 15, 1964.

SN 200,428. Feature Ring Co., Inc., New York, N.Y. Filed Aug. 24, 1964.

## BANDS OF LOVE

The word "Band" is disclaimed apart from the mark as shown.
For Finger Rings and Finger Ring Mountings Made of Precious Metal.
First use on or about Jan. 2, 1960.

SN 203,745. Coro Incorporated of Rhode Island, Providence, R.I. Filed Oct. 12, 1964.

## ANCESTRAL

For Jewelry.
First use June 15, 1964.

SN 203,746. Coro Incorporated of Rhode Island, Providence, R.I. Filed Oct. 12, 1964.

## TEMPLE BELLS

For Jewelry.
First use June 15, 1964.

SN 204,541. Anson Incorporated, Providence, R.I. Filed Oct. 22, 1964.



For Men's Jewelry—Namely, Tie Holders, Collar Holders, Tie Pins, Cuff Links, Watch Chains, Watch Bands, Brief Clips, Money Clips, Tie Chains, Studs, Buckles, Tie Tacks, Identification Bracelets, Tie Slides, Collar Pins, and Finger Rings.
First use June 5, 1964.

### Class 29 — Brooms, Brushes, and Dusters

SN 203,059. Acme Brush Corporation, New York, N.Y. Filed Oct. 1, 1964.

## ROCKET

For Paint Applying Devices—Namely, Roller Applicators.
First use January 1959.

### Class 30 — Crockery, Earthenware, and Porcelain

SN 192,512. Onandaga Pottery Company, Syracuse, N.Y. Filed May 1, 1964.

## BRAE LOCH

For Dinnerware and Tableware Made of China.
First use Feb. 10, 1964.

SN 192,513. Onondaga Pottery Company, Syracuse, N.Y. Filed May 1, 1964.

## WESTMINSTER

For Dinnerware and Tableware Made of China.
First use Feb. 10, 1964.

### Class 31 — Filters and Refrigerators

SN 200,142. American Motors Corporation, Detroit, Mich. Filed Aug. 19, 1964.

## SPACE WALL

For Refrigerators and Freezers and Parts Thereof.
First use May 15, 1963.

SN 200,694. Aquariums, Incorporated, Maywood, N.J. Filed Aug. 27, 1964.

## SLIM JIM

For Aquarium Filter.
First use as early as 1952.



SN 200,928. Gould-National Batteries, Inc., St. Paul, Minn. Filed Aug. 31, 1964.

## MICRO-GUARD

Owner of Reg. No. 689,097.
For Air, Oil, and Fuel Filters and Filter Elements for Use With Internal Combustion Engines.
First use on or about Aug. 8, 1958.

### Class 32 — Furniture and Upholstery

SN 185,508. Harter Corporation, Sturgis, Mich. Filed Jan. 28, 1964.

## SCOPE-H

For Office, Lobby, Reception Room, Lounge, and Institutional Furniture.
First use May 6, 1963.

SN 196,684. M-H Standard Corporation, Hamilton, Ohio. Filed June 29, 1964.

## VERSARACK

For First In, First Out Live Storage Racks.
First use Apr. 23, 1962.

SN 198,230. Simmons Company, New York, N.Y. Filed July 20, 1964.

## SIMCREST

Owner of Reg. No. 681,470.
For Mattresses and Bed Springs.
First use January 1962.

SN 198,797. Hallmark Cards, Incorporated, Kansas City, Mo. Filed July 29, 1964.




Owner of Reg. Nos. 107,653, 380,596, and 657,441.
For Display Racks and Cabinets.
First use on or about Feb. 3, 1949; about December 1935 as to "Hallmark."

SN 204,211. Topco Associates, Inc., Skokie, Ill. Filed Oct. 16, 1964.

## TOPCO

For Lawn Furniture.
First use Feb. 2, 1964.

### Class 33 — Glassware

SN 184,410. Walker & Zanger, Inc., New York, N.Y. Filed Jan. 10, 1964.

## MARSPAN

For Rolled Glass.
First use in or about November 1962.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 122,266. Carrier Corporation, Syracuse, N.Y. Filed June 19, 1961.

## ECONOAIR

For Year-Round Air Conditioning Apparatus.
First use Feb. 23, 1961.

SN 169,370. Henschel-Werke Aktiengesellschaft, Kassel, Germany. Filed May 21, 1963.




Owner of German Reg. No. 747,045, dated Mar. 23, 1961.
For Automatically and Manually Operated Steam Generators, Plants and Equipment—Namely, Columns, Heat Exchangers, Waste-Heat Boilers, and Pressure Vessels.

SN 184,023. Ban-Aire, Inc., Columbus, Ohio. Filed Jan. 6, 1964.




For Deodorizing Devices Installed in Cold Air Ducts To Eliminate Unpleasant Odors From the Circulating Air.
First use Nov. 12, 1963.

SN 195,602. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.




The drawing is lined for the color red, but no claim is made to color.
Owner of Reg. Nos. 513,546, 761,183, and many others.
For Heat Exchangers, Cooking Ranges, Water Heaters, Air Conditioners (Central and Room), Humidifiers, Dehumidifiers, Furnaces, Gas and Oil Conversion Burners, and Heat Exchanger Coils for Mechanical Seals.
First use on or prior to Mar. 3, 1964, on water heaters.

SN 198,853. Kool-O-Matic Corporation, Niles, Mich. Filed July 30, 1964.

KOOL-O-MATIC

For Residential Fans.
First use June 4, 1964.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 196,143. The General Tire & Rubber Company, Akron, Ohio. Filed June 22, 1964.

RAIL VAN

For Pneumatic Tires.
First use Mar. 15, 1963.

## Class 36 — Musical Instruments and Supplies

SN 163,464. Claan Music Corp., New York, N.Y. Filed Feb. 26, 1963.

MAGIC

For Musical Instruction Kit Consisting of Phonograph Recordings of Bossa Nova Music and Dancing Instructions, Claves Sticks, Motion Picture Book of Bossa Nova Dance Steps and Illustrated Brochure of Dancing Instructions.
First use on or about Jan. 15, 1963.

SN 188,248. Jesus Ochoa Lopez, d.b.a. Angelo Records, Los Angeles, Calif. Filed Mar. 9, 1964.

DISCOS HI ANGELO FI Records

The words "Discos" and "Records" are disclaimed apart from the mark as used. No claim of exclusive right is made to the term "Hi Fi" as used on mechanically grooved phonograph records.
For Phonograph Records.
First use May 17, 1963.

SN 191,953. Remo Records Corp., New York, N.Y. Filed Apr. 24, 1964.

REMO

For Phonograph Records.
First use Sept. 1, 1963.

SN 191,962. Suaritos Records Distributors, Inc., New York, N.Y. Filed Apr. 24, 1964.

SUARITOS

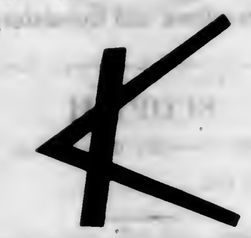
For Phonograph Records.
First use Jan. 1, 1962.

SN 191,967. V-M Corporation, Benton Harbor, Mich. Filed Apr. 24, 1964.

TAPE-O-MATIC

For Tape Recorders.
First use May 1954.

SN 192,486. Kay Musical Instrument Co., Elk Grove Village, Ill. Filed May 1, 1964.



Owner of Reg. Nos. 745,847 and 745,848.
For Musical Instruments and Parts Therefor—Namely, Guitars, Ukuleles, Mandolins, Banjos, Bass Viols, Cellos, and Amplifiers for Musical Instruments.
First use in or about July 1956.

SN 192,487. Kay Musical Instrument Co., Elk Grove Village, Ill. Filed May 1, 1964.



Owner of Reg. Nos. 745,847 and 745,848.
For Musical Instruments and Parts Therefor—Namely, Guitars, Ukuleles, Mandolins, Banjos, Bass Viols, Cellos, and Amplifiers for Musical Instruments.
First use on or about Dec. 1, 1963; July 1956 as to the letter "K" in a different form.

SN 199,604. J. C. Penney Company, New York, N.Y. Filed Aug. 10, 1964.

PENNCREST

Owner of Reg. No. 763,821.
For Tape Recorders.
First use Aug. 8, 1963.

## Class 37 — Paper and Stationery

SN 183,080. Marcal Paper Mills, Inc., East Paterson, N.J. Filed Dec. 16, 1963.

Madeira

For Paper Napkins.
First use February 1962.



SN 192,166. Exeter Paper Company, Inc., Chicago, Ill. Filed Apr. 28, 1964.

FASTCOTE

For Colored Coated Papers for Decorative Uses.
First use Sept. 3, 1963.

SN 192,485. David Kahn, Inc., North Bergen, N.J. Filed May 1, 1964.

LIQUARITER

Owner of Reg. No. 635,609.
For Writing and Marking Pens.
First use Apr. 27, 1964.

## Class 38 — Prints and Publications

SN 170,658. Mid-Co Photo Service, Inc., Wichita, Kans. Filed June 10, 1963.




For Packaged Photographs.
First use Mar. 2, 1955.

SN 179,004. Margaret T. Williams, d.b.a. Edwin K. Williams and Co., Santa Barbara, Calif. Filed Oct. 14, 1963.




For Bookkeeping and Business Management Forms.
First use May 1, 1962.

SN 182,542. Gabriel Richard Institute, Detroit, Mich. Filed Dec. 2, 1963.

LEAD

Applicant disclaims the right to exclusive use of the phrase "For the development of Christ-like leaders."
For Magazine.
First use Aug. 10, 1963.

SN 194,271. Ad-A-Day Company, Inc., Taunton, Mass. Filed May 26, 1964.

STA-PUT

For Desk Calendars.
First use May 26, 1960.

SN 196,048. Lake Region Publishing Corporation, Winter Haven, Fla. Filed June 19, 1964.

CITRUS WORLD

For Magazine Issued Monthly.
First use at least as early as June 4, 1964.

SN 196,564. Saran Schroeder, Rockville Centre, N.Y. Filed June 26, 1964.

CLOCKER LAWTON

For Racing Information Sheets.
First use 1930.

## Class 39 — Clothing

SN 157,698. Highlander Sportswear, Inc., Newark, N.J. Filed Nov. 21, 1962.

HIGHLAND LASSIE

For Juniors', Misses', and Women's Wearing Apparel—Namely, Coats, Suits, Slacks, and Skirts Made of Natural or Synthetic Fibers or Combinations Thereof.
First use Nov. 10, 1962.

SN 163,671. Thane Hosiery Mills, Inc., Reading, Pa. Filed Feb. 28, 1963.




For Men's Hosiery.
First use Oct. 18, 1962.

SN 172,319. The Kroger Co., Cincinnati, Ohio. Filed July 2, 1963.

MI-T-FINE

For Men's, Women's and Children's Socks; Brassieres, Panties, Slips, Girdles; Men's and Boys' Underwear; Infants' Shirts, Gowns, Coveralls, Crawlers, Sleeping Bags, Training Pants, Diapers, Pants, Booties, and Bibs; and Men's Handkerchiefs.
First use July 1, 1961.

SN 172,602. Mr. Blackwell, Inc., Los Angeles, Calif. Filed July 8, 1963.

Mr. Blackwell

For Women's Jackets, Coats, Dresses, Slacks, and Blouses.
First use Feb. 11, 1958, on women's dresses.

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SN 180,098. Hickey-Freeman Company, Rochester, N.Y. Filed Oct. 30, 1963.

BELÄNO

For Men's Suits.
First use in or about September 1956.

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SN 180,368. Carhartt of Texas, Inc., Dallas, Tex. Filed Nov. 4, 1963.

MR Playtime

The drawing is lined for the color red, but the mark is not limited to that color.
For Sportswear; Specifically, Women's Slacks, Shorts, Skirts, Blouses, and Dresses.
First use Aug. 29, 1963.

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SN 181,815. Herbert E. Whitehurst, d.b.a. Try-Pair Hosiery Mills, Berkeley, Mo. Filed Nov. 22, 1963.

Thrifty Girl

For Ladies' Hosiery.
First use Mar. 15, 1956.

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SN 183,019. Barlan Furs, Inc., New York, N.Y. Filed Dec. 16, 1963.

## BARLAN

For Fur Coats and Fur Jackets for Ladies.
First use Sept. 1, 1963.

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SN 185,190. Tru Balance Corsets, Inc., New York, N.Y. Filed Jan. 23, 1964.

Shape-Slimmer

For Ladies' Corsets, Girdles, Panty Corselettes, Bathing Suits, and Underwear.
First use Oct. 29, 1963.

SN 185,755. Burma-Bibas, Inc., New York, N.Y. Filed Jan. 31, 1964.

## ZIZANIE

For Menswear—Namely, Neckties, Shirts, and Sweaters; and Ladieswear—Namely, Blouses, Dresses, Skirts, and Sweaters.
First use Dec. 5, 1963.

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SN 188,442. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Mar. 11, 1964.

## ROXEL

For Articles of Clothing Which Have Been Treated so as To Be Durably Flame Retardant—Namely, Smocks and Gowns.
First use Feb. 17, 1964.

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SN 191,214. Ripley Manufacturing Corporation, Brooklyn, N.Y. Filed Apr. 15, 1964.

QM

For Men's and Young Men's Suits, Top Coats, Overcoats, and Slacks.
First use Nov. 14, 1963.

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SN 192,677. Cuadra Enterprises, Santa Monica, Calif. Filed May 5, 1964.

## BREAKAWAY

For Nightgowns.
First use May 1, 1964.

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SN 193,625. Bud Berman Sportswear, Inc., New York, N.Y. Filed May 18, 1964.

## MR. INFLUENTIAL

Owner of Reg. No. 674,222.
For Shirts.
First use Apr. 20, 1964.

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SN 194,535. Tex-Son, Inc., San Antonio, Tex. Filed May 28, 1964.

tex-trail

For Men's Western Shirts.
First use Mar. 31, 1964.

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SN 194,573. The L. S. Brown Company, d.b.a. Dixie Trading Company, Atlanta, Ga. Filed June 1, 1964.

Kodiak King

For Insulated Boots.
First use on or about Jan. 9, 1964.



SN 194,594. Galen Enterprises, Incorporated, Spokane, Wash. Filed June 1, 1964.

Galen

For Lightweight Plastic Gloves.
First use Mar. 20, 1956.

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SN 194,849. F. W. Woolworth Co., New York, N.Y. Filed June 3, 1964.

## TOPSALL

Owner of Reg. Nos. 267,020, 767,347, and others.
For Men's and Boys' Pajamas.
First use May 10, 1963.

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SN 195,682. The Kendall Company, Walpole, Mass. Filed June 15, 1964.

## HOUR GLASS

For Diapers.
First use Dec. 23, 1963.

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SN 195,864. The Joseph & Feiss Company, Cleveland, Ohio. Filed June 17, 1964.

## CREASE CONTROL

For Men's Tailored Wearing Apparel—Namely, Suits, Slacks, Coats, and Jackets.
First use Nov. 16, 1962.

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SN 195,920. Bata Shoe Company, Inc., Belcamp, Md. Filed June 18, 1964.

BULLETS

For Canvas Footwear.
First use on or about Apr. 21, 1964.

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SN 196,337. Associated Dry Goods Corporation, New York, N.Y. Filed June 24, 1964.

## CAVALIER

Owner of Reg. Nos. 253,846, 219,933, and 274,360.
For Women's Blouses and Skirts.
First use May 19, 1923.

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SN 196,339. Atlas Underwear Corporation, Piqua, Ohio. Filed June 24, 1964.

## TITAN

Owner of Reg. No. 631,386.
For Men's Knitted T-Shirts, Athletic Shirts, Knitted Briefs, Boxer Shorts, Support Underwear Garments; and Boys' Knitted T-Shirts and Knitted Briefs.
First use Oct. 28, 1955.

SN 196,513. Wilson Folmar, Inc., New York, N.Y. Filed June 26, 1964.

## WILSON FOLMAR

For Ladies' Dresses.
First use Jan. 15, 1958.

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SN 196,575. Wear-Right Gloves, Inc., New York, N.Y. Filed June 26, 1964.

## WEARETTE

For Gloves, Mittens, Hats, and Headbands.
First use June 3, 1964, on hats.

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SN 196,710. Rago Foundations Inc., Long Island City, N.Y. Filed June 29, 1964.

## CLOSETTE

For Foundation Garments Including Panty Girdles, Girdles, and Corselettes.
First use October 1963.

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SN 196,818. Sil-O-Ette Sales Corporation, New York, N.Y. Filed June 30, 1964.

## SLIMVIEW

For Girdles, Brassieres, Corsets, Panty Girdles, Garter Belts, Bandeaux, and Other Women's Foundation Garments.
First use on or about June 9, 1964.

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SN 196,860. George P. Hall, Inc., New York, N.Y. Filed July 1, 1964.

Bowler Sox

The word "Sox" is disclaimed apart from the mark as shown.
Owner of Reg. Nos. 760,836, 770,869, and 770,895.
For Men's Heavy Thick Cushion Socks.
First use on or about Feb. 15, 1960.

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SN 197,036. Maidenform, Inc., New York, N.Y. Filed July 3, 1964.

## BAROQUE

For Foundation Garments.
First use June 25, 1964.

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SN 197,050. Alba-Waldensian, Inc., Valdese, N.C. Filed July 6, 1964.

## ANTIPIC

For Hosiery.
First use June 20, 1964.

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SN 197,075. Capezio, Inc., New York, N.Y. Filed July 6, 1964.

## SKITTER

For Shoes.
First use December 1959.

SN 197,145. Maidenform, Inc., New York, N.Y. Filed July 6, 1964.

## LACERY

Owner of Reg. No. 692,865.
For Foundation Garments.
First use June 12, 1964.

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SN 197,603. Melville Shoe Corporation, New York, N.Y. Filed July 10, 1964.

## RAH RAH SHOES

No registration rights are claimed for the word "Shoes" apart from the mark shown in the drawing.
For Women's and Girls' Shoes.
First use July 9, 1964.

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SN 197,711. P. H. Hanes Knitting Company, Winston-Salem, N.C. Filed July 13, 1964.

## RED LABEL

Owner of Reg. No. 719,342.
For Men's and Boys' Underwear Shirts, Drawers, and Union Suits; and Men's, Boys', and Infants' Hosiery.
First use October 1929 on underwear.

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SN 197,781. Rob Roy Company, Inc., New York, N.Y. Filed July 13, 1964.

## GRO/matic

For Outer Dress Shirts for Boys and Young Men.
First use May 8, 1964.

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## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 164,570. Spun-Lo Elderlon Inc., New York, N.Y. Filed Mar. 13, 1963.

## SUEDE-SKIN

Owner of Reg. No. 305,226.
For Rayon Piece Goods.
First use May 3, 1932.

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SN 181,396. Old Bleach Linens, Inc., New York, N.Y. Filed Nov. 18, 1963.




Applicant disclaims the exclusive use of the words "Bleached by the Sun" apart from the mark as shown.
For Linen and Hemp Fabrics in the Piece as Follows: Embroidery Linens and Costume Linens, Sheetings and Pillow Linens, Natural Linens, Hucks, Figured Towelings and Towels, and Diapers; and Tablecloths and Napkins, Huck Towels, Fancy Towels, Diaper Towels, Damask Towels, Roller Towels, Cushion Covers, Chair Backs, Tea Napkins and Tea Cloths, Scarfs, Squares, Doilies, Pillow Cases and Bolster Cases, Sheets, and Carpets Made From Animal, Vegetable and/or Synthetic Fibres.
First use 1922.

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SN 184,112. Stein-Tex, Inc., New York, N.Y. Filed Jan. 6, 1964.

## FABRITIQUE

For Piece Goods Used in the Manufacture of Shirts, Dresses, Skirts, Blouses, Pants, Lingerie, Housecoats, Suits, Jumpers, and the Like.
First use Oct. 8, 1963.

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SN 185,832. Waumbec Mills Incorporated, New York, N.Y. Filed Jan. 31, 1964.

## CHAMACRON

For Piece Goods of Synthetic Fibers and Blends and Combinations Thereof.
First use Jan. 15, 1964.

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SN 188,441. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Mar. 11, 1964.

## ROXEL

For Flame Retardant Textile Fabrics.
First use Feb. 17, 1964.

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SN 191,112. Bell Industries, Inc., d.b.a. Pride Rug Mills, New York, N.Y. Filed Apr. 15, 1964.




For Carpeting and Rugs.
First use 1955.

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SN 193,066. United Merchants and Manufacturers, Inc., New York, N.Y. Filed May 8, 1964.

## KUNA

Owner of Reg. Nos. 407,294, 414,840, and 504,643.
For Natural and Synthetic Fiber Fabrics Adapted To Be Made Up Into Articles of Apparel for Men, Women, and Children.
First use on or about Oct. 20, 1932.

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SN 196,517. Fruit of the Loom, Inc., New York, N.Y., assignee of Fruit of the Loom, Inc., New York, N.Y. Filed June 26, 1964.

## PONTIAC

Owner of Reg. No. 186,475.
For Bleached Cotton Piece Goods.
First use 1872.



SN 196,612. Callaway Mills Company, LaGrange, Ga. Filed June 29, 1964.

## WALK OFF

For Textile Mats.
First use on or about June 10, 1964.

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SN 196,631. Dan River Mills, Incorporated, Danville, Va. Filed June 29, 1964.

## DANFLUF

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use May 27, 1964.

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SN 196,632. Dan River Mills, Incorporated, Danville, Va. Filed June 29, 1964.

## MADRADAN

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use May 27, 1964.

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SN 196,633. Dan River Mills, Incorporated, Danville, Va. Filed June 29, 1964.

## RIVERCORD

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use May 21, 1964.

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SN 196,636. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1964.

## CORRERO

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use Apr. 23, 1964.

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SN 196,639. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1964.

## MILLIPRIME

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use Mar. 5, 1964.

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SN 196,640. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1964.

## SUPER PLUS

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use June 3, 1964.

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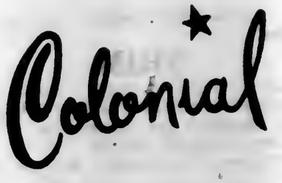
## Class 43—Thread and Yarn

SN 169,944. Kyowa Rubber Industry Co., Ltd., Nishinari-ku, Osaka, Japan. Filed May 29, 1963.




Owner of Japanese Reg. Nos. 405,493 and 447,982, dated Nov. 27, 1951, and July 17, 1954, respectively.
For Rubber Thread and Covered Rubber Thread.

SN 183,567. Colonial Woolen Mills, Inc., Cleveland, Ohio. Filed Dec. 26, 1963.




For Wool and Wool Blend Yarns.
First use July 18, 1917.

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SN 191,257. Compagnie Francaise de Bonneterie, Societe Anonyme, Paris, France. Filed Apr. 16, 1964.

## LES CORAUX

The English equivalent of the words "Les Coraux" is "coral reefs."
Owner of French Reg. No. 496,991, dated June 15, 1961 (Seine); Natl. Inst. No. 166,432.
For Yarns and Threads.

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SN 196,629. Courtaulds, Limited, London, England. Filed June 29, 1964.

## COURTOLON

Owner of British Reg. No. 749,113, dated Dec. 16, 1955.
For Textile Yarns.

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## Class 44—Dental, Medical, and Surgical Appliances

SN 192,219. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

## FLOCOVYL

Priority claimed under Sec. 44(d) on French Reg. No. 512,944, dated Apr. 25, 1963 (Paris); Natl. Inst. No. 206,716. (Claim based on co-pending application SN 175,440, filed in United States Aug. 20, 1963.) Owner of U.S. Reg. Nos. 778,220 and 778,262.
For Textile Articles for Use in Physiotherapy, Such as Dressings, Bandages, Kneepieces, Girdles, Belts, and Waistbands.

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SN 195,604. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.




The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 513,546, 761,183, and others.
For Hospital Beds, and Hospital Equipment for Controlled Atmosphere Therapy.
First use prior to Apr. 13, 1964, on hospital beds.

## Class 45—Soft Drinks and Carbonated Waters

SN 186,998. B-1 Beverage Company, St. Louis, Mo. Filed Feb. 19, 1964.

### TRIM

Applicant claims use for the entire United States except for the States of Maryland and Virginia and the District of Columbia. Owner of Reg. No. 642,391.
For Non-Nutritive, Non-Alcoholic, Maltless Dietetic Soft Drinks.
First use Feb. 1, 1952.
Subj. to Concurrent Use Proceeding with Reg. No. 642,390.

## Class 46—Foods and Ingredients of Foods

SN 170,877. Amtorg Trading Corp., New York, N.Y. Filed June 13, 1963.

### CHAIKA

Applicant claims use for all the States in the United States except Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine.
For Canned Crabmeat.
First use Oct. 11, 1930.
Subj. to Concurrent Use Proceeding with SN 202,942.

SN 175,050. Maxwell's Prepared Foods, Inc., Port Jefferson Station, N.Y. Filed Aug. 14, 1963.

### BREADIT

Owner of Reg. No. 417,671.
For Bread Crumbs Used for Breading Purposes.
First use Dec. 15, 1939.

SN 175,051. Maxwell's Prepared Foods, Inc., Port Jefferson Station, N.Y. Filed Aug. 14, 1963.

### STUFFIT

Owner of Reg. No. 419,887.
For Prepared Stuffing Composed of Bread Crumbs, Dehydrated Onion, Herbs and Spices for Poultry, Meat, and Fish.
First use March 1941.

SN 176,844. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Sept. 12, 1963.

### NETO

Owner of Reg. No. 82,269.
For Corn Syrup.
First use Jan. 10, 1962.

SN 178,582. The Borden Company, New York, N.Y. Filed Oct. 9, 1963.

### GUSTO

For Pet Food Supplement.
First use June 24, 1963.
Subj. to Intf. with SN 178,980.

SN 178,980. Associated Products, Inc., d.b.a. Rival Packing Company, Chicago, Ill. Filed Oct. 14, 1963.

### GUSTO

For Dog Food.
First use Oct. 3, 1963.
Subj. to Intf. with SN 178,582.

SN 180,231. The Rubel Baking Company, Cincinnati, Ohio. Filed Oct. 31, 1963.

RUBEL'S
Deutsches Schwarz Brot

Applicant disclaims exclusive right to the wording "Deutsches Schwarz Brot" separate and apart from the mark as shown, such wording being German for "German dark bread," but does not waive its common law rights in the use of the mark including such wording as applied to the goods herein. Owner of Reg. No. 302,520.
For Bread.
First use July 12, 1962.

SN 181,968. Dolly Madison Foods, Inc., d.b.a. Woodlawn Farm Dairy Co., Scranton, Pa. Filed Nov. 27, 1963.

### WOODLAWN

For Buttermilk, Chocolate Milk, Cheese, Butter, Fluid Cream, Fresh Eggs, Sour Cream, Ice Cream, Homogenized and Unhomogenized Milk, and Fresh Fruit Juice Drinks.
First use Oct. 3, 1963.

SN 182,967. Pixley & Ehlers, Chicago, Ill. Filed Dec. 13, 1963.

### PIXLEY AND EHLERS

For Foods—Namely, Canned Soups, Spaghetti, Macaroni, Canned Grapefruit Juice, Canned Tomato Juice, and Crackers.
First use 1935.

SN 183,058. Hiji Brothers, d.b.a. Hiji Bros., Oxnard, Calif. Filed Dec. 16, 1963.

Hiji Bros.

For Fresh Vegetables.
First use November 1955.



SN 183,767. Kellogg Company, Battle Creek, Mich. Filed Dec. 30, 1963.




Applicant disclaims the representation of the goods.
For Cereal Breakfast Foods.
First use Nov. 22, 1963.

SN 183,889. Del Gaizo S.p.A., Naples, Italy. Filed Jan. 2, 1964.

### V. DEL GAIZO

The name "V. Del Gaizo" is that of the founder of applicant's business—Namely, Vincenzo Del Gaizo, now deceased. Owner of Reg. No. 66,163.
For Canned Tomatoes and Tomato Paste.
First use Jan. 1, 1899; in commerce Jan. 1, 1899.

SN 185,088. Steele Canning Company, Springdale, Ark. Filed Jan. 21, 1964.

### WAGON MASTER

For Canned Beans.
First use Dec. 12, 1963.

SN 185,790. Bennett Lea, d.b.a. Lady Luck Vineyards, Delano, Calif. Filed Jan. 31, 1964.

### LADY JANE LEA

"Lady Jane Lea" is not the name of any known living individual.
For Fresh Grapes.
First use Aug. 30, 1963.

SN 187,453. Weston Bakeries Limited, Toronto, Ontario, Canada. Filed Dec. 2, 1963.

### COOKIE CADDIE

Without prejudice to its common law rights and for the purposes of this registration only, applicant disclaims the word "Cookie" except in conjunction with the rest of the mark shown.
For Cookies.
First use Nov. 2, 1962; in commerce Aug. 28, 1963.

SN 187,745. General Mills, Inc., Minneapolis, Minn. Filed Mar. 2, 1964.

### GOOD NEWS!

For Ready To Eat Breakfast Cereals.
First use Feb. 5, 1964.

SN 189,182. Libby, McNeill & Libby, Chicago, Ill. Filed Mar. 20, 1964.

Libby's

Owner of Reg. Nos. 112,291, 708,172, and others.
For Canned and Frozen Fruits and Vegetables, Canned Corned Beef Hash, Canned Spanish Rice, Canned Beef Stew, Frozen Meat Pies, and Frozen Macaroni and Cheese Casseroles.
First use on or about May 1, 1963, on canned fruits and canned vegetables.

SN 189,349. The Nestlé Company, Inc., White Plains, N.Y. Filed Mar. 23, 1964.

### NUTTY SNAP

Applicant makes no claim to the word "Nutty" except as shown in the mark.
For Milk Chocolate Bar.
First use Feb. 28, 1964.

SN 190,390. Willa Lee Johnson, d.b.a. Johnson Seafood Company and Miss Lou Ala Foods Company, Biloxi, Miss. Filed Apr. 6, 1964.

### OLD SPANISH TRAIL

For Canned Shrimp.
First use in or about 1946.

SN 190,391. Willa Lee Johnson, d.b.a. Johnson Sea Food Company and Miss Lou Ala Foods Company, Biloxi, Miss. Filed Apr. 6, 1964.

### SURF MAID

For Canned Shrimp and Canned Oysters.
First use Mar. 15, 1925.

SN 191,915. Del Mar Packing Co., Oxnard, Calif. Filed Apr. 24, 1964.

### Mr. Green

The word "Green" is disclaimed apart from the mark as shown.
For Fresh Vegetables.
First use Feb. 10, 1964.

SN 192,005. Canada Dairies Corporation Ltd., Burgessville, Ontario, Canada. Filed Apr. 27, 1964.

## MULTISKIM

Owner of Canadian Reg. No. 118,244, dated Mar. 27, 1960.
For Evaporated Skim Milk.

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SN 195,676. Julimar Farm, Inc., New York, N.Y. Filed June 15, 1964.




For Coffee.
First use Mar. 20, 1964.

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SN 195,997. Agress Nut & Seed Co., New York, N.Y. Filed June 19, 1964.

## RESERVE STOCK

For Pistachio Nuts.
First use June 4, 1964.

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SN 197,587. Krause Milling Company, Milwaukee, Wis. Filed July 13, 1964.

## SNACKMAKER

For Corn Meal.
First use June 7, 1963.

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SN 199,707. Ph. Wunderle Inc., Philadelphia, Pa. Filed Aug. 11, 1964.

## CLOVER

For Candy.
First use June 17, 1890.

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SN 199,816. Friday Canning Corporation, New Richmond, Wis. Filed Aug. 13, 1964.

## FRIDAY

Owner of Reg. No. 247,071.
For Canned Vegetables.
First use Oct. 1, 1926.

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SN 202,942. A. H. Morse Co., Brookline, Mass. Filed Sept. 29, 1964.

## CHATKA

Applicant claims use for the area comprising the States of Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine.
For Canned Crabmeat.
First use on or about July 23, 1959.
Subj. to Concurrent Use Proceeding with SN 170,877.

## Class 47 — Wines

SN 194,584. E. & J. Gallo Winery, Modesto, Calif. Filed June 1, 1964.




For Wines.
First use Apr. 22, 1964.

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## Class 49 — Distilled Alcoholic Liquors

SN 172,550. Montebello Liquors, Incorporated, Baltimore, Md. Filed July 2, 1963.

## CAMEL

For Whiskey, Gin, Rum, Brandy, and Alcoholic Cordials.
First use Aug. 23, 1935.

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## Class 50 — Merchandise Not Otherwise Classified

SN 157,105. Hugo Bosca Company, Inc., Springfield, Ohio. Filed Nov. 13, 1962.

## HEIRLOOM

For Novelty Items in the Form of Fancy Leather Goods, Such as Leather Fitted Brushes, Cases, Flasks, Frames, Buckets, and Bar Implements.
First use June 29, 1962.

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SN 175,700. Tunlaw Corporation, Washington, D.C. Filed Aug. 23, 1963.

## TRIP-IT

For Bird Feeders.
First use on or about Aug. 14, 1959.

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SN 193,327. Canrad Precision Industries, Inc., New York, N.Y. Filed May 13, 1964.

## SPOT-LITE

For Luminescent Vinyl Tape.
First use Apr. 3, 1963.

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SN 199,963. The Buxbaum Company, Canton, Ohio. Filed Aug. 17, 1964.

## MR. PRO

For Floor Mat Comprising Carpeting Bonded to a Rubber Base.
First use July 10, 1964.



SN 200,116. Republic Granite Co., Inc., Elberton, Ga. Filed Aug. 18, 1964.

## STERLING

For Stone Monuments, Stone Memorials, Stone Tablets, and Tombstones.
First use 1934.

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## Class 51 — Cosmetics and Toilet Preparations

SN 190,537. Paula Payne Products Company, Charlotte, N.C. Filed Apr. 7, 1964.

## PERKI HAIR PEP

Owner of Reg. No. 737,280.
For Hair Conditioner.
First use Feb. 20, 1964.

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SN 194,704. Clairol Incorporated, New York, N.Y. Filed June 2, 1964.

## LADIES DAY

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Dec. 19, 1963.

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SN 194,705. Clairol Incorporated, New York, N.Y. Filed June 2, 1964.

## PRETTY EASY

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Feb. 6, 1964.

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SN 194,706. Clairol Incorporated, New York, N.Y. Filed June 2, 1964.

## CLEARLY YOURS

For Hair Spray.
First use Dec. 19, 1963.

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SN 194,707. Clairol Incorporated, New York, N.Y. Filed June 2, 1964.

## ULTRA EASY

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Feb. 6, 1964.

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SN 195,322. Ed Pinaud, Inc., New York, N.Y. Filed June 10, 1964.

## BEAUTYSKIN

Owner of Reg. No. 407,837.
For Toilet Water.
First use Mar. 25, 1943.

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SN 195,508. John H. Breck, Inc., Springfield, Mass. Filed June 12, 1964.

## YOUNG & GAY

Owner of Reg. No. 686,062.
For Permanent Hair Waving Preparation and Hair Spray.
First use May 14, 1964.

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## Class 52 — Detergents and Soaps

SN 187,072. Bunlap Corporation, New York, N.Y. Filed Feb. 20, 1964.

## REDDI CLEEN

The term "Cleen" is disclaimed apart from the mark as shown.
For All-Purpose Household Cleaners.
First use Dec. 6, 1963.
Subj. to Intf. with SN 188,671.

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SN 194,459. The Borden Company, New York, N.Y. Filed May 28, 1964.

## KO-BRITE

For Acid Modified Synthetic Detergent for Cleaning Food Processing Equipment and Preventing Milkstone and Waterstone Buildup.
First use Apr. 1, 1950.

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SN 194,737. North American Dye Corporation, Danbury, Conn. Filed June 2, 1964.

## BIOSAFE

For Biodegradable All-Purpose Detergent.
First use Feb. 1, 1964.

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SN 194,868. Colgate-Palmolive Company, New York, N.Y. Filed June 4, 1964.

## BIG BERTHA

For Cleaner, Cleanser, and Detergent.
First use May 18, 1964.

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SN 194,933. United Gilsonite Laboratories, Scranton, Pa. Filed June 4, 1964.

## ZAR

Owner of Reg. Nos. 696,989, 717,097, and 717,098.
For Paint and Varnish Removers.
First use Mar. 3, 1964.

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SN 194,997. Lowe's Inc., Cassopolis, Mich. Filed June 5, 1964.

## KITTY'S OWN

For Shampoo for Cats and Kittens.
First use on or before Dec. 12, 1949.

# SERVICE MARKS

## Class 100 — Miscellaneous

SN 124,549. International Industries, Inc., North Hollywood, Calif., by change of name from The International House of Pancakes Commissary, North Hollywood, Calif. Filed July 24, 1961.




Applicant disclaims the exclusive right to the use of the words "House of Pancakes" apart from the mark as shown.
For Restaurant Services.
First use July 7, 1958.

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SN 167,387. International Projects Corporation, San Francisco, Calif. Filed Apr. 23, 1963.




The words "Emergency Aid Board" are disclaimed apart from the mark as shown without in any way abandoning common law rights in such name.
For Subscription Service Which Consists of Obtaining From Subscribers and Maintaining Personal Information Concerning Subscribers and Their Families for the Purpose of Aiding the Same in Emergencies by Transmitting Pertinent and Helpful Information to Doctors, Police, Relatives, Friends, etc. Who May Use Such Information To Alleviate or Remove the Emergency.
First use Mar. 25, 1963.

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SN 170,629. ESCO Corporation, Portland, Oreg. Filed June 10, 1963.

**ESCO RED BRIEFCASE SERVICE**

Owner of Reg. Nos. 530,350 and 562,046.
For Specialized Technical Assistance on Problems Involving Machining, Fabricating, Cleaning, Welding, Forming and Heat Treatment, as Well as Assistance in the Application of Stainless, High Alloy, Low Alloy and Manganese Steels To Combat Corrosion, Heat, Impact and Abrasion.
First use Feb. 2, 1963.



SN 179,167. Teddy Bear Restaurants, Inc., Cincinnati, Ohio. Filed Oct. 16, 1963.




For Drive-In Restaurant Services.
First use May 28, 1962.

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SN 188,684. Visual Panographics, Inc., New York, N.Y. Filed Mar. 13, 1964.

**XOGRAPH**

For Photographic Service Rendered in Connection With the Making and Furnishing to Others of Reproductions Having a Three-Dimensional Effect.
First use Feb. 27, 1964.

## Class 101 — Advertising and Business

SN 129,842. Consolidated Marketing Services, Inc., New York, N.Y. Filed Oct. 13, 1961.

**THE MARKETING BRAIN BANK**

No claim is made herein to the use of the word "Marketing" apart from the mark as shown.
For Devising Complete Marketing Programs for Others in Both the Industrial and Consumer Fields.
First use May 31, 1960.

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SN 158,227. Courtesy Club Corp., New York, N.Y. Filed Nov. 30, 1962.




For Promoting the Sales of the Goods and Services of Others by Means of Cash Discount Cards.
First use April 1962.



SN 165,053. R. A. Gosselin & Company, Inc., Dedham, Mass. Filed Mar. 20, 1963.

**AUDATREX**

For Assembling and Furnishing to Drug Manufacturers Information Relating to the Types and Quantities of Drugs Which Are Being Prescribed by Physicians.
First use Jan. 3, 1963.

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SN 188,031. The Research Institute of America, Inc., New York, N.Y. Filed Mar. 5, 1964.

**Selectron**

For Business Intelligence Retrieval Service.
First use Oct. 15, 1963.

## Class 102 — Insurance and Financial

SN 159,698. City National Bank & Trust Co. of Rockford, Rockford, Ill. Filed Dec. 26, 1962.

**H.E.L.P.**

Applicant claims use for the area comprising the States of Illinois and Wisconsin.
For Lending Money for Home Improvements.
First use at least as early as December 1956.
Subj. to Concurrent Use Proceeding with Reg. No. 735,808.

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SN 182,645. Oak Park National Bank, Oak Park, Ill. Filed Dec. 9, 1963.

**DEPOSITRON**

For Checking Account Services.
First use Nov. 30, 1963.

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SN 185,863. Central Mutual Insurance Company, Van Wert, Ohio. Filed Feb. 3, 1964.

**FAMILYMATIC**

For Underwriting of Auto Insurance.
First use Dec. 19, 1963.

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SN 190,046. Sentinel Life Insurance Company, San Francisco, Calif. Filed Mar. 31, 1964.

**FLEXECURITY**

For Underwriting Life Insurance.
First use Jan. 3, 1964.

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SN 194,692. Investors Syndicate Life Insurance and Annuity Company, Minneapolis, Minn. Filed May 28, 1964.

**ISL-O-MATIC**

For Collecting Periodic Insurance Premium Payments in Accordance With a Predetermined Plan by Pre-Authorized Checks.
First use Apr. 15, 1964.

## Class 104 — Communication

SN 154,184. The Western Union Telegraph Company, New York, N.Y. Filed Sept. 28, 1962.

**PATS**

For Installing, and Maintaining and Servicing, Private Automatic Telephone Systems for Others.
First use on or about Mar. 3, 1962.

## Class 105 — Transportation and Storage

SN 164,201. World Explorers Club, Los Angeles, Calif. Filed Mar. 7, 1963.



*World Explorers Club*

For Advertising Travel Services and Arranging Travel Tours for Groups.
First use July 23, 1957.

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SN 184,789. Berry World Travel, Inc., Kansas City, Mo. Filed Jan. 17, 1964.

**TARGET TOURS**

The word "Tours" is disclaimed.
For Arranging and Conducting Guided Travel Tours.
First use Nov. 6, 1963.

## Class 107 — Education and Entertainment

SN 150,993. Automated Building Components, Inc., Miami, Fla. Filed Aug. 13, 1962.

**ABC**

For Services to the Construction Industry—Namely, Conducting Engineering Seminars and Classes Whereat Technical Courses Are Presented Related to the Design and Manufacture of Roof Trusses and Other Structural Elements.
First use Oct. 1, 1961.

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SN 185,361. Ezra Cline, Pikeville, Ky. Filed Jan. 27, 1964.

**LONESOME PINE FIDDLERS**

For Entertainment Service Consisting of Band Performances Given on Radio and Television and by Live Performances Given in the Presence of Audiences in Various States.
First use 1938.

# COLLECTIVE MEMBERSHIP MARKS

## Class 200

SN 187,755. International Nutria Marketing Association. Watonga, Okla. Filed Mar. 2, 1964.

**INMA**

For Indicating Membership in Applicant Association. First use Jan. 28, 1963.

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SN 191,788. Nassau County Police Boys Club Inc., Williston Park, N.Y. Filed Apr. 22, 1964.




For Indicating Membership in Applicant. First use May 4, 1945.

# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

782,616. HI LEAN. Agricultural Research Development, Inc. SN 135,945. Pub. 2-25-64. Filed 1-17-62.

782,617. GARRISON GOLDEN SEX-LINKS ETC. AND DESIGN. Earl W. Garrison Inc. SN 158,526. Pub. 10-20-64. Filed 12-5-62.

782,618. GARRISON LEGHORNS ETC. AND DESIGN. Earl W. Garrison, Inc. SN 158,527. Pub. 10-20-64. Filed 12-5-62.

782,619. C AND DESIGN. The Borden Company. MULTIPLE CLASS (Classes 1, 20, and 42). SN 161,229. Pub. 10-20-64. Filed 1-23-63.

782,620. P POLYMER AND DESIGN. The Polymer Corporation. SN 165,823. Pub. 10-20-64. Filed 4-1-63.

782,621. COBOTITE. Cobon Plastics Corp. SN 176,158. Pub. 10-20-64. Filed 9-3-63.

782,622. COBOFLEX. Cobon Plastics Corp. SN 176,159. Pub. 10-20-64. Filed 9-3-63.

782,623. AVCA. Whitehead Brothers Company. SN 186,800. Pub. 10-20-64. Filed 2-14-64.

782,624. ATTASPHERES. Minerals & Chemicals Philipp Corporation. SN 187,116. Pub. 10-20-64. Filed 2-20-64.

782,625. SIZZLE. Great Lakes Carbon Corporation. SN 187,276. Pub. 10-20-64. Filed 2-24-64.

782,626. TURABAST. A. F. Thurnauer. SN 187,861. Pub. 10-20-64. Filed 2-24-64.

782,627. DISPAL. Continental Oil Company. SN 187,564. Pub. 10-20-64. Filed 2-27-64.

782,628. LIONTAN. Albert Trostel & Sons Company. SN 187,701. Pub. 10-20-64. Filed 2-28-64.

782,629. NUMA. American Cyanamid Company. SN 187,902. Pub. 10-20-64. Filed 3-4-64.

### Class 2 — Receptacles

782,630. HEARTWARE. Harold A. Harrison. SN 159,232. Pub. 10-20-64. Filed 12-17-62.

782,631. QUICK-SERV. Diamond National Corporation. SN 170,822. Pub. 1-7-64. Filed 6-12-63.

782,632. DELKIT. Delaware Barrel and Drum Company, Inc. SN 178,182. Pub. 10-20-64. Filed 10-2-63.

782,633. ZIP'N TAC. The Dow Chemical Company. SN 186,062. Pub. 10-20-64. Filed 2-5-64.

782,634. SNOWBOY. Delhi Manufacturing Corporation. SN 186,821. Pub. 10-20-64. Filed 2-17-64.

782,635. EZ. Gulf States Paper Corporation. SN 190,515. Pub. 10-20-64. Filed 4-7-64.

782,636. DURA FLIGHT. Dura-Vent Corporation. SN 191,680. Pub. 10-20-64. Filed 4-21-64.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

782,637. FLIP-IT. Charles B. Tebbs. SN 193,505. Pub. 10-20-64. Filed 5-14-64.

782,638. KEY-TAINER. Buxton, Incorporated. SN 193,930. Pub. 10-20-64. Filed 5-21-64.

782,639. SHUFFLE-DECK. Kleer-Vu Industries, Inc. SN 195,303. Pub. 10-20-64. Filed 6-10-64.

### Class 4 — Abrasives and Polishing Materials

782,640. FILM-LOK. Minnesota Mining and Manufacturing Company. SN 188,258. Pub. 10-20-64. Filed 3-9-64.

782,641. GLASS-LOK. Minnesota Mining and Manufacturing Company. SN 188,259. Pub. 10-20-64. Filed 3-9-64.

782,642. STEP-SURE. Todd Chemical Company, Inc. SN 192,102. Pub. 10-20-64. Filed 4-27-64.

### Class 5 — Adhesives

782,643. TERLAN. The Terrell Corporation. SN 184,667. Pub. 10-20-64. Filed 1-15-64.

### Class 6 — Chemicals and Chemical Compositions

782,644. AMAZON. Koppers Company, Inc. SN 120,729. Pub. 10-20-64. Filed 5-24-61.

782,645. "IT MELTS THE RUST AWAY!" Radiator Specialty Company. SN 137,794. Pub. 10-20-64. Filed 2-12-62.

782,646. BIO-GUARD. Bio-Lab, Inc. SN 167,697. Pub. 10-20-64. Filed 4-29-63.

782,647. SYNTALAZENE. Birko Chemical Corporation. SN 176,485. Pub. 10-20-64. Filed 9-9-63.

782,648. DOCUFIX. Agfa Aktiengesellschaft. SN 185,002. Pub. 10-20-64. Filed 1-21-64.

782,649. DIPHACIN 120. Nease Chemical Company, Inc. SN 185,707. Pub. 10-20-64. Filed 1-30-64.

782,650. POLYGEN. Alliance Color & Chemical Company. SN 190,048. Pub. 10-20-64. Filed 4-1-64.

782,651. VIVOSTRIP. Teaneck Chemical Co., Inc. SN 190,297. Pub. 10-20-64. Filed 4-3-64.

782,652. VIVOLITH. Teaneck Chemical Co., Inc. SN 190,298. Pub. 10-20-64. Filed 4-3-64.

782,653. WIXYN. Wica Chemicals, Incorporated. SN 190,460. Pub. 10-20-64. Filed 4-6-64.

782,654. WIXOL. Wica Chemicals, Incorporated. SN 190,466. Pub. 10-20-64. Filed 4-6-64.

### Class 8 — Smokers' Articles, Not Including Tobacco Products

782,655. CASTLEBAR. Henry Leonard and Thomas, Inc. SN 191,553. Pub. 10-20-64. Filed 4-20-64.

782,656. LESTAR. Whiz Manufacturing Company. SN 196,409. Pub. 10-20-64. Filed 6-24-64.

### Class 9 — Explosives, Firearms, Equipments, and Projectiles

782,657. SAMSON WRAP. Haveg Reinhold Inc. SN 194,181. Pub. 10-20-64. Filed 5-25-64.

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## Class 10 — Fertilizers

782,658. SOUTHLAND. N. S. Koos & Son Co. SN 191,936. Pub. 10–20–64. Filed 4–24–64.

782,659. PRO TURF. O. M. Scott and Sons Company. SN 192,434. Pub. 10–20–64. Filed 4–30–64.

782,660. TRI-UNA-SOL ETC. AND DESIGN. Monsanto Company. SN 192,502. Pub. 10–20–64. Filed 5–1–64.

782,661. VITAFOL. Socony Mobil Oil Company, Inc. SN 196,911. Pub. 10–20–64. Filed 7–1–64.

782,662. FOOD AND DRINK. Hygeno Litter Company. SN 196,963. Pub. 10–20–64. Filed 7–2–64.

782,663. UNISOIL. Minerals & Chemicals Philipp Corporation. SN 198,427. Pub. 10–20–64. Filed 7–23–64.

## Class 11 — Inks and Inking Materials

782,664. HYDRO-ACTIVE. Bowers Printing Ink Company. SN 193,624. Pub. 10–20–64. Filed 5–18–64.

782,665. VARFLO. McCloskey Varnish Co. SN 194,502. Pub. 10–20–64. Filed 5–28–64.

## Class 12 — Construction Materials

782,666. FIRESAFE AND DESIGN. B. M. Heede, Inc. SN 150,248. Pub. 10–20–64. Filed 8–1–62.

782,667. MODERN PAVE-CRETE AND DESIGN. Lyons Distributing, Inc. SN 171,023. Pub. 10–20–64. Filed 6–14–63.

782,668. LEXITE. Industrial Asphalt, Inc., assignee of Colorpave, Inc. SN 173,337. Pub. 9–29–64. Filed 7–19–63.

782,669. CONTINENTAL. Simpson Timber Company. SN 174,916. Pub. 10–20–64. Filed 8–12–63.

782,670. SIERRA. Simpson Timber Company. SN 174,917. Pub. 10–20–64. Filed 8–12–63.

782,671. KOOLDOME. Plastic Products of Texas, Inc. SN 175,603. Pub. 10–20–64. Filed 8–22–63.

782,672. FILON AND DOUBLE F DESIGN. Filon Corporation. SN 175,746. Pub. 10–20–64. Filed 8–26–63.

782,673. SH ETC. AND DESIGN. Strandlund Homes Corporation. SN 175,886. Pub. 10–20–64. Filed 8–27–63.

782,674. HUSKI-RIB. H. H. Robertson Company. SN 180,770. Pub. 7–7–64. Filed 11–8–63.

782,675. VARIMAR. Tiffany Tile Corporation. SN 181,704. Pub. 10–20–64. Filed 11–21–63.

782,676. PATI-WALK AND DESIGN. Peterson and Huff. SN 185,712. Pub. 10–20–64. Filed 1–30–64.

782,677. STRUCTO-BASE. United States Gypsum Company. SN 186,209. Pub. 10–20–64. Filed 2–6–64.

782,678. HOURGLASS. National Gypsum Company. SN 189,923. Pub. 10–20–64. Filed 3–30–64.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

782,679. FISCHER WITHIN FISH DESIGN. Artur Fischer, d.b.a. Artur Fischer, Feinmechanik, Plastikwerk, Werkzeugbau. SN 145,538. Pub. 10–20–64. Filed 5–28–62.

782,680. FERRALLOY. The Ferry Cap and Set Screw Company. SN 159,056. Pub. 10–15–63. Filed 12–13–62.

782,681. MIL-FLO. Mil-Flo, Inc. SN 162,585. Pub. 4–21–64. Filed 2–12–63.

782,682. DIAL SPRAY AND DESIGN. Sam E. Kulken, d.b.a. Dial Spray Mfg. Co. SN 175,294. Pub. 10–20–64. Filed 8–19–63.

782,683. AL-FIT AND DESIGN. Alpha Wire Corporation. SN 175,458. Pub. 10–20–64. Filed 8–21–63.

782,684. PERMA AND DESIGN. Aktiebolaget Mullsjoverken. SN 181,943. Pub. 10–20–64. Filed 11–27–63.

782,685. HILTI. Anstalt Fuer Montage-Technik. MULTIPLE CLASS (Classes 13 and 23). SN 187,169. Pub. 10–20–64. Filed 2–21–64.

782,686. RIGIDRAIN. Eastern Steel Rack Co. SN 188,214. Pub. 10–20–64. Filed 3–9–64.

782,687. M AND DESIGN. Mercury Air Parts Mfg. Co., Inc. SN 189,196. Pub. 10–20–64. Filed 3–20–64.

782,688. TEXSEAL. Texsteam Corporation. SN 190,127. Pub. 10–20–64. Filed 4–1–64.

782,689. NEMICO. Nemico Corporation. SN 191,204. Pub. 10–20–64. Filed 4–15–64.

782,690. SODA-PAC. Anthony Turak, d.b.a. Turak Company. SN 191,227. Pub. 10–20–64. Filed 4–15–64.

782,691. WARWICK. The Warwick Company. SN 191,231. Pub. 10–20–64. Filed 4–15–64.

782,692. HUILCO. Carlos Pardo Blanco. SN 191,497. Pub. 10–20–64. Filed 4–20–64.

782,693. METROL AND DESIGN. Metrol Corporation. SN 191,575. Pub. 10–20–64. Filed 4–20–64.

782,694. REVERE DRYSEAL. Revere Copper and Brass Incorporated. SN 192,324. Pub. 10–20–64. Filed 4–29–64.

782,695. JIFFY. Jiffy, Incorporated. SN 192,484. Pub. 10–20–64. Filed 5–1–64.

782,696. SAFETY-FILL. Buckeye Iron & Brass Works. SN 195,279. Pub. 10–20–64. Filed 6–10–64.

## Class 14 — Metals and Metal Castings and Forgings

782,697. TWISTRAP. Mid-States Steel & Wire Company. SN 186,876. Pub. 10–20–64. Filed 2–17–64.

## Class 15 — Oils and Greases

782,698. S-P AND DESIGN. Studebaker Corporation, by change of name from Studebaker-Packard Corporation. SN 141,220. Pub. 10–20–64. Filed 3–30–62.

782,699. MOLEX AND DESIGN. Molecular Chemicals, Inc. SN 151,506. Pub. 8–18–64. Filed 8–20–62.

782,700. FRIDGI-TREET. Dan Maurin, d.b.a. Motive Petrochemicals Company, assignee of Battenfeld Grease & Oil Corporation, Inc. SN 166,969. Pub. 10–20–64. Filed 4–18–63.

782,701. CAMPLITE AND DESIGN. Barkow Petroleum Co., Inc. of California. SN 179,991. Pub. 10–20–64. Filed 10–29–63.

782,702. STIR-LUBE. Ace Glass Incorporated. SN 187,458. Pub. 10–20–64. Filed 2–26–64.

782,703. LUBRITECT. V. Mueller & Company. SN 187,783. Pub. 7–14–64. Filed 3–2–64.

782,704. CYLESSTIC. Humble Oil & Refining Company. SN 192,824. Pub. 10–20–64. Filed 5–6–64.

782,705. TERESSTIC. Humble Oil & Refining Company. SN 192,826. Pub. 10–20–64. Filed 5–6–64.

782,706. M-D 4 WAY AND DESIGN. Macklanburg Duncan Company. SN 194,399. Pub. 10–20–64. Filed 5–27–64.

## Class 16 — Protective and Decorative Coatings

782,707. MONO-SEAL. Emanuel d'Ambrosio, d.b.a. Mono-Seal Products. SN 170,178. Pub. 10–20–64. Filed 6–3–63.

782,708. DYNACOL. Koppers Company, Inc. SN 181,367. Pub. 10–20–64. Filed 11–18–63.



782,709. CLF AND DESIGN. Carlstadt Leather Finishes Co., Inc. SN 187,556. Pub. 10–20–64. Filed 2–27–64.

782,710. SERLIK. Mercury Varnish Company Limited. SN 189,842. Pub. 10–20–64. Filed 1–6–64.

## Class 17 — Tobacco Products

782,711. FROM THE HOUSE OF EDGEWORTH AND DESIGN. Larus & Brother Company. SN 188,449. Pub. 10–20–64. Filed 3–11–64.

782,712. LI'L PHILLIES. Bayuk Cigars Incorporated. SN 191,110. Pub. 10–20–64. Filed 4–15–64.

782,713. GAMBLERS. Bayuk Cigars Incorporated. SN 196,760. Pub. 10–20–64. Filed 6–30–64.

## Class 18 — Medicines and Pharmaceutical Preparations

782,714. GELATIN-PLUS. Gelatin-Plus. SN 111,969. Pub. 12–11–62. Filed 1–17–61.

782,715. VITUSA AND DESIGN. Vitusa Corp., by change of name from Erich Holzer Export Corp. SN 150,056. Pub. 10–20–64. Filed 7–30–62.

782,716. SQUIBB ETC. AND DESIGN. Olin Mathieson Chemical Corporation. SN 189,497. Pub. 10–20–64. Filed 3–24–64.

782,717. HER'S. Davol Rubber Company. SN 189,876. Pub. 10–20–64. Filed 3–30–64.

782,718. POTASORAL. Warren-Teed Pharmaceuticals Inc. SN 195,474. Pub. 10–20–64. Filed 6–11–64.

782,719. ILEOTON. Warren Teed Pharmaceuticals Inc. SN 195,475. Pub. 10–20–64. Filed 6–11–64.

## Class 19 — Vehicles

782,720. LUMADOME. Strawsine Manufacturing Company. SN 138,669. Pub. 10–20–62. Filed 2–26–62.

782,721. M·A·N. Maschinenfabrik Augsburg-Nurnberg, A.G. SN 176,009. Pub. 10–20–64. Filed 8–29–63.

782,722. TRACKMASTER. Thiokol Chemical Corporation. SN 179,168. Pub. 10–20–64. Filed 10–16–63.

782,723. WHIRLOBIRD AND DESIGN. Inland Marine Corporation. SN 185,676. Pub. 10–20–64. Filed 1–30–64.

782,724. PORT-A-MIRROR. Calhoun Electric & Manufacturing Co., d.b.a. Calhoun Electrical & Manufacturing. SN 189,142. Pub. 10–20–64. Filed 3–20–64.

## Class 20 — Linoleum and Oiled Cloth

782,619. (See Class 1 for this trademark.)

## Class 21 — Electrical Apparatus, Machines, and Supplies

782,725. SEBIT. Rixon Electronics, Inc. SN 130,952. Pub. 10–20–64. Filed 10–30–61.

782,726. FLICKER FLAME. Aerolux Light Corporation. SN 136,419. Pub. 10–20–64. Filed 1–24–62.

782,727. SONOMATIC. C. & E. Marshall Company. SN 140,316. Pub. 7–3–62. Filed 3–22–62.

782,728. HANDY SPOOL. Del City Wire Company, Inc. SN 143,354. Pub. 10–20–64. Filed 4–30–62.

782,729. MICROSEAL. Hughes Aircraft Company. SN 170,070. Pub. 3–31–64. Filed 5–31–63.

782,730. ESSTRON. Minneapolis Scientific Controls Corp., d.b.a. Electric Service Systems. SN 176,215. Pub. 10–20–64. Filed 9–3–63.

782,731. 'EV-R-LERT'. The Maintenance Company, Inc. SN 176,557. Pub. 10–20–64. Filed 9–9–63.

782,732. FLEETWOOD. The Goodyear Tire & Rubber Company. SN 176,792. Pub. 10–20–64. Filed 9–12–63.

782,733. VICON. The Vicon Instrument Company. SN 178,838. Pub. 10–20–64. Filed 10–11–63.

782,734. TRANSITEL. The Transitel International Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 180,541. Pub. 10–6–64. Filed 11–5–63.

782,735. TABON. Malco Manufacturing Company, Inc. SN 183,849. Pub. 10–20–64. Filed 12–31–63.

782,736. KAYE-HALBERT AND DESIGN. White Front Stores, Inc. SN 185,334. Pub. 10–20–64. Filed 1–24–64.

782,737. AMERTRAN. Dynamics Corporation of America, by merger from Radio Engineering Laboratories, Inc. SN 186,473. Pub. 10–20–64. Filed 2–11–64.

782,738. TENAUTORADIO. Toyota Motor Sales, U.S.A., Inc. SN 186,652. Pub. 10–20–64. Filed 2–13–64.

782,739. BANDSTAND. Electron Enterprises, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 186,854. Pub. 10–20–64. Filed 2–17–64.

782,740. BELKNAP. Belknap Hardware and Manufacturing Company. SN 187,906. Pub. 10–20–64. Filed 3–4–64.

782,741. CONTIN-U-LITE. The H. J. Ashe Co., Inc. SN 187,996. Pub. 10–20–64. Filed 3–5–64.

782,742. AMPIP. AMI' Incorporated. SN 188,496. Pub. 10–20–64. Filed 3–12–64.

782,743. VITRICON. Vitramon, Incorporated. SN 188,685. Pub. 10–20–64. Filed 3–13–64.

782,744. SLEEP MATE. Tru-Buck, Inc. SN 189,402. Pub. 10–20–64. Filed 3–23–64.

782,745. CHANDELINE. Prescolite Manufacturing Corporation. SN 191,315. Pub. 10–20–64. Filed 4–16–64.

782,746. GEOMETRA. Globe Illumination Company. SN 191,381. Pub. 10–20–64. Filed 4–17–64.

782,747. TWINSLEEVE TUNER. Alford Manufacturing Company. SN 191,473. Pub. 10–20–64. Filed 4–20–64.

782,748. ELASTIMOLD. Elastic Stop Nut Corporation of America. SN 191,488. Pub. 10–20–64. Filed 3–17–64.

782,749. COJAX. Cooke Engineering Company. SN 192,010. Pub. 10–20–64. Filed 4–27–64.

782,750. HEYCO. Heyman Manufacturing Company. SN 194,387. Pub. 10–20–64. Filed 5–27–64.

## Class 22 — Games, Toys, and Sporting Goods

782,751. THRIFTTOWN AND DESIGN. Thrift Town U.S.A. Inc. SN 159,438. Pub. 10–20–64. Filed 12–19–62.

782,752. "RUFFLED KITTEN." Alexander Doll Company, Inc., d.b.a. Madam Alexander. SN 160,580. Pub. 10–20–64. Filed 1–14–63.

782,753. CHERI. Active Doll Corporation. SN 165,197. Pub. 10–20–64. Filed 3–22–63.

782,754. BIG SHOT. Louis Marx & Co., Inc. SN 171,900. Pub. 10–20–64. Filed 6–26–63.

782,755. GUM DROP. Richard G. Krueger, Inc. SN 175,292. Pub. 10–20–64. Filed 8–19–63.

782,756. BOWL-A-DART. Edward R. Hartigan. SN 184,063. Pub. 10–20–64. Filed 1–6–64.

782,757. BABY BRITE. De Luxe Reading Corporation. SN 184,613. Pub. 10–20–64. Filed 1–15–64.

782,758. ANOTHER BEAUTIFUL COLLETTE DOLL AND DESIGN. Collette Toy Novelty Co., Inc. SN 184,703. Pub. 10–20–64. Filed 1–16–64.

782,759. HUMP-A-JUMP. Jack Z De Lorean. SN 184,733. Pub. 10–20–64. Filed 1–16–64.

782,760. EB. Eddie Bauer. SN 184,786. Pub. 10–20–64. Filed 1–17–64.

782,761. GOLFSPHERE AND DESIGN. Golfsphere Company. SN 184,811. Pub. 10-20-64. Filed 1-17-64.

782,762. FISH FINDER. The Garcia Corporation. SN 185,032. Pub. 10-20-64. Filed 1-21-64.

782,763. TWITCHIE. Robert L. Hanaway, d.b.a. Hanaway Lures. SN 188,104. Pub. 10-20-64. Filed 3-6-64.

782,764. MUDDLED HOPPER. Hank Roberts, Inc. SN 188,273. Pub. 10-20-64. Filed 3-9-64.

782,765. SEA MASTER. Gentex Corporation. SN 188,538. Pub. 10-20-64. Filed 3-12-64.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

782,685. (See Class 13 for this trademark.)

782,766. ACCURATE AND DESIGN. Accurate Manufacturing Co. SN 142,775. Pub. 10-20-64. Filed 4-23-62.

782,767. ROTOBOOM. Deere & Company. SN 149,372. Pub. 10-20-64. Filed 7-19-62.

782,768. VIKING. Berbro Manufacturing Company, Inc. SN 152,197. Pub. 11-5-63. Filed 8-30-62.

782,769. VIKING. Gouverneur Iron Works, Inc. SN 153,480. Pub. 10-1-63. Filed 9-19-62.

782,770. UNIVERSEL. Epsco, Inc., assignee of Gate City Oil Equipment Company, Inc. SN 162,734. Pub. 10-20-64. Filed 2-14-63.

782,771. OSR. Oil Specialties & Refining Co., Inc. SN 172,223. Pub. 10-20-64. Filed 7-1-63.

782,772. MONOBOX. J. H. Carruthers & Company Limited. SN 185,742. Pub. 10-20-64. Filed 1-27-64.

782,773. KEYSTONE. Mummert-Dixon Company. SN 187,785. Pub. 10-20-64. Filed 3-2-64.

782,774. MD AND DESIGN. Mummert-Dixon Company. SN 187,786. Pub. 10-20-64. Filed 3-2-64.

782,775. LUBE MASTER. Economics Laboratory, Inc. SN 188,215. Pub. 10-20-64. Filed 3-9-64.

782,776. S 1936 AND DESIGN. Arthur W. Schmid Company. SN 189,381. Pub. 10-20-64. Filed 3-23-64.

782,777. CENTRIFUGAL FORCE ETC. AND DESIGN. American Bearing Corporation. SN 190,478. Pub. 10-20-64. Filed 4-7-64.

782,778. LIVE BLADE. Stahly, Inc. SN 191,220. Pub. 10-20-64. Filed 4-15-64.

782,779. AWARD. Award Tool Co., Inc. SN 191,242. Pub. 10-20-64. Filed 4-16-64.

782,780. TIMBER TIGER. Frick Company. SN 191,377. Pub. 10-20-64. Filed 4-17-64.

782,781. MIDAS. Precision Screen Machines Inc. SN 191,436. Pub. 10-20-64. Filed 4-17-64.

782,782. REBEATER. Aktiebolaget Celleco. SN 191,470. Pub. 10-20-64. Filed 4-20-64.

782,783. POWER-VATOR. Alexander Manufacturing Company. SN 191,472. Pub. 10-20-64. Filed 4-20-64.

782,784. METROL AND DESIGN. Metrol Corporation. SN 191,576. Pub. 10-20-64. Filed 4-20-64.

782,785. SPACE-O-MATIC. SCM Corporation. SN 191,607. Pub. 9-1-64. Filed 4-20-64.

782,786. ROBOT (DESIGN). Mr. Robot, Inc. SN 191,798. Pub. 10-20-64. Filed 4-22-64.

782,787. IMPERVRON. Link-Belt Company. SN 191,863. Pub. 10-20-64. Filed 4-23-64.

782,788. SLEEVLOK. Sleevlok Corporation. SN 192,210. Pub. 10-20-64. Filed 4-28-64.

782,789. TIMBER TIGER AND DESIGN. Frick Company. SN 192,277. Pub. 10-20-64. Filed 4-29-64.

782,790. GALION. Jeffrey Galion Manufacturing Company. SN 192,293. Pub. 10-20-64. Filed 4-29-64.

782,791. RAM-JET. United Chair Company. SN 192,340. Pub. 10-20-64. Filed 4-29-64.

782,792. DRI-MIX. Barnard & Leas Manufacturing Company, Inc. SN 193,322. Pub. 10-20-64. Filed 5-13-64.

782,793. CONTOURMASTER. The Cincinnati Milling Machine Co. SN 193,337. Pub. 10-20-64. Filed 5-13-64.

782,794. DOMUS. Fraser's, Inc. SN 193,348. Pub. 10-20-64. Filed 5-13-64.

782,795. CAD. Gouverneur Cadwallader, d.b.a. Standard Shop Equipment Co., Inc. SN 193,356. Pub. 10-20-64. Filed 5-13-64.

782,796. UNIFLON. The Helm Universal Corporation. SN 193,366. Pub. 10-20-64. Filed 5-13-64.

782,797. STEEL KING. Vermont American Corporation. SN 194,005. Pub. 10-20-64. Filed 5-21-64.

782,798. KROME KING. Vermont American Corporation. SN 194,006. Pub. 10-20-64. Filed 5-21-64.

782,799. ACRA-CUSHION. Gardner-Denver Company. SN 194,169. Pub. 10-20-64. Filed 5-25-64.

782,800. WHISTLER. S. B. Whistler & Sons, Inc. SN 194,448. Pub. 10-20-64. Filed 5-27-64.

782,801. SPEED VISE AND DESIGN. James C. Scullin, d.b.a. Cardinal Machine Company. SN 194,667. Pub. 10-20-64. Filed 6-1-64.

782,802. HY-LO-SCOUT. Monarch Road Machinery Company. SN 194,817. Pub. 10-20-64. Filed 6-3-64.

782,803. CALLAHAN MAX AMS AND DESIGN. Vermont Marble Company. SN 194,842. Pub. 10-20-64. Filed 6-3-64.

782,804. V VERMARCO AND DESIGN. Vermont Marble Company. SN 194,843. Pub. 10-20-64. Filed 6-3-64.

782,805. BLUE IVY. Burn-Strauss, Inc., d.b.a. Woodpecker Woodware. SN 195,061. Pub. 10-20-64. Filed 6-8-64.

782,806. LINK-BELT. Link-Belt Company. SN 195,300. Pub. 10-20-64. Filed 6-10-64.

782,807. DISPOSA-KING. Bryant Engineering Company. SN 195,364. Pub. 10-20-64. Filed 6-11-64.

782,808. EDLUND. The Monarch Machine Tool Company. SN 195,883. Pub. 10-20-64. Filed 6-17-64.

## Class 26 — Measuring and Scientific Appliances

782,734. (See Class 21 for this trademark.)

782,809. FOCATRON. Logetronics, Inc. SN 129,950. Pub. 10-20-64. Filed 10-16-61.

782,810. METERCORDER. United Gas Corporation. SN 162,505. Pub. 10-20-64. Filed 2-11-63.

782,811. MULTICHECK. Penrod Corporation of Anderson. SN 163,262. Pub. 10-20-64. Filed 2-21-63.

782,812. RATIOBAR. George Gorton Machine Company. SN 171,129. Pub. 10-20-64. Filed 6-17-63.

782,813. MAXIMUM SECURITY AND DESIGN. M. H. Rhodes, Inc. SN 172,238. Pub. 10-20-64. Filed 7-1-63.

782,814. MOVIFLEX SUPER. Zeiss Ikon A.G. SN 187,220. Pub. 10-20-64. Filed 2-21-64.

782,815. SPEEDLINER. Rol-Ruler Company. SN 187,436. Pub. 10-20-64. Filed 2-25-64.

782,816. DURA-VAC. Ace Glass Incorporated. SN 187,457. Pub. 10-20-64. Filed 2-26-64.

782,817. METROL AND DESIGN. Metrol Corporation. SN 191,577. Pub. 10-20-64. Filed 4-20-64.

782,818. ROLL-TAINER. The Victoreen Instrument Company. SN 192,107. Pub. 10-20-64. Filed 4-27-64.

782,819. FLO TIME AND DESIGN. Flo Time Ticket Printer, Inc. SN 192,169. Pub. 10-20-64. Filed 4-28-64.

782,820. LECTROMETER. Paul Chemical Co. SN 192,313. Pub. 10-20-64. Filed 4-29-64.

782,821. MABO AND DESIGN. Quenot & Cie S.a.r.l. SN 192,323. Pub. 10-20-64. Filed 4-29-64.



## Class 27 — Horological Instruments

782,822. HELVETIA. Montres Helvetia Societe d'Horlogerie la Generale. SN 184,642. Pub. 10-20-64. Filed 1-15-64.

782,823. GREYHOUND. World Wide Watch Co., Inc. SN 192,537. Pub. 10-20-64. Filed 5-1-64.

782,824. DURATIME. Elgin National Watch Company. SN 192,811. Pub. 10-20-64. Filed 5-6-64.

782,825. LADY SETH. General Time Corporation. SN 194,171. Pub. 10-20-64. Filed 5-25-64.

782,826. DYNAVOX. Ebauches S.A. SN 194,286. Pub. 10-20-64. Filed 5-26-64.

782,827. SWIFT AND DESIGN. Swift Instruments, Inc. SN 194,440. Pub. 10-20-64. Filed 5-27-64.

782,828. ACCUQUARTZ. Bulova Watch Company, Inc. SN 194,947. Pub. 10-20-64. Filed 6-5-64.

## Class 28 — Jewelry and Precious-Metal Ware

782,829. HL. Henry Landis, Inc., assignee of Henry Landis. SN 165,521. Pub. 10-20-64. Filed 3-27-63.

782,830. LANVIN. Societe Anonyme Jeanne Lanvin. MULTIPLE CLASS (Classes 28 and 39). SN 173,974. Pub. 10-20-64. Filed 7-29-63.

## Class 29 — Brooms, Brushes, and Dusters

782,831. UNI LOK AND DESIGN. Rubon, Incorporated. SN 194,239. Pub. 10-20-64. Filed 5-25-64.

782,832. TRIPLE CHECK AND DESIGN. G. C. Murphy Company. SN 196,465. Pub. 10-20-64. Filed 6-25-64.

## Class 30 — Crockery, Earthenware, and Porcelain

782,833. HICKORY. Castleton China, Inc. SN 145,773. Pub. 10-20-64. Filed 5-31-62.

782,834. SHENANDOAH. Castleton China, Inc. SN 145,774. Pub. 10-20-64. Filed 5-31-62.

782,835. CLASSICA. Castleton China, Inc. SN 169,825. Pub. 10-20-64. Filed 5-28-63.

782,836. WAYSIDE. Onondaga Pottery Company. SN 171,910. Pub. 10-20-64. Filed 6-26-63.

782,837. MISCELLANEOUS DESIGN. Stetson Corporation. SN 187,355. Pub. 10-20-64. Filed 2-24-64.

## Class 31 — Filters and Refrigerators

782,838. ASTROCEL. American Air Filter Company, Inc. SN 193,085. Pub. 10-20-64. Filed 5-11-64.

## Class 32 — Furniture and Upholstery

782,839. SCHED-U-GRAPH. Sperry Rand Corporation. SN 135,238. Pub. 10-20-64. Filed 1-4-62.

782,840. FISCHEL AND DESIGN. Hale Company, Inc. SN 138,402. Pub. 10-20-64. Filed 2-21-62.

782,841. TALLBOY. Quaker Maid Kitchens, Inc. SN 164,388. Pub. 10-20-64. Filed 3-11-63.

782,842. RISEAWAY. American Bed & Spring Company. SN 186,590. Pub. 10-20-64. Filed 2-13-64.

782,843. FLOATING WALL. Directional Industries, Incorporated. SN 188,519. Pub. 10-20-64. Filed 3-12-64.

782,844. WOODMARK ORIGINALS ETC. AND DESIGN. Woodmark Originals, Inc. SN 189,283. Pub. 10-20-64. Filed 3-20-64.

## Class 33 — Glassware

782,845. CLEARTEMP AND DESIGN. Fourco Glass Company. SN 186,450. Pub. 10-20-64. Filed 2-11-64.

782,846. LUSTRACRYSTAL. American Saint Gobain Corporation. SN 187,230. Pub. 10-20-64. Filed 2-24-64.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

782,847. EDWARDS. Edwards Engineering Corporation. SN 143,016. Pub. 12-24-63. Filed 4-25-62.

782,848. HEAT-LES. Pall Corporation, assignee of Trinity Equipment Corporation. SN 159,016. Pub. 10-20-64. Filed 12-12-62.

782,849. METROL AND DESIGN. Metrol Corporation. SN 191,578. Pub. 10-20-64. Filed 4-20-64.

782,850. TUNGTEC. Eutectic Welding Alloys Corporation. SN 192,121. Pub. 10-20-64. Filed 4-27-64.

782,851. BOROTEC. Eutectic Welding Alloys Corporation. SN 192,122. Pub. 10-20-64. Filed 4-27-64.

782,852. SOLARFLO. Solarflo Company, Inc. SN 192,220. Pub. 10-20-64. Filed 4-28-64.

782,853. INCOFLUX. The International Nickel Company, Inc. SN 192,289. Pub. 10-20-64. Filed 4-29-64.

782,854. FLAMELOCK AND DESIGN. Wayne Home Equipment Co., Inc. SN 192,962. Pub. 10-20-64. Filed 5-7-64.

782,855. GRANCO. Granco Incorporated. SN 193,162. Pub. 10-20-64. Filed 5-11-64.

782,856. MAMMOTH NU-AIRE. Mammoth Industries, Inc. SN 193,187. Pub. 10-20-64. Filed 5-11-64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

782,857. ULTRAPREME. The Hercules Tire & Rubber Company. SN 184,379. Pub. 6-23-64. Filed 1-10-64.

782,858. KONTAK. The Michigan Pipe Company. SN 195,689. Pub. 10-20-64. Filed 6-15-64.

## Class 36 — Musical Instruments and Supplies

782,739. (See Class 21 for this trademark.)

782,859. COPACABANA. Som Industria e Comercio S.A. SN 172,130. Pub. 10-20-64. Filed 6-19-63.

782,860. TOURMATIC. Tourmatic, Inc. SN 177,108. Pub. 10-20-64. Filed 9-16-63.

782,861. OTTENHEIMER WHEEL (DESIGN). Ottenheimer Publishers, Inc. SN 181,264. Pub. 10-20-64. Filed 11-15-63.

782,862. AVERNUS. Vito Mamone, d.b.a. Avernus Records. SN 182,307. Pub. 10-20-64. Filed 12-3-63.

## Class 37 — Paper and Stationery

782,863. SELECTA SCALE. Eugene Dietzgen Co. SN 125,812. Pub. 10-20-64. Filed 8-11-61.

782,864. AMERICAN BEAUTY. Noreross, Inc. SN 170,851. Pub. 10–20–64. Filed 6–12–63.

782,865. RECTANGULAR DESIGN HAVING A WHITE CIRCULAR CENTER. Papertronics, Inc. SN 171,697. Pub. 10–20–64. Filed 6–24–63.

782,866. BROWN BOUND AND DESIGN. Homer B. Brown Company. SN 175,719. Pub. 10–20–64. Filed 8–26–63.

782,867. NITE-NOTE. George McStay Jackson. SN 175,924. Pub. 10–20–64. Filed 8–28–63.

782,868. ANGELUS. Jeffries Banknote Company. SN 176,533. Pub. 10–20–64. Filed 9–9–63.

782,869. ACCOUNT O MATIC. Professional Men's Association, Inc. SN 178,368. Pub. 10–20–64. Filed 10–4–63.

782,870. CROWN/WEB GLOSS. Crown Zellerbach Corporation. SN 187,728. Pub. 10–20–64. Filed 3–2–64.

782,871. CROWN/WEB MAT. Crown Zellerbach Corporation. SN 187,730. Pub. 10–20–64. Filed 3–2–64.

782,872. CROWN/MAT. Crown Zellerbach Corporation. SN 187,731. Pub. 10–20–64. Filed 3–2–64.

782,873. PANORAMA. United States Box Co. SN 188,821. Pub. 10–20–64. Filed 3–16–64.

782,874. SOF-PAK. Berry Brothers Corporation. SN 189,429. Pub. 10–20–64. Filed 3–24–64.

782,875. FASHIONCOLOR. Speedry Chemical Products, Inc. SN 189,816. Pub. 10–20–64. Filed 3–27–64.

782,876. PUREWRAP. Continental Can Company, Inc. SN 191,038. Pub. 10–20–64. Filed 4–14–64.

782,877. MAGNE PIX. The J. C. Hall Company. SN 191,051. Pub. 10–20–64. Filed 4–14–64.

782,878. CON/TEXT. Consolidated Papers, Inc. SN 191,365. Pub. 10–20–64. Filed 4–17–64.

782,879. TEXCRAFT. East Texas Pulp and Paper Company. SN 191,371. Pub. 10–20–64. Filed 4–17–64.

782,880. IPC. International Paper Company. SN 191,391. Pub. 10–20–64. Filed 4–17–64.

782,881. FILEPERM. Old Town Corporation. SN 192,311. Pub. 10–20–64. Filed 4–29–64.

## Class 38 — Prints and Publications

782,882. SHOWCASE. Field Enterprises, Inc. SN 173,567. Pub. 10–20–64. Filed 7–23–63.

782,883. STYLIZED A (DESIGN). American Can Company. SN 182,237. Pub. 10–20–64. Filed 12–3–63.

782,884. UPDATE. Economics Laboratory, Inc. SN 182,412. Pub. 10–20–64. Filed 12–5–63.

782,885. PRE B. Marion Laboratories, Inc. (Delaware corporation), assignee of Marion Laboratories, Inc. (Missouri corporation). SN 182,694. Pub. 10–20–64. Filed 12–9–63.

782,886. QUALITY COURTS AND DESIGN. Quality Courts Motels, Inc. SN 183,280. Pub. 10–20–64. Filed 12–19–63.

782,887. CATERING INDUSTRY EMPLOYEE. Hotel & Restaurant Employees and Bartenders International Union (AFL–CIO). SN 185,138. Pub. 10–20–64. Filed 1–22–64.

782,888. FUN AT THE FAIR. Fair Money Corporation. SN 188,526. Pub. 10–20–64. Filed 3–12–64.

## Class 39 — Clothing

782,830. (See Class 28 for this trademark.)

782,889. MADEMOISELLE RICCI. Nina Ricci, S.A.R.L. SN 134,566. Pub. 1–15–63. Filed 12–22–61.

782,890. RECORD. Millard Clothes, Inc. SN 159,514. Pub. 10–20–64. Filed 12–20–62.

782,891. 727. Byer-Rolnick Corporation, by change of name from Byer-Rolnick Hat Corporation. SN 165,205. Pub. 10–20–64. Filed 3–22–63.

782,892. ADJUST-A-SIZE. Stone Manufacturing Company. SN 172,432. Pub. 10–20–64. Filed 7–3–63.

782,893. ETONSHIRE. Barr Company. SN 172,460. Pub. 10–20–64. Filed 7–5–63.

782,894. DEFROSTER AND DESIGN. Amco of Norvelt, Inc. SN 179,301. Pub. 10–20–64. Filed 10–10–63.

782,895. BATES PROCESS. Bates Shoe Company. SN 179,393. Pub. 10–20–64. Filed 10–21–63.

782,896. ALISON AYRES. Alison Ayres, Inc. SN 183,556. Pub. 10–20–64. Filed 12–26–63.

782,897. LORA LENOX. Beacon Frocks Inc. SN 183,558. Pub. 10–20–64. Filed 12–26–63.

782,898. SKYR AND DESIGN. Scandia Trading Co., Inc. SN 185,324. Pub. 10–20–64. Filed 1–24–64.

782,899. LIFE-RING. American Optical Company. SN 187,548. Pub. 10–20–64. Filed 2–27–64.

782,900. EILEEN SCOTT. Capri Mfg. Co. of Texas, Inc. SN 189,984. Pub. 10–20–64. Filed 3–31–64.

782,901. GAYMODE. J. C. Penney Company. SN 190,748. Pub. 10–20–64. Filed 4–9–64.

## Class 40 — Fancy Goods, Furnishings, and Notions

782,902. GENERAL WIG AND DESIGN. General Wig Manufacturers, Inc. SN 182,613. Pub. 10–20–64. Filed 12–9–63.

782,903. BOBBIE. Vulcanized Rubber and Plastics Company, Incorporated. SN 191,334. Pub. 10–20–64. Filed 4–16–64.

782,904. IRONEES. The Ironees Company. SN 191,395. Pub. 10–20–64. Filed 4–17–64.

782,905. LI'L LOVEY. Frederick Allen Corporation. SN 192,971. Pub. 10–20–64. Filed 5–8–64.

782,906. LOCKETTE. Solo Products Corporation. SN 194,530. Pub. 10–20–64. Filed 5–28–64.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

782,619. (See Class 1 for this trademark.)

782,907. ROMIQUE AND DESIGN. Romique Fabrics, Inc. SN 170,858. Pub. 10–20–64. Filed 6–12–63.

782,908. BEAR (DESIGN). Georgia Coated Fabrics Company, Inc. SN 171,542. Pub. 10–20–64. Filed 6–21–63.

782,909. CHEM STITCH. Hicks & Otis Prints, Inc. SN 175,112. Pub. 10–20–64. Filed 8–15–63.

782,910. NEEDLEOK. Draper Brothers Company. SN 176,292. Pub. 10–20–64. Filed 9–4–63.

782,911. MEXICOTTON. Concord Textile Co., Inc. SN 177,156. Pub. 10–20–64. Filed 9–17–63.

782,912. REPRESENTATION OF A HINDU. S. Mitchell Axelrod, d.b.a. S. M. Axelrod & Son. SN 180,486. Pub. 10–20–64. Filed 11–5–63.

782,913. REPRESENTATION OF AN ELEPHANT. S. Mitchell Axelrod, d.b.a. S. M. Axelrod & Son. SN 180,487. Pub. 10–20–64. Filed 11–5–63.

782,914. PUCCINO. Tanbro Fabrics Corporation. SN 182,304. Pub. 10–20–64. Filed 12–3–63.

782,915. SYNMESH. Asten-Hill Mfg. Company. SN 185,101. Pub. 10–20–64. Filed 1–22–64.

782,916. CHEMBACK. Monsanto Company, by change of name from Monsanto Chemical Company. SN 185,149. Pub. 10–20–64. Filed 1–22–64.

782,917. LEAPRA. Chicopee Mills, Inc. SN 190,062. Pub. 10–20–64. Filed 4–1–64.

782,918. TRICRYLIC. Graniteville Company. SN 190,078. Pub. 10–20–64. Filed 4–1–64.



782,919. BLAIR HOUSE. Belding Hausman Fabrics, Inc. SN 190,258. Pub. 10–20–64. Filed 4–3–64.

782,920. TUTORED. Joseph Bancroft & Sons Co. MULTIPLE CLASS (Classes 42 and 43). SN 190,323. Pub. 10–20–64. Filed 4–6–64.

782,921. ARTLON. William H. Horn & Brother, Incorporated. SN 190,518. Pub. 10–20–64. Filed 4–7–64.

782,922. BYLON. Hartford Textile Corporation. SN 190,722. Pub. 10–20–64. Filed 4–9–64.

782,923. HOMESTRETCH. United Merchants and Manufacturers, Inc. SN 190,767. Pub. 10–20–64. Filed 4–9–64.

## Class 43 — Thread and Yarn

782,920. (See Class 42 for this trademark.)

782,924. SYRAK. National Spinning Co., Inc. SN 172,219. Pub. 10–20–64. Filed 7–1–63.

782,925. DIANE. Sauquoit Fibers Company. SN 176,674. Pub. 10–20–64. Filed 9–10–63.

782,926. EMU PLUMAGE. Emu Wools Limited. SN 178,791. Pub. 10–20–64. Filed 10–11–63.

782,927. XENA. Beaunit Corporation. SN 185,555. Pub. 10–20–64. Filed 1–29–64.

782,928. TIVOLI. Standard Coosa Thatcher Company. SN 188,810. Pub. 10–20–64. Filed 5–1–64.

782,929. ROMAXE. Beaconway Stores, Inc. SN 189,980. Pub. 10–20–64. Filed 3–31–64.

782,930. OLDE TOWNE. Revere Knitting Mills Factory Store, Inc. SN 190,753. Pub. 10–20–64. Filed 4–9–64.

## Class 44 — Dental, Medical, and Surgical Appliances

782,931. EROS. The DEG Corporation. SN 140,210. Pub. 7–2–63. Filed 3–19–62.

782,932. STERILON AND DESIGN. Sterilon Corporation. SN 175,885. Pub. 10–20–64. Filed 8–27–63.

782,933. SENSI-CREME. Julius Schmid, Inc. SN 184,517. Pub. 10–20–64. Filed 1–13–64.

782,934. MAGICWRAP. John A. Smithers. SN 186,784. Pub. 10–20–64. Filed 2–14–64.

782,935. PHARMEDICA. Johnson & Johnson. SN 189,840. Pub. 10–20–64. Filed 3–26–64.

## Class 45 — Soft Drinks and Carbonated Waters

782,936. RO-ZAY. Frank N. Pond. SN 133,985. Pub. 11–6–62. Filed 12–13–61.

782,937. MOOO-CHO. Park Beverages, d.b.a. Mooo Cho Beverages. SN 171,033. Pub. 2–18–64. Filed 6–14–63.

782,938. MERIT. L.F. Beverage Corporation. SN 188,984. Pub. 10–20–64. Filed 3–18–64.

## Class 46 — Foods and Ingredients of Foods

782,939. ARMOUR STAR ETC. AND DESIGN. Armour and Company. SN 117,434. Pub. 10–20–64. Filed 4–10–61.

782,940. HONEYDEW SMOOTHEE. General Preserve Company, Inc. SN 150,412. Pub. 2–19–63. Filed 8–3–62.

782,941. ALPO AND DESIGN. Allen Products Co., Inc. SN 169,413. Pub. 10–20–64. Filed 5–22–63.

782,942. OUT OF THIS WORLD. Harry Buller, d.b.a. Harry Buller Farms. SN 172,635. Pub. 10–20–64. Filed 7–9–63.

782,943. SPICE CLUB. Spice Club Foods, Inc. SN 177,101. Pub. 10–20–64. Filed 9–16–63.

782,944. BLUE BONNET. Knapp-Sherrill Company. SN 179,907. Pub. 10–20–64. Filed 10–28–63.

782,945. DIXIE SHAKE ETC. AND DESIGN. Dix-A-Dee Beverage Corp. SN 179,999. Pub. 10–20–64. Filed 10–29–63.

782,946. WEIMAR. M.G., Inc. SN 181,373. Pub. 10–20–64. Filed 11–18–63.

782,947. WHOPPER. Eskimo Pie Corporation. SN 181,593. Pub. 3–10–64. Filed 11–22–63.

782,948. HARTZ. Hartz Mountain Products Corp. SN 184,814. Pub. 10–20–64. Filed 1–17–64.

782,949. CANDY ORCHARD AND DESIGN. Orchard Hill Farms Candy Company, assignee of Chesterton Candy Company. SN 186,331. Pub. 10–20–64. Filed 2–10–64.

782,950. GULF O'MAINE. Holmes Packing Corporation. SN 187,107. Pub. 10–20–64. Filed 2–20–64.

782,951. STAGE 1. Agway, Inc., by merger of Cooperative Grange League Federation Exchange, Inc. SN 188,517. Pub. 9–1–64. Filed 3–12–64.

782,952. STAGE 2. Agway, Inc., by merger of Cooperative Grange League Federation Exchange, Inc. SN 188,518. Pub. 9–1–64. Filed 3–12–64.

782,953. SLIM JIM. Megowen Associates, Inc. SN 190,947. Pub. 10–20–64. Filed 4–13–64.

782,954. CROSSE & BLACKWELL AND DESIGN. The Nestle Company, Inc. SN 191,061. Pub. 10–20–64. Filed 4–14–64.

## Class 49 — Distilled Alcoholic Liquors

782,955. PHILLIPS. Ed. Phillips & Sons Co. SN 186,642. Pub. 10–20–64. Filed 2–13–64.

782,956. LEILANI. Joseph E. Seagram & Sons, Inc. SN 187,213. Pub. 10–20–64. Filed 2–21–64.

782,957. ROYAL YACHT. Schenley Distillers, Inc. SN 188,804. Pub. 10–20–64. Filed 3–16–64.

782,958. GREENBRIER. Joseph S. Finch and Company. SN 189,064. Pub. 10–20–64. Filed 3–19–64.

782,959. PASSPORT. Glen Keith-Glenlivet Distillery Company Limited. SN 189,165. Pub. 10–20–64. Filed 3–20–64.

## Class 50 — Merchandise Not Otherwise Classified

782,960. BIBLEKITKRAFT. The Sunday School House. SN 133,029. Pub. 10–20–64. Filed 11–29–61.

782,961. LUMA-LACE. Char-Fran Eng. Inc. SN 185,984. Pub. 10–20–64. Filed 2–4–64.

782,962. DECOR-TRIM. Plastic Jewel Parts Corp. SN 187,042. Pub. 10–20–64. Filed 2–19–64.

782,963. NEET-A-SHOULDER. Neet-A-Pak Products. SN 194,412. Pub. 10–20–64. Filed 5–27–64.

782,964. HILLBILLY BRAND AND DESIGN. Ozark Forest Products, Inc. SN 194,829. Pub. 10–20–64. Filed 6–3–64.

782,965. PERMASEAL. National Seal Works, Incorporated. SN 196,543. Pub. 10–20–64. Filed 6–26–64.

782,966. STELCAP. Le Bouchage Mechanique (L.B.M.), Societe Anonyme. SN 196,679. Pub. 10–20–64. Filed 6–29–64.

782,967. DIICON. Chron-O-Dye Incorporated. SN 198,833. Pub. 10–20–64. Filed 7–30–64.

782,968. PRESTIGE. Sweetheart Plastics, Inc. SN 196,983. Pub. 10–20–64. Filed 7–31–64.

## Class 51 — Cosmetics and Toilet Preparations

782,969. CURL FRIEND. Soap Specialties, Inc., d.b.a. O'Neill Brands, Inc. SN 158,888. Pub. 2–26–63. Filed 12–13–62.

782,970. PASSPORT TO BEAUTY. Ross McArthur Salon, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 168,748. Pub. 10–20–64. Filed 5–13–63.

782,971. SEA & SKI TEEN-TAN TREATMENT. Botany Industries, Inc., d.b.a. Sea and Ski Company. SN 173,732. Pub. 10–20–64. Filed 7–25–63

782,972. DAN YANKEE AND DESIGN. J. Howard Cook, d.b.a. J. H. Cook Company. SN 174,260. Pub. 10–20–64. Filed 8–2–63.

782,973. MASTER TOUCH. Avon Products, Inc. SN 175,155. Pub. 10–20–64. Filed 8–16–63.

782,974. FATH'S LOVE. Les Parfums Jacques Fath, Societe Anonyme. SN 180,922. Pub. 10–20–64. Filed 11–12–63.

782,975. FASHION TONES. Maradel Products, Inc. SN 183,850. Pub. 10–20–64. Filed 12–31–63.

782,976. CINDY PARKER. Chesebrough-Pond's Inc. SN 186,236. Pub. 10–20–64. Filed 2–7–64.

782,977. KATANA CHARACTERS (DESIGN). Swank, Inc. SN 186,410. Pub. 10–20–64. Filed 2–10–64.

782,978. CAP-SU-DENT. Ora-Dent Corporation. SN 187,685. Pub. 10–20–64. Filed 2–28–64.

782,979. NO PROBLEM. Clairol Incorporated. SN 188,332. Pub. 10–20–64. Filed 3–10–64.

782,980. BODY SATINEE. Estee Lauder, Incorporated. SN 193,880. Pub. 10–20–64. Filed 5–18–64.

## Class 52 — Detergents and Soaps

782,970. (See Class 51 for this trademark.)

782,981. CORAL-LAVE. H.D.T. Company Factors, Inc. SN 71,735. Pub. 1–19–60. Filed 4–17–59.

782,982. E AND HEXAGONAL DESIGN. Eaton Chemical Corporation. SN 140,548. Pub. 10–20–64. Filed 3–23–62.

782,983. SWELL. East Coast Soap Corp. SN 167,457. Pub. 10–20–64. Filed 4–24–63.

782,984. GRAND PRIX AND DESIGN. Oasis Sponge Corporation, d.b.a. Grand Prix Products. SN 171,295. Pub. 9–1–64. Filed 6–18–63.

782,985. TRIPE WASH NO. 1 ETC. AND DESIGN. Birko Chemical Corporation. SN 176,483. Pub. 10–20–64. Filed 9–9–63.

782,986. PA'S LITTLE HELPER. Mamie's Incorporated. SN 180,512. Pub. 10–20–64. Filed 11–6–63.

782,987. NOFEX. The C. B. Dolge Company. SN 185,761. Pub. 10–20–64. Filed 1–31–64.

782,988. ARTI-FLORAL. Arti-Floral Products Corporation. SN 186,593. Pub. 10–20–64. Filed 2–13–64.

782,989. STAN-KLEEN. Standard Chemical Products, Inc. SN 188,675. Pub. 10–20–64. Filed 3–13–64.

## Service Marks

## Class 100 — Miscellaneous

782,990. HOME OF THE WHOPPER. Burger King of Florida, Inc. SN 98,429. Pub. 4–16–63. Filed 6–6–60.

782,991. IPE ETC. AND DESIGN. International Patent Exchange, Ltd. of Delaware. SN 160,710. Pub. 10–20–64. Filed 1–15–63.

782,992. QUALITY COURTS AND DESIGN. Quality Courts Motels, Inc. SN 183,281. COLLECTIVE MARK. Pub. 10–20–64. Filed 12–19–63.

## Class 101 — Advertising and Business

782,993. GAC GENERAL AMERICAN CREDIT AND DESIGN. General American Credits. SN 173,906. Pub. 10–20–64. Filed 7–29–63.

782,994. UNYT AND DESIGN. Metro-Suburbia, Inc. SN 180,316. Pub. 10–20–64. Filed 11–1–63.

782,995. PIVOT. American Home Products Corporation, d.b.a. Boyle-Midway. SN 182,456. Pub. 10–20–64. Filed 12–6–63.

782,996. KING KORN AND DESIGN. King Korn Stamp Company. SN 184,727. Pub. 10–20–64. Filed 1–16–64.

782,997. SUPER DOLLAR. Potter-McCune Company. SN 185,531. Pub. 10–20–64. Filed 1–28–64.

## Class 102 — Insurance and Financial

782,998. SCENERY (DESIGN). Summit National Holding Company. SN 182,973. Pub. 10–20–64. Filed 12–13–63.

## Class 103 — Construction and Repair

782,999. WHEN PESTS ANNOY RING A BELL BOY AND DESIGN. Bell Pest Control, Inc. SN 186,321. Pub. 10–20–64. Filed 2–10–64.

## Class 106 — Material Treatment

783,000. CMP AND DESIGN. Custom Metal Products, Inc. SN 171,237. Pub. 10–20–64. Filed 6–18–63.

## Collective Membership Marks

## Class 200

783,001. QUALITY COURTS AND DESIGN. Quality Courts Motels, Inc. SN 183,282. Pub. 10–20–64. Filed 12–19–63.

783,002. THE GREY EAGLES AND DESIGN. The Grey Eagles. SN 187,277. Pub. 10–20–64. Filed 2–24–64.

783,003. ASA AND DESIGN. The American Sunbathing Association, Inc. SN 187,988. Pub. 10–20–64. Filed 2–24–64.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 12 — Construction Materials

783,004. Lloyd K. Lockwood, d.b.a. Saginaw Roofing and Contracting Company, Saginaw, Mich. SN 109,599. Filed P.R. 12–5–60; Am. S.R. 11–6–64.

### SUPER-PANEL

For Siding, Siding Mounting Devices, Siding Fastening Devices, and Corner Members.
First use September 1958.

783,005. Afco Corporation, Alexandria, La. SN 177,743. Filed P.R. 9–26–63; Am. S.R. 10–19–64.

### PLASTI-COTE

For Prefinished Hardboard Wall Panels.
First use at least as early as April 1962.

783,006. American Plywood Association, Tacoma, Wash., by change of name from Douglas Fir Plywood Association, Tacoma, Wash. SN 180,298. Filed P.R. 11–1–63; Am. S.R. 10–30–64. COLLECTIVE MARK.

### STURD-I-WALL

For Plywood.
First use Oct. 25, 1963.

783,007. American Plywood Association, Tacoma, Wash., by change of name from Douglas Fir Plywood Association, Tacoma, Wash. SN 180,299. Filed P.R. 11–1–63; Am. S.R. 10–30–64. COLLECTIVE MARK.

### SPAN-RATED

For Plywood.
First use Oct. 25, 1963.

783,008. American Plywood Association, Tacoma, Wash., by change of name from Douglas Fir Plywood Association, Tacoma, Wash. SN 180,300. Filed P.R. 11–1–63; Am. S.R. 10–30–64. COLLECTIVE MARK.

### JOB-RATED

For Plywood.
First use Oct. 25, 1963.

783,009. Hough Manufacturing Corporation, Janesville, Wis. SN 181,143. Filed P.R. 11–14–63; Am. S.R. 11–2–64.

### GYMWALL

For Folding Partitions.
First use Oct. 22, 1963.

783,010. Consolidated Paper Company, Monroe, Mich. SN 184,440. Filed P.R. 1–13–64; Am. S.R. 10–23–64.

### ROLEDG

For Vinyl Laminated Construction Panels Having a Vinyl Facing Rolled Over the Edges of a Fiberboard Core.
First use on or about Aug. 2, 1963.

## Class 15 — Oils and Greases

783,011. Muench-Kreuzer Candle Co., Inc., Syracuse, N.Y. SN 142,208. Filed P.R. 4–13–62; Am. S.R. 11–2–64.

### CANDLE GLOW

For Candles.
First use at least as early as Jan. 1, 1962.

783,012. Never-Sees Compound Corp., Broadview, Ill. SN 144,268. Filed P.R. 5–10–62; Am. S.R. 11–2–64.

### NEVER-SEEZ

For Compound To Protect Against Cohesion and Galling of Metal Parts With One Another, Seizure of Metal Threads, Leakage Past Gaskets, Threaded Parts and Mating Surfaces, Rust, and Heat and Weather Corrosion, and To Provide Lubrication.
First use April 1957.

## Class 19 — Vehicles

783,013. Rootes Limited, London, England. SN 176,960. Filed P.R. 9–13–63; Am. S.R. 6–30–64.

### ROOTES

Owner of British Reg. No. B755,315, dated July 3, 1956.
For Motor Trucks, Motor Cars, Motor Coaches, Motor Vehicles for Emptying Gullies and Cesspools, Motor Vehicles for Collecting Refuse, and Parts Thereof.

783,014. The AP Parts Corporation, Toledo, Ohio. SN 196,087. Filed 6–22–64.

### COLUMBUS

For Shock Absorbers.
First use July 14, 1949.

## Class 20 — Linoleum and Oiled Cloth

783,015. Congoleum-Nairn Inc., Kearny, N.J. SN 181,126. Filed P.R. 11–14–63; Am. S.R. 10–19–64.

### VINYLSTONE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs and Tiles.
First use Nov. 6, 1963.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

783,016. Adams, Inc., Greenville, S.C. SN 158,208. Filed P.R. 11–30–62; Am. S.R. 10–8–64.

### CREELSTOP

For Control Means for Textile Machines Especially Roving Frames and the Like, Wherein the Presence of a Faulty Strand is Detected and the Machine Stopped.
First use Feb. 9, 1962.

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783,017. Star Cutter Company, Farmington, Mich. SN 158,574. Filed P.R. 12–5–62; Am. S.R. 10–8–64.

### DOUBLE-JET

For Gun Drills.
First use November 1960.

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## Class 27 — Horological Instruments

783,018. Bulova Watch Company, Inc., Flushing, N.Y. SN 178,101. Filed P.R. 10–1–63; Am. S.R. 10–29–64.

### DATE N'TIME

For Watches.
First use Aug. 22, 1963.

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## Class 28 — Jewelry and Precious-Metal Ware

783,019. Coro, Inc., New York, N.Y. SN 173,235. Filed P.R. 7–18–63; Am. S.R. 8–4–64.

### S-T-R-E-T-C-H BAND

For Necklaces, Earrings, Jewelry Clips, Brooches, Lockets, Finger Rings, Charms, Pendants, All Pearls for Personal Wear and the Following Goods Made in Whole or in Part of Precious Metal or Plated With Same: Beads, Pins, and Jewelry Initials.
First use May 1, 1963.

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783,020. Coro, Inc., New York, N.Y. SN 187,089. Filed P.R. 2–20–64; Am. S.R. 10–26–64.

### ADJUSTABLE SQUARE BAND

For Finger Rings.
First use Sept. 29, 1963.

## Class 29 — Brooms, Brushes, and Dusters

783,021. E Z Paintr Corporation, Milwaukee, Wis. SN 194,040. Filed P.R. 5–22–64; Am. S.R. 11–5–64.

### TRIM-LINE

For Paint Applicators.
First use Sept. 5, 1963.

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783,022. E Z Paintr Corporation, Milwaukee, Wis. SN 194,041. Filed P.R. 5–22–64; Am. S.R. 11–5–64.

### SASH-LINE

For Paint Applicators.
First use Sept. 5, 1963.

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## Class 34 — Heating, Lighting, and Ventilating Apparatus

783,023. Fasco Industries, Inc., Rochester, N.Y. SN 174,757. Filed P.R. 8–9–63; Am. S.R. 7–13–64.

### HARCOURT

For Ventilators, Hoods for Ranges, and Portable Heaters.
First use Dec. 12, 1962.

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## Class 36 — Musical Instruments and Supplies

783,024. Kolor Kee Company, Saginaw, Mich. SN 140,361. Filed P.R. 3–21–62; Am. S.R. 11–6–64.

### KOLOR KEE

For Covers for Keys for Musical Instruments.
First use Sept. 21, 1961.

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## Class 37 — Paper and Stationery

783,025. Jannes Associates, Inc., Chicago, Ill. SN 174,590. Filed P.R. 8–7–63; Am. S.R. 10–27–64.

### PENCIL CADDY

For Extensible Hollow Pop-Up Paper Box Desk Display With Top Flaps, Having Holes in Which To Stick Pencils.
First use Jan. 15, 1963.

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## Class 39 — Clothing

783,026. Teenform, Inc., New York, N.Y. SN 180,791. Filed P.R. 11–8–63; Am. S.R. 11–2–64.

### STRETCH UPS

For Brassieres.
First use Sept. 16, 1963.

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# TRADEMARK REGISTRATIONS RENEWED

25,669. BEE HIVE AND DESIGN. Cl. 43. 12–18–1894.
25,674. BEE HIVE. Cl. 43. 12–18–1894.
26,078. WINEBURGH'S BABESKIN SOAP. Cl. 51. 2–19–1895.
190,746. KEPOLAC AND DESIGN. Cl. 16. 10–21–24.
191,550. PROTECTO. Cl. 39. 11–11–24.
191,686. REPRESENTATION OF SPHYNX. Cl. 16. 11–18–24.
191,702. RANGER. Cl. 9. 11–18–24.
191,722. RANGER. Cl. 9. 11–18–24.



191,798. SHELL BRIAR. Cl. 8. 11–18–24.
192,118. GLOVER'S. Cl. 18. 11–25–24.
192,344. BANJO SEAT AND DESIGN. Cl. 39. 12–2–24.
192,561. GRO-SHOE AND DESIGN. Cl. 39. 12–9–24.
192,897. YOLANDA. Cl. 46. 12–16–24.
192,966. AMBLUCO. Cl. 12. 12–16–24.
193,386. CYANOGAS. Cl. 6. 12–30–24.
193,706. HACKNEY. Cl. 2. 1–6–25.
193,717. SINGER. Cl. 2. 1–6–25.
195,218. KODAK. Cl. 38. 2–17–25.
195,251. PARADOX. Cl. 52. 2–17–25.
196,082. PLEE-ZING. Cl. 46. 3–10–25.
196,587. SCRIPTO. Cl. 37. 3–24–25.
196,795. OCEAN SPRAY. Cl. 46. 3–31–25.
196,870. REPRESENTATION OF HARP AND SHAMROCK (DESIGN). Cl. 45. 3–31–25.
196,882. RED BAND ON THE END OF A SAW BLADE. Cl. 23. 3–31–25.
196,889. RED STRIPE ON BACK OF A KNIFE. Cl. 23. 3–31–25.
196,989. GULDEN'S. Cl. 46. 4–7–25.
197,045. TUSIDE. Cl. 39. 4–7–25.
197,189. MERCUROCHROME. Cl. 6. 4–14–25.
197,281. BANNER. Cl. 52. 4–14–25.
408,366. CE. Cl. 28. 8–8–44.
409,327. MILKMAID. Cl. 52. 10–3–44.
410,046. EL VIEJITO. Cl. 49. 11–7–44.
410,176. TUFF-TEX. Cl. 12. 11–14–44.
410,213. REDUX. Cl. 5. 11–14–44.
410,283. THE BLUE WAVE AND DESIGN. Cl. 30. 11–21–44.
410,910. DARLING AND DESIGN. Cl. 13. 12–26–44.
411,127. MATEY'S. Cl. 39. 1–2–45.
411,267. FORMAPLASTIC. Cl. 44. 1–9–45.
412,165. CAMOLLIENT. Cl. 18. 2–20–45.
412,398. WACO KID. Cl. 39. 3–6–45.
412,547. TCMCO. Cl. 23. 3–13–45.
412,957. PLEBEX. Cl. 18. 4–3–45.
413,019. THE LONE STAR. Cl. 39. 4–3–45.
413,099. GOLDEN NUGGET. Cl. 46. 4–10–45.
413,240. GRANDMOTHER'S. Cl. 46. 4–17–45.
413,323. KING OF EASE. Cl. 32. 4–17–45.
413,324. QUEEN OF EASE. Cl. 32. 4–17–45.
413,325. GRANDMOTHER'S. Cl. 46. 4–17–45.
413,384. TITE. Cl. 37. 4–24–45.
413,546. PROTHRICIN. Cl. 18. 5–1–45.

# TRADEMARK REGISTRATIONS CANCELED

### Section 7(d)

734,669. BERGHOFF 1887 AND DESIGN. Cl. 48. 7–17–62.
753,383. DROPSAN. Cl. 39. 7–23–63.
753,396. DROPSAN. Cl. 43. 7–23–63.
754,254. DROPNYL. Cl. 39. 8–6–63.
754,255. DROPGAL. Cl. 39. 8–6–63.
754,266. DROPSAN. Cl. 42. 8–6–63.
754,282. DROPNYL. Cl. 43. 8–6–63.
754,283. DROPGAL. Cl. 43. 8–6–63.
758,479. DROPNYL. Cl. 42. 10–15–63.
759,747. DROPGAL. Cl. 42. 11–5–63.

### Section 8

*The following registrations issued Nov. 18, 1958*

669,743. VARNI-GRAPHIC. Cl. 2.
669,747. NIGHT-N-DAY. Cl. 3.
669,749. COL-DOP AND DESIGN. Cl. 5.
669,761. YE OLD HUNTER AND DESIGN. Cl. 9.
669,762. THE BLADESMAN ETC. AND DESIGN. Cl. 9.
669,775. VREECO PRODUCTS AND DESIGN. Cl. 15.
669,787. DYNAKOTE. Cl. 16.
669,795. CORIGLUTE. Cl. 18.
669,797. NELVITE. Cl. 18.
669,800. THIOBAN. Cl. 18.
669,801. HI-FI. Cl. 18.
669,802. PREDNAZINE. Cl. 18.
669,804. ALEXTROL. Cl. 18.
669,808. VASODILEN. Cl. 18.
669,809. VASODILIN. Cl. 18.
669,811. VASODILON. Cl. 18.
669,818. NYLOX. Cl. 19.
669,819. TALISMAN. Cl. 19.
669,824. SATELLITE AND DESIGN. Cl. 21.
669,826. NARACORD. Cl. 21.
669,829. SLENDERELLA. Cl. 22.
669,831. MR. BUBBLES. Cl. 22.
669,834. SLENDERCYCLE. Cl. 22.
669,839. STOELTING. Cl. 23.
669,852. SUPERMATIC. Cl. 23.
669,853. DELUXE STEEL KING AND DESIGN. Cl. 23.
669,857. SPECTRA-STRIPER. Cl. 23.
669,862. ALPINA. Cl. 23.
669,866. MARADO AND DESIGN. Cl. 26.
669,870. CORONET. Cl. 26.
669,887. HI-FIRE. Cl. 28.
669,889. WHITE FIRE. Cl. 28.
669,891. JEWELETTE. Cl. 28.
669,907. SOLAR FLAME. Cl. 34.
669,908. ACET-O-LITE. Cl. 34.
669,910. WRENN'S. Cl. 37.
669,911. WRENN'S AND DESIGN. Cl. 37.
669,914. DECAFIX. Cl. 37.
669,915. SEALLABEL AND DESIGN. Cl. 37.
669,917. S AND DESIGN. Cl. 37.
669,920. APPE-DIAL. Cl. 38.
669,921. HEADHUNTER. Cl. 38.
669,923. WORLD-POLL. Cl. 38.
669,930. LEW MAGRAM. Cl. 39.
669,933. DSC. Cl. 39.
669,934. THE SPECTATOR ETC. AND DESIGN. Cl. 39.
669,942. FG AND DESIGN. Cl. 39.
669,947. ROYAL HAWAIIAN. Cl. 39.
669,948. WAMESET'S TEMPTRESS. Cl. 39.
669,949. DAISY LEAGUE. Cl. 39.
669,950. BABY LEAGUE. Cl. 39.
669,951. PONY LEAGUE. Cl. 39.
669,953. MOTHER KNOWS BEST. Cl. 39.
669,956. ELASKI AND DESIGN. Cl. 42.
669,962. SLENDER-EEZE. Cl. 44.
669,966. REDUCOROLL. Cl. 44.
669,972. IT'S "DOG-LICIOUS!" Cl. 46.
669,974. BB-MB AND DESIGN. Cl. 46.
669,975. MRS. KLEIN'S AND DESIGN. Cl. 46.
669,978. CHRISTY. Cl. 46.
669,982. CRADLE. Cl. 46.
669,983. QK AND DESIGN OF CROWN. Cl. 46.
669,986. DOS PALOS. Cl. 46.
669,996. PIE WIZ. Cl. 46.
670,000. CANADIAN TEN. Cl. 49.
670,003. FENGLO. Cl. 50.
670,009. COLOR BEAUTY. Cl. 51.
670,010. ZIP-O. Cl. 52.
670,011. SOOTY. Cl. 52.
670,017. WH. Cl. 100.
670,019. SELLORAMA. Cl. 101.
670,022. MERCURY. Cl. 101.
670,030. REDI-MADE. Cl. 102.
670,034. DESIGN OF HUMAN HEAD AND HELMET. Cl. 107.
670,035. BEAT THE CHAMP. Cl. 107.
670,040. EVEN-HEET. Cl. 13.
670,041. GOLDEN-HUE METAL. Cl. 14.
670,046. TOASTER DUSTER. Cl. 29.
670,049. TWEED OF TRALEE. Cl. 42.
670,050. FRAGRANT FLOWER. Cl. 50.

### Section 18

222,872. SECURITY AND REPRESENTATION OF A BOY. Cl. 39. 1–11–27.
231,021. "BIG SIX 6" AND DESIGN. Cl. 39. 8–9–27.
362,534. FORCE-FLO. Cl. 13. 11–22–38.
419,026. GOLD COAST. Cl. 46. 1–22–46.
432,404. CRUSADER AND DESIGN. Cl. 44. 9–2–47.
437,448. CRUSADER AND DESIGN. Cl. 23. 3–23–48.
438,571. CRUSADER AND DESIGN. Cl. 13. 5–4–48.
555,806. FILEX. Cl. 32. 4–22–52.
694,457. DEXATAL #2. Cl. 18. 3–15–60.
698,864. DEXATAL #1. Cl. 18. 6–7–60.
701,234. DEXATAL. Cl. 18. 7–19–60.

# TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

410,472. MARVINOL. Cl. 1. 11–28–44. The Glenn L. Martin Company. United States Rubber Company, New York, N.Y. Amended to appear:

Marvinol

668,770. SPUDNICKS. Cl. 46. 10–21–58. J. R. Simplot Company, Boise, Idaho. Corrected: In the statement, column 1, line 1, "Idaho" should be deleted and *Nevada* should be inserted.

686,420. POTATO GEMS. Cl. 46. 10–6–59. J. R. Simplot Company, Boise, Idaho. Corrected: In the statement, column 1, line 1, "Idaho" should be deleted and *Nevada* should be inserted.

687,298. FRANZENBURG AND DESIGN. Cl. 46. 10–27–59. The Franzenburg Provision Co., doing busines as Franzenburg Wolf Creek Smokehouse, Conrad, Iowa. Corrected: In the statement, column 1, line 1, before "Fransenburg" *The Franzenburg Provision Co., doing business as* should be inserted.

767,954. HEINEKEN AND DESIGN. Cl. 48. 4–7–64. Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. Amended to appear:

Heineken

775,826. GV AND DESIGN. Cl. 33. 8–25–64. Glaverbel, Brussels, Belgium. Corrected: In the statement, column 2, line 11, "299,581" should be deleted and *98,697* should be inserted.

777,826. 2–MC. Cl. 23. 9–29–64. The Warner & Swasey Company, Cleveland, Ohio. Corrected: In the statement, column 2, line 2, "1950" should be deleted and *1960* should be inserted.

777,838. R AND DESIGN. Cl. 26. 9–29–64. Botany Industries, Inc., Reno, Nev. Amended to appear:



779,072. MISCELLANEOUS DESIGN. Cl. 36. 10–27–64. The Nortronics Company, Inc., Minneapolis, Minn. Corrected: In the statement, column 1, line 2, "1801" should be deleted and *8101* should be inserted.

# TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

189,613. ENCHANTA SILK. Cl. 39. James A. Hearn & Son, Inc. 9–23–24. New Cert. Sec. 7(c) to City Stores Company, New York, N.Y.

563,182. WOODPECKER DESIGN. Cl. 104. Grandwood Broadcasting Company. 8–19–52. New Cert. Sec. 7(c) to Time-Life Broadcast, Inc., Grand Rapids, Mich.

571,651. KRETSCHMER. Cl. 46. Kretschmer Corporation. 3–10–53. New Cert. Sec. 7(c) to International Milling Company Inc., Minneapolis, Minn.

693,947. K DESIGN. Cl. 46. Kretschmer Wheat Germ Corporation. 3–1–60. New Cert. Sec. 7(c) to International Milling Company Inc., Minneapolis, Minn.

770,021. DESIGN ON BOTTLE CAP. Cl. 46. Kretschmer Wheat Germ Corp. 5–19–64. New Cert. Sec. 7(c) to International Milling Company Inc., Minneapolis, Minn.

# REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

## Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

279,605. Jan. 20, 1931. Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.

Barbara Lee

For Women's and Misses' Hand Bags and Pocketbooks of Leather, Beads, Silks, and Other Fabrics.

## Class 6—Chemicals and Chemical Compositions

409,688. Oct. 17, 1944. American Petroleum Products Co., New York, N.Y. Pub. by Witco Chemical Company, Inc., New York, N.Y.

MULTIWAX

For Amorphous, Waxy Hydrocarbon Material for Use in the Waterproofing of Paper and Textiles, and as a Substitute for Amorphous Wax in Cosmetics and Pharmaceutical Products.





## Class 8—Smokers' Articles, Not Including Tobacco Products

410,611. Dec. 5, 1944. Ropp Pipes, Limited, London, England. Pub. by registrant.

ROPP

For Tobacco Pipes of Wood.

## Class 15—Oils and Greases

194,481. Jan. 27, 1925. Graphol Products Co., Inc., Brooklyn, N.Y. Pub. by Graphol Products Company, Hawthorne, N.J.

GRAPHOL

For Rust Solvent and Penetrating Lubricant.

## Class 18—Medicines and Pharmaceutical Preparations

46,159. Sept. 5, 1905. The Norwich Pharmacal Company, Norwich, N.Y. Pub. by registrant.

UNGUENTINE

For Ointments and Preparations Employing Oils, Butters, Glycerin, and Other Viscous or Jelly-Like Substances as Vehicles Suitable for External and Intra-Orificial Applications, etc.

## Class 21—Electrical Apparatus, Machines, and Supplies

426,355. Dec. 24, 1946. Frank Rieber, d.b.a. Rieber Research Laboratory, New York, N.Y. Pub. by United Control Corporation, Redmond, Wash.

VIBROTRON

For Electrical Oscillator and Filters.

428,453. Mar. 25, 1947. Frank Rieber, d.b.a. Rieber Research Laboratory, New York, N.Y. Pub. by United Control Corporation, Redmond, Wash.

VIBRONIC

For Electrical Filters.

## Class 22—Games, Toys, and Sporting Goods

192,448. Dec. 2, 1924. Bernhard Ulmann Co. Inc., New York, N.Y. Pub. by Indian Head Mills, Inc., New York, N.Y.

STUFTOYS

For Stuffed Playthings in the Form of Dolls, Animals and the Like and Stamped, Tinted or Otherwise Prepared Foundation Material Known as Cut-Outs, With and Without Outfits for Finishing the Same and Other Supplies for Making the Same.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

409,059. Sept. 12, 1944. Mixermobile Manufacturers, Portland, Oreg. Pub. by Mixermobile Manufacturers, Inc., Portland, Oreg.

SHOVELMOBILE

For Power Driven Vehicle Mounted Bulk Material Handling and Loading Apparatus.

411,191. Jan. 9, 1945. Jambor Tool and Stamping Co., Milwaukee, Wis. Pub. by registrant.



Bull Dog

For Motor Vehicle Repair and Replacement Parts and Assemblies—Namely, Push Rods, Bushings for Mechanical Bearings, etc.

## Class 24—Laundry Appliances and Machines

283,168. May 19, 1931. The Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.




For Laundry Washing Machines.

## Class 26 — Measuring and Scientific Appliances

407,881. July 4, 1944. Walker, Croaweller & Company Limited, Cheltenham, England. Pub. by registrant.

Arkon

For Gas-Flow Recorders and Meters, Pressure and Vacuum Recorders and Gauges, Thermometers, Liquid-Flow Meters, Valve-Position Indicators, etc.

## Class 27 — Horological Instruments

401,762. June 8, 1943. Emil von Burg, d.b.a. American Grana Watch Company, New York, N.Y. Pub. by Certina, Kurth Freres, S.A., Grenchen, Switzerland.

CERTINA

For Watches, Parts Thereof, Watch Movements and Clocks.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

293,307. Apr. 19, 1932. Atlas Supply Company, Springfield, N.J. Pub. by registrant.

ATLAS

For Brake-Linings.

## Class 37 — Paper and Stationery

183,767. May 6, 1924. Thomas F. Rybert & Company, Atlanta, Ga. Pub. by Thomas F. Rybert, d.b.a. Rybert Printing Company, Atlanta, Ga.

STONE MOUNTAIN BOND

For Bond Papers.

## Class 38 — Prints and Publications

190,689. Oct. 21, 1924. International Brotherhood of Electrical Workers, Washington, D.C. Pub. by registrant.

AFFILIATED WITH ORGANIZED LABOR A.F.L. AMERICAN FEDERATION OF LABOR

For Booklets and Periodicals (Published Annually).

249,761. Nov. 20, 1928. Simmons-Boardman Publishing Co., New York, N.Y. Pub. by Simmons-Boardman Publishing Corporation, New York, N.Y.

Railway Age

For Periodical.

412,317. Feb. 27, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Decalcomanias.

## Class 39 — Clothing

192,606. Dec. 9, 1924. The Mallory Hat Company, Danbury, Conn. Pub. by John B. Stetson Company, Philadelphia, Pa.

CENTURY

For Hats for Men, Women, and Children.

SN 199,995. June 23, 1925. Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.

De Mura

For Women's Shoes Made Wholly or in Part of Leather.

252,217. Jan. 29, 1929. Arnold, Constable & Co., Inc., New York, N.Y. Pub. by Arnold Constable Corporation, New York, N.Y.

Ardelle

For Ladies' and Young Misses' Dresses, Coats, Suits, Waists for Outer Wear, Robes, Gowns, Stockings, and Skirts.



253,825. Mar. 5, 1929. Arnold, Constable & Co., Inc., New York, N.Y. Pub. by Arnold Constable Corporation, New York, N.Y.

The ARNOLTON

For Women's and Children's Coats, Suits, Overcoats, Hats, Vests for Outer Wear, and Cloaks.

279,606. Jan. 20, 1931. Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.

Barbara Lee

For Women's and Misses' Coats of Seasonal Materials, Such as Silk, Woolen, and Fur, etc.

279,688. Jan. 20, 1931. Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.

Félice

For Women's and Girls' Dresses, Coats, Leather Shoes; Women's and Misses' Hats, etc.

386,972. Apr. 29, 1941. Arnold, Constable & Co., Inc., New York, N.Y. Pub. by Arnold Constable Corporation, New York, N.Y.

Country Classics

For Dresses, Suits, Coats; Lingerie—Namely, Bloomers, Vests, Bandeaux, Chemises, Negligees, Slips, Petticoats, Shorts, Shirts, Costume Slips, Panties and Stepins, Pajamas, Nightgowns, and Drawers; Hosiery, Hats; Gloves of Leather and Fabric; Boots and Shoes Made of Leather and Fabric; Boots and Shoes Made of Leather, Rubber and Fabric, and/or Combinations Thereof, All for Women and Misses.

409,543. Oct. 10, 1944. The H. A. Seinsheimer Company, Cincinnati, Ohio. Pub. by registrant.

Gab Royal

For Men's and Boys' Clothing—Namely, Suits, Topcoats, Overcoats, Sport Jackets, and Slacks.

411,039. Jan. 2, 1945. Gushner Brothers, d.b.a. Boyd's, Philadelphia, Pa. Pub. by registrant.




For Men's Suits, Coats, Trousers, Slacks, Overcoats, Topcoats, Raincoats, Trouser Belts, Outer and Under Shirts, Underwear, etc.

436,406. Feb. 10, 1948. Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.




For Misses' and Girls' Dresses, Coats, Suits, etc.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

284,129. June 16, 1931. The Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.




For Textile Rugs.

359,834. Aug. 30, 1938. Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.

BABYCREST

For Muslin Sheets and Pillow Cases, etc.

430,246. June 10, 1947. Associated Merchandising Corporation, New York, N.Y. Pub. by Aimcee Wholesale Corporation, New York, N.Y.

Vanity House

For Window Curtains.

## Class 46 — Foods and Ingredients of Foods

188,519. Aug. 26, 1924. Mountain City Mill Co., Inc., Chattanooga, Tenn. Pub. by Martha White Mills, Inc., Nashville, Tenn.

Orient PASTRY FLOUR

For Flour.

192,721. Dec. 9, 1924. Royal Milling Company, Nashville, Tenn. Pub. by Martha White Mills, Inc., Nashville, Tenn.

MARTHA WHITE SOUTH'S FINEST PATENT ROYAL MILLING CO

"Goodness Gracious IT'S GOOD"

For Flour.

## Class 49 — Distilled Alcoholic Liquors

409,723. Oct. 17, 1944. Arrow Liqueurs Corporation, Detroit, Mich. Pub. by registrant.

SHANGRI-LA

For Liqueurs and Cordials.

# INDEX OF REGISTRANTS

## JANUARY 5, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)


Accurate Mfg. Co., Chicago, Ill. 782,766, pub. 10–20–64. Cl. 23.
Ace Glass Inc., Vineland, N.J. 782,702, pub. 10–20–64. Cl. 15.
Ace Glass Inc., Vineland, N.J. 782,816, pub. 10–20–64. Cl. 26.
Active Doll Corp., Brooklyn, N.Y. 782,753, pub. 10–20–64. Cl. 22.
Adams, Inc., Greenville, S.C. 783,016. Cl. 23.
Aerolux Light Corp., New York, N.Y. 782,726, pub. 10–20–64. Cl. 21.
Afco Corp., Alexandria, La. 783,005. Cl. 12.
Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 782,648, pub. 10–20–64. Cl. 6.
Agricultural Research Development, Inc., Denver, Colo. 782,616, pub. 2–25–64. Cl. 1.
Agway, Inc., Syracuse, from Cooperative Grange League Federation Exchange, Ithaca, N.Y. 782,951–2, pub. 9–1–64. Cl. 46.
Aimcee Wholesale Corp. : *See*—
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Aktiebolaget Celleco, Stockholm, Sweden. 782,782, pub. 10–20–64. Cl. 23.
Aktiebolaget Mullsjoverken, Mullsjo, Sweden. 782,684, pub. 10–20–64. Cl. 13.
Alexander Doll Co., Inc., d.b.a. Madame Alexander, New York, N.Y. 782,752, pub. 10–20–64. Cl. 22.
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Alexander Doll Co., Inc.
Alexander Mfg. Co., Yazoo City, Miss. 782,783, pub. 10–20–64. Cl. 23.
Alford Mfg. Co., Boston, Mass. 782,747, pub. 10–20–64. Cl. 21.
Ayres, Allison, Inc., New York, N.Y. 782,896, pub. 10–20–64. Cl. 39.
Allen, Frederick, Corp., York, Pa. 782,905, pub. 10–20–64. Cl. 40.
Allen Products Co., Inc., Allentown, Pa. 782,941, pub. 10–20–64. Cl. 46.
Alliance Color & Chemical Co., Newark, N.J. 782,650, pub. 10–20–64. Cl. 6.
Alpha Wire Corp., New York, N.Y. 782,683, pub. 10–20–64. Cl. 13.
Alpina-Buromaschinen-Werk G.m.b.H., Kaufbeuren, Germany. 669,862, canc. Cl. 23.
Amco of Norvelt, Inc., New York, N.Y. 782,894, pub. 10–20–64. Cl. 39.
American Air Filter Co., Inc., Louisville, Ky. 782,838, pub. 10–20–64. Cl. 31.
American Bearing Corp., Indianapolis, Ind. 782,777, pub. 10–20–64. Cl. 23.
American Bed & Spring Co., St. Louis, Mo. 782,842, pub. 10–20–64. Cl. 32.
American Blue Stone Co., Portageville, N.Y. 192,966, ren. 1–5–65. Cl. 12.
American Can Co. : *See*—
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American Can Co., New York, N.Y. 782,883, pub. 10–20–64. Cl. 38.
American Cyanamid Co., Wayne, N.J. 193,386, ren. 1–5–65. Cl. 6.
American Cyanamid Co., Wayne, N.J. 782,629, pub. 10–20–64. Cl. 1.
American Foot Health Foundation, The, Washington, D.C. 669,933, canc. Cl. 39.
American Grana Watch Co. : *See*—
Von Burg, Emil.
American Home Products Corp. : *See*—
Gulden, Charles, Inc.
Wyeth Inc.
American Home Products Corp., d.b.a. Boyle-Midway, New York, N.Y. 782,995, pub. 10–20–64. Cl. 101.
American Optical Co., Southbridge, Mass. 782,899, pub. 10–20–64. Cl. 39.
American Petroleum Products Co., by Witco Chemical Co., Inc., New York, N.Y. 409,688, 12(c) pub. 1–5–65. Cl. 6.
American Plywood Association, from Douglas Fir Plywood Association, Tacoma, Wash. 783,006–8. Cl. 12.
American Saint Gobain Corp., Kingsport, Tenn. 782,846. pub. 10–20–64. Cl. 33.
American Sunbathing Association, Inc., The, Mays Landing, N.J. 783,003, pub. 10–20–64. Cl. 200.
Ames Harris Neville Co., San Francisco, Calif. 669,915, canc. Cl. 37.
Amp Inc., Harrisburg, Pa. 782,742, pub. 10–20–64. Cl. 21.
Anstalt Fuer Montage-Technik, Vaduz, Liechtenstein. 782,685, pub. 10–20–64. Multiple Class (Classes 13 and 23).
Antell, Charles, Inc., Baltimore, Md. 670,009, canc. Cl. 51.
Ap Parts Corp., The, Toledo, Ohio. 783,014. Cl. 19.
Armour and Co., Chicago, Ill. 782,939, pub. 10–20–64. Cl. 46.
Arnold, Constable & Co., Inc., by Arnold Constable Corp., New York, N.Y. 252,217, 12(c) pub. 1–5–65. Cl. 39.
Arnold, Constable & Co., Inc., by Arnold Constable Corp., New York, N.Y. 253,825, 12(c) pub. 1–5–65. Cl. 39.
Arnold, Constable & Co., Inc., by Arnold Constable Corp., New York, N.Y. 386,972, 12(c) pub. 1–5–65. Cl. 39.
Arnold Constable Corp. : *See*—
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Arrow Liqueurs Corp., Detroit, Mich. 409,723, 12(c) pub. 1–5–65. Cl. 49.
Arti-Floral Products Corp., Atlanta, Ga. 782,988, pub. 10–20–64. Cl. 52.
Ashe, H. J., Co., Inc., The, South Norwalk, Conn. 782,741, pub. 10–20–64. Cl. 21.
Associated Merchandising Corp., by Aimcee Wholesale Corp., New York, N.Y. 199,995, 12(c) pub. 1–5–65. Cl. 39.
Associated Merchandising Corp., by Aimcee Wholesale Corp., New York, N.Y. 279,605–6, 12(c) pub. 1–5–65. Cl. 3.
Associated Merchandising Corp., by Aimcee Wholesale Corp., New York, N.Y. 279,688, 12(c) pub. 1–5–65. Cl. 39.
Associated Merchandising Corp., by Aimcee Wholesale Corp., New York, N.Y. 283,168, 12(c) pub. 1–5–65. Cl. 24.
Associated Merchandising Corp., The, by Aimcee Wholesale Corp., New York, N.Y. 284,129, 12(c) pub. 1–5–65. Cl. 42.
Associated Merchandising Corp., by Aimcee Wholesale Corp., New York, N.Y. 430,246, 12(c) pub. 1–5–65. Cl. 42.
Associated Merchandising Corp., by Aimcee Wholesale Corp., New York, N.Y. 436,406, 12(c) pub. 1–5–65. Cl. 39.
Associated Merchandising Corp., by Aimcee Wholesale Corp., New York, N.Y. 359,834, 12(c) pub. 1–5–65. Cl. 42.
Asten-Hill Mfg. Co., Philadelphia, Pa. 782,915, pub. 10–20–64. Cl. 42.
Atlas Supply Co., Springfield, N.J. 293,307, 12(c) pub. 1–5–65. Cl. 35.
Avon Products, Inc., New York, N.Y. 782,973, pub. 10–20–64. Cl. 51.
Award Tool Co., Inc., Flushing, N.Y. 782,779, pub. 10–20–64. Cl. 23.
Axelrod, S. Mitchell, d.b.a. S. M. Axelrod & Son, Boston, Mass. 782,912–13, pub. 10–20–64. Cl. 42.
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Baldwin, J. & J., Halifax, England, to Patons & Baldwins Ltd., Darlington, England. 25,669, ren. 1–5–65. Cl. 43.
Baldwin, J. & J., Halifax, England, to Patons & Baldwins Ltd., Darlington, England. 25,674, ren. 1–5–65. Cl. 43.
Bancroft, Joseph, & Sons Co., Wilmington, Del. 782,920, pub. 10–20–64. Multiple Class (Classes 42 and 43).
Bares, Bertha, Oakville, Conn. 669,974, canc. Cl. 46.
Barkow Petroleum Co., Inc. of California, Richmond, Calif. 782,701, pub. 10–20–64. Cl. 15.
Barnard & Leas Mfg. Co., Inc., Cedar Rapids, Iowa. 782,792, pub. 10–20–64. Cl. 23.
Barr Co., Los Angeles, Calif. 782,893, pub. 10–20–64. Cl. 39.
Bates Shoe Co., Webster, Mass. 782,895, pub. 10–20–64. Cl. 39.
Battenfeld Grease & Oil Corp., Inc. : *See*—
Maurin, Dan.
Bauer, Eddie, Seattle, Wash. 782,760, pub. 10–20–64. Cl. 22.
Bayuk Cigars Inc., Philadelphia, Pa. 782,712–13, pub. 10–20–64. Cl. 17.
Beacon Frocks Inc., New York, N.Y. 782,897, pub. 10–20–64. Cl. 39.
Beaconway Stores, Inc., Chelsea, Mass. 782,929, pub. 10–20–64. Cl. 43.
Beaunit Corp., New York, N.Y. 782,927, pub. 10–20–64. Cl. 43.
Belding Hausman Fabrics, Inc., New York, N.Y. 782,919, pub. 10–20–64. Cl. 42.
Belknap Hardware and Mfg. Co., Louisville, Ky. 782,740, pub. 10–20–64. Cl. 21.
Bell Pest Control, Inc., Independence, Mo. 782,999, pub. 10–20–64. Cl. 103.
Beloit State Bank, The, Beloit, Wis. 670,030, canc. Cl. 102.
Berbro Mfg. Co., Inc., New York, N.Y. 782,768, pub. 11–5–63. Cl. 23.
Berry Brothers Corp., Greensboro, N.C. 782,874, pub. 10–20–64. Cl. 37.
Bio-Lab, Inc., Decatur, Ga. 782,646, pub. 10–20–64. Cl. 6.
Birko Chemical Corp., Denver, Colo. 782,647, pub. 10–20–64. Cl. 6.
Birko Chemical Corp., Denver, Colo. 782,985, pub. 10–20–64. Cl. 52.
Blanco, Carlos P., Mexico City, Mex. 782,692, pub. 10–20–64. Cl. 13.
Blue Wave, The : *See*—
Fletcher, Sarah S.
Borden Co., The, New York, N.Y. 782,619, pub. 10–20–64. Multiple Class (Classes 1, 20, and 42).
Borneo Sumatra Trading Co. of California, Inc., d.b.a. Borsumy Trading Co. of California, Inc., San Francisco, Calif. 669,986, canc. Cl. 46.
Borsumy Trading Co. of California, Inc. : *See*—
Borneo Sumatra Trading Co. of California, Inc.
Botany Industries, Inc., d.b.a. Sea and Ski Co., Reno, Nev. 782,971, pub. 10–20–64. Cl. 51.
Bowers Printing Ink Co., Chicago, Ill. 782,664, pub. 10–20–64. Cl. 11.
Boyd's : *See*—
Gushner Brothers.
Boyle-Midway : *See*—
American Home Products Corp.

Brittains Ltd., Leek, Staffordshire, England. 669,914, canc. Cl. 37.
Brown, Homer B., Co., Nashville, Tenn. 782,866, pub. 10–20–64. Cl. 37.
Bryant Engineering Co., Port Huron, Mich. 782,807, pub. 10–20–64. Cl. 23.
Buckeye Iron & Brass Works, Dayton, Ohio. 782,696, pub. 10–20–64. Cl. 13.
Bulova Watch Co., Inc., Flushing, N.Y. 782,828, pub. 10–20–64. Cl. 27.
Buller, Harry, d.b.a. Harry Buller Farms, Bakersfield, Calif. 782,942, pub. 10–20–64. Cl. 46.
Buller, Harry, Farms: *See*—
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Bulova Watch Co., Inc., Flushing, N.Y. 783,018. Cl. 27.
Burger King of Florida, Inc., Jacksonville, Fla. 782,990, pub. 4–16–63. Cl. 100.
Burn-Strauss, Inc., d.b.a. Woodpecker Woodware, Los Angeles, Calif. 782,805, pub. 10–20–64. Cl. 23.
Buxton, Inc., Agawam, Mass. 782,638, pub. 10–20–64. Cl. 3.
Byer-Rolnick Corp., from Byer-Rolnick Hat Corp., Garland, Tex. 782,891, pub. 10–20–64. Cl. 39.
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Canadian Distillers, Ltd., from Distillers Corp., Ltd., Montreal, Quebec, Canada. 670,000, canc. Cl. 49.
Canadian Industries Ltd., Montreal, Quebec, Canada. 669,787, canc. Cl. 16.
Capri Mfg. Co. of Texas, Inc., Dallas, Tex. 782,900, pub. 10–20–64. Cl. 39.
Cardinal Machine Co.: *See*—
Scullin, James C.
Carlstadt Leather Finishes Co., Inc., Carlstadt, N.J. 782,709, pub. 10–20–64. Cl. 16.
Carruthers, J. H., & Co. Ltd., East Kilbride, Glasgow, Scotland. 782,772, pub. 10–20–64. Cl. 23.
Castleton China, Inc., New Castle, Pa. 782,833–5, pub. 10–20–64. Cl. 30.
Certina, Kurth Freres, S.A.: *See*—
Von Burg, Emil.
Char-Fran Eng. Inc., Chicago, Ill. 782,961, pub. 10–20–64. Cl. 50.
Chesebrough-Pond's Inc., New York, N.Y. 782,976, pub. 10–20–64. Cl. 51.
Chesterton Candy Co.: *See*—
Orchard Hill Farms Candy Co.
Chicago Plastic Products Co. Inc., Chicago, Ill. 411,267, ren. 1–5–65. Cl. 44.
Chicopee Mills, Inc., New York, N.Y. 782,917, pub. 10–20–64. Cl. 42.
Chron-O-Dye Inc., Berlin, N.J. 782,967, pub. 10–20–64. Cl. 50.
Ciba Ltd.: *See*—
Resinous Products & Chemical Co., The.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 782,793, pub. 10–20–64. Cl. 23.
City Oil Equipment Co., Inc.: *See*—
Epsco, Inc.
City Stores Co.: *See*—
Hearn, James A., & Son, Inc.
Clairol Inc., New York, N.Y. 782,979, pub. 10–20–64. Cl. 51.
Clay, H., Glover Co. Inc., Garden City, N.Y. 192,113, ren. 1–5–65. Cl. 18.
Cobon Plastics Corp., Newark, N.J. 782,621–2, pub. 10–20–64. Cl. 1.
Coca-Cola Bottling Co. of Minnesota, Inc.: *See*—
Moore, Thomas.
Collette Toy Novelty Co., Inc., Brooklyn, N.Y. 782,758, pub. 10–20–64. Cl. 22.
Colorpave, Inc.: *See*—
Industrial Asphalt, Inc.
Concord Textile Co., Inc., New York, N.Y. 782,911, pub. 10–20–64. Cl. 42.
Congoleum-Nairn Inc., Kearny, N.J. 783,015. Cl. 20.
Consolidated Paper Co., Monroe, Mich. 783,010. Cl. 12.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 782,878, pub. 10–20–64. Cl. 37.
Continental Can Co., Inc., New York, N.Y. 782,876, pub. 10–20–64. Cl. 37.
Continental Oil Co., Ponca City, Okla. 782,627, pub. 10–20–64. Cl. 1.
Cooke Engineering Co., Alexandria, Va. 782,749, pub. 10–20–64. Cl. 21.
Cook, J. H., Co.: *See*—
Cook, J. Howard.
Cook, J. Howard, d.b.a. J. H. Cook Co., Chicago, Ill. 782,972, pub. 10–20–64. Cl. 51.
Cooperative Grange League Federation Exchange: *See*—
Agway, Inc.
Cormac Industries, Inc., New York, N.Y. 669,870, canc. Cl. 26.
Corn Products Refining Co., New York, N.Y. 669,972, canc. Cl. 46.
Coro, Inc., New York, N.Y. 783,019–20. Cl. 28.
Crown Zellerbach Corp., San Francisco, Calif. 782,870–2, pub. 10–20–64. Cl. 37.
Custom Metal Products, Inc., New Hyde Park, N.Y. 783,000, pub. 10–20–64. Cl. 106.
Cutting Room Appliances Corp., New York, N.Y. 669,852, canc. Cl. 23.
DEG Corp., The, San Francisco, Calif. 782,931, pub. 7–2–63. Cl. 44.
D'Ambrosio, Emanuel, d.b.a. Mono-Seal Products, Everett, Mass. 782,707, pub. 10–20–64. Cl. 16.
Darling Valve & Mfg. Co., Williamsport, Pa. 410,910, ren. 1–5–65. Cl. 13.
Davol Rubber Co., Providence, R.I. 782,717, pub. 10–20–64. Cl. 18.
Deere & Co., Moline, Ill. 782,767, pub. 10–20–64. Cl. 23.
Del City Wire Co., Inc., Oklahoma City, Okla. 782,728, pub. 10–20–64. Cl. 21.
Delaware Barrel and Drum Co., Inc., Wilmington, Del. 782,632, pub. 10–20–64. Cl. 2.
Delhi Mfg. Corp., Delhi, La. 782,634, pub. 10–20–64. Cl. 2.
De Lorean, Jack Z., Huntington Wood, Mich. 782,759, pub. 10–20–64. Cl. 22.
De Luxe Reading Corp., Elizabeth, N.J. 782,757, pub. 10–20–64. Cl. 22.
De Luxe Saw and Tool Co., Louisville, Ky. 669,853, canc. Cl. 23.
Dial Spray Mfg. Co.: *See*—
Kulken, Sam E.
Diamond National Corp., New York, N.Y. 782,631, pub. 1–7–64. Cl. 2.
Dietzgen, Eugene, Co., Chicago, Ill. 782,863, pub. 10–20–64. Cl. 37.
Directional Industries, Inc., New York, N.Y. 782,843, pub. 10–20–64. Cl. 32.
Distillers Corp. Ltd.: *See*—
Canadian Distillers, Ltd.
Dix-A-Dee Beverage Corp., Brooklyn, N.Y. 782,945, pub. 10–20–64. Cl. 46.
Dolge, C. B., Co., The, Westport, Conn. 782,987, pub. 10–20–64. Cl. 52.
Dolly Dimple Inc., Montreal, Quebec, Canada. 669,953, canc. Cl. 39.
Douglas Fir Plywood Association: *See*—
American Plywood Association.
Dow Chemical Co., The, Midland, Mich. 782,633, pub. 10–20–64. Cl. 2.
Draper Bros. Co., Canton, Mass. 782,910, pub. 10–20–64. Cl. 42.
Dunhill, Alfred, of London, Inc., New York, N.Y., to Alfred Dunhill Ltd., London, England. 191,798, ren. 1–5–65. Cl. 8.
Dunhill, Alfred, Ltd.: *See*—
Dunhill, Alfred, of London, Inc.
Dura-Vent Corp., Redwood City, Calif. 782,636, pub. 10–20–64. Cl. 2.
Dynamics Corp. of America, New York, N.Y., from Radio Engineering Laboratories, Inc., Long Island City, N.Y. 782,737, pub. 10–20–64. Cl. 21.
E-C-M Corp.: *See*—
Manchester Knitted Fashions, Inc.
EZ Painter Corp., Milwaukee, Wis. 783,021–2. Cl. 29.
East Coast Soap Corp., Brooklyn, N.Y. 782,983, pub. 10–20–64. Cl. 52.
East Texas Pulp and Paper Co., Silsbee, Tex. 782,879, pub. 10–20–64. Cl. 37.
Eastern Steel Rack Co., Boston, Mass. 782,686, pub. 10–20–64. Cl. 13.
Eastman Kodak Co., to Eastman Kodak Co., Rochester, N.Y. 195,218, ren. 1–5–65. Cl. 38.
Eaton Chemical Corp., Detroit, Mich. 782,982, pub. 10–20–64. Cl. 52.
Ebauches S.A., Neuchatel, Switzerland. 782,826, pub. 10–20–64. Cl. 27.
Economics Laboratory, Inc., St. Paul, Minn. 782,775, pub. 10–20–64. Cl. 23.
Economics Laboratory, Inc., St. Paul, Minn. 782,884, pub. 10–20–64. Cl. 38.
Edwards Engineering Corp., Pompton Plains, N.J. 782,847, pub. 12–24–63. Cl. 34.
Egyptian Lacquer Mfg. Co., The, South Kearny, N.J. 191,686, ren. 1–5–65. Cl. 16.
Elastic Stop Nut Corp. of America, Union, N.J. 782,748, pub. 10–20–64. Cl. 21.
Electric Service Systems: *See*—
Minneapolis Scientific Controls Corp.
Electron Enterprises, Inc., Berwyn, Ill. 782,739, pub. 10–20–64. Multiple Class (Classes 21 and 36).
Elgin National Watch Co., Elgin, Ill. 782,824, pub. 10–20–64. Cl. 27.
Empress Novelty Jewelry Co.: *See*—
Maskit, Celia.
Emu Wools Ltd., London, England. 782,926, pub. 10–20–64. Cl. 43.
Epsco, Inc., from Gate City Oil Equipment Co., Inc., Atlanta, Ga. 782,770, pub. 10–20–64. Cl. 23.
Eskimo Pie Corp., Richmond, Va. 782,947, pub. 3–10–64. Cl. 46.
Eutectic Welding Alloys Corp., Flushing, N.Y. 782,850–51, pub. 10–20–64. Cl. 34.
Even-Heet Stainless Steel Co., Orlando, Fla. 670,040, canc. Cl. 13.
Excelsior Motor Co. Ltd., Birmingham, England. 669,819, canc. Cl. 19.
Fair Money Corp., New York, N.Y. 782,888, pub. 10–20–64. Cl. 38.
Famous Bathrobe Co., Inc., New York, N.Y. 669,949–51, canc. Cl. 39.
Fasco Industries, Inc., Rochester, N.Y. 783,023. Cl. 34.
Federal Cartridge Corp., to Winchester Repeating Arms Co., of New Haven, Conn., Minneapolis, Minn., to Olin Mathieson Chemical Corp., New York, N.Y. 191,722, ren. 1–5–65. Cl. 9.
Feng, Inc., Ft. Wayne, Ind. 670,003, canc. Cl. 50.
Ferry Cap and Set Screw Co., The, Cleveland, Ohio. 782,680, pub. 10–15–63. Cl. 13.
Field Enterprises, Inc., Chicago, Ill. 782,882, pub. 10–20–64. Cl. 38.
Filon Corp., Hawthorne, Calif. 782,672, pub. 10–20–64. Cl. 12.
Finch, Joseph S., and Co., New York, N.Y. 782,958, pub. 10–20–64. Cl. 49.
Fischer, Artur, d.b.a. (Artur Fischer, Feinmechanik, Plastikwerk Werkzeugbau), Tumlingen, Germany. 78,679, pub. 10–20–64. Cl. 13.





Fischer, Artur, Feinmechanik, Plastikwerk, Werkzeugbau: *See*—
Fischer, Artur.
Fletcher, Sarah S., d.b.a. The Blue Wave, to N. K. Wiggin and A. B. Wiggin, d.b.a. The Blue Wave, Kennebunk, Maine. 410,283, ren. 1–5–65. Cl. 30.
Flintkote Co., The: *See*—
Tile-Tex Co., The.
Flo Time Ticket Printer, Inc., Baltimore, Md. 782,819, pub. 10–20–64. Cl. 26.
Foster Grant Co., Inc., Leominster, Mass. 669,942, canc. Cl. 39.
Fourco Glass Co., Clarksburg, W. Va. 782,845, pub. 10–20–64. Cl. 33.
Fraser's, New York, N.Y. 782,794, pub. 10–20–64. Cl. 23.
French Vanilla Products Co., Inc., by Dodge & Olcott, Inc., New York, N.Y. 280,267, 12(c) pub. 1–5–65. Cl. 46.
Frick Co., Waynesboro, Pa. 782,780, pub. 10–20–64. Cl. 23.
Frick Co., Waynesboro, Pa. 782,789, pub. 10–20–64. Cl. 23.
Garberding, Waldo L., d.b.a. Twentieth Century Mfg. Co., Chicago, Ill., to Twentieth Century Mfg. Co., Libertyville, Ill. 412,547, ren. 1–5–65. Cl. 23.
Garcia Corp., The, Teaneck, N.J. 782,762, pub. 10–20–64. Cl. 22.
Gardner-Denver Co., Quincy, Ill. 782,799, pub. 10–20–64. Cl. 23.
Garrison, Earl W., Inc., Bridgeton, N.J. 782,617–18, pub. 10–20–64. Cl. 1.
Gelatin-Plus, El Segundo, Calif. 782,714, pub. 12–11–62. Cl. 18.
General American Credits, Columbus, Ohio. 782,993, pub. 10–20–64. Cl. 101.
General Preserve Co., Inc., Brooklyn, N.Y. 782,940, pub. 2–19–63. Cl. 46.
General Time Corp., New York, N.Y. 782,825, pub. 10–20–64. Cl. 27.
General Wig Manufacturers, Inc., Miami, Fla. 782,902, pub. 10–20–64. Cl. 40.
Gentex Corp., New York, N.Y. 782,765, pub. 10–20–64. Cl. 22.
Georgia Coated Fabrics Co., Inc., Atlanta, Ga. 782,908, pub. 10–20–64. Cl. 42.
Gibraltar Corrugated Paper Co., Inc., North Bergen, N.J. 669,743, canc. Cl. 2.
Gifford, Willard R., d.b.a. Gifford's Lapidary, Haysville, Kans. 669,749, canc. Cl. 5.
Gifford's Lapidary: *See*—
Gifford, Willard R.
Glazer's Wholesale Drug Co., Inc., Dallas, Tex. 734,669, canc. Cl. 48.
Glen Keith-Glenlivet Distillery Co., Keith, Scotland. 782,959, pub. 10–20–64. Cl. 49.
Globe Illumination Co., Gardena, Calif. 782,746, pub. 10–20–64. Cl. 21.
Golden Nugget Sweets Ltd., to Golden Nugget Sweets Ltd., San Francisco, Calif. 413,099, ren. 1–5–65. Cl. 46.
Golfsphere Co., Phoenix, Ariz. 782,761, pub. 10–20–64. Cl. 22.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 782,732, pub. 10–20–64. Cl. 21.
Gordon, George, Machine Co., Racine, Wis. 782,812, pub. 10–20–64. Cl. 26.
Goss Gas, Inc., Glenshaw, Pa. 669,908, canc. Cl. 34.
Gouverneur Cadwallader, d.b.a. Standard Shop Equipment Co., Inc., Solebury, Pa. 782,795, pub. 10–20–64. Cl. 23.
Gouverneur Iron Works, Inc., Gouverneur, N.Y. 782,769, pub. 10–1–63. Cl. 23.
Granco Inc., Grand Rapids, Mich. 782,855, pub. 10–20–64. Cl. 34.
Grand Prix Products: *See*—
Oasis Sponge Corp.
Grandwood Broadcasting Co., to Time-Life Broadcast, Inc., Grand Rapids, Mich. 563,182, new cert. Cl. 104.
Graniteville Co., Graniteville, S.C. 782,918, pub. 10–20–64. Cl. 42.
Grant, David, d.b.a. Nu-Life Vitamins Co., Glendale, Calif. 669,801, canc. Cl. 18.
Graphol Products Co., Inc., Brooklyn, N.Y., by Graphol Products Co., Hawthorne, N.J. 194,481, 12(c) pub. 1–5–65. Cl. 15.
Graphol Products Co.: *See*—
Graphol Products Co., Inc.
Great Lakes Carbon Corp., New York, N.Y. 782,625, pub. 10–20–64. Cl. 1.
Grey Eagles, Voluntary Asso. of Individual Persons, The, Palos Verdes Estates, Calif. 783,002, pub. 10–20–64. Cl. 200.
Gulden, Charles, Inc., to American Home Products Corp., New York, N.Y. 196,989, ren. 1–5–65. Cl. 46.
Gulf States Paper Corp., Tuscaloosa, Ala. 782,635, pub. 10–20–64. Cl. 2.
Gushner Bros., d.b.a. Boyd's, Philadelphia, Pa. 411,039, 12(c) pub. 1–5–65. Cl. 39.
H.D.T. Co. Factors, Inc., White Plains, N.Y. 782,961, pub. 1–19–60. Cl. 52.
Hale Co., Inc., East Arlington, Vt. 782,840, pub. 10–20–64. Cl. 32.
Hall, J. C., Co., The, Pawtucket, R.I. 782,877, pub. 10–20–64. Cl. 37.
Hanaway Lures: *See*—
Hanaway, Robert L.
Hanaway, Robert L., d.b.a. Hanaway Lures, Greensboro, N.C. 782,763, pub. 10–20–64. Cl. 22.
Hanes Hosiery Mills Co.: *See*—
Heyman & Bissinger Co.
Hank Roberts, Inc., Boulder, Colo. 782,764, pub. 10–20–64. Cl. 22.
Harrison, Harold A., Chicago, Ill. 782,630, pub. 10–20–64. Cl. 2.
Hartford Textile Corp., New York, N.Y. 782,922, pub. 10–20–64. Cl. 42.
Hartigan, Edward R., Springfield, Mass. 782,756, pub. 10–20–64. Cl. 22.
Hartz Mountain Products Corp., New York, N.Y. 782,948, pub. 10–20–64. Cl. 46.
Haveg Reinhold Inc., Santa Fe Springs, Calif. 782,657, pub. 10–20–64. Cl. 9.
Headhunter Studios, New York, N.Y. 669,921, canc. Cl. 38.
Hearn, James A., & Son, Inc., to City Stores Co., New York, N.Y. 189,613, new cert. Cl. 39.
Heede, B. M., Inc., Rye, N.Y. 782,666, pub. 10–20–64. Cl. 12.
Helm Universal Corp., The, Fairfield, Conn. 782,796, pub. 10–20–64. Cl. 23.
Hercules Tire & Rubber Co., The, Stamford, Conn. 782,857, pub. 6–23–64. Cl. 35.
Heyman & Bissinger Co., New York, N.Y., to Hanes Hosiery Mills Co., Winston-Salem, N.C. 191,350, ren. 1–5–65. Cl. 39.
Heyman Mfg. Co., Kenilworth, N.J. 782,750, pub. 10–20–64. Cl. 21.
Hicks & Otis Prints, Inc., Norwalk, Conn. 782,909, pub. 10–20–64. Cl. 42.
Hill, Amos T., New York, to Kittinger Co., Inc., Buffalo, N.Y. 413,323–4, ren. 1–5–65. Cl. 32.
Hocker, George M., d.b.a. Rockfield House, Claremont, Calif. 669,917, canc. Cl. 37.
Holmes Packing Corp., Eastport, Maine. 782,950, pub. 10–20–64. Cl. 46.
Holzer, Erich, Export Corp.: *See*—
Vitusa Corp.
Horn, William H., & Bro., Inc., Philadelphia, Pa. 782,921, pub. 10–20–64. Cl. 42.
Hotel & Restaurant Employees and Bartenders International Union (AFL–CIO), Cincinnati, Ohio. 782,887, pub. 10–20–64. Cl. 38.
Hough Mfg. Corp., Janesville, Wis. 783,009. Cl. 12.
Hughes Aircraft Co., Culver City, Calif. 782,729, pub. 3–31–64. Cl. 21.
Humble Oil & Refining Co., Houston, Tex. 782,704–5, pub. 10–20–64. Cl. 15.
Hunters Lodge, Inc., Alexandria, Va. 669,761–2, canc. Cl. 9.
Hygeno Litter Co., Cairo, Ill. 782,662, pub. 10–20–64. Cl. 10.
Hynson, Westcott & Dunning, to Hynson, Westcott & Dunning, Inc., Baltimore, Md. 197,189, ren. 1–5–65. Cl. 6.
Hynson, Westcott & Dunning, Inc.: *See*—
Hynson, Westcott & Dunning.
Indian Head Mills, Inc.: *See*—
Ulmann, Bernhard, Co., Inc.
Industrial Asphalt, Inc., from Colorpave, Inc., Van Nuys, Calif. 782,668, pub. 9–29–64. Cl. 12.
Inland Marine Corp., Minneapolis, Minn. 782,723, pub. 10–20–64. Cl. 19.
International Brotherhood of Electrical Workers, Washington, D.C. 190,689, 12(c) pub. 1–5–65. Cl. 38.
International Milling Co. Inc.: *See*—
Kretschmer Corp.
Kretschmer Wheat Germ Corp.
International Nickel Co., Inc., The, New York, N.Y. 782,853, pub. 10–20–64. Cl. 34.
International Paper Co., New York, N.Y. 782,880, pub. 10–20–64. Cl. 37.
International Patent Exchange Ltd. of Delaware, New York, N.Y. 782,991, pub. 10–20–64. Cl. 100.
International Society of Christian Endeavor, Columbus, Ohio. 408,366, ren. 1–5–65. Cl. 28.
Ironees Co., The, Philadelphia, Pa. 782,904, pub. 10–20–64. Cl. 40.
Isaacs, Joel, Shirt Co., to Levin & Hecht, Inc., New York, N.Y. 412,398, ren. 1–5–65. Cl. 39.
Isaacs, Joel, Shirt Co., to Levin & Hecht, Inc., New York, N.Y. 413,019, ren. 1–5–65. Cl. 39.
Jackson, George McStay, Chicago, Ill. 782,867, pub. 10–20–64. Cl. 37.
Jambor Tool and Stamping Co., Milwaukee, Wis. 411,191, 12(c) pub. 1–5–65. Cl. 23.
Jannes Associates, Inc., Chicago, Ill. 783,025. Cl. 37.
Jeffries Banknote Co., Los Angeles, Calif. 782,868, pub. 10–20–64. Cl. 37.
Jeffrey Galion Mfg. Co., Columbus, Ohio. 782,790, pub. 10–20–64. Cl. 23.
Jiffy, Inc., Philadelphia, Pa. 782,695, pub. 10–20–64. Cl. 13.
Johnson & Johnson, New Brunswick, N.J. 782,935, pub. 10–20–64. Cl. 44.
Kaufman, Zenn, d.b.a. Sellorama Services, New York, N.Y. 670,019, canc. Cl. 101.
Kepec Chemical Corp.: *See*—
Kepec Co., The.
Kepec Co., The, to Kepec Chemical Corp., Milwaukee, Wis. 190,746, ren. 1–5–65. Cl. 16.
Key Products Co., Detroit, Mich. 670,050, canc. Cl. 50.
King Korn Stamp Co., Chicago, Ill. 782,996, pub. 10–20–64. Cl. 101.
Kittinger Co., Inc.: *See*—
Hill, Amos T.
Kleer-Vu Industries, Inc., New York, N.Y. 782,639, pub. 10–20–64. Cl. 8.
Klein, L., Inc., Chicago, Ill. 222,872, canc. Cl. 39.
Klein's, Mrs.: *See*—
Klein's, Mrs., Inc.
Klein's, Mrs., Inc., from Mrs. Klein's, Chicago, Ill. 669,975, canc. Cl. 46.
Knapp-Sherrill Co., Donna, Tex. 782,944, pub. 10–20–64. Cl. 46.
Koeppel Steel Products, Inc., Ossining, N.Y. 55,806, canc. Cl. 32.
Kolor Kee Co., Saginaw, Mich. 783,024. Cl. 36.
Koos, N. S., & Son Co., Kenosha, Wis. 782,658, pub. 10–20–64. Cl. 10.

Koppers Co., Inc., Pittsburgh, Pa. 782,644, pub. 10–20–64. Cl. 6.

Koppers Co., Inc., Pittsburgh, Pa. 782,708, pub. 10–20–64. Cl. 16.

Kretschmer Corp., to International Milling Co. Inc., Minneapolis, Minn. 571,651, new certificate. Cl. 46.

Kretschmer Wheat Germ Corp., to International Milling Co. Inc., Minneapolis, Minn. 693,947, new certificate. Cl. 46.

Kretschmer Wheat Germ Corp., to International Milling Co. Inc., Minneapolis, Minn. 770,021, new certificate. Cl. 46.

Krueger, Richard G., Inc., New York, N.Y. 782,755, pub. 10–20–64. Cl. 22.

Kuiken, Sam E., d.b.a. Dial Spray Mfg. Co., St. Petersburg, Fla. 782,682, pub. 10–20–64. Cl. 13.

L. F. Beverage Corp., Glen Cove, N.Y. 782,938, pub. 10–20–64. Cl. 45.

Lalance & Grosjean Mfg. Co., Woodhaven, N.Y. 432,404, canc. Cl. 44.

Lalance & Grosjean Mfg. Co., Woodhaven, N.Y. 437,448, canc. Cl. 23.

Lalance & Grosjean Mfg. Co., Woodhaven, and New York, N.Y. 438,571, canc. Cl. 13.

Landis, Henry: *See*—
Landis, Henry, Inc.

Landis, Henry, Inc., from Henry Landis, New York, N.Y. 782,829, pub. 10–20–64. Cl. 28.

Lanvin, Jeanne, Societe Anonyme, Paris, France. 782,830, pub. 10–20–64. Multiple Class (Classes 39 and 28).

Larus & Brother Co., Richmond, Va. 782,711, pub. 10–20–64. Cl. 17.

Lauder, Estee, Inc., New York, N.Y. 782,980, pub. 10–20–64. Cl. 51.

Leach Health Furniture Co., from Miracle Health Furniture Co., Birmingham, Mich. 669,962, canc. Cl. 44.

Le Bouchage Mecanique (L.B.M.), Societe Anonyme, Neuilly-sur-Seine (Seine), France. 782,966, pub. 10–20–64. Cl. 50.

Leonard, Henry, and Thomas, Inc., Greensboro, N.C. 782,655, pub. 10–20–64. Cl. 8.

Les Parfums Jacques Fath, Societe Anonyme, Bois-Colombes (Seine), France. 782,974, pub. 10–20–64. Cl. 51.

Levin & Hecht, Inc.: *See*—
Isaacs, Joel, Shirt Co.

Link-Belt Co., Chicago, Ill. 782,787, pub. 10–20–64. Cl. 23.

Link-Belt Co., Chicago, Ill. 782,806, pub. 10–20–64. Cl. 23.

Lockwood, Lloyd K., d.b.a. Saginaw Roofing and Contracting Co., Saginaw, Mich. 783,004. Cl. 12.

Logetronics, Inc., Alexandria, Va. 782,809, pub. 10–20–64. Cl. 26.

Lyons Distributing, Inc., Dallas, Tex. 782,667, pub. 10–20–64. Cl. 12.

M.G., Inc., Houston, Tex. 782,946, pub. 10–20–64. Cl. 46.

Macklanburg Duncan Co., Oklahoma City, Okla. 782,706, pub. 10–20–64. Cl. 15.

Macy, R. H., & Co., Inc., New York, N.Y. 192,344, ren. 1–5–65. Cl. 39.

Macy, R. H., & Co., Inc., New York, N.Y. 192,561, ren. 1–5–65. Cl. 39.

Magram, Lew, New York, N.Y. 669,930, canc. Cl. 39.

Maier & Berkele, Inc., Atlanta, Ga. 669,889, canc. Cl. 28.

Maintenance Co., Inc., The, Long Island City, N.Y. 782,731, pub. 10–20–64. Cl. 21.

Malco Mfg. Co., Inc., Chicago, Ill. 782,735, pub. 10–20–64. Cl. 21.

Mallory Hat Co., The, by John B. Stetson Co., Philadelphia, Pa. 192,606, 12(c) pub. 1–5–65. Cl. 39.

Mamie's Inc., Alvin, Tex. 782,986, pub. 10–20–64. Cl. 52.

Mammoth Industries, Inc., Minneapolis, Minn. 782,856, pub. 10–20–64. Cl. 34.

Mamone, Vito, d.b.a. Avernus Records, North Troy, N.Y. 782,862, pub. 10–20–64. Cl. 36.

Manchester Knitted Fashions, Inc., to E-C-M Corp., Manchester, N.H. 411,127, ren. 1–5–65. Cl. 39.

Maradel Products, Inc., New York, N.Y. 782,975, pub. 10–20–64. Cl. 51.

Marado Trading Corp., New York, N.Y. 669,866, canc. Cl. 26.

Marathon Corp.: *See*—
Marathon Paper Mills Co.

Marathon Paper Mills Co., to Marathon Corp., Menasha, Wis., to American Can Co., New York, N.Y. 413,384, ren. 1–5–65. Cl. 37.

Marion Laboratories, Inc., from Marion Laboratories, Inc., Kansas City, Mo. 782,885, pub. 10–20–64. Cl. 38.

Marshall, C. & E., Co., Chicago, Ill. 782,727, pub. 7–3–62. Cl. 21.

Marx, Louis, & Co., Inc., New York, N.Y. 782,754, pub. 10–20–64. Cl. 22.

Maschinenfabrik Augsburg-Nurnberg, A.G., Nurnberg, Germany. 782,721, pub. 10–20–64. Cl. 19.

Maskit, Celia, d.b.a. Empress Novelty Jewelry Co., New York, N.Y. 669,891, canc. Cl. 28.

Maurin, Dan, d.b.a. Motive Petrochemicals Co., to Battenfeld Grease & Oil Corp., Inc., Kansas City, Mo. 782,700, pub. 10–20–64. Cl. 15.

McArthur, Rose, Salon, Inc., San Francisco, Calif. 782,970, pub. 10–20–64. Multiple Class (Classes 51 and 52).

McCloskey Varnish Co., Philadelphia, Pa. 782,665, pub. 10–20–64. Cl. 11.

Mead Johnson & Co., Evansville, Ind. 669,808–9, canc. Cl. 18.

Mead Johnson & Co., Evansville, Ind. 669,811, canc. Cl. 18.

Megowen Associates, Inc., Carlisle, Mass. 782,953, pub. 10–20–64. Cl. 46.

Merck & Co., Inc.: *See*—
Sharp & Dohme, Inc.

Mercury Air Parts Mfg. Co., Inc., Culver City, Calif. 782,687, pub. 10–20–64. Cl. 13.

Mercury Varnish Co. Ltd., St. Catharines, Ontario, Canada. 782,710, pub. 10–20–64. Cl. 16.

Metrol Corp., Houston, Tex. 782,693, pub. 10–20–64. Cl. 13.

Metrol Corp., Houston, Tex. 782,784, pub. 10–20–64. Cl. 23.

Metrol Corp., Houston, Tex. 782,817, pub. 10–20–64. Cl. 26.

Metrol Corp., Houston, Tex. 782,849, pub. 10–20–64. Cl. 34.

Metro-Suburbia, Inc., New York, N.Y. 782,994, pub. 10–20–64. Cl. 101.

Michigan Pipe Co., The, Ferndale, Mich. 782,858, pub. 10–20–64. Cl. 35.

Mid-States Steel & Wire Co., Crawfordsville, Ind. 782,697, pub. 10–20–64. Cl. 14.

Millard Clothes, Inc., New York, N.Y. 782,890, pub. 10–20–64. Cl. 39.

Mil-Flo, Inc., Dayton, Ohio. 782,681, pub. 4–21–64. Cl. 13.

Milkmaid Inc., Paterson, N.J., to Milkmaid, Inc., New York, N.Y. 409,327, ren. 1–5–65. Cl. 52.

Miller, Daniel, Co., Baltimore, Md. 231,021, canc. Cl. 39.

Minerals & Chemicals Philipp Corp., Menlo Park, N.J. 782,624, pub. 10–20–64. Cl. 1.

Minerals & Chemicals Philipp Corp., Menlo Park, N.J. 782,663, pub. 10–20–64. Cl. 10.

Minneapolis Scientific Controls Corp., d.b.a. Electric Service Systems, Minneapolis, Minn. 782,730, pub. 10–20–64. Cl. 21.

Minnesota Mining and Mfg. Co., St. Paul, Minn. 782,640–1, pub. 10–20–64. Cl. 4.

Miracle Health Furniture Co.: *See*—
Leach Health Furniture Co.

Mr. Robot, Inc., Bala Cynwyd, Pa. 782,786, pub. 10–20–64. Cl. 23.

Mixermobile Manufacturers, by Mixermobile Manufacturers, Inc., Portland, Oreg. 409,059, 12(c) pub. 1–5–65. Cl. 23.

Mixermobile Manufacturers, Inc.: *See*—
Mixermobile Manufacturers.

Molecular Chemicals, Inc., New Orleans, La. 782,699, pub. 8–18–64. Cl. 15.

Monarch Machine Tool Co., The, Sidney, Ohio. 782,808, pub. 10–20–64. Cl. 23.

Monarch Road Machinery Co., Grand Rapids, Mich. 782,802, pub. 10–20–64. Cl. 23.

Mono-Seal Products: *See*—
D'Ambrosio, Emanuel.

Monsanto Chemical Co.: *See*—
Monsanto Co.

Monsanto Co., St. Louis, Mo. 782,660, pub. 10–20–64. Cl. 10.

Monsanto Co., from Monsanto Chemical Co., St. Louis, Mo. 782,916, pub. 10–20–64. Cl. 42.

Montres Helvetia Societe d'Horlogerie La Generale, Reconvilier, Switzerland. 782,822, pub. 10–20–64. Cl. 27.

Mooo Cho Beverages: *See*—
Park Beverages.

Moore, Thomas, to Coca-Cola Bottling Co. of Minnesota, Inc., Minneapolis, Minn. 196,870, ren. 1–5–65. Cl. 45.

Morris Plastic Corp., Great Neck, N.Y. 669,831, canc. Cl. 22.

Motive Petrochemicals Co.: *See*—
Maurin, Dan.

Mountain City Mill Co., Inc., Chattanooga, by Martha White Mills, Inc., Nashville, Tenn. 188,519, 12(c) pub. 1–5–65. Cl. 46.

Mueller, V., & Co., Chicago, Ill. 782,703, pub. 7–14–64. Cl. 15.

Muench-Kreuzer Candle Co., Inc., Syracuse, N.Y. 783,011. Cl. 15.

Mummert-Dixon Co., Hanover, Pa. 782,773–4, pub. 10–20–64. Cl. 23.

Murphy, G. C., Co., McKeesport, Pa. 782,832, pub. 10–20–64. Cl. 29.

Narragansett Wire Co., Pawtucket, R.I. 669,826, canc. Cl. 21.

National Gypsum Co., Buffalo, N.Y. 782,678, pub. 10–20–64. Cl. 12.

National Queen's Kitchens, Inc., d.b.a. The National Queen's Kitchen Inc., Mount Prospect, Ill. 669,983, canc. Cl. 46.

National Seal Works, Inc., Richmond, Va. 782,965, pub. 10–20–64. Cl. 50.

National Spinning Co., Inc., New York, N.Y. 782,924, pub. 10–20–64. Cl. 43.

National-U.S. Radiator Corp., Johnstown, Pa. 669,907, canc. Cl. 34.

Nease Chemical Co., Inc., State College, Pa. 782,649, pub. 10–20–64. Cl. 6.

Neet-A-Pak Products, Brooklyn, N.Y. 782,963, pub. 10–20–64. Cl. 50.

Nelson, H. W., Co., The, Detroit, Mich. 669,797, canc. Cl. 18.

Nemico Corp., Apponaug, R.I. 782,689, pub. 10–20–64. Cl. 18.

Nestle Co., Inc., The, White Plains, N.Y. 782,954, pub. 10–20–64. Cl. 46.

Never-Sees Compound Corp., Broodview, Ill. 783,012. Cl. 15.

New York Herald Tribune, Inc., New York, N.Y. 669,923, canc. Cl. 38.

Norcross, Inc., New York, N.Y. 782,864, pub. 10–20–64. Cl. 37.

Norwich Pharmacal Co., The, Norwich, N.Y. 46,159, 12(c) pub. 1–5–65. Cl. 18.

Nu-Life Vitamins Co.: *See*—
Grant, David.

Nunes, Indalecio, Guadalajara, Mex. 410,046, ren. 1–5–65. Cl. 49.

Nylox Corp., Aracadia, Calif. 669,818, canc. Cl. 19.

Oasis Sponge Corp., d.b.a. Grand Prix Products, Millis, Mass. 782,984, pub. 9–1–64. Cl. 52.

Ocean Spray Cranberries, Inc.: *See*—
United Cape Cod Cranberry Co., The.

Oil Specialties & Refining Co., Inc., Brooklyn, N.Y. 782,771, pub. 10–20–64. Cl. 23.

Old Town Corp., Brooklyn, N.Y. 782,881, pub. 10–20–64. Cl. 37.





Olin Mathieson Chemical Corp.: *See*—
Winchester Repeating Arms Co.
Federal Cartridge Corp.

Olin Mathieson Chemical Corp., New York, N.Y. 782,716, pub. 10–20–64. Cl. 18.

O'Neill Brands, Inc.: *See*—
Soap Specialties, Inc.

Onondaga Pottery Co., Syracuse, N.Y. 782,836, pub. 10–20–64. Cl. 30.

Ora-Dent Corp., Lodi, Calif. 782,978, pub. 10–20–64. Cl. 51.

Orchard Hill Farms Candy Co., from Chesterton Candy Co., Chicago, Ill. 782,949, pub. 10–20–64. Cl. 46.

Organic Development Corp., Garden Grove, Calif. 669,857, canc. Cl. 23.

Ottenheimer Publishers, Inc., Owings Mills, Md. 782,861, pub. 10–20–64. Cl. 36.

Ozark Forest Products, Inc., Fayetteville, Ark. 782,964, pub. 10–20–64. Cl. 50.

Pall Corp., Glen Cove, N.Y., from Trinity Equipment Corp., Cortland, N.Y. 782,848, pub. 10–20–64. Cl. 34.

Papertronics, Inc., Oswego, N.Y. 782,865, pub. 10–20–64. Cl. 37.

Park Beverages, d.b.a. Mooo Cho Beverages, Ridgefield Park, N.J. 782,937, pub. 2–18–64. Cl. 45.

Parke, Davis & Co., Detroit, Mich. 669,800, canc. Cl. 18.

Pasadena Junior Chamber of Commerce, Pasadena, Calif. 670,034, canc. Cl. 107.

Patons & Baldwins Ltd.: *See*—
Baldwin, J. & J.

Paul Chemical Co., Buena Park, Calif. 782,820, pub. 10–20–64. Cl. 26.

Penney, J. C., Co., New York, N.Y. 782,901, pub. 10–20–64. Cl. 39.

Penrod Corp. of Anderson, Muncie, Ind. 782,811, pub. 10–20–64. Cl. 26.

Perel & Lowenstein, Inc., Memphis, Tenn. 669,887, canc. Cl. 28.

Peterson and Huff, Kansas City, Mo. 782,676, pub. 10–20–64. Cl. 12.

Philco Corp., by Philco Corp., Philadelphia, Pa. 412,317, 12(c) pub. 1–5–65. Cl. 38.

Phillips, Ed., & Sons Co., Minneapolis, Minn. 782,955, pub. 10–20–64. Cl. 49.

Pitman Laboratory Sales, Inc., Philadelphia, Pa. 670,010, canc. Cl. 52.

Plastic Jewel Parts Corp., New York, N.Y. 782,962, pub. 10–20–64. Cl. 50.

Plastic Products of Texas, Inc., Dallas, Tex. 782,671, pub. 10–20–64. Cl. 12.

Plee-sing Corp., The, New York, N.Y., to Plee-sing, Inc., Evanston, Ill. 196,082, ren. 1–5–65. Cl. 46.

Plee-sing, Inc.: *See*—
Plee-sing Corp., The.

Polymer Corp., The, Reading, Pa. 782,620, pub. 10–20–64. Cl. 1.

Pond, Frank N., Long Island City, N.Y. 782,936, pub. 11–6–62. Cl. 45.

Potter-McCune Co., McKeesport, Pa. 782,997, pub. 10–20–64. Cl. 101.

Precision Screen Machines Inc., Hawthorne, N.J. 782,781, pub. 10–20–64. Cl. 23.

Prescolite Mfg. Corp., San Leandro, Calif. 782,745, 10–20–64. Cl. 21.

Pressed Steel Tank Co., Milwaukee, Wis. 193,706, ren. 1–5–65. Cl. 2.

Professional Men's Association, Inc., Dallas, Tex. 782,869, pub. 10–20–64. Cl. 37.

Quaker Maid Kitchens, Inc., Lessport, Pa. 782,841, pub. 10–20–64. Cl. 32.

Quality Courts Motels, Inc., Daytona Beach, Fla. 782,886, pub. 10–20–64. Cl. 38.

Quality Courts Motels, Inc., Daytona Beach, Fla. 782,992, pub. 10–20–64. Cl. 100.

Quality Courts Motels, Inc., Daytona Beach, Fla. 783,001, pub. 10–20–64. Cl. 200.

Quenot & Cie S.a.r.l., Besancon, Doubs, France. 782,821, pub. 10–20–64. Cl. 26.

Radiator Specialty Co., Charlotte, N.C. 782,645, pub. 10–20–64. Cl. 6.

Radio Engineering Laboratories, Inc.: *See*—
Dynamics Corp. of America.

Rains, S. E., Co.: *See*—
Rains, Solomon E.

Rains, S. E., Co., Inc.: *See*—
Rains, Solomon E.

Rains, Solomon E., d.b.a. S. E. Rains Co., to S. E. Rains Co., Inc., New York, N.Y. 197,045, ren. 1–5–65. Cl. 39.

Reduc-O-Roll Corp., Norfolk, Va. 669,966, canc. Cl. 44.

Resinous Products & Chemical Co., The, Philadelphia, Pa., to Ciba Ltd., Basel, Switzerland. 410,213, ren. 1–5–65. Cl. 5.

Respondek, John E., Detroit, Mich. 670,022, canc. Cl. 101.

Revere Copper and Brass Inc., New York, N.Y. 782,694, pub. 10–20–64. Cl. 13.

Revere Knitting Mills Factory Store, Inc., Malden, Mass. 782,930, pub. 10–20–64. Cl. 43.

Rhodes, M. H., Inc., Hartford, Conn. 782,813, pub. 10–20–64. Cl. 26.

Rhodiaceta, Societe, Paris, France. 753,383, canc. Cl. 39.

Rhodiaceta, Societe, Paris, France. 753,396, canc. Cl. 43.

Rhodiaceta, Societe, Paris, France. 754,254–5, canc. Cl. 39.

Rhodiaceta, Societe, Paris, France. 754,266, canc. Cl. 42.

Rhodiaceta, Societe, Paris, France. 754,282–3, canc. Cl. 43.

Rhodiaceta, Societe, Paris, France. 759,747, canc. Cl. 42.

Rhodiaceta, Societe, Paris, France. 758,479, canc. Cl. 42.

Ricci, Nina, S.A.R.L., Paris, France. 782,889, pub. 1–15–63. Cl. 39.

Rider, Kenneth N., Co., Inc., Trafalgar, Ind. 669,978, canc. Cl. 46.

Rieber, Frank, d.b.a. Rieber Research Laboratory, New York, N.Y., by United Control Corp., Redmond, Wash. 426,355, 12(c) pub. 1–5–65. Cl. 21.

Rieber, Frank, d.b.a. Rieber Research Laboratory, New York, N.Y., by United Control Corp., Redmond, Wash. 428,453, 12(c) pub. 1–5–65. Cl. 21.

Rieber Research Laboratory: *See*—
Rieber, Frank.

Rixon Electronics, Inc., Silver Spring, Md. 782,725, pub. 10–20–64. Cl. 21.

Robert and Mikael's Industries, Garden Grove, Calif. 669,824, canc. Cl. 21.

Robertson, H. H., Co., Pittsburgh, Pa. 782,674, pub. 7–7–64. Cl. 12.

Rockfield House: *See*—
Hocker, George M.

Rol-Ruler Co., Riegelsville, Pa. 782,815, pub. 10–20–64. Cl. 26.

Romique Fabrics, Inc., New York, N.Y. 782,907, pub. 10–20–64. Cl. 42.

Rootes Ltd., London, England. 783,013. Cl. 19.

Ropp Pipes, Ltd., London, England. 410,611, 12(c) pub. 1–5–65. Cl. 8.

Ross & Co.: *See*—
Ross, Robert C.

Ross, Robert C., d.b.a. Ross & Co., Minneapolis, Minn. 669,996, canc. Cl. 46.

Royal Milling Co., by Martha White Mills, Inc., Nashville, Tenn. 192,721, 12(c) pub. 1–5–65. Cl. 46.

Rubon, Inc., Independence, Mo. 782,831, pub. 10–20–64. Cl. 29.

Rybert, Thomas F., & Co., by T. F. Rybert, d.b.a. Rybert Printing Co., Atlanta, Ga. 183,767, 12(c) pub. 1–5–65. Cl. 37.

SCM Corp., New York, N.Y. 782,785, pub. 9–1–64. Cl. 23.

S.p.A. Lanifici Riuniti Bona e Delleani Carignano (Torino), Carignano, Turin, Italy. 669,956, canc. Cl. 42.

Saginaw Roofing and Contracting Co.: *See*—
Lockwood, Lloyd K.

Sauquoit Fibers Co., Scranton, Pa. 782,925, pub. 10–20–64. Cl. 43.

Sbicca of California, El Monte, Calif. 669,947, canc. Cl. 39.

Scandia Trading Co., Inc., Lynnfield, Mass. 782,898, pub. 10–20–64. Cl. 39.

Schenley Distillers, Inc., New York, N.Y. 782,957, pub. 10–20–64. Cl. 49.

Schering Corp., Bloomfield, N.J. 669,802, canc. Cl. 18.

Schmid, Arthur W., Co., Pittsburgh, Pa. 782,776, pub. 10–20–64. Cl. 23.

Schmid, Julius, Inc., New York, N.Y. 782,933, pub. 10–20–64. Cl. 44.

Schmidt, A. E., Co., St. Louis, Mo. 670,035, canc. Cl. 107.

Scott, O. M., and Sons Co., Marysville, Ohio. 782,659, pub. 10–20–64. Cl. 16.

Scripto, Inc.: *See*—
Scripto Mfg. Co.

Scripto Mfg. Co., to Scripto, Inc., Atlanta, Ga. 196,587, ren. 1–5–65. Cl. 37.

Scullin, James C., d.b.a. Cardinal Machine Co., Glendale, Calif. 782,801, pub. 10–20–64. Cl. 23.

Sea and Ski Co.: *See*—
Botany Industries, Inc.

Seagram, Joseph E., & Sons, Inc., New York, N.Y. 782,956, pub. 10–20–64. Cl. 49.

Seinsheimer, H. A., Co., The, Cincinnati, Ohio. 409,543, 12(c) pub. 1–5–65. Cl. 39.

Sellorama Services: *See*—
Kaufman, Zenn.

Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 413,546, ren. 1–5–65. Cl. 18.

Simonds Saw and Steel Co., Fitchburg, Mass. 196,882, ren. 1–5–65. Cl. 23.

Simonds Saw and Steel Co., Fitchburg, Mass. 196,889, ren. 1–5–65. Cl. 23.

Simmons-Boardman Publishing Co., by Simmons-Boardman Publishing Corp., New York, N.Y. 249,761, 12(c) pub. 1–5–65. Cl. 38.

Simonin's, C. F., Sons, Inc., Philadelphia, Pa. 192,897, ren. 1–5–65. Cl. 46.

Simpson Timber Co., Seattle, Wash. 782,669–70, pub. 10–20–64. Cl. 12.

Singer Co., The: *See*—
Singer Mfg. Co., The.

Singer Mfg. Co., The, Elizabeth, N.J., and New York, N.Y., to The Singer Co., New York, N.Y. 193,717, ren. 1–5–65. Cl. 2.

Sleevlok Corp., Chicago, Ill. 782,788, pub. 10–20–64. Cl. 23.

Slendercycle Corp., New York, N.Y. 669,834, canc. Cl. 22.

Slenderella Systems, Inc., Stamford, Conn. 669,829, canc. Cl. 22.

Smallman, I., & Sons Co., New York, N.Y. 669,747, canc. Cl. 3.

Smithers, John A., Moline, Ill. 782,934, pub. 10–20–64. Cl. 44.

Soap Specialties, Inc., d.b.a. O'Neill Brands, Inc., Philadelphia, Pa. 782,969, pub. 2–26–63. Cl. 51.

Socony Mobil Oil Co., Inc., New York, N.Y. 782,661, pub. 10–20–64. Cl. 10.

Solarflo Co., Inc., Glendora, Calif. 782,852, pub. 10–20–64. Cl. 34.

Solo Products Corp., New York, N.Y. 782,906, pub. 10–20–64. Cl. 40.

Som Industria e Comercio S.A., Rio de Janeiro, Brazil. 782,859, pub. 10–20–64. Cl. 36.

Sooty Concessions Ltd., London, England. 670,011, canc. Cl. 52.

Spectator, Inc., Easley, S.C. 669,934, canc. Cl. 39.

Speedry Chemical Products, Inc., Glendale, N.Y. 782,875, pub. 10–20–64. Cl. 37.

Sperry Rand Corp., New York, N.Y. 782,839, pub. 10–20–64. Cl. 32.
Spice Club Foods, Inc., Long Island City, N.Y. 782,943, pub. 10–20–64. Cl. 46.
Stahly, Inc., South Bend, Ind. 782,778, pub. 10–20–64. Cl. 23.
Standard Chemical Products, Inc., Hoboken, N.J. 782,989, pub. 10–20–64. Cl. 52.
Standard Coosa Thatcher Co., Chattanooga, Tenn. 782,928, pub. 10–20–64. Cl. 43.
Standard Shop Equipment Co., Inc.: *See*—
Gouverneur Cadwallader.
Stanley, John T., Co., Inc.: *See*—
Wineburgh Bros.
Stanley, John T., Co., Inc., New York, N.Y. 195,251, ren. 1–5–65. Cl. 52.
Stanley, John T., Co., Inc., New York, N.Y. 197,281, ren. 1–5–65. Cl. 52.
Star Brush Mfg. Co., Inc., Boston, Mass. 670,046, canc. Cl. 29.
Star Cutter Co., Farmington, Mich. 783,017. Cl. 23.
Stein Bakers: *See*—
Stein, Morris M.
Stein, Morris M., d.b.a. Stein Bakers, Brooklyn, N.Y. 669,982, canc. Cl. 46.
Sterilon Corp., Buffalo, N.Y. 782,932, pub. 10–20–64. Cl. 44.
Stetson Corp., Lincoln, Ill. 782,837, pub. 10–20–64. Cl. 30.
Stetson, John B., Co.: *See*—
Mallory Hat Co., The.
Stevens-Root Co., Chicago, Ill. 362,534, canc. Cl. 13.
Stoelting Brothers Co., Kiel, Wis. 669,639, canc. Cl. 23.
Stone Mfg. Co., Greenville, S.C. 782,892, pub. 10–20–64. Cl. 39.
Strandlund Homes Corp., Washington, D.C. 782,673, pub. 10–20–64. Cl. 12.
Strawsine Mfg. Co., Corunna, Mich. 782,720, pub. 11–20–62. Cl. 19.
Studebaker Corp., from Studebaker-Packard Corp., South Bend, Ind. 782,698, pub. 10–20–64. Cl. 15.
Studebaker-Packard Corp.: *See*—
Studebaker Corp.
Summit National Holding Co., Akron, Ohio. 782,998, pub. 10–20–64. Cl. 102.
Sunday School House, The, Glendale, Calif. 782,960, pub. 10–20–64. Cl. 50.
Swank, Inc., Attleboro, Mass. 782,977, pub. 10–20–64. Cl. 51.
Sweetheart Plastics, Inc., Wilmington, Mass. 782,968, pub. 10–20–64. Cl. 50.
Swift Instruments, Inc., Boston, Mass. 782,827, pub. 10–20–64. Cl. 27.
Swift, M., & Sons, Inc., Hartford, Conn. 670,041, canc. Cl. 14.
Tanbro Fabrics Corp., New York, N.Y. 782,914, pub. 10–20–64. Cl. 42.
Teaneck Chemical Co., Inc., Carlstadt, N.J. 782,651–2, pub. 10–20–64. Cl. 6.
Tebbe, Charles B., Alexandria, Va. 782,637, pub. 10–20–64. Cl. 3.
Teenform, Inc., New York, N.Y. 783,026. Cl. 39.
Terrell Corp., The, Wilmington, Mass. 782,643, pub. 10–20–64. Cl. 5.
Testagar & Co., Inc., Detroit, Mich. 669,804, canc. Cl. 18.
Texas Bakers, San Antonio, Tex. 419,026, canc. Cl. 46.
Texsteam Corp., Houston, Tex. 782,688, pub. 10–20–64. Cl. 13.
Thiokol Chemical Corp., Bristol, Pa. 782,722, pub. 10–20–64. Cl. 19.
Thrift Town U.S.A. Inc., Brooklyn, N.Y. 782,751, pub. 10–20–64. Cl. 22.
Thurnauer, A. F., Zurich, Switzerland. 782,626, pub. 10–20–64. Cl. 1.
Tiffany Tile Corp., Tampa, Fla. 782,675, pub. 10–20–64. Cl. 12.
Tile-Tex Co., The, Chicago Heights, Ill., to The Flintkote Co., New York, N.Y. 410,176, ren. 1–5–65. Cl. 12.
Time-Life Broadcast, Inc.: *See*—
Grandwood Broadcasting Co.
Todd Chemical Co., Inc., Great Neck, N.Y. 782,642, pub. 10–20–64. Cl. 4.
Tourmatic, Inc., San Francisco, Calif. 782,860, pub. 10–20–64. Cl. 36.
Toyota Motor Sales, U.S.A., Inc., Los Angeels, Calif. 782,738, pub. 10–20–64. Cl. 21.
Transitel International Corp., The, Paramus, N.J. 782,734, pub. 10–6–64. Multiple Class (Classes 21 and 26).
Trimount Clothing Co., Inc., Boston, Mass. 670,049, canc. Cl. 42.
Trinity Equipment Corp.: *See*—
Pall Corp.
Trostel, Albert, & Sons Co., Milwaukee, Wis. 782,628, pub. 10–20–64. Cl. 1.
Tru-Buck, Inc., Elkhart, Ind. 782,744, pub. 10–20–64. Cl. 21.
Turak, Anthony, d.b.a. Turak Co., Cleveland, Ohio. 782,690, pub. 10–20–64. Cl. 13.
Turak Co.: *See*—
Turak, Anthony.
Twentieth Century Mfg. Co.: *See*—
Garberding, Waldo L.
Ullmann, Bernhard, Co. Inc., by Indian Head Mills, Inc., New York, N.Y. 192,448, 12(c) pub. 1–5–65. Cl. 22.
United Cape Cod Cranberry Co., The, Boston and South Hanson, to Ocean Spray Cranberries, Inc., Hanson, Mass. 196,795, ren. 1–5–65. Cl. 46.
United Chair Co., Leeds, Ala. 782,791, pub. 10–20–64. Cl. 23.
United Control Corp.: *See*—
Rieber, Frank.
United Gas Corp., Shreveport, La. 782,810, pub. 10–20–64. Cl. 26.
United Merchants and Manufacturers, Inc., New York, N.Y. 782,923, pub. 10–20–64. Cl. 42.
United States Box Co., Brooklyn, N.Y. 782,873, pub. 10–20–64. Cl. 37.
United States Gypsum Co., Chicago, Ill. 782,677, pub. 10–20–64. Cl. 12.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 412,165, ren. 1–5–65. Cl. 18.
Vermont American Corp., Louisville, Ky. 782,797–8, pub. 10–20–64. Cl. 23.
Vermont Marble Co., Proctor, Vt. 782,803–4, pub. 10–20–64. Cl. 23.
Vicon Instrument Co., The, Colorado Springs, Colo. 782,733, pub. 10–20–64. Cl. 21.
Victoreen Instrument Co., The, Cleveland, Ohio. 782,818, pub. 10–20–64. Cl. 26.
Vikan Nutritional Laboratories, The, Burbank, Calif. 669,920, canc. Cl. 38.
Vitamix Corp., Philadelphia, Pa. 669,795, canc. Cl. 18.
Vitramon, Inc., Monroe, Conn. 782,743, pub. 10–20–64. Cl. 21.
Vitusa Corp., from Erich Holzer Export Corp., New York, N.Y. 782,715, pub. 10–20–64. Cl. 18.
Von Burg, Emil, d.b.a. American Grana Watch Co., New York, N.Y., by Certina, Kurth Freres, S.A., Grenchen, Switzerland. 401,762, 12(c) pub. 1–5–65. Cl. 27.
Vreeco Products Co., Newark, N.J. 669,775, canc. Cl. 15.
Vulcanized Rubber and Plastics Co., Morrisville, Pa. 782,903, pub. 10–20–64. Cl. 40.
Walker, Crosweller & Co. Ltd., Cheltenham, England. 407,881, 12(c) pub. 1–5–65. Cl. 26.
Wamesit Sales Co., Inc., Lowell, Mass. 669,948, canc. Cl. 39.
Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. 782,718–19, pub. 10–20–64. Cl. 18.
Warwick Co., The, Warwick, R.I. 782,691, pub. 10–20–64. Cl. 13.
Wayne Home Equipment Co., Inc., Fort Wayne, Ind. 782,854, pub. 10–20–64. Cl. 34.
Western Hills Hotel, Inc., The, d.b.a. The Western Hills Hotel, Fort Worth, Tex. 670,017, canc. Cl. 100.
Western Hills Hotel, The: *See*—
The Western Hills Hotel, Inc.
Whipple Co., The, Natick, Mass. 413,240, ren. 1–5–65. Cl. 46.
Whipple Co., The, Natick, Mass. 413,325, ren. 1–5–65. Cl. 46.
Whistler, S. B., & Sons, Inc., Buffalo, N.Y. 782,800, pub. 10–20–64. Cl. 23.
White Front Stores, Inc., Los Angeles, Calif. 782,736, pub. 10–20–64. Cl. 21.
Whitehead Bros. Co., New York, N.Y. 782,623, pub. 10–20–64. Cl. 1.
Whis Mfg. Co., Brooklyn, N.Y. 782,656, pub. 10–20–64. Cl. 8.
Wica Chemicals, Inc., Charlotte, N.C. 782,653–4, pub. 10–20–64. Cl. 6.
Wiggin, Anne B.: *See*—
Fletcher, Sarah S.
Wiggin, Norman K.: *See*—
Fletcher, Sarah S.
Winchester Repeating Arms Co., New Haven, Conn., to Olin Mathieson Chemical Corp., New York, N.Y. 191,702, ren. 1–5–65. Cl. 9.
Winchester Repeating Arms Co. of New Haven, Conn.: *See*—
Federal Cartridge Corp.
Wineburgh Bros., to John T. Stanley Co., Inc., New York, N.Y. 26,078, ren. 1–5–65. Cl. 51.
Witco Chemical Co., Inc.: *See*—
American Petroleum Products Co.
Woodmark Originals, Inc., High Point, N.C. 782,844, pub. 10–20–64. Cl. 32.
Woodpecker Woodware: *See*—
Burn-Strauss, Inc.
World Wide Watch Co., Inc., New York, N.Y. 782,823, pub. 10–20–64. Cl. 27.
Wrenn Paper Co., The, Middletown, Ohio. 669,910–11, canc. Cl. 37.
Wyeth Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 412,957, ren. 1–5–65. Cl. 18.
Wynn Pharmacal Corp., Philadelphia, Pa. 694,457, canc. Cl. 18.
Wynn Pharmacal Corp., Philadelphia, Pa. 698,864, canc. Cl. 18.
Wynn Pharmacal Corp., Philadelphia, Pa. 701,234, canc. Cl. 18.
Zeiss Ikon A.G., Stuttgart, Germany. 782,814, pub. 10–20–64. Cl. 26.

U.S. GOVERNMENT PRINTING OFFICE:1964

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
January 12, 1965 Volume 810 Number 2

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of November 1964

| | |
|---|---|
| Examiner affirmed | 241 |
| Examiner affirmed in part | 36 |
| Examiner reversed | 87 |
| Total | 364 |

### Netherlands Printed Specifications

The Scientific Library is now receiving three copies of specifications of Netherlands patent applications, printed under a system inaugurated in January 1964. One copy will be distributed to the Examining Groups and placed in the search files.

These printed specifications (actually reproductions of the typewritten originals with a heading) can be used as printed publications under 35 U.S.C. 102(a) and (b). These references should be cited in the same manner as patents, except that the application number and date of publication are used and they are to be identified as Netherlands *applications*.

Significant data appearing on the first page:

| | |
|---|---|
| Octrooiaanvrage No. | Application No. |
| Datum van ter inzagelegging | Date of Publication |
| Aanvrager | Applicant |
| Ingeroepen recht van voorang | Priority date claimed* |

There will be another printing of the specification when and if a patent is issued, but in view of the fact that an earlier printed publication is already available, distribution of Netherlands patent specifications for incorporation in the search files will be discontinued.

*Background*

The publication of Netherlands specifications reflects a far-reaching change in their examination system which became effective, by statute, on January 1, 1964. It is sometimes referred to as a "deferred" examination system. Unless the application is withdrawn (abandoned), publication automatically takes place. Unless earlier requested by applicant, publication is as soon as practicable eighteen months from the priority date claimed or, if no foreign priority is claimed, from the filing date. The new procedure is being applied also to applications pending on January 1, 1964, which had not gone beyond a certain stage in the prosecution.

Under the new system applications are published without any action on the merits; i.e., no search of the prior art nor action by the Examiner. During a period of seven years from the filing date, the applicant is at liberty to request (upon payment of a fee) what corresponds to a first action; that is, a citation of the prior art which may be found by the Examiner but without applying this art to the claims. After the applicant has considered this prior art, he may, upon payment of another fee, request a continuation of the prosecution. There has been no change in the examination procedure other than the deferring of the examination in the manner indicated. An interesting feature is that, during the period after publication when the application is open to a request by the applicant for the first action or the complete prosecution, any other person may pay the fee and make the request. Such a person does not become a party to the prosecution. (There is an opposition period later if the application is found allowable.)

During the seven year period, certain other fees are payable to keep the application pending. At the end of the period, if the examination has not been requested, the application becomes abandoned. During the period, any member of the public may submit prior art (without requesting any examination) which is placed in the file. Such papers, as well as the results of the first action, if one is made, are available to the public.

Dec. 2, 1964.

RICHARD A. WAHL,
*Acting Superintendent*
*Patent Examining Corps.*

*If the priority application should be a U.S. ("Ver. St. v. Amerika") application, the Serial No. of said application appearing along with the U.S. filing date makes it simple to locate the U.S. application in order (1) to understand the disclosure of the Netherlands application or (2) more importantly to determine if the U.S. application has issued as a patent.

### United States Adopted Names

List No. 9

*July 1, 1964–October 31, 1964*

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

aletamine hydrochloride: sympathomimetic amine
bensindamine hydrochloride: analgesic; anti-inflammatory; antipyretic

### New Applications Received During November 1964

| | |
|---|---|
| Patents | 6,975 |
| Designs | 436 |
| Plant Patents | 8 |
| Reissues | 9 |
| Total | 7,428 |

### Issue—January 12, 1965

| | | |
|---|---|---|
| Patents | 915 | No. 3,164,839 to No. 3,165,753, incl. |
| Designs | 44 | No. 200,045 to No. 200,088, incl. |
| Plant Patents | 1 | No. 2,465 |
| Reissues | 1 | No. 25,710 |
| Total | 961 | |

cactinomycin : antineoplastic agent
carbamazepine : anticonvulsant
cephaloglycin : antibiotic
cephaloridine : antibiotic
coumermycin : antibiotic
deferoxamine : iron depleter
denatonium benzoate : denaturant
ethamsylate : hemostatic agent
follicle stimulating hormone, human : gonadotropin
furazolium chloride : antibacterial agent
hetacillin : antibiotic
hexedine : antibacterial
ioglycamic acid : radiopaque (cholecystographic and cholangiographic)
methyl cysteine hydrochloride : mucolytic agent
nitrodan : anthelmintic agent
peliomycin : antineoplastic agent
porfiromycin : antibiotic
prednazate : anti-inflammatory (veterinary)
proadifen hydrochloride : drug potentiator
quinbolone : anabolic agent
quingestanol acetate : progestational agent
sancycline : antibiotic
sodium acetosulfone : leprostatic agent
thiamiprine : anti-leukemic
triamcinolone hexacetonide : injectable glucocorticoid

## Patents Available for Licensing or Sale

2,961,235. Pole Centered Small Trampoline for Play and Exercise. Roger M. Blanchard, 2862 N. Rosemont Blvd., Tucson, Ariz.

3,150,900. Sliding Bearing. Matthias Bruening, Hamburg-Rahlstedt, Germany. Correspondence to: Max Voege, 1012 Broadmoor Drive, Dayton, Ohio, 45419.

3,159,319. Actuator-Adapter for Spray Can. Roy Parish, 2859 Thornhill Drive, Mobile, Ala., 36606.

Great Western Drilling Company is prepared to grant non-exclusive licenses under the following patent to responsible parties on uniform reasonable terms.

Applications for license under the following patent may be addressed to: Great Western Drilling Company, Box 1659, Midland, Tex.

3,150,085. Method of Drilling a Well Through a Subsurface Formation Employing an Oil-In-Water Emulsion Drilling Fluid.

General Electric Company is prepared to grant non-exclusive licenses under the following 12 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 2 patents may be addressed to: Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,154,112. Strand Transposing Mechanism.

3,156,803. Circuit Interrupter Having Uniformly Spaced Spiral Arc Runners in a Confined Atmosphere for Improved Arc Voltage Control.

Applications for license under the following 10 patents may be addressed to: General Electric Company, Hotpoint Division, 5600 W. Taylor St., Chicago, Ill., 60644. Attn: Patent Counsel.

2,703,974. Flexible Guard Sleeve and Water Deflector for Clothes Washing Machines.

2,939,811. Heat Insulating Units for Refrigerator Cabinets.

2,977,675. Methods of Making Copper-Aluminum Joints.

2,986,009. Thermo-Electric Refrigerators.

3,003,684. Refrigeration Apparatus.

3,028,733. Ice Making Apparatus.

3,052,100. Refrigeration System.

3,130,902. Refrigerator Compressor.

3,137,900. Insulated Wall and Method of Manufacture.

3,140,328. Method and Apparatus for Curing Gasket Deformities.

## Negotiation Authority Indicated on Office Actions

For some time, the full surname of the Examiner who prepared the Office action has been typed below the action on the left side; thus,

JHSmith : abc

One purpose was to facilitate making arrangements for an interview at a time when the Examiner would be conveniently available. However, if this Examiner did not have "negotiation authority," that is, could not definitely state at the interview that a proposed amendment would make a claim allowable, it was necessary that a more experienced Examiner also be present.

Effective immediately, therefore, the full surname will be typed only for those examiners with negotiation authority. Examiners without such authority will be identified by initials only; thus,

FDR : rbm

The Examiner responsible for releasing the action (whose signature is on the ribbon copy), will be identified by means of a rubber stamp applied to all carbon copies.

If the full surname of the Examiner appears at the *lower left*, the interview should be arranged with this Examiner, otherwise, with the Examiner whose name is stamped at the *lower right*.

Dec. 16, 1964.

RICHARD A. WAHL,
*Acting Superintendent,*
*Patent Examining Corps.*

## Notice of Automatic Ordering of Cited References

In the OFFICIAL GAZETTE of December 1, 1964, the Patent Office announced a new service permitting applicants to receive copies of cited references automatically with the cost of the references being charged to applicant's deposit account. This new service was instituted on January 4, 1965, for those applicants who requested this service prior to this date.

Owing to delays in typing and mailing Office actions, some actions mailed after January 4, 1965, for which authorization to send cited references has been received will not have references supplied automatically. All Office actions for which references are being supplied automatically will bear the applicant's deposit account number below the address block on the letterhead. Office actions in which the applicant's deposit account number does not appear below the address block on the letterhead are actions in cases where either the automatic mailing of cited references has not been authorized, or where the action was prepared before processing for this new service was initiated.

Dec. 18, 1964.

C. A. KALK,
*Director of Administration.*

## Information Re Application Status

In view of the relatively long pendency of patent applications at the present time, the final disposition of which may, in some cases, be of substantial importance to the public in general or, at least, to persons other than the applicants, it has been decided effective immediately to advise any person who makes written request for information as to the status of a United States application referred to by number in a foreign patent, which patent is identified in the request, whether the application is pending, abandoned or patented and, if patented, what the patent number is. The former practice of giving similar information with respect to an application referred to by number in a United States patent (Manual of Patent Examining Procedure, section 102) will be continued.

Dec. 11, 1964.

EDWARD J. BRENNER,
*Commissioner of Patents.*

## Suggested Form Letter for Authorizing the Automatic Furnishing of Cited References to Applicants

A notice in the December 1, 1964, issue of the OFFICIAL GAZETTE announced a new service to be provided by the Patent Office effective January 4, 1965, which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications.

In response to inquiries received, it should be noted that there will be no charge for the two additional copies of the first page of the office action being furnished at the time of mailing of the ordered references and deposit account statements.

Subsequent inquiries have been made of the Patent Office concerning a form letter that might be used to simplify the procedure for authorizing the automatic furnishing of references.

Shown below is a suggested format that applicants or their authorized representatives, on their own letterhead, might wish to use for their authorization letter. In those instances where the authorization letter may be filed initially upon the filing of a new application and the serial number is unknown at the time of filing, the brief notation "Filed herewith," in addition to the applicant's name and title of invention, is deemed sufficient to identify the particular application in question.

Applicant:
Serial Number:
Filed:
For:
Group:

Authorization Letter for Providing Copies of Cited References

Authorization is hereby given to the U.S. Patent Office to automatically send to the addressee of record as indicated on the front of the file wrapper in the above-identified application all references cited by the Examiner in this case.

---
Number of copies of cited references desired

---
Deposit Account Number to be charged

Dated----------

---
Applicant or Authorized Representative

December 22, 1964.

C. A. KALK,
*Director of Administration.*

# PATENT EXAMINING CORPS

## H. B. WHITMORE, Superintendent

## CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 1, 1964

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 5-20-62 | 1-28-57 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 12- 3-62 | 7- 9-56 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 9-23-58 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 8- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 10- 1-62 | 3-11-57 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-17-62 | 11- 7-55 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 12-29-55 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 10-5 -62 | 1-30-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 9- 3-59 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-10-62 | 12-22-53 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 4- 5-56 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 5-18-55 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-12-62 | 6-20-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 12-28-59 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 208,209 |
| Total number of Design applications pending | 5,762 |
| Total number of applications awaiting action (excluding Designs) | 138,972 |
| Total number of Design applications awaiting action | 2,593 |
| Date of oldest new application awaiting action | May 19, 1959 |
| Date of oldest amended application awaiting action | Dec. 22, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,433,824 to 2,435,186, inclusive

Plant Patents ..... Numbers 774 to 782, inclusive

| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| **MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner**<br>Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids. | 10- 2-62 | 10-31-60 |
| **METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner**<br>Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 12-12-58 |
| **MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner**<br>Special Article Making; Assembling, Tool and Implement Making; and Metal Working. | 11- 2-62 | 6-20-55 |
| **MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner.**<br>Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders. | 1-22-63 | 8-13-60 |
| **HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner**<br>Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling. | 1-17-63 | 10- 3-58 |
| **FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner**<br>Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing. | 2- 1-63 | 9-22-60 |
| **POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GARLAU, Supervisory Examiner**<br>Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3- 4-63 | 5-25-60 |
| **HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner**<br>Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination. | 5-19-60 | 6-21-63 |
| **GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| **AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner**<br>Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working. | 7- 8-63 | 2- 2-60 |
| **CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner**<br>Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 1-20-58 |
| **PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner**<br>Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12- 6-62 | 7-28-57 |
| **TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner**<br>Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-19-63 | 12-10-59 |
| **TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner**<br>Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 2-26-63 | 12-26-58 |
| **FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner**<br>Furniture; Supports; Cabinet Structures; Receptacles; Baggage. | 3- 4-63 | 4-17-63 |
| **PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner**<br>Printing; Typewriters; Stationery; Material Treatment. | 6-11-62 | 1-26-57 |
| **PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner**<br>Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| **DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner**<br>Industrial Arts; Household, Personal and Fine Arts. | 10-16-61 | 2-21-64 |



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

NATIONAL BISCUIT COMPANY *v.* PRINCETON MINING COMPANY, INC.

*No. 7238. December 10, 1964*

[— CCPA —; — F.2d —; — USPQ —]

1. TRADEMARK—OPPOSITION—CONFUSING SIMILARITY—"PREMIUM POP" FOR RAW POPCORN AND "PREMIUM" FOR BISCUITS.

On the issue of confusing similarity between appellant-opposer's registered marks of "PREMIUM" on biscuits and crackers and the appellee-applicant's mark "PREMIUM POP" sought to be registered for raw popcorn with "POP" being disclaimed, where the Trademark Trial and Appeal Board, one member dissenting, found no confusion likely and dismissed the opposition, *Held*, in affirming the decision below, that "Inasmuch * * * as none of appellant's allegations of error below is sufficient to convince us that the Board erred, detailed discussion of such allegations is unnecessary."

APPEAL from the Patent Office. Opposition No. 40,064.

AFFIRMED.

*Nims, Halliday, Whitman, Howes & Collision* (*Walter J. Halliday, Oliver P. Howes, Jr.*, and *Thomas A. Kain*, of counsel) for appellant.

*Beer, Richards & Haller* (*Stewart W. Richards*, of counsel) for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Princeton Mining seeks registration for "PREMIUM POP," disclaiming the word "POP," for use on raw popcorn, alleging use since 1956.

National Biscuit opposes on the ground that appellant's mark so resembles opposer's previously registered marks of "PREMIUM" [1] on biscuits and crackers as to likely cause confusion or mistake or deceive purchasers.

The Trademark Trial and Appeal Board, one member dissenting, found no confusion likely and dismissed the opposition.

In asking us to reverse that action appellant relies, inter alia, on prior decisions of this and other courts; the secondary meaning its mark has acquired over the years; a marketing survey calculated to show a likelihood of confusion between the competing marks; and the alleged "snack" nature of the instant goods.

Appellee also relies on decisions of this and other courts; on the laudatory, hence allegedly weak, nature of opposer's mark; on numerous third party registrations of "PREMIUM" on other foods; and strong criticism of appellant's marketing survey.

In our review of the rather voluminous record, due consideration has been given all of the contentions raised, as well as the views of the dissenting member. [1] Inasmuch, however, as none of appellant's allegations of error below is sufficient to convince us that the Board erred, detailed discussion of such allegations is unnecessary. The decision is affirmed.

AFFIRMED.

[1] Reg. No. 63,286, issued June 11, 1907, twice renewed.

## U.S. Court of Customs and Patent Appeals

THE RUSSELL CHEMICAL CO. v. WYANDOTTE CHEMICALS CORP.

*No. 7229. Decided November 5, 1964*

[— CCPA —; — F.2d —; — USPQ —]

1. TRADEMARK—CONFUSING SIMILARITY—"SEN-TROL" AND "SENTOL" FOR DETERGENTS.

"It is clear that there is no significant difference between the marks themselves. Deletion of the 'r' from SEN-TROL has but little effect either upon the eyes of the viewer or the ears of the hearer. It seems to us that the similarity of the marks is such as to give rise to the likelihood of confusion. And if this likelihood is to be avoided, it must necessarily be because of some significant differences in the goods themselves."

2. SAME—SAME—SAME.

"• • • the question here is whether a purchaser would be likely to conclude that the same manufacturer was the source of both SENTOL and SEN-TROL products. We think such a conclusion would be highly likely. As appellant points out, the products are both intended for cleaning vessels utilized for food (e.g., pots, plates and cups on the one hand as against pasteurizers on the other). While selected persons might not be likely to purchase both products (for example, a restaurateur might buy SEN-TROL and a dairy farmer SENTOL), this fact is inconclusive, for we feel that purchasers may well be confused by the similarity of the names when confronted with the two related albeit specifically different products here in issue. • • • the products here are so related that, under the same or similar marks, they might normally be considered to be produced by a single entity."

3. SAME—SAME—EVIDENCE—DIFFERENT CHANNELS OF TRADE NOT CONCLUSIVE OVER LIKELIHOOD OF CONFUSION.

"• • • as we have often held, neither party is restricted by its registration to a particular channel of trade. • • • Since the marketing environment is subject to change at any time it should not form the basis for any conclusive inference with respect to the issue of likelihood of confusion."

4. SAME—SAME—"SEN-TROL" AND "SENTOL" FOR DETERGENTS.

On appeal from the decision of the Trademark Trial and Appeal Board dismissing a petition to cancel appellee's registration of "SENTOL" for industrial type detergents for cleaning dairy equipment in view of appellant's registered mark "SEN-TROL" for "Dish Washing Solution," *Held* that "Here we have a set of marks so similar that any distinction is likely to be obscured in the pronunciation"; that "In such a case, the respective goods must be widely dissimilar, and the purchasers extremely discriminating, before it can be said that confusion in trade is unlikely"; and that "These conditions are not met here."

APPEAL from the Patent Office. Cancellation Proceedings No. 7,721.

REVERSED.

*Bruce B. Krost, Woodling, Krost, Granger and Rust*, for appellant.

*Robert E. Dunn* for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania.*

SMITH, *J.*, delivered the opinion of the court.

Appellant-petitioner is the owner of a registration on the mark "SEN-TROL" for "Dish Washing Solution," [1] and appeals the decision of the Trademark Trial and Appeal Board (see 137 USPQ 908) dismissing its petition to cancel two Principal Register registrations owned by appellee. Appellee's registrations both cover the mark "SENTOL," for "Industrial-Type Detergent Powder For Cleaning Dairy Equipment," [2] and the other for "Industrial-Type Liquid Detergent For Cleaning Dairy Equipment." [3] The stipulated facts establish that appellant's first use in commerce antedated that of appellee by more than three years. The single issue for our consideration, therefore, is whether appellee's marks, when used on its goods, so resemble appellant's mark as to be likely to cause confusion, mistake or deception.

[1] No. 615,464, registered November 1, 1955.
[2] No. 683,776, registered August 18, 1959.



The record establishes that appellant's SEN-TROL product is a detergent solution intended primarily for use with power dishwashers, while appellee's SENTOL detergents are of the non-foaming, acid type which are said to be particularly useful for cleaning pasteurizers, pipelines and other dairy equipment.

On the basis of the differences between the respective products, the Board concluded that confusion was not likely. We do not agree.

[1] It is clear that there is no significant difference between the marks themselves. Deletion of the "r" from SEN-TROL has but little effect either upon the eyes of the viewer or the ears of the hearer. It seems to us that the similarity of the marks is such as to give rise to the likelihood of confusion. And if this likelihood is to be avoided, it must necessarily be because of some significant differences in the goods themselves. The position of the Board was that:

While the products of both parties may be, as urged by petitioner, broadly related in that they are used for cleaning "vessels," it is apparent that they are distinctly different products intended for quite dissimilar applications, and would ordinarily be promoted and sold to distinctly different classes of purchasers under different circumstances and conditions and move in entirely different trade channels. • • •

The Board concluded it would be doubtful that "the average purchaser of petitioner's composition would under ordinary conditions be familiar with or be likely to encounter respondent's detergent composition." However, we do not agree that such specific differences in the goods and in the present channels of trade and classes of purchasers are sufficient to overcome the likelihood of confusion arising from the similarity of the marks themselves.

[2] Unencumbered by obscuring legalisms, the question here is whether a purchaser would be likely to conclude that the same manufacturer was the source of both SENTOL and SEN-TROL products. We think such a conclusion would be highly likely. As appellant points out, the products are both intended for cleaning vessels utilized for food (e.g., pots, plates and cups on the one hand as against pasteurizers on the other). While selected persons might not be likely to purchase both products (for example, a restaurateur might buy SEN-TROL and a dairy farmer SENTOL), this fact is inconclusive, for we feel that purchasers may well be confused by the similarity of the names when confronted with the two realted albeit specifically different products here in issue. As we said in *Hollywood Water Heater Co.* v. *Hollymatic Corp.*, 47 CCPA 782, 784, 274 F.2d 679, 124 USPQ 452:

• • • Section 2(d) of the Trademark Act of 1946 and the unquestioned weight of modern authority in this field does not require a finding of confusing similarity of goods as the basis for sustaining a trademark opposition but instead requires us to determine whether it is "likely" that the mark when applied to the goods of the applicant will cause confusion or mistake or deceive purchasers.

The Board's position overlooks the fact that the products here are so related that, under the same or similar marks, they might normally be considered to be produced by a single entity.

[3] No. 714,491, registered April 25, 1961.

[3] Moreover, as we have often held, neither party is restricted by its registration to a particular chanel of trade. E.g., *Daggett & Ramsdell, Inc.* v. *I. Posner, Inc.*, 47 CCPA 952, 277 F.2d 952, 125 USPQ 581. Since the marketing environment is subject to change at any time it should not form the basis for any conclusive inference with respect to the issue of likelihood of confusion.

[4] Here we have a set of marks so similar that any distinction is likely to be obscured in the pronunciation. In such a case, the respective goods must be widely dissimilar, and the purchasers extremely discriminating, before it can be said that confusion in trade is unlikely. These conditions are not met here. The decision of the Board is accordingly reversed.

REVERSED.

# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,424,511**, Stanley and Strickler, Jr., AIRCRAFT FLIGHT INSTRUMENT, **filed** Oct. 14, 1963, D.C., S.D.N.Y., Doc. 63/2993, *Kollsman Instrument Corp.* v. *Astek Instrument Corp.* Stipulation and order of dismissal with prejudice Aug. 4, 1964.

**2,475,430**, C. G. Kronmiller, SAFETY DEVICE FOR FLUID FUEL BURNERS, **filed** Aug. 6, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1115–EC, *Honeywell, Inc.* v. *Rehrig Controls Co.*

**2,477,782**, W. E. Bassett, NAIL CLIPPER; **2,779,098**, Pocoski and Hennessy, COMBINED TOOL, **filed** Jan. 29, 1957, D.C. Conn. (New Haven), Doc. 6532, *The W. E. Bassett Co.* v. *The H. C. Cook Co. et al.* Decree and final judgment dismissing case; claim 3 of Pat. 2,779,098 held valid and infringed; defendants Ernst C. Britton & Britton Mfg. Co. have not infringed said patent. Each claim of Pat. 2,477,782 held invalid Nov. 20, 1963.

**2,490,006**, W. Kimel et al., PROCESS OF NITRATING FURAN DERIVATIVES; **2,548,173**, R. F. Raffauf, PROCESS OF MAKING 5-NITRO-2 FURALDEHYDE SEMICARBAZONE; **2,812,282**, V. R. Ellis, STABILIZED AQUEOUS SOLUTION OF NITROFURAZONE; **2,866,795**, G. Swain, PREPARATION OF 5-NITRO-2 FURALDEHYDE SEMICARBAZONE; **2,896,335**, J. H. Nichols, NITRATING AN N-(2-FURYL) ALKYLIDENE HYDRAZINE COMPOUND; **2,927,110**, Gever and O'Keefe, PROCESS FOR THE PREPARATION OF AZOMETHINES OF 5-NITRO-2-FORMYL FURAN WITH HYDRAZINE COMPOUNDS; **Reg. No. 403,279** (FURACIN), The Norwich Pharmacal Company, Antiseptics and germicides; **Reg. No. 441,715**, same, Eaton Laboratories, Inc., Antibacterial preparations, **filed** Aug. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C–310(1), *The Norwich Pharmacal Company* v. *Performance Products Company.*

**2,500,750**, D. H. Halenza, FLUID CONTROL UNIT; **Re. 24,034**, T. R. Smith, FLOW CONTROL VALVE, **filed** Aug. 4, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1350, *The Dole Valve Company* v. *Controls Company of America.*

**2,512,588**, W. H. St. Thomas, COMBINATION BILLFOLD, PURSE, AND POCKET CASE, **filed** Aug. 5, 1964, D.C.N.J. (Newark), Doc. 720–64, *St. Thomas, Inc.* v. *Simon E. Knee.*

**2,532,672**, Michael and Anderson, VENEER CLIPPERS, **filed** Aug. 24, 1964, D.C., W.D. Wash. (Tacoma), Doc. 3156, *Prentice Machine Works, Inc.* v. *Globe Machine Manufacturing Co., Inc.*

**2,541,835**, E. Saarinen, SHAPED CHAIR; **2,666,001**, same, CHAIR HAVING A BACKREST IN THE FORM OF A SHELL-LIKE BODY, **filed** Aug. 20, 1964, D.C., S.D.N.Y., Doc. 64/2569, *Knoll Associates, Inc.* v. *International Contract Furnishings, Inc.*

**2,548,173.** (See 2,490,006.)

**2,571,625**, G. E. Seldon, THERMAL AND AUXILIARY VALVE COMBINATION, **filed** Aug. 10, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C301(3), *George E. Seldon* v. *Alco Valve Company.*

**2,588,699**, C. F. Carlson, ELECTROPHOTOGRAPHIC APPARATUS; **2,638,416**, Walkup and Wise, DEVELOPER COMPOSITION FOR DEVELOPING AN ELECTROSTATIC LATENT IMAGE; **3,001,872**, P. F. Kurz, PREPARING PLANOGRAPHIC PLATES AND SOLUTION THEREFOR; **3,121,006**, Middleton and Reynolds, PHOTOACTIVE MEMBER FOR XEROGRAPHY, **Re. 25,136**, C. F. Carlson, ELECTROSTATIC DEVELOPER COMPOSITION AND METHOD THEREFOR, **filed** Feb. 11, 1964, D.C.N.J. (Newark), Doc. 130–64, *Addressograph-Multigraph Corp.* v. *Xerox Corporation.* Stipulation of dismissal July 17, 1964.

**2,606,601.** (See 2,541,835.)

**2,635,717**, H. P. Albrecht et al., CONNECTING STRUCTURE; **2,636,785**, Albrecht and Wilson, SCAFFOLD SUPPORT; **2,731,303**, same; **2,777,660**, H. P. Albrecht, ADJUSTABLE SHORES; **2,988,318**, Ferguson and Moritz; SHORE ATTACHMENT COMBINATION; **Re. 25225**, Moritz and Ferguson, same, **filed** Dec. 27, 1962, D.C. S.D. Calif. (Los Angeles) Doc. 62–1658WB, *Waco-Porter Corporation* v. *Tubular Structures Corp. of America et al.*, Stipulation and order of dismissal; consent judgment in favor of plaintiff; defendants enjoined Aug. 6, 1964.

**2,636,785.** (See 2,635,717.)

**2,638,416.** (See 2,588,699.)

**2,687,994**, Russell and Headland, METHOD OF FORMING AN OXIDE COATING ON TIN; **2,724,526**, J. J. Russell et al., TIN PLATE BAKING PAN; **2,773,817**, same, COMPOSITE METAL AND ARTICLES THEREOF; **2,801,604**, Russell and Beck, PROCESSED DRAWN IMPLEMENT, **filed** May 13, 1958, D.C., N.D. Ill. (Chicago), Doc. 58c849, *The Ekco Products Company, Inc.* v. *Chicago Metallic Manufacturing Company.* Judgment with respect to Pats. 2,687,994, 2,773,817, and 2,801,604—pursuant to mandate filed Jan. 17, 1964, claims 1 and 5 of Pat. 2,687,994 held valid and infringed; claims 1 through 5, 8 and 9 of Pat. 2,773,817 held valid and infringed; claims 1 through 4 of Pat. 2,801,604 held valid and infringed; defendant enjoined Mar. 16, 1964. Judgment with respect to Pat. No. 2,724,526—claims 1 and 2 of Pat. 2,724,526 held valid and infringed; defendant enjoined; counterclaim dismissed Aug. 21, 1964.

**2,703,141**, J. H. McKee, OVERHEAD DOORS, **filed** Jan. 19, 1961, D.C., W.D.N.Y. (Buffalo), Doc. 9024, *McKee Door Co.* v. *Morrison Steel Products, Inc.* Final judgment; defendant enjoined (notice Oct. 13, 1964).

**2,724,526.** (See 2,687,994.)

**2,724,528**, W. O. Hersey, TOY GUN, **filed** Aug. 28, 1964, D.C.R.I. (Providence), Doc. 3331, *Eldon Industries, Inc.* v. *Tico-Toys, Inc.*

**2,731,303.** (See 2,635,717.)

**2,764,830**, E. Frey, ARTICULATED BANNER UNIT CONSTRUCTION, **filed** June 29, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1270, *Massillon-Cleveland-Akron Sign Co.* v. *Chicago Sign Printing Co.* Consent judgment; action dismissed with prejudice Aug. 4, 1964.



**2,773,439**, R. L. Chandler, PLOW TAIL WHEEL; **2,830,519**, Chandler and Ogle, Jr., TWO-WAY PLOW; **2,842,038**, R. L. Chandler, PLOW TAIL WHEEL CONSTRUCTION, **filed** Aug. 24, 1964, D.C., N.D. Tex. (Fort Worth), Doc. 4–308, *Harry A. Pursche* v. *Roy L. Chandler.*

**2,773,817.** (See 2,687,994.)

**2,777,660.** (See 2,635,717.)

**2,779,098.** (See 2,477,782.)

**2,786,206**, H. Steiner, BRASSIERE AND GIRDLE CONSTRUCTION, **filed** Aug. 29, 1963, D.C., S.D.N.Y., Doc. 63/2581, *Corde-de Parie, Inc.* v. *Contessa di Roma, Inc.* Stipulation and order of discontinuance Aug. 20, 1964.

**2,790,098**, E. Nyyssonen, POLYPHASE SYNCHRONOUS MACHINE; **2,790,131**, same, POLYPHASE TRANSFORMER SYSTEM, **filed** Aug. 16, 1963, C.C.A., 1st Cir., Doc. 6189, *Einard Nyyssonen* v. *Bendix Corporation.*

**2,790,131.** (See 2,790,098.)

**2,797,010**, A. P. Neer, SAMPLE CHART AND METHOD OF FABRICATING THE SAME, **filed** Aug. 12, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1394, *Matherson-Selig Co.* v. *Carl Gorr Color Card, Inc.*

**2,798,226**, H. Kanter, NECKTIE FORM, **filed** Aug. 31, 1964, D.C., S.D.N.Y., Doc. 64/2684, *France Neckwear Co., Inc.* v. *A. Ruderman Co., Inc. et ano.*

**2,798,777**, Flick and Kudlaty, CYLINDER MOUNT; **2,842,284**, F. S. Flick, CYLINDER END SEAL FOR FLUID PRESSURE CYLINDER, **filed** Apr. 1, 1959, D.C., N.D. Ill. (Fresport), Doc. 59c25, *Flick-Reedy Corporation* v. *Hydro-Line Manufacturing Co.* Final decree—claims 1, 2, and 5 of Pat. 2,842,284 held invalid; complaint dismissed as to Pat. 2,842,284; claims 1, 2 and 4 of Pat. 2,798,777 held valid and infringed; defendant enjoined from infringing Pat. 2,798,777, May 14, 1964. Third counterclaim relating to Pat. 2,798,777 dismissed by amendment July 1, 1964.

**2,801,604.** (See 2,687,994.)

**2,810,934**, J. Bailey, METHOD OF MAKING PLASTIC BOTTLES, **filed** Jan. 23, 1963, D.C., E.D. Mich. (Detroit), Doc. 23452, *Owens-Illinois Glass Company* v. *Anchor Bay Plastics, Inc.* Default judgment—claims 1 through 8 of Pat. 2,810,934 held valid and infringed; defendant enjoined Aug. 3, 1964.

**2,812,282.** (See 2,490,006.)

**2,813,115**, R. W. Bragdon, MANUFACTURE OF METHYL BORATE; **2,898,195**, M. D. Banus, METHOD FOR PREPARING SODIUM HYDRIDE, **filed** Aug. 28, 1964, Ct. Cls., Doc. 282–64, *Metal Hydrides, Inc.* v. *The United States.*

**2,830,519.** (See 2,773,439.)

**2,842,038.** (See 2,773,439.)

**2,842,284.** (See 2,798,777.)

**2,851,121**, B. McCollum, METHOD AND APPARATUS FOR SEISMIC EXPLORATION, **filed** Aug. 13, 1964, D.C., W.D. Mich. (Grand Rapids), Doc. 4852, *Sinclair Oil & Gas Company et al.* v. *Mandrel Industries, Inc.* **Same, filed** Aug. 13, 1964, D.C., E.D. Mich. (Detroit), Doc. 25680, *Sinclair Research, Inc.* v. *Mandrel Industries, Inc.*

**2,866,795.** (See 2,490,006.)

**2,871,452**, W. R. Hewlett, BROAD BAND WAVEGUIDE DIRECTIONAL COUPLER, **filed** Aug. 18, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1159, *Hewlett-Packard Company* v. *Microwave Associates, Inc.* Cause dismissed Oct. 21, 1964.

**2,896,195.** (See 2,813,115.)

**2,896,335.** (See 2,490,006.)

**2,903,077**, I. Kamlukin, SOIL TILLING DEVICE, **filed** Nov. 15, 1960, D.C., S.D. Ohio (Dayton), Doc. 2538, *Simplicity Manufacturing Co.* v. *Quick Manufacturing Co.* Claims 1 and 5–8 of Pat. 2,903,077 held valid and infringed; defendant enjoined; counterclaim dismissed July 17, 1964. **Same, filed** Aug. 31, 1964, D.C., E.D. Wis. (Milwaukee), Doc. 64–C–240, *Magna American Corporation* v. *Simplicity Manufacturing Company.*

**2,909,371**, G. Alcover, GYMNASTIC DEVICE, **filed** Mar. 5, 1963, D.C., S.D.N.Y., Doc. 63/615, *Picas International Ltd. et ano.* v. *R. H. Macy & Co., Inc. et ano.* Consent judgment; defendants enjoined Aug 25, 1964.

**2,913,046**, Sharp and Frymire, SLIDING CLOSURE CONSTRUCTION, **filed** Aug. 20, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1176–S, *Northrop Architectural Systems* v. *Texas Aluminum Company, Inc.*

**2,916,161**, R. L. Schaefer, UTILITY CONTAINERS; **Des. 186,819**, same, VEGETABLE BIN, **filed** Jan. 4, 1960, D.C., N.D. Ill. (Chicago), Doc. 60c6 *Republic Molding Corporation* v. *Federal, Enameling & Stamping Co. (Inc).* Upon stipulation, cause dismissed Aug. 11, 1964.

**2,924,865**, R. Berning, BUCKLE FOR BELTS OR THE LIKE, **filed** Aug. 18, 1964, D.C., S.D.N.Y., Doc. 64/2562, *Dalbac (Pty.) Ltd.* v. *Firma Otto Berning & Co. et ano.*

**2,925,931**, S. T. Carter, LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS; **2,996,822**, S. W. Souza, CONTRAST COLOR EMBOSSED PLASTICS, **filed** July 30, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42660, *Dymo Industries, Inc.* v. *Aaron L. Rubino.*

**2,927,110.** (See 2,490,006.)

**2,928,562**, C. R. Golinick, REFUSE COLLECTING AND TRANSPORTING EQUIPMENT, **filed** Oct. 1, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1675, *Leach Company* v. *General Sani-Can Mfg. Corp. et al.*

**2,943,020**, W. L. Gould, COMPOSITION FOR THE SYSTOMATIC TREATMENT OF THE MALE CLIMACTERIC, **filed** Oct. 11, 1963, D.C., E.D. Mich. (Detroit), Doc. 24454, *Research Supplies* v. *S. J. Tutag & Co.* Consent dismissal upon stipulation Aug. 11, 1964.

**2,960,316**, J. D. McKellar, FLUID DRIVEN VIBRATOR, **filed** Nov. 21, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–1423–CC. *John D. McKellar* v. *McCaron Bros.* Stipulation and order of dismissal without prejudice Aug. 20, 1964.

**2,968,256**, C. C. Williams, PUMP ADAPTER, **filed** Aug. 21, 1964, D.C., N.D. Ind. (Hammond), Doc. 1572, *Clifford C. Williams–Williams Products Co., Inc.* v. *V. R. Myers Pump and Supply, Inc.*

**2,981,228**, G. Brandano, DISPLAY TANK FOR SHELLFISH, **filed** June 26, 1961, D.C. Mass. (Boston), Doc. 61–468–J, *Giuseppe Brandano et al.* v. *Stanley L. Handman et al. doing business as Dayno Sales Co.* Complaint dismissed July 31, 1964.

**2,981,884**, D. J. Tighe, REGULATED VOLTAGE SUPPLY, **filed** Aug. 19, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–845, *Hewlett-Packard Company* v. *Trygon Electronics, Inc.*

**2,983,601**, Fletcher and Kells, FERROUS ALLOYS AND ARTICLES MADE THEREFROM, **filed** Aug. 21, 1964, D.C., N.D. Ohio (Cleveland), Doc. C 64–567, *Latrobe Steel Co.* v. *Atlas Steel Company, Ltd.*

**2,987,440**, K. Junkmann et al., INJECTABLE HORMONE PREPARATIONS, **filed** Nov. 14, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–1380–HW, *Olin Mathieson Chemical Corporation* v. *Maurry Biological Co., Inc.* Order on motion of defendants, dismissing complaint without prejudice Aug. 3, 1964.

**2,988,318.** (See 2,635,717.)

**2,996,822.** (See 2,925,931.)

**2,998,611**, W. E. Schuessler, CUFFED CAP AND FACE HOOD AND METHOD OF FORMING, **filed** Aug. 28, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1473, *American Needle and Novelty Co.* v. *Schuessler Knitting Mills, Inc.*

**3,001,872.** (See 2,588,699.)

**3,121,006.** (See 2,588,699.)

**Re. 24,034.** (See 2,500,750.)

**Re. 25,060**, F. E. Roland, IMPACT HOLE FORMING METHOD AND MECHANISM THEREFOR, **filed** Aug. 24, 1964, D.C. Oreg. (Portland), Doc. 64–407, *R and W Construction Company, Inc.* v. *McWaters Construction Co. et al.*

**Re. 25,136.** (See 2,588,699.)

**Re. 25,225.** (See 2,635,717.)

**Re. 25,412**, M. E. Bourns, ELECTRICAL RESISTOR; **Re. 25,510**, same, **filed** July 15, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–953–S, *Bourns, Inc.* v. *Techno-Components.* Stipulation and order of dismissal without prejudice Nov. 30, 1964.

**Re. 25,510.** (See Re. 25,412.)

**Des. 186,819.** (See 2,916,161.)

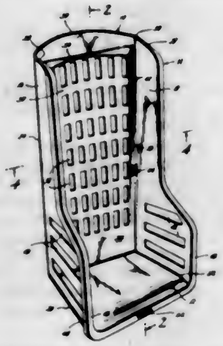
# REISSUES

## JANUARY 12, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

**25,710**
**BABY CARRIER**
**Alfred J. Ouellette, St. Paul, Minn., assignor, by mesne assignments, to Infanseat Company, Eldora, Iowa, a corporation of Iowa**
**Original No. 3,006,688, dated Oct. 31, 1961, Ser. No. 790,184, Jan. 30, 1959. Application for reissue Dec. 14, 1962, Ser. No. 245,369**
**22 Claims. (Cl. 297—457)**

1. A baby [seat] *carrier* comprising a [body] *shell* of flexible resilient sheet material including a [seat] bottom *having forward, rear, and side edges,* a [seat] back *having upper, lower, and side edges with the lower edge integral with the rear edge of said bottom and* extending upwardly from said bottom, and unitary sides secured to opposite *side* edges of said [seat] bottom and said [seat] back *along the length of the back from said bottom to the upper end of said back, said sides each having a forwardly facing front edge extending from said bottom to said upper end,* said [seat] back having an [offset] *apertured* central portion extending through the major portion of its width and terminating closely adjacent to the upper edge of said [seat] back, said central portion [being offset forwardly from the marginal portions of the seat back, said offset portion being substantially flat in vertical section] *having a plurality of transversely spaced apertures therein, said sides and bottom being provided at their forward edges with marginal flanges extending outwardly and rearwardly forming with the adjacent portions of the sides and bottom rearwardly opening channel-*



*shaped stiffening and reinforcing means,* said central portion forming a resilient cushioning member when the [marginal portion of the seat back is against a support] *carrier is supported by said marginal flange.*

# PLANT PATENTS

## GRANTED JANUARY 12, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

**2,465**
**GLADIOLUS PLANT**
**Carl H. Fischer, St. Charles, Minn., assignor to Selected Glads, Inc., New Albany, Ind., a corporation of Tennessee**
**Filed Nov. 6, 1963, Ser. No. 321,987**
**1 Claim. (Cl. Plt.—85)**

The new and distinct variety of gladiolus plant substantially as herein shown and described, characterized by its small size and blossoms of light blue color with creamy white throats.

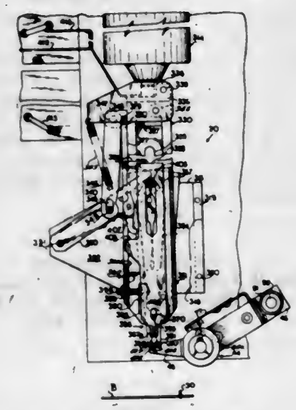


# PATENTS

## GRANTED JANUARY 12, 1965

## GENERAL AND MECHANICAL

**3,164,839**
**COMPONENT FORMING AND INSERTION MACHINE**
**Robert S. Kafka, Orange County, Fla., assignor to Martin-Marietta Corporation, Baltimore County, Md., a corporation of Maryland**
**Filed May 7, 1962, Ser. No. 192,946**
**12 Claims. (Cl. 1—322)**



1. An article handling device comprising:
(*a*) a frame,
(*b*) jaw means having operating arms extending therefrom,
(*c*) said jaws means and operating arms being mounted on said frame for motion toward and away from a workpiece,
(*d*) drive means on said frame for effecting said motion,
(*e*) actuating means between said arms and operable thereon to effect opening and closing movement of said jaws,
(*f*) proportional movement means connected between said drive means, said frame, and said actuating means whereby said actuating means is operated to effect said opening and closing movement of said jaws in phased relation to movement thereof.

**3,164,840**
**RADIATION PROTECTIVE GARMENT**
**Martin R. Reynolds, Glen Oaks, N.Y., assignor to The Filtron Company, Inc., Flushing, N.Y., a corporation of New York**
**Filed Feb. 27, 1961, Ser. No. 92,032**
**4 Claims. (Cl. 2—2)**

1. A protective work garment electrically shielded against radio frequency, comprising a fabric enclosure to fit over and enclose a human form, and having an opening to serve as a window in the region to be in front of the eyes of a wearer, such fabric having at least one layer of electrically conductive flexible metal extending throughout the area of the body of the enclosure to the region of the window, and a protective closure for said window, said closure embodying at least one layer of foraminous electrically conductive material to permit vision therethrough but to prevent transmission of field energy, and means for electrically coupling the conductive material of the



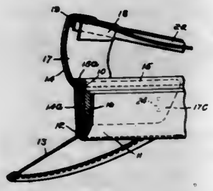
closure to the flexible conductive material layer in the body of the fabric, to establish a closed conductive shell.

**3,164,841**
**SAFETY GLOVES**
**Carl Burtoff, 702 Kathleen Place, Brooklyn 35, N.Y.**
**Filed Nov. 15, 1963, Ser. No. 324,148**
**3 Claims. (Cl. 2—161)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A safety glove comprising:
(*a*) an inner hand covering member;
(*b*) an outer hand covering member configured to receive said inner hand covering member;
(*c*) a plurality of relatively inflexible rings secured between said inner and outer hand covering members to surround the fingers of a hand;
(*d*) a relatively inflexible protective piece secured between said inner and outer hand covering members to surround the palm of a hand.

**3,164,842**
**STAY FOR UNIFORM CAP**
**Bernard Weinstein, Waban, Mass., assignor to Bancroft Cap Company, Framingham, Mass., a corporation of Massachusetts**
**Filed July 20, 1962, Ser. No. 211,202**
**1 Claim. (Cl. 2—195)**



In a uniform cap of the type having a generally circular head band, a soft crown with a front portion of arcuate

shape and a top, a top stiffener underlying said top, and a grommet supporting the periphery of said top: a one piece stay comprising a curved band fitting around said head band below the front portion of said crown, a rigid crown supporting member extending upward from said band and supporting said entire front portion and being of smoothly curved shape corresponding to that of said forward portion, said member having an upper edge and being coextensive in the circumferential direction with said band, bendable side wings extending from said band and secured to said head band at the sides thereof, and a central tab and bendable tabs to either side thereof extending rearwardly from the upper edge of said member, said central tab being secured to said top stiffener and said bendable tabs being bent down around said grommet.

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**3,164,843**
**UNDERGARMENT FOR WOMEN**
Olga Erteszek, Van Nuys, Calif., assignor to Olga Company, Van Nuys, Calif., a corporation of California
Filed Jan. 25, 1963, Ser. No. 253,930
8 Claims. (Cl. 2—212)



1. A half slip-type undergarment comprising two panels joined together along front and rear central seams and forming an upper torso encircling portion, a closed crotch and separate legs extending below the crotch from opposite sides of said seams, the front central portion of the garment having a vertical fold formed by doubling a vertical extent of one of said panels and sewed at its upper end to said torso encircling portion, said fold extending downwardly to overlap the legs at opposite sides of said front central seam and to conceal the crotch area, said fold having upper substantially parallel side extents equidistant from said front central seam, one of said side extents being exposed and the other being concealed by the fold.

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**3,164,844**
**GARMENT WAIST BAND CONSTRUCTION**
Burton B. Ruby, Edgewood, Michigan City, Ind., assignor to Jaymar-Ruby, Inc., Michigan City, Ind., a corporation of Indiana
Filed Sept. 12, 1962, Ser. No. 223,220
1 Claim. (Cl. 2—221)



Means for adjusting the waist size of a garment, said means comprising:

a first garment portion defining a waistband;

a multilayer second garment portion disposed inwardly of said waistband and overlappingly attached to said first garment portion to define a reverse loop having a short outer leg and a longer inner leg to form a pocket between said waistband and said looped second garment portion;

said multilayer second garment portion consisting essentially of an elongated outer garment segment, a short inner garment segment and a screen fabric therebetween;

an elastic band received in said pocket and having a first end affixed to said inner garment segment at said outer leg of said loop;

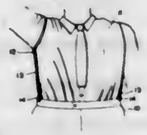
a strap having a first end affixed to a second end of said elastic band at a surface away from said waistband and adjacent an inner surface of said outer leg of said loop,

said strap having a second end extending from the interior of the pocket and provided with a first adhering portion; and

a second adhering portion on the first garment portion positioned for overlapping engagement with the first adhering portion of the strap, the overlappingly engaged adhering portions being inseparable in response to a force exerted substantially perpendicular to the strap and being separable in response to a peeling action, the adhering portion of the strap being adherable with any point on the adhering portion of the first garment portion; whereby a waist adjustment may be made with any desired degree of exactitude.

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**3,164,845**
**SHORT SUSPENDER**
Charles H. Fowler, 750 High St. SE., Salem, Oreg.
Filed Sept. 4, 1962, Ser. No. 221,088
2 Claims. (Cl. 2—325)



1. In combination

(*a*) a man's conventional outer shirt having double seams beneath armholes thereof,

(*b*) buttons secured over the double seams immediately beneath the armholes of the outer shirt,

(*c*) a pair of conventional outer men's trousers having a front opening,

(*d*) short straight elastic suspender straps, in number two only, initially detached from both the outer shirt and trousers and having

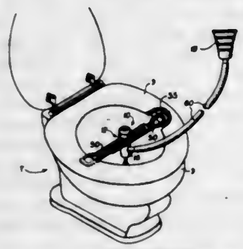
(*e*) a series of buttonholes in upper portions of the straps which, when selectively engaged with respective buttons, require the two short straight straps to depend from beneath armhole areas straight down along the double seams at the sides only of the shirt in positions with their lower end portions at the sides only of the trousers, and

(*f*) two-part fasteners depending freely at lower ends of the straps initially free of the trousers and in positions to overlap and detachably close upon inner and outer parts of the waistband of the trousers at side portions only of the trousers,

(*g*) so that the two straps while hanging each in a single straight vertical line will occupy zones of the person of the wearer only and solely beneath armpits and completely only within the arms while hanging down loosely, leaving the arms freedom of movement in all directions without interference from the two short suspender straps.



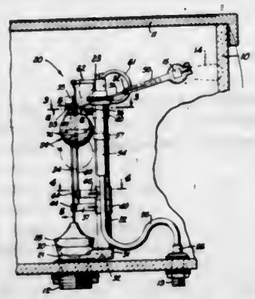
**3,164,846**
**PORTABLE BIDETS**
James B. T. Foster, 47 E. 67th St., New York, N.Y.
Filed Aug. 19, 1963, Ser. No. 302,833
13 Claims. (Cl. 4—7)



1. Portable apparatus for bathing the perineal region of the human anatomy when disposed in sitting position with respect to a toilet bowl or the like having a rim, said apparatus comprising a nozzle assembly; a hose coupled to said nozzle assembly to direct fluid thereto; a coupling on said hose permitting detachable connection of said hose to a water supply and a pair of slotted planar supporting plates secured to said nozzle assembly, said nozzle assembly slideably mounted in a slot of said supporting plates, the axis of said nozzle assembly extending at an angle to the plane of said supporting plates, to permit selective positioning of said nozzle assembly with respect to said plates to permit adjustment of the distance a free end of said plates extends from said nozzle assembly, whereby the free ends of said plates may be positioned on the rim of the bowl to support said nozzle assembly at a desired position within the confines of the bowl rim.

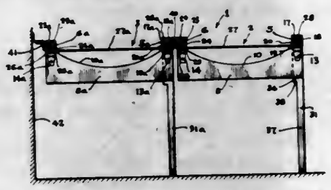
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**3,164,847**
**FLOAT CONSTRUCTION**
Ejnar Sorensen, 911 2nd St., Santa Monica, Calif.
Filed Dec. 19, 1962, Ser. No. 245,732
5 Claims. (Cl. 4—67)



1. In a flushing mechanism for use with a toilet tank having a discharge outlet valve seat, a valve ball seating thereon, an overflow pipe, and a water supply pipe, the improvement comprising a refill valve supported on said overflow pipe adjacent the top end thereof, said refill valve being connected to said water supply pipe and having a laterally projecting control lever which is movable vertically between open and closed positions, a stem loosely connected to the outer end of said control lever and depending therefrom, a float attached to said stem intermediate the ends thereof, and a guide arm attached to said overflow pipe and projecting laterally therefrom in the vertical plane of said control lever, said guide arm having bearing means at its outer end slidably engaging said stem below said float.

**3,164,848**
**FURNITURE**
David H. Melbye, 4513 W. 101st St., Oak Lawn, Ill.
Filed July 24, 1962, Ser. No. 212,050
6 Claims. (Cl. 5—8)



5. In a structure having an upright supporting member,

(*a*) two substantially rectangular-shaped frames,

(*b*) each of said frames including two substantially parallel spaced side rails,

(*c*) hinge means attaching one of said rails of one of said frames to said supporting member for support thereby,

(*d*) other hinge means attaching the other of said rails of said one frame to one of said rails of the other of said frames,

(*e*) each of said rails having two oppositely disposed faces,

(*f*) said frames being pivotable on said hinge means between

(1) one position wherein one of said two faces of all of said rails face upwardly in uniplanar relation to each other, and

(2) another position wherein

(*a'*) said one face of said rails of said one frame face horizontally outwardly from said supporting member, and

(*b'*) said one face of each of said rails of said other frame is disposed in closely adjacent, directly facing relation to said one face of a respective one of said rails of said one frame,

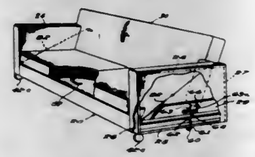
(*g*) flexible supporting means extending between the other of said faces on each of said frames, and

(*h*) leg means pivotally attached to said frames for supporting the latter in said one position,

(*i*) said leg means being pivotable into closely adjacent, substantially parallel relation to said frames.

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**3,164,849**
**COMBINATION BED AND DAVENPORT**
Irvin C. Poskin, 1828½ S. Robertson Blvd., Los Angeles 35, Calif.
Filed Oct. 23, 1962, Ser. No. 232,444
5 Claims. (Cl. 5—41)

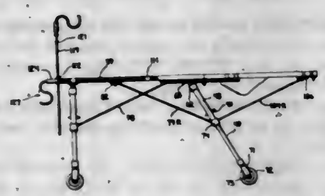


1. The combination, with a combined davenport and bed having a swingable back adjustable from an upstanding to a downswung position, and front and rear casters; of a track member which, when the davenport back is in an upstanding position normally underlies the davenport with said rear casters engaging the rear portion of said track, track attaching means which at such time releasably connect both the front and rear portion of said track member with the davenport, and manually operable means carried by the davenport and operable to release the rear portion of said track therefrom, the front

portion of the davenport being slidably related to said track member so that, after said manually operable track release means has been operated the davenport may be moved forwardly over said track till said rear casters reach its front portion, while said track member remains stationary upon a floor.

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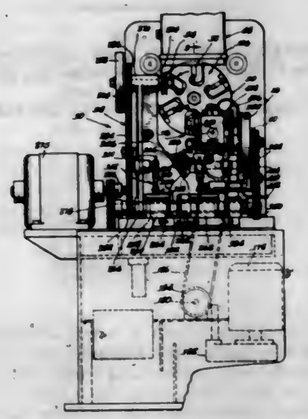
3,164,850
**EMERGENCY PATIENT SUPPORTING DEVICE**
Bern B. Grubb, 1621 E. Broadway, P.O. Box 224, Logansport, Ind.
Filed Nov. 22, 1963, Ser. No. 325,724
4 Claims. (Cl. 5—81)



3. In an emergency patient supporting device, the combination comprising: a table; a plurality of bracket means mounted along side margins of said table, each of said bracket means having a pair of horizontally aligned apertures; four one-piece carrying bars having a cross section fittingly received and non-rotatable in said horizontally aligned apertures, and said bars having hand grips thereon adjacent opposite ends of said table and extending beyond said opposite ends to receive the hands of litter bearers and facilitate carrying the table by litter bearers, said bars having integral generally S-shaped end portions of material homogeneous therewith extending beyond and below said grips and engageable with a ground surface to support said table as a platform.

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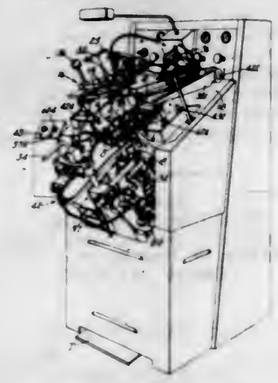
3,164,851
**MILLING MACHINE FOR DRILL POINT THREAD CUTTING SCREW**
Walter M. Hannemann, Wheaton, Ill., assignor to Illinois Tool Works, Inc., a corporation of Delaware
Filed Oct. 14, 1959, Ser. No. 846,481
16 Claims. (Cl. 10—2)



1. An apparatus for producing screws of the type described comprising endless conveying means for conveying successive screws along a predetermined arcuate path of travel, said conveying means including means for retaining successive screws with free end portions of the screws exposed, first bracket means pivotally mounted adjacent a first work station for movement in a first plane and including means for supporting a rotary tool for rotation in a plane parallel to said first plane for shaping an exposed end of successive screws at said first work station and providing said end with beveled faces, second bracket means disposed adjacent a second work station along said path of travel and spaced from said first work station and pivotally mounted for movement in a third plane parallel to said previously mentioned plane and including means on opposite sides of the path of travel for supporting rotary tool means for rotation in a plane substantially parallel to said previously mentioned planes for cutting a pair of opposed slot means angularly arranged and each partially penetrating a beveled face of the end portion of each of said successive screws, and means for actuating said conveying means and said first and second bracket means in timed relationship.

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3,164,852
**MACHINES FOR SHAPING UPPERS OVER LASTS**
Raymond M. Bowler, Salem Depot, N.H., and Donald B. McIlvin, Danvers, James R. Stewart, Salem, and Frank W. Wetherbee, Hamilton, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed May 11, 1962, Ser. No. 194,064
34 Claims. (Cl. 12—10.5)

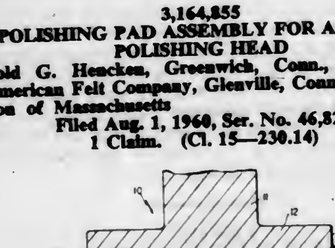


1. In a machine for operating on a shoe assembled on a last, a support for the last, a wiper head including wipers corresponding substantially to the outline of the last, said wiper head initially being in an open position exposing the support to facilitate placement of the shoe and being movable to a gaging position in which the wipers overlie the last and act as a visual gage defining the outline of the last hidden by the upper, means for bodily adjusting the position of the upper with respect to the last outline defined by the wipers, and means for moving the head intermittently from said open position to the gaging position and thereafter heightwise of the support to a closed position for wiping the upper over the last.

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3,164,853
**TELEPHONE DIAL WIPER**
Ruby Alice Peeler, 2645 Mt. View, San Bernardino, Calif.
Filed Aug. 27, 1962, Ser. No. 219,798
1 Claim. (Cl. 15—244)

A telephone dial wiper comprising, in combination, an elongated handle, a pair of opposed sponge rubber strips operatively secured to said handle and covering one end thereof for insertion into a telephone dial for cleaning dust and film from said telephone dial, said sponge rubber strips being elongated and pointed at their forward end, said strips in assembled position having a flat upper side and a flat lower side, said pointed end of said strips of said wiper being inwardly bevelled toward each other and the sides of said strips being bevelled inward toward each other



for further ease in cleaning small crevices, and said pointed forward end comprising a pair of individual points, each of which is on the plane of one of the said upper and lower sides.

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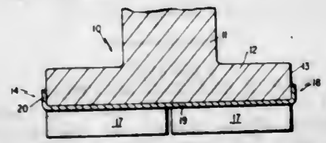
3,164,854
**APPARATUS FOR POLISHING SHEET MATERIAL**
Charles A. Hess, Perrysburg, and John M. Byal and Milton Adams, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 10, 1962, Ser. No. 222,517
6 Claims. (Cl. 15—230.19)



1. In apparatus for polishing sheet material such as glass and the like, a polishing runner including a hollow pan-like member having a rigid, substantially flat portion which defines the working face of the runner and a side wall portion surrounding and extending upwardly from said flat portion, a polishing pad secured to the runner about said side wall and completely covering said working face portion thereof, and a plurality of resilient inserts disposed between said rigid flat portion of the runner and said polishing pad in spaced relation to each other, said inserts being positioned adjacent the perimeter of said flat portion and dimensioned inwardly thereof so as to leave the centrally disposed area of said polishing pad spaced from said flat portion and completely free of resilient backing, with a portion of said inserts extending beyond said flat portion and also being secured adjacent said side wall.

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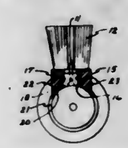
3,164,855
**POLISHING PAD ASSEMBLY FOR A GLASS POLISHING HEAD**
Harold G. Heneken, Greenwich, Conn., assignor to American Felt Company, Glenville, Conn., a corporation of Massachusetts
Filed Aug. 1, 1960, Ser. No. 46,828
1 Claim. (Cl. 15—230.14)



A polishing pad assembly for a glass polishing head comprising a non-metallic support member having an upstanding peripheral flange removably attachable to said head such that said upstanding peripheral flange mates with the peripheral surface of said head and including an outer plane surface and a plurality of segmentally shaped felt pads adhesively bonded to said plane surface to provide open grooves therebetween.

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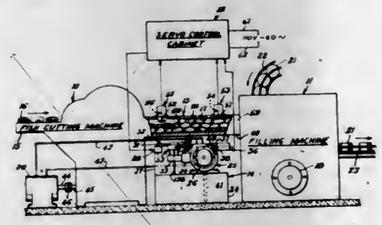
3,164,856
**BRUSH ATTACHMENT FOR PRESSURIZED CONTAINERS AND DISCHARGING OR EJECTING DEVICES**
Peter J. Samaras, 33 Arthur Place, George Samaras, 62 Pearl St., and Nick Samaras, 15 Navesink River Road, all of Red Bank, N.J.
Filed May 15, 1962, Ser. No. 194,761
4 Claims. (Cl. 15—552)



1. An interchangeable brush attachment for a pressurized container having a dispensing tube which includes a rigid base element mounted and supported solely on said dispensing tube, said rigid base element having a brush protruding from one face, said brush provided with a hollow central area, said base having a central aperture therethrough, a resilient bushing frictionally inserted into said aperture of said base from the side opposite to said brush, said bushing provided with a central aperture of a shape and size to frictionally grip and fit said dispensing tube of said pressurized container.

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3,164,857
**FISH CANNING CONTROL APPARATUS**
Joseph J. Sennello, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 6, 1962, Ser. No. 177,868
5 Claims. (Cl. 17—4)

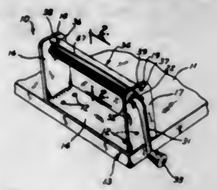



1. In a fish cutting and canning operation in which is provided a fish cutting machine, a fish canning machine and a generally horizontal fish delivery tunnel for delivering cut up fish from the fish cutting machine to the fish canning machine; the improvement comprising: a first detecting means in the tunnel at a point remote from the fish cutting machine and close to the fish canning machine; a second detecting means in the tunnel at a location closer to the cutting machine than the first detecting means, each detecting means being operable to assume a first position when the tunnel at the location of the detecting means is not substantially filled to capacity with fish and operable to assume a second position when the tunnel at the location of the detecting means is substantially filled to capacity; control means responsive to the position of each detecting means, and; a variable speed drive means for driving the fish cutting machine, the speed of which deter-

mines the rate at which the fish cutting machine delivers cut up fish to the fish tunnel, said control means being operatively connected to said variable speed drive means to vary the speed of the drive means in response to the position of each of the detecting means.

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**3,164,858**
**FISH SKINNING APPARATUS**
**Leonard De Moss, 4008 Douglas Ave., Des Moines, Iowa**
**Filed July 29, 1963, Ser. No. 298,144**
**4 Claims. (Cl. 17—7)**



1. A skinning apparatus comprising:

(*a*) a frame having a pair of substantially parallel upright legs, each leg having a slot extended in an upward and forward direction,

(*b*) front roller means extended between said legs, said front roller means having axial extensions at the opposite ends thereof positioned in the slots of the adjacent legs and teeth means on the peripheral surface thereof extended parallel to the axis of rotation of said roller means,

(*c*) rear roller means extended between said legs substantially parallel to said front roller means, said rear roller means having axial extensions at the opposite ends thereof positioned in the slots of the adjacent legs and teeth means on the peripheral surface thereof in meshing engagement with the teeth means on the front roller means,

(*d*) crank means secured to one of the axial extensions of said front roller means whereby upon turning of said crank means the front roller means is rotated downwardly to drive said rear roller means,

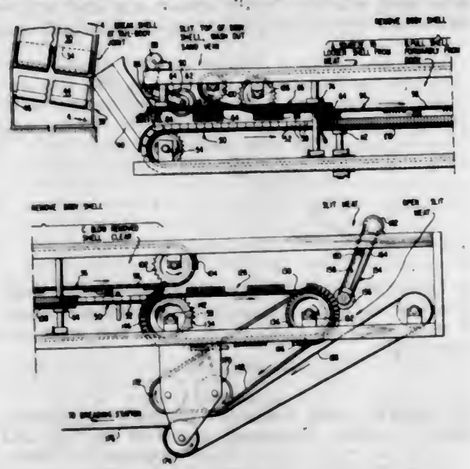
(*e*) blade means having a forward section and a rear section, said rear section having axial projections at the opposite ends thereof rotatably mounted on the legs for movement about an axis positioned above the slots and extended substantially parallel to the axes of said front and rear roller means, said blade means extended forwardly from said axis in a plane substantially normal to a vertical plane extended through the axis of rotation of said front roller means, said forward section having a concave surface engageable with and extended about a top portion of the front roller means and an edge extended axially of said front roller means in close proximity to the terminating ends of the teeth means thereon, and

(*f*) means connected to said legs and engageable with the top of the forward section of said blade means and operable to bias said forward section of the blade means into engagement with said front roller means.

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**3,164,859**
**METHOD FOR PROCESSING SHRIMP**
**Henry F. Ambos and Herman R. Letchworth, Savannah, Ga., assignors to Seafoods Automation Corp., Savannah, Ga., a corporation of Delaware**
**Filed May 21, 1963, Ser. No. 281,957**
**9 Claims. (Cl. 17—45)**

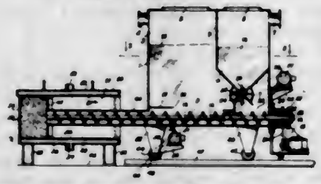
1. A method of partially deshelling headless shrimp comprising the steps of flexing the tail of the shrimp from side to side to circumferentially break the shrimp shell at a location adjacent the juncture of the tail section shell and the body section shell, slitting the top of the shrimp



shell longitudinally from the head end of the shrimp to the circumferential break, and pulling the slit portion of the shell forwardly from the body of the shrimp.

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**3,164,860**
**APPARATUS FOR UNIFORMLY MIXING AND CHARGING A SUBSTANCE INTO A MOLD**
**Berton Rogan Ozel, New Castle, Pa., assignor to Dyfoam Corporation, New Castle, Pa., a corporation of Pennsylvania**
**Filed Nov. 9, 1961, Ser. No. 151,368**
**6 Claims. (Cl. 18—5)**



1. An apparatus for mixing and molding granules of an expanded synthetic material comprising, a hopper divided into a plurality of chambers containing materials to be mixed and molded, screw conveyers at the bottom of the hopper for receiving, mixing and conveying the materials, a mold chamber having a fixed mold wall and a movable mold wall between which the materials are molded, the screw conveyers communicating with the interior of the mold chamber to thereby deposit the mixed materials therein, tubular means surrounding the screw conveyers and projecting from the hopper, said tubular means being attached to the movable mold wall, and a carriage for the hopper to thereby permit movement of it to and from the mold chamber to cause movement of the movable end wall to or from the fixed end wall.

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**3,164,861**
**SLEEVE SEALING MACHINE**
**Charles Leo Munroe, Medford, and Stefan Tomczak, Dorchester, Mass., assignors to Ark-Les Switch Corporation, Watertown, Mass., a corporation of Massachusetts**
**Filed Dec. 10, 1963, Ser. No. 329,411**
**4 Claims. (Cl. 18—6)**

1. Apparatus for sealing the edges of a sleeve together to complete an assembly, comprising

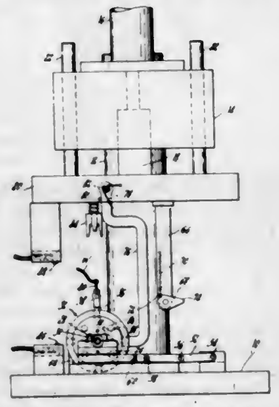


a fixed part and a cooperating movable part, together forming a clamp for pressing and sealing the edges of a said sleeve introduced therein,

a holder with a periphery adapted frictionally to receive and hold a plurality of said assemblies at angularly spaced index points therearound,

a rotatable mount for said holder, supporting it for stepwise rotation of its periphery between angles corresponding to the locations of said index points,

a sliding support for said holder, mounting it with respect to said clamp for reciprocating movement through a cycle including a first position with said periphery of said holder adjacent said clamp, movement to a second position with said periphery with-



drawn from said clamp and a return movement back to said first position,

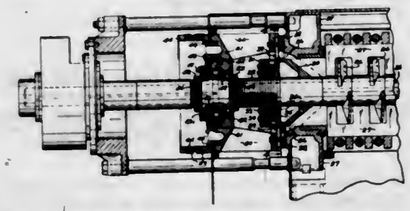
an ejector adjacent and fixed with respect to said fixed clamp part, adapted to engage and withdraw an assembly from said holder when moved from said first position to said second position in a cycle,

an operating member oscillatable from a rest position to an active position and back to rest position again,

means actuated by said operating member, when oscillated, to move said movable clamp part and press and seal the edges of a sleeve introduced in said clamp; to reciprocate said holder through a cycle on said sliding support and cause said ejector to withdraw an assembly from said holder; and to rotate said holder on said rotatable mount stepwise through an angle corresponding to an index point spacing.

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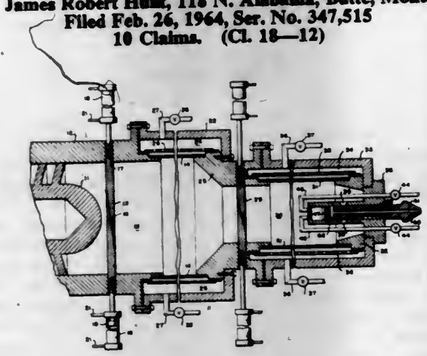
**3,164,862**
**MEANS FOR CUTTING DEWATERED ELASTOMERS**
**Carl W. Zies, Lakewood, Ohio, assignor to International Basic Economy Corporation, New York, N.Y., a corporation of New York**
**Filed Apr. 9, 1962, Ser. No. 185,894**
**6 Claims. (Cl. 18—12)**



1. Apparatus for cutting dewatered elastomeric material as it issues from a screw press barrrel, said apparatus comprising means including a rotatable shaft with helical screw flights thereon for advancing and compressing said material in said barrel, means providing a limited area discharge opening of annular contour through which the material is ejected, a first set of cutting blades fixed and spaced circumferentially around and within said opening, a second set of cutting blades disposed in spaced, circumferential relationship adjacent said fixed blades and supported on said shaft in cutting relationship with said fixed blades, first power means for rotating said shaft and second power means for imparting rotary motion to said second set of blades independently of shaft rotation whereby each moving blade cooperates in turn with each fixed blade to cut into predetermined sized fragments the material issuing through said annular opening.

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**3,164,863**
**APPARATUS FOR EXTRUDING PLASTIC MATERIAL**
**James Robert Hunt, 118 N. Alabama, Butte, Mont.**
**Filed Feb. 26, 1964, Ser. No. 347,515**
**10 Claims. (Cl. 18—12)**



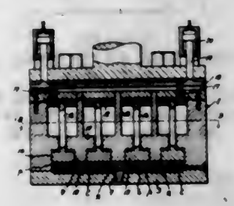
1. In a machine for extruding metered shots of thermoplastic material, a flexible reservoir bladder for receiving and temporarily storing thermoplastic materials and for maintaining said thermoplastic material at a desired temperature; a fluid pressure chamber around said flexible reservoir bladder for squeezing said reservoir bladder; a flexible operating bladder adjacent said flexible reservoir bladder; a normally closed shut-off gate separating said reservoir and operating bladders and for passing said thermoplastic materials from said reservoir bladder into said operating bladder when said gate is opened and said reservoir bladder is squeezed; a fluid pressure chamber surrounding said flexible operating bladder for squeezing said flexible operating bladder; a normally closed reciprocal nozzle positioned in and extending from said flexible operating bladder; and a source of fluid pressure connected to said normally closed reciprocable nozzle for opening said nozzle whereby metered shots of said thermoplastic material are extruded through said nozzle when said flexible operating bladder is periodically squeezed by increasing the fluid pressure in said fluid pressure chamber, the size of said shots being determined by the displacement of said flexible operating bladder upon each squeeze.

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**3,164,864**
**METALLIC MOLD FOR FORMING A SHAPED ARTICLE**
**Shoji Kobayashi, 1405 Oaza Ryoke, Urawa, Saitama Prefecture, Japan**
**Filed Mar. 20, 1963, Ser. No. 266,532**
**Claims priority, application Japan, Apr. 27, 1962, 37/16,658**
**3 Claims. (Cl. 18—42)**

1. Two-step molding apparatus comprising, in combination, an upper mold including side walls and a parti-

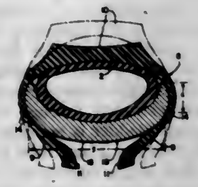
tion extending transversely between said side walls with the latter having portions extending beyond said partition to terminate in a parting plane; said partition having projections extending therefrom toward said parting plane and having substantially flat outer end surfaces arranged in a common plane substantially parallel to said parting plane; plural plungers having stems slidably engaged through apertures in said partition and heads on their outer ends closing the space between said partition and between said side walls and said partitions, said heads having substantially flat outer end surfaces lying in a common plane parallel to said parting plane; said substantially flat outer end surfaces of said projections and said head, together with said side walls, defining an open mold cavity; first and second lower molds interchangeably



cooperable with said upper mold at said parting plane to close said mold cavity; said first lower mold having a substantially planar inner surface formed with projecting bosses each alignable with a respective plunger and having ends terminating in a common plane intermediate said parting plane and the common plane of the outer end surfaces of said projections; said upper mold and said first lower mold cooperatively defining an injection gate in said parting plane for injection of the first molding material in a first molding step; said second lower mold having a cavity in its inner surface extending outwardly from said parting plane and an injection gate opening into said cavity substantially perpendicular to said parting plane for injection of a second molding material in a second molding step.

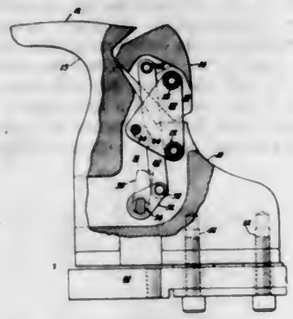
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**3,164,865**
**CURING RIM**
**Clement O. Dennis and William C. Shaver, Macon, Ga., assignors to Precision Recapping Equipment Company, Macon, Ga., a corporation of Georgia**
**Filed Oct. 27, 1960, Ser. No. 65,425**
**6 Claims. (Cl. 18—45)**



1. A device for temporarily reducing the diameter of a tire comprising, with an inflated tube therein, a rigid backing rim for the tube in the tire and leaving the beads of the tire in the clear, means to engage and press said beads toward each other, and elements on the rim at spaced intervals about the circumference thereof and positioned to engage the sidewalls of the tire on the inside thereof intermediate the beads and the tread thereof and arranged to cause the adjacent tread portions of the tire to be buckled radially inward as the beads are pulled together.

**3,164,866**
**MACHINERY FOR MAKING SHOES**
**Chester D. Mattera, Hamilton, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey**
**Filed Feb. 8, 1963, Ser. No. 257,260**
**1 Claim. (Cl. 18—46)**



A foreshortening shoe form comprising a main body portion having a head which is shaped similarly to the forepart of a shoe and a neck extending from the head and merging into a broadened base, said main body portion having an opening extending heightwise thereof from the neck into the base, a heel block constructed and arranged to form in combination with the head of said main body portion a form for mounting a shoe, said main body portion being provided with a recess which provides clearance for the foreshortening and extending movements of the heel block, means for mounting the heel block comprising two parallel plates spaced apart from each other and extending heightwise of said main body portion, the lower portions of said plates being positioned within the upper part of said opening in the main body portion and the upper portions of said plates being positioned within a recess formed in the heel block, means for rigidly mounting said plates in the main body portion comprising a forward cross pin and a rear cross pin, said cross pins being fixed in the main body portion and extending through the neck and through the upper portion of said opening, a third cross pin extending through the heel block, through the recess formed therein and through the upper portions of said plates and pivotally mounting the heel block for foreshortening and extending movements, means for imparting such foreshortening and extending movements to the heel block comprising a crank shaft journaled in the base of said main body portion and extending through the lower extremity of said opening, crank means fixed to said crank shaft and positioned within said opening, a link connecting the crank means to the heel block, said link being positioned between said parallel plates and being positioned between the first cross pin and the second cross pin, said first cross pin providing a stop against which the link comes to rest upon the completion of the operation of the crank means to advance the heel block from its foreshortening position to its shoe form extending position.

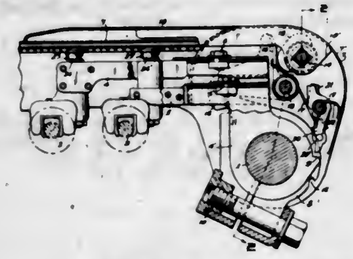
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**3,164,867**
**LATCHING DEVICE FOR LOAD ARMS FOR SPINNING MACHINES**
**Shigematsu Takita, Takarazuka, Hyogo, Japan, assignor to Meiko Boki Co., Ltd., Nagoya, Japan**
**Filed Feb. 6, 1962, Ser. No. 171,522**
**15 Claims. (Cl. 19—267)**

1. In a load arm mechanism for a textile machine, a load arm comprising integrally connected hub and radial portions, an abutment carried by said radial portion, means mounting said hub portion for rotation about a



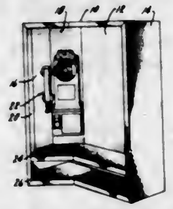
fixed axis from a first operating position to a raised position, a member independently rotatable about said axis between said positions and in said first position engaging the said abutment of said arm to hold said arm in first position, first means operable to releasably hold said member in first position, second means operable to releasably hold said member in raised position, third means operable



to releasably connect said member with said arm to rotate said arm to raised position, by and in response to movement of said member to raised position, and manually operable means carried by said member and movable in one direction to (*a*) release said first means (*b*) to engage and hold said second and third means in release position, sequentially, in the order mentioned.

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**3,164,868**
**WALL MOUNTED TELEPHONE BOOTH**
**Leslie A. Hannula, Waukegan, Martin B. Schaffer, Park Forest, and Edward S. Ertl, Island Lake, Ill., assignors to Acoustics Development Corporation, Park Ridge, Ill., a corporation of Illinois**
**Filed Nov. 8, 1961, Ser. No. 150,919**
**2 Claims. (Cl. 20—3.5)**



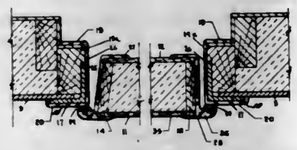
1. A tamperproof acoustical telephone booth comprising a rigid metal mounting frame adapted to be attached to a wall and a booth structure fixed to the frame,

said frame including a pair of vertically spaced horizontally extending metal channels, a metal vertical connecting member fixed to both channels, a vertical metal telephone support member fixed to both channels and horizontally spaced from said connecting member, said support member being formed by a pair of plates, integral with each other along one edge, one of said plates lying in the plane common to said channels and being attached to said channels, the other plate forming an acute angle with said plane and opening in a direction away from said connecting member,

said booth structure including an acoustical back wall, a pair of spaced generally downwardly depending flange members fixed to said back wall and in engagement with said channels, an acoustical first side wall at one end of the back wall and extending rearwardly beyond the back wall, an acoustical diagonal side wall at the other end of the back wall, said diagonal side wall lying flush against the plate forming an acute angle with the plane of the channels such that a telephone mounted on said diagonal side wall will be secured to said plate, a second acoustical side wall, parallel to said first side wall, joined to said diagonal side wall and extending rearwardly beyond said back wall, the angle of said diagonal side wall relative to said back wall and second side wall preventing removal of the telephone with a tampering tool, said first and second walls covering the frame, an inwardly directed acoustical side wall joined to said second side wall and extending partially across the front of the booth, an acoustical top wall joined to the top of said side walls and extending rearwardly beyond the back wall, and a bottom for said booth including a pair of spaced, generally parallel bottom walls extending rearwardly beyond said back wall, the upper of said bottom walls cooperating with the back, side, diagonal side, front and top walls and defining a space for the telephone, said diagonal side wall terminating at the upper of said bottom walls, the lower of said bottom walls cooperating with said side and front walls to define a shelf, said shelf extending rearwardly beneath said diagonal side wall.

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**3,164,869**
**CLOSURE STRUCTURE**
**George Barkan, Yonkers, N.Y., assignor to Marine Appliances Inc., New York, N.Y., a corporation of New York**
**Continuation of application Ser. No. 770,659, Oct. 30, 1958. This application Oct. 23, 1961, Ser. No. 147,098**
**9 Claims. (Cl. 20—69)**



5. An impervious door closure structure for refrigerated spaces comprising a door frame defining an opening and a door having front and rear face panels and a planar edge extending to the opposite face panels thereof fitted within said frame, means for sealing the peripheral portions of said door relative to said frame when the door is in its closed position, said sealing means comprising a resilient impervious member, said member comprising a first leg portion lying in continuous transverse contact with edge marginal portions of said door, a second leg portion at right angles to said first leg portion and covering face marginal portions of the front face panel of said door, and a third leg portion coplanar with the second leg portion and projecting outwardly of the edge portion of said door throughout the width thereof and forming a resilient unsupported bead in opposed relation to face portions of said frame, a gasket mounted on the inner face of said bead for abutting the face portions of said frame, said bead resiliently urging said gasket against the face portions of said frame.

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**3,164,870**
**ROOF RAIL WEATHERSTRIP**
**William J. Harms, Dearborn, and Joseph M. Stolarczyk, Wyandotte, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed June 15, 1962, Ser. No. 202,739**
**2 Claims. (Cl. 20—69)**

1. A weatherstrip attachable to a vehicle body rail section defining an edge of a body opening receiving a closure,

said weatherstrip comprising an elongated elastomeric member having a base fastenable to rail section,

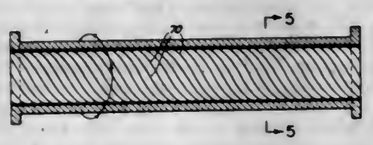
a leg at one longitudinal edge of said base extending in a direction perpendicular to the latter,
said leg terminating in an angularly related lip extending toward said base,
a flap means consisting of a pair of legs extending in divergent relationship to one another and connected by an integral neck to said base at the other longitudinal edge of the latter,
one of said divergent legs in the unflexed position thereof extending in a general direction of said lip and terminating in a bead,
said bead being spaced from the terminus of said lip,
said bead and said lip being engageable by adjacent



corner surfaces of said closure to flex said one divergent leg and said lip toward the intersection of said base and first mentioned leg,
the resistance to such flexure providing weatherseal pressure against said adjacent corner surfaces,
said one divergent leg when flexed by said closure causing the other divergent leg to be swung toward said closure for sealing engagement with a third surface thereof,
and nonelastomeric means embedded in said flap means and extending into each of said divergent legs to cause the latter to be swingable in unison upon engagement of said bead by said closure.

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3,164,871
**CENTRIFUGAL CASTING APPARATUS AND THE METHOD OF MAKING THE SAME**
Paul F. Haughton, Ringgold, Ga., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Nov. 2, 1961, Ser. No. 149,621
4 Claims. (Cl. 22—65)




1. Apparatus to be used for centrifugal casting including a mold, a layer of lining material on the inside of said mold, said mold having a first, pouring end, and a second, nonpouring end, means for pouring molten material at the pouring end only, means for rotating said mold in one preselected direction, spiral groove means formed in the inner surface of said lining material, said spiral groove means extending in one direction only, from the pouring end toward the nonpouring end in a direction opposite to said preselected direction of rotation.

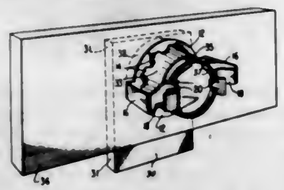
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3,164,872
**METHOD AND COMPOSITION FOR FORMING PRECISION MOLDS**
Herbert Greenewald, Jr., Dallas, Tex. (4296 Braunton Road, Columbus, Ohio)
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,121
11 Claims. (Cl. 22—193)

1. A chemically bonded molded material for forming precision casting molds and the like consisting essentially of an agglomerate of approximately 1000 parts by weight of a refractory powder selected from the group consisting of silica flour and the silica flour equivalent weight of a refractory powder, from 10 to 50 parts by weight of nonacidic bentonite, from 1 to 40 parts by weight of sodium hydroxide, from 10 to 100 parts of silicon metal powder, and from 100 to 250 parts of water where said silicon metal powder is prefired at a temperature of from 400° F. to 2200° F.

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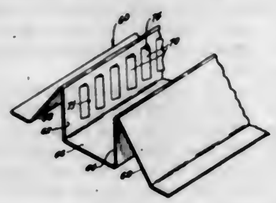
3,164,873
**SPRING CLIP FASTENER**
Stanley C. Marek, Chicago, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed May 28, 1963, Ser. No. 283,816
1 Claim. (Cl. 24—81)



A spring clip for securing a device, including a tubular shaft having a shoulder at one end, to a wall defining an aperture for receiving said tubular shaft, and for additionally securing an object having a lip formed on one end, within said tubular shaft, said spring clip comprising; a convex base including a plurality of resilient tabs defining at their extension a circle of slightly smaller diameter than said tubular shaft, said plurality of resilient tabs frictionally engaging said tubular shaft and securing said device to said wall and said spring clip to said tubular shaft; and resilient upright arms connected to said base having bent ends extending over the other end of said tubular shaft and blocking entrance thereto, a stop tab formed in each of said bent ends, said stop tabs having free edges extending toward said base and adapted to engage said lip for securing said object within said shaft, said resilient arms being bendable to allow insertion of said object in said tubular shaft into abutting engagement with said shoulder at one end of said tubular shaft and retaining engagement with the free edges of said stop tabs at the other end of said hollow shaft, without disrupting the frictional engagement between said resilient tabs and said shaft.

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3,164,874
**CONCRETE PIPE WITH PRETENSIONED REENFORCEMENT**
Benson Reark, 136 S. McGee St., Dayton 3, Ohio
Filed Aug. 6, 1958, Ser. No. 753,498
3 Claims. (Cl. 24—129)



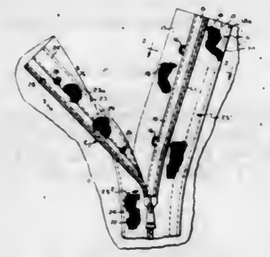
1. A combination die and gripping device for holding a wire comprising a body of sheet metal having spaced



parallel walls defining an elongated channel therein, said walls diverging from each other at one end and being fixedly interconnected at one edge by a portion extending between said walls, the edges of the walls opposite the interconnecting portion terminating in reverse bends, and said body having marginal portions in a common plane with the interconnecting portion between the walls and attached to said reverse bends, a plurality of teeth extending from each one of said walls into the channel, each set of said teeth terminating remote from its wall on substantially a plane substantially parallel to its wall in elongated edges substantially normal to the longitudinal axis of the channel, each tooth having side wall surfaces extending from its wall to the terminating plane of said tooth, said two terminating planes being spaced from each other, whereby the die and gripping device is adapted to receive a wire softer than said die and gripping device and having a diameter less than the distance between said walls and greater than the distance between said terminating planes, the wire, upon being driven into the channel being provided with teeth therein meshing with the teeth of the die and gripping device for gripping the wire.

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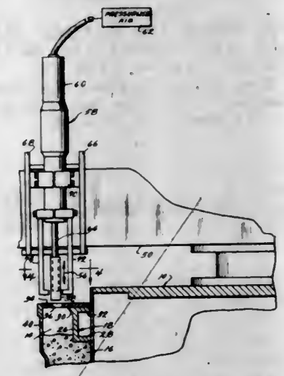
3,164,875
**CLOSURE FASTENER MEANS**
George Waldes, Pinedome, N.Y., assignor to Waldes Kohinoor, Inc., a corporation of New York
Filed Sept. 24, 1962, Ser. No. 225,602
7 Claims. (Cl. 24—205)



1. A combination slider-activated and hook-and-eye closure fastener unit comprising: a single pair of fastener tapes; one of said tapes being folded on itself to provide a longitudinal integral flap extending in a direction away from said tape and overlying a portion of said tape, said flap having a free edge portion, a plurality of slider-activated coupling elements disposed in a longitudinal row extending along and being secured to the free edge portion of said flap, said one fastener tape also carrying a longitudinal series of fastener eyes disposed in spaced-apart relation; the other of said fastener tapes having secured thereto a plurality of slider-activated coupling elements disposed in a longitudinal row and which are adapted to be engaged with and disengaged from said first-named coupling elements, said other tape also carrying a longitudinal series of longitudinally spaced-apart fastener hooks which are adapted to be engaged with and disengaged from the fastener eyes of said one fastener tape; and a slider carried by said tapes for effecting engagement and disengagement of the coupling elements of the rows thereof; the construction and arrangement being such that said one tape is common to the first-named row of coupling elements and to said series of fastener eyes, and said other tape is common to said second-named row of fastener elements and to the series of fastener hooks.

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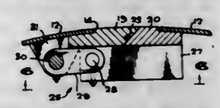
3,164,876
**BELL TAMPER FOR CONCRETE PIPE**
Harold H. Hendrix, Jr., Dover, Ohio, assignor to United States Concrete Pipe Company, a subsidiary of Pittsburgh Coke & Chemical Company, Pittsburgh, Pa., a company of Pennsylvania
Filed Mar. 4, 1963, Ser. No. 262,689
2 Claims. (Cl. 25—37)



1. Apparatus for manufacturing belled pipe of a type material which needs tamping during forming to impart desired strength to the pipe, comprising: a cylindrical core for forming an inner wall for the pipe generally, at least one bell packer fixedly secured to extend outwardly from a portion of the periphery of said cores at one end thereof for forming the inside wall and shoulder of the bell of said pipe, a cylindrical outer form spaced from said core and bell packer for forming the outer wall of the pipe including its bell, an apertured trowel fixedly secured to and extending from the outer end of said bell packer to said outer wall form for closing the space therebetween except for an aperture which is narrower and shorter than that space, tamping means having a reciprocable tamper and being fixedly mounted relative to said core so that the tamper reciprocates through the said trowel aperture to effect packing and troweling of concrete disposed between said bell packer and outer form to increase the density of the pipe bell, and means for relatively rotating said core and outer wall form to cause the said packing and troweling by the tamping means and trowel to be effected around the full circumference of the bell as it is being formed.

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3,164,877
**CORE FOR A MOLD**
Edwin J. Lee, Fullerton, Calif., assignor to American Pipe and Construction Co., Los Angeles, Calif., a corporation of California
Filed Sept. 17, 1962, Ser. No. 224,038
7 Claims. (Cl. 25—128)



7. In a core for a mold used in casting large poured concrete pipe sections, comprising a cylindrical body of heavy gauge sheet metal having a longitudinal parting from end to end, a substantially rigid gate strip secured to each marginal edge of the body along the parting, said gate strips being thicker than said cylindrical body and having abutting complementary edges, a plurality of pivot bars fixed to one of said gate strips at spaced intervals therealong, said pivot bars each extending across the other of said gate strips and in abutment with the inner surface

thereof, a plurality of links pivotally secured to said cylindrical body along an axis extending longitudinally of the core and spaced circumferentially beyond said other gate strip, and a pivotal connection between each link and one of said pivot bars at the end portion of the bar nearest said axis.

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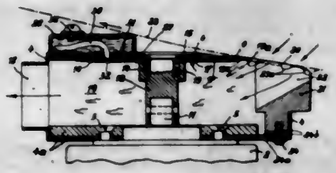
3,164,878
CONCRETE FORM TIE HAVING FLEXIBLE THREADS AND ASSOCIATED BOLT AND METHOD OF MAKING SAID TIE
David M. Berg, 2024 Ardin Drive, Norristown, Pa.
Filed July 5, 1963, Ser. No. 292,866
2 Claims. (Cl. 25—131)



2. In a concrete form tie and bolt assembly, a plurality of coextensive rods, two helical coils of resilient strip material secured to said rods one at each of the end portions of the rods, said coils having spaced resilient portions bent downwardly at a slant to constitute thread portions, two bolts one of which is associated with one of said coils and the other with the other of said coils, each bolt having a threaded surface, the bolt thread outer diameter being less than the coil root inner diameter, whereby the bolt may be readily inserted into the associated coil by forcefully moving the bolt axially into the associated coil at which tim the coil threads spring back and forth as the bolt threads enter, but a force on the bolt in the direction to retract the bolt will tend to flex the coil threads radially inward into locking engagement with the bolt threads.

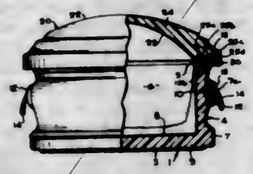
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3,164,879
DEVICE FOR SEVERING THREAD ENDS AND THREAD-CHANGE LOOPS ON FABRIC SELVEDGES
Louis Springli, Zurcherstrasse 53, Rapperswil, Switzerland
Filed June 19, 1962, Ser. No. 203,633
3 Claims. (Cl. 26—10.4)



1. A device for severing projecting thread ends and and loops on fabric selvedges comprising a toothed cutter, a casing receiving said cutter and defining a chamber beneath said cutter for reception of severed threads ends, a source of suction connected to said chamber, a co-operating cutter-comb plate directly above and adjacent said cutter defining the top wall of said casing, and a feed table preceding the cutter and providing a bearing surface for a fabric selvedge, said table being formed by spaced lamellae parallel to the selvedge and having fabric-engaging surfaces inclined to the plane of the cutter, said lamellae defining air gaps therebetween communicating with said chamber, said cutter comprising a circumferentially toothed circular disc, whereby the plane of the cutter forms an acute angle to the plane of a fabric passing over said table and comb plate and operates to sever the projecting threads drawn between the lamellae by the suction.

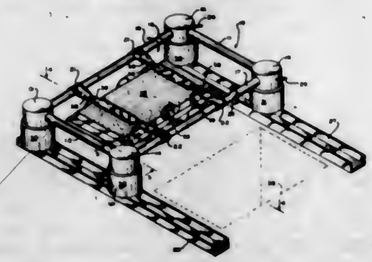
3,164,880
PLASTIC CASKET
Bruce M. Hotchkiss, 5 W. Highland Ave., Tracy, Calif.
Filed Mar. 24, 1961, Ser. No. 98,266
1 Claim. (Cl. 27—3)



In a rectangular casket, a tub portion comprised of spaced molded plastic inner, outer, bottom, end and side walls having a core of foam plastic therebetween, said outer, side and end walls having their top edge portions above the plane of the inner marginal portions of the top edge portions of said inner, side and end walls, said inner top edge portion spanning the space between said inner and outer, side and end walls, said inner top edge portion having a depressed portion between its inner and outer side marginal portions defining a continuous sealant-receiving channel, and a cover lid mounted on said tub and having a continuous depending lip portion of generally V-shaped cross section extending into said channel whereby to engage and displace sealant therein; said cover lid having a bottom portion sealingly engaging the outer marginal portion of said inner top edge portion and having a bottom inner marginal portion spaced above the inner marginal portion of said inner top edge portion whereby to provide a passageway from said channel to the interior of said tub for passing sealant displaced from said channel by said lip portion.

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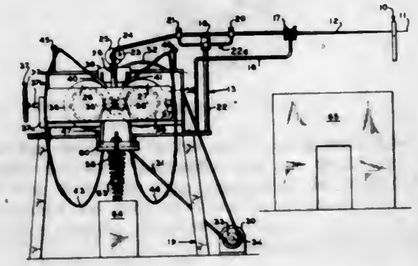
3,164,881
BURIAL LOWERING DEVICE
James E. Mead, 28 Burgess Place, Wayne, N.J.
Filed Jan. 17, 1962, Ser. No. 166,832
2 Claims. (Cl. 27—32)



1. A burial lowering device comprising, two track members to be positioned in parallel straddling relation to a grave, two carrier members engaging each of said tracks for movement thereon, recesses formed in the tops of the carrier members, a rectangular lowering unit with shaft housings in each corner thereof, the sides of said unit consisting of four shafts which are supported by said housings, two of said shafts being rotatably journalled within their corresponding shaft housings and extending across the space between said tracks, strap means attached to and extending between said rotatable shafts and adapted to be wound thereon, means for rotating said shafts, said shaft housings being removably carried in said carrier recesses, said track members each comprising a U-shaped channel providing two spaced contact surfaces, and said carrier members each being provided with two pairs of spaced rollers each pair engaged with one of said spaced contact surfaces of said channel.



3,164,882
APPARATUS AND METHOD FOR CRIMPING OF NATURAL AND SYNTHETIC TEXTILE MATERIAL
Nathan Rosenstein, West Hartford, Conn., and Abraham J. Rosenstein, New Marlboro, Mass., assignors to Spunize Company of America, Incorporated, Unionville, Conn., a corporation of Connecticut
Filed Sept. 19, 1960, Ser. No. 57,070
12 Claims. (Cl. 28—1)



8. A device for continuously crimping an elongated textile material comprising a pair of pressure rolls disposed parallel in a common plane to form a nip, means for rotating said rolls, means for guiding said material into the nip of said rolls, housing means adjacent to the rolls adapted to collect the material as it is fed by the rolls, and to retain the same therein, so as to produce a continuous crimp on the material, and sheathing means passable through the rolls and adapted to cushion the material as it passes into said nip.

10. The process of permanently crimping synthetic resinous continuous filament yarn comprising arranging a plurality of separated yarns of synthetic resinous continuous filament material generally parallel to one another, bringing said yarns together in the form of a rope and simultaneously and continuously crimping all such yarns in a common housing by bending them at an angle transversely of their longitudinal axes, applying pressure to all such yarns in said common housing while they are bent, collecting the resultant crimped yarns in a relaxed condition, and heat setting said yarns, whereby the resultant crimped continuous filament heat-set yarns are capable of being separated from one another so that each individual continuous filament yarn is suitable for fabrication.

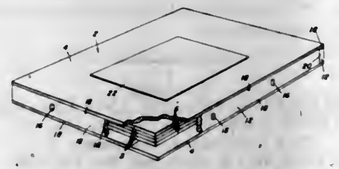
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3,164,883
COMB FOR WARP LEASING
Svend Sigurd Christie Fleischer, Kroyersvej No. 14, Klampenborg, Denmark, and Poul Ejnar Schou, Ordrupvej No. 94, Charlottenlund, Denmark
Filed Dec. 21, 1962, Ser. No. 246,427
8 Claims. (Cl. 28—40)



8. In a warp leasing device, a horizontal support, a row of spaced upright dents arranged along said support and each having a sidewise projecting hook, means mounting said dents on said support for axial turning movement, and means for simultaneously turning said dents and keeping their hooks projecting in the same direction.

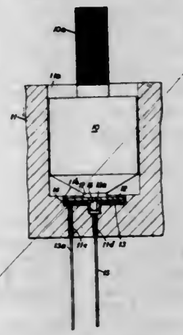
3,164,884
MULTIPLE ROLLING OF SHEETS
James W. Noble, Penn Hills, Howard S. Orr, Upper St. Clair Township, Allegheny County, and Frank R. Romeo, Snowden Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of New Jersey
Filed Sept. 30, 1959, Ser. No. 843,474
1 Claim. (Cl. 29—19)



A method of producing large, uniform thin gauge sheets comprising enclosing a plurality of inner plates of the desired composition between cover plates composed of mild steel, descaling the opposed surfaces of the inner plates and the cover plates, said opposed surfaces being positively roughened by grit blasing, the opposed surfaces being coated with a separating medium, welding side bars between the cover plates and around the inner plates to form a composite slab, placing a refractory heat insulating cover over about 25% of the top central surface of said pack, slowly heating the composite slab to rolling temperature, the heat insulating cover being effective to prevent the central portion of the cover plate from heating faster than the remainder of the assembly to thereby prevent breakage of the welds during the heating, preliminarily rolling the slab in a plurality of passes with its longitudinal axis parallel to the direction of rolling and then rolling the assembly in a plurality of passes transversely of its longitudinal axis, the initial reduction in each direction not exceeding about ¼" to bring the opposed grit blasted surfaces of the inner sheets and cover plates into close proximity.

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3,164,885
SEMICONDUCTORS
James Reekie and Stanley Peter Clarke, Swindon, England, assignors to Semiconductors Limited, Ilford, England, a British company
Filed Nov. 15, 1960, Ser. No. 69,522
6 Claims. (Cl. 29—25.3)

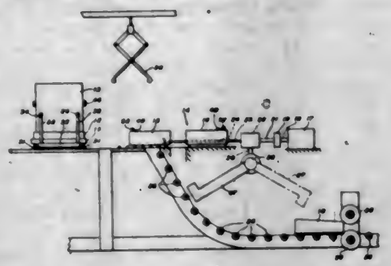


1. The method of manufacturing a transistor combined with a thermal mounting stud which comprises supporting a base electrode element adjacent an emitter electrode element, locating a heat-fusible washer of suitable welding material upon said base electrode element, locating an impurity alloying member upon said emitter electrode element, locating a semiconductor element upon said heat-fusible washer and said alloying member, locat-

ing a further impurity alloying member upon said semiconductor element, locating a heavy mounting stud upon said further alloying member and finally applying heat to cause said washer to fuse and unite said base electrode to said semiconductor element, to cause said first mentioned alloying member to alloy with said semiconductor element and unite said emitter electrode element to said semiconductor element and to cause said further alloying metal member to alloy with said semiconductor element and unite said mounting stud to said semiconductor element in a single operation.

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3,164,886
**STEELMAKING PROCESS AND APPARATUS**
Ralph Angio Verna, Scenery Hill, Pa.
(Box 186, R.D. 1, Daisytown, Pa.)
Filed May 2, 1962, Ser. No. 191,830
3 Claims. (Cl. 29—33)

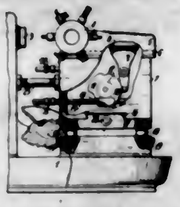


1. Steelmaking apparatus comprising a mold buggy, a stool, a vertically split mold supported on the stool and mounted on the buggy for reception of molten metal to provide an ingot, tongs arranged for removing the mold from the stool and buggy, a stripper having an upper surface with retaining members thereon, the mold having walls with bottom surfaces provided with openings within which the retaining members are received, the stripper including a fixed part and a movable part, which when the split mold is received on the retaining members are separable to divide the split mold into two sections whereby a freshly poured hot ingot retained by the mold walls is released, the stripper having a central passage straddled by opposed walls of the split mold, whereby the hot ingot released by the mold drops through the passage, conveyor rolls disposed beneath the passage to receive the hot ingot dropped therethrough and convey the ingot to a rolling station, at least one pair of pressure rolls in the path of the conveyor rolls for receiving an ingot carried on the conveyor rolls between the pressure rolls whereby the ingot is shaped, and means associated with the conveyor rolls for decelerating the rate of travel of the ingot along said conveyor rolls to the pressure rolls.

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3,164,887
**AUTOMATIC MACHINE TOOL TURRET**
Pierre Bergonzo, 117 Rte. de la Capite, Cologny, Geneva, Switzerland
Filed Sept. 5, 1961, Ser. No. 135,847
Claims priority, application Switzerland, Oct. 7, 1960, 1,258/60
1 Claim. (Cl. 29—39)

A lathe tool support structure comprising in combination a main bed frame, a tool means mounted on a slide, a auxiliary frame having an upper face which includes guideways on which said slide is mounted for reciprocal movement in a first direction, means for moving said slide along said guideways, an adjustment plate disposed between said bed frame and said auxiliary frame, said adjustment plate having slideway means on its upper surfaces, said auxiliary frame having on its lower surfaces slideway means complementary in form to said slideway means of said adjustment plate and slidably engaging said slideway means of said adjustment plate for movement in a second direction, means for traversing said auxiliary frame relative to said adjustment plate, locking means for releasably securing together said auxiliary frame and



said adjustment plate, lifting means acting between said main bed frame and said adjustment plate for varying the height of said adjustment plate relative to said bed frame, and means for releasably securing said adjustment plate in any of a plurality of vertically adjusted positions relative to said bed frame.

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3,164,888
**METHOD OF MAKING COILS**
Robert F. Sharrow and Buddy G. Sparks, Erie, Pa., assignors to General Electric Company, a corporation of New York
Filed Oct. 30, 1961, Ser. No. 148,537
7 Claims. (Cl. 29—155.5)



7. The method of making formed electrical coils for use in dynamoelectric machines which comprises: providing a plurality of electrically insulated conductors arranged in side-by-side relationship to form a conductor bundle wherein said conductors are electrically separated from one another; applying preformed tubes of a heat-shrinkable material having a diameter of a predetermined size greater than the periphery of the conductor bundle at locations where bending of the conductors of said bundle is intended to take place; heating the tubes of heat-shrinkable material to shrink said tube about said conductor bundle to hold the conductors and the insulation thereof in compression and prevent rupture of the electric conductor insulation upon bending of the conductors of said bundle; and forming the conductor bundle into an electrical coil of predetermined shape for use in a dynamoelectric machine.

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3,164,889
**METHOD OF MAKING A MAGNETIC CORE**
Kenneth D. Beardsley, Dalton, and Edward J. Wilk, Adams, Mass., assignors to General Electric Company, a corporation of New York
Original application Oct. 10, 1958, Ser. No. 766,488, now Patent No. 3,074,038, dated Jan. 15, 1963. Divided and this application Nov. 2, 1961, Ser. No. 149,689
4 Claims. (Cl. 29—155.57)

3. A method of making a curved magnetic core which comprises winding a strip of magnetic core material into a core form having a plurality of radially superposed turns, clamping said core form, annealing said core form to give said turns a permanent set, cutting said strip to provide a segment having a length of approximately two turns of said core, then cutting said strip into a plurality of segments having a length of approximately one turn of said core, then cutting another segment having a length of approximately two turns of said core, again cutting a plurality of segments of approximately one turn in length



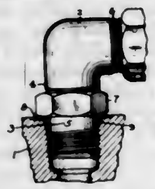
and another segment of approximately two turns in length, and lacing said cut segments with a preformed electric coil, by first lacing the smallest of said two turn segments, then lacing all of the smallest of said plurality of one



turn segments, then lacing the next largest of said two turn segments, then lacing all of the next largest of said plurality of one turn segments and finally lacing the largest of said two turn segments.

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3,164,890
**METHOD OF AND TOOLS FOR ASSEMBLY OF A PACKING RETAINER ON A THREADED COUPLING MEMBER**
Leland H. Schmohl, Chagrin Falls, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Original application May 31, 1956, Ser. No. 588,440. Divided and this application Feb. 4, 1960, Ser. No. 7,057
3 Claims. (Cl. 29—157)

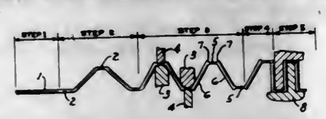


1. The method of assembling a circumferentially continuous metal ring to snugly embrace a smooth peripheral groove of uniform diameter formed between the uniform pitch diameter threads of an externally threaded coupling member and to retain a nut on said member which comprises screwing a nut on said member to a zone axially beyond such groove; providing a generally frusto-conical ring which has the desired outside diameter, an inside diameter to slip over the external threads, a thickness less than the axial width of such groove, and an slant height which corresponds to the radial distance from said outside diameter to said groove; coaxially positioning said ring around said groove; and flattening said ring while retaining the outside diameter thereof from radial expansion, whereby said ring is locked on said coupling member in snug embracing relation around said groove for axial actuation along such groove by turning of said nut in a direction tending to unscrew it from said member.

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3,164,891
**METHOD OF FORMING PIN FIN ASSEMBLIES**
John R. Gier, Jr., Hines Hill Road, Hudson, Ohio
Filed Mar. 2, 1960, Ser. No. 12,448
9 Claims. (Cl. 29—157.3)

3. The method of forming a length of wire into a series of alternate flattened, thin ligaments and pins connected at their adjacent ends to the ends thereof, and comprising bending the length of wire transversely of its length into sinuous shape with curvilinear crests and, while it is held in said shape, notching the wire at the crests by distorting a portion of the metal at each crest transversely of the wire from the outside of the bend toward and beyond the axis of the wire into a thin flexible ligament and leaving end surfaces of the pin portions at each end of each ligament facing toward each other



and at abrupt angles to the outer face of their associated ligament, preparatory to final forming, and controlling the abruptness of said angles by controlling the abruptness of the curve of the crests, at the time of notching.

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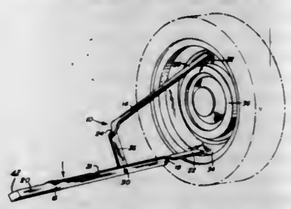
3,164,892
**THERMOELECTRIC BODY AND METHOD OF MAKING SAME**
Martin Lieberman, Newark, and Allan S. Gelb, Irvington, N.J., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,433
20 Claims. (Cl. 29—182.5)

1. A thermoelectric composition consisting essentially of a sintered combination of germanium, silicon and aluminum, the aluminum being present in proportions between 1–15% by weight of the entire composition, the silicon and germanium being present in proportions by weight, relative to one another, between 7:3 and 4.5:5.5.

4. The method of making a thermoelectric body which comprises mixing particles of germanium, silicon and aluminum, the aluminum being present in proportions between 1–15% by weight of the entire composition, pressure-compacting said mixture, and sintering said mixture for an extended period of time and at an elevated temperature.

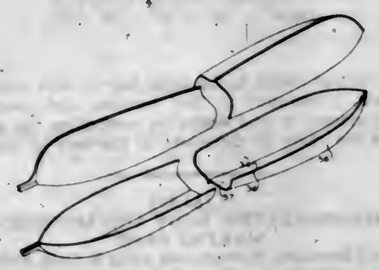
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3,164,893
**HUB CAP REMOVERS**
Robert O. Ashworth, Wilson County, Tenn.
(Rte. 3, Lebanon, Tenn.)
Filed Apr. 1, 1963, Ser. No. 269,823
1 Claim. (Cl. 29—245)



An improved device for removing a hub cap or decorative wheel cover from a wheel base, comprising:
a substantially straight lever bar;
said lever bar being twisted approximately 90° at two points along the length to provide a flat handle portion, a mid-portion, and a flat end portion;
said handle portion being tapered at its terminal end to provide a thin edge thereon; and
and angle bar having one end pivotally connected to the central portion of said lever bar, and having a hook on its other end adapted to engage a portion of the peripheral edge of a hub cap, wheel cover, or the like;
said angle bar being twisted 90° and bent at about a 90° angle at a point intermediate its ends to provide a rise portion, between said 90° bend and the said one end of said angle bar that is pivotally connected to said lever bar, and an extended portion, having said hook on the free end thereof.

3,164,894
METHOD OF MAKING BOAT HULLS
Wallace C. Johnson, Hamden, Conn., and Joseph A. Cruse, Pacific Palisades, Calif., assignors to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia
Filed Mar. 8, 1960, Ser. No. 13,578
6 Claims. (Cl. 29—412)



1. The method of fabricating a boat hull comprising the combination of steps of interposing an elongated oval shaped pattern of stop-weld material between superposed sheets of metal wherein each quadrant of said oval defines in the same direction a foreshortened configuration of the elevational profile of said boat hull, pressure welding said sheets together in the areas not separated by said material while simultaneously elongating said sheets and said pattern thereinbetween in the direction in which said pattern is foreshortened, injecting fluid pressure in the unwelded portion between said sheets defined by said material to inflate and outwardly deform said sheets, and transversely dividing said inflated and deformed sheets into quadrants of said elongated oval pattern.

3,164,895
METHOD OF FABRICATING HOLLOW BODIES AT ELEVATED TEMPERATURES
Ben Davies, Pittsburgh, and Roger W. Woodruff, Library, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 28, 1962, Ser. No. 220,064
3 Claims. (Cl. 29—423)

1. In method of fabrication of hollow bodies at elevated temperatures, in which the fabrication is executed about a mandrel or the like, the improvement which comprises fabricating the bodies about a readily hydrtable refractory mandrel composed of a material selected from the group consisting of dead burned magnesite and dead burned dolomite, said refractory mandrel being substantially inert to the material which comprises the hollow bodies, said mandrel having dimensional stability up to at least the temperature to which it will be subjected in the actual fabrication of the bodies, subjecting it to moisture at an elevated temperature upon completion of the fabrication of a hollow body, and flushing the material of the destroyed mandrel from the hollow body.

3,164,896
PROCESS FOR CONTINUOUS MANUFACTURE OF TUBING
Robert L. Fullman, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 12, 1960, Ser. No. 1,920
6 Claims. (Cl. 29—477)

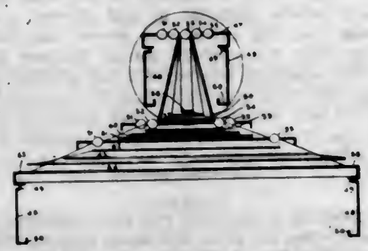
1. A method of producing an elongated hollow metal article which comprises in combination, providing a pair of adjacently positioned metal sections arranged in a closed hollow configuration with adjacent edges of the sections forming opened seams, providing a molten metal bath of the same metal as the said sections, passing the said sections in contact with the said molten metal bath to provide a deposited coating of the metal across the said seams, the metal freezing on the said seams by accretion, and withdrawing the hollow article from the said molten bath as a seamless hollow article.



3,164,897
METHOD OF BRAZING
Peter Patriarca, Knoxville, and Gerald M. Slaughter, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Original application Mar. 27, 1958, Ser. No. 724,486, now Patent No. 3,065,537, dated Nov. 27, 1962. Divided and this application Oct. 5, 1962, Ser. No. 235,903
2 Claims. (Cl. 29—494)

1. An improved method of joining structural metal surfaces of metals selected from the group consisting of nickel-base and iron-base alloys which comprises placing said surfaces in an aqueous bath, contacting in said bath nickel ions with an anionic complex of phosphorus and oxygen, thereby depositing nickel and phosphorus on said surfaces, electroplating chromium on said nickel and phosphorus covered surfaces, the conditions for depositing nickel, phosphorus and for electroplating chromium being controlled to produce a composite layer of about 80 percent nickel, 10 percent phosphorus, and 10 percent chromium, and heating the resulting plated surfaces to a temperature of about 1800° C. in a dry non-oxidizing atmosphere.

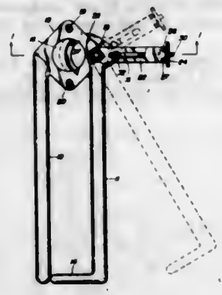
3,164,898
METHOD OF PRODUCING EXTRUDED SHAPES
Guy F. Kotrbaty, 56 Pondfield Road W., Bronxville, N.Y.
Filed Aug. 9, 1960, Ser. No. 48,438
22 Claims. (Cl. 29—553)



1. A process of producing an extruded metallic shape of a width substantially greater than the diameter of the circumscribed circle of the die orifice of an extrusion press, comprising extruding a shape having a web portion of uniform cross-section and an integral mass of substantially greater cross-section than the cross-section of the web portion, said mass providing a material bank of formable metal, subsequently passing the extruded shape through a series of reduction zones and progressively reducing the cross-section of the material bank to progressively extend the width of the shape while maintaining the cross-section of the web portion until the cross-section of the material bank is equal to that of the web portion.



3,164,899
COMPRESSION TYPE TOOL
Douglas D. Raze, 1220 Plymouth Ave. N., Minneapolis, Minn.
Filed July 11, 1961, Ser. No. 128,926
11 Claims. (Cl. 30—92)



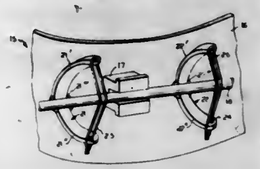
1. A compression-type tool comprising: a first member having work-engaging surfaces facing in one direction, a second member overlying said first member and constructed and arranged in cooperative work-engaging relation with said first member and having a cooperating work-engaging surface facing in the opposite direction and movable past the work-engaging surface of said first member to cooperatively engage a piece of work, and pivot structure pivotally connecting said two members at a fixed point behind the work-engaging surface of said first member to cause their work-engaging surfaces to move toward and away from each other, said second member being pivotally mounted on said pivot structure at a point located farther behind the work-engaging surface of said first member than said fixed pivotal point for pivotal movement relative to the other of said members and relative to said pivot structure, the axes of each of said pivotal movements being spaced and parallel to each other and means carried by said pivot structure permitting movement of said member mounted on said pivot structure to change the spacing between the axes of said pivotal movements.

3,164,900
ORTHODONTIC BRACKET
Melvin Wallshein, 8645 Bay Parkway, Brooklyn, N.Y.
Filed Mar. 7, 1961, Ser. No. 105,248
3 Claims. (Cl. 32—14)



1. A wire clamping device comprising a resilient M-shaped member formed of a single length of material, said member having outwardly diverging leg portions with outer surfaces, and the top of the M-shaped member forming a V-shaped channel having converging inner surfaces, a ring member engaged upon the outer surfaces of the leg portions, said ring member having an inner diameter greater than the distance across the V-shaped channel and less than the distance between the ends of the outwardly diverging leg portions, and cooperative engaging means on the inside diameter of the ring and the outer surfaces of the leg portions preventing slippage of the ring member off the M-shaped member, whereby a wire may be clamped within the V-shaped channel by the ring member and the resilient action of the converging inner surfaces of the channel.

3,164,901
ORTHODONTIC TORQUING SYSTEM
Melvin Wallshein, 8645 Bay Parkway, Brooklyn, N.Y.
Filed Apr. 25, 1961, Ser. No. 105,359
10 Claims. (Cl. 32—14)



1. An orthodontic system comprising, an element to be mounted on a tooth, an arch wire bracket having a horizontal channel therein secured to said element, at least one vertically extending resilient cantilever arm secured at one point to said element horizontally adjacent said bracket, said arm being curved away from said element from its point of securement to an outer end, means at said outer end of said arm for engagement by a tie wire, said outer end being substantially to one side of the axis of said channel, an arch wire in said channel and a tie wire connecting said outer end and said arch wire whereby corrective force may be applied to a tooth on which the system may be applied.

3,164,902
ADJUSTABLE ORTHODONTIC BANDS
Melvin Wallshein, 9645 Bay Parkway, Brooklyn, N.Y.
Filed Jan. 10, 1962, Ser. No. 165,358
8 Claims. (Cl. 32—14)

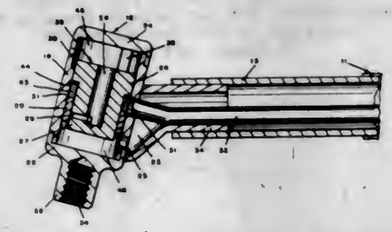


1. A band of the character described, to be fitted tightly onto a tooth in a mouth, comprising a single thin pliable strip member composed of three consecutive sections; the intermediate section being of ring-form and the other sections being in face-to-face contact with each other, forming a two-ply fin extending from the ring; the contacting faces of said plies being releasably joined to each other at multiple points starting from a region adjacent the ends of said intermediate section and extending to a region at the ends of said plies; the juncture of said plies being weak enough to be manually forced apart starting from the ring and strong enough to avoid their separation by any action as may be occasioned when the ring is tightly fitted on a tooth in the mouth, during chewing or normal manipulation of a finger in the mouth.

3,164,903
DENTAL HANDPIECE
Charles A. Ellis, Point Road, Box 145, Marion, Mass.
Filed Apr. 7, 1960, Ser. No. 20,775
8 Claims. (Cl. 32—27)

1. A dental apparatus comprising a sealed power head flexibly mounted upon a tubular handle, including a

tool holding device integral with said head, an air driven free-piston motor device within said power head by means of which a reactive vibratory motion is imparted to said head and to the tool holding means mounted upon it, said piston having no metallic driving connection with said tool holding means, a sealed air supply conductor passing through said handle for connection to a supply of compressed air for driving said motor and a sealed flexible and resilient exhaust conductor surrounding said



air supply conductor and passing through said handle for the dual purpose of carrying exhaust air from said motor to a point remote therefrom and to provide a resilient mounting for the power head, the said tubular handle member frictionally mounted upon said resilient exhaust conductor and slideable longitudinally thereof whereby the flexibility of coupling between the handle and the power head may be changed to modify the vibration of said power head.

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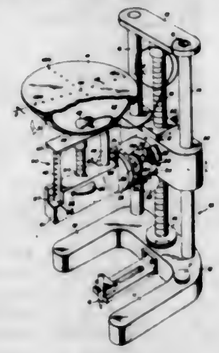
**3,164,904**
**DENTAL INSTRUMENTS**
Alonzo Roy Trevallion Barnes, 119 Trymill Road, Bradmore, Wolverhampton, England
Filed June 14, 1961, Ser. No. 117,174
Claims priority, application Great Britain, July 13, 1960, 24,433/60
2 Claims. (Cl. 32—69)



1. A dentist's mirror comprising a mirror, an elongated hollow tubular structure having a transversely operable valve means, a collapsible supply tube in the said structure passing through the valve means, a one-piece removable head having an internal bore, and fitting on said elongated structure for the reception of cleaning fluid supplied through the collapsible supply tube, a nipple on the head through which nipple the bore passes and which nipple is located internally of the said structure, the collapsible supply tube being detachably attached to the nipple, a cranked rod one end of which is fitted in the bore and the other end of which cranked rod carries the mirror obliquely to the length of the tubular structure and an outlet bore in said cranked rod being in communication with and in downwardly divergent relation to said first mentioned bore and directed at an angle towards and upon the reflecting surface of the mirror at a substantial distance therefrom.

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**3,164,905**
**UNIVERSAL TRACING TABLE**
Charles L. Pillmore, Denver, Colo., and Robert H. Morris, College of Porto Allegre, Brazil, assignors to the United States of America as represented by the Secretary of the Interior
Filed Aug. 16, 1961, Ser. No. 131,943
6 Claims. (Cl. 33—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A tracing table having utility in a double image stereoscopic projection-contour mapping apparatus, including a base and means on said base supporting an elevator structure for displacement within a plane normal to said base, said elevator structure being operable for moving a platen in a straight path normal to the plane of the base, the platen having a substantially flat reflective surface, the improvement comprising means connecting the platen to the elevator structure, said means comprising a platform structure to which the platen is fastened, and adjustable means supporting the platform structure to angularly reposition it about an axis parallel to the plane of the base and normal to said plane in which the elevator structure is displaceable, whereby the platen surface attached to the platform structure is moved from a horizontal attitude to a sloping attitude, said adjustable means also operable to move the platform structure and the platen therewith in a straight path normal to the plane of the platen surface.

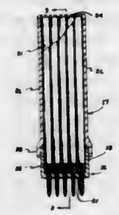
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**3,164,906**
**MULTIPLE PEN COMBINATION**
Russ S. Andaloro, 2107 N. Campbell, Tucson, Ariz.
Filed Aug. 31, 1962, Ser. No. 220,843
4 Claims. (Cl. 33—41)

1. In a multiple pen combination,
(*a*) a hollow base member having five sides including a bottom,
(*b*) said bottom having a plurality of holes to pass a smaller diameter portion of a ball-point pen type of writing element,
(*c*) a cover portion having five sides, four of which are generally aligned with four sides of said base, and having a flared skirt extending around the base member,



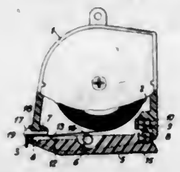
(*d*) said cover being provided with inside curved walls to grip and releasably position said writing elements,
(*e*) means including a projection and recess for re-



leasably holding said base member and cover together, and
(*f*) means supporting said base member in a set position with respect to a straight edge or the like.

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**3,164,907**
**METAL TAPE LINEAR MEASURING DEVICE**
Michel Quenot, Besancon, Doubs, France, assignor to Etablissements Quenot & Cie, Besancon, Doubs, France
Filed Aug. 23, 1962, Ser. No. 219,055
Claims priority, application France, Aug. 30, 1961, 871,901, Patent 1,306,082
2 Claims. (Cl. 33—138)



1. A case for a coiled measuring tape carrying scale figures, comprising a main downwardly open section including front, upper, rear, and side walls, the lower edge of the front wall serving as a guide for the outer end of the tape, a spindle extending in parallelism with said lower edge of the front wall between the side walls of the case and carrying the tape, a bottom section extending between the lower edges of the side walls, from the lower edge of the front wall to that of the rear wall to close the main downwardly open section, an axis extending approximately between the middles of the lower edges of the side walls around which said bottom section can pivot, and elastic means carried by the lower part of said rear wall slightly away from its lower edge cooperating with the rear end of the bottom section to make the front part of said bottom section engage the lower edge of the front wall and clamp normally the tape between it and the last-mentioned edge.

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**3,164,908**
**MEASUREMENT METHODS AND GAUGES**
Joseph J. Palozie, Broad Brook, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 18, 1961, Ser. No. 138,660
1 Claim. (Cl. 33—168)

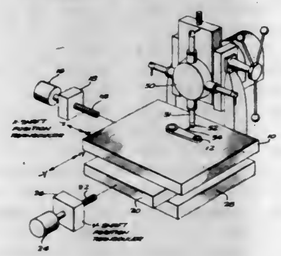
A measure device which is comprised of a gauge element of known, true size having superimposed on its gauging surface and firmly adhered thereto a copper detection deposit which is readily discernible visually from the gauge element and not changing the true size of the gauge element beyond the normal gauge class tolerance, the detection deposit having a thickness of between about 0.000005 and 0.00001 inch and capable of being eroded to expose portions of the surface of the gauge element



without affecting the true size of the gauge element, to thereby visually indicate gauge wear directly without effecting a change in true size of the gauge element.

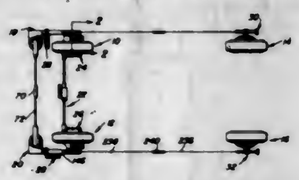
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**3,164,909**
**AUTOMATIC GAUGING SYSTEM**
Jack Rosenberg, Pacific Palisades, Calif., assignor, by mesne assignments, to General Electric Company, a corporation of New York
Filed Jan. 14, 1959, Ser. No. 786,776
4 Claims. (Cl. 33—174)



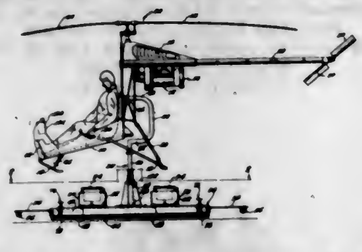
2. The improvement in an automatic machine tool of the type having a head for holding a tool and a table upon which a workpiece may be fastened, said table and head being relatively movable, said machine tool including separate means for each co-ordinate for moving said table to a desired location relative to said head, and a separate transducer for each co-ordinate for providing output signals representative of the location of said table relative to an origin point, said improvement comprising a feeler transducer fastened to said head, said feeler transducer including means for producing one output signal until an object is contacted thereby and for reducing said output signal with continuing increasing pressure of said transducer against said object, means responsive to said transducer output signals for detecting when said table reaches a desired location, normally inoperative means for moving said table responsive to said feeler-transducer output signal, means actuated by an output from said means for detecting for rendering operative said means for moving said table responsive to said feeler-transducer output signal, means for detecting when said feeler-transducer output signal attains a null and for providing a null-indicating signal, and means responsive to a null-indicating signal to provide an indication of said table location represented by output signals from each of said transducers for each co-ordinate.

3,164,910
**WHEEL ALIGNMENT INDICATING APPARATUS**
Maxwell B. Manlove, 808 E. 36th St., Topeka, Kans.
Filed May 1, 1962, Ser. No. 191,540
4 Claims. (Cl. 33—203.18)



1. Apparatus for gauging alignment of both a vehicle frame and spaced pairs of dirigible and tracking wheels mounted by the frame and the steering geometry associated with the turning of each dirigible wheel about a steering axis comprising, mechanical means operatively interconnected between said dirigible wheels for directly and simultaneously indicating relative angular toe and camber displacement of each dirigible wheel, track measuring means separately mounted on each tracking wheel in adjustably spaced relation transversely thereof and operatively connected to the mechanical means for indicating frame distortion in response to displacement of each dirigible wheel to a position of zero toe, wheel conditioning means operatively engageable with said dirigible wheels for measurement of toe and turning radius by said mechanical means, displaceable level means mounted on said mechanical means for measuring kingpin inclination and caster of each of said steering axes, said mechanical means including a pair of wheel mounted assemblies respectively including bracket means mounted on a wheel in leveled position to establish two perpendicular measuring planes, pivot means mounted on said bracket means for defining two pivotal axes intersecting perpendicular to each other and respectively disposed parallel to said perpendicular measuring planes, lever means mounted on said bracket means by said pivot means for limited displacement parallel to both measuring planes, rotational indicator means mounted by said bracket means for angular displacement about axes parallel to said two pivotal axes, calibrated indicia means mounted on said indicator means for displacement in said measuring planes, linkage means operatively connecting said lever means to the indicator means and extensible connecting means operatively interconnecting the lever means of each wheel mounted assembly for maintaining said lever means in aligned relation to each other, each of said wheel mounted assemblies including housing means fixedly mounted on the bracket means and having a plurality of scale reading openings therein for exposing said indicia means at a plurality of locations to provide alternative reading locations for both toe and camber, said track measuring means comprising a pair of wheel mounted bracket assemblies, each bracket assembly including deflection indicating means, spacing means pivotally mounting said deflection indicating means an adjustably measured distance from the wheel and flexible connecting means operatively connecting the deflection indicating means to said bracket means of one of said wheel mounted assemblies of said mechanical means, each of said wheel mounted assemblies further including wheel supported means fixedly mounting said bracket means in said leveled position forwardly spaced from a wheel having an engaging surface spaced radially inwardly from a rim portion, said wheel supported means comprising a horizontally positioned member having a pair of fixedly spaced wheel engaging elements engaging said surface, a vertically adjustable member slidably mounted on said horizontally positioned member, a surface engaging member displaceably mounted on said vertically adjustable member, locking means operatively mounted on said vertically adjustable member and engageable with said surface engaging member for displacement thereof into tight engagement with the wheel, an independently leveled connecting bracket member rigidly connected to said bracket means and pivotally connected to said horizontally positioned member and pivotal adjustment means operatively connected to said bracket member and horizontally positioned member for fine adjustment of said bracket member and bracket means to said leveled position, said wheel conditioning means comprising a pair of spring centered turntables in traction engagement with said dirigible wheels to measure turning thereof and preloaded lock bar means interconnected with said turntables for applying toe-out thrust thereto for simulating toe-out forces applied to the dirigible wheels during forward motion of a vehicle.

3,164,911
**HELICOPTER FLIGHT TRAINER**
John F. Vaughen, Palos Verdes, Calif., assignor to Del Mar Engineering Laboratories, Los Angeles, Calif., a corporation of California
Filed Feb. 16, 1961, Ser. No. 89,697
27 Claims. (Cl. 35—12)



1. In a trainer for a hovering type aircraft, the combination of: an aircraft assembly including powered means for hovering and flight and including flight controls; an air cushion vehicle constituting a mobile base structure constructed to provide an air cushion under the mobile base structure; and rigid means rigidly mounted on said base structure and extending upward from the base structure and pivotally connected to the aircraft assembly at a point on the assembly to give the assembly freedom to rotate relative to the base structure about a point on the assembly on an upright axis that is fixed relative to the base structure and to tilt laterally about said point whereby the attitude of the aircraf assembly is aerodynamically determined by the flight controls, said base structure being movable on an air cushion along the ground in response to the aerodynamic forces generated by the aircraft assembly and being constructed to provide the air cushion with characteristics for resisting tilting movements thereon created at said point by the aerodynamic forces.

3,164,912
**RUBBER HEEL WITH CIRCULAR ADJUSTABLE REAR SECTION**
Benjamin Gilowitz, 1996 Belmont Ave., Bronx, N.Y., assignor of one-half to Harry Litman, Bronx, N.Y.
Filed Mar. 10, 1964, Ser. No. 350,902
3 Claims. (Cl. 36—39)

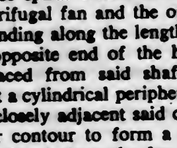
1. A rubber heel of the type having a front body section and a rotatively shiftable circular rear section, and in which both sections are made from cushioning sheet material of uniform thickness, said heel comprising in combination

(A) a front section having at its rear

(*a*) a substantial semi-circular opening extending entirely through the section and forming two rearwardly tapered side wings, and

(*b*) two arms extending inwardly from the rear end portions of said wings and disposed relation diametrically of said opening,

(B) a circular rear section having a radius corresponding to that of said semi-circular opening and also having in its edge diametrically opposite notches

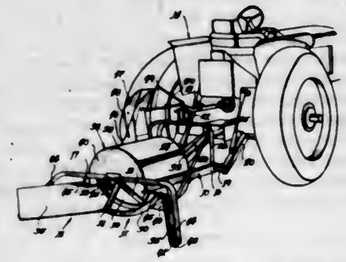


shaped to snugly receive said arms when half of said rear section is sealed in said opening,

(*c*) the free end portions of said arms remote from their connection with said wings being laterally enlarged to provide an interlocking connection between the two sections that will prevent said arms from being pulled endwise out of said notches.

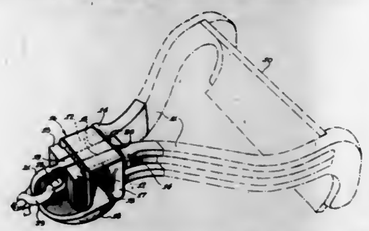


3,164,913
**SNOW REMOVAL APPARATUS HAVING A HOLLOW CENTRAL HORIZONTALLY EXTENDING AUGER**
Glenn E. Hanson, South Beloit, Ill., assignor to Hanson Equipment Company
Filed Oct. 18, 1962, Ser. No. 231,490
1 Claim. (Cl. 37—43)



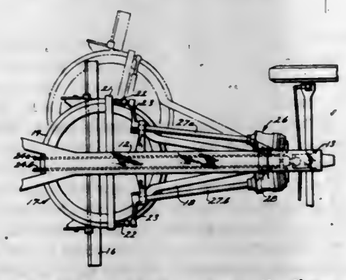
Snow removal apparatus having, in combination, a frame, a cylindrical housing having a cylindrical side wall and mounted on said frame with its axis disposed horizontally, a shaft mounted on said frame for rotation about said axis, a first end wall closing one end of said housing, a centrifugal fan mounted on said shaft within said housing adjacent said end wall, said cylindrical housing wall adjacent said first end wall having an outlet opening for the discharge of snow radially from the fan, a hollow auger having the same diameter as said fan and a plurality of spiral blades mounted on said shaft between the centrifugal fan and the opposite end of said housing and extending along the length of the shaft from the fan to the opposite end of the housing, said spiral blades being spaced from said shaft throughout their lengths to present a cylindrical peripheral contour complementary to and closely adjacent said cylindrical wall and a similar interior contour to form a tunnel through the auger and along the shaft to the fan and an axial opening leading into said auger tunnel at the end of the auger opposite to said fan, a plow mounted on said framework and having blades extending outwardly from said housing and diverging in a direction along said axis away from said first end wall, means on the lower portion of said cylindrical wall adjacent said opposite end of said housing defining an inlet opening for entry of snow into the housing and into said tunnel as the plow is moved along a path in the direction of divergence of said blades, and a second end wall closing the upper portion of said opposite end of said housing above said housing inlet opening to cooperate with said cylindrical wall and said closed housing end to define a suction chamber for drawing snow into the housing through the housing inlet opening and to prevent snow from entering into the upper portion of the axial opening into the tunnel.

3,164,914
**SLUSHER SCRAPER STRUCTURE**
John A. Wilson, Orillia, Ontario, Canada, assignor to Fahralloy Canada Limited, Orillia, Ontario, Canada
Filed Feb. 20, 1963, Ser. No. 259,960
3 Claims. (Cl. 37—147)



1. A slusher scraper comprising a scraper blade, a pair of arms carrying said scraper blade and having opposed end portions, each said end portion having an inner face, said inner faces being in confronting relation and in converging relation towards each other, each said end portion having an outer face and a pair of spaced shoulders projecting laterally outwardly from said outer face, a wedge disposed between said inner faces and having converging faces in engagement with said inner faces, and a nose shoe having a ground engageable runner thereon and a hollow box section encircling said end portions of said arms and said wedge, said box section having end edges disposed between each said pair of shoulders.

3,164,915
**REDUCTION GEAR TYPE MOTOR GRADER BLADE LIFT MECHANISM**
Paul B. Benner and Harold M. Johnson, Decatur, and Charles Brown, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 23, 1962, Ser. No. 175,232
1 Claim. (Cl. 37—156)

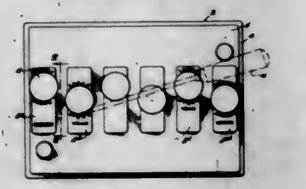


In a motor grader having a rearwardly disposed engine, an operator's station disposed just forwardly of the engine, a single main frame portion of hollow construction extending forwardly from the operator's station to a bolster supported on front wheels of the grader, an earth working blade supported on a blade circle disposed beneath the main frame between the operator's station and the bolster, and blade lift means deriving power from the engine for adjusting the angle of the circle and blade relative to a horizontal plane, the improvement which

resides in said last named means comprising power drive shafts extending from the operator's station forwardly through the hollow main frame, gear reduction means adjacent the bolster and receiving power from said shafts, and other shafts deriving power from the gear reduction means and extending rearwardly and back to adjusting means disposed above said circle to present a substantially unimpeded view of said circle and blade from the operator's station.

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3,164,916
DATING MEANS FOR ELECTRIC STORAGE BATTERIES
Charles H. Allen, Dallas, Tex., assignor to Vitalic Battery Co., Inc., Dallas, Tex., a corporation of New York
Filed May 25, 1962, Ser. No. 197,773
5 Claims. (Cl. 40—2.2)



1. In a storage battery of the type having a casing and a plurality of raised vent caps, an identification means comprising defaceable raised indicia formed integral with the casing and disposed sufficiently adjacent to at least one of the vent caps to permit an instrument to be inserted between a selected indicium and said vent cap whereby the selected indicium may be snapped off, utilizing said vent cap as a fulcrum.

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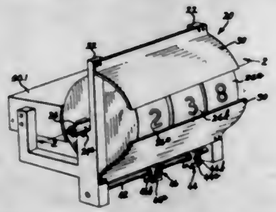
3,164,917
INDEX TAB
Ralph C. Harper, 6 Mayflower Road, Winchester, Mass.
Filed May 3, 1962, Ser. No. 192,145
2 Claims. (Cl. 40—23)



1. An index tab of the type wherein two opposed metal leg members are secured by their upper portions to the lower part of an index head member, said upper portions of said leg members spaced apart by said head member, the leg members extending downwardly freely from said head member to tips which define a line nip, the freely extending leg members providing a passage through which the edge of a sheet can be moved upwardly through said nip to said head member, the index tab characterized in that the freely extending portion of each of said leg members has an indentation at a point adjacent to but spaced below the point of securement of said leg members, each of said indentations defining a projection, said projections being opposite each other and extending toward each other, said projections having a combined inward extent less than the spacing between said upper portions so that said projections do not normally contact each other, said indentations enabling the flexing apart of the tips of said leg members by a paper sheet inserted therebetween and enabling movement of said sheet relative to said index head member, and said projections defining a restricted passage for relatively thick sheets whereby said projections can be pressed outwardly thereby, increasing the grip of said leg members on said relatively thick sheets.

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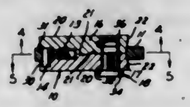
3,164,918
DISPLAY APPARATUS
Morden G. Brown, Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Mar. 30, 1961, Ser. No. 99,491
3 Claims. (Cl. 40—130)



1. A display device comprising a light source, a hollow dial member mounted for rotation about a selected axis adjacent said source, said dial member having at least one pair of light-transmitting dial-member portions which are arranged so that one of said portions is selectively disposed to receive light from said source located outside the dial member when the other of said light-transmitting portions is selectively disposed at a single display position by rotation of the dial member, and a plurality of light-conducting fibers each having a light-transmitting core and a light-insulating cladding, said fibers being secured within said dial member for rotation with said dial member, said fibers extending between said light-transmitting dial member portions for receiving light at one end from said source and for projecting said light from the opposite ends thereof from within the dial member through the light-transmitting dial member portion selectively disposed at said display position, said fibers being arranged in cooperative relation at said opposite ends to define a face having the configuration of a symbolic character, thereby to selectively display said character in back-illuminated form to be viewed from outside the dial member.

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3,164,919
FIREARM TRIGGER LOCK
Robert L. Hall, 3318 W. Burbank Blvd., Burbank, Calif.
Filed Sept. 28, 1962, Ser. No. 226,989
1 Claim. (Cl. 42—70)

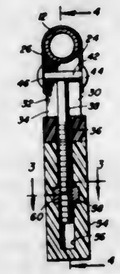


A firearm trigger lock for locking the trigger and the safety pin of a firearm comprising:
- a first rigid plate engageable in the trigger guard of a firearm on one side of its trigger and having its periphery engage on the inner surface of the trigger guard;
- a second rigid plate engageable in the trigger guard on the other side of the trigger and having its periphery engage on the inner surface of the trigger guard;
- a protuberance on one of said plates extending transversely behind the trigger to block the movement of the trigger to firing position;
- fastening means mounted in said plates for locking them together;
- a recess on one said plate adapted to completely encompass an end of said pin after it is slid to its safe position; and
- a land on the other of said plates adapted to abut the other end of said pin and firmly hold said pin in its safe position; said pin being automatically moved to its safe position by assembly of said plates into position for operation of said fastening means and being completely covered and confined against movement by said plates after operation of said fastening means to lock said plates together.



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3,164,920
HANDGRIP FOR GUNS
Charles P. Haas, Jr., 1447 S. Jones Blvd., Apt. 206E, and Willard E. Roebuck, 4164 E. Paseo Grande, both of Tucson, Ariz.
Filed Dec. 31, 1962, Ser. No. 248,442
10 Claims. (Cl. 42—71)



10. A rifle and shotgun grip attachment for assisting in pulling the butt end of a rifle or shotgun into tight seated engagement with the shoulder of a person firing the rifle or shotgun, said attachment comprising an elongated upright member having an axially opening recess formed in its upper end adapted to seatingly receive the lower portion of a barrel moved laterally downwardly thereinto, a generally inverted U-shaped abutment member including a pair of depending legs interconnected at their upper ends by means of a bight portion, said bight portion and said legs being adapted to seatingly receive the upper portions of a barrel and embracingly receive the upper end of said upright member, respectively, as said abutment member is advanced toward said barrel, and means operatively connected between said abutment member and said upright member releasably urging said upright member toward said bight portion for clamping a gun barrel therebetween.

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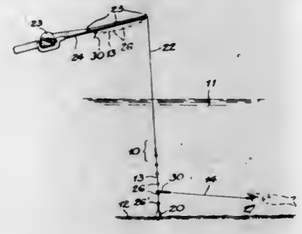
3,164,921
HEATED FISHING ROD
Sam H. Mavrakis, 135 N. Main, Sheridan, Wyo.
Filed July 9, 1962, Ser. No. 208,278
4 Claims. (Cl. 43—24)



1. A heated fishing rod having a hand grip at its inner end, a line guide at its outer end, and a line guide at approximately its mid-section, a sleeve within the hand grip receiving the rod, a battery casing having cells therein secured to the inner end of the hand grip and electrically connected to the sleeve, and a circuit from the cells to the battery casing composed by a conductor from one cell to one line guide, a conductor from the line guide to the second line guide, and a conductor from the second line guide to the sleeve, said line guides resisting the current passing therethrough from the cells and thereby being heated.

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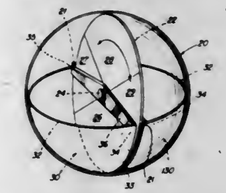
3,164,922
FISHING TACKLE
Steve Kearns, 1026A S. 11th St., and Frank Bloom, 4251 S. 10th St., both of Milwaukee, Wis.
Filed Mar. 18, 1963, Ser. No. 265,887
6 Claims. (Cl. 43—43.15)



1. In fishing tackle, a sinker leader adapted for attachment to a fishing line and having longitudinally spaced shoulder-forming enlargements thereon, and a fishhook leader connector plate having a keyhole-shaped aperture therein with a clearance hole portion larger than said enlargements and adapted to pass said sinker leader enlargements and a slot portion of lesser width than said enlargements and with a closed outer end, said slot portion being adapted to admit said sinker leader to the closed end thereof, whereby to retain said fishhook leader connector at selected positions along said sinker leader.

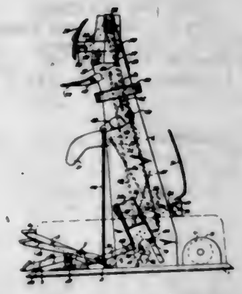
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3,164,923
CHANGEABLE LIGHT REFLECTIVE DEVICES INCLUDING ANIMATED TOYS AND DECORATIVE ORNAMENTS
Philip H. Knott, New York, N.Y.
(202 South St., Apt. A2, Sausalito, Calif.)
Filed Dec. 11, 1962, Ser. No. 243,861
22 Claims. (Cl. 46—49)



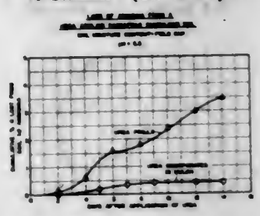
1. A changeable light reflective device comprising
(*a*) a composite cupped reflective structure into which one looks for visual reflection effects and alterations thereof including
(*b*) a pair of obliquely arranged and opposed reflector means located on opposite sides of a generally bisecting plane,
(*c*) a visual change member movably mounted in said plane for translation therealong having at least a zone thereof extending into said cupped reflective structure with faces of said zone successively bearing visually differing areas to be reflected in said pair of opposed reflector means, and
(*d*) means to manipulate said plate member for translating said zone thereof substantially along said plane to locate different ones of said areas alternately in reflective relation to one of said opposed reflector means.

3,164,924
ANIMATED FIGURE TOY
Keikichi Iwaya and Shigeaki Kuramochi, both of Tokyo, Japan, assignors to Louis Marx & Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 23, 1961, Ser. No. 133,502
11 Claims. (Cl. 46—232)



6. An animated figure toy simulating an animal in seated posture on a base, said toy having a movable paw, a movable tail, movable ears, movable eyes, a movable lower jaw, and a sound producing device, a row of push buttons and control levers on said base, a motor, a relatively long cam shaft driven by said motor and carrying a plurality of cams, a plurality of cam levers disposed for movement into or out of cooperation with said cams and controlled by said control levers, means whereby depression of any control lever permits movement of a cam lever into engagement with its cam, whereby any one or more of said movable parts may be set into rapid repeated motion.

3,164,925
ASPHALT COMPOSITION AND METHOD OF SOIL NUTRIENT APPLICATION
Albert G. Harshman, Elizabeth, and Richard W. Sage, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed May 17, 1962, Ser. No. 195,448
4 Claims. (Cl. 47—9)

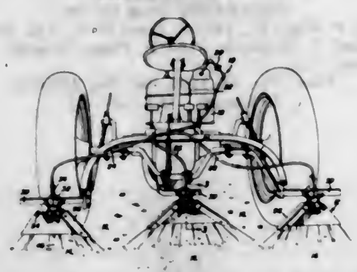


1. Improved asphalt composition for mulching seeded areas which comprises an asphalt-in-water emulsion containing a water soluble agricultural nutrient wherein the amount of asphalt present is in the range from about 40 to 70% by weight and the water present is in the range from about 30 to 60% by weight.

3,164,926
METHOD OF APPLYING GROWTH CONTROL CHEMICALS TO GROWING PLANTS
Myron P. Laughlin, 1705 Beach Drive, St. Petersburg, Fla.
No Drawing. Original application Apr. 5, 1956, Ser. No. 576,318, now Patent No. 3,002,319, dated Oct. 3, 1961. Divided and this application Feb. 27, 1961, Ser. No. 91,596
5 Claims. (Cl. 47—58)

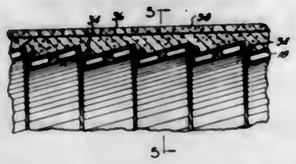
1. The method of feeding chemicals to a multiplicity of growing plants simultaneously during their growth without mechanical destruction thereof which includes preparing the chemicals in multiple dose form, feeding such dosage to a chemical vaccinator, then forcibly feeding the chemicals through the outer skins of said plants via said vaccinator as it passes over said plants to treat the same without mechanical interference with the plant growth therein.

3,164,927
FLAME THROWER FOR CULTIVATING PURPOSES
Joe S. Holloway, P.O. Box 242, Forney, Tex.
Filed Jan. 15, 1963, Ser. No. 251,581
3 Claims. (Cl. 47—1.44)



1. A flame cultivator burner for use either singly or in groups of two or more, said flame cultivator burner comprising an elongated generally vertically disposed and inverted fan-shaped casing, open at its lower end, and closed at its upper end, at least one pair of downwardly divergent flame nozzles disposed in said casing and having fuel inlet ends opening upwardly through the upper end of said casing and outlet ends disposed in opposite sides of said casing, the upper end of said casing having air inlet means formed therein for admitting air into said casing for supporting combustion of fuel discharged from said outlet ends of said nozzles, at least one side of said casing having heat shield means attached thereto, said heat shield means including a channel-shaped member inclined downwardly and outwardly and supported from and at least partially embracing said one side of said casing in spaced relation thereto said one side of said casing including a pair of braces extending transversely thereof and of a size and shape conforming to the interior of said channel-shaped member, said channel-shaped member being disposed over and secured to said braces.

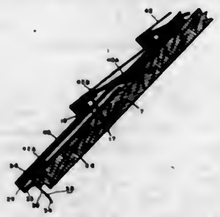
3,164,928
ARCH STRUCTURE
George S. Sarros, 1504 Forest Ave., Calumet City, Ill.
Filed Oct. 2, 1958, Ser. No. 764,918
1 Claim. (Cl. 50—61)



A building structure comprising a pair of spaced elongated supporting structural units and an arched structural unit spanning between and supported by said first units, said arched unit comprising a plurality of arched rows of preformed structural blocks with the blocks in each row bonded together by mortar, each row of blocks being inclined transversely of the row with a marginal surface portion of each block in said row disposed in overlapping relation to a marginal surface portion of a block in an adjacent row, the lapping marginal surface portions being bonded together by mortar whereby said block-defined arched unit has a serrated upper surface, a monolithic concrete layer covering and bonded to the upper surface of said arched unit and having interlocking engagement with the serrations thereof, and reinforcing rods imbedded in said concrete layer and extending the length of said rows, said rods being disposed within the serrations of the upper surface of said arched unit.



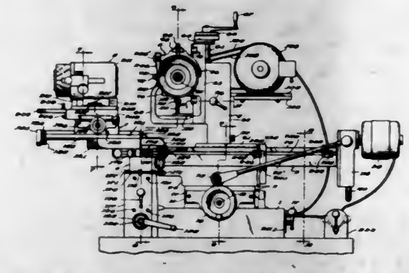
3,164,929
METALLIC ROOFING
John R. Boddie, 7522 S. Santa Fe, P.O. Box 60308, Houston, Tex.
Filed Sept. 28, 1962, Ser. No. 226,851
6 Claims. (Cl. 50—200)



1. A roof structure for covering a substantially continuous roof deck, comprising:
a plurality of substantially rectangular sheets of resilient, pliable, waterproof roofing material on said roof deck partially overlapping each other at spaced intervals going up said roof deck, each upper sheet overlapping a portion of the immediately lower sheet;
a plurality of sheet metal panels covering said sheets and interconnecting lower edges of said sheets, each of said panels having a body portion terminating in a downwardly extending re-entrant hook along the lower edge thereof and in a re-entrant notch portion along the upper edge thereof, each re-entrant hook engaging the re-entrant notch portion of the next lower panel, said re-entrant notch portion being formed as an S-bend with the upper end of the S-bend terminating in a nailing flange extending beyond the notch;
the topmost overlapping sheet covered by a given panel extending over the nailing flange of the panel immediately below said given panel and pressed between the upper end of the S-bend of said panel immediately below and the lower surface of the body portion of said given panel into the re-entrant hook of the given panel;
said nailing flange being nailed to the sheets thereunder and to the roof deck; the normal thickness of the sheets being at least the minimum distance between the body portion of one panel and the upper end of the S-bend of the next lower panel interconnected therewith whereby a given sheet is compressed between said body portion of one panel and said upper end of the S-bend of the next lower panel.

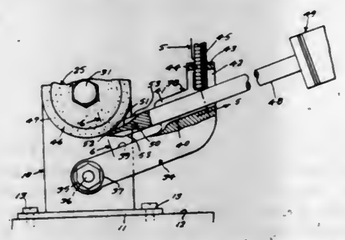
3,164,930
TOOL GRINDING MACHINE
Spurgeon Crosby, 4916 San Fernando Road, Glendale, Calif.
Filed Oct. 18, 1961, Ser. No. 145,792
39 Claims. (Cl. 51—3)

1. In a machine for grinding the teeth of tools such as milling cutters, ball end mills and end mills, a base, means for mounting a wheel head unit on said base; said unit including a rotatable spindle having means for mounting a grinding wheel on each end thereof and power means for driving said spindle; said mounting means for said wheel head unit including separate devices for moving said unit on said base in transversely extending horizontal directions, in a vertical line, about a vertical axis, and about a horizontal axis transverse to the spindle axis, a work holding means for holding a cutter to be ground by the selected one of said grinding wheels positioned by appropriate adjustment of said mounting means to grind the tooth of a tool so held carried by said base and devices carried by said base and supporting said work holding means; said



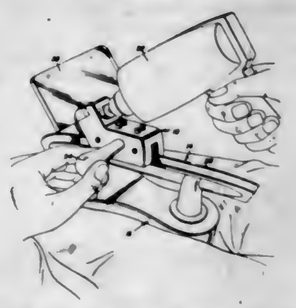
devices including an element pivotally movable about a vertical axial line having a fixed relation to said base, a first horizontally linearly adjustable means carried by said element, and a second horizontally linearly adjustable means carried by said first horizontally adjustable means and having a work table surface on which said work holding means is carried; said second named adjustable means being linearly adjustable in a line normal to the line in which said first named horizontally adjustable means is adjustable.

3,164,931
PHILLIPS SCREWDRIVER SHARPENER
Louie G. Sanchez, 2413 Sunrise Ave., and Philip A. Plount, 1909 Santa Paula, both of Las Vegas, Nev.
Filed Nov. 22, 1963, Ser. No. 325,528
2 Claims. (Cl. 51—98)



1. A sharpener for Phillips-type screwdrivers comprising an upright support, a grinding wheel journaled on said support for rotation about a horizontal axis, means carried by the support for rotating the grinding wheel, a work holder including an arm, means pivotally mounting an inner end of the arm on the support about an axis disposed beneath and parallel to the axis of rotation of the grinding wheel, said arm having an upwardly opening channel at its outer end with a central plane of said channel coinciding with a central plane of the grinding wheel and said channel being adapted to receive a Phillips-type screwdriver shank, said grinding wheel having a periphery of V-shaped cross-section to simultaneously sharpen both sides of a groove and the bit point of the shank, a set screw carried by the work holder for releasably clamping the shank in said channel, and means associated with the means pivotally mounting the arm for adjustably clamping said arm to the support with the work holder in different angularly adjusted positions relative to the grinding wheel.

3,164,932
ICE SKATE SHARPENER
Gilbert J. Morith, 14 N. Spruce St., Batavia, N.Y.
Filed May 17, 1963, Ser. No. 281,122
6 Claims. (Cl. 51—170)



5. A sharpener for ice skate blades including a jig consisting of a body having a full length vertical blade receiving slot in the bottom thereof, an upwardly and forwardly angled portion on said body, a downwardly and forwardly angled bore through said angled portion, a grinding wheel located forward of the angled portion, a shaft secured at one end to the center of said wheel and extending laterally therefrom and through the bore, and motor means drivingly engaged with the other end of the shaft.

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3,164,933
GRINDING WHEEL
Andrew Labowsky, 144 Emeline Drive, Hawthorne, N.J.
Filed Aug. 28, 1962, Ser. No. 219,902
1 Claim. (Cl. 51—209)

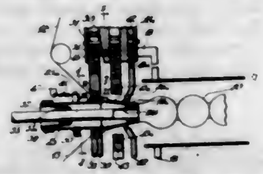


In a rotary grinding tool, a frusto-conical body having a leading edge and a trailing edge the leading edge including an annularly channeled area, an abrasive material positioned in said channeled area with the outer surface of the abrasive material forming a continuation of the body and extending beyond the leading edge thereof and heat dissipating continuous spiral groove means extending substantially from the trailing edge of the body and terminating at a point substantially adjacent to the channeled area confining said abrasive material.

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3,164,934
VACUUMING AND SEALING DEVICES FOR PACKAGING
Frank J. Pancratz, 924 S. Washington St., Park Ridge, Ill.
Filed Oct. 5, 1962, Ser. No. 228,701
14 Claims. (Cl. 53—112)

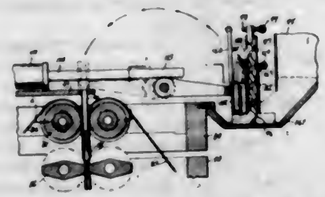
1. Vacuumized closing apparatus for the mouth of a package formed with companion sheets sealed together at the sides, comprising a tubular housing opening with one end into said mouth, a tube leading from a vacuum source into the housing and adapted to be advanced into said mouth a distance beyond said end, a flexible sheet extended in air-tight relation between said end and the corresponding end portion of the tube, said flexible sheet being funnel-shaped to seat closely between the package sheets, means supplementing the housing laterally to fill said mouth where the package sheets join at the sides,



the tube being retractable to roll the flexible sheet back out of said mouth without loss of vacuum, and means then operable to secure the package sheets together where they form said mouth.

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3,164,935
STRIP PACKAGING MACHINES
John H. Stroop, New York, N.Y., assignor, by mesne assignments, to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Original application June 22, 1957, Ser. No. 822,085, now Patent No. 3,054,236, dated Sept. 18, 1962. Divided and this application July 13, 1962, Ser. No. 209,737
8 Claims. (Cl. 53—178)



5. A strip packaging machine comprising die rolls mounted to cooperate and each having collars spaced thereon and in contact with the corresponding collars of the cooperating rolls whereby anular spaces are provided between collars, a hollow mandrel extending downwardly from above into each of said annular spaces, means for feeding web strips over and between the die rolls, a hopper containing granular material to be fed, a shaft mounted at a spaced distance from the mandrels, arms attached to the shaft, each having a measuring cup at its outer end and means for oscillating the shaft whereby each measuring cup is in an upright position when oscillated away from the mandrel and is in a reverse position when oscillated toward the mandrel and is adapted to dump its contents into the top of the corresponding mandrel.

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3,164,936
APPARATUS FOR STERILE PACKING OF STERILE GOODS
Willi Löliger, Kosoltingen, Switzerland, assignor to Alpura AG, Bern, Switzerland, a corporation of Switzerland
Filed Dec. 8, 1961, Ser. No. 158,172
Claims priority, application Switzerland Dec. 12, 1960
8 Claims. (Cl. 53—180)

4. In an apparatus for sterile packing of sterile goods comprising means for continuously forming a tube from a flexible web, means for advancing and compressing said tube transversely of the length of the tube for closing the tube, means extending into said tube for filling the sterile goods into the tube upstream of said compressing means, and heating means placed inside said tube upstream of the goods filled into the tube with respect to the movement of the tube for heating and sterilizing the inside of the tube, said filling means extending through and having

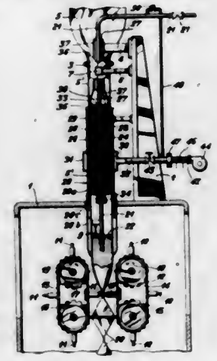


a part extending beyond said heating means toward said compressing means:

a jacket tube placed around said formed tube and having a diameter at least as great as the outside diameter of said formed tube and being at least coextensive with the entire part of the apparatus between said heating means and said compressing means,

said jacket tube being also substantially coextensive with said heating means,

means connected to said jacket tube for supplying a

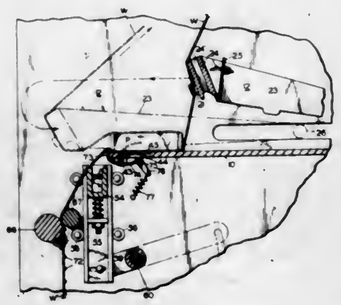


heat carrier to said jacket tube for initially heating and sterilizing the interior of said jacket tube and at least the part of said filling means extending beyond said heating means toward said compressing means prior to starting formation and filling of said formed tube, and

a circular closure member coaxially of and substantially at the end of said jacket tube averse of said compressing means, the diameter of said closure member being substantially equal to the inside diameter of said formed tube.

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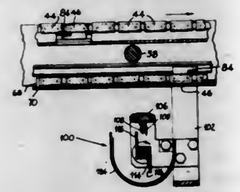
3,164,937
WRAPPING MACHINE
Marvin Lester Ingram, Portland, Oreg., assignor of seventeen percent to Maurice Ingram, ten percent to L. R. Geisler, and seventy-three percent to McDannell Brown
Filed June 4, 1962, Ser. No. 199,776
8 Claims. (Cl. 53—229)



1. In a wrapping machine of the character described, a table, a traveling overwrap bar assembly including a forward cross bar extending transversely over said table and positioned rearwardly on said table at the start of each cycle of operation of the machine, a guideway on said cross bar for the wrapper material, wrapper material supply means located upwardly and rearwardly from said cross bar of said overwrap assembly, a floating tensioning rod for the wrapper material in said supply means, driven feeding means in said supply means controlled by said floating tensioning rod, wrapper end holding elements positioned beyond the forward end of said table for holding said wrapper material on said table between said end holding elements and said cross bar of said overwrap bar assembly, whereby to enable the contents for a package to be wrapped to be deposited on the wrapper material at the forward end of said table, overwrap operating means for bringing the wrapper material over the top of the deposited contents for a package without moving said contents, said overwrap operating means moving said overwrap bar assembly so as to cause said cross bar of said assembly to move upwardly and forwardly from starting position to a position beyond said forward end of said table and then downwardly and rearwardly and along said table to said starting position during each complete cycle of operation of said machine, an automatic delay in said overwrap operating means causing said overwrap bar assembly to pause momentarily when said cross bar is at the forward end of said table near the forward side edge of said package contents during the rearward return movement of said overwrap bar assembly and cross bar, a wrapper severing and heat sealing element located below the forward end portion of said wrapper material near the forward end of said table, supporting means for said element mounted for up and down movement, and means automatically raising said element supporting means and therewith said element into wrapper contacting position beneath said cross bar of said overwrap bar assembly upon arrival of said cross bar near the forward side edge of said package contents.

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3,164,938
WRAPPING MACHINE
Fred L. Waite, East Williston, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 16, 1962, Ser. No. 180,219
22 Claims. (Cl. 53—379)



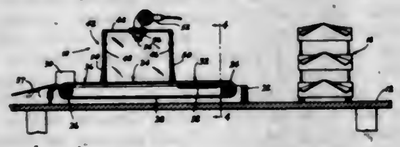
1. In heat sealing apparatus, an endless conveyor for carrying articles to be heat sealed and having incorporated in the conveyor a plurality of electrical heating elements, an electrical heating element stationarily mounted but otherwise identical to one of said travelling heating elements, a source of electric power, means providing a regulated supply of power from said source to both said stationary and travelling heating elements, and means responsive to the temperature of said stationary heating element for controlling the last-mentioned means.

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3,164,939
PORTABLE APPARATUS FOR HEAT SHRINKING FILM ABOUT OBJECTS
William J. Burke, St. Louis, Mo., assignor to Roll-O-Sheets, Inc., St. Louis, Mo., a corporation of Missouri
Filed Nov. 4, 1963, Ser. No. 321,025
4 Claims. (Cl. 53—379)

1. Portable apparatus adapted to mount on a table for heat shrinking a plastic film wrapped about an object,

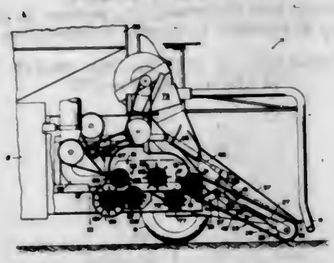
said apparatus comprising a flat base adapted to rest on a table or the like, said base being in the form of a rectangular frame composed of elongated side and end wall members, said wall members defining a central opening, endless conveyor means having an endless belt positioned in said frame to substantially cover said opening, said endless belt being mounted upon rollers supported within said opening at opposite ends of said side wall members, said endless belt having a top surface provided with three stations comprising a loading station at one end, a heating station at an intermediate position and a discharge station at an opposite end of the belt, a heat platen means



mounted on said side wall members underneath said loading station to provide a source of heat to cause overlapping fringe of the film wrapped about the object to cohere, a heat tunnel mounted upon said frame and positioned over the heating station, said heat tunnel being provided with a hot air blower and having inlet and exit means for passing the wrapped objects carried by said belt while preventing any subtantial loss of heat within said tunnel.

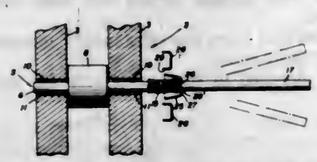
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3,164,940
COTTON SCRAPPER MEANS
James H. Gray, Columbus, Miss., assignor to Tupelo Spindle Company, Inc., Columbus, Miss., a corporation of Mississippi
Filed Dec. 13, 1962, Ser. No. 244,480
32 Claims. (Cl. 56—28)



1. In a cotton scrapper, belt means for retrieving scrap cotton, comprising a flexible, endless belt, means for supporting and driving said belt means including resilient means pivoted at one end intermediate the curved end portions of said belt means and connected at its other end with one curved end portion of said belt means, said resilient means urging said one end portion of the belt means resiliently downwardly toward ground contact, a plurality of grabber bars fixed to said belt, each said grabber bar including a spine connected to said belt, a set of prongs projecting away from said spine, said prongs of each said bar overlapping the spine of the next adjacent preceding grabber bar, said grabber bars lying in close overlapping contact along the lengths of the flights of said belt and projecting tangentially from said belt around the respective curved end portions of said belt, said prongs of each grabber bar being substantially flat and laterally spaced apart, the lateral spacing between adjacent said prongs being substantially equal in width to the width of a prong, said spacing providing for discharge of undesired material during use of said belt means.

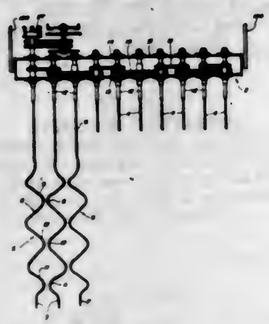
3,164,941
FLEXIBLE COTTON PICKER SPINDLE
Forrest L. Simpson, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 3, 1962, Ser. No. 214,659
1 Claim. (Cl. 56—50)



A cotton picker spindle comprising a multi-piece element having a picking portion and a supporting portion coaxially arranged and a flexible connection between said portions and further characterized in that said flexible connection comprises a coil spring having convolutions wrapped around adjacent ends of said portions of the spindle and wherein the peripheral portions of said adjacent ends have threads complementary to the coils of the spring and said convolutions of the spring being threaded onto said threads and providing a positive drive for the picking portion of the spindle and said convolutions and threads being formed to effect tightening of the spring with the portions of the spindle pursuant to rotation of the spindle in its operating direction.

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3,164,942
FRUIT HARVESTER HAVING GATHERING FINGERS
Tommy A. Middlesworth and Harold G. Meltl, Hinsdale, and Anthony S. Wuner, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 3, 1962, Ser. No. 214,657
3 Claims. (Cl. 56—328)



1. A fruit picker comprising a picker head having a plurality of rotatable side-by-side picker spindles formed of material permitting the spindles to deflect laterally against one another, said spindles having helical portions in transverse alignment with each other, and means rotating said spindles in timed relation with one another in preset relation with said helical portions abutting under deflection of the spindles along the turns of the helix.

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3,164,943
TREE SHAKER
Cecil C. Pearson, Cuba, Ala., assignor of forty percent to William A. Gangwet, Cuba, Ala.
Filed Oct. 17, 1962, Ser. No. 231,092
8 Claims. (Cl. 56—329)

1. A tree shaker comprising,
(a) a translatable frame,



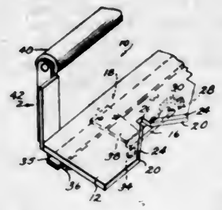
(b) a tree engaging member carried by said frame in position to engage the trunk of a tree,
(c) a drum mounted for rotation on said frame,
(d) a flexible member having one end thereof wound about said drum with the other end thereof being adapted for attachment to the tree at a point above and in speced relation to said tree engaging member,
(e) a rotatable member mounted adjacent said drum,
(f) at least one detent carried by said rotatable member,
(g) at least one detent carried by said drum in position to engage said detent carried by said rotatable member,



(h) resilient means imparting relative axial movement between said drum and said rotatable member to urge the detent carried by said rotatable member and the detent carried by said drum toward each other as said rotatable member rotates,
(i) said detent carried by said drum and said detent carried by said rotatable member being adapted for angular movement relative to each other upon application of a predetermined amount of torque to said rotatable member, and
(j) means to apply said predetermined amount of torque to said rotatable member whereby relative angular movement is imparted between said detents to vibrate said flexible member.

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3,164,944
SICKLE BAR HARVESTER
Ralph Polk, Jr., P.O. Box 3288, Tampa 1, Fla.
Filed Oct. 5, 1962, Ser. No. 228,591
10 Claims. (Cl. 56—338)



1. A harvesting apparatus for removing tree-grown fruit from its tree comprising: a plate having at least one generally V-shaped notch in the forward edge thereof; guard means carried by said plate, said guard means being movable between a first position across the notch near the apex thereof and a second position spaced from the notch; means resiliently biasing said guard means to said first position; stem cutting means carried by said plate and movable in a path across the apex of said notch, said path lying rearwardly of said first position of said guard means; a freely rotatable roller extending parallel to said plate; and means mounting said roller in spaced, opposed relation to one surface of said plate and rearwardly of the apex of the notch.

3,164,945
LAWN RAKES
Thomas A. Spencer, 337 Manhattan Ave., Daytona Beach, Fla.
Filed Jan. 14, 1963, Ser. No. 251,154
1 Claim. (Cl. 56—400.12)



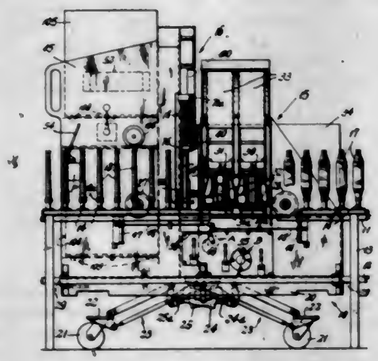
A composite rake for lawns, meadows, and similar areas comprising a first rake-head provided with a socket at one end thereof, a first plurality of long, resilient metal tines extending from the other end of said first rake-head, said first plurality of tines having a slight curvature at their free ends, an elogated handle attached to the socket of said first rake-head; a second rake-head provided with a socket at one end thereof, a second plurality of long, resilient metal tines extending from the other end of said second rake-head, said second plurality of tines also having a curvature at their free ends, the curvature of said second plurality of tines being greater than the curvature of said first plurality of tines, an elongated shaft attached to the socket of said second rake-head; pivot means joining said handle and said elongated shaft, said pivot means being located whereby said first and second pluralities of tines normally intermesh and whereby the free ends of said first plurality of tines extend beyond the free ends of said second plurality of tines; an alignment means comprising a curved shaft, said curved shaft being rigidly connected to said elongated shaft and being slidably connected to said handle, and spring means interconnecting said elongated shaft and said handle.

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3,164,946
DOFFING AND DONNING MECHANISM
Edwin O. Du Bois, Pearl River, Edward L. Cacksey, Upper Nyack, and Carl E. Lindquist, Nyack, N.Y., assignors to Willcox & Gibbs Sewing Machine Co., New York, N.Y., a corporation of New York
Filed July 15, 1963, Ser. No. 295,119
27 Claims. (Cl. 57—53)

1. A doffing and donning device comprising a carriage adapted to be mounted for movement on horizontal rails extending along a side of a spinning machine having a row of spindles thereon, said carriage comprising a frame having rail engaging rollers, a subframe having floor-engaging wheels, and means connecting the frame and subframe, including master and slave cylinders for relative vertical movement of the main frame for raising the rail engaging rollers above the height of the horizontal rails; a hydraulic circuit for operating said cylinders; and control means for the hydraulic circuit including movable controllers for engaging the rail, link means

connected to said controllers, and a control valve for the master and slave cylinders normally blocking the pressure line for the master cylinder from a return reservoir and rendering the master and slave cylinders operative to lift the frame, said controllers when the frame is in parallel relation with the rail and the rollers are



disposed above the rail automatically actuating the valve to connect the master and slave cylinders to the reservoir and deenergize said cylinders and causing the frame and the rail engaging rollers to descend to supporting relation with the rail for mounting the carriage on the rail for movement therealong.

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**3,164,947**
**CORDAGE AND METHODS OF MANUFACTURE THEREOF**
**Dexter W. Gaston, Dehanco, N.J., assignor to Wall Rope Works, Inc., Beverly, N.J., a corporation of New Jersey**
**Filed Feb. 28, 1963, Ser. No. 261,658**
**24 Claims. (Cl. 57—140)**



1. Cordage comprising a plurality of strands compactly assembled with each other, each of said strands comprising a plurality of extruded and oriented plastic elements compactly assembled with each other, each of which elements comprises a plurality of continuous filaments at least intermittently integrally joined together with substantial freedom of said filaments for movements relatively to each other, said elements presenting externally to each other irregular surfaces impeding their relative lateral movements, said elements having individual deniers of at least 500, at least some of which plastic elements are formed of a thermoplastic composition and a nonplastic solid material substantially uniformly dispersed in said plastic composition.

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**3,164,948**
**CORDAGE AND METHODS OF MANUFACTURE THEREOF**
**Edwin H. Stratford, Chatham, N.J., assignor to Wall Rope Works, Inc., Beverly, N.J., a corporation of New Jersey**
**Filed Feb. 28, 1963, Ser. No. 261,659**
**17 Claims. (Cl. 57—140)**

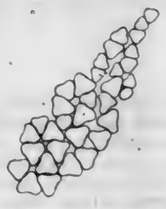
1. The method including extruding and orienting plastic elements each of which comprises a plurality of continuous filaments at least intermittently integrally joined



together, compactly twisting said elements together to form a unit, and twisting a plurality of said units together.

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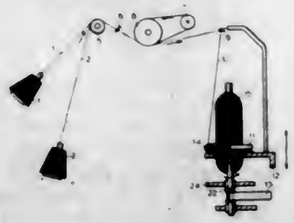
**3,164,949**
**TRILOBAL FILAMENTARY YARNS**
**Gilbert Pizzi, Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Mar. 22, 1963, Ser. No. 267,347**
**6 Claims. (Cl. 57—140)**



1. A yarn package of continuous-filament, synthetic, textile yarn, said yarn being composed of a plurality of species of trilobal filaments, the individual filaments within each species being of essentially the same denier, but the species differing from each other in said respect, the distribution of denier values over the entire group of filaments constituting the yarn being such as to give the group
(1) a coefficient of variation ($v$) of at least 10,
(2) a skewness coefficient ($a_3$) within the range of $-0.7$ to $+0.7$, and
(3) a kurtosis coefficient ($a_4$) in the range of 1.0 to 4.0.

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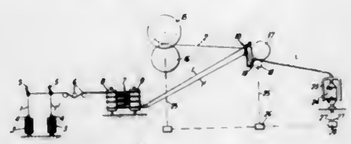
**3,164,950**
**METHOD OF TWINING THREADS**
**Edmund Hamel, Romanshorn, Thurgau, Switzerland, assignor to Hamel Projektierungs- und Verwaltungs A.G., Thurgau, Switzerland, a corporation of Switzerland**
**Filed July 20, 1962, Ser. No. 211,301**
**Claims priority, application Germany, July 27, 1961, H 43,261**
**5 Claims. (Cl. 57—156)**



1. A method of twining a plurality of fibrous threads twisted in a first direction, comprising the steps of gathering said threads into a yarn, imparting to said yarn a preliminary twist with a relatively low number of turns per unit of yarn length in said first direction to limit relative longitudinal movement of said threads, and subsequently imparting to said yarn a finishing twist with a relatively high number of turns per unit of yarn length in a direction opposite said first direction.



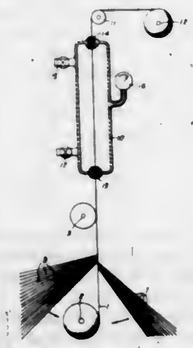
**3,164,951**
**METHOD OF FORMING A CORE YARN**
**William K. Donaldson, Cheadle, and Ian Eddleston, Blackburn, England, assignors to Turner Brothers Asbestos Company Limited, Manchester, England, a British company**
**Filed Mar. 11, 1963, Ser. No. 264,246**
**Claims priority, application Great Britain, Mar. 12, 1962, 9,404/62**
**6 Claims. (Cl. 57—160)**



3. A method of producing a yarn which comprises drawing a sliver of staple asbestos fibres having two opposite flat faces and at least two smooth continuous filaments of equal extensibility from sources of supply to a sandwiching point, the filaments being drawn at equal speeds, at such point bringing one of said filaments into contact with one flat face of said sliver and another of said filaments into contact with the other flat face of said sliver to sandwich the filaments and the sliver, maintaining an equal substantial tension on each of said filaments between the source of supply thereof and the sandwiching point, twisting the sandwiched product, and pressing at least one of the filaments against a smooth surface at the sandwiching point with the sliver overlying it so as to prevent the twist from passing backward beyond the sandwiching point.

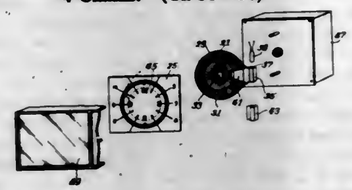
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**3,164,952**
**METHOD OF MAKING TENNIS CORDS**
**Albert Edward Toney Neale, Sutton Coldfield, and Brian Charles Roberts, Woodford Green, Essex, England, assignors to Dunlop Rubber Company Limited, London, England, a British company**
**Filed June 17, 1963, Ser. No. 288,399**
**Claims priority, application Great Britain, July 3, 1962, 25,400/62**
**13 Claims. (Cl. 57—160)**



1. A method of making cord for the stringing of tennis and the like racquets comprising applying directly to a monofilamentary textile core of a synthetic long-chain polymer at least one wrapping layer of a textile synthetic long-chain polymer material, and passing the wrapped core through steam at a pressure of at least 50 pounds per square inch for a period of time sufficient to fuse the wrapping layer to the core.

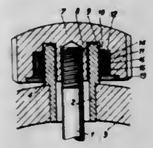
**3,164,953**
**CLOCK**
**Theodore A. Granroth, Elmhurst, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed May 20, 1963, Ser. No. 281,693**
**4 Claims. (Cl. 58—50)**



1. A clock having provision for illumination of the face thereof, including in combination, a plurality of opaque indicator hands, a clock face disposed behind said indicator hands and including a translucent portion adapted to silhouette said hands when lighted, a substantially disk shaped light conductor having a frosted surface and being mounted behind said translucent portion of said clock face, a bulb retaining extension on the periphery of said light conductor, a neon bulb secured in said bulb retaining extension and supplying light to said light conductor for lighting said translucent portion of said clock face to silhouette said hands, said frosted surface of said light conductor having an unfrosted portion adjacent said bulb to even the intensity of the light over the entire light conductor, whereby the position of said hands is observable from a darkened environment.

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**3,164,954**
**SEALING MEANS FOR AN ANNULAR PASSAGE FORMED BETWEEN TWO COAXIAL PORTIONS OF A PAIR OF UNITS MOVABLE WITH RESPECT TO ONE ANOTHER**
**René Soguel, Les Hauts-Geneveys, Neuchatel, Switzerland**
**Filed Apr. 13, 1960, Ser. No. 21,948**
**Claims priority, application Switzerland, Oct. 25, 1955, 28,805/55**
**5 Claims. (Cl. 58—90)**



1. In combination; an inner portion of a first unit and an outer portion of a second unit, said inner portion having an axis and said outer portion surrounding said inner portion and extending coaxially thereto, one of said units being arranged for rotary motions about said axis with respect to the other unit, said outer portion having an annular cavity facing said inner portion, said annular cavity being delimited in axial direction by two plane faces substantially perpendicular to said axis; a rubbery sleeve located in said cavity between said two plane faces and surrounding said inner portion, said sleeve having an inner surface contacting the outer surface of said inner portion, and two end faces each of which contacts one of said plane faces of said outer portion, said sleeve having an axial length slightly greater than the axial distance between said plane faces so that said sleeve is resiliently compressed in axial direction whereby an axial force is created which produces friction between said end faces of said sleeve and said plane faces requiring a certain force for relative turning movement between said sleeve and said plane faces; and pressing means com-

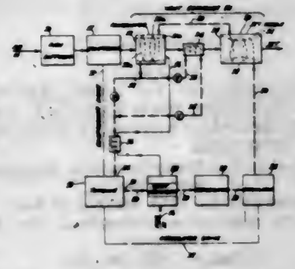
prising a metal ring surrounding at least the central tubular portion of said sleeve, said metal ring having the shape of a cylindrical crown and having its lower and upper inner edges bevelled and having between said bevelled edges an inner annular pressing surface contacting the outer anular surface of said central tubular portion, the diameter of said inner pressing surface being smaller than the diameter of said outer surface of said central tubular portion so that said central tubular portion is radially compressed and exerts on said inner portion an inwardly directed radial pressure which produces friction between said inner surface of said sleeve and said outer surface of said inner portion requiring for relative turning movement between said sleeve and said inner portion a greater force than said first mentioned certain force so that said sleeve and said inner portion do not turn relative to each other and so that said end faces of said sleeve slide on said plane faces when one of said units is rotated with respect to the other unit and only said plane faces will be subjected to wear by friction produced by said sleeve, while axial displacement of one of said units results in axial sliding of said sleeve on said inner portion.

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## 3,164,955
## TURBO COMPRESSOR DRIVE FOR JET POWER PLANT

George H. Garraway, 8 Holley Lane, Darien, Conn.

Filed Oct. 20, 1958, Ser. No. 768,497
11 Claims. (Cl. 60—35.3)



4. In a jet propulsion power system comprising the components of a ram diffuser and a turbine driven compressor for compressing inlet air, and a hot gaseous jet fluid generating chamber receiving air thus compressed and delivering said jet fluid to a jet-forming nozzle, wherein the said components provide a flow of jet fluid at elevated temperature from said diffuser to and through said nozzle, the method of supplying gaseous driving fluid to the turbine which comprises circulating a separate fluid distinct from said hot gaseous jet fluid, in a closed loop to and through said turbine, increasing the pressure of said fluid as it passes from turbine discharge to turbine inlet, heating said fluid before return delivery to the turbine by effecting indirect heat exchange between said fluid and said jet fluid of elevated temperature and between said fluid and ram air discharging from said diffuser.

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## 3,164,956
## TWO PART THRUST REVERSER

Ross W. Colebrook and Sam H. Feld, Bellevue, and Gerald F. Goetz, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Mar. 14, 1963, Ser. No. 265,205
10 Claims. (Cl. 60—35.54)

1. A thrust reverser for a reaction propelled vehicle comprising the combination of,

(*a*) a reaction engine,

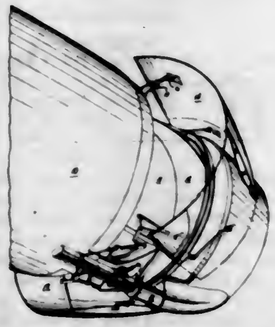
(*b*) structure for supporting said engine on the vehicle,

(*c*) a clamshell pivotally mounted on said supporting structure for reversing the flow of exhaust gases from said engine,

(*d*) a deflector door having leading and trailing edges,

(*e*) connecting link means for mounting said deflector door on said supporting structure for receiving the reverse flow of exhaust gases from said clamshell, and

(*f*) actuator means for operating both said clamshell



and said deflector door between a cruise position and a reverse thrust position,

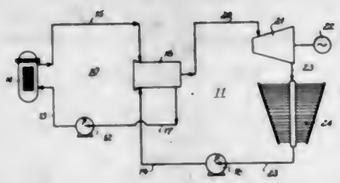
(*g*) said connecting link means comprising means for moving said deflector door trailing edge into the slipstream a greater distance from said engine supporting structure than said deflector door leading edge during the initial movement thereof from the cruise position to the reverse thrust position whereby aerodynamic forces tend to close said deflector door when inadvertently displaced.

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## 3,164,957
## THERMAL ENERGY CONVERTING SYSTEM

Edwin F. Fricke, Huntington, N.Y., assignor to Republic Aviation Corporation, Farmingdale, N.Y., a corporation of Delaware

Filed Mar. 10, 1961, Ser. No. 94,901
6 Claims. (Cl. 60—36)



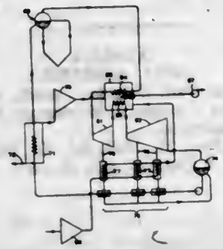
1. A thermal energy converting system comprising a primary fluid loop and a secondary fluid loop, immiscible alkali metal fluids in both said loops, means heating the fluid in the primary loop, fluid circulating means in both loops, a heat transfer chamber common to a selected portion of both loops, said chamber including tangentially disposed inlet ports at angles relative to each other to receive said fluids and a splash plate adjacent said ports to generate turbulence of said fluids whereby they are intimately mixed to a uniform temperature, means in communication with said chamber to receive the mixed fluids and separate them for return to their respective loops, and means converting the thermal energy in the fluid in the secondary loop into electrical energy.



## 3,164,958
## COMBINED GAS-STEAM TURBINE CYCLE POWER PLANT

Pierre Henri Pacault, Paris, France, assignor to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain

Filed Apr. 14, 1961, Ser. No. 103,077
Claims priority, application France Apr. 23, 1960
1 Claim. (Cl. 60—39.18)



A combined gas-steam turbine cycle power plant comprising a steam generating unit, a separate pressurized furnace including a burner means spaced from said steam generating unit, a superheater arranged to receive heat within said pressurized furnace, means for passing steam from said steam generating unit to said superheater in said pressurized furnace, a high pressure steam turbine arranged to receive superheated steam from said superheater, a reheater arranged within said pressurized furnace to receive and reheat exhaust steam from said high pressure steam turbine, a low pressure steam turbine arranged to receive reheated steam from said reheater, a condenser arranged to receive and condense exhaust steam from said low pressure steam turbine, a first conduit for bleeding superheated steam from said high pressure steam turbine at an intermediate point in its passage therethrough, a second conduit for bleeding reheated steam from said low pressure turbine at an intermediate point in its passage therethrough, a first heat exchanger located in each of said first and second conduits, an air compressor, means for passing compressed air from said compressor in parallel through said first heat exchangers in heat exchange relationship with steam bled from said high pressure and low pressure steam turbines respectively and thence to said pressurized furnace for combustion therein with fuel to provide combustion gases, a second heat exchanger located in each of said first and second conduits downstream from said first heat exchangers, means for passing condensate from said condenser serially through said second heat exchangers in heat exchange relationship with the bled steam from said high pressure and low pressure turbines, means for passing the bled steam from said second heat exchangers to said condenser, a gas turbine, means for passing exhaust heating gas from said pressurized furnace through said gas turbine, duct means for passing exhaust heating gas from said gas turbine to the atmospbere, a third heat exchanger arranged in said duct means, and means for passing heated condensate from said second heat exchangers through said third heat exchanger in heat exchange relationship with the exhaust heating gases from said gas turbine and thence to said steam generating unit whereby the condensate receives additional heat and the exhaust heating gases are cooled.

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## 3,164,959
## HYDRAULIC SYSTEMS

John T. Gondek, Minneapolis, Minn., assignor to Oil-Dyne, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed May 3, 1963, Ser. No. 277,776
9 Claims. (Cl. 60—52)

1. A hydraulic system including,

a reservoir,

a valve cylinder,

a pair of valve pistons each individually reciprocable between two extreme positions,

means operable to selectively direct fluid under pressure from said reservoir to either end of said valve cylinder,

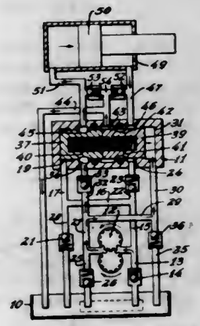
a return connection from a point intermediate the ends of said valve cylinder to said reservoir,

a work cylinder,

a piston reciprocable in said work cylinder,

a connection between each end of said work cylinder and a corresponding port in the wall of said valve cylinder between the ends and the center thereof and opened and closed by reciprocation of said valve pistons,

means providing communication between said means to selectively direct fluid under pressure and one said



port in one extreme position of both of said pistons when said valve pistons are in end abutting relation to direct fluid under pressure to one end of said work cylinder,

means providing communication between the other of said ports and said return line in said one extreme position to permit return of fluid to said reservoir,

means providing communication between said means to selectively direct fluid under pressure and the other said port in the other extreme position of both of said pistons when both said valve pistons are in end abutting relation to direct fluid under pressure to the other end of said work cylinder,

means providing communication between the other of said ports and said return line in said other extreme position to permit return of fluid to said reservoir, and

means normally urging said valve pistons apart and toward the ends of said valve cylinder.

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## 3,164,960
## HYDROSTATIC TRANSMISSION

Charles O. Weisenbach, Watertown, and Samuel G. Williams, Cape Vincent, N.Y., assignors to The New York Air Brake Company, a corporation of New Jersey

Filed Sept. 3, 1963, Ser. No. 306,218
9 Claims. (Cl. 60—52)

1. In combination

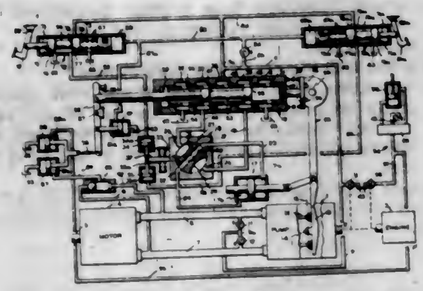
(*a*) a prime mover;

(*b*) a pair of work-performing devices;

(*c*) a hydrostatic transmission including a variable displacement pump connected with the prime mover and a motor connected with one work-performing device for transmitting power from the prime mover to that work-performing device;

(*d*) a second pump connected with the prime mover;

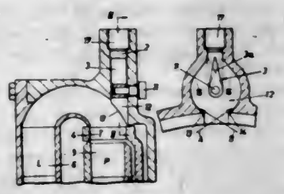
(*e*) a fluid pressure motor connected with the other work-performing device;
(*f*) a circuit for delivering fluid under pressure from the second pump to the fluid pressure motor;
(*g*) manually operable means for varying the displacement of the variable displacement pump; and



(*h*) a pair of override means arranged to limit the displacement-increasing effectiveness of the manually operable means, one means being responsive to the load pressure in the hydrostatic transmission and the other means being responsive to the load pressure in the circuit.

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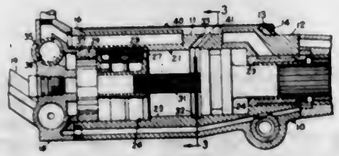
**3,164,961**
**HYDRODYNAMIC FLUID FLOW MACHINE**
**Walter Schröder, Essen, Germany, assignor to Voith-Getriebe KG., Heidenheim (Brenz), Germany**
**Filed July 27, 1962, Ser. No. 212,965**
**Claims priority, application Germany, Aug. 3, 1961, B 63,508**
**8 Claims. (Cl. 60—54)**



1. A rotary hydrodynamic fluid flow machine, which comprises: housing means confining a substantial torodial working chamber for the working fluid of said machine, input and output bladed wheel means in said chamber coacting with the working fluid in the chamber to cause the said working fluid to travel in a substantially helical flow path including circumferential components in either of two directions in said working chamber during operation of the machine, branch conduit means branching off from said working chamber at a first point in the radially outer region of said working chamber and returning along a path external of the working chamber to a second point of the working chamber nearer the axis of the machine than said first point and at a lower pressure than said first point whereby the pressure of the working fluid in said working chamber in the region of said first point is operable to cause flow of the working fluid in said conduit means from said first point toward said second point, the inlet end of said conduit means at said first point comprising a cavity formed in said housing means and having inner wall surfaces, said cavity having an inlet at the radially inner side thereof opening into said working chamber and having an outlet at the radially outer side thereof, said inner wall surfaces of said cavity including two side wall surfaces which are spaced from each other in a plane normal to the axis of rotation of the machine and end wall surfaces spaced in the axial direction of said machine and joining said side wall surfaces to form the said cavity, said side wall surfaces being concave toward the center of the cavity and each side wall surface having that portion which is adjacent said inlet inclined with respect to a plane passing through said inlet and the axis of the machine substantially in one of the two directions of circumferential flow of fluid in the working chamber within range of the opening.

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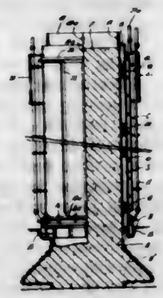
**3,164,962**
**DRILL ASSEMBLY**
**John E. Gordon, Galt, Ontario, Canada, assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 27, 1962, Ser. No. 242,038**
**6 Claims. (Cl. 60—64)**



1. A drill assembly comprising: a housing having a working chamber therein, a casing radially outwardly spaced from said working chamber to form a muffler chamber, at least one exhaust passageway communicating between said working chamber and said muffler chamber, said muffler chamber having an exterior opening, said housing having on the outer surface thereof at least a pair of axially and laterally outwardly extending portions abutting said casing to form an exhaust channel therebetween, said exhaust channel communicating between the exterior opening and ambient atmosphere, means normally closing said exhaust channel, said means being flexible to permit exhaust gases to flow outwardly through said channels.

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**3,164,963**
**APPARATUS FOR FORMING FOUNDATION MEMBERS**
**Dolen O. Talley and Myles H. Schutte, both of 4655 Telephone Road, Houston 17, Tex.**
**Filed Sept. 23, 1960, Ser. No. 58,050**
**3 Claims. (Cl. 61—53.66)**



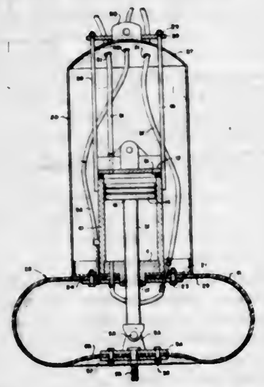
2. An apparatus for use in forming foundation members of concrete or the like, comprising:
(*a*) an outer casing adapted to be positioned in a body of water with its lower end engaged with such bottom,
(*b*) fluid jet nozzles disposed circumferentially on the lower end of said outer casing for directing jets of fluid into the bottom to thereby facilitate the penetration of such lower end of the outer casing in the bottom to form a seal therewith,



(*c*) tubular means mounted on said outer casing for supplying fluid under pressure to said jet nozzles,
(*d*) an inner casing disposed within the bore of said outer casing and adapted to have its lower end resting on the bottom also,
(*e*) said inner casing being of a smaller diameter than said outer casing to form an annular space therebetween for receiving sand,
(*f*) a plurality of longitudinal separator members on said inner casing and engageable with the inner wall of said outer casing to maintain said annular space,
(*g*) a jet fluid jacket mounted on the external surface of said outer casing,
(*h*) means for introducing fluid under pressure into said jet fluid jacket, and
(*i*) jet discharge nozzles in the wall of said outer casing at longitudinally spaced points and in communication with said fluid jacket and the interior of said outer casing for transmitting the fluid under pressure into the sand.

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**3,164,964**
**BELLING TOOL FOR BORE HOLES**
**Richard V. Josephson, 400 Park Blvd., Winnipeg 29, Manitoba, Canada**
**Filed Apr. 12, 1962, Ser. No. 187,131**
**3 Claims. (Cl. 61—63)**

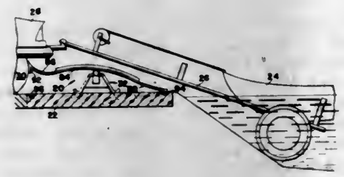


3. In a fluid pressure operated tool for belling bore holes, the combination of a hollow flexible and inflatable belling component having upper and lower wall portions, a fluid pressure cylinder mounted externally on the upper wall portion of said component, a piston reciprocable in said cylinder, a piston rod connected to said piston and projecting downwardly from said cylinder through the upper wall portion of said component into the latter, means connecting said piston rod to the lower wall portion of said component, means for delivering fluid under pressure into said cylinder for sliding said piston upwardly whereby said belling component may be radially expanded, and means for delivering compressed air into said component whereby the latter may be inflated and radially expanded as a function separate from and additional to the radial expansion thereof by the sliding of said piston.

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**3,164,965**
**BOAT LAUNCHING DEVICE**
**Raynald R. F. Martin, 710 Beverly Drive, Wichita, Kans.**
**Substituted for abandoned application Ser. No. 26,188, May 2, 1960. This application Mar. 8, 1963, Ser. No. 266,129**
**3 Claims. (Cl. 61—67)**

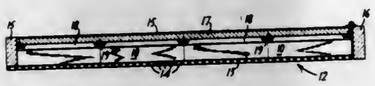
3. A boat launching device of the type described comprising, in combination, a support, said support having a generally horizontal portion, a recess in said horizontal portion, an axle rotatably and removably mounted in said recess and projecting from both ends of said support, each end of said support having a cover plate rigidly secured thereto through which the axle projects, each of the projecting end portions of said axle having a first annular metallic member mounted therearound and being rigid with said cover plate, said annular members having a projection on the outside surface thereof, each of the projecting end portions of said axle having a second annular metallic member therearound, each of said second annular members having a plurality of spaced recesses on the inside surface thereof, said annular members being mounted on said axle so that said projections on said first annular members is receivable within said recesses of said second annular members, each end of the projecting end portions of said axle having a closed longitudinal slot therethrough, each of said second annular members and said slot at



each end of said axle having a pin extending therethrough to mount said second annular member on said axle for rotation therewith and longitudinal movement therealong, each end of said axle having a lock nut threadedly mounted thereon, resilient means mounted between said lock nuts and said second annular member to continually urge said annular member into engagement with said first annular member, and a plate secured to said axle between said cover plates, said device being constructed and adapted so that a trailer having a boat thereon can be backed across said plate and into the water so that as the wheels of said trailer cross said plate from one side to the other said plate will be raised to engage the wheels of the pulling vehicle to prevent said vehicle from rolling into said water, and said projections on said first annular member will be disengaged from one of said recesses in said second annular member and engaged in another of said recesses in said second annular member.

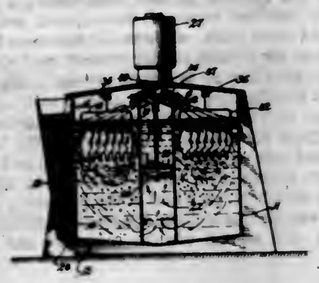
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**3,164,966**
**FREEZING PROCESS AND APPARATUS FOR ELIMINATING FROST ON THE WINDOW OF A CARTON**
**Sidney A. Levitz, 1628 Robin Road, Lebanon, Pa.**
**Filed Sept. 17, 1962, Ser. No. 223,934**
**15 Claims. (Cl. 62—62)**



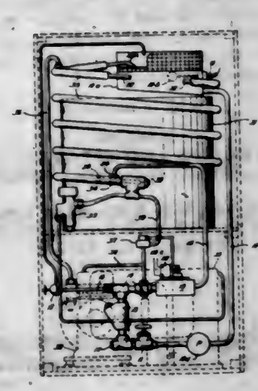
1. A process for freezing the contents of a carton of the window type without forming frost on the window comprising the step of subjecting the exterior of the carton to a reduced temperature to freeze the contents of the carton while maintaining the temperature adjacent the outside surface of the window at a temperature higher than the freezing temperature of water until the moisture within the carton has condensed on surfaces remote from the window.

3,164,967
POULTRY COOLING METHOD AND APPARATUS
Raymond Marshall, R.R. 1, Kettleby, Ontario, Canada
Filed Nov. 24, 1959, Ser. No. 855,953
9 Claims. (Cl. 62—63)



8. In a process for rapidly cooling eviscerated poultry, the steps of providing an elongated channel of water, circulating water from the top to the bottom of said channel and also circulating a portion of the water over ice so as to collect sediment on said ice to thereby check the growth of bacteria contained in said sediment and to maintain the temperature of said water below 40° F., creating a churning zone of high heat exchange within said channel by forcefully driving water onto the surface of said water, confining clusters of poultry below said water surface so as to provide a top layer which protectively cushions said poultry from the direct force of said downwardly driven water, and conveying said poultry through said zone of high heat exchange so as to rapidly cool said poultry.

3,164,968
METHOD AND APPARATUS FOR REMOVING ICE FROM AN ICE MAKING MACHINE
James N. Mullins, Jr., P.O. Box 4398, Fort Worth, Tex.
Filed Aug. 17, 1962, Ser. No. 217,610
12 Claims. (Cl. 62—73)



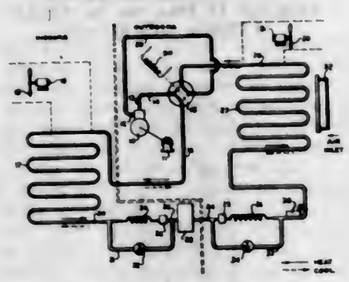
1. A liquid freezing machine comprising, in combination, a freezing tube having an outlet at one end and an inlet adjacent to but spaced from the other end; means for supplying the tube with liquid to be frozen to fill the portion of the tube between the inlet and the end adjacent thereto with the liquid and to circulate the liquid to be frozen through the portion of the freezing tube between the inlet and the outlet;

refrigerating means associated with the freezing tube and arranged to freeze the liquid in the portion of the tube between the inlet and the adjacent end of the tube into a solid plug and the liquid being circulated between the inlet and the outlet into a core having an opening sufficiently small to reduce the amount of liquid being circulated to a predetermined amount;

heating means associated with the freezing tube arranged to melt the frozen liquid adjacent the inside of the tube so that the pressure of the circulating liquid will be exerted along the inside of the tube and between the end of the solid plug of frozen liquid and the end of the freezing tube to force all the frozen liquid out of the freezing tube; and

control means arranged to actuate the heating means when the amount of liquid being circulated through the freezing tube reaches a predetermined amount.

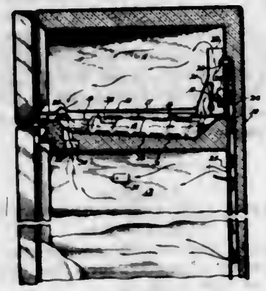
3,164,969
HEAT PUMP DEFROST CONTROL
Merl Baker, Lexington, Ky., assignor to Lennire Corporation, Nicholasville, Ky., a corporation of Kentucky
Filed Aug. 26, 1963, Ser. No. 304,535
6 Claims. (Cl. 62—155)



1. In an air-conditioning apparatus of the type including a refrigeration system operable selectively to heat or cool air and having a compressor with an inlet and an outlet, first and second heat-exchange coils normally connected to said inlet and outlet, respectively, when said apparatus is used for heating, expansion means coupling said coils to each other, valve means coupled between said coils and said compressor for selectively causing said first and second coils to be coupled to said compressor outlet and inlet respectively in order to effect defrost of said first coil; the improvement comprising a defrost control mechanism effective to prevent premature initiation of defrost and including a timer-operated switch, a timer having a motor and adapted to operate said switch upon expiration of a cumulative period of timer operation thereby to initiate defrost of said first coil, and means for controlling said period of timer operation including a hermetically-sealed, air-filled enclosure in heat-exchange relation with ambient air surrounding said first coil, a thermostatically operated switch within said enclosure movable between a first position establishing a running circuit to said timer motor and a second position opening said running circuit, and a heating means within said enclosure adapted to generate heat therein when said thermostatically controlled switch occupies its second position, said thermostatically controlled switch moving automatically to said second position when the temperature of the confined air within said enclosure drops to a predetermined first value as a result of cooler ambient air passing against said enclosure, and moving automatically to said first position when the temperature of the confined air within said enclosure rises to a predetermined and higher second value.

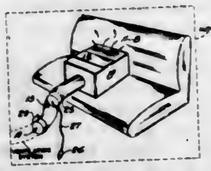


3,164,970
DEFROST CONTROL
Earl F. Hubacker, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,663
2 Claims. (Cl. 62—156)



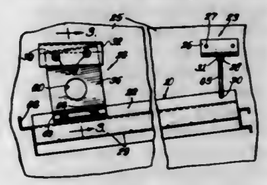
1. Refrigeration apparatus, comprising: an evaporator having a refrigerant passage member with a refrigerant entrance and exit in which refrigerant evaporates to cool said refrigerant passage member and thus said evaporator to below freezing temperatures whereby frost tends to collect on the evaporator; means for flowing air over said evaporator; duct means surrounding the evaporator for confining air flowing over said evaporator, the duct means including spaced fins in heat exchange relationship with said passage member; refrigerant liquefying means connected to said evaporator; defrost heater means thermally associated with said evaporator for periodically defrosting said evaporator; temperatume responsive means mounted directly on said refrigerant passage member adjacent said refrigerant exit for detecting the temperature of refrigerant in said passage member adjacent said exit for initiating operation of said defrost means upon said temperature responsive means reaching a preselected low temperature indicative of undesirable frost conditions on said evaporator; and a mounting bracket means shielding said temperature responsive means from flowing air in said duct means whereby said temperature responsive means is responsive substantially only to the temperature of refrigerant in said refrigerant passage member.

3,164,971
AUTO COOLER
Edward W. Gentz, 116 Rugeley Road, Western Springs, Ill.
Filed June 29, 1962, Ser. No. 206,430
3 Claims. (Cl. 62—241)



1. A cooler for temporary installation in an automobile having at least one air vent comprising; a box having four sides and a bottom made from insulating material, said box being proportioned to rest inside an automobile, an entrance port formed in one side of said box, a top for said box also comprising an insulating material and having a louvered exit port at one end thereof, said exit port being situated at the side of said box which is opposite to said entrance port when said top is in position and closing said box, a chamber having a depth which is less than the depth of said box with a plurality of fins integral with and depending from the bottom of said chamber, said chamber and said fins being made from a material having good heat conducting characteristics, the upper edges of said chamber being supported at the upper edges of the two opposing walls of said box and situated adjacent said louvered port, whereby the entrance port, bottom of said chamber, and the exit port form a duct for conveying an air stream through said box, means for continuously draining said chamber and said box, said fins being oriented to lie parallel to the flow of said stream of air, and a flexible duct for coupling the air vents in an automobile ventilating system to the entrance port in said box, whereby an air stream may be forced through said duct by forward motion of said automobile and controlled by controls in said ventilating system.

3,164,972
MOUNTING FOR ICE MAKER CUTTING GRID
Donald F. Swanson, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Jan. 6, 1964, Ser. No. 335,854
10 Claims. (Cl. 62—320)

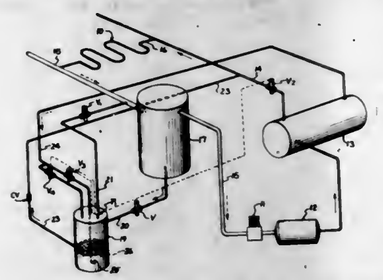


1. In an ice maker having apparatus for forming a slab of ice and causing the formed slab to fall to a preselected space, apparatus for dividing the slab into discrete portions comprising:

slab cutting means; and

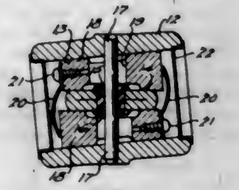
means movably supporting the cutting means below said preselected space to receive the slab falling thereto and including means for resiliently absorbing the kinetic energy of the falling slab.

3,164,973
REFRIGERATING SYSTEMS
John E. Watkins, 1311 S. 4th Ave., Maywood, Ill.
Filed Mar. 28, 1963, Ser. No. 268,695
6 Claims. (Cl. 62—509)



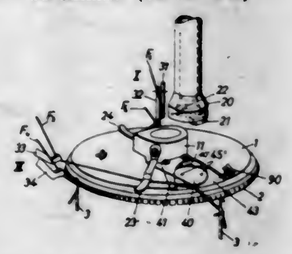
1. In a refrigerating system, a source of liquid refrigerant at one pressure and temperature, an evaporator coil, a liquid line connected to feed liquid refrigerant from said source of said coil, means in said line adjacent said coil to expand liquid refrigerant from said source to substantially lower temperature and pressure with cold liquid overfeed passing through said coil, means for collecting said cold liquid overfeed, and means associated with said collecting means for heating said cold liquid overfeed and for returning warm liquid overfeed in said collecting means from said collecting means to said coil through said liquid line.

3,164,974
UNIVERSAL WEDGE-TYPE COUPLING
Anthony J. Urbats, Livonia, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,865
5 Claims. (Cl. 64—7)



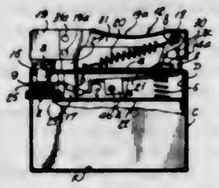
1. In a steering gear, a housing having a cylindrical chamber, a manually rotatable shaft extending transversely to the axis of said cylindrical chamber and having a splayed end projecting obliquely to said axis into said chamber through an opening in said housing, a pair of wedge elements, each wedge element having a plane inner surface engaging one of each of the opposite surfaces of said splayed end and having a cylindrical outer surface coaxial with said cylindrical chamber and slidably engaging the cylindrical wall thereof, a pin secured within said housing and extending through aligned openings in said wedge elements and splayed end transversely to the plane thereof, resilient means urging said wedge elements axially of said cylindrical housing in opposite directions respectively to grip said splayed end therebetween, the aligned openings in said elements and splayed end being oversize with respect to the diameter of said pin, also said opening in said housing being oversize with respect to said shaft and splayed end to enable limited pivotal movement of said splayed end about the axis of said pin, and also to enable limited rotation of said wedge elements and splayed end as a unit within said cylindrical housing about the axis thereof.

3,164,975
KNITTING APPARATUS
Karl Haberhauer, Ingolstadt, Germany, assignor to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt Kloman, Germany, a German corporation
Filed Oct. 3, 1962, Ser. No. 228,050
Claims priority, application Germany Oct. 7, 1961
36 Claims. (Cl. 66—145)



1. In apparatus for knitting comprising an array of knitting needles for working thread into knit fabric, means for severing an extension of the thread from a knitting needle and the knit fabric, said severing means including a holder for the thread extension, said holder being spaced from said needles, whereby the thread extension can be held at spaced points by a needle and the holder, means for moving the needle array relative to the holder whereby the thread extension between said spaced points can be moved relative to the holder, and a cutter disposed between the needles and the holder for cutting the thread extension intermediate said spaced points, the improvement in the holder which comprises a first clamping member disposed in the path of the thread as it moves in response to movement of the needle array, said first clamping member including engaging means for engaging the thread when the thread in its path crosses the first clamping means, a second clamping member for cooperating with the first clamping member to engage the thread in the holding means, means moving said first clamping member to carry thread engaged by its engaging means into engagement by the first and second clamping members, whereby the thread can be held at spaced points by a needle and the holder for cutting of the thread between said points by the cutter.

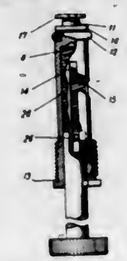
3,164,976
CIGARETTE LIGHTER VALVE CONTROL MECHANISM
Kunijiro Segawa, Ichikawa, Japan, assignor to Borneo Sumatra Trading Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 24, 1962, Ser. No. 219,235
4 Claims. (Cl. 67—7.1)



1. Cigarette lighter mechanism comprising:
a casing having a longitudinal axis and divided into a lower fuel tank and upper compartment having a top wall, said compartment having a bottom opening at its front communicating with said fuel tank, a fuel valve including a vertical plunger valve in said compartment at its front and receiving fuel through said opening, said plunger valve being movable between an upper valve opening position and a lower valve closing position, said top wall having a top wall front opening overlying said valve for flow out of said casing of fuel vapors from said valve;
a first lever extending longitudinally in said compartment, lateral pivot means mounting said first lever to said casing intermediate the ends of said first lever, means coupling the front end of said first lever to said plunger for movement thereof in the opposite sense to movement of the rear end of said first lever, spring means coupling the rear end of said first lever and said casing and urging said rear end upwardly so as to maintain said valve normally closed;
a snuffer, shaped and sized to block said top wall front opening and thereby block raising of said plunger, lateral pivot means mounting said snuffer on said casing above said top wall for movement between top wall front opening blocking and unblocking positions, a second lever, means mounting said second lever on said casing above said top wall for movement between first and second positions, means coupling said second lever and said snuffer for movement of said snuffer to blocking position by movement of said second lever to first position and to unblocking position by movement of said second lever to second position;
said top wall having a rear opening, means including a member extending through said top wall rear opening coupling said second lever and said first lever so that movement of said second lever to second position causes lowering of the rear end of said first lever, whereby said first lever positively moves said plunger valve between said valve opening and valve closing positions, and means biasing said second lever to first position.

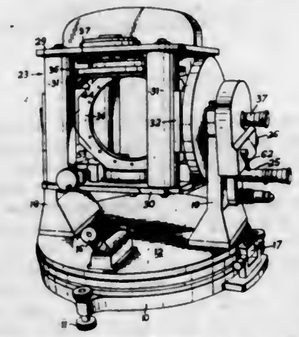


3,164,977
GAS LIGHTER
Emil Projahn, Nurnberg, Germany, assignor to Gebruder Kollisch, Nurnberg, Germany
Filed Nov. 1, 1962, Ser. No. 234,695
5 Claims. (Cl. 67—7.1)



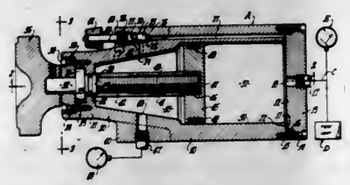
1. In a lighter; a housing, a fuel reservoir in the housing, a tube in the housing extending from top to bottom thereof and internally threaded at its opposite ends, a burner head threaded into the upper end of the housing, means connecting the burner head with the reservoir and including a flame control element at the bottom of the burner head, a tubular adjusting element threaded into the bottom of the tube and engaging the flame control member and operable for adjusting the flame control member to adjust the rate of fuel supply to said burner head upon rotation of the said element, a key member reciprocably mounted in the adjusting element and having a first idle position wherein the major portion of the member is within the element and a second working position wherein the major portion of the member projects from the element, and pin and slot means in said member and element drivingly connecting the same while permitting axial movement of the member in the element.

3,164,978
APPARATUS FOR TESTING GYROSCOPES
Godfrey Alan Sharman, Carioggas, Epsom Road, and John Alan Brooke Sharman, 16 Gateways, Epsom Road, both of Guildford, Surrey, England
Filed Aug. 31, 1959, Ser. No. 837,038
Claims priority, application Great Britain, Feb. 27, 1959, 7,040/59
10 Claims. (Cl. 73—1)



1. Gyroscope testing apparatus comprising a gimbal ring for supporting a gyroscope under test, a cage member surrounding said gimbal ring and having bearing means for supporting said ring for rotation relative to said cage member through 360° about a first axis, a base member, a table mounted on said base member for rotation relative thereto through 360° about a second axis, support means for said cage member mounted on said table, and including bearing means supporting said cage member for rotation relative to said support means through 360° about a third axis, said first, second and third axes intersecting at the centre of said gimbal ring, scale members on each of the said gimbal ring, said cage member, and said base member, and a reading means for said scales on each of said cage member, said support means and said table, the respective reading means being aligned with the respective scales.

3,164,979
PNEUMATIC OR GAS PRESSURE CONTROL APPARATUS
Samuel A. Siegel, 5392 Janisann Ave., Culver City, Calif.
Filed Sept. 24, 1962, Ser. No. 225,496
2 Claims. (Cl. 73—4)

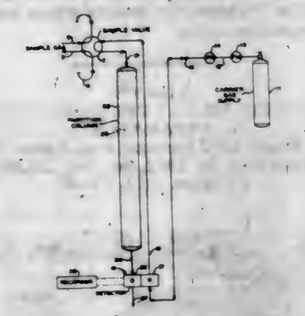


1. Apparatus for accurately establishing a required gas pressure for testing purposes, comprising: a cylindrical housing having a discharge end portion provided with a cylindrical bore and having an inlet end portion provided with a packing gland neck; an end cap secured to said discharge end portion of the housing and closing said bore, said cap having a discharge port for connection to a test unit and gage; a piston slidable in said bore in opposed relation to said end cap so as to define in said bore a control chamber in which the pressure of a trapped gas may be adjusted by axial movement of said piston so as to adjust the pressure in said control chamber accurately to the required pressure to be applied to said test unit; an actuator comprising a shaft journalled in said gland neck, a knob on the outer end of said shaft, a screw on the inner end of said shaft and a tubular piston stem having a forward end firmly secured to said piston and an internally threaded rear end portion constituting a follower nut through which said screw is threaded; said piston having a peripheral groove and a yieldable seal ring in said groove under compression between the bottom of the groove and the wall of said bore, said seal ring providing a frictional holding connection between said piston and said bore wall such as to resist the transmission of rotation to said piston from said screw; said inlet end portion of said housing providing an annular inlet chamber around said piston stem between said piston and said packing gland neck; controllable means for introducing pressurized gas into said inlet chamber; valve controlled passage means for transferring said pressurized gas from said inlet chamber to said control chamber and trapping it in said control chamber; and controllable means for releasing the compressed gas from said inlet chamber at the end of a testing operation, said housing, at its outlet end, having a counterbore and said end cap having a body portion received in said counterbore but spaced from the bottom thereof to provide an annular transfer port; said transfer means comprising an axial transfer passage extending in the wall of said housing parallel to its major axis and communicating with said annular transfer port at one end, and a manually operable valve providing communi-

cation between the other end of said transfer passage and said inlet chamber.

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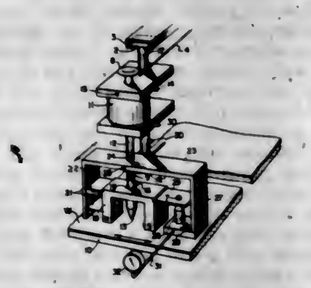
3,164,980
GAS-LIQUID PARTITION CHROMATOGRAPHY
Robert J. Loyd, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 23, 1960, Ser. No. 38,386
4 Claims. (Cl. 73—23.1)



1. In a method for analyzing a gaseous mixture by gas-liquid partition chromatography, comprising contacting said gaseous mixture in a stream of inert carrier gas with a column of partition packing material comprising inert particulate support material and adiponitrile as a stationary phase, whereby said gaseous mixture is separated into components thereof.

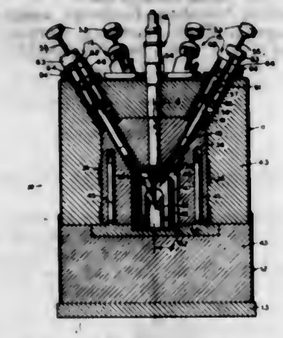
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3,164,981
APPARATUS FOR GAGING WIDE SHEET-FORM WORK
Max Knobel, 663 Beacon St., Boston, Mass.
Filed July 5, 1963, Ser. No. 292,864
7 Claims. (Cl. 73—37.5)



2. Apparatus for gaging wide sheet-form work comprising: work follower means for positioning at a constant distance from one face of such work; a magnet carried by said follower means, said magnet being also resiliently suspended from said follower means for independent movement with respect to said follower means toward and away from said work; an air gage nozzle carried by said follower means, said nozzle being arranged adjacent said magnet to sense said relative movement between said magnet and said follower means, and a magnetically responsive member located adjacent the other wide face of said work and opposite said magnet for causing said magnet to assume a determined position relative to said member, said position being indicative of the thickness of said work.

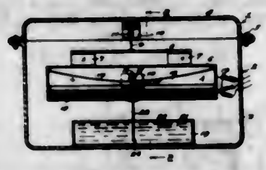
3,164,982
THERMOELECTRIC OSMOMETER
Raphael A. Pasternak, San Mateo, Leonard A. Cavanagh, San Jose, Harry C. Ehrmantraut, Los Altos, and Bruce D. Marshall, Palo Alto, Calif., assignors to Mechrolab, Inc., Mountain View, Calif.
Filed Feb. 14, 1961, Ser. No. 89,313
10 Claims. (Cl. 73—53)



6. Apparatus for use in accurately measuring minute temperature differences between solvents and solutions thereof, comprising: an insulated thermal envelope including separable upper and lower portions thereof defining a sample chamber therebetween substantially isolated from the atmosphere, a pair of thermally sensitive elements connected in a measuring circuit for indicating the temperature difference between said elements, supporting means carried by said upper portion and mounting said elements in fixed, spaced relation generally centrally of said chamber, and a plurality of solution and solvent dispensing devices carried by said upper portion and projecting into said chamber for applying solvent to one of said elements and solution to the other, said envelope including an inner metallic block having heating means thereon and an outer, rigid blanket of insulating material.

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3,164,983
HORIZONTAL DISPLACEMENT METER
Beauregard Perkins, Jr., and Willis F. Jackson, Aberdeen, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 30, 1960, Ser. No. 72,812
3 Claims. (Cl. 73—71)
(Granted under Title 35, U.S. Code (1952), sec. 266)

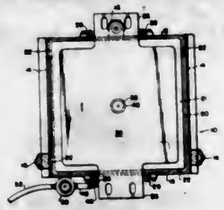


1. A horizontal displacement meter for placement below the ground surface and responsive to transient motion of the ground particle from an explosion above or below the surface of the ground, including in combination, an outer case, an inner case flexibly suspended for self-leveling therein, a track having a doubly beveled upper edge and defining an upwardly curving arc of a circle and being fixed longitudinally within said inner case, an inertial weight mounted for free movement along said track, recording means within said inner case, comprising a recording element fixed longitudinally within said inner case and being disposed in longitudinal alignment and spaced below said track and a downwardly depending contact arm fixed to said inertial weight and adapted to slidably contact said recording element, whereby when said inner case is displaced, said arm will slide along said recording element to record motion of said meter, and damping means carried by said inner and outer cases for preventing sudden displacement of said inner case.



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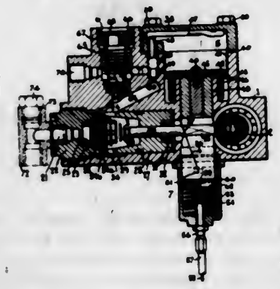
3,164,984
VIBRATION TESTING DEVICE
Maurice Gertel, Chestnut Hill, Mass., assignor, by mesne assignments, to Allied Research Associates, Inc., Boston, Mass., a corporation of Delaware
Filed Nov. 17, 1959, Ser. No. 853,522
4 Claims. (Cl. 73—71.6)



1. A vibration testing device comprising a support, a base member carried by the support and having a horizontally extending upwardly facing smooth surface, a table member slidably supported by said base member and having a horizontally extending downwardly facing smooth surface overlying the smooth surface of the base member, guide means on said support engageable with said table member for laterally guiding the table member for rectilinear sliding movement over the base member, one of said members being provided with a recess in the smooth surface thereof registering with the smooth surface of the other of said members, said one of the members being provided with a second recess in its smooth surface and surrounding the first mentioned recess in spaced relation thereto and providing a reservoir containing an oil-like fluid, said one of the members being further provided with internal passages connecting said first mentioned recess and reservoir, and means on one of said members for conducting a pressurized gaseous medium into said recess to exert a force on said members tending to separate the same in a vertical direction including means to selectively vary the pressure of the gaseous medium in said first mentioned recess to prevent vertical separation of said members by said gaseous medium.

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3,164,985
FUEL METERS
Alfred Erwin Reginald Arnot, Baughurst, Basingstoke, England
Filed July 3, 1961, Ser. No. 121,683
Claims priority, application Great Britain July 6, 1960
5 Claims. (Cl. 73—114)

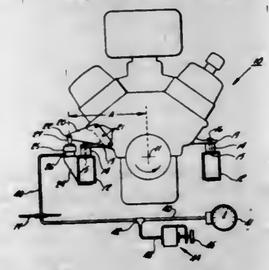


1. A fuel consumption meter installation to determine the relationship between the fuel consumption and an output condition of an internal combustion engine installation, comprising fuel delivery means in flow cooperation with the fuel consumption line of said engine; means for driving said fuel delivery means in proportion to an output condition of said engine; control means to vary the output of said fuel delivery means; balancing means sensitive to a difference in the flow condition between said fuel delivery output and the fuel consumption flow to actuate said control means to maintain the fuel delivery output equal to said fuel consumption; and indicating means responsive to the setting of said control means.

5. A fuel consumption meter installation as claimed in claim 1 in which said engine installation comprises a vehicle and said indicating means determines the relationship between the fuel consumption and distance being traveled by said vehicle.

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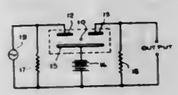
3,164,986
TORQUEMETER
Rudolph E. Krueger, 2808 N. Naomi St., Burbank, Calif., assignor of one-half to Woodson C. Deeds, North Hollywood, Calif.
Filed May 15, 1961, Ser. No. 109,958
1 Claim. (Cl. 73—136)



A torquemeter for indicating the torque output of a rotatable shaft of an engine secured by resilient mounts to a frame, the torquemeter comprising a rigid arm mounted on the engine, a bellows, a pressure gauge, a hydraulic duct connecting the gauge to the bellows, the bellows, duct and gauge being full of hydraulic fluid, means connecting the bellows between the frame and the rigid arm so the bellows is deformed and changes the pressure of the fluid in it as the engine develops torque, and means for adjusting the pressure on the hydraulic fluid independently of the engine torque to compensate for changes induced by variations in operating conditions.

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3,164,987
ELECTROSTATIC VIBRATION TRANSDUCER
Gareth M. Davidson, Bronx, and Jack Kritz, Westbury, N.Y., assignors to American Bosch Arma Corporation, a corporation of New York
Filed Mar. 28, 1961, Ser. No. 98,794
11 Claims. (Cl. 73—141)

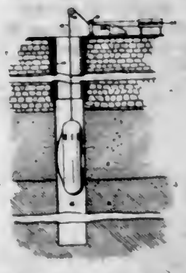


10. Apparatus for producing signals indicative of a variable condition comprising, a member subjected to a tension directed along a predetermined direction, means for establishing a pair of electrostatic fields adjacent two opposite sides of said member, said lines of force of said fields adjacent said member being substantially parallel to each other and substantially normal to said predetermined direction, means for varying the relative values of

said fields about a preselected value to vibrate said member in a plane perpendicular to said lines of force, output circuit means sensitive to at least one of said electrostatic fields for producing a signal the frequency of which varies with the frequency of vibration of said member, means for connecting said output circuit means to said means for varying the relative values of said fields to force said member into vibration at its natural frequency, and means for varying said tension in accordance with variations in said condition whereby said signal is indicative of said variable condition.

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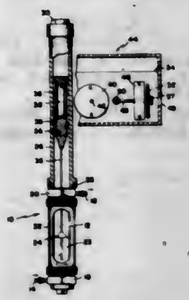
**3,164,988**
**DETERMINING THE NATURE OF GEOLOGICAL FORMATIONS**
**Charles F. Cook, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed July 14, 1961, Ser. No. 124,074**
**6 Claims. (Cl. 73—154)**



1. A method of logging a well bore penetrating subsurface geological formations, comprising the steps of lowering into said well bore a source of radio frequency radiation, generating radio frequency radiation from said source in said well bore while vertically moving said source therein, directing said generated radio frequency radiation into subsurface geological formations, measuring the temperatures of said formations before and after said radio frequency radiation is passed into said formations.

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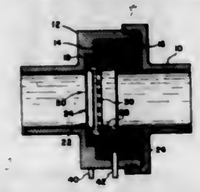
**3,164,989**
**FLOW RATE INDICATOR**
**Eugene P. Basilio, Huntingdon Valley, and Herbert J. Hampel, Philadelphia, Pa., assignors to Fischer & Porter Company, Hatboro, Pa., a corporation of Pennsylvania**
**Filed Apr. 29, 1960, Ser. No. 25,582**
**11 Claims. (Cl. 73—209)**



1. In an apparatus for indicating a variable condition including a magnet member movable in response to variations in said condition, the combination comprising a support means, a follower magnet movably supported by said support means, said follower magnet being magnetically coupled with the magnet member during normal variations of said condition, and a control magnet supported by said support means and magnetically coupled with said follower magnet to tend to restrict the following movement thereof in accordance with the magnet member movement whereby said control magnet ranges said follower magnet movement.

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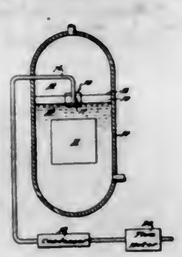
**3,164,990**
**FLOWMETERING**
**John M. Henness and Darrell E. Newell, Davenport, Iowa, assignors to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware**
**Filed Feb. 2, 1962, Ser. No. 170,561**
**3 Claims. (Cl. 73—228)**



1. A flowmetering system for measuring the mass rate of fluid flow comprising means sensitive to the density of said fluid and to the momentum of said fluid including a capacitor whose electrodes are immersed in said fluid and whose electrodes are subjected to fluid momentum in a direction to diminish electrode spacing in accordance with fluid momentum for providing a signal variable with their product in the form of an electrical reactance; and means for providing a signal variable as a function of the square root of said first mentioned signal comprising an oscillator of the type including a frequency determining network in which frequency is determined by the square root of the product of inductance and capacitance in said frequency determining network and means for applying said first mentioned signal to said frequency determining network to alter the product of its inductance and capacitance.

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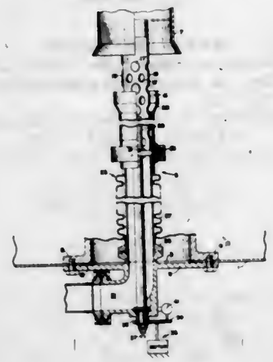
**3,164,991**
**LIQUID LEVEL INDICATOR**
**Robert E. Potthoff, Stamford, Calif., and John F. Wilson, New Berlin, Wis., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Feb. 5, 1963, Ser. No. 256,482**
**4 Claims. (Cl. 73—297)**



1. A device for determining the location of a two-phase region between a body of liquid and vapor over the liquid in a pressure vessel, said device comprising a generally vertical tube extending in the two-phase region and having a closed end and a side orifice near the closed end, a condenser connected with the other end of the tube, and a flow meter connected with the condenser.



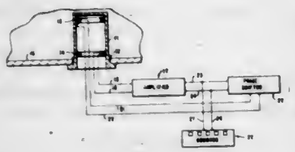
**3,164,992**
**LIQUID LEVEL INDICATING AND VARYING DEVICE**
**William A. Schulze and Herbert W. Fuhrmann, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Jan. 8, 1962, Ser. No. 165,047**
**8 Claims. (Cl. 73—298)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A liquid level indicating and varying device for use in a sealed liquid containing tank, comprising:
(*a*) an outlet section attached to the bottom portion of said tank;
(*b*) a flexible conduit means having upper and lower open ends, said lower end being attached to said outlet section;
(*c*) means for supporting the upper end of said flexible means within said tank;
(*d*) means for varying the vertical position of the upper end of said flexible means; and
(*e*) means coacting with said means for varying the position of said flexible means for indicating the amount of liquid in said tank.

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**3,164,993**
**INSTRUMENT FOR MEASURING A PHYSICAL CONDITION**
**Thomas R. Schmidt, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Aug. 17, 1960, Ser. No. 50,128**
**6 Claims. (Cl. 73—362)**



3. A thermometer comprising: a metallic tubular member closed at one end, said member being disposed with its outer surface in contact with the medium whose temperature is desired; an exciting coil disposed within said tubular member, a pick up coil disposed within said tubular member and spaced from said exciting coil a distance at least equal to the diameter of the tubular member; said pick up coil being coupled to the input side of a phase shifting device and said exciting coil being coupled to the output side of said phase shifting means whereby said phase shifting means will oscillate at a frequency related to the temperature of said tubular member.

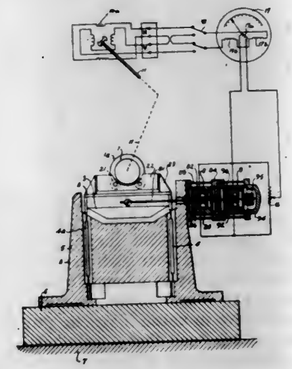
**3,164,994**
**BALANCING APPARATUS**
**Marcellus S. Merrill, 335 Colorado Blvd., Denver, Colo., and Lowell H. Erickson, Denver, Colo.; said Erickson assignor to said Merrill**
**Filed June 15, 1959, Ser. No. 820,194**
**7 Claims. (Cl. 73—457)**



1. In a balancing apparatus adapted to detect static and dynamic unbalance in vehicle wheels, a unitary lift support member having an oblong hollow pickup bar dimensioned for extension along the width of the underside of the vehicle, lift means extending angularly and downwardly from said bar to provide for vertical adjustment thereof into selective engagement with the underside of the vehicle whereupon said bar serves to support the vehicle while being free to vibrate in response to the vibrations developed therein, and pickup means arranged at opposed ends of said bar for disposition adjacent to the vehicle wheels when said bar is moved into engagement with the underside, said pickup means being selectively and individually responsive to vibrations transmitted through said bar by unbalancing forces in each vehicle wheel when rotated and to transmit signals corresponding to the vibration developed for detection by said apparatus.

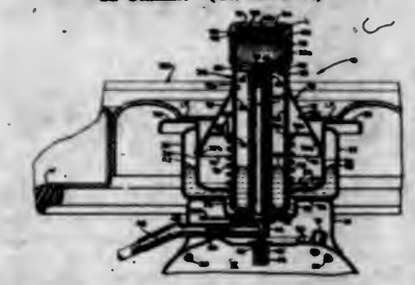
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**3,164,995**
**METHOD AND MEANS FOR COMPENSATION OF FRAME OSCILLATIONS IN WORKPIECE BALANCING OPERATIONS**
**Klaus Federn and Otfrid G. H. Maus, Darmstadt, Germany, assignors to Carl Schenck Maschinenfabrik G.m.b.H., Darmstadt, Germany, a corporation of Germany**
**Filed May 22, 1961, Ser. No. 111,555**
**7 Claims. (Cl. 73—462)**



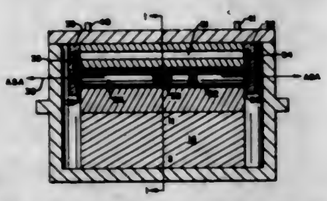
6. Apparatus for determing unbalance of a rotating workpiece comprising a frame, a workpiece supporting structure oscillatorily mounted on said frame, a first oscillation pickup mounted on said frame in coactive relation to said structure and having a voltage response to oscillation of said structure due to frame oscillation as well as to inherent unbalance of the workpiece, a second oscillation pickup mounted on said frame and having a voltage responsive to the oscillation of said frame, and circuit means connecting said two pickups in mutually opposed voltage relation.

3,164,996
WHEEL BALANCER
Tracy Carrigan, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 15, 1963, Ser. No. 251,547
12 Claims. (Cl. 73—483)



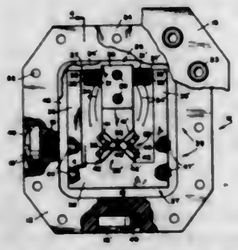
5. An apparatus for statically balancing wheels comprising, a support, an upwardly extending tubular member secured to said support, a rod slidably disposed in said tubular member, selectively operable means for moving said rod in one of two alternate directions along its axis relative to said tubular member, a balancing head, means for rockably mounting said balancing head on the upper end of said rod, means on said balancing head and on said tubular member cooperable to interrupt rocking movements of said balancing head and to supportably maintain said head in a fixed plane when said rod is moved in one of said directions, and spring means in engagement with the lower end of said rod and said support to urge said rod upwardly for effecting constant engagement between said balancing head and such upper end of said rod.

3,164,997
ACCELEROMETER
Vernon H. Aske, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Aug. 22, 1960, Ser. No. 50,954
19 Claims. (Cl. 73—503)



1. A linear accelerometer comprising: a hollow soft iron container; a permanent magnet; a pair of pole pieces, said container, said permanent magnet, and said pole pieces being connected together such that said pole pieces are positioned contiguously in a spaced relationship defining an elongated gap therebetween, and said permanent magnet being effective to cause magnetic flux to flow between said pole pieces such that a substantially uniform magnetic flux field is set up in said elongated gap; a resistance element positioned adjacent to said elongated gap and cooperating with said pole pieces to form an elongated channel therebetween; a conductor element positioned adjacent to said channel and cooperating with said pole pieces and said resistance element to form an elongated passage therebetween; a liquid metal seismic mass element positioned within said passage and adapted to move axially along and relative to said elements forming said passage in response to accelerations along said passage, said seismic mass element having a normal position at the center of said passage, and said pole pieces being electrically insulated from said mass element, said resistance element, and said conductor element; a gas return port connecting the ends of said passage; and a filter element positioned in said gas return port adjacent to each end of said passage and preventing said mass element from entering said gas return port; means for connecting said resistance element to a source of alternating current, and said resistance element, said seismic mass element, and said conductor element being electrically connected and defining a current path.

3,164,998
ACCELEROMETER
Roger C. Wickenden, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 4, 1962, Ser. No. 221,391
6 Claims. (Cl. 73—516)
(Granted under Title 35, U.S. Code (1952), sec. 266)

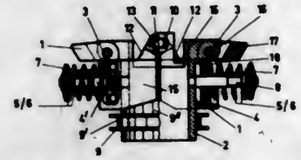


1. An apparatus for measuring angular acceleration imparted to a body about a given axis comprising: a casing having a base, wall portions and a cover; an elongated stator having first and second ends disposed within said casing and rigidly fixed at said first end to said base; a rotor having an elongated body portion and a pair of substantially elongated legs extending in a common direction from the body portion at opposite ends thereof and at right angles thereto; a flexible pivot means disposed in a location between said second end of the stator and the body portion of the rotor to thereby provide a flexible interconnection between the stator and the rotor and whereby the legs of the rotor are movably disposed along opposite sides of the flexible pivot and at opposite sides of the stator in spaced relation thereto; a pair of variable inductance pick-off coils mounted at opposite sides of the stator and located adjacent but spaced from said legs so as to form a pair of variable air gaps therebetween; means for supplying an alternating current excitation voltage in said coils; an electrical bridge circuit connected with said inductance coils to discern any significant changes of inductances in said coils created through changes in said air gaps; and a calibrated indicating means connected with said bridge circuit so that any significant angular acceleration imparted to the rotor about the flexible pivot will cause a variance in the air gaps to thus effect a corresponding change of inductance discernable at said bridge and measurable at said indicating means.

3,164,999
CENTRIFUGAL SPEED GOVERNOR
Fritz Heinzmann, Albershausen, Kreis Goppingen, Wurttemberg, Germany
Filed Dec. 11, 1961, Ser. No. 158,614
Claims priority, application Germany, Dec. 15, 1960, H 41,220
11 Claims. (Cl. 73—550)

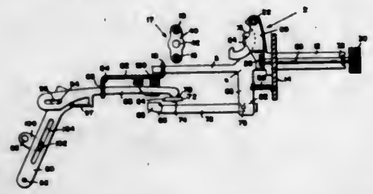
1. Centrifugal governor comprising a tubular support for coaxial mounting upon a rotatable shaft, said support having radially extending arms at one end thereof, a tubular sleeve axially slidably disposed over said support and having a tubular end portion axially remote from said arms, peripherally spaced apart side members axially extending from said tubular end in the direction of and passing radially intermediate the support arms and corresponding axially extending sleeve recesses defined by adjacent portions of said spaced apart side members, and radially arranged flyweights outwardly movable against the force of radially positioned springs and axially positioned between said one end of said support and said sleeve tubular end, each flyweight having a pair of lateral elements integrally connected by an intermediate lever bridge, said lateral elements extending peripherally to embrace concentrically a corresponding portion of said support and sleeve, each flyweight being pivotally connected with a corresponding support arm by means of the lever bridge, the axial extent of said lever bridge in





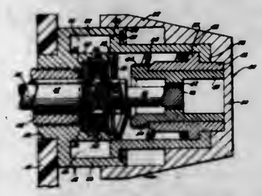
the direction of said one end of said support terminating at least at the corresponding axial terminus of the support arms at said one end of said support and the axial extent of said lever bridge in the direction of the opposite end of said support terminating at least at the corresponding axial terminus of said support arms in the direction of said opposite end, said springs operatively interconnecting said flyweights and said support through said sleeve recesses disposed radially therebetween and axially occupying substantially the distance between said tubular end and said support arms, said flyweights being operatively connected to said sleeve at said side members to cause axial displacement of said sleeve upon outward movement of said flyweights.

3,165,000
REMOTE CONTROL TUNING SYSTEM
John H. Teaf, Merchantville, N.J., assignor to Radio Condenser Company, Camden, N.J., a corporation of New Jersey
Filed Aug. 31, 1961, Ser. No. 135,251
6 Claims. (Cl. 74—10.33)



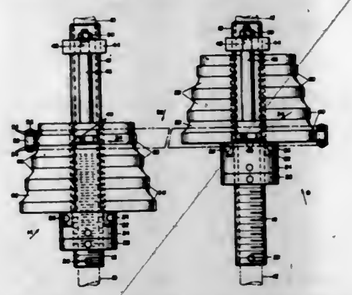
1. A system for operating a tuner from a remote location comprising a plurality of slide elements, means mounting each of said slide elements for reciprocating movement, adjustable cam means carried by each of said slide elements, means for transmitting movement of said cam means to said tuner for effecting tuning thereof, a movable member, means mounting said member for substantially linear reciprocating movement parallel to the movement of said slide elements, a plurality of coupling means, means movably mounting one of said coupling means on each of said slide elements for movement into and out of interlocking engagement with said member, individual actuating means for so moving each of said coupling means, said coupling means and said member having cooperating portions which interlock with each other during an initial part of said reciprocating movement of said member for holding said coupling means and said member in interlocking engagement, a drive motor, means for converting rotational drive from said motor into substantially linear reciprocating movement of said member, and selector means positioned at said remote location operatively connected to energize said drive means and to selectively operate said individual actuating means so as to effect remote tuning of said tuner.

3,165,001
ACTUATOR KNOB
Jay A. Harper, Gardena, Calif., assignor to Divac Electronics, a division of Acme Machine Works, Inc., Hawthorne, Calif., a corporation of California
Filed Aug. 22, 1962, Ser. No. 218,630
10 Claims. (Cl. 74—10.45)



1. A manual control for selective actuation of an outer tubular shaft journaled in fixed support structure and an inner shaft mounted in the outer shaft, comprising: a first gear mounted on an end portion of the inner shaft; a second gear mounted on the corresponding end portion of the outer shaft; a knob structure enclosing said end portions of the two shafts and movable axially of the two shafts between an extended position and a retracted position; a third gear fixedly carried by said knob structure to engage said first gear at one of the two positions of the knob structure; and a fourth gear fixedly carried by said knob structure to engage said second gear at the other of the two positions of the knob structure, said second gear being mounted on said outer shaft with freedom for angular movement for self-adjustment of the second gear in its engagement with the fourth gear.

3,165,002
SPEED REDUCING MECHANISM
Philip J. Hatch, 312 Westfield Road, Holyoke, Mass.
Filed Mar. 26, 1963, Ser. No. 268,051
1 Claim. (Cl. 74—217)

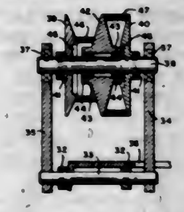


A speed-changing device for use with an endless power-transmitting chain operatively disposed around parallel input-driving and output-driven shafts and comprising: an input driving shaft tube sleeved and fixed upon the input driving shaft, an output driven shaft tube sleeved and fixed upon the output driven shaft, a sprocket sleeved upon and keyed to each respective said tube for the axial positioning of the respective said sprocket relative to its respective shaft, each said sprocket having a series of annular ramps of successively-decreasing diameter spaced

longitudinally of the outer periphery thereof, each said sprocket having a pair of diametrically-opposed slots extending from end to end thereof, a pair of chain engaging and guiding means carried by each said sprocket and each slideable within one of the slots of said sprocket and each incorporating teeth portions extending outwardly of the ramps for meshing with the power-transmitting chain, means for moving each said chain engaging and guiding means longitudinally and transversely relative to the axis of rotation of the respective said shaft, said sprockets being interconnected by the power-transmitting chain, said chain engaging and guiding means being connected to and constructed to compel the simultaneous adjustment of said sprockets whereby as the input-driving shaft rotates at one rotative speed, its said sprocket is driven therewith in rotating movement to motivate the power-transmitting chain and thereby said sprocket with the output-driven shaft being rotated accordingly but at another rotative speed.

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**3,165,003**
**LAUNDRY MACHINES**
**Benjamin Alvin Buss, East Moline, Ill., assignor to Ametek, Inc., a corporation of Delaware**
**Filed Nov. 8, 1961, Ser. No. 150,994**
**6 Claims. (Cl. 74—230.17)**

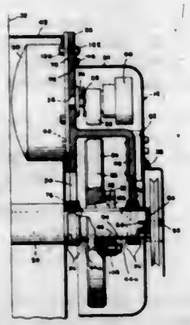


1. In a variable speed belt drive, a base; a motor mounted on said base and having a constant diameter V-groove pulley means on its output shaft; a driven, constant diameter V-groove pulley means mounted on said base; expansible pulley means journaled on arm means pivoted to said base intermediate said motor and driven pulley means; relatively narrow V-belt means connecting said motor pulley means to said expansible pulley means; relatively wide V-belt means connecting said driven pulley means to said expansible pulley means; means for oscillating said arm means to vary the rate of rotation of said driven pulley means; and means for sliding said arm means transversely of the longitudinal centerlines of said V-belts during its oscillation.

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**3,165,004**
**SHAFT MOUNT INTEGRAL DRIVE UNIT**
**Howard W. Kumro, Oil City, Pa., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware**
**Filed May 29, 1962, Ser. No. 198,551**
**2 Claims. (Cl. 74—219)**

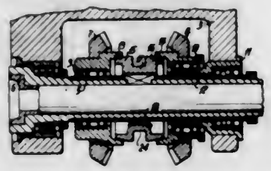
1. A shaft mount integral drive mechanism for driving a shaft on which the mechanism is mounted comprising:
(*a*) a frame means,
(*b*) a motor mounted on the frame means,
(*c*) a first pulley connected to the motor,
(*d*) a sleeve means having one end thereof closed,
(*e*) a second pulley connected to the sleeve means,
(*f*) a pair of holder elements rotatably mounted on the sleeve means, one holder element on each side of the second pulley,
(*g*) each of said holder elements being connected to the frame means whereby the frame straddles the second pulley in balanced position,
(*h*) belt means drivingly connecting the first pulley and the second pulley whereby motive power will be transmitted from the first pulley to the second pulley and to the sleeve means connected thereto,
(*i*) the closed end of the sleeve means having a hole therein,
(*j*) means extending through the last mentioned hole in the closed end of the sleeve means and in the sleeve means mounted on the shaft, said means adapted to threadedly engage the shaft to prevent



said mechanism from being disengaged from the shaft,
(*k*) means of connecting the sleeve means to the driven shaft so that power will be transmitted from the motor, the first and second pulleys, and the sleeve means to the driven shaft,
(*l*) a torque arm connected to the frame to maintain the frame in an upright position relative to the sleeve and the shaft.

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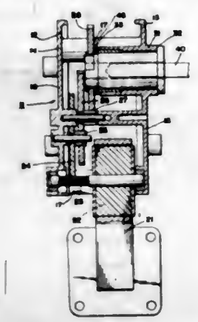
**3,165,005**
**DRIVING DEVICE OF A MACHINE TOOL SPINDLE**
**Pierre Bergonzo, 117 Rte. de la Capite, Cologny, Switzerland**
**Filed Sept. 5, 1961, Ser. No. 135,835**
**Claims priority, application Switzerland, Oct. 7, 1960, 11,260/60**
**7 Claims. (Cl. 74—378)**



1. A device for driving a rotary spindle of a machine tool provided with a headstock, said device comprising driving means located externally of said headstock, inversion means housed inside the headstock for selectively reversing the direction of rotation of the spindle, said inversion means comprising two driving rims mounted concentric with the axis of rotation of the spindle, at least one of said rims having a support upon which it is journaled, said support being carried by said headstock in direct, metallic contact therewith, at least one pinion meshing with both driving rims to rotate them in opposite directions, and coupling means for alternatively coupling either one of said driving rims to said spindle, and a single driving member journaled in a wall of said headstock, said driving member carrying said pinion inside the headstock and being connected to said driving means outside the headstock.



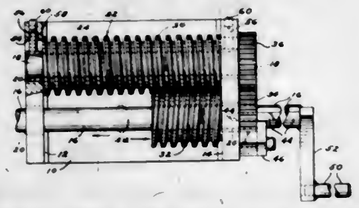
**3,165,006**
**DRIVE UNIT**
**James E. Barrick, Alliance, Ohio, assignor to Consolidated Electronics Industries Corporation, a corporation of Delaware**
**Filed Sept. 28, 1962, Ser. No. 226,899**
**9 Claims. (Cl. 74—421)**



1. A speed reduction drive unit comprising in combination, a frame,
a sleeve fixed in said frame and having an axis,
a metal hub journalled in said sleeve along said axis,
said sleeve having a cylindrical bearing surface defining a radial bearing with said hub and having two end thrust bearing surfaces,
said hub having a head outboard of said frame and disposed in thrust bearing reaction with one of said end surfaces,
a second head fixed on said hub and disposed in thrust bearing reaction with the other of said end surfaces,
shoulder means on said hub adjacent the inner end thereof,
gear fixed on said hub and axially engaging said shoulder means,
said second head having a thickness less than the axial distance between said shoulder means and said other end surface of said sleeve to axially space said gear from said second head,
drive means in said frame,
and speed reduction gearing drivingly connecting said drive means to said gear.

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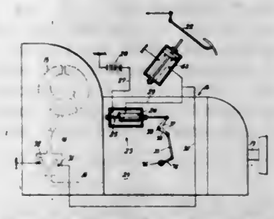
**3,165,007**
**FEED MECHANISM**
**William R. Neubarth, 8411 Weil, Center Line, Mich., assignor of one-third to Elway P. Gray, Royal Oak, and one-third to Joseph B. Whitmore, Inkster, Mich.**
**Filed July 11, 1962, Ser. No. 209,209**
**10 Claims. (Cl. 74—424.8)**



1. In combination, first and second co-operatively threaded worms, means for rotatably supporting said worms in side-by-side relation with their respective axes parallel to one another and with their respective threads meshed in direct driving relation with one another to develop forces tending to move said worms in the direction of their axes in response to rotation of said worms in predetermined directions about their axes, said first worm being axially movable relative to said second worm such that said rotation results in predetermnied axial movement of said first worm relative to said second worm and said support means, and means for rotating said worms a predetermined angular distance correlated with the lead of their respective threads to produce a predetermined ratio of rotational movement to linear axial movement of said first worm.

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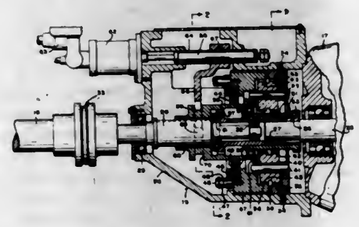
**3,165,008**
**CONTROL SYSTEM OF AN AUTOMATIC SPEED CHANGE TRANSMISSION PARTICULARLY FOR AUTOMOBILES**
**Hans-Joachim M. Förster, Stuttgart-Bad Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed May 5, 1961, Ser. No. 118,750**
**Claims priority, application Germany May 6, 1960**
**12 Claims. (Cl. 74—472)**



1. In a control system of an automatic speed change transmission of the type having an input shaft, an output shaft, and motion-transmitting means connecting said shafts at a variable ratio of transmission including a hydrodynamic apparatus having a supply duct for supply of a fluid thereto, the combination comprising speed ratio-changing means operatively connected to said motion-transmitting means and operative upon actuation to increase the ratio of the speed of said input shaft to the speed of said output shaft, actuating means for such speed ratio changing means, and temperature responsive means mounted in said supply duct of said hydrodynamic apparatus and being responsive to the temperature in said supply duct, said temperature responsive means being operatively connected with said actuating means so that when the temperature of said fluid exceeds a predetermined limit said actuating means actuates said speed ratio-changing means.

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**3,165,009**
**TABLE DRIVE TRANSMISSION FOR MILLING PLANERS**
**John M. Walter, Cincinnati, Ohio, assignor to The G. A. Gray Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed May 21, 1962, Ser. No. 196,149**
**4 Claims. (Cl. 74—750)**

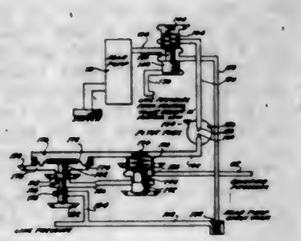


1. A table drive transmission for a milling planer having a base and a reciprocating table thereon driven by a gear and rack comprising;

(*a*) a variable speed power source provided with an extending shaft,
(*b*) a housing secured to said power source,
(*c*) a drive shaft in said housing in alignment with said extending shaft and having driving connection with said gear and rack drive,
(*d*) said shafts selectively connectible by a plurality of sleeves,
(*e*) one of said sleeves keyed to said extending shaft,
(*f*) a sliding sleeve provided with gear teeth on one end thereof keyed to said sleeve which is keyed to said extending shaft,
(*g*) a sliding sleeve provided with teeth on one end thereof keyed to said drive shaft and having coupling connection with said sleeve which is keyed to said extending shaft for direct drive,
(*h*) a pair of ring gears one stationary and one rotatable which has a toothed element connected thereto for selectively coupling to the teeth on said sliding sleeve keyed to said drive shaft,
(*i*) planet gears meshing with said ring gears, and
(*j*) a shifting yoke for moving said sliding sleeves for connecting said drive shaft direct from said power source and rendering said planet gears nonrotative or moving said sliding sleeves for connection through said planet gears from said power source to said drive shaft and rendering said direct drive inactive.

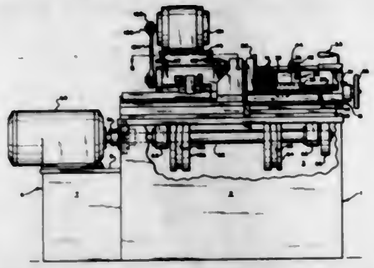
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**3,165,010**
**SPEED SENSOR MECHANISM**
**Richard D. Mean, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Oct. 24, 1961, Ser. No. 147,329**
**12 Claims. (Cl. 74—752)**



1. In a speed sensor for establishing a pressure speed signal that is related in magnitude to the speed of rotation of a rotary member, a fluid pressure pump drivably connected to said rotary member, a first passage communicating with the discharge side of said pump, a velocity pressure tube situated in the path of fluid flow through said first passage, a fluid pressure supply passage, a governor pressure passage, a pressure amplifying valve comprising a movable valve spool, a valve chamber accommodating said valve spool, said valve chamber being in fluid communication with said governor pressure passage and said supply passage, one portion of said spool being subjected to the pressure in said governor pressure passage, said valve spool controlling the degree of communication between said governor pressure passage and said supply passage, and means for subjecting another portion of said valve spool to the velocity pressure developed in said velocity pressure tube whereby the pressure of said supply passage is modulated in response to changes in velocity pressure to produce a governor pressure signal in said governor pressure passage that is proportional in magnitude to the driven speed of said rotary member.

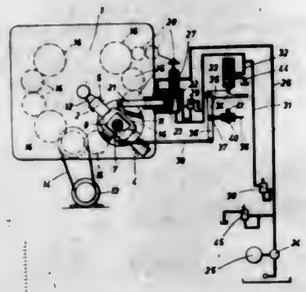
**3,165,011**
**APPARATUS FOR MACHINING STACKED WORKPIECES**
**Gerald W. Kelly, Saginaw, Mich., assignor to B & K Tool & Die, Inc., Saginaw, Mich., a corporation of Michigan**
**Filed Mar. 12, 1962, Ser. No. 179,075**
**13 Claims. (Cl. 77—3)**



8. Apparatus for successively presenting each workpiece of a stack of workpieces to tool means for machining said workpieces comprising: frame means; a first clamp means supported by said frame means; second clamp means supported by said frame means; tool means for machining said workpieces; reciprocable means mounting said second clamp means for movement toward and away from said first clamp means; drive means connected with said reciprocable means for moving said second clamp means both to and fro; indexing means carried by said reciprocable means and connected with said second clamp means for indexing said second clamp means relative to said reciprocable means; means driving said indexing means to index said second clamp means forwardly at a time when said second clamp means is moving away from said first clamp means; and yieldable means connecting said indexing means and second clamp means yieldable to take up a degree of movement of said reciprocating means to disable further movement of said second clamp means toward said first clamp means.

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**3,165,012**
**FORGING MACHINE**
**Bruno Kralowetz, St. Ulrich, near Steyr, Austria**
**Filed Nov. 16, 1962, Ser. No. 238,099**
**Claims priority, application Austria, Dec. 21, 1961, A 9,670/61**
**9 Claims. (Cl. 78—22)**

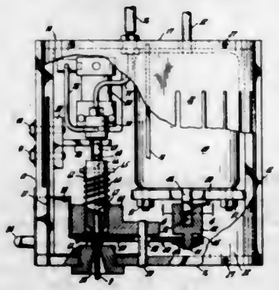


1. A forging machine which comprises a forging box adapted to have a workpiece passed therethrough in the direction of a longitudinal axis of said workpiece, a plurality of hammers evenly spaced around said workpiece and mounted in said housing for a movement in a radial direction with respect to said workpiece, a plurality of cylindrical housings rotatably adjustably mounted in said housings, a plurality of driving shafts, each of which is eccentrically mounted in one of said housings and carries an eccentric in driving connection with one of said hammers to move it radially inwardly with respect to said workpiece, whereby a rotation of each of said housings in one direction will cause a radially outward setting movement and a rotation in the opposite direction will cause a radially inward setting movement of one of said hammers, said machine further comprising a plurality of hydraulic cylinders, each of which contains a backing piston slidable in said cylinder and connected to one of said adjusting housings, conduit means, a source of hydraulic pressure connected by said conduit means to said hydraulic cylinders to oppose a movement of said piston in a direction corresponding to a rotation of said housing in said one direction, and overpressure relief valve means connected to said hydraulic cylinders and arranged to open and relieve pressure from said cylinders in a response to a pressure in said conduit means exceeding a predetermined value.



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**3,165,013**
**CABLE STRIPPER**
**Dean Oehlerking, Sycamore, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Illinois**
**Filed Feb. 1, 1963, Ser. No. 255,630**
**11 Claims. (Cl. 81—9.51)**



1. A method of removing the insulation from an insulated wire which includes the steps of applying pressure to the insulation at a point spaced somewhat from a free end thereof, gyrating the pressure point around the insulation while allowing the portion of the wire between the point of applied pressure and the free end to move freely in a gyratory whipping action, and moving the pressure point around the insulation at a sufficient intensity relative to the characteristics of the insulation such that the insulation will be deformed so that it may be removed from the wire at the free end.

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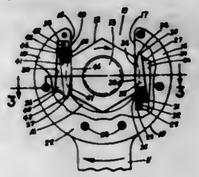
**3,165,014**
**PREDETERMINED TORQUE RELEASE WRENCH**
**Bosko Grahovac, Altadena, Calif., assignor to Torque Controls, Inc., San Gabriel, Calif., a corporation of California**
**Filed Aug. 14, 1961, Ser. No. 131,127**
**12 Claims. (Cl. 81—52.5)**



1. In a torque wrench having a hollow body and having a work-engaging member rotatably mounted on said body, said work-engaging member being operatively connected to a swingable arm inside the body, means cooperative with said arm for predetermined resistance to swinging movement of the arm away from a normal position, said cooperative means comprising: rotary means journaled on the end of said arm; a cam inside said body, said cam having an axial bore; an axal member in said bore defining with the cam an axial recess in which said rotary means is normally seated, said cam being movable to retract in response to cam action by swinging of the arm in either of two opposite directions, said axial member being adjustable axially to vary the depth of said recess; and spring means opposing retraction of the cam thereby opposing swinging movement of the arm in the two opposite directions.

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**3,165,015**
**WRENCH**
**Paul R. Hinrichs, % J. H. Farley, 620 Roanoke Bldg., Minneapolis 2, Minn., assignor of fifty percent to John H. Farley, Minneapolis, Minn.**
**Filed June 26, 1963, Ser. No. 290,747**
**4 Claims. (Cl. 81—179)**



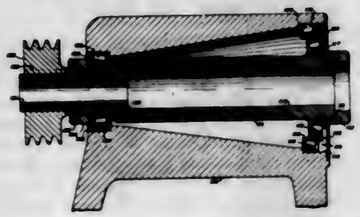
1. An open-end slip-and-grip-type spanner wrench with retractable jaw faces for use with nuts having opposed flat sides, which wrench comprises:
(A) a generally flat wrench head of thickness corresponding generally to the thickness of a nut to be turned,
(B) a handle portion extending from one side of said wrench head,
(C) a pair of spaced jaws extending outwardly from the opposite sides of said wrench head and defining a mouth to receive the maximum outside dimension of a nut to be turned,
(D) opposing faces on said jaws having their outer ends spaced closer than the diameter of said mouth to receive the opposed flat sides of a nut to be turned,
(E) an elongated recess in the wall of at least one of said jaws,
(F) said recess being open toward said mouth and extending generally parallel to the opposing faces at the outer ends of the jaws,
(G) a jaw retaining lip in one end of said recess,
(H) a spring seating means in the other end of said recess,
(I) a retractable jaw element in said recess,
(J) said jaw element being smaller than said recess for limited movement longitudinally and laterally within said recess,
(K) said jaw element being generally flat and elongated and having two generally flat elongated nut engaging faces along one longitudinal side extending toward said mouth,
(L) said nut engaging faces being disposed at an obtuse angular relation to one another,
(M) said jaw element having a tip portion at one end,
(N) said tip portion engaging said recess at the end adjacent to the retaining lip to hold one of said nut engaging surfaces extending out into said jaw mouth and in alignment with the face at the outer end of the jaw on the same side of the wrench head to engage the flat side of a nut to be turned when the wrench is moved in one direction,
(O) a spring seated in said spring seating means urging against the end of the jaw element opposite the tip portion to normally maintain said retractable jaw element in locked position,
(P) said jaw element being retractable into said recess

against the pressure of said spring to withdraw the nut engaging faces beyond the limits of said mouth to permit the jaw element to slip with respect to the nut being urned when the wrench is moved in the opposite direction, and

(Q) means for retaining said jaw element in said recess.

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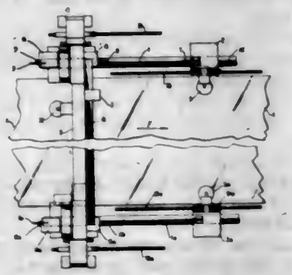
3,165,016
MACHINE TOOL SPINDLE
Billy Ted Woodle, Fort Worth, Tex., assignor to American Manufacturing Company of Texas, Fort Worth, Tex., a corporation of Texas
Filed Nov. 23, 1962, Ser. No. 239,500
3 Claims. (Cl. 82—30)



1. In a machine tool, a headstock, a spindle within said headstock, drive means mounted on said spindle, inner and outer rows of bearings around said spindle, at least one independent freely rotatable race between said inner and outer rows of bearings and positioned for coaction therewith, a race on said spindle coactive with said inner row of bearings, and a race in said headstock coactive with said outer row of bearings.

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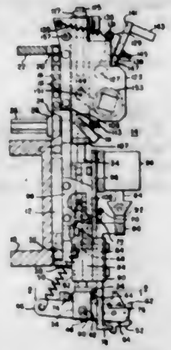
3,165,017
METHOD AND APPARATUS FOR AUTOMATICALLY CUTTING A STRIP OF GLASS
Pierre Galabert, Rueil-Malmaison, France, assignor to Compagnie de Saint-Gobain, Neuilly sur Seine, France
Filed July 16, 1962, Ser. No. 209,890
19 Claims. (Cl. 83—7)



6. A method of automatically transversely cutting an elongated material in the form of strip, tube or the like preferably of a glass strip moving forwardly in the direction of its length into a series of pieces of material, which comprises aligning first and second measuring scales with the length of the material and causing them to travel in synchronism therewith, accurately aligning a cutting tool with a predetermined first position adjacent one end of the first measuring scale while causing the tool to travel in synchronism with the material, moving the tool in a first operative scoring stroke generally transverse to the length of the material while causing it to move with the material along the path of the latter, moving the tool with respect to the material to a position aligned with a predetermined position on the first scale, then further moving the tool with respect to the material to a position aligned with a predetermined position on the second scale, and only after such second movement of the tool moving the tool in a second operative scoring stroke generally transverse to the length of the material while causing it to move with the material along the path of the latter.

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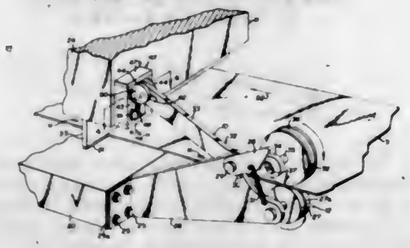
3,165,018
GLASS CUTTER HAVING MEANS TO RETAIN CUTTER IN AN INOPERATIVE POSITION
Jay J. Brand, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 5, 1962, Ser. No. 171,116
5 Claims. (Cl. 83—11)



1. A cutter assembly comprising a support structure; a vertically oriented plunger mounted for movement on said support structure between a raised and lowered position; a cutter wheel mounted adjacent the lower portion of said plunger; means, including a lifting arm operatively associated with said plunger and movable between an upper and lower position, for lifting said plunger to its raised position; means mounting said lifting arm for movement between said upper and lower position; means, including a selectively actuated retaining arm on said support structure, for retaining said vertically oriented plunger in its raised position independently of said lifting arm; switch means operatively associated with said retaining arm and movable to a position for preventing said retaining arm from restraining said plunger in its raised position; and means associated with said switch means for retaining said switch means in said position.

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3,165,019
RE-INDEXING PUNCHING UNIT
Robert L. Graveley, Jr., Silver Lake, Ohio, assignor to Alside, Inc., a corporation of Ohio
Filed Aug. 30, 1962, Ser. No. 220,465
9 Claims. (Cl. 83—300)

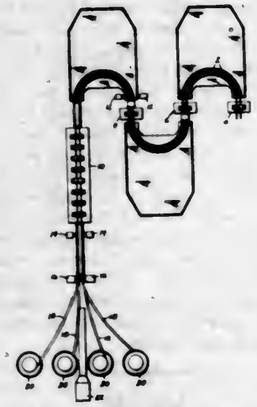


1. A re-indexing punching unit for continuous roll forming operations of the character described, comprising; continuous roll forming equipment having cut off means for severing the advancing stock material into predetermined lengths; a punch die normally rotatably driven by said advancing stock material and having at least one peripheral punching element that punches a repetitive pattern during each cycle of rotation; and means temporarily inactivating said punching die while simultaneously presetting the same to a predetermined position; said means acting in response to operation of said cutoff means, whereby said repetitive pattern will be resumed at a predetermined distance from said cutoff point.



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3,165,020
AUTOMATIC TAIL END CROPPING DEVICE
Norman A. Wilson, Westboro, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 8, 1963, Ser. No. 263,763
4 Claims. (Cl. 83—362)

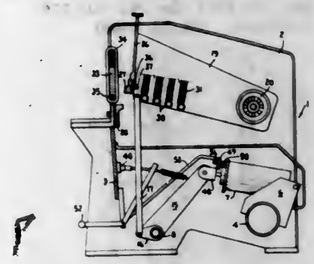


1. Means for removing off-gauge tail end portions of moving rod in a rod mill comprising the combination of a presence sensing device positioned adjacent the strand at a first position along the pass line, said presence sensing device emitting a presence signal when the tail end of the rod leaves said first position, infrared micrometer gauges responsive to said presence signal positioned adjacent the strand at a second position along the pass line for measuring the gauge of said moving rod, said second position being downstream a predetermined distance from said first position, said gauge capable of comparing the measured value of the rod gauge with acceptable rod gauge tolerances in order to emit an error signal when said measured rod gauge exceeds said tolerances, cutting means responsive to said presence signal and error signal for cropping moving rod, said cutting means positioned adjacent said strand at a third position along the pass line downstream from said second position, and means for delaying said error signal until said off-gauge portion is within operating range of said cutting means.

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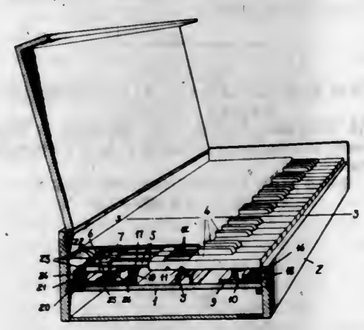
3,165,021
PNEUMATICALLY OPERATED GUILLOTINE
Edward Gransley Telfer, Monash, South Australia, Australia
Filed Sept. 18, 1961, Ser. No. 138,852
8 Claims. (Cl. 83—390)

1. A pneumatically operated guillotine comprising a frame, pneumatic cylinders on the frame, double acting pistons in said cylinders, a pneumatic pressure source, an air valve between the pressure source and the cylinders to supply pressure fluid to the cylinders on one side of the pistons, a throttle valve in communication with the atmosphere and connected to the cylinders on the other of the sides of the piston whereby the cylinders discharge to the atmosphere via said throttle valve, a blade supporting member pivotally mounted on the frame, a pressure multiplying linkage connecting the blade supporting member with the pistons in said cylinders, a moving guillotine blade on the blade supporting member, and a fixed guillotine blade on the frame, said air valve being foot operated to actuate the pistons in the pneumatic cylinders to thereby urge the moving blade past the fixed blade.



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3,165,022
TONE PRODUCTION SYSTEM IN ELECTRONIC MUSICAL INSTRUMENT
Akira Yokoyama, % Yaou Electric Co., Ltd., 1116 Suenaga, Kawasaki-shi, Kanagawa-ken, Japan
Filed Apr. 18, 1963, Ser. No. 274,017
4 Claims. (Cl. 84—405)

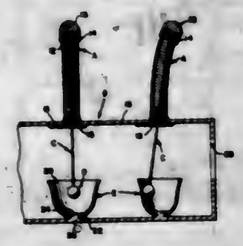


1. In an electronic musical instrument, a tone production system comprising, in combination, a plurality of vibratory reeds of paramagnetic material, a corresponding number of keys constituting a keyboard and each associated with a respective reed; means fixedly mounting each reed at one end thereof for free vibration of the reed relative to such one end; means mounting said keys for movement between a rest position and a depressed position; each key having one end overlapping the associated reed; and a plurality of permanent magnets each directly secured to said one end of the respective reed key; each magnet, in the rest position of its associated key, firmly engaging a vibratory portion of the associated reed to clamp the latter against vibration; each magnet, upon depression of its associated key, initially deflecting the associated reed about said fixed one end thereof and then releasing the associated reed for free vibration about said fixed one end; each magnet, upon release of its associated key, re-engaging the vibratory portion of the

associated reed to terminate the free vibration of the latter.

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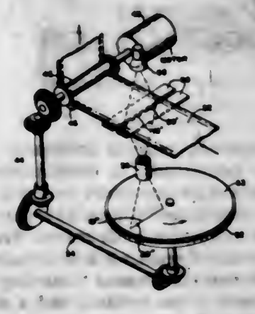
3,165,023
MUSICAL TOY
George V. Boynton, 4099 San Simeon Way, San Jose, Calif.
Filed Dec. 10, 1962, Ser. No. 243,270
6 Claims. (Cl. 84—406)



1. A musical toy comprising a bell defining a mouth, an elongated resilient member formed with an opening longitudinal thereof, means for mounting one end of said resilient member in spaced relation to the bell mouth, said mounting means constituting the sole support for said resilient member, a staff affixed to the opposite end of the resilient member and extending through the longitudinal opening in said resilient member into the bell mouth, said staff being sized with respect to the size of the longitudinal opening in said resilient member to afford relative transverse movement therein, and a clapper attached to the staff within the bell mouth, whereby transverse displacement and release of the resilient member imparts oscillatory motion to the clapper causing it to strike the bell interior.

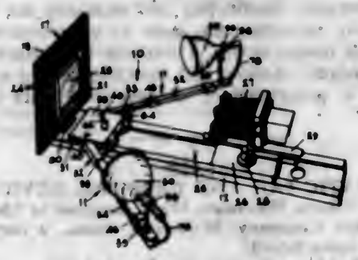
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3,165,024
SYSTEM FOR GENERATING FACSIMILES OF RADAR SIGNALS
Robert M. McClure, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 22, 1961, Ser. No. 97,678
1 Claim. (Cl. 88—24)



A system for generating facsimiles of radar signals recorded on a developed film as a repetitive single line scan, comprising slit mechanism means, light means operatively associated with said slit means, means for passing the film over said slit means in the path of said light means, a turntable having unexposed film thereon, means synchronizing the rotation of said turntable and movement of the film, and means projecting the signal data on the film onto said unexposed film one line at a time.

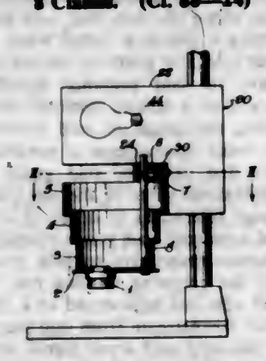
3,165,025
LAMP MOUNTING FOR PHOTOGRAPHIC APPARATUS
Halton W. Hart, 2250 Maplewood Ave., Toledo, Ohio
Filed Jan. 11, 1962, Ser. No. 165,550
9 Claims. (Cl. 88—24)



1. In photographic apparatus, in combination, a supporting base, a copy holder carried by the base adjacent one end thereof and a camera movably mounted on said base in spaced relation to said copy holder, a support member secured to the base between the camera and copy holder and adjacent the latter, a pair of supporting arms positioned at opposite sides of said base, means for pivotally connecting the inner end of each arm to said support member so that said arms can swing outwardly and inwardly relative to said base, a pair of lamps, one lamp being carried by each of said supporting arms, an electric circuit, a switch in said electric circuit connected to each of the lamps, means connecting said arms together for simultaneous inward and outward swinging movement, means for limiting the outward swinging movement of said arms, and means for actuating said switch when said arms reach a predetermined angular position to close the circuit through said lamps.

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3,165,026
PHOTOGRAPHIC ENLARGER
Julius Durst, Brixen, Bozen, Italy, assignor to Durst A.G. Fabrik Fototechnischer Apparate, Bolzano-Bozen, Italy
Filed July 24, 1962, Ser. No. 212,046
Claims priority, application Italy Nov. 21, 1961
8 Claims. (Cl. 88—24)

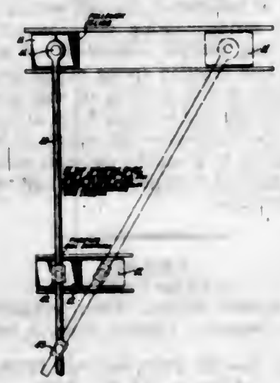


1. A photographic enlarger comprising a lamp housing, a lamp chamber in said housing, a negative carrier mounted upon an end of said housing remote from said chamber, an objective lens, and objective lens carrier, an expandable light-tight enclosure between said negative carrier and said objective lens, bearing means between said lamp chamber and said light-tight enclosure and being sealed therebetween, extendable rods connected to the portion of said light-tight enclosure remote from said lamp chamber, said extendable rods projecting through said bearing means and having a path of movement which extends into said lamp chamber, said extendable rods being enclosed within said light-tight enclosure and said lamp chamber thereby protecting them from dust and contamination, and manually accessible drive means in said bearing means engaging portions of said extendable rods for moving said objective lens toward and away from said negative carrier.



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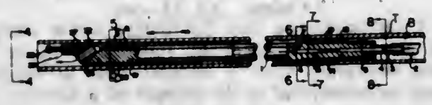
3,165,027
APPARATUS FOR FORMING CONTOURS
Nils Hoglund, 296 Hartshorn Drive, Short Hills, N.J.
Filed May 31, 1961, Ser. No. 113,707
3 Claims. (Cl. 90—13.3)



1. Apparatus for transferring a contour from a rotatably mounted master form to a work piece mounted to rotate at the same angular velocity as said master form, including a rotatable master form, a stationary rigid support frame, a follower slide movably mounted on said support frame and continously biased toward said master form, a follower mounted on said follower slide in contact with said master form, a tool slide mounted on said stationary rigid support frame and movable parallel to said follower slide, a tool thereon, said tool slide being movable toward and from said work piece, a link mechanism having a pivotal connection to each of said slides and said frame and being slidably mounted with respect to two of the pivotal connections, the other of the pivotal connections being fixed.

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3,165,028
SCARFING TOOL
Kenneth R. Keska, Bay Village, Ohio, assignor to The Yoder Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 30, 1961, Ser. No. 99,392
13 Claims. (Cl. 90—24)



1. A hollow cylindrical cutting tool having one end ground to a beveled circumferential cutting edge defined by the inner wall of such cylinder, the other end of said tool having a radially outwardly projecting peripheral shoulder with its end surface toward such cutting edge of the tool being normal to the outer cylindrical surface of the tool and its other end surface being outwardly beveled.

3,165,029
HYDRAULIC MOTORS
Hans Rudolf Haldimann, Tourneppe-les-Bruxelles, Belgium, assignor to ACEC-Ateliers de Constructions Electriques de Charlerol, S.A., Brussels, Belgium
Filed Apr. 8, 1963, Ser. No. 271,367
6 Claims. (Cl. 91—180)



1. In a hydraulic motor having a central stator, an outer peripheral rotor concentric thereto and a plurality of thrust members on said rotor, the combination comprising:

(*a*) two series of an equal number of cylinders, at the periphery of said stator, the series being arranged side by side axially of the stator;

(*b*) the axes of the cylinders of each series being tangential to a base circumference concentric to the axis of the stator;

(*c*) the base circumferences being equal in diameter and perpendicular to the axis of the stator;

(*d*) the axes of the cylinders of one series crossing the axes of the cylinders of the other series; each series corresponding to a direction of rotation of the stator;

(*e*) a distributor mounted for rotation in a central axial bore of said stator;

(*f*) a piston, slidable in each cylinder, having a head adapted to rest on said thrust members;

(*g*) means, in said distributor, successively communicating each of the cylinders corresponding to the desired direction of said motor and the piston of which is at the start of its working stroke with a source of high pressure until the end of said working stroke and then successively communicating each of said cylinders with all of the cylinders of the other series, the pistons of which are displaceable from the end of the return stroke towards the end of the working stroke in such a way that under the action of the moving thrust members, the oil in the cylinders of the first series moves to those of the second series, the latter being thereafter, and from the end of their driving stroke, placed in communication with a low pressure line where the oil is drawn off.

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3,165,030
ROTARY FLUID PRESSURE PUMP AND MOTOR
Robert P. Humphrey, Kalamazoo, Mich., assignor to Humphrey Products Division General Gas Light Company, Kalamazoo, Mich.
Filed Mar. 27, 1963, Ser. No. 268,340
20 Claims. (Cl. 91—202)

1. An air motor comprising,

an elongated cylindrical body,

a cylindrical rotor rotatably and sealingly mounted within said body with the ends of the rotor spaced inwardly from the ends of the body,

anti-friction bearings engaged between the ends of said rotor and the interior of said body and restraining said rotor against axial movement,

a third bearing positioned concentrically in one end

of said body and supporting an output shaft drivingly keyed to said rotor,

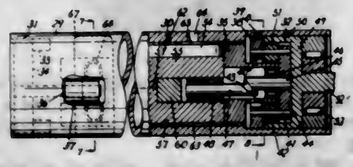
a bearing positioned concentrically within said rotor axially inwardly of said output shaft and supporting a reaction pin projecting eccentrically through said rotor,

a fixed support member retained in the opposite end of said body from said output shaft and fixedly supporting the opposite end of said reaction pin,

said rotor defining diametrically opposed pairs of longitudinal slots with arcuately rounded ends defining pressure chambers that rotate within said body with said output shaft,

elongated pressure elements radially reciprocably and sealingly mounted in said slots and having outer surfaces curved to the same radius as said rotor,

bearing members rotatably mounted on said reaction



pin and bearing against the inner faces of said pressure elements in eccentric relation to said body and rotor whereby rotation of the rotor will force the pressure elements to reciprocate in said slots and vice versa,

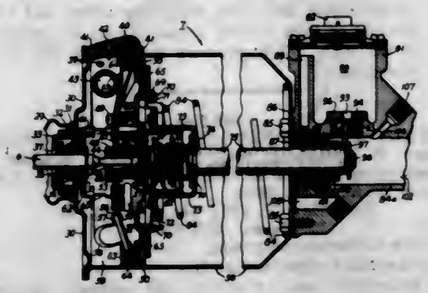
and means forming a pressure supply duct around a portion of said body,

said body having an inlet opening formed therein and opening between the surfaces of said rotor and said pressure elements and said duct from a position advanced from the point of maximum eccentricity of said pin to a point advanced to less than 180° from said point,

said body further having an exhaust port formed therethrough in angularly advanced relation to said inlet opening and extending angularly to adjacent said point of maximum eccentricity of said pin.

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**3,165,031**
**HYDRAULIC BRAKE BOOSTER**
Edward A. Rockwell, 167 Ashdale Place, Los Angeles 49, Calif.
Original application June 23, 1955, Ser. No. 517,413, now Patent No. 2,978,871, dated Apr. 11, 1961. Divided and this application Dec. 31, 1959, Ser. No. 863,330
19 Claims. (Cl. 91—369)



1. In a power booster unit comprising a casing having a power wall actuated by a pressure differential on the opposite sides thereof, an output member connected to said wall, and an input member, the improvement comprising: a follow-up valve mechanism operated by said input member and having a released position, a power position, and a lapped position for controlling the diffffferential pressures on the opposite sides of said wall, said valve mechanism including a valve floatingly carried by said wall and a valve element operably connected to said input member and seating on said valve at the lapped position and at one of the other of said positions; and reaction means transmitting reaction force from said output member to both said wall and said input member, said reaction means including a belleville spring, said belleville spring providing a yieldable connection from said wall to said output member, said reaction means further including spring means providing a force lightly opposing initial increments of movement of said valve element with an initially high boost ratio of the force applied to the input member to that applied by the output member, successive increments of movement of said valve element tending to compress said belleville spring causing said connection to yield thereby providing relative movement of said members and the wall, said reaction spring means being arranged to be responsive to the yielding of said connection for gradually increasing said reaction force at a gradually increasing rate upon successive increments of movement of said valve element to gradually decrease such boost ratio and thereby achieve a modified lower boost ratio as power run-out is approached.

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**3,165,032**
**FLUID PISTON**
Raymond L. Koukle, Clinton, Iowa, assignor to Central Steel Tube Company, Clinton, Iowa, a corporation of Iowa
Filed Nov. 29, 1963, Ser. No. 327,001
7 Claims. (Cl. 92—252)

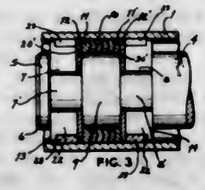


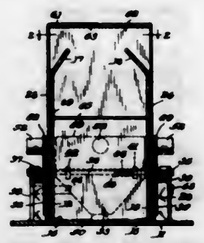
FIG. 3

1. For use in a fluid cylinder, the improvement comprising a piston shaft disposed for axial movement within said cylinder, a series of adjoining piston packing rings encircling the outer face of said piston shaft, and a pair of removably mounted retainer members carried on said shaft at opposite ends of the series of piston rings to prevent axial displacement thereof, each of said retainer members being of two-part complementary construction.

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**3,165,033**
**CARTON OPENING DEVICE**
Allan Bambra, Elwood, Ind., assignor to National Gypsum Company, a corporation of Delaware
Filed May 3, 1963, Ser. No. 277,859
7 Claims. (Cl. 93—36)

1. A carton-shaping and flap-folding device comprising a plurality of substantially rigid guide means extending outwardly from a support base in locations adapted to correspond to the corners of a carton to be shaped, the outer ends of the guide means being turned inwardly, a plurality of vane-support shafts carried from the base means and extending parallel to the plane between each guide means, the support shafts bounding a region external to the guide means, a flap-folding vane loosely carried on each of said support shafts and supported in a generally central region relative thereto, means to locate each vane about the shaft in a rest position to protrude inwardly of the boundaries of the guide means, said guide means being adapted to locate the panels of a carton to be opened and to provide a guide whereby the carton end-flaps when forced down over the guide means contact the surface of the flap-folding vanes and bend to follow the vane surface and upon being forced further downwardly the carton panel

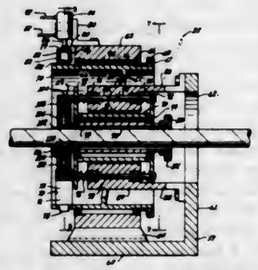


contacts the pivoted vane to rotate it about its support axis as the carton panel is moved between the guide means and the vane-support shafts so as to bend the carton flap backwardly about a score line adjacent to the panel to turn to a limiting position parallel to the carton panel, and means to return the vanes to the reset position.



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**3,165,034**
**METHOD AND APPARATUS FOR CUTTING TUBULAR MEMBERS FROM AXIALLY ADVANCING TUBULAR STOCK**
Daniel S. Cvacho, Chesterfield, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 229,116
34 Claims. (Cl. 93—80)

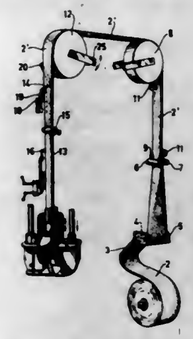


1. Apparatus for serially cutting axially advancing tubular stock into individual tubular members comprising means for orbiting cutting means around said tubular stock, means for axially moving said orbiting cutting means at the same speed of axial advancement of said tubular stock, and means for moving said cutting means inwardly toward said tubular stock to cut said tubular stock into individual tubular members while said cutting means orbits said tubular stock and axially advances therewith.

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**3,165,035**
**METHOD FOR CONTINUOUS TUBE PRODUCING**
Sven Olof Sören Stark, Qvanteborgsvagen 53, Lund, Sweden
Filed Oct. 26, 1961, Ser. No. 147,793
Claims priority, application Sweden Oct. 28, 1960
1 Claim. (Cl. 93—94)

In the method of forming a continuous tube having a longitudinal seam parallel to the tube axis from a continuous web of flexible but relatively buckling stiff material, the steps which comprise firstly moving the web upwardly and simultaneously double folding the web substantially along its longitudinal central line into a generally flattened state with the side of the web corresponding to the inside of the tube facing inwards, guiding said double folded web in said flattened state through a path including a relatively large bending radius to establish a



movement of the web in a downward direction, forming said downwardly moving double folded web into a tube of substantially circular cross section and joining the opposite longitudinal edges of said tube to establish a seam extending longitudinally of the tube axis.

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**3,165,036**
**PAVING STRUCTURE**
Robert J. Schmidt, El Cerrito, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 263,377
14 Claims. (Cl. 94—7)



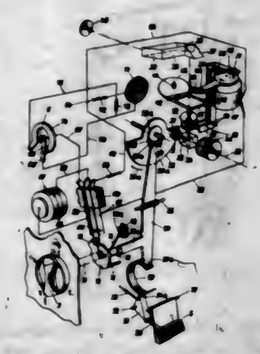
1. The process for preparing a paving structure, which comprises applying a layer of a thermoplastic bituminous material onto a rigid base; partially embedding a layer of coarse stone aggregate into said layer of bituminous thermoplastic material; introducing into the interstices of said coarse stone aggregate layer a finer stone aggregate, so that the coarse stone aggregate and the finer stone aggregate together cover completely the surface of the layer of bituminous material; binding the exposed portion of said coarse stone aggregate and the finer stone aggregate layer with a layer of a thermosetting resin; and topping said resin with a layer of a fine particulate solid material.

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**3,165,037**
**CONTROL FOR MOTION PICTURE CAMERA**
Karl Neudecker and Friedrich Winkler, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany, a corporation of Germany
Filed Sept. 13, 1961, Ser. No. 137,789
Claims priority, application Germany, Sept. 23, 1960, A 35,647
17 Claims. (Cl. 95—10)

1. A control arrangement for a motion picture camera incorporating a battery-operated exposure meter and an automatic exposure-regulating device actuated thereby comprising a battery, a testing resistor, a consolidated control device having a number of separate positions corresponding to different conditions of operation and test of said camera, one of said positions being connected to energize operation of said camera, another of said positions being a testing position arranged to connect said

battery to said exposure meter through said testing resistor for indicating the operative condition of said battery, said consolidated control device also including a safety position which is arranged to isolate said battery for preventing its discharge when said camera is not in



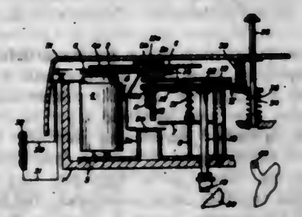
operation, a reset spring being connected to said consolidated control device, and said reset spring being adjusted to react against said consolidated control device for urging it from said battery testing position to said safety position.

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3,165,038
## COMPENSATING DEVICE FOR PHOTOGRAPHIC CAMERAS

Helmut Ettlicher and Paul Harter, Ruit, Esslingen, Germany, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 23, 1962, Ser. No. 232,440
3 Claims. (Cl. 95—10)

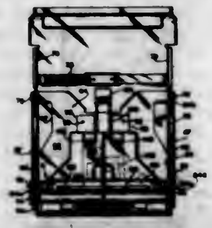


1. In a camera adapted to receive any of a plurality of interchangeable taking lens assemblies and having a photocell illuminatable by field light, an electric measuring instrument energizable by said photocell as a function of field brightness, said instrument having an indicator positioned as a function of the energization of said instrument, and a scanning member movable into sensing engagement with said indicator for controlling exposure in said camera, means compensating exposure in said camera for the substitution therein of a lens assembly having a first maximum aperture for a lens assembly having a second and different maximum aperture, comprising: means defining a respective surface irregularity on each lens assembly, representing the maximum aperture of the taking lens in that assembly; movable means for sensing said irregularity and positionable in accordance therewith; and a mechanical linkage coupling said scanning member to said sensing means for positioning said scanning member as a function of the maximum aperture of the lens in the lens assembly attached to said camera.

3,165,039
## PHOTOGRAPHIC APPARATUS

Rogers B. Downey, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 29, 1963, Ser. No. 268,882
29 Claims. (Cl. 95—13)



1. Processing apparatus for use with a film assembly including a photosensitive sheet, a second sheet, and a contained processing liquid adapted to be released under compression and spread between said sheets, said apparatus being mounted on a supporting surface and comprising an elongated margin-compressing element including a pair of compression-applying components located at each extremity thereof adapted to slidably engage and compress the transversely opposite marginal areas of said film assembly during its advancement therebetween, a pair of elongated pressure-applying members so located adjacent to said margin-compressing element that an entrance area thereof for accepting said film assembly lies substantially in a plane in which also lies an entrance area serving a similar purpose of said margin-compressing element, said elongated pressure-applying members having a length of their working surfaces which appreciably exceeds the lateral spacing between said pair of compression-applying components and which to a greater extent exceeds the width of said film assembly, pivotal mounting means for said elongated pressure-applying members enabling the translational movement of one of said members with respect to the other in a direction generally normal to the plane of a film assembly undergoing advancement therebetween, said mounting means being so located, laterally, at the extremities of said elongated pressure-applying members as to render the entire length of the working surfaces of said members available for compression purposes, spring means biasing said pressure-applying member which is translationally movable in a direction toward the other of said members, and mounting means for said margin-compressing element permitting the movement of said element in a plurality of directions in compliance with various directions of advancement of said film assembly between said pressure-applying members as well as various lateral positions of said film assembly between the extremities of said members.

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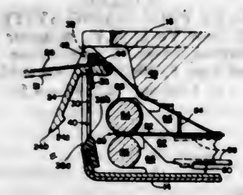
3,165,040
## CLOSURE DEVICE FOR A CAMERA

Joel A. Hamilton, West Medway, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 29, 1963, Ser. No. 268,999
8 Claims. (Cl. 95—13)

1. A closure device for alternatively covering and uncovering an exit aperture of a camera of a type adapted to photographically expose and process a film assembly, said closure device comprising a closure member, pivotal means rotatably attaching said member to a frame portion of said camera at a location adjacent to said exit aperture so as to substantially completely cover said exit aperture when at a closed position, spring means biasing said closure member toward said closed position, said closure member including an integral recessed portion having a bearing surface which is disposed angularly with respect to the major surface of said closure member and which is offset relative to an axis of said pivotal means, said recessed portion being adapted to slidably bear and to guide an elongated draw tab of said film assembly while said tab is being manually drawn upon for the purpose of advancing components of said film assembly for proc-





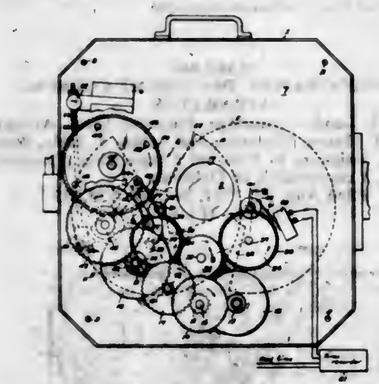
essing purposes, said closure member, by reason of its offset bearing surface, being caused to undergo pivotal movement in response to the tautening of said tab during its advancement and thereby to pivot said closure member to an open position uncovering said exit aperture and permitting a leader of said film assembly to pass through said aperture.

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3,165,041
## CODED SHUTTER SEQUENCE

Charles W. Lyle, Havre de Grace, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 30, 1962, Ser. No. 183,981
2 Claims. (Cl. 95—36)
(Granted under Title 35, U.S. Code (1952), sec. 266)



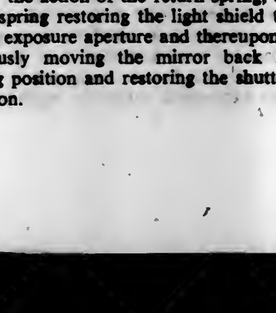
1. In combination with a camera having an object lens and a pair of apertured, rotatable shutters overlapping said lens; a coded sequence mechanism for intermittently interrupting the rotational speed of said shutters comprising, a driving motor, gearing including a cam gear driven by said motor and synchronously rotating said shutters; a differential in said gearing and a cam mechanism cooperating with said cam gear and connected to said differential, said cam mechanism comprising a series of studs mounted on the outer face of said cam gear, a collar rotatably mounted below said cam gear, an arm rigidly carried by said collar, said arm having a cam surface at its outer end and in contact with said arm, linkage connecting said last named collar with the collar on said differential, an extension on the collar of said cam mechanism and a spring loaded rod connected to said extension normally urging said last named collar in a counter clockwise direction, said arm on said last named collar being moved in a clockwise direction upon contact of a said stud on said cam gear whereby said linkage moves said last named collar on said differential in a clockwise direction to slow down the speed of rotation of said gearing.

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3,165,042
## MECHANISM FOR OPERATING REFLECTING MIRROR AND LIGHT SHIELD OF SINGLE LENS REFLEX CAMERA

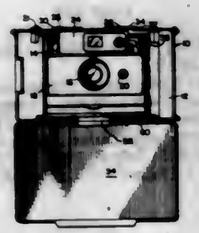
Atsushi Higuchi, Yokohama, Japan, assignor to Canon Camera Co., Inc., Tokyo, Japan, a corporation of Japan

Filed June 21, 1961, Ser. No. 118,580
Claims priority, application Japan, July 8, 1960, 35/35,843; July 8, 1960, 35/31,022
3 Claims. (Cl. 95—42)



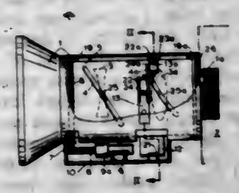
1. In a lens shutter type single reflex camera having a reflecting mirror movable to cover the focusing screen window of the viewfinder and a light shield movable to close the exposure aperture the combination comprising a shaft, spring hinge means rotatable on the shaft and supporting the reflecting mirror and the light shield on the shaft in such manner that the mirror and shield are mutually repelled by the springiness of the hinge means, a first lever connected at its one end region to the light shield and at its other end slidably connected to the mirror, a link hinged at one end to substantially the mid-region of the first lever, a second lever pivotally mounted on the camera body and having its one end slidably and pivotally connected to the other end of the link, shutter release means including a release spring and a return spring, the other end of the second lever cooperating with the shutter release means in such manner that normally the light shield closes the exposure aperture and positions the mirror in its position intercepting the exposure light to deflect incident light into the viewfinder and on actuation of the shutter release means the mirror under the bias of the tensioned release spring the mirror is first swung about the shaft and removed from its intercepting position to the position in which it is pressed against and covers the focussing screen of the viewfinder, the light shield pivoting partially to uncover the exposure aperture and then moving upwardly against the bias of the hinge means to be stopped by the mirror when the latter is pressed against the focussing screen completely to uncover the exposure aperture, the shutter then being completely opened to make the exposure and thereupon reclosed by the action of the return spring, the tension of the return spring restoring the light shield to its position closing the exposure aperture and thereupon substantially simultaneously moving the mirror back into its light intercepting position and restoring the shutter to its fully open position.

3,165,043
## PHOTOGRAPHIC CAMERA CONSTRUCTION
Richard R. Wareham, Marblehead, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 268,917
9 Claims. (Cl. 95—44)



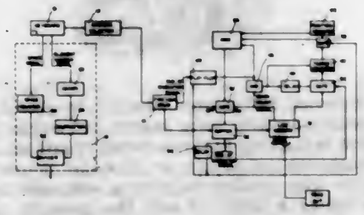
1. In a photographic camera, the combination comprising:
(*a*) a camera body;
(*b*) an objective lens;
(*c*) means for effecting focusing movement of said objective lens;
(*d*) optical apparatus movable, when in an operative position, in response to said focusing movement;
(*e*) means for mounting said optical apparatus for movement between operative and inoperative positions with respect to said camera body; and
(*f*) magnetic catch means for releasably retaining said optical apparatus in said operative position in a desired relationship to said objective lens.

3,165,044
## CONTROL MECHANISM FOR THE COMPONENTS OF OPTICAL OBJECTIVES
Paul Himmelsbach, Bad Kreuznach, Germany, assignor to Jos. Schneider & Co. Optische Werke, Bad Kreuznach, Germany, a corporation of Germany
Filed Aug. 17, 1961, Ser. No. 132,029
Claims priority, application Germany, Aug. 20, 1960, Sch 28,562
3 Claims. (Cl. 95—45)



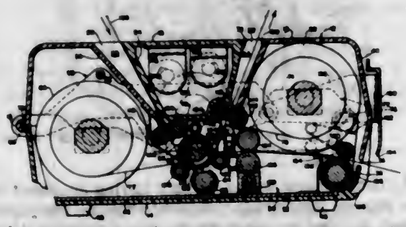
1. In an optical objective having a pair of displaceable components, in combination, a generally cylindrical housing provided with a sectoral outward extension, a rotatable camming sleeve in said housing coupled with said components, an electric motor for rotating said sleeve, a source of electric energy for said motor in said extension, an operating circuit including contact means selectively actuatable for reversibly energizing said motor from said source, and a pair of limit switches respectively controlled by said sleeve in two extreme angular positions thereof in series with said contact means for deactivating said motor, said limit switches including a pair of contacts mounted in said housing at peripherally spaced locations of said extension and a curved leaf spring of generally U-shaped configuration in said extension having extremities normally engaging said contacts, respectively, said sleeve being provided with two external projections engageable with said extremities in said angular positions for respectively deflecting them away from said contacts, said leaf spring lying close to the inner wall of said extension and being centrally secured to said wall.

3,165,045
## DATA PROCESSING SYSTEM
John H. Troll, New York, N.Y., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,316
11 Claims. (Cl. 95—4.5)



1. Photo typsetting apparatus comprising, in combination, a magnetic type font first storage medium storing the characters in the form of a binary representation indicating which elements of the characters are to be printed, means for reading from said first medium a line comprising selected ones of said characters, means for justifying said line and recording it on a second magnetic storage medium, and output means for reading the justified line from said second medium and recording it on a light sensitive medium, said output means being arranged to record said line element-by-element.

3,165,046
## PHOTOGRAPHIC DOCUMENT COPYING APPARATUS
Edwin H. Land, Cambridge, Nicholas Gold, Arlington, Paul B. Mason, Magnolia, and Arthur J. Sable, Boston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 23, 1961, Ser. No. 133,483
2 Claims. (Cl. 95—75)



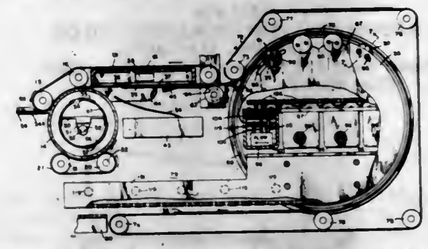
1. Photographic apparatus for exposing and treating with a processing liquid, a succession of areas of a photosensitive sheet to make copies of original documents, said apparatus comprising, in combination:
a housing for mounting and enclosing the components of said apparatus and providing a light-free environment for said photosensitive sheet during exposure and processing thereof, said housing comprising first and second sections movable with respect to one another between operative and inoperative positions to permit loading of sheet materials into said apparatus;
a source of illumination within said housing for exposing said photosensitive sheet;



first guide means comprising a cylindrical support member mounted for rotation about its axis on said first housing section;
second guide means comprising a pair of backing members mounted on said second housing section for juxtaposition with axial portions of the periphery of said support member in the operative position of said housing sections, said backing members being positioned for supporting a portion of said photosensitive sheet between said backing members against said guide member during rotation of said guide member and movement of said sheet with respect to said backing members;
said source of illumination being positioned for exposing said portion of said photosensitive sheet supported against said supporting member between said backing members;
light shield means disposed between said source and other sections of said housing for preventing light from said source from exposing other portions of said photosensitive sheet within said apparatus;
processing means including first and second pressure applying members mounted in juxtaposition respectively on said first and second housing sections for applying compressive pressure to said sheet during movement thereof between said pressure applying members;
means for dispensing a quantity of said processing liquid adjacent said pressure applying members for distribution in contact with each successive exposed area of said sheet;
third guide means including portions of said first housing section providing inlet and exit passages through which original documents can be introduced and withdrawn from said housing, and first and second pairs of juxtaposed feed rolls mounted on said first housing section with their axes substantially parallel with said axis of said support member, said first pair of feed rolls being mounted in closing relation to said inlet passage adjacent said support member with their surfaces generally tangent with a plane tangent with said support member in the region thereof closest one of said backing members, said second pair of feed rolls being mounted in closing relation to said exit passage adjacent said support member with their surfaces generally tangent with a plane tangent with said support member in the region thereof closest the other of said backing members; and
drive means for moving said photosensitive sheet through said apparatus and rotating said first and second pairs of juxtaposed feed rolls to advance an original document at substantially the same linear rate as said photosensitive sheet, into said apparatus into superposition with said sheet between said support member and said one backing member and from superposition with said sheet at said support member and said other backing member.

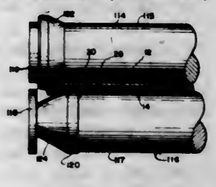
3,165,047
## PHOTOGRAPHIC PROCESSING APPARATUS
Seymour L. Hersh, Freehold, N.J., assignor to the United States of America as represented by the Secretary of the Army
Original application Feb. 6, 1961, Ser. No. 87,505, now Patent No. 3,104,602, dated Sept. 24, 1963. Divided and this application Mar. 1, 1962, Ser. No. 176,832
9 Claims. (Cl. 95—77.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

6. A photographic processing apparatus comprising a continuously driven perforated apron conveyor system for manipulating a transparency and a printing sheet during the operating steps of the apparatus, edge guiding means associated with said conveyor apron for accurately guiding and orienting said transparency and printing sheet in register one with the other, vacuum means for holding said sheet in contact with said apron for a portion of its travel after exposure thereof while said transparency is separating therefrom, circular marginal edge gripping means including a driven perforated apron coacting with said conveyor to transport said exposed printing sheet with its emulsion side away from said conveyor apron during its chemical processing steps, a processing solution reservoir, processing solution applying means consisting of at least one applicator unit having a slot like



chamber with the open side thereof disposed in the path of the emulsion side of said printing sheet whereby solution in said chamber is applied only to the emulsion of the sheet, a constantly running pump acting to supply solution to said applicator chamber the suction port thereof being connected to one end of said chamber, a conduit connected to the other end of said chamber and extending below the surface of the solution in said reservoir, the exhaust port of said pump discharging into said reservoir whereby when a printing sheet is covering the open side of said applicator chamber solution flows therethrough and when no printing sheet is present no solution flows.

3,165,048
## METHOD OF DISTRIBUTING AND CONTAINING PROCESSING FLUID BETWEEN SUPERPOSED SHEETS
Joel A. Hamilton, West Medway, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 26, 1961, Ser. No. 112,950
4 Claims. (Cl. 95—89)

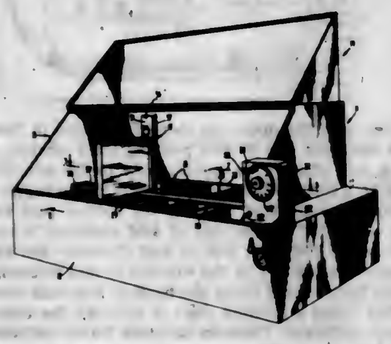


2. A method of distributing a liquid between and in contact with a pair of superposed sheets while preventing said liquid from escaping from between said sheets at the lateral edges thereof, said method comprising:
moving said sheets in superposition relative to and between a pair of rolls mounted in juxtaposition for rotation about axes lying substantially in a common plane;
providing a quantity of said liquid between said sheets on one of said sheets;
moving the medial portions of said sheets substantially in a plane between medial portions of said rolls while applying compressive pressure to said medial portions of said sheets along a line lying substantially in said plane containing the axes of rotation of said rolls; and
during movement of said sheets applying a bending stress to lateral marginal portions of said sheets

located between end sections of said rolls to bend said lateral marginal portions out of said plane of said medial portions of said sheets to prevent escape of said liquid from between said lateral edges of said sheets as said liquid is being distributed, said marginal portions of said sheets being bent by applying compressive pressure thereto with congruent tapered and flared sections at the ends of said rolls causing said marginal portions to conform substantially to said tapered and flared sections.

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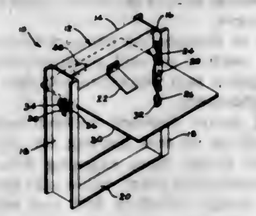
3,165,049
AUTOMATIC PHOTOGRAPHIC COLOR PROCESSING MACHINE
Vester Dick, 128 Lincoln St., Santa Cruz, Calif.
Filed Mar. 28, 1962, Ser. No. 183,214
11 Claims. (Cl. 95—89)



7. A processing machine comprising a horizontal open topped rectangular water jacket, hood means for selectively closing the top of said jacket to define a light tight enclosure therewith, a pair of central indexing members secured between the opposite ends of said jacket at positions elevated from its bottom and equally spaced on opposite sides of the longitudinal vertical median plane thereof, a pair of side indexing members respectively secured to the interior longitudinal side faces of said jacket in transversely spaced relation to said central pair of members, said members having pluralities of equally longitudinally spaced indexing notches in transverse alignment with the notches of the side members transversely facing the notches of the respective central members, a plurality of open topped process tanks of transversely elongated rectangular cross section, said tanks having outwardly flared rims at their open ends with the distance between the outside transverse edges of the rims being equal to the longitudinal distance between center lines of adjacent ones of said notches, said tanks disposed within said jacket to extend transversely between said side and central indexing members, said tanks having laterally projecting vertical ribs along their opposite longitudinal sides in sliding engagement with respective transversely facing sets of said notches, a carrier mounted for longitudinal translation intermediate said central members, a holder mounted for vertical translation laterally of said carrier and selectively pivotal relative thereto between positions of 180° displacement longitudinal translating means coupled to said carrier for incrementally translating same distances equal to that between said notches, vertical translating means coupled to said holder for translating same into and out of said tanks, and programmed timer means coupled in controlling relation to said longitudinal and vertical translating means to actuate same in accordance with a predetermined time program commensurate with correlated translation of the carrier between said tanks and translation of said holder into and out of said tanks at predetermined time intervals.

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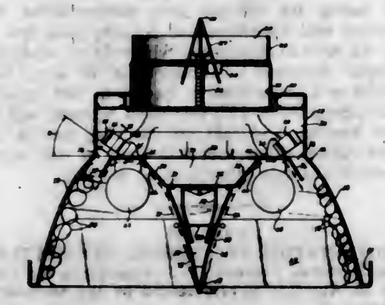
3,165,050
UNIVERSAL FIRE DAMPER WITH ENGAGING MEANS
Edward H. Johnson, Maumee, Ohio, assignor to The American Warming & Ventilating, Inc., Toledo, Ohio, a corporation of Ohio
Filed Nov. 13, 1962, Ser. No. 237,072
3 Claims. (Cl. 98—1)



1. In a fire damper comprising an end frame member, two side frame members, a damper blade, non-circular axles extending beyond the edges of said blade, said side frame members having axle-receiving openings and axle-receiving notches associated with said openings on the sides thereof opposite the end frame member, and fusible link means adapted to hold said blade in an open position except when heat of a predetermined magnitude exists in a duct associated with said damper, the improvement comprising engaging means associated with one of said damper blade and said end frame member to contact the other of said end frame member and said damper blade when said damper blade moves to its closed position, to move said damper blade away from said end frame member and to push said axles into said notches regardless of the angle of installation of said frame members.

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3,165,051
ASPIRATING-TYPE COMBINATION LIGHT AND VENTILATING UNIT
Lee A. Archer, Wheaton, Ill., and Edward M. Caferro, Spokane, Wash., assignors to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 22, 1960, Ser. No. 57,767
3 Claims. (Cl. 98—40)



1. A fixture for diffusion air and emitting light into a room comprising a double case shell having inner and outer walls forming a light compartment and a plenum for receiving a supply of air from a source at increased pressure, a fluorescent lamp in said light compartment, said walls of said double case shell terminating in a common plane at the lower free ends thereof to form a light egress for said light compartment and a diffusion outlet for said plenum, said inner wall formed with an aspirating opening means located above and one side of said fluorescent lamp, said aspirating opening means drawing room air through said light compartment and mixing with the air discharged from the plenum to the outlet.



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3,165,052
REVOLVING-DIFFUSER CONTROL-DEVICE FOR OVERHEAD SPACE HEATING UNITS
Paul F. Brisco, Racine, Wis., assignor to Young Radiator Company, Racine, Wis., a corporation of Wisconsin
Filed May 6, 1963, Ser. No. 278,354
1 Claim. (Cl. 98—40)



A heat exchanger of the overhead-unit-heater type comprising,

(*a*) an annular heating core,
having a fan shroud depending from the core and mounting a motor-driven fan rotably suspended within the shroud to draw-down air through the core,

(*b*) a revolving air diffuser
journaled on and
suspended from the shroud,

(*c*) a platform
channel-shaped and having the side walls converging radially outward and
having the larger end of arcuate shape and
attached to the shroud and
extending radially outward therefrom, and
having slots formed therein radially of the shroud.

(*d*) a base plate having
fasteners thereon and
extending through the base-plate slots to slidably support the plate on the platform,

(*e*) a motor-driven-reduction-gear unit
fixed on the plate and
connected to a sheave below the under face of the platform,

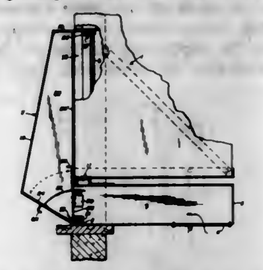
(*f*) a belt embracing
the sheave and the air-diffuser, and

(*g*) a spring means
mounted on the platform
urging the base plate and unit outwardly along the base plate slots
to maintain driving tension on the belt for limiting the revolutions of the air diffuser to a predetermined number per minute.

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3,165,053
ACCESSORY FOR AIR CONDITIONERS
Walter G. Christie, Oyster Bay, N.Y.
(241 E. 51st St., New York 22, N.Y.)
Filed Nov. 15, 1962, Ser. No. 237,992
4 Claims. (Cl. 98—94)

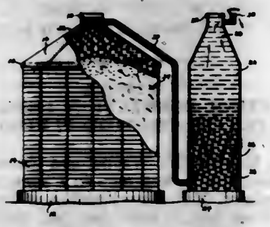
4. An accessory for a self-contained, window mounted room air conditioning unit presenting a large intake opening within a room; said accessory comprising mounting means adapted to be fixed in a window opening, air duct means adapted to be secured in said window opening by said mounting means and providing a passage for air through said window opening, said mounting means providing a support for the air conditioning unit to position said air conditioning unit over said air duct means, hood means having an open bottom positioned at the room end of said air duct and extending upwardly to cover the large air intake opening of the air conditioning unit in the room, and damper means hingedly mounted in said hood at a point adjacent said air duct adjacent its lowest point, said damper means being swingable to be selectively seated against the end of said air duct means to close off said air duct means and to permit flow of air to the large air intake opening of the air conditioner through the



open bottom of said hood means, or to be swung into a position to close said open bottom of said hood means and to permit flow of air through said duct means to said large air intake opening, or to be positioned at any intermediate position whereby the flow of air to the large air intake opening of said air conditioning unit within the room may be regulated.

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3,165,054
MATERIAL STORAGE MEANS
Herbert P. Behlen and Walter D. Behlen, Columbus, Nebr., assignors to Behlen Manufacturing Company, Inc., Columbus, Nebr., a corporation of Nebraska
Filed May 31, 1962, Ser. No. 198,809
4 Claims. (Cl. 99—235)



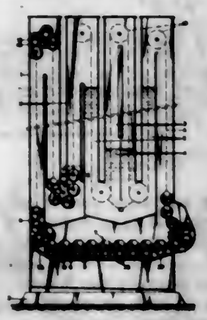
1. In a material storage and preserving means, comprising in combination,
a sealable material storage container,
a gas stratifying container having its inside upper area in communication with the outside atmosphere,
and a conduit having one end communicating with the inside top area of said storage container, and its other end communicating with the inside bottom area of said gas stratifying container.

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3,165,055
APPARATUS FOR THE CONTINUOUS STERILIZATION OR PASTEURIZATION OF FOODSTUFFS PACKED IN CONTAINERS
Johannes B. van der Winden, Nieuwer Amstel, Netherlands, assignor to Gebr. Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands, a corporation of the Netherlands
Filed May 2, 1960, Ser. No. 26,169
Claims priority, application Netherlands May 2, 1959
6 Claims. (Cl. 99—362)

6. Apparatus comprising a housing including walls defining a plurality of vertically disposed chambers, said chambers defining a substantially vertical path, an endless conveyor in said housing adapted to move along said path, said conveyor including two spaced parallel chains,

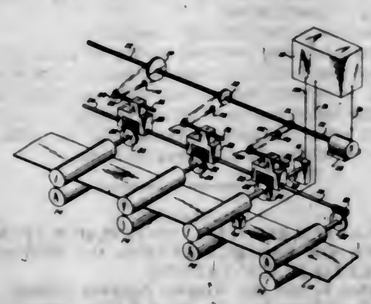
a plurality of tubular carriers, a pair of interconnected intermediate plate elements for each carrier secured to respective chains and movable therewith, each of said elements being provided with a slot, a supporting shaft rotatably supporting each of said carriers between the chains, said shafts each projecting through the slots of a corresponding pair of intermediate plate elements, a supporting flange on each of the plate elements bounding the slot therein, roller means on the supporting shafts for contacting the supporting flanges of the associated intermediate elements for supporting each carrier from



the associated intermediate elements while enabling limited relative movement between each carrier and the associated intermediate elements in a direction transverse of the direction of movement of the intermediate elements, said supporting flanges having an inclination relative to the direction of travel of the intermediate elements, said roller means being rotatably and slidably supported on said flanges such that upon vertical movement of the conveyor, the carriers are urged against the housing, thereby causing the carrier to rotate as the same advances with the intermediate elements along said path.

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**3,165,056**
**REGISTRATION CORRECTION USING A SINGLE COMPUTER TO PROVIDE PLURAL UNEQUAL CORRECTIONS**
William A. Headley, Jr., Wayne, and Emery R. Schaffer, West Orange, N.J., assignors to Champlain Company, Inc., Roseland, N.J., a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,418
24 Claims. (Cl. 101—181)



9. Apparatus comprising three or more stations operating on a moving web, means to apply a reference marker on the web, scanning means at a later control station connected to computer means to detect and measure a departure from registration at said control station, and means responsive to said computer means for making a control correction at the control station and related corrections at other stations except the first, the related corrections being so related to the control correction that the corrections are progressively and approximately proportional to the length of web between the first station and the subsequent station, and delay means to delay the correction applied to a later station compared to the time the correction is applied to an earlier station.

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**3,165,057**
**LINEAR SHAPED CHARGE UNIT**
Homer T. Armstrong, Arlington, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,900
2 Claims. (Cl. 102—24)



1. A linear shaped charge unit comprising,
an explosive,
a first tubular rigid container having a first exterior groove that extends linearly along the outer surface thereof, said first container being filled with a quantity of said explosive that has been compacted as result of the formation of said first groove,
a second tubular rigid container having a larger cross-section than said first container and being positioned to enclose a portion of the length of said first container, said second container having a second exterior groove that extends along the outer surface thereof, said second container being filled with said first filled container and with an additional quantity of said explosive that has been compacted as a result of the formation of said second groove,
said second groove being superimposed and aligned over the adjacent portion of said first groove for combining a cutting jet from each of said containers and directing the combined jet toward an object to be cut, and a detonator in contact with the explosive in at least one of said containers.

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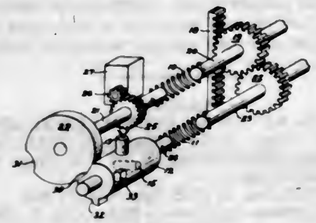
**3,165,058**
**TOY CARTRIDGES**
Robert G. Lahr, Hartland, Wis.
(2464 Amherst Ave., West Los Angeles 64, Calif.)
Filed Dec. 10, 1962, Ser. No. 243,542
4 Claims. (Cl. 102—38)



1. A toy cartridge comprising in combination a casing, said casing having a rear end and a front end and an axial recess opening forwardly at said front end and, an elongated projectile member having a recess therein, said projectile member being loosely axially slidably received on the outside of the front end of said casing, the fit between said projectile member and said casing being so loose that said projectile member falls from said casing due to the force of gravity when the assembly of said projectile member and the casing is disposed in a position in which said projectile extends downward and only said casing is supported, said casing comprising a rear portion of said cartridge, and said projectile member comprising the foremost portion of said cartridge, said recess in said projectile member being disposed axially in said projectile member and opening to the rear thereof, the rearmost end extremity of said casing comprising an apertured closure, said apertured closure communicating the interior of said recess in said casing to atmosphere external to said casing.



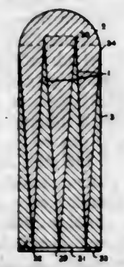
**3,165,059**
**LANYARD OPERATED, DELAY ARMING MECHANISM**
Allan M. Saunders, 3024 Price Court, Palo Alto, Calif.
Filed May 8, 1962, Ser. No. 193,137
6 Claims. (Cl. 102—83)



6. In a safe-arm explosive initiator mechanism for missiles, a rotary member movable from a safe to an arm position, a spring for moving said member, latch means normally preventing movement of said member, a time controlled rotary shaft, means on said shaft for releasing said latch means after a predetermined rotary movement of the shaft, a second spring for imparting rotation to said shaft, and means forming a connection between the missile base and the initiator to tension both of said springs.

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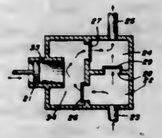
**3,165,060**
**MULTIPLE PROPELLENT GRAIN FOR ROCKET MOTORS**
James V. Braun, Lewisburg, Ohio, and Willard S. Bacon, Lancaster, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 31, 1960, Ser. No. 66,360
2 Claims. (Cl. 102—98)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A generally cylindrical propellant having a flat circular base at one end and a semispherical portion at the other end, said propellant comprising three charges, each of said charges having a different burning rate, a first conical intermediate burning charge positioned along the longitudinal axis of the cylindrical propellant grain, the apex of the conical portion being located in the plane of said circular base, the base of the conical portion being integral with the semispherical portion, an annular fast burning charge surrounding and in contact with the conical intermediate burning charge, said fast burning charge having a base portion located in the plane of the said circular base, said annular fast burning charge having walls narrowly tapering from said base and extending to said semispherical portion, a second intermediate annular propellant charge extending from said semispherical portion surrounding and in contact with said fast burning charge, said second intermediate charge having an annular wall narrowly tapering from said semispherical portion and extending to said circular base, a slow burning annular charge surrounding and in contact with said second intermediate burning charge, said slow burning charge having a base portion located in the plane of the said circular base and having a narrowly tapered wall extending to said semispherical portion.

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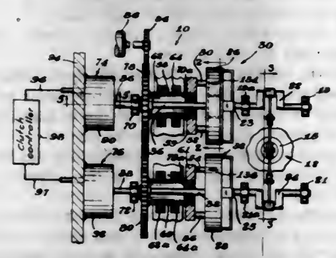
**3,165,061**
**METHOD AND APPARATUS EMPLOYING ACOUSTIC ENERGY FOR INCREASING FLUID FLOW**
Edward H. Smith, Silver Spring, and David E. Stone, Rockville, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 18, 1963, Ser. No. 259,472
1 Claim. (Cl. 103—1)



A fluid system having a source of fluid, an outlet for said fluid, and a positive displacement pump connected therebetween, said pump comprising:
inlet and outlet chambers;
means for bleeding air from the outlet chamber;
a pressure chamber having a reciprocating piston therein, a one way intake valve for admitting fluid from said inlet chamber, and a one way exhaust valve for permitting fluid to flow to said outlet chamber;
an additional one way valve connecting said inlet and outlet chambers so as to permit fluid to flow from said inlet chamber to said outlet chamber thereby bypassing the pump pressure chamber;
said piston initiating positive acoustic impulses in the fluid from the outlet chamber to the outlet of the system, said positive impulses being reflected by the outlet of the system as negative impulses which travel back to said additional one way valve, whereby the fluid which passes through said additional one way valve adds to the conventional and simultaneous flow from the pressure chamber resulting from the displacement of the piston.

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**3,165,062**
**VARIABLE VOLUME PUMPING APPARATUS**
Claude A. Clark, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,033
11 Claims. (Cl. 103—38)

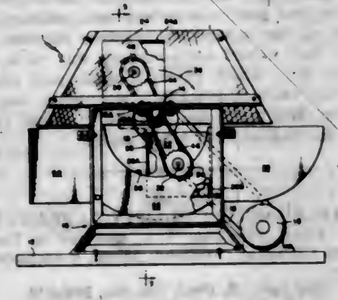


1. A portable pumping unit comprising in combination a prime mover and a variable displacement pump, said pump comprising a frame, a cylinder and piston reciprocal therein, a crosshead, means for mechanically coupling the piston to the crosshead to reciprocate the piston with reciprocation of the crosshead, a walking beam having a central part and two end parts, said crosshead being pivotally coupled to said central part of said walking beam, a pair of crankshafts, each of said crank-

shafts having at least one throw, a pair of connecting rods, one of said connecting rods being pivotally coupled to one end part of said walking beam and to a throw on one of said pair of crankshafts, the other connecting rod being pivotally coupled to the other end of the walking beam and to a throw on said other crankshaft, a pair of planetary gear assemblies each comprising a sun gear, at least one planetary gear and a ring gear, said planetary gear being coupled to a rotatable planet carrier element, one of said crankshafts being operatively coupled to the ring gear of one of said planetary gear assemblies, the other of said pair of crankshafts being operatively coupled to the ring gear of the other of the planetary assemblies, a pair of drive shafts, means for coupling said prime mover to said drive shafts and for rotating each of said drive shafts at least approximately at the same rate, one of said drive shafts being operatively coupled to one of said planet carriers, the other of said drive shafts being operatively coupled to the other of said planet carriers, a pair of multiple disc clutch assemblies each having a fixed segment and a rotatable segment, the rotatable segment of each clutch assembly being fixedly coupled to the sun gear of one of said planetary gear assemblies and the fixed segment of each clutch assembly being rigidly coupled to said frame, and means for actuating said clutch assemblies independently of one another.

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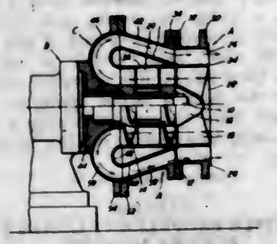
**3,165,063**
**FLUID MOVING DEVICE**
James Leland John, deceased, late of South Colby, Wash., by Catherine John, executrix, South Colby, Wash.; Marguerette Marie Lewis, administratrix, de bonis non, of said James Leland John
Filed June 18, 1962, Ser. No. 203,395
5 Claims. (Cl. 103—80)



1. A fluid moving device, comprising:
(*a*) a supporting and positioning frame;
(*b*) a transversely disposed rotary power input shaft supported by said frame;
(*c*) power means for driving said input shaft;
(*d*) two spaced apart and parallel impeller arms operatively secured at their midpoints to said input shaft and disposed at right angles thereto;
(*e*) impeller supporting and positioning shafts, revolvably mounted, one in each of the opposite ends of said arms;
(*f*) an impeller fixedly secured to each of said impeller shafts, said impellers having two spaced and parallel fluid moving sides connected at their opposite sides by supporting parallel sides that are fixedly secured to said impeller shafts;
(*g*) impeller positioning chain sprockets secured against rotation and coaxially disposed with respect to said power input shaft;
(*h*) a driven chain sprocket secured to each of said impeller shafts and aligned respectively for coaction with said positioning sprockets, said driven sprockets being larger in diameter than said driving sprockets and proportioned to present the closed, fluid moving sides of said impellers in the vertical plane as they pass through the lower portion of their travel and to present the said closed fluid moving sides of said impellers in a horizontal plane as they move through the upper portion of their travel, and
(*i*) a fluid guiding trough substantially enclosing the lower half of said impellers as they pass through the lower and fluid moving portion of their travel.

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**3,165,064**
**FLOW-REVERSAL PROPELLER PUMP**
Leo Drago, Schio, Italy, assignor to ILMA-Industria Lavorazione Metalli Antiacidi dei F.lli Drago S.a.S., a corporation of Italy
Filed Aug. 5, 1963, Ser. No. 299,898
Claims priority, application Italy, Aug. 9, 1962, 26,261/62
2 Claims. Cl. 103—93)



1. A liquid flow reversing propeller pump including a liquid inlet and outlet section, an impeller section and a flow direction reversing section, said flow direction reversing section comprising a member having a semi-toroidal passage therethrough and having an inlet end and an outlet end facing in the same general direction, said semi-toroidal passage having a substantial radius of curvature to provide for liquid direction flow reversal with a minimum of turbulence, said liquid inlet and outlet section comprising a generally cylindrical inlet passage and an annular liquid outlet passage surrounding said inlet passage and separated therefrom by a common wall member; said impeller section including an annular pumping passage communicating at one end with the inlet passage and at the other end with the inlet end of the flow direction reversing section and an annular intermediate passage surrounding said pumping passage and communicating at one end with the annular outlet passage and at the other end with the outlet end of said flow direction reversing section; an impeller shaft extending axially through the annular pumping passage, a pair of axially spaced liquid impeller means secured to rotate with the impeller shaft, and a liquid flow diffuser member positioned in said annular pumping passage between said pair of spaced impeller means.

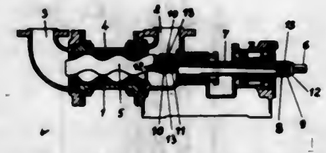
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**3,165,065**
**FLEXIBLE COUPLING FOR SCREW PUMP ROTORS**
Josef Stickel, Selb, Bavaria, Germany, assignor to Gebruder Netzsch Maschinenfabrik, Selb, Bavaria, Germany, a firm
Filed July 24, 1961, Ser. No. 153,771
Claims priority, application Germany, July 26, 1960, N 18,682; Nov. 2, 1960, N 19,128; Apr. 13, 1961, N 19,883, N 19,884; May 20, 1961, N 20,075
7 Claims. (Cl. 103—117)

1. In a screw-pump in which the screw-rotor of the pump is driven from a driven shaft rotating on a fixed axis through a link-rod connected between the drive shaft and the rotor, an improved flexible coupling between said link-rod and said rotor comprising, a hollow head-portion



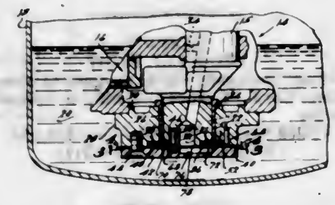
formed integrally on the end of said rotor and located within the fluid passage of said screw pump, said head-portion having a cylindrical cavity formed in the end thereof and receiving an end portion of said link-rod, an enlarged metallic sleeve surrounding the end portion of said link-rod located within said cylindrical cavity and having a splined connection with said link-rod, an elastic sleeve formed of rubber-like material located within said hollow head-portion and embracing said enlarged metallic sleeve, a pair of cup-like rings surrounding the end



portions of said elastic sleeve and having outside diameters to have close-fitting contact with the inner wall of said cylindrical cavity, means securing the inner surface of said elastic sleeve against turning with respect to said metallic sleeve, the assembly comprising said rings, elastic sleeve and metallic sleeve being insertable as a unit through the open end of said cylindrical cavity, and a pressure ring threaded into the end of said cylindrical cavity to exert continuous axial pressure on said elastic sleeve.

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**3,165,066**
**UNIDIRECTIONAL FLOW ROTARY PUMP**
Thomas W. Phelps, York, Pa., and James A. Short, Anna, Ohio, assignors to Copeland Refrigeration Corporation, Sidney, Ohio, a corporation of Michigan
Filed July 11, 1962, Ser. No. 209,143
5 Claims. (Cl. 103—126)

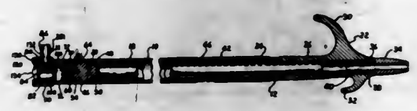


1. In a reversible pump having suction and discharge port means communicating with rotary pumping means, a rotatable portion of said pumping means keyed to a rotatable drive shaft and axially movable thereon, a stationary member supporting one side of said rotatable pumping means portion, and reversing means operatively connected to one portion of said pumping means and sandwiched in slidable frictional engagement between the other side of said rotatable pumping means portion and a radial surface on said drive shaft, said reversing means being actuatable in response to changes in the direction of rotation of the drive shaft for shifting said one pumping means portion relative to other portions of said pumping means to maintain unidirectional output of the pump.

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**3,165,067**
**COMBINED BOAT HOOK AND PUMP**
Harry Greenwald, 3121 Sheridan Road, Chicago, Ill.
Filed Jan. 30, 1962, Ser. No. 169,828
1 Claim. (Cl. 103—153)

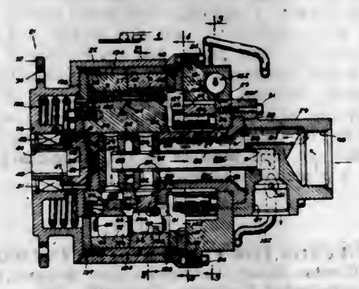
An article of manufacture comprising an elongated outer boat hook member; an elongated inner boat hook member positioned within said outer boat hook member and dimensioned to provide a substantially waterproof seal between at least one portion of itself and the inner surface of said outer boat hook member; said inner boat hook member having a pair of curvilinear hook projections extending from one end thereof; and valve means positioned adjacent said elongated outer boat hook member comprising a valve body having an inlet chamber of a predetermined configuration and an outlet chamber of a distinct predetermined configuration and separated from said inlet chamber, a disc shaped valve element positioned adjacent both said inlet and outlet chambers and having formed therein a pair of pivotable valve flaps through which liquid can pass, and a valve retainer positioned adjacent said valve element, said outlet chamber being shaped



so as to permit a first of said flaps to swing into said outlet chamber and said valve retainer being shaped so as to prevent said first flap from swinging through said valve retainer, said inlet chamber being shaped so as to prevent the second of said flaps from swinging into said inlet chamber and said valve retainer being shaped so as to permit the second of said flaps to swing through said valve retainer, whereby said article of manufacture can be operated to selectively pump a liquid into said outer boat hook member and then out of said outer boat hook member responsive to the manipulation of said inner boat hook member in and out of said outer boat hook member.

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**3,165,068**
**FLUID POWER APPARATUS**
Peter B. Burnham, Boston, and James L. Coakley, Wilmington, Mass., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed June 27, 1960, Ser. No. 39,174
7 Claims. (Cl. 103—161)



1. A variable displacement fluid power device comprising: an outer housing; a pair of axially aligned reaction members, each having elliptical inner surfaces, mounted within said outer housing for a limited amount of rotation therein; a rotor member disposed within said reaction members and formed with a pair of axially spaced, radial bores; inlet and outlet conduit means for conducting fluid to and from said bores; piston means disposed within each bore and biased toward one of said elliptical inner surfaces and reciprocable within the bore by rotation of the rotor within the reaction member; and means for rotating said reaction members with respect to said inlet and outlet conduit means to vary the output of said fluid power device including, a yoke member shiftable in one coordinate direction, ring members connected to the reaction members, and pin means connecting the yoke member and ring members to rotate the latter synchronously in response to linear movement of the yoke member.

shafts having at least one throw, a pair of connecting rods, one of said connecting rods being pivotally coupled to one end part of said walking beam and to a throw on one of said pair of crankshafts, the other connecting rod being pivotally coupled to the other end of the walking beam and to a throw on said other crankshaft, a pair of planetary gear assemblies each comprising a sun gear, at least one planetary gear and a ring gear, said planetary gear being coupled to a rotatable planet carrier element, one of said crankshafts being operatively coupled to the ring gear of one of said planetary gear assemblies, the other of said pair of crankshafts being operatively coupled to the ring gear of the other of the planetary assemblies, a pair of drive shafts, means for coupling said prime mover to said drive shafts and for rotating each of said drive shafts at least approximately at the same rate, one of said drive shafts being operatively coupled to one of said planet carriers, the other of said drive shafts being operatively coupled to the other of said planet carriers, a pair of multiple disc clutch assemblies each having a fixed segment and a rotatable segment, the rotatable segment of each clutch assembly being fixedly coupled to the sun gear of one of said planetary gear assemblies and the fixed segment of each clutch assembly being rigidly coupled to said frame, and means for actuating said clutch assemblies independently of one another.

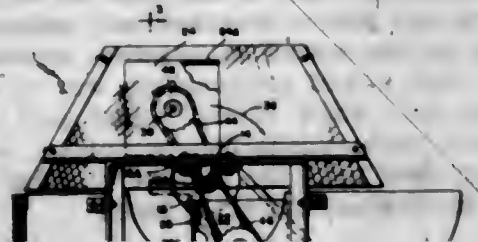
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3,165,063

## FLUID MOVING DEVICE

James Leland John, deceased, late of South Colby, Wash., by Catherine John, executrix, South Colby, Wash.; Margurette Marie Lewis, administratrix, de bonis non, of said James Leland John

Filed June 18, 1962, Ser. No. 203,395
5 Claims. (Cl. 103—99)



and proportioned to present the closed, fluid moving sides of said impellers in the vertical plane as they pass through the lower portion of their travel and to present the said closed fluid moving sides of said impellers in a horizontal plane as they move through the upper portion of their travel, and

(*i*) a fluid guiding trough substantially enclosing the lower half of said impellers as they pass through the lower and fluid moving portion of their travel.

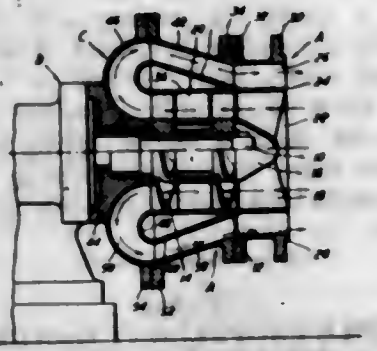
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3,165,064

## FLOW-REVERSAL PROPELLER PUMP

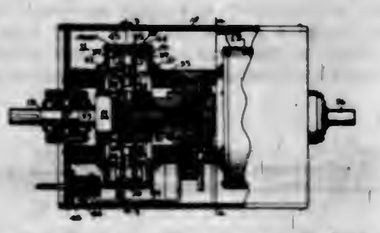
Leo Drago, Schio, Italy, assignor to ILMA-Industria Lavorazione Metalli Antiacidi dei F.lli Drago S.a.S., a corporation of Italy

Filed Aug. 5, 1963, Ser. No. 299,898
Claims priority, application Italy, Aug. 9, 1962, 26,261/62
2 Claims. Cl. 103—93)



1. A liquid flow reversing propeller pump including a liquid inlet and outlet section, an impeller section and a flow direction reversing section, said flow direction reversing section comprising a member having a semi-toroidal passage therethrough and having an inlet end and an outlet end facing in the same general direction, said semi-toroidal passage having a substantial radius of curvature to provide for liquid direction flow reversal with a minimum of turbulence, said liquid inlet and outlet section comprising a generally cylindrical inlet passage and an annular liquid outlet passage surrounding said inlet passage and separated therefrom by a common wall mem-

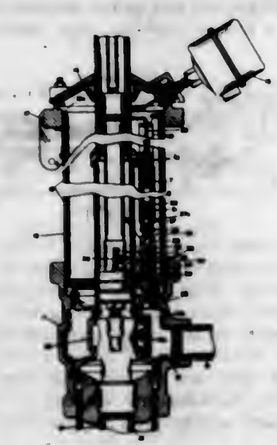
3,165,069
**HYDRAULIC PRESSURE AUTOMATIC PROPULSION SYSTEM**
John M. Adamek, New York, N.Y., assignor to Jaromir Tobias, Rhinebeck, N.Y.
Filed July 27, 1961, Ser. No. 127,334
2 Claims. (Cl. 103—161)



1. A positive displacement radial piston fluid pressure generator comprising a housing, a stationary pintle shaft rigidly supported in said housing, a rotatable cylinder barrel mounted for rotation about said sationary pintle shaft and having radially arranged cylinders, pistons reciprocable in said cylinders, said cylinders having cylinder passages open to said pintle shaft, said pintle shaft having diametrically opposite arcuate inlet and outlet ports formed in the periphery thereof with which said cylinder passages alternately register as the cylinder barrel rotates, said pintle shaft having axially extending inlet and outlet passages connected respectively with said inlet and outlet ports, an input shaft rotatably supported in said housing and drivingly coupled to said cylinder barrel, a reaction ring disposed about said cylinder barrel and displaceable transversely with respect to the axis of rotation of said barrel, means for shifting said ring transversely to thereby vary the eccentricity of said reaction ring relative to said cylinder barrel, anti friction means on the radial outer end of said pistons, track means on said reaction ring for sliding engagement with said anti friction means, a supercharging pump having pressure outlet lines connected to said inlet passage and said outlet passage of said pintle, and maintaining a pressure head in said passages in excess of the pressure needed to constantly maintain said anti friction means of said pistons against said track means, and a check valve interposed in said outlet lines of said supercharger pump to maintain the fluid pressure in said supercharger pump below a predetermined level.

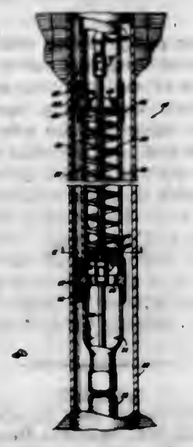
3,165,070
**CONNECTOR FOR FLUID SYSTEM COMPONENTS**
John Gordon Baker, Evansville, Wis., assignor to Baker Manufacturing Company, Evansville, Wis., a corporation of Wisconsin
Filed June 3, 1963, Ser. No. 285,050
12 Claims. (Cl. 103—202)

1. A pitless water system including an upwardly extending casing, a spool located within said casing having a first terminal passage therein subject to water system pressure, and water system components having a second terminal passage for transmission of fluid pressure located within said casing, and a quick connect and disconnect component connector, said connector comprising, a socket member having a mouth end and a base end attached in fluid-tight communication to one of said terminal passages, a substantially cylindrical socket extending into said socket member from said mouth end toward said base end, an arcuate channel extending around said socket, fluid-tight passage means extending from said channel to said base end, a plug member having one end attached in fluid-tight communication to the other of said terminal passages and having a plug withdrawably engaged within said socket in substantially rigid relation to support said water system components within said casing in protected relation, means for providing a substantially fluid-tight seal between said plug and said socket on each side of said channel, fluid-tight passage means extending through said plug member from a point in communication with said channel to said end adapted for communication with said other passage, said con-



nector being adapted to transmit changes in fluid pressure from said first terminal passage to said second terminal passage, said component and said connector member attached to said second terminal passage being movable as a unit whereby said attached member may be withdrawn from engagement with said other component member and from said casing by applying an upward force on said component.

3,165,071
**OIL WELL PUMP**
George Horg, Southgate, Calif., assignor to Monarch Engineering Corp., Gardena, Calif., a corporation of California
Filed Sept. 4, 1962, Ser. No. 221,134
2 Claims. (Cl. 103—211)



1. An oil well accessory for use in an oil well having a casing extending from the well head to an underground pool of crude oil, a pump disposed in the casing near the bottom of the casing and having a reciprocating piston and piston rod for forcing the crude oil from a discharge end and pumping the crude oil from the bottom



to the well head, a plurality of sections of tubes interconnecting with each other to form a tubing string extending from the bottom of the casing to the well head so that said crude oil may flow through said tubing to the well head, a sucker rod string extending axially of the tubing string and through the discharge end, said sucker rod string being drivingly connected to the piston rod in the pump, said accessory including the combination of:

a section of tubing having an inside diameter that is substantially the same as the inside diameters of said tubing sections,

fastening means on the upper end of said last tubing section, said fastening means being effective to be interconnected with the lower end of the tubing string for securing the last tubing section to the string,

a flange on the inside of the coupling, said flange having an opening that is large enough for the sucker rod string to pass therethrough but is smaller than the inside diameter of the tubing string,

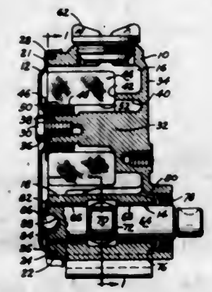
fastening means on the lower end of the last section for communicating the lower end of the last section with the discharge end of the pump for receiving the crude oil pumped therefrom,

a flange on the inside of the coupling, said flange having an opening that is large enough for the sucker rod string to pass therethrough but is smaller than the inside diameter of the tubing string,

a plate reciprocally disposed in the last tubing section, said plate having an outside diameter that is greater than the opening formed by the second flange, and

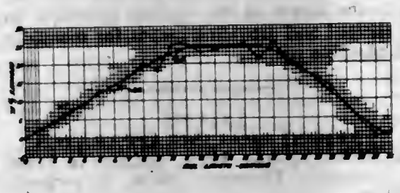
a spring disposed in the last section, one end of the spring bearing against the first flange so as to be retained in the section, the other end of the spring bearing against the plate for biasing the plate against the second flange.

3,165,072
**PUMP AND ROTARY CONSTRUCTION**
Harold B. Schultz, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Sept. 21, 1961, Ser. No. 139,712
3 Claims. (Cl. 103—217)



1. A pump construction comprising: a generally horizonal cylindrically shaped housing having an internal cup-shaped reservoir cavity opening into one end surface of said housing, the open end and closed end of said housing forming the opposite sides of said pump construction, said housing including an integral boss portion extending between said ends adjacent the lower side of said housing, a shaft receiving opening in said boss portion extending between said ends of said housing, a shaft journalled in said opening and projecting from said closed end of said housing, said housing having a generally cylindrically shaped sidewall surrounding said reservoir cavity and said shaft, an annular recess machined in the outside surface of said cylindrical sidewall adjacent said open end, a cup-shaped cover plate with its bottom covering said open end and its sidewall extending over said recess in said cylindrical wall, said cover plate being dished outwardly to form a lubricant passage a seal positioned between said sidewall of said cover plate and said recess, pump means driven by said shaft and opening into said cavity to be immersed in its fluid and receive suction therefrom, and a ball thrust bearing positioned between said shaft and said cover plate such that said ball thrust bearing is in to said lubricant passage.

3,165,073
**METHOD OF LINING CURVED TRACK**
Weltzin B. Blix, South Milwaukee, and John R. Rushmer, Milwaukee, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 28, 1958, Ser. No. 751,199
9 Claims. (Cl. 104—8)

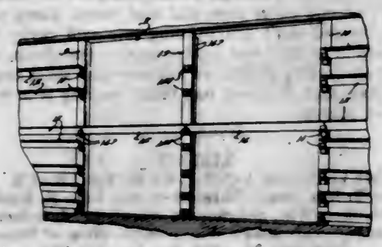


1. A method of lining curved track, including the steps of establishing a reference line between spaced front and rear stations on the track, positioning the reference line in predetermined lateral relation at both stations from one of the rails as the line rail, establishing an intermediate station between and in predetermined spaced relation to the front and rear stations, moving the stations, as a group, around the curve in generally equal longitudinal steps, while maintaining their relative spacing, sensing at each step a variation, if any, indicative of the lateral distance of the reference line from the line rail to the previously established predetermined lateral relation at the intermediate station to establish a series of actual variations, plotting a two dimensional graph with the actual variations as one dimension and the longitudinal steps as the other, averaging a curve through the actual variations, taken as a group, to establish a series of desired variations, repeating the step of moving the stations, as a group, around the curve in generally equal steps, and shifting the track laterally at each step, where necessary, at the intermediate station to establish the desired variation from the reference line on the track.

3,165,074
**DOORWAY CONSTRUCTION**
Henry L. Dunlap, Dearborn, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Original application June 11, 1956, Ser. No. 590,532, now Patent No. 2,994,285, dated Aug. 1, 1961. Divided and this application Oct. 27, 1960, Ser. No. 65,345
7 Claims. (Cl. 105—369)

1. In a removable vertical post for the doorway of a freight car or the like, an elongated body having a fixed pin extending parallel to its length projecting from the bottom end, said body having a pair of opposed sides each having a plurality of apertures spaced longitudinally thereof adapted to receive attachment means of associated wall members, means disposed intermediate and in spaced relation to said sides and between and in spaced relation to said apertures and providing a centrally located pivot surface adjacent the bottom end, said apertures extending axially along said body member throughout at least a portion of the axial length thereof throughout which said

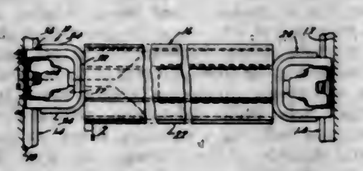
means providing said pivot surface extends, a movable pin pivotally mounted on said surface to swing about an axis transverse to the length of the bar, said movable pin having a latch shoulder facing the end of the bar, and handle



means connected to the movable pin and extending transversely to the length of the bar and accessible from the outside thereof and providing means for manually pivoting said movable pin.

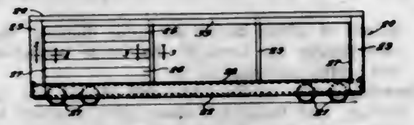
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3,165,075
**FREIGHT BRACING APPARATUS**
Fred B. Miller, Livonia, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Aug. 15, 1961, Ser. No. 131,624
5 Claims. (Cl. 105—369)



1. In an apparatus for supporting and bracing general merchandise in freight cars and the like, a crossbar end fitting comprising a body member having means at one side thereof for connecting said end fitting to an associated crossbar, said body member including a yoke portion having spaced arms extending in opposed relation to said means and a cap overlying and secured to the top of said yoke portion and defining an opening extending transversely of said body member and communicating with the space between said arms, said cap extending beyond the outer end of said arms of said yoke portion and including a hook portion including a support surface for supporting said end fitting on an associated support member and having an anti-pullaway surface extending substantially at right angles to said support surface for engaging behind a part of said associated support member to prevent said end fitting from pulling away therefrom, a latch member disposed within said opening and between said arms of the yoke portion of said body member and having a latch pin extending in generally opposed relation to said connecting means, means mounting said latch member on said body member for movement relative thereto between a retracted inoperative position a normal operative position in which the axis of said latch pin is disposed parallel to said support surface for engaging said support member when the latter is in its normal position and a fully extended position disposed beyond said normal operative position in a direction away from said retracted position, and means engaging said latch member and urging it toward said fully extended position.

3,165,076
**DOOR POST LOCKING MEANS FOR OPEN SIDE RAILWAY CARS OR THE LIKE**
Franklin P. Adler, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 2, 1961, Ser. No. 128,869
7 Claims. (Cl. 105—378)



1. In an open side railway car having a car structure which includes an underframe, car ends, a roof structure supported by said car ends and free of intermediate vertical supports, and a floor structure supported by said underframe, and also having a removable door post having a vertically arranged door track, means mounting said removable door post on said car structure, and a roll up door cooperating at one end with said door track, the combination of means locking the lower end of said door post in its operative position, said post locking means comprising, in combination, a bolt member, means on the lower end of said door post receiving said bolt member in vertically sliding relationship, an opening in the floor structure of the car adapted to receive the end of said bolt member so that said door post may be locked in its operative position, means operative only upon the closing of said roll up door for maintaining said bolt member in its operative position, and position indicating means operative prior to the closing of said door for indicating whether or not said bolt member is in its operative position.

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3,165,077
**PORTABLE SEAT ASSEMBLY**
Donald M. Olson, 613 Pinon Drive, P.O. Box 2165, Santa Fe, N. Mex.
Filed Aug. 15, 1963, Ser. No. 302,316
3 Claims. (Cl. 108—33)



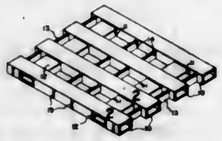
1. A portable seat assembly which comprises in combinations:
(*a*) a seat member of stacked flat strips with aligned openings, said strips being held together by a hollow rivet so that they can be fanned out to provide a resilient seat and can be pushed together to form an aligned unit of small cross sectional area,
(*b*) a supporting tube having one unobstructed end with closure-engaging means and one plugged end with an inner opening, and a fastening means to fit the inner opening, pass through the hollow rivet, and close the tube end,
(*c*) a closure member designed to fit and be held by the unobstructed end of the tube, said closure member having a tapered point on one side and a rubbery pad on the other, and



(*d*) a base plate having an opening therethrough, which is larger than the maximum cross-sectional area of the tapered point, the base plate and the aligned seat unit fitting within the tube and being retained therein by the closure member to form a small, light package.

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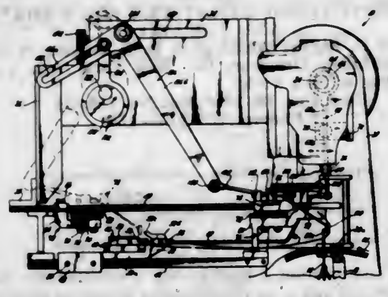
3,165,078
**PALLET**
James A. White, San Rafael, Calif., assignor to Materials, Inc., San Rafael, Calif.
Filed Nov. 5, 1962, Ser. No. 235,489
3 Claims. (Cl. 108—56)



1. An expendable material handling pallet comprising, in combination, a plurality of boxes aligned in substantially parallel spaced apart relation to one another, each of said boxes provided with a top panel having a top surface for receiving and supporting a load, a bottom panel, and side panels interconnecting said top and bottom panels, said side panels provided with spaced apart apertures, and a plurality of spaced apart support members aligned substantially perpendicular to the longitudinal axis of said boxes, said support members passing through said apertures of said boxes and extending from said top panels to said bottom panels to support said boxes and hold said boxes in spaced apart relation.

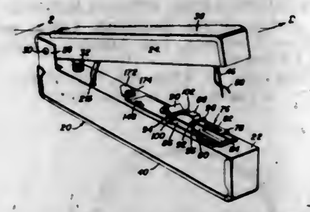
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3,165,079
**MACHINE FOR ROOTING HAIR INTO DOLL'S HEAD**
Frank A. Richards, Hollis, and Ragnar W. Winberg, Floral Park, N.Y., assignors to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Jan. 10, 1962, Ser. No. 165,453
8 Claims. (Cl. 112—79.5)



1. A machine for rooting hair into a doll's head comprising chain-stitching mechanisms including a needle movable through stitch-forming stroke for chain stitching hair into a doll's head, hair-cutting mechanisms spaced from said needle, a loop-drawing carriage including a hair guide pivotally mounted on said carriage, means for moving said carriage in a loop-drawing path including a needle-engaging segment during which said hair is engaged about said needle and said loop-drawing path further including a cutter-engaging segment during which said hair is engaged in said hair-cutting mechanisms, and actuating means for said hair-cutting mechanisms for severing hair loops in timed relation to operation of said chain-stitching mechanisms.

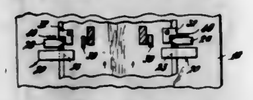
3,165,080
**HAND OPERATED BUTTON SEWER**
Lewis Castelletti, Buckeystown, Md. (Rte. 1, Mount Airy, Md.)
Filed July 19, 1963, Ser. No. 296,232
12 Claims. (Cl. 112—112)



1. A hand-operated portable button sewer of a sufficient size, shape and weight to be grasped, supported and manipulated in one hand of the user, said sewer comprising a pair of elongated hollow members constituting a base and a manual operating means, a pivot means connecting said members at one end of each for oscillatory movement towards and from each other, needle means mounted within said operating means at its other end and projectable into said hollow base, thread supply means mounted within said operating means adapted to feed thread therethrough into said needle means, a button and fabric holddown means, means slidably mounting said holddown means upon said base for longitudinal shifting movement therealong, shifting means connected to said holddown means and to said operating means whereby to effect through successive pivotal movements of said members towards each other a shifting of said holddown means successively in opposite directions and thereby alternately position a pair of apertures in a button held by said holddown means for passage of said needle means therethrough, said shifting means including a linkage assembly housed within said hollow members and connected at one end thereof to said holddown means and including at its other end a pair of relatively movable connected links each carried by one of said members.

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3,165,081
**METHOD FOR SHEET SEAMING**
Bernard Delacour Beamish, New Rochelle, N.Y. (22 W. 1st St., Mount Vernon, N.Y.)
Filed Mar. 3, 1961, Ser. No. 93,115
2 Claims. (Cl. 112—262)

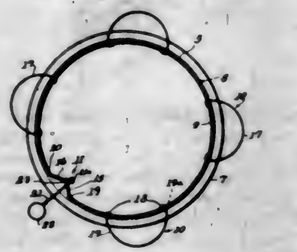


1. The method of finishing a cut sheet having parallel selvage edges transverse to its cut edges, comprising progressively and uninterruptedly advancing the cut edges in spaced parallel relation at a spacing less than the transverse length of the sheet between said edges to places of folding and sewing, folding and sewing incremental portions lengthwise of said edges to form hems while the edges continue to be advanced so that increasing hemmed portions are formed at the far side of the place of folding and sewing and decreasing portions of cut edges are left at the near side, said portions at both sides being unconstrained, advancing the leading ends of the hems independently of the movement of the cut edges and at a slower rate to places for sewing the open ends of the hems so as to leave a slack between the places of folding and sewing the hems and the places of sewing the open ends of the hems, sewing the open ends of the hems from their inner edges outwardly and without interruption rotating the open ends of the hems at the

trailing ends into alignment with the places of folding and sewing for sewing, and sewing said open ends of the hems from their inner edges outwardly.

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3,165,082
## WELD-CONTROLLING, PIPE-ALIGNING BAND
Harold U. Baker, South Pasadena, Calif., assignor to Roscoe Moss Company, Los Angeles, Calif., a corporation of California
Filed June 13, 1960, Ser. No. 35,492
6 Claims. (Cl. 113—103)



1. A weld-controlling and pipe-aligning band comprising a length of strip metal having a cross-sectional form in which the middle longitudinal part of the band is offset from the outer longitudinal parts, whereby there is formed an annular space between said middle part and the inner faces of two vertical end-abutted pipes at the line of abutment and seam at which said pipes are adapted to be welded for accommodating flux and weld material applied from the outside of said seam for effecting the weld, the ends of said strip comprising hinged end-abutted toggle members that, when straightened, expand the band into contact with said inner pipe faces, and means connected to said toggle members and extending in a direction to be outward of said pipes to move said members in a band-expanding direction.

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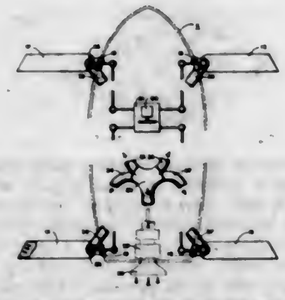
3,165,083
## CONSTRUCTION OF MARINE VESSELS' HULLS
Frederick Blanchard Romero, 2123 SE. Hawthorne Blvd., Portland, Oreg.
Filed July 31, 1961, Ser. No. 131,047
5 Claims. (Cl. 114—65)



1. A construction of marine vessel comprising framing members being T-bars and the like jointed by metallic welded joints with closed metallic barriers extending throughout the hull portions of said marine vessel, said T-bars and the like being arranged in parallel and in pairs closely approximated but on the opposite surfaces of said closed metallic barriers extending throughout said hull portions where they are joined perpendicularly to said barriers through metallic welded joints and perpendicularly with broad flat metallic joining bars extending through fitting apertures made in said closed barriers, said apertures being completely closed by metallic welded joints with said broad flat joining bars, said broad flat joining bars being placed in plurality and spaced in regular intervals.

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3,165,084
## WATER-JET HYDROFOIL BOAT
Calvin A. Gongwer, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Jan. 7, 1963, Ser. No. 249,768
7 Claims. (Cl. 114—66.5)



1. A water intake and ejection system for a craft of the hydrofoil type powered by water-jet propulsion comprising at least four hydrofoil support means rotatably mounted on said craft, control means connected to each of said support means for controlling movement of said craft about the pitch, yaw and roll axes while said craft is supported by said support means, water-jet propulsion means in said craft, conduit means in at least two of said support means for conveying water to said propulsion means, and said at least two support means being provided with inlets located in the respective surfaces thereof and communicating with said conduit means for inducting water into said conduit means through the inlets.

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3,165,085
## PASSIVE STABILIZER SYSTEM FOR A BOAT AND THE LIKE
Kenneth C. Ripley, Washington, D.C., assignor to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York
Filed Dec. 18, 1962, Ser. No. 245,476
9 Claims. (Cl. 114—125)



1. In combination a boat having a substantially short period of roll and a stabilizer system therefore including an elongated tank extending transversely of said vessel, said tank being substantially rectangular in cross section, said cross section being substantially constant throughout the tank, a plurality of horizontal hydrostatic flat plate members disposed in stacked spaced relationship in opposite ends of said tanks and spaced from the opposite end walls of the tank to provide outer wing compartments in the tank, weir means disposed along the center line of said tank and extending transversely of the main axis of said tank, said weir means mounted on the bottom of said tank and extending upwardly from the bottom a distance at least equal to one half the depth of liquid within said tank, said plate members and weir means providing inner wing compartments between the weir means and the plate members on both sides thereof, and a body of liquid disposed in said tank for transfer from one end to the other of the tank.



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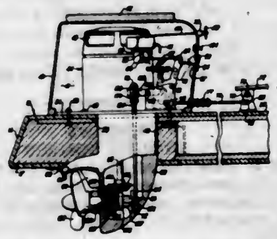
3,165,086
## OSCILLATING PROPELLER
Calvin W. Eastep, 39 Cayuga St., Trumansburg, N.Y.
Filed Sept. 25, 1962, Ser. No. 225,989
6 Claims. (Cl. 115—28)



6. A propeller comprising a plurality of elongated rigid body members arranged in closely spaced, side by side, parallel relation to one another in a common plane to form a paddle-like body outlined at two opposite edges by the ends of said body members and at two other opposite edges by the endmost body members of said row, vertical hinge means connecting the trailing end of each body member to the leading end of the next succeeding body member, each of said hinge means working about a vertical axis, an elastomer body intersected by each of said axes and operatively connected to the companion pair of body members to provide spring means yieldingly connecting said body members together and yieldingly maintaining them in parallel relation in a common plane but permitting them to be displaced laterally of said common plane, and means arranged to oscillate the leading body member at least about 90° about a vertical axis adjacent its leading edge, the resistance of said medium in which the propeller is immersed to such oscillation of said leading body member and of the succeeding body members so connected thereto by said pivot pins causing said row of body members to form a curve as the row swings transversely away from said common plane.

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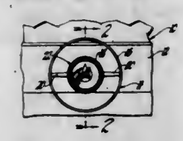
3,165,087
## ENGINE PROPELLED WATER SKI
Mack E. Stevens, 15724 Raymond Ave., Gardena, Calif.; Roger A. Monk, 4709 Bindewald Road, Torrance, Calif.; and Norman W. Slick, 1349 W. 135th St., Gardena, Calif.
Filed Feb. 9, 1961, Ser. No. 88,120
2 Claims. (Cl. 115—70)



1. A water vehicle comprising a hull; an engine and engine driven propeller mounted on said hull for propelling said vehicle through the water; an engine cover on and forming a water tight seal with said hull the engine cover providing an air reservoir for said engine; means on said cover for admitting engine required air into said reservoir; a clutch between said engine and propeller for engaging and disengaging said propeller with said engine; a throttle on said engine; and a common structure interconnected to said throttle, clutch, and means for substantially simultaneously actuating said throttle, clutch and means, said throttle being movable between a retarded position at which it admits only sufficient fuel to the engine for the engine to idle and an advanced position at which it admits more fuel to the engine to cause increased engine speed, and said throttle being spring biased to its said retarded position, said clutch being disengaged at said idle position of the throttle and being engaged when the throttle is moved against said spring biasing from said retarded to said advanced position, and said means for admitting air being in a relatively constricted position at said idle position of the throttle and being in a relatively open position when the throttle is moved against said spring biasing from said retarded to said advanced position, whereby the propeller will only be driven by the engine when the throttle is in its advanced position and the means for admitting air will only be in its relatively open position when the throttle is in its advanced position, and if the throttle is inadvertently released by the vehicle operator the throttle will be returned to its retarded position by the spring biasing and the engine will be automatically returned to its idle condition, the clutch will be automatically disengaged to stop propulsion of the vehicle, and the means for admitting air will be automatically moved to its said relatively constricted position.

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3,165,088
## RUDDER POSITION INDICATOR
Raymond W. Hill, Sellersville, and Frank P. Kimball, Souderton, Pa., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1963, Ser. No. 319,428
5 Claims. (Cl. 116—31)



1. A rudder position indicator for a boat having a rudder and a steering wheel for moving said rudder and comprising:

a housing adapted to be secured in said steering wheel and having an axis coinciding with the axis of said steering wheel, said housing being rotatable with said steering wheel about said axis;

a shaft secured in said housing and rotatable therewith and having an axis coinciding with said axis of said housing, said shaft having an eccentric portion with an axis disposed in parallel spaced relation to said axis of said shaft;

a disc rotatably mounted on said shaft and having a weight secured thereto to cause said disc to remain stationary when said shaft is rotated with said housing and said steering wheel;

a first gear rotatably mounted on said shaft and having a plurality of posts extending axially therefrom, and in regularly spaced circumferential relation, said first gear having indicator means extending radially outwardly therefrom;

a second gear rotatably mounted on said eccentric portion and disposed within the circumference of said posts, said second gear having a plurality of teeth extending radially outwardly therefrom and engaging some of said posts on said first gear and having one less teeth than the number of posts on said first gear, and said second gear being engaged with said stationary means and adapted to nutate about the axis of said shaft when said shaft is rotated to drive said first gear in direct proportion to the rotation of said steering wheel and indicate the position of the rudder on said boat.

3,165,089
REMINDER DEVICE
Cecil B. Fischbach, 914 Copley Road, Akron, Ohio
Filed Feb. 25, 1963, Ser. No. 260,408
4 Claims. (Cl. 116—134)



1. In a quick inventory apparatus the combination of a flat rectangularly shaped plate having an elongated rectangularly shaped recessed portion in one face thereof extending substantially parallel and adjacent to one edge thereof, said edge having a plurality of equally spaced open slots therealong substantially perpendicular to the edge and extending inwardly across the width of the recessed portion,
a raised half-round rib interposed substantially at the center of the length between adjacent slots to define inventory indicating positions on both sides thereof,
a long plastic strip having elastic qualities removably received in said recessed portion of said plate,
a plurality of elastic fingers integrally formed with the strip extending outwardly therefrom so that each finger is received through a respective slot in the plate, and
a bead integrally formed at the outward extension of each of said fingers proportioned so as to cause a continuous tensioning on its respective finger to urge said plastic strip into position when said bead is in either indicating position with respect to said raised rib.

3,165,090
HIGH-FREQUENCY SONIC SIGNAL TRANSMITTER MECHANISM
Theodore D. Smith, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 7, 1962, Ser. No. 200,870
6 Claims. (Cl. 116—137)



1. In a high-frequency sonic signal transmitter, the combination with a tuned rod-type longitudinal-mode transducer element of an actuator mechanism therefor comprising, a movable hammer positioned in extension of and spaced from one end of said transducer element, means providing a fixed support in said transmitter, a coiled compression spring connected at one end with said support and at the opposite end with said hammer, a fixed guide rod mounted on said support means for mounting said hammer on said fixed guide rod so that said fixed guide rod guides the movement of said hammer, a pivotally mounted pawl spring-biased to engage said hammer, a manually operable slide for moving said pawl and the hammer to compress said spring, said slide and said rod being relatively oriented with respect to one another so that said hammer and said pawl move in divergent directions as said pawl moves said hammer in a direction to compress said spring, whereby said hammer and said pawl disengage after a predetermined movement of said slide, releasing said hammer to follow said rod guide and strike said transducer element under the force of said spring.

3,165,091
INTERCHANGEABLE HONDA
Charles L. Welton, Saratoga, Wyo.
Filed Apr. 22, 1963, Ser. No. 274,622
6 Claims. (Cl. 119—153)

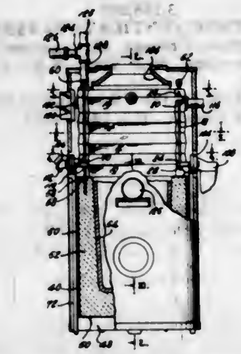


1. An interchangeable, releasable honda for the end of a lasso practice rope, comprising, in combination therewith:
(*a*) a short length of rope adapted to be looped to form a honda eye;
(*b*) a rigid, flat, box-shaped head having three closely-spaced passageways extending through it, as from a bottom surface to the top thereof, and with the passageways constituting a central passageway and opposing side passageways, wherein the end of the lasso rope is adapted to be threaded through the central passageway as from the bottom surface of the head to the top thereof, and the two ends of the honda eye rope are adapted to be threaded through the two side passageways from the top of the head to the bottom thereof;
(*c*) a connecting means at the end of the lasso rope and at a first end of the eye rope adapted to enlarge the said rope ends and to lock the respective rope ends in place on the head; and,
(*d*) a ferrule at the second end of the eye rope adapted to frictionally fit in its respective side passageway to normally hold the eye loop in place on the head, as during lasso practice, but to release under pressure as when an object is caught by the lasso.

3,165,092
MIDGET BOILER
Abraham B. Chadwick, Jeffersontown, Arthur O. Sjoden, Louisville, and Wilson J. Witten, Jr., Houston Acres, Ky., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,863
14 Claims. (Cl. 122—214)

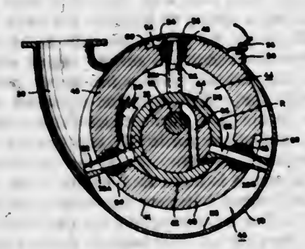
1. A boiler comprising top, bottom, and intermediate horizontally arranged and superimposed heating sections, said heating sections having a water passage around the periphery thereof, at least some of said intermediate heating sections, having means defining two generally diametrically opposed upper openings and two generally diametrically opposed lower openings communicating with said peripheral passages, a pair of first conduit means communicating corresponding upper and lower openings of the last said superimposed intermediate heating sections to provide parallel flow paths between the latter, said top heating section having an air outlet connection, a water outlet connection remote from said air outlet connection, and means defining a bottom opening, and second conduit means communicating the last said opening with a top opening of an underlying intermediate heating section, said air outlet connection overlying said





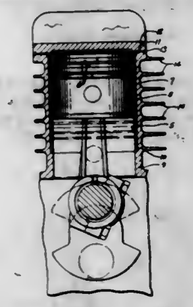
second conduit means such that any air and gaseous fluids carried in the water entering said top heating section through said second conduit means will be expelled through said overlying air outlet connection while the water passes through said top heating section to said remote water outlet connection.

3,165,093
ROTARY INTERNAL COMBUSTION ENGINE
Fernando Etxegoien, % Iron Mine Co. of Venezuela, El Pao Edo, Bolivar, Venezuela
Filed Sept. 25, 1962, Ser. No. 226,130
16 Claims. (Cl. 123—16)



1. In a rotary internal combustion engine, the combination comprising a hollow casing, said casing having its interior defined by intersecting surfaces of axially parallel but relatively eccentric cylinders of substantially different diameters, a cylindrical stator fixed within the casing concentrically to the larger diameter surface, an impeller rotor having a cylindrical hub rotatably journaled on said stator and a plurality of uniformly angularly spaced vanes radiating from said hub into wiping engagement with said larger diameter surface, an annular rotor supported in said casing for rotation coaxially with said smaller diameter surface, with its inner periphery engaging and forming a first seal with said hub, and with its outer periphery in concentric wiping engagement with said smaller diameter surface to form a second seal, said anular rotor dividing the hollow interior of the casing into inner and outer crescentic compartments, said vanes being radially slidably disposed through and in sealing relation with said annular rotor, said vanes dividing said inner compartment into working chambers which are alternately expanded and contracted incident to rotation of said rotors, and cooperating with said first seal to compress fuel within the inner compartment, said annular rotor being provided with outwardly opening recesses in trailing relation to the respective vanes, said smaller diameter surface closing said recesses successively to form preignition chambers, means for supplying gaseous fuel into the said inner compartment at an angular location in which said working chambers are expanding, to form fuel charges which are then successively compressed between said first seal and the respective vanes, and valve controlled means for delivering the compressed fuel charges from the inner compartment sequentially into the respective preignition chambers.

3,165,094
LINED CYLINDER FOR INTERNAL COMBUSTION ENGINES
Leo J. Lechtenberg, Elm Grove, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,542
9 Claims. (Cl. 123—41.69)

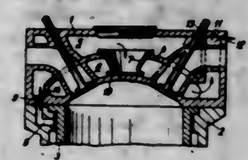


1. In a cylinder block assembly, for an internal combustion engine including a removable cylinder head and a reciprocating skirted piston including at least two spaced piston rings thereon, the combination comprising, a cylinder block formed from cast aluminum and having a bore extending within said block formed with two concentric different diameters therein with a shoulder therebetween, a sintered iron cylinder liner removably fitted into the larger diameter portion of said bore and abutting said shoulder, the inner diameter of said liner being substantially equal to the smaller diameter portion of said bore for forming a substantially continuous cylinder wall therewith when the liner is in place, said liner extending within said cylinder bore a distance only slightly greater than the distance traversed by said piston rings, whereby the piston rings bear against the liner during normal reciprocation of the piston, the skirt of the piston being guided by the unlined portion of the cylinder bore, said liner being clamped against said shoulder by said cylinder head.

3,165,095
CYLINDER HEAD
Otto Erich Adler, Hattingen (Ruhr), Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft, mit beschrankter Haftung, Essen, Germany
Filed Apr. 29, 1963, Ser. No. 276,517
Claims priority, application Germany May 18, 1962
4 Claims. (Cl. 123—41.82)

1. In combination: a cylinder, a cylinder head mounted on said cylinder and having partition means dividing said head into first and second cooling water chambers, said first water chamber having a water inlet for connection with a source of cooling water, said second water chamber having a water outlet for connection with water cooling means and also having a wall portion facing said cylinder and confining therewith a portion of a combus-

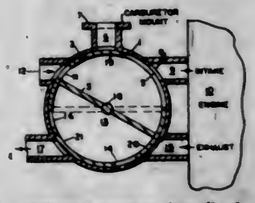
tion chamber, said first water chamber being located behind said second water chamber when looking from said cylinder in axial direction thereof toward said cylinder head, conduit means extending through said partition means and establishing communication between said first water chamber and said second water chamber for con-



ducting the water from said first water chamber to said second water chamber prior to the water passing through said chambers reaching said outlet, and core means arranged on said wall portion and partially extending into the adjacent portion of said conduit means in spaced relationship thereto so as to confine with the adjacent wall of said conduit means an annular passage.

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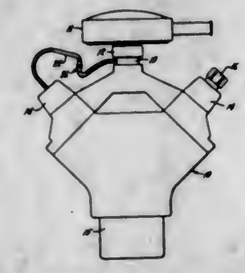
**3,165,096**
**COMPRESSION BRAKE FOR MOTOR VEHICLES**
Jesse D. Langdon, 1 John St., East Rockaway, N.Y.
Filed Apr. 9, 1962, Ser. No. 186,230
5 Claims. (Cl. 123—97)



1. A device of the character described comprising an article of manufacture including a cylindrical casing having a closed end and an oppositely disposed open end, a hollow cylindrical enclosed sleeve inserted into the open end of the casing for rotation therein, said casing provided with inlet means projecting outwardly of said casing to permit passage of compressible fluid mixture, air inlet means spaced laterally of said inlet means for fluid mixture and projecting outwardly of said casing exhaust passage means spaced away from the side of the fluid mixture inlet that is away from said air inlet means and disposed thru and projecting outwardly of said casing for communicating with a source of negative pressure, exhaust outlet means for communicating with atmosphere, same disposed thru said cylindrical wall of said casing and projecting outwardly thereof and spaced laterally away from the side of said air inlet means that is away from said fluid mixture inlet means, said exhaust outlet means located intermediate of said air inlet means and said exhaust passage means, the cylindrical hollow of said sleeve being partitioned longitudinally to form an intermediate intake chamber provided with an elongated port disposed thru the wall thereof for communicating at one and the same time between said inlet means for compressible fluid mixture and said passage means communicating with source of negative pressure, said air inlet means communicating between the intake chamber and atmosphere, an intermediate exhaust chamber being formed on that side of the partition opposite to said intake chamber, same provided with port means thru its cylindrical wall and communicating with said exhaust passage means, another port thru the wall of the exhaust chamber for communicating with said exhaust outlet means, cylindrical wall means of respective chambers extended between respective port means of each chamber and providing valve means for closing and opening respective passage means thru said casing, axially disposed shaft means providing manual central means to rotate said sleeve, said shaft means being axially journaled thru said closed end of said casing.

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**3,165,097**
**CRANKCASE VENTILATING SYSTEM**
Wilfred W. Lowther, Chicago, Ill., assignor to Novo Industrial Corporation, New York, N.Y., a corporation of New York
Filed Feb. 13, 1963, Ser. No. 258,292
16 Claims. (Cl. 123—119)

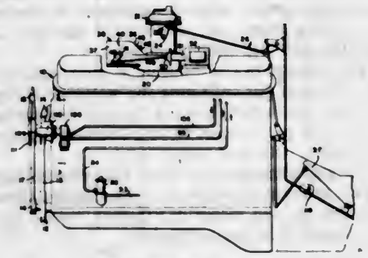


1. For use in an engine crankcase ventilating system wherein a conduit communicates between the engine crankcase and the air intake for the cylinders, a valve structure adapted to be positioned in the conduit including a valve element and a housing having an orifice therein, the valve element being positioned in the housing and being in the form of an elongated pin having a lower portion with a smaller exterior dimension than its intermediate portion, the body of the pin in between the two portions varying in cross sectional area, an upper portion above the intermediate portion constructed to define a greater flow area with the orifice than the intermediate portion, a spring to bias the pin away from the orifice at all times, the spring strength being such that under deceleration conditions on the engine resulting in high vacuum in the air intake, the upper portion will cooperate with the orifice to define a greater flow area resulting in an air flow through the valve greater than when the intermediate portion is cooperating with the orifice to regulate air flow, the at-rest position of the pin, when the spring is at its free length, being such that the flow area defined between the lower portion of the pin and the orifice is substantially greater than the flow area defined between the intermediate portion of the pin and the orifice, the proportioning and dimensioning of the housing, pin, spring and orifice being such that the pin is out of seating contact with the orifice under all load conditions.

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**3,165,098**
**FUEL CHARGE FORMING MECHANISM**
Walter W. Hamby, Smyrna, Ga., assignor to J. M. Feighery Company, Dalton, Ga., a corporation of Georgia
Filed Aug. 19, 1963, Ser. No. 302,849
10 Claims. (Cl. 123—127)

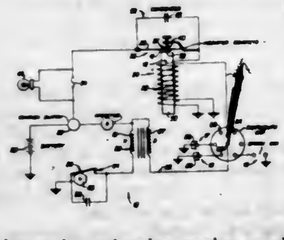
1. An auxiliary charge forming mechanism for a motor vehicle engine having an intake manifold and a carburetor, a casing arranged between the carburetor and the intake manifold and having a chamber therein open at the top and bottom to the carburetor and manifold, respectively, said casing having an air passage leading to said chamber, a normally closed air valve controlling said passage, a fuel atomizing nozzle projecting into said chamber, a normally closed fuel valve controlling said nozzle, a fuel passage leading to said nozzle, normally inoperative means for supplying fuel under pressure to said fuel passage, means biasing said fuel valve to closed position, a pressure responsive element exposed to pressure in said fuel passage for overcoming said biasing



means to open said fuel valve, and means for simultaneously rendering said fuel supply means operative and for opening said air valve.

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**3,165,099**
**ENGINE AFTERBURNER**
Albert G. Vanderpool, 14509 Van Ness Ave., Gardena, Calif.
Filed Dec. 10, 1962, Ser. No. 243,333
18 Claims. (Cl. 123—148)



1. In an internal combustion engine spark plug ignition system wherein a spark plug has electrodes adapted for exposure to the interior of a cylinder containing a reciprocating piston repeatedly undergoing a power stroke, first means to produce voltage pulses for creating primary and secondary sparking at the plug electrodes, and other means for transmitting said pulses to initially ignite the combustible mixture in the engine cylinder as a result of said primary sparking and thereafter to effect said secondary sparking at said electrodes during expansion of the initially ignited charge in said cylinder and during exhausting of burned gases from the cylinder.

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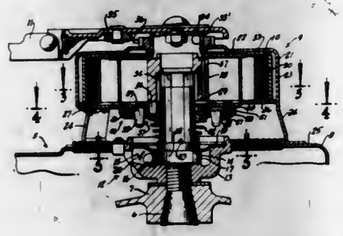
**3,165,100**
**SPRING TYPE STARTER FOR INTERNAL COMBUSTION ENGINES**
Ib H. Svendsen, Bjerringbro, Denmark, assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 341,828
13 Claims. (Cl. 123—179)

1. In a starter for internal combustion engines having a crankshaft, of the type wherein the release of energy in an energized energy storing device imparts engine starting torque to the crankshaft of the engine, the improvement which comprises:

(A) a rotatable torque applying member connected with the energy storing device, through which
  (1) the released energy of the energy storing device is translated into torque, and by which
  (2) the energy storing device is held while being energized;
(B) a rotatable driving member connectible with the engine crankshaft to transmit torque thereto;



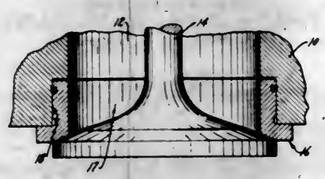
(C) means providing a lost motion torque transmitting connection between said members;
(D) means reacting between said members to yieldingly take up the lost motion in said connection in the direction permitting relative rotation of said members in consequence of rotation of the torque applying member in the direction it turns during the application of engine-starting torque to the crankshaft while the driving member is restrained from turning;
(E) manually releasable holding means to hold said torque applying member against turning and thereby enable the energy storing device to be energized



and to restrain said device against releasing its stored energy until desired, said holding means including
  (1) coacting abutments which must be engaged for the holding means to be operative;
(F) lockout means to prevent engagement of said abutments;
(G) biasing means acting on the lockout means to yieldingly maintain the same operative; and
(H) motion translating means operatively connected with the lockout means and operable only in consequence of said relative rotation (element D) between the torque applying and driving members to render the lockout means inoperative.

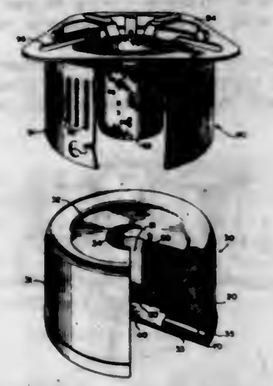
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**3,165,101**
**LOCKING ARRANGEMENT FOR VALVE SEAT INSERT**
Sandor Vargyai, Milwaukee, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 1, 1964, Ser. No. 356,617
5 Claims. (Cl. 123—188)



1. In combination with a cylinder of an internal combustion engine, said cylinder having at least one valve port, a valve seat insert positioned in said port, said insert having an outer annular groove, said cylinder having an internal annular groove generally in opposition to and in communication with said insert annular groove, and a coiled spring seated in said grooves, the outer diameter of said spring coils being greater than the radial depth of the insert groove so that said spring extends into said cylinder groove, the coils of said spring being separated, one from another, to permit said spring to be compressed substantially within the confines of said insert annular groove, said grooves and spring being positioned relative to each other such that an axially and radially inward holding force is applied to said insert from the cylinder and spring.

3,165,102
HEATING APPARATUS
Landon L. Palmer, 3535 Scarsborough Road, Toledo, Ohio, and Ernest W. Weaver, Sr., Toledo, Ohio; said Weaver assignor to said Palmer
Continuation of application Ser. No. 226,838, Sept. 28, 1962. This application Mar. 11, 1964, Ser. No. 351,884
5 Claims. (Cl. 126—43)



1. A stove or the like comprising a body of porous material capable of absorbing liquid fuel; a vapor impervious container having side, top and bottom surfaces surrounding and enclosing said body of porous material; a mixing chamber being formed in said porous material adjacent said bottom surface of said container; a vapor pervious chimney block positioned in said body of porous material extending between said mixing chamber and a top surface of said container; a chimney passage being formed in said chimney block and said top surface providing communication between said mixing chamber and the exterior of said container; a screen disposed between said mixing chamber and said chimney passage; an air vent aperture being formed in a side surface of said container; an air passage being formed in said porous body of material between said mixing chamber and said air vent aperture; and means for controlling the flow of air in said air passage.

3,165,103
WATER HEATER
Harry L. Warner, 2508 E. Evergreen Ave., West Covina, Calif.
Filed Jan. 29, 1963, Ser. No. 254,718
16 Claims. (Cl. 126—350)



1. In a swimming pool heater, the combination of:
(*a*) a horizontally oriented housing having inlet and outlet ends and provided at its inlet end with a horizontally facing air inlet and at its outlet end with a horizontally facing outlet for products of combustion;
(*b*) forced draft means in said housing for flowing air and products of combustion through said housing from its inlet to its outlet;
(*c*) a combustion chamber in said housing adjacent its inlet end;
(*d*) burner means in said combustion chamber adjacent the inlet end of said housing and facing the outlet end thereof;
(*e*) a water jacket at least partially enclosing said combustion chamber;
(*f*) a water chamber in said housing adjacent its outlet end;
(*g*) means in said housing for distributing water throughout said water chamber into driect and intimate contact with the products of combustion emanating from said combustion chamber and passing through said water chamber;
(*h*) a sump in said housing at the bottom of said water chamber for collecting the water distributed throughout said water chamber by said distributing means;
(*i*) said water jacket having discharge means communicating with said sump;
(*j*) said sump having water outlet means; and
(*k*) water supply means connected to said water jacket and to said water distributing means for delivering water to be heated thereto.

3,165,104
SUSPENSION FILING SYSTEM FOR FOLDERS AND OTHER DOCUMENT CONTAINERS
Georg Alfred Zippel, Mühlweg, Altdorf, near Nuremberg, Germany
Filed Apr. 19, 1960, Ser. No. 23,195
Claims priority, application Germany, Apr. 23, 1959, Z 7,276
4 Claims. (Cl. 129—16.7)



1. A suspension type filing device, comprising:
an elongated and rigid supporting rail of uniform cross-section having first and second parallel flange means extending along the opposite lengthwise sides thereof and projecting in opposite sideward directions;
a folder fabricated from sheet material and having an upper suspension edge portion;
a substantially flat and stiff suspension member secured to said suspension edge portion, said member having a recess opening through the upper edge thereof, said recess being defined by a bottom edge, a pair of spaced, side edges, and a pair of carrier noses extending toward each other from the upper ends of said side edges, the distance between said carrier noses being less than the distance between the remote edges of said flange means, said rail being relatively movable transversely thereof into said recesses and into a position with respect thereto so that said noses are respectively engaged by and supported upon said flange means, the distance between at least a portion of one side edge and the one carrier nose adjacent the opposite side edge of said recess being greater than said distance between said remote edges of said flange means on said rail;
first abutment means on the lower surface of said rail and extending lengthwise thereof between said flange means:
second abutment means on the bottom edge of said recess and spaced from said side edges, said second abutment means including a projection extending upwardly from the bottom edge of said recess between said carrier noses for engaging the lower side of said supporting rail, said rail being spaced from said bottom edge on both sides of said second abutment means, said first and second abutment means being in contact with each other when said flange means are in supporting positions beneath said carrier noses, whereby pivoting of said suspension member and said folder around the lengthwise axis of said rail is positively opposed, said bottom edge of said recess having one portion between said second abutment means and said one side edge, which portion is below said second abutment means and is spaced a substantial distance from the flange means when it is in said supporting position, said rail being relatively movable within said recess from said supporting position toward said one side edge so that said first abutment means is moved away from said second abutment means and the flange means is moved from beneath the one carrier nose, whereby said folder can be moved downwardly away from said rail.



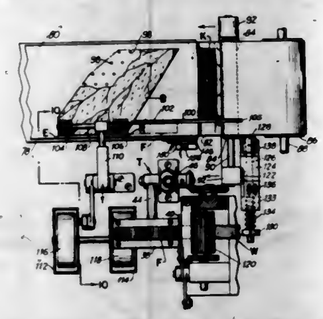
3,165,105
ASH-RETAINING SAFETY CIGARETTE
Robert A. Campbell, 167 N. Ridgeland Ave., Oak Park, Ill.
Filed May 13, 1963, Ser. No. 280,016
4 Claims. (Cl. 131—4)



1. In a cigarette having a lighting end and a mouthpiece end, a tubular cigarette paper member of constant diameter and a constant diameter filler within said member, the improvement comprising,
(1) an open-ended trough-shaped ash retaining member of porous fire resistant material, uniformly secured in firm laminated relationship throughout its entire length to a portion of the outside lower half circumference of said tubular paper member,
(2) said ash retaining member including a front end contiguous to and longitudinally even with said lighting end of said tubular member and a rear end adjacent to but inwardly spaced from said mouthpiece end of said tubular member,
(3) said ash retaining member further including adjacent its rear end a wide integral non-porous fire resistant snuffer band contiguous to portions of the remaining upper half of said tubular member,
(4) said ash retaining member further including a rearwardly diverging support means of substantially planar form, said support means being integral with the rear end of said ash retaining member and being foldable away from the adjacent surfaces of said tubular member to maintain, when so folded, said mouthpiece end of said cigarette in spaced upright supporting relationship with respect to a supporting surface,
(5) whereby when said cigarette, in lighted condition and in upright relation, is discarded, with the front end and rear support means of said ash retaining member both contacting a combustible supporting surface, the fire resistant trough will collect and retain the ashes from the lighted cigarette and the snuffer band will extinguish the cigarette, thus aiding in the prevention of accidental fire to said supporting surface.

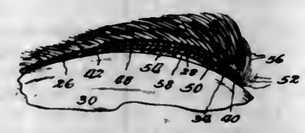
3,165,106
METHOD OF FORMING CIGAR WITH FILTER THEREIN
Charles E. Schon, West Hempstead, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed July 3, 1961, Ser. No. 121,532
6 Claims. (Cl. 131—20)

1. A method of manufacturing a cigar bunch which comprises the following steps in the following order: (1) drawing filter material from a continuous source thereof onto a transfer; (2) severing a predetermined length of said material at said transfer; (3) transferring said length of material to a receiving station on a bunch rolling table; (4) affixing said length of material to a pasted area of a tobacco binder at said receiving station in such position that upon being rolled to form a filter



it will be disposed in the extreme head end of the bunch; (5) simultaneously rolling said binder and said strip of filter material into a cigar bunch.

3,165,107
LAMINATED WIG WITH THICKENED PORTION ADJACENT THE FRONT EDGE
Earl H. Martin, 2003 Columbia Bay Drive, Lake Villa, Ill., and Kenneth A. Johanson, Forest Lake, Ill.; said Johanson assignor to said Martin
Filed June 7, 1962, Ser. No. 200,805
7 Claims. (Cl. 132—53)

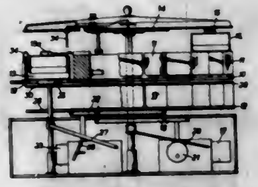


3. In a toupee, a base adapted to conform to the size and shape of a bald spot on a head comprising, a pair of members superimposed one upon the other, the lower member formed of a flexible plastic material substantially to conform to said bald spot, the upper member comprising a cap of flexible plastic material smaller than the lower member secured upon the front end portion of said lower member whereby the thus laminated front end portion of the base is more rigid than the remainder of the base, said cap having a front edge extending downwardly and beyond the front edge of the lower member to coincide with the front hairline of the head upon which the toupee is installed.

3,165,108
APPARATUS FOR AUTOMATICALLY TRANSFERRING AN ARTICLE FROM A SERIES OF BATHS OR THE LIKE IN WHICH IT IS IMMERSED FOR PREDETERMINED PERIODS OF TIME
William Elliott, Prestatyn, North Wales, and Francis Thomas Howells, Hoylake, Wirral, England, assignors to Elliotts Liverpool Limited, Liverpool, England, a British company
Filed Nov. 8, 1963, Ser. No. 322,487
Claims priority, application Great Britain, Dec. 11, 1962, 46,698/62
8 Claims. (Cl. 134—58)

1. Automatic immersion apparatus comprising at least two series of baths in tier formation one series above the other, article-holding means for holding an article to be immersed in said baths, means for moving and raising and lowering said article-holding means so that an article thereon is presented in turn to the baths of one series and immersed therein, means for moving and raising and lowering the baths of the other series to present them in turn to an article on the article-holding means

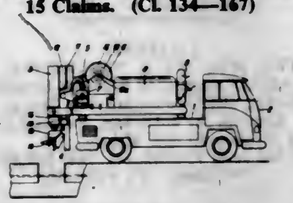
so that said article is immersed therein, motor means for driving both said moving and raising and lowering means, and time switch mechanism controlling the operation of



said motor means whereby an article on the article-holding means is immersed in each bath for a predetermined period.

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3,165,109
## APPARATUS FOR THE CLEANING OF SEWER SYSTEMS
Paul Hammelmann, Oelde, Westphalia, Germany
Filed June 14, 1962, Ser. No. 202,526
15 Claims. (Cl. 134—167)



1. Apparatus for cleaning sewer pipes comprising a hose, a nozzle carried by the end of said hose, means connected to said hose for supplying cleaning fluid thereto under pressure, guiding means guiding said hose for insertion into a sewer pipe, a cable attached to said hose adjacent to said nozzle and also guided by said guiding means, a hose reel on which said hose is wound, located at the side of said guiding means opposite said nozzle, a cable drum on which said cable is wound, rotatable relative to said hose reel, and located at the side of said guiding means opposite said nozzle, and gearing connecting said hose reel and said cable drum for coordinating relative rotation thereof.

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3,165,110
## BUILDING CONSTRUCTION
Thomas W. Brooks, Box 11421, Charlotte, N.C.
Filed Aug. 11, 1961, Ser. No. 130,879
11 Claims. (Cl. 135—1)



1. A building construction comprising a frame including a plurality of spaced, parallel, elongate arch-shaped frame members having longitudinally extending uninterrupted grooves formed in the opposing outer and inner surfaces thereof and brace means interconnecting said frame members, a first sheet of material covering the outer surface of said frame, second and third sheets of material disposed in and covering the area bounded by the frame members defining the ends of said frame, and a material securing member disposed in each of said outer and inner grooves and frictionally cooperating with the walls defining said grooves to clamp the sheets of covering material to said frame, said grooves and said material securing members being of such relative size that the material securing members are tightly and snugly received in said grooves to tightly clamp the sheets of material to the frame.

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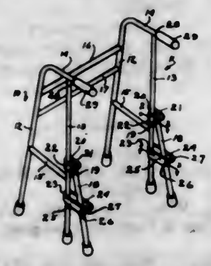
3,165,111
## ADJUSTABLE TOP FOR BOATS AND THE LIKE
Paul L. Foster, 2237 Tunis Ave., Memphis, Tenn.
Filed Dec. 21, 1962, Ser. No. 246,428
3 Claims. (Cl. 135—6)



1. An adjustable top for boats and the like of the character described, comprising at least two inverted U-shaped frames, each frame of which embodies a pair of spaced vertically mounted tubular posts in the upper end of each one of which is mounted a tube having a right angle tube hinged thereto, a pair of horizontally disposed tubes each having one end hinged to one end of one of said right angle tubes, a pair of telescoping tubes each having one end slidably mounted in the open end of one of said horizontally disposed tubes, a centrally located horizontally disposed tube hingably secured at each end to the two telescoping tubes, a mechanism locking the tubes together at the center thereof, a pair of spaced rails, each one of which has an end viewed configuration of a hollow rectangle, one rail being secured to each side of the deck of the boat and extending from a pre-determined point near the bow of the said boat to a predetermined point near the stern of the said boat, mechanism removably connecting the said inverted U-shaped frames to the said rails, and a canvas top having removable side curtains placed over the said plurality of inverted U-shaped frames which are mounted in parallel spaced relation along the length of the said rails.

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3,165,112
## WALKER OR WALKER AID
Elmer F. Ries, Cincinnati, Ohio, assignor to The Ries Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 20, 1961, Ser. No. 126,805
6 Claims. (Cl. 135—45)

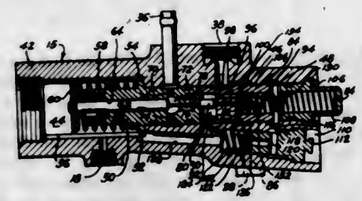


1. In a walker the combination of a pair of similar side frames permanently laterally spaced from one another, each side frame including a top member, a front leg depending from said top member, a rear member depending from said top member rearwardly spaced from the front leg, each said side frame being spaced from the other and normally having the lower ends of the front legs and rear members thereof simultaneously on a supporting surface, and a separate rear leg having its upper end pivotally connected to each side frame rear member at a similar point above its lower end, said rear legs each of a length greater than the length of its rear member from the pivot thereon to its lower end and each rear leg extending downwardly, rearwardly, with its lower end on the supporting surface when the front legs of the side frames and lower ends of the rear members are on said supporting surface, said rear legs are each freely oscillatable toward and from its rear member so that upon forward tilting of the walker on the lower ends of its front legs the back legs oscillate by gravity toward and against said back members to have said lower ends of the back legs below the lower ends of the back members, and whereby reverse tilting of the walker will place the lower ends of the back legs on the supporting surface along with the lower ends of the front legs, and so that rearward tilting of the walker on the lower ends of the back legs will forwardly oscillate the walker on the pivots of the back members.



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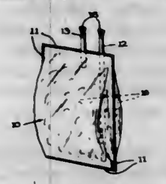
3,165,113
## COMBINED FLOW DIVIDER AND PRESSURE REGULATOR
Harold B. Schultz, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,614
4 Claims. (Cl. 137—101)



1. A valve means comprising:
a housing having an inlet port, an accumulator port, an accumulator chamber, a cross reference chamber, a control chamber, a passage communicating said accumulator chamber and said cross reference chamber, a first control port open to said accumulator chamber and a second control port open to said control chamber;
a floating piston in said housing arranged to separate said cross reference chamber and said control chamber and control communication between said inlet port and said control chamber, said piston having a first internal chamber open to said inlet port with a restricted passage between said first internal chamber and said cross reference chamber, said piston also having a second internal chamber with an opening to said cross reference chamber and said control chamber;
a valve operatively arranged in said opening of said second internal chamber to control fluid flow between said cross reference chamber and said control chamber via said second internal chamber;
a means responsive to accumulator chamber pressure to controll said valve, which, means is provided with a boss arranged to move said piston when said valve is opened to increase communication between said inlet port and said control chamber and, by opening said valve, to unload pressure in said cross reference chamber to said control chamber; and
means a yieldably position said piston to close off communication of said inlet port and said control chamber in the absence of a pressurized fluid being supplied to said inlet port.

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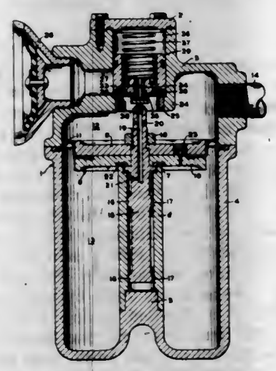
3,165,114
## DISPENSING PACKAGE FOR FLUID SOLUBLE MATERIALS
Curran L. Garrett, 4325 Devon St., Corpus Christi, Tex.
Filed Aug. 15, 1962, Ser. No. 217,153
4 Claims. (Cl. 137—268)



1. A flexible sealed dispensing package for liquid soluble particulate material, said package maintaining said material dry and uncontaminated prior to use, said package formed entirely of heat sealable plastic material and adapted for connection with a liquid proportioning device, said package comprising a flexible walled generally flat bag-like body portion adapted to hold a charge of said particulate material and being closed by heat sealing around its entire marginal edge, a relatively long liquid inlet tube extending through said marginal edge and heat sealed therein in a fluid tight manner and having an open end within the confines of the body portion near the remote side thereof, the opposite end of said tube being closed by heat sealing in a fluid tight manner exteriorly of the body portion and said marginal edge, and a relatively short discharge tube extending through said marginal edge in spaced parallel relation to the inlet tube and heat sealed within the marginal edge in a fluid tight manner and having an open end terminating within the body portion near the proximal side thereof and remote from the open end of said inlet tube, said discharge tube having its opposite end closed by heat sealing in a fluid tight manner exteriorly of the body portion and said marginal edge, the sealed ends of said tubes being equidistantly spaced from the body portion and said marginal edge, whereby said tubes may be severed inwardly of their sealed ends and exteriorly of the body portion for opening them and allowing them to receive spaced tubular nipples of said proportioning device.

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3,165,115
## VENT VALVE DEVICE
Erik G. Erson, Export, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Aug. 16, 1962, Ser. No. 217,473
12 Claims. (Cl. 137—494)



1. A vent valve device comprising:
(a) a casing having a control chamber communicable with a pressure controlled conduit via which fluid

under pressure may be applied thereto to charge said control chamber and via which fluid pressure may be released to reduce the pressure in said control chamber,

(*b*) said casing having a balancing chamber,

(*c*) throttling means connecting said chambers for charging said balancing chamber with pressurized fluid from said control chamber,

(*d*) movable abutment means subject to opposing pressure from said control chamber and said balancing chamber for movement in either of opposite directions,

(*e*) a normally seated valve operatively connected to said movable abutment means and unseated in response to movement of said movable abutment means upon the occurrence of a reduction in pressure in said control chamber at a rate above a certain rate to effect rapid venting to atmosphere of fluid under pressure from said control chamber and such pressure controlled conduit, and

(*f*) valve means comprising cooperating members on said movable abutment means and said casing for opening a restricted passageway between said balancing chamber and said control chamber upon movement of said movable abutment means in response to the differential of opposing pressures thereon resulting from the occurrence of a reduction in pressure in said control chamber at a sufficient rate in relation to the size of the throttling means and to close said restricted passageway upon movement of said movable abutment means in a direction opposite to said last-mentioned movement in response to a predominating pressure in said control chamber over pressure in said balancing chamber,

(*g*) said certain rate of pressure reduction in the control chamber being at least a rate, in relation to the combined flow capacity of both the throttling means and the restricted passageway, as to develop sufficient differential pressures on said movable abutment means to effect unseating of said normally seated valve.

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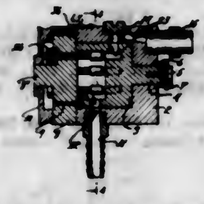
**3,165,116**
**AUTOMATIC VALVE ASSEMBLIES**
**John Rutger Munck af Rosenschöld, Saltsjöbaden, Sweden, assignor to Aktiebolaget Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden**
**Filed July 11, 1961, Ser. No. 123,137**
**5 Claims. (Cl. 137—512.1)**



1. A self-contained spring blade valve assembly for opening and closing inlet or outlet ports in the cylinders of piston compressors, internal combustion engines, and the like, which comprises a plurality of parallel rigid ribs for disposition overlying said ports and spaced apart forming passages therebetween, said ribs being all formed together as a thin metal piece and connected together as a single unit by a plurality of transverse spaced webs between adjacent said ribs, fastening means at each opposite end of said single unit for affixing said unit in operating position and forming substantially the sole connection between said valve assembly and a cylinder inlet or outlet port on which it is disposed, spring blade valve strips continuously and freely overlying one face of each of said ribs and movable toward and away from said ribs in a substantially straight line and continuously parallel to said ribs for forming the valving means for opening and closing said ports, each of said valve strips being longer than its respective said ribs and being bent loosely around each opposite end thereof forming a spring portion overlying a substantial length of the opposite face of said rib, and means for affixing each opposite end of said valve strips to said opposite face of said ribs at points inwardly spaced from the ends thereof with said bent and affixed portions of said valve strips forming with said opposite face of said ribs substantially the sole resilient springing and guiding means for said movement of said strip for opening and closing said ports, said unit and said valve strips thereon forming a complete and unitary substantially thin valve assembly for affixing to said cylinder inlet or outlet ports and in which the greatest thickness of said entire unit is defined by merely said bent portions of said valve strips at the opposite ends of said ribs.

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**3,165,117**
**ADJUSTABLE FLOW CONTROL VALVE FOR FUEL GAS**
**Aron Finelt, 130—17 236th St., Laurelton, N.Y.**
**Filed June 7, 1961, Ser. No. 115,396**
**1 Claim. (Cl. 137—614.17)**



An adjustable flow control valve for fuel gas comprising a unitary casing formed with a central chamber having a front opening which is relatively large and a rear bearing-opening of relatively small diameter, a valve rotor in said chamber, said rotor having a rear sub-shaft rotationally fitting the rear bearing opening of the casing and said rotor being provided with an open end chamber at its rear, said chamber being surrounded by an annular wall of the rotor, a plurality of spaced gas inlet openings in said annular wall, a gas inlet duct in the casing in line with said spaced inlet openings of the rotor annular wall, a plurality of spaced outlet gas passages in the rotor and communicating with its chamber, each of said outlet gas passages having a lead extending longitudinally of the rotor and having a lateral lead, an outlet passage in the casing and in line with the lateral leads of said last named outlet passages of the rotor, a rotor head abutting and closing the chamber of the rotor and removably secured thereto, said rotor head being exposed for manual rotation of the rotor, a plurality of valve stems threaded in said rotor head and projecting into the rotor chamber, each valve stem being in line with one of said outlet gas passages of the rotor and each valve stem having an end projected through the rotor head and adjustable forwardly and rearwardly, relatively to the rotor chamber and any outlet gas passage of the rotor aligned with the casing outlet is in communication with an inlet passage of the rotor and with the casing inlet duct.

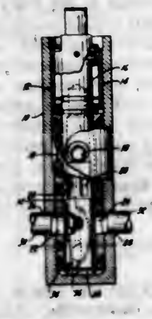
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**3,165,118**
**DIVIDER ASSEMBLY FOR MIXING VALVE**
**Alfred M. Moen, 25 Lakeview Drive, Grafton, Ohio**
**Filed July 13, 1962, Ser. No. 209,615**
**3 Claims. (Cl. 137—625.4)**

1. In combination, a mixing valve having a sleeve with hot and cold water inlet ports, a hollow valve member in said sleeve, hot and cold water inlet means in said valve member for taking water from the sleeve ports and directing it into its hollow interior, and a divider assembly positioned within said hollow valve member at the hot and cold water inlet means and substantially completely



blocking crossflow between the hot and cold water inlets, said divider being relatively thin and flat and being spring mounted within said valve member, said divider including



a pair of thin, flat and long plates, joined together along one edge, with a spring biased blade positioned between said plates.

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**3,165,119**
**FOUR-WAY VALVE DEVICE**
**Ellis E. Hewitt, Ruffsdale, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed July 30, 1962, Ser. No. 213,275**
**6 Claims. (Cl. 137—625.21)**



1. A rotary valve device comprising:

(*a*) a valve body having an internal circular bore and a supply passage, an exhaust passage and a first and second delivery passage opening thereinto in spaced angular relationship,

(*b*) expandable annular sealing means positioned within said bore adjacent the inner surface of said bore,

(*c*) cover means securing said sealing means on the outer edges of said inner surface of said bore in a sealing manner,

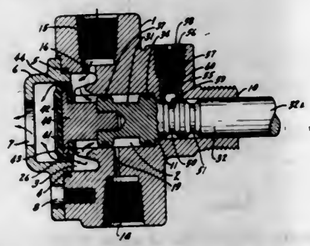
(*d*) a plurality of roller means coaxially located within said annular sealing means and engaging said sealing means in a rolling manner to bias said sealing means into sealing contact with the inside surface of said bore at the point of engagement of said roller means with said sealing means,

(*e*) divider means securing said plurality of roller means in a definite spaced relationship with each other, and

(*f*) positioning means operably connected to said divider means for selectively rotatably positioning said roller means in engagement with said sealing means in one position to establish a first communication between said supply passage and said first delivery passage, and a second communication between said second delivery passage and said exhaust passage, and in a second position to establish a third communication between said supply passage and said second delivery passage and a fourth communication between said first delivery passage and said exhaust passage, and in a third position to prevent any communication through either said first or second delivery passages.

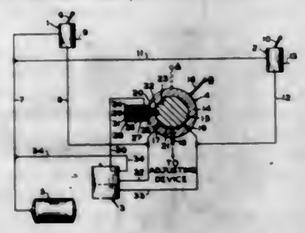
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**3,165,120**
**HAND CONTROL VALVE**
**Charles Horowitz, Chicago, Ill., assignor to Berg Airlectro Products Co., Chicago, Ill., a corporation of Illinois**
**Filed Oct. 11, 1961, Ser. No. 144,368**
**1 Claim. (Cl. 137—625.37)**



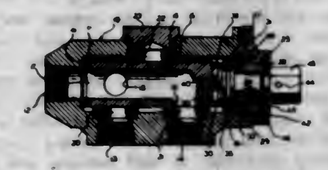
A valve comprising a housing, a first chamber in said housing, a second chamber in said housing communicating with one end portion of said first chamber and having an annular portion surrounding said portion of said first chamber adjacent the point of communication therebetween, a fluid pressure inlet formed in said housing and communicating with said annular chamber portion, a fluid pressure outlet formed in said housing and communicating with said first chamber intermediate the ends thereof and spaced from said point of communication between said chambers, a second outlet formed in said housing and communicating with said second chamber, the wall of said first chamber having openings formed therein adjacent the point of communication between said chambers and providing for communication between said annular chamber portion and said first chamber, a valve member reciprocally mounted in said housing, said member comprising an elongated stem, an enlarged head adjacent one end of said stem and mounted for reciprocation within said second chamber, a valve seat element carried by said head and positioned for sealing engagement with said housing to seal said second outlet against the passage of fluid pressure outwardly therethrough when said valve member is in a first position, a second head spaced on said stem from said first head and mounted for reciprocation within said first chamber, a first seal member carried by said second head in engagement with the wall of said first chamber at all positions of said valve member, said second head being positioned between said openings in said chamber wall and said first-named outlet passage in a second position of said valve, said second head being positioned beyond at least a portion of said openings in said chamber wall in said first position of said valve to provide communication between said housing inlet and said first-named outlet through said annular chamber portion, said openings, and said first chamber, a third head on said stem, said third head being spaced on said stem from said second head and carrying a seal in contact with the wall of said first chamber between said first outlet and the opposite end of said first chamber, a passage communicating with said opposite chamber end and having a diameter less than said first chamber whereby an annular abutment surface is formed at said opposite chamber end, said third head engaging said abutment surface when said valve is in said second position, said valve member having a stem portion extending outwardly of said housing and slidable in said passage, a pair of grooves spaced on said stem portion, a detent yieldingly urged toward said stem and positioned to alternately engage said grooves when said valve member is in said first and second positions.

3,165,121
**PRESSURE DIFFERENTIAL SAFETY INTERLOCK SYSTEM**
Theodor Strauss, Berenbostel, Hannover, and Wilhelm Bachmann, Godshorn, Hannover, Germany, assignors to Westinghouse-Bremsen-Gesellschaft m.b.H., Hannover, Germany
Filed July 27, 1962, Ser. No. 212,995
Claims priority, application Germany Nov. 3, 1961
2 Claims. (Cl. 137—625.41)



1. Apparatus for pneumatic equal pressure change-over protection on a multiple position cock of the type utilized to control an adjusting device, said apparatus including a plurality of control valves, a multiple position cock having a rotary member selectively positionable to supply fluid under pressure to an adjusting device, means for preventing rotation of said rotary member including locking cylinder means having a piston slidably mounted therein, piston stem means extending from said piston to said rotary member of said multiple position cock, said piston forming within said cylinder a pressure chamber adapted to be selectively supplied with fluid under pressure or vented to atmosphere, said piston stem being operably positioned in rotation preventing engagement with said rotary member of said multiple position cock when said pressure chamber of said locking cylinder means is vented to atmosphere and operably positioned out of engagement with said rotary member of said multiple position cock when said pressure chamber of said locking cylinder means is supplied with fluid under pressure, and a pressure differential operated valve means having a diaphragm means subject on one side thereof to a fluid pressure supplied by one of said control valves and subject on the other side thereof to a fluid pressure supplied by another of said control valves, said pressure differential operated valve means operably responsive to simultaneous supply of fluid under equal pressures from each of said control valves to supply fluid under pressure to said pressure chamber of said locking cylinder means, and operably responsive to simultaneous supply of fluid under unequal pressures from each of said control valves to effect venting of said pressure chamber of said locking cylinder means.

3,165,122
**PLUG VALVE**
Norman H. Sechalk, Houston, Tex., assignor to Texsteam Corporation
Filed Nov. 6, 1962, Ser. No. 235,636
5 Claims. (Cl. 137—625.47)



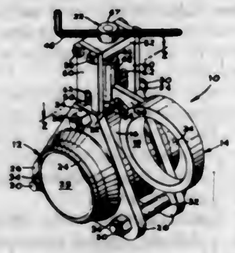
1. A plug valve comprising, an elongated hollow body having an inlet port at one end thereof and a pair of longitudinally spaced and aligned outlet ports along the side thereof, an elongated plug rotatable in said body and having a passageway therein with an inlet opening at one end thereof registering at all times with said inlet port and a pair of staggered outlet openings along the side thereof selectively registering with said outlet ports, a stem rotatably carried in the body at the end thereof opposite the inlet port and in coupling engagement with said plug for corotation therewith and to support said plug against longitudinal movement within the body away from said inlet port, resilient seats at said outlet ports coacting with said plug to define a positive seal, a guide seat within said body diametrically opposite said outlet ports coacting with said resilient seats to support said plug within the body, and a thrust bearing carried by the body and in engagement with said stem to receive the thrust of said plug, said stem extending outwardly of said body.

3,165,123
**CONTROL OF PRESSURE DROP IN FLUID FLOW**
Harold M. Hawkins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 3, 1961, Ser. No. 100,288
4 Claims. (Cl. 138—37)



1. A conduit for conveying a fluid which consists essentially of a substantially rigid conduit shell; and a flexible lining for said shell composed of a plurality of flexible sleeve members, each having an outside diameter less than the inside diameter of the shell so as to provide an annular space between the sleeve and the shell, serially secured to said shell at the upstream open end of each sleeve with respect to the direction of flow of fluid so that the downstream open end of each sleeve terminates approximately at the upstream end of the succeeding sleeve throughout the conduit; and means for fluid communication between the interior and the exterior of the sleeves.

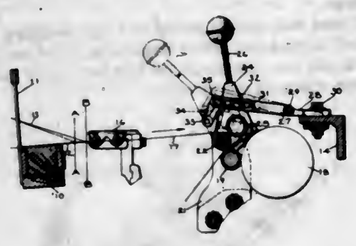
3,165,124
**LINE BLIND**
George P. Ausburn, Los Alamitos, and William M. Pearson, Long Beach, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,500
10 Claims. (Cl. 138—94.3)



9. In a line blind including a tubular body having flow passage means therethrough and a slot disposed transversely of said passage means; a spectacle plate disposed in the general plane of the slot and having perforate and imperforate portions alternatively positionable in the passage means; and separable interengageable guide means on the body and the spectacle plate for guiding each of said portions into its respective closed and open position in alignment with said flow passage means upon first locating said portion in said slot and then moving said portion in said slot transversely of said flow passage means.

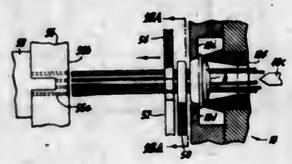


3,165,125
**FABRIC CONTROL MECHANISM TO PREVENT STARTING MARKS**
Wesley L. Tinkham, Upton, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Apr. 15, 1963, Ser. No. 273,077
2 Claims. (Cl. 139—291)



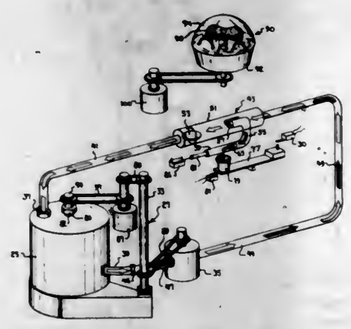
2. In a loom for weaving having a lay and reed, a breast beam and temples adapted to support and guide the fabric formed by said loom, a start mark preventer comprising a relatively fixed shaft member, arms pivoted with said shaft member as a center, a second shaft member fixed in said arms, both said fixed shaft member and said second shaft members extending horizontally the full width of said fabric transversely of said loom intermediate said breast beam and said temples, an operating handle extending from one at least of the arms whereby the arms and second shaft member may be swung about the fixed shaft member from an extreme rearward operating position to an extreme forward depressing position to take up a fabric threaded between said shafts and pull its fell line forwardly of the loom, and means releasably to latch the device in each of its extreme positions, said means including adjustable linkage for varying the extent of forward movement of said fell line.

3,165,126
**CUTTING MECHANISM FOR ASSEMBLING APPARATUS AND METHODS**
Stanley J. Gartner, Emporium, Pa., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Application Feb. 7, 1962, Ser. No. 171,745, which is a division of application Ser. No. 406,930, Jan. 29, 1954, now Patent No. 3,069,749, dated Dec. 25, 1962. Divided and this application Sept. 19, 1963, Ser. No. 309,937
6 Claims. (Cl. 140—140)



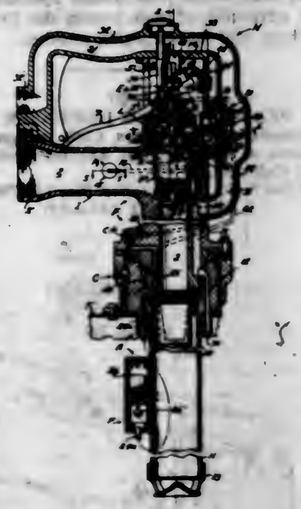
1. A mount machine including a stem block supporting an initially oriented stem having plural leads molded into a base, and a station for trimming respective groups of leads including combing tools movable transversely of said stem axis to a lead-engaging position in close proximity to said base, said combing tools in said lead-engaging position having cooperative cutouts arranged to define a predetermined apertured pattern about said plural leads corresponding to the molded position of said leads, a cutting die spaced outwardly from said stem block and formed with lead-receiving bores in a pattern registering with said apertured pattern, means for moving said combing tools axially of said leads and toward said cutting die whereby the leads are brought into alignment with respective lead-receiving bores in said cutting die, means for advancing said cutting die through a predetermined stroke over the patterned ends of said leads and toward said stem block, and means operable in timed relation to advancing of said cutting die for retracting said tools from said lead-engaging position.

3,165,127
**PEANUT BUTTER DISPENSER**
Saul R. Rosenberg, Los Angeles, Calif., assignor to Food Corporation of America, Los Angeles, Calif., a corporation of California
Filed Nov. 16, 1961, Ser. No. 152,798
2 Claims. (Cl. 141—83)



1. A device for dispensing peanut butter comprising
a closed container having an upper inlet and a lower outlet and a rotatable stirrer therein with the upper end of its shaft terminating above the top of the container,
a housing including a lower container support, pivot means including a rotatable vertical shaft mounting said support on the housing for movement between a position within the housing to a position outside of said housing, an upper frame member and a front control door,
a supply system having a return conduit releasably connected to the container inlet and a delivery conduit releasably connected to the container outlet, a delivery valve means connecting the delivery and return conduits, a pump mounted on said support and connected in said delivery conduit,
a cup scale mounted on said housing having a holder at said control door for placing a cup in position to be filled by peanut butter discharging from said delivery valve means,
power means mounted on said upper frame member for driving said pump and having a releasable connection for rotating said upper end of the shaft of said stirrer in the container, transmission means connecting said power means to the upper end of said vertical shaft and the lower end of said vertical shaft to said pump,
control means for automatic operation including first means responsive to a cup on said holder and said control door in closed position to actuate said pump and open said delivery valve means, second means responsive to a predetermined position of said scale when said cup is filled to close said delivery valve means and stop said pump.

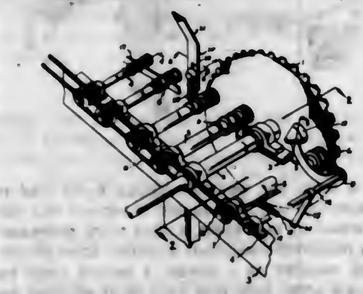
3,165,128
SYSTEM AND MECHANISM FOR DISPENSING FLUIDS
James W. Hammond, Emporium, and George B. Ensminger, Olanta, Pa., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Nov. 27, 1961, Ser. No. 155,542
10 Claims. (Cl. 141—209)



1. A liquid dispensing system comprising:
(*a*) a nozzle unit having an inlet and an outlet intercommunicating through a valve chamber the outlet being adapted to be sealed to a generally closed receptacle,
(*b*) a self closing control valve in the chamber,
(*c*) mean operable manually by an attendant to open the control valve to low-flow and high-flow-dispensing positions,
(*d*) a latch mechanism acting automatically to hold the control valve in high-flow-dispensing position,
(*e*) a fluid motor having a pressure chamber and a displacement member movable therein and operatingly arranged to trip the latch mechanism and allow the valve to close.
(*f*) a source of pressure fluid connected to actuate the displacement member,
(*g*) signal means responsive to attainment of a predetermined condition within the container to be charged with the liquid and normally operating automatically to control said fluid pressure to initiate actuation of the displacement member,
(*h*) additional motor means having an output connected to render the manually operable means ineffective to hold the control valve in any open position,
(*i*) and means operated as a function of failure of the attendant to move the control valve to high-flow-dispensing position followed by release by the attendant of the manually operable means, said means (*i*) operating to actuate said additional motor means.

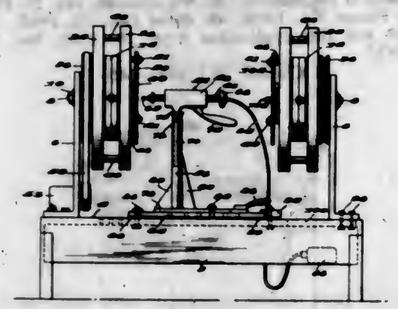
3,165,129
MECHANICAL OFF-BEARING MECHANISM
Stanley R. McClure, Rowesn, Ky.
Filed June 7, 1963, Ser. No. 286,263
6 Claims. (Cl. 143—157)

1. For use with a saw mill assembly, adapted to cut slabs from logs which contains:
(1) a reciprocating log moving carriage and
(2) a saw vertically disposed adjacent to the path of said carriage;
a mechanical off-bearing assembly for positioning a severed slab bark side up which comprises:
(*a*) a series of powered rollers arranged with their axes perpendicular to the path of said carriage and located on the off side of the saw relative to said carriage,
(*b*) at least two self-adjusting and non-wedging shoes located behind the cutting edge of said saw and adjacent to the saw line on the off side but out of rubbing contact with said saw in which



(i) each shoe has a straight vertical surface on the side adjacent the saw and a surface which is curved tangentially toward the top of the shoe on the side located on the off side of the saw, said shoe increasing in thickness from the top edge toward the middle and from the front edge edge toward the middle;
(ii) each shoe is resiliently mounted out of contact with said rollers to follow the lowermost sawed surface of the slab without wedging in the saw line so that the severed slab will slide down the curved surface of each shoe and then outwardly on said rollers bark side up.

3,165,130
MACHINE FOR CUTTING ELLIPTICAL SHAPES
Vestal O. Sanders, 4902 Inskip Drive, Knoxville, Tenn.
Filed Feb. 21, 1961, Ser. No. 90,828
5 Claims. (Cl. 144—33)



1. In a lathe, a work holding fixture comprising a face plate, means for mounting a workpiece on the face plate, a guide plate, means securing the guide plate to the face plate in axially spaced relation, said guide plate having a transverse slot therein, support means, an axle having one end fixedly secured to said support means and extending through said guide plate slot, a pulley mounted for rotation on said axle between said guide plate and said support means, said pulley having a pair of blocks mounted on the radial face thereof, said blocks being in diametrical alignment and on opposite sides of the axle and extending into engagement with said guide plate slot, a positioning plate between said guide plate and said face plate and having a thickness substantially the same as the axial spacing between said guide plate and said face plate, a lead screw mounted transversely within the positioning plate, slide means in said positioning plate and having screw threads thereon cooperating with said lead screw for displacement of said slide means relative to the positioning plate, said axle having the opposite end fixedly secured to said slide means, said face plate having a transverse slot therein extending perpendicularly to the guide plate slot and a roller secured to the positioning plate and extending through the face plate slot whereby upon rotation of the pulley, the guide plate, the face plate and a workpiece which is secured to the face plate rotate in an elliptical path.

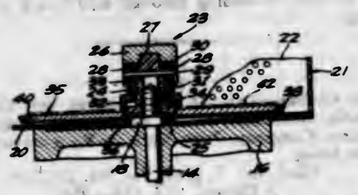


3,165,131
BORING TOOL
Bruce A. Mackey, Libertyville, Ill., assignor to Precision Accessories Inc., a corporation of Florida
Filed May 31, 1962, Ser. No. 199,183
3 Claims. (Cl. 145—126)



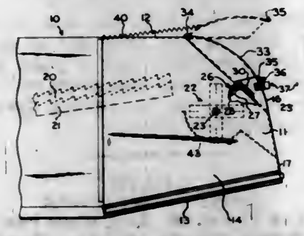
1. A tool for boring a relatively large hole in a workpiece; said tool comprising a rotatable shaft and a cutting head mounted on said shaft at one end thereof; said cutting head comprising a detachable cutting blade radiating outwardly and forwardly of a cutting head body portion and a detachable cutting point mounted on the periphery of said cutting head body portion and projecting forwardly of said blade for defining the periphery of said large hole; said head being cut away adjacent said blade and adjacent said point for chip egress; said cutting head having formed on one surface thereof opposite the surface from which said cutting point projects forwardly a plurality of radial fins extending rearwardly from the periphery of said cutting head body towards said rotatable shaft and each having a curvilinear configuration extending away from said cutting head body for guiding said tool whereby said tool is more readily withdrawn from said workpiece after said relatively large hole has been formed.

3,165,132
CUTTER DRIVE FOR VEGETABLE JUICING MACHINE
Douglas F. Moline, Arcadia, Calif., assignor to Acme Manufacturing Co., Inc., a corporation
Filed June 4, 1963, Ser. No. 285,271
3 Claims. (Cl. 146—76)



1. In a high speed centrifugal vegetable juicing machine having a vertical shaft, a centrifugal hub and a perforate basket on said hub having a cylindrical wall; the combination of a base plate in said basket, a cutter disc on said base plate, means for clamping said base plate to said shaft, and resiliently biased friction drive means providing a small degree of slip between said base plate and cutter disc and preventing an unbalancing accumulation of vegetable pulp on said cylindrical wall by providing a constantly changing position of the cutter disc in relation to the perforated wall of the basket, said friction drive means including an annular groove in said cutter disc and a nylon friction member in said groove having a plurality of circumferentially spaced feet and a clamping nut and clutch assembly on said shaft having a spring seated nylon sleeve engaging said cutter disc and self actuating means to increase the pressure engagement of said sleeve and cutter disc and prevent excessive slippage.

3,165,133
PROTECTIVE STRUCTURE FOR CROP TREATING APPARATUS
Elof K. Karlsson, East Moline, Ill., and Elvin L. Howell, Bettendorf, Iowa, assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 4, 1962, Ser. No. 164,253
3 Claims. (Cl. 146—117)

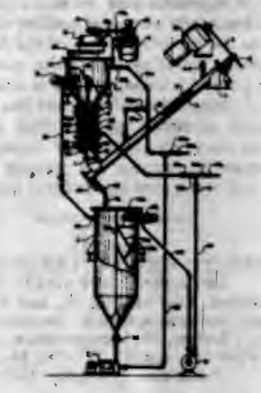


2. In a combine of the type having a housing including a plurality of wall portions defining a rearward primary material discharge opening, a straw chopper apparatus mounted within said housing adjacent said primary material discharge opening, mounting means affixed to said housing and to one of said wall portions to provide for displacement of one of said portions from a first position in which said wall portion comprises a portion of said housing to a second position in which said wall portion effectively defines at least a portion of a secondary material discharge opening, and latch means for maintaining said one wall portion in said first position as a normal volume of material passes through said chopper apparatus and through said primary discharge opening, said latch means being yieldable under pressure developed as the crop material accumulates to effect the displacement of said one wall portion from the first to the second position to provide for the discharge of the accumulated material through said secondary discharge opening, thereby preventing damage to the housing and to the chopper apparatus.

3,165,134
APPARATUS FOR MILLING RICE AND THE LIKE
Truman Benjamin Wayne, Houston, Tex., assignor to Food Engineering International, Inc., Houston, Tex., a corporation of Texas
Filed May 4, 1961, Ser. No. 107,728
4 Claims. (Cl. 146—279)

1. An apparatus for milling brown rice comprising a casing; a stationary frusto-conical screen mounted vertically within the casing and spaced laterally therefrom; a frusto-conical rotor within and concentric with the screen having a smooth surface substantially parallel to the screen defining an annular space between the rotor and screen effective to mill bran from brown rice; an inlet for brown rice into said annular space adjacent the upper end of the screen; a horizontal screen below said

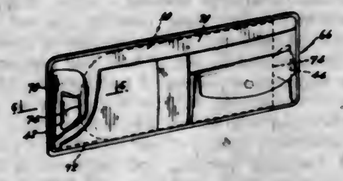
rotor defining a horizontal space below said rotor substantially equal in height to the width of said annular space and communicating with said annular space; a central outlet for milled rice in said horizontal screen; scraping ribs on the bottom of the rotor arranged to



sweep grains from said horizontal space to said outlet; and means, including rigid spiral ribs on the rotor arranged to oppose downward flow of grains through the annular space and to direct such grains outward against said frusto-conical screen, for retarding downward flow of grains in said annular space.

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3,165,135
## MONEY CONTAINERS
Louis Mintzes, 17 Radcliffe Road, Island Park, N.Y., and Arnold Walach, 198—04 56th Ave., Flushing, N.Y.
Filed Aug. 7, 1963, Ser. No. 300,464
7 Claims. (Cl. 150—38)

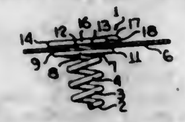


1. A personal money container, comprising opposite confronting side walls defining a pocket closed at one end and having an access opening at its opposite end, and a flap overlying and secured to at least one of said side walls at the opposite side edges of said one side wall and of said flap in the region of said access opening, said flap in said overlying position thereof concealing said access opening and foldably movable to a retracted position for access to the interior of said pocket through said access opening, tabs projecting from the opposite ends, respectively, of said container, and a wallet having a pocket provided with an inner wall provided with slits in which said tabs are engaged for releasably securing said container in said pocket of the wallet.

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3,165,136
## WIRE NUT WITH WORKPIECE ENGAGING MEANS
Billy M. Horton, 9712 Kensington Parkway, Kensington, Md.
Filed June 3, 1960, Ser. No. 33,779
5 Claims. (Cl. 151—41.75)

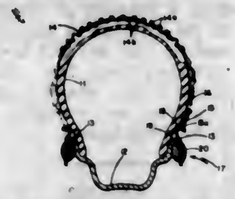
1. A wire nut for use with a threaded member comprising a length of coiled wire having a pitch generally conforming to the pitch of the threads of a threaded member with which the wire nut is to be emloyed, the two end turns of said coiled wire providing means to secure said coil to a workpiece, one of said turns comprising first and second curved diametrically opposed segments and first and second diametrically opposed radially outwardly extending segments, said first and second curved segments having a spacing therebetween conforming to the root diameter of the threaded member, said first curved segment having one end connected to the adjacent turn of said coiled wire, said first radial segment extending between the other end of said first curved segment and one end of said second curved segment, said second turn of wire comprising third and fourth diametrically opposed curved segment and a third radially outwardly extending segments, all of said curved segments being helically disposed and generally conforming to the radius of curvature of



the body of said threaded member, said second radially outwardly extending segment connected between the other end of said second curved segment and one end of said third curved segment, and said third radial segment extending between said third and fourth curved segments, all of said radial segments being elongated flat loops which extend radially outwardly a substantial distance beyond the diameter of said coiled wire, said third curved segment being adapted to pass through a screw receiving hole in said workpiece, said first and second radial segments lying on one side of said workpiece and the third radial segment lying on the other side thereof said fourth curved segment terminating in a section of wire having a pointed end, said end being disposed out of the plane of said section of wire and directed toward said other side of said workpiece.

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3,165,137
## ANTI-SKID DEVICE
Samuel Bergen, 60 Mason Terrace, Brookline, Mass.
Filed Apr. 8, 1963, Ser. No. 271,233
4 Claims. (Cl. 152—236)



1. An anchor for use in conjunction with a wheel having a rim with a lip and a tire mounted on said rim, comprising a substantially flat body member having a hook and being embedded in a block of malleable metal so as to form a lip-engaging notch with said hook; said body member extending through said block to provide an arm.

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3,165,138
## TIRE
Joseph G. Manchetti, St. Clair Shores, and Herbert B. Hindin, Southfield, Mich., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 5, 1962, Ser. No. 235,239
3 Claims. (Cl. 152—354)

1. A tire comprising a rubber carcass having sidewalls terminating in shoulders at the tread portion thereof, circumferentially extending beads at the inner edges of said carcass, at least one cord reinforcing ply in said carcass, the individual cords of which extend substantially radially from bead to bead, an air retaining liner of rubber on the inner surface of the carcass and extending from bead to bead, bias-cut fabric material interposed in each of the sidewalls between said liner and said ply and co-

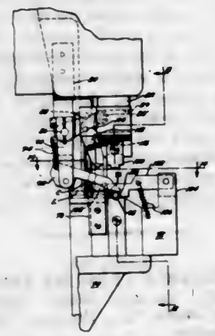


extensive at least with said sidewalls of the carcass to resist extrusion of the rubber liner between the cords of the radial ply when the interior of the carcass is under pressure, and, one edge of said fabric material in each of the sidewalls being anchored around its respective bead, the other edge thereof extending to and terminating at the respective adjacent shoulder.

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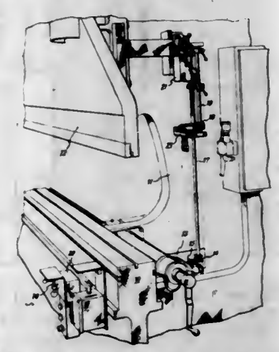


3,165,139
## APPARATUS FOR ORIENTING, FEEDING AND CRIMPING INSULATED TERMINAL CONNECTORS
Robert U. Whitney, Jr., Livingston, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Original application Mar. 13, 1959, Ser. No. 799,198, now Patent No. 3,084,780, dated Apr. 9, 1963. Divided and this application June 18, 1962, Ser. No. 203,239
4 Claims. (Cl. 153—1)



1. A cyclically operable crimping machine for crimping wire barrel, terminal connectors on the end portion of a wire conductor comprising a pair of relatively moveable and engageable crimping elements, one of said elements having an anvil configurated for receiving the wire barrel portion of a connector in position for crimping against the other element when said elements are engaged, means for moving said elements in and out of engagement, means for successively and singly feeding connectors into position on said anvil when said elements move to disengaged position, a connector holddown arm for securing the connector against said anvil while a wire is inserted into its wire barrel, means for moving said holddown arm into connector securing position when a connector is placed into received position on said anvil, and latch means on the other said element for moving said holddown arm from said securing position after the crimping cycle when said elements move from engaged to disengaged position to free the crimped connector.

3,165,140
## MULTIPLE STOP DEVICE FOR PRESS BRAKES AND THE LIKE
Merrill W. Hazelton, John J. Erhart, and Carl J. Ostendorf, Cincinnati, Ohio, assignors to The Cincinnati Shaper Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 19, 1961, Ser. No. 125,204
8 Claims. (Cl. 153—21)



1. In a press brake and the like having a bed and a ram reciprocable with respect to said bed; a bottom limit switch, and a member carrying a bottom stop, one of said switch and member being mounted on said bed and the other on said ram, and said member being adjustable to determine the point at which said bottom limit switch is actuated by said bottom stop to stop downward movement of said ram, a plurality of additional bottom limit switches mounted adjacent said first mentioned limit switch, and a plurality of additional bottom stops mounted on said member, each of said additional bottom stops being adjustable with respect to said member, and an operative electric circuit including switch means for placing any and all of said limit switches selectively into operative relation to said circuit, and means for rendering said selected limit switches operative in any sequence responsive to successive strokes of said ram to provide a cycle of operation wherein the downward movement of said ram is stopped at different points on successive strokes in said cycle, whereby all of said bottom stops may be adjusted as a unit to compensate for variations in thickness of the material being operated upon, without disturbing the settings of said stops in relation to each other.

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3,165,141
## ADJUSTABLE FIXTURE
Paul Tishken, 13000 W. Eight Mile Road, Detroit, Mich.
Filed May 26, 1961, Ser. No. 150,110
3 Claims. (Cl. 153—32)

1. The combination in an adjustable fixture to position a die to receive and straighten advancing stock, and including

a slideway,

a slide reciprocably slidable to selective positions of adjustment upon the slideway,

adjusting means interconnecting said slide and slideway and actuable to precisely establish any such position,

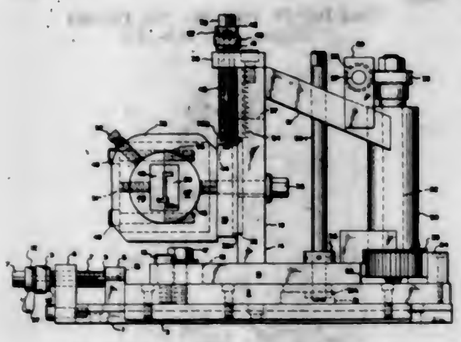
a carriage, including a base,

a pivot element securing said base upon said slide for arcuate travel thereon to selective positions of adjustment about the axis of said pivot element,

means carried by said carriage, reacting upon means carried by said slide to precisely establish any such position, of

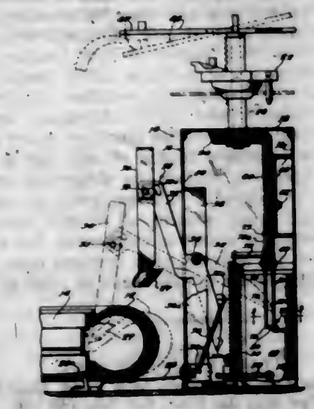
(*a*) a mounting plate carried by the base and extending therefrom,

(*b*) a pair of spaced die supporting plates,
(*c*) a pair of pivot mountings respectively independently mounting the respective plates,
(*d*) a straightening die elongated between and rigidly, releasably supported by, and interconnecting said plates, whereby pivotal movement of one die supporting plate responsive to travel of its pivot mounting is transmitted to the other die supporting plate through the interconnecting supported die.



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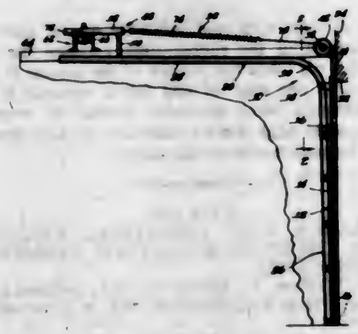
3,165,142
TIRE CHANGING STAND
Royal C. Taberdon, Casco, Wis., assignor to The Coats Company, Inc., a corporation of Iowa
Filed Apr. 15, 1963, Ser. No. 273,142
11 Claims. (Cl. 157—1.17)



1. A power operated tire changer for vehicular tires, comprising: a tire changing stand having a platform for holding a wheel rim thereon; a spindle on said platform extending generally through the center of said rim with the outer end thereof exposed; a rotatable tire tool driving shaft journaled in said spindle and having an exposed end for engaging a tire mounting and demounting tool and driving the tool peripherally of the wheel rim for progressively mounting and demounting of a tire thereon; drive means for said rotatable shaft including gear means on said rotatable shaft and swingable gear segment means pivotally mounted in mesh with said shaft gear means, a pneumatic piston and cylinder device within said stand connected with said gear segment means to rock said segment means through an arcuate path about its pivotal mounting and rotate said tool driving shaft thereby, bead breaker means operably associated with said drive means for selective engagement therewith to loosen the tire bead from the tire rim and prepare the tire for demounting from said rim, said bead breaker means comprising a depending shoe mounted on a swingable lever having a free end, said tire changer including a depending link on said gear segment so that the free end of said lever is selectively engageable with the free end of said link to move said bead breaker shoe toward said tire upon actuation of said piston and cylinder device.

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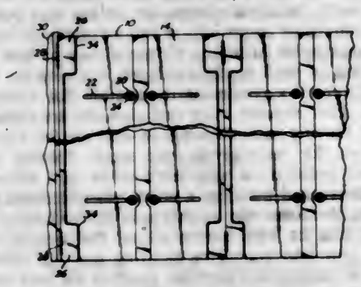
3,165,143
DOOR CONTROL MECHANISM
Roy Ralph Jackwig, Galesburg, Ill., assignor to Rowe Manufacturing Co., Galesburg, Ill., a corporation of Illinois
Filed Feb. 4, 1963, Ser. No. 255,766
8 Claims. (Cl. 160—189)



1. A mechanism for operating a door mounted for movement between a generally vertically disposed closed position and a raised generally horizontally disposed opened position, said mechanism including an element engageable with the door when the door is in said opened position and mountable for movement a substantial distance with the door as the door moves between its opened and closed positions, a spring operatively connected with said element for urging said element for biasing the door towards its closed position, and means connected with said spring and with the door and responsive to movement of the door toward its closed position for maintaining the forces provided by said spring while the door moves from its opened position toward its closed position.

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3,165,144
EXPANDABLE CLOSURE MEMBER
Charles A. Kirby, Tacoma, Wash., assignor to Allied Building Components, Inc., Tacoma, Wash., a corporation of Washington
Filed Mar. 22, 1963, Ser. No. 267,187
4 Claims. (Cl. 160—221)

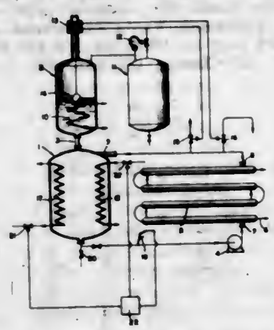


1. An expandable closure member for framed openings comprising a first elongated panel member of substantially H-shape cross section providing laterally spaced elongated grooves leading inwardly from each of its side edges and extending the full length thereof, a pair of second elongated panel members of substantially the same length as and disposed on opposite sides of the first panel member and each having a portion thereof slidably received in a different one of the grooves for adjusting the width of the closure member by selective penetration of the second panel members in the grooves, a pair of laterally extending, elongated slots leading inwardly from the rear surface of the first panel member and communicating with respective ones of the grooves, stud means integral with each of the second panel members and projecting through the associated slot, nut means on the studs for securing the first and second panel members together in adjusted relation, and longitudinally spaced rearwardly projecting enlargements on at least one of the second panel members for reinforced attachment of mounting means, each first panel member associated with a second panel member having said enlargements being recessed in the areas of said enlargements to accommodate full retraction of the second panel member into the associated groove of the first panel member.



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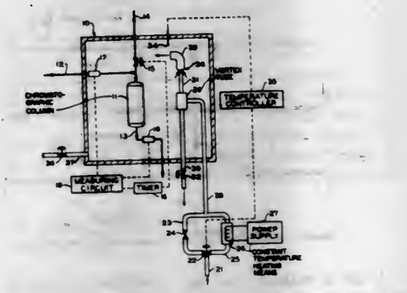
3,165,145
PROCESS FOR THE CONTROL OF THE TEMPERATURE IN REACTORS BY THE INDIRECT EXCHANGE OF HEAT BY MEANS OF WATER UNDER PRESSURE
Hermann Spaenig, Ludwigshafen (Rhine), Georg Schmidt-Thomee, Heidelberg, and Kurt Weizsaecker, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed June 30, 1960, Ser. No. 39,988
Claims priority, application Germany, July 1, 1959, B 53,826
3 Claims. (Cl. 165—2)



1. A process for regulating the temperature in reactors by indirect heat exchange with pressurized water which comprises: circulating water from a full storage vessel through the external jacket of a reactor and back to said storage vessel; heating and cooling said water to a desired temperature within said storage vessel; maintaining a pressure in said storage vessel which is higher than the saturation vapor pressure corresponding to the maximum attainable temperature of the water in the circulating system, said pressure being maintained by forcing a gas cushion into an auxiliary vessel which is partially filled with water, said auxiliary vessel being arranged above said storage vessel and being connected to the highest point of said storage vessel by a narrow conduit, said narrow conduit being such that the water passing from said storage vessel through said reactor jacket does not circulate through said auxiliary vessel; and maintaining the water in said auxiliary vessel at a temperature lower than the temperature of the water in said storage vessel.

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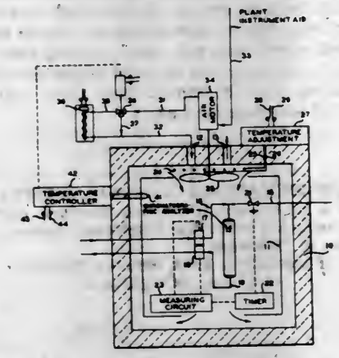
3,165,146
TEMPERATURE CONTROL SYSTEM
Dexter E. Smith and Lewis B. Roof, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed June 7, 1962, Ser. No. 200,819
10 Claims. (Cl. 165—2)



9. A method for maintaining the temperature of an object at a substantially constant value within the normal range of ambient temperature which comprises providing a source of fluid at ambient temperature, heating in a constant temperature electrical heating zone a first portion of the fluid from said source to a temperature higher than said value, combining the thus heated first portion with a second portion of the fluid from said source, cooling the thus combined fluid to said value, passing the thus cooled fluid in heat exchanging relationship with said object, and manipulating the ratio of the amount of said first portion to the amount of said second portion responsive to the temperature of said object.

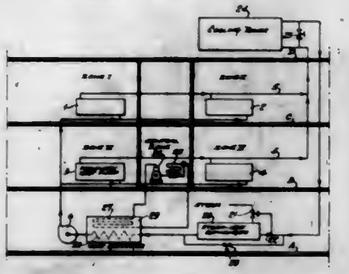
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3,165,147
TEMPERATURE CONTROL OF A CONFINED SPACE
Lewis B. Roof and Marvin E. Reinecke, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,399
9 Claims. (Cl. 165—2)



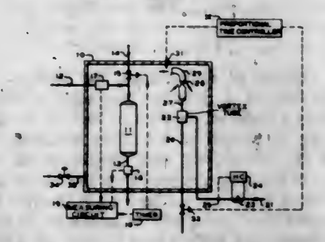
1. The method of maintaining the interior of an insulated housing at a constant temperature which comprises adding a constant amount of heat to the interior of said housing by means of a heating element; cooling a stream of air; introducing said stream of air to the interior of said housing; recirculating the air in said housing; exhausting air from said housing at the rate it is introduced; continuously sensing the temperature of the interior of said housing; and adding heat to said air stream in an amount sufficient to maintain the sensed temperature of the interior of said housing constant.

3,165,148
AIR CONDITIONING SYSTEM
John P. Soule, Birmingham, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 19, 1961, Ser. No. 125,211
3 Claims. (Cl. 165—29)



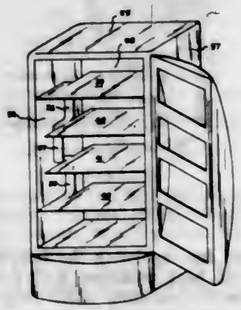
1. In a building, an air conditioning system for heating and cooling a plurality of peripheral zones and a central zone within said building, comprising a conduit for circulating a heat transfer fluid to said peripheral zones, reverse cycle refrigeration units in said peripheral zones having a first heat exchange element arranged in heat transfer relation with the circulating fluid in said conduit and a second heat exchange element arranged in heat transfer relation with the air in its associated zone, said first and second heat exchange elements being supplied with a common refrigerant and being operatively interconnected such that said elements may operate respectively as a refrigerant evaporator and as a refrigerant condenser or respectively as a refrigerant condenser and refrigerant evaporator, said units being operable on one cycle to transfer heat from said heat transfer fluid to the air in its associated zone and on the other cycle of operation to transfer heat from the air to said heat transfer fluid, heat source means connected to said conduit to add heat to the heat transfer fluid when required, a cooling unit to cool the heat transfer fluid when required, and a second cooling unit providing a heat transfer relation between said conduit and said central zone of said building, said central zone being within a portion of the building where there is substantially no heat transmission through the walls to lose or gain heat such that such central zone only requires cooling due to internal heat gains within said central zone, said second cooling unit comprising refrigeration apparatus designed to operate exclusively as a cooling unit to transfer heat from said central zone to said heat transfer fluid.

3,165,149
TEMPERATURE CONTROL SYSTEM
Clarence J. Raible and Richard A. Sanford, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,511
1 Claim. (Cl. 165—30)



A temperature control system including a chromatographic analyzer and means for maintaining the temperature of said chromatographic analyzer at a substantially constant value within the normal range of ambient temperature which comprises a vortex tube having an inlet, a hot fluid outlet and a cold fluid outlet; a source of fluid at ambient temperature; conduit means for passing fluid from said source to said inlet of said vortex tube; heating means in heat transferring relationship with the fluid in said conduit means for heating the fluid in said conduit means to a predetermined temperature above maximum ambient temperature; means for passing only fluid from said cold fluid outlet in heat exchanging relationship with said chromatographic analyzer; a hot fluid outlet conduit connected to said hot fluid outlet; an on-off valve means positioned in said hot fluid conduit to completely close said hot fluid outlet when said valve means is in its off position; means for measuring the temperature of said chromatographic analyzer and establishing a first signal representative thereof; a proportional time temperature controller; means for applying said first signal to an input of said proportional time temperature controller, and means responsive to the output of said proportional time temperature controller for actuating said valve means between the on position to cause said vortex tube to effect a temperature drop in the fluid between said inlet and said cold fluid outlet and the off position to prevent said vortex tube from effecting a temperature drop in the fluid between said inlet and said cold fluid outlet, the frequency of oscillation between said on position and said off position being sufficiently high to substantially avoid effecting a corresponding oscillation in the temperature of said chromatographic analyzer.

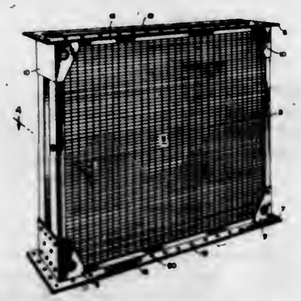
3,165,150
HEAT-EXCHANGER HAVING SELECTIVELY SPACED HEAT-EXCHANGE SHELVING INTEGRALLY FORMED THEREIN
Arnold U. Hurst, Henrico County, Va., and Grant V. Mack, Valley Station, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 14, 1959, Ser. No. 833,785
10 Claims. (Cl. 165—75)



1. In combination, an enclosure having an interior wall surface, a heat-exchanger comprising a one-piece metal sheet having a conduit therein to receive a heat-exchange fluid, said sheet having a plurality of generally vertically superposed flat portions provided with opposed ends and bent outwardly from the plane of said sheet and with each of said flat portions having a maximum length corresponding to the width of said sheet, and an intermediate portion of said sheet joining adjacent flat portions and having therein a portion of said conduit integrally connected to the remainder of said conduit and bent near the junction of said intermediate portion with said adjacent flat portions, said intermediate portion serving as the sole connection between said adjacent flat portions, each intermediate portion being disposed adjacent one of said ends of the pair of adjacent flat portions interconnected thereby while the adjacent intermediate portion is disposed adjacent the opposite ends of its respective pair of adjacent flat portions whereby the facing surfaces of each pair of adjacent flat portions are formed from the same side of said sheet; and means for mounting said heat-exchanger upon said wall surface.



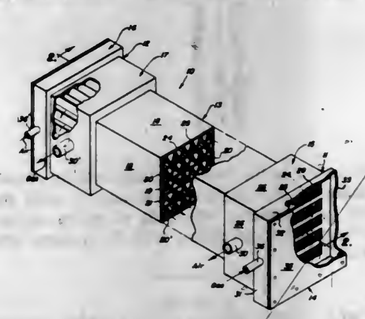
3,165,151
HEAT-TRANSFER TRUSSED-RADIATOR
William V. Astrup and Donald W. Christensen, Racine, Wis., assignors to Young Radiator Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 9, 1962, Ser. No. 186,148
2 Claims. (Cl. 165—81)



1. A heat-exchanger trussed-radiator comprising,
(*a*) a pair of apertured headers each having a bordering perimetrical flange with the apertured portion of the header offset from the plane of the bordering flange and defined by end and side rims,
(*b*) a single battery of tubes arranged in closely-spaced parallel relationship and supporting a series of fins transversely-disposed in closely-spaced relationship with the opposite ends of the tubes bonded in the apertured portion of the respective headers,
(*c*) pairs of U-shaped gussets each having the perimeters of the base and parallel wing parts bonded respectively to the end and side rims of the respective headers, and
(*d*) a pair of channel-shaped reinforcing side plates extending along the tube-supported fins on opposite sides thereof and each plate having one end bonded to the gussets on one header and each having the other end in sliding embracive contact with the gussets on the other header to permit movement of the headers relative to each other axially of the tubes in response to the alternating heat expansion-contraction of the tubes.

3,165,152
COUNTER FLOW HEAT EXCHANGER
Mack M. Jones, Western Springs, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 11, 1960, Ser. No. 48,903
5 Claims. (Cl. 165—166)

1. A stationary heat exchanger for transferring heat from a high temperature source of heat transferring fluid flow to a low temperature source of heat receiving fluid flow comprising a core having one end connected to a front header and the other end connected to a rear header, a first collector chamber having heat receiving fluid outlet means disposed in said front header adjacent one end of said core and a second collector chamber having heat transferring fluid outlet means disposed in said rear header adjacent the other end of said core, said core having a casing of rectangular cross-section and a matrix, said matrix comprising a plurality of superposed corrugated elements positioned in longitudinal direction and a longitudinally disposed plate positioned contiguous to and between each of said corrugated elements in sealed relation defining a plurality of first and second fluid passages in parallel superposed and adjacent transverse alternate relation, said first fluid passages being in sealed relation with respect to said second fluid passages, said first header defining a first mainfold having heat transferring fluid inlet means connected to the forward end of said first collector chamber, said first fluid passages of said matrix extending forwardly through said first collector chamber and communicatively connected to said first manifold, said first collector chamber having a plurality of openings in communication with said second fluid passages and said heat receiving fluid outlet means, said second header defining a second manifold having heat receiving fluid inlet means connected to the rearward end of said second

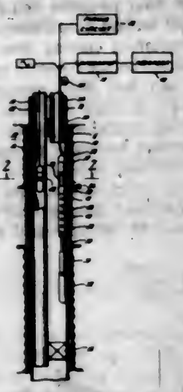


collector chamber, said second fluid passages of said matrix extending rearwardly through said second collector chamber and communicatively connected to said second manifold, said second collector chamber having a plurality of second openings in communication with said first fluid passages, and said heat transferring fluid outlet means whereby heat transferring fluid enters said first manifold and flows in one direction through said first passages into said second collector chamber and heat transferring fluid outlet means while said heat receiving fluid enters said second manifold and flows in the opposite direction through said second passages into said first collector chamber and said heat receiving fluid outlet means thereby transferring heat from said heat transferring fluid to said heat receiving fluid during flow through said matrix.

3,165,153
METHODS AND APPARATUS FOR WELL COMPLETIONS
C P. Lanmon, Friendswood, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed May 2, 1960, Ser. No. 25,997
9 Claims. (Cl. 166—4)

8. A method of perforating a cased well intermediate of the length of a tubing string disposed within such a cased well, comprising the steps of: lowering a first radioactive device in the tubing string to a position intermediate the length of the tubing string, lowering into the cased well a tool having a second directional radioactivity device, a well perforator, an indexing device and wall anchor means where the second directional radioactivity device has a fixed angular orientation relative to the direction of firing of the well perforator and the indexing device connects the perforator to the wall anchor means and where said first and second radioactivity devices emit and detect radioactivity, positioning the second radioactivity device and perforator at a level corresponding to the position to the first radioactivity device, attaching the wall anchor means in the cased well relative to the wall of the cased well in a fixed non-rotatable position, indexing the

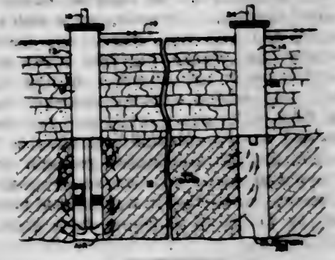
perforator and second radioactivity device with respect to the fixed position of the wall anchor means through a 360° arc while deriving indications of the indexed position of the second radioactivity device relative to the radioac-



tivity intercepted by the detecting radioactivity device, and further indexing the perforator in accord with derived indications to a position where its direction of firing is arranged to avoid interception with the tubing string in the cased well.

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3,165,154
OIL RECOVERY BY IN SITU COMBUSTION
Melcon Santourian, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 23, 1962, Ser. No. 182,013
10 Claims. (Cl. 166—11)

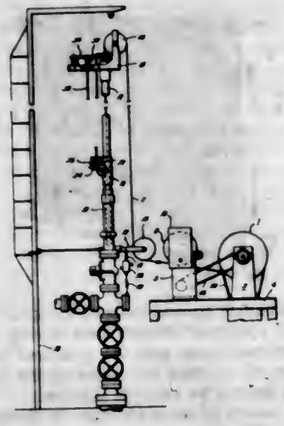


10. A process for producing hydrocarbons from a permeable carbonaceous stratum penetrated by an ignition well and at least one offset well which comprises establishing an annular combustion zone around said ignition well extending substantially from the top to the bottom of said stratum by igniting said stratum adjacent one end section of said annulus and passing combustion-supporting gas directly into the ignited section of said annulus so as to expand the resulting combustion zone to the opposite end section of said annulus; thereafter passing combustion-supporting gas thru said at least one offset well and thru said stratum to said annular combustion zone so as to advance said zone toward said offset well; and recovering produced gases from said ignition well.

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3,165,155
AUTOMATIC PARAFFIN SCRAPER
William D. Leathers and Leroy Q. Gresham, Houma, La., assignors to Gem Oil Tool Company, Inc., Houma, La., a corporation of Louisiana
Filed Sept. 22, 1961, Ser. No. 139,942
2 Claims. (Cl. 166—70)

1. Well tubing scraper control mechanism which is adapted to run a wire line suspended scraper tool through a well tubing string and from and return to an inactive location in a scraper housing section of the tubing string, including a wire line reel, a reversible fluid pressure motor drive connected with said wire line reel, a first pressure actuated valve shiftable to and from a setting which directs pressure fluid delivery to said motor for driving the same in wire line unreeling direction, a second pressure actuated valve shiftable to and from a setting which directs pressure fluid delivery to said motor for driving the same in wire line rereeling direction, a periodically operating controller through which a pressure fluid signal is transmitted to the first pressure actuated valve for shifting the same to its pressure fluid delivery setting, pressure fluid signal transmitting means connected with both of the aforementioned valves and

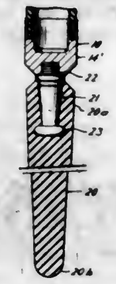


responsive to a predetermined amount of wire line unreeled for directing pressure fluid signals to actuate said valves for shifting the first pressure actuated valve from the abovementioned pressure fluid delivery setting and for shifting the second pressure actuated valve to its pressure fluid delivery setting, other valve means connected with said second pressure fluid actuated valve and movable to and from a setting which passes pressure fluid to the second pressure fluid actuated valve for shifting the same from its said pressure fluid delivery setting and motion transfer means with said other valve means and including a movable device having mounting attachment to said housing section and being responsive to scraper tool arrival in said housing section to effect movement of said other valve means to said pressure fluid passing setting.

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3,165,156
BOREHOLE APPARATUS
Frank P. Kokesh, Seabrook, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 8, 1960, Ser. No. 67,975
2 Claims. (Cl. 166—243)

1. Apparatus particularly for use in an open well bore having irregular wall surfaces, obstructions or ledges, comprising an elongated well tool having a central axis and guiding means affixed to the lower end of said well tool, said guiding means comprising a short coupling member having one end coupled to said well tool and a remaining end for receiving a nose piece, an elongated tapered nose piece having one end portion attached to said remaining end of said coupling means and the remaining major portion of said nose piece extending downwardly a distance substantially greater than the length of said coupling member, said nose piece having a central axis in longitudinal alignment with the central axis of said well tool, said nose piece constructed of an elastomer material of sufficient flexibility to allow said remaining portion of said nose piece and its axis to be bent relative to said central axis of said well tool after contact with

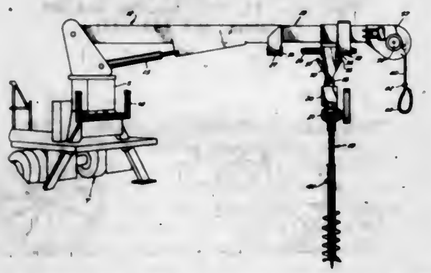


an obstruction in a well bore and thereby guide said well tool away from said obstruction and toward the center of the well bore to prevent said well tool from jamming with such an obstruction, said nose piece further providing shock absorber action for said well tool.

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3,165,157
EARTH-BORING APPARATUS
Ralph E. Carbert, Minneapolis, Minn., assignor to Tel-E-Lect Products, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 1, 1961, Ser. No. 149,468
12 Claims. (Cl. 173—28)



1. A utility-type digger mounted on a vehicle and constructed and arranged thereon for selective connection either with the boom or stinger carried by the vehicle or with both, said digger comprising

(*a*) an elongated boom pivotally mounted on said vehicle,

(*b*) a power driven digger,

(*c*) means carried by said vehicle and connected to said digger for driving the latter,

(*d*) a stinger telescopically carried by said boom and being extendable and retractable relative thereto,

(*e*) means carried by said vehicle and operatively connected to said stinger for extending and retracting said stinger relative to said boom,

(*f*) pivot shaft mounting means on said boom,

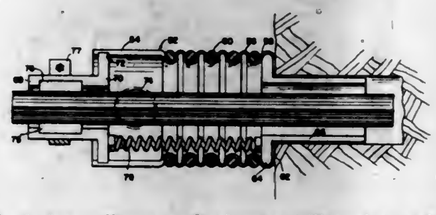
(*g*) pivot shaft mounting means on said stinger and substantially in alignment with the said means on the boom,

(*h*) a digger-supporting arm supporting said digger and carrying pivot shaft means for disposition either in the shaft mounting means on, and supported by, said boom with the stinger in extended position, or for disposition in the shaft mounting means on, and supported by, said stinger with the stinger also in extended position, or for disposition in the mounting means on the boom and stinger when the stinger is in retracted position,

(*i*) and releasable interengaging means carried by said boom and said digger-supporting arm for selectively maintaining said digger in boom and stinger supported positions.

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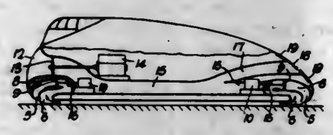
3,165,158
DRILL CUTTING COLLECTING APPARATUS
Carl R. Horten, Warren Township, Somerset County, and Isidor R. Loss, Phillipsburg, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 8, 1961, Ser. No. 130,067
4 Claims. (Cl. 175—211)



1. A dust collector to fit about a drill steel at a drill hole comprising a hollow housing adapted to encircle the drill steel and having a discharge passage, said housing being extensible, a nozzle on said housing to communicate with the drill hole, a member frictionally gripping said drill steel, said member being fitted to rotate in the rearward end of the housing, and spring means disposed within said housing and connected between said nozzle and said member to maintain said nozzle at the drill hole as the drill steel advances into the hole.

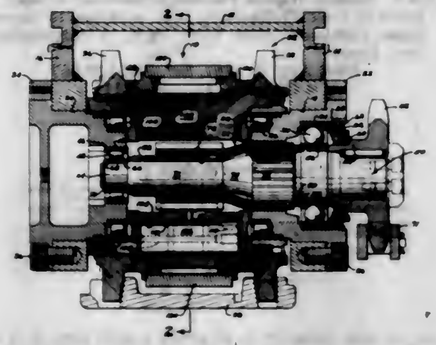
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3,165,159
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER
Wilfred James Eggington and Edward G. Tattersall, Southhampton, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed Mar. 10, 1961, Ser. No. 94,736
Claims priority, application Great Britain, Mar. 16, 1960, 8,685/60
13 Claims. (Cl. 180—7)



1. A vehicle for travelling over a surface which, in operation, is at least partly supported above the surface by a cushion of pressurized gas formed and contained beneath the vehicle by at least one curtain of fluid, comprising at least one supply port in the bottom surface of the vehicle from which the curtain forming fluid issues in a downwards and inwards direction relative to the periphery of the vehicle, and a plurality of discrete peripherally spaced recovery ports in the bottom surface of the vehicle adjacent to and inboard of the supply port through which at least part of the fluid forming the curtain is recovered into the vehicle, the recovery ports being separated by intervening portions of the bottom surface of the vehicle so that, when the vehicle is operating at a low height, at least part of the fluid forming the curtain is caused to flow inwardly beneath said intervening portions of the bottom surface of the vehicle and past the recovery ports until deflected round and outwardly by the gas cushion and to then flow back to the recovery ports in a substantially horizontal direction beneath the bottom surface of the vehicle.

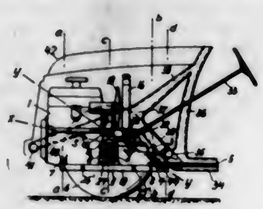
3,165,160
PLANETARY GEAR DRIVE FOR A CRAWLER TREAD
Arthur L. Lee and Arthur B. Coval, Columbus, Ohio, assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1962, Ser. No. 220,441
5 Claims. (Cl. 180—9.64)



1. A planetary gear drive for a crawler tread comprising a frame, a drive shaft rotatably journaled in and supported adjacent its end portions by said frame, said drive shaft having an intermediate portion of reduced diameter, a sun gear having a central bore and an annular flange extending laterally therefrom, said annular flange having an internal bore with substantially the same radial dimension as said drive shaft, said sun gear central bore having a diameter larger than the diameter of said drive shaft intermediate portion, said sun gear coaxially positioned on said drive shaft between said drive shaft end portions with said sun gear central bore overlying said shaft intermediate portion and said annular flange nonrotatably securing said sun gear to said drive shaft, a planet gear carrier having end portions rotatably supported by said frame and an intermediate portion journaled on said drive shaft, a plurality of planet gears carried by said planet gear carrier intermediate portion in meshing relation with said sun gear and positioned radially of said sun gear, said planet gear carrier having sprocket means extending radially therefrom, said sprocket means adapted upon rotation of said planet gear carrier to orbit an endless crawler tread therearound, an internally toothed ring gear meshing with said planet gears, and means to hold said ring gear against rotation, said sun gear arranged during drive to deflect radially relative to said drive shaft intermediate portion to assume a position equidistant from all of said planet gears so that said sun gear drives all of said planet gears and distributes the gear load equally among all of said planet gears.

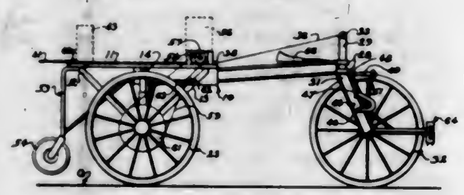
3,165,161
DRIVE AND AXLE SUSPENSION FOR MOTOR VEHICLES
Friedrich K. H. Nallinger, Albrecht-Duerer-Weg 5, Stuttgart, Germany
Continuation of abandoned application Ser. No. 446,355, July 28, 1954, which is a continuation of abandoned application Ser. No. 118,735, Sept. 30, 1949. This application Jan. 23, 1961, Ser. No. 84,458
Claims priority, application Germany Oct. 1, 1948
20 Claims. (Cl. 180—12)

20. In a motor vehicle having a vehicle body and two pairs of oppositely disposed wheels, an auxiliary frame separate from said vehicle body, drive means for driving a pair of said wheels, first elastic bearing means for elastically supporting said drive means on said auxiliary frame, suspension means for connecting one pair of said wheels to said auxiliary frame to provide an up and down movement of said wheels relative to said auxiliary frame including spring means for springing said wheels against said auxiliary frame, and second elastic bearing means for elastically fastening said auxiliary frame to said vehicle body in two transverse planes spaced in the longitudinal direction of the vehicle, said vehicle body, said drive means and said suspension means exerting forces on said



auxiliary frame, and said first elastic bearing means being so located in relation to the second elastic bearing means and the connection of the suspension means on said auxiliary frame that the weight of said drive unit counteracts at least some of the other forces acting on said auxiliary frame as would produce on said auxiliary frame moments which are directed oppositely to the moment produced by the weight of said drive means.

3,165,162
MOTORIZED FARM CART
William A. Ganguet, Cube, Ala.
Filed Mar. 11, 1963, Ser. No. 264,408
3 Claims. (Cl. 180—27)

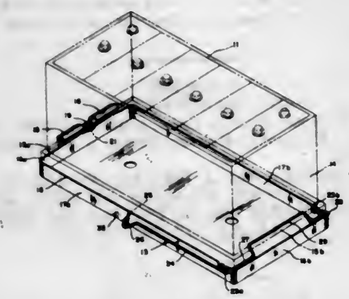


1. A farm cart adapted to transport objects over a row crop and the like comprising:
(*a*) a generally horizontal frame for supporting said objects,
(*b*) at least one pair of generally U-shaped members extending transversely of said frame and having the bases thereof secured to said frame in spaced relation to each other adjacent one end of said frame with the legs thereof depending therefrom,
(*c*) disc-like members securing the lower end portions of the legs of said U-shaped members to each other,
(*d*) a spindle on each side of the vehicle operatively connected to said legs adjacent said disc-like members and projecting outwardly from said legs,
(*e*) a large diameter ground engaging wheel mounted on each spindle in position to support said one end of the frame at an elevation above said crop,
(*f*) another large diameter ground engaging wheel mounted for pivotal movement adjacent the other end of said frame in position to support said other end of the frame at an elevation above said crop,
(*g*) a power unit carried by said supporting frame,
(*h*) means operatively connecting said power unit to said pair of ground engaging wheels to drive the same,



(*i*) steering means operatively connected to said another ground engaging wheel to pivot said another wheel relative to said frame,
(*j*) resilient means interposed between said spindles and said legs to permit a limited amount of relative movement therebetween, and
(*k*) a depending member carried by the end of said frame supported by said pair of ground engaging wheels disposed to engage the ground upon a predetermined amount of vertical movement of the other end of said frame.

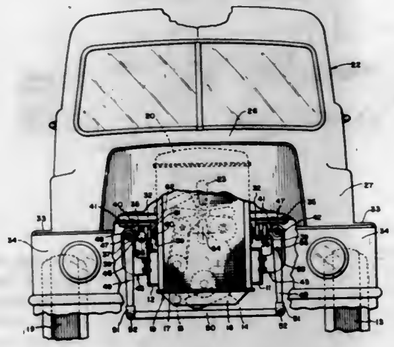
3,165,163
BATTERY MOUNTING DEVICE
Thomas C. Holka, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 24, 1962, Ser. No. 197,534
9 Claims. (Cl. 180—68.5)



A battery mounting device comprising, in combination, a battery case having at least one transversely extending projection at each end thereof, said projections being near the bottom of said battery case, a support tray having at one end thereof an end wall section provided with at least one horizontally extending flange, said flange being engageable with one of said projections to hold down the respective end of said battery case, said support tray having at one side thereof hook receiving means and at least one rod engaging means intermediate said hook receiving means and the other end of said support tray, a second rod engaging means at the other side of said support tray, and a rodlike member having a first segment extending generally longitudinally of said tray and a second segment extending generally transversely of said support tray, said longitudinally extending segment terminating in a hook portion, said generally transversely extending segment being adapted to apply hold-down pressure on the other of said projections at the other end of said battery case upon said transversely extending segment being received by said first and second rod receiving means and said hook portion engaging said hook receiving means.

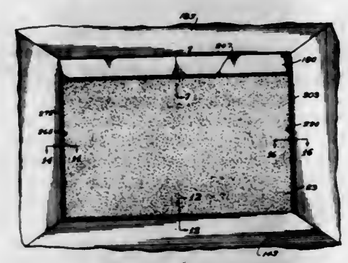
3,165,164
MOTOR VEHICLE RADIATOR MOUNTING MEANS
Gerald W. Hostetler and Vergil W. Kelley, Fort Wayne, Ind., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Dec. 7, 1961, Ser. No. 157,702
12 Claims. (Cl. 180—89)

2. In a motor vehicle having a longitudinal chassis frame and a body connected to said frame for controlled relative movement with respect thereto about a longitudinally extending axis an engine coolant radiator structure; and means for operatively connecting said radiator structure to said body whereby said radiator structure and said body move in unison relatively to said chassis



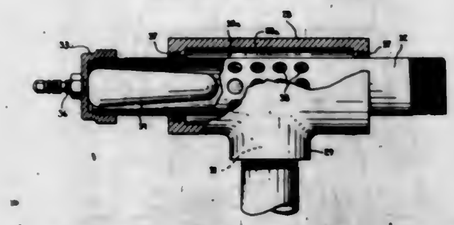
frame as a structural composite unit when said body moves with respect to said chassis frame about said longitudinally extending axis.

3,165,165
SOUND INSULATING BUILDING STRUCTURE WITH MOVABLE PARTITION
Dave Chapman, Chicago, Ill., assignor to Mohasco Industries, Inc., Amsterdam, N.Y., a corporation of New York
Filed Jan. 23, 1961, Ser. No. 84,045
21 Claims. (Cl. 181—33)



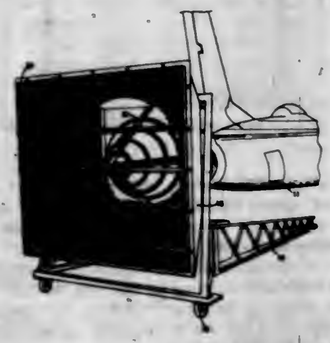
20. In a sound insulating building structure defining an enclosed space therein, sound insulating apparatus extending across said structure fully to the walls thereof, said apparatus comprising
a frame of sound insulating construction extending to to the walls and defining an opening therein,
a sound blocking member which is substantially impervious to sound waves mounted in said frame entirely across said opening,
sound attenuating means positioned between the edges of said member and said frame to substantially prevent the passage of sound waves between said frame and the edges of said member,
said sound attenuating means comprising an open pocket formed in said frame along at least one edge of said member into which said member extends for a substantial distance in spaced relationship to the sides of said pocket to attenuate the passage of sound waves around said edge of said sound blocking member.

3,165,166
SILENCER DEVICE FOR HYDRAULIC JACKS
Ernest A. Hall, Morristown, Ind., assignor to The White-Evans Elevator Co. Inc., Indianapolis, Ind., a corporation of Indiana
Filed Dec. 5, 1963, Ser. No. 328,306
6 Claims. (Cl. 181—47)



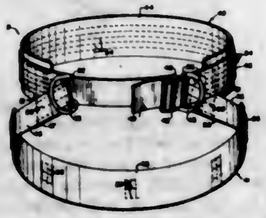
6. A silencer device for joining two rigid conduits carrying fluid under variable pressure comprising a tubular housing having an aperture therein intermediate its ends adapted to be joined to one of the conduits, a rigid tube extending axially through said housing and having one closed end, the open end of said tube being adapted to be joined to the other of the conduits, the interior surface of said tubular housing being spaced from the outer surface of said tube with resilient seal rings sealing the opposite ends of the housing against the tube but permitting axial and rotational movement of the tube with relation to the housing, a series of closely spaced ports in said tube providing fluid communication between said housing aperture and the interior of said tube whereby with said device connected between said conduits transmission of vibration between the conduits is retarded with the freedom for rotational movement between said tube and housing permitting accommodation of misalignment of said conduits.

3,165,167
NOISE INHIBITING DEVICE
Edward H. Miller, Baltimore, and Francis O. Furman, Towson, Md., assignors, by mesne assignments, to Koppers Company, Inc., a corporation of Delaware
Filed July 19, 1957, Ser. No. 672,894
6 Claims. (Cl. 181—51)



1. A noise inhibiting device for use in conjunction with a stream of high velocity gas emanating at high speed from the tailpipe of a jet engine comprising a series of hoop-like members of graduated size, and a plurality of generally longitudinally disposed supporting members secured together in a generally conical configuration having an apex portion at the farthest downstream part of said device, said supporting members supporting said hoop-like members in spaced relation along the principal axis of the supporting members, with the largest of said hoop-like members disposed in the upstream position, the hoop-like members of progressively smaller diameter being supported by said supporting means at progressively increased distances downstream, each of said hoop-like members having a cross section along the principal axis of the stream of comparatively small dimension as compared with its overall diameter, with each hoop-like member having an inner diameter which is slightly greater than the outer diameter of the next smaller hoop-like member, thereby defining an approximately straight-through flow path for high velocity gas to flow through said noise inhibiting device, each of said hoop-like members having radially-extending portions serving to intercept and redirect successive circumferential layers of hot gas from said stream and cause the intercepted gas to flow radially, the gas remaining in the original stream after the several hoop-like members have peeled off circumferential layers then impinging upon said apex portion, at which the remaining portion of gases remaining after traveling through said hoop-like members is eliminated, the change in the velocity frequency distribution resulting from collision with said hoop-like members occurring throughout the length of said device, resulting in a diminution to directed velocity of the stream, with virtual elimination of eddies that create high intensity noise.

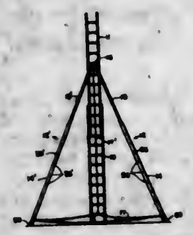
3,165,168
BOATSWAIN'S CHAIR
Clarence W. Rose, Denver, Colo., assignor to Rose Manufacturing Company, Denver, Colo., a corporation of Colorado
Original application Apr. 3, 1961, Ser. No. 100,328, now Patent No. 3,099,331, dated July 30, 1963. Divided and this application June 20, 1963, Ser. No. 289,364
7 Claims. (Cl. 182—3)



1. A boatswain's chair formed as a waist belt and a seating loop connected to each side of the waist belt, and comprising, a body pad of comparatively wide and stiff web material, a seat pad of comparatively wide and stiff web material, and a load-resisting strap wound about the body pad and about the seat pad, wherein one end of the strap is adjacent to an end of the body pad, with the strap extending about the body pad, to and beyond the opposite end of the body pad, to there form a downwardly directed fold, to extend thence about the seat pad and thence upwardly to the said strap end to connect therewith and to extend thence across the front portion of the chair, across the space between the ends of the body pad and to said downwardly directed fold as a connective tongue, and buckle means at said downwardly directed fold adapted to connect with the connective tongue.

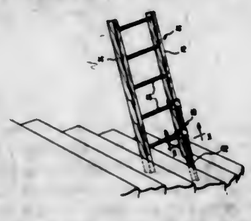
3,165,169
LADDER HOLDER
James F. Machen, 2495 Robinwood Ave., Toledo, Ohio
Filed Sept. 13, 1963, Ser. No. 308,706
1 Claim. (Cl. 182—170)

A self-supporting extension ladder comprising: a lower ladder section; at least one extensible upper ladder section; a separate fitting engageable with a rung of said upper ladder section; said fitting having fastening means engageable with said rung; two slender legs each with a separate hinged attachment to said fitting; said legs each having an upper and a lower portion; said upper portions telescoping respectively with said lower portions; said telescoping limited by stop means in each of said legs; said ladder and said legs arrangeable in a tripod configuration; said ladder forming one element of said tripod; said legs forming the other two elements of said tripod; said fitting located at the apex of said tripod; a



flexible tension link arrangeable in a path extending from said fitting to and around a lower rung of said lower ladder section, continuing to a point near the lower end of one of said legs, continuing to a point near the lower end of the other of said legs, and returning to said lower rung; said link being attachable to said fitting, engageable with said lower rung, attachable to said one leg, attachable to said other leg, and attachable to itself at said lower rung, respectively.

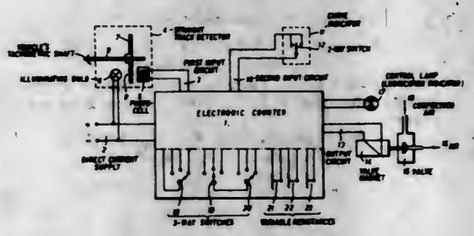
3,165,170
LADDER EXTENSION
Jack C. Blaney, Pittsburgh, Pa., assignor to A-Jack, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 9, 1963, Ser. No. 307,547
4 Claims. (Cl. 182—203)



1. An attachment for ladders comprising,
a hollow sleeve member of substantially rectangular cross-section having a pair of side walls joined by end walls,
an opening formed in one of said side walls,
a resilient arm member secured at one end to said one side wall,
a latching plunger mounted on the free end of said resilient arm member for movement into and out of the opening in said one side wall and projecting into said opening when said arm member is in its unstressed position,
an extension member of U-shape in cross section slidably received in said sleeve member for movement between selected positions in which it projects from said sleeve member and a retracted position in which it is wholly received within the sleeve member, said extension member having spaced flanges connected by an integral web,
a series of openings formed in the web of the extension member along the longitudinal axis thereof,
each opening of said series being selectively engageable by said latching plunger when said resilient arm member is in said unstressed position to maintain said extension member in one of said selected positions,
and a pair of vertically spaced brackets mounted on said sleeve member having upwardly-facing notches adapted to engage a selected pair of ladder rungs for supporting one side rail of the ladder on said extension member.



3,165,171
CONTROL SYSTEM FOR WHEEL FLANGE LUBRICATORS
Roger Baeriswyl, Geneva, Switzerland, assignor to Metravel S.A., Geneva, Switzerland, a Swiss company
Filed June 22, 1962, Ser. No. 204,538
Claims priority, application Switzerland, June 23, 1961, 7,424/61
9 Claims. (Cl. 184—3)

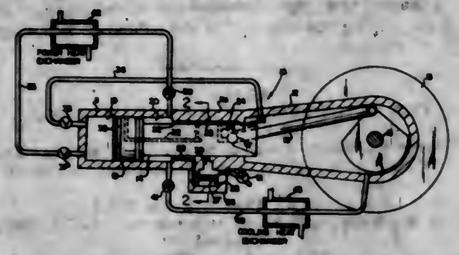


1. A system for controlling the lubrication of the flanges of the wheels of a railway vehicle, comprising an electronic counter, a first input circuit for said counter, a detector of the passage of the vehicle over a straight line track, including means supplying the counter through said first input circuit with linear pulses of current, at a frequency the value of which is in an adjustable linear ratio with the distance travelled over, a second input circuit feeding said counter, a curve detector supplying a pulse through said second input circuit to the counter during the passage of the vehicle over a curve, an output circuit system for the counter, at least one electrically controlled valve fed by said output circuit system and controlling the flow of lubricant to the vehicle wheels, said electronic counter including means whereby the electronic counter supplies an output pulse into the said output circuit system to operate the corresponding valve each time a predetermined number *n* of pulses from the first input circuit has been received by said counter, means for adjusting said number *n*, and means whereby the input of a pulse from the second input circuit into the counter produces in the output circuit system of the electronic counter further periodical pulses energizing the corresponding valve whenever the frequency of the pulses from the first input circuit is higher than a predetermined value.

3,165,172
SEAL FOR PISTON AND CYLINDER DEVICES
Charles H. Baker, Cleveland, Ohio, assignor to Cleveland Pneumatic Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 25, 1962, Ser. No. 197,757
5 Claims. (Cl. 184—6)

1. A combination comprising cylinder means, piston means comprising a piston and a piston rod connected thereto reciprocable within said cylinder, with a portion of said piston and said cylinder means defining a chamber in which working fluid is compressed by reciprocation of the piston, a bearing surface being provided in the cylinder means for support and guiding engagement of said piston rod, said bearing surface having a longitudinally enlarged lubricant-containing recess, means for applying pressure to the lubricant in said recess propor-

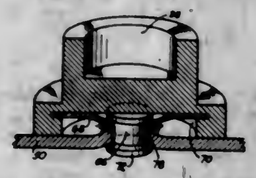
tional to the pressure applied to the working fluid during compression of the latter, and passage means affording



communication from said lubricant-containing recess to an area on the periphery of said piston.

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3,165,173
DISC BRAKES
René Alphonse Louis Thirion, Paris, France, assignor to Société Anonyme D.B.A., Paris, France, a company of France
Filed Nov. 26, 1962, Ser. No. 240,180
5 Claims. (Cl. 188—73)



1. In a disk brake, a connection between a piston and a friction member comprising: a piston having a friction member engaging face, a recess in said face, a resilient member secured to said piston and located in said recess, said resilient member having an opening therein, a spool shaped member having a necked portion between the ends thereof, each end of said spool shaped member defining a head, one of said heads being of greater dimension than said opening, and located between said resilient member and the bottom of said recess whereby said spool shaped member is secured to said piston, said necked portion of said spool shaped member extending through said opening away from said piston face, said friction member comprising a backing plate and a friction lining secured thereto, an opening in said backing plate, a first portion of said backing plate opening being larger than the other head of said spool shaped member and a second portion of said backing plate opening being smaller than said other head, said necked portion extending through said second portion of said backing plate opening and said other head being located between said backing plate and said lining whereby said friction member is secured to said piston, said spool shaped member being of such a length to stress said resilient member when said friction member is attached to said piston whereby said friction member is biased into engagement with said piston face.

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3,165,174
BRAKE THRUST LINK
Robert J. Dubac, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Mar. 30, 1961, Ser. No. 99,410
2 Claims. (Cl. 188—78)

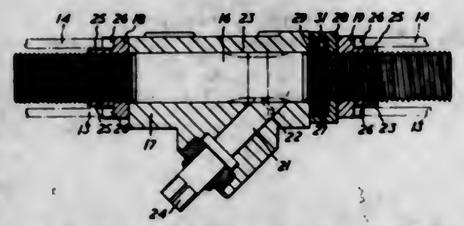
1. A thrust link for communicating applying force from a wheel cylinder piston to a brake shoe having a web, comprising: a tubular member having at one end a convexly curved bearing surface for bearing engagement between said link and piston, said tubular member being open at the other end thereof, a pair of diametrically spaced slots at the other end of said tubular member for receiving the web of the shoe therein, each said slot opening at one end into the edge of said other end of said tubular member and being closed at the other end thereof, a pair of tabs, each tab being integral with a respective



one of said closed ends of said slots and extending therefrom in a direction transverse to and toward the axis of said tubular member, the edges of each tab extending toward said axis being spaced from that portion of the wall of said tubular member from which they are oppositely located, said tabs being arranged in abutting overlapping relationship to provide a reinforced abutment between the shoe web and the link.

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3,165,175
ADJUSTER FOR SHOE DRUM BRAKES
Francis Anthony Dawson Sadler, Little Aston, Sutton Coldfield, England, assignor to Girling Limited, Birmingham, England, a British company
Filed June 25, 1962, Ser. No. 204,829
Claims priority, application Great Britain, June 30, 1961, 23,703/61
5 Claims. (Cl. 188—79.5)



1. An adjuster for the shoes of a shoe-drum brake incorporating shoes mounted on a stationary back-plate and an actuator for the shoes, comprising a housing adapted to be secured to the back-plate between the ends of the shoes remote from the actuator, spindle means rotatably mounted in the housing and including screw-threaded ends projecting from the housing, nuts in screw-threaded engagement with said ends of said spindle means, said nuts having opposed flats adapted to engage between spaced portions of webs of said shoes, abutments for said portions on the nuts on each side of and at the inner-ends of said flats, said screw-threaded engagement of said nuts with said ends of said spindle means being constructed and arranged that upon rotation of said spindle means said nuts move simultaneously in opposite directions for adjustment of the position of said shoes, said spindle means being axially slidable in said housing to permit initial adjustment of said nuts with respect to said spaced portions, and releasable means for retaining said spindle means in its operative position upon completion of said initial adjustment.

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3,165,176
SHOCK ABSORBER
David Alan Avner, Coventry, England, assignor to Girling Limited, Birmingham, England, a British Company
Filed May 28, 1963, Ser. No. 283,785
Claims priority, application Great Britain June 30, 1962
1 Claim. (Cl. 188—96)

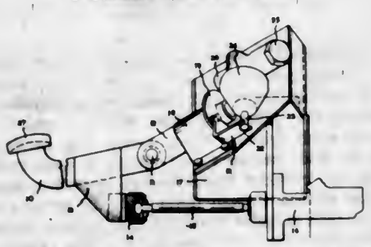
A telescopic damper comprising a cylinder adapted to be filled with fluid, a piston working in the cylinder, a piston-rod attached to the piston and working through an end closure for the cylinder, a nut in screw-threaded engagement with the piston-rod adjacent to the piston, an annular valve seating on the piston directed towards the nut, an oppositely directed concentric valve seating on the nut, a valve member comprising at least one flexible annular plate located between and engaging with said seatings, means on the nut for keying engagement with



a part non-rotatably associated with the cylinder when the damper is extended, whereby relative rotation between the cylinder and the piston-rod rotates the nut on the piston-rod to adjust it axially and vary the loading of the valve member, and a bleed orifice through said nut and having an end extending towards said piston whereby movement of said nut towards and away from said piston moves said orifice end with respect to said piston to effect control of the rate of flow through said orifice.

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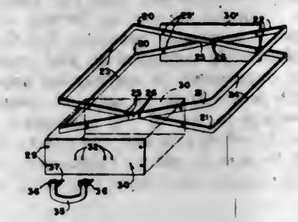
3,165,177
BRAKING SYSTEMS FOR VEHICLES
Peter Camplin Fieldsend, Hollywood, England, assignor to Girling Limited, Tyseley, England, a British company
Filed Nov. 23, 1962, Ser. No. 239,550
Claims priority, application Great Britain, Nov. 23, 1961, 41,879/61; Jan. 9, 1962, 754/62
5 Claims. (Cl. 188—152)



1. Means for applying simultaneously and independently brakes on wheels on opposite sides of a vehicle comprising a pedal lever angularly movable about its longitudinal axis and about an axis at right angles to its longitudinal axis for applying the brakes, a foot pad of substantial width on one end of said lever, a shaft angularly movable about its axis in a stationary housing, a pivotal connection between said shaft and the other end of said lever, the axis of said pivotal connection being at right angles to the axes of the shaft and said lever, individual means for applying the brakes on wheels on opposite sides of the vehicle, and selective means controlled by the angular position of said shaft and said pedal lever about their longitudinal axes for selectively transmitting a force applied through said foot pad to said pedal lever to either or both of said brake applying means.



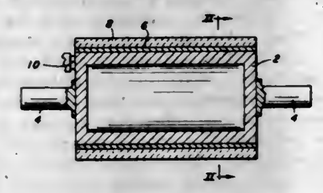
3,165,178
LIGHT-WEIGHT LUGGAGE CASE WITH REINFORCING X-FRAME
Joseph Y. Pelavin, Brooklyn, and Frank Ioviero, Queens, N.Y., assignors to Droutman Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed May 29, 1963, Ser. No. 284,146
3 Claims. (Cl. 190—49)



1. In combination with a substantially rectangular light-weight, flexible fabric luggage case of unitary construction having a first side wall, a second side wall spaced from and parallel to said first side wall, a third side wall, a fourth side wall spaced from and parallel to said third side wall, a front wall and a rear wall, a self-supporting reinforcing frame for placement within said luggage case comprising first and second rectangular frame members secured together substantially centrally of one pair of opposite sides of each of said frame members to define an X-framing, and means for securing together said frame members to prevent relative pivotal movement therebetween, said secured together opposite sides respectively overlying said third and fourth walls along the diagonals thereof, said unsecured sides of said frame members respectively extending along the joints defined by said first and second side walls and said front and rear walls.

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3,165,179
CERAMIC COATED CONDUCTOR ROLL
James T. Shapland, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Sept. 11, 1961, Ser. No. 137,422
12 Claims. (Cl. 191—1)



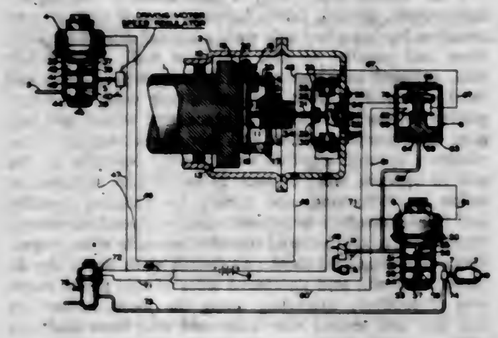
1. A ceramic coated conductor roll for supporting an object passing thereover comprising a cylindrical roll body made of electrically conductive material, a shaft supporting said roll body, and a thin object supporting coating of electrically conductive ceramic material on the outer surface of said roll body.

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3,165,180
COMBINATION VEHICLE WHEEL SPIN AND WHEEL SLIDE CONTROL APPARATUS
Karl Inderau, Hannover, Germany, assignor to Westinghouse-Bremsen-Gesellschaft, m.b.H., Hannover, Germany
Filed June 22, 1961, Ser. No. 118,913
Claims priority, application Germany June 24, 1960
12 Claims. (Cl. 192—3)

1. In a control system for preventing spinning of a wheel-axle unit of a railway vehicle due to excessive application of propulsion torque thereto and for preventing

sliding of the wheel-axle unit due to excessive brake application thereto, control apparatus comprising a rotary inertia device driven by rotation of the wheel-axle unit for sensing an imminent wheel-spin condition of the wheel-axle unit during propulsion and for sensing an imminent wheel-slide condition of the wheel-axle unit during a brake application thereon, switch means operated by said rotary inertia device from one position to another position incidental to sensing thereby of an imminent wheel-spin or wheel-slide condition, first electro-responsive means electrically connected to said switch means and operative responsively to energization upon operation of the switch means from its said one position to its said other position to cut off the application of propulsion power to the wheel-axle unit and effect a light brake application thereon to prevent wheel-spin, second electro-responsive means electrically connected to said switch

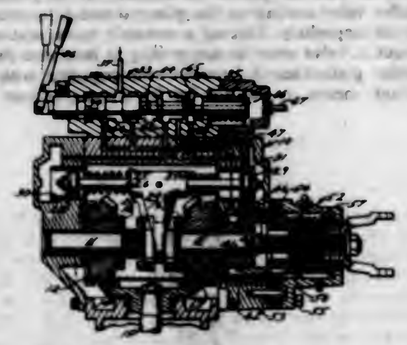


means and operative responsively to energization upon operation of said switch means from its said one position to its said other position to release an existing brake application to prevent wheel-slide, a selector switch device electrically interposed between said switch means and said first and said second electro-responsive means, said selector switch device having a normal position, in which it provides a circuit for energizing said first electro-responsive means upon operation of said switch means to its said other position, and having a different position in which it provides a different circuit for energizing said second electro-responsive means upon operation of said switch means to its said other position, and means responsive to initiation of a control operation on the vehicle for causing said selector switch device to be operated from its said normal position to its said different position.

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3,165,181
LOCK FOR HYDRAULICALLY CONTROLLED TRANSMISSION
Andrew V. Hampton and Carlisle S. Morris, Decatur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 11, 1963, Ser. No. 257,548
4 Claims. (Cl. 192—4)

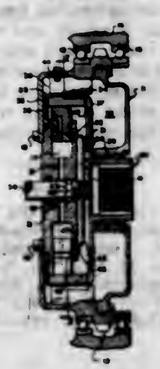
1. For combination with a machine having an adjustable component and power actuated means including a rotatable shaft and a forward-reverse transmission for adjusting said component, locking means normally holding said shaft against rotation, fluid actuated servo means for engaging said transmission, fluid actuated servo means for releasing the locking means, a source of fluid under pressure, means to direct fluid first to the lock releasing servo and then automatically to the transmission engaging servo, said locking means comprising a fixed toothed member, a second toothed member rotatable with and slidable on said shaft to mesh with the fixed member, and means



connecting the lock releasing servo to said second toothed member.

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3,165,182
HYDRAULIC CLUTCH
Matthew W. Huber, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Dec. 19, 1960, Ser. No. 76,735
4 Claims. (Cl. 192—59)

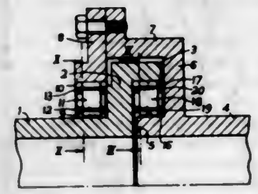


1. A hydraulic clutch comprising a rotary drive member; a rotary driven member; a cylinder barrel carried by one of the members and containing a plurality of circumferentially spaced cylinder bores; a piston reciprocable in each cylinder bore; a cam ring carried by the other of said members and having a cam surface encircling the cylinder barrel and in operative engagement with the pistons at their outer ends for moving them inward in each cylinder bore, the cam surface being spaced radially from the outer periphery of the cylinder barrel to define an inlet manifold; wall means closing the opposite ends of the inlet manifold; a reservoir located within one of the members and encircling its axis of rotation, the outer margin of the reservoir being at a greater radius from the axis of rotation than the outer margin of the inlet manifold; an inlet passage formed in each piston for connecting the associated cylinder bore with the inlet manifold; an inlet valve carried by each piston and serving to open the associated inlet passage for at least a portion of the outward stroke of the piston and to close the inlet passage during the inward stroke of the piston; a supply passage connecting the reservoir at a point adjacent its outer periphery with the inlet manifold at a point spaced radially inward from its outer margin; a pump driven by one of the members and located in the supply passage for forcing fluid from the reservoir to the inlet manifold; a discharge passage leading from each cylinder bore to the reservoir adjacent its inner periphery; and valve means movable in passage-opening and passage-closing directions for controlling flow through the discharge passages.



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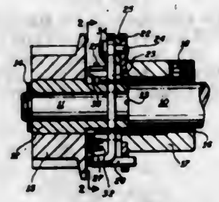
3,165,183
CLUTCHES FOR TRANSMITTING ROTARY MOTION
Herbert Arthur Clements, Weybridge, England, assignor to S.S.S. Patents Limited, London, England, a British company
Filed Jan. 9, 1962, Ser. No. 165,106
Claims priority, application Great Britain, Jan. 12, 1961, 1,400/61
2 Claims. (Cl. 192—103)



1. A clutch comprising a first rotary clutch part, a second rotary clutch part, a set of first sprags, spring means urging said first sprags into operative positions for the transmission of torque from said first clutch part to said second clutch part, said first sprags having a weight distribution such that under the action of centrifugal force they assume inoperative positions when the said second clutch part over-runs said first clutch part at a speed higher than a predetermined speed, a set of second sprags, spring means urging said second sprags into inoperative positions, said second sprags having a weight distribution such that when said first clutch part rotates at a speed above a predetermined speed said second sprags assume positions in which they are capable of transmitting torque from said first clutch part to said second clutch part when said first clutch part tends to overtake said second clutch part.

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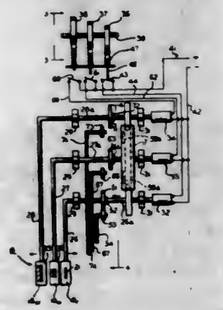
3,165,184
COIL SPRING CLUTCH WITH CENTRIFUGAL OPERATOR
Donald G. Hebert, South Windsor, Conn., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1962, Ser. No. 247,663
2 Claims. (Cl. 192—105)



1. A centrifugally operable clutch mechanism comprising an input shaft and a coaxial output shaft having the same diameter,
a wrap coil spring clutch element coaxially encircling said shafts and having a normal diameter less than the diameter of said shafts and attached at one end to said input shaft,
a collar on said input shaft,
an annular disc secured to said collar coaxially of said shafts and in proximity to the other end of said coil spring,
a stud secured to said disc whose axis is parallel to said shaft axis,
a centrifugal actuator comrpising an arcuately shaped lever pivotally mounted on said shaft and adapted to move radially outwardly in response to the attainment of a predetermined speed by said input shaft, said lever having an offset arm positioned in the path of the terminal end of the last coil of the unsecured end of said coil,
and a tension spring secured to said disc and to the extremity of said lever removed from its pivot for rotatively biasing said lever in a radially inward direction whereby said offset arm acts on said coil end to normally maintain said spring expanded and unwrapped from said output shaft and whereby when the input shaft attains said predetermined speed the radially outward movement of the lever against the force of said tension spring will move said arm away from said end coil permitting the coil spring to contract and frictionally grip said output shaft thereby coupling said input and output shafts.

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3,165,185
VENDING MACHINES
Robert Edwin Moore, 336 White Oak, Winnetka, Ill.
Filed Oct. 29, 1962, Ser. No. 233,662
1 Claim. (Cl. 194—1)



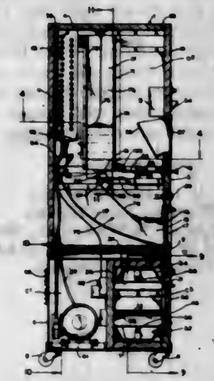
In a vending machine adapted to vend a product, the price of which varies in accordance with the time when said machine is operated, a plurality of fixed coin passing means for coins of different denominations, a plurality of coin receiving means, each being adapted to move into a position of register with its associated coin passing means and being adapted at other times to block its associated coin passing means, means mounting each of said coin receiving means for movement to coin receiving and coin blocking positions, electromagnetic means for moving said last named means to either of said positions including means for controlling said electromagnetic means according to the operation time, a fixed contact associated with each of said coin receiving means, a contact movable with each of said coin receiving mounting means into an index position with respect to the said fixed contact of such coin receiving means, and means for closing a circuit between a fixed contact and a contact indexed with respect to said fixed contact.

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3,165,186
VENDING MACHINES FOR VENDING HOT FOOD
Anthony W. Zelter, 3115 Rock Crest Drive, Mehlville, Mo.
Filed Oct. 9, 1961, Ser. No. 143,848
10 Claims. (Cl. 194—2)

1. A vending machine comprising an outer housing having a dispensing opening, a plurality of vertical storage stacks operatively mounted within the housing and having downwardly presented discharge openings, chute-forming

means extending from said stacks to the dispensing opening, slide means operatively located beneath each stack for holding the contents in the stack, an actuator bar operatively associated with said slide means and being provided with a groove along one longitudinal margin thereof, a pull-handle operatively associated with each actuator bar, coin-acceptance means for generating a pulse corresponding to each successive incremental amount of money deposited therein, a stepping switch adapted to receive said pulses and advance to a different contact position for each pulse, a lock having a pin which is normally engaged in the groove of each actuator bar for



preventing movement of said slide means, a solenoid operatively associated with each lock for disengaging the pin when the solenoid is energized, means for connecting each solenoid to some one of the contact positions of the stepping switch so that the lock associated with such solenoid will be open when some predetermined amount of money has been deposited in the coin-acceptance means, said actuator bar having a series of saw tooth notches, and pawl means operatively engageable by said saw tooth notches, said actuator bar also having a large rectilinear terminal notch which is engageable by said pawl means and thereby permitting said pull-handle to return to its original position.

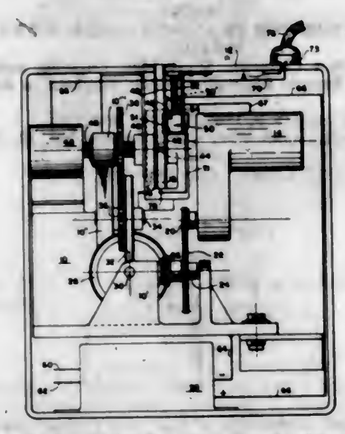
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**3,165,187**
**TOKEN DEVICE**
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Sept. 6, 1962, Ser. No. 221,723
13 Claims. (Cl. 194—4)



1. In a token operated apparatus, the device for verification of the token comprising: receiver means for reception of a token having a thermoplastic base, heating means positioned to heat the token when inserted in said receiver means for deforming said thermoplastic base, and actuation means mounted in said receiver means positioned for initiating operation of said apparatus responsive to predetermined heat deformation of said thermoplastic base caused by said heating means.

**3,165,188**
**TIMING DEVICE**
Clarence L. Elder, Baltimore, Md., assignor to Elder Systems Corporation, Baltimore, Md., a corporation of Maryland
Filed May 13, 1963, Ser. No. 280,029
4 Claims. (Cl. 194—4)



1. A timing device for governing the future operation of an electric switch including a frame and housing for supporting and enclosing a mechanism therefor, said mechanism comprising in combination:

(*a*) a rotatable time governing token of relatively narrow width formed with a pair of flat substantially parallel side faces and of substantially round configuration having means adjacent its center adapted to engage on operating element therefor;

(*b*) a time control unit having a token engaging element adapted to be movable back and forth over a predetermined path and extending over at least the radius of the token adjacent one of the faces of the token and in a plane parallel therewith;

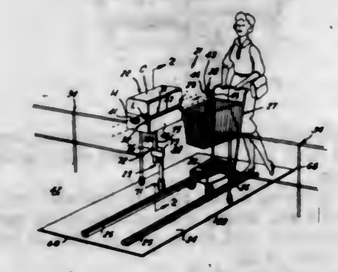
(*c*) said token having a spiral groove in at least one face thereof for slidably receiving the token engaging element for producing at least one movement of the back and forth motion of the time control unit;

(*d*) means operated by the token engaging element for operating said electric switch;

wherein the time for future operation of the electrical switch is governed by the groove in the face of the rotatable token.

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**3,165,189**
**DISPENSER OPERABLE IN RESPONSE TO MOVEMENT OF A VEHICLE**
Karl Easterday, 157 N. Shattuck Place, Orange, Calif.
Filed Oct. 29, 1963, Ser. No. 319,877
15 Claims. (Cl. 194—4)

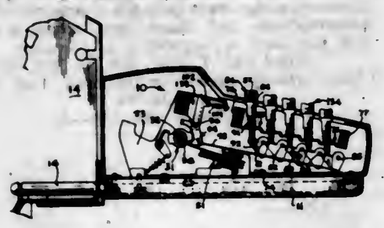


1. A dispenser operable in response to movement of a vehicle in a predetermined manner, comprising operating key means cooperable for attachment with respect to a vehicle in a predetermined projecting position with respect thereto; housing means provided with receiver means positioned for the reception of said projecting operating key means as said vehicle is moved in a predetermined manner with respect to said housing means and said receiver means; storing means and controllably operable dispensing means therefor carried by said housing means and provided with locking means normally locking said controllably operable dispensing means whereby to prevent it from dispensing operation; unlocking means effectively coupleable with respect to said locking means and movably positioned adjacent to said receiver means for unlocking operation of said unlocking means, and said locking means coupleable with respect thereto, in response to the reception of said operating key means by said receiver means; said operating key means being provided with dispenser operating means cooperable with said controllably operable dispensing means for forcible dispensing operation thereof after the unlocking operation of said unlocking means, and said locking means coupleable thereto, in response to the reception of said operating key means by said receiver means in said predetermined manner; and inactivation means effectively positioned adjacent to said receiver means and normally cooperable therewith for effectively preventing unauthorized unlocking operation of said unlocking means, but magnetically cooperable with said operating key means in response to magnetic characteristics thereof for effective deactivation of said inactivation means for allowing said unlocking operation of said unlocking means by said operating key means as it moves into and along said receiver means.



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**3,165,190**
**KEYBOARD COMPOSED OF THREE INTERRELATED BUT INDIVIDUALLY REPLACEABLE UNITS**
Lazzio Victor Wenczel, Elizabeth, N.J., assignor to Varityper Corporation, Newark, N.J., a corporation of Delaware
Filed Jan. 23, 1962, Ser. No. 168,123
11 Claims. (Cl. 197—19)



1. A keyboard for an electrically operable business machine comprising:

a continuously rotated shaft;

a plurality of signal devices, each actuatable between first and second operating conditions, electrically connectable with said business machine to control operation thereof;

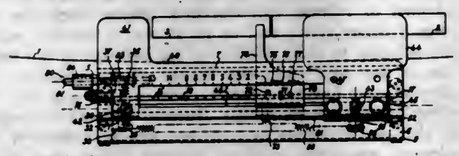
a corresponding plurality of actuators each frictionally coupled to said shaft for movement between first and second operating orientations to actuate a given one of said signalling devices to its first and second operating conditions, respectively;

control means for individually selectively restraining each of said actuators in its respective first and second operating orientations, independently of the operating orientations of the remaining actuators, said control means comprising a corresponding plurality of stop members individually engageable with respective ones of said actuators;

and key-actuated means for individually moving each stop member into position to engage the associated actuator and hold it selectively in said first and second operating orientations aganist the frictional drive from said shaft.

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**3,165,191**
**JUSTIFYING DEVICE FOR PROPORTIONAL SPACING TYPEWRITERS**
Pierre Leglise, 23 Rue Pierre Semard, Paris, France
Filed Dec. 18, 1961, Ser. No. 160,050
8 Claims. (Cl. 197—84)



1. A justifying device for typewriters having at least two space bars for typing spaces of two different widths, comprising:

a space bar control finger for actuating the space bars;

a slider carrying said space bar control finger through a longitudinal movement;

a frame carrying the slider, said frame being capable of swing about a horizontal axis;

a master space bar rigidly mounted on said frame and adapted to depress said space bars through the medium of the slider and space bar control finger;

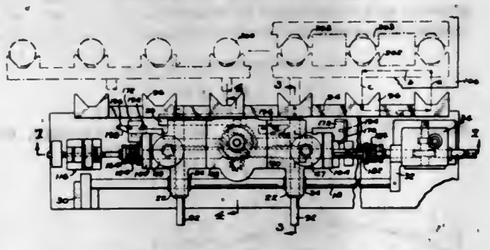
a return system for said slider and space bar control finger;

an escapement allowing the slider and space bar control finger to move stepwise each time said master space bar is manually actuated, and

means for setting the initial position of the slider and space bar control finger whereby said finger is in actuating position with respect to one of said space bars until a predetermined number of actuations has been effected on the master space bar, after which the slider and space bar control finger move into actuating position with respect to another one of the space bars.

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**3,165,192**
**TRANSFER DEVICE**
Bernard J. Wallis, % Livernois Engineering Co., 25200 Trowbridge, Dearborn, Mich.
Original application Mar. 21, 1960, Ser. No. 16,552, now Patent No. 3,135,395, dated June 2, 1964. Divided and this application Feb. 13, 1964, Ser. No. 344,744
12 Claims. (Cl. 198—19)



1. A transfer device for indexing a workpiece progressively through a plurality of stations, comprising a support, a carriage reciprocably mounted on said support, an actuator slidably mounted on said carriage for reciprocation in a path parallel to the path of reciprocation of the carriage, said actuator having a pair of abutments adjustably fixed thereon, said carriage having a pair of bearing faces adapted to be engaged by said abutments when the actuator is reciprocated to reciprocate the carriage, the abutments and bearing faces being

related such that when one of the abutments moves toward one of the bearing faces in response to movement of the actuator in one direction the other abutment moves axially away from the other bearing face whereby to form a lost motion, uni-directional driving connection between each abutment on the actuator and the carriage, said carriage having means movable thereon to grip the actuator and thereby interlock the carriage and the actuator for movement in unison when either abutment moves into contact with its respective bearing face on the carriage, said support having means thereon adapted to release said interlock means when the carriage reaches either end of its stroke to thereby permit the actuator to shift relative to the carriage at the initiation of the next successive stroke of the actuator, said support also having socket means thereon and the carriage having detent means thereon adapted to engage in said socket means to lock the carriage relative to the support when the carriage reaches either end of its stroke, and means operatively connecting said actuator and said detent means for releasing said detent means from the socket means as either abutment comes into engagement with its respective bearing face on the carriage.

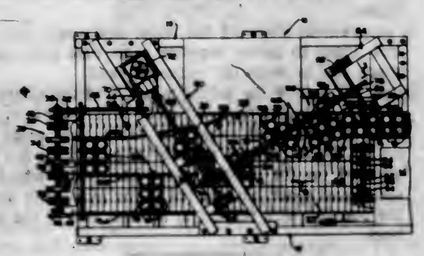
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3,165,193

## ARTICLE HANDLING APPARATUS

John Stevenson, Jr., Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed July 20, 1962, Ser. No. 211,184
15 Claims. (Cl. 198—31)



1. Article arranging apparatus comprising a first conveyor for advancing articles, a second conveyor mounted adjacent said first conveyor, means moving diagonally across said first conveyor to engage an article on said first conveyor to effect turning of said article to a position of predetermined angular orientation relative to its orientation while being advanced by said first conveyor, and means moving diagonally across said first conveyor to engage an article advanced by said first conveyor and effect lateral displacement thereof onto said second conveyor.

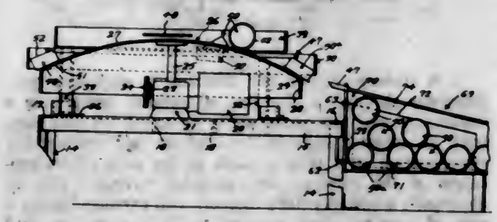
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3,165,194

## CAN ORIENTING MACHINE

Homer W. Madden, R.R. 3, Box 11A, Scottsburg, Ind.

Filed Feb. 20, 1963, Ser. No. 259,896
8 Claims. (Cl. 198—33)



1. A can orienting machine comprising a horizontally disposed table having a dome-shaped top and a depending cylindrical skirt, said table top being adapted to support cylindrical walled cans, a cylindrical wall concentrically disposed relative to the axis of said table and of a diameter less than the diameter of said skirt, said wall having a horizontal bottom edge spaced from the annular table top portion disposed directly therebeneath and combining therewith to provide a can passage, means revolving the table for propelling the cans by centrifugal force outwardly through the can passage, said can passage being of a size to allow movement of the cans therethrough only when in upright or inverted positions on the table top, a retaining wall disposed around and radially spaced outwardly from a substantial portion of said table top and adapted to be engaged by peripheral edges of the bottoms or rims of the cans which are conveyed outwardly through the can passage for maintaining said cans in positions resting on the table top for travel therewith partially around the retaining wall, said retaining wall including an end portion disposed in diverging relation to said cylindrical skirt and adapted to permit gravity escape of the cans between the retaining wall and table, a lower chute disposed along said divergent portion of the retaining wall and having an entrance end adapted to receive the inverted cans, an upper chute disposed above the lower chute having an entrance end disposed beyond the entrance end of the lower chute and adapted to receive the upright cans which are conveyed beyond the inverted cans by said table and while confined by engagement with the retaining wall, said lower chute having an exit end disposed directly beneath an exit end of the upper chute and being twisted through an arc of 180° between its ends whereby the cans are moving along the lower chute are adapted to be oriented to face in the same direction as the cans in the upper chute at the exit ends of the chutes.

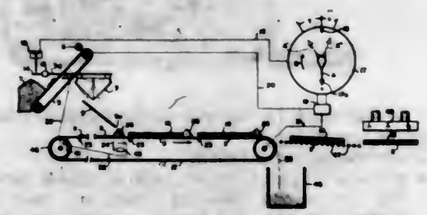
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3,165,195

## APPARATUS AND METHOD FOR REGULATING THE DELIVERY OF WOOD CHIPS ONTO A RUN-OUT CONVEYOR

Hans G. Sass and Helmut Johann Spielvogel, Krefeld, Germany, assignors to Industrie-Compagnie Kleinewefers Konstruktions- und Handelsgesellschaft m.b.H., Krefeld, Germany, a corporation of Germany

Filed Aug. 7, 1962, Ser. No. 215,415
Claims priority, application Germany, Aug. 12, 1961, J 20,392
13 Claims. (Cl. 198—37)



1. Apparatus for regulating delivery of wood chips onto a run-out conveyor to obtain a layer of a given thickness of wood chips, which comprises a weighing hopper, a feed conveyor for delivering chips into said hopper, a run-out conveyor for receiving chips from said hopper, means for opening said hopper to discharge chips therein onto said run-out conveyor upon a given weight of chips being in said hopper, operable hopper closing means connected to said hopper for closing same to collect therein a batch of chips of said given weight, a timing device for comparing the actual time required to collect said batch with a given time for collecting said batch, initiating means connected to said timing device and to said operable hopper closing means and positioned for engagement by contact means movable with said run-out conveyor and spaced apart at given intervals thereon, said initiating means upon engagement by said contact means closing said hopper and starting said timing device, means for stopping said timing device operable upon opening of said hopper, said timing device generating an impulse which has a magnitude proportional to the difference in time between that required to collect said batch and said given time and a directional characteristic as to said actual time being less than or more than said given time, and impulse means connected to said timing device for transmitting said impulse to at least one of said run-out conveyor and said feed conveyor for regulating speed thereof to obtain said layer of said given thickness.



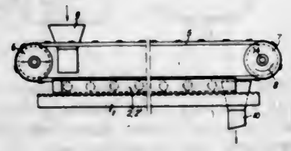
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3,165,196

## MAGNETIZABLE CONVEYOR

Sven Johan Alfredéen, Enskede, Sweden, assignor to Aktiebolaget Superior, Sundbyberg, Sweden, a corporation of Sweden

Filed Jan. 24, 1963, Ser. No. 253,600
Claims priority, application Sweden, May 21, 1962, 5,703/62
6 Claims. (Cl. 198—41)



1. A conveyor for transporting magnetizable articles from a loading station to a discharge station, comprising an endless conveying member, means for circulating said conveying member between said loading and discharge stations, said conveying member extending along a portion of the length thereof between said loading and discharge stations, stationary magnet means mounted adjacent said portion of the conveying member between said loading and discharge stations and comprising primary magnetic poles for generating a magnetic field, said conveying member comprising magnetizable material thereby to provide secondary poles in said magnetic field to cause attraction of said magnetizable articles at the loading station for their conveyance to the discharge station, and partition means extending between said magnet means and said conveying member substantially along the portion of the conveying member which is disposed between the loading station and the discharge station and mechanically separating said primary poles from said secondary poles.

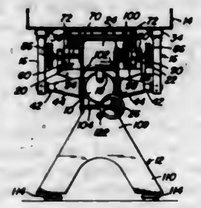
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3,165,197

## VIBRATING CONVEYOR

Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Newberg, Oreg., a corporation of Oregon

Filed Feb. 11, 1963, Ser. No. 257,452
8 Claims. (Cl. 198—220)



1. A vibrating conveyor comprising:
an elongated horizontally extending frame,
a plurality of horizontally extending parallel shafts journaled in and spaced longitudinally of said frame,
a plurality of flexible parallel links each of which extends upwardly and has a lower portion fixed to one of said shafts,
a conveyor table supported by the upper portions of said links,
means to vibrate said table generally longitudinally of said frame,
and means to simultaneously rotate said shafts through equal angles to adjust the average angle of inclination of said links relative to the vertical.

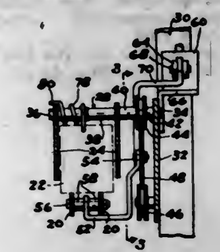
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3,165,198

## CONVEYOR

John G. Kay, Detroit, and Alfred L. Osinski, Warren, Mich., assignors to F. Jos. Lamb Company, Warren, Mich., a corporation of Michigan

Filed Oct. 21, 1963, Ser. No. 317,636
22 Claims. (Cl. 198—227)



1. A conveyor comprising a support, guide means on said support, a transfer rail supported by the guide means for lengthwise reciprocation on the support, a carrier rail spaced laterally from the transfer rail and extending parallel to the transfer rail, means extending transversely between the transfer rail and the carrier rail for supporting the carrier rail on the transfer rail for reciprocation therewith, said carrier rail having a generally straight upper edge adapted for slidably supporting work pieces to be conveyed, means for reciprocating the transfer rail and means on the support structure adjacent the carrier rail for engaging work pieces on the carrier rail and preventing retrograde movement thereof when the carrier rail moves in the retracting direction.

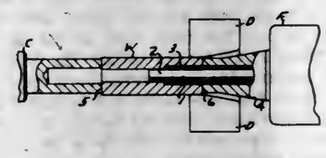
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3,165,199

## METHOD OF FORMING SHOULDERED ARTICLES

Erich Tlaker, Springfield, Vt., assignor to The Fellows Gear Shaper Company, Springfield, Vt., a corporation of Vermont

Filed Apr. 5, 1962, Ser. No. 185,256
2 Claims. (Cl. 205—4)

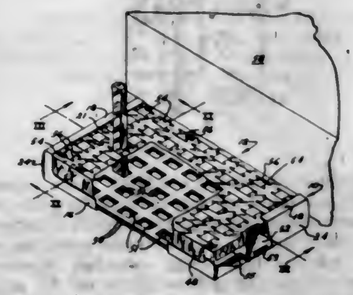


1. A method for the forming of a plurality of axially spaced contours in the bore of a hollow work piece in one continuous operation comprising the steps of feeding said work piece through a plurality of oppositely located pulsating dies exerting forces onto the work piece adequately large to reduce its outside dimensions and make its interior conform to a stepped mandrel located within the bore of the blank, holding the leading section of said mandrel stationary underneath the dies and feeding

the work piece over the mandrel and through the dies at a given feed rate by force exerted on its trailing end, in such manner as to make the formed part emerge behind the dies at a rate equal to the feed rate plus the elongation occuring during the reducing of the work piece cross-section; continuing this operation to a predetermined point along the axis of the work piece and from there on forcing the mandrel to move at the feed rate through the dies to feed and reduce the work piece in such manner as to make the formed part emerge behind the dies at a rate no greater than the feed rate and to force the elongation of the work piece resulting from its cross-section reduction to take place in a direction opposite to the feed direction, resulting in a forward elongation for one portion of the forming operation and in a backward elongation for another portion of the forming operation.

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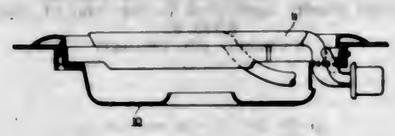
**3,165,200**
**DISPLAY CARTON**
Wallace E. Hansen, Springfield, Mass., assignor to Sample-Durick Company, Incorporated, Chicopee, Mass., a corporation of New York
Filed Mar. 20, 1963, Ser. No. 266,567
3 Claims. (Cl. 206—45.14)



1. A compositely formed carton comprising a collapsible tubular sleeve erected from a flattened condition and having bottom, top, front and rear panels defining the tube, a tongue struck from the front and top panels and forming an opening in both, said tongue lying against the rear and bottom panels of the tube, the remainder of the top panel comprising narrow marginal portions at opposite ends thereof and the remainder of the front panel comprising a narrow marginal portion extending upwardly from the bottom panel and also narrow marginal portions at opposite ends thereof, a transparent plastic member of inverted U-shape inserted within said tube and having its upper portion underlying the top panel and the opening therein and forming in part the upper wall of the carton, the legs of said insert being contiguous with the front and rear panels with the front leg forming in part the front wall of the carton and providing visual access to substantially the entire bottom wall of the carton when it is resting on a retail counter and viewed from a normal angle, said U-shaped member also having downturned stiffening flangles at its opposite ends, a pair of superposed inserts lying on the bottom of said tube and having openings therein which define shallow recesses on the bottom wall of said carton, said inserts having upturned flaps at their opposite ends to position the inserts on the bottom of the carton and the lower insert having an opening receiving a tab projecting from the upper insert to maintain said inserts in superposed relation, and panel means folded from said tube and forming the end walls of said carton, the upper portion of said U-shaped member having openings therein aligned with the recesses in the bottom wall of the carton and further having flexible, resilient tongues projecting into said openings from opposite ends thereof, and spaced from the front and rear sides of said openings, and containers positioned in said carton for display, each container being received by one of said recesses and projecting through an opening thereabove, each container having a lower end of greater width than the spacing between the tongues projecting into the opening and inwardly tapered walls which are in contiguous relation with the ends of said tongues, said tongues being flexed as the larger, lower end of the container is introduced into and removed from the carton.

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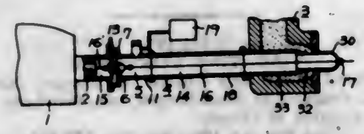
**3,165,201**
**DISPOSABLE ELEMENT REFLECTOR PAN**
Kenneth L. Woodman, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 26, 1963, Ser. No. 275,973
1 Claim. (Cl. 206—56)



A disposable reflector assembly adapted to be positioned beneath a cooking range heating element comprising, a plurality of nested dished shaped reflector elements having an apertured central portion and each formed of a thin sheet of aluminum having surface coatings of anodized aluminum over substantially the entire surface thereof to minimize adhesion of the elements to each other, the lowermost sheet element having a greater thickness than the others of said sheet elements whereby the assembly may be retained beneath a range heating element and the uppermost reflector sheet may be peeled off and disposed of when it is soiled to thereby expose an underlying sheet element.

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**3,165,202**
**APPARATUS FOR MANUFACTURING ELECTRIC POWER CABLES**
Itaru Watanabe, Keizo Kashihashi, Seiji Tsuchiya, and Tetsuro Terada, all of Yokohama, Japan, assignors to The Furukawa Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 30, 1963, Ser. No. 276,782
4 Claims. (Cl. 207—4)

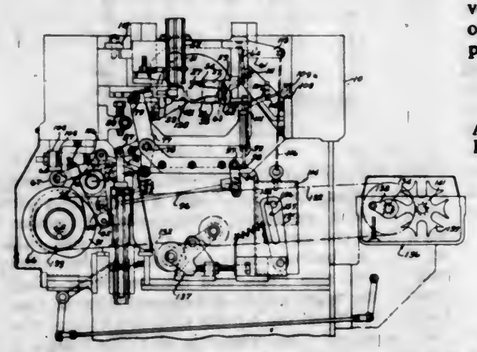


1. An apparatus for manufacturing power cables which comprises in combination, a casing for drying the cable core and impregnating it with insulating oil having an outlet opening therein, a press having a nipple and a nipple holder for applying metal sheath to the cable core, a communication tube between said casing outlet opening and said press, hermetically connected to them to pass said core therethrough, spaced parallel flanges between said casing outlet opening and said communication tube, a cable guide device for leading said core from said casing through said communication tube to said press without contacting said core with external air, a vacuum pump connected to said communication tube, said cable guide device consisting of a plate valve attached to seal the outlet opening of the casing and a tension wire connected to said plate valve, said plate valve contacting with the flanges of the casing outlet opening and said communication tube, said plate valve being so constructed as to deform when pulled by means of the cable guide device passing through the communication tube and the nipple holder and nipple in said press.



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**3,165,203**
**CAN MACHINE**
Harry A. Dom, Tiffin, Ohio, assignor to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio
Filed Jan. 30, 1961, Ser. No. 85,865
12 Claims. (Cl. 207—6)

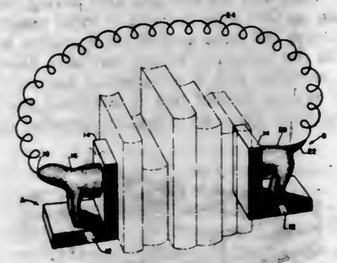


12. A machine for extruding hollow articles comprising a hollow die, a punch reciprocable relative to said die between a forward position within said die and a rearward position spaced from said die, feed means positioning blanks in a position adjacent to the open face of said die while said punch is spaced from said forward position, scissor type gripping elements pivoted at fixed positions relative to said die, receiving blanks from said feed means and holding blanks in a position adjacent to said open face, said punch engaging blanks held in said gripping elements during movement toward said forward position and moving such blanks into said die, movement of said punch to said forward position extruding said blank rearwardly along said punch, a conveyor positioned around said punch on the side of said feed means remote of said die when said punch is in said forward position, said punch being clear of said conveyor when in said rearward position, stripper means operable during the movement of said punch to said rearward position to remove said extruded blank from said punch, said feed means including an element positioned in front of said die as said extruded blank is stripped from said punch, said conveyor, stripper means and feed means operating to completely confine said extruded blank as it is being stripped from said punch, and drive means connected to operate said conveyor in timed relationship to the movement of said punch whereby said conveyor transfer extruded blanks clear of said punch before forward movement thereof.

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**3,165,204**
**PAIR OF BOOK ENDS**
George H. Spencer, 4731 30th St. NW., Washington, D.C.
Filed Apr. 7, 1964, Ser. No. 357,903
5 Claims. (Cl. 211—42)

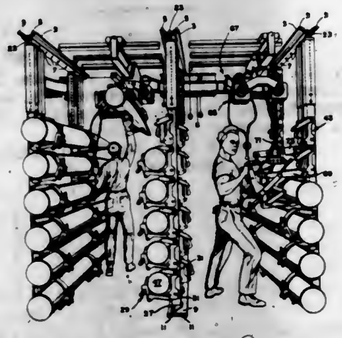
1. In combination: two book ends, each having a horizontal part with which the book end stands on a surface and a vertical part adapted to lie against a book standing on the surface; and flexible loop means having one end connected to one of said book ends and the other end connected to the other of said book ends, said loop means, when said book ends are standing with their respective



vertical parts being directed toward each other, looping over said vertical parts and over such books as may be positioned between said vertical parts of said book ends.

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**3,165,205**
**APPARATUS FOR MODULAR MISSILE STOWAGE**
Russell E. Travis, Jr., Washington, D.C., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 5, 1963, Ser. No. 321,655
6 Claims. (Cl. 211—60)



1. In a modular stowage compartment:
(*a*) a plurality of elongated hat sections affixed parallel to one another on the ceiling of the compartment, each hat section having a plurality of equally spaced apertures along its longitudinal axis;
(*b*) an elongated hat section affixed to the floor of the compartment beneath and parallel to each of the ceiling hat sections, each floor hat section having an aperture alined beneath each of the apertures in its complementary ceiling hat sections;
(*c*) a stanchion disposed between each pair of alined apertures in the ceiling and floor hat sections;
(*d*) a plurality of L-shaped brackets disposed on each stanchion, one arm of each bracket extending outwardly from one face of the stanchion; and
(*e*) flexible means detachably secured to the free ends of each bracket such that the items to be stowed can be secured therebetween.

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**3,165,206**
**STORAGE RACK FOR CYLINDRICAL CONTAINERS AND THE LIKE**
Arthur Taylor, 6725 S. 7th East, Midvale, Utah
Filed Sept. 16, 1963, Ser. No. 309,096
2 Claims. (Cl. 211—126)

1. A storage rack for cylindrical containers and the like comprising a pan that is rectangular when viewed from the top and having one end curved upward while

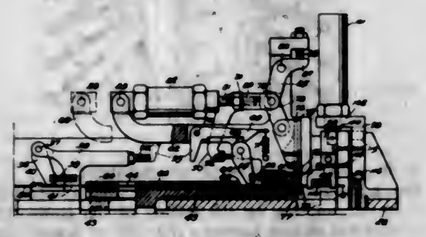
the other end is formed vertically at right angles to the bottom of the said pan and terminating in a horizontally disposed flange and the said pan also having two equally spaced and parallel sides and one or more removable separators having the same general configuration as the said sides, with the exception of the vertically disposed end, which is provided with a horizontally disposed recess in the upper portion thereof that is thickened and provided with a vertically disposed internally threaded opening in



which is screwed a thumb screw, the lower end of which presses against the upper surface of the said horizontally disposed flange which normally slips into the horizontally disposed recess in the said upper portion of the said separators when the said separators are in place in the said pan in which cylindrical containers are placed for transporting from one place to another, and a rack in which one or more of the pans are placed when the invention is being used.

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3,165,207
WIRE FEEDING APPARATUS
Hobert T. Campbell and Jack J. Monahan, Allentown, and Joseph A. Reeder, Quakertown, Pa., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 8, 1961, Ser. No. 158,052
2 Claims. (Cl. 214—1)



1. A wire feeding apparatus in combination with a turret rotated intermittently between intervals of rest to locate wire receiving nests, having upwardly extending projections and disposed at spaced radially positioned locations on the turret, successively in a feeding station, the apparatus comprising:

a fixed position frame mounted adjacent the turret and extending over the successive nests disposed in the feeding station,

a feeder for lengths of wire,

companion jaws for the feeder cooperating to form a mouth for the feeder which is greater in cross-section than the cross-section of the lengths of wire to readily receive the lengths of wire singly when the jaws are closed,

means normally holding the jaws closed to cause them to receive and support the wires singly in the closed mouth of the feeder,

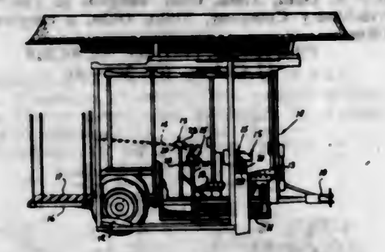
means mounted on the frame and operable to support the feeder and move it between a receiving position above the nest at the feeding station and a feeding position in engagement with the nest,

means to feed the lengths of wire longitudinally singly into the closed mouth of the feeder, and

means carried by the feeder to engage the projection of the nest at the feeding station to open the jaws to free the length of wire to leave the mouth and lie in the nest.

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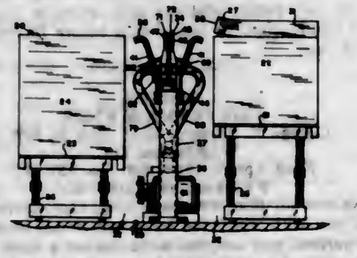
3,165,208
TOBACCO STICK HOLDER
Robert L. Lewis, P.O. Box 146, Baxley, Ga.
Filed Sept. 5, 1962, Ser. No. 221,588
1 Claim. (Cl. 214—5.5)



In a tobacco harvester including a mobile frame, and a support rising from said frame, a holder for a tobacco-stringing stick comprising a tunnel-shaped member having a front end and a rear end, a bottom, side walls rising from the bottom, and a top extending over the upper ends of said side walls, said member being fixedly secured to the upper end of said support with the front end facing away from the normal direction of movement of said frame and tilted upwardly at a small angle to the horizontal, a first horizontally disposed roller within said member adjacent the front end thereof, a second horizontally disposed roller within said member adjacent the rear end thereof, said first and second rollers having their ends rotatably supported in said member side walls, said first roller being adjacent said member bottom and spaced from said member top and said second roller being adjacent said member top and spaced from said member bottom so that a tobacco stringing stick when inserted by one end through the front end of said member may be supported on said first roller and when weighted on the portion of said stick exteriorly of the front end of said member will engage said second roller and will be rollably supported by said first and second rollers, the spaces between said first and second rollers and said member top and bottom, respectively, each being of a size to permit free insertion of said tobacco stick through said spaces.

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3,165,209
SHEET SORTING TABLE
John H. Sebastenski, Portland, Maine, assignor to Southworth Machine Company, Portland, Maine, a corporation of Maine
Filed Oct. 5, 1960, Ser. No. 60,596
9 Claims. (Cl. 214—6)



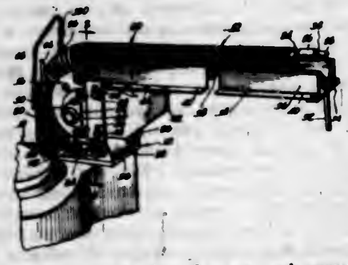
1. A sheet sorting table, for supporting a pile of sheets during movement from one stack to another stack,



said sorting table including a narrow, elongated base adapted to fit between a pair of adjacent stacks; an elongated, foldable, table top extending horizontally at a predetermined sorting level above said base when unfolded, said top having a central member extending along the longitudinal centre line thereof and a pair of identical, oppositely disposed leaves each hingedly connected along the inner longitudinal edge portion thereof to said member; table top actuating means connecting said central member with said base for moving said member vertically up and down and a pair of fixed fulcrum elements oppositely disposed on said base, each said element supporting the intermediate, longitudinally extending, portion of one of said leaves, when said table top is in said unfolded horizontal position, the fulcrumage of said elements lifting the outer longitudinal edge portions of said leaves when said central member is moved vertically down by by said actuating means.

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3,165,210
APPARATUS FOR HANDLING METAL DISCS AND THE LIKE
Wallace W. Molden, 8900 W. 102nd St., Palos Hills, Ill., and Norman J. Chivas, 1021 Forest Ave., Naperville, Ill.
Filed May 4, 1961, Ser. No. 107,799
18 Claims. (Cl. 214—7)

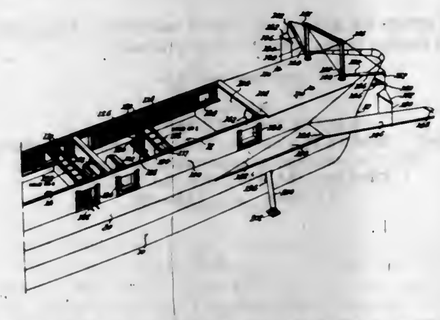


1. A handling mechanism for can ends composed of magnetically attractable material to convey such can ends with respect to an operating station; said mechanism comprising a trough for supporting a stack of closely juxtaposed can ends, said trough having an open end thereof vertically spaced from the associated operating station, a rotatable roller disposed intermediate said open end and the operating station and adjacent thereto, and magnetic gripping means on said roller operable to grip along a trio of axially spaced portions of said roller each of a group of can ends at the respective edges thereof to present the can ends in an outwardly extending, face to face relationship with each can end in a plane substantially normal to a tangent of said path to convey the can ends between said open end of said trough and the operating station.

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3,165,211
CARGO SHIP DESIGN FOR QUICK LOADING AND DISCHARGE
Harold A. Ablett, Singapore, Malaysia, Geoffrey E. Childs, Maresfield, Sussex, England, Paul K. Johnson, Newport News, Va., and Vernard A. Koerbe, Cheridan, Iowa, assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 25, 1962, Ser. No. 168,858
9 Claims. (Cl. 214—15)

1. A cargo ship construction for transporting items of cargo which comprises, in combination, a hull interiorly divided into cargo-receiving holds, a weather-deck on the hull extending longitudinally thereof from a foredeck to stern, extensions for the weather-deck hingedly connected to the weather-deck and extending forwardly along the hull and being foldable against the hull for stowage, a loading ramp extending from each forward weather-deck extension to a cargo-distributing surface, the holds having cargo-receiving hatches open in the weather-deck, hatch-enclosing means including a structure having vertical walls extending upwardly from the weather deck and disposed around the hatches, opposite longitudinal walls of the hatch-enclosing structure being provided with opposite corresponding recesses, track rails in the recesses defining a bottom track, an intermediate track, and a top track, the tracks extending longitudinally of the hatches, a crane means for each hold including a carrying frame mounted on the bottom track for longitudinal movement through its hold, the carrying frame extending transversely across its hatch and also being provided with track means extending transversely across its hatch, cargo stacking crane means suspended from the transversely-extending track means on the carrying frame, forklift means on the cargo-stacking crane means, the walls of the hatch-enclosing structure being provided with lateral openings communi-



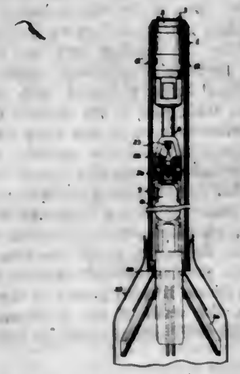
cating with the weather-deck, the said forklift means being extensible and retractable selectively with respect to said lateral openings for transferring cargo between the weather-deck and hold, foldable cover means for the hatch mounted on the intermediate track, an actuating crane for the cover means mounted on the top track, the actuating crane being rotatable and mounted on carriage means for the crane longitudinally movable on the top track, the carriage means extending transversely across the cover and enabling the crane to move transversely across the hatch, the crane also including a hoisting boom and a hoisting rig carried by the boom and adapted to be connected to articles of cargo for transferring such articles through the hatch, oppositely extending lateral weather-deck extensions hingedly connected with the weather-deck, the weather-deck extensions being foldable upon the weather-deck for stowage and hull-stabilizing mechanism mounted within the hull and extensible from the hull for laterally supporting the hull against tilting during cargo manipulating operations.

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3,165,212
DEVICE FOR THE HANDLING OF FUEL CARTRIDGES OF A NUCLEAR REACTOR
Victor Gerard, Cachan, France, assignor to L'Electricite de France (Service National)
Filed Oct. 23, 1962, Ser. No. 232,407
Claims priority, application France, Nov. 16, 1961, 879,186
7 Claims. (Cl. 214—27)

1. A device for handling fuel elements of nuclear reactors in vertical channels of the reactors comprising a cylindrical sheath formed with internal grooves, a fork supporting a fuel element handling gripper mounted in said sheath, means for angularly positioning said fork before its descent into a discharging well, a guiding device for vertical and angular movement of said fork inside said

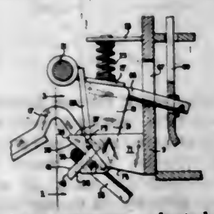
sheath, said guiding device moving in said grooves of said sheath, means for connecting said device and said fork



and means for guiding the lateral movement of said fork with respect to the channel to be processed.

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3,165,213
CONVEYING APPARATUS
Alfred F. Sanford II, Concord, Tenn., assignor to Sanford-Day Corporation, a corporation of Tennessee
Filed Sept. 24, 1962, Ser. No. 225,741
5 Claims. (Cl. 214—58)

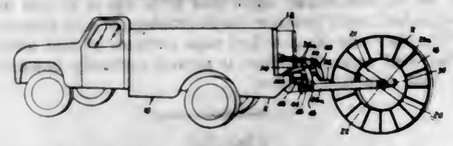


1. In a dumping conveyance adapted to move along a trackway and having a lading body with a drop-bottom door and latch means movable between a forward position in which the latch means maintains the door closed and a rearward position in which the door is free to fall open, the latch means having a shelf on which a rear portion of the door rests and a forwardly opening recess lower than the shelf for the reception of a vertically movable portion of a tripping mechanism adjacent the trackway to move the the latch means to said rearward position whereupon said portion of the tripping mechanism moves downward in sliding contact with a forwardly downwardly inclined surface of the latch means that defines the lower portion of said recess to disengage the tripping mechanism from the latch means to permit continued forward movement of the conveyance;
the improvement comprising:
cam means mounted on the conveyance
(a) closely laterally adjacent the latch means
(b) laterally overlying the latch means in said rearward position of the latch means
(c) having, at the level of a rear portion of said recess, a forward cam surface that is
(1) inclined downwardly rearwardly
(2) disposed farther forward than at least a portion of said recess in said rearward position of the latch means
(3) disposed at obtuse angles to said surface of the latch means as the latch means nears said rearward position

thereby to contact and cam a said vertically movable portion of a tripping mechanism downward out of engagement with said surface of the latch means immediately after rearward movement of the latch means has released the door to fall open.

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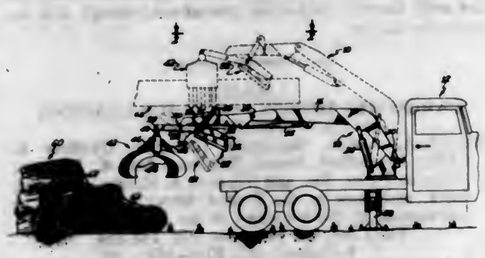
3,165,214
HANDLING DEVICE
Oscar L. Young, Griffin, Ga., assignor, by mesne assignments, to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed June 19, 1962, Ser. No. 203,532
9 Claims. (Cl. 214—77)



1. A handling device for loading reels of material, such as reels of wire, onto and from a vehicle and adapted for mounting on the vehicle, said handling device comprising a pair of laterally spaced arm elements of generally L-shaped configuration in side elevation, a rod extending between corresponding ends of said arm elements and being secured thereto, trunnion means pivotally mounting said rod for rotational movement about a generally horizontal axis, means for securing said trunnions to the vehicle, said arm elements including means thereon for securing said arm elements to a reel of material, reciprocal fluid powered motor means, and linkage means extending between said motor means and said rod for rotating said rod about said horizontal axis and thus moving said arm elements in generally vertical planes through a range of movement of approximately 180°, said linkage means comprising a crank element secured to said rod, an arcuate shaped link pivotally coupled at one end to said crank element and projecting upwardly therefrom, the other end of said arcuate shaped link being pivotally coupled to said reciprocal motor means, and another link pivotally coupled to the first link, said other link including means for pivotally coupling the same to the vehicle, the pivotal connection of said other link to said first link being disposed above the pivotal connection of said first link to said crank element throughout the range of movement of said arm elements.

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3,165,215
HEEL BOOM LOG GRAPPLING APPARATUS
Robert William Larson, Ashland, Wis., assignor to Beloit Corporation, a corporation of Wisconsin
Filed Aug. 23, 1962, Ser. No. 218,927
7 Claims. (Cl. 214—147)



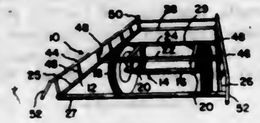
2. A heel boom log grappling apparatus comprising:
(a) a main boom assembly,
(b) a heel boom member,
(c) means mounting said heel boom member to the free end of said main boom assembly for pivotal movement in the general plane of said assembly,



(d) a grapple for picking up logs,
(e) means mounting said grapple to one end of said heel boom member for pivotal movement in the said general plane of said main boom assembly,
(f) downwardly facing cradle means fixedly carried at the other end of said heel boom member, and
(g) hydraulic means extending between said main boom assembly and said heel boom member for forcing said other end of the heel boom member downwardly to effect engagement of said cradle means to level a log held by said grapple.

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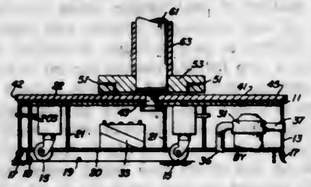
3,165,216
SKID AND TRAILER COMBINATION
Leo Macknood, 8629 Hupp St., Warren, Mich., and Victor Clavich, 18586 Old Homestead, Harper Woods, Mich.
Filed Nov. 6, 1963, Ser. No. 321,816
5 Claims. (Cl. 214—515)



1. In combination, a trailer having a horizontal frame provided with ground engaging wheels and including a pair of longitudinally extending rails and transversely extending members between and connected to said longitudinally extending rails at opposite ends thereof, struts rigid with and extending upwardly from said longitudinally extending rails, a pair of longitudinally extending track members substantially parallel to said rails and rigidly connected to the upper ends of said upwardly extending struts, each of said track members being provided at one end thereof with an upright projection, and a skid mounted upon said trailer, said skid having a floor provided on the underside thereof with rollers engaging said track member and having in spaced relation to one end of said floor a hingedly mounted gate movable from a horizontal position on top of said floor to a rearwardly extending horizontal position, said skid including means for supporting said gate in said rearwardly extending horizontal position, the space aforesaid between one end of said floor and said gate being adapted to receive the upright projections on said track members when said gate is moved to a rearwardly extending horizontal position on said supporting means, whereby the skid may be held against longitudinal displacement from the frame of said trailer.

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3,165,217
LIFT TRUCK WITH SUCTION COUNTERPOISE
Donald A. Harris, Vancouver, Wash., and Robert C. Shoemaker, Portland, Oreg., assignors to Hyster Company, Portland, Oreg., a corporation of Nevada
Filed June 27, 1961, Ser. No. 119,903
2 Claims. (Cl. 214—670)



1. An industrial lift truck comprising a body having wheels for engaging a surface on which said truck is to be operated,
load engaging means,
means mounting said load engaging means on said body for movement from a first position to a second position so laterally displaced from said first position as to render said truck unstable when handling a load near the capacity of the truck,
and suction means for temporarily anchoring said body to said surface during loading and unloading operations to prevent tipping of said body,
said body having a periphery,
said wheels being located within the confines of such periphery,
said suction means extending around such periphery exteriorally of said wheels.

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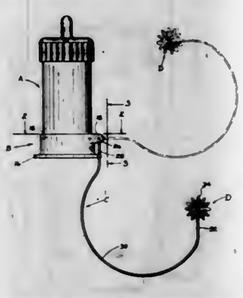
3,165,218
VESSEL
Robert E. Hauert, 910 Prospect, Elmhurst, Ill., and Fritz H. Pahlow, 344 Orchard Ave., Hillside, Ill.
Filed Sept. 10, 1963, Ser. No. 307,892
7 Claims. (Cl. 215—1)



1. A transparent vessel including, a container having a bottom and a continuous upstanding side wall formed integral with said bottom, a transparent face wall having opposite sides and a bottom formed integral with the side wall forming a label receiving pocket between the face wall and a side wall, a label positioned in the label receiving pocket, a first bead formed integral with the side wall and being spaced from the upper edge of the face wall, a scond continuous bead formed integral with the side wall and with the upper edge of the face wall and being spaced from the first bead, and a continuous ring seal mounted between said beads sealing the space between the upper edge of the face wall and the side wall to close said pocket.

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3,165,219
NURSING BOTTLE APPLIANCE
Robert A. Johnson, 206 Juniper Ave., South San Francisco, Calif.
Filed May 28, 1963, Ser. No. 283,905
6 Claims. (Cl. 215—11)



1. An appliance for an infant nursing bottle comprising a staff, means for mounting said staff at one end thereof to the bottle for pivotal movement between a folded position and an extended position, and an ornament

affixed to the other end of the staff, said staff being formed of resilient material and defining a generally arcuate shape so that the weight of the staff acts on a side of the pivotally mounted staff end to maintain the staff in the extended position when the bottle is in a slanted inserted infant nursing position.

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3,165,220
TAMPER-PROOF CONTAINER
Don A. Haynes, 1989 Osage Drive, Okemos, Mich.
Filed Jan. 22, 1962, Ser. No. 167,581
2 Claims. (Cl. 215—42)



1. In combination, a container having a body portion with an opening therein defined by an annular wall, a cup-shaped push-on, screw-off closure having an annular wall in coaxial relation with said container wall, said container wall having spaced apart threads thereon, said annular closure wall having a plurality of circumferentially spaced radially inwardly extending lugs engaging said threads, said threads having substantially flat circumferentially extending lower surfaces spaced equally with said lugs, the free ends of said threads being shaped to receive and guide said lugs to positions beneath their respective flat surfaces upon an axial movement of said closure toward said container, said lugs being shaped to prevent removal of said closure in an axial direction relative to said container and to hold said closure in tight sealing engagement with said container, said closure being removable from said container by rotary movement of said closure relative to said container, and being replaceable thereon by an opposite rotary movement, and a button extending radially outwardly from said container wall, and said closure wall having a recess therein receiving said button when said closure is first assembled onto said container, said button having a frangible connection with said container.

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3,165,221
BREAKER STRIP CONSTRUCTION FOR INSULATED CONTAINER
Fred Kennedy, Huntsville, Ala., assignor to Avco Corporation, Nashville, Tenn., a corporation of Delaware
Filed Jan. 24, 1963, Ser. No. 253,634
4 Claims. (Cl. 220—9)



1. In a cabinet enclosure, an insulated wall comprising: an outer shell;

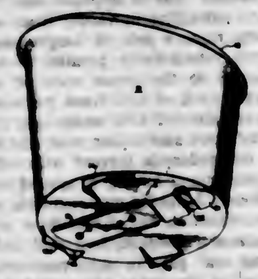
an inner liner spaced from said outer shell, said outer shell having an edge adjacent and parallel to an edge of said inner liner, each of said edges having a U-shaped channel formed thereon, the trough of said channel being located in the space between said inner and outer shells, said trough facing outwardly therefrom;

a rigid low heat-conducting channel-shaped breaker strip having at least two side walls, said breaker strip bridging the space between said troughs, the edges of said side walls of said breaker strip being frictionally engaged in said troughs of said U-shaped channels; and

a foamed in place plastic insulating material in the space defined by said shell, said liner, and said breaker strip, said material adhering to said shell, liner, and breaker strip, the pressure of said foamed insulating material on said U-shaped channels increasing the friction between said breaker strip and said channels, whereby said breaker strip is secured to said outer shell and said inner liner solely by the increased friction and by the adherence of said material to said shell, liner, and breaker strip.

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3,165,222
DISPOSAL UNIT
Jack L. Southinger, Huntington Park, Calif., assignor to Phillip Kadler
Filed June 8, 1962, Ser. No. 202,352
1 Claim. (Cl. 220—18)



In combination, a container and a mounting device for removably attaching said container to a support, said mounting device comprising,

a receiver bracket, the ends of said bracket being fixedly attached to said support, said bracket having a joggle formed therein,

an elongated latching tongue fabricated of a resilient material, one end portion of said tongue being fixedly attached to the bottom of said container, said tongue being positioned adjacent to the bottom of said container along the longitudinal axis thereof and extending over a substantial portion of the longitudinal dimension of said container bottom, the other end portion of said tongue being proximate to an edge of said container bottom and separated from said bottom to permit finger actuation, said tongue having a step formed therein spaced from said other end portion thereof and a joggle formed therein between said step and said one end portion, said step abutting against said bottom, said joggle formed in said tongue having substantially the same length and width as the width and length respectively of the joggle formed in said bracket whereby said joggles are capable of mating engagement with each other,

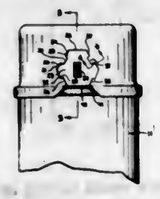
a pair of wedge shaped legs fixedly attached to said container, said legs being symmetrically positioned near opposite edges of said container on opposite sides of said tongue, and



a third leg fixedly attached to said container adjacent to the extremity of said one end portion of said tongue, a portion of the support end of said third leg being concave, said wedge shaped legs having apices at the ends thereof closest to said third leg, whereby said legs provide firm support for said container on both flat and curved surfaces.

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3,165,223
CONTAINER CLOSURE
Frederick W. Keuthan, Indianapolis, Ind., assignor to The Sargent Paint Mfg. Company, Indianapolis, Ind., a corporation of Indiana
Filed Jan. 25, 1963, Ser. No. 253,805
1 Claim. (Cl. 220—27)



A container closure comprising a first generally cylindrical wall with a top across the upper margin of said wall, a circular wall extending outwardly from said first wall adjacent the lower margin thereof, and a generally cylindrical flange extending downwardly from said circular wall and thereby adapted to substantially encircle and engage an annular lip of a container, said first wall having therein a plug portion integral therewith, said plug portion being partially bordered by rectilinear slits in said first wall and said plug portion having a tool receiving aperture therein to facilitate removal of said plug from said first wall to allow expansion of said flange for facilitating disengagement thereof from the said annular lip.

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3,165,224
HINGED GASOLINE CAP
Perry E. Allen, 5644 Round Hill Road, Birmingham, Mich.
Filed Dec. 19, 1962, Ser. No. 245,735
6 Claims. (Cl. 220—30.5)



1. The combination, with an automobile having a fuel tank, a filler pipe with inturned flanges at the outer end thereof and a rotatable cap assembly with means thereon for engaging said flanges to lock and unlock said cap upon rotation of said cap assembly, of a yoke having an opening therein for rotatably receiving an element of said cap assembly, apertured ears secured in spaced relation on said yoke, arms pivoted at one end in the apertures of said ears, and pivoted at the other end in a bracket secured to a member comprising part of the automobile body.

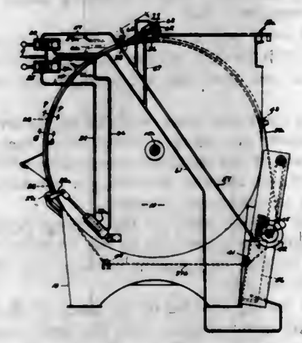
3,165,225
BOX COVER SUPPORT
Georg Reitzel, Altenmittlau, Kreis Gelnhausen, Germany, assignor of one-half to Droscher & Kiefer, Altenmittlau, Kreis Gelnhausen, Germany, a German firm, and one-half to Randolph-Rand Corporation, New York, N.Y., a corporation of New York
Filed Mar. 27, 1963, Ser. No. 268,249
5 Claims. (Cl. 220—35)



1. A case comprising a bottom part open at one end and having a pair of ears extending from one edge of the bottom part at the open end thereof and a closure part for closing the bottom part and having a pair of ears extending from a corresponding edge of the closeure part, the two ears of one pair being disposed between the two ears of the other pair in alignment therewith and spaced therefrom, a pintle extending through said ears to provide a hinge connection between the two parts allowing for relative displacement thereof in the direction of said pintle, a positioning coil spring disposed between each ear of one pair and the adjacent ear of the other pair, said springs biasing the two parts into predetermined positions in reference to each other, fastening means securing said pintle to the pair of outer ears to prevent displacement of the pintle in reference to said outer ears, latch means on the bottom part and the closure part engageable with each other when said two parts are in said predetermined positions and disengageable when the parts are displaced out of said position, and a case-opening coil spring disposed between the two intermediate ears, said opening spring encompassing the pintle and abutting against the bottom part and the closure part to bias the latter into an open position, whereby upon closing of the closure part against the action of said opening spring, said latch means maintain the closure part in its closed position, and upon displacement of the closure part in reference to the bottom part in the direction of the pintle against the action of said positioning spring, the latch means are released and said opening spring opens said closure part.

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3,165,226
OPERATING MEANS FOR TUB DOOR
William C. Files, Cincinnati, Ohio, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 229,113
14 Claims. (Cl. 220—41)



1. In a machine of the character described wherein a generally cylindrical housing is provided with a door

opening extending circumferentially partially therearound and across a portion of the width of said housing, and wherein a one-piece door is provided to slidably move around the housing surface between closed and open positions, operating means for said door including cable means having an intermediate portion extending circumferentially around and outside said housing, one end of said cable means being attached to the upper edge of said door and the other end of said cable means being attached to the lower edge of said door, intermediate portions of said cable means being wound around a rotatable hub whereby, upon rotation of said hub in one direction said door is slid to open position, and upon subsequent rotation of said hub in the opposite direction said door is slid to closed positon, and means for maintaining said door in leak proof engagement with said housing when said door is in closed position.

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3,165,227

## PACKAGE AND COMPOSITION

Philip L. Crowell, William C. Harris, and Erland L. Mieele, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.

Filed Nov. 7, 1963, Ser. No. 322,136
10 Claims. (Cl. 220—42)



I. A package suitable for providing a dynamic seal comprising a resilient cylindrical container and a compatible circular lid, said lid and container comprised of a plastic substance that is substantially inert and impervious to the contents of the package:

I. Said container having:

(*a*) an annular rim projecting substantially outwardly from an upstanding side wall, and

(*b*) a continuous inner annular sealing area projecting inwardly from said side wall;

II. Said lid having:

(*a*) outer and inner depending spaced concentric skirts defining a tapered sealing gland extending therebetween, and

(*b*) at least one continuous, sealing annulus integral with the outer wall of said inner skirt;

when the lid and container are brought into sealing engagement:

(*a*) the outer and inner skirts of the lid embrace the container providing a compressing force on that portion of the container coextensive with the sealing gland, thereby producing a substantial resistance to deforming stresses;

(*b*) the tapered area of the sealing gland accommodates the outer rim of the container resulting in a locking engagement between the lid and the container, and

(*c*) the sealing annulus of the inner lid skirt and the sealing gland register with the inner sealing area and outer rim of the container to provide a primary seal between the container and lid in the sealing gland.

3,165,228

## BASE FOR PRESSURE VESSELS

Milton F. Kroesch, Waukesha, and Wilbert O. Kugler, Milwaukee, Wis., assignors to Pressed Steel Tank Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Feb. 5, 1962, Ser. No. 171,133
3 Claims. (Cl. 220—69)



1. A metal pressure vessel having an outwardly convex bottom the external surface of which is characterized by an etched portion, a bottom member comprising a generally circular disk of polyvinyl chloride plastic conforming with and attached to said etched portion of said convex bottom, the interface between said convex bottom and said disk characterized by portions of said plastic bottom member intermingled with said convex bottom, and a polyvinyl primer dispersed therethrough to form an adherent, interlocking bond between said bottom member and said convex bottom, said plastic bottom member covering substantially the entire bottom area of said vessel and being provided with axially projecting support means arranged generally concentric with the longitudinal axis of said cylinder and defining a planar supporting surface lying in a plane substantially perpendicular to the longitudinal axis of said vessel.

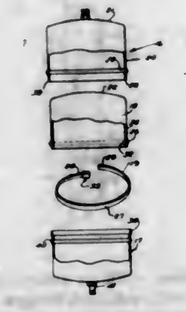
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3,165,229

## EXPANSION TANK

Albert F. Paul, Kingston, R.I., assignor to General Fittings Company, a corporation of Rhode Island

Filed Sept. 12, 1962, Ser. No. 223,063
1 Claim. (Cl. 220—85)



An expansion tank comprising a hollow body member having side and end walls, the inner surface of said side wall having an outwardly extending peripheral groove, a flexible resilient diaphragm in and spanning said body member between said end walls and having an outwardly extending peripheral rib located in said groove, a split ring with its ends abutting contacting the diaphragm on its inner surface in the area of said rib and of a size to compress the rib area of the diaphragm and press the rib outwardly against the wall of said groove, said compressed diaphragm forcing the ends of the split ring to abut, said split ring having overlapped beveled ends, and a channel member having opposite side walls located along the inner surface of said ring receiving said beveled ends with the opposite side walls of the channel member along the edges of the ring facing the end walls of the tank so as to prevent relative movement of the ring ends axially of the tank.



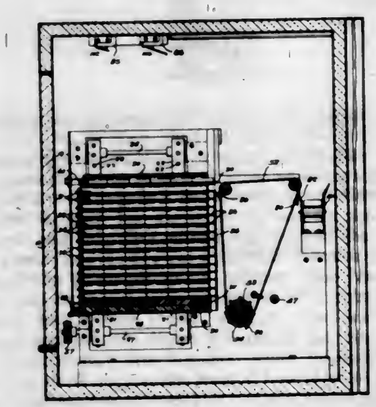
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3,165,230

## DISPENSING APPARATUS FOR BUTTER AND THE LIKE

Clayton W. Hahn, 1516 Sunrise Rim Road, Boise, Idaho

Filed Oct. 11, 1963, Ser. No. 315,621
8 Claims. (Cl. 221—73)



1. An apparatus for dispensing butter and the like, comprising a cabinet having a side wall provided with an exit opening, an upstanding magazine disposed within said cabinet to one side of and spaced from said exit opening and connected to said cabinet for upward movement, said magazine comprising a plurality of trays arranged in superimposed spaced relation, a pliable carrier sheet slidably supported on each tray and adapted to support thereon a plurality of rows of butter and the like in patty form, a first conveyor disposed within said cabinet and having a horizontal run in alignment with and traveling in a direction toward and discharging out of said exit opening, a second conveyor disposed within said cabinet between sad magazine and said first conveyor and having a substantially horizontal run below and contiguous to a tray of said magazine and traveling in a direction from said magazine toward and discharging onto the run of said first conveyor, attaching means on the end of each carrier sheet adjacent said second conveyor run, means on said cabinet applying a pushing force to the tray adjacent thereto and projecting the end of the carrier sheet carrying the attaching means of the carrier sheet supported on the tray over said second conveyor run, and securing means on said second conveyor releasably interengageable with the attaching means on the projecting end of said carrier sheet and connecting said carrier sheet to said second conveyor run for movement therewith to thereby cause said carrier sheet to travel out of said magazine and along the second conveyor run, be guided about the discharge end of said run, and be discharged between said second conveyor run and said first conveyor into the interior of said cabinet.

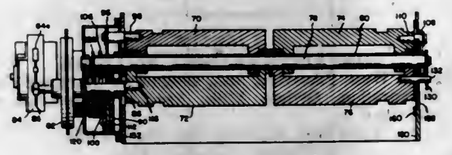


3,165,231

## VENDING MACHINE

Warren R. Heiser, Dearborn, Mich., assignor to Ferro Stamping Company, Detroit, Mich., a corporation of Michigan

Filed Mar. 10, 1958, Ser. No. 720,443
3 Claims. (Cl. 221—115)



1. A can vender comprising guide and support structure for four adjacent vertical stacks of cans all of which are disposed with their axes horizontal and parallel, the cans in each column being disposed in end-to-end relationship with one adjacent column and in generally side-by-side relationship with the other adjacent column, said guide and support structure comprising vertical support surfaces engaging the outer sides of the cans and a vertical separator intermediate the stacks of cans in side-by-side relationship and comprising in addition two pairs of upper and lower support and release members, all of said members being pivoted for independent movement about a horizontal axis located in the vertical plane of said separator, each member having portions movable alternately into and out of can supporting position at opposite sides of said separator, elongated actuator means extending from front to rear of said vender, drive mechanism at one end of said vender coupled to the upper and lower support and release members at such end for effecting independent rocking movement thereof and coupled also to the adjacent end of said elongated actuator means, and means at the opposite end of said elongated actuator means coupling it to the upper and lower support and release members at the opposite ends of said vender, and means for controlling said drive mechanism to move said two pairs of upper and lower supports and release members simultaneously in substantially equal increments of a sequenced movement at each operation to release a single can at each operation and in a predetermined regular sequence.

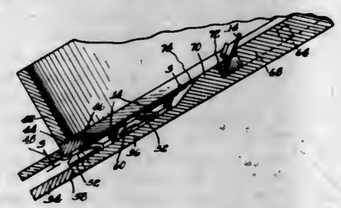
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3,165,232

## ARTICLE ORIENTING MECHANISM

William Stern, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,639
4 Claims. (Cl. 221—168)

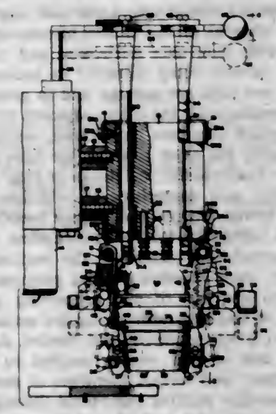


1. A mechanism for orienting articles such as washers to a desired right side up position, comprising rotatable inclined disc means, means disposed above said disc means for retaining a mass of said articles on said disc means, a plurality of rounded elements spaced around said disc means between the disc means and said retaining means and defining openings for permitting passage of the articles therebetween only when said articles are in the desired right side up position, and means fixed on and movable with said disc means for agitating said

mass of articles, said agitating means comprising means defining a generally annular groove on said disc means and having a width less than the diameter of articles being processed for causing portions of said articles to enter partially into the groove and assume a canted position with respect to the disc means for facilitating turning of the articles.

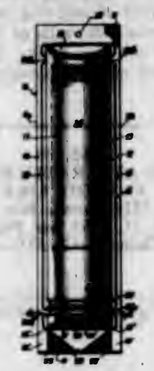
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3,165,233
## CONTAINER FEEDING MACHINE
John B. West, Pikesville, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland
Filed Sept. 25, 1963, Ser. No. 311,381
3 Claims. (Cl. 221—221)



1. A container feeding device comprising a stationary member having a vertical aperture for the disposition and passage of a nested stack of the containers therethrough; a first pair of arms hinged to the member on opposite sides of the aperture; jaws carried by said arms for engaging the bottom container of a nested stack of containers extending through the aperture; a second pair of arms hinged to the member on opposite sides of the stack having jaws for engaging the sides of the penultimate container of the stack projecting above the bottom container; first resiliently yieldable means urging the said first pair of arms outwardly to positions clear of the containers; second resiliently yieldable means urging the said second pair of arms inwardly; means for moving said first arms inwardly to cause the jaws thereof to engage the bottom container of the stack against the action of said first resiliently yieldable means while holding the second pair of arms clear of the stack against the action of the said second resiliently yieldable means and for releasing the said first pair of arms under the action of the first resiliently yieldable means to cause the jaws thereof to engage the said penultimate container with the said second pair of arms and disengage the said first pair of arms from the stack; stripping means slidably attached to the said second pair of arms for exerting a downward force against the bottom container of the stack when the said first pair of arms are in the released position and the penultimate container is supported by said second pair of arms; said moving means comprising rods movable in paths adjacent to said arms, and blocks slidably attached to the said second arms, said blocks having slots in which said rods are disposed, said blocks having camming surfaces for engaging said rods, said rods being rotatably mounted along their longitudinal axes and having eccentric portions in camming contact with the blocks to vary the limits of motion of the arms in order to adapt the device to different sizes of containers.

3,165,234
## PLASTIC PACKAGE CUP DISPENSER
Charles S. Conklin, Haworth, and John D. Reeves, Ramsey, N.J., assignors to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1961, Ser. No. 90,531
7 Claims. (Cl. 221—302)



1. An article of commerce comprising an integrally formed generally U-shaped body member of relatively thin but stiff plastic material providing a longitudinally extending open side thereof, a stack of nested cups disposed within the hollow of said U-shaped body member, and a back member of relatively stiff material secured to said body member and closing said open side thereof, said body member including a top end portion closing one end of said body member, a cup dispensing mouth portion including cup dispensing bead means at the other end of said body member, and a bottom end portion closing said cup dispensing mouth portion and having finger-engageable means adjacent said back member for grasping to sever said bottom end portion from said cup dispensing mouth portion, said bottom end portion merging with said cup dispensing mouth portion in a line of juncture which includes a sharply defined cornered portion extending along at least a length thereof which is opposite said finger-engageable means whereby said bottom end portion is readily severable from said dispensing mouth portion at least closely adjacent to the periphery of said line of juncture and along the length of said cornered portion thereof.

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3,165,235
## DISPENSING DEVICE AND COUNTER IN COMBINATION THEREWITH
Frank Madaffer, 1004 Cherry St., Erie, Pa.
Filed Nov. 20, 1962, Ser. No. 238,915
3 Claims. (Cl. 222—38)

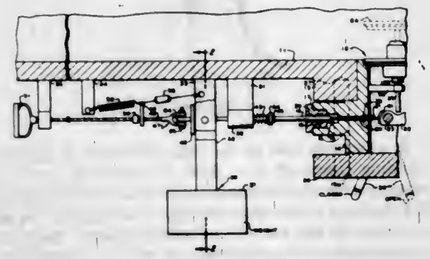


1. A dispenser comprising a ring like body member made of thin flat material, a cap for attaching said body member to a bottle and having an inlet opening therein, a spout connected to said body member and having an outlet opening therethrough, a counterbore in said opening in said spout, a disk like member having two wings struck therefrom and extending radially outwardly and toward said outlet opening from said spout, a closure in said body member over said inlet opening and a closure over said outlet opening, a leaf spring attached at its intermediate part to said body member and having said inlet closure on one end and said outlet closure on the other end, a disk in said body member, said disk being pivotally supported on said body member to pivot about an axis spaced from its center and parallel to its central axis, an actuating member attached to said disk at one end and extending through said body member to the outside thereof for rotating said disk, two levers, one attached to said inlet closure and the other attached to said outlet closure whereby one said closure is opened when said actuating member is pressed, a counter in said body member visible from the outside thereof having means actuating it each time said actuating member is pressed, and means to prevent said levers from being actuated when said body member is in position with a bottle attached thereto in upright position.



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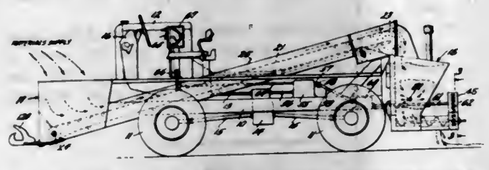
3,165,236
## SAFETY SHUT-DOWN DEVICE FOR VALVES ON MOBILE TANKS
Charles W. Beazer, Caney, Kans., and Edwin E. Reed and Earl E. Kleinmann, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,646
6 Claims. (Cl. 222—54)



6. In a fluid dispensing apparatus, the combination comprising:
(1) a tank car having a dispensing valve communicating an out-of-tank passageway with the interior of said tank, said valve being positioned intermediate ends in the bottom thereof and having means biasing same closed, the biasing means being operable by a stem extending to an out-of-tank position to open said valve;
(2) a cam and shaft means supported adjacent the outer end of the stem of (1) so that oscillation of said cam and shaft alternately moves said stem longitudinally so as to open said valve and then to allow said biasing means to close same;
(3) lever means for operating the cam and shaft means of (2);
(4) a locking shoulder on the cam of (2) for holding same in position actuating said stem to open said valve;
(5) a pin supported in alignment with the cam of (2) so as to be reciprocable into and out of locking engagement with the shoulder of (4);
(6) means biasing the pin of (5) into locking position;
(7) mechanical linkage connecting the pin of (5) with a remote operating means at one end of said car; and
(8) operating means at the other end of said car connected by mechanical linkage with the pin of (5), including a cable connected with said pin thru a direction reversing means.

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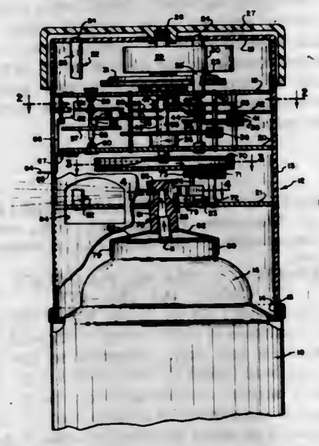
3,165,237
## MATERIAL DISPENSING APPARATUS
Wellington Stevens, P.O. Box 877, Vero Beach, Fla.
Filed Dec. 20, 1963, Ser. No. 332,997
28 Claims. (Cl. 222—56)



23. A material handling apparatus comprising first and second material containers, at least one means for conveying material from the first material container to the second material container, means for driving said conveyor means, said conveyor driving means having a fluid actuated clutch means for selectively transmitting drive to the conveyor means, a source of fluid under pressure, means for supplying the fluid to the fluid clutch means to actuate the same, electrically actuated valve means for controlling the supply of fluid to the clutch means and an electrical control system comprising a current source, current supply circuit means for energizing the electrically actuated valve means, an interrupter circuit means for selectively interrupting the current supply circuit means responsive to the loading of material in the second container at a first predetermined level, and a hold circuit for maintaining the interruption of the current supply circuit means responsive to the energization of the interrupter circuit means and the loading of material in the second container at a second predetermined level lower than the first predetermined level.

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3,165,238
## INTERMITTENT ACTUATING DEVICE FOR DISPENSERS
Gaston G. Wiley, Dover, N.J., assignor to Heuer Timer Corporation, a corporation of New York
Filed Feb. 19, 1962, Ser. No. 174,098
5 Claims. (Cl. 222—70)



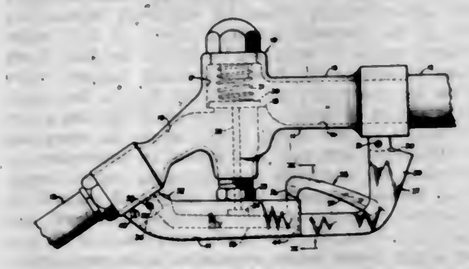
1. In an aerosol package of the type having a valve actuator for dispensing the contents of the package, the

improvement of an intermittent actuating device which comprises:

(*a*) a frame formed for attachment to said package,
(*b*) independent motive power means supported on said frame,
(*c*) a main drive member operatively connected to said motive power means,
(*d*) cam means positively connected to said main drive member and mounted for continuous movement thereby, said cam means extending from said frame in proximal relationship with said valve actuator, and
(*e*) a timer mechanism connected to said drive member to regulate the power means and the speed of movement of said cam means to bring said cam means in positive contact with said valve actuator at predetermined intervals.

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**3,165,239**
**GASOLINE DISPENSING NOZZLE AND GUARD**
Vern W. West, Fort Collins, Colo., assignor to Pat Griffin, Fort Collins, Colo.
Filed Dec. 11, 1962, Ser. No. 243,806
5 Claims. (Cl. 222—182)

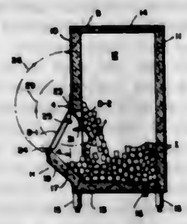


1. In a nozzle for dispensing gasoline and the like, a nozzle body, a valve stem projecting downwardly of said nozzle body, a trigger extending along said nozzle body and disposed beneath said valve stem and having operative engagement therewith, a fulcrum for one end of said trigger, adjacent the forward end of said nozzle body, said trigger having a generally horizontally extending operating portion extending rearwardly of said fulcrum beneath said valve stem, and having an upright portion extending upwardly of the rear end thereof having a finger grip extending rearwardly therefrom, a trigger guard extending along opposite sides of said trigger and including spaced guard plates of sufficient depth to guard said trigger and valve stem for the full extent of movement thereof, and a partition connecting said guard plates together and extending upwardly along the vertically extending portion of said trigger.

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**3,165,240**
**STORAGE UNIT FOR ICE AND THE LIKE**
Cornelius P. Maquelin, Phillipsburg, N.J., assignor to Follett Corporation, Phillipsburg, N.J., a corporation of New Jersey
Filed Mar. 3, 1964, Ser. No. 349,075
12 Claims. (Cl. 222—457)

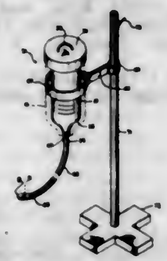
1. In a storage unit for ice or the like, a bin including a generally upstanding wall having a through opening formed therein, a first door connected to and movable relative to the wall about a first pivotal axis, said first door normally serving as a closure for the opening and being swingable outwardly relative to the bin about the first pivotal axis to open position, a second door connected to and movable relative to the wall about a second pivotal axis, said second door being normally positioned between the first door and the interior of the bin and being swingable outwardly relative to the bin about the second pivotal axis, and latching means for releasably coupling the second door to the first door when the first door is in open position, said latching means being oper-



able to uncouple the doors from each other in response to predetermined movement of the first door about the first pivotal axis in the course of travel of the first door from open position to closed position.

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**3,165,241**
**FEEDER FOR INVALIDS**
Irene V. M. Curry, 4 W. 31st St., New York, N.Y.
Filed Jan. 25, 1963, Ser. No. 253,866
2 Claims. (Cl. 222—490)



1. In a nursing unit of the class described, a container for holding foodstuff in a fluid or semifluid form and permitting same to flow therefrom under the influence of gravity through a tube, comprising, a mouthpiece for said tube to control the passage of said foodstuff therefrom, said mouthpiece being formed of resilient material, a passageway formed in said mouthpiece, said passageway having spaced walls converging into adjacent positions at the outer extremity of said mouthpiece, said walls when in said adjacent positions obstructing the flow of said foodstuff from said mouthpiece, said walls when pressure is applied in a predetermined direction to said mouthpiece spreading apart to permit the flow of said foodstuff therethrough, control means formed in said mouthpiece to determine the spacing of said walls and thereby the amount of foodstuff which will pass through said mouthpiece, said control means including spaced plates of rigid material, each of said plates having formed thereon step-like formations, said step-like formations determining the extent to which pressure, applied along a line passing through a particular step of said formation, will result in spreading of said walls.

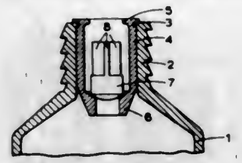
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**3,165,242**
**CONTAINERS FOR VISCOUS LIQUIDS**
Robert James Jackson, Sunningdale, England, assignor to County Laboratories Limited, Brentford, England, a British company
Filed Apr. 9, 1963, Ser. No. 271,802
Claims priority, application Great Britain, Apr. 10, 1962, 13,831/62
5 Claims. (Cl. 222—495)

1. In a collapsible container for viscous liquids comprising a substantially rigid hollow neck with an outlet



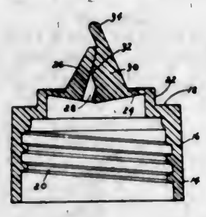
through which the contents of the container can be discharged, the combination comprising a valve located in said neck and comprising a valve housing secured inside said neck and provided with an inwardly directed flange at an outlet end and with an internal concave and annu-



lar valve seat; and a valve member which is movable inside said housing and which has a convex surface adapted to seat on said valve seat and a plurality of fingers extending towards, and engageable with, said inwardly directed flange.

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**3,165,243**
**DISPENSING CONTAINER WITH SNAP ACTION DIAPHRAGM**
Don A. Haynes, 1989 Osage Drive, Okemos, Mich.
Filed Apr. 26, 1962, Ser. No. 190,356
2 Claims. (Cl. 222—498)

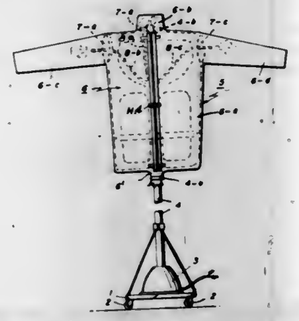


1. A container having as a portion thereof a snap-action diaphragm adapted to assume either of two concavo-convex shapes on opposite sides of a central radial plane through the edges of said diaphragm, said diaphragm having an orifice therein and a closure for said orifice located adjacent thereto, said closure being fixedly attached to said diaphragm and being separated from said orifice when said closure is in one of its positions and closing said orifice when in the other of its positions, said closure being in the form of a lever extending outwardly from said diaphragm.

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**3,165,244**
**INFLATABLE APPARATUS FOR PRESSING SHIRTS**
Martin Roberto Dosal, P.O. Box 62, Miami Shores 53, Fla.
Filed May 18, 1962, Ser. No. 195,861
2 Claims. (Cl. 223—67)

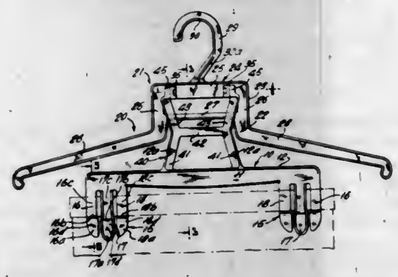
1. In an inflatable apparatus for pressing a shirt, the combination of a form including a torso having neck and arms to simulate a shirt to be pressed, said form being made of impermeable elastic material, and the outer ends of the neck and arms of said form being closed; an open-ended tube on which said form is mounted having the open end of said tube received in the torso of said form; means adapted to effect an air-tight seal between said form and said tube; a diaphragm mounted in said form between the torso and the neck of said form; a pair of diaphragms mounted in said form between the arms and the torso of said form, said diaphragms producing four independent air-tight compartments in said form; a pipe connecting said tube with the neck compartment; a pair of pipes connecting said tube with the arm compartments; a valve disposed in said tube between the open



end of said tube and the connections of said pipes to said tube; and means adapted to supply air under pressure to said tube.

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**3,165,245**
**DOUBLE HANGER**
Bernard B. Levine, New York, and Robert Phillips, Roslyn, N.Y., assignors to Warbern Plastics, Inc., Brooklyn, N.Y., a corporation of New York
Filed July 12, 1963, Ser. No. 294,598
4 Claims. (Cl. 223—91)



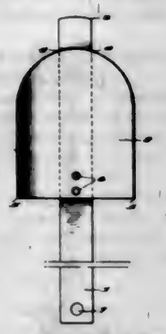
1. A garment supporting device comprising a pair of flat upper and lower hanger members of unitarily molded thermoplastic, the upper hanger member having a central neck portion and shoulder portions extending outwardly from each side edge of said neck portion and having a pair of spaced integrally formed upper hanger ears extending perpendicularly from a face of its neck portion, the lower hanger member having a cross bar, spaced garment clip members depending from said cross bar, a central neck portion extending upwardly from said cross bar and terminating at its upper end in spaced-apart, coplanar arms supported at their lower ends, and a pair of spaced, integrally formed lower hanger ears respectively extending upwardly from the upper ends of said arms with the lower hanger ears positioned adjacent outer faces of the upper hanger ears, said upper hanger ears having aligned lateral through bores, said lower hanger ears having respective aligned inwardly extending pins extended turnably through said respective bores.

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**3,165,246**
**SHOE HORNS**
Orlo F. Stearns, 3206 Perry St., Mount Rainier, Md.
Filed May 31, 1962, Ser. No. 199,576
9 Claims. (Cl. 223—118)

1. A shoe horn having a thin, smooth, flexible guide of sheet material of arcuate shape and having upper and

lower edges to be placed inside at the heel of low laced shoes, a rigid midrib narrower than said guide attached



to said guide being and in contact with said guide along its entire length for reinforcing the guide, said midrib extending beyond the lower edge of the guide.

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3,165,247
COLLAPSIBLE STORAGE POUCH
Vera V. Burns, P.O. Box 6, Salina, Utah
Filed Dec. 27, 1962, Ser. No. 247,744
3 Claims. (Cl. 224—29)

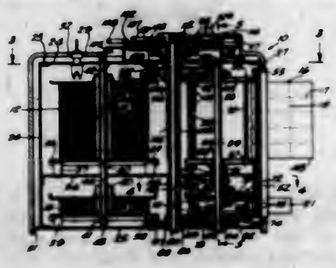


1. In combination, a collapsible storage pouch and a vehicle having a passenger cab and seat in the cab with a forwardly swingable back, said pouch comprising front and rear walls made of a single piece of flexible sheet material and forming a V-shaped trough, the upper margin of said rear wall being fixed to said vehicle cab and the upper margin of said front wall being removably fixed to the rear of the said seat back; inverted, triangular end pieces of flexible sheet material at each end of said trough; a partition wall extending the length of the trough and being fixed to and substantially bisecting said end pieces; and a facing of flexible sheet material fixed to said rear wall at its ends and at intervals along its length to form a series of article-receiving pockets, said partition wall and said facing being formed of a single piece of flexible sheet material having a line of fold extending along and fixed to the bottom of said V-shaped trough formed by said front and rear walls.

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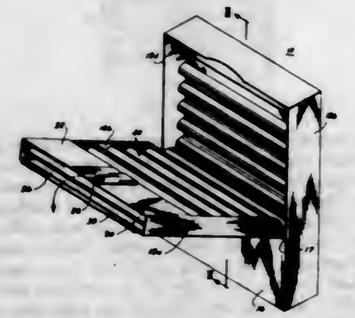
3,165,248
STAMP DISPENSING MACHINE
Hugh C. Jones, 330 Burchett St., Glendale, Calif., assignor of one-third each to Leland L. Dills and Richard W. Callaway, Arcadia, Calif.
Filed Aug. 15, 1962, Ser. No. 217,213
19 Claims. (Cl. 225—16)

1. A machine for dispensing stamps from a long strip separable along lines of perforations extending transversely of the strip, the strip being coiled in a cylindrical roll, the machine comprising a frame, a horizontal stationary platform for supporting one end of the roll resting directly upon the platform whereby a side edge of the strip abuts the platform to prevent unintended rotation of the roll and uncoiling thereof, a pin perpendicular to and extending above the platform and defining a vertical axis about which the roll may rotate, a feeding wheel mounted in the frame for rotation in juxtaposition to the roll-receiving space whereby said strip will travel in a path extending tangentially from the roll, thence in engagement with the circumference of the feeding wheel and thence to a vertically disposed tear-off position marking the outer or downstream end of the path of travel of the strip in the machine, spines on the circumference of the wheel for releasable engagement in the perforations of the strip, means for guiding the strip from the roll to engagement against the circumference of the wheel whereby rotation of the wheel will uncoil the strip from the roll to travel along said path, and means for rotating the wheel to dispense a predetermined whole number of stamps past said tear-off position.



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3,165,249
CIGARETTE PACKAGE
Samuel M. Peck, 33 E. 70th St., New York, N.Y.
Filed Jan. 8, 1964, Ser. No. 336,403
4 Claims. (Cl. 225—43)



1. A cigarette package comprising a container and a plurality of cigarettes contained therein, said container carrying at least one layer of cigarettes and having a hinged top for dispensing a selected number of said cigarettes therefrom, said hinged top including guide means through which said selected number of cigarettes are fed, and cutting means for detaching said selected number of cigarettes from the remaining cigarettes in the package, said guide means comprising a panel member extending across the inner side of said hinged top and spaced therefrom to form a guide channel between said hinged top and said panel member, said cutting means attached to the free edge of said hinged top at the end of said guide channel, said plurality of cigarettes being encased in a continuous sheathing in spaced, substantially parallel, side-by-side relationship, said sheathing formed into a perforated web between said cigarettes, whereby a selected number of cigarettes may be dispensed from said package by being fed through said guide channel onto said cutting means and severed along said perforated web of said sheathing.



3,165,250
FILM FLEX PULLDOWN SYSTEM
William P. Ewald, Webster, and Henry E. Brayer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 31, 1962, Ser. No. 170,171
7 Claims. (Cl. 226—55)



1. A device for converting continuous substantially constant linear speed advancement of a strip of perforated resilient material fed into and through a portion of a path from a supply, into intermittent advancement of a unit length of said material from the exit of said path, said device comprising

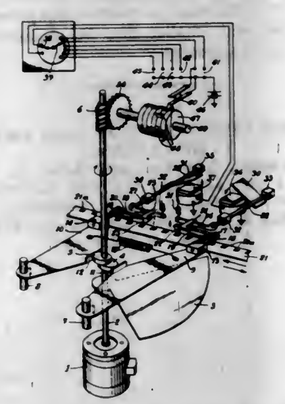
(a) stationary detent means extending into said path in advance of said exit for engaging successive perforations in said strip to interrupt the movement of said strip through said path;

(b) and guide wall means spaced along and disposed relative to said path at a point adjacent said detent means to impart a first bowed curvature laterally of said path to that portion of said strip continuously advanced into said path and a second bowed curvature laterally of said path in opposed relation to said first bowed curvature to that portion of said strip engaged by said detent means when a perforation of said strip engages said detent means, said guide wall means being so located with respect to each other and said detent means that said bowed portions of said strip are displaced laterally in increasing increments from said path until the perforation engaged by said detent means is disengaged therefrom by reason of said bowing action to allow said strip to resiliently flex and straighten out prior to repeating the cycle.

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3,165,251
DEVICE FOR CONTROLLING THE IMAGE FREQUENCY DURING THE PROJECTION OF MOTION PICTURES
Erwin Gerlach, Trollbacken, Sweden, assignor, by mesne assignments, to AGA Aktiebolag, Stockholm-Lidingo, Sweden, a Swedish corporation
Filed May 29, 1962, Ser. No. 198,528
Claims priority, application Germany, May 31, 1961, Z 8,779
6 Claims. (Cl. 226—63)

1. In a device for controlling the image frequency during the projection of a motion picture film, claw means adapted to be moved periodically lengthwise of the film and to be moved selectively perpendicular with respect to said film for entering into a perforation of said film during selected longitudinal movements of the same, motor driven shaft means, a pivoted guide lever arranged to swing in the same plane as said film to which said claw means is pivotally attached, a cam on said shaft means engageable with said guide lever for moving said claw means periodically in a direction lengthwise of said film, a lever arm engageable with said claw means for periodically moving said claw means into and out of engagement with a perforation of said film, an electromagnet arranged in an electric circuit having a source of electrical energy for actuating said lever arm, said electromagnet being connected selectively to a selector switch



in said circuit, a plurality of circuits for said selector switch each of which contains a normally open control switch, a cam carrying drum having a series of circumferentially spaced members engageable with said control switches for closing one of said selective control switches periodically, said cam carrying drum being operated by said motor driven shaft means, said claw means and lever arm being positioned in closely spaced relation to said film and arranged substantially parallel therewith.

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3,165,252
CONFECTIONARY NOVELTY AND CONTAINER THEREFOR
Paul H. Carter and Raymond L. Morse, Baltimore, Md., assignors to Universal Machine Co., Inc., Baltimore, Md., a corporation of Maryland
Original application Jan. 19, 1961, Ser. No. 83,762. Divided and this application Jan. 4, 1962, Ser. No. 164,271
1 Claim. (Cl. 229—5.5)

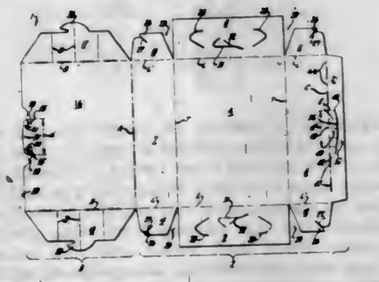


The combination of a frusto-conical container and an end closure member, said container having a smaller opening at one end and a larger opening at the other end, said member comprising a one-piece plastic plug having a relatively larger imperforate disc at one end and a relatively smaller imperforate disc at the other end, said discs being disposed in planes spaced from and parallel to each other, integral means securing the discs to-

gether, said means being disposed between the discs and being inwardly offset from the peripheries of the discs, the diameter of the smaller disc being substantially equal to the diameter of the said smaller opening and the diameter of the larger disc being substantially equal to the diameter of the container at a distance from the said smaller opening equal to the distance between the said discs, and a stem handle rigidly secured to the center of the smaller diameter disc, said handle projecting axially in a direction opposite said larger disc and extending beyond the container a substantial distance, said larger disc being in continuous peripheral engagement with the container and said smaller disc being disposed in and filling said smaller opening.

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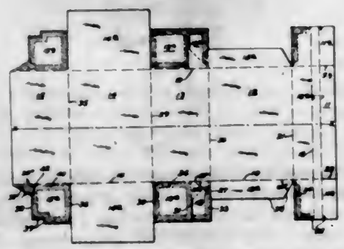
3,165,253
**CARTON CONSTRUCTION AND METHOD OF CLOSING**
Ernest P. Adams, Atherton, and Henry A. Nussbaum, Danville, Calif., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Sept. 5, 1961, Ser. No. 135,826
6 Claims. (Cl. 229—33)



1. A carton adapted to be overwrapped comprising a bottom tray portion, and a cover portion hingedly interconnected with said tray portion, said cover portion being closable over and lockable to said tray portion on automatic machinery; said tray portion comprising a bottom, front and rear walls hingedly connected to a first pair of opposite margins of said bottom, opposite side walls hingedly connected to a second pair of opposite margins of said bottom, a pair of corner flaps hingedly connected to opposite side margins of each of said front and rear walls, a tab on each of said corner flaps and a pair of tab receiving slits in each of said side walls between the pair of tab receiving slits therein, a product damming and cover locking flap hingedly connected directly with said front wall along an interrupted fold line which defines the upper margin of said front wall, and a locking slit in said damming and locking flap spaced from said interrupted fold line, said fold line being free of scoring, cuts and other means of weakness in an area intermediate the opposite ends of said locking slit so that said damming and locking flap and said front wall are co-planar continuations of each other in said area prior to such flap being folded into substantially parallel relationship with said bottom panel so that said flap is resistant to folding adjacent said slit, whereby said slit automatically opens at least partially when said damming and locking flap is folded during closing of said carton; said cover portion comprising a lid hingedly connected along another fold line to the upper margin of said rear wall of said tray portion, and a pair of side flaps hingedly connected to opposite side margins of said lid, each of said side flaps having a tongue projecting therefrom each of which is engaged in said third slit of an associated side wall of said tray portion, said lid having a closing tab directly thereon formed within the marginal confines thereof, said tab when said carton is closed being received directly in said locking slit in said damming and locking flap and lying beneath such flap for maintaining said lid closed, said lid tab being defined by cuts extending directly into said lid from the free marginal edge thereof opposite from the fold line along which said lid is hingedly connected to the upper margin of said tray portion rear wall.

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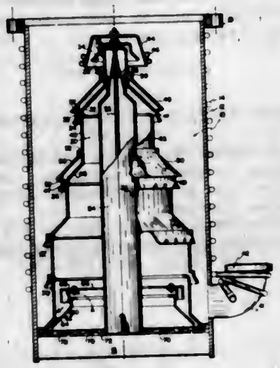
3,165,254
**CARTON**
Norman H. Moore, Palo Alto, Calif., assignor to Fibreboard Paper Products Corporation, San Francisco, Calif., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,504
2 Claims. (Cl. 229—51)



1. A carton blank symmetrically arranged on a longitudinal axis and having a length as taken along said axis and width as taken laterally thereof, parallel score lines formed on said blank in parallel relationship to said axis defining first to fifth consecutive hingedly connected panels having first to fifth pairs of flaps hingedly connected at said score lines thereto, respectively, said flaps having widths arranged to extend laterally relative to said axis, the first of said panels and said first flaps thereof having a laterally extending tear strip formed therein for division thereof into a first portion adjacent the second of said panels and a second portion, slits formed in said second portion and arranged coincident with said score lines and terminating at said tear strip, said second flaps having laterally extending widths substantially equal to the length of the first portion of said first panel and first flaps and having edge portions forming a substantially V-shaped configuration, one of said edge portions opposing said first flaps and arranged to extend from and forming an angle of approximately 60° relative to the score line which connects the second flaps to said second panel, the third flaps arranged in disconnected relationship relative to the second and fourth flaps and having a disconnectable tab formed thereon having a length substantially equal to the lateral width of said second flap, said tab being bounded by a perforated tear line extending from and at an angle of approximately 45° relative to the score line which connects the third flaps to the third panel and a laterally extending slit, said fourth flaps arranged in disconnected relationship relative to said fifth flaps and having lateral widths substantially equal to the length of said third panel and further having lengths substantially equal to the width thereof, said fifth flaps having V-shaped cutout portions arranged adjacent an outer edge of said fifth panel and formed by edge portions constructed and arranged to substantially conform to the V-shaped configuration of the edge portions of said second flaps, said third and fifth flaps having substantially equal laterally extending widths, the total of which is no greater than the length of said fourth flap.



3,165,255
**HIGH VACUUM DEVICE**
Arthur A. Landfors, Sharon, Mass., assignor, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed June 11, 1962, Ser. No. 201,547
4 Claims. (Cl. 230—101)



1. An improved construction of a fractionating, high vacuum oil diffusion pump, equipped with a cold cap comprising in combination:

(*a*) a vertically arranged, tubular pump body and means for cooling the pump body, the pump body being open at its upper end to provide a large inlet and closed at its lower end and having an exit opening in its tubular wall near the lower end thereof;

(*b*) a fractionating, vapor jet assembly mounted in the pump body and having a vertical series of outwardly and downwardly facing jet nozzles, including a jet nozzle near the top of the assembly, the assembly having a generally stepped form so that lower portions of the assembly present optical targets to the said top jet nozzle;

(*c*) heater means located at the bottom of said pump body for producing oil vapors within the vapor jet assembly;

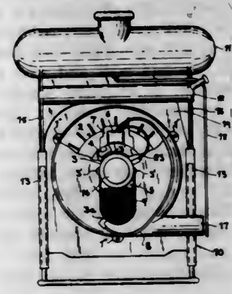
(*d*) a cold cap mounted over the said top jet nozzle in closely surrounding, yet thermally isolated, relation therewith and arranged to intercept a portion of the vapor jet emerging from said nozzle and means for cooling said cold cap so that it condenses the intercepted vapor; and

(*e*) means for shielding the said lower portions of the assembly presenting optical targets to the top jet nozzle from condensation dripping downwardly from said cap, said shielding means being arranged so that it maintains the condensate at a temperature below its boiling point.

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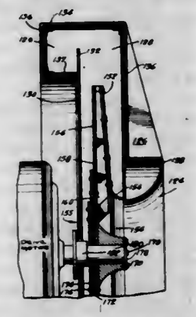
3,165,256
**MOTOR/BLOWER UNIT FOR PORTABLE SPRAYER DEVICE AND THE LIKE**
Heinz Emmerich, Stuttgart-Feuerbach, Germany, assignor to SOLO Kleinmotoren G.m.b.H., Maichingen, Wurttemberg, Germany, a corporation
Filed June 24, 1963, Ser. No. 290,116
Claims priority, application Germany, June 26, 1962, S 80,078
2 Claims. (Cl. 230—116)

1. In a portable spraying apparatus, in combination, housing means adapted to be carried upon the back of an operator and provided with a compartment having a major dimension generally parallel to the back of said operator, said housing means being provided with an inlet open to the atmosphere for induction of air; outlet means on said housing means for connecting said compartment to a spraying device; a blower impeller journaled in said housing means and disposed within said compartment for rotation about an axis perpendicular to said major dimension, said blower impeller including a disk lying generally in a plane parallel to the back of said operator and formed with blade means along an axial side of said disk proximal to said operator; an internal-combustion engine mounted on said housing means rearwardly of said compartment and provided with a shaft coupled with said impeller; and ignition means for operating said engine, said ignition means including a magneto magnet mounted on said disk at a side thereof axially opposite the first-mentioned side and remote from said operator, field-magnet means mounted on said housing means adjacent the path of said magneto magnet between said engine and said blade means for generating an ignition pulse, a spark plug on said engine, and breaker-contact means mounted on said engine on a side thereof axially opposite said disk and connected with said field-magnet means while being actuated by said shaft for firing said spark plug.



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3,165,257
**PRESSURE INDUCER**
Howard C. Edwards, 2443 Whipple Road NW., Canton, Ohio
Filed Oct. 3, 1962, Ser. No. 228,194
4 Claims. (Cl. 230—127)



1. In a pneumatic pressure inducer having a driving means provided with a forwardly extending driving shaft, the improvement comprising: a sheet - metal rotor mounted on the forward end of said shaft; said rotor having a central hub keyed to said shaft, an end plate secured to said hub and to said shaft for limiting axial displacement of said rotor relative to the shaft, an annular blade supporting member secured to the opposite end of said hub from said end plate and extending radially from said hub in a plane normal to the axis of the shaft, said supporting member comprising a stack of annular sheet metal discs of decreasing radial diameter, a plurality of

blades fixed radially about an axis of the disc having the largest diameter and concentrically spaced about the axis, each blade having a generally triangular shape converging in a radially outward direction, and lying in a generally radial plane, a conical disc secured to converging sides of the blades and defining a central intake opening for the rotor; a sheet metal housing mounted concentrically about said rotor and enclosing the same, said housing comprising first, second and third axially spaced, flat walls and a peripheral annular wall secured to the first and third walls; said first and second walls and a portion of said peripheral wall defining a pumping chamber for the rotor; said second and third walls and a remaining portion of said peripheral wall defining a collecting chamber; said second wall and said peripheral wall defining therebetween a restricted annular opening for communication between the pumping chamber and the collecting chamber; said housing having a tangential, outwardly converging discharge outlet communicating with said collecting chamber; said rotor having a plurality of holes in the disc having the largest diameter, equally spaced radially from the axis of the rotor, whereby axial thrusts on the supporting disc and on the conical disc are equalized; and means in said first wall providing communication with the intake of the rotor.

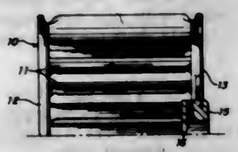
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**3,165,258**

**BLOWER**

William H. Westling, Donald D. Kinsworthy, and William P. Powell, Dayton, Ohio, assignors to The Lau Blower Company, Dayton, Ohio, a corporation of Ohio

Filed Apr. 4, 1963, Ser. No. 270,582
4 Claims. (Cl. 230—134)



1. A centrifugal blower wheel comprising, a plurality of parallel separate blades circumferentially arranged to form a wheel having a predetermined outer diameter, each said blade having a smoothly curved blade surface with a predetermined radius, said blade surface having a free inner trailing edge portion and an outer leading edge portion in a direction of rotation of the wheel, said leading portion terminating in a leading edge which is substantially tangent to the wheel periphery, an integral extension on each end of each said blade projecting axially outward of said blade from said outer edge portion only and substantially forward thereof in the direction of rotation of the wheel so that the end of said blades adjacent said trailing inner edge portions are free for axial flow of air into the wheel thereby increasing the inner intake area of said wheel, said outer edge portion of said blade and said extension having a tapered portion in the area of their juncture for positioning the outermost portion of said extension radially inward of the wheel from said leading edges, said extension including a rectangular flange on said outermost portion thereof which projects perpendicularly therefrom radially outward of the wheel, said flange having upper and lower edges which are parallel to each other and to a plane extending tangentially of said wheel through said leading edge of said blade surface, and a continuous retaining ring at each end of the wheel having a groove concentric with the wheel for receiving and enclosing said flanges to position the center of curvature of said blade surface and the midpoint of said flanges attached thereto in a common radial plane with said leading edge of said blade surface so that said leading edges lie substantially tangential of the wheel, said rings having a radial inner portion which supports the radial innermost surface of said extension and lies radially outward of said free inner trailing edge portions of said blade, and an integral radial outer portion on said rings which surrounds said flange and has an outer diameter substantially equal to said predetermined diameter for locking said blades together.

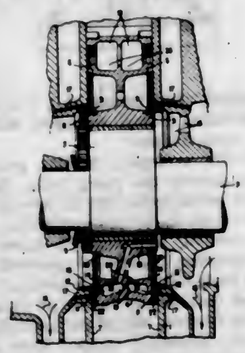
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**3,165,259**

**ROTARY PISTON INTERNAL COMBUSTION ENGINE**

Alfred H. Müller, Waiblingen, and Eberhard Müller, Esslingen-Mettingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

Filed Mar. 14, 1962, Ser. No. 179,740
Claims priority, application Germany Mar. 22, 1961
11 Claims. (Cl. 230—207)



1. An oil seal construction disposed between the piston end walls and the lateral housing walls of rotary-piston internal combustion engines, especially of internal combustion engines of trochoidal construction, comprising engine housing means including lateral housing walls, piston means including end walls and provided with hub portions, and metallic sealing disk means disposed between said piston end walls and said lateral housing walls and operatively connected radially inwardly thereof for common rotation with the hub portions of the piston means, said sealing disk means being provided at the radial edges thereof on a relatively large diameter with sealing edge means sealingly abutting substantially in the axial direction against said lateral housing walls, and the wall thickness of said sealing disk means decreasing progressively in the radially outward direction.

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**3,165,260**

**DATA TRANSFER DEVICE**

Fred Moring, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 3, 1962, Ser. No. 241,598
6 Claims. (Cl. 234—78)

1. A portable data transfer device adapted to be hand held and operated to transfer onto a tape information recorded on individual records which remain attached to their related articles which comprises:

movable means for holding an inserted record bearing information in the form of code perforations;

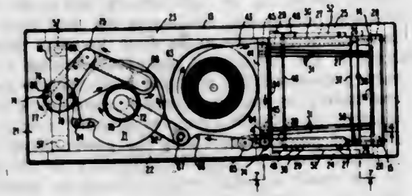
a supply of tape;



means for supporting a portion of said tape in position to be punched;

a plurality of movable punch elements disposed between said tape portion and said record holding means;

actuator means connected with said record holding means and manually operable to move same and a record inserted therein toward said tape portion whereby selected punch elements will be displaced by the record to transfer information from said record onto said tape;



a handle member connected with said actuator means for moving same; and

a stationary member in proximity with said handle member, said handle member and stationary member providing a hand grip by which said device may be held in one hand of an operator for carrying and presenting the device to individual records which remain attached to the articles to which they relate and which members may be squeezed together by said one hand to operate said actuator means to transfer information from an inserted record to said tape.

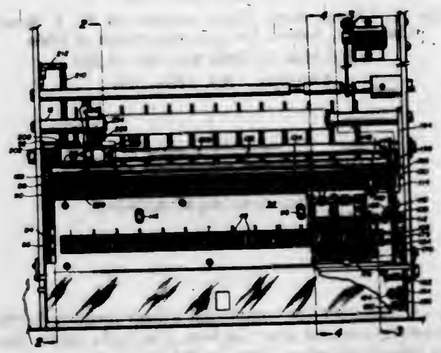
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**3,165,261**

**TOTALISATOR**

Joseph C. Wagner, Bayside, N.Y., assignor to General Register Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1961, Ser. No. 120,279
11 Claims. (Cl. 235—91)



1. In a machine for the issuing of tickets of a plurality of types, a plurality of counters individually registering the number of tickets issued corresponding to the various types, means operable to selectively effect advances of said counters, a cover plate movable between a closed position covering said counters and an open position uncovering said counters, means cooperable with said advancing means and movable between a locking position preventing operation of said advancing means and an unlocking position permitting operation of said advancing means, said last mentioned means having a slidably mounted lever biased to an extended position outwardly of the closed position of said cover plate and being movable between a locking position preventing operation of said advancing means and an unlocking position permitting operation of said advancing means, said lever being moved against the bias thereof by contact with said cover plate in said closed position thereof to thereby actuate said last mentioned means to said unlocked position said cover plate being movable out of contact with said lever in said open position thereof whereby said lever is moved under its bias to said locking position thereof.

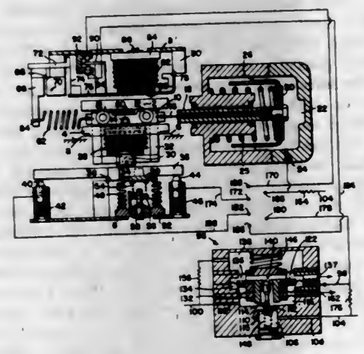
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**3,165,262**

**PNEUMATIC COMPUTER**

Louis A. Ollivier, Huntingdon Valley, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania

Filed July 15, 1963, Ser. No. 294,863
3 Claims. (Cl. 235—200)



1. A fluid-responsive computer comprising:

means providing a guideway;

a member mounted by said guideway for movement therealong;

a fluid motor connected to said member to position the member along said guideway;

a movable element;

a first fluid operated means responsive to a fluid pressure to provide a force on said element;

means for detecting movement of said element;

a spring connected between said element and said member;

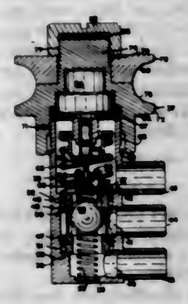
a second fluid operated means responsive to a fluid pressure and supported by said member for movement therewith;

a pivoted lever positioned for engagement by said second fluid operated means to receive therefrom a torque variable with the position of said member and with the fluid pressure to which the second fluid operated means is responsive;

a third fluid operated means responsive to a fluid pressure to provide a torque to said lever to balance the first mentioned torque;

means for detecting movement of said lever; and means interconnecting said fluid motor and said first, second and third fluid operated means and responsive to both of said detecting means to produce static equilibrium of said member, said element and said lever.

3,165,263
VALVE MECHANISM
Richard C. Dreibelbis, Fair Lawn, N.J., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 5, 1960, Ser. No. 27,183
3 Claims. (Cl. 236—100)



1. A valve mechanism adapted to be mounted on a bend of a heat exchanger comprising a casing having a longitudinal bore therein and an open end, first, second and third passages in communication with said bore, means for selectively communicating said first and second passages or said second and third passages, respectively, a mounting member connected to and closing the open end of said casing and adapted to engage a portion of the bend, said mounting member having a surface which generally conforms to a portion of the outer surface of the bend of an associated heat exchanger, said mounting member having actuator means therein for moving said communicating means in response to a predetermined temperature condition to selectively connect said first and second passages or said second and third passages respectively, and a mounting washer on said mounting member, said mounting washer having a surface which generally conforms to a portion of the outer surface of said bend, said mounting washer cooperating with the mounting member to connect the casing to a bend of the heat exchanger.

3,165,264
FUEL INJECTOR
Robert L. Shallenberg, Wheaton, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Apr. 14, 1961, Ser. No. 103,156
2 Claims. (Cl. 239—88)



1. In an injection system for an engine, said system having a servo-injection action and including a double diameter, reciprocal, pressure amplifying power piston and chamber mechanism:

an improved injector having first and second fluid inlets, said first inlet comprising a metered fluid source inlet having alternating periods of pressure fluid transfer and non-transfer thereto, said second inlet comprising a high-pressure supply inlet;

a fluid nozzle discharge portion;

a drain discharge portion;

first circuit means, including a small diameter, final pressure means of a pressure amplifying power piston and chamber, connecting the first inlet and fluid nozzle discharge portion for conducting fluid of the metered fluid source to the fluid nozzle discharge portion;

second circuit means, including a large diameter, motivating pressure means of the pressure amplifying power piston and chamber, connected between the second inlet and the drain discharge portion for alternately conducting the high-pressure fluid to the large diameter means and conducting the fluid from the large diameter means to the drain discharge portion;

valving in the first circuit means comprising a first valve between the first inlet and small diameter means and having an open position for charging the small diameter means with a metered quantity of fluid, and a closed position preventing the power piston and chamber from creating final pressure in the fluid in the small diameter means without an attendant discharge injecting the fluid from the fuel nozzle discharge portion; and

valving in the second circuit means comprising a second valve between the second inlet and the drain discharge portion and having an injection initiating position in which the high pressure of the second inlet is communicated to the large diameter means, and a drain-opening position in which the large diameter means is connected to the drain discharge portion and the high pressure is prevented from acting in the second circuit means;

said second valve comprising a pressure operable shuttle valve and having a longitudinally acting, pressure area communicating with the pressurized, metered-source, fluid inside the first inlet whereby said second valve, during the open position of the first valve, is positioned in drain-opening position preventing high pressure from acting in the second circuit means, and, during the closed position of the first valve, said second valve is positioned in the injection initiating position connecting the second inlet and the large diameter means.

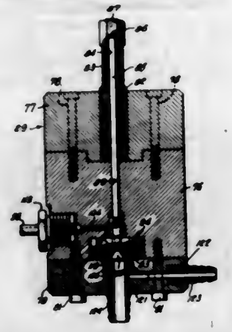
3,165,265
LIGHT REFLECTOR
John W. Clause, Kent, Ohio, assignor to W. J. Rascoe Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 2, 1960, Ser. No. 12,355
4 Claims. (Cl. 240—103)




3. A light reflector comprising a base member having a generally concave inner surface, a smooth, continuous, light reflective surface layer on the inner surface of said base member, said surface layer comprising a continuous, transparent, inert, plastic film, flexible at normal atmospheric temperatures, and a vapor deposited uniform, continuous, light reflective metal film directly bonded to and formed on the surface of said plastic film, said surface layer being fixed to said base member to form a continuous light reflecting layer in the reflector, said plastic film being dimensionally stable at temperatures below 290° F.



3,165,266
CELL FRACTIONATOR APPARATUS AND METHOD
Josef Blum, Norwalk, and Charles J. Filz, Weston, Conn., assignors to Ivan Sorvall, Inc., Norwalk, Conn., a corporation of Connecticut
Filed Feb. 7, 1962, Ser. No. 171,674
19 Claims. (Cl. 241—1)



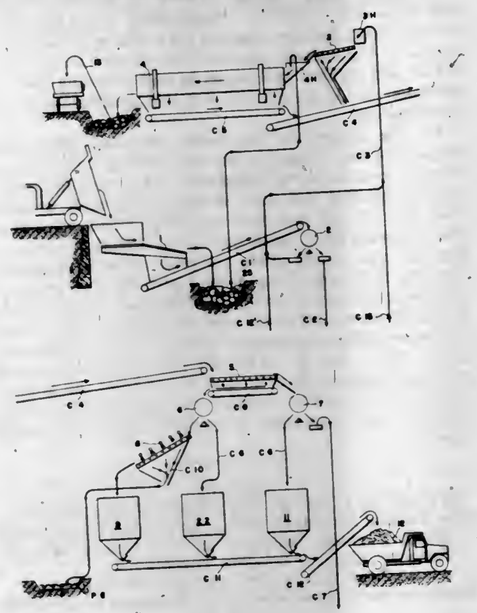
1. Cell fractionating apparatus comprising a valve assembly, first means for introducing a suspension of cells under pressure into said valve assembly, second means for emitting fractionated cells from said assembly, a valve positioned between said first means and said second means, an expansion chamber between said valve and said second means, and third means connected to said valve assembly for continuously circulating a cooling medium in said expansion chamber and in said valve.

3,165,267
COMMINUTION AND BENEFICIATION OF REFRACTORY FLOUR
William H. Owen and Robert K. Scott, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1962, Ser. No. 206,373
8 Claims. (Cl. 241—24)



1. Method of producing a refractory flour essentially free of irony material for use as an investment molding media, which comprises the steps of passing a selected refractory material to a preliminary size reduction stage, isolating an intermediate fraction substantially all of which rests on a 100 mesh Tyler screen from the reduced material, removing substantially all irony material from the intermediate fraction, passing the resulting material to a secondary size reduction treatment in a ceramic mill, said secondary size reduction treatment producing a refractory flour substantially all of which is —150 mesh Tyler and substantially entirely free of irony materials.

3,165,268
METHOD AND APPARATUS FOR PROCESSING FERROUS SLAG
Herbert G. Hausaig, Butler, Pa., assignor to Harsco Corporation, Harrisburg, Pa., a corporation of Delaware
Filed Jan. 8, 1963, Ser. No. 250,142
15 Claims. (Cl. 241—24)



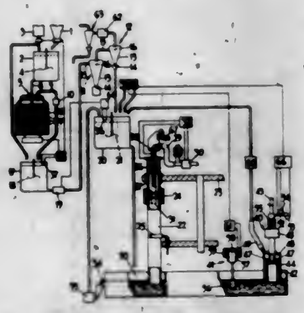
1. A plant installation for the processing of ferrous slags and refuse resulting from iron or steel making operations to recover metal scrap therefrom and to produce slag aggregate end products of predetermined size classifications and substantially free of included metal comprising a primary magnetic separator to divide incoming

raw materials of handleable particle size into a first fraction rich in iron and into a second fraction predominantly nonmetallic but in which metal pieces may be embedded in discrete pieces of slag, means to clean and separate into predetermined size classifications the metal pieces of the first fraction, means to reduce the larger sized pieces of the second fraction to a predetermined maximum size to thereby release metal pieces contained therein and to provide a burden for a slag screening plant, means to magnetically separate the released metal pieces out of said burden, and means in said screening plant to thereafter divide the reduced slag into predetermined size classifications.

14. The method of processing slag and other solid refuse resulting from iron or steel making operations to recover metallic scrap therefrom and to simultaneously produce cleaned and sized structural aggregate substantially free of iron and steel inclusions which consists of first removing from the incoming raw material burden all particles and pieces which are predominantly magnetic, cleaning such removed magnetic particles and pieces to provide scrap having a predetermined iron content, crushing the predominantly nonmagnetic fraction of said burden to release additional magnetic iron and steel particles and pieces which may be embedded therein, removing such released magnetic particles and pieces from the crushed burden, and thereafter cleaning and separating the tailings into structural aggregate of predetermined size classifications.

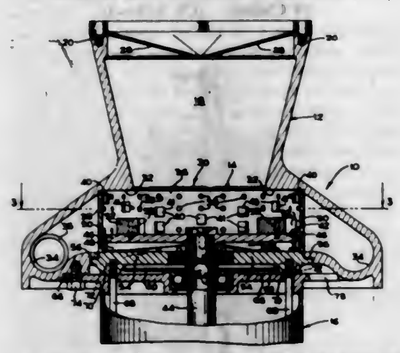
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**3,165,269**
## MANUFACTURE OF PHOSPHOR SUSPENSIONS
**Alan Percival Blackburn, Shaw, and Edward Ernest Miles, Delph, England, assignors to The General Electric Company Limited, London, England**
**Filed Apr. 21, 1961, Ser. No. 104,761**
**Claims priority, application Great Britain, Apr. 29, 1960, 15,134/60**
**11 Claims. (Cl. 241—30)**



1. A milling apparatus for forming a suspension of powdered crystalline inorganic phosphor in a liquid carrier medium for use in coating glass tubes, designed to form the envelopes of fluoreacent electric discharge lamps, internally with a layer of phosphor, said apparatus incorporating means for feeding controlled quantities of the phosphor and liquid carrier medium into a reservoir to form an initial suspension, a milling vessel containing a multiplicity of generally cylindrical and independently-movable milling elements disposed in a plurality of horizontal layers with the axes of the elements substantially vertical, means for feeding the initial suspension upwards through the milling vessel at a substantially constant rate, and means for vibrating the vessel both parallel and perpendicular to the axes of said milling elements to cause the particles to be milled on the passage of the suspension through the vessel.

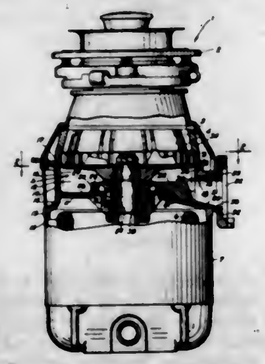
**3,165,270**
## GARBAGE DISPOSER
**Rolla J. Stout, Danville, and Donald E. Buhrmester, Hoopeston, Ill., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware**
**Filed July 30, 1962, Ser. No. 213,269**
**3 Claims. (Cl. 241—257)**



1. A garbage disposer comprising a grinder housing, a feed hopper in the upper portion of said grinder housing, a grinding chamber in the grinder housing below said feed hopper, and a grinding unit positioned in said grinding chamber including a perforated sizing ring, a comminuting rotor mounted for rotation within said perforated ring, a series of spaced lugs in each half of said ring arranged in a row inclined upwardly in the direction of rotation of said rotor, and another series of spaced lugs in each half of said ring arranged in a second row inclined downwardly in the direction of rotation of said rotor, said comminuting rotor having a plurality of cutting bars and vanes arranged to force waste material radially outward against said ring upon rotation of said rotor, and a motor for driving said comminuting rotor.

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**3,165,271**
## GARBAGE DISPOSER UNITS
**James H. Enright, Racine, Wis., assignor to In-Sink-Erator Manufacturing Company, Racine, Wis., a corporation of Wisconsin**
**Filed Apr. 19, 1962, Ser. No. 188,693**
**11 Claims. (Cl. 241—300)**



1. In a garbage disposer unit, a waste receptacle comprising

(*a*) a housing having

(1) an endless vertically extending upstanding side wall having

(*a'*) a discharge opening extending substantially radially therethrough, and



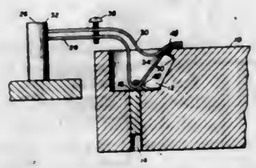
(*b*) a plastic liner

(1) mounted in said housing in linking relationship thereto and

(2) having a discharge nozzle disposed in said opening.

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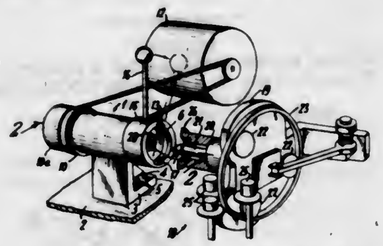
**3,165,272**
## TOROID WINDING MACHINE
**Michael W. Tanny, 501 Jefferson SE., Albuquerque, N. Mex.**
**Filed June 30, 1961, Ser. No. 179,505**
**9 Claims. (Cl. 242—4)**
**(Filed under Rule 47(b) and 35 U.S.C. 118)**



1. A toroid winding machine comprising a rotatable member having an upper surface, means for rotating said member, means for supporting a toroidal core at a point adjacent to but spaced apart from said rotatable member, a leader for pulling a strand of wire through said core to form a loop, said strand of wire passing over said upper surface as said loop is formed, and means for holding said leader lightly against said rotatable member to produce rotation of said leader responsive to rotation of said member.

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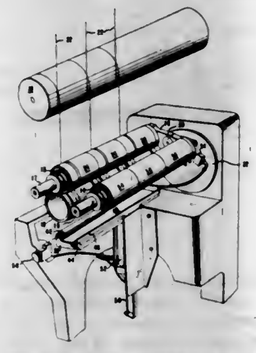
**3,165,273**
## TOROIDAL COIL WINDING APPARATUS
**Rudolf Fahrbach, Union, N.J., assignor to Universal Manufacturing Company, Inc., Irvington, N.J., a corporation of New Jersey**
**Continuation of application Ser. No. 198,872, May 31, 1962. This application May 13, 1964, Ser. No. 367,050**
**2 Claims. (Cl. 242—4)**



1. A toroidal coil winding apparatus having a frame, a basal power transmission unit rigidly and permanently attached to said frame, coupling means carried by said power transmission unit, and a power transmitting shaft rotatably mounted on said unit with a clutch member on the end of said shaft, in combination with a transitory toroidal coil winding head embodying a casting carrying a plurality of shuttle ring supporting and driving rolls, a tubular neck rigid with said casting and having at its free end coupling means engageable with the coupling means of the power transmission unit to rigidly and detachably support said winding head solely on the basal power transmission unit, and a driven shaft rotatably supported within the casting of the winding head to drive the shuttle ring supporting rolls, the free end of said driven shaft having a clutch member engageable with the clutch member of the power transmitting shaft to drive said driven shaft from said power transmitting shaft.

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**3,165,274**
## YARN WINDING APPARATUS
**Thomas Charles De Priest, Staunton, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed June 20, 1963, Ser. No. 289,209**
**1 Claim. (Cl. 242—18)**



A yarn winding apparatus comprising a pair of windup chucks for supporting a plurality of yarn packages, a drive roll for rotating said yarn packages while supported on one of said chucks, means for continuously feeding a plurality of yarns around said drive roll and onto packages on said one chuck to complete the packages thereon, a shield, and means for moving said shield, each of said chucks being secured to a pivot arm which is eccentrically mounted for rotating said one chuck from a yarn winding position in which the peripheral surfaces of said completed packages mounted thereon are in contact with the peripheral surface of said drive roll to a position remote from said drive roll for doffing said completed packages while simultaneously rotating said other chuck into winding position where incomplete packages thereon can be completed, said shield comprising a flexible sheet, one end of which is wound on a flexible spring biased rotatable member, said shield being normally in a retracted position outside the path traveled by said chucks during rotation from the winding to the doffing position and extendible to a shielding position between said drive roll and said completed packages in said doffing position, said means for moving said shield comprising structure operatively connected to a second end of said sheet for, firstly, advancing said sheet from said retracted position to said shielding position just prior to winding on said incomplete packages of said other chuck and for, secondly, retracting said sheet before winding on said incomplete packages is completed.

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**3,165,275**
## COIL WINDING MACHINE WITH YARN SEVERING DEVICE
**Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany**
**Filed Jan. 14, 1963, Ser. No. 251,330**
**Claims priority, application Germany Jan. 13, 1962**
**6 Claims. (Cl. 242—19)**

1. With a yarn-coil winding machine having take-up spool means, supply-coil holder means, yarn guiding means defining a yarn path from said spool means to said holder means, and two grippers movable in response to absence of yarn on said path for seizing the yarn ends and conveying them from the spool means and the

supply coil respectively, in combination, a yarn severing device mounted on said machine near said path at a place which, relative to the yarn-travel direction, lies behind the yarn-end seizing location of the gripper for seizing the yarn end of the supply coil, said severing device being normally inactive and being actuable to sever the yarn



to prevent entrainment of a double thrum by said latter gripper, and control means connected with said severing device and operably responsive to the movement of said gripper toward said yarn-end seizing location for actuating said severing device to cut the supply coil yarn end shortly prior to yarn seizure by said gripper.

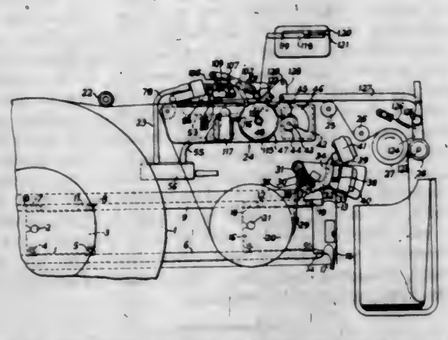
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3,165,276

## WEB SPLICING MECHANISM

Horace Alexander Stone and Robert Ernest Matheson Gemmell, Deptford, London, England, assignors to Molins Machine Company Limited, London, England, a company of Great Britain

Filed Aug. 13, 1962, Ser. No. 216,615
Claims priority, application Great Britain, Aug. 23, 1961, 30,374/61
1 Claim. (Cl. 242—58.3)



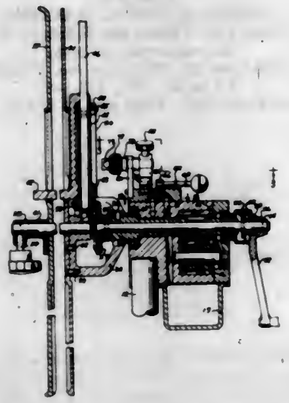
In a continuous rod cigarette-making machine, web splicing apparatus comprising a reservoir, a running web bobbin holder, mechanism to cause the running web to accumulate in the reservoir, a suction table positioned between the bobbin holder and the reservoir and capable of suctionally holding the running web, means to superimpose a new web over the suctionally held running web, a knife adjacent the suction table to sever both webs together, means to move the suction table and the suctionally held severed end relatively to the severed end of the new web so as to form an overlap, means to apply adhesive to one severed end, and means to cause both severed ends to adhere in a spliced joint.

3,165,277

## HYDRAULICALLY OPERATED STOCK REEL

Richard D. Nordlof and Gary C. Rausch, Rockford, Ill., assignors to Mechanical Tool & Engineering Co., Rockford, Ill., a corporation of Illinois

Filed July 24, 1963, Ser. No. 297,259
15 Claims. (Cl. 242—75.53)



1. In an hydraulically operated stock reel assembly, an hydraulic motor, a stock reel driven by said motor, normally operating with a slack loop extending to an adjoining production machine, an electric motor and an hydraulic pump driven continuously by the electric motor, said pump having an inlet and an outlet, means including duct means and a manually operable flow reversing valve interposed in said duct means adapted for delivering the fluid output of the pump selectively to the hydraulic motor for driving the latter in either of two directions of rotation, a fluid reservoir connected to the inlet of the pump, a by-pass duct connecting the outlet of the pump with the reservoir, a control valve in said duct, and means connected with said control valve actuated by said loop for operating said control valve adapted for varying the fluid flow through said by-pass duct.

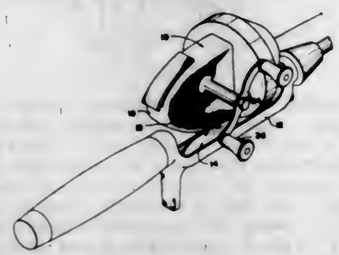
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3,165,278

## LUMINOUS HAND CRANK FOR A FISHING REEL

Wayne D. Wade, % Kopy Kraft, P.O. Box 789, El Dorado, Kans.

Filed Aug. 6, 1962, Ser. No. 214,925
3 Claims. (Cl. 242—84.1)



2. A fishing reel particularly suited for night fishing, comprising, a reel means having a crank means, and a plastic handle means affixed to said crank means, said plastic of said handle means comprising, a mixture of a luculent resin and a luminescent material, said handle means being luminescent and in use adapted to facilitate visual observation in darkness.

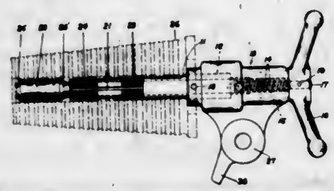


3,165,279

## PACKAGE HOLDER FOR TEXTILE MACHINES

Elliott L. Remington, Hopkinton, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine

Filed Dec. 8, 1961, Ser. No. 157,987
1 Claim. (Cl. 242—130)



A package holder for textile machines which comprises a supporting member, an expandable collet having one end thereof attached to said member and the other end thereof being slotted in a longitudinal direction, a spindle receivable within and movable longitudinally along said collet, a wedge member forming one end of said spindle and the opposite end being received into and supported by said supporting member, said opposite end being provided with a manual means for controlling longitudinal movement of said spindle for moving said wedge member to a position within said expandable collet for locking a yarn package thereto and for moving the same away from said collet to release said yarn package therefrom, separately disposed first and second gripping surfaces being provided on each said slotted portions of said collet, said first surfaces being adapted to hold firmly said yarn package thereon and said second surface being adapted to supplement said first gripping surface should the bore of the spool of said yarn package become worn to the extent that the latter gripping surface is unable to hold said package securely thereto, said spindle being threadably received into said supporting member and having a neck portion extending outwardly therefrom, said manual means comprising a handle fixedly attached to said neck portion for selectively turning said spindle to move said wedge member into and away from the slotted portions of said expandable collet, the slotted portions of said collet intermediate the first and second gripping surfaces being of reduced thickness to permit said second gripping surface to contact the bore of the spool of said yarn package when said first gripping surface becomes ineffective.

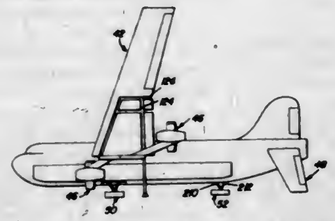
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3,165,280

## AMPHIBIOUS CONVERTIJET AIRCRAFT

Shao-tang Lee, 25 Chi-Kuang St., Taichung, Taiwan Province, China

Filed Aug. 27, 1962, Ser. No. 219,652
16 Claims. (Cl. 244—12)



1. An aircraft capable of both vertical and horizontal flight, comprising an elongated body, a laterally extending wing projecting from each side of said body, means mounting the wings on said body for movement between a generally horizontal position and a generally vertical position, a support frame fixed to each side of said body and projecting laterally therefrom beneath and independent of the corresponding wing, engine means, means mounting said engine means on each support frame for movement between a substantially horizontal position and a substantially vertical position and means for releasably locking said wings to said frames when said wings are in their generally horizontal position.

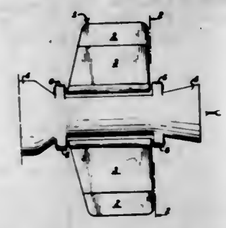
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3,165,281

## ELASTIC FOLDING CONTROL SURFACES FOR AERODYNES

Werner Gohlke, J.v. Eichendorffstrasse 8, Guls, Germany

Filed July 2, 1963, Ser. No. 292,364
Claims priority, application Germany, July 11, 1962, G 35,435
6 Claims. (Cl. 244—49)



1. An aerodyne comprising a generally cylindrical body, a substantially rigid wing part, means pivotally connecting said wing part to said body for movement between an extended position whereat said part is radially aligned relative to said body and a retracted position whereat said part is collapsed against body, and an extension on said wing part to constitute a radial extension thereof, said extension being substantially more elastic than said wing part whereby to facilitate insertion of the aerodyne into a tube.

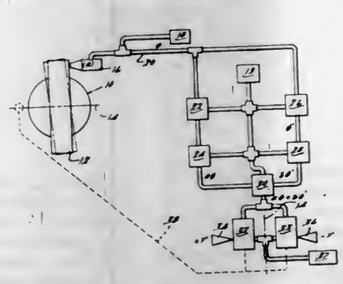
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3,165,282

## PNEUMATIC MISSILE GUIDANCE SYSTEM

Gregory D. Noyes, Troy, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Feb. 7, 1962, Ser. No. 171,667
8 Claims. (Cl. 244—79)



2. A pneumatic system for maintaining the predetermined attitude of a missile in flight comprising control means movable in response to a force causing deviation of the missile from its predetermined attitude, pneumatic sensing means mounted stationary on the missile and operable to produce a first pneumatic signal representative of the displacement of said control means, pneumatic balancing means operatively connected to said control

means and cooperable with said sensing means to provide a balancing force to said control means during sensing, pneumatic means operatively connected to said sensing means for differentiating said first signal to produce a second pneumatic signal representative of the rate of displacement of said control means, pneumatic means for amplifying the first and second signals, a summing pneumatic relay for adding the first and second amplified signals, pneumatic servo regulator means operatively connected to the output of said summing means, and pneumatic thrust means fixed on the missile, operatively connected to and controlled by said servo regulator means for providing a corrective force to the missile in a direction and magnitude opposite to the initial force causing deviation of the missile.

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3,165,283
## ADHESIVE DEVICE
Bernard Borisof, Chicago, Ill., assignor to Lectro-Stik Company, Chicago, Ill., a partnership
Filed July 22, 1963, Ser. No. 296,612
7 Claims. (Cl. 248—29)



1. An adhesive fastening device for securing articles to vertical and other surfaces comprising a cup-shaped member, a homogeneous body of tacky pliable material disposed within said cup-shaped member and having a volume greater than the capacity of said cup-shaped member, that portion of said body which projects from said cup-shaped member constituting a workable portion providing a tacky, pressure sensitive surface at room temperature for causing adhesion between said fastening device and a vertical surface.

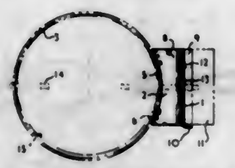
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3,165,284
## MULTIPLE CONDUCTOR SUPPORT
Joseph Kaminski, Jr., and William D. Becker, Baltimore, Md., assignors to General Electric Company, a corporation of New York
Filed Nov. 21, 1963, Ser. No. 325,358
16 Claims. (Cl. 248—63)



1. Supporting apparatus for suspending a plurality of electrical conductors from an insulator comprising, in combination, plate means having upper and lower portions, connecting means at the upper portion of said plate means for pivotally suspending said plate means from the insulator, said connecting means having a pivot axis perpendicular to the plane of said plate means, said plate means having arm members projecting therefrom on opposite sides thereof, said arm members having extremities located above said connecting means, and conductor support means suspended from the extremity of each said arm member for pivoting thereon about a pivot axis perpendicular to said first-mentioned pivot axis and for carrying conductors parallel to the plane of said plate means.

3,165,285
## SMOKE PIPE BRACKET
William Hodgins, Ottawa, Ontario, Canada, assignor to Hodgins Combustion Devices Limited, Ottawa, Ontario, Canada, a company incorporated of Canada
Filed Mar. 28, 1963, Ser. No. 266,599
1 Claim. (Cl. 248—65)

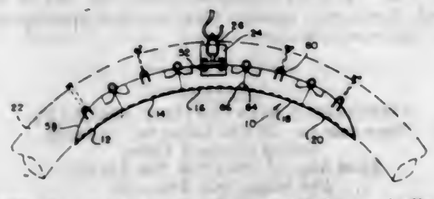


For a damper-actuating motor unit, a smoke pipe bracket comprising a body portion having an out-turned lip along its lower edge, side wings on opposite sides of said body portion disposed at right angles thereto and parallel to each other and outwardly directed lugs on said wings for securing said bracket to a smoke pipe, said body portion having a centrally disposed perforation to pass the shaft of the smoke pipe damper, the body portion and side wings of said bracket when applied vertically to a horizontal or vertical smoke pipe constituting with the engaged part of a smoke pipe an uninterrupted vertical stack for the circulation of a flow of cool air between the smoke pipe and the body portion of the bracket, and a heat-insulating member on the outer side of the said body portion supported by said lip, said lip providing also a flared lower end to said member having a central perforation registering with the shaft passing perforation in the body portion, and said body portion stack, whereby a motor unit on said bracket is protected from the heat of the smoke pipe by the intervening air space, the heat-dissipating flow of air up the stack and the said insulating member.

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3,165,286
## HINGED SADDLE FOR HOSE
Charles E. Johnson, Kenmore, N.Y., and Frank W. Packer, Fort Erie, Ontario, Canada, assignors to Hewitt-Robins Incorporated, Stamford, Conn.
Filed May 24, 1961, Ser. No. 112,317
4 Claims. (Cl. 248—75)

1. A hose saddle comprising a plurality of segments ar-



ranged in a series to end, each segment being semicylindrical in cross-section and presenting a base arcuately curved along its length about an axis of curvature to form a supporting trough which opens outwardly of its curved length, said segments being pivotally interconnected for pivotal movement about axes extending transversely of the saddle, said segments being so pivotally interconnected as to permit said saddle to rest on a planar surface with said segments in substantial longitudinal alignment, and as to cause said segments to pivot relatively in a radial direction towards said axis of curvature from said longitudinally aligned position under the influence of a downward load applied thereto by a flexible hose supported on said saddle upon lifting of the center of the saddle upwardly out of contact wtih said supporting surface, whereby said segments conjointly form a longitudinally curved trough-like chamber opening upwardly upon said lifting operation, means for limiting the relative pivotal movements of said segments in said radial direction to a relative stopped position in which said segments conjointly form a substantially continuous longitudinally curved support for the hose, and comprising stop configurations on said segments respectively in position to come into abutting interengagement when said segments reach said relative stopped position, and means for attaching a lifting device to said saddle to apply a central lifting force thereto to lift the saddle with the hose supported thereon, so as to support a portion of the hose received in said saddle in an arc.



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3,165,287
## SHUTTERS AND HARDWARE FOR DETACHABLY MOUNTING SAME
John S. Parsons, West Hartford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Jan. 16, 1963, Ser. No. 251,779
12 Claims. (Cl. 248—224)

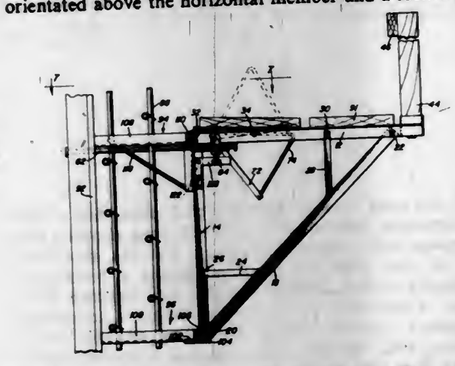


1. In combination with a shutter and a wall of a building having mounting surfaces in facing relationship with each other and positioned generally at the top of the shutter, an assembly for detachably mounting the shutter to the wall comprising a hook member fixed to one of said mounting surfaces, a hook-receiving member fixed to the other mounting surface and having means for removably receiving the hook member for hanging the shutter to the wall, a bracket having a first portion fixed to the wall generally adjacent the bottom of the shutter and having a second portion projecting outwardly from the wall and underlying the bottom surface of the shutter, said projecting portion of the bracket having an elongated opening extending generally normal to the wall, and means for securing the bottom of the shutter to the bracket in selected spaced positions from the wall including means fixed to the shutter dimensioned to extend through the opening and to move longitudinally therein for permitting the shutter to be adjusted towards or away from the wall.

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3,165,288
## SCAFFOLD BRACKET WITH SPACERS
James H. Jackson, 3408 Billups Road, South Norfolk, Va.
Filed Oct. 2, 1962, Ser. No. 227,774
5 Claims. (Cl. 248—226)

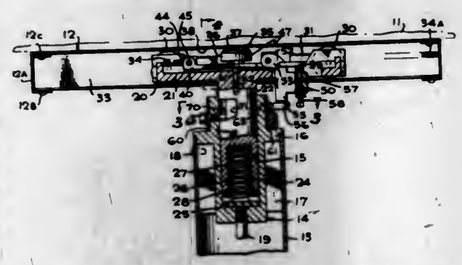
1. A scaffold bracket adapted to be mounted on a wall tie projecting outwardly from a forming wall in outwardly spaced relation to the wall, said bracket including an elongated vertical member positionable parallel to the wall, an elongated horizontal member rigid at one end with the upper end of the vertical member and projecting outwardly at generally a right angle therefrom, upper and lower generally equal length spacers fixed to the vertical member and projecting therefrom in a direction opposite from the horizontal member for abutting engagement against the forming wall, and means on the horizontal member for receiving and clampingly engaging the wall tie with the spacers abutted against the wall, said means consisting of a horizontal surface fixed to the bracket below the horizontal member and adjacent the vertical member, an eccentric pivoted to the bracket above the horizontal surface for clamping the tie between the eccentric and the horizontal surface, an operating lever fixed to the eccentric and movable in a vertical plane adjacent the horizontal member between an unlocked position orientated above the horizontal member and a locked po-



sition orientated slightly below the upper surface of the horizontal member, and a locking pin projecting laterally from the horizontal member for engaging the lever and retaining the lever in its locked position, said lever being capable of slight lateral deflection so as to pass beyond and behind said pin, said locking pin including a camming surface for effecting a lateral flexing of the lever upon contact of the lever with this surface, said lever being automatically engaged behind the pin upon movement of the lever beyond the outer end of the pin.

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3,165,289
## MOVABLE SEAT MOUNTING
Carl F. Caramelli, 905 Superba Ave., Venice, Calif.
Filed Dec. 11, 1962, Ser. No. 243,775
14 Claims. (Cl. 248—416)



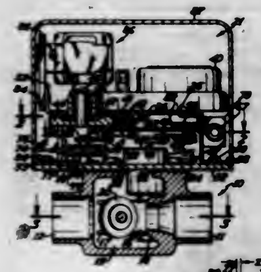
1. In a seat mounting adapted to be mounted on an upright tubular support, a bushing mounted in the upper end portion of said support, a base plate, a stem depending from the base plate and received in said bushing for limited movement axially and rotatively, a seat plate above said base plate and supported thereon for movement relative thereto reciprocally in a horizontal plane, a brake button carried by said base plate, means preventing horizontal displacement of said brake button relative to said base plate, an actuating lever carried by said base plate, cam means on one of said bushing and said support engageable by said lever to pivot the same, and an operative connection between said brake button and said lever whereby said lever, when pivoted by the cam means, is effective to raise said brake button into firm engagement with said seat plate.

3,165,290
EASEL
Charles F. Overton and Lawrence J. Nook, South Haven, Mich., assignors to S. E. Overton Company, South Haven, Mich., a corporation of Michigan
Filed Mar. 14, 1963, Ser. No. 265,544
14 Claims. (Cl. 248—463)



1. An easel back including a back plate, and a prop; a connection between said plate and prop allowing prop extension and collapse, including a first link attached to one of said plate and prop and having a horizontally elongated convex surface, a second link attached to the other of said plate and prop and having a horizontally elongated concave surface interfitting on said convex surface; said concave surface having a smaller arcuate length than that of said convex surface allowing arcuate movement therebetween for collapsing and extending of said prop with respect to said frame.

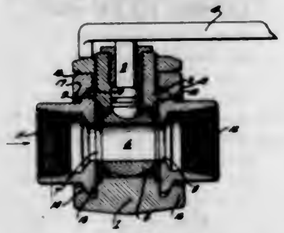
3,165,291
FLUID CONTROL DEVICES
Ralph T. Oseu, Golden Valley, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 266,130
11 Claims. (Cl. 251—134)





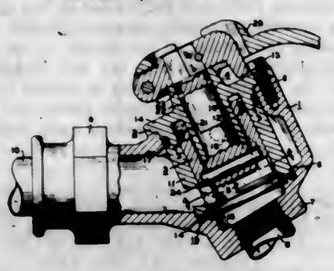
1. A control device comprising: a housing; a control member mounted in said housing and reciprocable between first and second positions; uni-directional electric motor means mounted in said housing; a crank member rotatably mounted in said housing and driven by said motor means, said crank member including a crank pin; a driving link operably connecting said pin to said control member; and means including rotary switch means for controlling the energization of said motor means, said rotary switch means including fixed contact means and movable contact means rotatable with respect thereto, said movable contact means being operably connected to said crank member, said rotary switch means being positioned in said housing so that the axis of rotation thereof is spaced from and substantially parallel to the axis of rotation of said crank member and generally between the axis of rotation of said crank member and said control member, said switch means having diametrically opposed switching positions, said operable connection between said crank member and said movable contact means so arranged as to effect rotation of said movable contact means between said diametrically opposed positions upon rotation of said crank member between two angular positions other than 180° apart.

3,165,292
REMOVABLE NIPPLE MOUNTING FOR A BALL VALVE
Robert P. Dumm, Long Beach, Calif., assignor to Pacific Valves, Inc., Long Beach, Calif., a corporation of California
Filed June 26, 1961, Ser. No. 119,498
3 Claims. (Cl. 251—148)



1. In a valve including a body, said body having a chamber therein, a rotatable element in said chamber, said body having an intake port and an outlet port extending from said chamber, said rotatable element having a fluid passage extending therethrough, said fluid passage being alignable with the intake and outlet ports in one position of the parts, a nipple alignable with a port in said body, a seat on said body, a flange on said nipple adapted to fit in said seat, a cap mounted on said body, and means on the cap engageable with said flange to hold the nipple in said seat.

3,165,293
ANGLE COCK
Glenn T. McClure, McKeesport, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1961, Ser. No. 160,851
1 Claim. (Cl. 251—252)



A valve device, comprising: a body having communicating passages therein and a bore through one wall thereof, a valve housing fitted in said bore to close the opening thereof, said housing comprising a pair of concentrically disposed core members, the outer core member of said pair of cores being closed at the outer end and extending across said body into engagement with the opposite wall thereof to separate the communicating passages, aperture means in the walls of said outer core to permit passage of fluid therethrough, resilient ring seal means compressed



between said opposite wall and the inner end of said outer core member with the seal extending inwardly of the inner periphery of the outer core member, the inner core member being open at both ends and having its inner end terminating short of the inner end of the outer core member, said inner core member having a non-circular outer periphery, a tubular valve member disposed on said inner core member for reciprocal movement with respect thereto to open and close said aperture means in said outer core and having a non-circular portion on the inner periphery thereof mating with the outer periphery of said inner core member, valve operating means having a stem member disposed in said inner core for movement only about its axis and having its inner end extending beyond the inner end of said inner core member, a pair of oppositely disposed helical grooves on the inner walls of said tubular valve member, means laterally extending from the inner end of said stem member and slidably engaged in said grooves whereby rotation of the stem member about its axis effects corresponding movement of said laterally extending means causing the resultant force thereof in said grooves to move said valve member toward and away from engagement with said resilient seal, depending upon the direction of rotation of the stem.

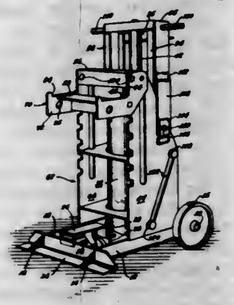
3,165,294
ROTOR ASSEMBLY
Bernard J. Anderson, Auburn, Wash., assignor to General Electric Company, a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,038
8 Claims. (Cl. 253—77)



1. A bladed rotor assembly for an axial fluid flow machine comprising a generally cylindrical blade holding member, said blade holding member having circumferentially continuous walls defining at least one circumferentially extending dovetail shaped slot in the periphery thereof, a plurality of blades all having identically shaped dovetail roots slidably received in said slot, said blade roots circumferentially filling said slot with adjacent roots in abutting relationship, the dovetail shapes of said slot and said blade roots being such that the roots are restrained against radial movement with respect to said blade holding member, a loading recess in the radially inward surface of the slot, a selected one of said blade roots positioned in said slot radially outward of said loading recess, and locking means engaging the radially inward portion of said selected blade root to maintain said selected blade root in said slot and to prevent circumferential movement of said plurality of blade roots in said slot.

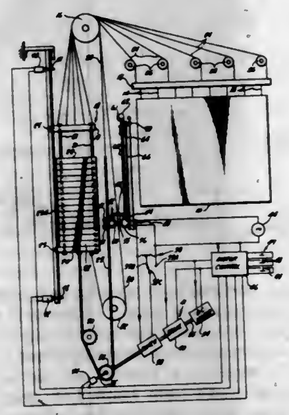
3,165,295
HEAVY DUTY JACK
John L. Nolden, 630 Resolano Drive, Pacific Palisades, Calif.
Filed Dec. 14, 1962, Ser. No. 244,620
8 Claims. (Cl. 254—2)

1. In a heavy duty jack of the character described, the combination of:
a portable base having two upwardly extending parallel guide members rigidly secured thereto;
an upright power cylinder mounted on the base;
a piston in the cylinder with a piston rod extending therefrom upward from the cylinder;
a carriage suspended from the upper end of said piston rod and having two interconnected side plates straddling said two guide members;
an upper rearwardly located sleeve welded to the outer side of each of said plates perpendicularly thereof;
an upper spindle mounted in each of said sleeves and extending through the side plate inwardly from the side plate;
an upper roller mounted on each of said spindles on the inner side of the side plate in rolling contact with the rear surface of the corresponding guide member;



a lower forwardly located sleeve welded to the outer side of each of said side plates perpendicularly thereof;
a lower spindle mounted in each of said lower sleeves and extending through the side plate inwardly from the side plate;
a lower roller mounted on each of said lower spindles on the inner side of the side plate in rolling contact with the front surface of the corresponding guide member; and
a reinforcement member on the outer surface of each side plate united with the two sleeves on the side plate and interconnecting the two sleeves in tension.

3,165,296
APPARATUS FOR POSITIONING STAGE DROPS
Richard A. Drew, Encino, Calif., assignor to Curran Productions, Hollywood, Calif., a corporation of California
Filed Aug. 14, 1961, Ser. No. 131,247
11 Claims. (Cl. 254—141)



1. In an apparatus utilizing a source of energizing potential for raising and lowering a stage drop the combi-

nation which comprises a movable elongated support member for supporting the stage drop, a head block, an arbor disposed below the head block, weights carried by the arbor for balancing the stage drop, a plurality of flexible supporting cables disposed over the head block and connected at one end to the support member and at the other end to the arbor, a control cable connected at each end to the arbor, means for supporting the control cable above the arbor so that the arbor is moved in a downward direction when the control cable is moved in one direction and the arbor is moved in an upward direction when the control cable is moved in the other direction, a rotatably mounted drive member disposed in engagement with the control cable so that the control cable is moved when the drive member is rotated, an electric motor, an electrically actuated clutch connected between the drive member and the motor, a motor control circuit connected between the source of energizing potential and the motor to supply energizing current to the motor to selectively drive the motor in a forward and reverse direction to raise and lower the stage drop, means for connecting the clutch to the source of energizing potential for the motor so that the clutch connects the motor to the drive member in response to the energizing potential and disconnects the motor from the drive member in the absence of the energizing potential, the last named means being arranged to selectively energize the clutch with a first and a second predetermined energizing current so that when the clutch is energized with the first predetermined energizing current the clutch will connect the motor to the drive member to move the arbor in a downward direction even though the weights on the arbor do not balance the stage drop and when the clutch is energized by the second predetermined current the clutch will connect the motor to the drive member only when the weights on the arbor approximately balance the stage drop.

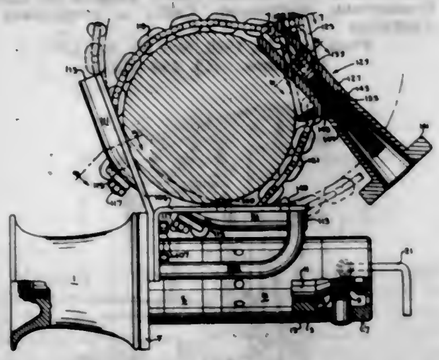
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3,165,297

## HOISTING AND PULLING APPARATUS

Parke H. Thompson III, St. Louis County, Charles Elliot Miltenberger, St. Louis, and William S. Waeckerle, Florissant, Mo., assignors to Parke H. Thompson II, St. Louis County, Mo.

Filed Feb. 26, 1962, Ser. No. 175,451
2 Claims. (Cl. 254—186)



1. Compact portable load hoisting and pulling apparatus comprising a support, a shaft rotatable in the support around an axis, a capstan carried by said shaft, a self-locking one-way ratchet type brake operated between said shaft and the support, a bracket on said support, said bracket being of cradle form adapted for cradling contact with poles and of a configuration adapted when the bracket is on a pole to place said axis in a nonintersecting position with respect to the pole center line and at a substantially right angle thereto, whereby the capstan extends nonradially from one side of the pole, a speed reducer having a housing containing torque input and output members at opposite ends thereof, said housing being connected to said support at its output end, said torque output member being connected with said shaft, the input end of said speed reducer being free of the support, an electric motor attached to said free end of the speed reducer, said motor having a rotatable shaft connected with said torque input member of the speed reducer, said capstan shaft, motor shaft and torque input and output members being coaxial.

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3,165,298

## AERIAL CARGO DELIVERY SYSTEM

Donald Beach Doolittle, Hockessin, and Richard van Cortlandt Parker, Wilmington, Del., assignors to All American Engineering Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 18, 1962, Ser. No. 224,368
1 Claim. (Cl. 258—1.2)



Means for extraction and ground delivery of cargo or the like from a moving aircraft, comprising a hook on said cargo movable therewith and said hook being engageable with a pendant cable, connected to ground based spaced apart hydraulic energy absorbers each having a liquid filled housing and a rotor therein, each of said energy absorbers having a rotor supported reel exterior of each respective housing, said reels each having nylon tapes stored thereon, each tape being wound in a single coil on their respective reels with an extended free end of each tape in oppositely spaced relation, said free end of each spaced tape connecting to an opposite end of the cable pendant extending between said energy absorbers, means for holding said cable elevated above the ground, a cargo ramp having an inboard and an outboard end carried by said aircraft, a bracket secured to said ramp, a shank having the free end thereof extending from said bracket beyond the outboard end of said ramp, a slidably detachable hook mounted on the free end of said shank, a cable connecting said hook to the said cargo on said ramp, said cargo hook when engaging with said cable pendant pulling on said tapes on each reel thereby imparting rotation to said reels and rotation to said rotor of each of said energy absorbers, thereby setting up an energy absorbing force, said energy absorbing force increasing as said respective tapes payout from their respective reels, whereby said cargo upon said cargo hook engagement with said cable pendant is extracted from the outboard end of the ramp of the rear of said aircraft and decelerated to a stop on the ground by said energy absorber units.

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3,165,299

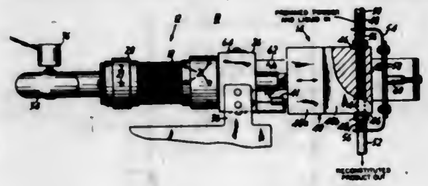
## ULTRASONIC MIXING APPARATUS

Lewis Balamuth, New York, and Arthur Kuris, Riverdale, N.Y., assignors to Cavitron Ultrasonics Inc., Long Island City, N.Y., a corporation of New York

Filed Aug. 13, 1962, Ser. No. 216,537
7 Claims. (Cl. 259—1)

2. Apparatus for producing a dispersion of a powder in a liquid comprising, transducer means adapted to convert alternating electrical energy into mechanical vibration at ultrasonic frequencies, a vibratory element coupled to said transducer means to be set into vibration thereby in a given direction, an opening extending through said element transversely to its direction of vibration, a smooth, nonporous lining for said opening, means





to continuously supply said powder and liquid to said opening whereby they are subjected to vibratory energy and a dispersion produced as they pass through said element, and vent means in said supply means for enabling the escape of gases liberated from said powdered liquid by the vibratory energy applied thereto.

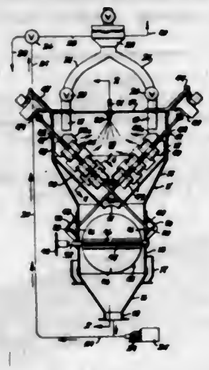
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3,165,300

## METHOD AND APPARATUS FOR MIXING AND BLENDING SOLID MATERIALS

Peter A. Ballistrieri, 1412 S. Park Ave., Buffalo 20, N.Y.

Filed Aug. 3, 1960, Ser. No. 47,222
12 Claims. (Cl. 259—6)



1. The method of mixing the particles of a stream of discrete solids in a body of gas, which comprises guiding two streams into the upper part of different sides of said body of gas in contact therewith at a rate to permit of dispersion of said particles out of contact with each other in said body of gas, striking the particles of each stream with positive force to separate them from one another and drive the separated particles of each stream horiontally and diagonally upwardly in a cross pattern through said body of gas to place them individually in free falling suspension in the gas and to drive them into headon collision with the particles of the other stream, permitting said particles to descend by gravity through said body of gas, successively striking the free falling particles with positive force at successively lower elevations from opposite sides of said body of gas horizontally into collision with one another to rebound and create a cloud of irregularly darting particles and removing the mixed rebounding particles colliding while in said suspension in said gas from said body.

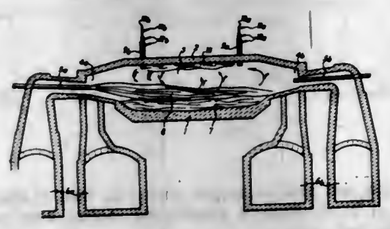
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3,165,301

## METHOD AND DEVICE FOR THE PROTECTION OF REFRACTORY WALLS

Michel Riviere, Saint Germain-en-Laye, Seine-et-Oise, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, Seine-et-Oise, France

Filed Oct. 16, 1961, Ser. No. 145,157
Claims priority, application France, Oct. 18, 1960, 841,485, Patent 1,277,355
12 Claims. (Cl. 263—15)



5. In the operation of a furnace of the type including a furnace chamber having opposite open end portions, a a hearth located between said opposite end portions and a roof extending above said hearth from one of said opposite end portions to the other, the steps of forming a flame flowing through one of said open end portions into said furnace chamber towards the opposite open end portion so that a large proportion of the hot gases emanating from said flame will directly flow out from said furnace chamber through said other open end portion thereof and the remaining small proportion of said hot gases will be forced in the vicinity of said roof to flow in a direction opposite to the direction of flow of said flame; and introducing into said remaining forced hot gas flow in the vicinity of the roof at a point farther distant from said one end portion than from the other of said end portions a carbonaceous fuel adapted at the temperature of said hot gas to be cracked under liberation of free carbon particles, the thus-formed carbon particles flowing first suspended in said gas above said flame towards said one end portion, thereby protecting the roof of said furnace chamber against heat radiating from said flame, and said carbon particles then merging with said flame in the vicinity of said one end portion of said furnace chamber to be completely burned therein while flowing toward the other of said opposite end portions.

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3,165,302

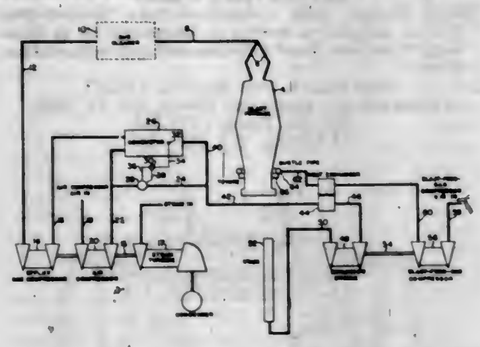
## APPARATUS FOR HEATING BLAST FURNACE FEED GAS

Le Roy M. Krouse, Buffalo, N.Y., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 21, 1960, Ser. No. 16,527
4 Claims. (Cl. 263—19)

1. An apparatus for heating blast furnace blast feed gas by combusting blast furnace efflux gas, a compressor for pressurizing blast furnace efflux gas to cause flow thereof in a continuous stream, a second compressor having its inlet portion in communication with the atmosphere for pressurizing atmospheric air to cause flow thereof in a continuous stream, a combustor in communication with the above mentioned pressurized continuous streams for mixing and combusting such streams, a heat exchanger communicating with a discharge conduit of said combustor for transferring heat from the stream of the products of combustion formed in said combustor by the combustion of said efflux gas and atmospheric air, an expansion engine having an inlet portion communicating with the products of combustion discharged from said heat exchanger, a third compressor driven by said ex-

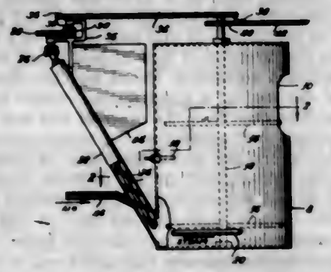
pansion engine for pressurizing blast feed gas for delivery thereof in a continuous stream to such blast furnace



through said heat exchanger where the heat of the products of combustion is transferred thereto continuously and immediately.

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3,165,303
EXPANDABLE POLYSTYRENE STRAND EXPANDER
Donald C. Paulson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 18, 1962, Ser. No. 188,371
4 Claims. (Cl. 263—21)

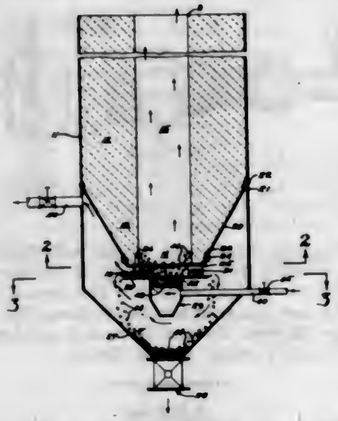


1. A device for expanding foam expandable polystyrene strands comprising in combination, a drum formed to provide an expanded strand outlet, a feeder pipe opening into the lower end of the drum, an auger positioned in the feed pipe, said auger rotatable to move strands into the drum, a pipe for admission of compressed air into the feed pipe at the lower end of the drum, a pipe arranged to inject steam into the lower end of the drum, and an agitator means positioned in the drum, said agitator means including arms arranged in spaced relation upon a rotatable shaft.

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3,165,304
SHAFT KILN
Aage M. Tvergaard, Albert H. Pack, and William W. Campbell, Ludington, Mich., and Earl Leatham, Wexford, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1963, Ser. No. 251,415
12 Claims. (Cl. 263—29)

7. In a vertical kiln of the type capable of dead burning refractory material above about 3000° F., said kiln including means defining an upper inlet and a bottom outlet, means positioned at a dead burning zone located intermediate the ends of the kiln arranged to obtain a temperature of at least about 3000° F. in said dead burning zone, a tubular outer shell having a relatively thick refractory lining contiguously positioned there within to define a vertical passage, a discharge table spaced beneath the kiln outlet, a plurality of apertures formed through the discharge table, manifold means including a plurality of separate compartments, said manifold means supported beneath the discharge table so that each one



of its compartments opens through one of the discharge table apertures, means arranged to separately deliver air to each of the separate compartments to thereby pass air through the apertures in the discharge table and through the kiln passage in upwardly moving countercurrent flow to a downwardly moving charge of material to be dead burned.

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3,165,305
CUSHIONING BUMPER FOR LOADING DOCKS
Robert H. Pfleger, Milwaukee, Wis., assignor to Kelley Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 20, 1963, Ser. No. 266,624
1 Claim. (Cl. 267—1)

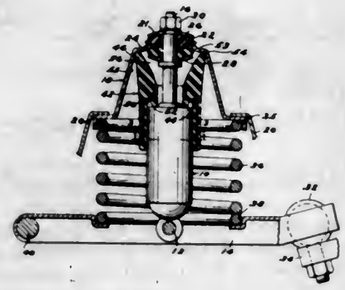


A bumper for truck loading docks comprising:
A. a stack of flat uniform thickness rectangular units of resilient material, said stack having wide front and rear faces and narrow top and bottom faces and the individual units having aligned rectangular centrally located holes, with long sides that are parallel to the long sides of the rectangular units and hence parallel to the wide front and rear faces of the stack and much narrower top and bottom ends;
B. a stiff metal end plate flatwise overlying the outer face of each endmost unit of the stack;
C. a single straight metal bar extending through the aligned holes in said resilient unit and having its ends secured to the metal end plates to tie the latter together with the stack of units tightly clamped therebetween, said bar having a uniform rectangular cross section for its entire length of a size and shape to snugly fit the aligned rectangular holes in the units so that the wide flat sides of the bar are parallel to the flat front and rear faces of the stack of units, the width of the bar being on the order of one-third of the length of the long sides of the rectangular units so that
(1) the bar provides good straight support against sagging of the stack in the middle when the bumper is mounted by its ends with its flat front and rear faces vertical; and
D. mounting means on the end plates by which the bumper may be secured to the front of a loading dock.



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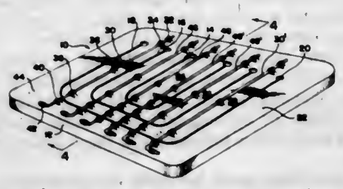
3,165,306
RESILIENT STOP MEANS
Clark A. Tea, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 10, 1961, Ser. No. 130,585
6 Claims. (Cl. 267—8)



3. A vehicle suspension system having relatively movable first and second parts, a telescopic shock absorber having first and second relatively movable components connected to said first and second parts respectively, said first part having an aperture therein, said first component being connected to said first part at said aperture by first resilient means, a rubber member secured to said second component and having a flared open mouth normally spaced from said first part constructed to engage said first part upon movement of said second part toward said first part and to define an enclosed air space therewith, said open mouth being of greater size than said first resilient means.

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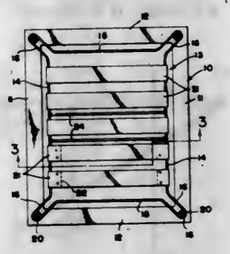
3,165,307
PADDED SEAT BASE
Robert L. Edwards, Mansfield, Ohio, assignor to National Seating Company, Mansfield, Ohio, a corporation of Ohio
Filed Aug. 21, 1963, Ser. No. 303,503
4 Claims. (Cl. 267—80)



1. A flexible base for a padded seat and the like, comprising a body in the general form of a plate having slots therein which define a plurality of relatively movable sections, elongated spring members disposed against and extending along a face of the plate forming said body to bridge the slots in the same, and means for retaining said spring members thus disposed on the body, with said means and spring members providing deflection of the body for contour deformation of the body under the load.

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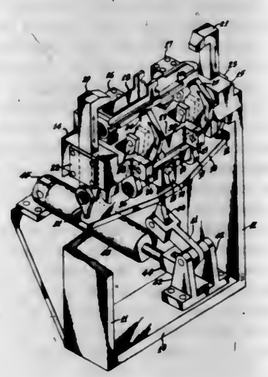
3,165,308
SPRING SEAT SUSPENSION
Alan E. Rathbun, 3135 Highland Drive, Cuyahoga Falls, Ohio
Filed June 11, 1963, Ser. No. 287,077
4 Claims. (Cl. 267—111)



1. Spring seat suspension comprising, a rigid seat frame, a resilient rod spring frame within said seat frame, a plurality of laterally spaced straps attached at their ends to said spring frame, a means supporting said spring frame member on said seat frame for limited downward yielding movement under load on said straps, and a bowed spring rod under compression having its ends abutting opposite sides of said spring frame for regulating transverse flexure of said resilient rod spring frame.

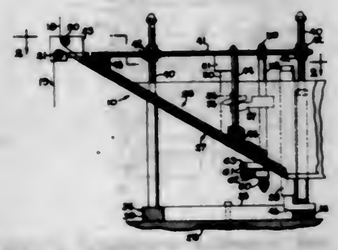
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3,165,309
CLAMPING MECHANISMS
Jerzy Grabowski, West Caldwell, N.J., assignor to Tri-Ordinate Corporation, a corporation of New Jersey
Filed Sept. 13, 1962, Ser. No. 223,441
7 Claims. (Cl. 269—107)



1. A clamping fixture comprising a supporting structure, a pair of oppositely disposed clamping members slidably mounted on said structure, a pair of pivoted clamping members pivotally mounted on said structure and positioned between said slidable clamping members, said supporting structure having banking means oppositely disposed to said pivoted clamping members, a movable plate mounted on said supporting structure, spherical rod end bearings connected to said plate and to said slidable clamping members, a swivelling bar mounted on said plate, end bearings connected between the ends of said swivelling bar and said pivoted clamping members and means connected to said plate for moving said plate to cause said pivoted clamping members and said slidable clamping members to contact a work piece mounted on said supporting structure.

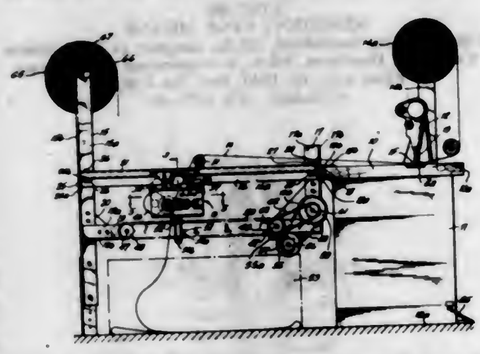
3,165,310
LONGITUDINAL FOLDING DEVICE FOR TWO STRIPS
Donald T. Petersen, Boone County, Ill., assignor to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed July 10, 1963, Ser. No. 294,111
4 Claims. (Cl. 270—41)



1. A device for folding two elongated strips of flexible material one within the other as the strips are advanced endwise and side by side along a predetermined path, said device including, in combination, a frame, a first flat plate mounted on said frame along said path and positioned above one of said strips, means for guiding said one strip against the underside of said plate and drawing the opposite edge portions of the strip upwardly along opposite side edges of said plate into generally vertical planes as the strip slides along said plate, said side edges converging to a first point in the direction of advance of the strip whereby said edge portions are folded into opposed face-to-face contact in passing said point, a similar second flat plate disposed beneath and generally parallel to the underside of said first plate closely adjacent said one strip and positioned above the other strip, means for guiding said other strip against the underside of the lower plate and drawing the opposite edge portions of the same upwardly along the opposite side edges of the lower plate into generally vertically planes, the side edges of the lower plate each generally paralleling the corresponding edge of the upper plate and being spaced laterally outwardly therefrom whereby the corresponding edge portions of said strips are spaced apart by said edges, and the point of the lower plate being spaced below the point of the upper plate thereby to space apart the folds in said strips, and two elements fast on said frame and supporting the lower plate in a predetermined relation with the upper plate, said elements being at least as thin as the spacing of said corresponding edge portions and extending downwardly between the latter past the upper plate and secured to the lower plate at a point spaced inwardly from the edges thereof.

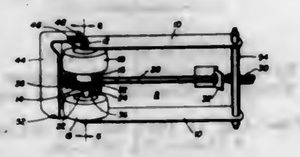
3,165,311
CLOTH SPREADER ACCESSORY FOR SEWING MACHINE
Samuel Lester Mitchell, Trumbull, Conn., assignor to Mitchell Bros., Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Aug. 21, 1962, Ser. No. 225,404
4 Claims. (Cl. 270—79)

1. Spreader for cloth friction fed longitudinally rearwardly by a sewing machine, said spreader comprising a frame adapted to be located behind said sewing machine, a lateral first roller mounted on said frame positioned for the cloth to extend against and behind said first roller, a carriage mounted on said frame for longitudinal reciprocating movement forwardly and rearwardly of said first roller between extreme positions, said first roller being longitudinally centered between the extremes of movement of said carriage, lateral draw rollers, means mounting said draw rollers on said carriage positioned for the cloth passing behind said first roller to extend frictionally between said draw rollers so that cloth drawn by said draw rollers to a support below them during reciprocation of said carriage is lapped said means mounting said draw rollers including pressure means pressing one draw roller against the other so as to draw said cloth frictionally therebetween and adjustable so as to vary the pressure



between the rollers, means for driving said carriage, adjustable means for driving said draw rollers at selected speeds, said respective drive means being independent of each other, and means for activating said respective driving means either indivdually or jointly, the pressure between said rollers and the means for driving said draw rollers being respectively adjustable to draw said cloth at varying speeds and tension including speeds and pressures to override the sewing machine friction feed.

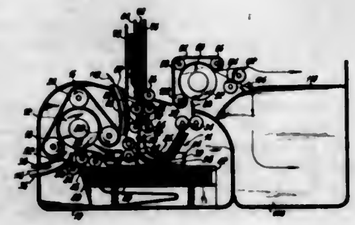
3,165,312
SHEET FEEDING MECHANISM
Hans O. Stoever, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 26, 1962, Ser. No. 182,527
5 Claims. (Cl. 271—36)



1. In a sheet-feeding mechanism for individually feeding sheets one at a time from a stack of sheets located in a compartment, the combination comprising:
(A) sheet feeding means including a uni-directional feed roller movable into a sheet-feeding position in frictional engagement with said stack of sheets;
(B) means for driving said feed roller in said sheet-feeding position for feeding a sheet from said stack; and
(C) separating means movably mounted on said sheet-feeding means and movable by a stack of sheets inserted edgewise into said compartment from a normal inoperative position in which said separating means is free of said roller, to an operative position in which said separating means is positioned between the outermost sheet of said stack and said feed roller to prevent said feed roller from frictionally engaging said stack and interfering with the entry of said stack of sheets into said compartment, said feed roller when driven by said drive means to feed a sheet from said compartment after said stack of sheets has been inserted returns said separating means from its operative position to its inoperative position.



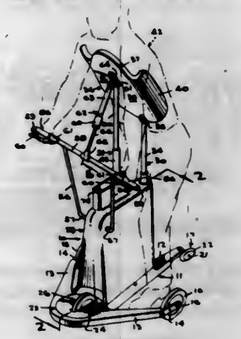
3,165,313
APPARATUS FOR MAKING COPIES
Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany
Original application Apr. 2, 1959, Ser. No. 803,718. Divided and this application Aug. 29, 1961, Ser. No. 134,610
Claims priority, application Germany, Apr. 5, 1958, L 30,127, L 30,128; Apr. 30, 1958, L 30,321
11 Claims. (Cl. 271—64)



1. In an apparatus for making copies wherein first and second sheets are superimposed in contiguous relation, in combination, sheet separating and advancing means, transporting means transporting and feeding the superimposed contiguous sheets into said separating and advancing means, said separating and advancing means including a first member having a first surface, a rotatable mounted roller located adjacent said first member having an axis of rotation transversely disposed to the direction of sheet movement, means rotating said roller, a slot defined by the surface of said roller and said first surface of a thickness greater than the thickness of said first sheet and less than the combined thickness of said first and second sheets, the leading edge of said sheets being directed toward said slot by said transporting means, said roller rotating in a direction wherein the roller periphery adjacent said first surface is moving counter to the direction of sheet transportation, said slot being of a thickness such that upon said first sheet engaging the first surface said second sheet engages said roller whereby said roller rotation separates said sheets causing said second sheet to be lifted over said roller and advanced in the direction of roller rotation and said first sheet passes through said slot, and second sheet receiving means adjacent said roller receiving said separated second sheet.

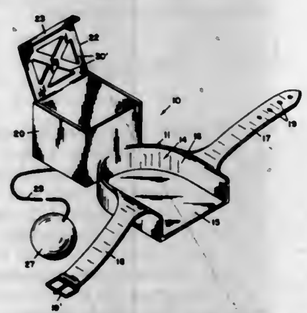
3,165,314
INVALID WALKER AND AMBULATORY AID
Jerome P. Clearman, 337 E. Lake Road, Honeoye, N.Y., and Bruce C. Webster, 269 Millard Ave., North Tarrytown, N.Y.
Filed July 9, 1962, Ser. No. 208,383
2 Claims. (Cl. 272—70.3)

2. In an invalid walker, a base including a main body portion and angularly arranged side portions, side wheels journaled in the side portions of said base, a rear caster assembly connected to said main body portion at the rear end thereof, a front caster assembly in the front of the main body portion, a hollow housing on said base providing a cowling, front and rear lifts mounted above said base and having an adjustable chest support piece connected to the upper portions thereof, handle bars pivotally connected to said housing, a cross piece affixed to said handle bars, an adjustable connector unit connecting



said chest piece to said cross piece, and power means in said housing for selectively actuating said lifts.

3,165,315
SKIPPING DEVICES
Victor Petrusek, 14611 Halsted St., Harvey, Ill.
Filed Dec. 5, 1963, Ser. No. 328,347
12 Claims. (Cl. 272—74)

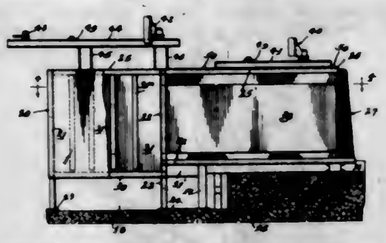


6. A skipping device comprising in combination, attachment means including adjustable straps adapted to be secured to one foot of a user, a receptacle carried by said attachment means, an elongated flexible tethering element connected at one end thereof to the bottom of said receptacle, and a weight provided at the other end of said element, said element being sufficiently long whereby a gyratory movement imparted to said attachment means by said one foot of the user may orbit said weight around said receptacle while being tethered by said element and whereby the user must skip over said tethering element with the other foot in order for the orbiting of said weight to continue, and means in said receptacle for producing noise in response to movement imparted to said attachment means.

3,165,316
BOWLING ALLEY KICKBACK WITH REPLACEABLE PANEL
Miles E. Untiedt and Jack E. Larson, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,317
5 Claims. (Cl. 273—53)

4. A bowling alley kickback having, in combination, an upright frame comprising a rear portion adapted to extend upwardly from an alley pit floor and a front portion comprising a pair of opposed channel members, one extending forwardly from the upper part of the rear portion and the other extending forwardly from a lower part of

the rear portion, said opposed channel members having their flanges forming guide grooves, open at the forward



end thereof, and a wooden rectangular panel removably fitted between said opposed channels and held thereby when the upper channel is pressed downwardly.

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3,165,317

## GAME APPARATUS HAVING MOVABLE TARGET ELEMENTS WITH ANGULARLY RELATED WINGS

Raymond C. Kirsch, 159 Pleasant Ave., Hamburg, N.Y.

Continuation of application Ser. No. 69,726, Nov. 16, 1960. This application Feb. 12, 1963, Ser. No. 258,023
16 Claims. (Cl. 273—102.1)



1. For use in combination with a missile tossed by hand a game playing structure comprising a body having a vertical front wall, rearwardly and inwardly inclined vertical supports mounted behind the front wall, a horizontal shelf extending between and secured to the supports, the front wall having an opening in communication with the space above the shelf, a gate of V-shaped outline having its apex extending vertically and supported by and upon the shelf, a vertical pivot pin for the gate arranged adjacent the apex and about which the gate may have swinging movement, the gate by reason of its V-shaped outline providing a pair of angularly related wings, either of which may serve as a target against which a missile may be tossed, and means for limiting the swinging movement of the gate to either of two positions in which one of the wings provides the target and is located within the front wall opening in substantially flush relation to the front wall and the other wing extends laterally and rearwardly and in combination with the adjacent vertical support provides a scoring space into which a missile may be thrown through the opening in the front wall for support upon the shelf.

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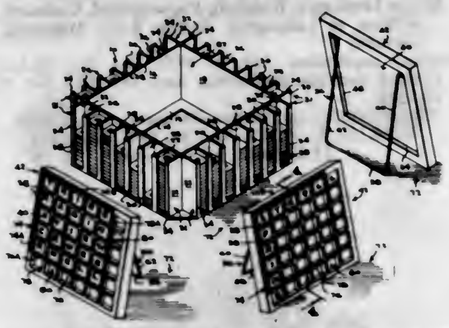
3,165,318

## WORD GAME APPARATUS COMPRISING GAME BOARDS, GAME PIECES AND A RACK THEREFOR

Frederick J. Lisenadrello, Box 134B, R.D. 1, Catskill, N.Y.

Filed May 17, 1963, Ser. No. 281,184
2 Claims. (Cl. 273—148)

1. A game apparatus comprising, in combination, a game piece and game board rack, said game board rack including a normally horizontal substantially rectangular base plate having a central opening formed therein and a continuous panel projecting laterally from a side thereof and cooperating with said base plate to form a cavity, a plurality of substantially rectangular game boards stacked within said cavity, said game boards being supported on said base plate, said game boards each having dimensions substantially equal to the length and width of said cavity, a plurality of spaced divider means projecting laterally from said panel and away from said cavity and upwardly from said base plate, said divider means cooperating with said panel and said base plate to form a plurality of substantially rectangular game



piece-receiving compartments opening in a direction away from said panel, and a plurality of uniformly-shaped substantially rectangular game pieces stacked within each of said game piece compartments in face-to-face engagement and with the peripheral edges on three sides thereof constantly abutting said panel and said divider means.

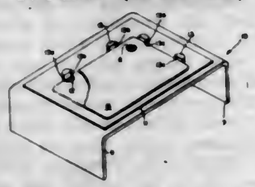
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3,165,319

## MECHANICAL DEVICE AND SYSTEM

David Benisse, 306 Cooper St., Camden, N.J.

Filed July 17, 1961, Ser. No. 124,533
14 Claims. (Cl. 273—149)



1. In combination: a number of cards each having a different pattern of perforations, a matrix having a plurality of indicia-bearing fields for sorting said cards into a plurality of groups respectively corresponding to said fields, said cards overlying said matrix one-by-one, one perforation only of each of said cards coinciding with an indicium of said matrix, and said one perforation in each card of the same group only being located to coincide with an indicium in the field of said matrix corresponding to that group.

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3,165,320

## CHANGEABLE RECORD PHONOGRAPH FOR TOY FIGURES

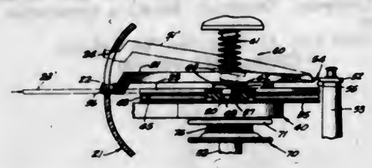
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California

Filed Jan. 22, 1963, Ser. No. 253,192
7 Claims. (Cl. 274—2)

1. A toy figure having a hollow body with a phonograph device therein; having a turntable for supporting and rotating a record; a slot in said body, substantially in a plane containing said turntable but outwardly of the periphery of said turntable; means in said body for guiding a record inserted edgewise through said slot into approximately concentric relation to said turntable; a lifting bar extending across said turntable and pivoted at one end to said device for pivotal movement perpendicular to said turntable, the other end of said lifting bar extending outwardly of said body adjacent said slot;



said body having an opening therein through which said other end extends and being of a size and shape to permit said pivotal movement of said lifting bar; centering means mounted on said lifting bar intermediate the ends thereof and adjacent the center of said turntable and being engageable with the center of a record to accurately center the same on said turntable; spring means urging



said centering means toward said turntable to hold said record securely thereagainst; and means fixedly carried by said other end of said lifting bar and which extends across and blocks said slot when said centering means is in engagement with said record, and which moves with said lifting arm to unblock said slot when said arm and centering means are swung away from said turntable.

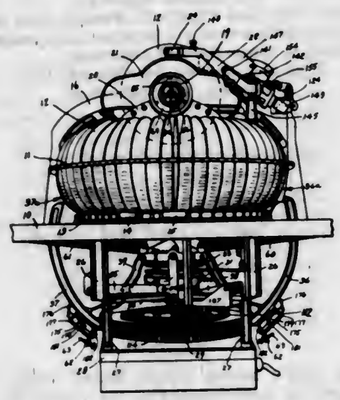
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3,165,321

## AUTOMATIC PHONOGRAPH

Fred H. Osborne, Snyder, N.Y., Sven W. E. Andersson, St. Joseph, Mich., and Robert S. Tuttle, Eggertsville, N.Y., assignors to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio

Continuation of application Ser. No. 388,242, Oct. 26, 1953. This application Mar. 21, 1961, Ser. No. 97,259
38 Claims. (Cl. 274—10)



28. An automatic phonograph record playing mechanism comprising, a rotary record storage magazine rotatable about a first axis inclined to the horizontal, means carried by the magazine for storing phonograph records therein in a toroidal radial arrangement, a rotary record playing turntable rotatable about a second axis perpendicularly disposed in respect to said first axis, said turntable including means for supporting and rotating a record in a plane substantially parallel to and proximate to said first axis, a pair of record shifting arms movable substantially in the plane of said turntable and operable to move records to and from the turntable from opposite sides of said magazine, a guide pivotally mounted substantially in the plane of said turntable and between said arms and pivotable relatively away from a record being moved from said magazine and forming an inclined guide ramp along which a record is moved by a record shifting arm, a control drum cooperable with the magazine to control the movements thereof, and control mechanism for controlling the rotation of the turntable, the shifting of said arms and the movement of said magazine in predetermined timed relation.

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3,165,322

## MATERIAL UNLOADER AND SPREADER WITH EXTENSIBLE FLAILS

Howard J. Ferris, Gulfport, Fla., assignor to Starline Inc., a corporation of Illinois

Filed Mar. 6, 1963, Ser. No. 263,308
8 Claims. (Cl. 275—3)



1. A material spreader comprising, in combination: a wheeled carriage; a material container on the carriage, said container having two end walls and an arcuate wall secured to said end walls to provide the bottom and sides of the container, and the bottom of said container being between the wheels so that the container is generally parallel to a supporting surface; a rotatable, hollow unloader shaft extending longitudinally of the container, said shaft having a plurality of longitudinally spaced openings; extensible means including a tension spring within and having an end secured adjacent an end of the shaft; attaching means secured to the other end of the extensible means; and a plurality of flexible flail members each of which has one end connected to said attaching means and a free end extending through one of said openings, there being a flail plate on the free end of each flail member, said extensible means being adapted to extend in response to the pull of said flail members resulting from centrifugal force on the flail plates, whereby the flexible members are normally entirely within the shaft and project outwardly in response to extension of the spring.

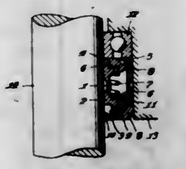
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3,165,323

## WATER SEAL FOR PUMP

Kiichi Hamano, 1793 Umeda-cho, Adachi-ku, Tokyo-to, Japan

Filed Apr. 17, 1963, Ser. No. 273,593
1 Claim. (Cl. 277—41)



A pump seal to be disposed between stationary and rotating cylindrical members, comprising in combination,

a resilient main body having a cylindrical wall designed to engage one of said members and having a U-shaped external cross-section, the arms of the U extending towards the other of said members with a plurality of saw-tooth ribbed edges disposed in step ladder fashion at the lower portion of said main body between said members;

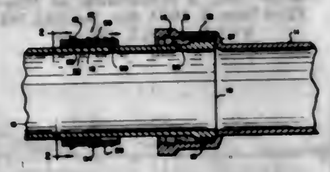
an enclosure surrounding said main body, the lower portion thereof having a funnel shape conical wall conforming generally to the step ladder inclination of said saw-toothed ribbed edges;

upper and lower metal reinforcing rings along both sides of said main body defined by the arms of said U-shaped cross-section; and,

a spiral spring coiled around said main body between said upper and lower reinforcing rings.

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3,165,324
MOLDED PIPE JOINT SEAL
William L. Zegel, 2638 Hilton Road, Ferndale, Mich.
Filed Sept. 30, 1963, Ser. No. 312,425
5 Claims. (Cl. 277—209)



1. Means for sealing the joint between a first pipe having an enlarged bell end and a second pipe axially inserted into said bell end; the invention comprising:
a pre-molded thin ring-like tubular body of flexible plastic material, said body adapted for assembly upon and snugly slidable along the second pipe into close fitting engagement within the bell end of the first pipe, said bell end upon its interior and adjacent its open end having an annular undercut lead groove;
the inserted end of the second pipe having an axial annular aligning bead in engaging registry with said first pipe;
an annular undercut tapered sealing flange upon the trailing end of said body nested and retainingly interlocked within said lead groove and anchored against outward disassembly from said bell end;
there being an elongated internal groove in said body at its leading end co-operatively receiving said aligning bead and retaining the second pipe against disassembly relative to the bell end of the first pipe.

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3,165,325
POWER OPERATED CHUCK
George A. Goepfrich, New Britain, Howard C. Multer, West Hartford, and John J. Roddy, Meriden, Conn., assignors to Skinner Precision Industries, Inc., New Britain, Conn., a corporation of Connecticut
Filed Dec. 10, 1962, Ser. No. 243,414
9 Claims. (Cl. 279—4)

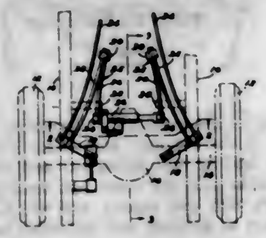


1. In combination with a chuck having jaws and a ring gear and cooperable pinion for operating the jaws, said pinion having projections extending from the chuck, a portable drive mechanism comprising a casing having a through passage, means removably mounting the casing to the chuck with the through passage in alignment with the pinion projections, a clutch member mounted in the passage for rotatable movement and having means engaging the pinion projections establishing a drive connection, and power means for rotating the clutch member to drive the pinion for operating the jaws.

2. The combination defined in claim 1, wherein the power means includes a hydraulic motor supported by the casing and means for supplying and exhausting hydraulic fluid to and from the motor, respectively.

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3,165,326
VEHICLE SUSPENSION
Donald H. Beisel, Royal Oak, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 31, 1961, Ser. No. 135,336
6 Claims. (Cl. 280—6)



1. A suspension system having sprung and unsprung components, a pair of torsion springs interconnecting said components, said torsion springs each having a portion near one of its ends rotatably mounted on said sprung components, lever arms connected to said ends, a linearly extendable strut freely suspended between and connected to said lever arms and said strut being actuatable to rotate said lever arms in opposite directions.

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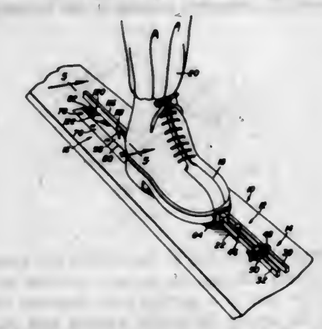
3,165,327
LEVELING VALVE
Maxwell L. Cripe and Charlie N. French, both of South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,196
7 Claims. (Cl. 280—6.1)



1. In a vehicle having a body whose weight is supported from the undercarriage of the vehicle by an air bag: a reservoir of pneumatic pressure for communication to said air bag, a valve for controlling the pneumatic pressure in said air bag, and a switch for controlling said valve, said switch comprising a rotatable cam whose angular position is controlled by the relative position of said body and undercarriage, a pair of cam followers positioned on opposite sides of said cam, a pressure inlet valve and an exhaust valve for said air bag, said valves being positioned between said cam followers and each of which are opened by a respective cam follower when said cam permits the respective follower to move towards the other follower from a normal position, and solenoid means which biases both followers towards each other when energized, said cam normally preventing said followers from operating said valves when said body and undercarriage are normally spaced, permitting said pressure valve to be opened when said body and undercarriage are at less than their normal spacing, and permitting said exhaust valve to be opened when said body and undercarriage are at more than their normal spacing.



3,165,328
MAGNETIC SKI BINDING
Franklin Malone, 882 Quentin St., Aurora, Colo.
Filed Dec. 14, 1962, Ser. No. 244,610
10 Claims. (Cl. 280—11.35)



1. A magnetic ski binding for attaching a ski boot to a ski, said ski binding including lever means comprising a pair of crossed levers, mounting means adapted to pivotally secure said levers to a ski for rotation about an upstanding axis disposed generally normal to the upper surface of said ski and disposed intermediate the opposite ends of said levers with corresponding ends of said levers generally paralleling the longitudinal axis of said ski, one pair of corresponding ends of said pair of levers defining a pair of recesses opening downwardly and toward each other and communicated with said one pair of ends and adapted to receive an enlarged projection on the end of a shank supported from the toe portion of a ski boot, said mounting means including abutment means engageable with the other ends of said levers for preventing movement of each of said other ends in a direction toward the other of said ends beyond a predetermined point, and magnetic means carried by said other ends magnetically attracting said other ends toward each other.

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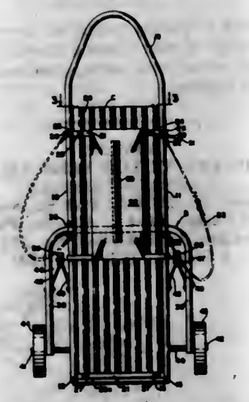
3,165,329
GOLF CART APPARATUS
Elmer H. Libbe, 1811 62nd St., Des Moines, Iowa
Filed Nov. 12, 1963, Ser. No. 322,717
4 Claims. (Cl. 280—36)



1. A golf cart comprising in combination:
frame means;
axle means including a pair of transversely spaced tubes each open at one end and having a journal pin secured in the other end, said pins axially aligned;
separate wheel devices each including a shaft and a wheel rotatably mounted at one end thereof, the other end of each shaft inserted into one of said tubes through the open end thereof and releasably engaged with the journal pin therein, each wheel device movable in a lateral direction relative to said frame means from a ground engaging position to a non-ground engaging position; and
brace means including a solid, elongated element having a pair of laterally spaced walls, the opposed ends of each wall having a concave shape, and a flexible member secured to said element and extended outwardly from each end of said element, said member including a pair of laterally spaced arms each having a concave shape relative to said element wall ends and forming therewith a flexible band for releasably engaging a shaft, said brace means maintaining said wheel devices against lateral movement relative to said frame means.

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3,165,330
COMBINATION GOLF CART AND GOLF BAG
Robert B. Cotton, 1503 Old Orchard Road, Media, Pa.
Filed Nov. 12, 1963, Ser. No. 322,949
2 Claims. (Cl. 280—41)



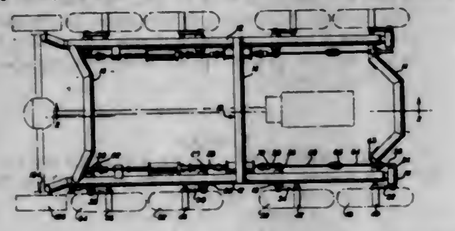
1. A convertible golf club holder having ground wheels and a carrying strap, said holder including a pair of inverted U-shaped frame members, the first of said members forming a handle at the top thereof, the second of said members being pivoted at the top to medial portions of said first member, said second member carrying an axle with wheels journalled to each end thereof, transverse tube retainer bars secured to each leg of said first frame member, and a plurality of individual golf club holder tubes between said bars secured to each of the legs of said first frame member, said holder tubes being open at the top and diverging from the said handle at the top of said first frame member, and tube support means transverse the bottom of the said first frame member, said support means comprising angle bars positioned back-to-back, said bars being secured to the rear side of the first frame member adjacent the free ends of the legs thereof and said tubes extending upward from the support bars to the front side of the said first frame member.

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3,165,331
WHEEL SUSPENSION SYSTEM
James A. Hardman, Logan, and Ross W. Eskelson, Centerville, Utah, assignors to Utah Scientific Research Foundation, a non-profit corporation of Utah
Filed Sept. 25, 1961, Ser. No. 140,983
10 Claims. (Cl. 280—104)

6. A wheel suspension system, including in combination a frame; two longitudinally spaced wheels; respective supporting arms for said wheels; respective axle means journalling said wheels and carried by said supporting arms; respective pivot means rotatably mounting said supporting arms on the frame at positions spaced from and disposed outwardly with respect to said axle means; linkage arms secured to said supporting arms, respectively, in fixed relation thereto, one of said linkage arms being disposed at an angle of less than 90° with re-

spect to its supporting arm; and means interconnecting said linkage arms, so that upward movement of one supporting arm will effect downward movement of the other supporting arm, and vice versa, said interconnecting



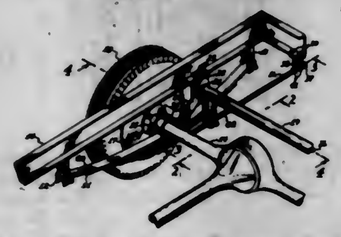
means including a housing connected to one of said linkage arms, a flange in said housing connected to the other of said linkage arms, and a spring positioned between the flange and the housing.

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3,165,332
## AUXILIARY MOTOR VEHICLE LOAD CARRYING DEVICE

Julius A. Barker, Jr., 2501 N. 69th St., Scottsdale, Ariz., and Richard Phelps, 4434 E. Almeria, Phoenix, Ariz.

Filed Jan. 30, 1963, Ser. No. 254,862
2 Claims. (Cl. 280—124)



1. An auxiliary load carrying device for an existing vehicle having a frame, an axle, and load carrying springs supporting the frame on the axle comprising in combination:

(*a*) a main tubular housing,

(*b*) means for rotatably mounting the said main housing on the frame of a vehicle,

(*c*) a torque bar having one end fixed to said main housing,

(*d*) a torque arm fixed to the other end of said torque bar,

(*e*) a spring contacting element adapted to engage said vehicle spring connected to move up and down in response to the up and down rear axle housing and spring movement of the motor vehicle,

(*f*) and means interconnected between said frame and said main housing operable to adjust the relative rotary position of said main housing on said frame to increase or decrease the torque in said torque bar against said spring to accommodate variations in load carried by said vehicle.

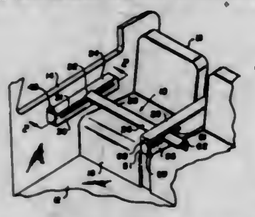
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3,165,333
## ADJUSTABLE PASSENGER SAFETY GUARD

Earl H. Dalgleish, 725 Biddesden Place, West Vancouver, British Columbia, Canada

Filed Feb. 12, 1963, Ser. No. 257,936
5 Claims. (Cl. 280—150)

1. An adjustable passenger safety guard for a vehicle comprising an elongated horizontally disposed housing being adapted to be mounted on an inner side wall of said vehicle adjacent a seat thereof in a fore and aft position, a runner in the housing longitudinally slidable therein and having a wedging face, a wedging block slidably mounted in the housing forwardly of the runner having a wedge-shaped after face adapted to coact with the wedging face of the runner, thereby securing said runner against forward movement relative to the housing, a safe-



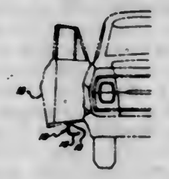
ty bar pivotally connected at one end to the runner, said safety bar being adapted to lie in a position parallel to and above the seat in a normal open position and being adapted to be swung forwardly against and parallel to the side wall when not in use.

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3,165,334
## SHOE SCRAPER FOR AUTOMOBILES AND THE LIKE

Francis T. Barrett, Rte. 1, Box 165, Pocahontas, Iowa

Filed Apr. 1, 1963, Ser. No. 269,272
5 Claims. (Cl. 280—164)



2. A shoe scraper for automobiles and the like comprising, a vertically disposed scraper rod having an upper portion slightly bent to fit in an upright position along the lower outer portion of an automobile door, and a horizontally disposed lower portion on which one scrapes his shoes on entering an automobile, means for securing the said slightly bent upper portion of the said scraper rod to the lower outer surface of the door of an automobile or the like in vertically adjusted position with the lower portion extending under the door substantially perpendicular to the outer surface of the door.

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3,165,335
## AUTOMATIC FIFTH-WHEEL COUPLER

James N. Methven, Vancouver, British Columbia, Canada, assignor to Johnston Terminals Limited, Vancouver, British Columbia, Canada

Filed Mar. 11, 1963, Ser. No. 264,234
5 Claims. (Cl. 280—421)



1. In a tractor and trailer combination; a tractor kit fixedly applied to the tractor and a trailer kit fixedly applied to the trailer; said kits having complemental parts thereof releasably interfitted in an articulated draft connection; said tractor kit comprising a fifth wheel mounted for turning about a vertical pivot member and having top and bottom plates rigidly joined in spaced coaxial relationship by transversely interposed spacing plates that are formed with companion king pin receiving slots leading forwardly thereinto from their rear edges, a resiliently yieldable abutment block disposed between the top and bottom plates of the fifth wheel, against the rear face of one of said spacing plates and mounting a terminal block thereon in the line of the king pin slots; said trailer kit comprising a mounting plate with a downwardly directed king pin adapted for entering the king pin slots of the fifth wheel in making said draft connection to seat against said terminal block and to be held against axial turning in the fifth wheel slots; said king pin and said terminal block as applied to the yieldable abutment block having complemental service line connectors mounted therein for automatic connection incident to the making of a draft connection, and releasable latch means mounted in the fifth wheel for retaining the articulated draft connection.



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3,165,336
## EXTENDABLE REACH FOR TRACTOR-TRAILER VEHICLES

Henry W. Bigge, 50 Marsh Place, Oakland, Calif.

Original application Feb. 24, 1961, Ser. No. 91,470, now Patent No. 3,102,735, dated Sept. 3, 1963. Divided and this application Jan. 16, 1963, Ser. No. 266,464
6 Claims. (Cl. 280—421)



1. An extendable trailer reach for connecting a steerable trailer vehicle having a movable load bed with a tractor vehicle also having a movable load bed, said reach comprising: an outer reach section connected at one end to the load bed of one of said vehicles and an inner reach section connected at one end to the load bed of the other said vehicles and slidable within said outer reach section; a pair of cross bars located near the opposite ends of said outer reach section, each said cross bar having an opening; a locking dog means pivotally attached to said inner reach section and having an end portion axially aligned with and adapted when lowered, to enter the said opening of the adjacent cross bar to connect said reach section at either the retracted or extended position; sensing means connected to said dog means to control the movement of said dog means, said sensing means comprising a cam follower rigidly fixed to said locking dog and positioned to normally ride along a longitudinal member of said outer reach as the reach sections are being moved apart; slot means on said outer reach section having the same relative position to a said opening in said cross bar as said sensing means has to the location of said end portion of said locking dog means; whereby as said inner reach section is being moved relative to said outer reach section, said sensing means will keep its attached locking dog raised and disconnected and will lower said locking dog into said opening when said sensing means drops within a said slot.

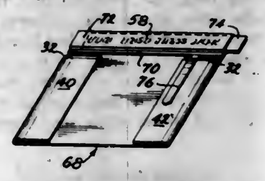
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3,165,337
## BOOK COVERS

Sydney S. Leibowitz, 100 Westerleigh Road, New Haven, Conn.

Filed Mar. 15, 1963, Ser. No. 265,477
4 Claims. (Cl. 281—34)

1. A book jacket comprising a body portion formed of transparent flexible sheet material, said body portion being provided on one surface thereof with a pair of laterally spaced book cover enclosures, said enclosures each having an opening extending between the upper and lower edges of said jacket, and said enclosures having closed upper and lower marginal edges extending transversely of said openings, and an advertising extension provided on said jacket between associated closed mar-




ginal edges of said enclosures and the adjacent edge of said jacket, said advertising extension comprising a tunnel in which an advertising strip is removably insertible.

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3,165,338
## HOSE COUPLING

Trevor F. Moss, Mantua, Ohio, assignor to Samuel Moore & Co., Mantua, Ohio, a corporation of Ohio

Filed Aug. 3, 1961, Ser. No. 129,190
9 Claims. (Cl. 285—256)



1. In a coupling adapted for permanent attachment to an end of a piece of tubing, said coupling comprising, an elongated axially apertured insert member including a shank adapted to be received interiorly of one end of the tubing a deformable ferrule adapted to be received externally of the end of the tubing in encompassing relation with respect thereto and with respect to said shank, tooth means on the interior of the ferrule and on the exterior of said insert member for holding the tubing in positive assembled relation with the coupling upon deformation of said ferrule, means on said insert member adapted for holding coaction with complementary means on said ferrule for preventing relative axial movement with respect to one another, and wherein said tooth means comprises substantially circumferentially extending raised ring means, said raised ring means on said ferrule being of axially spaced alternately greater and lesser interior diameters and the ring means on said insert member being disposed in confronting relation with only the greater interior diameter ring means on said ferrule whereby the tubing material will be alternately stressed first in one radial direction and then the other.

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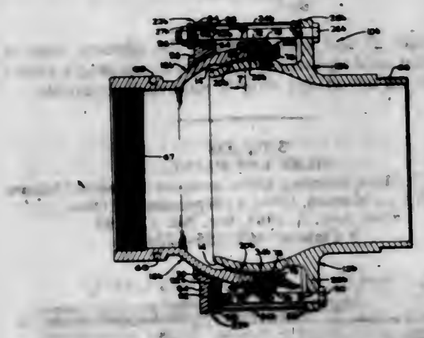
3,165,339
## SWIVEL PIPE COUPLING

Armand L. Faccou, Santa Ana, Calif., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 25, 1961, Ser. No. 112,683
4 Claims. (Cl. 285—263)

3. A swivel pipe coupling comprising a pipe terminating in a socket member having spherical internal seat means and a spherical outer retaining face, a pipe terminating in a ball member having a spherical external seat within said socket member, a radial flange adjacent the junction of said pipe and said ball member, a pliable sealing ring connected to the free end of said socket member and having a sealing lip in sealing engagement with the external seat of said ball member, a coupling ring assembly surrounding said members, said coupling ring assembly comprising a relatively short bearing ring having bearing means formed with a spherical inner face that engages said outer retaining face on the socket member, said bearing ring being formed with an annular,

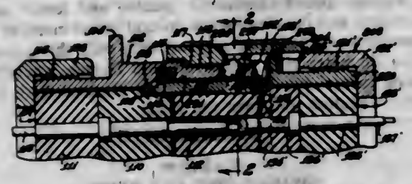
axially inner seat that faces radially outward, said coupling ring assembly also comprising a retainer ring fitting on said bearing ring seat, said retainer ring having an annular, axially inner spacer seat adjacent its peripbery, the radial flange on said ball member having an annular, axially inner spacer seat aligned with said bearing ring spacer seat, an annular spacer extending between said retaining ring and the radial flange on said ball member and centered by said spacer seats, said bearing ring being



formed with a radial flange that faces said retainer ring, sleeve nuts threaded into said bearing ring flange and engaging said retainer ring, bolts extending through the radial flange at said ball member and threaded into said retainer ring to independently retain said spacer ring and said retainer ring on said ball member, and bolts extending through the radial flange at said ball member, said retainer ring, and said sleeve nuts for connecting bearing ring to the remainder of said coupling ring assembly and to the radial flange at said ball member.

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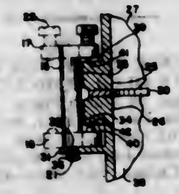
3,165,340
QUICK COUPLING STRUCTURE
Ernest W. Knehl, San Fernando, and Ian E. Robb, Newport Beach, Calif., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Nov. 7, 1960, Ser. No. 67,895
10 Claims. (Cl. 285—316)



1. A quick coupling and uncoupling device comprising a receptacle member including a single forwardly extending tubular sleeve, a plug member including a forwardly extending internal sleeve adapted to axially enter said receptacle sleeve in coupling relationship, said receptacle sleeve having a radial opening extending therethrough, a ball locking detent floatingly mounted in said radial opening and captive therein, the diameter of the ball detent being greater than the wall thickness of said receptacle sleeve, an external sleeve rotatably mounted on the plug member and engageable over said receptacle sleeve, said external plug sleeve having an internally disposed shoulder facing rearwardly of the plug and the internal plug sleeve having an external bearing surface of right-circular cylindrical configuration, said external sleeve being quickly rotatable between a lock position in which said bearing surface holds said detent against said shoulder to lock the receptacle and plug against relative axial movement and a release position in which the detent is freed from said shoulder to permit axial separation of the plug and receptacle, said shoulder having a spiral portion and said external sleeve being rotatable in one direction on the plug member to cause said spiral portion of the shoulder to engage said detent and draw the members together into their final coupling relationship, said sleeve being rotatable in the opposite direction to free the detent from said shoulder and permit axial separation of the members.

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3,165,341
CLAMPING DEVICES FOR MATED FLANGES
Marcy Burns, New York, and Nathan Burns, Ardsley, N.Y., assignors to Star Tank and Filter Corporation, Bronx, N.Y., a corporation of New York
Filed July 10, 1962, Ser. No. 208,710
3 Claims. (Cl. 285—406)



1. In a clamping device for two parallel mating flanges one of which has a body portion, the combination of a pivot bar member carried by said body portion and extending outwardly therefrom, and a swivel clamp member pivotally connected to said pivot bar member; said clamp member having a shank positioned exteriorly of said flanges, two spaced holding arms connected to said shank, force-applying means on one of said arms for operative engagement with one of said flanges, and flange-engaging means on the other of said arms for operative engagement with the other of said flanges, said arms extending inwardly from said shank and being in flanking relation to said flanges when said clamp member is in operative clamping position, said pivot bar, said holding arms and said force-applying means being contained within the same plane; and coactive pivotal means on said pivot bar member and the adjacent end of said clamp member and having an axis extending longitudinally of said shank and disposed exteriorly of said flanges, said pivotal means comprising a pivot pin on one of said members and an apertured portion on the other of said members, said pin being in pivotal and slidable engagement with said apertured portion, said force-applying means and said pivotal means being on opposite sides of said mating flanges, said pin and apertured portion being so positioned and proportioned as to provide a clearance space between said pivot bar member and the said adjacent end of said clamp member when said clamp member is in operative clamping position, whereby said pivot bar member will be free to move in the direction of the extent of said axis toward said clamp member during the operative relative movements of said flanges upon an operative manipulation of said force-applying means.

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3,165,342
MEANS FOR FIXING WHEELS ON SHAFTS
James H. Anderson, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 77,714, Dec. 22, 1960. This application Mar. 29, 1963, Ser. No. 270,491
7 Claims. (Cl. 287—52)

1. The combination with a cylindrical shaft and a wheel having a bore which fits the shaft, said wheel being mounted thereon, and means for maintaining the wheel on the shaft comprising, a shoulder formed in the wheel, a collet having a bore which fits the shaft; said collet being mounted thereon, said collet having a shoulder engaging portion bearing on said wheel shoulder, said collet having a ring seating deck portion, a ring on said deck portion, said ring having a deck engaging portion whose diameter is less than the diameter of said deck portion to thereby

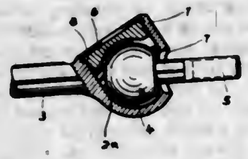




form a tight fit with the deck portion, said collet also having a portion engaging said shaft, said deck portion being on a portion of the collet which is axially intermediate the said shoulder engaging collet portion and the said shaft engaging collet portion with said intermediate collet portion being radially spaced from said shaft, whereby the collet is deformed.

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3,165,343
BALL JOINT
Rudolf Gottschald, Osterath, Germany, assignor to A. Ehrenreich & Cie., Duesseldorf-Oberkassel, Germany
Filed June 30, 1961, Ser. No. 121,026
Claims priority, application Germany, July 6, 1960, E 19,571
2 Claims. (Cl. 287—87)

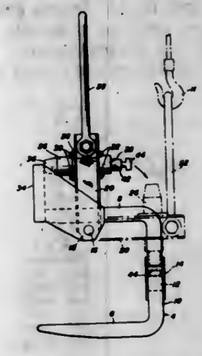


1. In a ball joint: a housing having a shank fixedly connected thereto, said housing also having a first opening therein for permitting the insertion of a ball head together with a ball stud therethrough, said housing also having a second opening for the passage of the ball stud only therethrough, the axis of said first opening forming an obtuse angle with the axis of said second opening and forming an acute angle with the axis of said shank, said first opening having a diameter greater than said ball head, and said second opening having a diameter less than that of said ball head but considerably greater than that of said stud so as to allow the latter to angularly move relative to the axis of said second opening.

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3,165,344
LIFTING HOOK WITH UNLOADING LINK
Ronald W. Holder, 144 Maple St., Manchester, Conn.
Filed Aug. 16, 1963, Ser. No. 302,529
3 Claims. (Cl. 294—67)

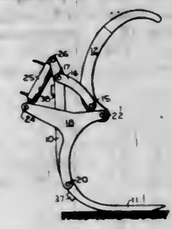
1. Apparatus adapted to be suspended from an overhead crane for carrying articles which comprises a pair of substantially C-shape upright members arranged in spaced parallel relation, each of said members including a lower load-bearing arm, an upper arm spaced above said load-bearing arm and extending substantially parallel therewith and a connecting arm portion extending between said arms at one end thereof, a separator beam connected with and extending between the connecting arm portions of said C-shape members, said separator beam having an



inverted T-slot in the upper surface thereof intermediate its ends, a bail pivoted to and disposed between said upper arms intermediate the ends thereof, and rotatable means on said bail adapted to cooperatively engage said inverted T-slot to lock said bail in position between said connecting arm portions when said bail is pivoted toward said separator beam.

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3,165,345
FORK FOR PULPWOOD AND SIMILAR MATERIALS
Charles W. Gardner, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 26, 1963, Ser. No. 304,547
3 Claims. (Cl. 294—67)



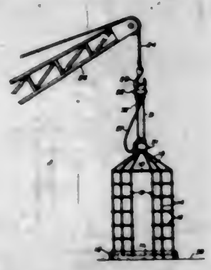
1. A material handling fork of the kind described comprising forwardly disposed tines with upstanding parts at their rearward ends, clamp arms, a link pivoted to the clamp arms and to said upstanding parts, a lever pivoted to said parts below said link, a pivotal connection between said lever and said clamp arms, and extensible power means between said parts and said lever to swing the lever rearwardly for rotating the clamp arms toward a closed position with respect to the tines about their pivotal connection with said link and to swing said link downwardy and rearwardly.

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3,165,346
LIFTING HARNESS FOR LANDING NET
Billy Gene Pugh, P.O. Box 802, Corpus Christi, Tex.
Filed Nov. 20, 1962, Ser. No. 238,983
2 Claims. (Cl. 294—77)

1. A landing net and lifting harness assembly comprising in combination, a landing net including a base spreader ring and an upper spreader ring with longitudinally extending circumferentially spaced ropes connecting the upper spreader ring with the base spreader ring

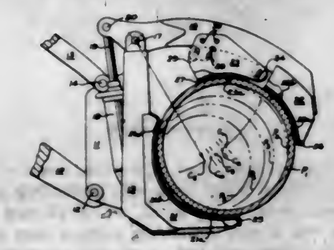
and circumferentially extending ropes connected to said longitudinally extending ropes providing a flexible netting with said circumferentially extending ropes omitted between two longitudinally extending ropes to provide an opening of limited lateral dimensions in the netting when the longitudinal ropes are taut, a ring shaped member, means connecting said ring shaped member to said upper spreader ring, an inextensible flexible element connected to said ring shaped member, a flexible elastic element connected to said ring shaped member, a loop shaped member connected to the free end of said inelastic element



and connected to the free end of said elastic element, said elastic element in the unelongated state being of less length than said inelastic element, lifting means engaging said loop member for raising the netting and a load therein during which the elastic element elongates to a length equal to that of the inelastic element, and the energy stored in said elastic element during said elongation being sufficient to maintain said longitudinal extending ropes substantially taut when the base spreader ring supports the landing net with the lifting means lowered to a position where slack develops in the inelastic element.

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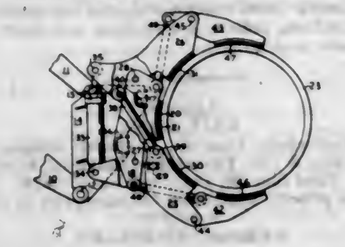
**3,165,347**
**PIPE GRAPPLER**
**Howard O. Keskitalo, Batavia, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed May 9, 1962, Ser. No. 193,441**
**6 Claims. (Cl. 294—88)**



1. A grappler mounted on a vehicle for snugly securing cylindrical articles of circular cross-section having a predetermined range of outside diameters defined by a first cylindrical article with the largest outside diameter and a second cylindrical article with the smallest outside diameter comprising: a first tine member having first seating means fixedly mounted thereon, said first tine member arranged to be held in a stationary position relative to said vehicle, a second tine member pivotally mounted on the first tine member, means for pivoting said second tine member relative to the first tine member, said second tine member having a second seating means thereon arranged in opposed relationship to said first seating means, said first seating means having a pair of first arcuate surface portions formed thereon each having a diameter adapted to conform to the outer periphery of the cylindrical article having the largest outside diameter and further having a second arcuate surface portion formed thereon having a diameter adapted to conform to the outer periphery of the cylindrical article having the smallest outside diameter, said second arcuate surface portion being formed between the pair of first arcuate surface portions on said first seating means, said second seating means with at least one arcuate surface formed thereon having a diameter adapted to conform to the outer periphery of the cylindrical article having the largest outside diameter and further having a second arcuate surface portion of a diameter adapted to conform to the outer periphery of the cylindrical article having the smallest outside diameter, so that an arc formed by a movement of a fixed radius extending from said pivot point of said tine members to a position intermediate the seating means and arranged to pass through the axis of said first cylindrical article, when the first cylindrical article is secured between said seating means, also passes through the axis of said second cylindrical article, when said second cylindrical article is secured between said seating means.

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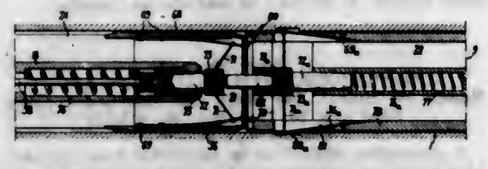
**3,165,348**
**HANDLING DEVICE FOR CYLINDRICAL OR LIKE OBJECTS**
**Howard O. Keskitalo, Batavia, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Sept. 3, 1963, Ser. No. 306,258**
**4 Claims. (Cl. 294—88)**



1. A grappling device for handling cylindrical or the like articles comprising a relatively stationary frame with an article engaging shoe thereon, levers pivoted to said frame at opposite sides of said shoe, second levers pivoted one to each of said first named levers, an article engaging shoe on each of said first and second levers, power actuated extensible means between the first levers to swing them inwardly toward an article, and linkage connecting the second levers with said frame to effect inward swinging of the second levers upon inward swinging of the first levers.

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**3,165,349**
**LOCKING STRUCTURES**
**Didier Costes, Paris, France, assignor to Commissariat à l'Energie Atomique, Paris, France**
**Filed Aug. 3, 1962, Ser. No. 214,633**
**Claims priority, application France, Aug. 16, 1961, 870,859**
**1 Claim. (Cl. 294—97)**

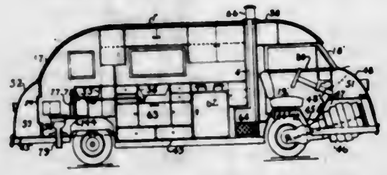


Temporary locking structure between two coaxial elements comprising a first element, a second element, resilient tongues secured adjacent an end of said first element, an inwardly open groove in said second element receiving said tongues, the elasticity of said tongues urging said tongues into engagement in said groove, a rod for and articulated to each of said tongues adjacent the free end of said tongues, a common control member receiving said rods and means for displacing said member along the longitudinal axis of said first element whereby said tongues are withdrawn from said groove, said control member including a nut, a skirt for said nut, lateral slots in said skirt receiving said rods, an operating rod secured to said nut, a tubular sleeve disposed in the longitudinal axis of said first element, said operating rod sliding in said sleeve, a reactor channel, said first and said second elements sliding in said channel, resilient latching tongues mounted on said second element, a slot for each of said latching tongues in said second element, the resiliency of said latching tongues urging them through said slots into engagement with said channel and means for moving said latching tongues out of engagement with said channel comprising a second rod articulated to each of said latching tongues, a second nut, lateral slots in said second nut receiving said second rods, spring means urging said second nut in a direction for engagement of said latching tongues with said channel and a plunger secured to said second nut and engageable by said operating rod whereby movement of said operating rod to engage said resilient tongues in said groove withdraws said latching tongues from engagement with said channel.



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**3,165,350**
**TOUR CARS OF STATION WAGON TYPE**
**Corwin D. Willson, 525 Goldengate St., Lake Orion, Mich.**
**Filed Nov. 22, 1961, Ser. No. 155,246**
**13 Claims. (Cl. 296—23)**



1. A family car comprising an automotive body on forewheels and aftwheels and housing in one and the same compartment driving controls and a driving seat facing said controls and dinette components seating two passengers face-to-face in the longitudinal center axis of the body directly above a floor having two margins that meet at a corner, and a passage extending around said corner to reach a sidedoor slightly ahead of an aftwheel, and said body extending down from said margins to the bottom of said passage to wall said passage below said floor.

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**3,165,351**
**ADJUSTABLY SUPPORTED SEAT STRUCTURE**
**Robert J. Clancy, Basking Ridge, N.J., and Charles P. Sears, St. Clair Shores, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Apr. 25, 1962, Ser. No. 190,137**
**2 Claims. (Cl. 296—65)**

1. In a vehicle body having a supporting floor structure,

a seat structure,

and positioning means interposed between said floor structure and said seat structure:

said positioning means comprising track means fixed to said floor structure and slide means movable on said track means for fore and aft positioning of said seat structure;

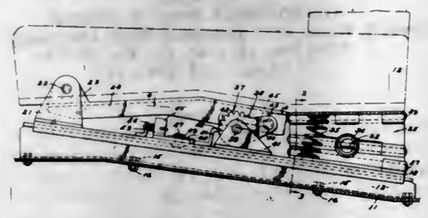
pivot means coupling said seat structure adjacent its fore edge to said slide means;

a plurality of spaced strap hinges supporting said seat structure at its aft edge on said slide means,

said strap hinges being selectively extensible or collapsible to raise or lower said aft edge of said seat structure to support the latter in selected tilted relationship to said slide means,

each of said strap hinges comprising hinge members articulated about pivot axes extending laterally of the pivot axis of said pivot means;

motion coordinating means coupled to corresponding elements of said strap hinges and extending



in parallel relationship to the pivot axis of said pivot means,

said motion coordinating means synchronizing the movement of said strap hinges in either extensible or collapsible directions;

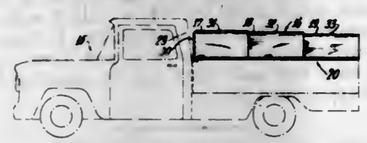
and latch means for locking said seat structure in said selected tilted relationship to said slide means,

said latch means comprising lever means having a pin and slot connection with said seat structure and a ratchet portion pivotally mounted on said slide means,

and manually releasable ratchet engaging means on said slide means for holding said lever means against pivotal movement.

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**3,165,352**
**TELESCOPIC ROOF COVER CONSTRUCTION FOR AUTOMOTIVE VEHICLES**
**Albert W. Hallock, 10 Pearl St., and George S. Mistler, 15 Woodland St., both of Bellport, N.Y.**
**Filed Jan. 3, 1963, Ser. No. 249,240**
**8 Claims. (Cl. 296—100)**

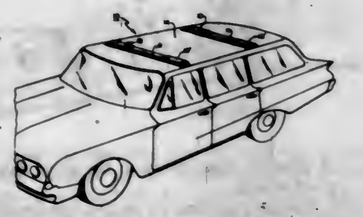


1. For an automotive vehicle, an adjustable roof construction extending longitudinally on said vehicle comprising opposed tracks parallel to each other on said vehicle, a plurality of rearwardly and forwardly moving telescopic sections mounted on said tracks, the forward one of said sections being adapted to remain in firm relative position with respect to the other sections, the same being closed at three sides leaving an open, exposed end, said end having a beaded portion extending around the same, a proximate adjacent section having a top and side portion thereof with open ends and a beaded portion on each of said ends, the forward end of said section having a beaded portion exposed and adapted to contact the end portion of the forward section and form a closure therewith and an inwardly formed bead at the other rear end, and a continuing end section of smaller relative size than the previous sections, having an external bead at the for-

ward open end and thereof adapted to contact the inwardly formed bead at the rear open end of the preceding section to form a closure therewith, closure means for said end section, said sections having terminal portions extending into the track means to permit sliding of the sections along said track, each of said tracks being mounted on the body of the vehicle in opposed parallel relation and having a plurality of laterally extending grooves therein to accommodate the terminal portion of the side walls of the sections to permit longitudinal sliding of the sections, said grooves being provided with drainage means.

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3,165,353
AUTOMOBILE ROOF CARRIER
Frank S. Weise, 4237 Springdale Road, Cincinnati, Ohio
Filed Feb. 16, 1961, Ser. No. 89,799
1 Claim. (Cl. 296—137)

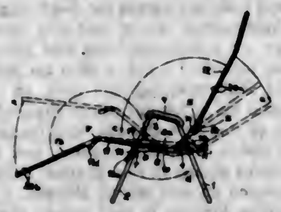


In combination with an automobile roof, a pair of parallel transversely extending longitudinally spaced recesses provided in said roof, elongated telescopic carrier support means provided in each of said recesses, each of said carrier support means comprising pairs of transversely spaced frame support brackets, said brackets being pivotly mounted within said recesses provided in said roof to permit said brackets to be lowered into a position wherein their outer surfaces conform to the outer contours of said roof, an extensible telescopic carrier frame member pivotly mounted at its free ends between each pair of said transversely spaced brackets, said extensible telescopic carrier frame members being received within said transversely extending recesses in a manner wherein the side surfaces of said frame members conform closely to the side walls of said recesses and the outer surface of said frame member conform to the outer contour of said roof and substantially fill the recess to provide a smooth, continuous roof surface once said members are in a lower position, each of said frame members adapted to be raised out of its associated recess when its brackets are raised, and lowered into its associated recess when its associated brackets are lowered, and locking means operatively associated with each of said frame members to releasably lock each frame and its associated bracket members in a raised position.

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3,165,354
COLLAPSIBLE DECK CHAIR
Friedlin Egger, deceased, late of Ottenbach, Zurich, Switzerland, by Alfred Jean Rothenbühler, legal representative, Landshutstrasse 12, Utzenstorf, Bern, Switzerland
Filed July 17, 1962, Ser. No. 211,946
1 Claim. (Cl. 297—29)

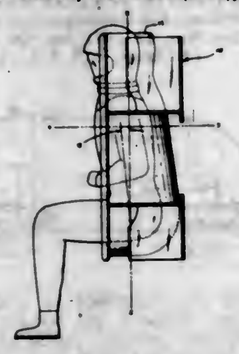
A foldable reclining chair comprising a seat member, a back-rest member and a leg-rest member; first pivot means interconnecting said back-rest member and said seat member for relative angular displacement about a first horizontal axis, said seat member having a seating surface and being provided with a rear portion inclined rearwardly and upwardly from said seating surface while including an obtuse angle therewith, said first pivot means being formed on said rear portion at a distance therealong on the order of half the length of said seating surface; second pivot means hingedly interconnecting said leg-rest member and said seat member for relative angular displacement about a second horizontal axis parallel to said first axis and remote therefrom; a support frame articulated to said seat member and provided with arm rests along opposite lateral edges of said seating surface,



said arm rests having respective supporting surfaces lying above said first axis in a substantially horizontal position of said seating surface; and locking means at said first pivot means for retaining said back-rest member and said seat member in selected relative angular position.

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3,165,355
UNIVERSAL-FIT ACCELERATION PROTECTIVE DEVICE
Lloyd Hitchcock, Jr., Hatboro, and Donald A. Morway, Oreland, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 30, 1963, Ser. No. 298,802
3 Claims. (Cl. 297—216)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A universal-fit acceleration protective contoured couch for supporting and restraining a human occupant subjected to a high acceleration environment, the occupant being from a group having a wide range of physical sizes and configurations, comprising:
- a rigid shell substantially contoured into a hollow relief of the head, back and posterior of the occupant in a prescribed posture and of sufficient depth so as to provide complete support laterally and longitudinally to the occupant, the relief being uniformly larger than the corresponding portions of the occupant;
- a uniformly thick resilient pad intimately secured to the entire relief surface of said shell for providing substantially contiguous support to the confronting body portions of the occupant, the shape of the head, back and posterior portions of said pad being contoured to the body of the occupant, said pad having a plurality of uniformly thick layers of elastic foam secured to each other at the interfaces and air-permeable therebetween, and an omnidirectional elastic slip lining intimately secured to the otherwise exposed surface of said pad, the layer closest to the confronting body portions having a relatively low elastic bulk modulus throughout a low range of loads and progressively farther removed layers having high resistance at low loads and low moduli throughout progressively higher and overlapping ranges of loads, and said layers being selected with respect to each other for maximum damping of preselected vibration frequencies; and
- a structural adapter mounted on the exposed surface of said shell for positively securing said couch in an aero-space vehicle;

whereby the occupant's physiological tolerance in aero-space flight are greatly enhanced.



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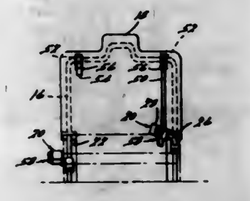
3,165,356
SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS
Douglas J. Geier, Houston, Gerard J. Pesman, Friendswood, and Richard S. Johnston and Matthew I. Radnofsky, Seabrook, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 17, 1963, Ser. No. 331,324
8 Claims. (Cl. 297—216)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A shock-absorbing support means adapted to be used as a couch, said support means comprising:
- a rigid frame encompassing an occupant-receiving space, said frame having a curvature in profile which substantially corresponds to the posterior contour of the human body and being comprised of first and second sections which are pivotally connected to one another;
- a fabric webbing including a first layer comprised of a plurality of sections of normally non-elastic material which is permanently elongatable beyond its normal length when subjected to tension forces in excess of the yield strength of the material, said webbing including a second layer of fabric having a uniform tensile strength which is less than that of the yield strength of any of said sections;
- means for securing the peripheral margins of the webbing to the frame whereby each of said webbing sections is attached to spaced points of the frame, said webbing and said first frame section being adapted to support the torso and head of a person reclining on said support means and said webbing and second frame section being adapted to support the legs of the person; and
- means for locking said frame sections in a selected angular relationship for supporting a person in a desired position, said webbing sections each possessing a yield strength in the predetermined relationship to the mass of the part of the body of a person resting thereon whereby when "G" forces in excess of the yield strength of any of said webbing sections are applied upon a person reclining on the couch the first layer of webbing will absorb a component of the forces before breaking and the second layer of webbing will stretch without resiliency to absorb the remainder components of said forces and maintain the attitude and contour of the person's body during the application and attenuation of said forces.

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3,165,357
VEHICLE SAFETY SEAT
Albert D. Ruedemann, Jr., 242 Lewiston Road, Grosse Pointe Farms 36, Mich.
Filed Aug. 14, 1961, Ser. No. 131,136
11 Claims. (Cl. 297—384)



4. A safety seat for vehicles comprising a frame member anchored to the vehicle frame and extending upwardly along each side of the seat back, a safety bar mounted on each of said frame members comprising a sleeve having a guard arm rigidly secured thereto, said sleeve being vertically slidable and rotatable on said frame member to swing said guard arm inwardly into a position overlying and adapted to be engaged by the anterior superior spine of the ilium of the occupant of the seat, and locking means associated with said sleeve and said frame member for locking said sleeve against outward movement resulting from the occupant being thrown forward against said arm during rapid deceleration of the vehicle, said locking means being releasable by the occupant.

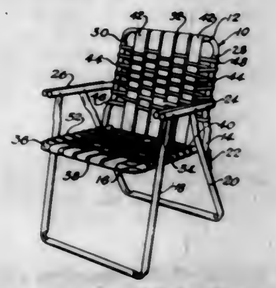
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3,165,358
INFANT-HOLDING ATTACHMENT FOR SEATS
Londa Y. Card, 860 SW. 31st Ave., Miami, Fla.
Filed Oct. 19, 1962, Ser. No. 231,684
6 Claims. (Cl. 297—389)



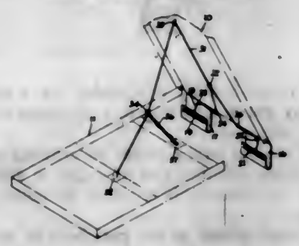
5. In an infant-holding attachment for a seat,
- a generally flat bottom member arranged for disposition on the seat,
- a pair of bottom straps affixed in crossing relation to said bottom member and arranged to extend under the seat for detachably securing the bottom member thereto,
- a fabric band affixed to the periphery of said bottom member and extending upwardly therefrom for encircling a lower portion of the infant's torso,
- a pair of elongated shoulder straps secured respectively at the ends thereof in mutually spaced relation to front and rear portions of said band and arranged to extend over the infant's shoulders, and
- a vertically extending zipper means situated in the rear portion of said band between said shoulder straps secured thereto to selectively vertically open the rear portion of said band between said shoulder straps.

3,165,359
**WOVEN SUPPORT FOR FURNITURE**
Joseph Albert Ashkouti, Atlanta, Ga., assignor to Production Engineering Company, Austell, Ga., a corporation of Georgia
Filed Sept. 26, 1961, Ser. No. 140,845
2 Claims. (Cl. 297—445)



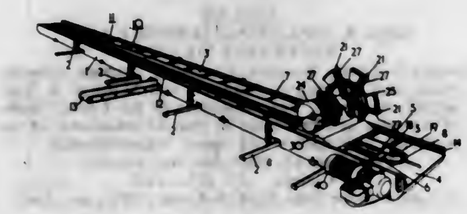
1. In a woven support for furniture, a substantially rigid furniture frame having a back frame and a bottom frame each with spaced side members and each of said side and bottom frames having end members associated with respective outer ends of said back and bottom frames, a weft of continuous tubular material spirally wound transversely on said back and bottom frames and having one end attached at the end of one of said back or bottom frames and the other end attached to the end of the other of said back or bottom frames, thereby to form a plurality of weft strips running from one side of the frame to the other on both the back and front thereof, and a plurality of individual warp strips substantially wider than said weft strip material, each of said warp strips being attached at one end to one end of said frame and being woven through said alternate weft strips and attached at the other end of said frame, thereby to form warp elements woven through said weft strips, said warp strips running over the front of said frame from back to front thereby pulling said back weft strips forward from the back toward the front when woven in place therein, the width of said warp material being at least twice that of the weft material.

3,165,360
**AUTOMATIC MUD FLAP RETRACTOR FOR DUMP TRUCK VEHICLES**
Gene R. Saxton, 31 N. Mason Ave., and Charles L. Morganti, 21 N. Mason Ave., both of Chicago, Ill.
Filed Nov. 1, 1962, Ser. No. 234,719
3 Claims. (Cl. 298—1)



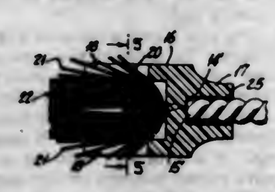
1. A dump truck assembly comprising a dump box arranged to be raised and lowered, a pair of mud flaps supported in spaced relation on said dump box, a first cable having its ends secured to said flaps, a second cable having one end secured to the frame of said dump truck forwardly of the hinge axis of said dump box and having its other end connected to said first cable, said second cable having an intermediate portion slidably supported by said dump box, and spring means extending between said second cable and said frame to tension said second cable upon raising of said dump box and thereby pull said first cable and retract said flaps.

3,165,361
**ROTARY PICK MINING MACHINE**
Gordon Bertram Dawson, Ashby-de-la-Zouch, and Laurence John Mills, Coleorton, England, assignors to Coal Industry (Patents) Limited, London, England, a company of Great Britain
Filed May 1, 1961, Ser. No. 106,552
Claims priority, application Great Britain, May 5, 1960, 1,593/60
4 Claims. (Cl. 299—43)



1. A mineral mining machine comprising a conveyor, a body mounted for movement along said conveyor, means for effecting reciprocating movement of said body from end-to-end of said conveyor, first drive means mounted on said body and connected to a horizontal drive shaft extending transverse to said conveyor, a rotary tool carrier mounted on said shaft and extending vertically downwards alongside of and imediately adjacent one side of said conveyor, said carrier having at its periphery only one row of spacially-separated cutter tools located on a circle having its centre on the drive shaft axis, each cutter tool extending radially outwardly and obliquely in a direction away from the conveyor, abutment means adjacent each end of the conveyor and projecting laterally from said side of the conveyor, each abutment means comprising an element rigid wtih said conveyor and extending below said carrier to a location adjacent the conveyor side of the path swept out by the cutter tools upon rotation of said carrier, and means for applying thrust to said conveyor to move said conveyor laterally against a mineral face whereby upon the passage of said carrier past the abutment means, the machine is automatically sumped into the face by an amount approximately equal to the distance between the said locations and the path swept out by the outer extremities of the cutter tools.

3,165,362
**METHOD OF MAKING A BRUSH**
Oswald P. Glas, New York, N.Y., assignor to American Technical Machinery Corp., Mount Vernon, N.Y., a corporation of New York
Filed Dec. 12, 1961, Ser. No. 158,708
1 Claim. (Cl. 300—21)

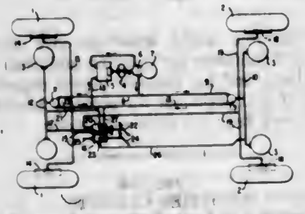


A method of making a brush comprising the steps of: providing a penetratable ferrule having a pair of base-spaced coaxial bores of unequal diameter, the larger of said bores having a pair of diametrically opposed axial slots therein;



positioning a tuft of bristles transversely of said larger bore with a U-shaped staple embracing said tuft adjacent said larger bore;
pushing said staple into said larger bore with sufficient force to implant it in said ferrule base, thereby fanning a plurality of said bristles in said slots with the remaining bristles axially disposed;
forming a second section of said brush by placing a series of bristles between two spaced parallel wires while leaving a predetermined relatively small length of wires at the front ends devoid of bristles,
twisting said wires to lock said bristles in place, and
securely mounting said front end in the smaller ferrule bore.

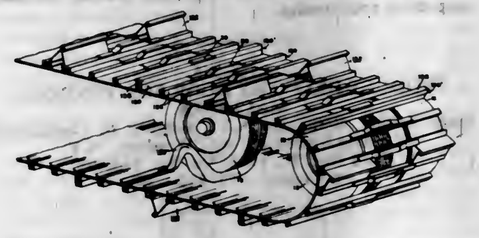
3,165,363
**INTERRELATED FLUID SUSPENSION AND BRAKE SYSTEM FOR VEHICLES**
Franz G. F. Behles, Stuttgart-Schonberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 28, 1960, Ser. No. 72,103
Claims priority, application Germany Dec. 2, 1959
18 Claims. (Cl. 303—6)



1. A motor vehicle, especially passenger motor vehicle having a vehicle superstructure spring-supported with respect to the front and rear axle means coordinated to each vehicle wheel by respective oil-air spring means, comprising a plurality of oil-air spring means for the vehicle axle means, supply means for supplying pressure oil, first connecting means providing for the supply and discharge of pressure oil from said supply means to and from said spring means including height adjusting valve means coordinated to at least each axle means for selectively controlling the pressure oil in dependence on the distance of the vehicle superstructure from a respective axle means, oil-pressure actuated means including brake installations at the vehicle wheels, separate control valve means for the brake installations of the front axle means and rear axle means, common actuating means for both said control valve means, second connecting means including the control valve means for the brake installations of the front axle means for effectively connecting said last-mentioned brake installations with the pressure oil acting on the spring means of the front axle means, and third connecting means including the control valve means for the brake installations of the rear axle means for effectively connecting said last-mentioned brake installations with the pressure oil acting on the spring means of the rear axle means.

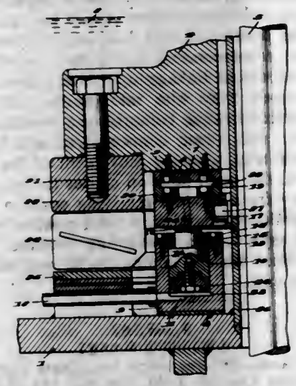
3,165,364
**SMOOTH-RIDING SELF-CLEANING ENDLESS TRACK**
James A. Hardman, Logan, and Ross W. Eskelson, Centerville, Utah, assignors to Utah Scientific Research Foundation, a non-profit corporation of Utah
Filed Oct. 25, 1961, Ser. No. 160,381
3 Claims. (Cl. 305—13)

1. A crawler track including, in combination: endless belt means; a plurality of first track cleat elements transversely disposed in mutually spaced relationship across said endless belt means and rigidly secured thereto, said first track cleat elements including respective separate wheel guide means opening inwardly with respect to said endless belt means, respective wear plates rigid with the wheel guide means and outwardly oriented with respect to said endless belt means, and lateral track clamping members secured to said endless belt means; a plurality of second track cleat elements transversely disposed in mutually spaced relationship across said endless belt means and rigidly secured thereto, said second track cleat elements also including wheel guide means opening inwardly with respect to said endless belt means, respective wear plates fixed to the wheel guide means and outwardly oriented with respect to said endless belt means and in line



with the wear plates of said first track cleat elements, clamping members secured to said endless belt means, and laterally extending fixed traction bars secured to said clamping members, said second track cleat elements being interposed between first track cleat elements so that the distance between adjacent second track cleat elements is greater than the distance between adjacent wheel guide means, said laterally extending fixed traction bars extending from the clamping members outwardly to a point between the said track clamping members of said first track cleat elements and the surface of the wear pads such that the outer surface of the wear plates of said first and second track cleat elements are located substantially the same distance from said belt means.

3,165,365
**BEARING ARRANGEMENT FOR VERTICAL SHAFTS**
Eugen Wiedemann, Baden, and Robert Heinrich Cuny, Wettingen, Aargau, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Dec. 3, 1962, Ser. No. 241,697
Claims priority, application Switzerland Dec. 5, 1961
9 Claims. (Cl. 308—170)

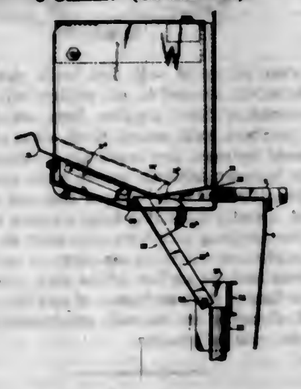


1. In a bearing structure for supporting a vertically disposed rotatable shaft, the combination comprising a normal service hydrostatic bearing means having a lower

annular non-rotatable bearing member surrounding a shaft and which coacts through a pressurized lubricant film with an upper annular rotary bearing member surrounding and secured to said shaft, and an emergency service hydrodynamic bearing having a lower circular array of circumferentially spaced stationary bearing segments surrounding said shaft and an upper annular rotary bearing member surrounding and secured to said shaft, said hydrostatic bearing means alone serving to carry the shaft load during normal service, and said hydrodynamic bearing taking over the load only upon a failure of said hydrostatic bearing means and a resulting lowering of said shaft so as to bring said upper and lower bearing elements of said hydrodynamic bearing into load supporting relationship.

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3,165,366
**PRODUCT DELIVERY DOOR FOR VENDING MACHINES**
Mark Levine, Bethpage, N.Y., assignor to Continental Vending Machine Corp., Westbury, N.Y.
Filed Dec. 18, 1962, Ser. No. 245,495
8 Claims. (Cl. 312—35)

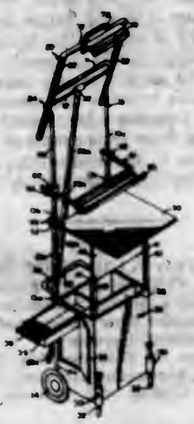


1. Product delivery means for vending machines having at least one product storage compartment, and product dispensing means associated therewith, said product delivery means comprising a product delivery door and a product delivery tray, said door being movable between closed and open positions, said tray being movable between a product receiving position in which the tray is adapted to communicate with the product storage compartment and product dispensing means to receive a dispensed product, said product receiving position of said tray corresponding to the closed position of said door and said product delivery position corresponding to the open position of said door, a mechanical linkage operatively connecting said product delivery tray with said product delivery door, said mechanical linkage comprising a bracket connected to said door and a cam connected to said bracket and engaging said tray, whereby movement of the door from the closed to the open position causes the cam means to cam the tray from product receiving position to product delivering position, this being a tilted position wherein the tray serves as a barrier preventing unauthorized access to said product storage compartment and said product dispensing means.

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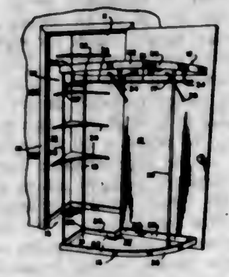
3,165,367
**ARTIST'S EASEL**
Herman Ross, 49 Greenwich Ave., New York, N.Y.
Filed Apr. 30, 1962, Ser. No. 191,098
4 Claims. (Cl. 312—231)

4. A portable artist's easel comprising, a container for storing painting supplies, height-variable canvas bearing means supported above said container and comprising a pair of horizontally-disposed channel members adjustably spaceable and secured to an inverted U-shaped frame member vertically extending above the top of said container to a variable height, wheel-and-axle means on the bottom of said container for carrying said easel in a transportation mode, and leg member means depending from the bottom of said container for securely positioning said easel on an even keel in a stationary mode.



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3,165,368
**CLOTHES CLOSETS**
Ray C. Hughes, 135 Lock Trail, and James T. Hughes, 915 Person St., both of Fayetteville, N.C.
Filed Dec. 12, 1963, Ser. No. 330,094
4 Claims. (Cl. 312—242)



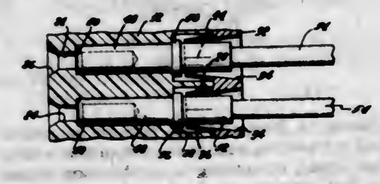
1. In combination with a clothes closet door, a tray having a sturdy periphery flange a portion of which is straight and of a length substantially equal to the width of said door, said straight portion of the flange of said tray being fixed to the inner side of said door on the order of 16 inches from the top thereof, said tray being of a length substantially equal to the width of said door plus the distance from the hinge jamb of the door to the adjacent side wall of the closet, one end of the tray being formed with a rectangular cut-out of a width and length substantially corresponding to the thickness of the front wall of said closet and the distance of the hinge from said side wall, the diagonal corner thereof being rounded sufficient to permit said tray to swing with said door out into the room, spaced brace members each having one end connected to the center portion of the underside of said tray and the opposite end fixed to said door, a straight clothes hanger rod disposed beneath said tray in spaced relation thereto and parallel with said door, spaced fasteners passing through said hanger rod and said tray,



and a tubular spacer member surrounding each fastener between said rod and said tray.

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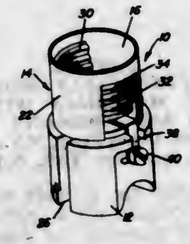
3,165,369
**RETENTION SYSTEM FOR ELECTRICAL CONTACTS**
James W. Maston, Altadena, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Aug. 13, 1962, Ser. No. 216,445
13 Claims. (Cl. 339—59)



1. An electrical connector unit comprising a body of insulation material having a plurality of passages therethrough from a front face to a rear face and adapted to receive respective electrical contact members therein which are insertable from the rear and which each have an enlarged section defining a rearwardly facing shoulder and a plurality of truncated, tubular contact retention cones integral with said body and coaxial with the respective said passages, each of said cones tapering forwardly and radially inwardly from the wall of the respective passage to a forward free end, each cone being resiliently radially expandable to permit said enlarged section of a respective contact member to pass therethrough upon forward insertion of the contact member into the respective said passage, the cone contracting behind the shoulder on the contact member to limit rearward movement of the contact member in the passage, and each cone being substantially rigid in an axial direction when in its contracted position so as to provide a positive stop against rearward movement of the respective contact member.

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3,165,370
**LAMP SOCKET**
Samuel Cleveland Laub, Sr., 3008 23rd Ave. S., Nashville, Tenn.
Filed Jan. 7, 1963, Ser. No. 249,669
3 Claims. (Cl. 339—73)




1. An electrical socket for reception of a threaded cylindrical base member, said socket comprising a base of insulating material, an upstanding cylindrical member mounted upon said base and having an open upper end, said cylindrical member having a smooth cylindrical inner surface and being adapted to telescopically and snugly seatingly receive said threaded base member therein upon axial displacement of said threaded base member into the open end of said cylindrical member, a pair of electrical contact elements cooperating with said cylindrical member and said base for supplying electrical energy thereto, said cylindrical member having a plurality of circumferentially spaced openings formed therein spaced below the upper end thereof and including a plurality of integral partial cylindrical resilient elements dependingly supported from the portions of said cylindrical member defining the upper extremities of said openings and spaced slightly from the opposite side and bottom edges of said openings, said resilient elements being slightly inwardly convergent at their lower ends, forming continuations of the adjacent portions of said cylindrical member, and each including means on at least the lower end portions thereof defining inwardly projecting vertically spaced thread segments, the thread segments on said resilient elements coacting to define a plurality of convolutions of threads at the lower end of said socket, said thread segments, including the lowermost thread segments, being adapted to provide sufficient resistance, upon engagement with the threads on said cylindrical base member to prevent axial insertion of said base member into a fully seated position in said socket and axial withdrawal of said base member from said fully seated position independently of rotation of said base member relative to said socket and to be inadequate, independently of said lowermost thread segments, to provide said sufficient resistance.

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3,165,371
**SOCKET ADAPTER**
Joseph Rubino Rnocco, 39 3rd Ave. E., Newark, N.J.
Filed Aug. 21, 1962, Ser. No. 218,417
9 Claims. (Cl. 339—154)



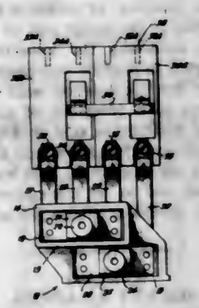
1. A socket adapter comprising a unitary, bowl-shaped body portion, differing in diameter at opposite ends, having a plurality of peripherally-spaced prong members extending axially of the body portion and from each end thereof; the prong members at one end lying on a circle of diameter different from that on which those at the other end lie, generally corresponding with the differing diameters of the body ends, a center contact member disposed axially within the said body portion, and insulating means supporting the said contact member in fixed position within the body portion.

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3,165,372
**CABLE CONNECTOR ASSEMBLY**
Lewis W. Jacobs, West Hartford, and Robert J. Sabatella, Southington, Conn., assignors to General Electric Company, a corporation of New York
Filed Mar. 29, 1962, Ser. No. 183,555
1 Claim. (Cl. 339—198)

An electric cable connector assembly comprising:
(*a*) an insulating body having three parallel side wall portions comprising first and second side walls and an intermediate side wall spaced apart to define two main cable connector chambers;
(*b*) end walls closing said connector chambers respectively at each end;

(c) said chambers having bottom walls extending substantially at right angles to said side and end walls, said bottom walls being offset with respect to each other in a direction parallel to said side walls;
(d) a connector bar in each of said chambers on said bottom wall thereof;
(e) a main cable connector mounted on said connector bar in each of said chambers;
(f) said first side wall being at least partially cut away to provide a pair of openings;
(g) a pair of branch connector straps extending through said openings in said first side wall into a first one of said chambers, said connector straps having one

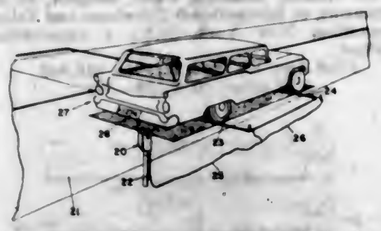


end thereof rigidly attached to said connector bar in said first chamber;
(h) said intermediate side wall having portions thereof cut away to provide a pair of openings;
(i) a pair of branch connector straps extending through said openings in said intermediate side wall and having one end thereof rigidly attached to said connector bar in said second chamber;
(j) an opening in each of said chamber end walls to receive a cable for connection by a corresponding one of said cable connectors, and
(k) all of said branch connector straps extending outwardly from said insulating body substantially at right angles to the planes of said side walls and in the same direction.

### 3,165,373
### TRAFFIC SPEED VIOLATION RECORDER

Loyce B. Scott, % Mid-Continent Insurance Company, 1307 B San Mateo NE., Albuquerque, N. Mex., assignor of one-half to Fred D. Huning, Jr., Albuquerque, N. Mex.

Filed Sept. 7, 1962, Ser. No. 221,974
15 Claims. (Cl. 346—107)



1. Means to determine and give an indication of the speed of a travelling vehicle in comparison with a predetermined speed, comprising in combination means to deliver a first defined signal when the vehicle passes the beginning of a speed test zone of pre-determined length, means to deliver a second defined signal when the vehicle passes the end of said speed test zone, a rotary mass, means to journal said mass for rotation about its axis, spring means connected to the mass and constituted to urge rotation of the mass in a time count direction during unwinding of the spring, means to lock the mass against rotation at a starting position and against the urge of the spring, means to unlock the locking means, operative connections between the first defined signal delivering means and the unlocking means, constituted to unlock the mass when the first defined signal is delivered, for release of the mass for rotation under unwinding urge of the spring, a stationary starting position indicator in proximity to the mass, indicia on the mass movable with the mass in reference comparison with said stationary statring point indicator, means to produce an indication of the moved position of the indicia in comparison with the starting position indicator, and operative connections between the second defined signal producing means and the means which produces an indication of the moved position of the indicia on the mass, constituted to activate the indication producing means when the second defined signal is delivered.

## CHEMICAL

### 3,165,374
### PROCESS OF PARTIALLY METHYLENATING CELLULOSE TEXTILES

Henry R. Hushebeck, Wilmington, Del., assignor to Joseph Bancroft & Sons Company, Rockford, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Sept. 16, 1959, Ser. No. 838,823. Divided and this application Feb. 17, 1961, Ser. No. 94,111
3 Claims. (Cl. 8—116.4)

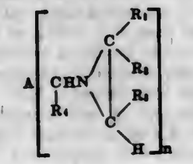
1. In a process of partially methylenating cellulose textiles involving impregnating the textile with a methylenating agent and thereafter curing the impregnated textile in an acid environment by heating the fabric to temperatures above 250° F. to bring about the reaction of the cellulose and the methylenating agent, the improvement which comprises effecting the cure in the presence of a catalyst that will, upon said heating, form a residue in the textile that will provide the textile with a pH at least two points higher than the pH of a pure aqueous solution of the catalyst.

### 3,165,375
### PROCESS OF CHEMICALLY MODIFYING PROTEINACEOUS MATERIALS WITH AZIRIDINE COMPOUNDS AND PRODUCTS THEREOF

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1961, Ser. No. 105,285
20 Claims. (Cl. 8—127.6)

1. A process of improving the dimensional stability of proteinaceous materials comprising reacting said materials with polyfunctional aminoaziridine compounds corresponding to the structure:





in which $R_1$, $R_2$, and $R_3$ are selected from the group consisting of hydrogen and lower alkyl, $R_4$ is selected from the group consisting of hydrogen, lower alkyl and OH, and A is selected from the group consisting of alkylene, hydroxy-substituted alkylene, aralkylene, oxyalkylene, sulfone-containing alkylene, and the residue of a carboxylic acid ester, the valence of which is equal to $n$ and $n$ has a value of 2 to 3.

### 3,165,376
### PROCESS FOR SEPARATION AND RECOVERY OF VOLATILE FLUORIDE IMPURITIES FROM URANIUM HEXAFLUORIDE CONTAINING THE SAME

Waldo R. Gollihar, Paducah, Ky., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 2, 1962, Ser. No. 184,611
10 Claims. (Cl. 23—14.5)

8. The process of separating volatile fluoride values of at least one metal in the group consisting of technetium, neptunium, molybdenum and vanadium from gaseous $UF_6$ containing the same which comprises intimately contacting said $UF_6$ in gaseous form with magnesium fluoride whereby said volatile fluoride values are selectively sorbed.

### 3,165,377
### SEPARATION OF STAINLESS STEEL FROM A NUCLEAR FUEL

Herbert M. Katz, Port Jefferson, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Apr. 11, 1962, Ser. No. 187,180
3 Claims. (Cl. 23—14.5)

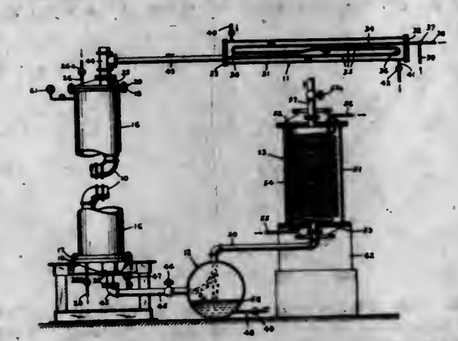
2. A method of separating stainless steel cladding from a stainless steel clad uranium bearing nuclear fuel element, wherein the method is carried out in a stainless steel clad reaction vessel without harming the vessel, comprising the steps of: contacting the steel clad element with a metal selected from the group consisting of mild steel and a nickel-phosphorus braze composition; placing said steel clad element into a stainless steel downdraft condenser vessel containing nitric acid, heating said nitric acid to approximately 100° C., adding sulfuric acid and sulfamic acid to said solution in an amount to result in a final solution, which covers said mixture with a solution having sulfuric acid in a molearity of from 5.0 M to 7.0 M, nitric acid in a molarity of from 0.03 M to 0.07 M and sulfamic acid in a molarity of from 0.02 M to 0.10 M, heating said final solution to a temperature in the range of approximately 116° C., introducing oxygen in the cold leg of said downdraft condenser to form nitrogen dioxide which combines with the condensate contained therein to form nitric acid; and returning said nitric acid to the downdraft condenser vessel in order to maintain the molarity of said nitric acid at 0.03 M to 0.07 M.

### 3,165,378
### CONVERSION OF SODIUM SULFIDE TO SODIUM SULFITE

John Eckert Greenawalt, Bronxville, N.Y.; Joy S. Greenawalt, executrix of said John E. Greenawalt, deceased

Filed June 26, 1961, Ser. No. 119,445
7 Claims. (Cl. 23—129)

1. A process for converting sodium sulfide to sodium sulfite which comprises passing an aqueous solution containing sodium sulfide through a reaction zone in an atmosphere of saturated steam and air under substantially constant pressure within the range of 60 to 125 pounds per square inch and at a given temperature within the range of 310° F. to 350° F. at which said sodium sulfide is oxidized in an exothermic reaction, to sodium sulfite, controlling said pressure in said zone at said constant pressure whereby any excess heat produced by the exothermic oxidation of the sodium sulfide to sodium sulfite which would cause the temperature in said zone to rise above said given temperature is taken up as latent heat



of vaporization in the conversion of water into steam, thereby to maintain the temperature in said zone substantially constant.

### 3,165,379
### PREPARATION OF SILICEOUS AEROGELS

Albert B. Schwartz, Philadelphia, Pa., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Mar. 14, 1962, Ser. No. 179,742
15 Claims. (Cl. 23—182)

1. A method for preparing a siliceous aerogel which comprises reacting an alkali metal silicate, in the absence of added acid, with a gelling agent of a water-soluble ammonium salt, the ratio of said alkali metal silicate to said ammonium salt being such as to form a siliceous hydrosol characterized by a pH in the approximate range of 9.5 to 11.2 and a silica concentration of between about 80 and about 160 grams $SiO_2$ per liter of hydrosol, permitting the resulting hydrosol to set to a hydrogel, washing the hydrogel free of water-soluble matter and drying the resulting product, to thereby form a siliceous aerogel characterized by a particle density not exceeding about 0.3 gram per cubic centimeter.

8. A process for forming spheroidal particles of a siliceous aerogel which comprises reacting an alkali metal silicate, in the absence of added acid, with a gelling agent of a water-soluble ammonium salt, the ratio of said alkali metal silicate to said ammonium salt being such as to form a siliceous hydrosol which has a pH in the approximate range of 9.5 to 11.2 and a silica concentration of between about 80 and about 160 grams $SiO_2$ per liter of hydrosol, introducing said hydrosol as a finely divided stream into a water-immiscible medium wherein the hydrosol sets to globules of hydrogel, washing the resulting hydrogel globules free of water-soluble material and drying the resulting product so obtained under conditions of substantially atmospheric pressure, to thereby form a siliceous aerogel characterized by a particle density not exceeding about 0.3 gram per cubic centimeter.

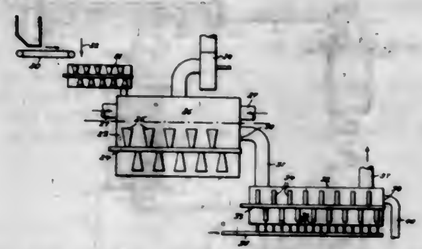
### 3,165,380
### PLASTIC HYDRATE OF LIME

Irving Warner, Wilmington, Del.; Wilmington Trust Company and Irving Warner, Jr., executors of said Irving Warner, deceased

Filed Apr. 20, 1962, Ser. No. 189,203
4 Claims. (Cl. 23—188)

1. A process of hydrating lime to produce a raw hydrate containing less than about 10% free water and suited to be plasticized by milling, which comprises premixing lime particles with liquid water, the water being in sufficient quantity to hydrate the lime plus excess water in sufficient quantity to absorb heat of reaction by evapora-

tion, and blowing ambient air having a susceptibility to humidification through the lime and water mixture in intimate contact with the mixture while the lime is hydrating and producing the raw hydrate with humidification of the air and thus taking off vapor of the water and



heat from the hydrating lime, the quantity of ambient air susceptible to humidification being regulated to keep the temperature of the mixture at least 10° F. below the boiling temperature of the water and thus prevent the formation and evolution of steam by heat of hydration of the lime.

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3,165,381
PROCESS OF PRODUCING BORANES
Herbert Jenkner, Hannover-Wasliel, Germany, assignor to Kali-Chemie Aktiengesellschaft, Hannover, Germany, a corporation of Germany
No Drawing. Filed Mar. 19, 1962, Ser. No. 180,814
Claims priority, application Germany, Mar. 28, 1961, K 43,234
4 Claims. (Cl. 23—204)

1. In a process of producing boranes, the steps which comprise reacting an inorganic silane selected from the group consisting of monosilane and halogeno monosilanes with a boron halogenide of the formula

$$BX_nR_xR'_y$$

wherein
X indicates a halogen;
R indicates a member selected from the group consisting of alkyl and aryl;
R' indicates a member selected from the group consisting of hydrogen, alkyl, and aryl;
$n$ indicates an integer from 1 to 3;
$x$ indicates the integers 0 to 2;
$y$ indicates the integers 0 to 2; and
$n+x+y$ together being the integer 3;
at a temperature between about 20° C. and about 150° C. in the presence of dehydrated activated charcoal as catalyst.

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3,165,382
DECOMPOSITION OF HYDRAZINE
Mark R. Forte, Belleville, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
No Drawing. Filed July 6, 1961, Ser. No. 122,097
2 Claims. (Cl. 23—212)

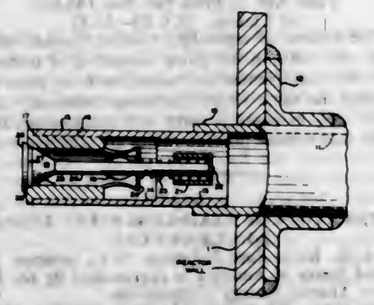
1. In a process wherein hydrazine is initially thermally decomposed to produce a mixture of ammonia and nitrogen having a temperature of about 2500° F., the step which consists in promoting the decomposition of the mixture to nitrogen and hydrogen by passing the mixture through a decomposition chamber and contacting a perforated structure in the chamber composed of an alloy consisting essentially of between about 60% and about 85% nickel, between about zero and about 25% iron and between about 11% and about 22% chromium, the alloy being characterized in that it instantly promotes the decomposition of the mixture to reduce the temperature thereof within the chamber, maintains the temperature within the chamber at about 1800° F., resists nitriding, disintegration and erosion, and has a useful life of about fifty hours.

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ERRATUM
For Class 23—259.5 see:
Patent No. 3,165,522

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3,165,383
VALVED MONOMER INDUCTION TUBE AND REACTOR
August E. Murray and Delphin H. Clark, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 28, 1961, Ser. No. 106,366
4 Claims. (Cl. 23—285)



1. In apparatus suitable for conducting a chemical reaction process comprising a reactor vessel and a fluid conduit in open communication with said vessel, the improvement comprising in combination: valve means disposed in said fluid conduit precluding flow from said vessel into said fluid conduit comprising a solid wall valve body having a fixed position relative to the interior wall of said conduit, said valve body having one closed end opposite the entrance to the interior of the reactor with said body having a fluid passageway therethrough in communication with said conduit and the interior of said reactor; a reciprocal valve head disposed in said passageway adapted to close said passageway in one position; a valve stem attached to said valve head axially disposed in said valve body adapted to move longitudinally therein; a valve seat in said valve body adapted to receive the valve head in the closed position of the valve stem; and urging means cooperating with said valve stem and reacting against the closed end of said valve body to move said valve head into the closed position in response to a positive reactor pressure against said valve head.

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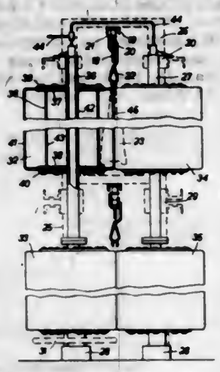
3,165,384
PROCESS OF CONCENTRATION OF SOLUTES
Allen F. Reid, The University of Texas, 5323 Harry Hines Blvd., Dallas 35, Tex.
Filed May 7, 1959, Ser. No. 811,732
2 Claims. (Cl. 23—310)

1. A process for increasing the concentration of a solute content in one portion of a solution while decreasing the concentration in another portion of the solution comprising circulating different phases of a solution of a salt in opposite directions in liquid interface contact, one phase moving in one direction being supplied from a salt solution feed reservoir and the other second phase being supplied from an intermediate mixing and dissolving cell forming an organic and salt solution from addition of an organic compound to salt solution discharge from said first phase, said organic and salt solution passing as said opposite flow in liquid interface contact with the first phase of the salt solution so that salt solute is transferred to the first phase from said opposite flow and there is a supply of relatively concentrated salt solution to said mixing and dissolving cell and a relatively depleted salt solution is maintained in an outflow from said second phase.



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3,165,385
APPARATUS FOR DRYING FISH
Einar Sola, Bergen, Norway, assignor to Fiskeridirektoratets Kjemisk-Tekniske Forskningsinstitutt, Bergen, Norway
Filed Oct. 4, 1960, Ser. No. 60,377
5 Claims. (Cl. 34—70)

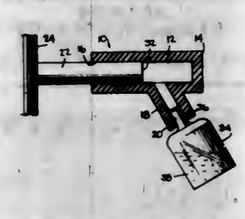


1. Apparatus for subjecting fish flakes to a pressing operation at intermediate stages during drying comprising in combination a housing, two inflatable cylindrical bags therein rotatably mounted in a fluid tight condition, means for inflating said bags from a source of pressure fluid, said bags having parallel axes of rotation spaced apart by a distance less than one-half of the sum of the diameters of the bags on inflation, an endless belt, upper and lower guide members, a plurality of intermediate guide members arranged between said upper and lower guide members and interconnected by said endless belt, upper and lower guide rollers each engaging a corresponding one of said upper and lower guide members, each intermediate guide member carrying an upper and a lower guide roller disposed with their axes at right angles to each other, means for rotating one bag and for driving said conveyor belt, the second bag being rotatable by pressure contact with the first bag, a plurality of clip means for suspending said cod flakes connected to corresponding intermediate guide members, said endless belt having a path of travel relative to the location of said bags causing the cod flakes to be conveyed to the nip therebetween and the clip means to pass adjacent, but outside, the nip.

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3,165,386
VACUUM VALVE
Martin Kapeker, Brooklyn, N.Y., assignor to Thermovac Industries Corp., Brooklyn, N.Y., a corporation of New York
Filed Feb. 12, 1963, Ser. No. 258,036
9 Claims. (Cl. 34—92)

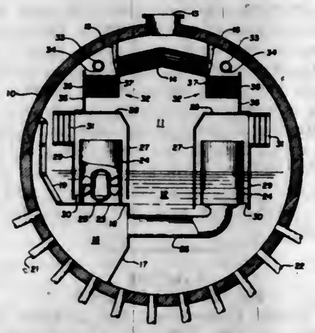
1. In association with a freeze dryer and a flask of the types described, a vacuum valve formed of a resilient material comprising
a first tube provided open at one end and closed at its other end, adapted to be slidably mounted upon and in air-tight engagement with a port of the freeze dryer, and
a second tube integral with the first tube at a point intermediate the ends of the first tube and extending therefrom at an angle thereto,
the second tube opening into the first tube at their point of union and provided open at its free end to receive the neck of the flask in air-tight engagement therewith,



The valve material being sufficiently rigid to withstand collapse under vacuum suction and sufficiently flexible to permit the engagements hereinabove described.

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3,165,387
METHOD AND APPARATUS FOR REMOVAL OF SILICA VAPOR FROM STEAM
Palmer B. Place, Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 27, 1961, Ser. No. 162,389
4 Claims. (Cl. 55—90)

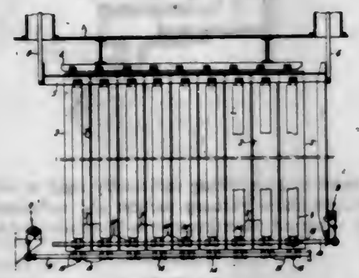


1. In combination with a vapor and liquid drum having an inlet for introducing a vapor and liquid mixture thereto and a vapor outlet opening positioned in the upper portion of said drum including a screen drier positioned closely adjacent to and extending across said vapor outlet opening, vapor purifying apparatus comprising separator means including a mixture inlet communicating with the drum inlet and a vapor outlet adapted to remove liquid particles from said mixture, a vapor washer interposed between said separator means and said screen drier, means forming an expansion space providing a low velocity vapor space between said washer and said screen drier, said vapor washer comprising an inlet in communication with said separator means vapor outlet, a vapor washer outlet positioned below said vapor washer inlet, means for effecting the intimate contact of vapor and wash water positioned between said washer inlet and outlet, means positioned above said inlet for gravitationally supplying wash water to said contact-effecting means in a direction cocurrent with downwardly flowing vapor through said washer and in contact therewith, said screen drier being positioned above said washer outlet whereby said washer outlet communicates with said low velocity vapor space in a direction away from said screen drier thereby causing the vapor discharge from said washer outlet to undergo an abrupt change of direction in said low velocity vapor space ahead of said screen drier.

### 3,165,388
### ELECTROSTATIC PRECIPITATORS

Thorsten Jäderbrandt, Jonkoping, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Oct. 20, 1961, Ser. No. 146,549
Claims priority, application Sweden, Oct. 20, 1960, 10,038/60
1 Claim. (Cl. 55—112)

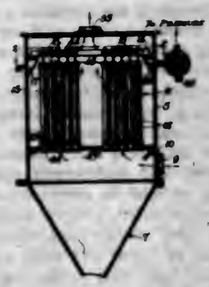


In an electrostatic precipitator having a casing, electrodes in at least one row in said casing, means suspending said row of electrodes for swing movement, and at least one rapping bar underlying said row for displacing said electrodes, said bar comprising two flat iron rods and spacers interconnecting said rods; means for supporting said bar independently of said casing comprising legs depending from selected electrodes and including portions projecting between said flat iron rods, said projecting portions having holes of a first diameter therein, and bolts passing through said holes, said bolts having a second diameter less than said first diameter so as to pass freely through said holes and underlie and support said bar and having a length substantially coextensive with the overall width of said rapping bar, each bolt having intermediate its ends a transverse groove with a width slightly exceeding the thickness of the marginal portion of the hole in its associated leg and adapted to receive said marginal portion to thereby lock said bolt against displacement axially thereof.

### 3,165,389
### FILTERING DEVICE

Walter O. Vedder, Hagerstown, Md., assignor, by mesne assignments, to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware

Filed Apr. 19, 1962, Ser. No. 188,659
5 Claims. (Cl. 55—304)

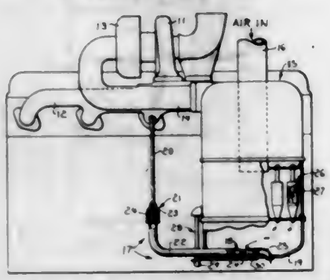


1. A dust collecting apparatus for filtering and collecting particulate matter from gas comprising a chamber, a floor in said chamber, spaced openings in said floor, a filter tube support frame positioned in the upper portion of said chamber, dust filter tubes supported by said frame means extending from the chamber wall at opposite ends of the chamber for supporting said frame, air cushions connecting the frame with said frame support wall extensions, individual means connected with each air cushion for inflating and deflating said cushion for flexing said dust filter tubes, means on said frame directly securing the upper ends of dust filter tubes thereto, means connecting the bottom ends of said dust filter tubes to the openings in the floor of said chamber, means for introducing dust laden gas to a point beneath said floor adjacent said floor openings, and means connected with said chamber for drawing the dust laden gas through the dust filter tubes and for withdrawing the dust-free gas from the chamber after it has passed through the dust filter tubes.

### 3,165,390
### DUST EJECTOR FOR AIR CLEANERS

Dwight W. Parken, Washington, and Richard D. Philippsen, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Mar. 26, 1962, Ser. No. 182,192
2 Claims. (Cl. 55—431)

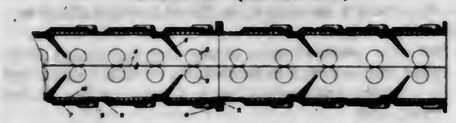



1. In combination with an air cleaner having a contaminant separation chamber and a dust cup vertically arranged beneath said contaminant separation chamber and detachably mounted thereto by latching means, said dust cup including vertical side walls and a horizontal bottom wall; a dust ejector comprising a first conduit extending from outside said dust cup horizontally through said side wall and adjacent said bottom wall, the portion of said conduit outside said side wall terminating in a coupling adapted for detachable connection to a gas line, said conduit terminating inside said dust cup in a restricted nozzle portion; a second conduit extending from inside dust cup to outside thereof, the portion of said second conduit inside said cup being in axial alignment with said first conduit, said second conduit terminating inside said cup in closely spaced relation to said nozzle portion, whereby when gas under pressure is directed into said first conduit a low pressure region is created between said nozzle portion and the inside terminal of said second conduit means with any dust in said dust cup flowing into said low pressure region and through said second conduit to outside said dust cup and whereby the dust cup and the ejector may be removed from the air cleaner by the detachable coupling and latch means.

### 3,165,391
### APPARATUS FOR AND METHOD OF FORMING SHEET GLASS BY VERTICAL DRAW MACHINE

Arthur W. Schmid, 1743 Hastings Mill Road, Pittsburgh, Pa.

Filed June 8, 1961, Ser. No. 126,395
5 Claims. (Cl. 65—168)



1. In a vertical draw machine for forming and annealing sheet glass, a plurality of housing sections in superposed relation with their ends abutting to constitute a continuous annealing chamber through which the glass is drawn, and a plurality of rolls in vertically spaced relation for guiding and drawing the glass, the inner walls of said housing sections having baffles and said walls having clean-out doors adjacent said baffles and having heating elements in the walls adjacent the ends of said rolls, said rolls having heat insulation at the ends thereof and being provided with means for accelerating heat loss at the centers thereof.

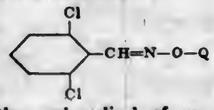


### 3,165,392
### METHOD OF DESTROYING UNDESIRED PLANT LIFE

Harmannus Koopman, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1960, Ser. No. 24,893
Claims priority, application Netherlands, Apr. 28, 1959, 238,686; Dec. 30, 1959, 246,932
7 Claims. (Cl. 71—2.3)

1. A method of destroying undesired plant life comprising applying to the undesired plants a herbicidal composition containing a herbicidally effective amount of a compound of the structural formula:




wherein Q is the acyl radical of an aliphatic monocarboxylic acid containing from 2 to 6 carbon atoms.

### 3,165,393
### METHOD OF INHIBITING PLANT GROWTH

Geert C. Vegter, Amsterdam, Netherlands, and Johannes T. Hackmann, Caversham, Dence Park, Herne Bay, Pieter Ten Haken, Herne Bay, and Geoffrey E. Barnsley, Harbledown, near Canterbury, England, assignors to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Nov. 24, 1958, Ser. No. 775,716
Claims priority, application Great Britain, Dec. 30, 1957, 40,286/57
3 Claims. (Cl. 71—2.7)

1. The method of inhibiting the growth of grass-type plants which comprises treating said plants with bis(beta,-beta,beta-trichloro-alpha-hydroxyethyl) sulfide and a carrier which is substantially inert with respect to said sulfide, the amount of said sulfide being sufficient to inhibit the growth of grass-type plants.

### 3,165,394
### PROCESS FOR MAKING AN ODOURLESS CATTLE MANURE COMPOST

Anders Ruben Ranning, Simontorps Säteri, Blentarp, Sweden

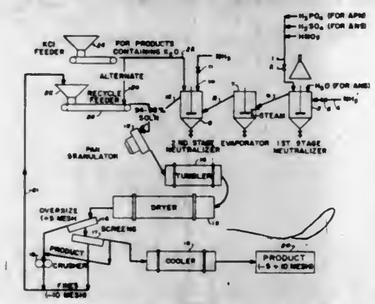
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,839
2 Claims. (Cl. 71—8)

1. The method of making an odourless compost which comprises the steps of collecting a natural mixture of cattle manure and urine, mixing the manure and urine to obtain a substantially liquid product, storing said liquid product several months to effect the destruction of any weed seed contained therein, thoroughly mixing said weed-free liquid product with dry peat moss, storing said mixture in the presence of air three to four months to effect a breakdown of the peat moss as a result of the action of bacteria in the presence of nitrogen, working said mixture during the storage period in order to aerate the same and establish an initial compost, mixing with said initial compost at high speed a mixture comprising dry peat moss, fertilizer phosphate and nitrogen in such proportions as to obtain a final light and fluffy compost product the dry substances of which constitute from about 30 to 35 percent by weight of said final product, and storing said final compost product one to three months to effect a breakdown of the last added peat moss.

### 3,165,395
### METHOD FOR THE PRODUCTION OF GRANULAR HIGH-NITROGEN AND MIXED FERTILIZERS

Isaac W. McCamy, Sheffield, James L. Graham, Muscle Shoals, and Milton R. Siegel, Florence, Ala., assignors to Tennessee Valley Authority, a corporation of United States

Filed Apr. 4, 1962, Ser. No. 185,169
6 Claims. (Cl. 71—34)
(Granted under Title 35, U.S. Code (1952), sec. 266)




1. A process for the production of high-nitrogen fertilizers which comprises the steps of simultaneously introducing a stream of acidulating material selected from the group consisting of phosphoric acid, sulfuric acid, nitric acid, and mixtures thereof, and a stream of ammoniating fluid into a first-stage neutralization zone; controlling the ratio of introduction of each of said streams so as to maintain a pH in said first-stage neutralization zone in the range from about 1 to 4; withdrawing the resulting partially neutralized acid stream from said first-stage neutralization zone to evaporating means, therein concentrating said partially neutralized acid stream to a concentration greater than about 90 percent by weight; withdrawing said concentrated and partially neutralized acid stream from said evaporating means to a second-stage neutralization zone; simultaneously introducing a stream of ammoniating fluid into said second-stage neutralization zone, together with the stream from said evaporating means, and therein neutralizing said partially neutralized and concentrated acid stream to a pH in the range from about 4.5 to 6.0; withdrawing a resulting concentrated and substantially neutralized stream of material from said second-stage neutralization zone of substantially the same composition (dry basis) as the product recovered in a later-mentioned product removal step; maintaining in a horizontally inclined rotating pan a bed of fines recycled from a later-mentioned sizing step in continuous and alternate rising and cascading motion; spraying said concentrated and substantially neutralized stream of material withdrawn from said second-stage neutralization zone onto the cascading portion of said bed of fines; discharging continuously over the lower rim of said horizontally inclined rotating pan a granular high-analysis fertilizer material; sizing said withdrawn material; returning the undersize and crushed oversize material to the upper rim of said horizontally inclined rotating pan; and withdrawing the onsize material as product.

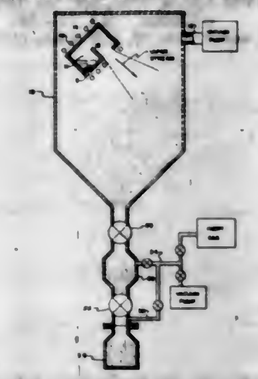
### 3,165,396
### DEFLECTION OF METAL VAPOR AWAY FROM THE VERTICAL IN A THERMAL EVAPORATION PROCESS

Edward J. Goon, Burlington, Paul L. Raymond, Beverly, and Robert W. Steeves, Nahant, Mass., assignors, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 9, 1961, Ser. No. 81,312
6 Claims. (Cl. 75—.5)

1. The process for the production of high purity ultra fine metal powders having a surface area on the order of

4 square meters per cc. and a particle size of less than 0.1 micron comprising vaporizing a metal selected from the group consisting of aluminum, manganese, silver, chromium, beryllium, copper, boron, silicon, iron, nickel, zinc, magnesium, bismuth, titanium, zirconium, and thorium at a pressure below about 500 microns Hg abs.,



directing the resultant metal vapor stream in a direction sufficiently away from vertically upward to substantially completely prevent condensed powder from re-entering the metal vapor stream, condensing the resultant metal vapors in free space, said free space being maintained at a pressure below about 500 microns Hg abs., and collecting resultant metal powders.

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**3,165,397**
**PREPARATION OF ALUMINUM PARTICLES**
**Paul A. Lobo, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,683
11 Claims. (Cl. 75—5)

1. A method which comprises passing into a reaction zone an aluminum compound having the formula:

$$R_1-\underset{\displaystyle R_2}{\overset{\displaystyle |}{Al}}-R_3$$

wherein the $R_1$, $R_2$ and $R_3$ groups are selected from hydrogen and alkyl radicals containing about 1 to 5 carbon atoms and at least two of the groups are alkyl radicals, passing an inert carrier fluid into the reaction zone, the temperature in the reaction zone being maintained at about 300° to 700° F., thereby causing the aluminum compound to decompose and form a thin aluminum film, disrupting the aluminum film in the presence of an inert carrier fluid in the reaction zone to form finely divided aluminum particles and withdrawing the aluminum particles from the reaction zone.

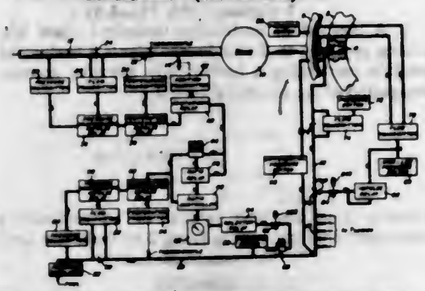
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**3,165,398**
**METHOD OF MELTING SPONGE IRON**
**Tetuso Shimomura and Atsumi Fukuda, Tokyo, Japan, assignors to Yawata Iron & Steel Company, Limited, Tokyo, Japan**
No Drawing. Filed July 15, 1963, Ser. No. 295,185
Claims priority, application Japan, Aug. 31, 1962, 37/37,637
1 Claim. (Cl. 75—40)

A method of producing molten pig iron high in carbon content which comprises treating sponge iron produced from iron sand by charging said sponge iron in a rotary smelting furnace and heating said sponge iron from a temperature of about 1100° C. to a temperature of between 1250° C. to about 1300° C. in a reducing gas atmosphere within said furnace by the partial combustion of heavy oil, continuously stirring said sponge iron slowly by the rotation of said furnace, adding carbonaceous material to said sponge iron for the purpose of carburization when the individual iron grains in said sponge iron begin to fuse with each other and show a paste-like state at a temperature of about 1300° C., raising the temperature of the carburized mixture to a temperature of about 1450° C. while continuing the stirring thereof and converting the reducing gas atmosphere to an oxidizing atmosphere by the complete combustion of the heavy oil fuel and separting the molten pig iron from the slag which contains substantially all impurities, which impurities remain in the slag in the form of oxides.

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**3,165,399**
**METHOD OF CONTROLLING ADMISSION OF FUEL AND AIR TO BLAST FURNACES**
**Frank Kennedy, Johnstown, Pa., assignor to United States Steel Corporation, a corporation of New Jersey**
Filed Feb. 14, 1961, Ser. No. 89,166
10 Claims. (Cl. 75—43)



1. The method of operating a blast furnace having a plurality of tuyeres which comprises introducing air and fuel separately into the tuyeres, maintaining a predetermined ratio between total air flow and total fuel flow, maintaining the same predetermined ratio between air and fuel to each tuyere as for total air and fuel flow, decreasing the fuel flow to an individual tuyere when the air flow to that tuyere decreases, and distributing the fuel diverted from said last mentioned tuyere to the other tuyeres.

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**3,165,400**
**CASTABLE HEAT RESISTING IRON ALLOY**
**Amodeo Roy, Ferndale, and Walter E. Jominy, Detroit, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware**
Filed June 27, 1961, Ser. No. 119,902
21 Claims. (Cl. 75—126)



1. An iron base casting type alloy for producing products of complex shape and having substantial oxidation resistance and high strength at elevated temperatures, said alloy consisting essentially of by weight percent, about 0.8 to 1.6% carbon; about 12 to 35% chromium; between 0 to 2.5% silicon; between 0.2 to 12% of a plurality of carbide forming elements from the group consisting of tungsten in the range 0.1 to 10%, molybdenum in the range 0.1 to 9%, columbium and tantalum, said columbium and tantalum combined being in the range 0.1 to 5%; up to about 15% of metal from the group consisting of, nickel in the range 0 to about 8%, manganese in the range 0 to 15%, and cobalt in the range 0 to 8%; and from 0 to 0.6% nitrogen; the balance essentially iron, said iron content being at least 40%, said nickel being at least about 2% when said manganese is less than about 1%, said manganese being at least between 2 to 10% when the nickel is less than 2% and nitrogen is present, at least between about 5 to 10% when substantially no nitrogen is present and the nickel is less than about 2%, and at least about 10% when the nickel is zero; said alloy being austenitic at room temperature and being characterized in the as cast condition by a 100 hour rupture strength at 1500° F. of at least about 20,000 p.s.i. and said alloy being castable into complex shapes and products, a test bar thereof ¼" in diameter exposed to 1500° F. for 100 hours being generally characterized by a structure having an interdendritic network of substantially ledeburite phases outlining an austenitic phase embedding relatively fine dot-like precipitates randomly distributed therein.



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**3,165,401**
**ALLOY STEEL FOR CAST PARTS RESISTANT TO HIGH TEMPERATURES AND CORROSION**
**Emil Resech, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey**
No Drawing. Filed Mar. 20, 1957, Ser. No. 647,216
10 Claims. (Cl. 75—128)

1. A stainless steel having high resistance to high temperatures and products of internal combustion, containing about 0.90% to 1.20% carbon, about 0.60% to 1.00% silicon, 5% to 8% manganese, 20% to 22% chromium, 1% to 2% nickel, about 0.20% to 0.40% nitrogen, and the remainder substantially iron.

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**3,165,402**
**ALLOY STEEL AND METHOD OF HEAT TREATMENT THEREFOR**
**William F. Finkl, Chicago, Ill., assignor to A. Finkl & Sons, Co., a corporation of Illinois**
No Drawing. Filed June 26, 1961, Ser. No. 119,276
5 Claims. (Cl. 75—128)

1. A method of developing substantially uniform hardness in a piece of steel of large cross section by heat treatment, the composition of said steel being substantially as follows in percent by weight:

| | |
|---|---|
| Carbon | From about .35 to about .50 |
| Manganese | From about .35 to about .60 |
| Silicon | From about .40 to about 1.00 |
| Nickel | From about 3.00 to about 4.00 |
| Chromium | From about 1.00 to about 3.50 |
| Molybdenum | From about .50 to about 1.00 |
| Vanadium | From about .25 to about .40 |

and the balance substantially all iron, said steel having exceptional hardenability and good resistance to softening, said method including the steps of sustenitizing the steel in the range of from about 1600° F., to about 1650° F., air hardening the steel to approximately room temperature, and then double tempering the steel, the first tempering temperature being sufficient to condition the retained sustenite, and the second tempering temperature being sufficient to achieve a desired, substantially uniform hardness throughout pieces of large cross section.

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**3,165,403**
**SUPERCONDUCTIVE MATERIALS**
**Harry N. Treaftis, Lee, Charles E. Watts, Jr., Pittsfield, and Raymond A. Meyer, Richmond, Mass., assignors to General Electric Company, a corporation of New York**
No Drawing. Filed Mar. 27, 1962, Ser. No. 182,925
6 Claims. (Cl. 75—169)

1. A superconductive material consisting essentially of by weight from about 70 to 95 percent mercury and from about 5 to 30 percent of an alloy consisting essentially of 50 percent indium and 50 percent tin.

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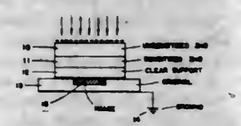
**3,165,404**
**METHOD OF MANUFACTURING A HOLLOW METAL PART BY USE OF HIGH ENERGY MEANS**
**Ralph W. Callender, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey**
Filed Oct. 2, 1961, Ser. No. 143,022
9 Claims. (Cl. 75—214)



1. A process of forming hollow articles from powdered metal in a die having an interior wall defining a hollow cavity comprising the steps of, placing a quantity of powdered metal within said cavity, said quantity being of less volume than the volume of said cavity, supporting a force package within said cavity and beneath a portion of said quantity of powdered metal, said force package being capable of releasing a hot gaseous product at an explosive rate in a direction substantially transverse to the base of said die, and releasing said gaseous product in said explosive whereby said hot gaseous product heats said powdered metal to produce sintering of the same and simultaneously compacts said powdered metal against portions of the interior wall of said die to produce a hollow powdered metal article.

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**3,165,405**
**ZINC OXIDE XEROGRAPHIC LAYERS FOR BIREFLEX COPYING**
**Donald C. Hoesterey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
Filed Sept. 5, 1962, Ser. No. 221,568
6 Claims. (Cl. 96—1)



1. A xerographic element useful for bireflex copying comprising a thin, transparent, electrically insulating support having coated thereon a photoconductive zinc oxide layer spectrally sensitized to the visible region of the spectrum and coated over said spectrally sensitized zinc oxide layer, a continuous discrete layer of spectrally unsensitized photoconductive zinc oxide, said unsensitized zinc oxide layer being of substantially greater thickness than said optically sensitized layer.

4. A xerographic method of producing copies of an original by a bireflex copying technique comprising photoexposing to visible actinic radiation a two-ply combination comprising

(*a*) an original bearing an image on one surface and
(*b*) a xerographic element comprising (1) a thin, transparent insulating support having coated thereon (2) at least one photoconductive layer having substantial sensitivity to said visible actinic radiation and coated over said sensitized photoconductive layer (3) at least one discrete photoconductive layer having substantially no sensitivity to said visible actinic radiation,

said support being placed in surface contact with the side of said original bearing an image and said outer photoconductive layer having a positive electrostatic charge, said exposure being made so that said visible actinic radiation passes firstly through said non-sensitive photoconductive layer, then through said sensitized photoconductive layer and said support, so that reflections of said visible actinic radiation from said original cause photoexposure, said exposure being continued until said electrostatic charge has leaked away from said outer layer substantially only where exposure has occurred in said sensitized photoconductive layer, and developing a visible image by applying a negatively charged electroscopic powder to the surface of said outer layer.

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3,165,406

## MULTICOLOR PHOTOGRAPHIC PROCESS AND PRODUCT

Wallace J. Murray, Cambridge, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 24, 1958, Ser. No. 769,490
19 Claims. (Cl. 96—3)




5. Method of developing an exposed film comprising in combination a transparent filter layer consisting essentially of transparent dots in systematic side-by-side arrangement, each of said dots being one of the three primary colors acting subtractively, a light-sensitive panchromatic silver halide emulsion layer capable of forming latent images when exposed and reacted with a developer capable of reducing silver in a latent image to free silver, an image-carrying layer containing coupler dots capable of reacting with said developer to form the additive primary colors corresponding to the subtractive filter dots printed directly above them on said filter layer and a supporting sheet for said image-carrying layer, which comprises exposing said silver halide emulsion layer to light through said filter layer, contacting said filter layer with a liquid developer, causing said liquid developer to permeate said filter layer to contact said panchromatic layer and develop latent images formed therein and to react with those of said coupler dots on said supporting sheet which do not lie below said latent images in said panchromatic layer, and separating said panchromatic layer from said image-carrying layer, said liquid developer being capable of developing black and white latent images and of reacting with said couplers to form the additive primary colors.

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3,165,407

## PROCESS FOR IMPROVING COLOR DEVELOPABILITY OF REVERSAL PHOTOGRAPH FILMS

Catherine S. McCarthy, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 8, 1962, Ser. No. 200,910
14 Claims. (Cl. 96—22)

1. In a photographic reversal color process wherein a photographic element containing at least one photographic silver halide emulsion layer is given a first exposure to produce a latent image therein, a development in a photographic developer for producing a black-and white negative image, exposure to light of a color to which the said first exposed silver halide emulsion layer is sensitive, and an additional development in a photographic color developer for producing a colored image, said color developer containing an aromatic primary amine color developing agent and a photographic color coupler selected from the group consisting of a magenta-forming pyrazolone color coupler, a cyan-forming phenolic color coupler and a yellow-forming open-chain ketomethylene color coupler, the improvement which comprises utilizing a vehicle for said silver halide comprised of gelatin and a water-soluble lower alkyl acrylate-acrylic acid copolymer having 10 to 50 mol percent of the acrylic acid moiety and wherein said vehicle contains about 1 to 90 percent of said copolymer based on the combined weight of said gelatin and said copolymer.

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3,165,408

## PHOTOGRAPHIC PRODUCTS

Nicholas Gold, Arlington, Mass., Frank W. Knight, Salem, N.H., and Arthur J. Sable, Boston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 7, 1960, Ser. No. 74,384
1 Claim. (Cl. 96—76)

A composite photographic product for producing, in conjunction with photographic apparatus, a plurality of developed, reusable photographic negatives and a positive print associated with each of said negatives, said product comprising, in combination:

(*a*) a first web of flexible sheet material having on one surface thereof a layer of photosensitive material at least portions of which are adapted to be photoexposed to form latent images capable of being developed and fixed as photographic negatives lying in spaced relation along the length of said first web;

(*b*) a second web of baryta paper having on one surface thereof a layer of image-receiving material adapted to be superposed with said layer of photosensitive material and to form a positive transfer print from the associated, developed negative while superposed therewith;

(*c*) means facilitating removal from said second web of portions thereof lying in spaced relation along the length of said second web intermediate of relatively narrow marginal edge portions thereof;

(*d*) a plurality of container means holding a viscous processing liquid adapted to be released and spread between said first and second webs in a uniformly thin layer to effect development of a latent image in an exposed portion of said first web and to produce a positive transfer print in the superposed portion of said second web;

(*e*) a third web of flexible sheet material having a plurality of substantially rectangular apertures with rounded corners lying in spaced relation along the length thereof;

(*f*) a first surface of said third web being formed of a substantially continuous layer of polyethylene;

(*g*) means providing a substantially fixed bond, impenetrable by said processing liquid, between said first surface of said third web and said one surface of said second web in areas outside the limits of said removable portions of said second web, whereby said third web does not become separated from said second web, in the areas where the two are bonded, as a result of saturation by said processing liquid, while allowing removal of said portions of said second web without substantial adherence to said third web;

(*h*) said third web being arranged in such relation to said second web when bonded thereto that said apertures overlie said removal portions, the latter being slightly longer and wider than the former, whereby said apertures form a frame for areas of said one surface of said first and second webs wherein said negative and positive, respectively, are formed, and portions of said third web which bound said apertures overlie a border around the periphery of said removable portions; and

(*i*) a second surface of said third web being formed of a substantially continuous layer of polyethylene terephthalate, thereby preventing adherence of said third web to said first web as a result of said processing liquid being spread therebetween, said layer of polyethylene terephthalate being of sufficient thickness to impart a tensile strength to the combination of said second and third webs which is substantially greater than that of said second web alone, thereby permitting movement of said second and third webs by tension-applying means after removal of said portions of said second web and separation therefrom of said first web.

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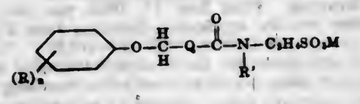
3,165,409

## DERIVATIVES OF CERTAIN HIGHLY BRANCHED CHAIN ACIDS AS COATING AIDS

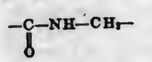
William J. Knox, Jr., Rochester, N.Y., and Robert E. Sticker, Lawrence, Kans., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 7, 1962, Ser. No. 171,560
11 Claims. (Cl. 96—94)

4. A gelatin-silver halide photographic emulsion containing a coating aid corresponding to the following formula:



In which
R is branched alkyl,
$(R)_n$ totals 8 to 16 carbon atoms,
$n$ is an integer of 1 to 2,
Q is selected from the group consisting of a bond and



R' is selected from the group consisting of alkyls of 1 to 4 carbon atoms and cycloalkyl,
and M is a substituent selected from the group consisting of Na, K, Li, $NH_4$ and alkylammonium.

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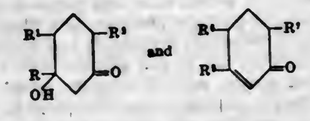
3,165,410

## PHOTOGRAPHIC EMULSIONS CONTAINING CYCLIC KETONE SENSITIZERS

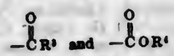
Burton D. Wilson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 29, 1961, Ser. No. 113,065
11 Claims. (Cl. 96—107)

1. A photographic silver halide emulsion containing a sensitizing amount of a cyclic sensitizing compound having a formula selected from the group consisting of



wherein R and $R^5$ are alkyl radicals having 1 to 6 carbon atoms, and $R^1$, $R^2$, $R^6$ and $R^7$ are selected from the group consisting of a hydrogen atom and a carbonyl radical having a formula selected from the group consisting of



wherein $R^3$ and $R^4$ are alkyl radicals having 1 to 6 carbon atoms, at least one of $R^1$ and $R^2$ and at least one of $R^6$ and $R^7$ being one of said carbonyl radicals.

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3,165,411

## PHOTOGRAPHIC PRODUCTS

Charles J. Fox, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 4, 1959, Ser. No. 810,574
5 Claims. (Cl. 96—114)

1. A gelatin-silver halide photographic emulsion essentially consisting of silver halide grains suspended in an aqueous solution of a salt selected from the group consisting of the ammonium and alkali metal salts of the polymers obtained by polymerization of at least 15 hours duration of a mixture essentially consisting of 50–80 mol percent of 1,3-diolefin and 50–20 mol percent of unsaturated carboxylic acid.

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3,165,412

## SILVER HALIDE EMULSIONS

Louis M. Minsk and Edward P. Abel, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 18, 1961, Ser. No. 138,627
8 Claims. (Cl. 96—114)

1. A gelatin-silver halide photographic emulsion of good density properties containing about 10–30%, based on the weight of the gelatin, of a saturated aliphatic dicarboxylic acid half ester of polyvinyl alcohol, said acid having a carbon chain length of 4–7 carbon atoms.

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3,165,413

## PREVENTION OF GEL FORMATION

George R. Weber and Franklyn D. Miller, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 23, 1962, Ser. No. 168,274
17 Claims. (Cl. 99—6)

1. A process for preventing gel formation in a liquid animal feed containing a phosphatic material and molasses which comprises incorporating into said feed a minor, gel-inhibiting amount of a non-phosphatic acid, the amount of said phosphatic material ranging from about 1 to 15 parts by weight per 100 parts by weight of molasses.

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3,165,414

## PREPARATION OF RAISIN PASTE

Fredoon S. Nury, Richmond, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 8, 1963, Ser. No. 314,817
2 Claims. (Cl. 99—100)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In the process of preparing raisin paste wherein raisins are ground to form a paste, the improvement which comprises baking the paste at a temperature about from 100 to 200° F. for a period about from ¼ hour to 10 days while it is enclosed in a closed container, to reduce the tendency of the paste to set during storage.

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3,165,415

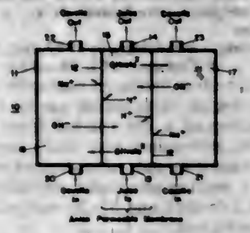
## MODIFYING TASTE OF FRUIT JUICE BY DIALYSIS

Robert W. Kilburn, Lake Wales, Fla., and Harry P. Gregor, Hewlett, N.Y., assignors, by mesne assignments, to American Machine & Foundry Company, a corporation of New Jersey

Filed Oct. 4, 1960, Ser. No. 60,495
8 Claims. (Cl. 99—105)

1. In a method of improving the taste of fruit and vegetable juices having a normal pH within the range of about 2.5 to about 5.5, by adjusting the pH within a range of about ±0.5 pH to a desired value affording improved taste, the step of flowing said juice and an electrolyte separately through alternate compartments of

an electrodialysis device having ion selective membranes all permeable to ions of the same sign, thereby creating



ion exchange through said membranes and changing the pH of the juice to the desired value by substitution of electrolyte ions for ions originally present in the juice.

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3,165,416

**METHOD OF COATING FREEZE-DRIED MEAT**

Rhale B. Steele, Park Forest, and Henry P. Furgal, Highland Park, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 20, 1961, Ser. No. 153,708

6 Claims. (Cl. 99—169)

1. The method of treating dehydrated meat after said meat has been subjected to freeze-drying, comprising applying to the outer surfaces of said dehydrated meat, a liquefied coating containing from 20 to 40% by weight of lard, from 50 to 70% of beef tallow, from 1 to 10% of a vegetable oil, and from 5 to 20% of a mixed triglyceride of fatty acids containing from 14 to 18 carbon atoms and lactic acid.

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3,165,417

**HIGH STRENGTH BERYLLIA ARTICLES**

Percy P. Turner, Jr., Cincinnati, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 26, 1960, Ser. No. 65,240

12 Claims. (Cl. 106—43)

1. The method of making a beryllia article having a restricted grain growth above 2500° F. which consists of intimately mixing from 0.1 to 0.2 weight percent of an inhibitor selected from the group consisting of carbon and refractory carbides with highly purified beryllia, pressing at about 10,000 p.s.i. to about 50,000 p.s.i. and sintering at temperatures of from about 2800° F. to about 3300° F. in a hydrogen atmosphere.

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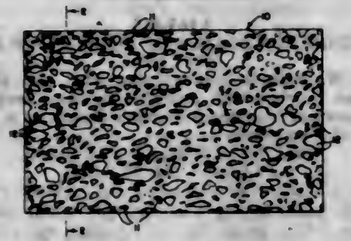
3,165,418

**SYNTHETIC SPONGE AND METHOD OF MAKING SAME**

Ford M. Jenkins, Springfield, Ohio, and Jack A. Bitzer, Conifer, Colo., assignors to General Mills, Inc., a corporation of Delaware

Filed Aug. 16, 1961, Ser. No. 131,756

2 Claims. (Cl. 106—122)



1. A synthetic sponge comprising a body of cellulosic sponge material having embedded in and dispersed throughout said body a plurality of pre-made regenerated cellulosic sponge material particles of greater density than said body.

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3,165,419

**NEW IRON-TUNGSTEN OXIDE COMPOSITION**

Gerhard Bayer, Hinteregg-Zurich, Switzerland, assignor to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed Nov. 15, 1960, Ser. No. 69,284

3 Claims. (Cl. 106—299)

1. The compound $Fe_2WO_6$ in solid solution in rutile in an amount up to one-third mol fraction of the solid solution, said solid solution having a rutile type crystalline structure.

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3,165,420

**DEVELOPER FOR ELECTROPHOTOGRAPHIC PURPOSES AND PROCESS FOR DEVELOPING AN ELECTROSTATIC IMAGE**

Martha Tomanek, Hans Behmenburg, Wilhelm Neugebauer, and Kurt-Walter Klupfel, all of Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed June 13, 1960, Ser. No. 35,448

Claims priority, application Germany June 27, 1959

28 Claims. (Cl. 117—17.5)

1. A dry developer for electrophotographic purposes, capable of being negatively charged, comprising a finely-divided inorganic carrier having an average particle size in the range of about 100 to 600$\mu$ and a finely-divided metal resinate toner having an average particle size in the range of about 1 to about 100$\mu$, the weight ratio of carrier to toner being in the range of about 100:30 to about 100:0.1.

15. A dry process for developing an electrostatic image which comprises contacting the image with a negatively charged developer comprising a finely-divided inorganic carrier having an average particle size in the range of about 100 to 600$\mu$ and a finely-divided metal resinate toner having an average particle size in the range of about 1 to about 100$\mu$, the weight ratio of carrier to toner being in the range of about 100:30 to about 100:0.1, and fixing the image.

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3,165,421

**SUBSTRATE COATED WITH AN ADHESIVE LAYER AND METHOD OF MAKING THE COATED SUBSTRATE**

Robert E. Polid, Winchester, and James R. Arenson, Cambridge, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Nov. 10, 1961, Ser. No. 151,456

6 Claims. (Cl. 117—33)

6. Method of coating a substrate with a delayed-tack, heat-activatable adhesive, comprising the steps of applying to at least one surface of said substrate a thermoplastic adhesive in a fluid state, said adhesive comprising an elastomer and diphenyl phthalate as a plasticizer, and subsequently substantially completely and uniformly covering the tacky surface of said adhesive with a finely divided dusting powder selected from the group consisting of di-(m-cresyl) phthalate and di-(o-cresyl) phthalate thereby to recrystallize said adhesive and to render it free from tackiness until heat is applied to activate said adhesive.

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3,165,422

**CERAMIC COATED FUEL PARTICLES**

Lincoln D. Stoughton, Chatham, N.J., and John M. Blocher, Jr., and Neil D. Veigel, Columbus, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 16, 1961, Ser. No. 96,338

4 Claims. (Cl. 117—100)

1. A method of coating particles of $UO_2$ with a first layer of porous $Al_2O_3$ and a second, outer layer of



impermeable, alpha phase $Al_2O_3$, comprising the steps of hydrolizing aluminum chloride in the presence of hydrogen and water vapor in a reactor containing a fluidized bed of $UO_2$ particles at a temperature below 900° C. sufficient to vapor deposit a layer of porous $Al_2O_3$ on the



surfaces of said particles, venting said reactor to terminate said porous layer and then resuming the aforementioned hydrodizing step at a temperature above 900° C. sufficient to vapor deposit over said layer of porous $Al_2O_3$ a layer of dense alpha phase $Al_2O_3$.

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3,165,423

**PROCESS FOR PREPARING WATER-RESISTANT AND VAPOR-PERMEABLE COATED FABRIC**

John R. Caldwell and Clarence C. Donnelly, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 5, 1961, Ser. No. 80,732

2 Claims. (Cl. 117—135.5)

1. A process for preparing a water-resistant coated fabric which resists the passage of liquid water but permits transmission of water vapor comprising (A) forming a mixture of (1) 15–60% based on the dry coating of discrete particles having diameters of less than 10 microns which are essentially composed of a trioxane cross-linked insolubilized high copolymer of about 57 mole per cent fumaramide and about 43 mole percentage of vinyl acetate, with (2) an elastomer essentially composed of approximately equal parts by weight of polyvinyl butyral and dibutyl phthalate, said constituents (1) and (2) being carried in a liquid medium containing 5–80% solids content of the elastomer, (B) forming a coating of about 2.1 ounces of dry weight per square yard of said mixture on a supporting fabric essentially composed of cotton and (C) drying said coating to form a water-resistant coated fabric which transmits water vapor at the rate of at least about 35 grams per square meter per hour with a vapor pressure differential of about 11.58 mm. Hg pressure.

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3,165,424

**TREATMENT OF CELLULOSE TEXTILES**

Josef König, Siegburg, Rhineland, and Egon N. Petersen, Neumunster, Germany, assignors to Phrix-Werke Aktiengesellschaft, Hamburg, Germany

No Drawing. Filed Apr. 6, 1960, Ser. No. 20,268

Claims priority, application Germany, Apr. 6, 1959, P 22,536

11 Claims. (Cl. 117—139.4)

1. Method of improving properties such as the crease resistance and non-shrinking properties of cellulose textiles, comprising the steps of treating a cellulose textile material with an acid aqueous liquor containing in solution a water soluble resin-forming substance which upon heating to a predetermined temperature below the temperature at which damage to said cellulose textile material occurs is transformed into an insoluble resinous substance, said water soluble resin-forming substance containing hydroxyl groups, and also containing in solution a water soluble alkyloxy alkyl cellulose mixed ether containing ether groups and also containing free hydroxyl groups formed by the reaction of an alkali cellulose with about 1 mol of an alkylating agent and about 3 mols of an alkoxylating agent calculated per each mol of glucose anhydride of said alkali cellulose; and heating the thus treated cellulose textile material to said predetermined temperature so as to convert said water soluble resin-forming substance into an insoluble resinous substance and to cause cross linking reaction between the same and said water soluble alkyloxy alkyl cellulose, thereby forming a treated cellulose textile material having improved properties.

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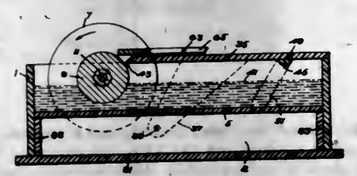
3,165,425

**LIQUID COATING DEVICES**

Raymond H. Parker, 55 Warren Ave., Plymouth, Mass.

Filed Aug. 25, 1961, Ser. No. 134,026

3 Claims. (Cl. 118—252)



1. A label paster having in combination a reservoir for liquid adhesive, a roller of concave profile rotatably mounted therein so as to dip into the adhesive, means for rotating the roller, a feed table having a flat label-supporting surface disposed in a plane parallel to the roller's axis and intersecting the roller and an edge adjacent the roller matching in contour the shape of the proximate surface portion of the roller, means mounting the table for pivotal movement carrying the edge into adhesive-stripping relation to the roller, and a guide above and in fixed spaced and parallel relation to the surface of the feed table, adapted to engage the upper surface of a label being alid over the table and roller and force the label into conforming contact with the concave surface of the roller.

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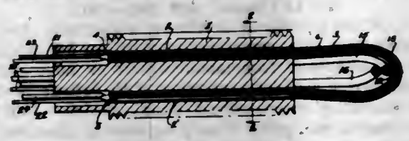
3,165,426

**THERMOPILE**

Paul Beckman, 944 Henrietta Ave., Huntingdon Valley, Pa.

Filed July 30, 1962, Ser. No. 213,395

4 Claims. (Cl. 136—4)

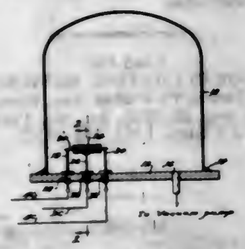


1. A thermopile comprising, in combination, a body having at least a plurality of pairs of substantially parallel passages, each pair of passages being disposed on substantially diametrically opposed sides of the body, a single continuous tube extending through one of said passages beyond the end of said body and looping back through a diametrically opposed passage, and another single continuous tube extending through another one of the pairs of passages beyond said end of the body and then looping back to extend into a diametrically opposed passage, the loops crossing each other in substantially adjacent relation, and thermocouple wires extending through said tubes with their thermocouple junctions in the loops of said tubes so that said junctions are substantially in alignment with each other.

### 3,165,427
### METHOD OF HEAT TREATING TUNGSTEN WIRE OR RIBBON

Edmond C. Hurst, Stoughton, Wis., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 24, 1962, Ser. No. 219,829
4 Claims. (Cl. 148—20.3)



1. A method for heat treating an elongated element of tungsten, comprising the steps of spatially mounting said element in an evacuable chamber, mounting a metal member adjacent said element in spatial relationship thereto, evacuating said chamber to a pressure of at least $10^{-4}$ mm. of mercury, applying an A.-C. current to said element, increasing the value of said A.-C. current over a period of approximately 10 to 30 seconds until said element reaches a temperature just under the melting point thereof, maintaining the value of said A.-C. current for a period of approximately 3 minutes, applying a D.-C. voltage of approximately 1000 volts between said heated element and said metal member, said D.-C. voltage being applied so that the polarity of said element is positive and the polarity of said member is negative, maintaining the value of said A.-C. current and said applied D.-C. voltage together for a period of approximately 5 minutes, decreasing the value of said A.-C. current to zero ampere and removing said applied D.-C. voltage.

### 3,165,428
### PRODUCTION OF THIN GOSS ORIENTED MAGNETIC MATERIALS

Paul A. Albert, Penn Hills, and Karl Foster, Wilkins Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,531
13 Claims. (Cl. 148—111)

1. In the process of producing a magnetic sheet of a ferrous base alloy containing from 2% to 8% silicon and of a thickness of from about 0.0001 to 0.006 inch, the sheet having a major proportion of its volume composed of secondary recrystallized grains having (110)[001] orientation, the grains having an average diameter of at least ten times the thickness of the sheet, the steps comprising

(1) cold reducing a thick sheet of the alloy at least 40% to a final gauge thickness of from about 0.0001 to 0.006 inch, the surface of the sheet being clean and free from any oxide and coatings,

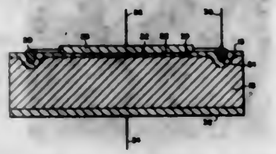
(2) open annealing the uncoated cold reduced sheet at a temperature of from 1100° C. to 1400° C. in a non-oxidizing atmosphere under furnace conditions whereby impurities in the sheet are readily evolved from the surface so that the oxygen and sulfur in the sheet are reduced to a value of below 0.001% each by the time secondary recrystallization begins, and

(3) continuing the annealing until substantially complete secondary recrystallization of the sheet occurs, the secondary grains substantially all having (110)[001] orientation.

### 3,165,429
### METHOD OF MAKING A DIFFUSED BASE TRANSISTOR

Charles E. Benjamin, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 31, 1962, Ser. No. 170,011
4 Claims. (Cl. 148—177)

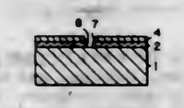


1. A method of making a semiconductor device containing two p-n junctions comprising, disposing a body comprised of a doping material capable of imparting a second type of semiconductivity to a wafer of a semiconductor material having a first type of semiconductivity upon one surface of said wafer, forming a shallow region of a second type of semiconductivity in said wafer of semiconductor material by alloying, said shallow region extending from one surface of said wafer into said wafer forming a thicker region of said second type of semiconductivity in said wafer by vapor diffusion, said vapor entering said wafer at said one surface and diffusing into said wafer to a depth greater than the penetration of said alloying but less than the thickness of said wafer, said region of second type semiconductivity formed by alloying merging with and becoming a part of said region of second type of semiconductivity formed by vapor diffusion, reconverting by alloying only a portion of said region of second type of semiconductivity to a second region of said first type of semiconductivity, said second region of said first type of semiconductivity extending from said one surface into said wafer to a depth less than the thickness of said region of second type semiconductivity.

### 3,165,430
### METHOD OF ULTRA-FINE SEMICONDUCTOR MANUFACTURE

Frances B. Hugle, Santa Clara, Calif., assignor to Siliconix Incorporated, Sunnyvale, Calif., a corporation of California

Filed Jan. 21, 1963, Ser. No. 252,941
10 Claims. (Cl. 148—187)



1. The method of making semiconductor devices which comprises the steps of;

(*a*) providing an etchable refractory coating upon a surface of a semiconductor material having a given conductivity type,

(*b*) depositing a thin layer of a shoft etchant-resistant metal upon said coating,

(*c*) scribing a trench through said metal, but not through said coating, the width of said trench being narrow with respect to the length of said trench upon said coating,

(*d*) etching away said coating exclusively under said trench down to said semiconductor material,

(*e*) dissolving away said metal from said coating with an etchant reactive with said metal, and

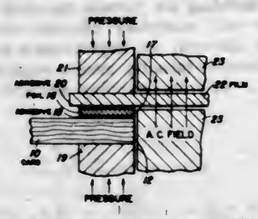
(*f*) diffusing a conductivity-determining impurity into said semiconductor material through the trench etched in said coating.



### 3,165,431
### RECORD CARD STRUCTURE

Lee T. Ashren, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Sept. 23, 1960, Ser. No. 58,033
2 Claims. (Cl. 156—108)

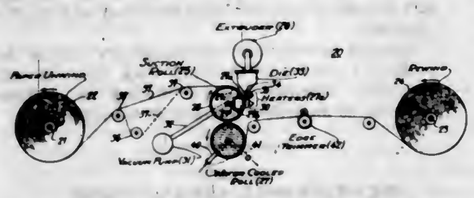



1. A method for securing a piece of film to a metal foil frame arranged about and bonded in registery with an aperture in a record card, the exposed surface of said metal foil frame being coated with a heat-sensitive adhesive, which comprises positioning said film on the exposed surface of said metal foil frame and in registery with said aperture, pressing the marginal portions of said film against said foil frame, and inductively heating said metal foil frame to activate said adhesive whereby said film is bonded to said frame.

### 3,165,432
### METHOD OF COATING A POROUS SHEET MATERIAL BY EXTRUSION

Clyde A. Plunkett, Ardsley, N.Y., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed Mar. 16, 1960, Ser. No. 15,451
9 Claims. (Cl. 156—244)



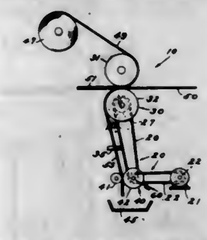
1. The method of progressively applying an adherent coating of a thermoplastic resin to a fibrous and porous web, which comprises: continuously hot extruding said resin through a slotted orifice into plastic sheet and feeding said sheet into contact with a surface of said web at a coating station spaced from said orifice and while progressively feeding said web past said station at a rate substantially exceeding the rate of said resin extrusion, thereby to hot stretch said plastic sheet prior to application to said web, and while applying a gas pressure differential over an area of the so-coated web of lower pressure on the uncoated web surface, thereby adherently to bond said plastic coating to said web.

### 3,165,433
### APPARATUS TO TRIM RESIN FROM THE EDGE OF LAMINATED SHEETS

Martin S. Markowicz, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Apr. 20, 1962, Ser. No. 189,078
5 Claims. (Cl. 156—271)

1. The method of covering a sheet material having a longitudinally extending edge which comprises causing a strip of covering material to be placed on said sheet material so as to extend over said edge, causing the portion of covering material placed on said sheet material to be moved at a first speed, and causing the excess covering material extending over said edge to be moved at a speed greater than said first speed in a direction away from said sheet material whereby said strip



is pulled against said edge and separated along said edge, said edge being sufficiently rigid to assist the divergent movements of said excess covering material and said portion in effecting separation of said strip.

### 3,165,434
### METHOD FOR ADHESIVELY BONDING PLASTICS TO ONE ANOTHER AND TO METALS

Henno Keskkula and John A. Schmitt, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 13, 1960, Ser. No. 28,855
2 Claims. (Cl. 156—327)

1. A method of adhesively bonding polyethylene terephthalate resins to one another which comprises coating a surface of said resinous polyethylene terephthalate with a layer of latex of a copolymer of from 14 to 30 percent by weight of itaconic acid and from 86 to 70 percent by weight of a mixture of monomers consisting of from about 0.5 to about 50 percent by weight of styrene and from about 99.5 to about 50 percent by weight of butadiene, said latex being one prepared by polymerizing a mixture of the monomers in aqueous emulsion, pressing a coated surface of said resinous polyethylene terephthalate against another surface of said resinous polyethylene terephthalate and heating the coating while in contact with said surfaces at a temperature between 140° and 180° C. for a time between 0.25 and 3.5 hours.

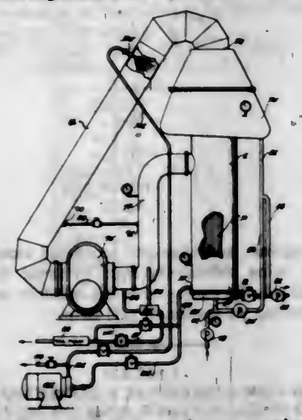
### 3,165,435
### EVAPORATION APPARATUS AND METHOD

Richard R. Hensaey, Oconomowoc, Wis., assignor, by mesne assignments, to C. E. Rogers Company, Detroit, Mich., a corporation of Michigan

Filed Jan. 19, 1961, Ser. No. 83,790
8 Claims. (Cl. 159—47)

1. A method of evaporating in apparatus having first, second and third columns arranged consecutively and having successively larger cross sectional areas correlated to produce substantially equal exit velocities of a fluid flowing through the columns, said method comprising the steps of passing a liquid feed upwardly through said first evaporating column, maintaining a reduced pressure in said first evaporating column sufficient to produce boiling in the liquid at a predetermined evaporating temperature, passing all said liquid and vapors evolved therefrom downwardly through said second evaporating column and thence upwardly through said third evaporating column, continuously supplying liquid feed to said first evaporating column at a rate sufficient to establish a vapor flow exit velocity in said first and second evaporating columns which is at least equal to the exit velocity of vapor being discharged from the third evaporating column, separating a liquid product from vapor issuing from said third evaporating column, injecting a liquid spray into the separated vapor in amounts substantially in excess of that required to saturate the separated vapor at said evaporating

temperature whereby entrained solids are diluted to substantially eliminate the tendency to adhere to the working surfaces of a vapor compressor, compressing the separated vapor arising from said liquid product, and passing



the compressed vapor in heat exchange proximity to the liquid flowing through said evaporating columns to heat said evaporating columns and maintain a temperature therein which is above said evaporating temperature.

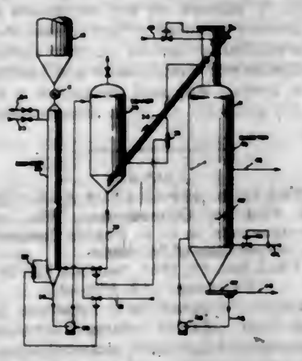
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3,165,436

## CONTINUOUS IMPREGNATING AND PULPING PROCESS

Carroll O. Bennett, Pelham Manor, and Salvatore A. Guerrieri, Scarsdale, N.Y., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1961, Ser. No. 137,121
13 Claims. (Cl. 162—19)



1. A process for pulping cellulosic material comprising impregnating cellulosic material with a cooking liquor at a pressure of 150 to 300 p.s.i.g., substantially continuously feeding impregnated material into a digesting zone, digesting said impregnated material in non-submergence in cooking liquor and in an atmosphere of steam, and removing digested material from said digesting zone.

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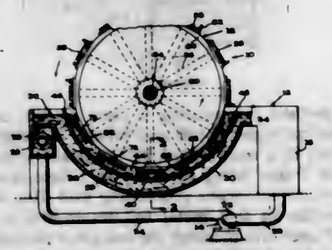
3,165,437

## APPARATUS AND METHOD FOR PRODUCING PULP ARTICLES

James E. Feste, Westport, Conn., assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware

Filed May 2, 1962, Ser. No. 191,985
6 Claims. (Cl. 162—228)

4. In apparatus for forming molded pulp articles comprising a slurry vat, means communicating with said vat to circulate a pulp stock therein to maintain the slurry in substantial agitation and homogeneity, a primary chamber in said vat into which the pulp stock slurry is initially introduced, a secondary chamber in said vat and overlying and communicating with said primary chamber, a suction die carrier mounted above said vat and including at least one molding die thereon movable in one direction through said secondary chamber for receiving a pulp preform thereon, the improvement comprising accumulator chamber-forming means disposed in trailing relationship to said one molding die and forming for-



wardly thereof a movable pulp stock slurry accumulator chamber whereby a homogeneous pulp slurry will be deposited on said molding die.

5. The method of forming molded pulp articles with a uniform fiber texture comprising the steps of:

(*a*) constantly circulating a pulp stock slurry through a primary chamber at a rate to prevent channeling and flocculation;

(*b*) directing the constantly circulating pulp stock slurry through a secondary chamber at a rate of flow which is substantially less than the rate of flow into said primary chamber, said rate of flow through said secondary chamber being such that said stock is quiescent;

(*c*) isolating, moving and simultaneously suction depositing a portion of the pulp stock slurry in said secondary chamber from a moving accumulator chamber as an article preform on a suction die.

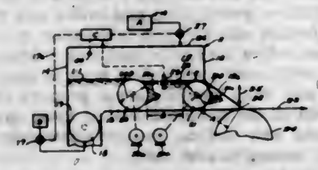
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3,165,438

## RECTIFIER ROLL ARRANGEMENT

Louis E. Dennis, Clinton, and Edward D. Beachler, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Dec. 14, 1962, Ser. No. 244,829
4 Claims. (Cl. 162—359)



1. A rectifier roll adapted to be rotatably mounted for close running relation to paper machine headbox side walls, said rectifier roll comprising a radially perforated cylindrical tube with scalloped ends, a plurality of radial baffles extending across the interior of the tube and axially spaced along the length of the tube, each of the outermost baffles in the tube having a streamlined contour tapering radially outwardly from an axial stub shaft receiving socket to a thin periphery closely spaced from the interior of the tube but secured to the tube axially inwardly from the scalloped ends by peripherally spaced pins extending radially outwardly from such thin periphery, a stub shaft at each end of the tube adapted to extend inwardly through the headbox side walls and received in



the socket of each of the outermost baffles, and annular resilient means in each socket interposed between the shaft and the outermost baffle at each end of the tube to accommodate relative tilting movement between the shaft and the baffle carried thereby during rotation of the rectifier roll.

4. In a headbox having side walls, a floor and a front wall defining with the floor a tapered approach to a slice opening, first means for flowing a stream of stock through the headbox and out the slice, second means in control of gas pressure against the top of such stock stream, a first rectifier roll at the tapered approach but spaced from the slice opening to afford dissipation of turbulence at the off-running side of the first roll upstream of the slice opening, and a second rectifier roll in the headbox spaced upstream from the first roll to afford dissipation of the turbulence at the off-running side of the second roll upstream of the first roll, each of said rectifier rolls presenting a radially perforate cylindrical tube having perforations within the diameter range of ½ to 1½ inches and presenting a substantially uniform pattern in the cylindrical tube walls which have a thickness of substantially ¼ to ⅜ times the perforation diameters, each said tube extending between the side walls and having stub shaft journalling the tube for rotation and resiliently mounting the tube ends on thin heads of streamlined contour tapering radially outwardly from said shafts mounting peripherally spaced pins to connect to the inner periphery of each such perforate tube closely spaced from the extremities of the tube inwardly and in close running relation to the headbox side walls, said shafts positioned in the side walls to mount said tubes in close running relation to the headbox floor whereby the rotary perforate tube presents a substantially uniform restriction between the side walls to the flow of stock in the stream in the headbox, said second rectifier roll being larger in diameter than the first roll and cooperating with said first means and second means to maintain a first level of stock downstream of the second roll that is barely sufficient to submerge the first roll by less than substantially ½ of its perforation diameters and a second stock level upstream from the second roll that is barely sufficient to submerge the second roll by less than substantially ½ of its perforation diameters, with the difference between said second stock level and said first stock level being substantially in the order of three times the aforesaid perforation diameters for high speed stock flow in the order of 60 to 100 gallons per minute per inch of headbox width.

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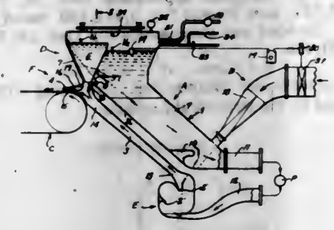
3,165,439

## STOCK FEEDING APPARATUS FOR WEB MAKING MACHINES

Pierre Lejeune and Louis de Maillard, Grenoble, France, assignors to Ateliers Neyret-Beylier & Piccard-Pictet (NEYRPIC), Grenoble, France, a corporation of France, and Societe Grenobloise d'Etudes et d'Applications Hydrauliques (SOGREAH), Grenoble, France, a corporation of France

Filed Sept. 11, 1962, Ser. No. 222,836
Claims priority, application France Sept. 15, 1961
12 Claims. (Cl. 162—337)

1. A device for feeding stock to a web making machine, comprising arranged in a closed circuit, a header tank and an overflow chamber positioned in adjacent relation so that stock rising in such chamber will overflow into the upper end of said header tank, means for feeding new stock into said header tank below the surface level thereof and into intermixture with the stock therein from said overflow chamber, means spaced from said header tank in the circuit for distributing the stock, means for pumping the combined mixture of stock from said header tank into said distributor means at a given substantially constant flow rate greater than the rate of flow of the stock required by the machine and such that the flow in all portions in such circuit is sufficiently high to prevent flocculation, a slice associated with the machine and constructed and arranged to take a portion of the volume of stock fed to said distributor means, means for con-



veying from said distributor means such portion of the stock to said slice and the stock in excess thereof to the bottom end of said overflow chamber, and means for controlling the rate of flow of the stock through said slice to the machine.

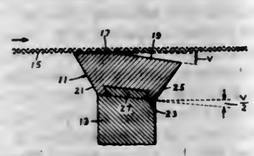
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3,165,440

## DRAINAGE ELEMENT FOR THE WIRE OF A PAPER MAKING MACHINE

Lars Bengt Jordansson, Karlstad, Sweden, assignor to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a company of Sweden

Filed Feb. 21, 1962, Ser. No. 174,863
Claims priority, application Sweden, Feb. 23, 1961, 1,887/1961
3 Claims. (Cl. 162—352)



1. A device for draining the wire of a paper making machine, comprising a bar to be disposed below the wire and substantially transversely thereof, said bar having a first flap upper face, an adjoining second flat upper face inclined at an angle of about 1 to 5 degrees to said first face, a support for said bar, a lower face on said bar inclined to said first face at an angle equal to one-half the angle of inclination of said second face to said first face, said support having an upper complementally inclined face engaging said lower face of said bar and supporting said bar with said first upper face parallel with and engaging said wire and said second upper face slanting away from said wire, and means detachably connecting said bar to said support to enable said bar to be detached from said support, turned end for end and reattached to said support to dispose said second face parallel to said wire and said first face slanting away from said wire.

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3,165,441

## METHYLPHOSPHONOTHIOATE INSECTICIDE

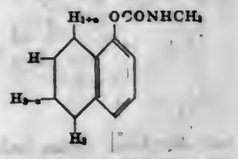
George F. Ladvik and John P. Clupp, Kirkwood, and Peter E. Newallis, Crestwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 1, 1961, Ser. No. 92,446
4 Claims. (Cl. 167—30)

3. The method of controlling insects which comprises contacting the insects with a toxic amount of O-(n-propyl) O-(4-nitrophenyl) methylphosphonothioate.

3,165,442
**METHOD OF KILLING INSECTS WITH DIHYDRONAPHTHYL N-METHYLCARBAMATE COMPOSITIONS**
John R. Kilsheimer, South Charleston, W. Va., and Herbert H. Moorefield, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Original application Dec. 30, 1960, Ser. No. 79,521, now Patent No. 3,081,340, dated Mar. 12, 1963. Divided and this application Dec. 26, 1962, Ser. No. 251,456
9 Claims. (Cl. 167—32)

1. An insecticidal composition comprising a compound represented by the structural formula:



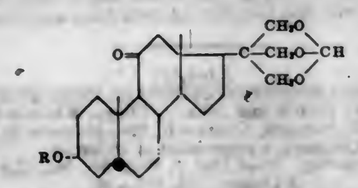
wherein *n* is an integer having a value of from 0 to 1, an insecticidally suitable carrier and a surfactant.

3,165,443
**NEBULISATE OF FUMARIA AND PROCESS OF PREPARATION**
Victor Lafon, Paris, France, assignor, by mesne assignments, to Société Anonyme dite: Orsymonde, Paris, France
No Drawing. Filed Aug. 2, 1962, Ser. No. 214,193
6 Claims. (Cl. 167—55)

1. A process for the preparation of a nebulisate of a member of the genus Fumaria selected from the group consisting of *Fumaria grandiflora, Fumaria parviflora, Fumaria officinalis* and *Fumaria vaillantii* which consists essentially of admixing a semi-fine powder obtained from one of the said Fumaria species with cold water in the amount of approximately 1 kilogram of such powder per 8 to 10 liters of water, boiling the resulting mixture for about one hour, filtering the boiled mixture, homogenizing the resulting filtered decoction and projecting the homogenizate in mist form at a temperature in the range of about 40° C. to 70° C. by passing it through capillary apertures at a pressure of about 250 kilograms per square centimeter into an enclosure through which a violent stream of air is passed.

3,165,444
**COMPOSITIONS AND METHOD FOR THE TREATMENT OF VASCULAR SPASMS**
Daniel Bertin, Montrouge, France, assignor to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed Apr. 17, 1962, Ser. No. 188,226
Claims priority, application France, Apr. 22, 1961, Patent 859,596
6 Claims. (Cl. 167—65)

1. A method for controlling vascular spasms which comprises administering to an animal having vascular spasms 25 to 100 mg. of a compound having the formula

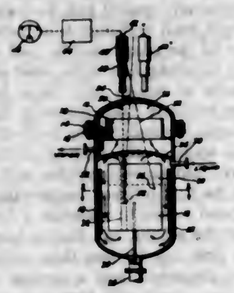


wherein R is selected from the group consisting of hydrogen, lower alkyl and an acyl radical of an organic carboxylic acid having 1 to 18 carbon atoms.

3,165,445
**ANTI-PERNICIOUS ANAEMIA FACTOR OF THE FUNDUS AND METHOD OF PREPARING SAME**
Edward Abram Greenspon, Apt. 304, 4851 Cote St., Luc Road, Montreal, Quebec, Canada
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,611
Claims priority, application Great Britain July 11, 1958
8 Claims. (Cl. 167—74)

1. Process for the production of a composition comprising anti-pernicious anaemia factor, which comprises separating the fundus from the stomach of a freshly killed animal, subjecting the separated fundus to the action of an agent selected from the group which consists of acids and alkalis whereby its content of pepsin is reduced by from 85 to 100%, and drying the treated material at a temperature of at most 60° C.

3,165,446
**NUCLEAR REACTOR POWER MONITOR**
Samuel Untermyer II, Atherton, Calif., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 793,117, Feb. 13, 1959. This application Dec. 26, 1962, Ser. No. 247,404
11 Claims. (Cl. 176—26)

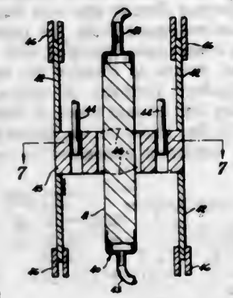


1. A method for monitoring the power distribution throughout a nuclear chain reacting assembly disposed in a reactor vessel and having a plurality of nuclear fuel-containing coolant flow channels through which a liquid coolant is passed, which method comprises the steps of collimating penetrating radiation emitted axially from a relatively small local region of said assembly including at least one of said flow channels, measuring the intensity of the collimated radiation at a point remote from said assembly and outside of said vessel, the attenuation of said radiation varying with changes in the density and the temperature of said coolant through which it passes and the power level in said channel from which it issues whereby the collimated radiation has an intensity which is a direct function of said power level, and repeating the radiation collimation and collimated radiation intensity measurement steps for a plurality of said relatively small local regions to determine said power distribution.

8. An apparatus for monitoring the power level in each of a plurality of relatively small local regions of a nuclear chain reacting assembly enclosed within a vessel which comprises a plurality of penetrating radiation detecting means disposed at points remote from said assembly and outside said vessel, a plurality of radiation collimating means disposed between said detecting means and said assembly, each of said collimating means being aligned with a corresponding one of said plurality of relatively small local regions of said assembly, each of said collimating means being disposed immediately adjacent a corresponding one of said detecting means.

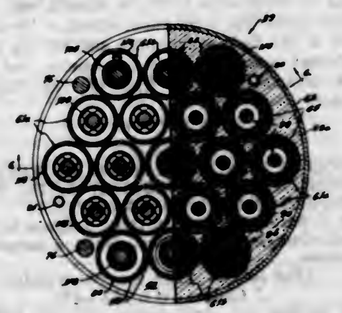


3,165,447
**NUCLEAR CHAIN REACTORS**
Richard M. Stephenson, Storrs, Conn.
Filed May 5, 1961, Ser. No. 108,094
1 Claim. (Cl. 176—33)



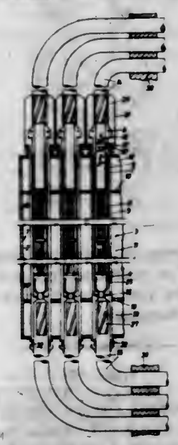
A nuclear chain reactor, comprising an elongated flux-producing heterogeneous fixed fuel, pipes connected with opposite ends of said fuel for passing a coolant through the fuel, a cylindrical beryllium reflector enclosing a portion of said fuel intermediate its ends, pistons connected with diametrically opposed ends of said cylindrical reflector, cylinders enclosing portions of said pistons for reciprocating said pistons along with said reflector, whereby said reflector is cycled along the fuel, said reflector having openings extending parallel to said fuel between said fuel and said pistons, and control rods extending into said openings.

3,165,448
**NUCLEAR REACTOR CORE AND FUEL ASSEMBLY**
Willard H. McCorkle, Hinsdale, and Harry S. Cern, Chicago, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Original application Nov. 8, 1960, Ser. No. 68,140, now Patent No. 3,031,394, dated Apr. 24, 1962. Divided and this application Mar. 16, 1962, Ser. No. 180,366
3 Claims. (Cl. 176—50)



2. A core for a nuclear reactor comprising a cylindrical vessel containing finely divided graphite particles, a plurality of vertically-disposed, cylindrical fuel assemblies disposed in ordered arrangement on concentric circles about a central fuel assembly in said cylindrical vessel, said fuel assemblies comprising a plurality of spaced concentric fuel tubes containing highly enriched uranium, a cylindrical aluminum thimble disposed in said fuel tubes, a beryllium cylinder disposed in said thimble, a boron-aluminum rod disposed in said beryllium cylinder, and means for passing water through and between the fuel tubes.

3,165,449
**STEAM COOLED NUCLEAR REACTOR**
Norman Bradley, Culcheth, near Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Oct. 26, 1959, Ser. No. 848,721
Claims priority, application Great Britain June 10, 1959
3 Claims. (Cl. 176—59)

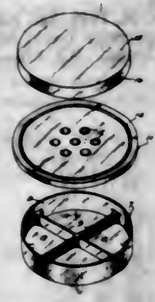


1. A steam cooled nuclear reactor comprising a tank having defined therein a lattice of vertically oriented channels in parallel array through the tank; a liquid moderator in the tank surrounding the channels; steam conducting pipes passing lengthwise through said channels; fuel elements in said steam conducting pipes; open ended barrier tubes in the steam conducting pipes between the steam conducting pipes and the fuel elements contained therein and spaced from both the steam conducting pipes and the fuel elements; means to cause steam coolant to flow through the steam conducting pipes; means at one end of the barrier tubes to cause the steam coolant flowing through the pipes to divide into a major fraction passing inside the barrier tubes and over the fuel elements and a minor fraction passing outside the barrier tubes and along the inner walls of the pipes; means at the other end of the barrier tubes causing the major and minor fractions to reunite; and means at the said one end of the barrier tubes for entraining water to mix with the minor fraction of steam coolant.

3,165,450
**ANAEROBIC CULTURING DEVICE**
Robert A. Scheidt, Hales Corners, Wis., assignor to St. Luke's Hospital Research Foundation, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 11, 1963, Ser. No. 264,449
6 Claims. (Cl. 195—139)

1. An anaerobic culturing device comprising, a shallow dish having a continuous upstanding side wall and provided with partitions forming laterally disposed segregated chambers for receiving substances for the treatment of the atmosphere by chemical reaction to create conditions conducive to anaerobic growth, a perforated plate having a continuous open groove on each of its opposite faces with one of said grooves being received by and seated upon the peripheral upper edge of the dish side wall, said plate thus presenting an open platform spanning said dish with said perforations establishing communication between all of said segregated chambers and the atmosphere above said platform, a culture plate for receiving an anaerobic specimen to be cultured seated upon said platform, and an imperforate cover having a continuous depending lip received by and seated within

the other of said grooves to provide an upper compartment, said cover and said dish cooperating to provide a sealed receptacle having an upper compartment and segregated lower chambers, said culture plate being of such size and shape and so positioned on said perforated platform as to allow for free circulation throughout the entire interior of said receptacle.



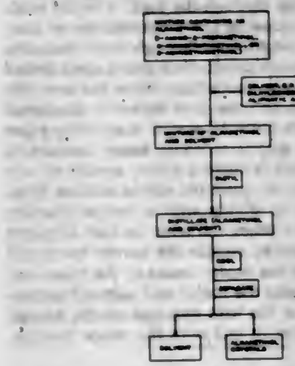
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3,165,451

## RECOVERY OF AMINO-SUBSTITUTED ALKANETHIOLS BY DISTILLATION WITH A SOLVENT

Rector P. Lonthan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,776
6 Claims. (Cl. 202—50)



1. A process for recovering an amino-substituted alkanethiol selected from the group consisting of 1-amino-2-propanethiol, 3-aminopropanethiol, and 2-aminoethanethiol from a material containing the same, which process comprises mixing said material with a solvent selected from the group consisting of alkylbenzenes and aliphatic alcohols and having an atmospheric boiling point in the range of 120 to 155° C., subjecting the resulting mixture to distillation to obtain a distillate comprising said amino-substituted alkanethiol and said solvent, cooling said distillate to crystallize said amino-substituted alkanethiol, and separating the resulting crystals of said amino-substituted alkanethiol from the cooled distillate.

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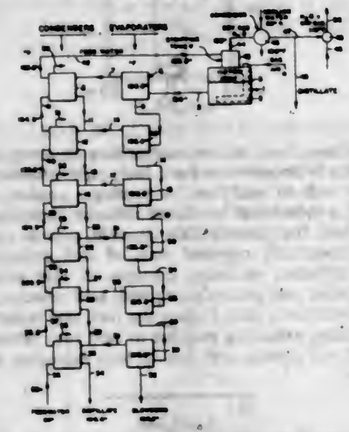
3,165,452

## SUBMERGED COMBUSTION AND FLASH EVAPORATION SYSTEM AND PROCESS

Arthur Williams, Munster, Ind., assignor to Submerged Combustion, Inc., Hammond, Ind., a corporation of Indiana

Filed June 15, 1959, Ser. No. 820,231
3 Claims. (Cl. 202—53)

1. A system for evaporation of liquids and condensation of the vapors therefrom comprising in combination a heating unit in which the liquid to be evaporated is disposed, said heating unit comprising a submerged combustion burner wherein the flame of the burner burns in direct contact with the liquid to be evaporated beneath the liquid level and the products of combustion from the burner are discharged directly into said liquid, means for removing undissolved gases from the combustion zone, a series of flash evaporators provided with a vapor space above the liquid, means to transfer the hot liquid containing said dissolved products of combustion directly from said heating unit to said series of flash evaporators where a part of the liquid is successively flashed into flash vapors, a condenser connected to each said flash



evaporator, means to maintain successively lower pressures and temperatures in said flash evaporators, means to transfer said flash vapors from said vapor space above the liquid in said flash evaporators to said condensers in each stage of evaporation where condensate is formed from said flash vapors, means to recover said condensate, means to transfer unvaporized liquid from one said evaporator to another in succession, means to transfer the products of combustion from the heating unit to operate an ejector connected to the vapor spaces of the condensers of each of the flash evaporators and serving to remove uncondensed gases from said condensers, and means to remove unvaporized liquid from the last evaporator in the series.

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3,165,453

## METHOD OF CONCENTRATING AQUEOUS HCl BY VAPORIZATION, COMBINED WITH PARTIAL CONDENSATION AND ABSORPTION

Robert C. Sutter, Painesville, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

Filed July 20, 1959, Ser. No. 828,151
2 Claims. (Cl. 202—67)

1. A method for concentrating aqueous hydrochloric acid of a concentration greater than 13° Bé. which includes the steps of:

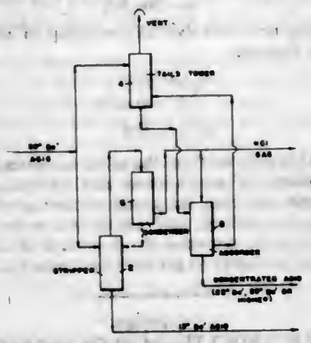
(A) Splitting a body of liquid aqueous hydrochloric acid having a hydrogen chloride content greater than that equivalent to 13° Bé. into two portions.

(B) Heating the first of said portions to form a first vapor mixture of hydrogen chloride and water, and liquid hydrochloric acid having a hydrogen chloride content substantially equivalent to 13° Bé.;

(C) Passing said first vapor mixture to a condenser wherein it is cooled to a temperature sufficiently low to separate a liquid aqueous hydrochloric acid phase and a second vapor mixture of hydrogen chloride and water;



(D) Passing said second vapor mixture to the second portion of aqueous hydrochloric acid from step (A) and absorbing it therein at a temperature below the



boiling point of said second portion, and recovering the body of aqueous hydrochloric acid thus concentrated.

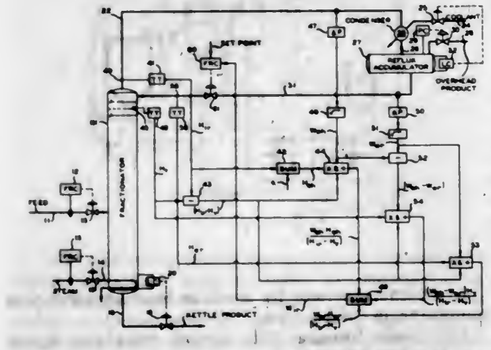
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3,165,454

## FRACTIONATION CONTROL

Donald R. Wiesecke, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 1, 1962, Ser. No. 176,724
3 Claims. (Cl. 202—160)



1. In a fractionation system wherein a fluid mixture to be separated is introduced into a fractionation column; a kettle product stream is removed from the lower region of said column; vapors are withdrawn from the upper region of said column; a portion of said vapors are condensed; and resulting condensate is returned to the upper region of said column as external reflux; a control system comprising means to sense the temperature of the vapors withdrawn from said column and to establish a first signal $H_{tr}$ in response thereto, said signal $H_{tr}$ being representative of the enthalpy of the internal reflux in said column at a region immediately below the point of introduction of external reflux to the column; means responsive to said first signal to establish a second signal $H_{ov}$ representative of the enthalpy of the vapors withdrawn from said column; means to sense the temperature of said external reflux and to establish a third signal $H_{er}$ in response thereto, said signal $H_{er}$ being representative of the enthalpy of said external reflux; means to sense the temperature in said column a short distance below the point at which said external reflux is returned and to establish a fourth signal $H_v$ in response thereto, said signal $H_v$ being representative of the enthalpy of vapor in said column at the region the temperature is sensed; means to measure the rate of flow of overhead vapors from said column and to establish a fifth signal $W_{oh}$ representative thereof; means to measure the rate of flow of external reflux and to establish a sixth signal $W_{er}$ representative thereof; means responsive to said first, second, third, fourth, fifth and sixth signals to establish a seventh signal $W_{tr}$ which is equal to the quantity

$$\left[\frac{W_{er}H_{er}}{H_{tr}-H_v}\right]+\left[\frac{(W_{oh}-W_{er})H_v}{H_{tr}-H_v}\right]-\left[\frac{W_{oh}H_{oh}}{H_{tr}-H_v}\right]$$

and means responsive to said seventh signal to adjust the rate of flow of said external reflux.

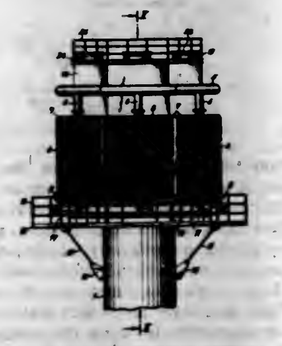
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3,165,455

## DISTILLING ARRANGEMENT

Werner Rose, Bochum, and Herbert Kolenda, Essen, Germany, assignors to GEA-Luftkuhler-Gesellschaft m.b.H., Bochum, Germany

Filed May 17, 1960, Ser. No. 29,684
Claims priority, application Germany, May 21, 1959, G 27,100
10 Claims. (Cl. 202—189)



1. A distilling arrangement comprising, in combination, an elongated distilling column having an upper end portion in which the vaporized head product collects; air cooled condenser means comprising at least one jacket composed of a plurality of groups of finned tubular condenser elements spaced from each other and surrounding said upper end portion of said column spaced therefrom and having each an upper end located at a higher elevation than the lower end thereof and a length which is only a small fraction of that of said column; means connected to the upper ends of a plurality of said condenser elements and to the upper end of said column for carrying said condenser elements on said upper end of said column and for connecting the interior of said upper end of said column in parallel with the interior of said condenser elements so that the vaporized head product may pass through said condenser elements to condense therein, whereby the condensate will flow in downward direction through said elements; means connecting the lower ends of said condenser elements in parallel to each other; and air circulating means located in the region of said upper end portion of said column and within the area between said column and said jacket for circulating air between said condenser elements and through the space between the latter and said upper end portion of said column.

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3,165,456

## DEVELOPER

David A. Morgan, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Nov. 21, 1960, Ser. No. 70,431
10 Claims. (Cl. 204—18)

7. A process for electrolytically reproducing an image which comprises exposing to a light-image a copy-sheet

comprising a photoconductor bonded to a conductive carrier sheet, contacting and electrolytically developing said exposed sheet with an aqueous solution having a pH below 7 consisting essentially of a complex of a silver salt and a thiourea, an acid and 4 to 15 weight percent of an alkaline earth salt buffering agent, the mol ratio of silver salt to thiourea being 1:3.

## 3,165,457
## DIRECT POSITIVE PHOTOCONDUCTOGRAPHY

Donald Pearlman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 15, 1961, Ser. No. 109,977
8 Claims. (Cl. 204—18)




1. In a photoconductographic process the steps comprising forming in a photoconductive layer an image pattern of variations in electrical conductivity, placing the photoconductive layer in electrical contact with a light tone layer containing a uniformly distributed, substantially colorless, material, which material will react with a reagent to form a dye of a darker tone than the initial tone of said light tone layer and which material is reducible to an non-so-reactive form by the passage of electrical current, passing current through both layers with said photoconductive layer acting as a cathode, whereupon said current is distributed in accordance with said pattern to reduce said material in areas of higher current density, and subsequently treating the light tone layer with said reagent to react with the unreduced moiety in the other areas to form said dye.

## 3,165,458
## ELECTROLYTIC RECORDING SHEETS

Benjamin R. Harriman, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Sept. 22, 1961, Ser. No. 140,032
10 Claims. (Cl. 204—18)

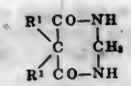
7. A photoconductive copysheet capable of electrolytic development which comprises a continuous electrically conductive layer having thereon a thin, continuous and contiguous layer of photoconductive particles in a water-insoluble insulative binder and, superimposed thereon, a thin, continuous, glossy, adherent, transparent, cohesive, water permeable and water insoluble layer comprising a film forming silica, said layer being essentially free of alkali metal ions.

## 3,165,459
## PROCESS OF MANUFACTURE

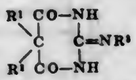
Wilhelm Peter Seebode and Charles Henry Vasey, Grangemouth, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 2, 1960, Ser. No. 73,227
Claims priority, application Great Britain, Dec. 21, 1959, 43,324/59
3 Claims. (Cl. 204—74)

1. A process for the manufacture of pyrimidine derivatives of the formula:



which comprises electrolytically reducing an imino-derivative of the formula:

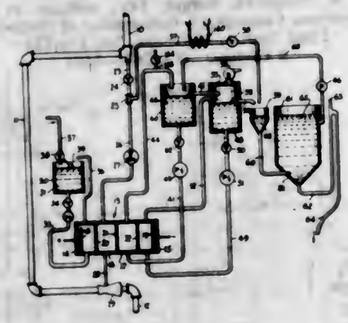


wherein $R^1$ is selected from the group consisting of phenyl and halophenyl, $R^2$ stands for an alkyl radical, and wherein $R^3$ is selected from the group consisting of hydrogen and the cyano radical, said electrolytic reduction being carried out in the presence of sulphuric acid using a current density sufficient to provide the desired reduction.

## 3,165,460
## ELECTROLYTIC ACID GENERATOR

Joseph Albert Zaug, Rockville Centre, N.Y., and Erwin Morton Cohen, Stamford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Apr. 11, 1962, Ser. No. 186,793
9 Claims. (Cl. 204—301)



1. An acid generator for a salt or brackish water feed comprising, in combination,

(*a*) means forming first, second, third and fourth juxtaposed fluid treatment cells,

(*b*) a pair of electrodes in said first and said fourth fluid treatment cells,

(*c*) a direct current source connected to said pair of electrodes with said electrode in said first cell functioning as an anode and said electrode in said fourth cell functioning as a cathode,

(*d*) cation permeable membranes disposed between said first and said second and between said third and said fourth cells,

(*e*) an anion permeable membrane disposed between said second and said third cells,

(*f*) first, second, third and fourth sets of pipes leading into and out of said first, second, third and fourth cells,

(*g*) means connected to said first set of pipes for circulating a dilute solution of an acid through said first cell,

(*h*) means for directing some feed water through said second cell through said second set of pipes,

(*i*) a first tank having an overflow and means for circulating fluid from said first tank through said third set of pipes through said third cell,

(*j*) a second tank receiving overflow from said first tank, having means for circulating fluid from said second tank through said fourth set of pipes and said fourth cell, and having an overflow,



(*k*) a settling tank having a pipe leading from its bottom portion, a stand pipe connected to said pipe leading from said settling tank, and a waste drain overflow leading from the upper portion of said stand pipe,

(*l*) a floc former container connected to the lower portion of said settling tank, said overflow of said second tank leading into said floc former,

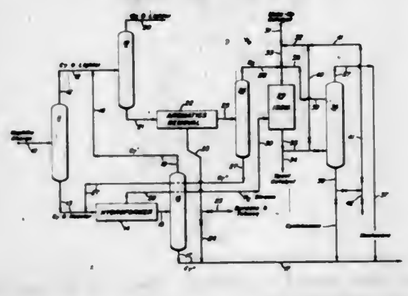
(*m*) means for flowing feed water at a constant rate into said floc former container, and

(*n*) pump means for drawing the solution from the top portion of said settling tank and delivering the fluid from said settling tank into said second tank at a rate less than the total combined rate of said means for flowing feed water into said floc former container and the rate of said overflow of said second tank leading into said floc former container.

## 3,165,461
## NEOHEXANE PRODUCTION

Dennis E. Wade and Maynard L. Anderson, Texas City, Tex., assignors, by mesne assignments, to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Aug. 7, 1959, Ser. No. 832,201
4 Claims. (Cl. 208—64)



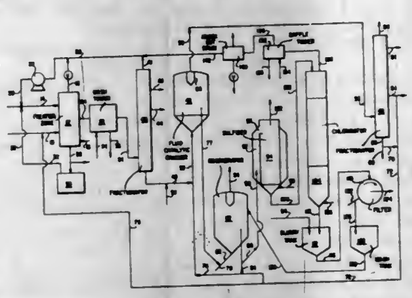
1. The method of converting naphtha to an aromatic product and a super premium motor fuel having a clear octane number substantially higher than 100 which method comprises splitting naphtha into a light fraction containing some $C_7$ and lighter hydrocarbons and a heavy fraction containing $C_7$ and heavier hydrocarbons, hydroforming the heavy fraction under a severity to obtain reformate of which the higher boiling portion has an octane number of about 102–104, splitting the reformate into a light fraction containing $C_7$ and lighter hydrocarbons and a separate heavy reformate fraction, depentanizing the combined light fractions, removing substantially all aromatics from the depentanized light fractions to obtain a dearomatized stream, dehexanizing the dearomatized stream to obtain a hexane stream and a heptane stream, recycling at least a part of the heptane stream to the hydroforming step, isomerizing the hexane stream which is substantially free from aromatics and which contains 2–20% naphthenes by contacting with aluminum chloride-on-adsorbent catalyst containing about 15–30% aluminum chloride under a pressure sufficient to maintain liquid phase conditions at a temperature in the range of about 60–180° F. for a time to convert a large proportion of the normal hexane and methylpentanes to dimethylbutanes, splitting the isomerization product by fractional distillation to obtain a stream which is chiefly neohexane and a stream consisting essentially of methylpentanes and normal hexane, recycling the latter stream to the isomerization step and combining the neohexane stream with the heavy reformate fraction to produce super premium gasoline having a clear octane number substantially higher than 100.



## 3,165,462
## PRETREATMENT AND CRACKING OF HEAVY MINERAL OILS

Bernard S. Friedman, Chicago, and James P. Gallagher, Park Forest, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 10, 1961, Ser. No. 130,513
20 Claims. (Cl. 208—86)



1. A method for preparing gasoline which comprises contacting a hydrocarbon cracking feedstock boiling above the gasoline range and containing at least about 1 p.p.m. nickel and at least about 1 p.p.m. vanadium by including in said feedstock the residual product obtained as hereafter set forth, with a solid cracking catalyst under cracking conditions to produce gasoline, removing from the cracking system catalyst contaminated with metal contaminant, the removed catalyst containing at least about 50 p.p.m. nickel and at least about 50 p.p.m. vanadium, demetallizing the catalyst to remove at least 50% of the nickel and at least 15% of the vanadium from the catalyst, returning the catalyst to said cracking system and recovering gasoline product from said cracking; said feedstock containing the residual product obtained by treating a mineral oil hydrocarbon boiling above about 650° F. and containing at least about 5 p.p.m. nickel and at least about 5 p.p.m. vanadium with a metal- and -asphalt precipitating acid to reduce by about 10 to 90% the content of said contaminant, said residual product containing at least about 1 to about 25 p.p.m. nickel and at least about 2 to about 50 p.p.m. vanadium and less metal contaminant than said mineral oil hydrocarbon.

## 3,165,463
## HYDROREFINING OF CRUDE OIL AND CATALYST THEREFOR

William K. T. Gleim, Island Lake, and John G. Gatsis, Des Plaines, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed July 2, 1962, Ser. No. 207,001
16 Claims. (Cl. 208—264)

1. A process for hydrorefining a hydrocarbon charge stock which comprises the steps of:

(*a*) admixing said hydrocarbon charge stock with an organo-metallic compound in which the metal is selected from the group consisting of vanadium, niobium, tantalum, molybdenum, tungsten, iron, cobalt and nickel;

(*b*) decomposing said organo-metallic compound in said charge stock and sulfiding the resulting colloidal suspension to form the sulfide of said metal;

(*c*) reacting the metal sulfide-containing colloidal suspension with hydrogen at a temperature above about 225° C. and at a pressure greater than 500 pounds per square inch gauge;

(*d*) separating the reaction product to provide a gaseous phase containing hydrogen sulfide, a hydrorefined liquid product substantially free from catalytic solids and a catalyst-containing sludge;

(*e*) sulfiding at least a portion of said catalyst-containing sludge, admixing the sludge with said hydrocarbon charge stock and reacting the resulting colloidal suspension as aforesaid.

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3,165,464
METHOD OF REFINING OIL
Robert H. Campbell, Drexel Hill, and Irwin H. Johnson, Chester, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Sept. 7, 1962, Ser. No. 222,225
11 Claims. (Cl. 208—276)

1. Method of treating mineral oil comprising the steps of concurrently contacting a mineral oil in liquid phase with (1) 15–30 lbs. of concentrated sulfuric acid per barrel of oil, (2) at least 0.4%, as iron, based on weight of oil, of an inorganic ferric salt, and (3) at least 1.5%, as copper, based on weight of oil, of a compound selected from the group consisting of copper metal and inorganic copper salts; said concurrent contacting being at a temperature in the range of 90° to 130° F. and for a period of time in the range of 20–35 minutes, separating an acid phase from a treated oil phase, and thereafter contacting said treated oil phase with adsorptive clay.

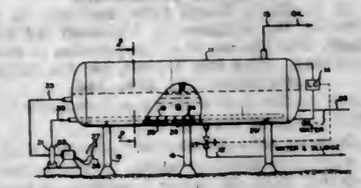
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3,165,465
FLOCCULATION AND SETTLING OF LIQUID SUSPENSIONS OF FINELY-DIVIDED MINERALS
Charles L. Ray, Wheaton, and Robert E. Bearson, La Grange, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 4, 1961, Ser. No. 107,635
8 Claims. (Cl. 210—53)

1. A process for flocculating and settling finely-divided minerals in liquid suspension comprising the steps of first mixing into said suspension a flocculant selected from the group consisting of a polyacrylamide, carboxymethyl cellulose, guar gum and gelatin and then mixing into said suspension a cationic flocculant selected from the group consisting of a quaternary ammonium compound totally substituted with aliphatic radicals, at least one of which is a long chain hydrocarbon radical, and a water-soluble salt of N-aliphatic trimethylene diamine.

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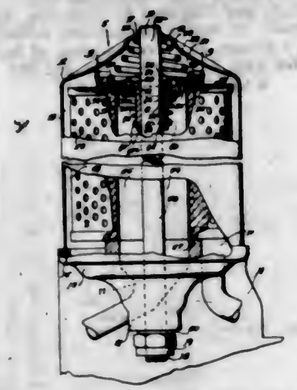
3,165,466
DESALTING APPARATUS
Lucien H. Vautrain and Miles L. Lacey, both of Okmulgee, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed June 2, 1961, Ser. No. 114,468
2 Claims. (Cl. 210—114)



1. Apparatus comprising in combination:
(*a*) a horizontally elongated sealed settling tank, having an inlet in one end at an intermediate level for a mixed stream of oil, salt water, and sludge material, an outlet for oil in its top section, and an outlet line connecting with the tank bottom intermediate its ends for salt water and sludge removal;
(*b*) a liquid level controller on said tank and a motor valve in the outlet salt water and sludge line, said controller being sensitive to the salt water level in said tank and being in control of said motor valve;
(*c*) a circulation line leading from a level in said tank just below the controlled salt water level to a level adjacent the bottom of said tank;
(*d*) a fixed perforate conduit extending longitudinally and internally of said tank substantially the length thereof adjacent its bottom connected with the lower end of the line of (*c*), the lower section of said tank between said perforate conduit and the outlet for salt water and sludge being unobstructed to permit free flow of salt water and sludge to the outlet line of (*a*); and
(*e*) pumping means in the line of (*c*) for circulating salt water from its upper end thru said perforate conduit.

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3,165,467
OIL FILTER
Robert J. Klein, Elmhurst and Christ B. Bozos, Hinsdale, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 29, 1962, Ser. No. 183,543
1 Claim. (Cl. 210—130)



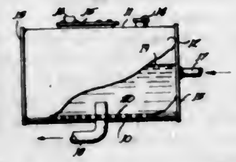
In a filter having an upwardly open cap, the combination with said cap, of:
a housing cylinder complemental to said cap so as to define therewith a filter chamber, and having a fixed, closed upper end and an open lower end engaging the cap in a first sealed ring of pressure contact;
a hollow cored, filter element and a hold-down stud element, disposed one element within the other in the filter chamber and with an annular space between each element and the surrounding element;
said cylinder being substantially coextensive in length with the filter element, said cap being located adjacent the lower end of the filter element and providing support so as to hold the filter element in a completely exposed condition when the housing cylinder is removed;
said hold-down stud element having the upper end joined fluid tight to the fixed closed end of the cylinder, and having a detachable lower end and a fastener carried thereby as the hold-down means in engagement with the cap;
biasing means between the upper end of the housing cylinder and the corresponding upper end of the filter element; and
a unitized valve assembly, said valve assembly comprising a spring seat clamped between said upper end of the filter element and the biasing means, and serving as a hold-down to cause the supported lower end of the element to seat in a second ring of pressure contact exerted against the cap;
said spring seat having a depending sleeve and defining a valve port which has an axis extending generally parallel to the sleeve and which is spaced apart radially outwardly thereof;



a filter by-passing valve carried by said sleeve below and in covering relation to said valve port, said spring seat sleeve engaging the stud element in guided sliding relation and supporting the by-passing valve thereon in guided sliding relation; said sleeve having a distal end; and
biasing means in said unitized valve assembly between the distal end of the sleeve and the by-passing valve, and biasing said valve with predetermined sealing force against the valve port in the spring seat;
said cap having an upstanding annular seat against which the aforesaid second ring of pressure contact is exerted by the lower end of the filter element; said cap further having an inlet passage outside said annular seat which introduces unfiltered fluid into the filter chamber, and an outlet passage inside said annular seat which is separated thereby from the inlet passage and which discharges all fluid passing through the filter element and by-passing the filter element.

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3,165,468
SEDIMENT TRAP FOR HYDRAULIC FLUID RESERVOIR
Don S. Strader, Mount Prospect, Ill., assignor to The Frank G. Hough Co., a corporation of Illinois
Filed Jan. 19, 1961, Ser. No. 83,780
2 Claims. (Cl. 210—172)

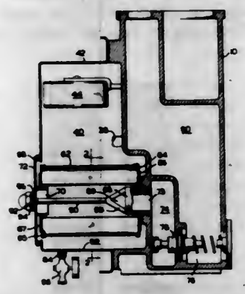


1. A hydraulic fluid reservoir comprising an enclosed container having a substantially flat bottom wall and a top wall, said top wall having an access opening, a cover plate removably securable to said top wall for covering said opening, a sediment trap having a plan configuration substantially complementary to that of said bottom wall, said trap having a base member and a plurality of substantially cylindrical cells the tops of which are open and which are secured to said base member and upstanding therefrom, said trap being formed of a substantially flexible material to permit the easy ingress and egress of said trap through said opening, whereby said sediment trap may be easily removed from and replaced in said container.

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3,165,469
VAPOR AND SOLIDS SEPARATOR FOR GASOLINE
Frank J. Bruss, Hazel Crest, and Alan H. Eron, Calumet City, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 14, 1960, Ser. No. 14,870
7 Claims. (Cl. 210—232)

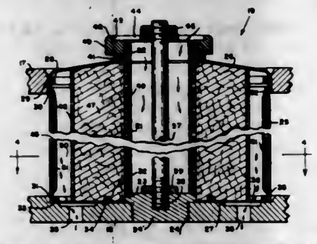
1. An apparatus for separating vapor and solids from gasoline and suitable for use in a gasoline dispenser comprising a chamber having an inlet for pumped gasoline and an outlet for filtered gasoline, said chamber being provided with a collection space and a vent for separated vapors, a longitudinally pleated, resin-impregnated cellulose cylindrical filter which is wetted by gasoline in preference to water, having an essentially horizontal axis in the flow path between said inlet and outlet, said chamber being provided with a drain for separated solids, said chamber comprising a bell having an opening at its side sufficient to allow passage of the filter through the opening, a cover for the said opening, a pipe secured to said outlet and a rod secured to said outlet pipe engageable



with said cover, said cover and said outlet pipe holding the filter in operative position.

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3,165,470
LIQUID COALESCING AND SEPARATING APPARATUS
Robert C. Giesse, Bettendorf, Iowa, and William C. Smith, Moline, Ill., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 2, 1959, Ser. No. 850,309
2 Claims. (Cl. 210—307)



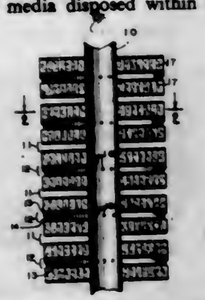
1. Filtering apparatus for removing solids and water from a hydrocarbon fuel, comprising in combination a housing having an inlet and an outlet; a sump connected to said housing; baffle means within said housing; tubular filter means extending from said baffle means and having a portion of its interior in communication with said inlet, and another portion in communication with said sump; and means extending completely between said portions for causing water admixed with said fuel to coalesce, said means comprising a separating element compounded of a mass of coated fibers, the coating on sad fibers including polyethylene and having formed therein a profusion of knob like protuberances, whereby said coalesced water separates from said fuel within that portion of said tubular filter means in communication with said sump and collects therein.

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3,165,471
FILTER CARTRIDGE
Harold G. Hencken, Greenwich, Conn., assignor to American Felt Company, Glenville, Conn., a corporation of Massachusetts
Filed July 6, 1960, Ser. No. 41,111
1 Claim. (Cl. 210—347)

A filter cartridge unit comprising a tubular core having a plurality of longitudinally spaced groups of peripherally disposed openings therethrough; a plurality of sets of four similarly radially dimensioned and perforated rigid discs in generally uniformly spaced parallel relationship along said core, the middle two of said group of four discs disposed to straddle one of said groups of said openings with each of said middle discs having an imperforate

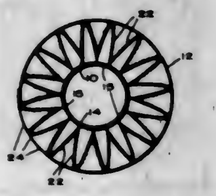
laterally extending edge flange portion constructed to telescope one flange portion within the other to form therebetween a fluid collecting chamber open only to one of said group of openings at the inner radius of the discs, and a filter media disposed within and filling the



spaces between the first two and second two of said perforated discs, said filter media being an involutely wound strip of mechanically interlocked synthetic fiber felt of significant thickness and of a width substantially equal to the spacing between said discs.

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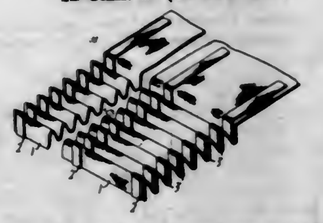
3,165,472
FILTER WITH FILTER AID
Southwick W. Briggs, Howard County, Md. (% Stone Filter Corporation, 900 Franklin St. NE., Washington, D.C.)
Filed June 23, 1960, Ser. No. 38,275
5 Claims. (Cl. 210—457)



1. A filter comprising a permeable impregnated paper filter element having axial pleats defining a plurality of inner and outer peaks, said outer peaks being spaced apart and lying substantially in a cylinder, a permeable core disposed within said element in contact with said inner peaks, a permeable annular cover member embracing said outer peaks, and a layer of mutually free loosely arranged textile fibers disposed between said element and said cover member.

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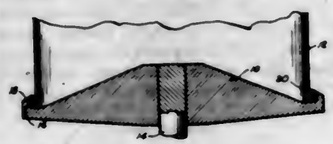
3,165,473
CORRUGATED FILTER UNIT
David B. Pall, Roslyn Heights, Marcel G. Verrando, Jr., Glen Cove, and Bernard Silverwater, Westbury, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Oct. 24, 1960, Ser. No. 64,346
12 Claims. (Cl. 210—510)



1. A filter element comprising a corrugated foraminous metallic sheet material which has a tendency to become distorted under the conditions to which it is subjected in use, and a relatively narrow metallic cross-strip bonded to a surface thereof and following the corrugated contour of the sheet, in and out of the corrugations thereof in a manner to prevent distortion thereof.

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3,165,474
ROTOR END CAP
Thomas C. Delker, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,158
1 Claim. (Cl. 233—27)



In a rotary inertial device for developing substantial centrifugal force, a driving and sealing means comprising:
an end cap formed with a substantial cross section, said end cap being adapted for rotation about an axis of symmetry thereof, said end cap having a peripheral flange portion parallel with said axis of symmetry, which flange portion has an annular inwardly facing portion prescribing an annular trough at the periphery of said end cap;
a tube member including a surface of revolution having a wall of a smaller cross section than said end cap to allow said tube to expand at a greater rate than said end cap, said tube being of an external diameter that permits said tube to rest on said end cap spaced inwardly of said inwardly facing portion a predetermined distance which is equal to the radial growth dimension of said tube member whereby at operating speeds of said rotary inertial device said tube member and said end cap inwardly facing portion are in driving contact; and
a deformable ring having an internal diameter of sufficient size to tightly grip said tube member and an external diameter of sufficient size to contact the surfaces of said annular trough such that said deformable ring is squeezed between said annular trough of said end cap and an outer surface of said tube member such that said tube member is centered on said end cap with respect to the axis of symmetry, said ring forming the driving connection between said end cap and said tube member during acceleration to operating speeds and being capable of flowing outwardly against the inner surfaces of said trough to permit said radial growth of said tube member to contact the annular inwardly facing portion of said end cap for direct driving contact at operating speeds with said ring remaining in contact with both said tube member and said end cap throughout said acceleration and during the maintenance of said operating speeds.

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3,165,475
STRONTIUM COMPOSITION AND PROCESS OF MAKING IT
Lawrence C. Amos, Longview, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Sept. 7, 1962, Ser. No. 222,241
3 Claims. (Cl. 252—301.1)

1. A method of handling strontium$^{90}$ consisting in mixing a strontium$^{90}$ compound selected from the group consisting of strontium$^{90}$ oxide and strontium$^{90}$ carbonate with lithium fluoride, melting the mixture obtained at above 800° C. whereby it reacts, cooling the reaction product, and dissolving the reaction product in mineral acid.



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3,165,476
METHOD OF PROCESSING ELECTRO-LUMINESCENT PHOSPHOR
Anselm Wachtel, Sayreville, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 15, 1962, Ser. No. 166,356
4 Claims. (Cl. 252—301.6)

1. The method of enhancing the electroluminescent performance of fired finely divided Group IIB metal sulfide electroluminescent phosphor which includes copper as activator, which method comprises, washing said phosphor in a solution which is a good solvent for cuprous sulfide but which is not a good solvent for Group IIB metal sulfide for a sufficient period of time to lighten the body color of said phosphor, removing residual washing solution from said phosphor, additionally washing said phosphor in a 5% to 15% by weight hydrogen peroxide aqueous solution for a period of at least thirty minutes and not exceeding such time as will permit a substantial portion of said phosphor to dissolve, and thereafter removing from said phosphor any residual hydrogen peroxide washing solution.

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3,165,477
PROCESS FOR INHIBITING FOAMING IN AN AQUEOUS FLUID
Robert E. Crowe, Midland, Mich., and Bartolome Garcia, Jr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 10, 1962, Ser. No. 165,318
6 Claims. (Cl. 252—321)

1. The process for inhibiting foaming in an aqueous fluid having a tendency to foam, said process comprising dispersing in said fluid a small but effective proportion of an antifoam compound having the formula

$$R(OA)_n—NH_2$$

wherein R represents a radical selected from the group consisting of —$ANH_2$ and hydrocarbon radicals containing up to about 18 carbon atoms, A represents an alkylene radical containing 3 to 4 carbon atoms and $n$ is an integer from about 5 to about 100.

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3,165,478
PROCESS FOR THE REGENERATION OF RANEY-NICKEL CATALYST
Ulrich Hauschild, Hannover, and Horst Nicolaus, Nurnberg, Germany, assignors to Kali-Chemie Aktiengesellschaft, Hannover, Germany
No Drawing. Filed Aug. 3, 1961, Ser. No. 130,226
Claims priority, application Germany, Aug. 5, 1960, K 41,390 IVa/121
8 Claims. (Cl. 252—413)

1. A process for the regeneration of Raney-nickel catalysts used in the production of hydrogen peroxide over organic compounds in the hydrogenation steps, comprising contacting the used catalyst under exclusion of free oxygen, at a temperature in the range between ordinary room temperature of 15–25° C. and 50° C., with the solution of carboxylic acid in an alcohol, the carboxylic acid being selected from the group consisting of acetic acid, propionic acid, butyric acid, caproic acid, capric acid, palmitic acid, stearic acid, oleic acid, lactic acid, malonic acid, succinic acid, adipic acid, maleic acid, fumaric acid, tartaric acid, pyroracemic acid and benzoic acid, and the alcohol being selected from the group consisting of lower aliphatic and cycloaliphatic monofunctional alcohols and using 1.5 to 4.5 parts of the alcoholic solution containing 10 to 50% of the carboxylic acid for one part of the catalyst to be regenerated.

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3,165,479
PROCESS FOR ACTIVATING A CATALYST COMPOSITE
Emmett H. Burk, Jr., Hazel Crest, and John Mool, Homewood, Ill., assignors, by mesne assignments, to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Aug. 7, 1959, Ser. No. 832,132
6 Claims. (Cl. 252—442)

1. A process for activating a catalyst composite consisting essentially of a platinum group noble metal decomposable compound sufficient to provide about 0.01 to 2 percent of a platinum group noble metal, about 5 to 50 percent of an aluminum halide Friedel-Crafts component and about 40 to 95 percent of an activated alumina comprising placing the catalyst under a vacuum less than about 5 mm. Hg at temperatures up to about 150° F. and heating the catalyst composite under said vacuum at temperatures from about 600° F. to 900° F. for a time sufficient to enhance the hydrocarbon conversion activity of the catalyst.

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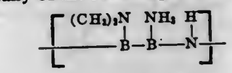
3,165,480
ELECTRICAL CONTACT BRUSH
Ronald W. Churchill, Jr., Fostoria, Ohio, assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 18, 1957, Ser. No. 703,513
5 Claims. (Cl. 252—503)

1. A carbon electrical contact brush consisting of from 5 to 30 weight percent of discrete particles containing at least one film-forming and lubricating material selected from the group consisting of barium fluoride, molybdenum disulphide, lead oxide, zinc sulphide, silver sulphide and calcium carbonate, and a metal selected from the group consisting of silver, copper and lead in an amount sufficient to render said particles electrically conductive; said metal being present in an amount up to 25 weight percent of said brush; said particles being of a size that will pass through a 10 mesh Tyler standard screen and rest on a 100 mesh screen and being substantially uniformly distributed throughout the entire brush mass, the contact surface of said brush being composed of 7 to 8 percent by area of said particles initially and as the brush wears, the remainder of said brush being carbon.

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3,165,481
POLYMERIC ORGANOBORON COMPOUNDS
Robert J. Brotherton, Fullerton, Allen L. McCloskey, Orange, and Lowell L. Petterson, Whittier, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed Mar. 20, 1962, Ser. No. 181,182
3 Claims. (Cl. 260—2)

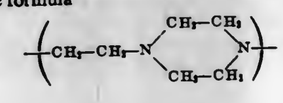
1. Solid, thermally stable organoboron polymers consisting essentially of the recurring structural unit



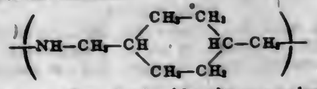
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3,165,482
POLYMERS FROM N-HETERO-BICYCLO ALKANES AND PROCESS FOR PRODUCING SAME
Henry K. Hall, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 13, 1962, Ser. No. 209,761
12 Claims. (Cl. 260—2)

1. A novel polymer selected from the group consisting of (a) those consisting essentially of recurring structural units of the formula



and (*b*) those consisting essentially of recurring structural units of the formula



there being more than 5 of said units per polymer molecule.

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3,165,483

## SKELETAL POLYURETHANE FOAM AND METHOD OF MAKING SAME

Paul G. Gemeinhardt, Sistersville, W. Va., and Stanley A. Bingham, Pittsburgh, Pa., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Feb. 23, 1961, Ser. No. 90,907
11 Claims. (Cl. 260—2.5)

1. The method of making a skeletal cellular polyurethane plastic which comprises reacting (*a*) an organic polyisocyanate with (*b*) a member selected from the group consisting of castor oil and a polyhydric polyalkylene ether having a molecular weight of at least about 285, in the presence of a blowing agent, an alkyl silane oxyalkylene block copolymer and from about 10 to about 40 parts per hundred parts of (*b*) of an additive selected from the group consisting of hydrocarbons having from 7 to 70 carbon atoms, halogen substituted hydrocarbons having from 7 to 70 carbon atoms, esters of equivalent amounts of carboxylic acids and alcohols based on the —OH and —COOH groups, aldehydes having from 4 to 18 carbon atoms and ketones having from 5 to 18 carbon atoms, said additive having a boiling point of at least about 100° C. and being free of groups which are reactive with an organic polyisocyanate.

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3,165,484

## CARBON PAPER INK CONTAINING A TRIMELLITIC ACID-ALKANOL-NEOPENTYL GLYCOL POLYESTER

Ronald L. Broadhead, Park Forest, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 31, 1960, Ser. No. 18,906
10 Claims. (Cl. 260—28)

1. A coating composition suitable for preparation of carbon paper which composition consists essentially of (A) mineral oil having an SSU viscosity at 100° F. of about 70–425; (B) a color affording ingredient; and (C) waxy resin prepared by the polyesterification-condensation reaction of (I) a monoester of an acidic member selected from the class consisting of trimellitic acid and anhydride thereof and a primary alkanol containing from at least 18 to about 36 carbon atoms and (II) an alkanediol containing from 2 to 6 carbon atoms in a straight chain between hydroxyl groups and a total of not more than 12 carbon atoms in a mole ratio of said alkanediol to said monoester of from about 0.9:1 to about 1.2:1, said reaction being at a temperature between about 125° C. and 225° C., with continuous withdrawal of water of reaction to obtain a waxy solid resin product having an Acid Number of not more than about 30.

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3,165,485

## HIGH QUALITY SEALING WAX

Stephan Ilnyckyj and David M. MacLeod, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 13, 1962, Ser. No. 223,517
5 Claims. (Cl. 260—28.5)

4. Improved wax composition of high sealing strength which comprises about 64% by weight of a paraffin wax having a melting point in the range from about 158 to 160° F., about 31% by weight of a paraffin wax having a melting point in the range from about 140 to 142° F. and about 5% by weight of a microcrystalline wax having a melting point of about 135° F., said wax composition having incorporated therein based upon the total wax from about 10 to 40% by weight of a copolymer of ethylene and a diester of an acid selected from the group consisting of fumaric and maleic acid, said diester containing from 6 to 16 carbon atoms, said copolymer containing from about 10% to 40% by weight of said diester and from about 90% to 60% by weight of ethylene.

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3,165,486

## CROSS-LINKED OLEFIN-MALEIC ANHYDRIDE INTERPOLYMERS AND SALTS THEREOF

John H. Johnson, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 29, 1958, Ser. No. 763,796
26 Claims. (Cl. 260—29.7)

1. A cross-linked interpolymer comprising substantially equimolar portions of maleic anhydride and an olefin having from 2 to 4 carbon atoms, and a cross-linking agent which is a vinyl ester of an olefinically unsaturated aliphatic carboxylic acid having from 3 to 24 carbon atoms in an amount in the range of about 0.1 mol percent to about 5 mol percent based on reacting monomers.

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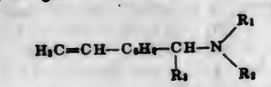
3,165,487

## COATING COMPOSITIONS OF GRAFT COPOLYMERS OF ALKALI SALTS OF VINYLPHENYL ALPHA-AMINOCARBOXYLIC ACIDS AND BUTADIENE-STYRENE COPOLYMERS AND METHOD OF MAKING THE SAME

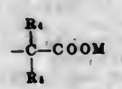
John Barton Gardner and Billy Gene Harper, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,298
12 Claims. (Cl. 260—29.7)

1. A composition comprising an aqueous dispersion of a graft copolymer consisting of a minor amount by weight of an alkali salt of a vinylphenyl amino carboxylic acid having the general formula:



wherein $R_1$ represents a radical selected from the group consisting of —H, —$CH_2$—COOM and radicals of the formula



wherein $R_4$ and $R_5$ individually represent a radical selected from the group consisting of —H, —$CH_2$—COOM, —$CH_2$—$CH_2$—COOM and alkyl radicals containing from 1 to 4 carbon atoms, at least one of the radicals $R_3$ and $R_5$ being selected from the group consisting of —H and alkyl, $R_3$ represents a radical selected from the group consisting of —H, —$CH_3$·$C_6H_4$·$CH$=$CH_2$ and —$CH_2$—COOM, $R_2$ represents a radical selected from the group consisting of —H, and —COOM, at least one of said $R_1$, $R_3$ and $R_2$ radicals containing the carboxylate group, and wherein M is a member of the group consisting of ammonium bases and alkali metals, polymerized in admixture with a synthetic latex containing a predominant amount by weight of a previously prepared copolymer of from 20 to 75 percent by weight of butadiene and from 80 to 25 percent of styrene which aqueous dispersion contains from about 20 to about 50 percent by weight of said graft copolymer.



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3,165,488

## SPINNING SOLUTIONS OF A MIXTURE OF POLYVINYL ALCOHOL AND A VINYL ACETATE-VINYLIDENE CYANIDE COPOLYMER IN DIMETHYL SULFOXIDE AND FIBERS THEREFROM

Kazuo Itoi, Kurashiki, Japan, assignor to Kurashiki Rayon Co., Ltd., Kurashikishi, Okayama Prefecture, Japan, a corporation of Japan

Filed Dec. 15, 1960, Ser. No. 76,027
Claims priority, application Japan, Dec. 15, 1959, 34/38,770
3 Claims. (Cl. 260—30.8)

1. A spinning solution effective to be spun into fibers having high elasticity and dyeability which comprises dimethylsulfoxide having dissolved therein polyvinyl alcohol and a vinyl acetate-vinylidene cyanide copolymer, the weight ratio between said polyvinyl alcohol and said copolymer being within the range of from 1:1 to 3:1 based on the weight of said polymers, and said vinyl acetate-vinylidene cyanide copolymer being essentially a 1:1 alternating copolymer.

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3,165,489

## ADHESIVES FROM COPOLYMERS OF ETHYLENE AND N-VINYL-N-METHYL-ACETAMIDE

Clarence E. Roth, Jr., Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 6, 1963, Ser. No. 263,106
10 Claims. (Cl. 260—31.2)

1. A normally liquid solution of (1) a copolymer of ethylene and N-methyl-N-vinyl acetamide, said copolymer having a melt index of from 10 to 500 decigrams per minute and containing from 25 to 50 weight percent polymerized N-methyl-N-vinyl acetamide, the balance being polymerized ethylene, in (2) a solvent selected from the group consisting of acyclic esters and ketones having a boiling point of from 75° C. to 130° C., said solution having a viscosity at room temperature of up to 10,000 centistokes.

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3,165,490

## NON-ELECTROSTATIC VINYL RESIN COMPOSITION

Taizo Uno, Tarumi-ku, Kobe, and Masaharu Yuasa, Nakagyo-ku, Kyoto, Japan, assignors to Tanabe Seiyaku Co., Ltd., Higashi-ku, Osaka, Japan

No Drawing. Filed May 17, 1962, Ser. No. 195,389
4 Claims. (Cl. 260—31.8)

1. A composition of matter consisting essentially of polyvinyl chloride resin and a destaticizing effective amount of a compound selected from the group consisting of di-alkyl aspartate and di-alkyl glutamate wherein each of said alkyl groups contains 4 to 12 carbon atoms.

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3,165,491

## VINYLIDENE CHLORIDE POLYMER COMPOSITIONS HAVING IMPROVED LOW TEMPERATURE PROPERTIES

George J. Butzler, Carl P. Zupic, and George B. Sterling, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1962, Ser. No. 202,062
14 Claims. (Cl. 260—31.8)

1. A polymeric composition comprising a blend of (I) from 70 to 95% by weight of the composition of a normally crystalline polymer selected from the group consisting of polyvinylidene chloride and interpolymers of at least about 70% by weight of vinylidene chloride with up to about 30% by weight of at least one other monoethylenically unsaturated comonomer and (II) complementarily from 5 to 30% by weight of the composition of a rubber-like copolymer consisting of (1) from 70 to 95% by weight of open chain aliphatic conjugated diolefin having from 4 to about 9 carbon atoms and (2) 5 to 30% by weight of a lower alkyl-lower alkenyl-ketone.

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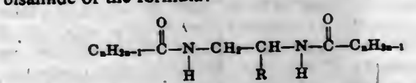
3,165,492

## SOLID POLY-α-MONO-OLEFIN CONTAINING N,N'-ALKYLENE BIS AMIDES

Clarence E. Tholstrup and Alan Bell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 14, 1959, Ser. No. 846,248
10 Claims. (Cl. 260—32.6)

1. A plastic composition comprising solid poly-α-mono-olefin and .0001 to 5% by weight of an N,N'-alkylene bisamide of the formula:



where *n* is an integer from 17 to 21 and R is alkyl.

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3,165,493

## CHLORINATED LINEAR, MACROMOLECULAR ETHYLENE POLYMER COATING COMPOSITIONS, THEIR USE AND COATED PRODUCTS THEREOF

Gerald E. Clock, Midland, Herbert R. Bailey, Saginaw, and Stanley F. Roth, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 13, 1959, Ser. No. 852,624
10 Claims. (Cl. 260—33.6)

1. Coating composition consisting essentially of (*a*) between about 5 and about 50 weight percent, based on the weight of the composition, of a chlorinated macromolecular polyethylene resin having an essentially linear and unbranched molecular structure from a parent macromolecular polyethylene having a melt index between about 15 and 75 and containing at least about 60 weight percent of combined chlorine and (*b*) between about 95 and about 50 weight percent, based on the weight of the composition, of a solvent vehicle comprised of at least about 50 weight percent of an aromatic hydrocarbon solvent for said chlorinated macromolecular polyethylene, said aromatic hydrocarbon containing between about 6 and about 10 carbon atoms in its molecular structure, any balance of said solvent vehicle being another organic ketone solvent for vinyl lacquers that is miscible with said aromatic hydrocarbon solvent; said chlorinated macromolecular polyethylene being the sole film-making resin in the composition.

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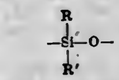
3,165,494

## ORGANOSILOXANE COMPOSITIONS CONTAINING ALKOXYDISILANES AS ROOM TEMPERATURE CROSS-LINKING AGENTS

Frederick A. Smith, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,803
12 Claims. (Cl. 260—37)

4. A composition of matter curable to an elastomer at room-temperature which comprises (1) 100 parts by weight of a diorganopolysiloxane fluid having a hydroxy group bonded to each of the terminal silicon atoms thereof, said fluid being an essentially linear diorganopolysiloxane composed of units of the formula:



wherein R and R' are monovalent organic radicals selected from the class consisting of monovalent hydrocarbon groups and monovalent carbon-functional substituted hydrocarbon groups, said substituted hydrocarbon groups bonded to the silicon atom through a carbon to silicon

linkage and wherein the carbon-functional substituent is removed by at least two carbon atoms of a saturated hydrocarbon chain from the silicon atom, said fluid having a viscosity of from 100 centipoises to 2,000,000 centipoises at room-temperature and having an organic group to silicon atom ratio of from about 1.95:1 to 2:1, (2) from 0.1 to 10 parts by weight of an alkoxydisilane compound containing at least six alkoxy groups, said alkoxydisilane compound being selected from the class consisting of alkoxydisilanes of the formula:

$$(R''O)_3Si—Si(OR'')_3$$

and the partial hydrolyzates thereof, wherein R'' is an alkyl group (3) from 10 to 200 parts by weight of a filler and (4) from 0.5 to 5 parts by weight of a metal salt of a carboxylic acid wherein the metal is selected from the class consisting of lead, tin, zirconium, iron, cadmium, titanium, calcium and manganese.

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3,165,495

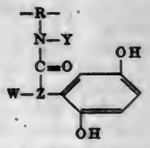
## HYDROQUINONE SUBSTITUTED POLYMERS

Lloyd D. Taylor, Everett, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Apr. 3, 1961, Ser. No. 100,019
5 Claims. (Cl. 260—47)

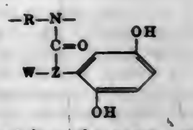
1. A process for preparing hydroquinone-substituted polymers represented by recurring groups selected from the group consisting of:

(A)

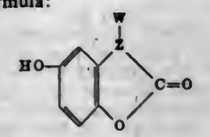


and

(B)



wherein R is selected from the group consisting of alkylene and aralkylene radicals, Y is selected from the group consisting of hydrogen, alkyl and aryl radicals, Z is an alkylene radical comprising one to two carbon atoms, inclusive, and W is selected from the group consisting of hydrogen and lower alkyl radicals; said process comprising reacting an amine-containing polymer, said amine having an acylatable amino nitrogen atom, with a compound of the formula:



wherein Z and W have the same meaning as above.

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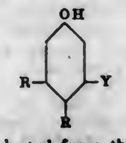
3,165,496

## HALOMETHYL HYDROCARBON-SUBSTITUTED PHENOLS

James V. Fusco and Samuel B. Robison, Westfield, and Alfred L. Miller, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Original application June 12, 1957, Ser. No. 665,246, now Patent No. 3,093,613, dated June 11, 1963. Divided and this application Oct. 31, 1961, Ser. No. 148,833
29 Claims. (Cl. 260—59)

1. A composition of matter containing halomethyl and methylol groups obtained by halogenating a composition selected from the group consisting of: (A) the reaction product of formaldehyde with (1) a phenol having the formula:



wherein each R is selected from the group consisting of hydrogen, $C_4$–$C_{18}$ alkyl, aryl, and alkaryl, and wherein at least one R is hydrogen and Y is selected from the group consisting of hydrogen and hydroxyl; and (B) mixtures of formaldehyde with (1), the content of combined halogen being between about 1 and about 30 wt. percent of the halogenated product and insufficient to completely substitute halogen for the hydroxyl radicals of the methylol groups.

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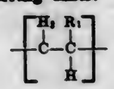
3,165,497

## ACRYLOXYACETOPHENONE COPOLYMERS

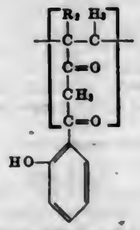
Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 29, 1960, Ser. No. 11,503
17 Claims. (Cl. 260—62)

1. A substantially linear polymer consisting essentially of the following recurring units:



and



wherein $R_1$ is selected from the group consisting of hydrogen and alkyl having 1–4 carbon atoms and $R_2$ is selected from the group consisting of hydrogen and alkyl having 1–3 carbon atoms,

the second-mentioned recurring units being .01–10 mole percent of said polymer, said polymer having an inherent viscosity of 0.3–3.0 as measured using 0.1 gram of the polymer in a solution with 100 milliliters of alpha-chloronaphthalene at 125° C.

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3,165,498

## NOVEL POLYMERS OF UNSATURATED CARBAMATES

William E. Bissinger, Akron, Ohio, assignor, by mesne assignments, to Pittsburgh Plate Glass Company

No Drawing. Filed Apr. 27, 1960, Ser. No. 24,904
5 Claims. (Cl. 260—67)

1. A condensation product of an unsaturated carbamate-normally gaseous aliphatic olefin polycarbamate interpolymer and an aldehyde

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3,165,499

## FILM AND PROCESS FOR MAKING SAME

Francis Peter Alles, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 27, 1960, Ser. No. 65,257
6 Claims. (Cl. 260—75)

2. An asymmetrically biaxially oriented polyethylene terephthalate film composed of a network of crystalline



and amorphous regions having an apparent density of 1.37–1.40 grams/cc. at 25° C., the average crystallite length being 50–75 Angstrom units, the average amorphous length being 65–110 Angstrom units, the sum of crystallite length and amorphous length being 125–160 Angstrom units, the weighted average distribution of the long axes of the crystallites being within an angle of 30–45° from the direction of greater orientation and the thermal dimensional stability at 150° C. being less than 15%.

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3,165,500

## PROCESS FOR THE PRODUCTION OF ACRYLONITRILE POLYMERS

Heino Logemann, Leverkusen, and Wilhelm Becker, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 17, 1961, Ser. No. 83,144
Claims priority, application Germany Feb. 17, 1960
9 Claims. (Cl. 260—79.3)

1. In a process for producing acrylonitrile polymers with a predominant proportion of acrylonitrile by polymerizing acrylonitrile in an aqueous medium at pH values below 7 in the presence of (1) a heavy metal ion selected from the group consisting of divalent iron and copper in an amount of 0.00001 to 0.1%, based on the weight of monomers, and (2) a complex former for said heavy metal ion selected from the group consisting of ethylene diamine tetraacetic acid, imido triglycolic acid, the alkali salts of hydrofluoric acid, the alkali salts of pyrophosphoric acid, and the alkali salts of hexametaphosphoric acid, said complex former being employed in an amount of 0.5–10% by weight, based on the weight of monomers, the improvement which comprises conducting said polymerization at a temperature of 30–70° C. with the aid of a redox system consisting of a mixture of an alkali salt of persulfuric acid and an alkali salt of pyrosulfurous acid, each salt being employed in an amount of 0.2–5% by weight of monomers and in the presence of a compound selected from the group consisting of formaldehyde sulfoxylate and formamidine sulfinic acid.

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3,165,501

## NITRO-AROMATIC TELOMERS

Maurits Krukziener, Amsterdam, Netherlands, assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Original application Nov. 2, 1959, Ser. No. 850,078, now Patent No. 3,116,250, dated Dec. 31, 1963. Divided and this application June 12, 1963, Ser. No. 287,181
Claims priority, application Netherlands, Nov. 18, 1958, 233,324
13 Claims. (Cl. 260—80.5)

1. As a new compound an oil-soluble telomer obtained by copolymerizing in substantially equal parts by weight and at a temperature ranging from 0° C. to 250° C., a mono-olefinic unsaturated taxogenic monomer containing at least one oleophilic group of at least 8 carbon atoms with a telogenic nitrobenzene in substantially equal parts by weight and at a temperature ranging from 0° C. to 250° C., said telomer having a molecular weight range of from 1,200 to 20,000.

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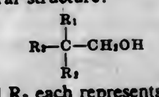
3,165,502

## NEOPENTYL HALIDE ESTER OF α,β-UNSATURATED CARBOXYLIC ACID

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 16, 1962, Ser. No. 217,275
12 Claims. (Cl. 260—86.1)

7. A resinous polymer of an unsaturated ester of (1) an α,β-unsaturated carboxylic acid selected from the group consisting of acrylic acid, methacrylic acid, maleic acid, fumaric acid and itaconic acid, and (2) an alcohol represented by the general structure:



wherein $R_1$, $R_2$ and $R_3$ each represents a member selected from the group consisting of $CH_2Cl$, $CHCl_2$, $CCl_3$, $CHClCH_3$, $CH_2Br$, $CHBr_2$, $CBr_3$, $CHBrCH_3$, $C_6H_4Cl$ and $C_6H_4Br$, and wherein $R_2$ and $R_3$ in addition represent the unsubstituted $CH_3$ group, said polymer having a softening point of from 120 to 200° C.

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3,165,503

## METHOD OF POLYMERIZING BUTADIENE-1,3 HYDROCARBONS

Henry Kahn, Grafton, and Samuel E. Horne, Jr., Akron, Ohio, assignors to Goodrich-Gulf Chemicals, Inc., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Apr. 7, 1959, Ser. No. 804,563
3 Claims. (Cl. 260—94.3)

1. A method for polymerizing monomeric material consisting of isoprene to form a polyisoprene high in molecular weight, low in gel and in which at least 90% of the isoprene units are joined cis-1,4 comprising mixing said monomeric isoprene with a reaction medium consisting of an inert aliphatic hydrocarbon boiling in the range of —10° to 10° C. and an active catalyst prepared by adding to said inert hydrocarbon, in the following order, (1) from about 1 to about 20 gram millimoles of a trialkyl aluminum per liter of said medium, (2) a trialkyl amine in which each alkyl group contains from 2 to 12 carbon atoms, (3) a condensate of an alkyl phenol and ethylene oxide having a molecular weight between 400 and about 1500, and (4) from about 1 to about 20 gram millimoles of titanium tetrachloride per liter of said reaction medium, the said ingredients (1), (2) and (3) being mixed together before addition of said ingredient (4), the said ingredients (1) and (2) being added to said aliphatic hydrocarbon in a molar ratio amine:aluminum between about 0.03:1 and about 0.5:1, the said ingredients (1) and (3) being added to said aliphatic hydrocarbon in a molar ratio condensate:aluminum between 0.001:1 and about 0.3:1, said ingredients (1) and (4) being added to said aliphatic hydrocarbon in a molar ratio titanium:aluminum between about 0.75:1 and 1.1:1, and the said monomeric isoprene constituting between about 5 and 30%/wt. of the total resulting mixture, and carrying out the polymerization of said monomeric isoprene in the said resulting mixture while refluxing said aliphatic hydrocarbon.

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3,165,504

## CATALYST AND PROCESS FOR PRODUCING OLEFIN POLYMERS

John P. Hogan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,612
11 Claims. (Cl. 260—94.9)

1. A polymerization process which comprises polymerizing monomers selected from the group consisting of ethylene and mixtures of ethylene with higher molecular weight 1-olefins having from 3 to 12 carbon atoms per molecule at a temperature in the range 100–500° F. in the presence of catalyst comprising chromium oxide supported on at least one member of the group consisting of silica, alumina, zirconia and thoria, wherein at least part of the chromium is hexavalent, said catalyst having been improved in activity by incorporating a metal fluoride of a metal selected from the group consisting of zirconium, iron, cobalt, silver, strontium, calcium, zinc, tin and bismuth therein and then heating at a temperature ranging from 450–1500° F. for a period of time ranging from 5 minutes to 20 hours sufficient to increase the activity of said catalyst in polymerizing said olefin.

### 3,165,505
### PROCESS FOR IMPROVING THE PROPERTIES OF POLYETHYLENE

Rudolf Gaeth, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Continuation of application Ser. No. 419,903, Mar. 30, 1954. This application Nov. 9, 1961, Ser. No. 151,188
Claims priority, application Germany, Apr. 4, 1953, B 25,064
6 Claims. (Cl. 260—94.9)

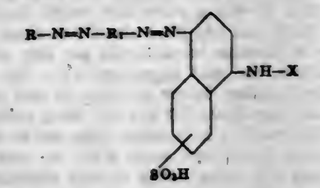
1. A process for improving the properties of solid polyethylene having a mean molecular weight exceeding 10,000 which comprises forcing said polyethylene in the solid state through the nip of a pair of rotating rollers at a speed of said polyethylene of 0.5 to 1.5 meters per second and a temperature of said polyethylene in said nip which is above 60° C. but below the melting point of said polyethylene, said nip being not larger than 0.1 mm. in width; in which nip a mechanical turbulence in the solid polyethylene is induced, and discharging the polyethylene from the nip of said rollers as solid, creped polyethylene.

### 3,165,506
### DISAZO DYESTUFFS CONTAINING A TRISULFONATE DIAZO COMPONENT

Raymond Gunst, Binningen, Switzerland, assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Aug. 8, 1961, Ser. No. 130,006
Claims priority, application Switzerland Aug. 12, 1960
9 Claims. (Cl. 260—153)

1. A water-soluble disazo dyestuff corresponding to the formula



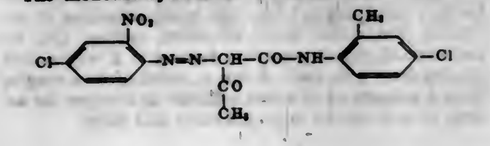

in which R represents a naphthalene radical containing three sulfonic acid groups as sole substituents, $R_1$ represents a member selected from the group consisting of the unsubstituted, the lower alkylated and lower alkoxylated 1:4-phenylene radicals, the 1:4-naphthylene and sulfo-1:4-naphthylene radicals, X represents a 1:3:5-triazine nucleus bound to the —NH— group through one of its carbon atoms, another of its carbon atoms bearing a member selected from the group consisting of a bromine and a chlorine atom and the third of its carbon atoms bearing a member selected from the group consisting of the amino and phenoxy groups.

### 3,165,507
### WATER-INSOLUBLE YELLOW MONOAZO-DYESTUFF

Oskar Braun and Gottfried Bandel, Frankfurt am Main, and Ernst-August Theiling, Hoechst, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 11, 1961, Ser. No. 158,589
Claims priority, application Germany, Dec. 16, 1960, F 32,773
1 Claim. (Cl. 260—193)

The monoazo-dyestuff of the formula




### 3,165,508
### DEGRADED STARCH POLYOXYALKYLENE ETHER COMPOSITIONS AND PROCESS FOR PRODUCING THE SAME

Felix H. Otey and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 13, 1962, Ser. No. 187,443
10 Claims. (Cl. 260—210)
(Granted under Title 35, U.S. Code (1952), sec. 266)

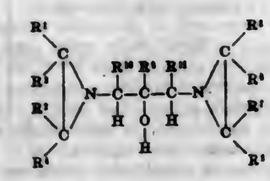
1. A process for the production of a degraded starch polyoxyalkyline ether composition containing polyhydroxyl groups comprising heating unmodified granular starch with about from 1 to 2 mole equivalents, based on the starch, of a polyol selected from the group consisting of ethylene glycol, propylene glycol, and glycerol, in the presence of about from 0.1 percent to 1.5 percent, based on the polyol, of an acid catalyst selected from the group consisting of sulfuric acid, hydrochloric acid, phosphoric acid, and an aryl sulfonic acid, at a temperature of about from 120° C. to 140° C. for about from 30 minutes to one hour, and under non-hydrolytic conditions, to effect degradation and transglycosidation of the starch, heating the resulting degraded and transglycosidated starch mixture in the said temperature range for an additional 30 minutes to one hour at reduced pressure to remove any unreacted polyol from the mixture, adding a catalytic excess of alkali to the resulting anhydrous, degraded, and transglycosidated starch mixture to neutralize the acid and terminate the reaction prior to the formation of more than a trace of reducing sugars and to catalyze the subsequent etherification reaction, and, in the substantial absence of atmospheric oxygen, etherifying the degraded and transglycosidated starch mixture with an alkylene oxide selected from the group consisting of ethylene oxide, propylene oxide, and mixtures thereof, at a temperature of about from 130° C. to 180° C. until about from 4 to 7 mole equivalents of the alkylene oxide have reacted to produce a degraded and transglycosidated starch polyoxyalkylene ether composition having an average hydroxyl number of about from 75 to 600.

### 3,165,509
### AZIRIDINYL-PROPANOL COMPOUNDS, METHOD OF MAKING SAME, AND POLYMERS THEREOF

Herbert W. Mackinney, Eastwell, N.Y., assignor to Chemstrand Corporation, Milltown, N.J.

No Drawing. Filed Jan. 6, 1960, Ser. No. 683
13 Claims. (Cl. 260—239)

1. A monomeric compound of the formula



in which substituents $R^1$, $R^2$, $R^5$ and $R^6$ are selected from the group consisting of H and monovalent, saturated alkyl radicals of the general formula $C_nH_{2n+1}$, and $R^3$, $R^4$, $R^7$, $R^8$, $R^9$, $R^{10}$ and $R^{11}$ are hydrogen, the aziridin radicals being identical.

4. A homopolymer of the compound of claim 1.

9. The method of producing 1,3-bis-aziridyl 2-propanol which comprises reacting together ethylene imine with epichlorohydrin at a temperature of from about −10° C. to +25° in the presence of an alkali metal hydroxide dehydro-halogenating agent.



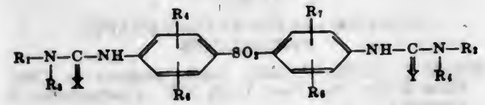
### 3,165,510
### 4,4'-DISUBSTITUTED DIPHENYL SULFONES AND PROCESS OF MAKING SAME

Lambert Hoenen and Hans Loeschner, Stolberg, Rhineland, and Heinrich Mueckter, Aachen, Germany, assignors, by mesne assignments, to Protochemie AG, Glarus, Switzerland, a corporation of Switzerland

No Drawing. Filed July 25, 1961, Ser. No. 126,513
Claims priority, application Germany, July 26, 1960, C 22,003
18 Claims. (Cl. 260—239.8)

14. Bis - [N' - (γ - pyridyl) - carbamido - N - phenyl-4]-sulfone.

18. The 4,4'-disubstituted diphenyl sulfone compound of the formula



wherein

$R_1$ and $R_2$ are members selected from the group consisting of γ-pyridyl and of phenyl which is substituted, at least in p-position, by a substituent selected from the group consisting of hydroxyl, lower alkoxy, lower alkanoyloxy, halogen, nitro, amino, azomethine resulting from the reaction of the amino group with pyridine aldehyde, azomethine resulting from the reaction of the amino group with quinoline aldehyde, lower alkyl, and lower alkanoyl;

$R_3$ and $R_4$ are members selected from the group consisting of hydrogen, lower alkyl, and carboxy lower alkyl;

$R_5$, $R_6$, $R_7$, and $R_8$ are members selected from the group consisting of hydrogen, lower alkyl, hydroxyl, lower alkanoyloxy, lower alkoxy, carboxyl, lower carbalkoxy, nitro, and halogen; and

X and Y are members selected from the group consisting of oxygen and sulfur.

### 3,165,511
### PRODUCTION OF HYDROXY-ALDEHYDES

Albert Wettstein, Richen, and Julius Schmidlin, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 15, 1962, Ser. No. 180,029
Claims priority, application Switzerland, Mar. 30, 1961, 3,799/61
9 Claims. (Cl. 260—239.55)

1. Process for the manufacture of a member selected from the group consisting of γ-hydroxyaldehyde-cyclohemiacetals, α-hydroxyaldehyde-cyclohemiacetals, their O-acyl and O-lower alkyl derivatives, by reduction of the lactones of corresponding hydroxy-carboxylic acids, wherein reduction is carried out with a member selected from the group consisting of a di-lower alkyl aluminum hydride and an aluminum tri-lower alkyl capable of forming a di-lower alkyl aluminum hydride, and the aluminum adduct thus obtained is reacted with a member selected from the group consisting of water, an alcohol, acid, acid halide, acid anhydride and a lower alkyl halide.

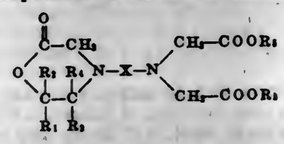
5. Process according to claim 1, wherein there is used as starting material a member selected from the group consisting of a γ- and a α-lactone of steroidal hydroxy carboxylic acids.

### 3,165,512
### MORPHOLINONES

Paul Moser, Basel, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 22, 1961, Ser. No. 139,874
Claims priority, application Switzerland, Sept. 23, 1960, 10,761/60; Aug. 18, 1961, 9,671/61
7 Claims. (Cl. 260—247.1)

1. The morpholinone compound of the formula



wherein

$R_1$, $R_2$, $R_3$ and $R_4$ independently of each other each is a member selected from the group consisting of hydrogen and lower alkyl,

$R_5$ is a member selected from the group consisting of lower alkyl, phenyl(lower)alkyl and (lower)alkylphenyl(lower)alkyl, and

X is a member selected from the group consisting of

—$CH_2$—$CH_2$—, —$CH_2$—$CH_2$—O—$CH_2$—$CH_2$— and —$CH_2CH_2$—S—$CH_2$—$CH_2$—

### 3,165,513
### TRIAZINE PHOSPHONIUM DERIVATIVES

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,205
15 Claims. (Cl. 260—248)

1. A symmetrical triazine compound selected from the class consisting of:

$C_3N_3[PO(OCH_2CH{=}CH_2)_2]_3$

$C_3N_3[PO(OCH_2C{=}CH_2)_2]_3$ (with $CH_3$)

$C_3N_3[PO(OCHCH{=}CH_2)_2]_3$ (with $CH_3$)

$C_3N_3[PO(OCH{=}CH_2)_2]_3$

$C_3N_3[PS(SCH_2CH{=}CH_2)_2]_3$

$(NH_2)_2C_3N_3{-}PO(OCH_2CH{=}CH_2)_2$

$NH_2{-}C_3N_3[{-}PO(OCH_2CH{=}CH_2)_2]_2$

$NH_2{-}C_3N_3\left[{-}\underset{\displaystyle NHC_6H_5}{P}O(OCH_2CH{=}CH_2)\right]_2$

$[(C_2H_5)_2N]_2C_3N_3{-}PO(OCH_2CH{=}CH_2)$

$C_6H_5NH{-}C_3N_3[{-}PO(OCH_2CH{=}CH_2)_2]_2$

$[(C_2H_5)_2N]_2C_3N_3{-}\underset{\displaystyle NHC_6H_5}{P}O(OCH_2CH{=}CH_2)$

$HOC_6H_4NH{-}C_3N_3[{-}PO(OCH_2CH{=}CH_2)_2]_2$

$(ClC_6H_4NH)_2C_3N_3{-}PO(OCH_2CH{=}CH_2)_2$

and

$HO{-}C_3N_3\underset{\displaystyle N(C_6H_5)_2}{P}O(OCH_2CH{=}CH_2)_2$

### 3,165,514
### UNSATURATED TRIAZINE COMPOUNDS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,280
20 Claims. (Cl. 260—248)

1. A triazine compound of the formula

$$Y_{3-n}[C_3N_3][O{-}Z{-}COO(CR''_2)_mCR''{=}CH_2]_n$$

wherein:

$n$ is an integer having a value of at least 1 and no more than 3;

Z has no more than 18 carbon atoms and is selected from the class consisting of alkylene, cyclohexylene, alkylene, phenylene, naphthylene, diphenylene, diphenyleneoxide, diphenylenesulfide, and diphenyleneamine and derivatives thereof in which there is only one derivative group therein and said derivative group is selected from the class consisting of chloro, fluoro, alkoxy, phenylalkoxy, alkenoxy and hydrocarbon carboxylic acyloxy groups;

R'' is selected from the class of hydrogen, halogen and hydrocarbon of no more than 10 carbon atoms;

*m* is an integer having a value of at least 0 and no more than 1;

Y has no more than 18 carbon atoms and is selected from the class consisting of halogen, —OR', —NR'$_2$, —SR', alkenyl, alkyl, aryl, having only benzene nuclei, cyclohexyl and cyclopentyl;

R' is selected from the class consisting of hydrogen and hydrocarbon of no more than 8 carbon atoms; and

$C_3N_3$ represents the trivalent symmetrical triazine nucleus.

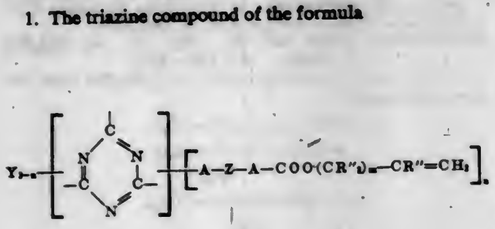
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### 3,165,515
## UNSATURATED TRIAZINE COMPOUNDS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Sept. 26, 1962, Ser. No. 226,468
20 Claims. (Cl. 260—248)

1. The triazine compound of the formula



wherein:

*n* is an integer having a value of at least 1 and no more than 3;

A is selected from the class consisting of O and NR', wherein R' is of no more than 12 carbon atoms and is selected from the group consisting of alkyl, aryl having benzene nuclei, and cycloalkyl having 5–7 carbon atoms in the cyclic ring;

Z has no more than 18 carbon atoms and is selected from the class consisting of alkylene, cyclohexylene, alkenylene, phenylene, naphthylene, diphenylene, diphenyleneoxide, diphenylenesulfide, and diphenyleneamine radicals and derivatives thereof having only one derivative group and said derivative group is selected from the class consisting of chloro, fluoro, alkoxy, aryloxy having benzene nuclei, cyclohexyloxy, cyclohexenyloxy, alkenoxy and hydrocarbon carboxylic acyloxy groups;

R'' is selected from the class of hydrogen, halogen and hydrocarbon of no more than 10 carbon atoms;

*m* is an integer having a value of at least 0 and no more than 1;

Y has no more than 18 carbon atoms and is selected from the class consisting of hydrogen, hydrocarbon, halogen, —OR''', —NR'''$_2$, —SH''', alkenyl, alkyl, aryl of benzene nuclei, cyclohexyl, cyclopentyl and amino; and

R''' is selected from the class consisting of hydrogen and hydrocarbon having no more than 8 carbon atoms.

### 3,165,516
## 5-SULFO AND CARBOXYPHENYL-1-(2'-CHLORO-4' - AMINO - 1':3':5' - TRIAZINYLAMINO)MONOANTHRAQUINONES

Hans Altermatt, Reinach, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,140
Claims priority, application Switzerland, Oct. 28, 1960, 12,112/60; Apr. 24, 1961, 4,788/61
5 Claims. (Cl. 260—249)

1. 5 - sulfophenylmercapto-1-(2'-chloro-4'-amino-1':3':5'-triazinylamino) monoanthraquinone.

2. 5-carboxyphenylmercapto - 1-(2'-chloro-4'-amino - 1':3':5'-triazinylamino) monoanthraquinone.

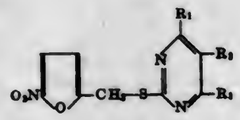
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### 3,165,517
## 2-(5-NITRO-FURFURYL)-MERCAPTO-PYRIMIDINES

Donald C. Hobbs, Niantic, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,305
4 Claims. (Cl. 260—251)

1. A compound selected from the group consisting of those of the formula:



and the pharmaceutically acceptable acid addition salts thereof wherein $R_1$, $R_2$ and $R_3$ are each a member selected from the group consisting of hydrogen and lower alkyl.

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### 3,165,518
## CATALYTIC CHLOROSULFONATION OF QUINAZOLINONES

Herbert G. Arlt, Jr., Ridgefield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,487
6 Claims. (Cl. 260—251)

1. An improved process for the chlorosulfonation of 2-alkyl-7-halo-2,3-dihydro-4(1H)-quinazolinones in which the 2-alkyl substituent contains from about one to about four carbon atoms and the 7-halo-substituent is selected from fluorine, chlorine and bromine, which process comprises: for each mol part of quinazolinone to be treated, at from about 0° to about 25° C., forming a reaction mixture comprising from about three to about eight mol parts of chlorosulfonic acid and from about 0.75 to about four mol parts of an activator selected from the group consisting of thionyl chloride and phosphorus pentachloride; then while agitating said mixture maintaining the temperature at from about 10° C. to not over 30° C., adding thereto said quinazolinone at a rate such that the exotherm does not cause the temperature to exceed said 30° C.; then continuing to maintain said temperature and agitation until the reaction substantially ceases and collecting the resultant product quinazolinesulfonyl chloride.

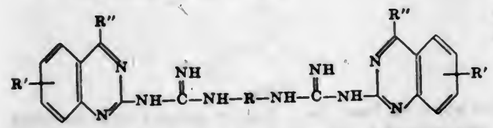


### 3,165,519
## NEW QUINAZOLINES

Joseph Patrick Brown, Llangollen, Wales, assignor to Monsanto Chemicals Limited, London, England, a British company

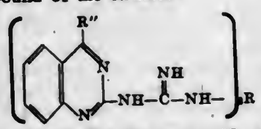
No Drawing. Filed Apr. 5, 1961, Ser. No. 100,826
Claims priority, application Great Britain Apr. 21, 1960
8 Claims. (Cl. 260—256.4)

1. A compound of the structure



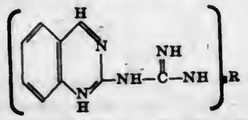
wherein R is alkylene having up to 12 carbon atoms; wherein R' is alkoxy having up to 12 carbon atoms; and wherein R'' is alkyl having up to 12 carbon atoms.

2. A compound of the structure



wherein R is alkylene having up to 12 carbon atoms; and wherein R'' is alkyl having up to 12 carbon atoms.

3. A compound of the structure



wherein R is alkylene having up to 12 carbon atoms.

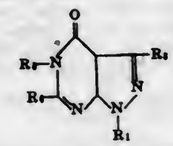
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### 3,165,520
## PYRAZOLO-PYRIMIDINES

Paul Schmidt, Therwil, and Kurt Eichenberger and Max Wilhelm, Basel, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed May 5, 1961, Ser. No. 107,908
Claims priority, application Switzerland, May 11, 1960, 5,403/60; Apr. 4, 1961, 3,929/61
18 Claims. (Cl. 260—256.4)

1. A member selected from the group consisting of compounds of the formula



and physiologically tolerable ammonium compounds and salts thereof, in which formula $R_1$ represents a member selected from the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, lower alkoxy-lower alkyl, cyclo-lower alkyl, (cyclo-lower alkyl)-lower alkyl, phenyl, lower alkyl-phenyl, hydroxy-phenyl, lower alkoxy-phenyl, amino-phenyl, lower alkylamino-phenyl, di-lower alkyl-amino-phenyl, lower alkylenedioxy-phenyl, halogeno-phenyl, trifluoromethyl-phenyl, nitrophenyl, phenyl-lower alkyl, (lower alkyl-phenyl)-lower alkyl, (hydroxy-phenyl)-lower alkyl, (lower alkoxy-phenyl)-lower alkyl, (amino-phenyl)-lower alkyl, (lower alkylamino-phenyl)-lower alkyl, (di-lower alkylamino-phenyl)-lower alkyl, (lower alkylenedioxy-phenyl)-lower alkyl, (halogenophenyl)-lower alkyl, (trifluoromethyl-phenyl)-lower alkyl, nitrophenyl-lower alkyl, pyridyl and pyridyl-lower alkyl, $R_2$ is a member selected from the group consisting of hydrogen and lower alkyl, $R_3$ represents a member selected from the group consisting of di-lower alkylamino-lower alkyl, pyrrolidino-lower alkyl, piperidino-lower alkyl, morpholino-lower alkyl, piperazino-lower alkyl and N-lower alkyl-piperazino-lower alkyl, and $R_4$ represents a member selected from the group consisting of lower alkyl, cyclo-lower alkyl, phenyl-lower alkyl, (lower alkyl-phenyl)-lower alkyl, (hydroxy-phenyl-lower alkyl), (lower alkoxy-phenyl)-lower alkyl, (amino-phenyl)-lower alkyl, (lower alkylamino-phenyl)-lower alkyl, (di-lower alkyl-amino-phenyl)-lower alkyl, (lower alkylenedioxy-phenyl)-lower alkyl, (halogenophenyl)-lower alkyl, (trifluoromethyl-phenyl)-lower alkyl and nitrophenyl-lower alkyl.

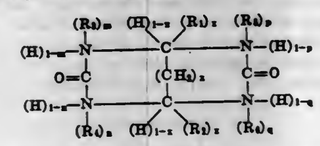
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### 3,165,521
## HALOGENATED GLYCOLURILS

Frank B. Slezak and Irving Rosen, Painesville, and Clifford A. Neros, Willoughby, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed June 21, 1962, Ser. No. 204,054
4 Claims. (Cl. 260—256.4)

1. A compound having the structure:



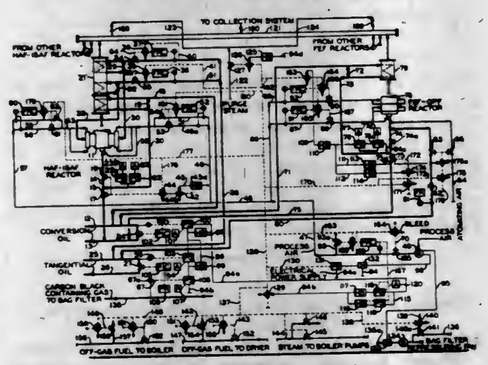
wherein $R_1$ and $R_2$ are alkyl of up to 4 carbon atoms; $R_3$, $R_4$, $R_5$ and $R_6$ are chlorine; and *x*, *m*, *n*, *p* and *q* are each numbers from 0 to 1, inclusive, at least two of *m*, *n*, *p* and *p* being 1.

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### 3,165,522
## EMERGENCY SHUTDOWN SYSTEM FOR CARBON BLACK PLANT

Robert F. Dye, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 11, 1961, Ser. No. 130,831
3 Claims. (Cl. 23—259.5)



1. In a system for production of carbon black by the incomplete combustion of a hydrocarbon charge stock including a reactor, an electric motor driven process air blower, first conduits supplying a hydrocarbon charge stock to said reactor and passing process air under pressure from said blower to said reactor, a second conduit for conveying reaction products from said reactor to bag filter carbon black recovery equipment, a third conduit communicating said bag filter recovery equipment with a source of noncombustion supporting gas, an electric motor driven bag filter repressuring blower in said third conduit, first and second electrical circuits supply-

ing electrical power to the motors of said process air blower and said repressuring blower, respectively, an emergency shutdown system comprising, first and second switches in said first and second circuits, respectively, an electrical interlock communicating said first circuit with said second switch, a fourth conduit leading from a source of instrument air, a 3-way electric motor operative valve in said fourth conduit, a third electrical circuit supplying electric power to the motor of said valve, a third switch in said third circuit, a first pressure sensing means in communication with the first conduit passing process air to said reactor and with said third switch, a second pressure sensing means communicating with said fourth conduit and with said first switch whereby upon sensing a pressure less than a predetermined pressure in said first conduit passing process air to said reactor said first pressure sensing means closes said third switch in said third circuit thereby energizing the motor of said motor valve thereby closing same to said source of instrument air and reducing instrument air pressure in said fourth conduit on the side of said valve remote from said source of instrument air, said second pressure sensing means thereby sensing the decreased pressure in said fourth conduit and opening said first switch thereby shutting down the electric motor driven process air blower and via said interlock opening said second switch thereby shutting down the electric motor driven repressuring blower.

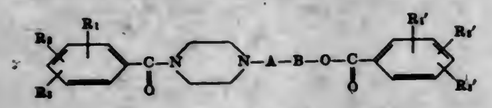
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## 3,165,523
## N-BENZOYL PIPERAZINE DERIVATIVES AND PROCESS FOR THEIR PRODUCTION

Laszlo Vargha, Lajos Toldy, Istvan Toth, Boris Dumbovich, and Jozsef Borsi, all of Budapest, Hungary, assignors to Egyesült Gyógyszer-és Tápszergyár, Budapest, Hungary, a firm

No Drawing. Filed May 3, 1963, Ser. No. 277,726
3 Claims. (Cl. 260—268)

1. A piperazine derivative of the formula



wherein $R_1$, $R_2$, $R_1'$, $R_2'$ are lower alkoxy, $R_3$ and $R_3'$ are members selected from the group consisting of hydrogen and lower alkoxy, A is a bivalent saturated aliphatic hydrocarbon of from 1 to 6 carbon atoms and B is a member selected from the group consisting of a direct chemical bond and an —OA'— group, wherein A' is a bivalent saturated aliphatic hydrocarbon of from 1 to 6 carbon atoms.

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## 3,165,524
## PRODUCTION OF 7,14-DIOXO-5,7,12,14-TETRAHYDROQUINOLINO-(2,3-b)-ACRIDINES

Alfred Schmidmacher and Alfred Eberhardt, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Original application July 18, 1961, Ser. No. 124,806. Divided and this application Apr. 5, 1963, Ser. No. 275,785
Claims priority, application Germany, Nov. 8, 1960, B 60,007
3 Claims. (Cl. 260—279)

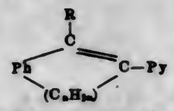
1. A process for the production of 2,9-dichlor-7,14-dioxo - 5,7,12,14 - tetrahydroquinolino - [2,3-b]-acridine, which comprises heating 2,5-di-(p-chloranilino)-terephthalic acid with phosgene in the presence of an inert organic solvent to temperatures of about 140° C. to about 250° C.

## 3,165,525
## PYRIDYL DERIVATIVES OF BENZOCYCLOALKANES AND BENZOCYCLOALKENES

William Laszlo Benesa, New Providence, N.J., assignor to Ciba Corporation, a corporation of Delaware

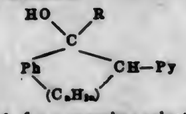
No Drawing. Filed Dec. 13, 1961, Ser. No. 159,150
8 Claims. (Cl. 260—290)

1. A member selected from the group consisting of a compound of the formula



in which Ph stands for a member selected from the group consisting of 1,2-phenylene, (lower alkyl)-1,2-phenylene, (hydroxy)-1,2-phenylene, (lower alkoxy)-1,2-phenylene, (halogeno)-1,2 - phenylene, (nitro) - 1,2 - phenylene and (amino)-1,2-phenylene, Py.is pyridyl, R stands for a member selected from the group consisting of hydrogen and lower alkyl, and the group of the formula—$(C_nH_{2n})$—, in which the letter *n* stands for a whole number from two to seven, is an alkylene radical separating the group Ph from the carbon atom carrying the group Py by two to three carbon atoms, and acid addition salts thereof.

5. A member selected from the group consisting of a compound of the formula



in which Ph stands for a member selected from the group consisting of 1,2-phenylene, (lower alkyl)-1,2-phenylene, (hydroxy)-1,2-phenylene, (lower alkoxy)-1,2-phenylene, (halogeno)-1,2 - phenylene, (nitro) - 1,2 - phenylene and (amino)-1,2-phenylene, Py is pyridyl, R stands for a member selected from the group consisting of hydrogen and lower alkyl, and the group of the formula —$(C_nH_{2n})$—, in which the letter *n* stands for a whole number from two to seven, is an alkylene radical separating the group Ph from the corbon atom carrying the group Py by two to three carbon atoms, and acid addition salts thereof.

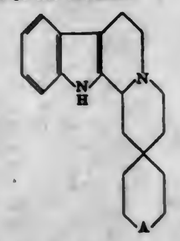
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## 3,165,526
## SPIRO INDOLO QUINOLIZINES

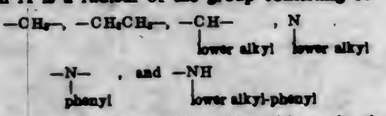
Johan Gootjes, Heer Hugowaard, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades Stheeman en Pharmacia, Amsterdam, Netherlands, a corporation of the Netherlands

No Drawing. Filed July 18, 1963, Ser. No. 296,085
Claims priority, application Great Britain, Oct. 9, 1962, 38,281/62
9 Claims. (Cl. 260—293)

1. A compound of the formula



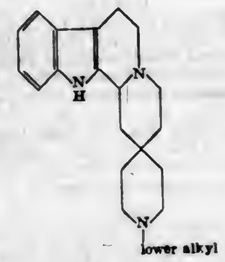
wherein A is a radical of the group consisting of



and physiologically acceptable acid addition salts thereof.



2. A compound of the formula



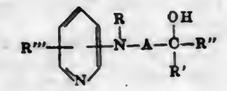
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## 3,165,527
## PYRIDYL AMINO LOWER ALKANE DERIVATIVES AND PROCESS

Allan Poe Gray, Decatur, Ill., assignor to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware

No Drawing. Filed Nov. 3, 1960, Ser. No. 73,157
10 Claims. (Cl. 260—295)

1. A compound of the formula



wherein A is lower-alkylene of one to four carbon atoms, inclusive; R is selected from the group consisting of hydrogen and lower-alkyl of from one to six carbon atoms, inclusive; R' is a monocyclic carbocyclic group selected from the group consisting of phenyl, cycloalkyl of from five to six carbon atoms, and aralkyl wherein aryl is phenyl and alkyl is lower-alkyl of from one to six carbon atoms, inclusive, the ring substituents of the monocyclic carbocyclic group being selected from the group consisting of hydrogen, halo, lower-alkyl of from one to six carbon atoms, inclusive, and lower-alkoxy of from one to six carbon atoms, inclusive; R'' is selected from the group consisting of hydrogen, lower-alkyl of from one to six carbon atoms, inclusive, and R'; and R''' is selected from the group consisting of hydrogen, halo, lower-alkyl of from one to six carbon atoms, inclusive, lower-alkoxy of from one to six carbon atoms, inclusive, nitro and trifluoromethyl.

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## 3,165,528
## NEW AZAFLUORENES

Paul Schmidt, Therwil, and Eduard Schumacher, Kurt Eichenberger, and Max Wilhelm, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 21, 1962, Ser. No. 218,444
Claims priority, application Switzerland, Aug. 24, 1961, 9,869/61
4 Claims. (Cl. 260—296)

1. A member selected from the group consisting of (1) 9-hydroxy-9-(α-nitro-lower alkyl)-1:8-diazafluorene and (2) 9-hydroxy-9-(α-nitro-lower alkyl)-1:8-(R)-diazafluorene, in which R is lower alkyl having 1 to 4 carbon atoms.

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### ERRATUM

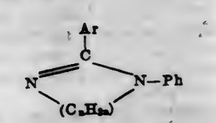
For Class 260—308 see:
Patent No. 3,165,753

## 3,165,529
## 1,2-DI-SUBSTITUTED DIAZACYCLES

Herbert Morton Blatter, Millburn, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 8, 1963, Ser. No. 263,715
10 Claims. (Cl. 260—309.6)

1. A member selected from the group consisting of compounds of the formula



in which Ph is a member selected from the group consisting of phenyl substituted by hydroxyl, phenyl substituted by lower alkoxy, phenyl substituted by lower alkenyloxy, phenyl substituted by cycloalkyloxy, in which cycloalkyl has from three to eight carbon atoms, phenyl substituted by phenyl-lower alkoxy, and phenyl substituted by lower alkanoyloxy, Ar is a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (hydroxy)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl and pyridyl, and the group of the formula —$(C_nH_{2n})$— is alkylene having from two to seven carbon atoms and separating the two nitrogen atoms by two to four carbon atoms, and the pharmaceutically acceptable acid addition salts of such compounds.

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## 3,165,530
## PROCESS FOR PURIFYING TRITHIANE

Klaus Küllmar and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 18, 1961, Ser. No. 124,812
Claims priority, application Germany, July 30, 1960, F 31,804
5 Claims. (Cl. 260—327)

1. A process for purifying crude 1,3,5-trithiane contaminated by ill-smelling sulfur compounds which comprises dissolving the crude 1,3,5-trithiane in an inert solvent, heating the trithiane solution to a reflux temperature within the range of 100 to 200° C. for distilling off part of the solvent with the ill-smelling sulfur compounds and their decomposition products, and recrystallizing pure trithiane from the solution.

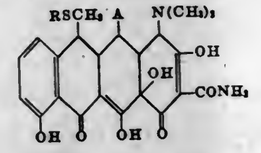
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## 3,165,531
## 13-SUBSTITUTED-6-DEOXYTETRACYCLINES AND PROCESS UTILIZING THE SAME

Robert K. Blackwood, Gales Ferry, Hans H. Rennhard, Lyme, John J. Beereboom, Waterford, and Charles R. Stephens, Jr., Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 8, 1962, Ser. No. 178,237
14 Claims. (Cl. 260—330.5)

1. A compound selected from the group consisting of those having the formula



wherein A is selected from the group consisting of hydrogen and hydroxy and R is selected from the group consisting of primary and secondary alkyl of from one to twelve

carbon atoms; R"CO where R" is alkyl of from one to three carbon atoms; phenyl; mono- and disubstituted phenyl; benzoyl; trifluoromethyl and $R'CH_2$—

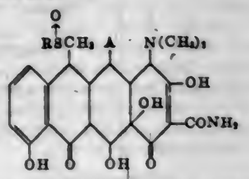
wherein R' is selected from the group consisting of mono- and disubstituted lower alkyl, carboxy, lower carbalkoxy, halo, phenyl, mono- and disubstituted phenyl and furyl,

each substituent of said mono- and disubstituted lower alkyl being selected from the group consisting of hydroxy, lower alkoxy, carboxy, lower carbalkoxy, halo and amino, provided that where two of said substituents are joined to the same carbon atom at least one is selected from the group consisting of carboxy and lower carbalkoxy,

and each substituent of said mono- and disubstituted phenyl being selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxy, lower carbalkoxy, nitro and amino,

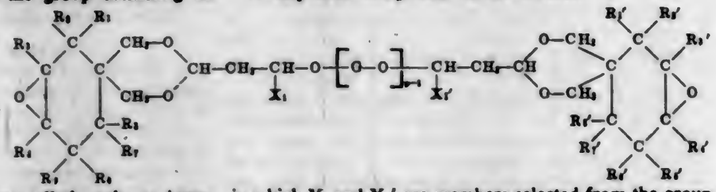
the acid addition salts thereof, and the pharmaceutically acceptable metal salts thereof.

7. A compound selected from the group consisting of those having the formula



wherein A is selected from the group consisting of hydrogen and hydroxy and R is selected from the group consisting of primary and secondary alkyl of from one to twelve carbon atoms; R"CO where R" is alkyl of from one to three carbon atoms; phenyl; mono- and disubstituted phenyl; benzoyl; trifluoromethyl and $R'CH_2$—

wherein R' is selected from the group consisting of



mono- and disubstituted lower alkyl, carboxy, lower carbalkoxy, halo, phenyl, mono- and disubstituted phenyl and furyl,

each substituent of said mono- and disubstituted lower alkyl being selected from the group consisting of hydroxy, lower alkoxy, carboxy, lower carbalkoxy, halo and amino, provided that where two of said substituents are joined to the same carbon atom at least one is selected from the group consisting of carboxy and lower carbalkoxy,

and each substituent of said mono- and disubstituted phenyl being selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxy, lower carbalkoxy, nitro and amino,

the acid addition salts thereof, and the pharmaceutically acceptable metal salts thereof.

12. 7,13-epithio-6-deoxytetracycline.

13. 11a,13-epithio-6-deoxytetracycline.

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**3,165,532**

## HEMIACETAL ESTER PRODUCTION

William J. Farrissey, Jr., Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed June 14, 1961, Ser. No. 116,942
12 Claims. (Cl. 260—333)

1. A compound of the formula $ArOCH_2OR$ wherein Ar is chosen from the group consisting of p-toluyl and isoduryl and R is chosen from the group consisting of acetyl, benzoyl, p-toluyl and mesitoyl.

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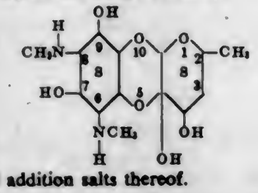
**3,165,533**

## DIHYDROACTINOSPECTACIN, AMIDES AND ESTERS THEREOF

Herman Hoeksema, Kalamazoo, and Paul F. Wiley, Texas Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,931
7 Claims. (Cl. 260—340.3)

1. A compound selected from the class consisting of dihydroactinospectacin of the formula:



and the acid addition salts thereof.

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**3,165,534**

## DIEPOXIDES OF ETHER ACETALS OF 1,1-BIS-(HYDROXYMETHYL)-CYCLOHEXENE

Daniel Porret, Basel, Willy Flech, Binningen, Hans Batzer, Ariesheim, and Otto Ernst, Pfeffingen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Original application Sept. 8, 1960, Ser. No. 54,581, now Patent No. 3,072,678, dated Jan. 8, 1963. Divided and this application Apr. 2, 1962, Ser. No. 205,185
Claims priority, application Switzerland, Sept. 10, 1959, 78,068
1 Claim. (Cl. 260—340.7)

A diepoxide compound of the formula



in which X, and $X_1'$ are members selected from the group consisting of hydrogen atom and methyl group, and in which $R_1$, $R_6$, $R_1'$ and $R_6'$ are selected from the group consisting of hydrogen, halogen, lower alkyl and together each of $R_1$, $R_6$, and $R_1'$, $R_6'$ form the methylene group, $R_2$, $R_2'$, $R_3$, $R_3'$, $R_4$, $R_4'$, $R_5$, $R_5'$ $R_7$, $R_7'$, $R_8$ and $R_8'$ each represent a member selected from the group consisting of a hydrogen atom, a halogen atom and lower alkyl, G represents a member selected from the group consisting of divalent saturated aliphatic hydrocarbon residues of the formula $(CH_2)_n$ where $n$ is an integer from 2 to 6, divalent saturated cycloaliphatic hydrocarbon residues in which the cycloaliphatic ring system contains 6 carbon atoms, and divalent residues obtained by removing the terminal hydroxyl groups from a polyalkylene glycol; and $p$ is a whole number of at least 1 and at most 2.

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**3,165,535**

## RECOVERY OF KOJIC ACID

James V. Keboe, Glendale, and Frank Inzerillo, Elmont, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,105
7 Claims. (Cl. 260—345.9)

1. A process for the recovery of kojic acid and the water soluble salts thereof from a kojic acid-containing fermentation broth which comprises the steps of contacting the said broth with substantially stoichiometric amounts of a salt of a metal selected from the group consisting of Group IIA of the Periodic Chart of the Elements, divalent zinc, copper, manganese, iron and lead, trivalent aluminum and bismuth; adjusting the said broth to a pH of from about 5 to about 9; precipitating and separating the insoluble metal salt of kojic acid; thereafter contacting said metal salt of kojic acid with substantially stoichiometric amounts of an acid selected from the group consisting of oxalic acid, sulfuric acid, phosphoric acid, hydrochloric acid and nitric acid; and thereafter separating the kojic acid.



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**3,165,536**

## PRODUCTION OF 2,5-DIHYDROFURAN

Max Strohmeyer, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 25, 1962, Ser. No. 205,076
Claims priority, application Germany, June 29, 1961, B 63,079
4 Claims. (Cl. 260—346.1)

1. A process for the production of 2,5-dihydrofuran which comprises splitting off water from cis-butene-(2)-diol-(1,4) on an aluminum oxide catalyst whose average particle size is between 0.01 and 1 mm., at a temperature between 160 and 240° C., said cis-butene-(2)-diol-(1,4) being maintained in the liquid phase.

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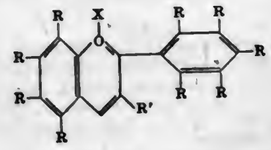
**3,165,537**

## PREPARATION OF BENZOFURAN DERIVATIVES

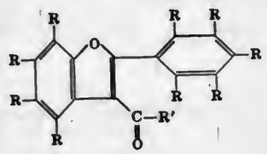
Leonard Jurd, Berkeley, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed July 8, 1963, Ser. No. 293,564
1 Claim. (Cl. 260—346.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A method for synthesizing a benzofuran which comprises reacting a flavylium salt of the formula



wherein each R represents a radical selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, benzoxy, and phenoxy, R' represents a radical selected from the group consisting of lower alkyl, lower alkoxy, phenyl, lower alkylphenyl, lower alkoxyphenyl, phenoxy, lower alkylphenoxy, lower alkoxyphenoxy, benzyl, lower alkylbenzyl, lower alkoxybenzyl, benzoxy, lower alkylbenzoxy, lower alkoxybenzoxy, carboxy-lower alkyl, carboxy-lower alkoxy, carboxyphenyl, carboxyphenoxy, carboxybenzyl, and carboxybenzoxy, and wherein X represents an anion, with a peroxygen oxidizing agent to produce a benzofuran of the formula



wherein R and R' have the aforesaid significance.

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**3,165,538**

## CYCLOUNDECANE-1,2-DICARBOXYLIC ACIDS

Pierre Lafont, Lyon, and Yannik Bonnet, Tassin la Demi-Lune, France, assignors to Rhone Poulenc S.A., a French body corporate

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,204
Claims priority, application France Oct. 27, 1960
9 Claims. (Cl. 260—346.3)

1. A compound selected from the class consisting of cis and trans-cycloundecane-1,2-dicarboxylic acids and their corresponding anhydrides.

4. The anhydride of cis-cycloundecane-1,2-dicarboxylic acid.

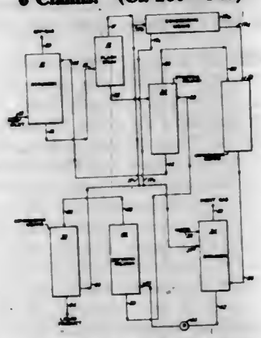
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**3,165,539**

## RECOVERY OF ETHYLENE OXIDE FROM A LIQUID MIXTURE THEREOF WITH NORMALLY GASEOUS IMPURITIES

John H. Lutz, Wyckoff, N.J., assignor to Halcon International, Inc., a corporation of Delaware

Filed July 8, 1960, Ser. No. 41,601
6 Claims. (Cl. 260—348)



1. The process, for separating ethylene oxide from a liquid mixture which consists essentially of ethylene oxide, carbon dioxide, water and gaseous inerts, of introducing said mixture into a flash distillation zone, flash distilling said mixture at a temperature of 75 to 110° C. and a pressure of 15 to 100 p.s.i.a., separately removing a liquid aqueous fraction containing ethylene oxide and a gaseous fraction containing a major amount of said inerts from said zone, water scrubbing ethylene oxide from the said gaseous fraction, distilling said liquid aqueous fraction and recovering a gaseous overhead ethylene oxide fraction, and further distilling said overhead ethylene oxide fraction to produce ethylene oxide product.

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**3,165,540**

## PROCESS FOR ISOLATION OF DIVERNOLIN AND TRIVERNOLIN

Charles F. Krewson, Abington, and Jesse S. Ard, Glenside, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Sept. 5, 1961, Ser. No. 136,113
4 Claims. (Cl. 260—348)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process of isolating divernolin and trivernolin from a source material containing divernolin, trivernolin, vernolic acid, non-oxygenated fatty acids, the glycerides of said non-oxygenated fatty acids, and unsaponifiable material, and selected from the group consisting of ground *Vernonia anthelmintica* seed and *Vernonia anthelmintica* seed oil, comprising extracting said source material with petroleum ether at a temperature above about 35° C. to obtain a petroleum ether extract comprising a petroleum ether solution containing the divernolin, trivernolin, vernolic acid, non-oxygenated fatty acids, the glycerides of said non-oxygenated fatty acids, and the unsaponifiable material dissolved therein and insoluble material if the ground seed was used as the source material, separating

the petroleum ether solution from any insoluble material, cooling the petroleum ether solution to a temperature in the range of about from 0° to 10° C. to precipitate the divernolin, isolating the precipitated divernolin from the petroleum ether solution, cooling the resulting divernolin-free petroleum ether solution to a temperature in the range of about from —20° to —10° C. to precipitate a mixture of the trivernolin and vernolic acid, separating the precipitated mixture of trivernolin and vernolic acid from the divernolin-free petroleum ether solution, the latter containing the non-oxygenated fatty acids, the glycerides of said non-oxygenated fatty acids, and the unsaponifiable material in solution therein, redissolving the precipitated mixture of trivernolin and vernolic acid in fresh petroleum ether, mixing aqueous methanolic alkali with the fresh petroleum ether solution containing the trivernolin and vernolic acid to form a petroleum ether layer containing the trivernolin dissolved therein and an aqueous layer containing the vernolic acid dissolved therein in the form of its water-soluble alkali metal salt, separating the petroleum ether layer from the aqueous layer, and isolating the trivernolin from the petroleum ether layer.

4. A process of isolating divernolin and trivernolin from a source material containing divernolin, trivernolin, vernolic acid, non-oxygenated fatty acids, the glycerides of said non-oxygenated fatty acids, an unsaponifiable material, and selected from the group consisting of ground *Vernonia anthelmintica* seed and *Vernonia anthelmintica* seed oil, comprising extracting said source material with petroleum ether at a temperature in the range of about from —20° to —15° C. to obtain a first petroleum ether extract consisting of an insoluble marc containing the divernolin, trivernolin, and vernolic acid, and a first petroleum ether solution containing the non-oxygenated fatty acids, the glycerides of said non-oxygenated fatty acids, and the unsaponifiable material dissolved therein, separating the insoluble marc from said first petroleum ether solution, extracting the marc with a second portion of petroleum ether at a temperature in the range of about from 0° to 10° C. to obtain a second petroleum ether extract consisting of a second insoluble marc containing the divernolin and a second petroleum ether solution containing the trivernolin and vernolic acid dissolved therein, separating the second insoluble marc containing the divernolin from the second petroleum ether solution containing the trivernolin and vernolic acid, extracting the second insoluble marc containing the divernolin with a third portion of petroleum ether at a temperature above about 35° C. to obtain a third petroleum ether extract consisting of a third insoluble marc and a third petroleum ether solution containing the divernolin dissolved therein, separating the third petroleum ether solution containing the divernolin from said third insoluble marc, isolating the divernolin from the third petroleum ether solution, mixing aqueous methanolic alkali with the second petroleum ether solution containing the trivernolin and vernolic acid dissolved therein to form a petroleum ether layer containing the trivernolin dissolved therein and an aqueous layer containing the vernolic acid dissolved therein in the form of its water-soluble alkali metal salt, separating the petroleum ether layer from the aqueous layer, and isolating the trivernolin from the petroleum ether layer.

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3,165,541

## PROCESS FOR HYDROXYLATING STEROIDS

Allan Eugene Hydorn, Milltown, John Nicholas Korman, North Brunswick, and James Riva Mootz, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 20, 1963, Ser. No. 281,742
9 Claims. (Cl. 260—397.4)

1. A process for converting a 16-dehydro steroid of the pregnene series into its 16α,17α-dihydroxy derivative, which comprises continuously feeding into a reaction medium a solution of said steroid and a solution of a water-soluble permanganate at such a rate that the ratio of permanganate to reactive double-bond per mole of steroid in the reaction medium is at least one mole to one and less than about two moles to one, permitting the reagents to interact for a period of time from about one second to about sixty seconds, and reducing any excess permanganate to manganese dioxide immediately after the desired reaction has been completed.

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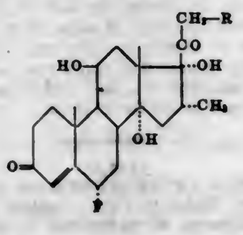
3,165,542

## NEW 14-HYDROXY-PREGNANES

Jakob Urech and Ernst Vischer, Basel, and Albert Wettstein, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,446
Claims priority, application Switzerland, Dec. 19, 1960, 14,166/60, 14,167/60
6 Claims. (Cl. 260—397.45)

1. A compound of the formula



in which R stands for a member selected from the group consisting of a free hydroxyl group and a hydroxyl group esterified with an acid selected from the group consisting of a carboxylic acid, a sulfonic acid, a phosphoric acid, a sulfuric acid and a hydrohalic acid.

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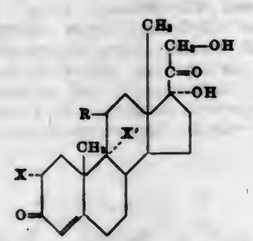
3,165,543

## 2α-HALO- AND 2α-HALO-6α-METHYL-17α,21-DIHYDROXY-4-PREGNENE-3,20-DIONES

Alan H. Nathan, Kalamazoo, John A. Hogg, Galesburg, and William P. Schneider, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 10, 1964, Ser. No. 358,927
33 Claims. (Cl. 260—397.45)

1. A compound selected from the group consisting of (1) 2α-halo-17α,21-dihydroxy-4-pregnene-3,20-dione represented by the following formula:



wherein X is a halogen having an atomic weight from 19 to 36, inclusive, X′ is selected from the group consisting of halogen and hydrogen atoms, and R is selected from the group consisting of β-hydroxy and keto, and (2) 21-esters thereof of hydrocarbon carboxylic acids containing from one to twelve carbon atoms, inclusive.



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3,165,544

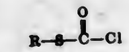
## CHLOROTHIOLFORMATES AND PREPARATION THEREOF

Harry Tilles, El Cerrito, Calif., assignor to Stauffer Chemical Company, a corporation of Delaware

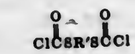
No Drawing. Filed Sept. 6, 1960, Ser. No. 53,924
13 Claims. (Cl. 260—455)

1. A method for preparing chlorothiolformates comprising: reacting a compound selected from the class consisting of alkyl mercaptans having less than 15 carbon atoms, lower cycloalkyl mercaptans, lower alkenyl mercaptans, phenyl mercaptans, lower alkyl-substituted phenyl mercaptans, chloro-substituted phenyl mercaptans, benzyl mercaptans, chlorobenzyl mercaptans, carbo-lower-alkoxy-lower alkyl mercaptans, naphthyl mercaptans, and polymethylene dithiols having no more than five carbon atoms with phosgene in the presence of finely divided activated carbon as a catalyst.

9. Compounds of the general formula



where R is selected from the class consisting of chlorobenzyl, carbo-lower-alkoxy-lower-alkyl, and



wherein R′ is a polymethylene group having no more than five carbon atoms.

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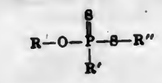
3,165,545

## S-ARYL PHOSPHORAMIDODITHIOATES

Earyl H. Blair, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 9, 1962, Ser. No. 208,587
5 Claims. (Cl. 260—461)

1. A compound of the formula



wherein R represents loweralkyl, R′ represents a member of the group consisting of amino and loweralkylamino, and R″ represents a member of the group consisting of phenyl and substituted phenyl in which the substituents are selected from the group consisting of bromo, chloro, loweralkoxy, loweralkyl, and loweralkylthio.

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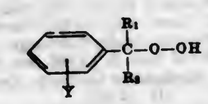
3,165,546

## DIARYL PEROXIDES BY REACTION OF HYPOCHLORITES ON CORRESPONDING HYDROPEROXIDES

Stewart H. Merrill, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,752
10 Claims. (Cl. 260—502)

1. A process comprising reacting an aryl hydroperoxide of the general formula:



wherein $R_1$ and $R_2$ represent a member selected from the group consisting of alkyl groups of from 1–4 carbon atoms and the element required to complete a cyclohexane ring, and Y represents a member selected from the group consisting of hydrogen, halogen, alkyl groups of 1–4 carbon atoms, the $—NO_2$ group and the —COOH group, with a metal hypochlorite selected from the group consisting of alkali metal hypochlorites and alkaline earth hypochlorites, in aqueous caustic alkali at a temperature of from 0–100° C. to form a corresponding diaryl peroxide.

7. A peroxide compound selected from the group consisting of a bis(p-carboxy-α,α-dialkylbenzyl)peroxide wherein the alkyl portion contains from 1–4 carbon atoms, an alkali metal salt thereof, and an acid chloride thereof.

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3,165,547

## PROCESS FOR PREPARING DIPHENIC ACID

Julius Altpeter, Bad Homburg vor der Hohe, and Hubert Sauer, Hofheim, Taunus, Germany, assignors to Rutgerswerke-Aktiengesellschaft, Frankfurt am Main, Germany

No Drawing. Filed July 20, 1959, Ser. No. 828,004
Claims priority, application Germany, July 29, 1958, R 23,783
5 Claims. (Cl. 260—523)

1. In a process for converting phenanthrene into diphenic acid by oxidation with peracetic acid, in combination the steps of dissolving 1 mol phenanthrene in 8–12 mols concentrated acetic acid, adding to the resulting solution a volatile organic solvent which is indifferent to the ingredients of the mixture and capable of and sufficient for forming an azeotropic mixture with water and heating the mixture thus formed in the temperature range of 80 to 110° C.; gradually adding to the mixture hydrogen peroxide in about the proportion of 5 mols $H_2O_2$ for 1 mol of phenanthrene and continuously removing water from the reaction mixture in the form of an azeotropic mixture by distillation.

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3,165,548

## CONTINUOUS PROCESS FOR THE PRODUCTION OF AROMATIC AND HETEROCYCLIC CARBOXYLIC ACIDS

Ernst Bartholomé, Heidelberg, and Hans Nienburg, Richard Sinn, Karl Scherf, and Adolf Kreyer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Apr. 19, 1962, Ser. No. 188,759
Claims priority, application Germany, Jan. 14, 1960, B 56,245; Apr. 21, 1961, B 62,224
9 Claims. (Cl. 260—524)

1. In a continuous process for the production of aromatic carboxylic acids by oxidizing a compound having an aromatic nucleus and an oxidizable side chain with nitric acid of about 10 to 40 weight percent concentration, at an oxidation temperature of about 150° C. to 400° C. and under a pressure of about 10 to 150 atmospheres, the improvement which comprises: premixing the compound to be oxidized with nitric acid at a temperature below said oxidation temperature; leading the resultant mixture with turbulent flow in the form of a turbulent jet into the lower end of a vertically elongated reaction zone filled with reaction liquid and maintained adiabatically under said oxidation temperature and pressure, the velocity of flow of said mixture decreasing to at least one-third upon entry into said reaction zone so as to form a vortex with hot reaction product being sucked back to the point of entry of said mixture; avoiding a gas space at the upper end of said reaction zone; and withdrawing reaction product at the upper end of said reaction zone.

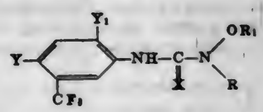
3,165,549

## CARBANIL-HYDROXAMIC ACID ESTERS

Henry Martin, Basel, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

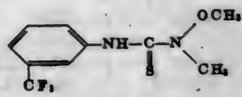
No Drawing. Filed Jan. 16, 1962, Ser. No. 166,710
Claims priority, application Switzerland, Jan. 19, 1961, 638/61
5 Claims. (Cl. 260—552)

1. A compound of the formula



in which R and $R_1$ each represent an alkyl radical of 1 to 3 carbon atoms, Y and $Y_1$ each represent a member selected from the group consisting of a hydrogen atom and a halogen atom, and X represents a member selected from the group consisting of an oxygen atom and a sulfur atom.

4. The compound of the formula



3,165,550

## N-SUBSTITUTED p-BENZENEDISULFONAMIDES

Gerald F. Holland and William M. McLamore, Groton, and Gerald D. Laubach, Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 29, 1960, Ser. No. 39,717
5 Claims. (Cl. 260—556)

1. N-monoallyl-p-benzenedisulfonamide.
2. N-monocyclohexyl-p-benzenedisulfonamide.
3. N-monobenzyl-p-benzenedisulfonamide.
4. N-mono (m-trifluoromethylphenyl) - p - benzenedisulfonamide.
5. N-mono(α-naphthyl)-p-benzenedisulfonamide.

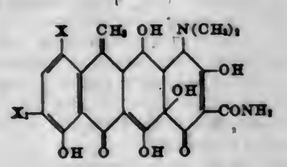
3,165,551

## NEW ANTIBACTERIAL AGENTS

Robert K. Blackwood, Gales Ferry, Hans H. Rennhard, Lyme, John J. Beereboom, Waterford, and Charles R. Stephens, Jr., Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

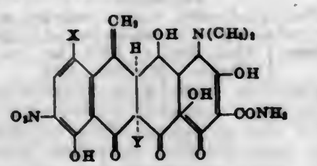
No Drawing. Filed June 26, 1961, Ser. No. 119,274
11 Claims. (Cl. 260—559)

1. A compound selected from the group consisting of compounds of the formula:



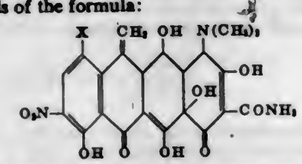
in which X is selected from the group consisting of hydrogen, chloro, iodo and bromo, $X_1$ is selected from the group consisting of amino and lower alkanoylamino;
and acid addition salts and pharmaceutically acceptable metal salts thereof.

2. A compound selected from the group consisting of compounds of the formula:



in which X is selected from the group consisting of hydrogen, chloro, iodo and bromo, Y is selected from the group consisting of chloro and fluoro;
and acid addition salts thereof.

9. A compound selected from the group consisting of compounds of the formula:



in which X is selected from the group consisting of hydrogen, chloro, iodo and bromo;
and acid addition salts and pharmaceutically acceptable metal salts thereof.

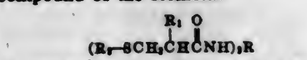
3,165,552

## INTERNAL AMIDE, NONPOLYMERIC THIOETHER SENSITIZERS FOR PHOTOGRAPHIC EMULSIONS

William G. Lovett, Peter P. Chiesa, and John R. Dann, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Application Apr. 2, 1962, Ser. No. 184,496, which is a division of application Ser. No. 858,872, Dec. 11, 1959, now Patent No. 3,057,724, dated Oct. 19, 1962. Divided and this application Apr. 6, 1964, Ser. No. 357,801
6 Claims. (Cl. 260—561)

1. A compound of the formula:



wherein R represents a member selected from the class consisting of methylene, methyl-substituted methylene, ethyl-substituted methylene, n-propyl-substituted methylene, isopropyl-substituted methylene and cyclohexylene-p,p'-bis methylene, $R_1$ represents a member selected from the class consisting of hydrogen and methyl and $R_2$ represents a member selected from the class consisting of methoxyethyl, ethoxyethyl, butoxyethyl, methoxypropyl, ethoxyethoxyethyl, methoxyethoxyethyl, β-hydroxyethyl, γ-hydroxypropyl, β-hydroxyethoxyethyl, γ-hydroxypropoxyethyl, β-hydroxyethoxyethoxyethyl, γ-hydroxypropoxypropoxyethyl, β-phenoxyethyl, γ-hydroxypropyl, hydrazinocarbonylmethyl and propen-1-ylidenehydrazinocarbonylmethyl.

2. 10,12-diazo - 3,19 - dioxa - 6,16 - dithiaheneicosane-9,13-dione.

3,165,553

## PRODUCTION OF N-METHYL SUBSTITUTED ETHYLENE DIAMINE

Franz Koenig, Offenbach (Main), Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Nov. 28, 1960, Ser. No. 71,927
Claims priority, application Germany, Dec. 4, 1959, D 32,046
4 Claims. (Cl. 260—583)

1. A process for the production of N-methyl ethylene diamine which comprises hydrogenating N-methylene amino acetonitrile trimer in a water free inert organic solvent at a temperature of 50 to 120° C. under a gauge pressure of 30 to 200 atmospheres.



3,165,554

## OXIDATION OF CYCLIC AND ALIPHATIC ALCOHOLS

William H. Wineland, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 25, 1962, Ser. No. 212,461
7 Claims. (Cl. 260—586)

1. A method for converting a secondary alcohol to its corresponding ketone which comprises reacting in the aqueous phase a second alcohol selected from the group consisting of secondary alkanols, phenyl secondary alkanols, cycloalkanols, cyclohexylcyclohexanols and phenyl cycloalkanols with a halogen selected from the group consisting of chlorine and bromine in the presence of a hydrogen halide acceptor selected from the group consisting of the carbonates and bicarbonates of the alkali and alkaline earth metals and the hydroxides and oxides of alkaline earth metals and ammonia at a temperature of from 0° to 100° C., the molar ratio of halogen to alcohol being between about 0.25 to 1.2.

3,165,555

## POLYHALOBICYCLOALKENIC DERIVATIVES OF SALICYLALDEHYDES

John P. Lavisi, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 18, 1960, Ser. No. 29,822
6 Claims. (Cl. 260—600)

1. A polyhalobicycloalkenic derivative of a salicylaldehyde having the generic formula:



in which the R's are radicals selected from the group consisting of hydrogen and alkyl radicals containing from 1 to 6 carbon atoms, the X's are radicals selected from the group consisting of hydrogen, chlorine and bromine radicals, at least 2 X's being halogen, *m* is an integer of from 0 to 5 and *n* is an integer of from 1 to 2, the polyhalobicycloalkenic moiety being in one of the positions 3 to 5 with respect to the formyl radical.

3,165,556

## PREPARATION OF DIVINYL AND TETRAVINYL ETHERS OF PENTAERYTHRITOL

Norman Shachat, Levittown, and James J. Bagnell, Jr., Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 21, 1961, Ser. No. 104,511
2 Claims. (Cl. 260—615)

1. Process for preparing a composition of matter essentially consisting of the divinyl ether of pentaerythritol, comprising, introducing sufficient water into a reaction system containing pentaerythritol and a catalytic quantity of a base from the class consisting of sodium and potassium hydroxides so that the water will dissolve at least some of the pentaerythritol, saturating the aqueous solution of pentaerythritol and base with acetylene under pressure at a temperature of between about 0° and 25° C., introducing said acetylene-saturated mixture into a reaction zone where the vinylation takes place under a pressure of between about 200 and 2000 p.s.i.g. and temperature of between about 130° and 200° C., thereby forming a two-layered system in which the lower is an aqueous layer and the upper layer consists of partial vinylation products including the divinyl ether of pentaerythritol.

3,165,557

## PROCESS FOR PREPARING α-MONOOLEFINIC HYDROCARBONS

Harry W. Coover, Jr., and Richard L. McConnell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 30, 1960, Ser. No. 39,821
8 Claims. (Cl. 260—683.15)

1. The method for producing monoolefinic hydrocarbons which comprises telomerizing an α-monoolefinic hydrocarbon containing up to 10 carbon atoms in the presence of the non-distillable polymeric solid reaction product of a methylene halide with a metal selected from the group consisting of aluminum, zinc and magnesium as the sole effective telomerization catalyst.

3,165,558

## PRODUCTION OF THERMOSETTING, AROMATIC HYDROCARBON RESINS

Minoru Imoto, 181–2 Okashinmachi, and Ching Yun Huang, 249 Okashinmachi, both of Maikata-shi, Osaka-fu, Japan; Teiichi Taniguki, 1156–23 Okamoto, Motoyama-machi, Higashi-ku, Kobe-shi, Japan; and Tadao Kuraya, 20 Chika-machi, Kita-ku, Osaka-shi, Japan

No Drawing. Filed Mar. 30, 1961, Ser. No. 99,376
Claims priority, application Japan, Mar. 31, 1960, 11,342/60
7 Claims. (Cl. 260—823)

1. A process of producing thermosetting resins which comprises preparing an aromatic hydrocarbon-formaldehyde resin containing oxygen wherein said oxygen is in a group selected from ether and acetal and said aromatic hydrocarbon is selected from the group consisting of a mononuclear aromatic hydrocarbon containing one to four methyl substituents, naphthalene, α-methyl-naphthalene, β-methyl-naphthalene, anthracene, and mixtures thereof, condensing by heating at a temperature of the order of 140°–220° C. in the presence of an acid catalyst, said aromatic hydrocarbon-formaldehyde resin with at least one reactant selected from the group consisting of acenaphthene, acenaphthylene, their resinous formaldehyde reaction products, and mixtures thereof, the oxygen containing group thereby reacting with said reactant to split out water, and continuing said heating to produce a fully, thermally hardened resin, substantially free of oxygen.

3,165,559

## MANUFACTURE OF BEAD POLYMERS

Karl-Heinz Kabra, Frankfurt am Main, Fritz Winkler, Kelkheim, Taunus, and Johann Wolfgang Zimmermann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

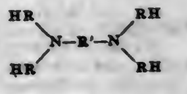
No Drawing. Filed Dec. 1, 1959, Ser. No. 856,338
Claims priority, application Germany Dec. 13, 1958
12 Claims. (Cl. 260—875)

1. In a process for manufacturing bead polymers, the step which comprises graft co-polymerizing, in an aqueous medium, with stirring, at a temperature of from 20° C. to 100° C., and in the presence of a water-soluble emulsifier and of a free radical forming activator, (1) a vinyl ester of a monobasic carboxylic acid having 2-10 carbon atoms and (2), dissolved in said vinyl ester, 0.1–25 percent by weight of said ester of a water-insoluble stem polymer selected from the group consisting of

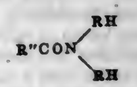
(*a*) polyalkylene glycols
(*b*) polyalkylene glycols having at least one etherified terminal hydroxy group

(*c*) polyalkylene glycols having at least one esterified terminal hydroxy group

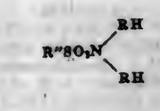
(*d*) a compound of the formula



(*e*) a compound of the formula



(*f*) a compound of the formula



where R' is a bivalent hydrocarbon radical,

R'' is a monovalent hydrocarbon radical having up to 20 carbon atoms, and

R is an alkylene oxide chain having 15 to 1500 alkylene oxide units and comprising less than 10 percent by weight of ethylene oxide, said polyalkylene glycols in (*a*), (*b*), and (*c*) having a molecular weight between about 1000 and 10,000, and said compounds (*d*), (*e*), and (*f*) having a molecular weight between about 1500 to 100,000,

said water-soluble emulsifier being present in an amount of from about 0.1–5 percent by weight of said water-insoluble stem-polymer and said vinyl ester, and said activator being present in an amount of from 0.01–10 percent by weight of said vinyl ester.

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**3,165,560**

## VINYL CHLORIDE POLYMER AND COPOLYMER COMPOSITIONS OF MATTER

Hans-Helmut Frey, Frankfurt am Main, Helmut Klug and Karl-Heinz Nittelberger, Gersthofen, near Augsburg, and Friedrich Nolte, Stadtbergen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 18, 1959, Ser. No. 813,682
Claims priority, application Germany May 24, 1958
5 Claims. (Cl. 260—897)

1. A composition of matter comprising (1) a member selected from the group consisting of polyvinyl chloride and a copolymer of vinyl chloride and a member selected from the group consisting of vinyl acetate, vinyl propionate, vinyl butrate, vinyl stearate, vinylidene chloride and esters of acrylic, methacrylic and maleic acid, said esters being formed with an aliphatic, saturated alcohol containing from 1 to 10 carbon atoms, said copolymer containing more than 50 percent vinyl chloride and (2) 10 to 50%, calculated upon the weight of the composition, of a chlorination product of the polymer selected from the group consisting of a homopolymer of an olefin having 2 to 4 carbon atoms and a copolymer whose monomers consist of mono-olefins having from 2 to 4 carbon atoms obtained by chlorination of said polymer suspended in water at a temperature within the range of 110° C. as the lower limit and 150° C. as the upper limit, said chlorination product having a chlorine content within the range of 30 to 45 percent by weight.

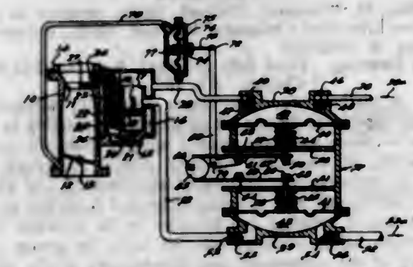
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**3,165,561**

## RETURN FLOW CARBURETOR

Thomas M. Ball, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed July 28, 1959, Ser. No. 830,124
7 Claims. (Cl. 261—27)



1. In a carburetor for an internal combustion engine having an air intake manifold system, a fuel bowl, means responsive to the air flow in said manifold system for discharging fuel thereinto from said bowl, a movable-wall type fuel pumping means, inlet conduit means connecting said pumping means and bowl for supplying the latter with fuel upon operation of said pumping means, means for maintaining the fuel in said bowl at a predetermined level comprising an overflow weir in said bowl defining at least in part a chamber adapted to receive excess fuel overflowing said weir from said bowl when the fuel in said bowl attains said predetermined level, fuel return means in communication with said chamber to drain fuel therefrom upon overflow of excess fuel from said bowl into said chamber, said pumping means having a reciprocable wall movable in alternate intake and pumping strokes, pressure exerting means for yieldingly urging said wall in a pumping stroke, actuating means including follower means operatively associated with said wall for moving the latter in opposition to said pressure exerting means to effect an intake stroke of said wall upon movement of said actuating means in one direction and for releasing said wall for movement in said pumping stroke upon movement of said actuating means in the opposite direction, said actuation means also including a cyclical cam, said follower means being engageable with said cam for reciprocation thereby, and adjustable means responsive to said air flow in said manifold system for adjustably controlling the relative positions of said follower means with respect to said cam to increase said intake stroke with increasing air flow.

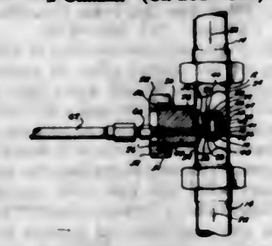
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**3,165,562**

## DISPERSING DEVICE

Lawrence W. Young, Oak Park, and Jim M. Venetucci, Forest Park, Ill., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed June 14, 1962, Ser. No. 202,907
2 Claims. (Cl. 261—122)



1. A device for dispersing gas in a liquid flowing through a pipe line having a T pipe fitting connected therein with the liquid flowing through the cross member of the T pipe fitting, comprising a dispersing assembly including a cylindrical member of porous material, a first end member closing one end of said cylindrical member and having a spherical portion at the side thereof facing away from said cylindrical member, and a second end member having a recess therein and closing the opposite end of said cylindrical member, whereby a chamber is defined by said cylindrical member and said end members, means for mounting said dispersing assembly within the cross member of the T pipe fitting with the axis of said cylindrical member parallel to the direction of flow of liquid in said cross member and with said first end portion facing in an upstream direction, said mountng means including a body member located in the leg of the T and extending transversely of the axis of said cylindrical member and having an arcuate channel in the end thereof adjacent the dispersing assembly which channel extends parallel to the axis of said cross member, said arcuate channel being substantially a continuation of the surface of said cross member and having substantially the same curvature as said surface, the length of said body member and the curvature of the arcuate channel being such that when said body member is disposed within the leg of the T the channel corresponds to the inside surface of the cross member of the T pipe fitting, said body member having a passageway therein which extends from said channel to the opposite end of said body, and a conduit mounting said dispersing assembly in spaced relation to the wall of said channel and connected to said passageway and to the chamber to thereby provide fluid communication between said passageway and said chamber, and means for coupling a source of gas to said passageway.



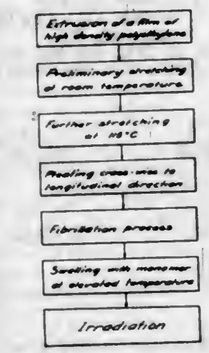
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**3,165,563**

## METHOD FOR THE PRODUCTION OF A FIBROUS MATERIAL

Ole-Bendt Rasmussen, Charlottenlund, Denmark, assignor to Phillips Petroleum Company, Bartlesville, Okla., a corporation of Delaware

Filed June 22, 1960, Ser. No. 38,412
Claims priority, application Denmark June 25, 1959
6 Claims. (Cl. 264—22)




1. The method of producing a fibrous material from an orientable polymer, which comprise stretching a film of the said polymer to impart an orienting, splitting the oriented film to form a network of coherent fibres, spreading said network cross-wise to the longitudinal direction to a wide-meshed state, and fixing the network in the spread state.

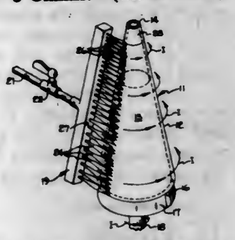
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**3,165,564**

## METHOD FOR FORMING A TEXTILE CARRIER

Harry G. Howle, Blanding D. Clarkson, and Robert S. Lawhon, all of Hartsville, S.C., assignors to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina

Filed Feb. 14, 1962, Ser. No. 173,231
5 Claims. (Cl. 264—90)



1. A method of forming a textile carrier comprising the steps of, providing a tubular body formed from a synthetic plastic material, melting substantially all of the outer surface of said body except a portion adjacent one end, and moving said melted plastic surface to form randomly distributed irregularly shaped ripples on said surface and cooling said surface to set said ripples and form a yarn retentive winding surface on said body.

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**3,165,565**

## METHOD OF MAKING HOLLOW ARTICLES

Alvon R. Cox and Albert E. Hosier, Ashland, Ohio, assignors to The Fauldless Rubber Company, Ashland, Ohio

Filed June 17, 1960, Ser. No. 37,007
9 Claims. (Cl. 264—161)



1. The method for making hollow articles from a liquid dispersion of thermosetting material which comprises providing complementary mold members having mating cavities and narrow meeting lands about the cavities, heating the mold members to the gelling temperature of the thermosetting material, filling each mold member to the brim with the liquid thermosetting material, depositing the material over the mold cavity surface, removing the excess undeposited liquid material from the mold members by flowing it uniformly over the mold lands to form a gelled deposit thereon, assembling the mold members and the deposited material face to face to unite the deposits, applying pressure to the assembled mold members to squeeze excess material out of the space between lands of the molds, heating the assembled molds to the thermosetting temperature of the material to further set the material forming the hollow articles, cooling the molds, removing the clamping pressure, opening the molds, and removing the articles.

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**3,165,566**

## ONE STEP POLYAMINE CURING FOR POLYURETHANE THREADS

Walter T. Murphy, Cuyahoga Falls, and Bernard F. Cinadr, Brecksville, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed June 29, 1961, Ser. No. 120,526
11 Claims. (Cl. 264—184)

1. A method of making an elastic thread material comprising in combination the steps of providing a low mo-

lecular weight polyurethane prepolymer which is a reaction product of a polymer having terminal hydroxyl groups selected from the group consisting of polyesters and polyethers with an excess of an aromatic polyisocyanate, adding to said polyurethane prepolymer a polyol material having terminal hydroxyl groups, said materials being present in proportions such that the number of equivalents of diisocyanate exceeds the number of equivalents of terminal hydroxyl in the polymer plus the polyol, extruding the mixture of prepolymer plus polyol into a curing bath comprising a 2% to 20% by weight solution of a polyfunctional amine compound having at least three functional amine groups for a period of 15 to 120 seconds, washing the extruded thread material with alcobol to remove said polyfunctional amine compound from the surface thereof and drying said thread material.

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3,165,567

## METHOD OF INTEGRALLY SURFACE LUBRICATING MOLDED PLASTIC ARTICLES

Richard L. Olson, Chicago, Ill., assignor to Dike-O-Seal Incorporated, Chicago, Ill., a corporation of Illinois

Filed July 1, 1960, Ser. No. 40,265
3 Claims. (Cl. 264—255)

1. In a method of preparing a mold for making articles from a liquid plastic material which in its cured solid state has a high coefficient of surface friction,

heating to not over 212° F. a mold having a molding surface,

applying to said surface a parting agent in generally fluid condition but unaffected by said temperature of the mold,

wiping excess parting agent from said surface to leave a uniform layer of parting agent only sufficient for its releasing or parting function and to avoid running of the parting agent after such wiping,

while the mold is still at about said temperature spraying a substantially uniform coating of finely divided particles of solid lubricating material predominantly in a multi-micron size to pass through a 50 micron mesh screen in a volatile vehicle onto the superficial surface of the parting agent,

and by the residual heat of the mold rapidly evaporating the carrier and effecting superficial adherence of the particles of lubricating material to said layer of parting agent and to one another with interstitial spaces through the coating and thereby forming a porous matrix of the lubricating material particles wherein the particles mutually sustain one another against displacement when the liquid plastic material is run thereonto and thereover in loading the mold but permit running of the liquid plastic into the interstitial spaces between the particles and to the surface of the parting agent so that the lubricating particles become intimately embedded in an integral matrix of the plastic material in the surface of the plastic article resulting from curing of the plastic material in the mold.

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3,165,568

## PROCEDURE OF MANUFACTURING IMPREGNATED ELECTRICAL CONDENSERS

Olaf Sternbeck, Alvsjo, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Aug. 29, 1960, Ser. No. 52,646
Claims priority, application Sweden, Sept. 4, 1959
3 Claims. (Cl. 264—272)

1. A method of encapsulating an electric roll type condenser, which method comprises loosely inserting a free form foil made of moisture-impervious material together with the condenser to be encapsulated in a mold so that the foil is placed between the base of the mold and the condenser, and then filling the mold with a thermosetting




resin so that the foil and the condenser thereupon are fully submerged in the resin.

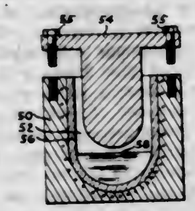
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3,165,569

## METHOD AND APPARATUS FOR THERMAL EXPANSION MOLDING

Elvin M. Bright, North Hollywood, Calif., assignor to Air Logistics Corporation, a corporation of California

Filed Apr. 18, 1960, Ser. No. 23,067
17 Claims. (Cl. 264—313)




1. The method of forming a tubular body from a sheet of plastic material comprising the steps of wrapping the sheet material about a thermally expansible mandrel, confining the mandrel with the sheet material thereon within an annular mold fabricated of material having a lower thermal expansion than that of said mandrel, and supplying heat to said mandrel and by conduction to the plastic material to induce thermal expansion thereof with consequent application of pressure to said plastic material.

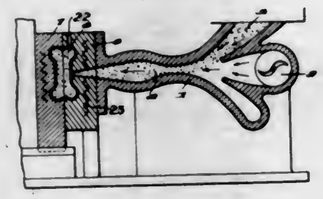
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3,165,570

## REFRACTORY POWDER INJECTION, PROCESS AND APPARATUS

Alexander T. Deutsch, 1721 19th St. NW., Washington, D.C.

Filed Aug. 22, 1962, Ser. No. 221,395
10 Claims. (Cl. 264—329)




1. The method of impact forming of refractory particles in a mold comprising suspending said particles in a carrier gas, imparting an elevated velocity and temperature to said gaseous suspension of particles, to convert said suspension into a plasma, passing said suspension as a jet into a closed, two-part vented mold as a continuous stream and impacting the particles one upon the other to cohere and adhere each particle into a matrix filling the space within said mold and forming a composite molded article.

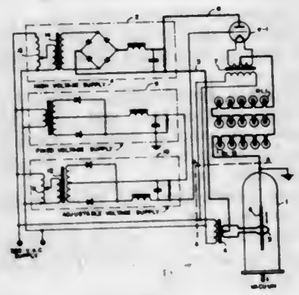
# ELECTRICAL

3,165,571

## AUTOMATIC CURRENT REGULATOR

Willard M. Grimes, Jr., Wayne, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 20, 1961, Ser. No. 118,389
5 Claims. (Cl. 13—1)



1. An electron-beam, zone-refining furnace and the electric power source therefor, said furnace comprising a cathode connected to a furnace electrical input terminal and an anode comprising the object being refined and connected to a furnace electrical output terminal, said furnace normally operating with a predetermined current passing therethrough, said electric power source comprising:

(*a*) electron power tube means having an anode, a cathode, and a control grid, said tube means during operation of said furnace acting to pass the operating current drawn by said furnace;

(*b*) first D.C. potential source means having an output potential of predetermined value and connected across the input terminals of said furnace and the anode of said tube means;

(*c*) second D.C. potential source means adapted to apply to the grid of said tube means a potential of predetermined value; and

(*d*) non-linear feedback impedance means connected in series between said tube means and said furnace, and said non-linear impedance means during normal operation of said furnace having a predetermined voltage drop thereacross and displaying a resistance which increases with increasing voltage drop thereacross.

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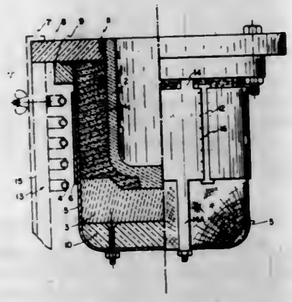
3,165,572

## PREFORMED CRUCIBLE

Philip Bertenshaw, Watford, and Joseph E. Moore, South Ruislip, England, assignors, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed June 8, 1962, Ser. No. 201,154
7 Claims. (Cl. 13—27)

1. A preformed, replaceable crucible assembly for induction furnaces and the like, comprising an inner crucible, an outer sheath made of non-magnetic metal of high resistivity and constructed to prevent flow of induced currents therein, and top and bottom members of insulating material, one at least of these members being removable to allow packing of thermally insulating material within the sheath around the inner crucible, thermal insulating material packed between the crucible and sheath, the entire assembly being held together so that it can be supported and moved as a single unit to and



from its operating location in proximity to a fixed furnace heating element.

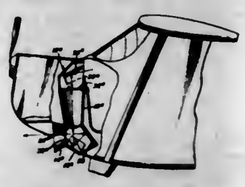
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3,165,573

## VISION DEVICE FOR VEHICLES

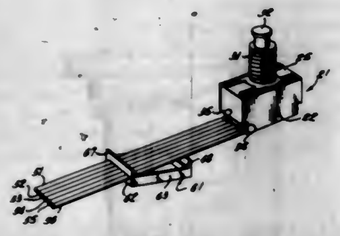
Charles W. Moultrie, 1543 E. 85th St., Chicago, Ill.

Original application Sept. 29, 1958, Ser. No. 763,889, now Patent No. 3,043,195, dated July 10, 1962. Divided and this application Mar. 1, 1962, Ser. No. 186,568
1 Claim. (Cl. 88—69)



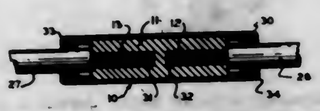
In combination with an aircraft having a cockpit, a front vision device comprising an elongated open-ended housing positioned vertically in said aircraft so that the top end thereof opens into said cockpit, the bottom end of said housing being positioned beneath said cockpit and including a bottom chamber having an annular mouth opening forwardly of said aircraft, a lower inclined wall and an upper inclined wall in vertical alignment with said mouth, a planar mirror mounted on said upper inclined wall at an angle of 45° with the vertical axis of said housing, a converter mounted on said lower inclined wall at an angle of 45° with said axis and in optical alignment with said mirror, said converter comprising a supporting frame and a pair of planar front surface mirrors mounted on said fame in right angle face to face relationship, a plano-convex lens horizontally mounted in said housing above said converter and in optical alignment therewith, a ground glass screen horizontally mounted in said housing above said lens and in optical alignment therewith, said screen being positioned in the focal plane of said lens so that an image may be formed thereon, and a concave viewing mirror pivotally mounted in said top end and in optical alignment with said screen, said first mentioned mirror, converter, lens, screen and viewing mirror being all on the same optical axis and cooperating so that the image of an object viewed by the operator of said aircraft appears on said viewing mirror in its true position and proportion.

3,165,574
INSULATING AND/OR DUST COVER FOR SWITCHES
Conrad I. Carling, Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut
Filed Oct. 20, 1961, Ser. No. 146,587
7 Claims. (Cl. 174—59)



1. A switch assembly comprising a case made of insulating material, a plurality of electrically conductive terminals on the bottom of said case, the outer ends of said terminals extending beyond the respective edges of said case, a lead wire connected to at least some of said terminals and extending in a group from one side of said case, a removable cover for said case, said cover releasably engaging said terminal ends by snap action, a slot in said cover, said wires being laced through said slot, said case being movable along said wires when released from said terminals.

3,165,575
INSULATED SPLICER WITH END SEALS
Leslie S. Lynch, Jr., Union, and Edward L. Eldridge, Warren Township, N.J., assignors to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Oct. 4, 1962, Ser. No. 228,339
5 Claims. (Cl. 174—84)



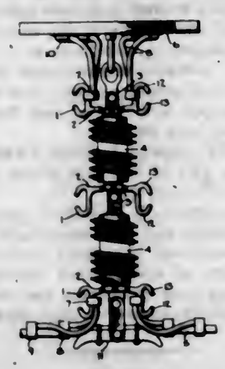
1. An insulated splicer for electrically connecting and dielectrically shielding conductors extending from insulating covers, comprising an inner core block having recesses extending inwardly of the longitudinal ends thereof to receive said conductors, said core block being formed of conducting material and adapted to be longitudinally elongated under transverse compression, a tubular dielectric insulating sheath of substantially greater length than the core block, said core block being medially received within said sheath, flexible sealing means positioned against the longitudinal ends of the core block within the confines of said insulating sheath, said sealing means being axially deformable to increase the radial dimension thereof upon axial compression thereof, the longitudinal ends of said insulating sheath being turned down to confine the sealing means against said core block ends, the parts being so proportioned that upon insertion of the conductors within said recesses, the sealing means will be in peripheral contact with the insulating covers of said conductors, whereby upon transverse compression and deformation of said core block, said conductors will be crimped therein and said core block will elongate and apply an axial compressive force upon said sealing means to radially deform the same and tightly seal against said insulating covers and said insulating sheath to thereby effectively seal the conductors from the atmosphere.

3,165,576
WIRE CONNECTORS WITH FLEXIBLE LEAD
Frederick O. Lige, Rte. 3, Hillsdale, Mich.
Filed Jan. 25, 1963, Ser. No. 253,905
3 Claims. (Cl. 174—87)



1. An electrical connector adapted to be affixed to the end of electrical conductors comprising,
(*a*) a hollow body member of dielectric material, said body member having an open end and an internal bore,
(*b*) a conically shaped spring coaxially received within said body member bore, said spring having a large diameter end and a reduced diameter end, said spring large end being disposed adjacent said body member open end,
(*c*) means maintaining said spring within said body member bore, and
(*d*) a flexible electrical lead permanently attached to said spring adjacent an end thereof and extending from said body member.

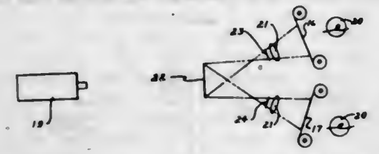
3,165,577
ARC PROTECTING DEVICE WITH C-SHAPED HORNS FOR SUSPENSION INSULATORS
Jean Henri Meier, Tarbes, Hautes-Pyrenees, France, assignor to Compagnie Generale d'Electro-Ceramique, Paris, Seine, France, a company of France
Filed Mar. 21, 1963, Ser. No. 266,887
Claims priority, application France, Mar. 26, 1962, 892,253
4 Claims. (Cl. 174—141)



1. A suspension insulator comprising a generally cylindrical body of insulating material, said cylindrical body having at least one blind bore at an end thereof, a pair of metal fittings, at least one of said fittings having a portion which is cemented within said blind bore in an end of said cylindrical body, said metal fitting having a portion sealed within said bore of said body having a protecting device against electric arcs, said protecting device having at least one horn having a generally C-shaped free end portion, said free end portion opening in a direction away from the longitudinal axis of said metal fitting, the longitudinal extremity of said C-shaped free end portion nearest said end of said cylindrical body not extending beyond a transverse plane passing through the end of said cylindrical body.

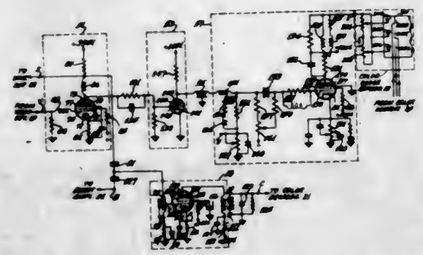


3,165,578
THREE DIMENSIONAL TELEVISION METHOD AND MEANS
Felix Lauricella, 68 Post St., San Francisco, Calif.
Filed Sept. 25, 1959, Ser. No. 842,181
1 Claim. (Cl. 178—5.4)



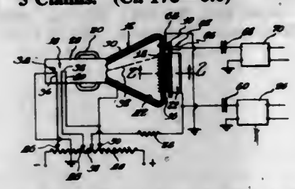
A method of producing a television broadcast giving the illusion of a three dimensional image consisting of the steps of: photographing a subject on black and white film simultaneously from two positions in stereoscopic relationship to each other; viewing the two photographed images with a color television camera through filters of opposite colors; positioning the filters so that the first of said images is viewed in one color and the second of said images is viewed in an opposite color; sequentially reproducing said images on a television screen in superposed relationship; and viewing the television screen through two filters each oppositely colored to prevent optical viewing of opposite ones of the reproduced colored pictures.

3,165,579
COLOR TELEVISION RECEIVER VIDEO AMPLIFIER
John Stark, Jr., and Gordon E. Kelly, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,710
6 Claims. (Cl. 178—5.4)



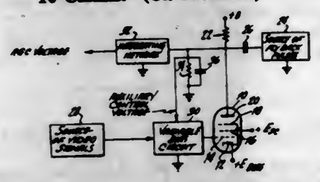
1. In a color television receiver including a video detector developing in response to signals applied thereto a composite color video output signal including a luminance component, a chrominance component, a deflection synchronizing component and a color synchronizing component,
apparatus comprising the combination of:
a first video signal amplifying means, direct current conductively connected to said video detector and having a load circuit, for developing in said load circuit an amplified and phase inverted version of the composite signal output of said video detector;
means for utilizing said chrominance component;
means for utilizing said deflection synchronizing component;
means for utilizing said color synchronizing component;
respective means for applying signals developed in said load circuit to each of said chrominance, deflection synchronizing and color synchronizing component utilization means;
a triode having a cathode, a control grid, and an anode;
a direct current conductive connection from said load circuit to said control grid;
means, including said direct current conductive connection for maintaining said control grid positively biased with respect to said cathode;
a load impedance connected between said anode and a source of direct current potential;
a delay line;
a luminance output amplifier having an input electrode and an output electrode;
means including said delay line for providing a direct current conductive connection between said anode and said input electrode;
and means for utilizing said luminance component, said luminance component utilization means being direct current conductively connected to said output electrode.

3,165,580
REPRODUCING TRANSDUCER FOR MOVING DIELECTRIC RECORD
Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, a corporation of Illinois
Filed June 18, 1962, Ser. No. 203,326
5 Claims. (Cl. 178—6.6)



2. In a reproduction system for use with a moving dielectric record medium having an internal charge pattern representing the signal recorded thereon, comprising an evacuated tube, a series of conductors extending through a wall of said tube and receiving the record medium at the exterior ends thereof in operative relation thereto, said wall being made of semiconductive material, a source of positive potential connected to said wall, electron gun means within said tube for projecting a beam of electrons at the interior ends of the conductors, means causing said beam to cyclically scan the interior ends of said series of conductors, backing electrode means disposed on the side of the record medium opposite that cooperating with said series of conductors, and means connected to said backing electrode means for amplifying variations produced therein by the electric charge pattern in said record medium.

3,165,581
KEYED AGC CIRCUIT WITH MEANS FOR CONTROLLING HORIZONTAL SYNC PULSE LEVEL OF SIGNALS BELOW THE AGC THRESHOLD
Jack Avins, Staten Island, N.Y., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 16, 1962, Ser. No. 195,171
10 Claims. (Cl. 178—7.3)

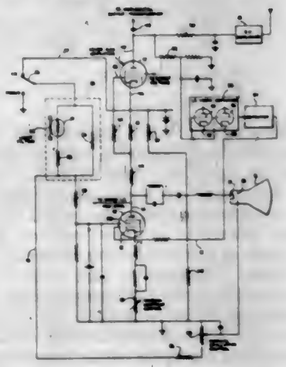


1. In a television receiver having a source of composite video signals including regularly recurring horizontal synchronizing signals and a direct voltage component, the amplitude of which video signals may vary as the strength of the television wave received by said receiver varies, the combination comprising:

an amplifying device having first and second electrodes;
means for applying a direct bias voltage between said electrodes;
means for applying the composite video signals, including the direct voltage component, between said electrodes such that above a threshold level of the video signals the horizontal synchronizing signals on said electrodes cause current conduction in said device, and below said threshold level said synchronizing signals normally cause no current conduction in said device; and
means coupled to said amplifying device to derive a control signal responsive to the amplitude of said video signals and to vary the direct bias voltage on said electrodes by said control signal when said video signals are below said threshold level so that the synchronizing signals on said electrodes cause current conduction in said device.

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3,165,582
AUTOMATIC CONTRAST AND BRILLIANCE CONTROL SYSTEM FOR TELEVISION RECEIVERS
Paul Korda, San Francisco, Calif., assignor to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed Dec. 29, 1961, Ser. No. 202,036
(Filed under Rule 47(b) and 35 U.S.C. 118)
6 Claims. (Cl. 178—7.5)

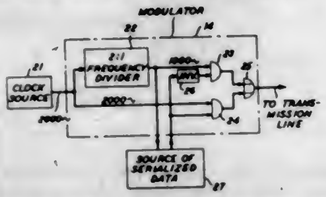


3. A television receiver comprising a cathode ray tube having first and second control electrodes, a picture signal channel coupled to one of said control electrodes for impressing picture signals thereon, light sensitive means responsive to ambient light conditions in the vicinity of said cathode ray tube for generating signals representative of said ambient light conditions, means for coupling said light sensitive means to the other of said control electrodes of said cathode ray tube and to said picture signal channel for impressing ambient light representative signals on said other control electrode for simultaneously varying contrast effects and brilliance of said image, and means for adjusting the bias on one of said cathode ray tube electrodes for determining the tracking relationship for brilliance and contrast under all ambient light conditions.

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3,165,583
TWO-TONE TRANSMISSION SYSTEM FOR DIGITAL DATA
Ernest R. Kretzmer, New Providence, N.J., and Ralph A. Winter, Ridgefield, Conn., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 16, 1961, Ser. No. 89,831
7 Claims. (Cl. 178—66)

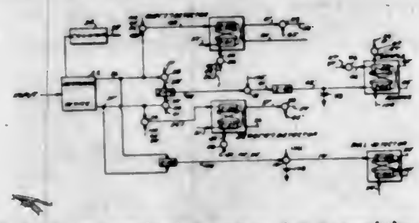
1. A two-state frequency shift data transmission system comprising a transmission line, a source of binary data, a stable source of rectangular-wave oscillations at a first frequency within the pass band of said transmission line, means for deriving from the output of said stable source an even subharmonic frequency of said first frequency, a pair of two-input coincidence gates, one input of one of said gates being connected directly to said stable




source, one input of the other of said gates being connected to said deriving means and the remaining inputs being connected to said data source, means inverting the binary data from said data source connected in series with a remaining input of one of said coincidence gates, and a buffer gate coupling the outputs of said coincidence gates to said transmission line.

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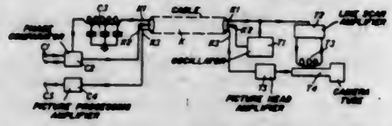
3,165,584
DIGITAL COMMUNICATION SYSTEM WITH DETECTOR SELECTION MEANS RESPONSIVE TO DATA POLARITY TRANSITIONS
James E. Thornton, St. Paul, and Ernest J. Hood, Minneapolis, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 29, 1962, Ser. No. 233,778
9 Claims. (Cl. 178—68)



2. In a communication system for transmitting and receiving elements of information at two polarities, a phase modulator for converting said information from a first format to a second format having polarity transitions at predetermined intervals, means for detecting the information in said second format comprising: a plurality of bistable devices, at least one of said bistable devices responsive to each polarity, and selecting means responsive to said transitions to select appropriate bistable devices for each element of information.

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3,165,585
SYNCHRONISING APPARATUS FOR TELEVISION CAMERAS
John Frederick James, Little Baddow, Essex, England, assignor to The Marconi Company Limited, a British company
Filed Apr. 16, 1962, Ser. No. 187,478
Claims priority, application Great Britain, Apr. 20, 1961, 14,296/61
5 Claims. (Cl. 178—69.5)



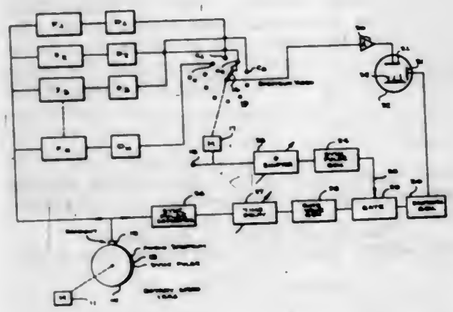
1. A television camera installation wherein a television camera is situated remotely from a control point from



which it is to be controlled over a signal path of extended length, said installation comprising at the camera end of said path a variable frequency oscillator adapted to be controlled in frequency by a control voltage fed thereto, said oscillator being employed to control line scanning in said camera; a phase comparator at the control point end of said path and adapted to produce a control signal dependent on and representative of the phase relation between two signals fed thereto; means for feeding to said phase comparator two inputs, one derived from a line drive source provided at said control point and the other derived from said oscillator; and means for supplying, as control voltage to said oscillator, output from said phase comparator dependent on the phase relation of the two inputs fed thereto.

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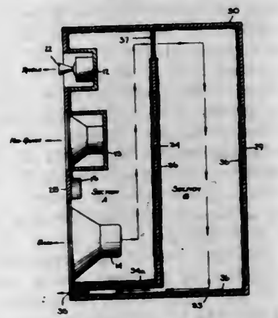
3,165,586
MICROSCOPE SPECTRUM ANALYZER
Samuel J. Campanella, Springfield, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Aug. 11, 1960, Ser. No. 48,987
11 Claims. (Cl. 179—1)



1. A spectrum analyzer comprising a bank of filters, each of said filters being a relatively narrow band pass filter compared to the spectrum width, the band pass frequencies of said filters being arranged in an ordered array, said filters together encompassing a relatively wide frequency band signal subject to analysis by said spectrum analyzer, a periodically scanning commutator for sequentially sampling the responses of said filters, a repetitively operative reproducer of a time varying signal, said reproducer including structure for imparting a relatively long operating period per repetition, said reproducer including means to provide a first synchronizing pulse at the initiation of each of its operating periods, means coupling said reproducer to said filters in parallel, a visual plotter having provision for deflecting a visual indication in two coordinate directions, means coordinated with said commutator and operative at a predetermined time in each cycle of scanning thereof for generating a second synchronizing pulse, means responsive to said first synchronizing pulse for generating a gate wave of relatively short duration at any time in each of the periods of said reproducer, said gate waves having durations approximately equal to the scanning period of said periodic commutator, a gate circuit for passing said second synchronizing signals only in response to said gate waves, means responsive to each passage of said second synchronizing signals through said gate circuit for effecting a scan of said visual indication in one of said two coordinate directions, and means for deflecting said visual indication in the other of said coordinate directions in response to sampled responses of said filters as supplied by said commutator.

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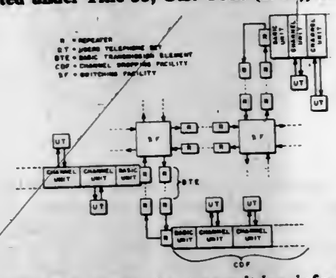
3,165,587
MULTIPLE-LOUDSPEAKER SYSTEM
Richard L. Alderson, 154 W. 57th St., New York, N.Y.
Filed Oct. 8, 1962, Ser. No. 229,029
8 Claims. (Cl. 179—1)



1. A multiple loudspeaker system comprising a box having a front baffle and a base, a woofer speaker mounted on said baffle about a port adjacent the lower end thereof, a tweeter speaker mounted on said baffle about a port adjacent the upper end thereof, said speakers radiating forwardly through said ports, a vertical centerboard dividing said box into front and rear sections, a horizontal deck displaced above said base and supported between the lower edge of said baffle and the lower edge of said centerboard to define a slot communicating between said rear section and the front of said box, an acoustic resistance unit forming the upper portion of said centerboard whereby sound emanating from the rear of said woofer speaker travels in a transmission path along the front section of said box and through said resistance unit into the rear section thereof, the sound then being propagated downwardly through said rear section and outwardly through said slot.

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3,165,588
TUNE DIVISION MULTIPLEX DIGITAL COMMUNICATION SYSTEM EMPLOYING DELTA MODULATION
Johann Holzer, Elberon, Richard F. Grantges, Madison, and Martin Weinstock, Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 25, 1960, Ser. No. 71,839
11 Claims. (Cl. 179—15)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A telephone system for transmitting information in binary digital form in which each subscriber to the telephone system is preassigned to one group of several groups of subscribers and all information sent or received by a group of subscribers is transmitted on a time sharing basis between pulses of a constant frequency synchronizing pulse train, each subscriber being preassigned to a time interval between successive synchronizing pulses comprising a user's telephone set for each subscriber to the telephone system, each users' telephone set including means

for converting audible sounds into binary bits of information and means for converting binary bits of information into audible sounds, separate trunk line means for connecting each of said groups of subscriber's telephone sets to a switching facility with each of said trunk line means having originating and terminating ends in the said switching facility, means in the said switching facility for producing the said constant frequency synchronizing pulses at the said originating ends of the said trunk line means, multiplexing means located outside the switching facility for each of said groups of subscriber's telephone sets for inserting into said trunk line means in the said preassigned time intervals the said binary bits of information from said means for converting audible sounds into binary bits of information, demultiplexing means in the said switching facility at the said terminating ends of said trunk line means for removing the binary bits of information from each of said time intervals and separately storing the bits of information by a storage means, multiplexing means in the said switching facility for inserting selected ones of said stored bits of information into said trunk line means near the said originating ends, and demultiplexing means connected to the said trunk line means for separating the said inserted stored bits of information and applying them to the said means for converting binary bits of information into audible sounds.

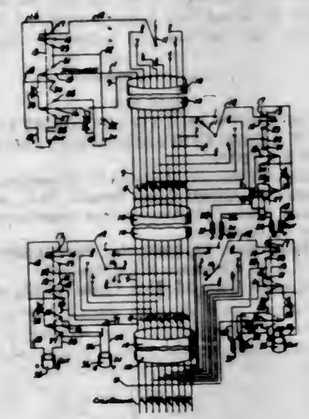
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3,165,589

## AMPLIFIERS AND INTERCONNECTION CIRCUITS

Frank M. Shoemaker, 2560 Noblestown Road, Pittsburgh 5, Pa., and William D. Carothers, Old Farm Road, Rosslyn Farms, Pa.

Filed Mar. 23, 1961, Ser. No. 97,783
13 Claims. (Cl. 179—39)



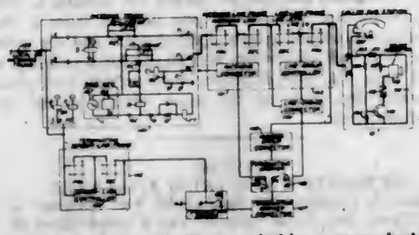
12. An intercommunication power amplifier having a common ground, an input and an input ground, the latter being directly connected to said common ground, an output and an output ground, the latter being directly connected to said common ground, amplifier means between said input and said output, a plurality of stations having switch means, independent connections from each station to said input and input ground and to said output and output ground, a power source connected between said common ground and said amplifier to supply current for the same only when said input and output connections are completed at one of said station switch means remotely of said amplifier, and a privacy resistance connected between said common ground and said output ground.

3,165,590

## SPEECH TRANSMISSION THROUGH TELEPHONE RINGING CIRCUIT

Chester E. Brooks, Montvale, George B. Crofutt, Jr., Verona, and William C. Sand, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 29, 1961, Ser. No. 163,186
9 Claims. (Cl. 179—84)



1. An automatic telephone switching system including a telephone central office, a substation, ringing means at said substation responsive to ringing signals from said office for producing an audible ringing tone, means in said central office effective during a terminating call to said substation for delivering intermittent ringing signals to said ringing means, and means at said central office for controlling the transmission of intelligence information other than said ringing signals through said ringing means during intervals intermediate said ringing signals.

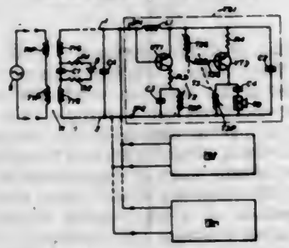
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3,165,591

## SIGNALLING CIRCUITS

Thomas Harold Flowers, Mill Hill, London, England, assignor to Her Majesty's Postmaster General, London, England

Filed Nov. 27, 1962, Ser. No. 240,346
Claims priority, application Great Britain, Dec. 8, 1961, 44,082/61
10 Claims. (Cl. 179—84)



1. An electrical signalling circuit operable by concurrent application thereto of an A.C. control signal source and a D.C. power source, the signalling circuit having a pair of input terminals to which the said A.C. control signal and D.C. power sources can be applied, a relatively low audio-frequency tuned amplifier including a first transistor, a relatively high audio-frequency oscillator including a second transistor, a charge storage device, and means connecting said tuned amplifier, said oscillator and said charge storage device severally across the said input terminals whereby said charge storage device can be charged by said D.C. source to provide a power supply for said oscillator and said tuned amplifier; a first transformer having primary and secondary windings, a first parallel resonant circuit tuned to the said relatively low audio-frequency and including the primary winding of the said first transformer, means connecting the said first parallel resonant circuit to the collector of the first transistor to provide a tuned load for the said tuned amplifier, a base-emitter circuit for the first transistor and means connecting said base-emitter circuit to one of said input



terminals for biasing said first transistor so that said tuned amplifier conducts only during alternate half-cycles of A.C. control signals having said relatively low audio-frequency to which said amplifier is tuned; a second transformer having primary and secondary windings, an electro-acoustic transducer, a second parallel resonant circuit tuned to said relatively high audio-frequency and including said primary winding of the second transformer and said transducer, means connecting said second resonant circuit to the collector of said second transistor to provide a tuned load for said oscillator, a base-emitter circuit for said second transistor including said secondary windings of the first and second transformers, the secondary winding of the second transformer providing positive feed-back means between the collector and emitter-base circuits of said second transistor, and the secondary winding on the first transformer providing means coupling said first parallel resonant circuit and the base-emitter circuit of said second transistor for forward biasing thereof to cause oscillation of said second transistor and actuation of the said transducer at said relatively high audio-frequency only during conduction of the tuned amplifier during said forward biasing half-cycles of A.C. control signals having the said relatively low audio-frequency.

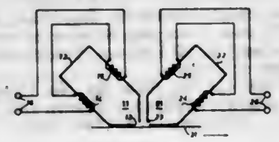
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3,165,592

## METHOD OF AND MEANS FOR NEUTRALIZING INDUCTIVE DISTURBANCES IN MAGNETIC REPRODUCERS

Yves-Jean François Brette, Sevres, France, assignor to Compagnie des Machines Bull (Societe Anonyme), Paris, France

Filed Apr. 18, 1960, Ser. No. 22,767
Claims priority, application France, Apr. 23, 1959, 792,929, Patent 1,222,229
1 Claim. (Cl. 179—100.2)



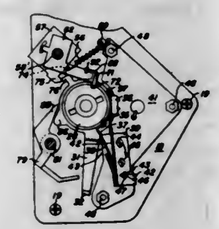
In a double magnetic head unit comprising a recording magnetic head and a reading magnetic head, said recording magnetic head comprising a magnetic core having a first non-magnetic gap, and at least one recording winding wound on said core of recording head, said magnetic reading head comprising a magnetic core forming two parallel branches with a second non-magnetic gap located in the neighbourhood of said first non-magnetic gap, a first reading winding which is wound on the branch of said reading head core and located in the nearest proximity of said recording head, a second reading winding wound on the other branch of said core, said reading windings being serially connected in an electric reading circuit and being wound in flux-adding relationship on said core of the reading head, said reading windings being submitted to magnetic stray fluxes of different values generated by said recording head when recording signals are applied to said recording winding, the electromotive interference forces induced by said stray fluxes in each of said reading windings being of opposite directions in said electric reading circuit, and the turn ratio of said second reading winding with respect to said first reading winding being equal to the ratio of the electromotive interference force induced in one turn of said first reading winding to the electromotive interference force induced in one turn of said second reading winding.

3,165,593

## SOUND DRIVE SYSTEM

Robert J. Roman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 13, 1960, Ser. No. 35,660
24 Claims. (Cl. 179—100.2)



8. In a sound drive system for a projector or the like, the combination comprising: a rotatable sound drum for supporting a film having a sound track; sound recording-reproducing means movable between an inoperative position and an operative position in which said sound recording-reproducing means is in engagement with said sound track; pressure roller means movable between an inoperative position and an operative position in which said film is urged into engagement with said sound drum; film stabilizing means movable between an inoperative position and an operative position in which said film is prevented from laterally moving off of said drum; and actuating means including a common control lever for moving said three aforementioned means to their respective operative positions when said lever is in a first position, and moving said three aforementioned means to their respective inoperative positions when said lever is in a second position.

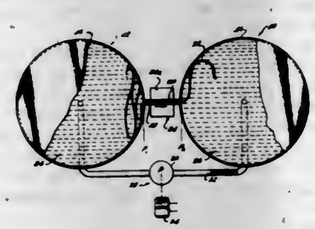
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3,165,594

## METHOD OF AND APPARATUS FOR TRANSPORTING LINEAR ELEMENTS

William A. Wootten, 1324 Palos Verdes Drive W., Palos Verdes Estates, Calif.

Filed June 2, 1961, Ser. No. 114,544
18 Claims. (Cl. 179—100.2)

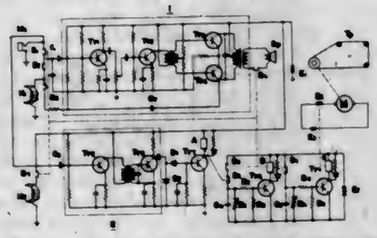


1. A transport mechanism, comprising means defining two fluid chambers and a passage communicating said chambers, an elongate driven member extending through and having a length appreciably greater than the length of said passage, said member being of approximately uniform cross section along substantially its entire length and said passage being proportioned to receive said member with a close sliding fit, and means for creating a fluid pressure differential in either direction between said chambers, such that the fluid pressure in either chamber may be increased above the fluid pressure in the other chamber, whereby to cause movement of said member through said passage toward the low pressure chamber by the action of fluid pressure.

### 3,165,595
### MAGNETIC RECORDING AND REPRODUCING DEVICE

Ritsuko Noshiro, 65 7-chome, Kameido-cho, Koto-ku, Tokyo, Japan

Filed May 8, 1962, Ser. No. 193,120
Claims priority, application Japan, Mar. 14, 1962, 37/10,131
1 Claim. (Cl. 179—100.2)



A small magnetic recording and reproducing device for reproducing short sound sequences uttered by children, comprising in combination;

a microphone responsive to a child's voice;

a first amplifier to amplify the output from the microphone including a half wave rectifier, a first transistor biased by the half wave rectifier to render it conductive, a first contact normally open, which is closed by said first transistor becoming conductive;

capacitor-resistor time means, responsive to said first contact and providing an output for a prefixed time;

a second transistor responsive to said capacitor-resistor time means and a second contact normally open, responsive to said second transistor, said second contact being closed for said prefixed time in response to said capacitor-resistor time means output;

motor means responsive to said second contact, an endless tape cyclically driven by said motor means, one cycle corresponding to said prefixed time;

a first magnetic head including a lead line for coupling to a power source with a third contact responsive to said second contact, said first magnetic head being disposed to erase any prior sound on said tape;

a second amplifier coupled to said microphone output;

a second magnetic head responsive to said second amplifier acting on said endless tape, recording sound signals thereon when coupled to the output side thereof and, reproducing said sound signals thereof when coupled to the input side thereof;

first and second switch means connected to said second contact the first switch means being normally opened and being closed by said second contact for said prefixed time to couple said second magnetic recording head to said second amplifier output side, said second switch means being normally closed, for coupling said second magnetic recording head to said second amplifier input side and being opened by said second contact, and,

speaker means coupled to said second amplifier means and a fourth contact responsive to said second contact and second switch means enabling said speaker after the end of said prefixed time to provide the signal recorded on said tape during said time period after said prefixed time period has ceased.

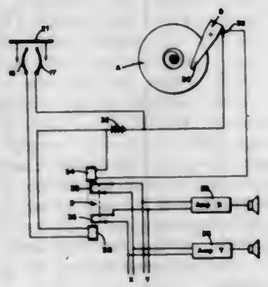
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### 3,165,596
### PHONOGRAPH MONAURAL-BINAURAL SWITCHING DEVICE

Wetherby Boorman, 132 San Benito Ave., San Bruno, Calif.

Filed Dec. 3, 1959, Ser. No. 857,051
6 Claims. (Cl. 179—100.4)

6. In a phonograph the combination of a stereophonic transducer of the type having a first and second section, a bi-stable relay having switch contacts operable to move to a first condition when the relay is pulsed from a first signal and to a second condition when said relay is pulsed from a second signal, a pair of amplifiers, said switch contacts connected to connect the two sections of said transducers each to one of said amplifiers when said contacts are in one of two conditions of operation and to connect both sections to both amplifiers when said switch contact points are in the opposite condition of operation,



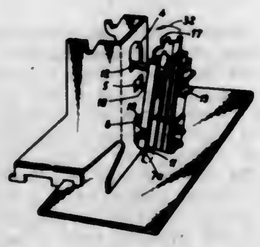
an electrically conductive member mounted on phonograph records for use with said phonograph, brush means connected to said relay positioned to contact the conductive member on a phonograph record when the phonograph record is positioned for playing on the phonograph to provide the first signal, second switch means connected to said relay to provide said second signal, and means to actuate said second switch means at the termination of play of a phonograph record.

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### 3,165,597
### TELEPHONE INSTRUMENTS

Oskar Edvin Rudolf Nordström, Hagersten, and Per Olof Ragnar Persson, Linkoping, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Nov. 30, 1960, Ser. No. 72,665
Claims priority, application Sweden Dec. 8, 1959
8 Claims. (Cl. 179—164)



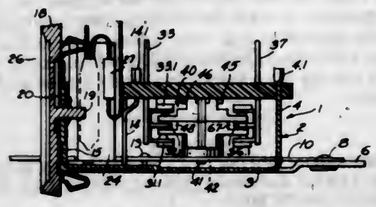
1. In a telephone instrument, in combination, a support frame, a cradle switch means pivotally supported on said frame, contact springs for switching the instrument from a signalling condition to a speaking condition and vice versa, a mounting member mounting said contact springs, said cradle switch means switching in one pivotal position said contact springs to the signalling condition of the instrument and in another pivotal position to the speaking condition, and a spring means secured to said cradle switch means and to said mounting member, said spring means biasing the cradle switch means into the pivotal position corresponding to the instrument being in speaking condition and biasing the mounting member against said frame.



### 3,165,598
### ARC-SUPPRESSING MULTIPOSITION ELECTRIC SWITCH

John L. McClure, Berwyn, Ill., assignor to General Electric Company, a corporation of New York

Filed Aug. 14, 1961, Ser. No. 131,303
4 Claims. (Cl. 200—5)



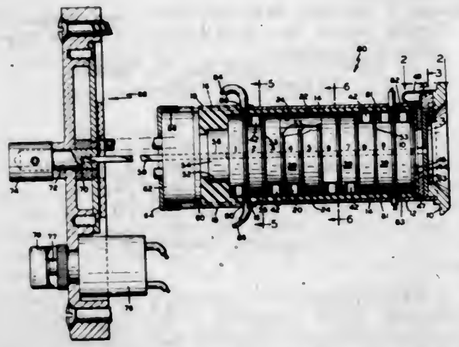
1. A switching device for selecting an electric circuit from among a plurality of possible circuits, comprising. in combination, a terminal board; a plurality of electric terminals spaced about said terminal board and extending therethrough, certain of said terminals having end portions constituting fixed contact elements occupying a common plane, other of said terminals having means providing spring contacts overlying certain of said fixed contact elements and still others having means providing spring contacts extending beneath certain of said fixed contacts, all of said spring contacts being biased to assume a normally closed circuit relationship with the associated fixed contact elements; a cam block; means for mounting said cam block for longitudinal sliding movement in a plane parallel to said fixed contact elements; said cam block including a body section and upper and lower insulating wall members extending laterally from said body section and collectively providing a groove into which said fixed contact elements extend, said wall members being positioned and formed to intrude between said fixed contact elements and spring contacts to separate the same, said wall members, further, being provided at selected locations along their length with apertures through which spring contacts can reach the associated fixed contact elements, whereby according to the lateral displacement of said cam block relative to said fixed contact elements various electric circuit conditions may be established; and means for effecting said cam block movement.

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### 3,165,599
### KEY OPERATED COMBINATION SWITCH FOR ALARM SYSTEM

Nathan S. Clay, 290 Riverside Drive, New York, N.Y.

Filed Nov. 2, 1959, Ser. No. 850,244
19 Claims. (Cl. 200—44)



1. A combination switch for operation by a key having coded teeth along an edge thereof, comprising a pair of electrical terminals, switch means including contacts operable to complete or break a circuit between said terminals, a plurality of axially aligned control elements mounted for independent selective rotation, said control elements and said switch means being coupled to establish a normal circuit condition between said terminals only in a particular unique relationship of all said control elements, said control elements having formations cooperable with and selected by corresponding teeth, if present, on an insertable key, said formations providing axially aligned spaces for admitting a key into its fully inserted position and allowing withdrawal thereof at both ends of an arcuate operating stroke of the key, irrespective of which control elements may be selectively rotated during such toothed-key operation, and said combination switch having guide means axially aligned with said control elements and formed to provide an opening for admission and withdrawal of such key in said two arcuately spaced positions, said guide means being formed to restrict said key against removal in positions between said arcuately spaced positions.

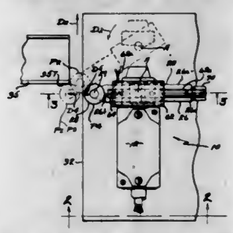
8. A method of controlling an alarm system having a combination switch that includes several switching members having respective "normal" positions wherein said alarm system is passive, said method including the steps of "setting" only certain of said switching members away from their normal positions by inserting any key of a plurality of keys having respectively different code notches along an edge thereof and rotating the inserted code-notched key through a "setting" angle and thereby to "set" only selected ones of the switching members in dependence on the code notches of the inserted and rotated key, and removing the key without disturbing the switching members in their "set" and "normal" positions, respectively, then inserting a code-notched key and rotating the latter through a restoring angle, said passive condition of the alarm system being restored only if the latter key had the same code notches as the key used in the setting operation.

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### 3,165,600
### SOLENOID OPERATED LIMIT SWITCH ASSEMBLY

Anthony R. Chasar and Alfonso W. Mehrbrodt, Cleveland, Ohio, assignors to The Triax Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 23, 1961, Ser. No. 91,020
7 Claims. (Cl. 200—47)

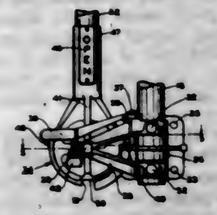


1. A switch assembly comprising a switch unit having actuatable contacts and adapted to be connected to a supporting frame, an actuator arm, connecting means movably connecting said arm to said switch unit with said arm engageable with a trip having relative movement with respect to said frame for actuating said contacts of said switch unit by causing arm movement relative to said switch unit in a switch actuating direction, power means for moving said arm relative to said switch unit in a direction non-parallel to said actuating direction between an inoperatable position with said arm located to be out of actuating alignment with said trip and an operatable position with said arm located to be in actuating alignment with said trip, said connecting means including a pivot element pivotally connecting said arm to said switch unit for arcuate actuating movement of

said arm about a pivot axis in said actuating direction, said power means connected to have the same arcuate actuating movement as said arm and being carried by said assembly near said pivot axis to minimize retarding inertia during arcuate movement.

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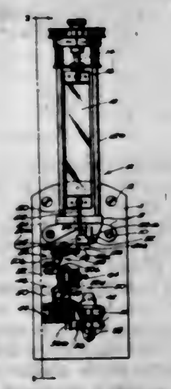
3,165,601
HEAVY DUTY AIR BREAK SWITCH OPERATING MECHANISM
Robert M. Bohler, Hampton, Ga., assignor to Southern States, Inc., a corporation of Georgia
Filed Jan. 22, 1962, Ser. No. 167,682
9 Claims. (Cl. 200—48)



1. A switch operating mechanism comprising a first interlocking element, an elongated switch operating element rotatably mounted adjacent said first interlocking element and fixed in position against axial movement thereof relative to said first interlocking element, and a second interlocking element movably mounted on said switch operating element, said second interlocking element being freely and independently movable throughout a predetermined range of movement relative to said first interlocking element so as to impart switch operating movement to said switch operating element only when disposed in a predetermined position relative to said movable switch operating element and said second interlocking element being movable in opposite directions away from said predetermined position to occupy extreme positions corresponding to open and closed switch positions respectively.

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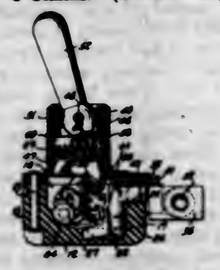
3,165,602
HUMIDITY CONTROLLER
Phillip F. Maguire, Jr., Providence, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed June 22, 1961, Ser. No. 118,906
17 Claims. (Cl. 200—61.06)



1. In a humidity control, a linkage for transmitting movement of a humidity sensitive element to movement of an actuator, said linkage comprising at least two lever members movable relative to each other, means for applying a force to at least one of said lever members to hold said members against relative movement with respect to each other over a predetermined operating range of movement of said element whereby they move together as a coupled unit over said range, stop means responsive to further movement of said element beyond said predetermined range for exerting a force on at least one of said lever members to break said holding force and move said members relative to each other against said holding force without substantially increasing said holding force, whereby said moving force need only slightly exceed said holding force.

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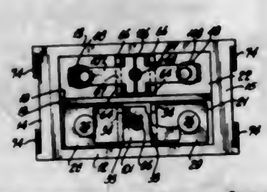
3,165,603
COMPRESSION SPRING ACTUATING MECHANISM FOR TOGGLE-OPERATED MOMENTARY ELECTRICAL SWITCHES
Wesley T. Sorenson, West Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut
Filed Oct. 10, 1962, Ser. No. 229,531
5 Claims. (Cl. 200—67)



3. A momentary switch comprising a case, a toggle element pivotally mounted in said case, said toggle element being movable between an open circuit position and a closed circuit position, a lateral recess in said toggle element, and a spring, at least half of the length of said spring being held captive coaxially in said recess, the other free end of said spring abutting and being slidable along the interior wall of said case, said spring normally urging the said toggle element into the open circuit position, the movement of said toggle element to the closed circuit position causing the compression of said spring into said recess while the free end of said spring moves slidably along said interior wall.

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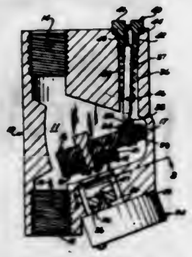
3,165,604
THREE-POSITION SINGLE TOGGLE ACTUATED SWITCH FOR TWO INDEPENDENT ELECTRICAL CIRCUITS
Wesley T. Sorenson, West Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut
Filed Feb. 26, 1963, Ser. No. 260,991
10 Claims. (Cl. 200—67)



4. Electrical apparatus comprising a first three-position "center-on" switch controlling a first single circuit, a three-position second "center-off" switch selectively controlling second and third circuits, said first circuit being independent of said second and third circuit and a single actuator connected to and operating both of said switches.



3,165,605
PERMANENT MAGNET SWITCH ROTOR CONTROL MECHANISM
Henry G. Dietz, Garden City, N.Y., assignor to Henry G. Dietz Co., Inc., Long Island City, N.Y., a corporation of New York
Filed June 23, 1961, Ser. No. 119,143
9 Claims. (Cl. 200—81.9)

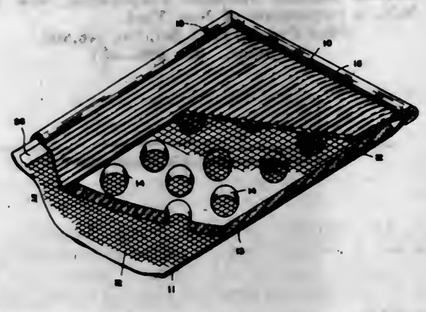


1. A permanent magnet control mechanism, comprising a rotatable shaft, a first substantially cylindrical permanent magnet having one relatively flat face, fixedly attached to the rotatable shaft, a second relatively flat-faced permanent magnet mounted in a position in which the flat face of the second permanent magnet is movable to a position close to the fact of the first permanent magnet, a flapper of a nonmagnetic material fixedly attached to the second permanent magnet, means pivotally supporting one end of the nonmagnetic flapper supporting the second permanent magnet, said flapper being operative to move the second permanent magnet to a predetermined distance from the face of the first permanent magnet, the second permanent magnet being so magnetized that the magnetic poles thereof are formed on the face thereof directed toward the first permanent magnet, the first permanent magnet being magnetized so that the magnetic poles thereof are strongest on the face thereof directed toward the second permanent magnet, a coiled torsion spring surrounding the rotatable shaft, one end of said torsion spring being attached to the rotatable shaft, said torsion spring being operative to normally retain the rotatable shaft in a rotational position in which the poles of the first permanent magnet are out of alignment with the opposite poles of the second permanent magnet, the first permanent magnet being rotated into a position in which the poles thereof are substantially aligned with the opposite poles of the second permanent magnet, when the second permanent magnet is moved to a position with the magnetic pole face thereof close to the face of the first permanent magnet.

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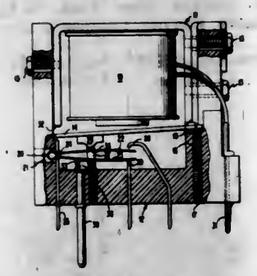
3,165,606
MAT SWITCH HAVING U-SHAPED BINDING CLAMPS
Clinton T. Cooper, 372 Melbourne Ave., Youngstown, Ohio
Filed June 30, 1961, Ser. No. 121,106
1 Claim. (Cl. 200—86)

A reversible floor mat switch comprising upper and lower identical expanses of flexible insulating wear-resistant flat sheet-like material bound along their overlying edges with a rigid frame, the inner faces of said expanses being overlaid inwardly of said frame with current-conductive wire screens, a layer of compressible material having a pattern of closely spaced enlarged apertures therein normally separating said screens but yieldable upon a concentrated weight being applied to said upper expanse to permit said screens to contact each other through one or more of said apertures, and said frame comprising a plurality of sections made of soft metal and each being U-shaped in section to provide legs overlying the bottom surface of the lower expanse and the top surface of the upper expanse of said sheet-like material, said frame sections having their leg portions serrated on their inner surfaces and bent toward each other to tightly clamp the edge portions of said expanses, one of said frame sections having a horizontal aperture in the web connecting its two legs, and an insulating terminal connector having an outer body portion extending through said aperture and a flange bearing against the inner face of said web as well as a shank portion clamped between edge portions of said expanses of sheet-like material and between the legs of the said one of said frame sections, said terminal connector having electrical connections with said screens.



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3,165,607
ARMATURE FOR ELECTRO-MAGNETIC RELAY
Le Roy Hogan, Essex Junction, Vt., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 11, 1961, Ser. No. 130,842
4 Claims. (Cl. 200—87)

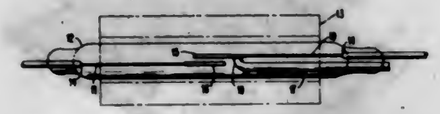


1. An electro-magnetic relay comprising an electromagnet, an armature and at least one contact member disposed generally parallel to each other, an actuator connected to the armature and providing a lost-motion type operating connection between the armature and each such contact member, means for fulcruming the armature adjacent its one end, and means for fulcruming each contact member adjacent its end remote from the fulcrum point of the armature such that as the actuator is positioned farther from the fulcrum point of the armature it will be positioned closer to that of each contact member, said actuator being positioned nearer the free end of the armature than to the fulcrum point of the armature and no more than half way from the fulcrum point of each contact member to the free end of the latter such that upon energization of the electro-magnet, the armature will be attracted towards the latter and through the actuator effect movement of each contact member from a normal position to an energized position, whereby to produce a mechanical advantage that will provide a smaller value

of air gap between the armature and electro-magnet than degree of movement of each contact member.

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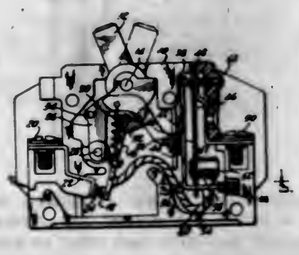
3,165,608
MAGNETIC SWITCHING APPARATUS FOR REDUCING CONTACT BOUNCE
Joseph E. Wallace, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,604
4 Claims. (Cl. 200—87)



1. An electrical switching device comprising:
a pair of resilient overlying contact elements formed of magnetic material and cantilever supported at their remote ends and separated by a gap at their adjacent ends;
means for producing a magnetic field for effecting movement of said elements toward each other; and
means providing a stop surface engageable by one of said elements upon creation of said magnetic field, said surface being disposed so as to be engaged by said one element before said elements contact each other, whereby at the instant said elements come into mutual contact, both said elements will be moving in substantially the same direction but at different velocities causing the elements to establish electrical connection substantially without contact bounce.

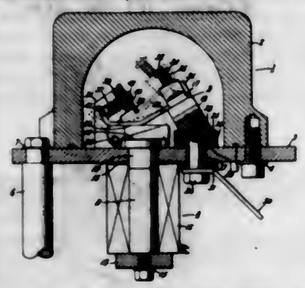
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3,165,609
TEMPERATURE COMPENSATED CIRCUIT BREAKERS
Alexander R. Norden, New York, N.Y., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Aug. 4, 1955, Ser. No. 526,401
11 Claims. (Cl. 200—88)



3. A circuit breaker including a fixed contact and a movable contact, actuating means for the movable contact including a spring and a releasable member for opening said contacts and a trip mechanism normally preventing such contact opening, said trip mechanism including a current-responsive bimetal and an ambient temperature compensating bimetal having a one-way driving mechanical connection therebetween, one of said bimetals constituting a latch for said releasable member, the other of said bimetals having a fixed support, and an electromagnet and armature both mounted for movement together with the thermally moved end of one of said bimetals and interposed to act between said bimetals, said mechanical connection including means to fix the maximum spacing between said armature and said electromagnet.

3,165,610
ELECTRICAL CIRCUIT INTERRUPTER HAVING EXTERIOR POSITIONED ACTUATING MEANS
Leon J. Goldberg, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 6, 1962, Ser. No. 221,755
4 Claims. (Cl. 200—150)



1. A compact electrical circuit interrupter comprising a base plate member,
actuated means comprising a relatively movable contact, a pair of stationary contacts, and a magnetic armature for operating said movable contact into open and closed circuit position with said stationary contacts,
a totally enclosed compact container,
a dissociable fluid confined within said container, said actuated means positioned within said container and immersed within said fluid, said fluid dissociating into a gaseous medium in a region between the contacts in response to production of an electric arc therebetween, said gaseous medium forming at high pressure by reason of a fixed volume of fluid and gas in said vessel whereby the arc becomes extinguished and thereby interrupts the electrical circuit, said gaseous medium thereafter recombining in absence of the arc to form the original fluid, and
actuating means for operating said actuated means and magnetically coupled thereto, said actuating means disposed without said container and comprising
two spaced apart magnetic core legs and coils wound thereon,
magnetic inserts joined to each core leg, said inserts including a first portion passing through said base plate member and a shoulder portion contained within said container,
a nonmagnetic shim positioned between the shoulder portion of said inserts and said armature whereby said nonmagnetic shim is in contact with said shoulder portion and said armature during closed circuit position of said movable and stationary contacts to develop a predetermined air gap in the magnetic path and thereby prevent retention of said movable contact in the closed circuit position by reason of residual flux in said core legs, energization of said coils causing said armature to pivot and thereby communicate with said magnetic inserts to move said movable contact into closed circuit position.

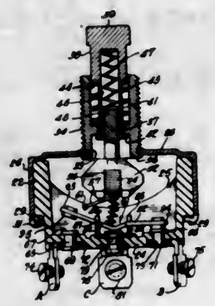
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3,165,611
SPRING BIASED-SPRING ACTUATED MOMENTARY SWITCH
Hugo E. Hagberg, West Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut
Filed July 18, 1961, Ser. No. 126,837
2 Claims. (Cl. 200—159)

1. A momentary switch comprising a case made of insulating material, first and second spaced apart circuit elements in said case, an electrically conductive support yoke positioned in said case intermediate said elements,



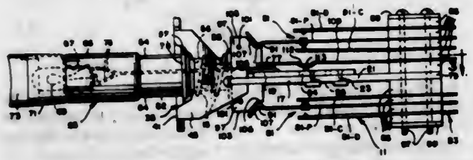
a V-shaped electrically conductive lever mounted pivotably on said yoke, first and second arms on said lever, a plunger actuator movably mounted in said case, a coil spring, one end of said coil spring being mounted on said actuator, the other end of said coil spring bearing continuously upon the inner apex of said lever and operating continuously and yieldably upon said lever normally to maintain said first arm in contact with said first element,



and a second spring on said actuator operative only when the latter is momentarily moved toward said lever to bear directly upon the second arm of said lever to cause the latter to move pivotally on said yoke against the action of said coil spring, said first arm thereby moving momentarily apart from said first element and said second arm moving momentarily into contact with said second element.

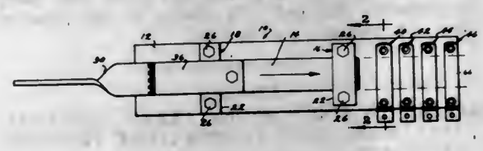
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3,165,612
LIGHTED PUSH BUTTON SWITCH WITH LATCHING MECHANISM
James R. Bailey, Chicago, Ill., assignor to Switchcraft, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 2, 1962, Ser. No. 184,236
15 Claims. (Cl. 200—159)



15. In a push button controlled structure, a support frame, a shiftable frame reciprocable on the support frame, yielding bias means normally urging the shiftable frame on the support frame in one direction toward a retracted position determined by cooperating stops on said frames, a pushbutton connected with the shiftable frame to move it from retracted position against the influence of said bias means, an electric lamp supporting socket movable with the pushbutton for supporting a lamp in position to illuminate the pushbutton, socket connected conductors on and movable with the shiftable frame, supply conductors on the support frame in position for connection with a source of lamp energizing power, said socket connected and supply conductors being wipingly interconnected, and cooperating cam means on one of said frames and on a said conductor carried on the other frame, said cam means being operable in response to relative movement of said frames to separate a pair of said wipingly interconnected conductors and thereby interrupt the supply of energizing power to said lamp, when the shiftable frame is in a selected position on the support frame.

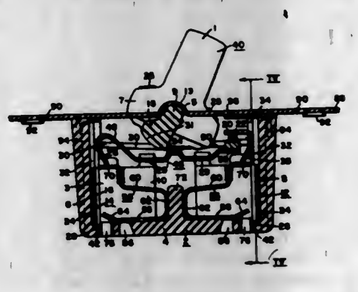
3,165,613
HEAVY DUTY SWITCH HAVING SPACED CONTACT ASSEMBLIES
Garfield A. Wood, Alva Base, Miami Beach, Fla.
Filed Apr. 16, 1962, Ser. No. 187,473
4 Claims. (Cl. 200—163)



1. An electric switch comprising an insulated base, an elongated flat contact bar slidably mounted on said base, a plurality of spaced contact plates mounted on said base and extending substantially perpendicular to the line of movement of said contact bar in position to be progressively slidably engaged by said contact bar, a plurality of second contact plates, means for resiliently and floatingly supporting each of said second contact plates in parallel spaced relation above one of said fixed contact plates with the spacing between each pair of contact plates normally being less than the thickness of said contact bar, and means for electrically interconnecting each pair of contact plates whereby said flat contact bar can progressively slide between each pair of contact plates to close a circuit therewith with each of the floating plates firmly resiliently biased against a flat surface of said contact bar to ensure good area engagement therewith.

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3,165,614
WIRING DEVICE AND WIRE ENGAGEMENT MEANS THEREFOR
Vincent L. Cariasimi, Fairfield, and Owen L. Taylor, Easton, Conn., assignors, by mesne assignments, to Westinghouse Electric Corporation, a corporation of Pennsylvania
Continuation of application Ser. No. 484,811, Jan. 28, 1955. This application Dec. 23, 1958, Ser. No. 782,588
10 Claims. (Cl. 200—166)



1. A wiring device comprising an insulating support having at least two walls at an angle to each other, a terminal secured to said support adjacent the inner surface of one wall of said support, a generally U-shaped spring adapted to be separately mounted on said support and having one arm thereof located in engagement with the inner surface of the other wall of said support and with both arms extending toward said terminal, the other arm of said spring being formed adjacent its outer end, with a short lateral outward extension which terminates in a short lateral projection, the free end of said one arm and said projection being located in substantial alignment adjacent to but spaced from said terminal and with said projection located substantially parallel to said one arm, an opening in said other wall of said support

between said one arm of said spring and said terminal whereby an electrical conductor may be inserted therebetween in one direction along a surface of said terminal, and means integral with said terminal extending outwardly therefrom in engagement with the outer surface of said projection to force said arms of said spring toward each other and to prevent said spring from being longitudinally displaced with relation to said terminal when said conductor is so inserted.

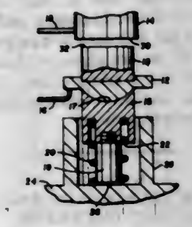
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3,165,615

## APPARATUS FOR FORMING CLEAN IRON-LEAD TELLURIDE HIGH TEMPERATURE PRESSURE CONTACTS

Donald Pigott Miller, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Original application Apr. 7, 1961, Ser. No. 101,565, now Patent No. 3,093,719, dated June 11, 1963. Divided and this application July 2, 1962, Ser. No. 207,112
1 Claim. (Cl. 219—9.5)



Apparatus for thermally bonding an electrical conductor to a contact electrode within a chamber to form a thermocouple element apparatus in said chamber comprising a supporting wall, a contact electrode positioned above said wall, an adaptor positioned beneath said contact electrode, an electrical conductor of thermoelectric material supported on the upper end of said adaptor, spring means positioned between said adaptor and supporting wall to normally bias the electrical conductor into engagement with the contact electrode, and low temperature solder means for bonding said adaptor to the supporting wall in a retracted position to maintain the electrical conductor in spaced relation to the contact electrode and place said spring means under compression, whereby when said low temperature solder means is melted by heat supplied through the supporting wall the bond between the adaptor and supporting wall will be broken and the compressed spring means will bias the electrical conductor into engagement with the contact electrode.

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3,165,616

## SEAM SEALING APPARATUS

George N. Monasoff, Tarrytown, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware

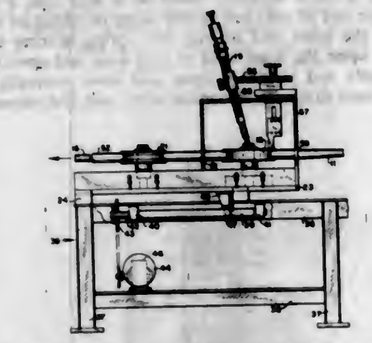
Filed July 27, 1962, Ser. No. 212,806
6 Claims. (Cl. 219—60)

1. Apparatus forming a seam in an advancing sheath comprising:

A. a platform,

B. means advancing and returning said platform a limited distance in the line of advance of said sheath, and

C. means for stopping the advance of said sheath within the distance of advance of said platform,



D. said platform comprising, mounted thereon,

(*a*) seam closing means and

(*b*) seam sealing means.

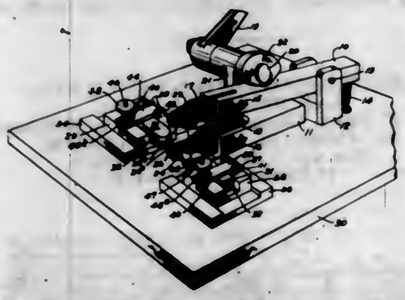
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3,165,617

## APPARATUS FOR JOINING METAL WIRES BY BRAZING

Maurice G. Steele, % M. G. Steele Co., 508 W. Liberty St., Rome, N.Y.

Filed July 23, 1962, Ser. No. 211,522
3 Claims. (Cl. 219—85)



1. In an apparatus for joining a pair of wires by brazing, two radially clampable collets for gripping the respective end portions of said wires, said collets having elongated openings extending longitudinally thereof for receiving said wire end portions, collet holder means for clamping each collet, two fixed guide blocks for receiving said respective collet holder means so that said collets are restrained against sidewise movement and can only move longitudinally toward and away from one another, a pair of electrodes between said guide blocks, at least one of which electrodes is movable towards and away from the other, and a drill jig for guiding a twist drill of approximately the same diameter as that of the wires to be joined, which drill jig is adapted to be interchangeably received in said collet holder means for longitudinal movement along one of said guide blocks so that a cylindrical opening can be drilled in part in each of said electrodes and in accurately aligned relationship with the elongated openings in said collets.

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3,165,618

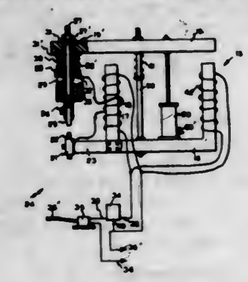
## ELECTRICAL WELDING APPARATUS

Sam Larkin, 254 Beach 140th St., Belle Harbor, N.Y.

Filed May 4, 1962, Ser. No. 192,501
6 Claims. (Cl. 219—86)

1. In an electrical resistance type welding apparatus, the combination of a step-down transformer having a primary winding and a secondary winding on a transformer core of substantially U-form; said primary winding being on one leg of said U-form, a magnet coil on the second leg of said U-form; said magnet coil and primary winding being connected so that when current passes through one of them, current will also pass through the other; said core being magnetized upon the passage of a current through said magnet coil and primary winding, a movably mounted magnetizable member positioned opposite both distal ends of said U-form, biased to be normally away from said core and adapted upon the actuation of said primary winding and magnet coil to be attracted to and contact both of said core ends thereby making the transformer core of the closed type while said movable





member makes contact with said core ends, a first welding electrode holder at a position to be approached by said movable member when the latter moves towards said core end, a second welding electrode holder carried on said movable member, two welding electrodes, one mounted in each of said holders respectively; said electrodes being opposite each other so that upon movement of said movable member towards said core ends, the second electrode will approach the first electrode for pressing action against work pieces between them; said electrode holders being insulated from each other and means connecting the terminals of the secondary winding to said holders respectively, at least after the movable member has moved a predetermined distance in the direction towards said core ends.

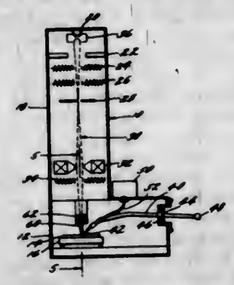
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3,165,619

## OPERATING CONTROL FOR ELECTRON BEAM MACHINES

Joseph H. Cohen, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 15, 1962, Ser. No. 217,136
6 Claims. (Cl. 219—121)



3. Apparatus for welding materials with a beam of charged particles comprising:

means for generating a beam of charged particles,

means for causing said beam to impinge upon a workpiece positioned generally in the path thereof,

means for causing relative movement between said beam and the workpiece in a first direction,

means movable about two axes for continuously tracking a seam to be welded on the workpiece,

first transducer means responsive to movement of said tracking means about a vertical axis for producing signals indicative of the position in a horizontal plane of the seam,

second transducer means responsive to movement of said tracking means about a horizontal axis for producing signals indicative of a condition of the seam as indicated by the vertical position of said tracking means, and

means responsive to the signals produced by said transducer means for effecting changes in the welding conditions at the seam during the welding operation.

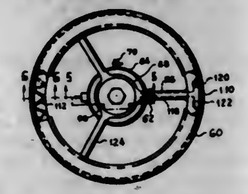
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3,165,620

## HEATED STEERING WHEEL FOR VEHICLES

Richard D. Miller, 226—26 Union Turnpike, Flushing 64, N.Y.

Filed Feb. 23, 1962, Ser. No. 174,999
5 Claims. (Cl. 219—204)



1. A heating device for heating a vehicle steering wheel having a hub portion and a spoke portion connecting the steering wheel to the hub portion, a wheel covering for the steering wheel and a heating element in said wheel covering, means adapted to be connected in heat exchange relationship with said steering wheel for heating thereof, a rotary disc adapted for coupling to the hub portion externally thereof for rotation therewith, said rotary disc including first and second electrically conductive ring members, a stationary disc adapted for operatively coupling with the steering shaft enclosure and externally thereof, means electrically coupling said stationary disc to said rotary disc, said means including first and second spring-biased brushes received and retained within said stationary disc for electrical contacting relationship with said first and second ring members, respectively, means electrically coupling said rotary disc to said heating element including first and second connecting wires connected to said first and second ring members, respectively, and to said heating element for coupling the ends of said heating element with said first and second ring members, clamping means holding said first and second connecting wires to said spoke portion free of interference with said steering wheel as it rotates, and means including said rotary and said stationary discs for enclosing said brushes and said electrically conductive ring members.

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3,165,621

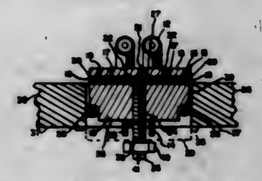
## ELECTRIC ENGINE COOLING JACKET HEATER

Lynne E. Windsor, Winnipeg, Manitoba, Canada, assignor to James B. Carter Ltd., Winnipeg, Manitoba, Canada

Filed June 26, 1961, Ser. No. 119,720
6 Claims. (Cl. 219—208)

1. An immersion heater adapted to be installed within a frost plug aperture of an engine block, comprising in combination a substantially cylindrical body portion, having a diameter slightly less than the diameter of said frost plug aperture whereby said body portion is insertable within said frost plug aperture, an immersion heater element secured to and extending from one side of said body portion, electrical connecting pins secured to said immersion heater element and extending through said

body portion to the other side thereof and being connectable to a source of electrical energy, endwise movable means mounted transversely in said body portion adjacent said one side thereof, selectively engageable with the inner surface of the block surrounding said frost plug aperture, said endwise movable means comprising at least two pins mounted for endwise radial movement in transverse drillings situated diametrically across said body portion adjacent said one side thereof, a centrally located screw threaded drilling extending axially from the other side of said body portion and intercepting said transverse drilling, a resilient plug between the inner adjacent ends of said pins at the base of said centrally located screw threaded drilling, a screw threaded



bolt engaging said screw threaded drilling from said other side of said body portion, the inner end of said bolt engaging said resilient plug whereby pressure from said bolt on said plug expands same into said transverse drillings thereby moving said pins outwardly therefrom, resilient sealing means carried by said body portion engageable with the wall of said frost plug aperture, a cover plate detachably connected to said body portion, means extending from said cover plate engageable with the outer surface of said engine block surrounding said frost plug aperture, an adjustable clamp means for connecting said cover plate to said body portion to clamp said body portion into sealing engagement with said frost plug aperture.

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3,165,622
HEAT SEALING MEANS
Stanislaus V. Marzec, Massapequa Park, N.Y., assignor to Gerace Electronics Corp., Brooklyn, N.Y.
Filed June 6, 1962, Ser. No. 200,407
2 Claims. (Cl. 219—243)

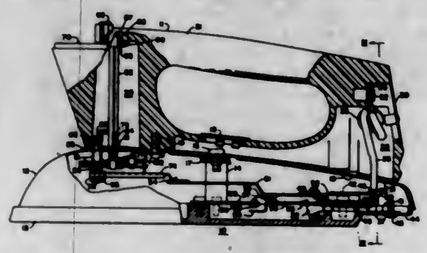


1. In heat sealing means,
heater bar means comprising a bar having two pilot shaftways one at each end,
said shaftways having two portions one having greater diameter than the other,
a pair of insulating blocks each having a pilot shaft mounted in one of such shaftways,
a heater strip,
means to removably connect said strip to said blocks, and
spring means connected to said mounting shafts to control tension on said strip.

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3,165,623
THERMOSTATICALLY CONTROLLED ELECTRIC IRON
Alan D. Smith, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1963, Ser. No. 274,095
6 Claims. (Cl. 219—252)

1. A flatiron having an electrically heated soleplate and a thermostat therefor, a shell covering the soleplate and thermostat, regulating the temperature of the soleplate, said means comprising; an exterior control knob, a cam actuated by the control knob, a cam follower actuated by the cam, linkage interconnecting the cam follower to the thermostat and including a presser arm, a support for the presser arm, and means accessible from the exte-



rior for varying the location of the support for the presser arm in the direction of movement of the cam follower and thereby adjusting the thermostat, the support for the presser arm including a screw adjustable in the direction of movement of the cam follower and including also an element affixed to the screw and adapted to carry the presser arm pivotally thereon.

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3,165,624
BASEBOARD HEATER ASSEMBLY
Donald M. Cunningham, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Sept. 1, 1961, Ser. No. 135,650
13 Claims. (Cl. 219—365)



2. A baseboard heater comprising an elongated, channel-shaped sheet metal member having spaced flange portions connected by a web portion and adapted to be secured to a wall of a room to be heated with its flange portions vertically spaced from each other and facing the interior of the room, a terminal box at each end of said member between its flange portions and adjoining sides of such boxes having a slot facing in a direction toward the room interior, an elongated, tubular sheathed electric resistance heating element extending longitudinally of said member between its flange portions and in spaced relation with the latter and with said web portion, said element having terminal end portions projecting into respective terminal boxes through said terminal box slots for electrical circuit connections, a pair of laterally spaced-apart sheet metal baffles on opposite sides of said element extending longitudinally of the intermediate portion of the latter and between said terminal boxes, a channel-shaped bracket at respective ends of said baffles each having a web portion and spaced flange portions, each bracket web portion having an aperture for closely receiving a respective element terminal end and each bracket flange portion having slots for closely receiving respective ad-



joining baffle ends for maintaining such baffle ends in predetermined relation and for maintaining said element in predetermined relation with said baffles, and means removably securing said brackets to respective adjoining terminal box sides.

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3,165,625
HEATING-VENTILATING DEVICE
William G. Potter, Oakmont, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Mar. 28, 1961, Ser. No. 98,929
9 Claims. (Cl. 219—369)

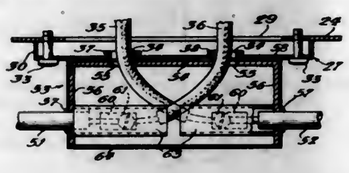


1. An air conditioning device, comprising a housing through which air is drawn for discharge into a room to be conditioned, said housing having a central portion flanked by end portions, a first air inlet in said housing central portion for admitting air from the room, a second air inlet also in said housing central portion and spaced from said first air inlet for admitting air from the outside of said room, a temperature responsive device affected by room temperature and adjustable to respond to a selected desired room temperature, motor means within one of said housing end portions and shiftable to various positions in accordance with room temperature and whose position is proportional to the differential between actual room temperature and said desired room temperature, damper means within said housing central portion to control air flow through said air inlets, said damper means being connected to said motor means and shiftable thereby from a first position wherein said first air inlet is at least partially closed and said second air inlet is open, to a second position wherein said second air inlet is at least partially closed and said first air inlet is open, heating means within said housing central portion for heating air before discharge thereof into said room, means for controlling operation of said heating means, said control means being connected to said motor means for actuation thereby in accordance with room temperature, and override means within said housing other end portion and connected to said damper means for selectively maintaining the latter in position closing said second air inlet regardless of the position of said motor means.

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3,165,626
REPLACEMENT OVEN UNITS
Joseph J. Jasionowski, Niles, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed May 9, 1963, Ser. No. 279,278
3 Claims. (Cl. 219—402)

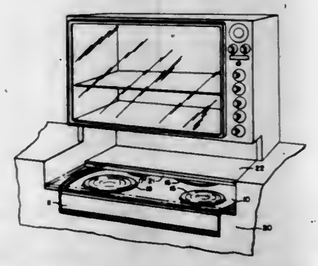
1. Means for securing an electrical heating unit to an apertured wall of an oven comprising: a bracket having a flat face and being of sufficient size to cover the aperture in said wall, means for securing the bracket in position overlying said aperture and with said face closely spaced from said wall, a small compact housing having a removable cover, said housing having dimensions in a plane parallel to the plane of said wall less than the corresponding dimensions of the face of the bracket, an electrical connector mounted in said housing, a sheathed electrical heating unit having terminals terminating in



said housing and secured to said connector therewithin, electrical leads extending through an aperture in said wall and through openings in said bracket, with said leads terminating in said housing and being secured to said connector, and means hingedly securing said housing to said bracket.

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3,165,627
COOKING RANGE REVOLVING PLATFORM
Robert L. Gault, Mansfield, Ohio, and David L. Haas, Alexandria, Va., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 24, 1963, Ser. No. 283,055
7 Claims. (Cl. 219—444)



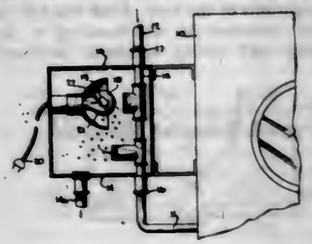
1. A cooking range comprising, a supporting cabinet structure having a front wall, a rotatable range element platform having a generally circular configuration with a truncated peripheral portion, means rotatably securing said platform to said cabinet structure as a top surface thereof in a location such that said truncated portion is aligned with said front wall surface when said rotatable platform is in a first selected rotatable position, a cabinet structure overlying in vertically spaced relation a portion of said platform, and a plurality of range heating elements mounted on said platform to be carried thereby to advance selected ones of said elements to a position nearer said front wall when said platform is rotated.

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3,165,628
LIQUID ACTIVATING TECHNIQUES
Armando A. Araujo, Jr., Freeport, N.Y., assignor to Ionic Corporation of America, Westbury, N.Y., a corporation of New York
Filed Feb. 13, 1961, Ser. No. 89,030
3 Claims. (Cl. 250—43)

1. Water-activating apparatus comprising a chamber, a pipe section extending through said chamber adapted for interconnection with a water supply system, a source of ultra violet radiation disposed within said chamber, means for admitting air into said chamber into exposure with said source, unidirectional pressure responsive valve means in said pipe section disposed within said chamber for admitting irradiated air from said chamber into the interior

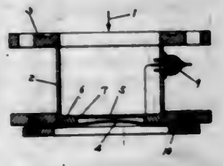
of said pipe section, said pipe section including a venturi passage to cause said irradiated air from said chamber to



be sucked into said section, said unidirectional valve means preventing flow of water into said chamber when water passage through said section is blocked.

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3,165,629
SECONDARY EMISSION ELECTRON BEAM MONITOR
Sigeru Okabe, Sakaishi, Osakafu, Japan, assignor to Osakafuchiji Gisen Sato, Osakafu, Japan, a corporation of Japan
Filed Jan. 8, 1962, Ser. No. 164,923
Claims priority, application Japan, Dec. 7, 1961, 36/44,497
4 Claims. (Cl. 250—49.5)



1. A monitoring device for measuring the current intensity of an electron beam having an energy of from 1–3 mev. and generated in an electron accelerator with an electron conduit, consisting essentially of a tube having a diameter substantially the same as the conduit of the electron accelerator, means on one end of the tube adapted to attach said monitoring device to the electron accelerator, an aluminum foil diaphragm having a weight of about 29 mg./cm.² sealed over the other end of said tube for enabling a vacuum to be maintained in said tube, said diaphragm acting as one electrode, a second aluminum foil electrode mounted across the tube and spaced from said first electrode from 3–5 cm. toward the said one end of said tube, said foil having a weight of about 1.4 mg./cm.², and a voltage bias means having a voltage of about 150 v. and a current measuring means connected to said second electrode, said first electrode being grounded.

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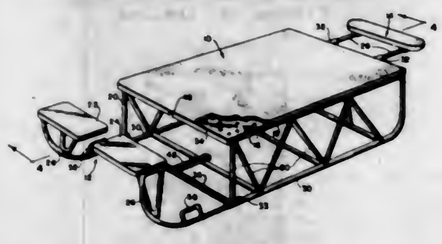
3,165,630
TABLE FOR HOLDING AND POSITIONING A FEMALE SUBJECT AND FILM DURING BREAST X-RAY EXPOSURES
John S. Bialat, Lexington, and Herbert J. Frede, Framingham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 13, 1961, Ser. No. 116,730
3 Claims. (Cl. 250—58)

1. Apparatus for holding and positioning a female subject and film during breast X-ray exposures whereby said subject and film may be subsequently placed in the same relative positions to obtain repeatable exposures of the identical area, said apparatus comprising, in combination:

(*a*) a substantially flat, horizontal surface adapted to support at least a portion of the body of said subject during said exposures;

(*b*) a rigid leading edge associated with said surface which the breasts of said subject overhang when the subject is positioned upon said surface;

(*c*) first holding means rigidly affixed with respect to said leading edge and adapted to engage and hold an X-ray cassette holding a first X-ray film in a first position, wherein an edge of said first film is closely adjacent and parallel to said leading edge and said

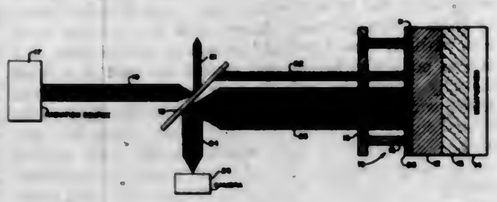


first film is positioned below the plane of said surface and in a plane perpendicular thereto; and

(*d*) second holding means rigidly affixed with respect to said leading edge and adapted to engage and hold an X-ray cassette holding a second X-ray film in a second position, wherein an edge of said second film is closely adjacent and perpendicular to said leading edge and said second film is positioned below the plane of said surface and in a plane perpendicular to that of said first film.

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3,165,631
ELECTROLUMINESCENT GENERATOR
Max Solow, Silver Spring, Md., Nathaniel L. Colebura, Washington, D.C., and Raymond C. Wiley, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 26, 1960, Ser. No. 45,509
3 Claims. (Cl. 250—84)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for the production of short intense pulses of energy which comprises

(1) an oxide layer having a free surface

(2) a metal sheet bonded to a surface of said oxide layer opposite the free surface of said oxide layer, said metal being selected from the group consisting of aluminum, zinc, magnesium, cadmium, indium and gallium

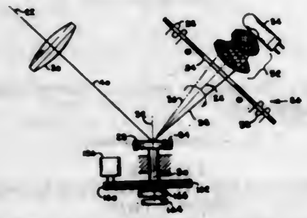
(3) explosive means contiguous with said metal sheet

(4) radiation means directing energy upon said oxide layer and thereby activating said oxide layer

(5) means for generating a planar shock wave by initiation of said explosive means whereby said planar shock wave impinges said metal sheet and said oxide layer and a brief pulse of energy is emitted from the free surface of said oxide layer.



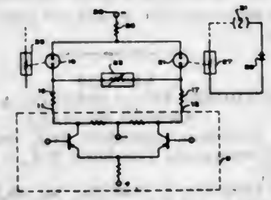
3,165,632
STAR-TRACKING SYSTEM USING A FREQUENCY MODULATED CARRIER WAVE
Siegfried Hansen, Los Angeles, Calif., assignor, by mesne assignments, to Hughes Aircraft Company, a corporation of Delaware
Filed Oct. 4, 1950, Ser. No. 188,401
12 Claims. (Cl. 250—203)



1. An electrooptical apparatus for tracking a source of radiant energy, said apparatus comprising: a movable optical system having an optical axis and means for intercepting and focusing a portion of said energy as an image in a plane; nutating means for nutating said image about a circular path in said plane, said path having an axis coincident with a predetermined point in said plane when said optical axis is directed at said source, said path axis diverging from said predetermined point when said optical axis is deflected from said source; a rotatable shutter disposed in said plane; means for rotating said shutter to convert said focused energy into a frequency-modulated radiation signal, the frequency modulation of said signal corresponding to the divergence of said path axis from said predetermined point; and translating means positioned to intercept said radiation signal, said translating means being responsive to the frequency modulation of said radiation signal for moving said optical system to direct said optical axis at said source.

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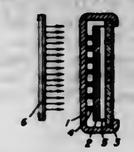
3,165,633
ELECTRICAL READOUT DRIVE AND STORAGE CIRCUIT
Irwin Wunderman, Mountain View, and Blair H. Harrison, Sunnyvale, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Aug. 22, 1961, Ser. No. 133,125
10 Claims. (Cl. 250—206)



1. An output circuit for apparatus which performs logic operations comprising a plurality of binary circuits that produce relatively high and low amplitude output signals on pairs of output lines in opposite phase relationship, a storage circuit for each of said binary circuits comprising voltage responsive lamps connected to each of said output lines, said lamps having a first voltage above which they become luminant and a second voltage level below which they become extinguished, the first voltage level being higher than the second voltage level, a voltage source connected to said lamps for making luminant the lamp which receives an output signal of relatively low amplitude from said binary circuit and for sustaining the voltage across the luminant lamp above the second voltage level and below the first voltage level, and switching means connected between the common connection of said output lines and said lamps, said switching means becoming conductive in response to a signal applied thereto to clamp the voltage across the non-luminant lamp to the voltage across the luminant lamp.

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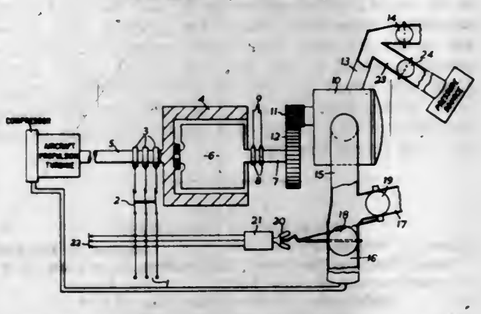
3,165,634
PHOTOSENSITIVE INFORMATION STORING DEVICES
Francois Henri Raymond, Saint-Germain-en-Laye, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, France
Filed Mar. 11, 1957, Ser. No. 645,181
Claims priority, application France Mar. 23, 1956
19 Claims. (Cl. 250—219)



1. A binary data storage device comprising the combination of a storage element consisting of an opaque member upon which an information pattern has been impressed by means of transparent areas in predetermined locations of a storage raster, means for illuminating one side of the said element, a photoresistive member receiving a light pattern determined by said information pattern from the said storage element and comprising a layer of a photoconductive substantially non-rectifying material and a pair of film electrode networks arranged in contact with opposite faces of said photo-conductive layer, each electrode network comprising parallel conductors insulated from each other and extending entirely across said layer, with the conductors of one network crossing the conductors of the other network to form virtual intersection points defining a raster similar to that of said storage raster.

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3,165,635
ELECTRICITY GENERATION PLANT
Norman Moss, London, and Peter Stanwell, Wanstead, England, assignors to The Plessey Company Limited, Ilford, England, a British company
Filed Oct. 16, 1961, Ser. No. 145,516
Claims priority, application Great Britain, Oct. 25, 1960, 36,575/60
9 Claims. (Cl. 290—5)



2. Electrical generating plant which comprises in combination an engine subject to speed variations, an electrical generator having an inductor member and an exciter member each of which is rotatable independently of the other about a common axis, one of said members being coupled for rotation with the engine, a rotary-displacement fluid-pressure motor coupled to the other member of the generator, and automatic control means for the fluid-pressure

motor operative to cause the fluid-pressure motor to be power-driven in one direction to supplement the engine-derived exciter-to-inductor speed when the engine-derived exciter-to-inductor speed is less than a predetermined value and to allow the fluid-pressure motor to be driven in the opposite direction by the torque transmitted through the generator field so as to reduce the exciter-to-inductor speed of the generator below the engine-derived speed to substantially the said predetermined value when the engine-derived exciter-to-inductor speed is higher than said predetermined value.

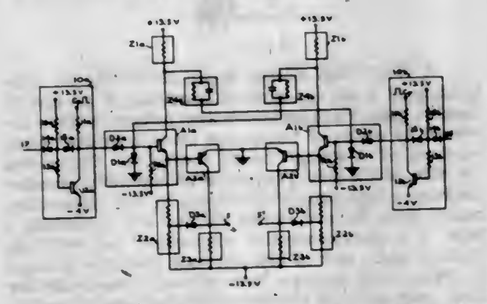
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**3,165,636**

## ELECTRONIC SWITCHING CIRCUITS

**Robert N. Mellott, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware**

**Filed July 31, 1958, Ser. No. 752,222**
**8 Claims. (Cl. 307—88.5)**



1. In a bistable multivibrator circuit comprising first and second amplifiers each having an input electrode and first and second output electrodes, a first load impedance being coupled to each of said first output electrodes and a cross-coupling impedance connecting each first output electrode of an amplifier to the input electrode of the other amplifier, an output circuit for producing complementary bivalued output signals comprising: first and second output impedances coupled to the second output electrodes of said amplifiers, respectively; third and fourth amplifiers each having an input electrode and first and second output electrodes, the input electrodes of said third and fourth amplifiers being directly connected to the second output electrodes of said first and second amplifiers, respectively; third and fourth output impedances coupled to the second output electrodes of said third and fourth amplifiers, respectively; means for applying a first potential to the first load impedances; means for applying a second potential to said first and second output impedances; and means for applying a third potential having a level intermediate the levels of said first and second potentials directly to the first output electrodes of said third and fourth amplifiers.

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**3,165,637**

## ANALOGUE DECODER

**James L. Walsh, Hyde Park, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Mar. 23, 1960, Ser. No. 17,179**
**11 Claims. (Cl. 307—88.5)**

1. Decoding apparatus, comprising a current sink capable of passing a current up to a predetermined level; a plurality of input channels, each providing a predetermined amount of input curent when energized, coupled in common to the input of said current sink; a variable current source, also coupled to the input of said current sink, for supplying thereto a current value equal to the difference between said predetermined current level and the total current provided by the energized channels; and means coupled to said variable current source for indicating when the current supplied thereby falls below a predetermined level.



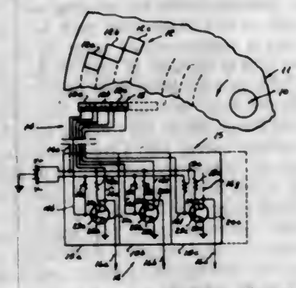
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**3,165,638**

## COMMUTATOR CONTROL FOR SIGNAL DERIVATION

**William Hess, Hasbrouck Heights, N.J., and Menashe Teitelbaum, Brooklyn, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware**

**Filed June 28, 1960, Ser. No. 39,290**
**10 Claims. (Cl. 307—88.5)**



1. A signal commutator for deriving discrete step signals as a function of a variable, comprising a plurality of control circuits, each circuit having at least one output line for transmitting a step signal and at least one semiconductor device connected to each output line to control transmission by the associated line, a voltage source connected to each of the semiconductor devices and output lines, and an input connected to all the circuits and adapted to receive control signals corresponding to the variable and including a variable resistor in each circuit which varies in value selectively with the variable to selectively control the semiconductor devices and provide the discrete step signals.

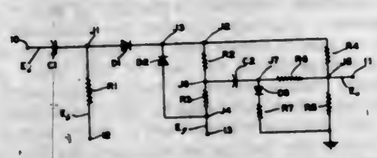
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**3,165,639**

## ELECTRONIC SWITCHING OF ANALOG CARRIER SIGNALS

**Arthur S. Robinson, Allendale, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware**

**Filed July 1, 1960, Ser. No. 40,231**
**11 Claims. (Cl. 307—88.5)**



7. An electronic gate having an input adapted to receive alternating voltage signals and an output, means connecting the input to the output for transmitting the signals when forward biased and for blocking the signals when back biased, means connected to the connecting means and providing direct control voltage varying between a predetermined high level of one polarity to back bias the connecting means to block the signals and another low level of the same polarity to provide for signal connecting means to block the signals and another low level to provide for signal transmission, and means for clamping the control voltage to the output to suppress spurious signals at the output when the signals are blocked.



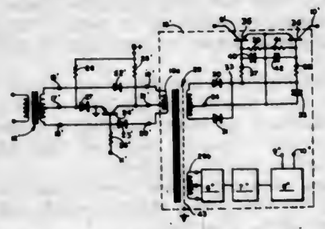
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**3,165,640**

## D.C. CONTROLLED SEMICONDUCTOR SWITCH FOR A.C. CURRENT

**William Fitzwater, Jr., Santa Ana, Calif., assignor to North American Aviation, Inc.**

**Filed Dec. 15, 1960, Ser. No. 76,021**
**10 Claims. (Cl. 307—88.5)**



1. A switching circuit comprising a source of alternating-current power, A.-C. switch means responsive to a switch control signal for selectively controlled passage of a signal from the source, a pair of switching transistors series connected between terminals to be switched, a rectifier responsively connected to said alternating-current switch means, a first filter connected between said rectifier and one of said transistors and a second filter connected between said rectifier and the other of said transistors.

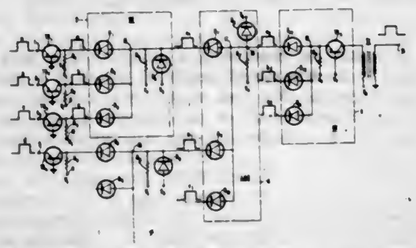
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**3,165,641**

## PLURAL LOGIC CIRCUIT UTILIZING BREAKDOWN DIODES TO IMPROVE WAVE SHAPE AND SWITCHING SPEEDS

**Jack Saul Cubert, Haddonfield, N.J., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed July 20, 1961, Ser. No. 125,473**
**25 Claims. (Cl. 307—88.5)**



1. A logic circuit including: a first OR circuit comprising a group of first semiconductor devices each having a reverse relatively constant potential breakdown characteristic between first and second terminals thereof, with their first terminals connected together at a first junction, each of said first devices being poled so that it is actuated and operates in its reverse breakdown condition upon application to its second terminal of a first potential individual thereto, said first OR circuit also including means connected to said first common junction for generating an output signal in response to the actuation of any first device, at least one first AND circuit for providing one of said first potentials, where said first AND circuit comprises a second semiconductor device having a reverse relatively constant potential breakdown characteristic between first and second terminals thereof with a first impedance connected in series with said first terminal of said second device to form a second junction therebetween, said first AND circuit also including a potential applied across said series combination with a polarity and magnitude such as to cause said second device to operate in its reverse breakdown condition to pass a current of maximum magnitude $I_D$ therethrough so as to generate a second potential at said second junction, said first AND circuit also including a group of N third semiconductor devices each having a reverse relatively constant potential breakdown characteristic between first and second terminals thereof with each being connected to said second junction by its first terminal and poled so that it is actuated and operates in its reverse breakdown condition upon application to its second terminal of a third potential individual thereto, so as to pass a current therethrough of magnitude I which is applied to said first impedance in the same direction as that of current $I_D$, where $I_D=(N-1)I$, in order that said second potential is produced at said second junction for any number of actuated third devices, up to and including $(N-1)$, and said first potential is produced at said second junction for a number of actuated third devices equal to N, means connecting said second junction of said first AND circuit to the second terminal of an individual one of said first devices, and at least one first circuit means connected to the second terminal of at least one said third device to provide said third potential thereto.

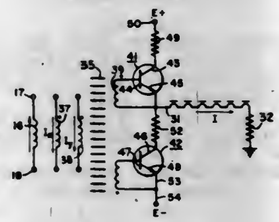
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**3,165,642**

## ACTIVE ELEMENT WORD DRIVER USING SATURABLE CORE WITH FIVE WINDINGS THEREON

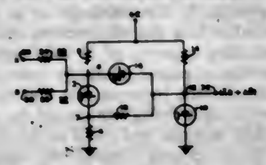
**Robert E. Noll, Lutherville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Oct. 13, 1961, Ser. No. 144,894**
**8 Claims. (Cl. 307—88.5)**



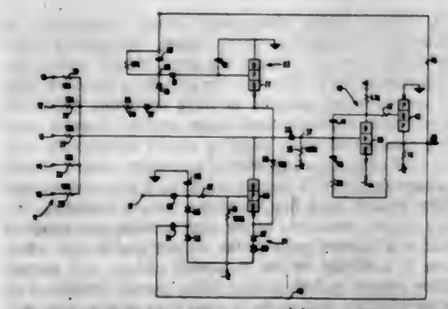
2. A current pulse generating circuit comprising, in combination, a magnetic core, means operatively connected to the core for biasing the core, circuit means operatively connected to the core for switching the core, said circuit means being adapted to have switching pulses of predetermined amplitude and shape applied thereto, read winding means and write winding means inductively coupled to said core, first and second transistor means output lead means operatively connected to said first and second transistor means, said first transistor means including energizing means connected to the read winding and adapted to produce a current pulse in the output lead means when the core is switched by the switching pulses, said second transistor means including energizing means connected to the write winding and to the output lead means, said second transistor means being driven into cutoff when the core is switched, said core being reset by the fall of the switching pulses, said second transistor thereafter generating a current pulse in the output means, said first transistor being driven to cutoff upon the resetting of said core.

3,165,643
## LOGIC CIRCUIT
Karl C. Wehr, Ellicott City, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 27, 1961, Ser. No. 148,122
11 Claims. (Cl. 307—88.5)



1. An exclusive OR circuit comprising, in combination; a first and a second tunnel diode each having a low voltage state and a high voltage state and substantially equal current breakover levels; a backward diode interconnecting said tunnel diodes and poled to block current from the second tunnel diode to the first tunnel diode; means for biasing each said tunnel diode to its low voltage state; output means responsive to the voltage state of said second tunnel diode; and input means including a first and a second input circuit for selectively receiving one unit input signals increasing the voltage across each said tunnel diode an additional step function over and above the biasing means for each said unitary input signal present; circuit means for exceeding the current threshold level of said second tunnel diode upon receipt of a unitary input signal at only one of said input circuits and for exceeding the current breakover level of said first tunnel diode in response to the simultaneous occurrence of an input signal at both input circuits; and means responsive to breakover of said first tunnel diode for clamping the current through said second tunnel diode to a level less than its current breakover level prior to breakover of said second tunnel diode.

3,165,644
## ELECTRONIC CIRCUIT FOR SIMULATING BRAIN NEURON CHARACTERISTICS INCLUDING MEMORY MEANS PRODUCING A SELF-SUSTAINING OUTPUT
Gesang L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 26, 1961, Ser. No. 162,127
2 Claims. (Cl. 307—88.5)



1. An electronic neuron comprising: —
(*a*) an input circuit for summing a plurality of applied voltages;
(*b*) an integrating pulse shaper to which said summed voltage is applied and responsive to a predetermined summation of applied voltage for generating an output;
(*c*) said integrating pulse shaper including a charging circuit to which said summed voltage is applied wherein the magnitude of said summed voltage determines the time interval through which said summed voltage must be applied to reach said predetermined summation of voltage for generating an output;
(*d*) an inhibit circuit connected to said integrating pulse shaper and responsive to an output therefrom to become operative to reduce the summed voltage to a predetermined low value, wherein said integrating pulse shaper terminates its output; and
(*e*) a storage circuit included in said inhibit circuit for retaining said inhibit circuit in an operative state to a time subsequent to the termination of the output pulse from said integrating pulse shaper;
(*f*) a memory responsive to an output from said integrating pulse shaper for generating an output voltage;
(*g*) means for connecting the output of said memory to said input whereby the condition of memory aids in establishing the output to which it is responsive, whereby the frequency output of said integrating pulse shaper may be increased;
(*h*) means contained in said memory unit for establishing the time period through which said output voltage will be generated;
(*i*) wherein said last-mentioned means is responsive to the frequency of pulse output from said integrating pulse shaper for establishing said time period.

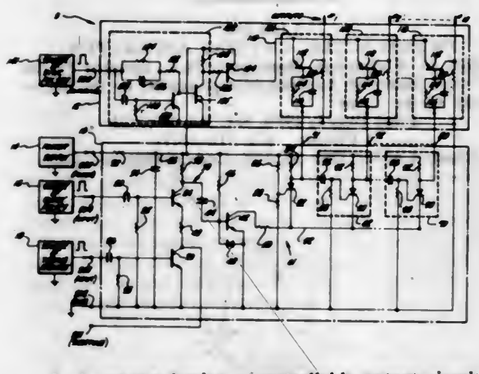
3,165,645
## SOLID STATE RELAY UTILIZING TWO TERMINAL, TWO-STATE ELEMENTS AND CONTROLLED PULSE PRODUCING MEANS
Scott V. Campbell, Melbourne, Fla., assignor to Radiation, Incorporated, Melbourne, Fla., a corporation of Florida
Filed Mar. 27, 1962, Ser. No. 182,828
13 Claims. (Cl. 307—88.5)



1. A circuit for connecting a potential to a load in response to predetermined amplitude levels of a signal source comprising first and second two terminal semiconducting elements, each of said elements having a conducting and a non-conducting state, each of said elements being rendered into the conducting state between its said two terminals from the normally non-conducting state upon the application of a first voltage of predetermined magnitude and polarity across its said two terminals and into the non-conducting state from the conducting state upon the application of a second predetermined voltage magnitude across its said two terminals, said first predetermined voltage magnitude being less than the predetermined amplitude, said second predetermined voltage magnitude being less than the first predetermined voltage magnitude, first means for connecting said two terminals of said first element to the signal source, a shock excited oscillatory circuit connected across said two terminals of said first element, second means for connecting the load and the potential to said two terminals of the second element, and means for coupling the wave of the shock excited circuit to said two terminals of the second element to couple the potential to the load in response to energization of said shock excited circuit by conduction of said first element.

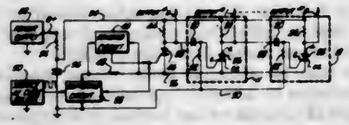


3,165,646
## BLANKING CIRCUIT FOR RING COUNTER AND INCLUDING GATING CIRCUITS AT THE OUTPUTS THEREOF
Louis A. de Bottari and Ciro Guajardo, Torrance, Calif., assignors to Alpha-Tronics Corporation, Torrance, Calif., a corporation of California
Filed June 20, 1962, Ser. No. 203,839
6 Claims. (Cl. 307—88.5)



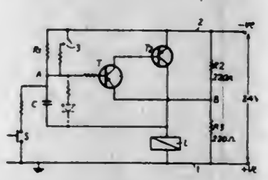
1. A counter having a controllable output circuit the combination of which comprises, a source of timing pulses, means connected for counting the pulses from said timing pulse source and including a plurality of output circuits for developing a corresponding output signal, switching means for each output circuit including input, output, and control circuits and characterized as normally being arranged in a high impedance condition between the input and output circuits thereof and connected to be responsive to a signal applied at the control circuit thereof by the corresponding output circuit of said timing pulse source for switching into a low impedance condition between said input and output circuits, means for developing a preselected electrical signal, second switching means having a control circuit, an output circuit coupled in common to the input circuits of each of said first switching means and an input circuit coupled to the preselected signal means, said second switching means being normally arranged in a high impedance condition across the input and output circuits thereof and responsive to a signal applied at the control circuit thereof for switching into a low impedance condition and thereby applying said preselected signal to the input circuits of said first switching means, a source of synchronizing signals, and a delay circuit connected to be responsive to the signals from said synchronizing signal source for applying a signal to the control circuit of said second switching means.

3,165,647
## RING COUNTER WITH NO FEEDBACK COMPRISING SILICON CONTROLLED RECTIFIER STAGES
Louis A. de Bottari and Ciro Guajardo, Torrance, Calif., assignors to Alpha-Tronics Corporation, Torrance, Calif., a corporation of California
Filed June 20, 1962, Ser. No. 203,980
7 Claims. (Cl. 307—88.5)



1. A counter comprising a plurality of switching elements connected in cascade, including first and last switching elements, each of said switching elements comprising input, output and control electrodes, a load impedance for each of said switching elements and connected for applying an electrical signal to the input electrode thereof, a voltage divider circuit connected for applying a constant bias potential to the control electrode of said first switching element, a separate capacitive element for each switching element other than said last switching element and connected between the input electrode of the corresponding switching element and the control electrode of the succeeding switching element in the cascade, an impedance element for each of said capacitive elements and connected for separately applying an electrical signal to the common junction of the capacitive element and the connected control electrode, a two terminal load impedance having one terminal connected in common to the output electrode of each of said switching elements, and a transistor switching circuit connected to the other terminal of the common impedance element for applying an electrical reference potential thereto.

3,165,648
## TIMING CIRCUITS PROVIDING CONSTANT TIME DELAY INDEPENDENT OF VOLTAGE SUPPLY VARIATIONS
Jeffrey Jerome Sainsbury, Bedford, England, assignor to Fords (Finsbury) Limited, Bedford, England, a British company
Filed July 25, 1962, Ser. No. 212,423
Claims priority, application Great Britain, July 25, 1961, 26,899/61
14 Claims. (Cl. 307—88.5)

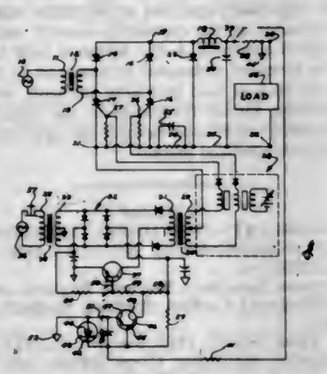


1. An electronic timing circuit comprising a first transistor having an emitter, collector and base, means for maintaining said emitter at a potential which is a substantially fixed percentage of the voltage of a D.C. source, a second transistor having an emitter, collector and base, means connecting the collector of said first transistor to the base of said second transistor, resistance means, means connecting the collector of said second transistor through said resistance means to one pole of said D.C. source, means connecting the emitter of said second transistor to the other pole of said D.C. source, a resistor and condenser connected in series and having a tapping therebetween, said condenser having its side remote from said tapping connected between said resistance means and the collector of said second transistor, and said resistor having its side remote from said tapping connected to said other pole of said D.C. source, and means connecting the base of said first transistor to said tapping.

3,165,649
## QUICK TURN-OFF CIRCUIT USING TUNNEL DIODE AND INDUCTIVE KICK TO EFFECT OFF CONDITION
Joseph C. Ault, Minneapolis, Minn., assignor to Ault Incorporated, a corporation of Minnesota
Filed Sept. 4, 1962, Ser. No. 221,127
4 Claims. (Cl. 307—88.5)

1. A quick turn-off subcircuit for use with a controlled, filtered, direct current supply circuit to a load including a filter subcircuit connected to said load, a full wave power rectifier subcircuit connected to said filter, said power

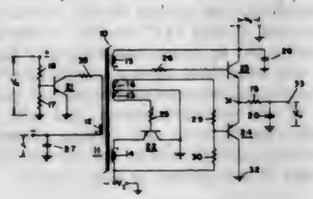
rectifier subcircuit including a pair of silicon controlled rectifiers having gates, a magnetic amplifier subcircuit exciting said gates, a full wave control rectifier subcircuit feeding said magnetic amplifier subcircuit, a source of alternating electromotive force driving each of said rectifier subcircuits, said quick turn-off subcircuit including a current overload control resistor connected in series with said load between the load and said filter, a transistor having its emitter and collector connected in series between the output of said control rectifier subcircuit and said magnetic amplifier subcircuit, means operative selec-




tively to bias said transistor to cutoff and to permit conduction, said means including a tunnel diode effective when operating over its stable high current state to permit said transistor to conduct and operative in its degenerative low current state to prevent said transistor from conducting, a voltage divider resistor in series with said tunnel diode, said divider resistor and diode being in series with each other and connected together across said control resistor, and reversing means for assuring application of a reverse voltage on said silicon controlled rectifiers when excitation is removed from said gates.

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**3,165,650**
**MAGNETIC MULTIPLIER SYSTEM**
**James Paul White, Norristown, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Oct. 2, 1962, Ser. No. 227,900**
**8 Claims. (Cl. 307—88.5)**



8. A magnetic amplifier system comprising a saturable core transformer,
means for driving said core from saturation in one sense comprising a solid-state switching device whose input circuit includes a source of switching pulses of fixed frequency and duration and whose output circuit includes an input voltage and a core winding,
means including a second solid-state device for resetting the core to original state in the intervals between successive switching pulses, said resetting being accompanied by a flux change in excess of the residual flux density,
a third solid-state switching device whose input circuit includes one of said core windings and whose output circuit includes a voltage source in series with an averaging circuit, said third switching device being conductive during resetting of said core,
and a compensating resistor in said output circuit of said first switching device substantially to correct for the effect upon reset time of said excess flux change.

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**3,165,651**
**PIEZOELECTRIC CRYSTAL APPARATUS**
**Rudolf H. Bechmann, Oceanport, N.J., assignor to the United States of America as represented by the Secretary of the Army**
**Filed Dec. 1, 1959, Ser. No. 856,623**
**4 Claims. (Cl. 310—9.7)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A thickness-shear mode piezoelectric crystal element adapted to vibrate in an oscillating circuit, means for providing an electric field parallel to the major surfaces of said crystal element comprising a pair of discrete electrodes each partially covering both of said major surfaces and continuous over the edges of said crystal element, the areas on said major surfaces covered by said electrodes being co-extensive, the ends of said electrodes being spaced from each other to form respective mutually opposing uncovered portions on said major surfaces, said uncovered portions being substantially perpendicular to the Z'-axis of said crystal element.

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**3,165,652**
**ELECTRODE STRUCTURE FOR A MAGNETO-HYDRODYNAMIC DEVICE**
**Thomas A. Prater, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed July 16, 1962, Ser. No. 209,825**
**15 Claims. (Cl. 310—11)**



1. An electrode for a magnetohydrodynamic device of the type in which the electrode is exposed to high temperature corrosive fluids comprising:
(*a*) a body of refractory oxide selected from the group consisting of alumina and zirconia and including a layer of zirconia on one surface to be exposed to such fluids, and
(*b*) at least one conductor embedded in said body and extending partially through said layer of zirconia.



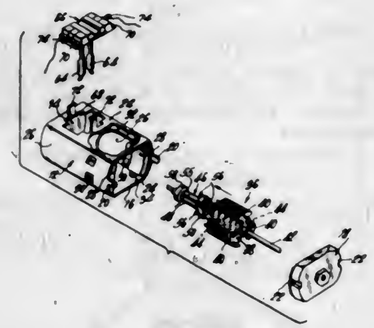
**3,165,653**
**MAGNETOSTRICTIVE RESONATOR DEVICE WITH SINUSOIDALLY VARYING EXCITING FIELD**
**Max Preisinger, Darmsheim, near Boblingen, Wurttemberg, Germany, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Mar. 14, 1962, Ser. No. 179,542**
**Claims priority, application Germany Mar. 18, 1961**
**6 Claims. (Cl. 310—26)**



1. An electromagnetic device comprising a magnetostrictive longitudinal resonator element said resonator clamped at its node of vibration, and magnetic coupling means for electromechanically exciting said resonator element, said magnetic coupling including means to excite the resonator element longitudinally at every point proportional to the deformation stress at that point of a freely longitudinally vibrating rod.

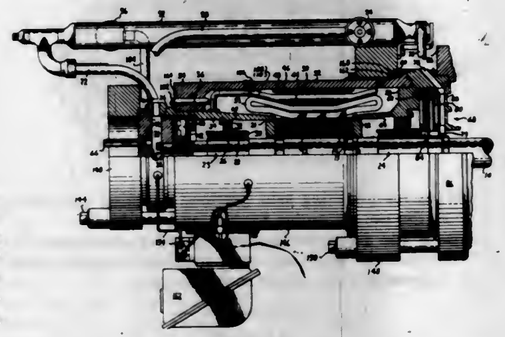
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**3,165,654**
**MINIATURE ELECTRIC MOTORS**
**Takuichi Mabuchi, 104 Houdemachi, Katsushika-ku, Tokyo, Japan**
**Filed Feb. 17, 1960, Ser. No. 9,331**
**5 Claims. (Cl. 310—46)**



1. A miniature electric motor comprising a hollow casing closed at one end and open at the other end thereof, permanent magnets disposed in confronting opposition on the inner surface of said casing, said casing including spaced abutments against which one end of each magnet respectively is disposed, resilient means biasing the opposite ends of said magnets toward said respective abutments, said casing further including an abutment on each side against which a side edge of said magnets are respectively located, a removable cap to close the open end of said casing, a rotary shaft mounted within said casing, one end of the shaft being journalled in the closed end of said casing and the other end of said shaft being journalled in said cap, a rotor provided on said shaft in spaced magnetic relation with said permanent magnets, a commutator provided on said shaft, brush means for said commutator accessible externally of said casing, said casing having an aperture defined therein, and a support member mounted in said casing and overlying said aperture, said brush means being mounted on said support and extending into the interior of said casing to engage said commutator.

**3,165,655**
**DYNAMOELECTRIC MACHINES**
**Ralph O. Elz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Jan. 2, 1962, Ser. No. 163,619**
**7 Claims. (Cl. 310—54)**



1. A dynamoelectric machine comprising a shaft supporting a rotor including a multiplicity of laminations held under compression and a winding disposed in its peripheral surface, first support members disposed on opposite ends of said rotor and a cylinder enclosing said laminations and positioned in water-tight relationship with said support members for preventing the infiltration of liquid into the rotor, means supporting said shaft in guide bearings and a thrust bearing associated with said rotor for absorbing thrust forces imposed thereon during motor operation, a stator for said machine comprising a magnetic core including laminations held under compression and a winding disposed in its peripheral surface, a second pair of cylinder support members of corrosion resistant material extending axially outward from the ends of said core but in contact therewith, a cylinder of nonmagnetic material positioned in immovable relationship with the inner surface of the core and joined at its ends to said second support members, an outer shell having flanges disposed on opposite ends thereof and designed for respective contact with said second cylinder support members thereby enclosing said magnetic core in a dead air space, coolant means placed in contact with said core for absorbing heat generated therein during machine operation seal welds sealing the juncture of said cylinder support members and said outer shell for forming a fluid-tight fit for the stator, and second flanges spaced from the shell flanges but secured thereto by bolts for holding the stator components together as an integral unit, thereby eliminating the need for heavy structural welds in the motor.

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**3,165,656**
**ELECTRIC MOTOR WITH OVERLOAD CUT-OUT**
**Helmut Korthaus, Fernblick 3, Wuppertal-Barmen, Germany, and Richard Wilke, Eschfeldstrasse 11, Gelsenkirchen-Buer, Germany**
**Filed Mar. 5, 1963, Ser. No. 262,910**
**14 Claims. (Cl. 310—76)**

1. An electric motor with pre-selectable number of revolutions and switchable in two directions of rotation, comprising
a stator including a stator-winding,
a motor shaft,
a rotor formed as a slider and mounted on said motor shaft, as well as including an overload cutout means,
a motor housing receiving said stator, said rotor and said overload cut-out means,
said overload cut-out means comprising an overload

coupling operatively connected with said rotor and said motor shaft, respectively,
so that said overload coupling transmit the motor torque from said rotor to said motor shaft,



means for adjusting said overload coupling in relation to the output motor torque, and
means for disconnecting the operative connection between said rotor and said overload coupling upon surpassing said output motor torque.

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3,165,657
ELECTRICAL ROTATING MACHINES
Jacques Henry-Baudot, Antony, Seine, France, assignor, by mesne assignments, to Printed Motors, Inc., New York, N.Y.
Filed Sept. 15, 1958, Ser. No. 760,964
Claims priority, application France Mar. 28, 1958
8 Claims. (Cl. 310—268)

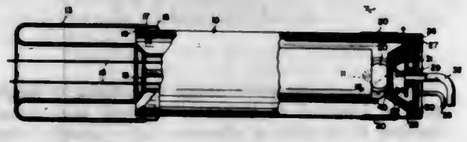


1. A disc-shaped rotor for an electric machine comprising a rigid disc-shaped body of dielectric material having an armature winding formed thereon, said winding comprising a first series of pre-formed half-turn conductors embedded in one face of said disc and being spaced apart throughout an annular area of said one face said annular area being concentric with the axis of said rotor, and a second series of pre-formed half-turn conductors embedded in the opposite face of said disc and being distributed throughout an annular area thereof corresponding in size and location with the said first mentioned annular area, each half-turn conductor in each set extending between the inner and outer boundaries of the annular supporting area for the set at substantially the same angle as the other conductors in the same set, the ends of the half-turn conductors on one face of said disc being connected by individual connections to the ends of the half-turn conductors on the opposite face of the disc to form an annular winding in which one-half of each turn of the winding is located on one face of said body and the other half-turn is located on the opposite face of said body.

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3,165,658
DIRECTLY-COOLED X-RAY TUBE ANODE
Michael J. Zmuick, Hubertus, Wis., assignor to General Electric Company, a corporation of New York
Filed Mar. 31, 1961, Ser. No. 99,897
5 Claims. (Cl. 313—30)

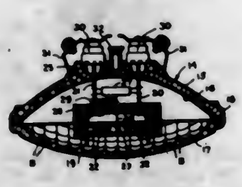
1. An X-ray generator tube comprising:
(a) an evacuated envelope at least a portion of which is metal,
(b) a cathode structure mounted in one end of said envelope for emitting an electron beam toward the other end of the envelope,
(c) a hollow adapter means having a wide end the edge of which is welded directly to the edge that constitutes the end of the metal envelope,
(d) said adapter means also having an apertured narrower end that terminates remote from the wide end in the direction of the cathode structure,



(e) a target element constituting a disk of metal sealed over the aperture to close the same and to present one of its sides toward the cathode and its other side directly to the inside of the hollower adapter means,
(f) means for applying coolant fluid directly to said other side of the target element on the inside of the adapter means,
(g) and an X-ray transmissive window in the metal envelope in a region that would be intersected by extending the plane of the target element and which window is spaced from the welded joint between the adapter and envelope.

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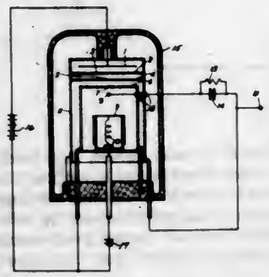
3,165,659
RECTANGULAR BEAM ELECTRIC INCANDESCENT LAMP
Arthur A. Bottone, Madison Township, Middlesex County, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1962, Ser. No. 178,327
10 Claims. (Cl. 313—115)



1. An incandescent electric lamp comprising, a substantially paraboloidal reflector member, a concentrated filament of linear configuration supported approximately at the focus of said reflector member, said filament extending transversely of the axis of revolution of said reflector member and comprising a pair of coiled segments joined by an open segment that is approximately centered at the focus of said reflector member, and a light-transmitting lens sealing the opening of said reflector member and having one group of flutes that extend in a direction parallel to said filament and another group of flutes that extend in a direction normal to said filament, said flutes being superimposed on said lens and being of such configuration that they direct the light from said filament and reflector member, when said filament is energized, into a beam of light having a rectangular-shaped beam pattern of predetermined dimensions and substantially uniform intensity.



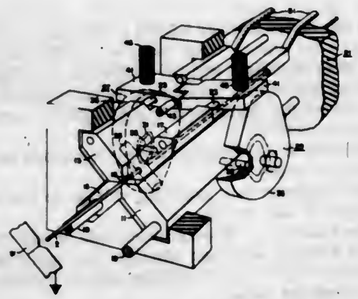
3,165,660
HYDROGEN THYRATRONS WITH HEAT SHIELDS AND PRIMING ELECTRODES
Hugh Menown, Writtle, Essex, England, assignor to English Electric Valve Company Limited, London, England, a British company
Filed Nov. 9, 1961, Ser. No. 151,276
Claims priority, application Great Britain, Mar. 22, 1961, 10,436/61
5 Claims. (Cl. 313—189)



1. A hydrogen thyratron switch including in the order stated and starting with the cathode: a cathode, a priming electrode; a heat shield having an aperture; a first baffle having an aperture; a second baffle having an aperture; an anode; and mounting means positioning said cathode, said heat shield, said baffles and said anode in the order stated and with the apertures in the heat shield and in the first baffle being at least approximately aligned with one another and with the priming electrode, and the aperture in the second baffle being out of alignment with the heat shield and first baffle apertures so that the anode field, which is present when the switch is in use, cannot penetrate to any substantial extent through the first baffle in the direction of the priming electrode.

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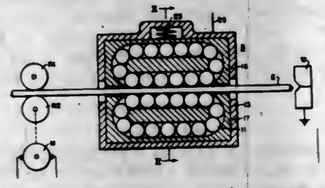
3,165,661
ARC WELDING APPARATUS
Alexander Taleff, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 3, 1962, Ser. No. 192,130
2 Claims. (Cl. 314—68)



1. A gun for arc welding with a consumable electrode comprising first contact means, second contact means, means actuating said first and second contact means alternately and in overlapping relationship to engage said electrode in welding-current-transmitting and advancing relationship so as to advance said electrode continuously, and means for supplying welding current through said electrode through at least one of said contact means.

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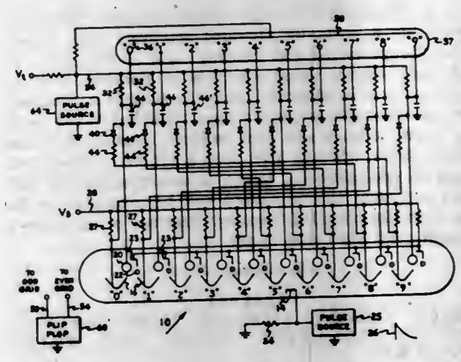
3,165,662
ARC WELDING APPARATUS
George W. Norris, Wilkins Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 18, 1962, Ser. No. 195,839
2 Claims. (Cl. 314—129)



1. Arc welding apparatus for welding work with a consumable electrode having a substantially continuously electrically conductive surface comprising means connected to said electrode for advancing said electrode into welding relationship with said work, rolling-bearing means connected to said electrode, at any instant at discrete points along said surface, to be advanced in rolling relationship with said electrode by the advancing of said electrode, and means connected to said rolling-bearing means for supplying current to said electrode.

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3,165,663
MAGNETRON BEAM SWITCHING TUBE IN COMPLEMENTARY SWITCHING CIRCUIT
David Glaser, Greenbrook, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 24, 1962, Ser. No. 232,798
7 Claims. (Cl. 315—8.5)



1. A counter circuit including an electron beam switching tube having a cathode and a plurality of groups of electrodes; each group including a target electrode which receives an electron beam and produces an output signal therefrom, a spade electrode which holds an electron beam on its associated target electrode, and a switching electrode which serves to switch an electron beam from one group of electrodes to the next;
each group of electrodes comprising a position to which an electron beam may flow;
each target electrode in one group of electrodes being connected to a spade electrode in a complementary group of electrodes;
voltage storage means coupled to each target electrode;
first circuit means coupled to all of said target electrodes and operable to apply a selected potential to all of said target electrodes at the same time that an electron beam is flowing to one of said target electrodes;

said one target electrode being set thereby at a potential different from the potential on all of the other target electrodes with the aid of its associated storage means;

second circuit means coupled to said tube for clearing and resetting an electron beam therein;

said potential on said one target electrode being applied to the spade electrode in the complementary group of electrodes whereby an electron beam forms and flows to said complementary group of electrodes, none of the potentials on the other target electrodes being suitable for forming an electron beam.

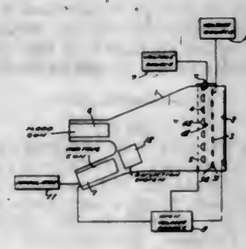
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**3,165,664**

## SIGNAL STORAGE TUBES UTILIZING HIGH AND LOW CAPACITANCE STORAGE ELECTRODES

Eric Brian Butler Callick, Chelmsford, England, assignor to English Electric Valve Company Limited, London, England, a British company

Filed Feb. 21, 1961, Ser. No. 90,667
Claims priority, application Great Britain, Mar. 21, 1960, 9,844/60
7 Claims. (Cl. 315—12)



1. A "direct view" storage tube of the kind referred to comprising a normally provided relatively high capacitance storage target and "writing" and "flood" guns, an additional storage target which is of relatively low capacitance and is adapted rapidly to acquire a relatively non-persistent charge pattern when traversed by the "writing" beam between said guns and said normally provided storage target, whereby after such a pattern has been produced on said additional target, a corresponding but relatively persistent charge pattern will be produced on the said normally provided target by electrons projected to it through said additional target.

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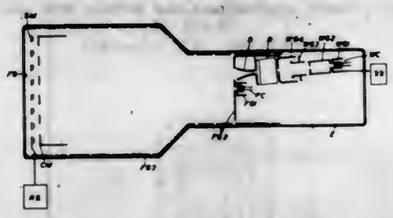
**3,165,665**

## DIRECT VIEWING STORAGE TUBE ARRANGEMENTS PRODUCING "BLACK AND WHITE" PICTURES

Jervois Campbell Firmin, Little Baddow, Essex, and Ian Robertson Sinclair and Norman John Davies, Chelmsford, Essex, England, assignors to English Electric Valve Company Limited, London, England, a British company

Filed Jan. 15, 1962, Ser. No. 166,303
Claims priority, application Great Britain, Jan. 13, 1961, 1,522/61
7 Claims. (Cl. 315—12)

1. A storage tube circuit arrangement including a direct viewing storage tube comprising an electric charge storage structure having a backing grid or mesh with an insulator on one side thereof, a writing gun adapted to scan said structure with a signal-modulated electron beam to produce on said insulator stored electric charges controlled by said signals, a flood gun adapted to cover the working area of said structure with a collimated substantially uniform density flood beam of electrons, and a fluorescent viewing screen positioned to receive electrons of the flood beam which pass through said structure, means for modulating the writing electron beam of said tube by means of input signals, and means for applying between the backing grid or mesh and the cathode of said flood gun successively different recurrent potential values so chosen in relation to the secondary emission ratio-voltage characteristic curve of said insulator that, in the absence of stored



charges produced by said signals, said insulator is stabilized at a predetermined potential sufficient to prevent the passage of flood beam electrons therethrough and, in the presence of stored charges produced by said signals, said insulator is stabilized at a second predetermined potential to permit the passage of flood beam electrons therethrough.

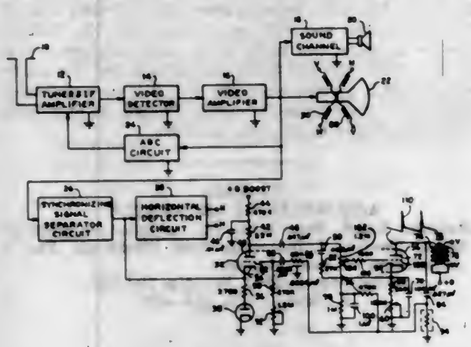
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**3,165,666**

## VERTICAL DEFLECTION CIRCUIT WITH HEIGHT CONTROL FEEDBACK

Alfred H. Rickling, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 27, 1962, Ser. No. 182,839
6 Claims. (Cl. 315—27)




1. In a television receiver having a cathode ray image reproducing tube and an electromagnetic deflection yoke for said tube including vertical deflection windings, a vertical deflection circuit comprising in combination:

circuit means for developing a substantially sawtooth voltage waveform;

an amplifying device having an input electrode and an output electrode;

means for applying said sawtooth voltage to the input electrode of said device;

means for connecting the output electrode of said device to said vertical deflection windings for applying deflection current to said windings and for developing retrace voltage pulses;

means responsive to said retrace voltage pulses for developing a direct control voltage having an amplitude proportional to the average amplitude of said retrace voltage pulses;

and means for applying said direct control voltage to the input electrode of said device to maintain the amplitude of said deflection current substantially constant.

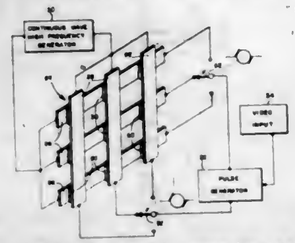


**3,165,667**

## ELECTROLUMINESCENT DEVICE

Claus H. Haake, Livingston, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 10, 1960, Ser. No. 35,339
5 Claims. (Cl. 315—169)



1. The combination which comprises an electroluminescent element and associated energization means: said element comprising, spaced electrodes, and electroluminescent phosphor included between said spaced electrodes; said energization means comprising, a first potential generating means and a second potential generating means; said first potential generating means adapted to deliver across said spaced electrodes a continuous alternating potential having a frequency of at least 10 kcs.; said second potential generating means adapted to deliver across said spaced electrodes potential pulses having a magnitude at least greater than the magnitude of the continuous alternating potential adapted to be delivered across said spaced electrodes by said first potential generating means; the duration of each pulse and the quiescent period between successive pulses adapted to be delivered across said spaced electrodes by said second potential generating means both extending over a time period at least ten times as long as the time period required for one complete cycle of the continuous alternating potential adapted to be delivered across said spaced electrodes by said first potential generating means; the summation of potential magnitudes of the continuous and pulsed potentials adapted to be delivered by said first and second potential generating means being less than that potential required to cause breakdown across said electrodes, but sufficient to energize said phosphor to produce radiations; and said first and second potential generating means adapted to deliver their respective potentials simultaneously across said spaced electrodes.

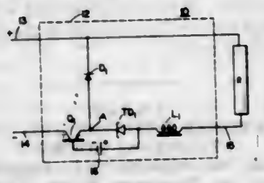
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**3,165,668**

## APPARATUS EMPLOYING NEGATIVE RESISTANCE DEVICE FOR OPERATING ELECTRIC DISCHARGE LAMPS

Theodore R. Harpley, Danville, Ill., assignor to General Electric Company, a corporation of New York

Filed Dec. 17, 1962, Ser. No. 245,122
4 Claims. (Cl. 315—209)



1. An apparatus for supplying energy from a source of potential to an electric discharge lamp, said apparatus comprising a first semiconductor means having a number of zones of semiconductive material forming at least a pair of PN junctions, said means being rendered conductive by a bias signal, a second semiconductor means characterized by sharp impedance shift when operated under predetermined current conditions, said second means switching to a high voltage state in response to a first predetermined value of current passing through said second means and switching to a low voltage state when the current through said second means decreases to a second predetermined value, bias means coupled with said first and second means for applying a bias signal to render said first means conductive, an inductive energy storage means, and circuit means for connecting said first and second semiconductor means and said storage means in circuit with the lamp and the potential source, said circuit means including a unidirectional conducting device to provide a path for the delivery of energy stored in the inductive energy storage means to the lamp when said first means is rendered nonconductive, said first semiconductor means being rendered conductive by said bias means until the current through said second semiconductor means reaches said first predetermined value whereby said second means is switched to a high voltage state and cancels the bias signal to render said first means nonconductive.

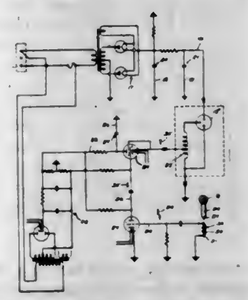
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**3,165,669**

## TRIGGERING MEANS FOR STROBOSCOPIC DEVICES

Stephen F. Marcotte, Norfolk, Mass., assignor to International Equipment Company, Boston, Mass., a corporation of Massachusetts

Filed Aug. 11, 1961, Ser. No. 130,924
1 Claim. (Cl. 315—237)

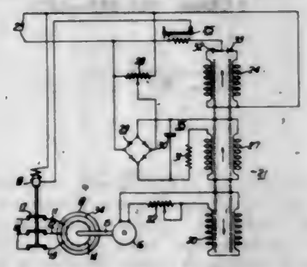


In a centrifuge device having a rotatable shaft member, the combination including stroboscopic means for illumination of revolving objects at high speeds together with associated electronic circuitry and triggering means for actuation of the stroboscopic means communicating with said rotatable member; said stroboscopic means comprising a flash tube including an anode, cathode and control element and having a predetermined threshold voltage potential requirement; a first circuit series connected to said cathode and including a power supply, first and second parallel grounded leads intermediate said supply and said cathode with said first lead including a large capacity reservoir capacitor and said second lead including a discharging capacitor, said anode of the tube being grounded, said first circuit supplying less voltage than the threshold voltage requirement of the flash tube; a second circuit connected to the control element of the flash tube and including in series a normally non-conductive gas discharge tube having a cathode connected to the control element of said flash tube, anode, control and suppressor grids, a second power supply with output terminals connected to said anode and control grid, a parallel grounded lead having a capacitor connected to said anode, and a pulse transformer whose primary winding is interconnected to the suppressor grid and whose secondary winding is connected across the anode and the control element of the flash tube; a third circuit including in series an electromagnetic field generating means compris-

ing a permanent magnet and coil arrangement disposed in close proximity to said centrifuge rotatable member, an amplifier tube including an anode, cathode and control element, the anode being interconnected to the control grid of said discharge tube and said second power supply and the control element being connected to said field; said triggering means comprising an interceptor arm disposed at right angles to the axis of said rotatable member and defining a tapered point, said interceptor point rotating to intermittently cut the electromagnetic field to thereby generate a pulse having an approximately right angular leading edge and a postive and negative polarity halves; said third circuit transmitting only the pulse halves of negative polarity to ionize said gas discharge tube; said second circuit capacitor discharging upon conduction of said discharge tube to transmit a voltage pulse through the pulse transformer to render the flash tube conductive; said first circuit capacitor connected to said second lead discharging rapidly upon incidence of conduction of the flash tube to result in a highly intense luminous discharge at the precise moment a revolving object is displaced beneath the stroboscopic means.

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**3,165,670**
**MOTOR PROTECTIVE SYSTEM**
John Bando, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 2, 1963, Ser. No. 248,952
11 Claims. (Cl. 317—19)

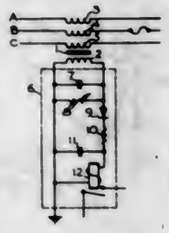


4. In a motor energizing circuit having a tripping means for deenergizing the motor in response to a tripping signal, a protective system for a winding of the motor comprising: means responsive to the speed of rotation of the winding for producing an electrical speed signal varying as a function of the winding speed; amplifying means connected to receive the speed signal for producing an output inversely proportional to the winding speed; and means connected to the tripping means and to the amplifying means for producing the tripping signal when said amplifying means output approximates an inverse time-current value that conforms to the overheating characteristic of the winding.

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**3,165,671**
**POLYPHASE CONTROL DEVICE**
Martin Mintz, Woodland Hills, and John De Villier, Northridge, Calif., and Stanley W. Zimmerman, Ithaca, N.Y., assignors to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio
Filed Aug. 10, 1960, Ser. No. 48,762
13 Claims. (Cl. 317—27)

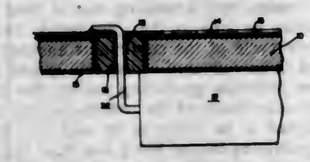
1. In a polyphase control system, an apparatus comprising: a single magnetic circuit; a plurality of separate conductors coupled to said magnetic circuit and connected to different phases of a polyphase alternating current of a specified fundamental frequency, the phases of which are relatively electrically displaced; the alternating current in said plurality of separate conductors establishing a resultant flux within said magnetic circuit of one phase angle and magnitude during one set of polyphase current conditions and a different phase angle and magnitude resultant flux during unbalanced polyphase current conditions relative to said one set of polyphase current conditions; means responsive to an overload in one of said plurality of separate conductors for interrupting current flow therethrough, thereby inducing an unbalanced polyphase current condition; and detecting means for said magnetic



circuit responsive to said resultant flux established during said relatively unbalanced polyphase current condition, said detecting means including a capacitive harmonic filter for providing protection against harmonic additions in said detecting means, and ballast means for providing a substantially constant load to said magnetic circuit, said ballast means being a variable resistor to provide a threshold level of response in said detecting means.

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**3,165,672**
**PRINTED CIRCUIT BASEBOARD**
Alvin W. Gellert, Phoenixville, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 15, 1959, Ser. No. 820,297
2 Claims. (Cl. 317—100)

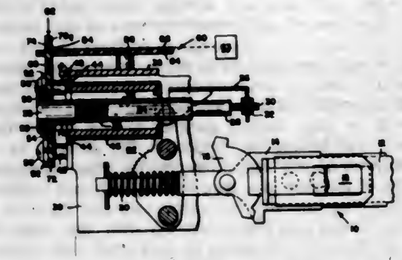


1. A printed circuit board assembly including in combination, a printed circuit board of one part construction comprising a metal panel provided on external surfaces thereof with an electrically insulative coating of good thermal conductivity, electrically conductive strips secured on said insulative coating adjacent one surface of said panel, said panel having laterally spaced holes extending through it and said insulative coating, and a heat emissive electrical component having a body portion which includes an exterior surface urged in direct physical contact against the insulative coating on the opposite surface of said panel by wire leads projecting from the component and extending through said holes, insulative means disposed between said wire leads and the wall surfaces defining said holes, and with each of said wire leads being bent to engage the conductive strips in the marginal areas surrounding said holes.

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**3,165,673**
**RADIO TUNER WITH PRINTED CIRCUIT TERMINAL BOARD**
John H. Teaf, Merchantville, N.J., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Euclid, Ohio, a corporation of Ohio
Filed Dec. 15, 1961, Ser. No. 159,724
7 Claims. (Cl. 317—101)

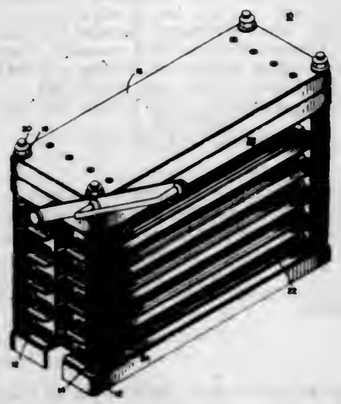
1. In a radio including a plurality of tuning means and a printed circuit assembly board, a terminal board, said terminal board including a plurality of rigid portions and a plurality of extensions flexible in both lateral and longitudinal directions, means connecting said tun-



ing means to said rigid portions and second means connecting said assembly board to said flexible extensions.

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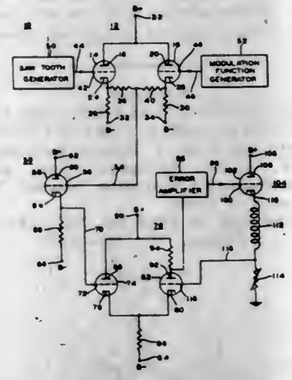
**3,165,674**
**ELECTRICAL TESTING APPARATUS**
Dean R. Swan, Andover, Mass., assignor to Precision Metal Products Co., Inc., Stoneham, Mass., a corporation of Massachusetts
Filed Aug. 9, 1962, Ser. No. 215,886
6 Claims. (Cl. 317—101)



1. An electrical testing apparatus comprising: a base plate; guide posts mounted in said base plate and extending upwardly therefrom; a cover plate overlying said base plate and secured to the top ends of said guide posts; a plurality of shelf plates horizontally disposed between said base plate and said cover plate, said shelf plates connected to and vertically movable on said guide posts; spring means co-axially carried on said guide posts for resiliently spacing said shelf plates from each other; component trays removably mounted upon the upper surfaces of said shelf plates, each said tray having aligned grooves in which a multiplicity of electrical components are carried and fastening means for retaining the components in said tray grooves; a multiplicity of wiper contacts mounted on and depending from the lower surfaces of said shelf plates; each said wiper contact positioned over a groove in said component tray; a compression plate horizontally disposed between said uppermost shelf plate and said cover plate, said compression plate connected to and vertically movable on said guide posts; and means for driving said compression plate downward to bring said wiper contacts into electrical contact with the tray-held components whereby the components can be electrically tested.



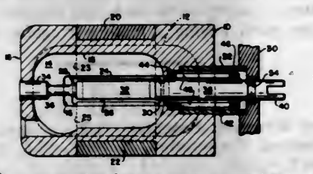
**3,165,675**
**APPARATUS FOR PRODUCING A MAGNETIC FIELD**
Louis Shapiro, Erlton, N.J., assignor, by mesne assignments, to First Pennsylvania Banking and Trust Company, trustee
Filed Sept. 29, 1960, Ser. No. 59,365
20 Claims. (Cl. 317—149)




1. Apparatus for producing a magnetic field comprising means for producing a control signal, a signal comparing means for receiving said control signal and a comparison signal and for delivering an error signal; a winding for producing a magnetic field; and a current controlling means for delivering a load current to said winding responsive to said error signal and for delivering a comparison signal to said comparing means, said current controlling means including a valve having a control electrode for receiving said error signal and for controlling an impedance of said valve in accordance therewith, said winding being in series with the impedance of said valve, and a reaistor receiving said load current for providing said comparison signal which is directly related to said load current.

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**3,165,676**
**ARMATURE SUSPENSION FOR TORQUE MOTOR**
Donald G. O'Brien, Cochituate, Mass., assignor to American Measurement & Control, Inc., Waltham, Mass., a corporation of Massachusetts
Filed July 11, 1960, Ser. No. 42,098
2 Claims. (Cl. 317—171)



1. A torque motor having a rotary output motion comprising, in combination, a frame, an armature, means mounting said armature intermediate its ends within said frame for pivotal movement about an axis while restraining it from translational movement along and across said axis, said armature mounting means including a shaft rigidly connected to one side of said armature and extending outwardly from one side thereof coaxially with said axis, the outer end of said shaft being free and rotating with said armature to provide the rotary output of the torque motor, an elongated torsional flexure member for supporting said shaft and the armature secured thereto, said flexure member preventing translational movement along and across said axis while permitting resiliently restrained rotation of said shaft, said torsional

flexure member being arranged coaxially over said shaft, the end of the flexure member next adjacent to the armature being rigidly connected to said frame, and the other end of the flexure member remote from the armature being rigidly connected to the shaft, said flexure member being rigid with respect to relative translation of its ends in directions longitudinally of and across said axis, the outer end of said shaft extending beyond the end of said flexure member remote from the armature, and being adapted to be connected to a driven element.

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3,165,677

## TELEVISION TUBE DEFLECTION COIL ASSEMBLY WITH SEPARABLE YOKE SECTIONS

Ernest Gostyn and John T. Harten, Longmeadow, and William F. Walters, Springfield, Mass., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey

Filed Aug. 30, 1960, Ser. No. 52,841
8 Claims. (Cl. 317—200)



2. In a deflection coil assembly comprising a support which is adapted to be received around the neck of a television tube and which carries two individual deflection windings arranged substantially in electrical quadrature, the improvement which comprises said support being formed in two parts, one of said windings comprising two electrically connected saddle-type sections and the other of said windings comprising two electrically connected toroidal-type sections, each of said support parts carrying one section of each of said windings, each of said support parts together with its associated winding being movable as a unit away from the other support part together with its associated windings, and means for securing said yoke support parts in assembled position, each of said support parts comprising a magnetizable core part engageable with the core part on the other support part when said support parts are assembled to define a substantially continuous magnetizable core, the engaging surfaces of said core parts having a mating irregular shape.

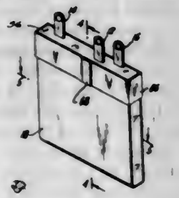
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3,165,678

## FLAT RECTIFIER STACK

Bernard Bernstein, Brooklyn, N.Y., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey

Filed June 4, 1962, Ser. No. 199,918
5 Claims. (Cl. 317—234)



1. A flat rectifier assembly comprising a plurality of flat selenium cells, each cell having a base plate and a selenium coating surface thereon, a plurality of flat metal terminal plates each having a pair of opposite side contact surfaces and an upwardly projecting soldering lug at its upper edge, said cells and terminal plates being stacked with at least two of said contact surfaces of said terminal plates in contact with two selenium surfaces of said cells, a sheet metal case bent to U shape and having parallel sides and a web portion connecting said sides, said stack of selenium cells and terminal plates disposed within said case with an edge thereof parallel to and spaced from said web and having the respective flat surfaces of the end members of said stack engaging the inner surfaces of the sides of the case in a snug fit, and with said soldering lugs projecting laterally from the case, and the sides of the case having margins extending over the respective edges of the cells and plates in said stack and together with the peripheral edges of the stack forming a trough around the peripheral sides of the case and stack, and a polymerized insulative potting compound filling the trough and covering the peripheral edges of the cells and plates with the soldering lugs projecting through and exposed on the exterior side of the compound.

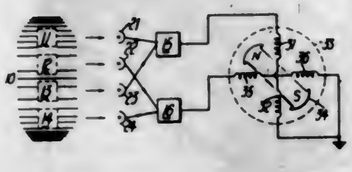
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3,165,679

## MEASURING APPARATUS FOR DETERMINING THE EXTENT AND SENSE OF RELATIVE MOVEMENT OF ONE OBJECT WITH RESPECT TO ANOTHER

Ernest Thomas Angus and Alexander Turnbull Shepherd, Edinburgh, Scotland, and David Theodore Nelson Williamson, near Wrotham, England, assignors to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland

Filed Mar. 8, 1961, Ser. No. 94,303
Claims priority, application Great Britain, Mar. 11, 1960, 8,585/60
7 Claims. (Cl. 318—27)



1. Measuring apparatus for determining the extent and sense of the relative movement of a first object in one or other of two opposite directions with respect to a second object including means for setting up a cyclic wave pattern adapted to move with respect to said second object in dependence on the said relative movement of said first object and wherein the conditions of the pattern at first, second, third and fourth positions fixed with respect to said second object are so related that the conditions at the first and second positions are in quadrature with one another and the conditions at the third and fourth positions are respectively in counterphase with the conditions at said first and second positions, first, second, third and fourth detecting devices fixed with respect to said second object and operative during the said movement of the pattern to produce electrical signals responsive to and indicative of the conditions of the pattern at said first, second, third and fourth positions respectively, a synchronous electrical motor having a permanent-magnet unwound rotor and a plurality of stator windings of the type in which the angular position of the rotor is determined by the relative conditions of energisation of said windings, the motor being capable of working down to zero frequency, and means for so energising said stator windings by the signals from the four detecting devices as to cause the angular position of the rotor to represent



by the extent and direction of its displacement from a datum angular position the extent and direction of said movement of the first object.

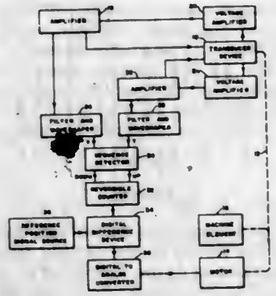
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3,165,680

## DIGITAL POSITION CONTROL SERVOSYSTEM

Robert W. Morrison, Clarence, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 6, 1960, Ser. No. 54,109
6 Claims. (Cl. 318—28)



1. In position control apparatus for a movable machine device, the combination of first oscillatory signal amplifying means, second oscillatory signal amplifying means, a transducer device operable to respond to the movement of said machine device, said transducer device having a first variable coupling circuit connected around said first signal amplifying means for providing a first control signal from said first signal amplifying means in accordance with the coupling variation of said first circuit due to movement of said machine device, said transducer device having a second variable coupling circuit connected around said second signal amplifying means for providing a second control signal from said second signal amplifying means in accordance with the coupling variation of said second circuit due to movement of said machine device, signal comparison means operative with each of said first and second control signals for providing a position controlling signal in accordance with a predetermined comparison of said first and second control signals, and motor means connected to said signal comparison means and operable with said machine device for controlling the movement of said machine device in response to said position controlling signal.

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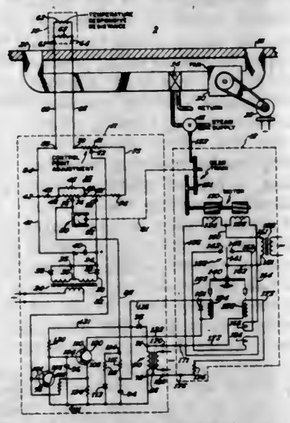
3,165,681

## MOTOR CONTROL APPARATUS EMPLOYING A BALANCEABLE SWITCHING DEVICE

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,666
4 Claims. (Cl. 318—28)

1. In a temperature control system, a bridge circuit having a direct current power supply, a space temperature responsive resistance element, and rebalance potentiometer connected therein for providing an output, a reversible motor connected to control a space temperature changing apparatus, switch means for controlling the energization of said reversible motor in one direction or another depending upon the operation of said switch, a first solenoid for operating said switch means, a direct current amplifier, means connecting said output to said amplifier and said amplifier to control the energization of said first solenoid in response to said output, a second solenoid for counter biasing said switch means, and an alternating current power supply connected to said second solenoid, said switch means energizing said motor means in one direction when



said first solenoid has an output greater than said second solenoid and in an opposite direction when said first solenoid has an output less than said second solenoid.

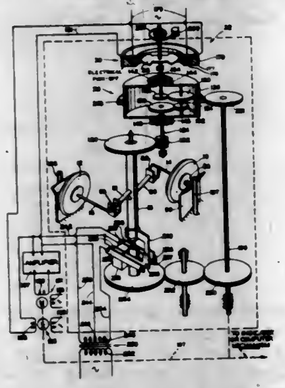
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3,165,682

## FLUID PRESSURE SENSING MECHANISM OPERATIVELY ARRANGED TO COMPENSATE FOR CHANGING ENVIRONMENTAL CONDITIONS

Fred P. Modrowsky, Union, and Harry G. Anastasia, Paramus, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Feb. 27, 1961, Ser. No. 91,860
17 Claims. (Cl. 318—32)

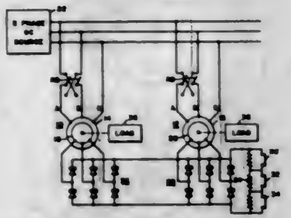


8. In a fluid pressure sensitive mechanism of a type including a rocking shaft, a pair of diaphragm capsules disposed at opposite sides of said shaft, a pair of operating arms projecting radially from the rocking shaft, and linkage means operatively connecting one of said diaphragm capsules to one of said arms and the other of said diaphragm capsules to the other of said arms for imparting angular movement to said shaft in response to changes in the fluid pressure applied to said capsules; the improvement comprising a bimetallic member mounted on each of said arms and effective to flex in response to changes in ambient temperature in a sense to vary the effective length of said operating arms and thereby the operating range of said linkage means with changes in said ambient temperature, a first pendulous bimetallic post for supporting one of the diaphragm capsules, a second pendulous bimetallic post for supporting the other of the diaphragm capsules, said posts being effective to flex in response to

changes in ambient temperature so as to vary the position of said capsules relative to the shaft and thereby compensate for variations in the modulus of elasticity of said capsules caused by said changes in the ambient temperature, leaf spring means for biasing the pendulous bimetallic posts toward an initial position relative to said shaft, jewel bearing means for supporting the opposite ends of said rocking shaft, an epicyclic differential gearing mechanism including a casing rotatably mounted and having a ring gear affixed thereto, a pair of sun gears, jewel bearing means rotatably mounting the sun gears in the casing, a pair of planetary gears, jewel bearing means rotatably mounting the planetary gears in the casing, said planetary gears being arranged in driving relation between the sun gears, an electrical pick-off device having a control element angularly movable from a predetermined null signal position, gear means for drivingly connecting the rocking shaft to one of the sun gears, means drivingly connecting the other sun gear to the control element of the electrical pick-off device to angularly move the control element from the null signal position to effect an output signal for controlling speed and direction of rotation of a variable speed reversible motor means, a follow-up shaft to be driven by the reversible motor means and including gear means for drivingly connecting the follow-up shaft to the ring gear of the epicyclic differential gearing mechanism so that the motor means may effectively drive the control element through the epicyclic differential gearing mechanism so as to angularly reposition the control element to the null signal position relative to the electrical pick-off device.

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**3,165,683**
**MOTOR CONTROL**
**Albert T. Bacheler, Eggertsville, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 27, 1961, Ser. No. 119,971**
**5 Claims. (Cl. 318—44)**

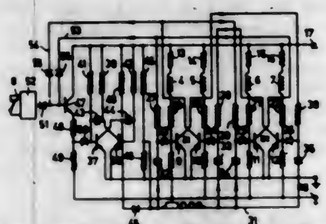


1. An electric motor system comprising a plurality of induction motors each having a wound secondary, a like plurality of rectifiers, each having an input and an output, said secondary of each motor being coupled to the input of a different one of said rectifiers, resistance means, and means connecting the outputs of said rectifiers to said resistance means, whereby said resistance means is a load on said rectifiers.

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**3,165,684**
**STEPPING MOTOR WITH BISTABLE TRIGGERING**
**Johannes Enslink, Hendrikus Cornelis van Reeuwe, and Hans van Kampen, all of Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed July 3, 1961, Ser. No. 121,715**
**Claims priority, application Netherlands July 26, 1960**
**13 Claims. (Cl. 318—138)**

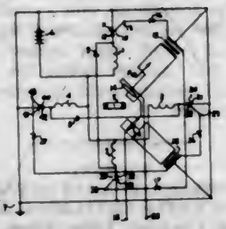
1. Apparatus for operating a motor having first and second stator windings each of which is adapted to be supplied by an energizing voltage, each of said stator windings comprising first and second winding elements, said apparatus comprising first and second bistable trigger circuits each of which has an input circuit and first and second output connections, said output connections of said first trigger circuit being individually connected to the winding elements of said first stator winding and the output connections of said second trigger circuit being individually connected to the winding elements of said second stator winding for supplying out of phase bivalued energizing voltages thereto, means for generating control pulses for selectively switching said bistable trigger circuits in a predetermined order and including an output circuit, first and second gate circuit means having an open and closed condition and interconnecting the output cir-



cuit of said pulse generating means with the input circuit of said first and second trigger circuits, respectively, said first gate circuit being further connected to an output connection of said second trigger circuit and said second gate circuit being further connected to an output connection of said first trigger circuit, the state of said first and second bistable trigger circuits determining the condition of said first and second gate circuit means, said gate circuits and said bistable trigger circuits coacting so that successive control pulses produced will alternately switch said first and second bistable trigger circuits, and switch means for actuating said pulse generating means to produce said control pulses.

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**3,165,685**
**SOLID-STATE COMMUTATOR DIRECT CURRENT MOTOR EMPLOYING HALL EFFECT ELEMENTS**
**Erich W. Mantouffel and George Kovatch, Ithaca, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed Apr. 18, 1962, Ser. No. 188,439**
**14 Claims. (Cl. 318—138)**



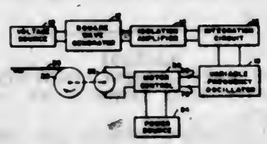
1. An electric motor energizable from a source of unidirectional potential comprising:
(*a*) a rotor member having magnetic poles of opposite polarity thereon;
(*b*) a stator member, an even number of armature windings positioned in said stator member in torque-producing relation with said rotor;
(*c*) a plurality of solid-state switching devices each having control means for rendering its associated switching device conductive, each of said switching devices controlling the connection of a respective one of said windings to a source of unidirectional potential so that unidirectional current will flow in each of said windings when its respective switching device is conducting;



(*d*) a pair of Hall effect generators for each direction of motor rotation positioned to sense flux emanating from said magnetic poles;
(*e*) means for applying energizing electrical current to one pair of said Hall generators; and
(*f*) means associated with each of the Hall effect generators of said pair for applying a gating signal to the control means of a first switching device to establish current flow within the armature windings of said motor to produce an armature field in a first direction when said Hall effect generator is under the coincident inter-action of its applied energizing current and rotor flux of a first polarity and for applying a gating signal to the control means of a second switching device to establish current flow in the armature winding of said motor to produce an armature field electrically displaced 180 degrees from said first armature field when that same Hall effect generator is under the coincident inter-action of its applied energizing current and rotor flux of a second polarity.

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**3,165,686**
**MOTOR CONTROL APPARATUS**
**Ian M. Macdonald, Kenmore, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed July 24, 1961, Ser. No. 126,243**
**2 Claims. (Cl. 318—163)**

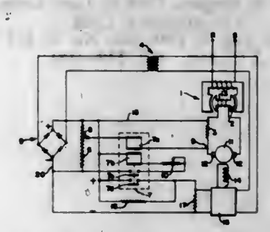


1. In apparatus operative with a motor to vary periodically the speed of said motor, the combination of first signal providing means for supplying a substantially square wave first control signal, second signal providing means for supplying a second control signal, signal frequency control means operative with said first signal providing means to provide a selected frequency variation period for said first control signal, signal frequency variation amplitude control means commonly operative with said signal frequency control means and being operative with said first signal providing means to integrate the first control signal and thereby provide a selected frequency variation amplitude for said first control signal, with said second signal providing means being operative with said motor and responsive to said integrated first control signal for energizing said motor with said second control signal to vary the speed of said motor by an amount in accordance with the amplitude of said frequency variation of the first control signal and in a periodic manner in accordance with the frequency variation period of said first control signal.

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**3,165,687**
**AUTOMATIC MEANS FOR ROTATING A LAGGING OR LEADING ROTOR OF A SYNCHRONOUS MACHINE**
**Paul Lauper, Zurich, Switzerland, assignor to Oerlikon Engineering Company, Zurich, Switzerland, a corporation of Switzerland**
**Filed Mar. 3, 1961, Ser. No. 93,155**
**Claims priority, application Switzerland, Mar. 19, 1960, 3,106/60**
**4 Claims. (Cl. 318—167)**

1. In a synchronous dynamo machine having a stator, a rotor, an excitation winding, and a corrective circuit for varying the excitation current to correctively rotate the rotor should it lead or lag: apparatus for automatically controlling said corrective circuit comprising
(*a*) a transformer whose primary is connected to the stator terminals,
(*b*) a rectifier bridge whose input terminals are connected to the secondary of said transformer,
(*c*) a potentiometer connected to the output terminals



of said rectifier bridge and divided into sections by a movable tap,
(*d*) a resistor in series with said excitation winding and connected across one of the potentiometer sections, and
(*e*) means interposed between said resistor and said potentiometer and responsive both to excitation current and to stator voltage for breaking said corrective circuit whenever

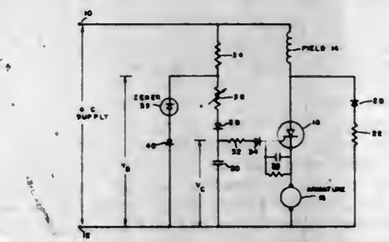
$$\frac{I_e}{U} = -\frac{I_{eo}}{U_n}\left(\frac{X_d}{X_q}-1\right)$$

in which:

$I_e$=excitation current
$U$=stator voltage
$I_{eo}$=no-load excitation current
$U_n$=rated voltage
$X_d$=reactance parallel to rotor axis
$X_q$=reactance cross wise to rotor axis

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**3,165,688**
**CEMF RESPONSIVE MOTOR SPEED CONTROL CIRCUIT**
**Frank W. Gutzwiller, Auburn, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Mar. 15, 1962, Ser. No. 179,964**
**6 Claims. (Cl. 318—246)**

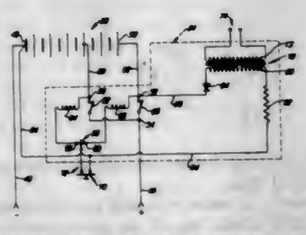


1. A speed control circuit for a direct current motor having an armature and a field, comprising a controlled rectifier having an anode, a cathode, and a control electrode, means coupling said armature, said field, and the anode-cathode path of said controlled rectifier in a series circuit, a second rectifier having an anode and a cathode, means coupling said second rectifier in parallel with said anode-cathode path of said controlled rectifier so that the anode-cathode path of said second rectifier is in the opposite direction relative to said anode-cathode path of said controlled rectifier, a capacitor coupled in a circuit including the control electrode-cathode path of said con-

trolled rectifier and further including said armature, and an impedance element coupled in a circuit including the control electrode-anode path of said controlled rectifier.

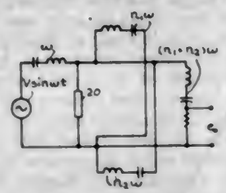
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**3,165,689**
**STORAGE BATTERY DEVICE FOR STARTING VEHICLES**
Elroy E. Hughes, 3739 N. Land Drive, Los Angeles 8, Calif.
Filed Aug. 3, 1960, Ser. No. 47,291
2 Claims. (Cl. 320—18)



2. A storage battery device for use as an auxiliary source of power for starting vehicles which comprises: a rectangular case having a bottom wall and longitudinal side walls and transverse end walls, and having a plurality of transverse separator walls extending between said side walls so as to divide the case into a plurality of receptacle portions of the case; a plurality of storage cells disposed in respective receptacle portions of the case, said cells being electrically connected in series so that in combination the cells comprise a storage battery; a negative terminal and a positive terminal on said storage battery, and intermediate outlet means on said storage battery at an electrical potential intermediate the potentials of the negative and positive terminals; a pair of output cables, one cable being connected to one of said battery terminals; and a battery maintainer and switching unit disposed in one of said receptacle portions of the case, said unit including electrical switching means electrically connected to the other cable, and to the other battery terminal and said intermediate outlet means, said swtiching means being selectively operable in one position thereof to electrically connect said other cable with said other battery terminal for use of the device in connection with high voltage electrical systems, and in another position thereof to electrically connect said other cable with said intermediate outlet means for use of the device in connection with low voltage electrical systems; said unit also including a battery maintainer comprising electrical input means for receiving electrical power from an alternating current power source, three maintainer output conductors connected to said storage battery so as to provide charging current to said storage battery, two of the conductors being electrically connected to the respective storage battery terminals and the third conductor being connected to said intermediate storage battery outlet means, and electrical circuit means connected between said maintainer input means and said maintainer output conductors for reducing the voltage and rectifying the current provided to the maintainer from said alternating current power source, said circuit means including current limiting means for limiting the amount of charging current provided to the storage battery, a voltage-reducing transformer having primary and secondary windings, said primary winding being connected to said electrical input means and rectifying means connected to said transformer secondary winding and to said three conductors so as to provide greater charging current to a portion of the storage battery between one battery terminal and said intermediate battery outlet means than between the other battery terminal and said intermediate outlet means.

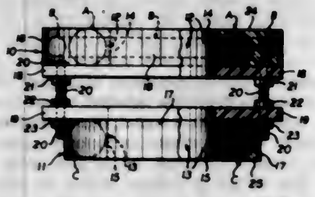
**3,165,690**
**HARMONIC GENERATOR UTILIZING A NONLINEAR REACTANCE**
Irving Kaufman, Woodland Hills, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio
Filed Dec. 12, 1960, Ser. No. 75,413
12 Claims. (Cl. 321—69)




5. A microwave harmonic generator comprising:
a source of first frequency electrical energy;
a non-linear reactance element, to which said energy is applied, for generating a current therethrough which includes at least first, second and third current components having first, second and third frequencies;
resonant circuit means including said element for maximizing said second and third current components;
and output circuit means for extracting power substantially only at a frequency which corresponds to the arithmetic sum of at least two of said three frequencies, and which is higher than any of said three frequencies.

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**3,165,691**
**METHOD OF RECOGNIZING INDUSTRIAL WIPING CLOTHS AND TOWELS BY MAGNETIC DETECTION**
Maurice E. McClanahan, Cleburne, Tex., assignor to Industrial Wiping Cloth Co. Inc., Cleburne, Tex.
Filed Nov. 15, 1961, Ser. No. 152,428
4 Claims. (Cl. 324—41)

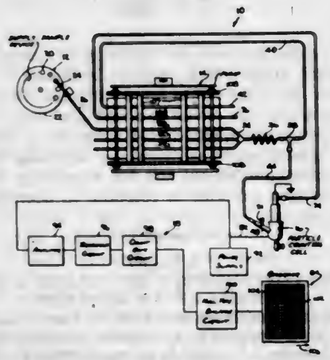


2. The method of detecting magnetic properties in a wiping cloth or the like having a tracer of magnetic material, whereby a second wiping cloth is dispensed from a dispensing device when the presence of magnetic material is detected in said first wiping cloth, comprising the steps of passing said first wiping cloth through three fixed co-axial coils, one of said coils being a primary excited by an alternating current source having a frequency of substantially 60 cycles, another of said coils being co-planar with said first named coil and which is a relatively close secondary, and the third coil being in a plane separate and apart from the first named plane but parallel thereto and which coil is a relatively distant secondary having more turns of wire than said close secondary, both of said secondaries being wound with the same kind of wire, the coefficient of linkage between the primary and the close secondary being normally equal to that between the primary and the distant secondary due to the differences of proximity relative to the primary and the number of turns of the same kind of wire of the close and distant secondaries, the secondaries being connected in series polarity opposition; and amplifying any current differential between the close and distant secondaries as the distance between the first wiping cloth and said coils is reduced, and employing any amplified current differential to operate an electromagnetic signaling device to dispense said second wiping cloth from said dispensing device.



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**3,165,692**
**CONTINUOUSLY OPERABLE APPARATUS AND METHOD FOR COUNTING PARTICLES IN SUCCESSIVE PORTIONS OF A FLOWING FLUID STREAM**
Jack Isreeli, Tuckahoe, and Theodore Bilichniansky, Pleasant Valley, N.Y., assignors to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed May 15, 1961, Ser. No. 116,907
13 Claims. (Cl. 324—71)



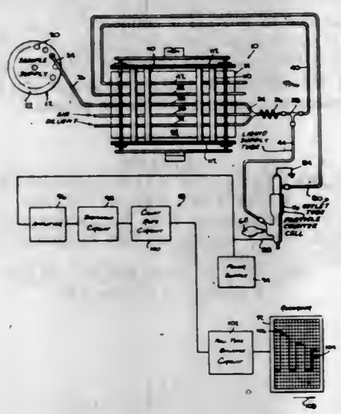
1. Apparatus for determining the number of particles suspended in a liquid having a different electrical conductivity than said particles, comprising a substantially enclosed cell having a liquid inlet and a liquid outlet and means providing a constricted flow path for the liquid between said inlet and outlet, pump means connected to said inlet for transmitting a continuous stream of the liquid to said cell, pump means for applying a suction to said outlet for causing the continuous flow of the liquid through said constricted flow path to said outlet, and means for measuring the electrical conductivity of said flow path during the flow of the liquid therethrough as a measurement of the number of particles in said liquid.

7. A method of continuously determining the number of particles suspended in a liquid having a different electrical conductivity than said particles, comprising continuously transmitting a stream of the liquid through a conduit having a constricted passage therein and electrodes at opposite sides, respectively, of said passage for sensing changes in conductivity of the liquid as it and a particle therein flows through said passage, and operating electrical counting means under the control of said sensing electrodes in response to changes in conductivity of the particles-containing liquid as it flows through said constricted passage.

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**3,165,693**
**CONTINUOUSLY OPERABLE APPARATUS AND METHOD FOR COUNTING PARTICLES IN SUCCESSIVE PORTIONS OF A FLOWING FLUID STREAM**
Jack Isreeli, Tuckahoe, and Theodore Bilichniansky, Pleasant Valley, N.Y., assignors to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Feb. 23, 1962, Ser. No. 175,172
13 Claims. (Cl. 324—71)

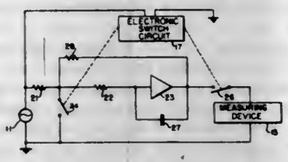
1. Particle counting apparatus for continuously determining the number of particles in a liquid having a different electrical conductivity than said particles, said apparatus comprising:
(*a*) a cell having first and second chambers separated from each other by a wall having an aperture therein forming a constricted flow path for the liquid from said first chamber to said second chamber,
(*b*) said first chamber having a liquid inlet and said second chamber having a liquid outlet,
(*c*) means connected to said inlet for transmitting a stream of liquid to said first chamber,



(*d*) means connected to said outlet for causing flow of the liquid through said constricted flow path to said outlet,
(*e*) means for measuring the electrical conductivity of said flow path during the flow of the liquid therethrough as a measurement of the number of particles in said liquid, and
(*f*) means in communication with said first chamber for varying the pressure therein and thereby controlling the level of liquid in said first chamber.

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**3,165,694**
**AVERAGE SIGNAL VALUE MEASURING MEANS USING STORAGE MEANS ALTERNATELY CONNECTED TO THE SIGNAL AND A D.C. MEASURING MEANS**
Frank M. Young, Boston, Mass., assignor to Adage, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 30, 1960, Ser. No. 52,833
11 Claims. (Cl. 324—111)

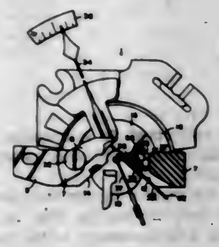



1. Apparatus for translating signals from a source of alternating current signals to obtain an indication of the magnitude of the signals, said apparatus comprising an amplifier having an input circuit and an output circuit, first switching means operating in synchronism with said signal source to apply the signals from said source to said input circuit during alternate half cycles of said signals, said switching means permitting current flow both to and from the input circuit during said alternate half cycles,

a first feedback circuit coupled between said output circuit and said input circuit, said first feedback circuit having a substantially resistive impedance to enable said amplifier to reproduce the signals applied to said input circuit, a second feedback circuit coupled between said output circuit and said input circuit, said second feedback circuit having a substantially capacitive impedance to accumulate an amount of charge equivalent to the magnitude of said signals during said alternate half cycles and to hold said charge during the remaining half cycles of said alternating current signals, direct voltage measuring means, and a second switching means operating in synchronism with said signal source to provide a connection from said output circuit to said voltage measuring means during the remaining half cycles when said charge is held and means connecting one terminal of said signal source and said measuring means to a common reference potential.

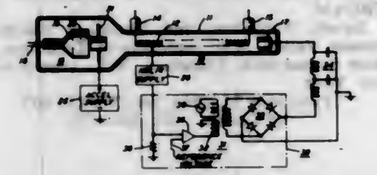
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**3,165,695**
**CALIBRATION ADJUSTER FOR REPULSION VANE TYPE INSTRUMENTS**
Dennis F. Hoerty, Jersey City, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 22, 1960, Ser. No. 77,694
1 Claim. (Cl. 324—147)



In an instrument of the character described, a supporting member having a base portion and a circularly cylindrical portion extending outwardly of said base portion and having an end wall spaced from said base portion, said cylindrical portion intermediate said end wall and said base portion being provided with a sector-like aperture opening outwardly through the peripheral wall of said cylindrical portion, a shaft having a portion located within said aperture and coaxial of said cylindrical portion, means pivotally supporting said shaft on said supporting member, a first plate-like member of magnetic material carried by said shaft portion and extending outwardly therefrom, a second plate-like member of magnetic material, an elongated plate-like member of nonmagnetic material having a longitudinally projecting protuberance at one end thereof and having a laterally projecting protuberance at the opposite end thereof, said lateral protuberance having an operating finger extending outwardly therefrom in a direction generally longitudinal of said elongated member, said one end of said elongated member being positioned within said aperture with said protuberance engaging said cylindrical portion end wall and with said elongated member lying in a plane substantially parallel to the plane of said first magnetic member when said shaft is in a first rotative position, means securing said second magnetic member to the surface of said elongated member adjacent said first magnetic member, the end surface at said opposite end of said elongated member being arcuate about said protuberance, and a clamp carried by said supporting member and overlying said end surface for clampingly securing said elongated member in adjusted pivotal position to determine the degree of congruence of said magnetic members.

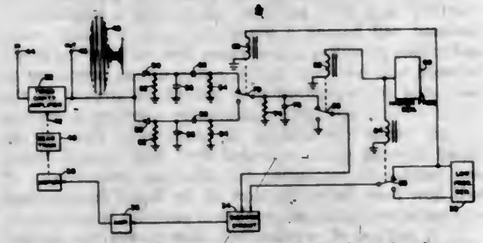
**3,165,696**
**COLLECTOR VOLTAGE CONTROL CIRCUIT FOR TRAVELING WAVE TUBE EMPLOYED IN A RADIO REPEATER**
Kenneth M. Poole, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 17, 1961, Ser. No. 96,490
14 Claims. (Cl. 325—4)



12. A radio repeater for receiving and transmiting an intermittent signal, said repeater including a traveling wave tube including means for directing an electron beam along an interaction circuit to a collector, means for conserving power supplied to said collector in the absence of said signal comprising means for sampling the current in said interaction circuit and for decreasing the voltage applied to said collector in response to decrease in said current.

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**3,165,697**
**AUTOMATIC TUNING CIRCUIT FOR A TRANSMITTER CAVITY AMPLIFIER**
Alfred Reich, Levittown, and Dale M. Osterman, Haddonfield, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Dec. 19, 1961, Ser. No. 160,679
5 Claims. (Cl. 325—127)



1. In a transmitter an automatic tuning circuit comprising a cavity amplifier tunable by a moving plunger, a motor connected to said plunger, a pair of rectifying and filtering circuits connected in parallel to the output of said amplifier, a switch means disposed for alternate connection to each of said rectifying and filtering circuits, a summing circuit, a low frequency generator connected to said summing circuit, a relay connected to said generator and responsive to the output signal of said generator for operation of said switch means, and means connecting the output of said switch means to said summing circuit, and amplifier means connecting said summing circuit to said motor.

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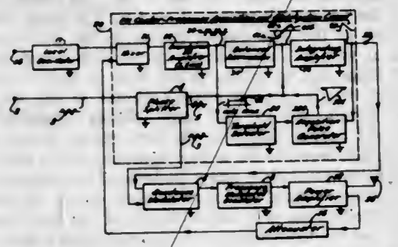
**3,165,698**
**AUTOMATIC FREQUENCY STABILIZATION UTILIZING OSCILLATION SEARCH SWEEP**
Clifford K. Friend, Northridge, Adrian D. Taylor, West Covina, John Edward Stanley, Altadena, and Richard H. Swartley, Monrovia, Calif., assignors to Microdot Inc., South Pasadena, Calif., a corporation of California
Filed Aug. 2, 1962, Ser. No. 214,347
20 Claims. (Cl. 325—148)

11. A circuit for acquiring and stabilizing the center frequency of a frequency-modulated signal, including:



a first input terminal for the frequency-modulated signal;

means including a balanced discriminator having substantially identical operating characteristics on both sides of a correct center frequency and operable through a particular range of frequencies for demodulating the frequency-modulated signal to produce an error signal having a magnitude representing the magnitude of the deviation of the actual center frequency of the frequency-modulated signal from the correct center frequency and having a polarity representing the direction of the deviation



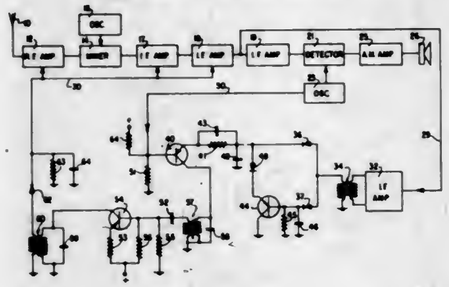
of the actual center frequency of the signal from the correct center frequency;

means coupled effectively to the input terminal and to the error-signal producing means for generating a center frequency acquisition pulse having rising and falling characteristics whenever the magnitude of the pulse from the demodulating means exceeds a particular value to indicate that the deviation of the actual center frequency exceeds the particular range of frequencies of the demodulating means; and

means operatively coupled to the last mentioned means for using only a particular portion of the rising and falling characteristics of the acquisition pulse to return the frequency-modulated signal to the correct center frequency.

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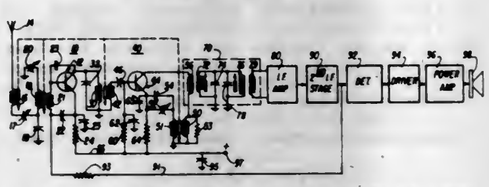
**3,165,699**
**AUTOMATIC GAIN CONTROL SYSTEM FOR SUPPRESSED CARRIER SINGLE SIDEBAND RADIO RECEIVERS**
Frank Heamueller, Chicago, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed June 20, 1962, Ser. No. 203,877
6 Claims. (Cl. 325—410)



1. In a single sideband receiver, said receiver having a plurality of stages for translating a received wave signal and also having a source of continuous wave signals for restoring the carrier to said received wave signal, an automatic gain control system including in combination, first circuit means including a rectifier circuit for applying a unidirectional gain control voltage to the signal translating stages of said receiver, second circuit means including an alternating current amplifying device coupled between said continuous wave signal source and said first circuit means, a first detector circuit including a long time constant decay network for supplying a voltage indicative of the level of the signal translated by said receiver to control the gain of said alternating current amplifying device, switching means operable between a conductive and a non-conductive state coupled between said long time constant decay network and a reference potential, and a second detector circuit including a short time constant decay network for providing a voltage indicative of the level of the signal translated by said receiver to control the conductive state of said switching means thereby to discharge said long time constant decay network subsequent to the reduction of the level of the signal translated by said receiver.

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**3,165,700**
**MIXER CIRCUIT FOR AUTODYNE RECEIVER IN WHICH UNTUNED COIL COUPLES SIGNAL TO INTERMEDIATE FREQUENCY TRANSFORMER**
Bernhard Birkenes, deceased, late of Chicago, by Randi Birkenes, administratrix, Chicago, Ill., assignor to Motorola Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1962, Ser. No. 231,870
7 Claims. (Cl. 325—440)



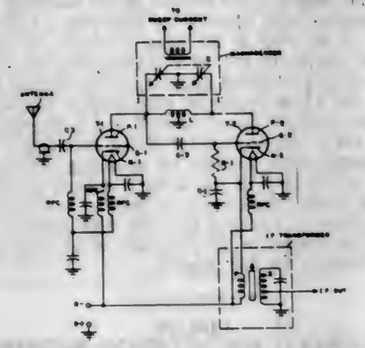
1. In a wave signal receiver having a stage for translating the frequency of a received signal to an intermediate frequency signal and a stage for selectively passing said intermediate frequency signal, the combination including a transistor having emitter, base, and collector electrodes; means coupling said received signal to said base electrode; a circuit path connecting said collector electrode to said emitter electrode, said path including an untuned inductance means series connected with a resonant circuit tuned to a predetermined frequency, with said path providing regenerative feedback to produce oscillations at said predetermined frequency other than the frequency of said received signal so that said oscillations are mixed with said received signal in said transistor to produce said intermediate signal; and circuit means including a resonant circuit tuned to said intermediate frequency inductively coupled to said untuned inductance means to pass said intermediate frequency signal.

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**3,165,701**
**RADIO-FREQUENCY OSCILLATOR, AMPLIFIER AND CONVERTER**
Lance R. Jacobsen, deceased, late of San Francisco, Calif., by Charles E. Stimson, Jr., administrator, Los Angeles County, Calif., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 17, 1962, Ser. No. 232,342
3 Claims. (Cl. 325—440)

1. A radio-frequency converter including an antenna for receiving radio-frequency signals; a first electron-discharge device coupled to said antenna for amplifying the received radio-frequency signals; a second electron-discharge device to act as a local oscillator; and L-C tank circuit having a tap maintained at R-F ground; means for coupling said L-C tank circuit to the electron collecting electrodes of said first and said second discharge devices; means for electromagnetically sweeping said local oscillator; means for feeding back radio-frequency energy from

said L-C tank circuit to said second discharge device; and means connected to the electron emitting electrode of



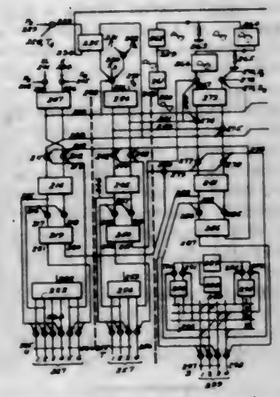
said second electron-discharge device for deriving a difference frequency between said radio-frequency signals and the signals generated by said local oscillator.

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3,165,702
## SYSTEM SUPPLYING ELECTRIC PULSES IN CYCLIC ORDER TO A NUMBER OF CIRCUITS

Robert Adriaan Grijseels and Hendrikus Hermanus Tonen, both of Hengelo, Overijssel, Netherlands, assignors to N.V. Hollandse Signaalapparaten, Hengelo, Netherlands, a firm of the Netherlands

Filed Oct. 3, 1961, Ser. No. 143,027
Claims priority, application Great Britain, Oct. 4, 1960, 33,996/60
7 Claims. (Cl. 328—75)



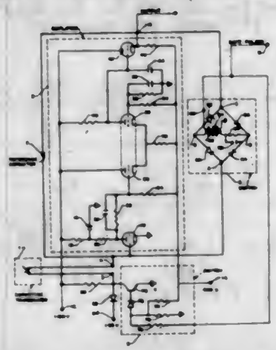
1. In a system for successively supplying pulses to a number of pulse circuits in a cyclic order in which each cycle starts with a pulse supplied to a predetermined first one and ends with a pulse supplied to a predetermined last one of the said pulse circuits, a pulse source and a coincidence circuit with an output circuit and a first and a second input circuit for each pulse circuit, a connection between the pulse source and the first input circuit of the coincidence circuit for each pulse circuit and a connection between the output circuit of each coincidence circuit and the corresponding pulse circuit, a first and a second bi-stable trigger circuit capable of being in a first and a second state and for each of these trigger circuits, a first control circuit for setting it to its first state and a second control circuit for setting it to its second state, as well as a first output circuit and a second output circuit supplying different voltages depending on the state of the trigger circuit, a connection between the first output circuit of the first trigger circuit and the second input circuit of the coincidence circuit connected to the first one of the pulse circuits and to the second input circuits of a number (which may be zero) of coincidence circuits, connected to pulse circuits following on the first pulse circuit, and a connection between the first output circuit of the second trigger circuit and the second input circuit of one of the coincidence circuits not connected to the first output circuit of the first trigger circuit, including at any rate the coincidence circuit connected to the last one of the pulse circuits, and a coincidence circuit with a first and a second input circuit and an output circuit connected with its output circuit to the first control circuit of the second trigger circuit and its first input circuit connected to the first output circuit of the first trigger circuit, as well as a coincidence circuit with a first and a second input and an output circuit with its output circuit connected to the second control circuit of the second trigger circuit and its first input circuit connected to the second output circuit of the first trigger circuit and a connection between the second input circuits of the said two coincidence circuits and a pulse source connected to a coincidence circuit, the second input circuit of which is connected to the first output circuit of the first trigger circuit, and two coincidence circuits each with a first and a second input circuit and an output circuit and a connection between the output circuit of the first one of these coincidence circuits and the first control circuit of the first trigger circuit, as well as a connection between the output circuit of the second one of these coincidence circuits and the second control circuit of the first trigger circuit and a connection between the second input circuits of the said two coincidence circuits and a pulse source connected to a coincidence circuit, the second input circuit of which is connected to the first output circuit of the second trigger circuit, as well as a first system control circuit connected to the first input circuit of the last mentioned first coincidence circuit and a second system control circuit connected to the first input circuit of the last mentioned second coincidence circuit.

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3,165,703
## CAPACITIVE TRANSDUCER CIRCUIT

Theodore Lerner, Amherst, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.

Filed Nov. 9, 1961, Ser. No. 151,225
12 Claims. (Cl. 328—127)



1. A circuit to be coupled with capacitive transducer means to deliver an analog voltage proportional to the instantaneous value of capacity thereof, comprising a source of constant potential; reference capacitor means of fixed capacity, said transducer means and said capacitor means being coupled together in series at a common junction; and said transducer and capacitor means being connected to said source of potential; an amplifier connected across one of said means, said amplifier having an input connected with said junction and an output delivering said analog voltage; first switch means for shunting said amplifier when closed; second switch means for shunting, when closed, the potential applied to the other of said means; and control means for simultaneously and periodically closing both switch means.

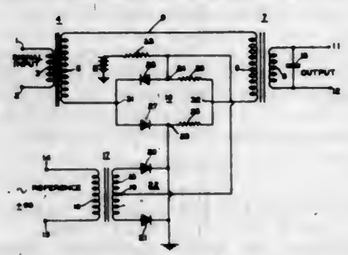


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3,165,704
## PHASE DISCRIMINATOR

George A. Shacknow, Bronx, N.Y., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Oct. 26, 1961, Ser. No. 147,975
14 Claims. (Cl. 328—166)



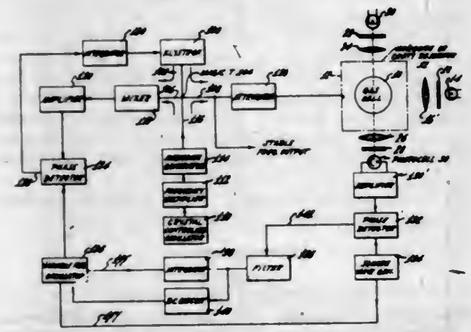
1. A phase discriminator for discriminating against quadrature signals, comprising an input adapted to receive a signal having a desired in-phase component and an unwanted quadrature component, an output, a circuit having two legs connecting the input to the output including a direct connection in one leg and a quadrature rejection network in the other leg including switching means rendered conducting when the desired in-phase component is a maximum and the unwanted quadrature component is a minimum and rendered nonconducting when the unwanted quadrature component is a maximum and the desired in-phase component is a minimum.

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3,165,705
## GAS CELL FREQUENCY STABILIZATION

Robert H. Dicke, 321 Prospect Ave., Princeton, N.J.

Filed Apr. 30, 1958, Ser. No. 732,086
19 Claims. (Cl. 331—3)



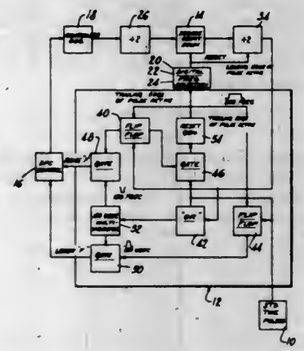
1. A frequency stabilization system comprising, in combination, a gas which exhibits atomic resonance at a predetermined frequency; means for exciting the gas so that atomic resonance can occur; a frequency generator for applying a wave to said gas the frequency of which is varied between two limits equally spaced from said atomic resonance frequency; means for applying polarized light to the gas and for optically detecting changes in the polarization state of said applied light upon passage through the gas; and means responsive to differences in said polarization state at said two frequency limits for controlling the center frequency of said generator.

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3,165,706
## FREQUENCY GENERATING SYSTEM

Everett R. Sarratt, Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware

Filed Aug. 9, 1961, Ser. No. 130,331
3 Claims. (Cl. 331—18)



1. An electrical system for producing output signals having any of a plurality of desired frequencies including a master oscillator capable of emitting frequencies over a desired frequency range and means for varying the output frequency of said master oscillator,

a time standard oscillator capable of producing an output signal which is closely controlled to a constant frequency,

frequency dividing means connected to receive the output of saidmaster oscillator for dividing said output by any of a number of desired integers including a first binary divider and a series of $n$ decade counters with switches for dividing said output by an integer up to $10^n$,

comparing means for comparing the outputs from said time standard oscillator and said dividing means and producing an output signal having a polarity and average voltage proportional to the direction and extent of departure of the dividing means pulse from the time standard pulse including a first flip-flop circuit and a second flip-flop circuit, a first pulse producing circuit for producing a pulse of a constant pulse duration, a first gate circuit connected to said first flip-flop circuit and to said first pulse producing circuit to which the pulse from said first pulse producing circuit is supplied, a second gate circuit connected to said second flip-flop circuit and to said pulse producing circuit to which the pulse from said first pulse producing circuit is supplied at the opposite polarity from said first gate, a third gate connected to said first flip-flop circuit, a second pulse producing circuit connected to receive an input from said third gate circuit producing a reset pulse having a greater duration than that of said first named pulse and connected to said dividing means and to said first and second flip-flop circuits to reset said dividing means and said circuits at the end of said reset pulse, such that when the output pulse from said dividing means leads that from said time standard oscillator, said flip-flop circuit is energized thereby disabling said first gate and enabling said third gate and said output pulse is also supplied to said first pulse producing circuit causing said circuit to emit a pulse to said second gate of a proper polarity to cause said automatic frequency control circuit to reduce the output

frequency of said master oscillator; and when the output pulse from said dividing means lags that from said time standard oscillator, the pulse from said oscillator energizes said second flip-flop circuit which closes said second gate and causes said first pulse producing circuit to emit a pulse to said first gate of a proper polarity to cause said automatic frequency control circuit to increase the output frequency of said master oscillator;

and an automatic frequency control circuit receiving the output of said comparing means and connecting it to said means for varying the output frequency of said master oscillator and for finally locking the phase of the divided master oscillator output to that of the time standard oscillator.

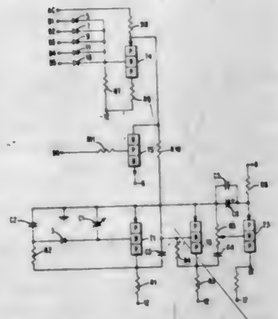
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**3,165,707**

## ZENER DIODE NOISE GENERATOR WITH FEEDBACK FOR THRESHOLD MAINTENANCE

Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 27, 1960, Ser. No. 78,385
2 Claims. (Cl. 331—78)



1. A noise generator comprising in combination, an electron discharge device having an input and an output circuit, means for supplying direct current operating potentials to said electron discharge device, a Zener diode having a predetermined threshold voltage, means for supplying direct current potential to said diode to bias said diode, circuit means connecting said diode to the input of said electron discharge device, and a degenerative feedback circuit connected between said diode and said output circuit to vary the bias of said diode in response to fluctuations in said output circuit the variations in bias continuously maintaining the diode at said threshold voltage.

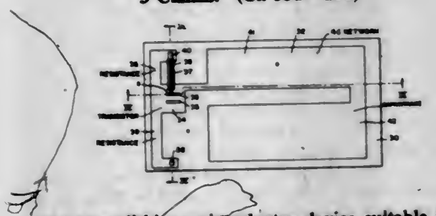
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**3,165,708**

## MONOLITHIC SEMICONDUCTOR OSCILLATOR

John P. Stelmak and John D. Husher, Greensburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 28, 1961, Ser. No. 106,240
3 Claims. (Cl. 331—108)



1. A monolithic semiconductor device suitable for use as a phase shift oscillator comprising: a unitary body of semiconductive material of a bulk material having a resistivity of at least 50 ohm centimeters and a carrier lifetime of at least 300 microseconds and being of a first type semiconductivity; said unitary body having in a first portion thereof a first and a second impurity doped semiconductive region to form with said bulk material three semiconductive regions of alternate conductivity type separated by p-n junctions and providing transistor functions; a plurality of other impurity doped semiconductive regions continuous and integral with one of said first and second regions for providing resistances to bias said transistor area to a desired operating point upon application of suitable potential thereto; first and second additional impurity doped semiconductive regions continuous and integral with said first semiconductive region, said first additional region opposed on the opposite surface of said unitary body by a low resistance portion to form an area providing the function of a distributed resistance-capacitance network and said second additional region opposed on the opposite surface of said unitary body by a region of opposite conductivity type to provide a capacitive function upon the application of a reverse bias thereto.

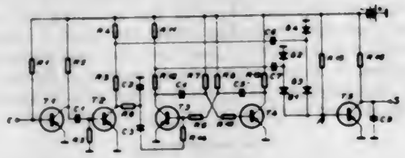
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**3,165,709**

## FREQUENCY SELECTION CIRCUIT, PARTICULARLY FOR CALL RECEIVERS

Hans Blöchlinger and Rudolf Kauffungen, Solothurn, Switzerland, assignors to Autophon Aktiengesellschaft, Solothurn, Switzerland

Filed Dec. 13, 1960, Ser. No. 75,571
Claims priority, application Switzerland, Dec. 24, 1959, 82,319/59
10 Claims. (Cl. 331—113)



1. A frequency selection circuit of the character described comprising first means to receive an alternating current input signal to convert such input signal into a first square wave, second means comprising an oscillator producing a second square wave and adapted to be synchronized in phase-locked relation by an external periodic signal approximately of the same frequency as the natural frequency of the oscillator, third means coupling said first means to said second means so as to synchronize said oscillator, and fourth means to rectify and superimpose said first and second square waves and to derive therefrom a resultant output signal of at least approximately continuous duration when the frequency of the external signal is so near to the natural frequency of said oscillator that said oscillator is synchronized by the external signal.

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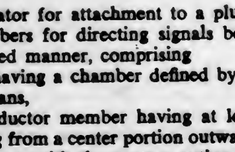
**3,165,710**

## SOLID STATE OSCILLATOR

Gene Strull, Pikesville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 27, 1961, Ser. No. 98,408
16 Claims. (Cl. 332—17)

9. A modulated oscillator comprising a semiconductor structure having four functional regions of alternate n- and p-type semiconductivity with p-n junctions therebetween, a semiconductor structure having three functional regions of alternate n- and p-type semiconductivity with p-n junctions therebetween, a direct current power source, means for connecting the four region structure, the three region structure and the power source in a series circuit relationship whereby the semiconductor




structure will oscillate, and means for modulating said oscillation by the application of a signal across a p-n junction in at least one of the semiconductor devices.

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**3,165,711**

## ANISOTROPIC CIRCULATOR WITH DIELECTRIC POSTS ADJACENT THE STRIP LINE PROVIDING DISCONTINUITY FOR MINIMIZING REFLECTIONS

Oliver L. Drumheller, Pontiac, and Ronald W. Kordos, East Detroit, Mich., assignors to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed June 10, 1960, Ser. No. 35,281
2 Claims. (Cl. 333—1.1)



1. A circulator for attachment to a plurality of signal carrying members for directing signals between them in a predetermined manner, comprising

a housing having a chamber defined by spaced ground plane means,

a strip conductor member having at least three arms extending from a center portion outwardly to the ends of the arms, with the center portion being in an inwardly direction from the ends of said arms,

said ends of each of said arms being adapted for connection to a signal carrying member,

said strip conductor member being supported in said chamber between said ground plane means,

anistotropic means being positioned between the center portion of said strip conductor member and said ground plane means,

means for producing a magnetic field through said anisotropic means to direct the path of electromagnetic waves along said strip conductor member,

means for providing an electromagnetic wave discontinuity to minimize reflections in the strip conductor thereby improving circulator characteristics,

said last means comprising localization of material having a dielectric constant greater than air and positioned along said strip conductor member to create said electromagnetic wave discontinuities,

said last means being positioned inwardly of the ends of said arms.



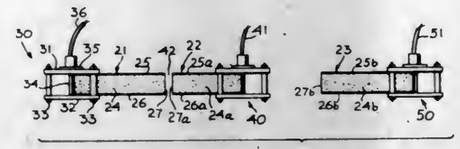
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**3,165,712**

## ROTARY DISTRIBUTOR HAVING WAVEGUIDE COUPLING ACROSS ROTOR-STATOR GAP

Millard F. Gordon, Northridge, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio

Filed Dec. 20, 1960, Ser. No. 77,106
2 Claims. (Cl. 333—7)



1. An electromagnetic energy wave switch comprising: a rotatable member of high dielectric material having electrically conductive coatings on at least two opposed surfaces thereof and having at least one open end, a plurality of members of high dielectric material each having electrically conductive coatings on at least two opposed surfaces thereof and at least one open end, said plurality of members being circularly disposed about said rotatable member, means for rotating said open end of said rotatable member past said open end of each of said plurality of members, said open end of each of said plurality of members being spaced from said open end of said rotatable member during the time said rotatable member is rotating past each of said plurality of members, and means electrically connected to said rotatable member and to each of said plurality of members and adapted to launch signals within and remove signals from said members.

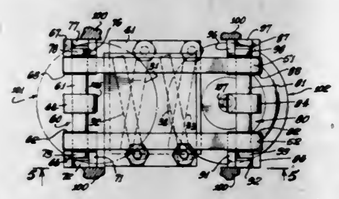
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**3,165,713**

## VARIABLE RESISTANCE DEVICE

Carlyle A. Mounteer, 1250 Sierra Madre Villa, Pasadena, Calif.

Filed Mar. 14, 1963, Ser. No. 265,183
9 Claims. (Cl. 338—150)

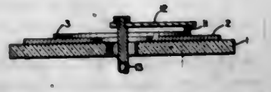


1. A variable electrical resistance device comprising:

(*a*) first and second elongate resistance members each having a longitudinally extending exposed surface area defining a rectilinear resistance path along which the resistance of the member is evenly distributed in predetermined substantially equal increments, said members being disposed with their resistance paths in a predetermined acute angular relationship and with a portion of their respective resistance paths in surface contact with each other; and,

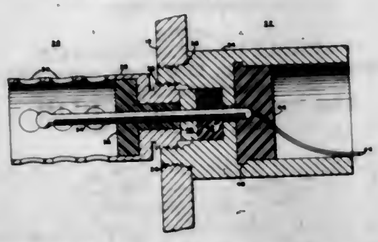
(*b*) means for selectively moving said resistance members relatively to each other while maintaining said predetermined angular relationship and surface contact between said resistance paths, the movement of each of said members being along a linear path perpendicular to the bisector of the acute angle between the resistance paths so that the point of surface contact simultaneously varies along each of said resistance paths to thereby vary the effective resistance between one end of the resistance path of said first member and one end of the resistance path of said second member.

3,165,714
RESISTIVE LAYER TRACK POTENTIOMETERS
Bertrand Alain Dreyfus, Sevres, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, Seine, France
Filed Aug. 6, 1962, Ser. No. 215,489
Claims priority, application France, Sept. 4, 1961, 872,469, Patent 1,306,701
7 Claims. (Cl. 338—162)



1. A potentiometer comprising in combination: an insulating base member; a resistive film track formed of a metallic compound carried by said base member; a metallic brush track which is narrow and substantially of brush width formed over said resistive film track and extending continuously from one end to the other of the path of brush travel, said brush track being of substantially higher resistance than said film track; and a low-pressure brush mounted to travel along and in contact with said brush track.

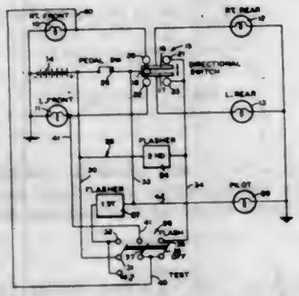
3,165,715
HIGH PRESSURE SEAL MOUNTING FOR BRITTLE INSTRUMENT
William J. Leiss, Richard F. Trufant, and Edward J. J. Tracey, State College, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 23, 1962, Ser. No. 239,852
8 Claims. (Cl. 338—228)



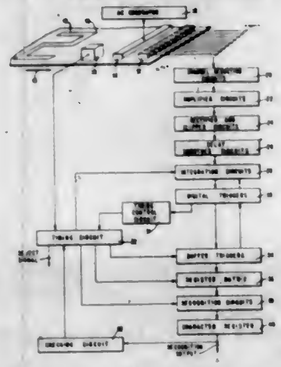
1. In the sealing of a brittle ceramic thermistor for submergence into the ocean to determine temperatures at various depths, the combination comprising: a rubber-like potting means surrounding said thermistor to eliminate shock and vibration on said thermistor; a sealing means of rubbery substance compressed around said thermistor adjacent to said potting means; a hard electrical insulating supporting means behind said thermistor whereby said thermistor cannot be forced rearward by the pressure of said ocean depths; and a housing covering, and in intimate contact with, said shock and vibration eliminating means, said sealing means, and said supporting means holding each in intimate contact with said thermistor.

3,165,716
VEHICLE SIGNAL LAMP SYSTEM HAVING LOAD SENSITIVE AUXILIARY FLASHER
Harry Epstein, Saddle Brook, N.J., assignor to Klaxon Industries, Inc., New York, N.Y.
Filed Aug. 7, 1963, Ser. No. 300,564
9 Claims. (Cl. 340—81)

1. In a vehicle signal system which includes front and rear signal lamps, a turn signal flasher, and a directional switch including a common terminal connectable to a power source through a normally open switch, said directional switch being operable to connect the rear signal lamps to the flasher when a turn is to be signalled; in combination therewith additional switching means for flashing all the lamps simultaneously including an additional flasher and a manually operable switch means which connects the additional flasher in series between one terminal of a source of electrical power and the common terminal in said directional switch, said switch means also connecting two of the signal lamps to one terminal of the turn signal flasher.



3,165,717
CHARACTER RECOGNITION SYSTEM
Paul F. Eckelman and Robert B. Hennis, Poughkeepsie, and Russell H. Larson, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 8, 1959, Ser. No. 804,996
27 Claims. (Cl. 340—146.3)

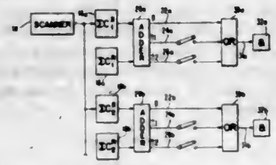


1. Character recognition apparatus comprising means for scanning a character and producing signal data in response to a character scanned, means responsive to signal data from said scanning means for producing signals representative of scanned character line increments, storage means, a storage matrix, means for advancing line increment signals from said producing means to said storage means, means for advancing said line increment signals from said storage means to positions in said storage matrix, and means responsive to the positions of line increment signals in said storage matrix for recognizing a character scanned.

3,165,718
SPECIMEN IDENTIFICATION APPARATUS
Harold Fleisher, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 4, 1961, Ser. No. 156,843
3 Claims. (Cl. 340—146.3)

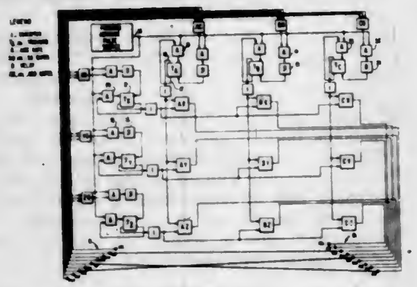
1. Character recognition apparatus for identifying a specimen character displayed on a matrix having *m* rows and *n* columns, a counter associated with each row for counting the number of character bits therein, a counter associated with each column for counting the number of character bits therein, a plurality of registers containing individual row and column counts of a reference character, and comparison means responsive to the column and row counters for producing individual outputs when the





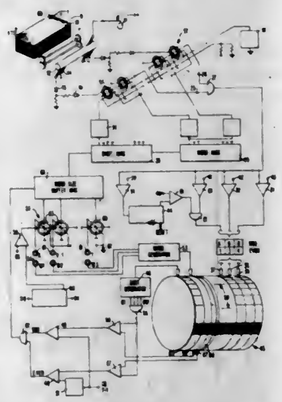
counts of corresponding rows and columns are equal, a group of AND gates corresponding to the reference character, each of said AND gates being responsive to a different one of said individual outputs, and means connected to said group of AND gates to provide a recognition signal when the bit counts of all the corresponding rows and columns of the specimen and reference characters are equal.

3,165,719
MATRIX OF COINCIDENCE GATES HAVING COLUMN AND ROW SELECTION
Dave C. Mueller, Stillwater, Okla., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 13, 1959, Ser. No. 852,744
1 Claim. (Cl. 340—166)



A program step matrix driver, comprising:
a coordinate array of AND gates grouped in rows and columns and each having a row input terminal, a column input terminal, and an exit terminal,
a plurality of bistable storage elements, namely, a row bistable storage element for each row of AND gates and a column bistable storage element for each column of AND gates, each bistable storage element having On and Off input terminals and On output terminal means;
means connecting the On output terminal means of each row bistable storage element to all of the AND gate row input terminals of its related row, and means connecting each On output terminal means of each column bistable storage element to all of the AND gate column input terminals of its related column, each of said AND gates being turned On when both of its input terminals are receiving signals from the On output terminal means of the related bistable storage elements and to then issue a half-signal signal;
a set of entry terminals, namely, one pertaining to each of said AND gates;
coupling means coupling each of said entry terminals to the On input terminals of a related pair of said bistable storage elements, namely, the row bistable storage element and the column bistable storage element, whose On output terminal means are connected to the input terminals of the AND gate pertaining to the respective entry terminal;
Pluggable connecting means for selectively connecting the output terminals of said AND gates individually to any desired ones of said entry terminals, whereby a half-select signal from the output terminal of any AND gate is transmitted through a related pluggable connecting means to a selected one of said entry terminals, to half-select the pair of coupling means connected to the selected entry terminal;
means including pulsing means adapted to pulse all of said coupling means concurrently to render any half-selected coupling means effective to turn on the bistable storage element connected thereto;
restoring means for turning off any of said bistable storage elements which is on, comprising an AND circuit having a first input terminal connected to the On output terminal means of the same bistable storage element, a second input terminal connected to said pulsing means, and an output terminal connected to the Off input terminal of the related bistable storage element;
each of said coupling means having delay means interposed before the On input terminal means of the related bistable storage element whereby pulses from said coupling means to turn on selected ones of said bistable storage elements are delayed to occur after the pulses to restore the bistable storage elements.

3,165,720
DATA INPUT DEVICE WITH FORMAL CONTROL
George J. Laurer, Johnson City, and Carl D. Southard, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1959, Ser. No. 823,747
2 Claims. (Cl. 340—172.5)

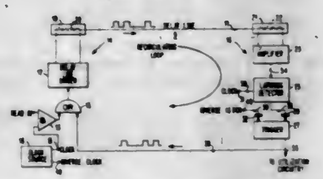


1. In an apparatus for reading records wherein data is stored in columns by combinatorial row indications to indicate predetermined characters, comprising means for sensing said records by row, buffer storage means operable to record said indications by row, enabling means for sequentially reading the columns of row indications from said buffer storage, a storage device having successively available storage locations for receiving said row indications, each said storage location having a first and a second successively available substorage location, timing means for said storage location for determining the location then available for receiving said row indications,

said timing means including a first and second pulse generator operable to provide pulses indicative of the availability of a first or second storage location in accordance with the row then being sensed, format control means utilizing said pulses for timing said enabling means in order to record successive rows of data indications in first or second storage locations, said storage locations being divided into parallel tracks and further including translating means for recording said data indications in predetermined parallel tracks in accordance with the row then being sensed, said storage locations also being divided into groups of words, said timing means including word generating means indicating the availability of a particular word wherein the word generating means is connected to said format control, and wherein said format control includes a ring circuit having a number of stages equal to the number of storage locations into which said data indications are to be placed and having an advance pulse line connected to said first and second pulse generator to advance said ring to a null condition, said word generator being operable to set a stage in said ring for each successive word whereby said ring will transmit pulses to said enabling means in accordance with the stage which is set to an On condition.

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**3,165,721**
**COMPENSATING CIRCUIT FOR DELAY LINE**
**James J. Kennedy and James C. Rogers, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Dec. 3, 1962, Ser. No. 241,893**
**6 Claims. (Cl. 340—173)**



5. A circuit for compensating for the skew of pulses being recirculated from an input to the output of a delay line comprising, in combination:

(*a*) first transducer means positioned at the input of said delay line for converting electrical pulses to acoustical pulses and coupling said acoustical pulses to said delay line;

(*b*) electrical drive means arranged to couple electrical pulses to said first transducer means;

(*c*) second transducer means positioned at the output of said delay line for converting said acoustical pulses to electrical signal pulses;

(*d*) a source of clock pulses;

(*e*) amplitude detecting means for detecting said electrical signal pulses and providing a control signal in response thereto;

(*f*) means for coupling said electrical signal pulses from said second transducer means to said detecting means;

(*g*) first and second bistable conducting devices each having an initial and a second stable conducting condition;

(*h*) means for coupling clock pulses to said first and second bistable conducting devices;

(*i*) means for coupling said control signal from said detecting means to cause said first bistable device to shift from its initial to its second conducting condition;

(*j*) said first bistable conducting device being shifted to its initial conducting condition by a clock pulse and thereby providing a second control signal;

(*k*) means for connecting said second control signal from said first bistable device to said second bistable device;

(*l*) said second bistable device being shifted to its second conducting condition by said second control signal for initiating an output pulse and said second bistable conducting device being shifted to its initial conducting condition by a succeeding clock pulse to thereby terminate said output pulse;

(*m*) whereby the time duration of said output pulse is determined by said clock pulses; and,

(*n*) means for connecting said output pulse from said second bistable conducting device to said electrical drive means.

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**3,165,722**
**MAGNETIC INFORMATION TRANSFER DEVICE**
**Walter Ghisler, Southampton, England, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Jan. 5, 1961, Ser. No. 80,837**
**23 Claims. (Cl. 340—174)**



21. An information transfer device comprising the subcombination of;

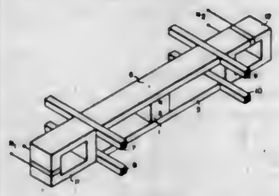
an elongated anisotropic strip of magnetic material exhibiting an easy axis of remanent domain orientation along the longitudinal axis thereof;

means coupled to said strip for propagating a magnetic field along, and directed transverse to, the longitudinal axis of said strip to orient the magnetization of succeeding portions into a hard direction;

and means coupled to different portions of said strip including information input means for applying a magnetic field directed along the easy axis of said strip coincidently with the passage of said propagated magnetic field to cause remanent orientation of the magnetization of said strip after passage of said propagated pulse in accordance with the direction of the applied information field.

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**3,165,723**
**MAGNETIC MEMORY DEVICE**
**Raymond J. Radus, Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Jan. 19, 1962, Ser. No. 167,361**
**6 Claims. (Cl. 340—174)**

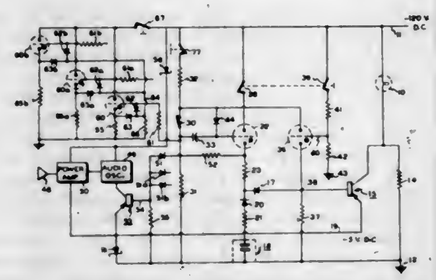


3. In a magnetic memory device, the combination of: magnetic means including a plurality of magnetic paths therein, a first source of magnetomotive force common to each of said paths to supply magnetic flux thereto in accordance with the relative reluctance of each of said paths, one of said paths acquiring a lower reluctance than the other of said paths, a second source of magnetomotive force including an electromagnetic winding disposed in at least one of said paths for providing control flux in a quadrature spatial relationship to the flux supplied by said first source of magnetomotive force to change the reluctance of the path acquiring the lower reluctance by saturating a portion thereof.



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**3,165,724**
**ANNUNCIATOR SYSTEM HAVING ACKNOWLEDGMENT AND USING GASEOUS TRIODES**
**Edward S. Ida, Folsom, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Jan. 5, 1962, Ser. No. 164,496**
**7 Claims. (Cl. 340—213.2)**

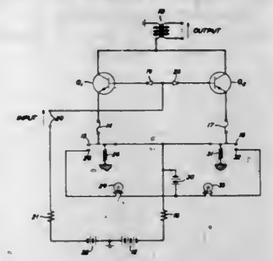


1. An annunciator circuit comprising in combination an alarm lamp connected across an illuminating power source in series with a voltage-limiting element preselected to operate said lamp at a first characteristic level of illumination below full brilliance, a transistor connected with collector and emitter elements in series with the filament of said alarm lamp and in parallel with said voltage-limiting element through a biasing diode to the positive side of a D.C. power source and with base element connected via the positive side of a first diode intermediate (1) a flasher signal apparatus provided on its output side with a second diode and (2) a gaseous triode, which devices (1) and (2) are connected in series with a first acknowledgment switch contact pair as a first network connected across said D.–C. power source, a normally closed alarm switch contact pair connected in series with resistors on both positive and negative sides of said alarm switch contact pair as a second network in parallel with said first network across said D.-C. power source, and coupling means firing said gaseous triode responsive to the opening of said alarm switch contacts connected in electrical circuit between a point within said second network on the positive side of said alarm switch contact pair and the grid of said gaseous triode.

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**3,165,725**
**PROTECTED AMPLIFYING DEVICE**
**Francis C. Kelcourse, Methuen, Mass., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Dec. 28, 1960, Ser. No. 79,067**
**3 Claims. (Cl. 340—250)**

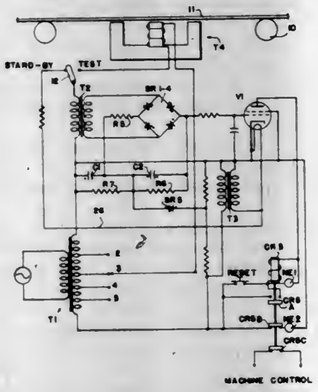
1. In combination, a plurality of transistors, each of said transistors having base, emitter and collector electrodes, means for connecting the collector of each of said transistors to a first common conductor, a plurality of fusible elements each connecting the emitter electrode of one of said transistors to a second common conductor, a voltage source for establishing a potential difference between said first and second common conductors, an input terminal, a source of input signals effectively connected between said input terminal and said second common conductor, a plurality of diodes each connecting said input terminal to the base electrode of one of said transistors, said diodes being poled in a direction appropriate



for presenting a low impedance to the flow of forward biasing current to said transistors.

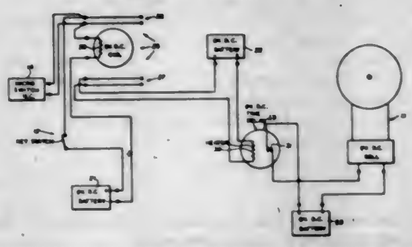
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**3,165,726**
**DOUBLE SHEET DETECTING APPARATUS**
**Joseph J. Riley and Emmanuel Victor Dethler, Warren, Ohio, assignors to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio**
**Filed Mar. 30, 1961, Ser. No. 99,475**
**1 Claim. (Cl. 340—259)**




Double sheet detecting apparatus comprising a current-conductive sensing coil and an associated magnetic circuit adapted to be placed in proximity with a metal sheet to be tested whereby an increase in the mass or thickness of the sheet decreases the reluctance of said circuit and consequently increases the impedance of said coil, means to connect the primary winding of a transformer and a source of variable alternating potential in series with said coil, a grid-controlled electric discharge device having a source of alternating plate potential and the actuating coil of a relay in series in its plate circuit, means establishing a reference source of negative potential for the control grid of said device, means to rectify the output of said transformer and thereby establish a source of positive potential for said control grid in opposition to said reference source, an indicator controlled by said relay to show cessation of conduction in said device and consequently an excess of mass or thickness in the sheet being tested, means to disconnect said sensing coil from said source while connecting said primary winding to a source of sustaining alternating potential of sufficient strength to maintain said device conducting, the arrangement being such that during "standby" said sensing coil is unenergized while said device remains conductive and thus the apparatus is conditioned for immediate test of a sheet upon disconnecting said sustaining potential and reconnecting said source of variable potential to said sensing coil.

3,165,727
**BURGLAR ALARM SYSTEM**
Gerard M. Callahan, Flushing, N.Y., assignor to Electrolert Inc., Jamaica, N.Y.
Filed Apr. 24, 1962, Ser. No. 189,903
1 Claim. (Cl. 340—274)



A self-contained alarm mechanism adapted to be supported adjacent to a member for announcing relative movement between said mechanism and said member, which mechanism comprises, in combination:

a case;

at least one source of voltage supported in said case;

tripping means having

a lever arm pivotally supported in said case for limited angular movement between a normal and a displaced position, said arm extending through said case and engaging said member in said displaced position, and first biasing means mounted in said case and connected to said arm urging the same to said normal position;

first circuit means connected to one said source and including, in series,

first switch means adapted for manual operation and

second switch means having

a pair of contacts adapted for movement between opened and closed positions, second biasing means connected to said contacts and stressed to urge said contacts to said closed of the positions and a movable plunger connected to said pair of contacts and extending from said second switch means a distance sufficient to be engaged by said lever arm when said lever arm is moved from said normal to said displaced position and hold said pair of contacts against said second biasing means in said opened of the positions;

magnetic relay means having

a coil connected in series with said first and second switch means in said first circuit means and first and second pairs of normally opened contacts, said first of the pairs being connected in shunt across said second switch means;

time delay relay means having

a heater element and contact means supported adjacent to said element and responsive to heating by said element for closing;

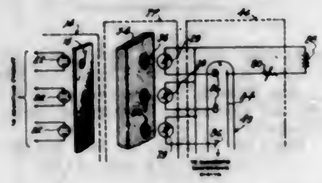
second circuit means connected to one said source and including, in series, said second of the pairs of normally opened contacts and said heater element; and,

third circuit means connected to one said source and including, in series,

annunciator means and said time delay contact means,

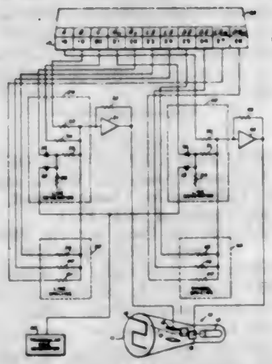
said annunciator means comprising an electrically operated bell, said source of voltage comprising at least one dry cell battery and said plunger having a handle disposed thereon and extending to an accessible position.

3,165,728
**OUT-OF-LINE TO IN-LINE NUMERAL DISPLAY**
Horace R. Finney, Denville, N.J., assignor to Radio Frequency Laboratories, Boonton, N.J., a corporation of New Jersey
Filed June 23, 1958, Ser. No. 743,857
1 Claim. (Cl. 340—324)



Apparatus for obtaining an in-line read-out of the information display of illuminable digits of decade counter units of a counting instrument comprising a reader head with a resilient member disposed over each counter unit and apertured for the passage of light only from the respective illuminated digits of said units, a corresponding number of photo-resistive elements disposed to receive light only through said apertures when the respective digits are illuminated and then decrease in resistance sufficiently to allow passage of actuating current, a read-out unit comprising a series of indicator tubes corresponding numerically with the decade counter units, each tube including a single anode and a plurality of cathodes in the form of digits, means connecting one pole of each photo-resistive element to the cathode of configuration conforming with the digit of the decade counter from which it receives light, a source of direct current, and means connecting the other pole of each photo-resistive element to the negative side and each anode to the positive side of said source of direct current, whereby the photo-resistive elements transmit current energizing only the digit cathodes corresponding with the illuminated decade counter digits.

3,165,729
**CRT DISPLAY SYSTEM HAVING LOGIC CIRCUITS CONTROLLED BY WEIGHTED RESISTORS IN THE DEFLECTION CIRCUITRY**
Robert L. Richman, 3726½ Elliot St., San Diego 6, Calif.
Filed July 24, 1961, Ser. No. 126,355
3 Claims. (Cl. 340—324)
(Granted under Title 35, U.S. Code (1952), sec. 266)

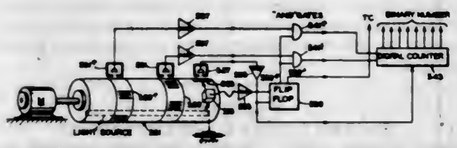


1. A digital display system for forming symbols comprising; digital storage means for storing digital information bits therein representing horizontal symbol generate information vertical symbol generate information symbol space information line, space information vertical position information and horizontal position information; horizontal amplifier means having an input and output for summing information at the input thereof, weighting resistors operatively coupled to the input of said horizontal amplifier means; logic means operatively coupled to one of said weighting resistors and having at least two input terminals, one of said input terminals of said logic means being coupled to said digital storage device for coupling horizontal symbol generate information from said storage device to said logic means, triangular wave generating means operatively coupled to the other of said input means of said logic means for coupling a triangular waveform to said logic means, other coupling means connected from another of said weighting resistors to said digital storage means for coupling horizontal position information from said digital storage device to said weighting resistor and thereby to the input of said horizontal amplifier so that the output from said horizontal amplifier represents horizontal position information and horizontal symbol generate information; vertical amplifier means having an input and output for summing voltages coupled to the input thereof, vertical weighting resistors operatively connected to the input of said vertical amplifier means, vertical logic means operatively connected to one of said weighting resistors and having at least two input elements, one of said input elements operatively connected to said digital storage means so that vertical symbol generate information is coupled to said input of said vertical logic means, triangular wave generator means operatively coupled to the other of said logic means inputs for coupling a triangular waveform thereto; another of said vertical weighting resistors being operatively coupled to said digital storage means for coupling vertical symbol position information to the input of said vertical amplifier means so that the output of said vertical amplifier means is representative of vertical position information and vertical symbol generate information; display means utilizing an electron beam for displaying information thereon and having vertical and horizontal beam deflection means; horizontal conducting means operatively connected between the output of the horizontal amplifier means and said horizontal beam deflection means for coupling the output of said horizontal amplifier to said horizontal beam deflection means thereby causing said electron beam to be moved and positioned horizontally in accordance with the output of said horizontal amplifier means; and vertical conducting means operative connecting said vertical amplifier means to said vertical beam deflection means so that the electron beam is positioned and moved vertically in accordance with the output of said vertical amplifier means.



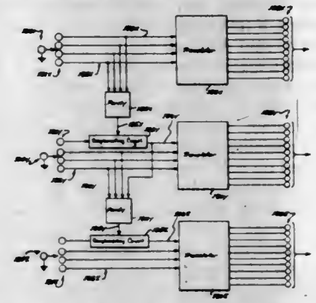


3,165,730
**ENCODER**
Arthur S. Robinson, Allendale, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Apr. 15, 1959, Ser. No. 806,625
10 Claims. (Cl. 340—347)



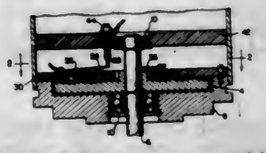
2. A function encoder comprising a member having increment and reference intelligence thereon, the increment intelligence corresponding to a preselected non-linear function which varies in value in accordance with a condition and comprising a series of unevenly spaced lines arranged in accordance with the function pick-up means for scanning the member and providing increment and first and second reference signals, means providing relative movement between the member and pick-up means, means for controlling the pick-up means providing one reference signal in accordance with the condition, and means connected to the pick-up means providing the reference and increment signals and responsive to the increment signals in the interval between the reference signals and providing an output corresponding to the condition according to the preselected function.

3,165,731
**DIGITAL CODING AND TRANSLATING SYSTEM**
Carl P. Spaulding, San Marino, Calif., assignor, by mesne assignments, to Datex Corporation, Monrovia, Calif., a corporation of California
Filed Mar. 9, 1954, Ser. No. 415,058
27 Claims. (Cl. 340—347)



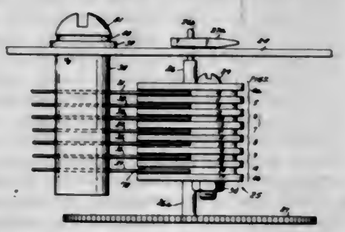
1. A system for indicating the Arabic decimal number represented by a set of physical code elements which are shiftable respectively among a plurality of states, said code elements comprising a plurality of groups corresponding to the respective digits of the Arabic number, the configuration of the code element states of each group representing the value of the corresponding Arabic digit in accordance with one syncopic code when the preceding Arabic digit has one parity and representing that digit value in accordance with another syncopic code when the preceding Arabic digit has the other parity the configuration of code element states that represent the digit value 9 in each code being identical with the configuration that represents the digit value 0 in the other code; said system comprising a plurality of translating sections for the respective groups of code elements, input means acting to supply to the respective translating sections sets of input signals representing the configurations of code element states of the corresponding groups, the translating sections including respective translating circuits responsive to the respective sets of input signals and producing respective output signals representing the corresponding Arabic digit values, the translating sections for the Arabic digits of other than least significance including parity discriminating circuits which are responsive to the respective sets of input signals and which act independently of the output signals of the translating circuits to produce respective parity output signals representing the respective parities of the corresponding Arabic digits, the translating circuits and the parity discriminating circuits of the translating sections for the Arabic digits of other than least significance being capable of respective first and second conditions in which they act in accordance with said first and second codes, respectively, and coupling means for each such translating section acting to shift the translating circuit and the parity discriminating circuit of that translating section between their respective conditions in response to the parity output signal of the parity discriminating means of the translating circuit corresponding to the Arabic digit of next greater significance.

3,165,732
**ANALOG-TO-DIGITAL CONVERTER**
Clarence J. Klosterman, Tujunga, Calif., assignor to General Precision, Inc.
Filed Jan. 21, 1960, Ser. No. 3,844
7 Claims. (Cl. 340—347)



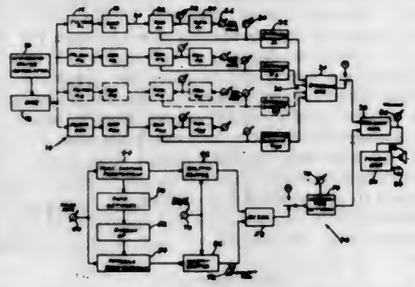
7. An analog-to-digital converter comprising a housing, a shaft rotatably mounted in said housing, a disk axially mounted to said shaft, a plurality of concentric rows on one face of said disk, each of said concentric rows having a plurality of raised and recessed segments that form a coded pattern, a retaining member positioned adjacent the coded face of said disk and rigidly mounted to said housing, a support member positioned in spaced relationship and substantially parallel to said retaining member and rigidly mounted to said housing, a plurality of resilient electrical contact members mounted on said retaining member, a plurality of adjustable electrical contact members mounted on said support member and positioned adjacent said resilient contact member to form electrical switches that close when any one of said resilient contact members is acted upon by a force in a direction away from said coded disk, and an actuating element comprising a plurality of spherical balls loosely mounted in said retaining member between each of said resilient electrical contact members and said coded disk, said actuating element being arranged to actuate said resilient electrical contact members in accordance with the pattern of raised and recessed segments in the concentric rows on the coded face of said disk when said disk and said housing are rotated with respect to each other, at least one ball in each said plurality being composed of electrically non-conducting material.

3,165,733
**CODE STACK**
Abraham Brothman, Dumont, and Richard D. Reiser, Newark, N.J., Stephen J. Halpern, Forest Hills, N.Y., and Edward W. Lewison, Englewood Cliffs, and Paul Lewison and Alfred Lewison, Deal, N.J., assignors, by mesne assignments, to Transitel International Corp., Paramus, N.J., a corporation of New Jersey
Filed July 19, 1961, Ser. No. 125,247
13 Claims. (Cl. 340—347)



12. A meter for encoding a decimal reading of a quantity being measured wherein said decimal reading is at least two decimal digits in length; first and second means each mounted on rotatable shafts for digitizing the angular positions of the meter utilized to identify by a decimal number the quantity being measured; gear means for imparting rotation in a 1:10 ratio to one of said shafts in response to rotation of the other of said shafts; said first and second means each being comprised of a rotatable drum capable of assuming any angular position in a complete circle of rotation; said circle being divided into a plurality of discrete angular portions; first conductive means on the surface of said drum for generating a first plurality of binary coded signal groups wherein each one of said signal groups represents one of said discrete angular portions around said circle; second conductive means on said drum for identifying shaft angle positions which lie in the immediate region surrounding the adjacent ends of neighboring angular portions; said second conductive means cooperating with said first conductive means to generate a second plurality of binary coded signal groups to identify an angular shaft position in the immediate region of two adjacent angular portions; stationary sensing means making a wiping contact with the surface of said drum for reading out said binary coded signal groups; said second code group being adapted to identify a first range in which the least significant decimal digit will lie when one of said second binary coded groups is read out by said sensing means; said first code being a two-out-of-five binary code; said second code being a three-out-of-five code, third conductive means on said drum surface for generating a plurality of third binary coded signal groups to identify a second range in which the least significant decimal digit will lie when one of said second binary coded groups is read out by said sensing means, said second range being smaller than said first range; said third code being a four-out-of-six code.

3,165,734
**SCREW NOISE SIMULATION TECHNIQUE**
Samuel Grodzinsky, East Meadow, and Myron N. Kaufman, Massapequa, N.Y., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 2, 1961, Ser. No. 149,633
10 Claims. (Cl. 340—384)

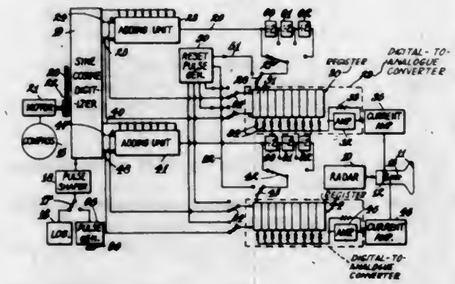


1. A device for simulating sounds produced by ships' propellers on sonar receivers comprising, a noise generating means, means apportioning said noise generating means into segments of octaves, said means being coupled to said noise generating means, means varying the distribution of noise content within each segment of an octave, summing means connected to said apportioning means, and beat means coupled to said summoning means to form the noise to the beat characteristics of the sound being simulated.

3,165,735
**RADAR DISPLAY APPARATUS**
Douglas Arthur Aylett, London, England, assignor to Decca Limited, London, England, a British company
Filed Mar. 29, 1963, Ser. No. 269,060
Claims priority, application Great Britain, Apr. 2, 1962, 12,560/62
19 Claims. (Cl. 343—5)

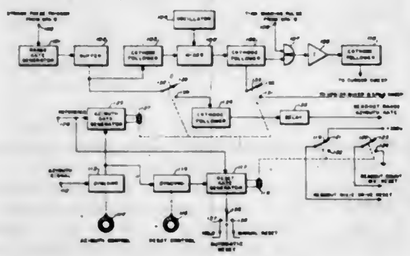
1. Radar display apparatus for a mobile craft wherein there are provided a sine-cosine digitizer having a rotatable input member to resolve an input signal in accordance with the angular setting of said input member, means for setting said input member in accordance with the heading of the craft and arranged to provide, on receipt of an input signal, outputs in digital form representative of the sine and cosine of the input setting, means for applying





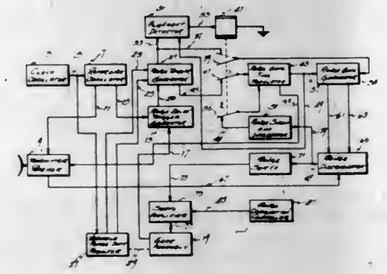

input signals to said sine-cosine digitizer periodically at time intervals corresponding to units of distance travelled by the craft, separate adding means for summing respectively the sine and cosine components from the digitizer and digital-to-analogue conversion means for converting the two summed components into analogue signals.

3,165,736
**BINARY TO DIGITAL READOUT AZIMUTH GATING**
Emanuel Montalvo, San Diego, and Alfred C. Sanders, Escondido, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 31, 1962, Ser. No. 220,921
5 Claims. (Cl. 343—6.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



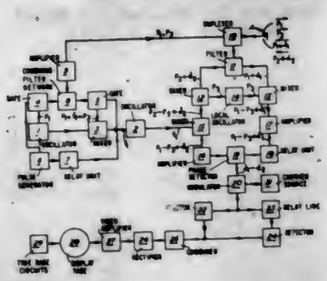
1. An azimuth gating system for use with an IFF system comprising; input means for coupling antenna position synchro signals thereto; initiating means operatively coupled to said input means and receiving synchro signals for producing a signal which is adapted for initiating an azimuth readout; reset means operatively coupled to said initiating means for producing a signal adapted to cut-off the readout of azimuth information; range means adapted for producing range information; gating means operatively coupled to said range means and said initiating means for producing an output signal corresponding to a range-azimuth readout signal; shading means operatively coupled to the output of said range means for modulating the area of the range gate established; output means operatively coupled to the output of said shading means and said range means; said output means being adapted for coupling to a presentation display.

3,165,737
**ELECTRONIC ACQUISITION ELECTROMECHANICAL TRACKING RADAR SYSTEM**
Alfred I. Mintzer, Riverton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 30, 1961, Ser. No. 99,647
2 Claims. (Cl. 343—7.3)



1. In a radar range system:
(*a*) a D.C. generator;
(*b*) means coupled to the D.C. generator for manually controlling its output and developing a potential which represents a designated range of a preselected target;
(*c*) a radar transmitter and receiver;
(*d*) a reference oscillator coupled to the radar transmitter, said oscillator being adapted to develop periodic pulses for energization of the transmitter and a pretriggering pulse which precedes each pulse to the transmitter a predetermined amount;
(*e*) a range trigger generator coupled to the D.C. generator and to the reference oscillator, said range trigger generator being responsive to the output potential of the D.C. generator and the pretriggering pulse of the oscillator to develop a mechanical trigger pulse that occurs an interval after each transmitter energizing pulse that represents the range of the target;
(*f*) a range search circuit which is coupled to the range trigger generator and which sweeps about the mechanical trigger pulse;
(*g*) a range gate time modulator coupled to the range search circuit for detecting the target within the search area and generating an electronic trigger pulse which also defines the range of the target;
(*h*) a range gate generator which is coupled to the range gate time modulator and provides early and late gate pulses equally disposed before and after the electronic trigger pulse;
(*i*) a range discriminator circuit which is coupled to the range gate generator and the radar receiver and which distinguishes the portion of a target echo signal from the receiver during the early and late gate pulses and provides a range error voltage;
(*j*) means coupled to the range discriminator for adjusting the potential of the D.C. generator and for causing the mechanical and electronic trigger pulses to occur substantially simultaneously;
(*k*) and means connected to the output circuits of the range trigger generator and the range gate time modulator for energizing the range gate generator with the mechanical trigger pulse.

3,165,738
**MOVING TARGET INDICATING RADAR SYSTEM**
Eric Eastwood and Gordon Nismmo Coop, Essex, England, assignors to The Marconi Company Limited, London, England, a company of Great Britain
Filed May 26, 1958, Ser. No. 737,972
Claims priority, application Great Britain, June 7, 1957, 18,179/57
5 Claims. (Cl. 343—7.7)

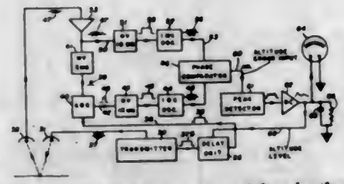


1. A pulsed radar system comprising an aerial, a transmitter for alternately transmitting from said aerial pulses of radio frequency waves of different but adjacent frequencies with a predetermined time interval between the transmission of each pulse of one frequency and the transmission of the next pulse of the other frequency, a receiver for receiving the transmitted pulses after reflection from a target, said receiver comprising means for separating the received reflected pulses corresponding to transmitted pulses of different frequencies into one or other of two channels, delay means in at least one of said channels for providing a time delay difference between said channels substantially equal to said time interval and such that the output from one channel corresponding to reception of a reflected transmitted pulse of one frequency occurs simultaneously with the output from the other channel corresponding to reception of the next reflected transmitted pulse of the other frequency, a phase detector circuit, means to apply the outputs from the two channels to said phase detector circuit, and target display means responsvie to the resultant of phase comparison by the said phase detector circuit.

4. A system as set forth in claim 1 and wherein the said means for separating the received reflected pulses comprises frequency selective means, one of said channels being for signals resulting from reflected transmission on one frequency and the other channel being for signals resulting from reflected transmissions on the other frequency, each of said channels having a band width sufficient to accept Doppler frequencies which may be superimposed due to motion of a reflecting target, and means for miving with the derived signals on one channel a frequency equal to the difference between the two transmitted frequencies, said display being a moving target indicator.

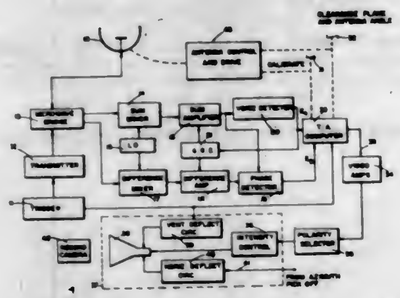
3,165,739
**PULSE TYPE RADAR TIME-MEASURING SYSTEM**
James D. Long, North Hollywood, and David W. Young, Jr., Van Nuys, Calif., assignors to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed Aug. 29, 1960, Ser. No. 52,680
4 Claims. (Cl. 343—13)

1. A system for measuring the time interval between two time-related signals comprising:
a first continuous wave oscillator;
means for triggering said first oscillator responsive to a first signal;
a second continuous wave oscillator of the same frequency as said first oscillator;
means responsive to a first signal for enabling said second oscillator for a period equal to one-half cycle of the operation of said first oscillator;
said second oscillator enabling means including variable delay means for controlling the time of enablement of said second oscillator, said variable delay means



having a continuously varying delay in the absence of a second signal;
means for triggering said second oscillator responsive to a second signal during the enabled period;
means for comparing the phase of the outputs of said first and second oscillators; and
means for indicating the time difference between said signals as a function of the measured phase difference of said oscillators.

3,165,740
**TERRAIN CLEARANCE RADAR**
William E. Stoney, Whittier, Calif., assignor to North American Aviation, Inc.
Filed July 30, 1959, Ser. No. 830,675
13 Claims. (Cl. 343—16)



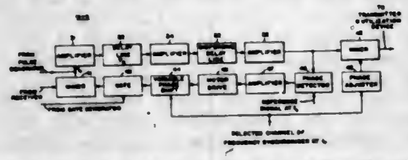
3. A monopulse radar having an antenna and a receiver producing sum and difference signals, computing means responsive to said signals for generating an output signal indicative of the elevation of a target relative to a selected clearance plane, said computing means including means for producing a reference signal representing distance from said radar to said clearance plane and means for adjusting said reference signal to thereby adjust said clearance plane, and means responsive to said adjusting means for adjusting the elevation angle of said antenna.

3,165,741
**PHASE STABLE MULTI-CHANNEL PULSE COMPRESSION RADAR SYSTEMS**
Robert C. Thor, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,197
5 Claims. (Cl. 343—17.2)

5. A multiple channel pulse synthesis and compression system comprising:
(*a*) means to distrbute the original signal into the individual channels and to provide differentiated phase dispersive delays therein suitable for pulse compression operation;

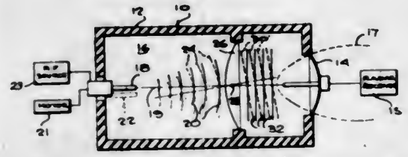


(*b*) means to recombine the signals from the various channels; and
(*c*) means to sense the phase relationships between the



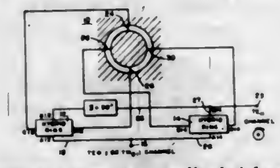
signals of adjoining channels and to adjust the phase relationships so as to bring the channel signals into phase match at the channel boundaries.

3,165,742
**ANTENNA RANGE SIMULATOR**
Paul E. Taylor, Springfield, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Sept. 19, 1961, Ser. No. 139,164
8 Claims. (Cl. 343—17.7)



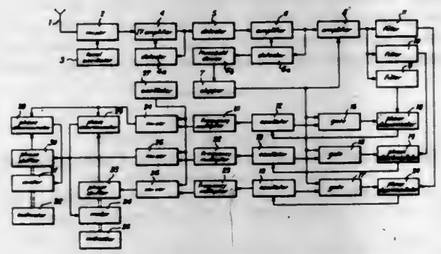
1. A radar test equipment, said radar including a directive receiving antenna, including a tubular housing having an axis, said housing having an internal lining substantially completely absorptive of radio waves, a directive transmitting antenna located adjacent one end of said housing, a lens located at an intermediate point of said housing, the remaining end of said housing including an opening receptive of said directive receiving antenna to be tested, said lens having the property of converting non-planar waves transmitted by said transmitting antenna to planar waves at said opening, the direction of energy fronts of said planar waves being a function of the directivity of said transmitting antenna with respect to the axis of said housing and means for varying the directivity of said transmitting antenna to simulate arrival of radio waves at said directive receiving antenna from a plurality of different directions.

3,165,743
**AMPLITUDE/PHASE MONOPULSE ANTENNA SYSTEM**
Leonard Hatkin, Elberon, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 11, 1963, Ser. No. 250,961
3 Claims. (Cl. 343—100)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An antenna system for amplitude/phase monopulse operation comprising, an annular slot antenna, and means including two discrete channels for energizing said annular slot antenna to establish a radiation pattern in free space characterized by simultaneous field configurations of either the TEM mode or $TM_{01}$ mode, and the $TE_{11}$ circular polarized mode, said radiation patterns being further characterized such that the difference in phase between the channel mode patterns is an indication of the azimuth of a target, and the difference in amplitude between the channel mode patterns is an indication of the elevation angle of the target, and the azimuth amplitude response in each mode is uniform.

3,165,744
**SYSTEMS FOR DETERMINING THE ELEVATION OR AZIMUTH OF A BODY**
Paul Fombonne, Paris, France, assignor to C.S.F.-Compagnie Générale de Télégraphie Sans Fil, a corporation of France
Filed Jan. 15, 1963, Ser. No. 251,651
Claims priority, application France, Jan. 16, 1962, 884,921
6 Claims. (Cl. 343—106)

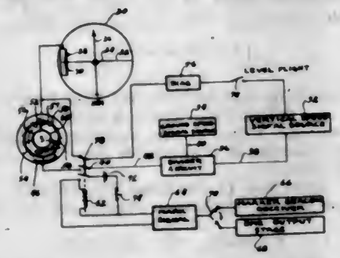


1. A system for allowing a moving body to determine an angular co-ordinate of said body with respect to a frame of reference, said system comprising:
a transmitting station, located at the origin of said frame of reference and comprising: means for scanning a space portion according to said angular co-ordinate with a beam which is generated by means of a carrier wave; and means for modulating said carrier wave with $n$ subcarrier waves, where $n$ is an integer greater than one, said $n$ subcarrier waves having respective frequencies which are different multiples of a basic frequency, one of said $n$ subcarrier waves remaining unmodulated to serve as a phase reference, and the other $(n-1)$ of said $n$ subcarrier waves being phase modulated according to different functions of an angle value defining the instantaneous direction of said beam according to said angular co-ordinate;
and a receiver, located aboard said body and comprising: means for receiving said modulated carrier wave while it is swept by said beam; means for demodulating said carrier wave to obtain $n$ subcarrier waves; means for deriving from said $n$ intermittently received subcarrier waves $n$ continuous waves respectively associated with said $n$ subcarrier waves, said $n$ continuous waves having a common frequency and respective phases depending upon that of the associated subcarrier wave; and means for measuring the phase shifts between that one of said continuous waves which is associated with said one subcarrier wave, and each of the $(n-1)$ others of said $n$ continuous waves.

3,165,745
**AIRBORNE GLIDE SLOPE DIRECTOR SYSTEM**
Edward W. Pike, 135 Ellerman Ave., Twickenham, England, and David S. Little, 35 Bogart Ave., Port Washington, N.Y.
Filed Sept. 11, 1959, Ser. No. 839,354
4 Claims. (Cl. 343—108)

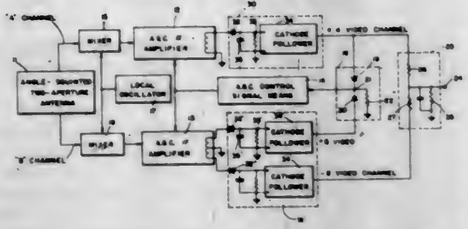
1. An airborne glide slope director system comprising a horizontal director indicator having a glide slope di-

rector display, a first source of electric signals the amplitude of which is responsive to the vertical speed of the aircraft, a second source of electric signals the amplitude of which is responsive to the ground speed of the aircraft, a divider circuit to generate a third electric signal the amplitude of which is proportional to the ratio between said first and second signals, and means for coupling said third electric signal to said glide slope indicator.



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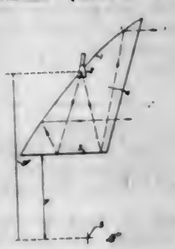
3,165,746
**MONOPULSE RECEIVER**
Richard G. Whitnah, Garden Grove, Calif., assignor to North American Aviation, Inc.
Filed Sept. 19, 1962, Ser. No. 224,615
14 Claims. (Cl. 343—113)



1. In a radiant energy receiver, first and second antenna elements providing different relative response to received energy depending on the angle from which said energy arrives, means responsive to the output signals from said antenna elements for providing a signal indicating the difference of said antenna signals divided by the larger of said antenna signals.

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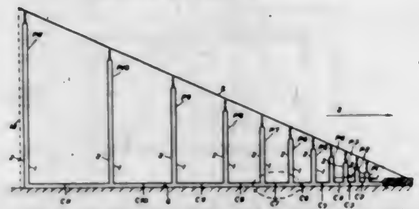
3,165,747
**PRIMARY HORN ANTENNA FEEDING PLANAR REFLECTOR THROUGH HOLE IN FOCUSED CURVED REFLECTOR**
Michael Wales, Durham, England, assignor to The Marconi Company Limited, a British company
Filed Feb. 15, 1963, Ser. No. 258,702
Claims priority, application Great Britain, Apr. 4, 1962, 12,954/62
9 Claims. (Cl. 343—761)



1. An aerial system comprising a curved reflector having a predetermined focus, a localised primary radio unit in a hole in said reflector, and a planar reflector opposite and facing said primary unit and in a plane at an angle to the curved reflector, the distance of said planar reflector from said primary unit being at least approximately one-half the distance of said focus from said unit, and the shapes and mutual arrangement of the two reflectors being such that radio energy following straight line paths from said unit to the planar reflector will be reflected thereby to the curved reflector and reflected again from the curved reflector along paths parallel to one another and to the plane of the planar reflector.

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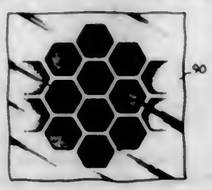
3,165,748
**SERIES FED LOG PERIODIC ANTENNA WITH COPLANAR CONDUCTOR PAIRS**
Edmund Wergiliusz Wolosczak, Chelmsford, Essex, England, assignor to The Marconi Company Limited, a British company
Filed Mar. 19, 1962, Ser. No. 180,483
Claims priority, application Great Britain, Mar. 29, 1961, 11,499/61
12 Claims. (Cl. 343—792.5)



1. A series array directional aerial system comprising a plurality of conductor pairs of progressively differing lengths, the conductors of each pair being of substantially the same length, close together, and connected together at one end, and a plurality of series connecting substantially co-linear connectors of progressively different lengths and extending substantially at right angles to the conductors of the conductor pairs, each connector connecting the free end of one conductor of one pair to the free end of one conductor of the next pair, the ratio of the electrical length of each conductor pair to the electrical length of the connector connecting it to the next conductor pair of smaller length being substantially the same in all cases and the ratio of the electrical length of each conductor pair to that of the next conductor pair of smaller length being also substantially the same in all cases.

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3,165,749
**MICROWAVE TRANSMISSIVE OPTICAL RADIATION REFLECTORS**
Stanton H. Cushner, Los Angeles, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 15, 1958, Ser. No. 760,944
9 Claims. (Cl. 343—911)

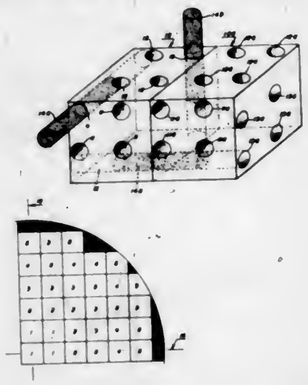


1. A mirror member for separating short wavelength radiation and microwave radiation that is transmitted along a common axis through the same area, said mirror member comprising a dielectric base member having at least one optically smooth surface thereon, said base member being transparent to such microwave radiation, said base member having a two-dimensional array of mutually spaced hexagonal mirror segments bonded to said optical surface, said segments having sharp boundaries at their edges and being separated by insulating gaps; said mirror segments being composed of a material that possesses a high reflection coefficient for said short wavelength region; the lineal dimensions of said mirror segments being large compared with the wavelength of said short wavelength radiation and small compared with the wavelength of said microwave radiation, the widths of the gaps between adjacent mirror segments being small compared with the lineal dimensions of said segments but large compared with the wavelength of said short wavelength radiation, whereby a large percentage of the microwave radiation incident upon said mirror means is transmitted therethrough, and whereby a large percentage of said short wavelength radiation incident upon said mirror member is reflected therefrom.



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3,165,750
**DELAY TYPE LENS CONSISTING OF MULTIPLE IDENTICAL FOAMED BLOCKS VARIABLY LOADED BY INTERLINKING INSERTED RODS**
Philip Tell, Summit, N.J., assignor to Tellite Corporation, Orange, N.J., a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,604
12 Claims. (Cl. 343—911)

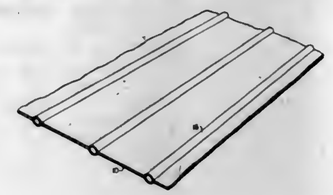


1. A method of imparting a predetermined electrical characteristic to a block of dielectric material which method comprises forming a plurality of sets of apertures in the block, which sets of apertures have axes lying in three mutually perpendicular planes, and inserting into the apertures rods of plastic, said rods fitting snugly within the apertures and having a predetermined quantity of metal particles substantially uniformly dispersed therethrough.

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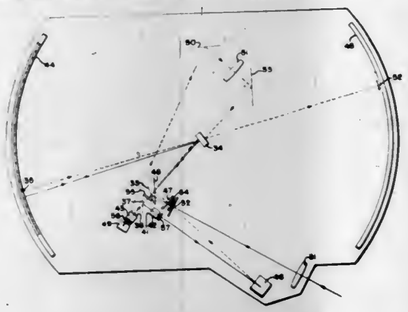
3,165,751
**ROLLED PASSIVE REFLECTIVE ANTENNA TENDING TO UNROLL UNDER BIAS OF ENTRAPPED AIR**
Trevor Clark, Annapolis, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 26, 1962, Ser. No. 233,293
2 Claims. (Cl. 343—915)

1. A passive reflective antenna to be orbited in space comprising, a panel of electrically insulative foldable sheet material adapted to be folded and stored within a space capsule under atmospheric air conditions and ejected from the capsule into space, at least one tubular rib of material impervious to atmosphere secured to and extending along said panel in a direction for erection of the panel in space, a plurality of metallic filaments supported in random positions from a surface of said material, each of said metallic filaments having a length corresponding to one half the wavelength of the desired frequency of electromagnetic radiation to be reflected to thus function as a reflective antenna for such radiation, and said tubular rib entrapping ambient air while said panel is folded under atmospheric air conditions whereby when a folded panel is ejected from the capsule into the near vacuum of space the panel is unfolded to a variable extent to form an enlarged area of reflective antenna with no predetermined geometric configuration.



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3,165,752
**MOTION PICTURE CAMERA USING FOCAL PLANE SHUTTERS**
Sigmund J. Jacobs, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 28, 1961, Ser. No. 134,482
10 Claims. (Cl. 352—84)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A camera for forming a series of photographs on a light sensitive film of an object moving at high speed comprising a rotating reflecting means for reflecting image rays received from the object to provide continuous sweeping image rays along a first path, means for receiving and diverting said sweeping image rays along a second path in a timed relationship back to said first named means, an opaque baffle plate having a plurality of apertures therein arranged in such a manner that a multiplication of images is formed after passage of the rays through the apertures, said first named means reflecting the sweeping image rays in the second path across said baffle plate, the apertures in said baffle plate receiving and passing the multiple of image rays in a timed relationship through said baffle plate, channeling means for placing said multiple image rays in a displaced spacial relationship, recording means having an arcuate shape for receiving and recording the multiple image rays from said first named means, a plurality of mirrors for receiving and reflecting said muutiple of image rays from said channeling means to said first named means whereby the multiple images are reflected by the first named means to said recording means for recordation in a frame relation.

3,165,753

## PREPARATION OF 1-ALKYL-3,5-DINITRO-1,2,4-TRIAZOLE

Newton Reeser Smith and Richard Haven Wiley, Louisville, Ky., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed May 3, 1957, Ser. No. 656,993
3 Claims. (Cl. 260—308)

1. The process for the preparation of 1-alkyl-3,5-dinitro-1,2,4-triazoles in which the alkyl group is a lower alkyl group, which comprises adding guanazine dropwise to a copper nitrate solution at a temperature between about 90 to 95° C., stirring the resulting solution for about 1 to 2 hours at about 90 to 100° C., filtering the solution, acidifying the filtrate with concentrated nitric acid, extracting the filtrate with ether, extracting the ether extract with a slurry of sodium bicarbonate, and adding to the final extract a slight excess of a dialkyl sulphate in which the alkyl groups are lower alkyl groups.

# DESIGNS

JANUARY 12, 1965

200,045

## POSTER SUPPORT

John R. Schmidgall, 2421 Stranahan Drive, Alhambra, Calif.

Filed Nov. 18, 1963, Ser. No. 77,471
Term of patent 14 years
(Cl. D1—12)

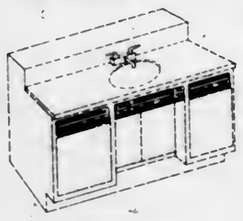


200,046

## COMBINED SINK AND CABINET

Warren A. Dillen, Jeffersontown, Ky., assignor to H. J. Scheirich Company, a corporation of Kentucky

Filed Jan. 6, 1964, Ser. No. 78,160
Term of patent 14 years
(Cl. D4—2)

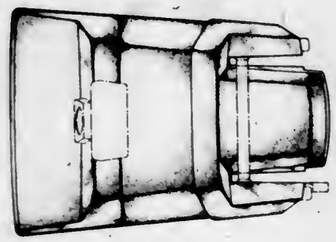


200,047

## VACUUM CLEANER OR THE LIKE

George H. Frost, Ashland, and Robert S. Waters, Lexington, Ohio, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 15, 1964, Ser. No. 80,004
Term of patent 14 years
(Cl. D9—2)

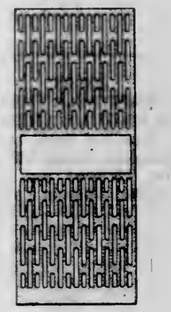


200,048

## PANEL

Kenneth Van Dyck, Westport, Conn., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 26, 1963, Ser. No. 76,354
Term of patent 14 years
(Cl. D13—1)



200,049

## UNDERFLOOR WIRING DUCT UNIT

James W. Hudson, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed May 14, 1963, Ser. No. 74,882
Term of patent 14 years
(Cl. D26—5)

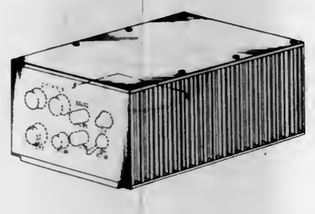


200,050

## MODULAR ELECTRONIC CABINET

Ronald E. Wiggerman, McHenry, Ill., assignor to Chicago Aerial Industries, Inc., a corporation of Delaware

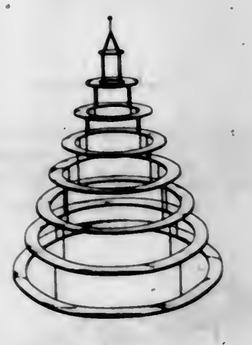
Filed May 31, 1963, Ser. No. 75,138
Term of patent 14 years
(Cl. D26—5)



200,051
MICROPHONE
Lute P. Wassmann, Chicago, Ill., assignor to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Indiana
Filed Mar. 4, 1963, Ser. No. 73,822
Term of patent 14 years
(Cl. D26—14)



200,052
ARTIFICIAL CHRISTMAS TREE DECORATION OR SIMILAR ARTICLE
Lawrence W. Haas and Betty Lou Haas, both of 5426 W. Hemlock Road, Milwaukee, Wis.
Filed Dec. 13, 1961, Ser. No. 67,901
Term of patent 7 years
(Cl. D29—1)



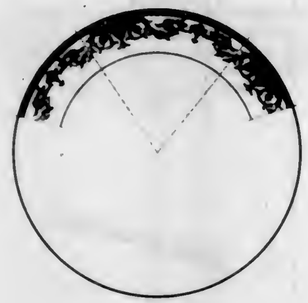
200,053
HAND WEIGHT
James H. Edwards, P.O. Box 1081, Evanston, Ill.
Filed Aug. 19, 1964, Ser. No. 81,358
Term of patent 14 years
(Cl. D34—5)



200,054
COMBINED TUMBLER AND HOLDER THEREFOR
Bernard F. Swartz, 901 Millin St., Orville C. Dore, R.D. 2, Frank S. Bagshaw, 303 Reynolds Ave., and Richard C. Coffman, R.D. 1, all of Huntingdon, Pa.
Filed Apr. 17, 1964, Ser. No. 79,545
Term of patent 14 years
(Cl. D44—10)



200,055
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 3, 1964, Ser. No. 78,039
Term of patent 3½ years
(Cl. D44—15)



200,056
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 3, 1964, Ser. No. 78,040
Term of patent 3½ years
(Cl. D44—15)

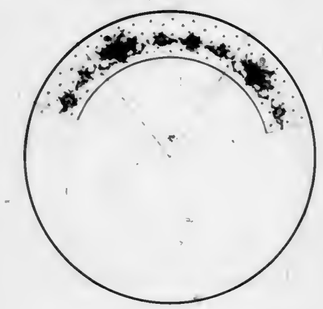




200,057
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 3, 1964, Ser. No. 78,041
Term of patent 3½ years
(Cl. D44—15)



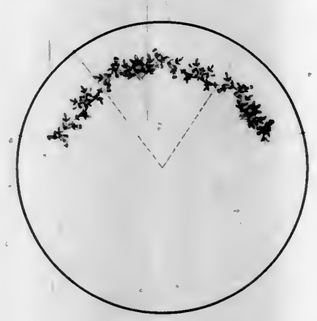
200,058
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 3, 1964, Ser. No. 78,042
Term of patent 3½ years
(Cl. D44—15)



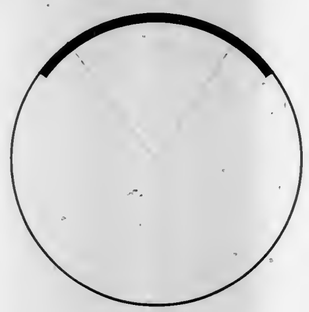
200,059
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 3, 1964, Ser. No. 78,043
Term of patent 3½ years
(Cl. D44—15)



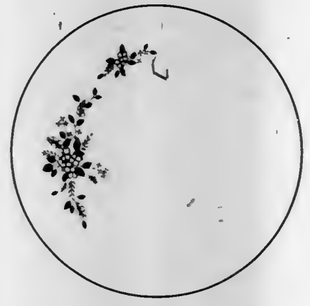
200,060
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 3, 1964, Ser. No. 78,044
Term of patent 3½ years
(Cl. D44—15)



200,061
PLATE OR SIMILAR ARTICLE
Wataru Uda, 2181 Central Road, Apt. A, Fort Lee, N.J.
Filed Jan. 7, 1964, Ser. No. 78,105
Term of patent 3½ years
(Cl. D44—15)



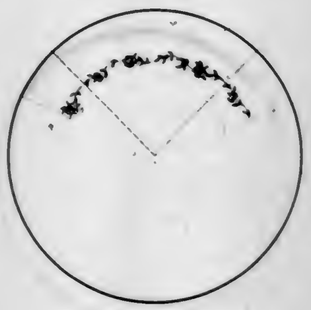
200,062
PLATE OR SIMILAR ARTICLE
Wataru Uda, 2181 Central Road, Apt. A, Fort Lee, N.J.
Filed Jan. 7, 1964, Ser. No. 78,106
Term of patent 3½ years
(Cl. D44—15)



200,063
PLATE OR SIMILAR ARTICLE
Wataru Uda, 2181 Central Road, Apt. A, Fort Lee, N.J.
Filed Jan. 7, 1964, Ser. No. 78,108
Term of patent 3½ years
(Cl. D44—15)



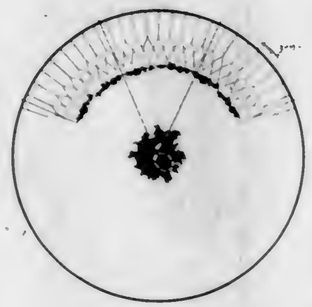
200,064
PLATE OR SIMILAR ARTICLE
Wataru Uda, 2181 Central Road, Apt. A, Fort Lee, N.J.
Filed Jan. 7, 1964, Ser. No. 78,110
Term of patent 3½ years
(Cl. D44—15)



200,065
PLATE OR SIMILAR ARTICLE
Tsuneo Murase, 15015 Gramercy Place, Apt. 3-C, Gardena, Calif.
Filed Jan. 31, 1964, Ser. No. 78,458
Term of patent 3½ years
(Cl. D44—15)



200,066
PLATE OR SIMILAR ARTICLE
Shigeru Masuda, 2185 Central Road, Apt. C, Fort Lee, N.J.
Filed Jan. 31, 1964, Ser. No. 78,459
Term of patent 3½ years
(Cl. D44—15)



200,067
PLATE OR SIMILAR ARTICLE
Wataru Uda, 2181 Central Road, Apt. A, Fort Lee, N.J.
Filed Jan. 31, 1964, Ser. No. 78,460
Term of patent 3½ years
(Cl. D44—15)

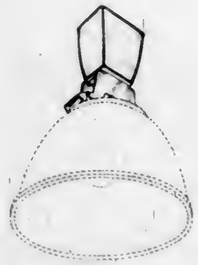


200,068
PENDANT CHARM
Henry B. Lederer, 120 Bay Blvd., Atlantic Beach, N.Y.
Filed May 21, 1963, Ser. No. 75,000
Term of patent 7 years
(Cl. D45—17)

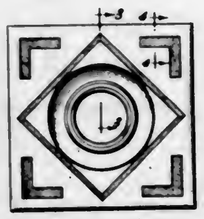




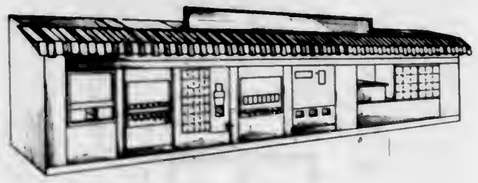
200,069
LUMINAIRE
Frank Van Steenhoven, 140 N. 5th St., Newark, Ohio
Filed July 26, 1963, Ser. No. 75,984
Term of patent 14 years
(Cl. D48—23)



200,070
COMBINED ROSE AND ATTACHING COLLAR
Fred J. Russell, 8635 Otis St., South Gate, Calif.
Filed Mar. 31, 1964, Ser. No. 79,281
Term of patent 14 years
(Cl. D50—6)



200,071
FOOD VENDING UNIT
Otto E. Werner, Skokie, Ill., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Filed June 18, 1962, Ser. No. 70,590
Term of patent 7 years
(Cl. D52—3)



200,072
PORTABLE IMPACT TOOL OR THE LIKE
Albert C. Koett, 2112 Glenside Ave., Norwood, Ohio
Filed June 20, 1963, Ser. No. 75,454
Term of patent 14 years
(Cl. D54—14)



200,073
SPECTACLE FRAME
Eugene D. Ditto, Needham, Mass., assignor to Marine Optical Manufacturing Company, Boston, Mass., a corporation of Massachusetts
Filed Dec. 26, 1963, Ser. No. 77,930
Term of patent 14 years
(Cl. D57—1)



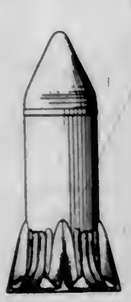
200,074
CARBOY
Ted F. Bodenheimer, Kansas City, Mo., assignor to Owens Plastics Company, Kansas City, Mo., a corporation of Missouri
Filed Aug. 1, 1963, Ser. No. 76,065
Term of patent 14 years
(Cl. D58—3)



200,075
JUG
Sidney B. Flashman, Coral Gables, Fla., assignor to General Distillers Corporation of Kentucky Inc., doing business as Ye Olde Kentucky Distillery, Louisville, Ky., a corporation of Kentucky
Filed Aug. 12, 1963, Ser. No. 76,190
Term of patent 14 years
(Cl. D58—5)



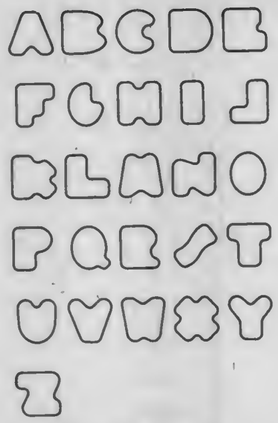
200,076
CONTAINER FOR FOODSTUFFS OR DRINKS
Peter R. Hill, Wymondham, Melton Mowbray, England, assignor to Competitive Grocers Limited, Wymondham, Melton Mowbray, England, a British company
Filed June 10, 1963, Ser. No. 75,300
Claims priority, application Great Britain Jan. 8, 1963
Term of patent 7 years
(Cl. D58—9)



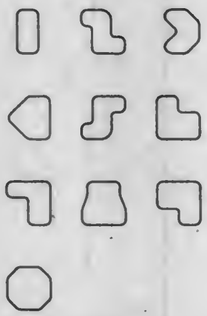
200,077
PULL TAB FOR CONTAINERS OR THE LIKE
Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 3, 1964, Ser. No. 78,069
Term of patent 14 years
(Cl. D58—26)



200,078
FONT OF TYPE OR SIMILAR ARTICLE
Earle F. Miller, Jr., 803 S. Star, El Dorado, Kans., and Maurice S. Lowe, 2667 N. Estella, Wichita, Kans.
Filed Feb. 25, 1963, Ser. No. 73,688
Term of patent 14 years
(Cl. D64—12)



200,079
FONT OF TYPE OR SIMILAR ARTICLE
Earle F. Miller, Jr., 803 S. Star, El Dorado, Kans., and Maurice S. Lowe, 2667 N. Estella, Wichita, Kans.
Filed Feb. 25, 1963, Ser. No. 73,701
Term of patent 14 years
(Cl. D64—12)

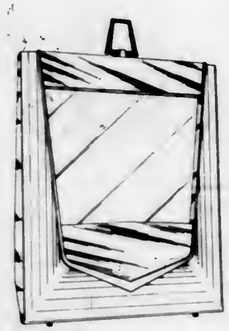


200,080
REFRIGERATOR
William E. Stumpf, Minneapolis, Minn., assignor, by mesne assignments, to Studebaker Industries, Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 15, 1963, Ser. No. 75,806
Term of patent 14 years
(Cl. D67—3)

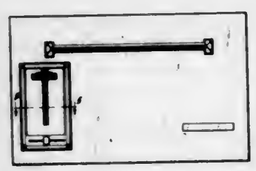




200,081
DISPLAY CASE
Charles E. Trame, Shawnee Township, Allen County, Ohio, assignor to Neon Products Inc., Lima, Ohio, a corporation of Ohio
Filed Mar. 19, 1963, Ser. No. 74,047
Term of patent 14 years
(Cl. D81—11)



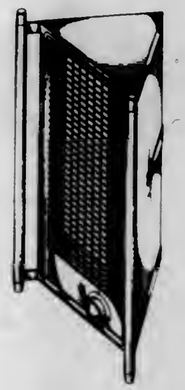
200,082
ELECTRIC TOASTER FOR WALL OR COUNTER TOPS
Frank R. Swanson, 607 Washington Ave., Owosso, Mich.
Filed Apr. 15, 1963, Ser. No. 74,439
Term of patent 14 years
(Cl. D81—10)



200,083
ELECTRIC HOT PLATE OR THE LIKE
Alan W. Duncan, Itasca, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed June 17, 1963, Ser. No. 75,359
Term of patent 7 years
(Cl. D81—10)



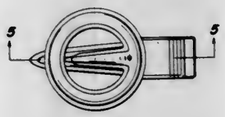
200,084
PORTABLE HEATER
James F. Mariol, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Dec. 5, 1963, Ser. No. 77,684
Term of patent 14 years
(Cl. D81—10)



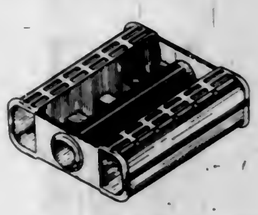
200,085
URINARY METERING CONTAINER OR SIMILAR ARTICLE
William L. Smith, Warwick, R.I., assignor to Davol Rubber Company, Providence, R.I., a corporation of Rhode Island
Filed Apr. 28, 1964, Ser. No. 79,607
Term of patent 14 years
(Cl. D83—1)



200,086
HAIR CURLER
William Duerr, 5125 E. 117th St., Cleveland 25, Ohio, and Richard Roller, 266 Graham Road, Cuyahoga Falls, Ohio
Filed May 19, 1964, Ser. No. 80,046
Term of patent 14 years
(Cl. D86—10)



200,087
**PEDAL FOR VELOCIPEDES**
Harry Golden, New York, N.Y., assignor to Ideas for Auto & Bike Specialties, Inc., New York, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 77,604
Term of patent 3½ years
(Cl. D90—14)



200,088
**FAUCET AERATOR**
John Earnshaw, Chicago, Ill., assignor to Wrightway Engineering Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 25, 1963, Ser. No. 77,159
Term of patent 14 years
(Cl. D91—3)



# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 12TH DAY OF JANUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Infanseat Co.: *See*—
Ouellette, Alfred J. Re. 25,710.

Ouellette, Alfred J., to Infanseat Co. Baby carrier. Re. 25,710, 1–12–65, Cl. 297—457.

# LIST OF PLANT PATENTEES

Fischer, Carl H., to Selected Glads, Inc. Gladiolus plant. 2,465, 1–12–65, Cl. 85.

Selected Glads, Inc.: *See*—
Fischer, Carl H. 2,465.

# LIST OF DESIGN PATENTEES

American Radiator & Standard Sanitary Corp.: *See*—
Van Dyck, Kenneth. 200,048.
Arvin Industries, Inc.: *See*—
Mariol, James F. 200,084.
Automatic Canteen Co. of America: *See*—
Werner, Otto E. 200,071.
Bagshaw, Frank S.: *See*—
Swarts, Bernard F., Dore, Bagshaw, and Coffman. 200,054.
Bodenheimer, Ted F., to Owens Plastics Co. Carboy. 200,074, 1–12–65, Cl. D58—3.
Chicago Aerial Industries, Inc.: *See*—
Wiggerman, Ronald E. 200,050.
Coffman, Richard C.: *See*—
Swarts, Bernard F., Dore, Bagshaw, and Coffman. 200,054.
Competitive Grocers Ltd.: *See*—
Hill, Peter R. 200,076.
Continental Can Co., Inc.: *See*—
Stec, Frederick J. 200,077.
Davol Rubber Co.: *See*—
Smith, William L. 200,085.
Dillen, Warren A., to H. J. Scheirich Co. Combined sink and cabinet. 200,046, 1–12–65, Cl. D4—2.
Ditto, Eugene D., to Marine Optical Mfg. Co. Spectacle frame. 200,073, 1–12–65, Cl. D57—1.
Dore, Orville C.: *See*—
Swarts, Bernard F., Dore, Bagshaw, and Coffman. 200,054.
Duerr, William, and R. Roller. Hair curler. 200,086, 1–12–65, Cl. D86—10.
Duncan, Alan W., to Sears, Roebuck and Co. Electric hot plate or the like. 200,083, 1–12–65, Cl. D81.
Earnshaw, John, to Wrightway Engineering Co. Faucet aerator. 200,088, 1–12–65, Cl. D91—3.
Edwards, James H. Hand weight. 200,053, 1–12–65, Cl. D34—5.
Electro-Voice, Inc.: *See*—
Wassmann, Lute P. 200,051.
Flashman, Sidney B., to General Distillers Corp. of Kentucky Inc., d.b.a. Ye Olde Kentucky Distillery. Jug. 200,075, 1–12–65, Cl. D58—5.
Frost, George J., and R. S. Waters, to Westinghouse Electric Corp. Vacuum cleaner or the like. 200,047, 1–12–65, Cl. D9—2.
General Distillers Corp. of Kentucky Inc.: *See*—
Flashman, Sidney B. 200,075.
Golden, Harry, to Ideas for Auto & Bike Specialties, Inc. Pedal for velocipedes. 200,087, 1–12–65, Cl. D90—14.
Haas, Betty L.: *See*—
Haas, Lawrence W. and B. L. 200,052.
Haas, Lawrence W. and B. L. Artificial Christmas tree decoration or similar article. 200,052, 1–12–65, Cl. D29—1.
Hill, Peter R., to Competitive Grocers Ltd. Container for foodstuffs or drinks. 200,076, 1–12–65, Cl. D58—9.
Hudson, James W., to Square D Co. Underfloor wiring duct unit. 200,049, 1–12–65, Cl. D26—5.
Ideas for Auto & Bike Specialties, Inc.: *See*—
Golden, Harry. 200,087.
Koett, Albert C. Portable impact tool or the like. 200,072, 1–12–65, Cl. D54—14.
Lederer, Henry B. Pendant charm. 200,068, 1–12–65, Cl. D45—17.
Lowe, Maurice S.: *See*—
Miller, Earle F., Jr., and Lowe. 200,078.
Miller, Earle F., Jr., and Lowe. 200,079.
Marine Optical Mfg. Co.: *See*—
Ditto, Eugene D. 200,073.
Mariol, James F., to Arvin Industries, Inc. Portable heater. 200,084, 1–12–65, Cl. D81—10.
Masuda, Shigeru. Plate or similar article. 200,066, 1–12–65, Cl. D44—15.
Masuda, Shigeru. Plate or similar article. 200,055, 1–12–65, Cl. D44—15.
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Masuda, Shigeru. Plate or similar article. 200,060, 1–12–65, Cl. D44—15.
Miller, Earle F., Jr., and M. S. Lowe. Font of type or similar article. 200,078, 1–12–65, Cl. D64—12.
Miller, Earle F., Jr., and M. S. Lowe. Font of type or similar article. 200,079, 1–12–65, Cl. D64—12.
Murase, Tsuneo. Plate or similar article. 200,065, 1–12–65, Cl. D44—15.
Neon Products Inc.: *See*—
Trame, Charles E. 200,081.
Owens Plastics Co.: *See*—
Bodenheimer, Ted F. 200,074.
Russell, Fred J. Combined rose and attaching collar. 200,070, 1–12–65, Cl. D50—6.
Scheirich, H. J., Co.: *See*—
Dillen, Warren A. 200,046.
Schmidgall, John R. Poster support. 200,045, 1–12–65, Cl. D1—12.
Sears, Roebuck and Co.: *See*—
Duncan, Alan W. 200,083.
Smith, William L., to Davol Rubber Co. Urinary metering container or similar article. 200,085, 1–12–65, Cl. D83—1.
Square D Co.: *See*—
Hudson, James W. 200,049.
Stec, Frederick J., to Continental Can Co., Inc. Pull tab for containers or the like. 200,077, 1–12–65, Cl. D58—26.
Studebaker Industries, Inc.: *See*—
Stumpf, William E. 200,080.
Stumpf, William E., to Studebaker Industries, Inc. Refrigerator. 200,080, 1–12–65, Cl. D67—3.
Swanson, Frank R. Electric toaster for wall or counter tops. 200,082, 1–12–65, Cl. D81—10.
Swarts, Bernard F., O. C. Dore, F. S. Bagshaw, and R. C. Coffman. Combined tumbler and holder therefor. 200,054, 1–12–65, Cl. D44—10.
Trame, Charles E., to Neon Products Inc. Display case. 200,081, 1–12–65, Cl. D80—11.
Uda, Wataru. Plate or similar article. 200,061, 1–12–65, Cl. D44—15.
Uda, Wataru. Plate or similar article. 200,062, 1–12–65, Cl. D44—15.
Uda, Wataru. Plate or similar article. 200,063, 1–12–65, Cl. D44—15.
Uda, Wataru. Plate or similar article. 200,064, 1–12–65, Cl. D44—15.
Uda, Wataru. Plate or similar article. 200,067, 1–12–65, Cl. D44—15.
Van Dyck, Kenneth, to American Radiator & Standard Sanitary Corp. Panel. 200,048, 1–12–65, Cl. D13—1.
Van Steenhoven, Frank. Luminaire. 200,069, 1–12–65, Cl. D48—23.
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Bright, Elvin M., to Air Logistics Corp. Method and apparatus for thermal expansion molding. 3,165,569, 1–12–65, Cl. 264—313.

Brinen, Paul F., to Young Radiator Co. Revolving-diffuser control-device for overhead space heating units. 3,165,052, 1–12–65, Cl. 98—40.

Broadhead, Ronald L., to Standard Oil Co. Carbon paper ink containing a trimellitic acid-alkanol-neopentyl glycol polyester. 3,165,484, 1–12–65, Cl. 260—28.

Brooks, Chester E., G. B. Crofutt, and W. C. Sand, to Bell Telephone Laboratories, Inc. Speech transmission through telephone ringing circuit. 3,165,590, 1–12–65, Cl. 179—84.

Brooks, Thomas W. Building construction. 3,165,110, 1–12–65, Cl. 135—1.

Brotherton, Robert J., A. L. McCloskey, and L. L. Petterson, to United States Borax & Chemical Corp. Polymeric organoboron compounds. 3,165,481, 1–12–65, Cl. 260—2.

Brothman, Abraham, R. D. Reiser, S. J. Halpern, and E. W. P., and A. Lewison, to Transitel International Corp. Code stack. 3,165,733, 1–12–65, Cl. 340—347.

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Wiedemann, Eugene, and Cuny. 3,165,365.

Brown, Charles: *See*—
Benner, Paul B., Johnson, and Brown. 3,164,915.

Brown, Joseph P., to Monsanto Chemicals Ltd. New quinasolines. 3,165,519, 1–12–65, Cl. 260—256.4.

Brown, McDannell: *See*—
Ingram, Marvin L. 3,164,937.

Brown, Morden G., to American Optical Co. Display apparatus. 3,164,918, 1–12–65, Cl. 40—130.

Bruns, Frank J., and A. H. Eron, to Sinclair Research, Inc. Vapor and solids separator for gasoline. 3,165,469, 1–12–65, Cl. 210—232.

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Buhrmester, Donald E.: *See*—
Stout, Rolla J., and Buhrmester. 3,165,270.

Bunker-Ramo Corp., The: *See*—
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Burgen, Samuel. Anti-skid device. 3,165,137, 1–12–65, Cl. 152—236.

Burk, Emmett H., Jr., and J. Mool, to Engelhard Industries, Inc. Process for activating a catalyst composite. 3,165,479, 1–12–65, Cl. 252—442.

Burke, William J., to Roll-O-Sheets, Inc. Portable apparatus for heat shrinking film about objects. 3,164,939, 1–12–65, Cl. 53—379.

Burnham, Peter B., and J. L. Coakley, to American Brake Shoe Co. Fluid power apparatus. 3,165,068, 1–12–65, Cl. 103—161.

Burns, Marcy and N., to Star Tank and Filter Corp. Clamping devices for mated flanges. 3,165,341, 1–12–65, Cl. 285—406.

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Glaser, David. 3,165,663.

Burtenshaw, Philip, and J. E. Moore, to National Research Corp. Preformed crucible. 3,165,572, 1–12–65, Cl. 13—27.

Burton, Carl. Safety gloves. 3,164,841, 1–12–65, Cl. 2—161.

Busillo, Eugene P., and H. J. Hampel, to Fischer & Porter Co. Flow rate indicator. 3,164,989, 1–12–65, Cl. 73—209.

Buss, Benjamin A., to Ametek, Inc. Laundry machines. 3,165,003, 1–12–65, Cl. 74—230.17.

Butsler, George J., C. P. Zupic, and G. B. Sterling, to The Dow Chemical Co. Vinylidene chloride polymer compositions having improved low temperature properties. 3,165,491, 1–12–65, Cl. 260—31.8.

Byal, John M.: *See*—
Hess, Charles A., Byal, and Adams. 3,164,854.

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Fombonne, Paul. 3,165,744.

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Caldwell, John R., to Eastman Kodak Co. Neopentyl halide ester of α,β-unsaturated carboxylic acid. 3,165,502, 1–12–65, Cl. 260—86.1.

Caldwell, John R., and C. C. Dunnelly, to Eastman Kodak Co. Process for preparing water-resistant and vapor-permeable coated fabric. 3,165,423, 1–12–65, Cl. 117—135.5.

California Research Corp.: *See*—
Schmidt, Robert J. 3,165,036.

Callahan, Gerard M., to Electrolert Inc. Burglar alarm system. 3,165,727, 1–12–65, Cl. 340—274.

Callaway, Richard W.: *See*—
Jones, Hugh C. 3,165,248.

Callender, Ralph W., to International Harvester Co. Method of manufacturing a hollow metal part by use of high energy means. 3,165,404, 1–12–65, Cl. 75—214.

Callick, Eric B. B., to English Electric Valve Co. Ltd. Signal storage tubes utilising high and low capacitance storage electrodes. 3,165,664, 1–12–65, Cl. 315—12.

Campanella, Samuel J., to Melpar, Inc. Microscope spectrum analyzer. 3,165,586, 1–12–65, Cl. 179—1.

Campbell, Hobert T., J. J. Monahan, and J. A. Roeder, to Western Electric Co. Inc. Wire feeding apparatus. 3,165,207, 1–12–65, Cl. 214—1.

Campbell, Robert A. Ash-retaining safety cigarette. 3,165,105, 1–12–65, Cl. 131—4.

Campbell, Robert H., and I. H. Johnson, to Sun Oil Co. Method of refining oil. 3,165,464, 1–12–65, Cl. 208—276.

Campbell, Scott V., to Radiation Inc. Solid state relay utilising two terminal two-state elements and controlled pulse producing means. 3,165,645, 1–12–65, Cl. 307—88.5.

Campbell, William W.: *See*—
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Caramelli, Carl F. Movable seat mounting. 3,165,289, 1–12–65, Cl. 248—416.

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Card, Londa Y. Infant-holding attachment for seats. 3,165,358, 1–12–65, Cl. 297—389.

Carissimi, Vincent L., and O. L. Taylor, to Westinghouse Electric Corp. Wiring device and wire engagement means therefor. 3,165,614, 1–12–65, Cl. 200—166.

Carling, Conrad I., to Carling Electric, Inc. Insulating and/or dust cover for switches. 3,165,574, 1–12–65, Cl. 174—59.

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Hagberg, Hugo E. 3,165,611.
Sorenson, Wesley T. 3,165,603.
Sorenson, Wesley T. 3,165,604.

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Carrigan, Tracy, to FMC Corp. Wheel balancer. 3,164,996, 1–12–65, Cl. 73—483.





Carter, James B., Ltd.: *See*—
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Carter, Paul H., and R. L. Morse, to Universal Machine Co., Inc. Confectionary novelty and container therefor. 3,165,252, 1–12–65, Cl. 229—5.5.

Castelletti, Lewis. Hand operated button sewer. 3,165,080, 1–12–65, Cl. 112—112.

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Keskitalo, Howard O. 3,165,348.
Parker, Dwight W., and Philipsen. 3,165,390.

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Koakle, Raymond L. 3,165,032.

Cern, Harry S.: *See*—
McCorkle, Willard H., and Cern. 3,165,448.

Chadwick, Abraham B., A. O. Sjoden, and W. J. Witten, Jr., to American Radiator & Standard Sanitary Corp. Midget boiler. 3,165,092, 1–12–65, Cl. 122—214.

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Chapman, Dave, to Mohasco Industries, Inc. Sound insulating building structure with movable partition. 3,165,165, 1–12–65, Cl. 181—33.

Chasar, Anthony R., and A. W. Mehrbrodt, to The Triax Co. Solenoid operated limit switch assembly. 3,165,600, 1–12–65, Cl. 200—47.

Chemirad Corp.: *See*—
Mackinney, Herbert W. 3,165,509.

Chiesa, Peter P.: *See*—
Lovett, William G., Chiesa, and Dann. 3,165,552.

Childs, Geoffrey E.: *See*—
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Christie, Walter G. Accessory for air conditioners. 3,165,053, 1–12–65, Cl. 98—94.

Chrysler Corp.: *See*—
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Noyes, Gregory D. 3,165,282.
Roy, Amedee, and Jominy. 3,165,400.
Urbats, Anthony J. 3,164,974.

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Churchill, Ronald W., Jr., to Union Carbide Corp. Electrical contact brush. 3,165,480, 1–12–65, Cl. 252—503.

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Blatter, Herbert M. 3,165,529.
Gunst, Raymond. 3,165,506.
Schmidt, Paul, Eichenberger, and Wilhelm. 3,165,520.
Schmidt, Paul, Schumacher, Eichenberger, and Wilhelm. 3,165,528.
Urech, Jakob, Vischer, and Wettstein. 3,165,542.
Wettstein, Albert, and Schmidlin. 3,165,511.
Altermatt, Hans. 3,165,516.
Martin, Henry, Aebi, and Ebner. 3,165,549.
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Clancy, Robert J., and C. P. Sears, to Ford Motor Co. Adjustably supported seat structure. 3,165,351, 1–12–65, Cl. 296—65.

Clapper, Genung L., to International Business Machines Corp. Electronic circuit for simulating brain neuron characteristics including memory means producing a self-sustaining output. 3,165,644, 1–12–65, Cl. 307—88.5.

Clapper, Genung L., to International Business Machines Corp. Zener diode noise generator with feedback for threshold maintenance. 3,165,707, 1–12–65, Cl. 331—78.

Clark, Claude A., to The Dow Chemical Co. Variable volume pumping apparatus. 3,165,062, 1–12–65, Cl. 103—38.

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Murray, August E., and Clark. 3,165,383.

Clark, Trevor, to Westinghouse Electric Corp. Rolled passive reflective antenna tending to unroll under bias of entrapped air. 3,165,751, 1–12–65, Cl. 343—915.

Clarke, Stanley P.: *See*—
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Clarkson, Blanding D.: *See*—
Howle, Harry G., Clarkson, and Lawhon. 3,165,564.

Clause, John W., to W. J. Ruscoe Co. Light reflector. 3,165,265, 1–12–65, Cl. 240—103.

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Macksoud, Leo, and Clavich. 3,165,216.

Clay, Nathan S. Key operated combination switch for alarm system. 3,165,599, 1–12–65, Cl. 200—44.

Clearman, Jerome P., and B. C. Webster. Invalid walker and ambulatory aid. 3,165,314, 1–12–65, Cl. 272—70.3.

Clements, Herbert A., to S.S.S. Patents Ltd. Clutches for transmitting rotary motion. 3,165,183, 1–12–65, Cl. 192—103.

Cleveland Pneumatic Industries, Inc.: *See*—
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Clock, Gerald E., H. R. Bailey, and S. F. Roth, to The Dow Chemical Co. Chlorinated linear, macromolecular ethylene polymer coating compositions, their use and coated products thereof. 3,165,493, 1–12–65, Cl. 260—33.6.

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Cohen, Erwin M.: *See*—
Zang, Joseph A., and Cohen. 3,165,460.

Cohen, Joseph H., to United Aircraft Corp. Operating control for electron beam machines. 3,165,619, 1–12–65, Cl. 219—121.

Colebrook, Ross W., S. H. Feld, and G. F. Goetz, to The Boeing Co. Two part thrust reverser. 3,164,956, 1–12–65, Cl. 60—35.54.

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Costes, Didier. 3,165,349.

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Conklin, Charles S., and J. D. Reeves, to Lily-Tulip Cup Corp. Plastic package cup dispenser. 3,165,234, 1–12–65, Cl. 221—302.

Consolidated Electronics Industries Corp.: *See*—
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Continental Oil Co.: *See*—
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Continental Vending Machine Corp: *See*—
Levine, Mark. 3,165,366.

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Cook, Charles F., to Phillips Petroleum Co. Determining the nature of geological formations. 3,164,988, 1–12–65, Cl. 73—154.

Cop, Gordon N.: *See*—
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Cooper, Clinton T. Mat switch having U-shaped binding clamps. 3,165,606, 1–12–65, Cl. 200—86.

Coover, Harry W., Jr., and R. L. McConnell, to Eastman Kodak Co. Process for preparing α-monoolefinic hydrocarbons. 3,165,557, 1–12–65, Cl. 260—683.15.

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Phelps, Thomas W., and Short. 3,165,066.

Costes, Didier, to Commissariat a l'Energie Atomique. Locking structures. 3,165,349, 1–12–65, Cl. 294—97.

Cotton, Robert B. Combination golf cart and golf bag 3,165,330, 1–12–65, Cl. 280—41.

County Laboratories Ltd.: *See*—
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Coval, Arthur B.: *See*—
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Cox, Alvon R., and A. E. Hosier, to The Faultless Rubber Co. Method of making hollow articles. 3,165,565, 1–12–65, Cl. 264—161.

Cripe, Maxwell L., and C. N. French, to The Bendix Corp. Leveling valve. 3,165,327, 1–12–65, Cl. 280—6.1.

Crofutt, George B., Jr.: *See*—
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Crosby, Spurgeon. Tool grinding machine. 3,164,930, 1–12–65, Cl. 51—3.

Crowe, Robert E., and B. Garcia, Jr., to The Dow Chemical Co. Process for inhibiting foaming in an aqueous fluid. 3,165,477, 1–12–65, Cl. 252—321.

Crowell, Philip L., W. C. Harris, and E. L. Muoio, to S. C. Johnson & Son, Inc. Package and composition. 3,165,227, 1–12–65, Cl. 220—42.

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Cubert, Jack S., to Sperry Rand Corp. Plural logic circuit utilising breakdown diodes to improve wave shape and switching speeds. 3,165,641, 1–12–65, Cl. 307—88.5.

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Cushner, Stanton H., to Thompson Ramo Wooldridge Inc. Microwave transmissive optical radiation reflectors. 3,165,749, 1–12–65, Cl. 343—911.

Cvacho, Daniel S., to Reynolds Metals Co. Method and apparatus for cutting tubular members from axially advancing tubular stock. 3,165,034, 1–12–65, Cl. 93—80.

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Muller, Alfred H. and E. 3,165,259.

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D'Alelio, Gaetano F., to Dal Mon Research Co. Unsaturated triazine compounds. 3,165,514, 1–12–65, Cl. 260—248.
D'Alelio, Gaetano F., to Dal Mon Research Co. Unsaturated triazine compounds. 3,165,515, 1–12–64, Cl. 260—248.
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Davidson, Gareth M., and J. Kritz, to American Bosch Arma Corp. Electrostatic vibration transducer. 3,164,987, 1–12–65, Cl. 73—141.
Davies, Ben, and R. W. Woodruff, to Harbison-Walker Refractories Co. Method of fabricating hollow bodies at elevated temperatures. 3,164,895, 1–12–65, Cl. 29—423.
Dawson, Gordon B., and L. J. Mills, to Coal Industry (Patents) Ltd. Rotary pick mining machine. 3,165,361, 1–12–65, Cl. 299—43.
De Bottari, Louis A., and C. Guajardo, to Alpha-Tronics Corp. Blanking circuit for ring counter and including gating circuits at the outputs thereof. 3,165,646, 1–12–65, Cl. 307—88.5.
De Bottari, Louis A., and C. Guajardo, to Alpha-Tronics Corp. Ring counter with no feedback comprising silicon controlled rectifier stages. 3,165,647, 1–12–65, Cl. 307—88.5.
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De Moss, Leonard. Fish skinning apparatus. 3,164,858, 1–12–65, Cl. 17—7.
Dennis, Clement O., and W. C. Shaver, to Precision Recapping Equipment Co. Curing rim. 3,164,865, 1–12–65, Cl. 18—46.
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De Priest, Thomas C., to E. I. du Pont de Nemours and Co. Yarn winding apparatus. 3,165,274, 1–12–65, Cl. 242—18.
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Sutter, Robert C. 3,165,453.
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Dick, Vester. Automatic photographic color processing machine. 3,165,049, 1–12–65, Cl. 95—89.
Dicke, Robert H. Gas cell frequency stabilization. 3,165,705, 1–12–65, Cl. 331—3.
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Dietz, Henry G. 3,165,605.
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Dom, Harry A., to The National Machinery Co. Can machine. 3,165,203, 1–12–65, Cl. 207—6.
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Doolittle, Donald B., and R. V. C. Parker, to All American Engineering Co. Aerial cargo delivery system. 3,165,298, 1–12–65, Cl. 258—1.2.
Dosal, Martin R. Inflatable apparatus for pressing shirts. 3,165,244, 1–12–65, Cl. 223—67.
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Paulson, Donald C. 3,165,303.
Wineland, William H. 3,165,554.
Downey, Rogers B., to Polaroid Corp. Photographic apparatus. 3,165,039, 1–12–65, Cl. 95—13.
Drago, Leo, to ILMA—Industria Lavorazione Metalli Anticidi dei F.lli Drago S.A.S. Flow-reversal propeller pump. 3,165,064, 1–12–65, Cl. 103—93.
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Tinkham, Wesley L. 3,165,125.
Dreibelbis, Richard C., to Carrier Corp. Valve mechanism. 3,165,263, 1–12–65, Cl. 236—100.
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Drew, Richard A., to Curran Productions. Apparatus for positioning stage drops. 3,165,296, 1–12–65, Cl. 254—141.
Dreyfus, Bertrand A., to Societe d'Electronique et d'Automatisme. Resistive layer track potentiometers. 3,165,714, 1–12–65, Cl. 338—162.
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Drumbeller, Oliver L., and R. W. Kordoe, to The Bendix Corp. Anisotropic circulator with dielectric posts adjacent the strip line providing discontinuity for minimizing reflections. 3,165,711, 1–12–65, Cl. 333—1.1.
Dubuc, Robert J., to The Bendix Corp. Brake thrust link. 3,165,174, 1–12–65, Cl. 188—78.
Du Buis, Edwin O., E. L. Cucksey, and C. E. Lindquist, to Willcox & Gibbs Sewing Machine Co. Doffing and donning mechanism. 3,164,946, 1–12–65, Cl. 57—53.
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Gray, James H., to Tupelo Spindle Co., Inc. Cotton scrapper means. 3,164,940, 1–12–65, Cl. 56—28.

Greenawalt, John E., deceased (J. S. Greenawalt, executrix). Conversion of sodium sulfide to sodium sulfite. 3,165,378, 1–12–65, Cl. 23—129.

Greenawalt, Joya S.: *See*—
Greenawalt, John E. 3,165,378.

Greenewald, Herbert, Jr. Method and composition for forming precision molds. 3,164,872, 1–12–65, Cl. 22—193.

Greenspon, Edward A. Anti-pernicious anaemia factor of the fundus and method of preparing same. 3,165,445, 1–12–65, Cl. 167—74.

Greenwald, Harry. Combined boat hook and pump. 3,165,067, 1–12–65, Cl. 103—153.

Gregor, Harry P.: *See*—
Kilburn, Robert W., and Gregor. 3,165,415.

Gresham, Leroy O.: *See*—
Leathers, William D., and Gresham. 3,165,155.

Griffin, Pat: *See*—
West, Vern W. 3,165,239.

Grijseels, Robert A., and H. H. Tonen, to Hollandse Signaalapparaten, N.V. System supplying electric pulses in cyclic order to a number of circuits. 3,165,702, 1–12–65, Cl. 328—75.

Grimes, Willard M., Jr., to Westinghouse Electric Corp. Automatic current regulator. 3,165,571, 1–12–65, Cl. 13—1.

Grinnell Corp.: *See*—
Maguire, Philip F., Jr. 3,165,602.

Grodsinsky, Samuel, and M. N. Kaufman, to United States of America, Navy. Screw noise simulation technique. 3,165,734, 1–12–65, Cl. 340—384.

Grubb, Bern B. Emergency patient supporting device. 3,164,850, 1–12–65, Cl. 5—81.

Guajardo, Ciro: *See*—
De Bottari, Louis A., and Guajardo. 3,165,646.
De Bottari, Louis A., and Guajardo. 3,165,647.

Guerrieri, Salvatore A.: *See*—
Bennett, Carroll O., and Guerrieri. 3,165,436.

Gunst, Raymond, to Ciba Corp. Diazo dyestuffs containing a trisulfonate diazo component. 3,165,506, 1–12–65, Cl. 260—153.

Gutswiller, Frank W., to General Electric Co. CEMF responsive motor speed control circuit. 3,165,688, 1–12–65, Cl. 318—246.

Haake, Claus H., to Westinghouse Electric Corp. Electroluminescent device. 3,165,647, 1–12–65, Cl. 315—169.

Haas, Charles P., Jr., and W. E. Roebuck. Handgrip for guns. 3,164,920, 1–12–65, Cl. 42—71.

Haas, David L.: *See*—
Gault, Robert L., and Haas. 3,165,627.

Haberhauer, Karl, to Schubert & Salyer Maschinenfabrik Aktiengesellschaft. Knitting apparatus. 3,164,975, 1–12–65, Cl. 66—145.

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Verter, Geert C., Hackmann, Ten Haken, and Barnsley. 3,165,393.

Hagberg, Hugo E., to Carling Electric, Inc. Spring biased-spring actuated momentary switch. 3,165,611, 1–12–65, Cl. 200—159.

Hahn, Clayton W. Dispensing apparatus for butter and the like. 3,165,230, 1–12–65, Cl. 221—73.

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Lutz, John H. 3,165,539.

Haldimann, Hans R., to ACEC—Ateliers de Construction Electriques de Charleroi, S.A. Hydraulic motors. 3,165,029, 1–12–65, Cl. 91—180.

Hall, Ernest A., to The White-Evans Elevator Co., Inc. Silencer device for hydraulic jacks. 3,165,166, 1–12–65, Cl. 181—47.

Hall, Henry K., Jr., to E. I. du Pont de Nemours and Co. Polymers from N-hetero-bicyclo alkanes and process for producing same. 3,165,482, 1–12–65, Cl. 260—2.

Hall, Robert L. Firearm trigger lock. 3,164,919, 1–12–65, Cl. 42—70.

Hallock, Albert W., and G. S. Mistler. Telescopic roof cover construction for automotive vehicles. 3,165,352, 1–12–65, Cl. 296—100.

Halpern, Stephen J.: *See*—
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Hamano, Kiichi. Water seal for pump. 3,165,323, 1–12–65, Cl. 277—41.

Hamby, Walter W., to J. M. Feighery Co. Fuel charge forming mechanism. 3,165,098, 1–12–65, Cl. 123—127.

Hamel, Edmund, to Hamel Projektierungs- und Verwaltungs A.G. Method of twining threads. 3,164,950, 1–12–65, Cl. 57—156.

Hamel Projektierungs- und Verwaltungs A.G.: *See*—
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Hamilton, Joel A., to Polaroid Corp. Closure device for a camera. 3,165,040, 1–12–65, Cl. 95—13.

Hamilton, Joel A., to Polaroid Corp. Method of distributing and containing processing fluid between superposed sheets. 3,165,048, 1–12–65, Cl. 95—89.

Hammelmann, Paul. Apparatus for the cleaning of sewer systems. 3,165,109, 1–12–65, Cl. 134—167.

Hammond, James W., and G. B. Enesminger, to Curtiss-Wright Corp. System and mechanism for dispensing fluids. 3,165,128, 1–12–65, Cl. 141—209.

Hampel, Herbert J.: *See*—
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Hampton, Andrew V., and C. S. Morris, to Caterpillar Tractor Co. Lock for hydraulically controlled transmission. 3,165,181, 1–12–65, Cl. 192—4.

Hanneman, Walter M., to Illinois Tool Works Inc. Milling machine for drill point thread cutting screw. 3,164,851, 1–12–65, Cl. 10—2.

Hannula, Leslie A., M. B. Schaffer, and E. S. Ertl, to Acoustica Development Corp. Wall mounted telephone booth. 3,164,868, 1–12–65, Cl. 20—3.5.

Hansen, Siegfried, to Hughes Aircraft Co. Star-tracking system using a frequency modulated carrier wave. 3,165,632, 1–12–65, Cl. 250—203.

Hanson Equipment Co.: *See*—
Hanson, Glenn E. 3,164,913.

Hanson, Glenn E., to Hanson Equipment Co. Snow removal apparatus having a hollow central horisontally extending auger. 3,164,918, 1–12–65, Cl. 37—48.

Hanson, Wallace E., to Sample-Durick Co., Inc. Display carton. 3,165,200, 1–12–65, Cl. 206—45.14.

Harbison-Walker Refractories Co.: *See*—
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Owen, William H., and Scott. 3,165,267.
Tvergaard, Aage M., Pack, Campbell, and Leatham. 3,165,304.

Hardman, James A., and R. W. Eskelson, to Utah Scientific Research Foundation. Wheel suspension system. 3,165,381, 1–12–65, Cl. 280—104.

Hardman, James A., and R. W. Eskelson, to Utah Scientific Research Foundation. Smooth-riding self-cleaning endless track. 3,165,364, 1–12–65, Cl. 305—18.

Harms, William J., and J. M. Stolarczyk, to Ford Motor Co. Roof rail weatherstrip. 3,164,870, 1–12–65, Cl. 20—69.

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Gardner, John B., and Harper. 3,165,487.

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Harper, Jay A., to Divac Electronics a division of Acme Machine Works, Inc. Actuator knob. 3,165,001, 1–12–65, Cl. 74—10.45.

Harper, Ralph C. Index tab. 3,164,917, 1–12–65, Cl. 40—25.

Harpley, Theodore R., to General Electric Co. Apparatus employing negative resistance device for operating electric discharge lamps. 3,165,668, 1–12–65, Cl. 315—209.

Harriman, Benjamin R., to Minnesota Mining and Mfg. Co. Electrolytic recording sheets. 3,165,458, 1–12–65, Cl. 204—18.

Harris, Donald A., and R. C. Shoemaker, to Hyster Co. Lift truck with suction counterpoise. 3,165,217, 1–12–65, Cl. 214—670.

Harris, William C.: *See*—
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Harshman, Albert G., and R. W. Sage, to Esso Research and Engineering Co. Asphalt composition and method of soil nutrient application. 3,164,925, 1–12–65, Cl. 47—9.

Hart, Halton W. Lamp mounting for photographic apparatus. 3,165,025, 1–12–65, Cl. 88—24.

Harten, John T.: *See*—
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Harter, Paul: *See*—
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Hatch, Philip J. Speed reducing mechanism. 3,165,002, 1–12–65, Cl. 74—217.

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Hauert, Robert E., and F. H. Pahlow. Vessel. 3,165,218, 1–12–65, Cl. 215—1.

Haughton, Paul F., to Combustion Engineering, Inc. Centrifugal casting apparatus and the method of making the same. 3,164,871, 1–12–65, Cl. 22—65.

Hauschild, Ulrich, and H. Nicolaus, to Kali-Chemie Aktiengesellschaft. Process for the regeneration of Raney-nickel catalyst. 3,165,478, 1–12–65, Cl. 252—418.

Haussig, Herbert G., to Harsco Corp. Method and apparatus for processing ferrous slag. 3,165,268, 1–12–65, Cl. 241—24.

Hawkins, Harold M., to Phillips Petroleum Co. Control of pressure drop in fluid flow. 3,165,123, 1–12–65, Cl. 138—37.

Haynes, Don A. Tamper-proof container. 3,165,220, 1–12–65, Cl. 215—42.

Haynes, Don A. Dispensing container with snap action diaphragm. 3,165,243, 1–12–65, Cl. 222—498.

Haselton, Merrill W., J. J. Erhart, and C. J. Ostendorf, to The Cincinnati Shaper Co. Multiple stop device for press brakes and the like. 3,165,140, 1–12–65, Cl. 153—21.

Heatley, William A., Jr., and E. R. Schaffer, to Champlain Co., Inc. Registration correction using a single computer to provide plural unequal corrections. 3,165,056, 1–12–65, Cl. 101—181.

Hebert, Donald G., to Royal McBee Corp. Coil spring clutch with centrifugal operator. 3,165,184, 1–12–65, Cl. 192—105.

Heinsmann, Fritz. Centrifugal speed governor. 3,164,999, 1–12–65, Cl. 73—550.

Heiser, Warren E., to Ferro Stamping Co. Vending machine. 3,165,231, 1–12–65, Cl. 221—116.

Hencken, Harold G., to American Felt Co. Polishing pad assembly for a glass polishing head. 3,164,855, 1–12–65, Cl. 51—195.

Hencken, Harold G., to American Felt Co. Filter cartridge. 3,165,471, 1–12–65, Cl. 210—347.

Hendrix, Harold H., Jr., to United States Concrete Pipe Co. Roll tamper for concrete pipe. 3,164,876, 1-12-65, Cl. 25—37.

Henmueller, Frank, to Motorola, Inc. Automatic gain control system for suppressed carrier single sideband radio receivers. 3,165,699, 1-12-65, Cl. 325—410.

Henn, William, and M. Tetelbaum, to The Bendix Corp. Commutator control for signal derivation. 3,165,638, 1-12-65, Cl. 307—88.5.

Hennom, John M., and D. E. Newell, to The Bendix Corp. Flowmetering. 3,164,990, 1-12-65, Cl. 73—228.

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Hennessy, Richard R., to C. E. Rogers Co. Evaporation apparatus and method. 3,165,495, 1-12-65, Cl. 159—47.

Hersh, Seymour L., to United States of America, Army. Photographic processing apparatus. 3,165,047, 1-12-65, Cl. 95—77.5.

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Hewitt, Ellis R., to Westinghouse Air Brake Co. Four-way valve device. 3,165,119, 1-12-65, Cl. 137—625.21.

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Hewlett-Packard Co.: *See*—
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Hill, Raymond W., and F. P. Kimball, to Teleflex Inc. Rudder position indicator. 3,165,066, 1-12-65, Cl. 116—31.

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Hobbs, Donald C., to Chas. Pfizer & Co., Inc. 2-(5-nitrofurfuryl)-mercapto-pyrimidines. 3,165,517, 1-12-65, Cl. 260—251.

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Hoenen, Lambert, H. Loeschner, and H. Mueckter, to Protochemie A.G. 4,4'-disubstituted diphenyl sulfones and process of making same. 3,165,510, 1-12-65, Cl. 260—239.8.

Hoesterey, Donald C., to Eastman Kodak Co. Zinc oxide xerographic layers for diredex copying. 3,165,405, 1-12-65, Cl. 96—1.

Hogan, John P., to Phillips Petroleum Co. Catalyst and process for producing olefin polymers. 3,165,504, 1-12-65, Cl. 260—94.9.

Hogan, Le Roy, to International Business Machines Corp. Armature for electro-magnetic relay. 3,165,607, 1-12-65, Cl. 200—67.

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Hoglund, Nils. Apparatus for forming contours. 3,165,027, 1-12-65, Cl. 90—13.3.

Holder, Ronald W. Lifting hook with unloading link. 3,165,344, 1-12-65, Cl. 294—67.

Holka, Thomas C., to Ford Motor Co. Battery mounting device. 3,165,163, 1-12-65, Cl. 180—68.5.

Holland, Gerald F., W. M. McLamore, and G. D. Leubach, to Chas. Pfizer & Co., Inc. N-substituted p-benzenedisulfonamides. 3,165,560, 1-12-65, Cl. 260—556.

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Holloway, Joe S. Flame thrower for cultivating purposes. 3,164,927, 1-12-65, Cl. 47—1.44.

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Horten, Carl R., and L. R. Loss, to Ingersoll-Rand Co. Drill cutting collecting apparatus. 3,165,158, 1-12-65, Cl. 175—211.

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Hough, Frank G., Co., The: *See*—
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Howle, Harry G., B. D. Clarkson, and R. S. Lawhon, to Sonoco Products Co. Method for forming a textile carrier. 3,165,564, 1-12-65, Cl. 264—80.

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Imoto, Minoru, C. Y. Huang, T. Tanigaki, and T. Kuraya. Production of thermosetting, aromatic hydrocarbon resins. 3,165,558, 1-12-65, Cl. 260—623.

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Inderau, Karl, to Westinghouse-Bremsen-Gesellschaft, m.b.H. Combination vehicle wheel spin and wheel slide control apparatus. 3,165,180, 1-12-65, Cl. 192—3.

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Ingram, Marvin L., 17% to M. Ingram, 10% to L. B. Geisler, and 73% to M. Brown. Wrapping machine. 3,164,987, 1-12-65, Cl. 53—229.

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Iwaya, Keikichi, and S. Kuramochi, to Louis Marx & Co., Inc. Animated figure toy. 3,164,924, 1-12-65, Cl. 46—232.

Jackson, James H. Scaffold bracket with spacers. 3,165,268, 1-12-65, Cl. 248—226.

Jackson, Robert J., to County Laboratories Ltd. Containers for viscous liquids. 3,165,242, 1-12-65, Cl. 222—495.

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Jacobs, Sigmund J., to United States of America, Navy. Motion picture camera using focal plane shutters. 3,165,752, 1-12-65, Cl. 352—84.

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Jaymar-Ruby, Inc.: *See*—
Ruby, Burton B. 3,164,844.

Jenkins, Ford M., and J. A. Bitner, to General Mills, Inc. Synthetic sponge and method of making same. 3,165,418, 1-12-65, Cl. 106—122.

Jenkner, Herbert, to Kali-Chemie Aktiengesellschaft. Process of producing boranes. 3,165,381, 1-12-65, Cl. 23—204.

Johanson, Kenneth A.: *See*—
Martin, Earl H., and Johanson. 3,165,107.

John, Catherine: *See*—
John, James L. 3,165,063.

John, James L., deceased (by C. John, executrix, M. M. Lewis, administratrix, de bonis non, of said James L. John). Fluid moving device. 3,165,063, 1-12-65, Cl. 103—80.

Johnson, Charles E., and F. W. Packer, to Hewitt-Robins Inc. Hinged saddle for hose. 3,165,286, 1-12-65, Cl. 248—75.

Johnson, Edward H., to The American Warming & Ventilating, Inc. Universal fire damper with engaging means. 3,165,050, 1-12-65, Cl. 98—1.

Johnson, Harold M.: *See*—
Benner, Paul B., Johnson, and Brown. 3,164,915.

Johnson, Irwin H.: *See*—
Campbell, Robert H., and Johnson. 3,165,464.

Johnson, John H., to Monsanto Co. Crossed-linked olefin-maleic anhydride interpolymers and salts thereof. 3,165,486, 1-12-65, Cl. 260—29.7.

Johnson, Paul K.: *See*—
Ablett, Harold A., Childs, Johnson, and Keerbs. 3,165,211.

Johnson, Robert A. Nursing bottle appliance. 3,165,219, 1-12-65, Cl. 215—11.

Johnson, S. C., & Son, Inc.: *See*—
Crowell, Philip L., Harris, and Muoio. 3,165,227.

Johnson, Wallace C., and J. A. Crum, to Olin Mathieson Chemical Corp. Method of making boat hulls. 3,164,894, 1-12-65, Cl. 29—412.

Johnston, Richard S.: *See*—
Geier, Douglas J., Pesman, Johnston, and Radnofsky. 3,165,356.

Johnston Terminals Ltd.: *See*—
Methven, James N. 3,165,335.

Jominy, Walter E.: *See*—
Roy, Amedee, and Jominy. 3,165,400.

Jones, Hugh C., ¼ each to L. L. Dills and R. W. Callaway. Stamp dispensing machine. 3,165,248, 1-12-65, Cl. 225—16.

Jones, Mack M., to International Harvester Co. Counter flow heat exchanger. 3,165,152, 1-12-65, Cl. 165—166.

Jordansson, Lars B., to Aktiebolaget Karlstads Mekaniska Werkstad. Drainage element for the wire of a paper making machine. 3,165,440, 1-12-65, Cl. 162—352.

Josephson, Richard V. Belling tool for bore holes. 3,164,964, 1-12-65, Cl. 61—63.

Joy Mfg. Co.: *See*—
Gordon, John E. 3,164,962.
Krouse, Le Roy M. 3,165,302.

Jurd, Leonard, to United States of America, Agriculture. Preparation of benzofuran derivatives. 3,165,537, 1-12-65, Cl. 260—346.2.

Kafka, Robert S., to Martin-Marietta Corp. Component forming and insertion machine. 3,164,839, 1-12-65, Cl. 1—322.

Kahn, Henry, and S. E. Horne, Jr., to Goodrich-Gulf Chemicals, Inc. Method of polymerizing butadiene-1,3 hydrocarbons. 3,165,503, 1-12-65, Cl. 260—94.3.

Kahrs, Karl-Heinz, F. Winkler, and J. W. Zimmermann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Manufacture of bead polymers. 3,165,559, 1-12-65, Cl. 260—875.

Kali-Chemie Aktiengesellschaft: *See*—
Hauschild, Ulrich, and Nicolaus. 3,165,478.
Jenkner, Herbert. 3,165,381.

Kaminski, Joseph, Jr., and W. D. Becker, to General Electric Co. Multiple conductor support. 3,165,284, 1-12-65, Cl. 248—63.

Kapeker, Martin, to Thermovac Industries Corp. Vacuum valve. 3,165,386, 1-12-65, Cl. 34—92.

Karlsson, Elof K. and E. L. Howell, to International Harvester Co. Protective structure for crop treating apparatus. 3,165,133, 1-12-65, Cl. 146—117.

Karlstads Mekaniska Werkstad, Aktiebolaget: *See*—
Jordansson, Lars B. 3,165,440.

Kasady, Fred, to Avco Corp. Breaker strip construction for insulated container. 3,165,221, 1-12-65, Cl. 220—9.

Katz, Herbert M., to United States of America, Atomic Energy Commission. Separation of stainless steel from a nuclear fuel. 3,165,377 1-12-65, Cl. 23—14.5.

Kauffungen, Rudolf: *See*—
Blochlinger, Hans, and Kauffungen. 3,165,709.

Kaufman, Irving, to Thompson Ramo Wooldridge Inc. Harmonic generator utilising a nonlinear reactance. 3,165,690, 1-12-65, Cl. 321—69.

Kaufman, Myron N.: *See*—
Grodsinsky, Samuel, and Kaufman. 3,165,734.

Kay, John G., and A. L. Osinski, to F. Jos. Lamb Co. Conveyor. 3,165,198, 1-12-65, Cl. 198—227.

Kearns, Steve, and F. Bloom. Fishing tackle. 3,164,922, 1-12-65, Cl. 43—48.15.

Keerbs, Vernard A.: *See*—
Ablett, Harold A., Childs, Johnson, and Keerbs. 3,165,211.

Kehoe, James V., and F. Inserillo, to Chas. Pfizer & Co., Inc. Recovery of kojic acid. 3,165,535, 1-12-65, Cl. 260—345.9.

Kelcourse, Francis C., to Bell Telephone Laboratories, Inc. Protected amplifying device. 3,165,725, 1-12-65, Cl. 340—250.

Kelley Co., Inc.: *See*—
Pfleger, Robert H. 3,165,305.

Kelley, Vergil W.: *See*—
Hostetler, Gerald W., and Kelley. 3,165,164.

Kelly, Gerald W., to B & K Tool & Die, Inc. Apparatus for machining stacked workpieces. 3,165,011, 1-12-65, Cl. 77—3.

Kelly, Gordon E.: *See*—
Stark, John, Jr., and Kelly. 3,165,579.

Kennedy, Frank, to United States Steel Corp. Method of controlling admission of fuel and air to blast furnaces. 3,165,399, 1-12-65, Cl. 75—42.

Kennedy, James J., and J. C. Rogers, to International Business Machines Corp. Compensating circuit for delay line. 3.165.721, 1-12-65, Cl. 340—178.

Keska, Kenneth R., to The Yoder Co. Scarfing tool. 3,165,028, 1-12-65, Cl. 90—24.

Keskitalo, Howard O., to Caterpillar Tractor Co. Pipe grappler. 3,165,347, 1-12-65, Cl. 294—88.

Keskitalo, Howard O., to Caterpillar Tractor Co. Handling device for cylindrical or like objects. 3,165,348, 1-12-65, Cl. 294—88.

Keskkula, Henno, and J. A. Schmitt, to The Dow Chemical Co. Method for adhesively bonded plastics to one another and to metals. 3,165,434, 1-12-65, Cl. 156—327.

Keuthan, Frederick W., to The Sargent Paint Mfg. Container closure. 3,165,223, 1-12-65, Cl. 220—27.

Kilburn, Robert W., and H. P. Gregor, to American Machine & Foundry Co. Modifying taste of fruit juice by dialysis. 3,165,415, 1-12-65, Cl. 99—105.

Kilsheimer, John R., and H. H. Moorefield, to Union Carbide Corp. Method of killing insects with dihydronaphthyl N-methylcarbamate compositions. 3,165,442, 1-12-65, Cl. 167—32.

Kimball, Frank P.: *See*—
Hill, Raymond W., and Kimball. 3,165,088.

Kinsworthy, Donald D.: *See*—
Wentling, William H., Kinsworthy, and Powell. 3,165,258.

Kirby, Charles A., to Allied Building Components, Inc. Expandable closure member. 3,165,144, 1-12-65, Cl. 160—221.

Kirsch, Raymond C. Game apparatus having movable target elements with angularly related wings. 3,165,317, 1–12–65, Cl. 273—102.1.

Kleff Industries, Inc.: *See*—
Epstein, Harry. 3,165,716.

Klein, Robert J., and C. B. Bosoe, to International Harvester Co. Oil filter. 3,165,467, 1–12–65, Cl. 210—130.

Kleinmann, Earl E.: *See*—
Beaser, Charles W., Reed, and Kleinmann. 3,165,236.

Klosterman, Clarence J., to General Precision, Inc. Analog-to-digital converter. 3,165,732, 1–12–65, Cl. 340—347.

Klug, Helmut: *See*—
Frey, Hans-Helmut, Klug, Nittelberger, and Nolte. 3,165,560.

Klupfel, Kurt-Walter: *See*—
Tomanek, Martha, Behmenburg, Neugebauer, and Klupfel. 3,165,420.

Knight, Frank W.: *See*—
Gold, Nicholas, Knight, and Sable. 3,165,408.

Knobel, Max. Apparatus for gaging wide sheet-form work. 3,164,981, 1–12–65, Cl. 73—37.5.

Knott, Philip H. Changeable light reflective devices including animated toys and decorative ornaments. 3,164,923, 1–12–65, Cl. 46—49.

Knox, William J., Jr., and R. E. Sticher, to Eastman Kodak Co. Derivatives of certain highly branched chain acids as coating aids. 3,165,409, 1–12–65, Cl. 96—94.

Kobayashi, Shoji. Metallic mold for forming a shaped article. 3,164,864, 1–12–65, Cl. 18—42.

Koenig, Franz, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Production of N-methyl substituted ethylene diamine. 3,165,553, 1–12–65, Cl. 260—583.

Kokesh, Frank P., to Schlumberger Well Surveying Corp. Borehole apparatus. 3,165,156, 1–12–65, Cl. 166—243.

Kolenda, Herbert: *See*—
Rose, Werner, and Kolenda. 3,165,455.

Kollisch, Gebruder: *See*—
Projahn, Emil. 3,164,977.

Konig, Josef, and E. N. Petersen, to Phrix-Werke Aktiengesellschaft. Treatment of cellulose textiles. 3,165,424, 1–12–65, Cl. 117—139.4.

Koninklijke Pharmeceutische Fabrieken v/h Brocades Stheeman en Pharmacia, N.V.: *See*—
Gootjes, Johan. 3,165,526.

Konkle, Raymond L., to Central Steel Tube Co. Fluid piston. 3,165,032, 1–12–65, Cl. 92—252.

Koopman, Harmannus, to North American Philips Co., Inc. Method of destroying undesired plant life. 3,165,392, 1–12–65, Cl. 71—2.3.

Koppers Co., Inc.: *See*—
Miller, Edward H., and Furman. 3,165,167.

Korda, Paul, to The Magnavox Co. Automatic contrast and brilliance control system for television receivers. 3,165,582, 1–12–65, Cl. 178—7.5.

Kordos, Ronald W.: *See*—
Drumheller, Oliver L., and Kordos. 3,165,711.

Korthaus, Helmut, and R. Wilke. Electric motor with overload cut-out. 3,165,656, 1–12–65, Cl. 310—76.

Korsun, John N.: *See*—
Hydorn, Allan E., Korsun, and Moetz. 3,165,541.

Kotrbaty, Guy F. Method of producing extruded shapes. 3,164,898, 1–12–65, Cl. 29—553.

Kovatch, George: *See*—
Manteuffel, Erich W., and Kovatch. 3,165,685.

Kralowetz, Bruno. Forging machine. 3,165,012, 1–12–65, Cl. 76—22.

Kretzmer, Ernest R., and R. A. Winter, to Bell Telephone Laboratories, Inc. Two-tone transmission system for digital data. 3,165,583, 1–12–65, Cl. 178—66.

Krewson, Charles F., and J. S. Ard, to United States of America, Agriculture. Process for isolation of divernolin and trivernolin. 3,165,540, 1–12–65, Cl. 260—348.

Kreyer, Adolf: *See*—
Bertholome, Ernst, Nienburg, Sian, Scherf, and Kreyer. 3,165,548.

Krits, Jack: *See*—
Davidson, Gareth M., and Krits. 3,164,987.

Kroesch, Milton F., and W. O. Kugler, to Pressed Steel Tank Co. Base for pressure vessels. 3,165,228, 1–12–65, Cl. 220—69.

Krouse, LeRoy M., to Joy Mfg. Co. Apparatus for heating blast furnace feed gas. 3,165,302, 1–12–65, Cl. 263—19.

Krueger, Rudolph E., ½ to W. C. Deeds. Torquemeter. 3,164,986, 1–12–65, Cl. 73—136.

Krukziener, Maurits, to Shell Oil Co. Nitro-aromatic telomers. 3,165,501, 1–12–65, Cl. 260—80.5.

Kudler, Phillip: *See*—
Semtlinger, Jack L. 3,165,222.

Kuehl, Ernest W., and I. E. Robb, to International Telephone and Telegraph Corp. Quick coupling structure. 3,165,340, 1–12–65, Cl. 285—316.

Kugler, Willert O.: *See*—
Kroesch, Milton F., and Kugler. 3,165,228.

Kullmar, Klaus, and E. Fischer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. Process for purifying trithiane. 3,165,530, 1–12–65, Cl. 260—327.

Kumro, Howard W., to Worthington Corp. Shaft mount integral drive unit. 3,165,004, 1–12–65, Cl. 74—219.

Kuramochi, Shigeaki: *See*—
Iwaya, Keikichi, and Kuramochi. 3,164,924.

Kurashiki Rayon Co., Ltd.: *See*—
Itoi, Kazuo. 3,165,486.

Kuraya, Tadao: *See*—
Imoto, Minoru, Huang, Tanigaki, and Kuraya. 3,165,558.

Kuris, Arthur: *See*—
Balamuth, Lewis, and Kuris. 3,165,299.

Kushihashi, Keiso: *See*—
Watanabe, Itaru, Kushihashi, Tsuchiya, and Terada. 3,165,202.

Labowsky, Andrew. Grinding wheel. 3,164,933, 1–12–65, Cl. 51—209.

Lacey, Miles L.: *See*—
Vautrain, Lucien H., and Lacey. 3,165,466.

Lafon, Victor, to Caymonde, Societe Anonyme dite. Nebulisate of fumaria and process of preparation. 3,165,443, 1–12–65, Cl. 167—55.

Lafont, Pierre, and Y. Bonnet, to Rhone Poulenc S.A. Cycloundecane-1,2-dicarboxylic acids. 3,165,538, 1–12–65, Cl. 260—346.3.

Lahr, Robert G. Toy cartridges. 3,165,058, 1–12–65, Cl. 102—38.

Lamb, F. Joe, Co.: *See*—
Kay, John G., and Osinski. 3,165,198.

Land, Edwin H., N. Gold, P. B. Mason, and A. J. Sable, to Polaroid Corp. Photographic document copying apparatus. 3,165,046, 1–12–65, Cl. 95—75.

Landfors, Arthur A., to National Research Corp. High vacuum device. 3,165,255, 1–12–65, Cl. 230—101.

Langdon, Jesse D. Compression brake for motor vehicles. 3,165,096, 1–12–65, Cl. 123—97.

Lanmon, C. P., to Schlumberger Well Surveying Corp. Methods and apparatus for well completions. 3,165,163, 1–12–65, Cl. 166—4.

Larkin, Sam. Electrical welding apparatus. 3,165,618, 1–12–65, Cl. 219—86.

Larson, Jack E.: *See*—
Untiedt, Miles E., and Larson. 3,165,316.

Larson, Robert W., to Beloit Corp. Heel boom log grappling apparatus. 3,165,215, 1–12–65, Cl. 214—147.

Larson, Russell H.: *See*—
Bekelman, Paul F., Hennis, and Larson. 3,165,717.

Lau Blower Co., The: *See*—
Wentling, William H., Klasworthy, and Powell. 3,165,258.

Laub, Samuel C., Sr. Lamp socket. 3,165,370, 1–12–65, Cl. 339—73.

Laughlin, Myron P. Method of applying growth control chemicals to growing plants. 3,164,926, 1–12–65, Cl. 47—58.

Lauper, Paul, to Oerlikon Engineering Co. Automatic means for rotating a lagging or loading rotor of a synchronous machine. 3,165,687, 1–12–65, Cl. 318—167.

Laurer, George J., and C. D. Southard, to International Business Machines Corp. Data input device with formal control. 3,165,720, 1–12–65, Cl. 340—172.5.

Lauricella, Felix. Three dimensional television method and means. 3,165,578, 1–12–65, Cl. 178—5.4.

Lawhon, Robert S.: *See*—
Howle, Harry G., Clarkson, and Lawhon. 3,165,564.

Leatham, Earl: *See*—
Tvergaard, Aage M., Pack, Campbell, and Leatham. 3,165,304.

Leathers, William D., and L. Q. Gresham, to Gem Oil Tool Co., Inc. Automatic paraffin scraper. 3,165,155, 1–12–65, Cl. 166—70.

Lechtenberg, Leo J., to Briggs & Stratton Corp. Lined cylinder for internal combustion engines. 3,165,094, 1–12–65, Cl. 123—41.69.

Lectro-Stik Co.: *See*—
Borisof, Bernard. 3,165,283.

Lee, Arthur L., and A. B. Coval, to Consolidation Coal Co. Planetary gear drive for a crawler tread. 3,165,160, 1–12–65, Cl. 180—9.64.

Lee, Edwin J., to American Pipe and Construction Co. Core for a mold. 3,164,877, 1–12–65, Cl. 25—128.

Lee, Shao-tang. Amphibious convertijet aircraft. 3,165,280, 1–12–65, Cl. 244—12.

Leeds and Northrup Co.: *See*—
White, James P. 3,165,650.

Leglise, Pierre. Justifying device for proportional spacing typewriters. 3,165,191, 1–12–65, Cl. 197—84.

Leibowitz, Sydney S. Book covers. 3,165,337, 1–12–65, Cl. 281—34.

Leins, William J., R. F. Trufant, and E. J. J. Tracey, to United States of America, Navy. High pressure seal mounting for brittle instrument. 3,165,715, 1–12–65, Cl. 338—228.

Lejeune, Pierre, and L. de Maillard, to Ateliers Neyret-Beylier & Piccard-Pictet (NEYRPIC) and Societe Grenobloise d'Etudes et d'Applications Hydrauliques (SOGREAH). Stock feeding apparatus for web making machines. 3,165,439, 1–12–65, Cl. 162—237.

L'Electricite de France (Service National): *See*—
Gerard, Victor. 3,165,212.

Lerner, Theodore, to Bell Aerospace Corp. Capacitive transducer circuit. 3,165,703, 1–12–65, Cl. 328—127.

Letchworth, Herman R.: *See*—
Amboa, Henry F., and Letchworth. 3,164,859.

Levine, Bernard B., and R. Phillips, to Warbern Plastics, Inc. Double hanger. 3,165,245, 1–12–65, Cl. 223—91.

Levine, Mark, to Continental Vending Machine Corp. Product delivery door for vending machines. 3,165,366, 1–12–65, Cl. 312—35.

Levits, Sidney A. Freezing process and apparatus for eliminating frost on the window of a carton. 3,164,966, 1–12–65, Cl. 62—62.

Lewis, Marguerette M.: *See*—
John, James L. 3,165,063.

Lewis, Robert L. Tobacco stick holder. 3,165,208, 1–12–65, Cl. 214—5.5.

Lewison, Alfred: *See*—
Brothman, Abraham, Reiser, Halpern, E. W., P., and A. Lewison. 3,165,733.





Lewison, Edward W.: *See*—
Brothman, Abraham, Reiser, Halpern, E. W., P., and A. Lewison. 3,165,733.

Lewison, Paul: *See*—
Brothman, Abraham, Reiser, Halpern, E. W., P., and A. Lewison. 3,165,733.

Lexaire Corp.: *See*—
Baker, Merl. 3,164,969.

Libbey-Owens-Ford Glass Co.: *See*—
Hess, Charles A., Byal, and Adams. 3,164,854.

Lieberman, Martin, and A. S. Gelb, to General Instrument Corp. Thermoelectric body and method of making same. 3,164,892, 1–12–65, Cl. 29—182.5.

Lige, Frederick O. Wire connectors with flexible lead. 3,165,576, 1–12–65, Cl. 174—87.

Lilbbe, Elmer H. Golf cart apparatus. 3,165,329, 1–12–65, Cl. 280—86.

Lily-Tulip Cup Corp.: *See*—
Conklin, Charles S., and Reeves. 3,165,234.

Limberger, Walter, to Lumoprint Zindler K.G. Apparatus for making copies. 3,165,313, 1–12–65, Cl. 271—64.

Lindquist, Carl E.: *See*—
Du Buis, Edwin O., Cucksey, and Lindquist. 3,164,946.

Ling-Temco-Vought, Inc.: *See*—
Armstrong, Homer T. 3,165,057.

Lissandrelle, Frederick J. Word game apparatus comprising game boards, game pieces, and a rack therefor. 3,165,318, 1–12–65, Cl. 273—148.

Litman, Harry: *See*—
Gilowitz, Benjamin. 3,164,912.

Little, Arthur D., Inc.: *See*—
Murray, Wallace J. 3,165,406.
Politi, Robert E., and Aronson. 3,165,421.

Little, David S.: *See*—
Pike, Edward W., and Little. 3,165,745.

Lobo, Paul A., to Continental Oil Co. Preparation of aluminum particulates. 3,165,397, 1–12–65, Cl. 75—.5.

Loeschner, Hans: *See*—
Hoenen, Lambert, Loeschner, and Mueckter. 3,165,510.

Logemann, Heino, and W. Becker, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of acrylonitrile polymers. 3,165,500, 1–12–65, Cl. 260—79.3.

Löliger, Willi, to Aipura AG. Apparatus for sterile packing of sterile goods. 3,164,936, 1–12–65, Cl. 53—180.

Long, James D., and D. W. Young, Jr., to The Bendix Corp. Pulse type radar time-measuring system. 3,165,739, 1–12–65, Cl. 343—13.

Loss, Isidor R.: *See*—
Horten, Carl R., and Loss. 3,165,158.

Louthan, Rector P., to Phillips Petroleum Co. Recovery of amino-substituted alkanethiols by distillation with a solvent. 3,165,451, 1–12–65, Cl. 202—50.

Lovett, William G., P. P. Chiesa, and J. R. Dann, to Eastman Kodak Co. Internal amide, nonpolymeric thioether sensitizers for photographic emulsions. 3,165,552, 1–12–65, Cl. 260—561.

Lowther, Wilfred W., to Novo Industrial Corp. Crankcase ventilating system. 3,165,097, 1–12–65, Cl. 123—119.

Loyd, Robert J., to Phillips Petroleum Co. Gas-liquid partition chromatography. 3,164,980, 1–12–65, Cl. 73—23.1.

Ludvik, George F., J. P. Chupp, and P. E. Newallis, to Monsanto Co. Methylphosphonothioate insecticide. 3,165,441, 1–12–65, Cl. 167—30.

Lummus Co., The: *See*—
Bennett, Carroll O., and Guerrieri. 3,165,436.

Lumoprint Zindler K.G.: *See*—
Limberger, Walter. 3,165,313.

Luts, John H., to Halcon International, Inc. Recovery of ethylene oxide from a liquid mixture thereof with normally gaseous impurities. 3,165,539, 1–12–65, Cl. 260—348.

Lavid, John P., to Universal Oil Products Co. Polyhalobicycloalkenic derivatives of salicylaldehydes. 3,165,555, 1–12–65, Cl. 260—600.

Lyle, Charles W., to United States of America, Army. Coded shutter sequence. 3,165,041, 1–12–65, Cl. 95—36.

Lynch, Leslie S., Jr., and E. L. Eldridge, to The Thomas & Betts Co. Insulated splicer with end seals. 3,165,575, 1–12–65, Cl. 174—84.

Mabuchi, Takaichi. Miniature electric motors. 3,165,654, 1–12–65, Cl. 310—46.

Macdonald, Ian M., to Westinghouse Electric Corp. Motor control apparatus. 3,165,686, 1–12–65, Cl. 318—163.

Machen, James F. Ladder holder. 3,165,169, 1–12–65, Cl. 182—170.

Machines Bull (Societe Anonyme), Compagnie des: *See*—
Brette, Yves-Jean F. 3,165,692.

Mack, Grant V.: *See*—
Hurst, Arnold U., and Mack. 3,165,150.

Mackey, Bruce A., to Precision Accessories Inc. Boring tool. 3,165,131, 1–12–65, Cl. 145—126.

Mackinney, Herbert W., to Chemirad Corp. Aziridinyl-propanol compounds, method of making same, and polymers thereof. 3,165,509, 1–12–65, Cl. 260—239.

Macksoud, Leo, and V. Clavich. Skid and trailer combination. 3,165,216, 1–12–65, Cl. 214—515.

MacLeod, David M.: *See*—
Ilnycky, Stephan, and MacLeod. 3,165,485.

Madaffer, Frank. Dispensing device and counter in combination therewith. 3,165,235, 1–12–65, Cl. 222—38.

Madden, Homer W. Can orienting machine. 3,165,194, 1–12–65, Cl. 198—33.

Magnavox Co., The: *See*—
Korda, Paul. 3,165,582.

Maguire, Philip F., Jr., to Grinnell Corp. Humidity controller. 3,165,602, 1–12–65, Cl. 200—61.06.

Malone, Franklin. Magnetic ski binding. 3,165,328, 1–12–65, Cl. 280—11.35.

Manchetti, Joseph G., and H. B. Hindin, to United States Rubber Co. Tire. 3,165,188, 1–12–65, Cl. 152—354.

Manlove, Maxwell B. Wheel alignment indicating apparatus. 3,164,910, 1–12–65, Cl. 33—203.18.

Manteuffel, Erich W., and G. Kovatch, to General Electric Co. Solid-state commutator direct current motor employing Hall effect elements. 3,165,685, 1–12–65, Cl. 318—138.

Maquelin, Cornelius P., to Follett Corp. Storage unit for ice and the like. 3,165,240, 1–12–65, Cl. 222—457.

Marconi Co. Ltd., The: *See*—
Eastwood, Eric, and Coop. 3,165,738.
James, John F. 3,165,585.
Wales, Michael. 3,165,747.
Woloescsuk, Edmund W. 3,165,748.

Marcotte, Stephen F., to International Equipment Co. Triggering means for stroboscopic devices. 3,165,669, 1–12–65, Cl. 315—237.

Marek, Stanley C., to Admiral Corp. Spring clip fastener. 3,164,873, 1–12–65, Cl. 24—81.

Marine Appliances Inc.: *See*—
Barkan, George. 3,164,869.

Markowicz, Martin S., to Ford Motor Co. Apparatus to trim resin from the edge of laminated sheets. 3,165,433, 1–12–65, Cl. 156—271.

Marshall, Bruce D.: *See*—
Pasternak, Raphael A., Cavanagh, Ehrmantraut, and Marshall. 3,164,982.

Marshall, Raymond. Poultry cooling method and apparatus. 3,164,967, 1–12–65, Cl. 62—63.

Martin, Earl H., and K. A. Johanson, said Johanson assor. to said Martin. Laminated wig with thickened portion adjacent the front edge. 3,165,107, 1–12–65, Cl. 132—53.

Martin, Henry, H. Aebi, and L. Ebner, to Ciba Ltd. Carbanilhydroxamic acid esters. 3,165,549, 1–12–65, Cl. 260—552.

Martin, Raynald R. F. Boat launching device. 3,164,965, 1–12–65, Cl. 61—67.

Martin-Marietta Corp.: *See*—
Kafka, Robert S. 3,164,839.

Marx, Louis, & Co., Inc.: *See*—
Iwaya, Keikichi, and Kuramochi. 3,164,924.

Maryland Cup Corp.: *See*—
West, John B. 3,165,233.

Marsec, Stanislaus V., to Gerace Electronics Corp. Heat sealing means. 3,165,622, 1–12–65, Cl. 219—243.

Mason, Paul B.: *See*—
Land, Edwin H., Gold, and Mason. 3,165,046.

Maston, James W., to International Telephone and Telegraph Corp. Retention system for electrical contacts. 3,165,369, 1–12–65, Cl. 339—59.

Materials, Inc.: *See*—
White, James A. 3,165,078.

Mattel, Inc.: *See*—
Ryan, John W. 3,165,320.

Mattern, Chester D., to United Shoe Machinery Corp. Machinery for making shoes. 3,164,866, 1–12–65, Cl. 18—46.

Maus, Ottrid G. H.: *See*—
Federn, Klaus, and Maus. 3,164,995.

Mavrakis, Sam H. Heated fishing rod. 3,164,921, 1–12–65, Cl. 43—24.

Maytag Co., The: *See*—
Smith, Thomas R. 3,165,187.

McCamy, Isaac W., J. L. Graham, and M. R. Siegel, to Tennessee Valley Authority. Method for the production of granular high-nitrogen and mixed fertilisers. 3,165,395, 1–12–65, Cl. 71—34.

McCarthy, Catherine S., to Eastman Kodak Co. Process for improving color developability of reversal photograph films. 3,165,407, 1–12–65, Cl. 96—22.

McClanahan, Maurice E., to Industrial Wiping Cloth Co. Inc. Method of recognising industrial wiping cloths and towels by magnetic detection. 3,165,691, 1–12–65, Cl. 324—41.

McCloskey, Allen L.: *See*—
Brotherton, Robert J., McCloskey, and Petterson. 3,165,481.

McClure, Glenn T., to Westinghouse Air Brake Co. Angle cock. 3,165,293, 1–12–65, Cl. 251—252.

McClure, John L., to General Electric Co. Arc-suppressing multiposition electric switch. 3,165,598, 1–12–65, Cl. 200—5.

McClure, Robert M., to Texas Instruments Inc. System for generating facsimiles of radar signals. 3,165,024, 1–12–65, Cl. 88—24.

McClure, Stanley R. Mechanical off-bearing mechanism. 3,165,129, 1–12–65, Cl. 143—157.

McConnell, Richard L.: *See*—
Coover, Harry W., Jr., and McConnell. 3,165,557.

McCorkle, Willard H., and H. S. Cern, to United States of America, Atomic Energy Commission. Nuclear reactor core and fuel assembly. 3,165,448, 1–12–65, Cl. 176—50.

McGraw-Edison Co.: *See*—
Files, William C. 3,165,226.

McIlvin, Donald B.: *See*—
Bowler, Raymond M., McIlvin, Stewart, and Wetherbee. 3,164,852.

McLamore, William M.: *See*—
Holland, Gerald F., McLamore, and Laubach. 3,165,550.

McMullen, John J., Associates, Inc.: *See*—
Ripley, Kenneth C. 3,165,085.

Mead, James E. Burial lowering device. 3,164,881, 1–12–65, Cl. 27—32.

Mechanical Tool & Engineering Co.: *See*—
Nordlof, Richard D., and Rausch. 3,165,277.

Mechrolab, Inc.: *See*—
Pasternak, Raphael A., Cavanagh, Ehrmantraut, and Marshall. 3,164,982.

Mehltretter, Charles L.: *See*—
Otey, Felix H., and Mehltretter. 3,165,508.

Mehrbrodt, Alfonso W.: *See*—
Chasar, Anthony R., and Mehrbrodt. 3,165,600.

Meier, Jean H., to Compagnie Generale d'Electro-Ceramique. Arc protecting device with C-shaped horns for suspension insulators. 3,165,577, 1-12-65, Cl. 174—141.

Meiko Boki Co., Ltd.: *See*—
Takita, Shigematsu. 3,164,867.

Meitl, Harold G.: *See*—
Middlesworth, Tommy A., Meitl, and Wunar. 3,164,842.

Melbye, David H. Furniture. 3,164,848, 1-12-65, Cl. 5—8.

Mellott, Robert N., to The Bunker-Ramo Corp. Electronic switching circuits. 3,165,636, 1-12-65, Cl. 307—88.5.

Melpar, Inc.: *See*—
Campanella, Samuel J. 3,165,586.
Taylor, Paul E. 3,165,742.

Menasoff, George N., to Anaconda Wire and Cable Co. Seam sealing apparatus. 3,165,616, 1-12-65, Cl. 219—60.

Menown, Hugh, to English Electric Valve Co. Ltd. Hydrogen thyratrons with heat shields and priming electrodes. 3,165,660, 1-12-65, Cl. 313—189.

Merrill, Marcellus S., and L. H. Erickson; said Erickson assignor to said Merrill. Balancing apparatus. 3,164,994, 1-12-65, Cl. 73—457.

Merrill, Stewart H., to Eastman Kodak Co. Diaryl peroxides of reaction hypochlorites on corresponding hydroperoxides. 3,165,548, 1-12-65, Cl. 260—502.

Methven, James N., to Johnston Terminals Ltd. Automatic fifth-wheel coupler. 3,165,235, 1-12-65, Cl. 280—421.

Metravel S.A.: *See*—
Beeriswyl, Roger. 3,165,171.

Meyer, Raymond A.: *See*—
Trenftin, Harry N., Watts, and Meyer. 3,165,403.

Microdot Inc.: *See*—
Friend, Clifford K., Taylor, Stanikey, and Swartley. 3,165,696.

Middlesworth, Tommy A., H. G. Meitl, and A. S. Wunar, to International Harvester Co. Fruit harvester having gathering fingers. 3,164,842, 1-12-65, Cl. 56—328.

Miles, Edward E.: *See*—
Blackburn, Alan P., and Miles. 3,165,269.

Miller, Alfred L.: *See*—
Fusco, James V., Robison, and Miller. 3,165,496.

Miller, Donald F., to Texas Instruments Inc. Apparatus for forming clean iron-lead telluride high temperature pressure contacts. 3,165,616, 1-19-65, Cl. 219—9.5.

Miller, Edward H., and F. O. Furman, to Koppers Co., Inc. Noise inhibiting device. 3,165,167, 1-12-65, Cl. 181—51.

Miller, Franklyn D.: *See*—
Weber, George R., and Miller. 3,165,413.

Miller, Fred B. to Evans Products Co. Freight bracing apparatus. 3,165,075, 1-12-65, Cl. 105—369.

Miller, Richard D. Heated steering wheel for vehicles. 3,165,620, 1-12-65, Cl. 219—204.

Mills, Laurence J.: *See*—
Dawson, Gordon B., and Mills. 3,165,361.

Miltenberger, Charles E.: *See*—
Thompson, Parke H., III, Miltenberger, and Waechterle. 3,165,297.

Minnesota Mining and Mfg. Co.: *See*—
Harriman, Benjamin R. 3,165,458.
Morgan, David A. 3,165,456.

Minsk, Louis M., and E. P. Abel, to Eastman Kodak Co. Silver halide emulsions. 3,165,412, 1-12-65, Cl. 96—114.

Mintzer, Alfred I., to United States of America, Navy. Electronic acquisition electromechanical tracking radar system. 3,165,737, 1-12-65, Cl. 343—7.3.

Mintzes, Louis, and A. Walach. Money containers. 3,165,-135, 1-12-65, Cl. 150—38.

Mintz, Martin, J. De Villier, and S. W. Zimmerman, to Thompson Ramo Wooldridge Inc. Polyphase control device. 3,165,671, 1-12-65, Cl. 317—27.

Mistler, George S.: *See*—
Hallock, Albert W., and Mistler. 3,165,352.

Mitchell Bros., Inc.: *See*—
Mitchell, Samuel L. 3,165,311.

Mitchell, Samuel L., to Mitchell Bros., Inc. Cloth spreader accessory for sewing machine. 3,165,311, 1-12-65, Cl. 270—79.

Moan, Richard D., to Ford Motor Co. Speed sensor mechanism. 3,165,010, 1-12-65, Cl. 74—753.

Mobay Chemical Co.: *See*—
Gemeinhardt, Paul G., and Bingham. 3,165,483.

Modrowsky, Fred P., and H. G. Anastasia, to The Bendix Corp. Fluid pressure sensing mechanism operatively arranged to compensate for changing environmental conditions. 3,165,-682, 1-12-65, Cl. 318—32.

Moen, Alfred M. Divider assembly for mixing valve. 3,165,-118, 1-12-65, Cl. 137—625.4.

Moets, James R.: *See*—
Hyderu, Allan R., Korsun, and Moets. 3,165,541.

Mohasco Industries, Inc.: *See*—
Chapman, Dave. 3,165,165.

Molden, Wallace W., and N. J. Chivas. Apparatus for handling metal discs and the like. 3,165,210, 1-12-65, Cl. 214—7.

Moline, Douglas F., to Acme Mfg. Co., Inc. Cutter drive for vegetable juicing machine. 3,165,132, 1-12-65, Cl. 146—76.

Molins Machine Co. Ltd.: *See*—
Stone, Horace A., and Gemmell. 3,165,276.

Monahan, Jack J.: *See*—
Campbell, Hobart T., Monahan, and Roeder. 3,165,207.

Monarch Engineering Corp.: *See*—
Horg, George. 3,165,071.

Monk, Roger A.: *See*—
Stevens, Mack R., Monk, and Slick. 3,165,067.

Monsanto Chemicals Ltd.: *See*—
Brown, Joseph P. 3,165,519.

Monsanto Co.: *See*—
Johnson, John H. 3,165,486.
Ludvik, George F., Chupp, and Newallis. 3,165,441.

Montalvo, Emanuel, and A. C. Sanders, to United States of America, Navy. Binary to digital readout azimuth gating. 3,165,736, 1-12-65, Cl. 343—6.5.

Mool, John: *See*—
Burk, Emmett H., Jr., and Mool. 3,165,479.

Moore, Joseph E.: *See*—
Burtenshaw, Philip, and Moore. 3,165,672.

Moore, Norman H., to Fibreboard Paper Products Corp. Carton. 3,165,254, 1-12-65, Cl. 229—61.

Moore, Robert B. Vending machines. 3,165,185, 1-12-65, Cl. 194—1.

Moore, Samuel, & Co.: *See*—
Moss, Trevor F. 3,165,338.

Moorefield, Herbert H.: *See*—
Kilsheimer, John R., and Moorefield. 3,165,442.

Morgan Construction Co.: *See*—
Wilson, Norman A. 3,165,020.

Morgan, David A., to Minnesota Mining and Mfg. Co. Developer. 3,165,454, 1-12-65, Cl. 204—18.

Morganti, Charles L.: *See*—
Barton, Gene E., and Morganti. 3,165,240

Moring, Fred, to International Business Machines Corp. Data transfer device. 3,165,260, 1-12-65, Cl. 234—76.

Morith, Gilbert J. Ice skate sharpener. 3,164,932, 1-12-65, Cl. 51—170.

Morris, Carlisle S.: *See*—
Hampton, Andrew V., and Morris. 3,165,181.

Morris, Robert H.: *See*—
Pillmore, Charles L., and Morris. 3,164,905.

Morrison, Robert W., to Westinghouse Electric Corp. Digital position control servosystem. 3,165,650, 1-12-65, Cl. 318—28.

Morse, Raymond L.: *See*—
Carter, Paul H., and Morse. 3,165,252.

Morway, Donald A.: *See*—
Hitchcock, Lloyd, Jr., and Morway. 3,165,355.

Moser, Paul, to Geigy Chemical Corp. Morpholinones. 3,165,512, 1-12-65, Cl. 260—247.1.

Moss, Norman, and P. Stanwell, to The Plessey Co. Ltd. Electricity generation plant. 3,165,635, 1-12-65, Cl. 290—5.

Moss Rosecon Co.: *See*—
Baker, Harold U. 3,165,062.

Moss, Trevor F., to Samuel Moore & Co. Hose coupling. 3,165,338, 1-12-65, Cl. 285—256.

Motorola, Inc.: *See*—
Birkenes, Bernhard. 3,165,700.
Granroth, Theodore A. 3,164,953.
Hennueller, Frank. 3,165,699.

Moultrie, Charles W. Vision device for vehicles. 3,165,573, 1-12-65, Cl. 88—69.

Mounteer, Carlyle A. Variable resistance device. 3,165,713, 1-12-65, Cl. 338—150.

Moeller, Dave C., to International Business Machines Corp. Matrix of coincidence gates having column and row selection. 3,165,719, 1-12-65, Cl. 340—166.

Muller, Alfred H. and E., to Daimler-Benz Aktiengesellschaft. Rotary piston internal combustion engine. 3,165,259, 1-12-65, Cl. 230—207.

Muller, Eberhard: *See*—
Muller, Alfred H. and E. 3,165,259.

Mullins, James N., Jr. Method and apparatus for removing ice from an ice making machine. 3,164,968, 1-12-65, Cl. 62—73.

Multer, Howard C.: *See*—
Goepfrich, George A., Multer, and Reddy. 3,165,325.

Munck af Rosenschold, John R., to Atlas Copco Aktiebolag. Automatic valve assemblies. 3,165,116, 1-12-65, Cl. 137—512.1.

Munroe, Charles L., and S. Tomcsak, to Art-Lee Switch Corp. Sleeve sealing machine. 3,164,861, 1-12-65, Cl. 18—5.

Muoio, Eriand L.: *See*—
Crowell, Philip L., Harris, and Muoio. 3,165,227.

Murphy, Walter T., and B. F. Cinadr, to The B. F. Goodrich Co. One step polyamine curing for polyurethane threads. 3,165,566, 1-12-65, Cl. 264—184.

Murray, August E., and D. H. Clark, to Phillips Petroleum Co. Valved monomer induction tube and reactor. 3,165,-383, 1-12-65, Cl. 23—285.

Murray, Wallace J., to Arthur D. Little Inc. Multicolor photographic process and product. 3,165,406, 1-12-65, Cl. 96—3.

Nallinger, Friedrich K. H. Drive and axle suspension for motor vehicles. 3,165,161, 1-12-65, Cl. 180—12.

Nathan, Alan H., J. A. Hogg, and W. P. Schneider, to The Upjohn Co. 2a-halo- and 2a-halo-6a-methyl-17a,21-dihydroxy-4-pregnene-3,20-diones. 3,165,543, 1-12-65, Cl. 260—397.45.

National Distillers and Chemical Corp.: *See*—
Weber, George R., and Miller. 3,165,413.

National Gypsum Co.: *See*—
Bambra, Allan. 3,165,033.

National Machinery Co., The: *See*—
Dom, Harry A. 3,165,203.

National Research Corp.: *See*—
Burtenshaw, Philip, and Moore. 3,165,572.
Goon, Edward J., Raymond, and Steeves. 3,165,396.
Landfors, Arthur A. 3,165,255.

National Seating Co.: *See*—
Edwards, Robert L. 3,165,307.

Neale, Albert E. T., and B. C. Roberts, to Dunlop Rubber Co. Ltd. Method of making tennis cords. 3,164,962, 1-12-65, Cl. 57—160.

Neisler Laboratories, Inc.: *See*—
Gray, Allan P. 3,165,527.

Neroe, Clifford A.: *See*—
Slesak, Frank B., Roen, and Neroe. 3,165,521.





Netsch, Maschinenfabrik, Gebruder: *See*—
Stickel, Josef. 3,165,065.

Neubarth, William R., ½ to E. P. Gray, and ½ to J. B. Whitmore. Feed mechanism. 3,165,007, 1-12-65, Cl. 74—424.8.

Neudecker, Karl, and F. Winkler, to Agfa Aktiengesellschaft. Control for motion picture camera. 3,165,037, 1-12-65, Cl. 95—10.

Neugebauer, Wilhelm: *See*—
Tomanek, Martha, Behmenburg, Neugebauer, and Klupfel. 3,165,420.

New York Air Brake Co., The: *See*—
Huber, Matthew W. 3,165,182.
Weisenbach, Charles O., and Williams. 3,164,960.

Newallis, Peter E.: *See*—
Ludvik, George F., Chupp, and Newallis. 3,165,441.

Newell, Darrell E.: *See*—
Hennessy, John M., and Newell. 3,164,990.

Nicolaus, Horst: *See*—
Hauschild, Ulrich, and Nicolaus. 3,165,478.

Nienburg, Hans: *See*—
Bertholome, Ernst, Nienburg, Stan, Scherf, and Kreyer. 3,165,548.

Noble, James W., H. S. Orr, and F. R. Romeo, to United States Steel Corp. Multiple rolling of sheets. 3,164,884, 1-12-65, Cl. 29—19.

Nolden, John L. Heavy duty jack. 3,165,295, 1-12-65, Cl. 254—2.

Noll, Robert E., to Westinghouse Electric Corp. Active element word driver using saturable core with five windings thereon. 3,165,642, 1-12-65, Cl. 307—88.5.

Nolte, Friedrich: *See*—
Frey, Hans-Helmut, Klug, Nittelberger, and Nolte. 3,165,560.

Nook, Lawrence J.: *See*—
Overton, Charles F., and Nook. 3,165,290.

Nordberg Mfg. Co.: *See*—
Blix, Weltzin B., and Rushmer. 3,165,073.
Vargyai, Sander. 3,165,101.

Norden, Alexander R., to Federal Pacific Electric Co. Temperature compensated circuit breakers. 3,165,609, 1-12-65, Cl. 200—88.

Nordlof, Richard D., and G. C. Rausch, to Mechanical Tool & Engineering Co. Hydraulically operated stock reel. 3,165,-277, 1-12-65, Cl. 242—75.53.

Nordstrom, Oskar E. R., and P. O. R. Persson, to Telefonaktiebolaget L M Ericsson. Telephone instruments. 3,165,597, 1-12-65, Cl. 179—164.

Norris, George W., to Westinghouse Electric Corp. Arc welding apparatus. 3,165,662, 1-12-65, Cl. 314—129.

North American Aviation, Inc.: *See*—
Fitzwater, William, Jr. 3,165,640.
Stoney, William E. 3,165,740.
Whitnah, Richard G. 3,165,746.

North American Philips Co., Inc.: *See*—
Enzink, Johannes, van Roesum, and van Kampen. 3,165,-664.
Koopman, Harmannus. 3,165,392.

Noshiro, Ritsuko. Magnetic recording and reproducing device. 3,165,596, 1-12-65, Cl. 179—100.2.

Novo Industrial Corp.: *See*—
Lowther, Wilfred W. 3,165,097.

Noyes, Gregory D., to Chrysler Corp. Pneumatic missile guidance system. 3,165,282, 1-12-65, Cl. 244—79.

Nury, Fredoon S., to United States of America, Agriculture. Preparation of raisin paste. 3,165,414, 1-12-65, Cl. 99—100.

Nussbaum, Henry A.: *See*—
Adams, Ernest P., and Nussbaum. 3,165,253.

O'Brien, Donald G., to American Measurement & Control, Inc. Armature suspension for torque motor. 3,165,676, 1-12-65, Cl. 317—171.

Oehlerking, Dean, to Ideal Industries, Inc. Cable stripper. 3,165,013, 1-12-65, Cl. 81—9.51.

Oerlikon Engineering Co.: *See*—
Lauper, Paul. 3,165,687.

Ohio Brass Co., The: *See*—
Young, Oscar L. 3,165,214.

Oil-Dyne: *See*—
Gondek, John T. 3,164,959.

Okabe, Sigeru, to Osakafuchiji Gisen Sato. Secondary emission electron beam monitor. 3,165,629, 1-12-65, Cl. 250—49.5.

Olga Co.: *See*—
Ertesmek, Olga. 3,164,843.

Olin Mathieson Chemical Corp.: *See*—
Hydorn, Allan E., Korsun, and Moets. 3,165,541.
Johnson, Wallace C., and Crum. 3,164,894.

Ollivier, Louis A., to Fischer & Porter Co. Pneumatic computer. 3,165,262, 1-12-65, Cl. 235—200.

Olson, Donald M. Portable seat assembly. 3,165,077, 1-12-65, Cl. 108—33.

Olson, Richard L., to Dike-O-Seal Inc. Method of integrally surface lubricating molded plastic articles. 3,165,567, 1-12-65, Cl. 264—255.

Orr, Howard S.: *See*—
Noble, James W., Orr, and Romeo. 3,164,884.

Orsymonde, Societe Anonyme dite: *See*—
Lafon, Victor. 3,165,443.

Osakafuchiji Gisen Sato: *See*—
Okabe, Sigeru. 3,165,629.

Osborne, Fred H., S. W. E. Andersson, and R. S. Tuttle, to The Wurlitzer Co. Automatic phonograph. 3,165,321, 1-12-65, Cl. 274—10.

Osen, Ralph T., to Honeywell Inc. Fluid control devices. 3,165,291, 1-12-65, Cl. 251—134.

Osinski, Alfred L.: *See*—
Kay, John G., and Osinski. 3,165,198.

Ostendorf, Carl J.: *See*—
Hazelton, Merrill W., Erhart, and Ostendorf. 3,165,140.

Osterman, Dale M.: *See*—
Reich, Alfred, and Osterman. 3,165,697.

Otey, Felix H., and C. L. Mehltretter, to United States of America, Agriculture. Degraded starch polyoxyalkylene ether compositions and process for producing the same. 3,165,508, 1-12-65, Cl. 260—210.

Overton, Charles F., and L. J. Nook, to S. E. Overton Co. Easel. 3,165,290, 1-12-65, Cl. 248—463.

Overton, S. E., Co.: *See*—
Overton, Charles F., and Nook. 3,165,290.

Owen, William H., and R. K. Scott, to Harbison-Walker Refractories Co. Comminution and beneficiation of refractory flour. 3,165,267, 1-12-65, Cl. 241—24.

Owens-Illinois Glass Co.: *See*—
Bayer, Gerhard. 3,165,419.

Oxel, Berton E., to Dyfoam Corp. Apparatus for uniformly mixing and charging a substance into a mold. 3,164,860, 1-12-65, Cl. 18—6.

Pacault, Pierre H., to Babcock & Wilcox Ltd. Combined gas-steam turbine cycle power plant. 3,164,958, 1-12-65, Cl. 60—39.18.

Pacific Valves, Inc.: *See*—
Dumm, Robert P. 3,165,292.

Pack, Albert H.: *See*—
Tvergaard, Aage M., Pack, Campbell, and Leatham. 3,165,304.

Packer, Frank W.: *See*—
Johnson, Charles E., and Packer. 3,165,286.

Pahlow, Frits H.: *See*—
Hauert, Robert E., and Pahlow. 3,165,218.

Pall Corp.: *See*—
Pall, David B., Verrando, and Silverwater. 3,165,473.

Pall, David B., M. G. Verrando, Jr., and B. Silverwater, to Pall Corp. Corrugated filter unit. 3,165,473, 1-12-65, Cl. 210—510.

Palmer, Landon L., and E. W. Weaver, Sr., said Weaver assor. to said Palmer. Heating apparatus. 3,165,102, 1-12-65, Cl. 126—43.

Paloxie, Joseph J., to United Aircraft Corp. Measurement methods and gauges. 3,164,908, 1-12-65, Cl. 33—168.

Pancratz, Frank J. Vacuuming and sealing devices for packaging. 3,164,934, 1-12-65, Cl. 53—112.

Pangborn Corp., The: *See*—
Vedder, Walter O. 3,165,389.

Parken, Dwight W., and R. D. Philipsen, to Caterpillar Tractor Co. Dust ejector for air cleaners. 3,165,390, 1-12-65, Cl. 55—431.

Parker, Raymond H. Liquid coating devices. 3,165,425, 1-12-65, Cl. 118—252.

Parker, Richard V. C.: *See*—
Doolittle, Donald B., and Parker. 3,165,298.

Parker-Hannifin Corp.: *See*—
Schmohl, Leland H. 3,164,890.

Parsons, John S., to The Stanley Works. Shutters and hardware for detachably mounting same. 3,165,287, 1-12-65, Cl. 248—224.

Pasternak, Raphael A., L. A. Cavanagh, H. C. Ehrmantraut, and B. D. Marshall, to Mechrolab, Inc. Thermoelectric osmometer. 3,164,982, 1-12-65, Cl. 73—53.

Patriarca, Peter, and G. M. Slaughter, to United States of America, Atomic Energy Commission. Method of brazing. 3,164,897, 1-12-65, Cl. 29—494.

Paulson, Donald C., to The Dow Chemical Co. Expandable polystyrene strand expander. 3,165,303, 1-12-65, Cl. 263—21.

Pearlman, Donald, to Eastman Kodak Co. Direct positive photoconductography. 3,165,457, 1-12-65, Cl. 204—18.

Pearson, Cecil C., 40% to W. A. Ganguet. Tree shaker. 3,164,943, 1-12-65, Cl. 56—329.

Pearson, William M.: *See*—
Ausburn, George P., and Pearson. 3,165,124.

Peck, Samuel M. Cigarette package. 3,165,249, 1-12-65, Cl. 225—43.

Peeler, Ruby A. Telephone dial wiper. 3,164,853, 1-12-65, Cl. 15—244.

Pelavin, Joseph Y., and F. Iovlero, to Droutman Mfg. Co., Inc. Light-weight luggage case with reinforcing X-frame. 3,165,178, 1-12-65, Cl. 190—49.

Perkins, Beauregard, Jr., and W. F. Jackson, to United States of America, Army. Horisontal displacement meter. 3,164,-983, 1-12-65, Cl. 73—71.

Persson, Per O. R.: *See*—
Nordstrom, Oskar E. R., and Persson. 3,165,597.

Pesman, Gerard J.: *See*—
Geier, Douglas J., Pesman, Johnston, and Radnofsky. 3,165,356.

Petersen, Egon N.: *See*—
Konig, Josef, and Petersen. 3,165,424.

Peterson, Donald T., to Bartelt Engineering Co., Inc. Longitudinal folding device for two strips. 3,165,310, 1-12-65, Cl. 270—41.

Petrusek, Victor. Skipping devices. 3,165,315, 1-12-65, Cl. 272—74.

Petterson, Lowell L.: *See*—
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Shoemaker, Frank M., and W. D. Carothers. Amplifiers and interconnection circuits. 3,165,589, 1-12-65, Cl. 179—39.

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Slezak, Frank R., I. Rosen, and C. A. Neros, to Diamond Alkali Co. Halogenated glycolurils. 3,165,521, 1-12-65, Cl. 260—256.4.

Slezak, Frank R., I. Rosen, and C. A. Neros, to Diamond Alkali Co. Halogenated glycolurils. 3,165,521, 1-12-65, Cl. 260—256.4.

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Smith, Dexter E., and L. B. Reed, to Phillips Petroleum Co. Temperature control system. 3,165,146, 1-12-65, Cl. 165—2.

Smith, Edward H., and D. E. Stone, to United States of America, Navy. Method and apparatus employing acoustic energy for increasing fluid flow. 3,165,061, 1-12-65, Cl. 102—1.

Smith, Frederick A., to Union Carbide Corp. Organosiloxane compositions containing alkoxydisilanes as room temperature cross-linking agents. 3,165,494, 1-12-65, Cl. 260—37.

Smith, Newton R., and R. H. Wiley, to United States of America, Navy. Preparation of 1-alkyl-3,5-dinitro-1,2,4-triazole. 3,165,753, 1-12-65, Cl. 260—308.

Smith, Theodore D., to Radio Corp. of America. High-frequency sonic signal transmitter mechanism. 3,165,090, 1-12-65, Cl. 116—137.

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Solow, Max, N. L. Coleburn, and R. C. Wiley, to United States of America, Navy. Electroluminescent generator. 3,165,631, 1-12-65, Cl. 250—84.

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Sorenson, Wesley T., to Carling Electric, Inc. Compression spring actuating mechanism for toggle-operated momentary electrical switches. 3,165,603, 1-12-65, Cl. 200—67.

Sorenson, Wesley T., to Carling Electric, Inc. Three-position single toggle actuated switch for two independent electrical circuits. 3,165,604, 1-12-65, Cl. 200—67.

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Spaenig, Hermann, G. Schmidt-Thomee, and K. Weimaecker, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Process for the control of the temperature in reactors by the indirect exchange of heat by means of water under pressure. 3,165,145, 1-12-65, Cl. 165—2.

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Spencer, Thomas A. Lawn rakes. 3,164,945, 1-12-65, Cl. 56—400.12.

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Stark, John, Jr., and G. E. Kelly, to Radio Corp. of America. Color television receiver video amplifier. 3,165,579, 1-12-65, Cl. 178—5.4.

Stark, Sven O. S. Method for continuous tube producing. 3,165,035, 1-12-65, Cl. 93—94.

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Strauss, Theodor, and W. Bachmann, to Westinghouse-Bremsen-Gesellschaft m.b.H. Pressure differential safety interlock system. 3,165,121, 1-12-65, Cl. 137—625.41.

Strohmeyer, Max, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of 2,5-dihydrofuran. 3,165,536, 1-12-65, Cl. 260—346.1.

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Teaf, John H., to Radio Condenser Co. Remote control tuning system. 3,165,000, 1-12-65, Cl. 74—10.33.

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| 205 : 3,164,875 | 67 : 3,164,965 | 75 : 3,165,046 | 625.4 : 3,165,118 | 170 : 3,165,169 | 86 : 3,165,618 |
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| 234– 78 | 3,165,260 | 28 | 3,165,484 | 397.4 | 3,165,541 | 11.35 | 3,165,328 | 26 | 3,165,653 | 18 | 3,165,706 |
| 235– 91 | 3,165,261 | 28.5 | 3,165,485 | 397.45 | 3,165,542 | 36 | 3,165,329 | 46 | 3,165,654 | 78 | 3,165,707 |
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| | 3,165,273 | 62 | 3,165,497 | 586 | 3,165,554 | 406 | 3,165,341 | 315– 8.5 | 3,165,663 | 198 | 3,165,372 |
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| 58.3 | 3,165,276 | 79.3 | 3,165,500 | 683.15 | 3,165,557 | 290– 5 | 3,165,635 | 27 | 3,165,666 | | 3,165,718 |
| 75.53 | 3,165,277 | 80.5 | 3,165,501 | 823 | 3,165,558 | 294– 67 | 3,165,344 | 169 | 3,165,667 | 166 | 3,165,719 |
| 84.1 | 3,165,278 | 86.1 | 3,165,502 | 875 | 3,165,559 | | 3,165,345 | 209 | 3,165,668 | 172.5 | 3,165,720 |
| 130 | 3,165,279 | 94.3 | 3,165,503 | 897 | 3,165,560 | 77 | 3,165,346 | 237 | 3,165,669 | 173 | 3,165,721 |
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| 63 | 3,165,284 | 210 | 3,165,508 | 21 | 3,165,303 | 65 | 3,165,351 | | 3,165,674 | 259 | 3,165,726 |
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| 75 | 3,165,286 | 239.55 | 3,165,511 | 264– 22 | 3,165,563 | 137 | 3,165,353 | 171 | 3,165,676 | 324 | 3,165,728 |
| 224 | 3,165,287 | 239.8 | 3,165,510 | 80 | 3,165,564 | 297– 29 | 3,165,354 | 200 | 3,165,677 | | 3,165,729 |
| 226 | 3,165,288 | 247.1 | 3,165,512 | 161 | 3,165,565 | 216 | 3,165,355 | 234 | 3,165,678 | 347 | 3,165,730 |
| 416 | 3,165,289 | 248 | 3,165,513 | 184 | 3,165,566 | | 3,165,356 | 318– 27 | 3,165,679 | | 3,165,731 |
| 463 | 3,165,290 | | 3,165,514 | 255 | 3,165,567 | 384 | 3,165,357 | 28 | 3,165,680 | | 3,165,732 |
| 250– 43 | 3,165,628 | | 3,165,515 | 272 | 3,165,568 | 389 | 3,165,358 | | 3,165,681 | | 3,165,733 |
| 49.5 | 3,165,629 | 249 | 3,165,516 | 313 | 3,165,569 | 445 | 3,165,359 | 32 | 3,165,682 | 384 | 3,165,734 |
| 58 | 3,165,630 | 251 | 3,165,517 | 329 | 3,165,570 | 457 | Re.25,710 | 44 | 3,165,683 | 343– 5 | 3,165,735 |
| 84 | 3,165,631 | | 3,165,518 | 267– 1 | 3,165,305 | 298– 1 | 3,165,360 | 138 | 3,165,684 | 6.5 | 3,165,736 |
| 203 | 3,165,632 | 256.4 | 3,165,519 | 8 | 3,165,306 | 299– 43 | 3,165,361 | | 3,165,685 | 7.3 | 3,165,737 |
| 206 | 3,165,633 | | 3,165,520 | 80 | 3,165,307 | 300– 21 | 3,165,362 | 163 | 3,165,686 | 7.7 | 3,165,738 |
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| 148 | 3,165,292 | 279 | 3,165,524 | 270– 41 | 3,165,310 | 307– 88.5 | 3,165,636 | 320– 18 | 3,165,689 | 17.2 | 3,165,741 |
| 252 | 3,165,293 | 290 | 3,165,525 | 79 | 3,165,311 | | 3,165,637 | 321– 69 | 3,165,690 | 17.7 | 3,165,742 |
| 252–301.1 | 3,165,475 | 293 | 3,165,526 | 271– 36 | 3,165,312 | | 3,165,638 | 324– 41 | 3,165,691 | 100 | 3,165,743 |
| 301.6 | 3,165,476 | 295 | 3,165,527 | 64 | 3,165,313 | | 3,165,639 | 71 | 3,165,692 | 106 | 3,165,744 |
| 321 | 3,165,477 | 296 | 3,165,528 | 272– 70.3 | 3,165,314 | | 3,165,640 | | 3,165,693 | 108 | 3,165,745 |
| 413 | 3,165,478 | 308 | 3,165,753 | 74 | 3,165,315 | | 3,165,641 | 111 | 3,165,694 | 113 | 3,165,746 |
| 442 | 3,165,479 | 309.6 | 3,165,529 | 273– 53 | 3,165,316 | | 3,165,642 | 147 | 3,165,695 | 761 | 3,165,747 |
| 503 | 3,165,480 | 327 | 3,165,530 | 102.1 | 3,165,317 | | 3,165,643 | 325– 4 | 3,165,696 | 792.5 | 3,165,748 |
| 253– 77 | 3,165,294 | 330.5 | 3,165,531 | 148 | 3,165,318 | | 3,165,644 | 127 | 3,165,697 | 911 | 3,165,749 |
| 254– 2 | 3,165,295 | 333 | 3,165,532 | 149 | 3,165,319 | | 3,165,645 | 148 | 3,165,698 | | 3,165,750 |
| 141 | 3,165,296 | 340.3 | 3,165,533 | 274– 2 | 3,165,320 | | 3,165,646 | 410 | 3,165,699 | 915 | 3,165,751 |
| 186 | 3,165,297 | 340.7 | 3,165,534 | 10 | 3,165,321 | | 3,165,647 | 440 | 3,165,700 | 346–107 | 3,165,373 |
| 258– 1.2 | 3,165,298 | 345.9 | 3,165,535 | 275– 3 | 3,165,322 | | 3,165,648 | | 3,165,701 | 352– 84 | 3,165,752 |
| 259– 1 | 3,165,299 | 346.1 | 3,165,536 | 277– 41 | 3,165,323 | | 3,165,649 | | | | |


## Classification of Designs


| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D 1– 12 | 200,045 | D34– 5 | 200,053 | D44– 15 | 200,061 | D45– 17 | 200,068 | D58– 5 | 200,075 | D81– 10 | 200,082 |
| D 4– 2 | 200,046 | D44– 10 | 200,054 | | 200,062 | D48– 23 | 200,069 | 9 | 200,076 | | 200,083 |
| D 9– 2 | 200,047 | 15 | 200,055 | | 200,063 | D50– 6 | 200,070 | 26 | 200,077 | | 200,084 |
| D13– 1 | 200,048 | | 200,056 | | 200,064 | D52– 3 | 200,071 | D64– 12 | 200,078 | D83– 1 | 200,085 |
| D26– 5 | 200,049 | | 200,057 | | 200,065 | D54– 14 | 200,072 | | 200,079 | D86– 10 | 200,086 |
| | 200,050 | | 200,058 | | 200,066 | D57– 1 | 200,073 | D67– 3 | 200,080 | D90– 14 | 200,087 |
| 14 | 200,051 | | 200,059 | | 200,067 | D58– 3 | 200,074 | D80– 11 | 200,081 | D91– 3 | 200,088 |
| D29– 1 | 200,052 | | 200,060 | | | | | | | | |


## Classification of Plants


| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P. – 85 | 2,465 | | | | | | | | | | |



# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 12, 1965 Volume 810 Number 2


# TRADEMARKS

## NOTICES

### United States Adopted Names

List No. 9

*July 1, 1964–October 31, 1964*

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

aletamine hydrochloride : sympathomimetic amine
benzindamine hydrochloride : analgesic ; anti-inflammatory ; antipyretic
cactinomycin : antineoplastic agent
carbamazepine : anticonvulsant
cephaloglycin : antibiotic
cephaloridine : antibiotic
coumermycin : antibiotic
deferoxamine : iron depleter
denatonium benzoate : denaturant
ethamsylate : hemostatic agent
follicle stimulating hormone, human : gonadotropin
furazolium chloride : antibacterial agent
hetacillin : antibiotic
hexedine : antibacterial
ioglycamic acid : radiopaque (cholecystographic and cholangiographic)
methyl cysteine hydrochloride : mucolytic agent
nitrodan : anthelmintic agent
pelliomycin : antineoplastic agent
porfiromycin : antibiotic
prednazate : anti-inflammatory (veterinary)
proadifen hydrochloride : drug potentiator
quinbolone : anabolic agent
quingestanol acetate : progestational agent
sancycline : antibiotic
sodium acetosulfone : leprostatic agent
thiamiprine : anti-leukemic
triamcinolone hexacetonide : injectable glucocorticoid

## CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] ..... 15,498
Date of oldest new application ..... Apr. 17, 1964
Date of oldest amended application ..... Apr. 1, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

| TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application: New | Oldest Application: Amended |
|---|---|---|
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44 | 5–25–64 | 5–18–64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 4–17–64 | 4–1–64 |
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Applications filed during the month of November 1964—2026

Registrations Issued ..... 412—No. 783,027 to No. 783,438
Renewals Issued ..... 50


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# MARKS PUBLISHED FOR OPPOSITION

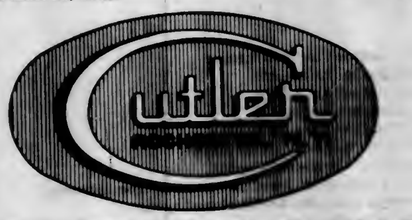
## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 164,703. Cutler Mail Chute Company, Rochester, N.Y. Filed Mar. 15, 1963.




The drawing is lined for red, but no claim is made to such color. "Rochester, N.Y." is disclaimed apart from the mark as shown without prejudice to applicant's common law rights. Owner of Reg. Nos. 554,020 and 739,861.

**Class 2—Receptacles**

For Mail Chutes and Mail Boxes.
First use at least as early as Mar. 21, 1962, on mail chutes.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Mail Slots.
First use at least as early as Mar. 26, 1962.

**Class 25—Locks and Safes**

For Lock Boxes.
First use at least as early as Mar. 30, 1962.

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SN 170,967. Toolcraft Corporation, d.b.a. Flightways, Geneva, Ill. Filed June 13, 1963.

## FLIGHTWAYS

**Class 19—Vehicles**

For Wheels and Casters and Parts Thereof for Material Handling Equipment and Hand Trucks.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Gravity Wheel and Roller Conveyors and Work Benches.

**Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires**

For Tires.
First use Jan. 1, 1958.

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SN 171,455. Ipco Hospital Supply Corporation, New York, N.Y. Filed June 20, 1963.

## DISPOSEZE

**Class 39—Clothing**

For Diapers, Caps and Shroud Units.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Shroud Sheets (Paper and Plastic), Draping Sheets; Bed Underpads (Regular and Flame Retardant), Professional Towels, Sterilized Bed Sheets and Absorbent Wipers (Cloth).

**Class 44—Dental, Medical, and Surgical Appliances**

For Hospital Supplies—Namely, Examination Capes, Bed Pan Bags and Covers, Sterilized Envelopes for Surgical Gloves, and Face Masks.
First use May 2, 1963.

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SN 175,488. Grundig Werke GmbH, Fuerth, Bavaria, Germany. Filed Aug. 21, 1963.
Owner of German Reg. No. 772,896, dated Apr. 26, 1963.

## MULTI-STENO

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Microphones, Electric Switches, and Control Devices for Dictating Machines.

**Class 36—Musical Instruments and Supplies**

For Electrically Operated and Controlled Dictation Machines and Parts Thereof.

First use on or about July 17, 1963; in commerce on or about July 17, 1963.

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SN 180,972. "Stromburg" Siegert & Co. G.m.b.H., Dusseldorf, Germany. Filed Nov. 12, 1963.

## Attaché

Owner of German Reg. No. 744,366, dated Jan. 4, 1961.

**Class 47—Wines**

For Wines.

**Class 49—Distilled Alcoholic Liquors**

For Brandies, Whisky, Vodka, Gin, Alcoholic Bitters, and Liqueurs.

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SN 181,618. De Haen-Carstanjen & Söhne, Dusseldorf, Germany. Filed Nov. 21, 1963.

## DUKAT

The English translation of "Dukat" is "ducat." Owner of German Reg. No. 673,813, dated Apr. 1, 1955.

**Class 47—Wines**

For Wines.

**Class 49—Distilled Alcoholic Liquors**

For Brandies, Whisky, Vodka, Gin, Alcoholic Bitters, and Liqueurs.



## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 178,213. National Superior Fur Dressing and Dyeing Co., Chicago, Ill. Filed Oct. 2, 1963.

## MARCHESA

For Fur Pelts.
First use on or about Sept. 13, 1963.

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SN 178,214. National Superior Fur Dressing and Dyeing Co., Chicago, Ill. Filed Oct. 2, 1963.

## REGINA

For Fur Pelts.
First use on or about Sept. 13, 1963.

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SN 178,216. National Superior Fur Dressing and Dyeing Co., Chicago, Ill. Filed Oct. 2, 1963.

## CONTESSA

For Fur Pelts.
First on or about Sept. 13, 1963.

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SN 180,296. Curlator Corporation, East Rochester, N.Y. Filed Nov. 1, 1963.

## TEXPA

For Non-Woven Webs Made of Paper Fibers and Made of Blends of Such Fibers and Other Materials for Use in the Industrial Arts.
First use Sept. 23, 1963.

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SN 184,429. Barrett & Company, Inc., Newark, N.J. Filed Jan. 13, 1964.




The drawing is lined for the colors silver and blue, which are features of the mark.
For Bulk Leather for Shoe Manufacture.
First use at least as early as 1954.

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SN 186,548. Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. Filed Feb. 12, 1964.

## THREE DIAMONDS

Owner of Japanese Reg. No. 451,570, dated Sept. 14, 1954.
For Raw Silk in Fiber Form.

SN 192,216. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

## FLOCOLAINE

Priority claimed under Sec. 44(d) on French Reg. No. 512,945, dated Apr. 25, 1963 (Paris); Natl. Inst. No. 206,717. (Claim based on co-pending application Ser. No. 175,438, filed in U.S. on Aug. 20, 1963.)

For Fibers and Fibrous Materials of Wool or in Substantial Part of Wool, Used for Thermal and Sonic Insulation, Stuffing and Padding, for Mattresses, Bolsters and Pillows, Padded Jackets, Amoraks, Padded Wrappers, and Bedjackets.

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SN 204,116. Norsk Hydro-Elektrisk Kvaelstofaktieselskab, Oslo, Norway. Filed Sept. 16, 1964.



Owner of Norwegian Reg. Nos. 10,593, dated Nov. 13, 1923, and 48,553, dated Sept. 17, 1956; and U.S. Reg. Nos. 516,063 and 523,090.

For Synthetic Resins and Plastics as Well as Pipes, Sheets, and Films Made Thereof.
First use July 13, 1923; in commerce first part of 1924.

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### Class 2—Receptacles

SN 187,243. Mrs. Philip Cammack, Santa Monica, Calif. Filed Feb. 24, 1964.

## SIPARETTE

For Miniature Containers in the General Shape of a Cigarette and Holder, for Liquids Such as Cordials, Syrups, etc.
First use Feb. 12, 1964.

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SN 191,691. Elmer C. Hilberg, Friday Harbor, Wash. Filed Apr. 21, 1964.

## *The Thrifty Dripper*

**"YOUR GRILLS BEST FRIEND"**



No claim is made to the representation of the goods or to the word "Dripper" apart from the mark.
For Holder for Cooking Oil Brush.
First use Jan. 29, 1964.

SN 194,869. Consolidated Container Corporation, Minneapolis, Minn. Filed June 4, 1964.

## HONEYCOTE

For Steel Drums.
First use Mar. 20, 1964.

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SN 195,269. Animal Trap Company of America, Lititz, Pa. Filed June 10, 1964.

## JARDIER

For Containers for Floral Arrangements—Namely, Vases, Jardinieres, Centerpieces, Planters, and Boxes.
First use at least as early as Dec. 31, 1920.

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SN 198,019. Aladdin Industries, Incorporated, Chicago, Ill. Filed July 17, 1964.

## DANIEL BOONE

For Lunch Boxes, Lunch Kits Comprising a Carrying Case Containing Thermos Bottles, Heat Insulated Receptacles Such as Thermos Bottles and Pitchers.
First use on or about Aug. 1, 1955.

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SN 199,621. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.

For Sandwich Bags of Plastic Sheeting and Waxed Paper and Beverage Containers of Paper and Plastic.
First use June 26, 1964.

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SN 199,625. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.

SCOTT

Owner of Reg. Nos. 669,919, 714,852, and 747,765.
For Sandwich Bags of Plastic Sheeting and Waxed Paper and Beverage Containers of Paper and Plastic.
First use June 26, 1964.

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SN 201,872. Rexall Drug and Chemical Company, d.b.a. Tupco, Los Angeles, Calif. Filed Sept. 14, 1964.

## TUPCO

Owner of Reg. No. 777,543.
For Perforated Plastic Closures.
First use Aug. 18, 1964.

## Class 5 — Adhesives

SN 167,926. Myers Industries, Inc., Akron, Ohio, by change of name from Myers Tire Supply Co., Akron, Ohio. Filed May 1, 1963.

MYERS TIRE SUPPLY

For Retread and Vulcanizing Cement.
First use Nov. 15, 1962.

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SN 183,191. Union Laboratories, Inc., Morganville, N.J. Filed Dec. 17, 1963.

BOXER STIXIT

Owner of Reg. No. 546,872.
For Pressure Sensitive Tape.
First use Feb. 8, 1963.

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SN 195,165. The Spiegel Brothers Corporation, Long Island City, N.Y. Filed June 8, 1964.

The drawing is lined for the color red. Applicant disclaims the representation of the tire apart from the mark as shown.
Owner of Reg. No. 339,835.
For Flat Tire Inflator and Sealer.
First use Nov. 22, 1963.

## Class 6 — Chemicals and Chemical Com-

SN 179,614. Citrus and Allied Essential Oils Co., Brooklyn, N.Y. Filed Oct. 23, 1963.

## NEUTRO "C"

For Industrial Perfume Compound and Odor Neutralizer.
First use Feb. 25, 1956.

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SN 179,615. Citrus and Allied Essential Oils Co., Brooklyn, N.Y. Filed Oct. 23, 1963.

## NEUTRO "A"

For Industrial Perfume Compound and Odor Neutralizer.
First use Sept. 27, 1962.



SN 180,209. Intrusion-Prepakt, Inc., Cleveland, Ohio. Filed Oct. 31, 1963.

3-C

For Admixtures for Cements and Grouts, Cement Hardeners, and Chemical Ice Thawers.
First use October 1959.

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SN 180,888. Philip A. Hunt Chemical Corporation, Palisades Park, N.J., by merger from Philip A. Hunt Company, Palisades Park, N.J. Filed Nov. 12, 1963.

## MICRO-GRAPH

For Developer-Replenisher for Processing of Microfilm.
First use Oct. 12, 1962.

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SN 180,890. Philip A. Hunt Chemical Corporation, Palisades Park, N.J., by merger from Philip A. Hunt Company, Palisades Park, N.J. Filed Nov. 12, 1963.

## MR. ETCH

For Additive Used in Etching Photoengraving Plates.
First use Apr. 25, 1962.

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SN 182,021. George J. Zaffiras, d.b.a. Pan American Company, Des Moines, Iowa. Filed Nov. 27, 1963.

PAC

For Rat and Mouse Bait.
First use Sept. 11, 1963.

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SN 184,448. The Dow Chemical Company, Midland, Mich. Filed Jan. 13, 1964.

## STEER-KLEER

For Parasiticide—Namely, Systemic Insecticide.
First use Nov. 18, 1963.

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SN 185,122. Foote Mineral Co., Exton, Pa. Filed Jan. 22, 1964.

## PERMANOX

For Manganese Oxide—Namely, Manganese Sesquioxide for Use Exclusively in the Electronic Component Industry.
First use December 1963.

SN 187,384. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Feb. 25, 1964.

## PYRAMIN

For Herbicides.
First use July 23, 1963; in commerce Oct. 11, 1963.

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SN 187,448. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Feb. 25, 1964.

## SERAMOX

For Nonreactive Aluminum Hydroxide Adsorbent for Removal of Bilirubin From Serum in Cholesterol Assays for Laboratory Use.
First use Aug. 29, 1963.

## Class 7 — Cordage

SN 187,485. FMC Corporation, Philadelphia, Pa. Filed Feb. 26, 1964.

## AVICORD

Owner of Reg. No. 419,183.
For Cord.
First use Feb. 11, 1964.

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SN 190,355. FMC Corporation, Philadelphia, Pa. Filed Apr. 6, 1964.

## AVILOC

Owner of Reg. No. 702,103.
For Cord.
First use Mar. 11, 1964.

## Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 171,827. Canadian Industries Limited, Montreal, Quebec, Canada. Filed June 25, 1963.

## METEOR

Owner of Canadian Reg. No. 241/52,132, dated May 6, 1931.
For Shot Shells and Bullets for Firearms.

## Class 12 — Construction Materials

SN 179,243. Louis L. Magyar, d.b.a. Meridian Brick, Los Angeles, Calif. Filed Oct. 17, 1963.

MERIDIAN PUMICE BRICK

Applicant disclaims the words "Pumice Brick" apart from the word "Meridian," and the representation of the "globe" apart from the balance of the mark.
For Decorative Bricks, Made of Pumice Cement and Coloring Matter.
First use June 5, 1960.

SN 181,124. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Nov. 14, 1963.

## CLEVE-TEK

For Box Car Caulking Compounds.
First use Nov. 29, 1962.

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SN 181,496. Refractory & Insulation Corporation, Port Kennedy, Pa. Filed Nov. 19, 1963.

Super #3000

For Refractory Cement and Furnace Cement, Bonding and Patching Mortars.
First use on or about May 1, 1947.

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SN 182,198. Minnesota and Ontario Paper Company, Minneapolis, Minn. Filed Dec. 2, 1963.

## CASCADE

For Decorated Acoustical Tileboard.
First use Nov. 15, 1963.

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SN 182,808. Metal Service Company, Inc., Alexandria, Va. Filed Dec. 11, 1963.

## PRE-CISION STACKED

For Fabricated Metal Stairways Sold as Integral Units for Use Alone or With Similar Units.
First use Apr. 11, 1963.

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SN 184,268. Technical Wire Products, Inc., Cranford, N.J. Filed Jan. 8, 1964.

TECKNIT THERMASHIELD

For Thermal Insulation Covered With Flexible Knitted Wire Mesh for Insulating Doors, Pipes, Tubing, Ingots, Billets, Kilns, Engines for Absorbing Sound and for Other Like Uses.
First use Oct. 17, 1963.

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SN 189,846. Allen-Morrison, Inc., Lynchburg, Va. Filed Mar. 30, 1964.

## AMLINE

For Prefabricated Portable Storage Houses.
First use Jan. 16, 1964.

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SN 191,867. Martin Marietta Corporation, New York, N.Y. Filed Apr. 23, 1964.




For Building Cement, Paving Cement, and Mortar.
First use Feb. 5, 1964.

SN 195,403. Hagan Manufacturing Company, Delphos, Ohio. Filed June 11, 1964.

## SF-416

For Cellulose Insulation.
First use Jan. 31, 1964.

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SN 195,530. Johns-Manville Corporation, New York, N.Y. Filed June 12, 1964.

## MOBINSUL

For Thermal Insulation, for Mobile Homes.
First use Nov. 22, 1963.

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SN 195,988. Wheeling Corrugating Company, Wheeling, W. Va. Filed June 18, 1964.

Paneldrain

For Sheet Metal Roofing.
First use June 9, 1964.

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SN 196,363. Dominion Tar & Chemical Company, Limited, Montreal, Quebec, Canada. Filed June 24, 1964.

## PACIFIC

Owner of U.S. Reg. No. 779,699.
For Crushed Lime and Quicklime Used for Masonry Mortar and Plaster and for Other Purposes.
First use May 1955; in commerce January 1963.

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SN 196,491. Abitibi Power & Paper Company, Limited, Toronto, Ontario, Canada. Filed June 26, 1964.

## PLATEBOARD

Owner of U.S. Reg. Nos. 671,382 and 643,795.
For Medium Density Building Board Siding.
First use July 1, 1962; in commerce July 23, 1962.

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SN 196,579. Taylor-Colquitt Co., Spartanburg, S.C. Filed June 26, 1964.

T-C

Owner of Reg. No. 405,686.
For Lumber, Railroad Ties, Wooden Piles, and Telephone, Telegraph, and Power Transmission Poles.
First use Jan. 1, 1919.

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SN 196,755. Air Products and Chemicals, Inc., Trexlertown, Pa. Filed June 30, 1964.

## APACHE

For Rigid Urethane Foam Board.
First use Mar. 18, 1964.

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SN 196,785. Hordis Bros. Inc., Pennsauken, N.J. Filed June 30, 1964.

## ARM-R-BRITE

For Tempered Glass Panels With Ceramic Paint on One Surface To Be Used as Curtain-Walls in Construction of Buildings and as Interior Walls of Buildings.
First use May 4, 1964.



SN 204,825. United States Ceramic Tile Company, Canton, Ohio. Filed Oct. 19, 1964.

## DIAMONITE

Owner of Reg. No. 415,852.
For Refractory Articles—Namely, Blocks, Tubes and Other Shapes, and Powder, Used To Support or Imbed Articles for Firing in Kilns or Furnaces; Corrosion Resistant Articles—Namely, Blocks, Tubes and Other Shapes, Made of Fired Vitreous Materials and Used for Construction of Vessels or Pipes or Liners for Vessels or Pipes for Containing or Transporting Corrosive Substances, Namely, Electro-Plating Baths, and Baths and Acid Vapors; Construction Materials—Namely, Bricks, Blocks, and Slabs and Tiles, and Tubular Parts for Use as Linings in Grinding Mills, Drain Pipes, Conduits, Corrosive Smoke and Gas Stacks; and for Architectural Purposes for Use on Floors, Walls, Ceilings, Ramps, Stairways, and Other Such Building Surfaces.
First use Dec. 22, 1942.

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## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 182,306. Vaughan & Bushnell Mfg. Co., Chicago, Ill. Filed Dec. 3, 1963.

## SUPER-BAR

For Pry Bars.
First use Nov. 15, 1961.

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SN 184,012. Finishine Laboratories, Inc., Syracuse, N.Y. Filed Jan. 2, 1964.

## DUSTAWAY

For Nozzles Adapted for Attachment to Aerosols Containing Dichlorodifluoromethane.
First use at least as early as Sept. 16, 1963.

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SN 184,568. Boss, Lubbock, Tex. Filed Jan. 14, 1964.
The drawing is lined for the color red.




For Irrigation Pipe.
First use on or about Oct. 15, 1961.

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SN 194,983. Kenney Manufacturing Company, Warwick, R.I. Filed June 5, 1964.

Kay Kenney

The name "Kay Kenney" does not identify any particular living individual. Owner of Reg. No. 515,703.
For Drapery Hardware.
First use Sept. 25, 1963.

SN 197,106. Fit-All Trim Co., Los Angeles, Calif. Filed July 6, 1964.




For Bathroom Fixtures and Hardware Fixtures.
First use Jan. 15, 1963.

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SN 198,713. C.S.C. Corporation, Fort Wayne, Ind. Filed July 29, 1964.

## IMPERIAL

For Tail Pipe Hangers, Muffler Hangers, and U-Type Clamps for General Use.
First use Apr. 1, 1964.

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## Class 14—Metals and Metal Castings and Forgings

SN 177,483. E. W. Bliss Company, Pittsburgh, Pa. Filed Sept. 23, 1963.

## GARRISON SPECIAL

For Low Alloy, Chilled Cast Iron Material Used for Rolling Mill Rolls, Such as Rolls for Rod Mills, Bar Mills, Tube Mills, Merchant Mills, etc.
First use on or about Feb. 28, 1951.

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SN 179,841. Wilson Supply Company, Houston, Tex. Filed Oct. 25, 1963.

WX

The mark consists of the letters "WX" inside an elongated letter "C."
For Hard Rods of Tungsten Carbide Useful as Wear-Resistant Rods and as Dressings for Wear-Resistant Surfaces of Tools.
First use at least as early as Oct. 6, 1961.

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SN 193,032. National Steel Corporation, Pittsburgh, Pa. Filed May 8, 1964.

## WSX

For Flat Rolled Steel—Namely, Strip, Sheets, and Tinplate.
First use May 1954.

SN 199,622. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.



For Aluminum Foil.
First use June 13, 1964.

SN 199,626. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.




Owner of Reg. Nos. 669,919, 714,852, and 747,765.
For Aluminum Foil.
First use June 13, 1964.

## Class 15—Oils and Greases

SN 202,981. Candle Artisans, Incorporated, Long Valley, N.J. Filed Sept. 30, 1964.

PATRICIAN

For Candles.
First use May 9, 1964.

## Class 16—Protective and Decorative Coatings

SN 185,395. Hunt Foods and Industries Inc., Fullerton, Calif. Filed Jan. 27, 1964.



HOT ROD PRIMER

The drawing is lined for the colors red, orange, gray, and yellow. No registration rights are claimed for the word "Primer" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown in the drawing of any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

SN 196,232. The Burns & Russell Company of Baltimore City, Baltimore, Md. Filed Feb. 7, 1964.




For Smoke Retarding Additives for Glazing Compositions, Paints, and Other Coating Compositions.
First use Oct. 17, 1963.

SN 186,480. Southwest Grease & Oil Co., Inc., Wichita, Kans. Filed Feb. 11, 1964.

DURA-BOND

For Automobile Rust-Proof Undercoatings.
First use Jan. 31, 1964.

SN 191,444. Sargent Manufacturing Corp., Haselton, Pa. Filed Apr. 16, 1964.




For Artists' Oil and Water Colors.
First use January 1939.

## Class 17—Tobacco Products

SN 179,127. Duc George Sigarenfabrieken N.V., Zeelst, Veldhoven, Netherlands. Filed Oct. 16, 1963.

Duc
GEORGE

The term "Duc" is a French word meaning "duke." The name "Duc George" does not represent a particular living individual.
For Tobacco and Tobacco Products—Namely, Cigars, Cigarillos, Senoritas, and Whiffs.
First use about the year 1890; in commerce June 30, 1962.

SN 182,721. General Cigar Co., Inc., New York, N.Y. Filed Dec. 10, 1963.

JUAN DE FUCA

The name "Juan de Fuca" is not a name identifying a particular living individual.
For Cigars.
First use on or about May 1, 1906.



SN 185,050. La Primadora Cigar Corporation, New York, N.Y. Filed Jan. 21, 1964.

CONTESSA

For Cigars.
First use Jan. 20, 1964.

SN 191,826. The Antonio Company, Tampa, Fla. Filed Apr. 23, 1964.




The pictorial representation of the cigar is disclaimed apart from the mark as shown.
For Cigars.
First use Mar. 31, 1964.

SN 195,663. Max Guttmann, d.b.a. M.G.T. Tobacco Company, Kew Gardens, N.Y. Filed June 15, 1964.

ROCKING CHAIR

For Smoking Tobacco.
First use May 18, 1964.

SN 201,890. Stephano Brothers, Philadelphia, Pa. Filed Sept. 14, 1964.

RAND MINA-TIP

For Little Cigars.
First use Sept. 9, 1964.

SN 202,096. Philip Morris Incorporated, New York, N.Y. Filed Sept. 17, 1964.

FIELD & STREAM

Owner of Reg. Nos. 523,871 and 776,496.
For Smoking Tobacco and Cigarettes.
First use July 26, 1948, on smoking tobacco.

SN 202,097. Philip Morris Incorporated, New York, N.Y. Filed Sept. 17, 1964.

COUNTRY DOCTOR

Owner of Reg. Nos. 371,245 and 527,241.
For Smoking Tobacco and Cigarettes.
First use Dec. 8, 1936, on smoking tobacco.

## Class 18—Medicines and Pharmaceutical Preparations

SN 182,320. Evans Medical Limited, Speke, Liverpool, England. Filed Dec. 4, 1963.

PROLOTHAN

For Pharmaceutical Preparations for Human Use Containing Proteins, e.g. Protomine.
First use Nov. 14, 1961; in commerce Sept. 25, 1963.



SN 185,104. Byk-Gulden Lomberg, Chemische Fabrik G.m.b.H., Konstanz, Germany. Filed Jan. 22, 1964.

TOMANOL

Owner of German Reg. No. 602,669, dated Nov. 23, 1950.
For Medicines and Pharmaceutical Preparations—Namely, Analgetics, Antirheumatics, Antipyretics, and Antiphlogistics.

SN 185,110. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 22, 1964.

DU-AIDS

For Antacid and Breath Sweetening Tablets.
First use Dec. 3, 1963.

SN 187,000. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Feb. 19, 1964.

DISCASE

For Enzymes in Injectable Dosage Form for the Dissolution of the Intravertebrae Spinal Disc Substances.
First use Jan. 22, 1964.

SN 187,111. Mead Johnson & Company, Evansville, Ind. Filed Feb. 20, 1964.

TRIACTOL

Owner of Reg. Nos. 244,145, 748,671, and others.
For Liquid and Tablet Preparations Used for Symptomatic Relief of Colds and Coughs Due to Colds.
First use prior to Feb. 7, 1964.

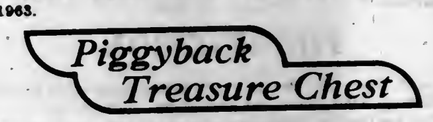
SN 188,043. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Mar. 5, 1964.

SYNCHRONYL

For Steroid Hormone Preparation for Oral Use in the Synchronization of Estrus in Animals.
First use Jan. 30, 1964.

## Class 19—Vehicles

SN 180,514. McLain Mfg. Co., Tulsa, Okla. Filed Nov. 5, 1963.




For Trunk for Wheeled House Trailers.
First use June 25, 1963.

SN 194,112. Alcor Aviation, Inc., San Antonio, Tex. Filed May 25, 1964.

CARGOMORE

For Special Door for Cargo Hauling in Single Engine Aircraft.
First use Mar. 1, 1964.

SN 196,525. Jeffrey-Allan Industries, Incorporated, Chicago, Ill. Filed June 26, 1964.

ROLL-A-MATIC

For Reels for Vehicle Seat Belts.
First use Jan. 27, 1964.

## Class 20 — Linoleum and Oiled Cloth

SN 196,628. Congoleum-Nairn Inc., Kearny, N.J. Filed June 29, 1964.

### CUSHIONWALL

Owner of Reg. No. 766,248.
For Plastic Surfaced Wall Coverings.
First use June 8, 1964.

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## Class 21 — Electrical Apparatus, Machines, and Supplies

SN 161,879. General Cable Corporation, New York, N.Y. Filed Feb. 1, 1963.

### CCW

For Flexible, Corrugated Sheaths or Conduits.
First use Dec. 4, 1962.

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SN 164,061. Consolidated Electronics Industries Corp., New York, N.Y., assignee, by mesne assignments, of Ohmite Manufacturing Company, Skokie, Ill. Filed Mar. 6, 1963.

### TALLY TAPE

For Mounting and Storage Tape for Carrying Groups of Resistors.
First use May 1960.

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SN 178,957. Noam Electronic Corporation, New York, N.Y. Filed Oct. 14, 1963.

### Noam

For Radio and Television Sets and Electronic Equipment Including Transistor Radios, Table Radios, and Radio Speakers.
First use July 1962.

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SN 181,749. C. W. Brabender Instruments, Inc., South Hackensack, N.J. Filed Nov. 22, 1963.

### THERMOTRON

For Pressure Circulators for Temperature Control for Use on Testing, Pilot Plant and Processing Equipment.
First use Oct. 15, 1963.

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SN 182,837. Sigma Instruments, Inc., South Braintree, Mass. Filed Dec. 11, 1963.

### VERSTAR

For Devices Including Sensing and Switching Apparatus Used as Protective Relaying Equipment for Electric Power Transmission and Distribution Systems.
First use Apr. 13, 1961.

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SN 184,754. The Ruby Lighting Corporation, New York, N.Y. Filed Jan. 16, 1964.

### RUBY

For Electrical Lighting Fixtures.
First use on or about Jan. 1, 1940.

SN 186,126. Tensor Corporation, Brooklyn, N.Y. Filed Feb. 5, 1964.

### POCKET-LITE

For Electrical Lamps.
First use Dec. 11, 1963.

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SN 186,567. Rumar Heating Corp., Tacoma, Wash. Filed Feb. 12, 1964.

### FIRST MATE

For Electrically Energized Low Temperature, Long Wave, Radiant Heaters, for Use by Men, Women, and Children.
First use Sept. 10, 1963.

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SN 186,826. Eaton Manufacturing Company, Cleveland, Ohio. Filed Feb. 17, 1964.

### MUTUATROL

For Electrical Control Systems for Controlling Eddy-Current Transmission Devices.
First use Jan. 23, 1964.

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SN 186,859. Lapine Scientific Company, Chicago, Ill. Filed Feb. 17, 1964.

### PORTA-STIR

For Magnetic Stirrer Drive for Laboratory Use.
First use Jan. 10, 1964.

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SN 188,732. Cutler-Hammer, Inc., Milwaukee, Wis. Filed Mar. 16, 1964.

### D-MIST

For Electrical Apparatus and Systems for the Control and Suppression of Fluid Particles, Such as Ink Mist Generated in Printing Presses; Parts Thereof, and Accessories Used Therewith.
First use Feb. 26, 1964.

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SN 190,878. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

### OMEGA-VU

For Indoor Antennas.
First use Mar. 20, 1964.

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SN 190,885. Channel Master Corporation, Ellenville, N.Y. Filed Apr. 13, 1964.

### OMEGA-82

For Indoor Antennas.
First use Mar. 20, 1964.

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SN 191,092. The Whitney Blake Company, Hamden, Conn. Filed Apr. 14, 1964.

### TELECHROME

For Telephone Cords—Namely, Insulated Electric Wire for Transmitting Audible Signals.
First use on or about Feb. 26, 1964.

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SN 194,287. The Electric Storage Battery Company, Philadelphia, Pa. Filed May 26, 1964.

### BONANZA

For Electric Batteries and Parts Thereof.
First use Mar. 5, 1964.



SN 194,654. Rae Company, Inc., Indianapolis, Ind. Filed June 1, 1964.

### QUIETRON

For Transistorized Replacements for Vibrators in Radios.
First use Feb. 1, 1964.

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SN 195,008. National Union Electric Corporation, Bloomington, Ill. Filed June 5, 1964.

### SANITAIRE

For Electric Vacuum Cleaners and Parts Thereof.
First use Nov. 16, 1939.

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SN 197,391. The Hallicrafters Co., Chicago, Ill. Filed July 8, 1964.

### COMMAND LINE

For Mobile, Two-Way Radio Equipment.
First use May 6, 1963.

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SN 198,944. Electronic Futures, Incorporated, North Haven, Conn. Filed July 31, 1964.

### AUDIO SECRETARY

The word "Audio" is disclaimed as a part of the mark.
For Wireless Transmitter and Receiver Apparatus Employing a Closed-Loop Antenna.
First use Mar. 12, 1964.

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SN 199,744. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Aug. 12, 1964.

### KA-FLEX

For Electrical Cable.
First use on or about May 1, 1964.

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SN 199,820. Gremar Manufacturing Co., Inc., Wakefield, Mass. Filed Aug. 13, 1964.

### DURAPLATE

For Co-Axial Transmission Line Connectors and Radio Frequency Fittings.
First use on or about July 27, 1964.

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SN 201,526. Electronic Futures, Inc., North Haven, Conn. Filed Sept. 9, 1964.

### LEARNING LOOP

The word "Loop" is hereby disclaimed as a part of the mark.
For Loop Antennas for Wireless Transmission.
First use Sept. 7, 1962.

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## Class 22 — Games, Toys, and Sporting Goods

SN 179,904. T. A. Johnston, Jr., d.b.a. Master Products Co., Tulsa, Okla. Filed Oct. 28, 1963.

### GRIP MASTER

For Roll-On Hand Drying Preparation for Use Primarily by Bowlers and Golfers.
First use July 16, 1963.

SN 187,966. St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada. Filed Mar. 4, 1964.

### Shamrock

For Ice Skate Blades.
First use Sept. 1, 1955; in commerce Sept. 1, 1955.

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## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 140,072. Adams Rite Manufacturing Company, Glendale, Calif. Filed Mar. 19, 1962.

### ROTOSTAT

For Torque-Transmission and Control Devices of the Type Having Coupling Means for Transmitting Rotary Motions From One Element to Another, and Having Automatic Locking Means Operable Against Reverse Transmission.
First use Oct. 18, 1961.

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SN 169,120. Draper Corporation, Hopedale, Mass. Filed May 17, 1963.

### D 26

Owner of Reg. No. 298,948.
For Cast Metal Parts for Looms.
First use Apr. 15, 1963.

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SN 169,121. Draper Corporation, Hopedale, Mass. Filed May 17, 1963.

### 26

For Cast Metal Parts for Looms.
First use Apr. 15, 1963.

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SN 177,484. E. W. Bliss Company, Pittsburgh, Pa. Filed Sept. 23, 1963.

### GARRISON SPECIAL

For Rolling Mill Rolls, Such as Rolls for Rod Mills, Bar Mills, Tube Mills, Merchant Mills, etc.
First use on or about Feb. 28, 1951.

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SN 180,110. Mullins Manufacturing Corporation, Salem, Ohio. Filed Oct. 30, 1963.

### LEHMANN

Owner of Reg. Nos. 549,419 and 562,781.
For Machinery for Chocolate Processing, Cocoa Liquor Mills, Millstone Dressing Machines, Emulsifiers, Paste Mixers, Screening Machines, Ink and Paint Machinery and Various Assorted Calenders and Mills for Grinding, Pulverising, and Processing Various Ingredients.
First use in or about 1954.

SN 182,141. The Akron Standard Mold Company, Akron, Ohio. Filed Dec. 2, 1963.

ASM

The drawing is lined to represent dull gold and silver.
For Servicers (All Types), Tread Splice Press (Passenger and Truck), Batch-Off Machines, Guillotine Cutter, Tire Building Machines (All Types), Mill Blender, Abrasion Machine, Band Builders, Stock Cooling Conveyor, Tire Squeeser, Air Bag Puller, Tread Stitchers, Roller Type Tread Splice Press, Rotary Slab Cooling Tank, Tread Slitter, White Sidewall Buffers, Tire Testing Machines (All Types), Stock Let-Offs, Mill Apron, Powermax Trimmer, Band Applier, Tire Rimming Press, Air Bag Buffing Machine, Band Spinner, Goodrich Type Rear Stitcher, Ply Splicing Wind-Up Table, Cured Stock Cutter, Rotary Hot Knife Slab Cutter, Oscillating Mill Strip Knife, Rotary Cutting and Stacking Unit, Building Machine for Rubber Cement Bags, Variable Knife Cutter, Banbury Charging Conveyor, Mill Feed Conveyor, Rotary Stock Cutter, Calender Inner Gum Inserting Unit, U.S. Type Ply Stitcher, Tread Separation Tester, Cutter Stacker Unit, Wig-Wag Stock Piling Unit, Hydraulic Bias Cutter, Double Let-Off for Bias Cutter, Strip Feeding Blending Unit, and Tire Exercising Machine.
First use May 21, 1959.

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SN 182,227. Tru-Bal Products, Inc., Minneapolis, Minn. Filed Dec. 2, 1963.

## CO-RECT LINE

For Automotive Vehicle Parts Including Front End Stabilizers, Steering Idler Attachment Units, Shims, Ball Joints, and Trunnions.
First use Apr. 1, 1960.

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SN 183,118. F. R. Schwanke Co., Inc., Chicago, Ill. Filed Dec. 16, 1963.

FrankLen Products

For Automotive Parts and Accessories—Namely, Piston Pins, Valve Lifters and Tappets, Valve Push Rods, Oil Pumps, Oil Pump Repair Kits, Timing Chains, King Bolts, King Bolt Sets, Ball Joints, Ball Joint Repair Kits, and Suspension Parts and Kits.
First use on or about Nov. 21, 1963.

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SN 184,658. Saunders Incorporated, Charlotte, N.C. Filed Jan. 15, 1964.

## OLD MANOR

For Stainless Steel Flatware.
First use Nov. 15, 1963.

SN 185,485. Belson Corporation, New York, N.Y. Filed Jan. 28, 1964.

## HOFFMAN

For Air Appliance Products Including Industrial Blowers and Exhausters, Portable and Stationary Industrial Vacuum Cleaning Systems, Pneumatic Conveying Equipment, Dust Collectors, Continuous Strip and Sheet Dryers for the Metalworking Industries; Industrial Filtration Equipment Including Magnetic-Type Separators, Flotation-Type Clarifiers, Disposable Filter Media-Type Filters, Diatomaceous Earth-Type Filters and Other Filtration Systems; and Parts and Accessories of the Foregoing.
First use during March 1933.

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SN 185,486. Belson Corporation, New York, N.Y. Filed Jan. 28, 1964.

H

For Air Appliance Products Including Industrial Blowers and Exhausters, Portable and Stationary Industrial Vacuum Cleaning Systems, Pneumatic Conveying Equipment, Dust Collectors, Continuous Strip and Sheet Dryers for the Metalworking Industries; Industrial Filtration Equipment Including Magnetic-Type Separators, Flotation-Type Clarifiers, Disposable Filter Media-Type Filters, Diatomaceous Earth-Type Filters and Other Filtration Systems; and Parts and Accessories of the Foregoing.
First use March 1946.

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SN 189,160. Firma Otto Bilz Werkzeugfabrik, Neilingen, near Esslingen, Germany. Filed Mar. 20, 1964.

## BILZ

For Fittings for Pressure Systems, Particularly Hose and Pipe Couplings and Blow-Off Pistols; Accessories for Machine Tools, Particularly Spherical Turning Attachments, Bolt and Stud Setting Devices, and Holders (Chucks) for Tools.
First use January 1958; in commerce January 1958.

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SN 192,280. Gestetner Limited, London, England. Filed Apr. 29, 1964.

## GESTETNER

Owner of British Reg. No. 836,844, dated June 29, 1962.
For Duplicating Apparatus and Duplicating Machines, All for Office Use, and Parts and Fittings for These Goods.

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SN 192,952. Shur-Gloss Mfg. Co., Inc., Chicago, Ill. Filed May 7, 1964.

## DIP-O-MATIC

For Air Driven Agitators.
First use Feb. 3, 1964.

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SN 194,735. Midwest Tool & Cutlery Co., Inc., Sturgis, Mich. Filed June 2, 1964.

## CLIP-EASE

Applicant disclaims the word "Clip" apart from the mark.
For Grass Shears.
First use on or about Feb. 13, 1963.

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SN 196,316. Starline, Inc., Harvard, Ill. Filed June 23, 1964.

## ROTASPREADER

For Tractor Drawn Manure Spreaders.
First use May 25, 1964.



SN 197,618. The A. J. Sackett & Sons Company, Baltimore, Md. Filed July 10, 1964.

## TRANSBLENDER

For Transferring and Blending Apparatus for the Manufacture of Plant Foods.
First use Apr. 2, 1964.

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SN 198,819. The Black and Decker Manufacturing Company, Towson, Md. Filed July 30, 1964.

## HAMMER GUN

The word "Hammer" is disclaimed apart from the mark as shown.
For Power-Operated Drills, Hammers, and Hammer-Drills, and Kits and Accessories Therefor.
First use Mar. 1, 1964.

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SN 199,028. The Cleveland Crane & Engineering Company, Wickliffe, Ohio. Filed Aug. 3, 1964.

CTI

Owner of Reg. No. 723,549.
For Overhead Cranes, Overhead Conveyor-Type Material Handling Systems, and Parts Thereof.
First use Dec. 15, 1962.

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SN 199,545. Dexco Corporation, Detroit, Mich. Filed Aug. 10, 1964.

## SPIRO-FLAT

For Drills.
First use May 28, 1961.

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SN 199,631. The Singer Company, New York, N.Y. Filed Aug. 10, 1964.

## TOUCH & SEW

For Sewing Machines, Their Parts and Attachments.
First use May 5, 1964.

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SN 199,658. Curlator Corporation, East Rochester, N.Y. Filed Aug. 11, 1964.

## CMC EVENFEED

The word "Evenfeed" is disclaimed apart from the mark as shown.
For Apparatus for Feeding and Carding Fibers.
First use June 30, 1964.

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SN 199,663. Fabrique Nationale de Lames de Rasoirs, Poissy, Seine-et-Oise, France. Filed Aug. 11, 1964.

LAFANA

Priority claimed under Sec. 44(d) on French Reg. No. 8,082, dated Mar. 17, 1964 (Versailles); Natl. Inst. No. 225,555.
For Razor Blades.

SN 199,696. Joseph L. Perry, Geneva, Ill. Filed Aug. 11, 1964.

SAFE-T TWIST—TIP

For Cutting Blades for Rotary Mowers.
First use Sept. 15, 1963.

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SN 201,490. Toledo Scale Corporation, Toledo, Ohio. Filed Sept. 8, 1964.

## REMOPRINT

For Remotely Controlled Machines for Printing Labels, Tickets, and the Like.
First use Feb. 17, 1964.

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SN 202,106. Sandusky Foundry & Machine Company, Sandusky, Ohio. Filed Sept. 17, 1964.

## CHILRON

For Roll Shell for Machines Such as Paper-Making Machines.
First use Sept. 4, 1964.

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SN 202,237. Curtiss-Wright Corporation, Cleveland, Ohio. Filed Sept. 21, 1964.

Permaspring

Owner of Reg. No. 674,756.
For Coil or Spring Clutch and Brake Mechanism Units and Components Thereof.
First use May 28, 1964.

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### Class 24 — Laundry Appliances and Machines

SN 142,599. Brighton Corporation, d.b.a. Hamilton Copper and Brass Works, Cincinnati, Ohio. Filed Apr. 19, 1962.

## HAMILTON

For Extractor Baskets as Employed in Commercial and Heavy Duty Types of Laundry Machines and Dry Cleaning Machines.
First use 1890.

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### Class 25 — Locks and Safes

SN 184,516. Sargent & Company, New Haven, Conn. Filed Jan. 13, 1964.

## "2" LINE

For Door Locks.
First use Jan. 13, 1963.

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### Class 26 — Measuring and Scientific Appliances

SN 148,227. Republic Flow Meters Company, Chicago, Ill. Filed July 2, 1962.

## ANALOGGER

For Circular Chart Pneumatic Receiver Recorders.
First use Feb. 1, 1962.

SN 164,144. The Nuarc Company, Chicago, Ill. Filed Sept. 28, 1962.

## JET LINE

For Lithographic Equipment—Namely, Stripping Tables, Line-Up Tables, Light Tables, Rub-Up Tables, Film Developing Tanks and Sinks, and Accessories for Use With Such Tables.
First use Oct. 1, 1960.

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SN 158,271. Quarzlampen Kesellschaft m.b.H., Hanau, Main, Germany. Filed June 13, 1963.

## XENOTEST

Owner of German Reg. No. 677,388, dated June 11, 1955.
For Photo-Electrical Apparatus for Testing Materials—Namely, for Testing Paints, Lacquers, Varnishes, Dyes Regarding Color Fastness by Visible and Ultraviolet Irradiation.

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SN 168,508. Ipsen Industries, Inc., Rockford, Ill. Filed May 9, 1963.

## WATER SENTINEL

The word "Water" is disclaimed apart from its use in the mark as a whole.
For Apparatus for Detecting the Presence of Moisture in Liquids Such as Oil Used To Quench Heat Treated Workpieces.
First use at least on Mar. 4, 1960.

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SN 170,781. United Aircraft Corporation, East Hartford, Conn. Filed June 11, 1963.

## BIM

For Inspection Apparatus for Detecting Flaws and Cracks in Aircraft Blades of the Helicopter and Propeller Type.
First use about Jan. 15, 1963.

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SN 176,999. Canadian Aviation Electronics Ltd., St. Laurent, Quebec, Canada. Filed Sept. 16, 1963.

## ANA-LITE 176

The number "176" is disclaimed apart from the mark as shown.
For Electronic Continuity Checkers for Checking Out Electronic Circuits.
First use Jan. 30, 1963; in commerce July 15, 1963.

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SN 180,207. Illumitronic Systems Corporation, Sunnyvale, Calif. Filed Oct. 31, 1963.

## KARDIGRAF

For Weight Recorder.
First use July 1963.

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SN 182,439. Penn Controls, Inc., Goshen, Ind. Filed Dec. 5, 1963.

## POW-R-CEL

For Photosensitive Device, Relay and Other Electric Circuit Components Used in an Oil Burner Control System.
First use August 1963.

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SN 183,075. Colin C. Kerr & Company Limited, Montreal, Quebec, Canada. Filed Dec. 16, 1963.

## SYNCHROSLIDE

Priority claimed under Sec. 44(d) on Canadian application filed June 21, 1963; Reg. No. 137,250, dated Sept. 11, 1964.
For Photographic Slide Projection Equipment and Devices for Synchronizing Such Equipment With a Recorded Sound Track.

SN 183,329. Manufacturers Engineering & Equipment Corporation, Warrington, Pa. Filed Dec. 20, 1963.

## COLORMASTER

For Colorimeters.
First use Jan. 12, 1951.

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SN 183,389. Eye-Con Laboratories, Inc., Boston, Mass. Filed Dec. 23, 1963.

eye-con laboratories inc.

For Contact Eye Lenses and Corrective Eye Lenses of All Types.
First use Oct. 1, 1963.

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SN 184,422. Automatic Control Company, St. Paul, Minn. Filed Jan. 13, 1964.

## GEO-GRAPHIC PANEL

The word "Panel" is disclaimed apart from the mark.
For Control System Indicator Panels Pictorially Indicating Liquid Flow Control System Layouts and Locations and Operating Conditions at the Control Points, Such as Temperature, Pressure, Flow Volume, and Operation.
First use Mar. 1, 1963.

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SN 184,894. Comptone Company, Ltd., New York, N.Y. Filed Jan. 20, 1964.

## FASHION SWEEP

For Eye Glasses, Sun Glasses, Spectacles, Frames, and Parts Thereof, Including Lenses.
First use Dec. 23, 1963.

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SN 185,301. Lanston Industries, Incorporated, Philadelphia, Pa. Filed Jan. 24, 1964.

## TRIMOLITE

For Electric Illuminating Lamp for Photographic Copying Devices.
First use at least as early as Nov. 14, 1963.

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SN 190,911. Fiske Associates, Inc., Bethel, Conn. Filed Apr. 13, 1964.

## FISKE

For Precision Scientific Instrumentation—Namely, Cryoscopes and Osmometers.
First use June 25, 1962.

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SN 191,223. Thermal Industries of Florida, Inc., Miami, Fla. Filed Apr. 15, 1964.

## VOLUME-AIRE

For Instrument Which Measures the Time-Rate of Volume Flow and Velocities From the Grills of Existing Air Conditioning and Heating Installation.
First use Jan. 1, 1963.



SN 192,281. Gestetner Limited, London, England. Filed Apr. 29, 1964.

## GESTETNER

Owner of British Reg. Nos. 836,342, dated June 29, 1962, and 836,344, dated June 29, 1962.
For Sensitised Sheet Material, Writing and Drawing Instruments—Namely, Bow Pens, Dividers, Perspex Rulers, T-Squares, Triangles, and Curves.
First use June 29, 1962.

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SN 195,199. Berg Mfg. & Sales Co., Des Plaines, Ill. Filed June 9, 1964.

## PROTECTIRE

For Tire Gauges.
First use Apr. 24, 1964.

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SN 196,671. Honeywell Inc., Minneapolis, Minn. Filed June 29, 1964.

## AUTO/SHARP

For Photographic Slide Projectors.
First use Feb. 28, 1964.

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SN 197,580. Ametek, Inc., New York, N.Y. Filed July 10, 1964.

## SUPERGARD

For Temperature Controllers.
First use Apr. 6, 1964.

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SN 197,622. The Steel Company of Canada Limited, Hamilton, Ontario, Canada. Filed July 10, 1964.

## THERMOCARB

For Apparatus for Determining the Percentage of Carbon, Sulphur, and Other Constituents in Metal.
First use Dec. 11, 1962; in commerce Dec. 11, 1962.

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SN 198,292. Porter & Co., Inc., Butler, N.J. Filed July 21, 1964.

## TOP NOTCH

For Transparencies, Projection Frames for Supporting Them, Masks and Adapter Strips To Permit Use of Standard Transparencies With Applicant's Projection Frames, for Use With Projection or Viewing Devices.
First use Apr. 13, 1964.

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SN 198,619. Wilkens Instrument & Research, Inc., Walnut Creek, Calif. Filed July 27, 1964.

## MODULINE

For Gas Chromatography Instruments and Parts Therefor.
First use on or about Sept. 15, 1963.

SN 198,667. Richard S. Salvage, Brooklyn, N.Y. Filed July 28, 1964.

## NORTIQUE

For Glasses and Goggles.
First use on or about June 15, 1964.

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SN 198,827. Botany Industries, Inc., d.b.a. Sea & Ski Co., Reno, Nev. Filed July 30, 1964.

## POLOSCOPIC

For Sunglasses.
First use June 9, 1964.

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SN 198,851. Kalvar Corporation, New Orleans, La. Filed July 30, 1964.

## CONVERKAL

For Film for Conversion of Printing Type to Film Images.
First use Mar. 12, 1964.

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SN 198,852. Kalvar Corporation, New Orleans, La. Filed July 30, 1964.

## KALVALITH

Owner of Reg. Nos. 691,242, 745,414, and others.
For Heat Developable Lithographic Printing Film.
First use Mar. 12, 1964.

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SN 199,110. Riedel-De Haen Aktiengesellschaft, Seelze, near Hannover, Germany. Filed Aug. 3, 1964.

## PANPEHA

Priority claimed under Sec. 44(d) on German application filed Apr. 7, 1964; Reg. No. 791,194, dated July 17, 1964.
For Reagent Paper.

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### Class 27 — Horological Instruments

SN 189,346. Montres Yema S.A., Fabrique d'Horlogerie, Besancon, France. Filed Mar. 23, 1964.

YEMA

Owner of French Reg. No. 2,696, dated Aug. 16, 1961 (Besancon); Natl. Inst. No. 170,770.
For Watches, Clocks, and Parts Thereof.

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### Class 28 — Jewelry and Precious-Metal Ware

SN 183,989. Raimond Silver Manufacturing Company, Inc., Cambridge, Mass. Filed Jan. 3, 1964.

## STERLING'S OTHER NAME

The word "Sterling" is disclaimed apart from the mark.
For Precious Metal and Precious Metal Plated Eating Utensils and Ornamental Jewelry.
First use Oct. 6, 1962.

SN 190,074. Federated Department Stores, Inc., d.b.a. Wm. Filene's Sons Company, Boston, Mass. Filed Apr. 1, 1964.

## FILENE'S

Owner of Reg. No. 124,527.
For Fine and Costume Jewelry for Men, Women, Boys, Girls, Children, and Infants Made of Sterling Silver or Other Precious Metals—Namely, Rings, Cuff Links, Money Clips, Tie Clips, Pins, Bracelets, Charms, Necklaces, Earrings, Barrettes and Pill Boxes; Flatware and Holloware Made of Sterling Silver or Other Precious Metals—Namely, Spoon, Knife and Fork Sets, Cups and Porringers for Infants, Cake Servers, Fish Servers, Tea Sets, Candlesticks, Ash Trays, Candy Dishes and Salvers; Bathroom and Toilet Accessories Plated With Silver or Gold or Made in Part of Sterling Silver or Other Precious Metals—Namely, Hand Mirrors, Soap Dishes, Brushes and Combs; and Picture Frames Made of Sterling Silver or Silver or Gold-Filled.
First use sometime prior to 1940 on costume jewelry for women made of sterling silver or other precious metals.

SN 196,974. Shiman Manufacturing Company, Newark, N.J. Filed June 18, 1964.

## CORNELIA'S JEWELS

The term "Jewels" is claimed only in connection with the mark as shown.
For Jewelry—Namely, Finger Rings, Pins, Brooches, Earrings and Clips.
First use December 1961.

SN 204,120. Gold-Master Corp., New York, N.Y. Filed July 17, 1964.

GMC

For Men's and Women's Rings.
First use Apr. 22, 1964.

SN 204,121. Gold-Master Corp., New York, N.Y. Filed Oct. 12, 1964.

## G.M.C.

For Men's and Women's Rings.
First use Apr. 22, 1964.

### Class 29—Brooms, Brushes, and Dusters

SN 196,106. Merchants Buying Syndicate, Inc., New York, N.Y. Filed Feb. 5, 1964.

Lady Colby

For Corn Brooms, Household and Automotive Sponges, Wet Mops, Sponge Mops and Nonelectrical Wax Applicators, and Broom, Sponge, Mop and Applicator Refills.
First use January 1963.

SN 190,900. Theron V. Moss, d.b.a. South Eastern Cordage, Cleveland, Ohio. Filed Aug. 14, 1964.

## WING-SPREAD

For Mop Heads.
First use July 31, 1964.

### Class 30—Crockery, Earthenware, and Porcelain

SN 190,557. Terrace Ceramics, Inc., Zanesville, Ohio. Filed Apr. 7, 1964.

## MAIZE-WARE

For Ceramic Ovenware, Tableware, Bake and Serve Ware—Namely, Casseroles, Bean Pots, Mugs, Plates, Mixing Bowls, Pitchers, Tea Pots, Sugar Bowls, Creamers, Salt and Pepper Shakers, Salad and Soup Bowls, and Covered Butter Dishes.
First use Jan. 20, 1964.

### Class 31—Filters and Refrigerators

SN 151,234. The King Company, Owatonna, Minn. Filed Aug. 15, 1962.

## KING

For Sharp Freeze Units and Systems, and Parts Thereof.
First use September 1945.

SN 182,434. National Filter Corporation, New York, N.Y. Filed Dec. 5, 1963.

## PURIT

Owner of Reg. No. 366,378.
For Filtering Materials and Filter Masses, Filter Sheets, Filter Fibers, Filter Cloths and Filter Paper, Said Goods Being Used in the Filtration of Liquids and Gases in Conjunction With the Processing of Foods, Beverages, Wine, Chemicals, and Pharmaceuticals.
First use Jan. 18, 1939.

SN 182,744. Sel-Rex Corporation, Nutley, N.J. Filed Dec. 10, 1963.

Sel-Rex

Owner of Reg. Nos. 524,387 and 621,544.
For Filter for Electroplating and Similar Solutions.
First use April 1955.

SN 182,985. The Vendo Company, d.b.a. Vendorlator Manufacturing Co., Kansas City, Mo. Filed Dec. 18, 1963.

## TAP-MASTER

For Draft Beer Dispenser.
First use Feb. 17, 1963.



SN 196,174. Marvel Engineering Company, Chicago, Ill. Filed June 22, 1964.

## MARVELBO-S

For Filters for Use on Hydraulic Power, Low Pressure Circulating and Water Systems.
First use May 18, 1964.

### Class 32—Furniture and Upholstery

SN 156,578. Aurel E. Diefendorf, Topeka, Kans. Filed Nov. 5, 1962.

## PONY

For Article Carrying and Supporting Racks in the Nature of Furniture for Receiving Items Such as Clothing, Books, Brushes, and the Like.
First use during December 1958.

SN 191,911. Coppes, Inc., Nappanee, Ind. Filed Apr. 24, 1964.

Curricula

For School Furniture—Namely, Tables, Chairs, Stools, Desks, Chalk Boards, Work Benches, and Storage Cabinets.
First use Dec. 11, 1963.

SN 193,040. The Pilliod Cabinet Co., Swanton, Ohio. Filed May 8, 1964.

## PILLIOD

For Furniture—Namely, Tables, Desks, Chests of Drawers, and Beds.
First use June 1955.

SN 196,709. Plymouth Rubber Company, Inc., Canton, Mass. Filed June 29, 1964.

## ELECTRATED

For Sheets and Panels for Upholstery of Seats, of Seat and Chair Backs, of Couches, of Settees and of Headboards.
First use Feb. 25, 1964.

SN 197,034. The Budsen Corporation, East Rochester, N.Y. Filed July 3, 1964.

## BUDSEN

For Cabinet Enclosures for Speakers Used in Music Systems and Electronic Audio Amplifiers for Music Systems.
First use Aug. 3, 1963.

SN 198,236. Ther.a.pedic Associates, Inc., Passaic, N.J. Filed July 20, 1964.

## THER-A-PEDIC

For Bedding—Namely, Mattresses, Mattress Covers, Quilting, Ticking, and Mattress Components.
First use July 15, 1957.

### Class 33—Glassware

SN 185,364. Creative Specialty Manufacturers, d.b.a. The Galaxy Line, Waterloo, Iowa. Filed Jan. 27, 1964.

THE GALAXY LINE

The words "The" and "Line" are disclaimed apart from the mark as shown.
For Novelty and Gift Glassware—Namely, Tumblers, Ash Trays, Measuring Glasses, Jars, Decanters, Cups, Cocktail Sets, Sugar and Creamer Sets, Mugs, and Salt and Pepper Shakers.
First use September 1959.

### Class 34—Heating, Lighting, and Ventilating Apparatus

SN 197,057. Antar Industries, Inc., New York, N.Y. Filed July 6, 1964.

Antar

Owner of Reg. No. 639,371.
For Water Coolers and Evaporative Air Coolers.
First use June 23, 1961, on water coolers.

SN 199,289. Charles H. Krueger, Jr., Mishawaka, Ind. Filed Aug. 5, 1964.

## Wheelaburner

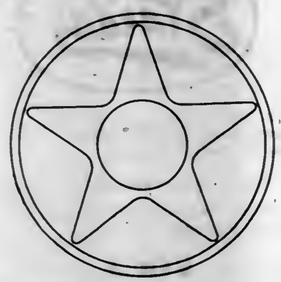
For Trash Burner.
First use Apr. 17, 1964.

SN 199,401. Seymour Manufacturing Co., Seymour, Ind. Filed Aug. 6, 1964.

## HEARTH HUTCH

For Fireplace Tool Sets.
First use June 29, 1964.

SN 200,310. Vernco Corporation, Columbus, Ind. Filed Aug. 20, 1964.



For Blower Wheels.
First use Jan. 20, 1957.

SN 200,427. Engelhard Industries, Inc., Newark, N.J. Filed Aug. 24, 1964.

## DEOXAIR

For Catalytic Air Purification and Catalytic Air Pollution Elimination Apparatus.
First use Aug. 4, 1964.

SN 200,634. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed Aug. 26, 1964.

## DYNABRAZE

For Flux Coated Torch Welding Alloys.
First use Aug. 20, 1964.

SN 200,701. Carnes Corporation, Verona, Wis. Filed Aug. 27, 1964.

## MECHANITROL

For Air Handling Equipment, Particularly Dual Duct Mixing and Constant Volume Controls.
First use July 18, 1963.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 183,820. Westminster Tire Corporation, New York, N.Y. Filed Dec. 30, 1963.



For Non-Metallic Tires.
First use in or about the year 1920.

## Class 36 — Musical Instruments and Supplies

SN 193,229. Starday Recording and Publishing Co., Inc., Madison, Tenn. Filed May 11, 1964.




Owner of Reg. No. 700,193.
For Phonograph Records in Disc Form.
First use Apr. 10, 1964.

SN 193,733. Alroy International Corporation, New York, N.Y. Filed May 15, 1964.

## VOCA

For Dictating Machine.
First use Apr. 2, 1964.

SN 194,062. Semie A. Moseley, d.b.a. Mosrite Company, Bakersfield, Calif. Filed May 22, 1964.

## MOSRITE

For Electric Guitars.
First use December 1953.

SN 194,205. Semie A. Moseley, d.b.a. Mosrite Company, Bakersfield, Calif. Filed May 25, 1964.




For Electric Guitars.
First use August 1962.

SN 194,659. Rodeo Music Corporation, Beverly Hills, Calif. Filed June 1, 1964.

## RODEO

For Guitars, Both Acoustic and Electric, Ukeleles, Guitar Cases, and Guitar Amplifiers.
First use Feb. 12, 1964.

SN 194,908. Nashboro Record Co., Inc., Nashville, Tenn. Filed June 4, 1964.

## NASHBORO

For Disc Phonograph Records.
First use 1952.

SN 195,415. International Radio and Electronics Corporation, Elkhart, Ind. Filed June 11, 1964.

## CROWN

For Tape Recorders.
First use at least as early as May 1952.

## Class 37 — Paper and Stationery

SN 144,185. Pest-Guard Products, Inc., Dallas, Tex. Filed May 9, 1962.

## SHELF BEAUTIFUL

For Paper and Plastic Shelf and Drawer Linings and Gift Wrapping.
First use Oct. 19, 1961.

SN 176,535. Jeffries Banknote Company, Los Angeles, Calif. Filed Sept. 9, 1963.

## LOS ANGELES

For Bond Paper.
First use 1904.



SN 177,356. Krauth and Benninghofen, Inc., Hamilton, Ohio, assignee of Krauth and Benninghofen, Hamilton, Ohio. Filed Sept. 19, 1963.

## E-Z LOAD

For Manifolding Forms Sold in Packs.
First use Aug. 20, 1963.

SN 179,571. Westab Inc., Dayton, Ohio, by change of name from Western Tablet & Stationery Corporation, Dayton, Ohio. Filed Oct. 22, 1963.

## ACCURACY

Applicant's related company owner of Reg. No. 568,278.
For Stationery Products—Namely, Paper Tablets; Loose Writing Paper for School or Office Use, Put Up in Wrapped Packages, Boxes, or Banded; Envelopes; Loose Leaf Fillers; Binders; Order Books, Index Cards and Guides; Adding Machine Rolls; Accounting Forms; and Account Data and Order Books.
First use 1940 on loose leaf fillers.

SN 182,074. General Bank Supply, Inc., Nevada, Iowa. Filed Nov. 29, 1963.

*Ident-i-check*

For Partially Printed Check Blanks.
First use Oct. 28, 1963.

SN 193,343. The Eagle-Picher Company, Cincinnati, Ohio. Filed May 13, 1964.

## FABAND

For Bread Wrappers and Bands.
First use Feb. 24, 1964.

SN 194,176. Griffin, Campbell, Hayes, Walsh, Inc., New York, N.Y. Filed May 25, 1964.




Owner of Reg. Nos. 224,301 and 767,198.
For Sized Transfer Roll Leaf on Plastic Film and Paper Carriers for Stamping in All Colors.
First use Dec. 17, 1963.

SN 199,204. International Paper Company, New York, N.Y. Filed Aug. 4, 1964.

## TICONDEROGA

For Printing and Writing Papers.
First use Dec. 1, 1932.

SN 199,205. International Paper Company, New York, N.Y. Filed Aug. 4, 1964.

## FEEDSET

For Writing and Printing Papers.
First use June 1962.

SN 199,317. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 5, 1964.



Owner of Reg. Nos. 685,246 and 696,764.
For Facial and Bathroom Tissue.
First use Dec. 14, 1962.

SN 199,575. Kimberly-Clark Corporation, Neenah, Wis. Filed Aug. 10, 1964.

## KIMFAX

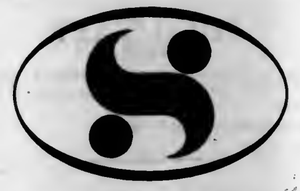
For Thermal Copy Paper.
First use July 17, 1964.

SN 199,628. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.



For Paper Products—Namely, Toilet Tissue, Facial Tissue, Paper Towels, Paper Napkins, Waxed Paper, and Plastic Sheeting Used as a Wrap.
First use May 22, 1964, on toilet tissue.

SN 199,627. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.



SCOTT

Owner of Reg. Nos. 669,919, 714,852, and 747,765.
For Paper Products—Namely, Toilet Tissue, Facial Tissue, Paper Towels, Paper Napkins, Waxed Paper, and Plastic Sheeting Used as a Wrap.
First use May 22, 1964, on toilet tissue.

SN 199,818. The Grand Union Company, East Paterson, N.J. Filed Aug. 13, 1964.

## GRAND UNION

Owner of Reg. Nos. 638,790, 755,534, and others.
For Stationery—Namely, Writing Paper and Envelopes.
First use on or about Apr. 1, 1964.

## Class 38 — Prints and Publications

SN 180,383. The Dow Chemical Company, Wilmington, Del. Filed Nov. 4, 1963.

**DOW METAL PRODUCTS NEWS**

Applicant disclaims "Metal Products News" apart from the mark as shown.
Owner of Reg. Nos. 599,694, 601,695, and others.
For Trade Magazine.
First use April 1960.

SN 181,323. City National Bank and Trust Company of Kansas City, Mo., Kansas City, Mo. Filed Nov. 18, 1963.

**YOUR FAMILY MATTERS**

For Bulletin Issued Periodically Dealing With Estate and Fiduciary Plans and Procedures.
First use Nov. 6, 1963.

SN 184,462. John Garrison, Chicago, Ill. Filed Jan. 13, 1964.

*Ticket to Beauty*

For Booklets for Use by Travelers, Containing Personal Beauty Identification, Tips for Beauty Care and List of Beauty Salons.
First use Dec. 5, 1963.

SN 185,061. Mico/Tape, Inc., Hollywood, Calif. Filed Jan. 21, 1964.

**MICO/TAPE**

For Pressure Sensitive Tapes Imprinted With Symbols, Patterns or Other Printed Matter for Use in Drafting or Lay-Out Work.
First use on or about Apr. 1, 1966.

## Class 39 — Clothing

SN 151,672. Finn Fabrics Corporation, New York, N.Y. Filed Aug. 22, 1962.

BOCCACCIO DI ROMA

No claim is made to the words "Di Roma" apart from the combination.
For Neckties and Shirts.
First use June 20, 1962.

SN 157,697. Highlander Sportswear, Inc., Newark, N.J. Filed Nov. 21, 1962.

**HIGHLAND LASS**

For Juniors', Misses' and Women's Wearing Apparel—Namely, Coats, Suits, Slacks, Skirts, and Outer Sportswear Made of Natural or Synthetic Fibers or Combinations Thereof.
First use Nov. 12, 1962.

SN 165,328. P. H. Hanes Knitting Company, Winston-Salem, N.C. Filed Mar. 25, 1963.

**CUTE 'N' COZY**

For Underwear for Infants, Children and Girls; One-Piece and Two-Piece Sleepers and Pajamas for Infants, Children and Girls; and Stretch Knit Garments for Infants—Namely, Coveralls, Overalls, Creepers, Polo Shirts, and Jackets.
First use Mar. 6, 1963.

SN 170,221. Daniel T. Robbins, d.b.a. Easy Walker Shoe Company, Portland, Oreg. Filed June 3, 1963.

**AIR STROLL**

For Shoes.
First use May 15, 1963.

SN 178,471. O.K.I. Supply Co., Cincinnati, Ohio. Filed Oct. 7, 1963.



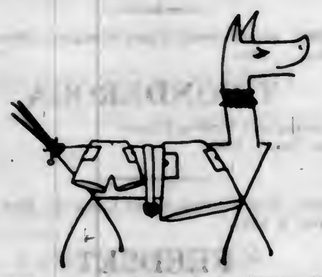
Owner of Reg. No. 607,266.
For Caps for Wear Under Protective Headwear.
First use on or about Sept. 23, 1963.

SN 181,181. Saks & Company, New York, N.Y. Filed Nov. 18, 1963.

**COWL-TOWL**

For Slip-Over Terry Cloth Beach or Bath Robe.
First use Oct. 30, 1963.

SN 182,586. The Clothes Horse, Millburn, N.J. Filed Dec. 9, 1963.



For Women's Dresses, Suits, Coats, Slacks, Shorts, and Shirts.
First use Sept. 1, 1955.



SN 182,587. The Clothes Horse, Millburn, N.J. Filed Dec. 9, 1963.



For Women's Dresses, Suits and Coats, Belts, Shorts, Slacks, Skirts and Blouses.
First use Sept. 1, 1955.

SN 182,949. Jay-Thomas, Inc., Milwaukee, Wis. Filed Dec. 13, 1963.

**BUG'S EARS**

For Slippers and Shoes.
First use Aug. 17, 1963.

SN 186,158. Dalton of America, Inc., Willoughby, Ohio. Filed Feb. 6, 1964.

Dalton

DALSOIE

For Women's Sweaters, Suits, Coats, Jackets, Skirts, Blouses, Slacks, and Shorts.
First use Nov. 16, 1963.

SN 191,080. Saks & Company, New York, N.Y. Filed Apr. 15, 1964.

Kip Carpenter

"Kip Carpenter" is a fanciful name and does not identify a particular living individual.
For Women's and Misses' Coats, Suits, Raincoats, Dresses, and Evening Dresses.
First use Mar. 26, 1964.

SN 191,681. Sid Eagle Associates, Inc., New York, N.Y. Filed Apr. 21, 1964.




The drawing is lined for red and pink.
For Girls' Dresses and Girls' Wearing Apparel—Namely, Skirts, Blouses, Shorts, Slacks, Suits, Jackets, Sweaters, Hats and Caps, and Overalls.
First use Apr. 10, 1964.

SN 192,194. Marjorie Montgomery of California, Los Angeles, Calif. Filed Apr. 28, 1964.

**MARJORIE MONTGOMERY**

The mark comprises the name of Marjorie Montgomery Gray, whose consent is of record.
For Women's, Juniors' and Misses' Dresses, Skirts, Sweaters, Blouses, Jackets, Suits, Coats, Bathing Suits, Shorts and Halter Sets, Shifts, Shorts, Slacks, and Beachwear.
First use 1926.

SN 193,522. Alexander Bros. Company, Savannah, Ga. Filed May 15, 1964.

BEACON LIGHT

For Dungarees, Jeans and Overalls.
First use May 1, 1964.

SN 194,421. Rampon Products, Inc., Asheboro, N.C. Filed May 27, 1964.

**GAMBADEUR**

For Support Hosiery.
First use Apr. 20, 1964.

SN 195,126. Masterbilt Hosiery Company, Inc., New York, N.Y. Filed June 8, 1964.

Softpuff

For Girls' and Misses' Hosiery.
First use June 1961.

SN 195,128. Mattel, Inc., Hawthorne, Calif. Filed June 8, 1964.

**BARBIE**

For Clothing, Especially Children's Sweaters and Blouses.
First use on or about Mar. 23, 1958.

SN 195,266. Adams-Millis Corporation, High Point, N.C. Filed June 10, 1964.

**CAPRI-LETS**

For Hosiery.
First use May 27, 1964.

SN 195,523. G.T., Incorporated, Boston, Mass. Filed June 12, 1964.

GT EASE

Owner of Reg. No. 576,387.
For Ladies' and Men's Slacks and Outer Shorts.
First use May 15, 1964.

SN 195,577. Angelica Uniform Company, St. Louis, Mo. Filed June 15, 1964.

**BACTO-BAND**

For Surgical Caps and Clean-Room Head Coverings of All Types and Headbands Therefor.
First use Apr. 27, 1964.

SN 195,768. Arthur Doctor & Company, New York, N.Y. Filed June 16, 1964.

**MAESTRO**

For Ladies' Coats and Suits.
First use Mar. 25, 1964.

SN 196,411. Zwicker Knitting Mills, Appleton, Wis. Filed June 24, 1964.

**KNEE-CAP**

For Knitted Headwear, Gaiters and Mufflers.
First use May 5, 1964.

SN 198,258. The Duquesne Manufacturing Company, New Kensington, Pa. Filed July 21, 1964.

*Miss Florence*

Owner of Reg. No. 540,011.
For Dresses, Aprons, Hooverettes, Pinafore Aprons, and Smocks.
First use May 26, 1964.

SN 198,478. International Shoe Company, St. Louis, Mo. Filed July 24, 1964.

Vitality
TOWN PACERS

Owner of Reg. No. 273,668.
For Women's Shoes.
First use July 1, 1964.

SN 198,967. Maternity Modes, Chicago, Ill. Filed July 31, 1964.

*Jame' girl*

For Maternity Garments.
First use Jan. 1, 1955.

SN 198,968. Maternity Modes, Chicago, Ill. Filed July 31, 1964.

*Batelli*

For Maternity Garments.
First use Jan. 1, 1955.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 145,086. Klauber Bros. Inc., New York, N.Y. Filed May 21, 1962.

Marie Antoinette LACE BY KLAUBER

The words "Lace by Klauber" are disclaimed apart from the mark as shown.
For Lace, for use on Clothing and Household Wares.
First use Apr. 20, 1962.

SN 175,478. Denison Cotton Mill Company, Denison, Tex. Filed Aug. 21, 1963.

CELLUFAB

Applicant disclaims the representation of a weave design apart from the mark as shown. Owner of Reg. No. 752,215.
For Woven, Knitted and Netted Fabrics Made Wholly or Partially From Twisted Paper Yarn or Twisted Cellulose Kraft Yarn.
First use Sept. 4, 1962.

SN 180,620. Tennessee Tufting Company, Nashville, Tenn. Filed Nov. 6, 1963.

**SAF-T-SOFT**

For Carpet Backing.
First use Sept. 16, 1963.



SN 181,642. Indian Head Mills, Inc., New York, N.Y. Filed Nov. 21, 1963.

**LOOPER-MAT**

Owner of Reg. Nos. 605,935 and 684,832.
For Place Mats.
First use June 13, 1963.

SN 187,486. FMC Corporation, Philadelphia, Pa. Filed Feb. 26, 1964.

**AVICORD**

Owner of Reg. No. 419,183.
For Cord Fabric.
First use Nov. 12, 1963.

SN 190,356. FMC Corporation, Philadelphia, Pa. Filed Apr. 6, 1964.

**AVILOC**

Owner of Reg. No. 702,103.
For Cord Fabric.
First use Mar. 11, 1964.

SN 191,233. Thomas Wilson & Co., Inc., New York, N.Y. Filed Apr. 15, 1964.

**SPAN-NETTE**

For Laces and Nettings in the Piece.
First use July 5, 1961.

SN 192,645. Wales Manufacturing Company, Boston, Mass. Filed May 4, 1964.

**PLUVIAL**

For Fabric for Use in Making Raincoats, Topcoats, Jackets and the Like.
First use Apr. 2, 1964.

SN 193,451. Collins & Aikman Corporation, New York, N.Y. Filed May 14, 1964.

*Cloud Trique*

Owner of Reg. Nos. 625,943 and 758,907.
For Tricot Fabrics Used for Lingerie and Loungewear.
First use Apr. 27, 1964.

SN 195,989. Whiting Manufacturing Company, Inc., Cincinnati, Ohio. Filed June 18, 1964.

**PUFFLETTE**

For Combined Coverlet and Comforter.
First use May 20, 1964.

SN 196,753. World Carpets, Inc., Dalton, Ga., by merger of World Carpet Mills, Inc., Dalton, Ga. Filed June 29, 1964.

WORLD

Owner of Reg. No. 737,967.
For Textile Carpeting.
First use May 1, 1964.

SN 196,775. Fieldcrest Mills, Inc., Spray, N.C. Filed June 30, 1964.

*Tonneau*

For Textile Rugs and Carpeting.
First use June 5, 1964.

## Class 43—Thread and Yarn

SN 187,487. FMC Corporation, Philadelphia, Pa. Filed Feb. 26, 1964.

**AVICORD**

Owner of Reg. No. 419,133.
For Yarn.
First use Nov. 18, 1963.

SN 190,357. FMC Corporation, Philadelphia, Pa. Filed Apr. 6, 1964.

**AVILOC**

Owner of Reg. No. 702,103.
For Yarn.
First use Mar. 11, 1964.

## Class 44—Dental, Medical, and Surgical Appliances

SN 175,800. Rochester Dental Manufacturing Co., Rochester, N.Y. Filed Aug. 26, 1963.

**ARDENT**

For Release Agent for Alginate Impression Material.
First use Aug. 9, 1963.

SN 184,114. Elisabeth Ungar, d.b.a. Elisabeth Ungar Skin Care, Inc., New York, N.Y. Filed Jan. 6, 1964.

GALVANOTRON

The lines shown in the drawing are decorative and do not designate color.
For Electronic Apparatus Consisting of an Oblong Housing Containing Electronic Components for Producing Between Terminals a Unidirectional Current Applied by Means of Electrodes to Areas of the Skin for Treatment Thereof.
First use Sept. 20, 1963.

SN 192,217. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

**FLOCOLAINE**

Priority claimed under Sec. 44(d) on French Reg. No. 512,945, dated Apr. 25, 1963 (Paris); Nat'l Inst. No. 206,717. (Claim based on co-pending application Ser. No. 175,437, filed in U.S. on Aug. 20, 1963.)
For Textile Articles of Wool or in Substantial Part of Wool, for Use in Physiotherapy, Such as Dressings, Bandages, Knee-Pieces, Girdles, Belts, and Waistbands.

SN 195,188. Wilmot Castle Company, Rochester, N.Y. Filed June 8, 1964.

## SPEED CLAVE

For Sterilisers.
First use Oct. 15, 1951.

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SN 195,351. Zimmer Manufacturing Company, Warsaw, Ind. Filed June 10, 1964.

## ZIMCODE

Owner of Reg. Nos. 647,921 and 661,710.
For Orthopedic Traction Frames.
First use May 1, 1964.

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SN 196,148. Monte H. Greenawalt, d.b.a. Shoe-Mate Orthopedic Arch Co., Dubuque, Iowa. Filed June 22, 1964.

## SHOE MATE

For Arch Support.
First use Aug. 3, 1963.

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SN 196,765. William Bennett Collett, Atlanta, Ga. Filed June 30, 1964.

## MEDI-FLOSS

For Medicated Dental Floss.
First use on or about June 12, 1964.

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SN 196,858. John F. Greer Company, Oakland, Calif. Filed July 1, 1964.

## COLOSTOBELT

Owner of Reg. No. 755,605.
For Belts for Supporting Colostomy Stoma Pads.
First use Apr. 6, 1964.

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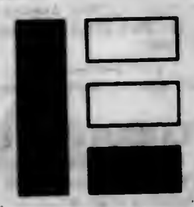
SN 196,859. John F. Greer Company, Oakland, Calif. Filed July 1, 1964.

## COLOSTOPAD

Owner of Reg. No. 755,605.
For Absorbent Pads for Colostomy Stoma.
First use Mar. 27, 1964.

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SN 198,147. Edwards Laboratories, Inc., Santa Ana, Calif. Filed July 20, 1964.



The mark consists of an "EL" monogram.
For Artificial Heart Valves and Catheters and Obturators for Heart Valves.
First use Apr. 16, 1962.

SN 198,182. Max Kurta, d.b.a. The Perfectone Co., Fort Lauderdale, Fla. Filed July 20, 1964.

## PERFECTONE

For Acrylic Denture Material for Teeth, for Inlays, for Jacket Crowns, and for Bridges; Pliable Plastic Molds for Teeth and for Teeth Veneers; and Hollow Wax Crowns.
First use April 1942 on acrylic denture material.

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SN 198,318. Beverly Dental Ceramics, Inc., Beverly Hills, Calif. Filed July 22, 1964.

## ELREZ

For Dental Plastics.
First use Jan. 26, 1963.

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SN 198,463. Delancey Chemical Co. Inc., Bronx, N.Y. Filed July 24, 1964.

## MANDELAYS

For Medicated Prophylactic Device.
First use July 6, 1964.

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SN 198,489. Modecraft Company, Inc., Brooklyn, N.Y. Filed July 24, 1964.

## MODE-AIRE

For Hair Dryers.
First use July 17, 1964.

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SN 198,593. Smith Brothers, Inc., Altoona, Iowa. Filed July 27, 1964.

## NURS-AID

For Wheel Chair.
First use June 27, 1962.

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SN 199,291. Lacto-Seal, Inc., Indianapolis, Ind. Filed Aug. 5, 1964.

## LACTO-SEAL

For Infants' Nursing Nipples and Nipple Covers.
First use on or before June 26, 1964.

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SN 199,624. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.



For Sanitary Napkins.
First use June 26, 1964.



SN 199,628. Scott Paper Company, Philadelphia, Pa. Filed Aug. 10, 1964.




Owner of Reg. Nos. 669,919, 714,852, and 747,765.
For Sanitary Napkins.
First use June 26, 1964.

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## Class 46—Foods and Ingredients of Foods

SN 179,634. Ben Hill Griffin, Inc., Frostproof, Fla. Filed Oct. 23, 1963.

## SUN SIP

Owner of Reg. No. 359,924.
For Canned Single Strength Citrus Juice and Frosen Citrus Juice Concentrate.
First use Oct. 1, 1936, on canned single strength citrus juice.

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SN 182,841. The Southland Corporation, Dallas, Tex. Filed Dec. 11, 1963.

## BETTY BAKER

The name "Betty Baker" is fanciful.
For Bread and Rolls.
First use at least as early as Oct. 14, 1963.

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SN 183,204. Derry Products, Inc., Brooklyn, N.Y. Filed Dec. 18, 1963.




Owner of Reg. No. 620,061.
For Dietary Liquid Sweetener.
First use July 9, 1963.

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SN 187,675. Luk-O-Ma Corporation, Port Chester, N.Y. Filed Feb. 28, 1964.

## ORIÉN-TALS

For Pastry Cookies.
First use Oct. 10, 1963.

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## Class 50—Merchandise Not Otherwise Classified

SN 179,109. Bemis Bro. Bag Company, Minneapolis, Minn. Filed Oct. 16, 1963.

## COVER QUICK

For Polyethylene Sheets for Protection of Surfaces—Namely, Drop Cloths.
First use Jan. 25, 1963.

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## Class 51—Cosmetics and Toilet Preparations

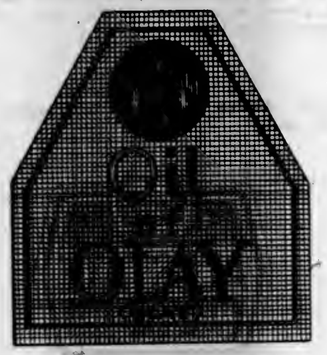
SN 171,292. West Forest Corp., Great Neck, N.Y. Filed June 18, 1963.

## NICK-KNACK

For Shaving Cologne.
First use Feb. 9, 1962.

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SN 179,008. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Oct. 15, 1963.




The drawing is lined for pink and black; however, no claim is made to color as a feature of the mark. Applicant disclaims the word "Oil" apart from the mark as shown.
For Skin Lotion.
First use 1951; in commerce June 1, 1957.

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## Class 52—Detergents and Soaps

SN 181,123. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Nov. 14, 1963.

## CLEVE-TEK E-63

For Electrical Parts Cleaners.
First use Sept. 10, 1963.

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SN 199,249. Apco Oil Corporation, Oklahoma City, Okla. Filed Aug. 5, 1964.

## SPEEDSOL

For Dry Cleaning Solvent.
First use June 1, 1964.

# SERVICE MARKS

## Class 100 — Miscellaneous

SN 172,478. Leonal P. Gardner, d.b.a. Beefy's Drive In, Seattle, Wash. Filed July 5, 1963.

Beefy's

For Restaurant Services.
First use Sept. 21, 1962.

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SN 186,312. Agricultural Aviation Engineering Company, Santa Clara, Calif. Filed Feb. 10, 1964.

AGRIMAUTICS

For Rendering Engineering and Consultant Services in the Field of Agricultural Aviation.
First use June 17, 1960.

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SN 188,324. Allstate Enterprises, Inc., Skokie, Ill. Filed Mar. 10, 1964.

ALLSTATE MOTOR CLUB

Without waiver of applicant's common law rights with respect to the combination of words constituting applicant's service mark, applicant disclaims any right to the words "Motor Club," except as a part of the mark as shown. Owner of Reg. Nos. 734,204, 759,387, and others.
For Automobile Club Services—Namely, Assistance on Planning Auto Trips, Emergency Road Service Benefits, Legal Service Benefit in Event of Traffic Violation Charges, Accident Insurance and Arranging for World-Wide Tours.
First use on or about Apr. 15, 1962.

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## Class 101 — Advertising and Business

SN 179,852. Ayr-Way Stores, Inc., Indianapolis, Ind. Filed Oct. 28, 1963.

ayr-way

For Retail Department Store Services.
First use Sept. 6, 1961.



SN 179,853. L. S. Ayres and Company, Indianapolis, Ind. Filed Oct. 28, 1963.

L.S. Ayres + co. of Indiana

L. S. Ayres is the name of a living individual whose consent is of record.
For Retail Department Store Services.
First use Apr. 1, 1962.

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SN 182,607. Economics Laboratory, Inc., St. Paul, Minn. Filed Dec. 9, 1963.

EL

Owner of Reg. Nos. 367,491, 760,619, and others.
For Supplying Technical Advice and Assistance on All Phases of Warewashing to the Food Service Industry.
First use Nov. 11, 1963.

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SN 187,599. Norkem Corporation, d.b.a. Agricultural Production Specialists, Yakima, Wash. Filed Feb. 27, 1964.

AGRIMANAGEMENT

For Rendering Technical Assistance to Farmers in All Areas of Scientific Agriculture.
First use October 1962.

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SN 187,723. Chauffeurs Unlimited, Incorporated, New York, N.Y. Filed Mar. 2, 1964.

Chauffeurs Unlimited

For Employment Agency Services—Namely, Supplying Uniformed Drivers for Driving Private or Rented Automobiles.
First use Oct. 15, 1963.

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## Class 103 — Construction and Repair

SN 171,351. Halliburton Company, Duncan, Okla. Filed June 19, 1963.

PARACHEK

For Chemical Service Rendered Principally to Oil and Gas Producers and Particularly a Service of Employing a Paraffin Control Additive or Composition for Inhibiting the Formation of Paraffin on Pipe Surfaces, Earth Formations, Well Equipment, and the Like.
First use Apr. 2, 1962.



SN 182,993. Arthur L. Willie, d.b.a. Metalock Western Repair Service Co., Compton, Calif. Filed Dec. 13, 1963.

UNILOCK

For Repairing Cracked or Broken Metal Castings and Forgings.
First use Aug. 1, 1962.

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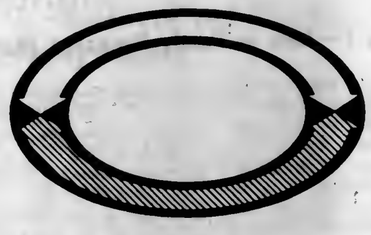
SN 184,531. Thomas Noble Vaughan, Sr., d.b.a. Ashland Laundry & Cleaners, Ashland, Va. Filed Jan. 13, 1964.

Fashion Fast SERVICES

The word "Services" is disclaimed apart from the mark as shown.
For Laundry and Dry Cleaning Services.
First use Apr. 11, 1963.

## Class 105 — Transportation and Storage

SN 187,686. D. H. Overmyer Warehouse Company, Toledo, Ohio. Filed Feb. 28, 1964.



The drawing is lined for green.
For Storage and Warehousing of Goods, Wares, and Merchandise of Others.
First use May 10, 1963.

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# CERTIFICATION MARKS

## Class A — Goods

SN 182,392. American Way Association, Ada, Mich. Filed Dec. 5, 1963.




The mark certifies that the goods meet standards set by the applicant. Owner of Reg. No. 714,525.
For General Cleaning and Maintenance Products, Such as All-Purpose Cleansers, Waxes, Polishes, Bleaches, Stain Removers, Fire Extinguishers, Germicides; Household Cleaning and Maintenance Products, Such as Water Conditioners, Dish Washing Compounds, Oven Cleaners, Metal Cleaners, Silver Cleaners, Floor Waxes, Wax Applicators, Wax Removers, Rug and Upholstery Shampoos, Rug Shampoo Applicators, Furniture Polishes, Window Cleaners, Moth Proofing Compounds, Septic Tank Aids, Bug Sprays, Vegetation Killing Compounds, Room Fresheners; and Personal Cleaning and Maintenance Products, Such as Hand Soaps, Shaving Cream and Hair Preparations.
First use in or about the month of March 1963.

# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

783,027. TECFLUORFIL. Thermech Engineering Corporation. SN 154,647. Pub. 10–27–64. Filed 10–5–62.

783,028. PERMALIFE. Sternco Industries, Inc. SN 178,644. Pub. 10–27–64. Filed 10–9–63.

783,029. CLYSAR. E. I. du Pont de Nemours and Company. SN 178,793. Pub. 10–27–64. Filed 10–11–63.

783,030. ARYLIT. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 181,607. Pub. 10–27–64. Filed 11–21–63.

783,031. POLYSAR AND DESIGN. Polymer Corporation Limited. SN 182,826. Pub. 10–27–64. Filed 12–11–63.

783,032. POLYSAR. Polymer Corporation Limited. SN 182,828. Pub. 10–27–64. Filed 12–11–63.

783,033. ROYALENE. United States Rubber Company. SN 183,939. Pub. 10–27–64. Filed 1–2–64.

783,034. CARAPEL. Celanese Corporation of America. SN 188,001. Pub. 10–27–64. Filed 3–5–64.

783,035. ACRYLENE. The Goodyear Tire & Rubber Company. SN 188,099. Pub. 10–27–64. Filed 3–6–64.

783,036. NUFLO. J. M. Huber Corporation. SN 188,241. Pub. 10–27–64. Filed 3–9–64.

783,037. TRIMSKINS. Park Electrochemical Corporation. SN 188,387. Pub. 10–27–64. Filed 3–10–64.

783,038. BANTEUR. Joseph Bancroft & Sons Co. SN 188,416. Pub. 10–27–64. Filed 3–11–64.

783,039. REDI-CORN. The Thomas Monahan Company. SN 196,796. Pub. 10–27–64. Filed 6–30–64.

### Class 2 — Receptacles

783,040. HALLMARK. Royalon, Inc. SN 159,285. Pub. 10–27–64. Filed 12–17–62.

783,041. TOP PACK. John Burton Machine Corporation. SN 167,117. Pub. 10–27–64. Filed 4–19–63.

783,042. CLOSET MAID. Equality Plastics, Inc. SN 196,370. Pub. 10–27–64. Filed 6–24–64.

783,043. LOC-KING AND DESIGN. United States Box Co. SN 196,741. Pub. 10–27–64. Filed 6–29–64.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

783,044. KLEER VU AND DESIGN. American Kleer-Vu Plastics, Inc. SN 126,718. Pub. 10–27–64. Filed 8–28–61.

783,045. SHEEP'S HEAD (DESIGN). Buddy Scheelkopf Products Inc. MULTIPLE CLASS (Classes 3, 22, 39, and 9). SN 174,800. Pub. 10–6–64. Filed 8–9–63.

783,046. LADY BUXTON. Buxton, Incorporated. MULTIPLE CLASS (Classes 3 and 8). SN 193,929. Pub. 10–27–64. Filed 5–21–64.

783,047. LORD BUXTON. Buxton, Incorporated. SN 193,932. Pub. 10–27–64. Filed 5–21–64.

783,048. DOVA. Dover Handbag Co. Inc. SN 196,142. Pub. 10–27–64. Filed 7–20–64.

### Class 4 — Abrasives and Polishing Materials

783,049. RETARD. Verle C. Smith. SN 164,397. Pub. 10–27–64. Filed 3–11–63.

783,050. SURE GRIP. Creco Company, Inc. SN 176,631. Pub. 10–27–64. Filed 9–10–63.

783,051. LADY'S AIDE. United States Pumice Supply Co. SN 191,333. Pub. 10–27–64. Filed 4–16–64.

783,052. VERV. Byrne Plywood Company. SN 191,505. Pub. 10–27–64. Filed 4–20–64.

### Class 5 — Adhesives

783,053. UNITAC. General Foods Corporation. SN 187,017. Pub. 10–27–64. Filed 2–19–64.

783,054. THERMO-TOE. Imperial Adhesives Inc. SN 191,860. Pub. 10–27–64. Filed 4–23–64.

### Class 6 — Chemicals and Chemical Compositions

783,055. TENNECO. Tenneco Corporation. SN 165,861. Pub. 10–27–64. Filed 4–1–63.

783,056. SHIELD (DESIGN). Tenneco Corporation. SN 165,862. Pub. 10–27–64. Filed 4–1–63.

783,057. DIPHACIN 110. Nease Chemical Company, Inc. SN 181,052. Pub. 10–27–64. Filed 11–13–63.

783,058. GMF. United States Rubber Company. SN 182,685. Pub. 10–27–64. Filed 12–9–63.

783,059. CLORECON. Arizona Agrochemical Corporation. SN 182,919. Pub. 10–27–64. Filed 12–13–63.

783,060. ROSINTENE. Crowley Tar Products Company, Inc. SN 183,002. Pub. 10–27–64. Filed 12–13–63.

783,061. TREFMID. Eli Lilly and Company. SN 185,909. Pub. 10–27–64. Filed 2–3–64.

783,062. ODORTROL. Hill Manufacturing Company. SN 188,013. Pub. 10–27–64. Filed 3–5–64.

783,063. COLGATE. Colgate-Palmolive Company. SN 188,200. Pub. 10–27–64. Filed 3–9–64.

783,064. WICASIZE. Wica Chemicals, Incorporated. SN 190,468. Pub. 10–27–64. Filed 4–6–64.

783,065. ALFOL. Continental Oil Company. SN 191,509. Pub. 10–27–64. Filed 4–20–64.

783,066. THERMEX. The R. T. French Company. SN 191,543. Pub. 10–27–64. Filed 4–20–64.

783,067. ACTIFLO. Central Soya Company, Inc. SN 192,359. Pub. 10–27–64. Filed 4–30–64.

### Class 7 — Cordage

783,068. EA. American Chain & Cable Company, Inc. SN 189,528. Pub. 10–27–64. Filed 3–25–64.

783,069. EA AND DESIGN. American Chain & Cable Company, Inc. SN 191,648. Pub. 10–27–64. Filed 4–21–64.

783,070. NEW BEDFORD ETC. AND DESIGN. New Bedford Cordage Company. SN 193,979. Pub. 10–27–64. Filed 5–21–64.





### Class 8 — Smokers' Articles, Not Including Tobacco Products

783,046. (See Class 3 for this trademark.)

783,071. GALLERY. Akay Corporation. SN 167,186. Pub. 10–27–64. Filed 4–22–63.

783,072. VISUAL PERSUADER. Seymour M. Gluck. MULTIPLE CLASS (Classes 8, 9, and 30). SN 185,888. Pub. 10–27–64. Filed 2–3–64.

783,073. LADY SHARON. Arden Jewelry Mfg. Co. SN 189,423. Pub. 10–27–64. Filed 3–24–64.

783,074. MONARCH. Monarch Pipe Company, Inc. SN 190,740. Pub. 10–27–64. Filed 4–9–64.

783,075. ZAIMA. Zaima Corporation of America. SN 192,448. Pub. 10–27–64. Filed 4–30–64.

### Class 9 — Explosives, Firearms, Equipments, and Projectiles

783,045. (See Class 3 for this trademark.)

783,072. (See Class 8 for this trademark.)

783,076. KARVITE. Hercules Powder Company. SN 184,156. Pub. 10–27–64. Filed 1–7–64.

783,077. FAVORITE. Transamerican Match Corporation, assignee of Pacific Match Co. SN 186,638. Pub. 10–27–64. Filed 2–13–64.

### Class 10 — Fertilizers

783,078. FAS FERROUS AMMONIUM SULPHATE. Kerley Chemical Corporation. SN 172,199. Pub. 10–27–64. Filed 7–1–63.

783,079. BONNIE GREEN. Heritage House Products, Inc. SN 177,995. Pub. 10–27–64. Filed 9–30–63.

783,080. SOCIETY HILL. Heritage House Products, Inc. SN 177,999. Pub. 10–27–64. Filed 9–30–63.

783,081. MAGIK-MOSS. The Cleveland Builders Supply Company. SN 186,332. Pub. 10–27–64. Filed 2–10–64.

783,082. GRO-GREATER AND DESIGN. Gro-Green Chemical Co., Inc. SN 186,718. Pub. 10–27–64. Filed 2–14–64.

783,083. H.A.S. Arizona Agrochemical Corporation. SN 193,838. Pub. 10–27–64. Filed 5–20–64.

783,084. VINTAGE. Socony Mobil Oil Company, Inc. SN 196,912. Pub. 10–27–64. Filed 7–1–64.

### Class 11 — Inks and Inking Materials

783,085. SPEEDSIGN. J & K Creative Productions, Inc. MULTIPLE CLASS (Classes 11 and 28). SN 182,332. Pub. 10–27–64. Filed 12–4–63.

### Class 12 — Construction Materials

783,086. SNUG SEAM. Aluminum Company of America. SN 159,548. Pub. 10–27–64. Filed 12–21–62.

783,087. CHILDERS. Childers Manufacturing Company. SN 176,072. Pub. 10–27–64. Filed 8–30–63.

783,088. STRUCTO-GAUGE. United States Gypsum Company. SN 186,208. Pub. 10–27–64. Filed 2–6–64.

783,089. RAILMASTER. Fred Miller Manufacturing Co., Inc. SN 186,262. Pub. 10–27–64. Filed 2–7–64.

783,090. TREND. International Pipe and Ceramics Corporation. SN 190,384. Pub. 10–27–64. Filed 4–6–64.

783,091. DUCTRON. The Standard Oil Company. SN 190,657. Pub. 10–27–64. Filed 4–8–64.

783,092. DECRAMASTIC. L. J. Fisher & Company Limited. SN 191,849. Pub. 10–27–64. Filed 4–23–64.

### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

783,093. MISCELLANEOUS DESIGN. Ekco Products Company. SN 150,768. Pub. 10–27–64. Filed 8–8–62.

783,094. B-LINE AND DESIGN. The Binkley Company. SN 179,396. Pub. 10–27–64. Filed 10–21–63.

783,095. SNO-TRACS. The AGS Development and Sales Corporation. SN 184,335. Pub. 10–27–64. Filed 1–10–64.

783,096. AIR KING. Dixon Valve & Coupling Company. SN 191,143. Pub. 10–27–64. Filed 4–15–64.

783,097. SOLITAIRE. Ekco Products Company. SN 191,148. Pub. 10–27–64. Filed 4–15–64.

783,098. SHOWER SUSAN. Stuart M. Lerner, Inc. SN 191,571. Pub. 10–27–64. Filed 4–20–64.

783,099. SPRACO. Spray Engineering Company. SN 191,623. Pub. 10–27–64. Filed 4–20–64.

783,100. IN-VIS-O. Elizabeth R. Blackburn, d.b.a. Disappearing Roller Screen Co. SN 192,550. Pub. 10–27–64. Filed 5–4–64.

### Class 14 — Metals and Metal Castings and Forgings

783,101. CBC AND DESIGN. Clark Brass & Copper Company. SN 181,326. Pub. 10–27–64. Filed 11–18–63.

783,102. BRAEVAC. Continental Copper & Steel Industries Inc. SN 190,699. Pub. 10–27–64. Filed 4–9–64.

783,103. ELECTRO-SLIK. Republic Foil, Inc. SN 195,013. Pub. 10–27–64. Filed 6–5–64.

### Class 15 — Oils and Greases

783,104. POLY-PUL 10. Ideal Industries, Inc. SN 195,226. Pub. 10–27–64. Filed 6–9–64.

783,105. POLY-PUL 32. Ideal Industries, Inc. SN 195,227. Pub. 10–27–64. Filed 6–9–64.

### Class 16 — Protective and Decorative Coatings

783,106. COLOREZE. Coloriser Associates. SN 161,309. Pub. 10–27–64. Filed 1–24–63.

783,107. HB AND DESIGN. Horton-Barbee Company. SN 168,822. Pub. 10–27–64. Filed 5–14–63.

783,108. X-COTE AND DESIGN. Cal-National Chemicals, Inc. SN 183,497. Pub. 10–27–64. Filed 12–24–63.

783,109. OVALITE. E. I. du Pont de Nemours and Company. SN 184,043. Pub. 10–27–64. Filed 1–6–64.

783,110. DEE-TAC. National Polychemicals, Inc. SN 190,416. Pub. 10–27–64. Filed 4–6–64.

### Class 17 — Tobacco Products

783,111. MORNING ETC. AND DESIGN. Rüesch & Cie, A.G. SN 174,442. Pub. 10–27–64. Filed S.R. 8–5–63; Am. P.R. 4–30–64.

783,112. KALOMA K AND DESIGN. Regina Cigar Company, Inc. SN 179,064. Pub. 10–27–64. Filed 10–15–63.

783,113. MONTESINO. Anthony Suares, d.b.a. Montesino Cigar Company. SN 188,154. Pub. 10–27–64. Filed 3–6–64.

## Class 18 — Medicines and Pharmaceutical Preparations

783,114. HUDSON FEROSPACE. Hudson Vitamin Products, Inc. SN 172,904. Pub. 10–27–64. Filed 7–12–63.

783,115. PRO-GRO. Vit-A-Way, Inc. SN 173,798. Pub. 10–27–64. Filed 7–25–63.

783,116. PROTEC. American Home Products Corporation. SN 183,870. Pub. 10–27–64. Filed 1–2–64.

783,117. KLICK. Dean Rubber Manufacturing Company. SN 191,515. Pub. 10–27–64. Filed 4–20–64.

783,118. DAY BREAK. Chesebrough-Pond's Inc. SN 193,534. Pub. 10–27–64. Filed 5–15–64.

783,119. QUINISPAN. Nysco Laboratories, Inc. SN 195,010. Pub. 10–27–64. Filed 6–5–64.

783,120. ESOPHOTRAST. Barnes-Hind Barium Products. SN 196,100. Pub. 10–27–64. Filed 6–22–64.

783,121. ORATRAST. Barnes-Hind Barium Products. SN 196,102. Pub. 10–27–64. Filed 6–22–64.

783,122. FERDURALTA. Merck & Co., Inc. SN 196,882. Pub. 10–27–64. Filed 7–1–64.

## Class 19 — Vehicles

783,123. RAPHAEL GEMINIANI. Manufacture Industrielle de Cycles & Motocycles (MICMO). SN 175,949. Pub. 10–27–64. Filed 8–28–63.

783,124. REX. E. Edelmann & Co., d.b.a. Rex Caps. SN 189,279. Pub. 10–27–64. Filed 3–23–64.

783,125. IMP. Sunbeam-Talbot Limited. SN 192,098. Pub. 10–27–64. Filed 4–27–64.

783,126. CREST AND WREATH (DESIGN). General Motors Corporation. SN 192,588. Pub. 10–27–64. Filed 5–4–64.

783,127. CALIFORNIAN CB AND DESIGN. Westway Enterprises, Inc. SN 192,650. Pub. 10–27–64. Filed 5–4–64.

## Class 21 — Electrical Apparatus, Machines, and Supplies

783,128. DE VILLE. De Ville Associates. SN 158,060. Pub. 10–27–64. Filed 11–28–62.

783,129. ZET-HORN. Zöllner & Co. SN 158,492. Pub. 10–27–64. Filed 6–10–63.

783,130. XETRON AND DESIGN. Carbons, Inc. SN 173,149. Pub. 10–27–64. Filed 7–17–63.

783,131. SUPERAY. B. Merritt, Inc. SN 177,269. Pub. 10–27–64. Filed 9–18–63.

783,132. CLYSAR. E. I. du Pont de Nemours and Company. SN 178,794. Pub. 10–27–64. Filed 10–11–63.

783,133. MAGNAFAX. The Magnavox Company. SN 180,261. Pub. 10–27–64. Filed 10–30–63.

783,134. KDK AND DESIGN. Matsushita Seiko Co. Ltd. SN 180,422. Pub. 10–27–64. Filed 11–4–63.

783,135. TRI-LINE. Inductotherm Corporation. SN 181,239. Pub. 10–27–64. Filed 11–15–63.

783,136. KE AND DESIGN. Konigsberg Electronics, Inc. SN 182,187. Pub. 10–27–64. Filed 12–2–63.

783,137. DELTAFILM. Dearborn Electronic Laboratories of Delaware, Inc. SN 184,795. Pub. 10–27–64. Filed 1–17–64.

783,138. TENSOR AND DESIGN. Tensor Corporation. SN 184,851. Pub. 10–27–64. Filed 1–17–64.

783,139. PHONEMINDER. Phonomatic, Inc. SN 185,620. Pub. 10–27–64. Filed 1–29–64.

783,140. QUOTREND. Scantlin Electronics, Inc. SN 186,196. Pub. 10–27–64. Filed 2–6–64.

783,141. BUTTERFLY. Illinois Tool Works, Inc. SN 187,668. Pub. 10–27–64. Filed 2–28–64.

783,142. VISIBAR. Federal Sign and Signal Corporation. SN 188,432. Pub. 10–27–64. Filed 3–11–64.

783,143. KAPSTAT. Sigma Instruments, Inc. SN 189,112. Pub. 10–27–64. Filed 3–19–64.

783,144. LOGCELL. Fifth Dimension, Inc. SN 189,283. Pub. 10–27–64. Filed 3–23–64.

783,145. TRIMODE. Sage Laboratories, Inc. SN 189,376. Pub. 10–27–64. Filed 3–23–64.

783,146. CONCORD. Slumberest Company. SN 189,387. Pub. 10–27–64. Filed 3–23–64.

783,147. KEPEWARM. Ben S. Loeb, Inc. SN 190,734. Pub. 10–27–64. Filed 4–9–64.

## Class 22 — Games, Toys, and Sporting Goods

783,045. (See Class 3 for this trademark.)

783,148. FANCIFUL DESIGN (KNOWN AS WOODY WOODPECKER). Walter Lantz Productions, Inc. SN 155,016. Pub. 10–27–64. Filed 1–2–62.

783,149. IT'S A WONDERFUL TOY . . . IT'S IDEAL AND DESIGN. Ideal Toy Corporation. SN 155,156. Pub. 10–27–64. Filed 10–15–62.

783,150. LINE-IT. Line-It Corporation. SN 175,589. Pub. 10–27–64. Filed 8–22–63.

783,151. SPORTS-MASTER. L. S. Brown Company. SN 177,678. Pub. 10–27–64. Filed 9–25–63.

783,152. WRETCHED MESS. David F. Bascom, d.b.a. Wretched Mess Enterprises. SN 178,864. Pub. 10–27–64. Filed 10–14–63.

783,153. ATH-O-MED AND DESIGN. The Chattanooga Medicine Company, d.b.a. Ath-O-Med Co. MULTIPLE CLASS (Classes 22 and 44). SN 186,599. Pub. 10–27–64. Filed 2–13–64.

783,154. ZOOMERANG. Cellox Corporation. SN 187,244. Pub. 10–27–64. Filed 2–24–64.

783,155. JIGGITY-JIG. Whopper Stopper, Incorporated. SN 187,837. Pub. 10–27–64. Filed 3–2–64.

783,156. LOJEN AND DESIGN. Lojen Apparatus Incorporated. SN 188,119. Pub. 10–27–64. Filed 3–6–64.

783,157. DOUBLE TRAP ACTION. Wilson Sporting Goods Co. SN 188,597. Pub. 10–27–64. Filed 3–13–64.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

783,085. (See Class 11 for this trademark.)

783,158. LASTING ROSE. Oneida Ltd. SN 143,994. Pub. 10–27–64. Filed 5–7–62.

783,159. MISCELLANEOUS DESIGN. Ekco Products Company. SN 150,769. Pub. 10–27–64. Filed 8–8–62.

783,160. ATLANTIS. Oscar Enterprises, Inc. MULTIPLE CLASS (Classes 23, 34, and 46). SN 168,216. Pub. 10–27–64. Filed 5–6–63.

783,161. VIBRO-ENERGY AND DESIGN. Southwestern Engineering Co. SN 178,304. Pub. 10–27–64. Filed 10–3–63.

783,162. PLUG-A-CYCLE AND DESIGN. The Heald Machine Company. SN 179,133. Pub. 10–27–64. Filed 10–16–63.

783,163. METEOR. Outboard Marine Corporation. SN 180,227. Pub. 10–27–64. Filed 10–31–63.



783,164. HOLZ HER. Firma Karl M. Reich, Maschinenfabrik. SN 183,501. Pub. 10–27–64. Filed 12–24–63.

783,165. B & W. B & W Incorporated. SN 186,140. Pub. 10–27–64. Filed 2–6–64.

783,166. MICRO-VAPOR. Monnier Bros., Inc. SN 187,033. Pub. 10–27–64. Filed 2–19–64.

783,167. FORTUNA. Fortuna-Werke Spezialmaschinenfabrik A.G. SN 187,743. Pub. 10–27–64. Filed 3–2–64.

783,168. ALINA AND DESIGN. Alina Corporation. MULTIPLE CLASS (Classes 23 and 26). SN 188,172. Pub. 10–27–64. Filed 3–9–64.

783,169. TIMBERLINE. Timberline Equipment Co. SN 188,482. Pub. 10–27–64. Filed 3–11–64.

783,170. TREE (DESIGN). Timberline Equipment Co. SN 188,483. Pub. 10–27–64. Filed 3–11–64.

783,171. CLOVERLAND AND DESIGN. Cloverland Engines, Inc. SN 190,154. Pub. 10–27–64. Filed 4–2–64.

783,172. CONCRETE-MOBILE. Iri Daffin Associates, Incorporated. SN 191,179. Pub. 10–27–64. Filed 4–15–64.

783,173. MON-O-BAG BAGMAKER. Sperry Rand Corporation. SN 191,622. Pub. 10–27–64. Filed 4–20–64.

783,174. SORTRAC. Aerojet-General Corporation. SN 191,895. Pub. 10–27–64. Filed 4–24–64.

783,175. MINI-CON. The Bruning Company. SN 192,002. Pub. 10–27–64. Filed 4–27–64.

783,176. FACTURA. Triumph Werke Nurnberg Aktiengesellschaft. SN 192,438. Pub. 10–27–64. Filed 4–30–64.

783,177. MATURA. Triumph Werke Nurnberg Aktiengesellschaft. SN 192,439. Pub. 10–27–64. Filed 4–30–64.

783,178. TURBO-GEN. B & W Incorporated. SN 192,663. Pub. 10–27–64. Filed 5–5–64.

783,179. TOTE. Hoover Ball and Bearing Company. SN 193,675. Pub. 10–27–64. Filed 5–18–64.

783,180. MISCELLANEOUS DESIGN. J. Wiss and Sons Co. SN 194,688. Pub. 10–27–64. Filed 6–1–64.

783,181. VENTORQUE. Fawick Corporation. SN 195,659. Pub. 10–27–64. Filed 6–15–64.

783,182. AJA LIF. Magnus Chemical Company, Inc. SN 195,874. Pub. 10–27–64. Filed 6–17–64.

783,183. MIJI-LIF. Magnus Chemical Company, Inc. SN 195,875. Pub. 10–27–64. Filed 6–17–64.

783,184. PORTO LIF. Magnus Chemical Company, Inc. SN 195,876. Pub. 10–27–64. Filed 6–17–64.

783,185. TERMI-POINT. AMP Incorporated. SN 196,226. Pub. 10–27–64. Filed 6–23–64.

## Class 26 — Measuring and Scientific Appliances

783,168. (See Class 23 for this trademark.)

783,186. SOUND HOUSE. Edgerton, Germeshausen & Grier, Inc. SN 181,765. Pub. 10–27–64. Filed 11–22–63.

783,187. MONRO-CARD. Monroe International Corporation, by change of name from Monroe Calculating Machine Company. SN 182,195. Pub. 10–27–64. Filed 12–2–63.

## Class 27 — Horological Instruments

783,188. BOUTIQUE. Bulova Watch Company, Inc. SN 194,950. Pub. 10–27–64. Filed 6–5–64.

783,189. SQUARE-RIGGER. Benrus Watch Company, Inc. SN 196,241. Pub. 10–27–64. Filed 6–23–64.

783,190. MONTREX. Unitime Corporation. SN 196,405. Pub. 10–27–64. Filed 6–24–64.

783,191. EQUATOR. Croton Watch Company, Inc. SN 196,509. Pub. 10–27–64. Filed 6–26–64.

## Class 28 — Jewelry and Precious-Metal Ware

783,192. A AND DESIGN. Artistic Medal and Badge Company. SN 193,092. Pub. 10–27–64. Filed 5–11–64.

783,193. CRESCENT AND DESIGN. Crest Leather Manufacturing Corporation. SN 195,067. Pub. 10–27–64. Filed 6–8–64.

783,194. VML. Visual Mountings Limited. SN 195,259. Pub. 10–27–64. Filed 6–9–64.

783,195. MISCELLANEOUS DESIGN. Astro Cultured Pearls, Inc. SN 195,919. Pub. 10–27–64. Filed 6–18–64.

783,196. INVISALOK. Gemex Precision Metals, Inc. SN 196,270. Pub. 10–27–64. Filed 6–23–64.

## Class 29 — Brooms, Brushes, and Dusters

783,197. JEAN-PIERRE. Jean-Pierre Creations de Paris Inc. SN 194,615. Pub. 10–27–64. Filed 6–1–64.

## Class 30 — Crockery, Earthenware, and Porcelain

783,072. (See Class 8 for this trademark).

## Class 31 — Filters and Refrigerators

783,198. CENTRI-CLERE. Centri-Spray Corporation. SN 191,672. Pub. 10–27–64. Filed 4–21–64.

783,199. INTEX. Industrial Textile Corporation. SN 192,400. Pub. 10–27–64. Filed 4–30–64.

783,200. ROLL-ARRESTOR. Research Products Corporation. SN 192,636. Pub. 10–27–64. Filed 5–4–64.

783,201. FLO-DRI AND DESIGN. John A. Haslett, d.b.a. John A. Haslett Company. SN 192,719. Pub. 10–27–64. Filed 5–5–64.

## Class 32 — Furniture and Upholstery

783,202. SEE-THRU. Butler Industries, Inc. SN 180,708. Pub. 10–27–64. Filed 11–8–63.

783,203. HISTORICAL JAMES RIVER PLANTATIONS AND DESIGN. Hickory Chair Company. SN 187,282. Pub. 10–27–64. Filed 2–24–64.

783,204. MOONGLOW. H. J. Scheirich Company. SN 191,611. Pub. 10–27–64. Filed 4–20–64.

783,205. SCHEIRICH. H. J. Scheirich Company. SN 191,612. Pub. 10–27–64. Filed 4–20–64.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

783,160. (See Class 23 for this trademark.)

783,206. GAS PAC. Fraser & Johnston Company. SN 177,694. Pub. 10–27–64. Filed 9–25–63.

783,207. SNAPPER LOCK AND DESIGN. Manufactured Products Inc., assignee of Vera Products Company. SN 178,382. Pub. 10–27–64. Filed 10–4–63.

783,208. ALKO. Allen J. Kinley, d.b.a. A. J. Kinley Company. SN 180,904. Pub. 10–27–64. Filed 11–12–63.

783,209. WAIST HIGH. Northwood Construction Company, d.b.a. Waist High Fireplaces. SN 181,392. Pub. 10–27–64. Filed 11–18–63.

783,210. MISCELLANEOUS DESIGN. Sojin Matsumoto. SN 181,420. Pub. 10–27–64. Filed 11–18–63.

783,211. SOLARONIC. Solaronics, Inc. SN 181,575. Pub. 10–27–64. Filed 11–20–63.

783,212. SEASONCON. McQuay, Inc. SN 182,098. Pub. 10–27–64. Filed 11–29–63.

783,213. PERMANEL. Breese Illinois Incorporated. SN 182,461. Pub. 10–27–64. Filed 12–6–63.

783,214. PYROVAULT. John J. Nesbitt, Inc. SN 182,819. Pub. 10–27–64. Filed 12–11–63.

783,215. THERMORATOR. ITT Bell & Gossett Inc. SN 193,278. Pub. 10–27–64. Filed 5–12–64.

783,216. GORTON VALVES AND DESIGN. Gorton Heating Corporation. SN 193,783. Pub. 10–27–64. Filed 5–19–64.

783,217. THAWMASTER. Midwest Tool & Die Co., Inc. SN 193,973. Pub. 10–27–64. Filed 5–21–64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

783,218. SERVICE. Johns-Manville Corporation. SN 166,285. Pub. 10–27–64. Filed 4–8–63.

783,219. SAVOY. Savoy Rubber Co., assignee of East Bay Tire Company. SN 192,014. Pub. 10–27–64. Filed 4–27–64.

783,220. MOTOR RACER. The Goodyear Tire & Rubber Company. SN 192,033. Pub. 10–27–64. Filed 4–27–64.

## Class 36 — Musical Instruments and Supplies

783,221. PIXIE. H. & A. Selmer, Inc. SN 174,292. Pub. 10–27–64. Filed 8–2–63.

## Class 37 — Paper and Stationery

783,222. COURT TABS. Dockfield's. SN 151,573. Pub. 10–27–64. Filed 8–21–62.

783,223. CRESTONE AND DESIGN. Wesco Merchandise Co. SN 163,438. Pub. 10–27–64. Filed 2–25–63.

783,224. AMERICAN. American Paper & Plastic Products, Inc. SN 173,998. Pub. 9–1–64. Filed 7–30–63.

783,225. AZOFAX. A. B. Dick Company. SN 176,175. Pub. 10–27–64. Filed 9–3–63.

783,226. DUBL-FRUNT. Wilson Jones Company. SN 176,449. Pub. 10–27–64. Filed 9–6–63.

783,227. MONA-TEC. Monadnock Paper Mills, Inc. SN 177,905. Pub. 10–27–64. Filed 9–27–63.

783,228. CLYSAR. E. I. du Pont de Nemours and Company. SN 178,795. Pub. 10–27–64. Filed 10–11–63.

783,229. S AND DESIGN. Ottenheimer Publishers, Incorporated. SN 181,265. Pub. 10–27–64. Filed 11–15–63.

783,230. FORTEFITE. Nekoosa-Edwards Paper Company. SN 182,106. Pub. 10–27–64. Filed 11–29–63.

783,231. SERT 'N PULL MAILER AND DESIGN. Tension Envelope Corporation. SN 183,126. Pub. 10–27–64. Filed 12–16–63.

783,232. CHROMATIC. Chromatic Corporation. SN 185,267. Pub. 10–27–64. Filed 1–24–64.

783,233. EKTAFAX. Eastman Kodak Company. SN 186,448. Pub. 10–27–64. Filed 2–11–64.

783,234. LADY SCOTT. Scott Paper Company. SN 187,892. Pub. 10–27–64. Filed 3–3–64.

783,235. ARGENTONE. Crane & Company, Inc. SN 188,050. Pub. 10–27–64. Filed 2–28–64.

783,236. NEBS AND DESIGN. New England Business Service, Inc. SN 188,136. Pub. 10–27–64. Filed 3–6–64.

783,237. KAYWOODIE. S. M. Frank & Co., Inc. SN 188,350. Pub. 10–27–64. Filed 3–10–64.

783,238. AUTOCRAT. Westab Inc. SN 188,690. Pub. 10–27–64. Filed 3–13–64.

783,239. ZO-NOTCH. Globe Ticket Company. SN 189,168. Pub. 10–27–64. Filed 3–20–64.

783,240. TOUCH OF ROSES. Huston Research Corporation. SN 189,303. Pub. 10–27–64. Filed 3–23–64.

783,241. BACTOSTAT. John Sexton & Co. SN 189,384. Pub. 10–27–64. Filed 3–23–64.

783,242. PRESENTATION BOND. Hammermill Paper Company. SN 190,719. Pub. 10–27–64. Filed 4–9–64.

783,243. DONA-CHEX. Dona-Chex Corporation. SN 191,145. Pub. 10–27–64. Filed 4–15–64.

## Class 38 — Prints and Publications

783,244. SRA OCCUPATIONAL EXPLORATION. Science Research Associates, Inc. SN 138,237. Pub. 10–27–64. Filed 2–19–62.

783,245. WHAT IS PANCHO SAYING? EDUCATIONAL PASTIME. Alvaro Carrillo, Sr. SN 163,302. Pub. 10–27–64. Filed 2–25–63.

783,246. STIK-TYPE. Lectro-Stik Company. SN 172,205. Pub. 10–27–64. Filed 7–1–63.

783,247. INFORMAL ELEGANCE. Norcross, Inc. SN 178,561. Pub. 10–27–64. Filed 10–8–63.

783,248. MISCELLANEOUS DESIGN. The Woodcrest Service Committee. SN 182,230. Pub. 10–27–64. Filed 12–2–63.

783,249. KB ETC. AND DESIGN. Harry Walter Koch, d.b.a. The Ken-Books. SN 182,998. Pub. 10–27–64. Filed 12–10–63.

783,250. THE WANT-AD HOBBYIST. The Want Ad Hobbyist, Inc. SN 183,139. Pub. 10–27–64. Filed 12–16–63.

783,251. WOMEN AND WALL STREET ETC. AND DESIGN. Stephen Kahn, d.b.a. Women & Wall Street. SN 185,418. Pub. 10–27–64. Filed 1–27–64.

783,252. ABBOTTEMPO. Abbott Laboratories. SN 189,029. Pub. 10–27–64. Filed 3–19–64.

783,253. KAIROS. Paul Keller and Associates, Inc. SN 189,082. Pub. 10–27–64. Filed 3–19–64.

783,254. VOTEMASTER. Cybernetics General Company. SN 190,066. Pub. 10–27–64. Filed 4–1–64.

783,255. MELROSE. John Baumgarth Company. SN 191,244. Pub. 10–27–64. Filed 4–16–64.

## Class 39 — Clothing

783,045. (See Class 3 for this trademark.)

783,256. MISCELLANEOUS DESIGN. Fit-Rite Pants Company, Inc. SN 165,224. Pub. 10–27–64. Filed 3–22–63.

783,257. SHORE TERRY. Cluett, Peabody & Co., Inc. SN 178,823. Pub. 10–27–64. Filed 7–26–63.

783,258. RAINY DAZE AND DESIGN. Lucky Sales Co., Inc., d.b.a. Rainy Daze Sales Co. SN 178,208. Pub. 10–27–64. Filed 10–2–63.

783,259. QUAL T RITE. Arthur Harry Heitsley. SN 178,609. Pub. 10–27–64. Filed 10–10–63.

783,260. ROMANSETTE. Alba-Waldensian, Inc. SN 179,180. Pub. 10–27–64. Filed 10–17–63.

783,261. CUALICRON. Cualicron Sociedad Anonima. SN 180,187. Pub. 10–27–64. Filed 10–31–63.

783,262. BABY LEWIS ETC. AND DESIGN. Neisner Brothers, Inc. SN 184,093. Pub. 10–27–64. Filed 1–6–64.

783,263. ANITA LEWIS ETC. AND DESIGN. Neisner Brothers, Inc. SN 184,098. Pub. 10–27–64. Filed 1–6–64.

783,264. SPLASHKAP. Trina, Inc. SN 186,413. Pub. 10–27–64. Filed 2–10–64.

783,265. STRETCHABOUTS. Regal Knitwear Co., Inc. SN 186,474. Pub. 10–27–64. Filed 2–11–64.



783,266. JUNIOR TOUCH. Junior Touch, Inc. SN 187,495. Pub. 10–27–64. Filed 2–26–64.

783,267. LC LORD CUMMING AND DESIGN. Lad 'N Dad Slacks, Inc. SN 188,017. Pub. 10–27–64. Filed 3–5–64.

783,268. E-Z-ON NATURAL KNOT. Wembley, Inc. SN 189,126. Pub. 10–27–64. Filed 3–19–64.

783,269. PLAYCORDS. Melville Shoe Corporation. SN 189,488. Pub. 10–27–64. Filed 3–24–64.

783,270. STYLEPRIDE'S SWEET STEP. Edison Brothers Stores, Inc. SN 190,248. Pub. 10–27–64. Filed 4–3–64.

783,271. VAMPIRE. Melville Shoe Corporation. SN 190,526. Pub. 10–27–64. Filed 4–7–64.

783,272. RICHMARK. McCubbin Hosiery, Inc. SN 190,943. Pub. 10–27–64. Filed 4–13–64.

783,273. McCUBBIN AND DESIGN. McCubbin Hosiery, Inc. SN 190,944. Pub. 10–27–64. Filed 4–13–64.

783,274. TRIC-O-LASTIC. Maidenform, Inc. SN 191,189. Pub. 10–27–64. Filed 4–15–64.

783,275. COPY-RITE. Glamorise Foundations, Inc. SN 191,281. Pub. 10–27–64. Filed 4–16–64.

783,276. LASSO. Lasso Western Wear, Inc. SN 195,087. Pub. 10–27–64. Filed 6–9–64.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

783,277. STROOCK—CREATOR OF AMERICA'S MOST DISTINGUISHED WOOLENS. Ramco Enterprises, Inc. SN 175,511. Pub. 10–27–64. Filed 8–21–63.

783,278. YUKON. Dan River Mills, Incorporated. SN 176,172. Pub. 10–27–64. Filed 9–3–63.

783,279. SOVEREIGN ALL CLIMATE. Wellington Sears Company. SN 186,421. Pub. 10–27–64. Filed 2–10–64.

## Class 44 — Dental, Medical, and Surgical Appliances

783,280. FLEX PACK. Ipco Hospital Supply Corporation. SN 169,458. Pub. 10–27–64. Filed 5–22–63.

783,281. PCP AND DESIGN. Surgical Appliance Industries, Inc., d.b.a. Convalescent Products Company. SN 182,445. Pub. 10–27–64. Filed 12–5–63.

783,282. AIR-O-MAGIC. The Uni-Glide Corporation. SN 187,364. Pub. 10–27–64. Filed 2–24–64.

783,283. TOOTHETTE. Halbrand, Inc. SN 192,718. Pub. 10–27–64. Filed 5–5–64.

783,284. NOVALIND. Wundtextil G.m.b.H. SN 192,776. Pub. 10–27–64. Filed 5–5–64.

783,285. WANDVELS. Wolf & Dessauer Company. SN 198,108. Pub. 10–27–64. Filed 7–17–64.

## Class 45 — Soft Drinks and Carbonated Waters

783,153. (See Class 22 for this trademark.)

783,286. FLAVOR FIRST. Flavor First Foods, Inc. CONSOLIDATED CERTIFICATE. SN 193,006, pub. 10–13–64, filed 5–8–64, Cl. 45; SN 175,836, pub. 10–13–64, filed 7–26–63, Cl. 46.

783,287. SURF RIDER. Orrell's Food Products, Inc. MULTIPLE CLASS (Classes 45 and 46). SN 185,437. Pub. 10–27–64. Filed 1–27–64.

## Class 46 — Foods and Ingredients of Foods

783,160. (See Class 23 for this trademark.)

783,286. CONSOLIDATED CERTIFICATE. See Class 45.

783,267. (See Class 45 for this trademark.)

783,288. SCHMULKA BERNSTEIN'S. Schmulka Bernstein & Co., Inc. SN 138,118. Pub. 10–27–64. Filed 2–16–62.

783,289. JUST TRY ONE AND PENGUIN DESIGN. Norris Inc. SN 150,439. Pub. 10–27–64. Filed 8–3–62.

783,290. REPRESENTATION OF A LITTLE GIRL. Quality Bakers of American Cooperative Inc. SN 163,692. COLLECTIVE MARK. Pub. 10–27–64. Filed 2–28–63.

783,291. DESIGN OF WITCH AND A BROOM. Mars, Inc. SN 168,831. Pub. 7–7–64. Filed 5–14–63.

783,292. GOLDEN PHEASANT. Trautmann Bros. Co. of Laredo, Texas, Inc. SN 171,726. Pub. 10–27–64. Filed 6–24–63.

783,293. REDWOOD EMPIRE. Hallberg Canning Corporation. SN 172,994. Pub. 10–27–64. Filed 7–15–63.

783,294. CAL-BEST. Carnation Company, assignee of Contadina Foods, Inc. SN 173,561. Pub. 10–27–64. Filed 7–23–63.

783,295. LUCULLUS AND DESIGN. Mario's Restaurant Frosen Specialties Co. SN 174,677. Pub. 10–27–64. Filed 8–8–63.

783,296. B AND DESIGN. H. C. Bohack Co., Inc. SN 176,151. Pub. 10–27–64. Filed 9–3–63.

783,297. GLEE. Imperial Imitation Dairy Foods, Inc. SN 177,048. Pub. 10–27–64. Filed 9–16–63.

783,298. LUGANO. Rosa Continente, d.b.a. G. Continente Company. SN 179,870. Pub. 10–27–64. Filed 10–28–63.

783,299. TARTEX. Dyna, S.A. SN 180,000. Pub. 10–27–64. Filed 10–29–63.

783,300. FANTINA. Otto Roth & Co., Inc. SN 180,325. Pub. 10–27–64. Filed 11–1–63.

783,301. TOPPER. M.G. Inc. SN 181,375. Pub. 10–27–64. Filed 11–18–63.

783,302. PERFORMANCE CHAMPION. Southern States Cooperative Incorporated. SN 182,296. Pub. 10–27–64. Filed 12–3–63.

783,303. ITALIAN VILLAGE. The Italian Village, Inc. SN 182,425. Pub. 10–27–64. Filed 12–5–63.

783,304. PARK AVE. Cal-Zona Farms, d.b.a. Cal-Zona Company. SN 184,352. Pub. 10–27–64. Filed 1–10–64.

783,305. SUTTON PLACE. Cal-Zona Farms, d.b.a. Cal-Zona Company. SN 184,353. Pub. 10–27–64. Filed 1–10–64.

783,306. GLOVER'S. Glover Packing Company. SN 186,168. Pub. 10–27–64. Filed 2–6–64.

783,307. QUEEN OF SCOT. Scot Lad Foods, Inc. SN 186,198. Pub. 10–27–64. Filed 2–6–64.

783,308. TABLE-TREAT. Super Food Services, Inc. SN 187,162. Pub. 10–27–64. Filed 2–20–64.

783,309. SUPREME AND DESIGN. United Biscuit Company of America. SN 187,828. Pub. 10–27–64. Filed 3–2–64.

783,310. POLYMINE-S. Food Techniques, Inc. SN 189,995. Pub. 10–27–64. Filed 3–31–64.

783,311. PARMTANG. National Dairy Products Corporation. SN 190,101. Pub. 10–27–64. Filed 4–1–64.

783,312. BFP. Breddo Food Products Corporation. SN 191,501. Pub. 10–27–64. Filed 4–20–64.

783,313. ZOOM. Fisher Flouring Mills Co. SN 191,541. Pub. 10–27–64. Filed 4–20–64.

783,314. HAPPY VALLEY. Wilsey-Bennett Co. SN 191,639. Pub. 10–27–64. Filed 4–17–64.

783,315. PACIFIC QUEEN. Wilsey-Bennett Co. SN 191,642. Pub. 10–27–64. Filed 4–17–64.

783,316. DIACRYST. E. Fougera & Co., Inc. SN 191,920. Pub. 10–27–64. Filed 4–24–64.

783,317. Y AND DESIGN. Young's Market Company. SN 191,978. Pub. 10–27–64. Filed 4–24–64.

783,318. FLEER DUBBLE BUBBLE AND DESIGN. Frank H. Fleer Corporation. SN 192,031. Pub. 10–27–64. Filed 4–27–64.

783,319. EASE. Carnation Company. SN 192,143. Pub. 10–27–64. Filed 4–27–64.

783,320. ACTIFLO. Central Soya Company, Inc. SN 192,360. Pub. 10–27–64. Filed 4–30–64.

783,321. PARTY PRIDE. Safeway Stores, Incorporated. SN 192,527. Pub. 10–27–64. Filed 5–1–64.

783,322. FLIPS. General Foods Corporation. SN 194,597. Pub. 10–27–64. Filed 6–1–64.

783,323. WINDJAMMER. Cape Cod Tuna Corporation. SN 194,777. Pub. 10–27–64. Filed 6–3–64.

783,324. GRAND ENTRY. Anderson, Clayton & Co. SN 195,197. Pub. 10–27–64. Filed 6–9–64.

783,325. SUM CLASS. Suntreat Growers & Shippers, Inc. SN 195,566. Pub. 10–27–64. Filed 6–12–64.

## Class 47 — Wines

783,326. OLD DECANTER. E. & J. Gallo Winery. SN 177,018. Pub. 10–27–64. Filed 9–16–63.

783,327. DESIGN OF CUP. Monarch Wine Co., Inc. SN 185,917. Pub. 10–27–64. Filed 2–3–64.

783,328. TYTELL EUROPA SELECTED AND DESIGN. Monarch Wine Co., Inc. SN 185,918. Pub. 10–27–64. Filed 2–3–64.

783,329. GRAND VIN DE CHATEAU LATOUR AND DESIGN. Societe Civile du Vignoble de Chateau Latour. SN 186,478. Pub. 10–27–64. Filed 2–11–64.

783,330. ROYAL CHOICE. Frassia Brothers Winery. SN 189,572. Pub. 10–27–64. Filed 3–25–64.

783,331. ROYAL SELECTION. Frassia Brothers Winery. SN 189,573. Pub. 10–27–64. Filed 3–25–64.

## Class 48 — Malt Beverages and Liquors

783,332. MATT'S. The West End Brewing Company of Utica, N.Y. SN 172,857. Pub. 10–27–64. Filed 7–10–63.

783,333. ISOLONE. Kalamazoo Spice Extraction Company. SN 185,216. Pub. 10–27–64. Filed 1–28–64.

783,334. LEDERBRAU. Atlantic Brewing Company. SN 186,996. Pub. 10–27–64. Filed 2–19–64.

783,335. DIA-BEER. Holsten-Brauerei. SN 187,108. Pub. 10–27–64. Filed 2–20–64.

## Class 49 — Distilled Alcoholic Liquors

783,336. CLAN MAC ANDREWS. Bohemian Distribution Company, d.b.a. Mac Andrews Ltd. SN 180,830. Pub. 10–27–64. Filed 11–12–63.

783,337. IL CARABINIERE. McKesson & Robbins, Incorporated. SN 186,259. Pub. 10–27–64. Filed 2–7–64.

783,338. SIR JAMES. John Gross & Co. SN 186,942. Pub. 10–27–64. Filed 2–18–64.

## Class 50 — Merchandise Not Otherwise Classified

783,339. CARR KASE AND DESIGN. United-Carr Incorporated, by change of name from United-Carr Fastener Corporation. SN 169,497. Pub. 10–27–64. Filed 5–22–63.

783,340. GRAPHALLOY. Graphic Electronics Inc. SN 174,665. Pub. 10–27–64. Filed 8–8–63.

783,341. POLY-CONE. Radiator Specialty Company. SN 180,680. Pub. 10–27–64. Filed 11–7–63.

783,342. TUBE-CORE. Hexcel Products Inc. SN 196,157. Pub. 10–27–64. Filed 6–22–64.

783,343. RULE-STIR. Zoo-Piks. SN 196,930. Pub. 10–27–64. Filed 7–1–64.

783,344. 'JUNIOR.' Union Steel Products Company. SN 198,598. Pub. 10–27–64. Filed 7–27–64.

## Class 51 — Cosmetics and Toilet Preparations

783,345. HOLD ME. Big D Chemical Company, d.b.a. Le Fevre Products Company. SN 158,187. Pub. 10–27–64. Filed 11–29–62.

783,346. MEDACTON. Mayo-Reese Co. Inc. SN 174,107. Pub. 10–27–64. Filed 7–31–63.

783,347. LACALUT. Boehringer Ingelheim, G.m.b.H., assignee of C. H. Boehringer Sohn. SN 177,155. Pub. 10–27–64. Filed 9–17–63.

783,348. BIGEN. Kabushiki Kaisha Hoyu Shokai, d.b.a. Hoyu Co., Ltd. SN 178,552. Pub. 10–27–64. Filed 10–8–63.

783,349. DERMAGIC AND DESIGN. Highland Pharmacy, Inc. SN 184,009. Pub. 10–27–64. Filed 12–31–63.

783,350. SO IN LOVE. Nutrilite Products, Inc. SN 186,470. Pub. 10–27–64. Filed 2–11–64.

783,351. DROPS OF PEARLS. Nutrilite Products, Inc. SN 187,792. Pub. 10–27–64. Filed 3–3–64.

783,352. SONAR. The Procter & Gamble Company. SN 189,014. Pub. 10–27–64. Filed 3–18–64.

783,353. BE DISCREET. Bristol-Myers Company. SN 189,431. Pub. 10–27–64. Filed 3–24–64.

783,354. CAVALIER. S. H. Kress and Company. SN 189,712. Pub. 10–27–64. Filed 3–26–64.

783,355. RAY-DAR. The Procter & Gamble Company. SN 189,936. Pub. 10–27–64. Filed 3–30–64.

783,356. TWICE AS PRETTY. Studio Girl-Hollywood, Inc. SN 189,962. Pub. 10–27–64. Filed 3–30–64.

## Class 52 — Detergents and Soaps

783,357. NORTHLAND pH6 AND DESIGN. Northland Chemical Corporation. SN 126,670. Pub. 10–27–64. Filed 8–25–61.

783,358. BUST OF A MAN. Wade, Wenger Servicemaster Co. SN 165,894. Pub. 10–27–64. Filed 3–25–63.

783,359. SAN-E-BLU. Philip J. Hewitt, d.b.a. Specialty Items Company. SN 183,758. Pub. 10–27–64. Filed 12–30–63.

783,360. ANITA LEWIS ETC. AND DESIGN. Neisner Brothers, Inc. SN 184,102. Pub. 10–27–64. Filed 1–6–64.

783,361. NUTRI CLEAN AND DESIGN. Con-Stan Industries, Inc. SN 186,441. Pub. 10–27–64. Filed 2–11–64.

783,362. LAUNDERELLA. Jalma Corporation. SN 189,078. Pub. 10–27–64. Filed 3–19–64.

783,363. AC. Adair Company. SN 189,129. Pub. 10–27–64. Filed 3–20–64.

783,364. CLOBBER. Hercules Chemical Company, Inc. SN 189,299. Pub. 10–27–64. Filed 3–23–64.

# Service Marks

## Class 100 — Miscellaneous

783,365. ELECTROFARM. Tennessee Valley Authority. SN 137,029. Pub. 10–27–64. Filed 1–30–62.

783,366. POSTACULAR. Postacular, Inc., assignee of Triangle Outdoor Advertising Company. SN 143,889. Pub. 10–27–64. Filed 5–4–62.



783,367. PICO SAFE STAIRS. Pico Safe Stairs Co. SN 169,653. Pub. 10–27–64. Filed 5–24–63.

783,368. UNICUBE AND DESIGN. The Pillsbury Company. SN 173,182. Pub. 10–27–64. Filed 7–17–63.

783,369. OPTIFORM. Bowles Engineering Corporation. SN 175,011. Pub. 10–27–64. Filed 8–14–63.

783,370. ENGINEERS AND DESIGN. Parkinson, Crosby & Works, Inc. SN 179,726. Pub. 10–27–64. Filed 10–24–63.

783,371. SUNBURST AND PYLON (DESIGN). Quality Courts Motels, Inc. SN 187,328. COLLECTIVE MARK. Pub. 10–27–64. Filed 2–24–64.

## Class 101 — Advertising and Business

783,372. CHUS-A-TREAT. International Flavor Machines, Inc. SN 149,740. Pub. 10–27–64. Filed 7–25–62.

783,373. CUES. Credit Union National Association, Inc., d.b.a. Credit Union National Association. SN 159,153. Pub. 10–27–64. Filed 12–14–62.

783,374. GIFT OF THE HOLIDAYS AND DESIGN. Holiday Foods, Inc., d.b.a. Gift of the Holidays Club. SN 165,231. Pub. 10–27–64. Filed 2–22–63.

783,375. SAI. Studio Associates International, Inc. SN 169,577. Pub. 10–27–64. Filed 5–23–63.

783,376. IFM AND DESIGN. International Flavor Machines, Inc. SN 170,913. Pub. 10–27–64. Filed 6–13–63.

783,377. GETTING TO KNOW YOU. Forese Enterprises, Inc. SN 176,298. Pub. 10–27–64. Filed 9–4–63.

## Class 102 — Insurance and Financial

783,378. X MARKS THE SPOT AND DESIGN. The State Automobile & Casualty Underwriters. SN 178,659. Pub. 10–27–64. Filed 9–18–63.

783,379. BEVERLY BANK. Beverly Bank. SN 179,862. Pub. 10–27–64. Filed 10–28–63.

783,380. DOUBLE B IN CIRCLE AND DESIGN. Beverly Bank. SN 180,488. Pub. 10–27–64. Filed 11–5–63.

783,381. IC AND DESIGN. Imperial Casualty and Indemnity Company. SN 182,268. Pub. 10–27–64. Filed 12–3–63.

783,382. NORTH STAR REINSURANCE AND DESIGN. North Star Reinsurance Corporation. SN 182,641. Pub. 10–27–64. Filed 12–9–63.

783,383. P·M·R. All Nation Insurance Company. SN 182,915. Pub. 10–27–64. Filed 12–12–63.

783,384. AMERICAN DEFENDER LIFE INSURANCE COMPANY. American Defender Life Insurance Company. SN 184,870. Pub. 10–27–64. Filed 1–20–64.

783,385. F & M. First and Merchants National Bank. SN 186,884. Pub. 10–27–64. Filed 2–17–64.

783,386. ORIENTAL REDWOOD TREE (DESIGN). Redwood National Bank. SN 187,333. Pub. 10–27–64. Filed 2–24–64.

## Class 105 — Transportation and Storage

783,387. PANAMAC. Pan American World Airways, Inc. SN 168,526. Pub. 10–27–64. Filed 5–9–63.

783,388. B & O TRAILER SERVICE ETC. AND DESIGN. The Baltimore and Ohio Railroad Company. SN 179,765. Pub. 10–27–64. Filed 10–8–63.

783,389. B & O AND DESIGN. The Baltimore and Ohio Railroad Company. SN 181,952. Pub. 10–27–64. Filed 11–27–63.

783,390. TCA AND DESIGN. Trans-Canada Air Lines. SN 186,412. Pub. 10–27–64. Filed 2–10–64.

783,391. PACIFIC. Pacific Air Lines. SN 187,140. Pub. 10–27–64. Filed 2–20–64.

## Class 106 — Material Treatment

783,392. IT'S EASY AS A-B-C TO ORDER FROM A-B-C. A.B.C. Film Service, Inc., d.b.a. A-B-C Film Service and ABC Film Service. SN 158,757. Pub. 10–27–64. Filed 12–10–63.

783,393. STYLIZED A (DESIGN). Ames American. SN 176,699. Pub. 10–27–64. Filed 9–10–63.

783,394. ROCKET (DESIGN). Vanadium-Alloys Steel Company. SN 183,542. Pub. 10–27–64. Filed 12–23–63.

## Class 107 — Education and Entertainment

783,395. THE CITATION. Music Makers, Inc. SN 161,805. Pub. 10–27–64. Filed 1–31–63.

783,396. THUNDERBIRD. Newark District Ford Dealers Advertising Association, Inc. SN 182,200. Pub. 10–27–64. Filed 12–2–63.

783,397. CTI. Commercial Trades Institute. SN 183,201. Pub. 10–27–64. Filed 12–18–63.

# Collective Membership Mark

## Class 200

783,398. MISS IRISH AMERICA INDEPENDENT IRISH SOCIETY, INC. AND DESIGN. Independent Irish Society, Inc. SN 168,506. Pub. 10–27–64. Filed 5–9–63.

# SUPPLEMENTAL REGISTER

**These registrations are not subject to opposition.**

## Class 10 — Fertilizers

783,399. Red Barn Chemicals, Inc., Shreveport, La. SN 151,364. Filed P.R. 8–16–62; Am. S.R. 10–6–64.

**CHEL-ZINC-"3"**

For Liquid Fertilizers.

First use Apr. 18, 1962.

## Class 11 — Inks and Inking Materials

783,400. W. Korseka, Vienna, Austria. SN 156,235. Filed P.R. 10–30–62; Am. S.R. 11–16–64.

**DIRECT-COPY**

Owner of Austrian Reg. No. 48,297, dated July 11, 1962. For Carbon Papers and Typewriter Ribbons.

## Class 12 — Construction Materials

783,401. The Cleveland Fabricating Company, Inc., Cleveland, Ohio. SN 152,980. Filed P.R. 9–12–62; Am. S.R. 8–27–64.

**FOILCLAD**

For Building Insulation, in the Form of Vapor Barrier Backed Rolls or Batts of Fibrous Insulating Material Adapted to Application for Wall, Roof, Duct or Pipe Insulating Purposes.
First use July 19, 1962.

## Class 14 — Metals and Metal Castings and Forgings

783,402. The Brewer-Titchener Corporation, Cortland, N.Y. SN 176,152. Filed P.R. 9–3–63; Am. S.R. 11–18–64.

**DIG 'N HOLD**

For Anchors.
First use on or about July 12, 1963.

## Class 16 — Protective and Decorative Coatings

783,403. Conchemco, Incorporated, d.b.a. Seidlitz Paint & Varnish Co., Kansas City, Mo. SN 142,794. Filed P.R. 4–23–62; Am. S.R. 11–18–64.

**INSTANT COLOR**

For Tinting Units for Paint.
First use Apr. 3, 1962.

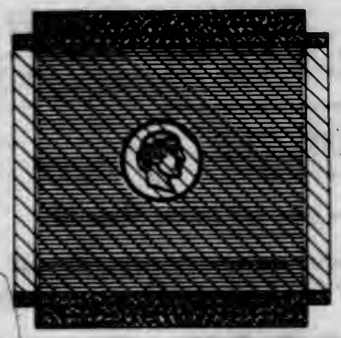
783,404. Rust-Oleum Corporation, Evanston, Ill. SN 176,320. Filed P.R. 9–4–63; Am. S.R. 11–5–64.

**ZINC-SELE**

For Corrosion-Resistant Surface Coating Compositions.
First use on or about Apr. 30, 1963.

## Class 17 — Tobacco Products

783,405. Cigarette Manufacturing Company "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. SN 187,086. Filed P.R. 2–20–64; Am. S.R. 9–8–64.



The mark "Delphi" stands for the locality in ancient Greece at which was the seat of the famous Delphi oracle. The drawing is lined for a light green color on the face thereof and for gold color on the edges thereof but color is not claimed as a feature of the mark.
For Cigarettes and Filters Sold With Cigarettes.
First use Oct. 10, 1957; in commerce Dec. 1, 1959.

783,406. La Manufacture de Tabacs et de Cigarettes Heints van Landewyck S.ar.l., Luxembourg, Luxembourg. SN 195,533. Filed P.R. 6–12–64; Am. S.R. 10–30–64.

**VAN LANDEWYCK**

Owner of Luxembourg Reg. No. 19,818, dated Dec. 9, 1963.
For Smoking Tobacco.

## Class 21 — Electrical Apparatus, Machines, and Supplies

783,407. Scovill Manufacturing Company, Racine, Wis. SN 182,220. Filed P.R. 12–2–63; Am. S.R. 11–4–64.

**CLINTON**

For Electric Motor Driven Vacuum Cleaners.
First use June 1, 1963.

## Class 22 — Games, Toys, and Sporting Goods

783,408. Gotham Educational Equipment Co., Inc., New Rochelle, N.Y. SN 185,771. Filed 1–31–64.

**ELLIPTIPOOL**

For Pool Tables.
First use Jan. 5, 1963.

783,409. Wilson Sporting Goods Co., River Grove, Ill. SN 192,864. Filed 5–6–64.

**AQUA-TITE**

For Golf Clubs, Tennis and Badminton Rackets.
First use Dec. 21, 1961.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

783,410. Thermal Hydraulics, Inc., Denver, Colo. SN 173,532. Filed P.R. 7–22–63; Am. S.R. 11–23–64.

**SILENT POWER**

For Thermally Controlled Actuators for Actuating Valves, Dampers, Shutters, Levers, Latches, Circuit Breakers, Alarms, and Other Mechanisms.
First use July 11, 1963.

## Class 25 — Locks and Safes

783,411. The Mosler Safe Co., Hamilton, Ohio. SN 203,418. Filed 10–6–64.

**TAPEGUARD**

For Safes.
First use Oct. 2, 1963.



## Class 26 — Measuring and Scientific Appliances

783,412. Arthur D. Finn, d.b.a. El Cerrito Optical Co., El Cerrito, Calif. SN 191,340. Filed P.R. 3–2–64; Am. S.R. 10–7–64.

Flip-Up

For Spectacle Frames.
First use Nov. 30, 1962.

## Class 32 — Furniture and Upholstery

783,413. Mattress Specialists Inc., New York, N.Y. SN 160,195. Filed P.R. 1–4–63; Am. S.R. 11–9–64.

*Multi-Tuft*

For Mattresses.
First use December 1961.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

783,414. Grant & Grant, Los Angeles, Calif. SN 168,188. Filed P.R. 5–6–63; Am. S.R. 11–9–64.

**GRANT**

For Piston Rings.
First use in the year 1934.

## Class 38 — Prints and Publications

783,415. McCrory Corporation, New York, N.Y. SN 141,861. Filed P.R. 4–9–62; Am. S.R. 11–12–64.

McCRORY - McLELLAN - GREEN *News*

For House Publication Published From Time to Time.
First use July 1961.

783,416. Seaton T. Preston, Jr., d.b.a. Preston Technical Abstracts Company, Evanston, Ill. SN 160,891. Filed P.R. 1–17–63; Am. S.R. 11–4–64.

**JOURNAL OF GAS CHROMATOGRAPHY**

For Periodical Magazine.
First use on or about Jan. 7, 1963.

783,417. Maran Specialties, Inc., Baltimore, Md. SN 178,936. Filed P.R. 10–14–63; Am. S.R. 11–10–64.

**ADULT-CROSSUPS**

For Newspaper or Magazine Column.
First use Sept. 20, 1963.

## Class 40 — Fancy Goods, Furnishings, and Notions

783,418. E-Z Buckle Inc., New York, N.Y. SN 179,408. Filed P.R. 10–21–63; Am. S.R. 9–30–64.

**E-Z SURE-LOK**

For Button Locking Devices Sold as Component Parts of Kits for Making Covered Garment Buttons.
First use Sept. 25, 1963.

## Class 44 — Dental, Medical, and Surgical Appliances

783,419. Engelhard Hanovia, Inc., Newark, N.J. SN 160,855. Filed P.R. 1–17–63; Am. S.R. 11–3–64.

**CLYMAN PAN-CULDOSCOPE**

For Gynecological Instrument.
First use May 16, 1962.

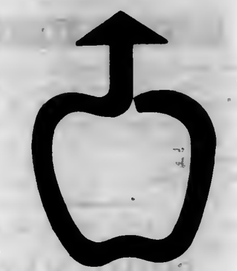
## Class 46 — Foods and Ingredients of Foods

783,420. Floyd Lombard, d.b.a. Floyd Lombard Co., Topeka, Kans. SN 169,557. Filed P.R. 5–28–63; Am. S.R. 11–12–64.

FLOYD *Lombard's*

For Salad Dressings.
First use Apr. 28, 1963.

783,421. Dwinnell Bros. Orchards, Inc., Oroville, Wash. SN 169,917. Filed P.R. 5–29–63; Am. S.R. 3–5–64.



For Fresh Apples.
First use Nov. 28, 1962.

783,422. J. Langrall & Bro., Inc., Baltimore, Md. SN 178,554. Filed P.R. 10–8–63; Am. S.R. 11–10–64.

**OLDE MARYLAND**

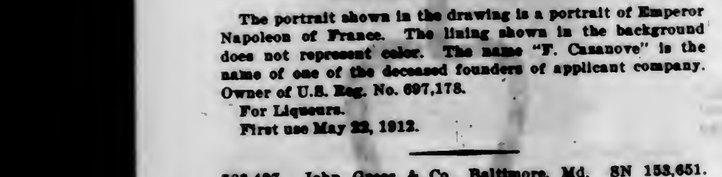
For Canned Vegetables.
First use Sept. 10, 1963.

783,423. Harts Mountain Products Corp., New York, N.Y. SN 182,794. Filed P.R. 12–11–63; Am. S.R. 8–27–64.

**COLOR TONE**

For Bird Food.
First use Mar. 14, 1960.

783,424. Godofredo Lorenzana, Tondo, Manila, Philippines. SN 189,415. Filed 3–18–64.




Owner of Philippine Reg. No. SR–275, dated Sept. 3, 1959.
For Bagoong (Salted Fish) and Patis (Liquified Anchovy).
First use Feb. 1, 1940; in commerce about 1940.

783,426. April Hill Frozen Foods, Inc., Coatsville, Pa. SN 191,014. Filed P.R. 4–14–64; Am. S.R. 11–10–64.

**U-BAKE**

For Frozen Bread Dough.
First use Oct. 14, 1963.

## Class 49 — Distilled Alcoholic Liquors

783,426. Les Successeurs de F. Casanove, d.b.a. Les Successeurs de Casanove, Bordeaux (Gironde), France. SN 147,379. Filed P.R. 6–21–62; Am. S.R. 11–20–63.




The portrait shown in the drawing is a portrait of Emperor Napoleon of France. The lining shown in the background does not represent color. The name "F. Casanove" is the name of one of the deceased founders of applicant company. Owner of U.S. Reg. No. 697,178.
For Liqueurs.
First use May 22, 1912.

783,427. John Gross & Co., Baltimore, Md. SN 153,651. Filed P.R. 9–21–63; Am. S.R. 10–4–63.

**PRIME VAT**

For Scotch Whisky.
First use Mar. 20, 1947.

783,428. John Gross & Co., Baltimore, Md. SN 161,611. Filed P.R. 1–29–63; Am. S.R. 1–10–64.

**BRISTOL VAT**

For Scotch Whisky.
First use May 20, 1951.

## Class 50 — Merchandise Not Otherwise Classified

783,429. Design Built Exhibits, Inc., Long Island City, N.Y. SN 159,215. Filed P.R. 12–17–62; Am. S.R. 11–20–64.

Design Built Exhibits, Inc.

For Exhibits for Industrial and Other Expositions and Couventions.
First use Apr. 19, 1962; 1947 as to the mark "Design Built."

## Class 51 — Cosmetics and Toilet Preparations

783,430. Rhodes Pharmacal Co., Inc., Chicago, Ill. SN 182,212. Filed P.R. 12–2–63; Am. S.R. 10–28–64.

*Nothing Like It*

For Preparation for Activating and Promoting Body of Hair.
First use Sept. 20, 1963.

783,431. Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. SN 193,968. Filed 5–21–64.



The mark consists of the configuration of the bottle and cap.
For Perfumes and Colognes.
First use in or about June 1962.



## Class 52 — Detergents and Soaps

783,432. Economics Laboratory, Inc., St. Paul, Minn. SN 188,217. Filed 3–9–64.

**WE CLEAN THE WINGS AND THE WHEELS OF THE WORLD**

For Cleaning Compositions for General Industrial Use.
First use May 16, 1961.

# Service Marks

## Class 101 — Advertising and Business

783,433. Mary Wright Connell, d.b.a. Junior All-American Scholarship Foundation, Weatherford, Tex. SN 149,365.

**JUNIOR ALL-AMERICAN**

Filed P.R. 7–19–62; Am. S.R. 7–23–64.
For Promoting the Sale of the Goods and Services of Others by Means of Contests in Which the Winner Is Awarded a Football Scholarship to the College of His Choice.
First use Aug. 31, 1959.

## Class 102 — Insurance and Financial

783,434. Nationwide General Insurance Company, Columbus, Ohio. SN 175,312. Filed P.R. 8–19–63; Am. S.R. 10–26–64.

**SAFE-T-RATE**

For Underwriting of Automobile Insurance.
First use Sept. 15, 1958.

783,435. Exemplair Service, Inc., Teaneck, N.J. SN 188,738. Filed P.R. 2–16–64; Am. S.R. 11–5–64.

**EXEMPLAR**

For Insurance Brokerage and Consulting Services.
First use during July 1963.

## Class 103 — Construction and Repair

783,436. Halliburton Company, Duncan, Okla. SN 176,301. Filed P.R. 9–4–63; Am. S.R. 10–7–64.

**CASING-KOTE**

For Casing-Kote Service, a Special Cementing Service for Preparing the External Surface of Casing or Pipe To Aid in Improving the Bonding of Cement Thereon.
First use on or about June 3, 1963.

783,437. Edw. Livingston & Sons, Inc., Kansas City, Mo. SN 183,425. Filed P.R. 12–23–63; Am. S.R. 11–12–64.

**THRIF-T**

For Car Wash Services by Use of Coin-Operated Equipment.
First use Nov. 4, 1963.

## Class 105 — Transportation and Storage

783,438. McLean Trucking Company, Winston-Salem, N.C. SN 150,706. Filed P.R. 8–7–62; Am. S.R. 10–8–64.

LOOK TO THE LEADER FOR FAST LTL SERVICE

For Transportation of Freight by Truck.
First use September 1960.

# TRADEMARK REGISTRATIONS RENEWED

25,550. BABCOCK & WILCOX. Cl. 34. 11–20–1894.
186,516. CELANESE. Cl. 39. 7–22–24.
189,319. PLATINUM-GINGER. Cl. 39. 9–16–24.
190,687. DESIGN OF WITCH ON A BROOM. Cl. 21. 10–21–24.
191,148. MANUEL AND DESIGN. Cl. 17. 11–4–24.
191,604. SINDANYO. Cl. 21. 11–11–24.
192,008. AVOMETER. Cl. 26. 11–25–24.
192,064. BARBASOL. Cl. 51. 11–25–24.
192,166. MYRURGIA. Cl. 51. 11–25–24.
192,384. REPRESENTATION OF HERCULES. Cl. 16. 12–2–24.
192,385. HERCULES. Cl. 16. 12–2–24.
192,857. AEROFIN. Cl. 34. 12–16–24.
193,535. BOVINOL. Cl. 6. 12–30–24.
194,083. GASCON. Cl. 15. 1–13–25.
195,735. HOOPERWOOD 2100. Cl. 42. 3–3–25.
196,144. ALWETHER. Cl. 15. 3–10–25.
196,846. NO. 214 AND DESIGN. Cl. 23. 3–31–25.
196,847. NO. 0214 AND DESIGN. Cl. 23. 3–31–25.
197,205. DE WITT'S. Cl. 18. 4–14–25.
197,482. REPRESENTATION OF RISING SUN AND MOUNTAIN SCENE (DESIGN). Cl. 18. 4–21–25.
197,872. KNIT-TEX AND DESIGN. Cl. 42. 4–28–25.
198,104. SKILSAW. Cl. 21. 5–5–25.
408,703. SNUG-EMS. Cl. 39. 8–29–44.
409,177. C. L. GUINAND. Cl. 27. 9–19–44.
409,330. BATIQUE. Cl. 51. 10–3–44.
409,729. PRO-CAPA. Cl. 51. 10–17–44.
409,896. TIKI. Cl. 51. 10–31–44.
410,033. TOWN & COUNTRY. Cl. 39. 11–7–44.
410,134. REDDYTORIAL. Cl. 38. 11–7–44.
410,185. SKYSCRAPER. Cl. 23. 11–14–44.
410,186. ORCHARD "SATISFACTION IN EVERY STITCH" AND DESIGN. Cl. 43. 11–14–44.
410,206. CE. Cl. 50. 11–14–44.
410,331. BAX. Cl. 18. 11–21–44.
410,334. SORETONE. Cl. 18. 11–21–44.
410,484. TITEFLEX. Cl. 21. 11–28–44.
410,509. ALLYMER. Cl. 1. 11–28–44.
410,911. PERMA-SCREEN. Cl. 13. 12–26–44.
411,050. S & S. Cl. 31. 1–2–45.
411,134. PAREZ. Cl. 1. 1–2–45.
411,615. AQUASTRONG. Cl. 37. 1–23–45.
411,865. PERIDO. Cl. 40. 2–6–45.
412,264. PLIOTHERM. Cl. 21. 2–27–45.
412,714. LINEAGE. Cl. 32. 3–20–45.

412,770. DESIGN OF ALLEGORICAL FIGURE OF PROGRESS. Cl. 40. 3–27–45.
412,959. ALCOLEC. Cl. 6. 4–3–45.
412,999. ORBITOL. Cl. 15. 4–3–45.
413,411. PHILCO. Cl. 31. 4–24–45.
413,412. PHILCO. Cl. 36. 4–24–45.
413,573. PLYOSEAL. Cl. 16. 5–1–45.
413,620. NU-COIL. Cl. 52. 5–1–45.

# TRADEMARK REGISTRATIONS CANCELED

## Section 8

*The following registrations issued Nov. 25, 1958*

670,057. BIERSCH. Cl. 1.
670,058. NYLON BY NATIONAL AND DESIGN. Cl. 1.
670,069. NC CLARSOL. Cl. 6.
670,071. SUPER CAT. Cl. 6.
670,073. HALON. Cl. 6.
670,077. UOP 4 AND DESIGN. Cl. 6.
670,081. TESCOL. Cl. 6.
670,088. FELAMON. Cl. 9.
670,089. MIRACLE RAIN. Cl. 10.
670,093. FLAKE PLY AND DESIGN. Cl. 12.
670,094. FLAKE PLI AND DESIGN. Cl. 12.
670,095. MURRAY V-BAK ETC. AND DESIGN. Cl. 12.
670,114. SI. Cl. 13.
670,122. GLOR-ISOL. Cl. 16.
670,124. LEPAGE'S. Cl. 16.
670,125. BARN-X ETC. AND DESIGN. Cl. 16.
670,132. THE LITTLE CIGAR ETC. AND DESIGN. Cl. 17.
670,136. PASITABS. Cl. 18.
670,140. COBEC. Cl. 18.
670,141. GUM MEL. Cl. 18.
670,151. ESVIT-M. Cl. 18.
670,152. HOGETS. Cl. 18.
670,153. IRONETS. Cl. 18.
670,154. IRONOL. Cl. 18.
670,158. GLASS SLIPPER. Cl. 19.
670,159. GAR-ROLL-CART. Cl. 19.
670,160. TRAVEL QUEEN. Cl. 19.
670,175. TERRIE TOY. Cl. 22.
670,179. AVENGER. Cl. 22.
670,181. PHOTOSTAT. Cl. 23.
670,182. CONDENSAVER. Cl. 23.
670,195. ROD ROTOR AND DESIGN. Cl. 23.
670,203. TRESA FILES. Cl. 23.
670,205. WORCESTER. Cl. 23.
670,211. VIBRO-PERFORATOR. Cl. 23.
670,213. ELECTRO JET. Cl. 26.
670,214. ELECTRO JET AND DESIGN. Cl. 26.
670,216. NAFLI. Cl. 26.
670,222. SOLARION. Cl. 27.
670,225. ALSAN SOPHISTICATE. Cl. 28.
670,233. PORTA. Cl. 31.
670,234. CUNOLIN. Cl. 31.
670,235. THRIFT-SOFT. Cl. 31.
670,239. DOVTAIL. Cl. 32.
670,243. KING'S GRANT BY DREXEL. Cl. 32.
670,253. MARIMBA. Cl. 36.
670,256. MASTERLITH. Cl. 37.
670,259. STRETCH-EZE. Cl. 39.
670,262. DJAKARTA. Cl. 39.
670,265. STILETTO. Cl. 39.
670,267. ROYAL GRACE AND DESIGN. Cl. 39.
670,268. LAMB'S TOUCH. Cl. 39.
670,269. EXCELSA AND DESIGN. Cl. 39.
670,274. MERMAID. Cl. 39.
670,280. WOOL-O-RAMA. Cl. 42.
670,284. LAUNDEREZE. Cl. 42.
670,285. UNDERWOOD & HALE QUALITRON AND DESIGN. Cl. 42.
670,296. VIBRA-LAXER. Cl. 44.
670,297. PRO-LASTIC. Cl. 44.
670,300. ANDONATO-PIZZA-CHIPS AND DESIGN. Cl. 46.
670,301. SOOTY. Cl. 46.
670,302. DIXIE KING. Cl. 46.
670,306. VITA AND DESIGN. Cl. 46.
670,309. DESIGN OF TWO MALES CARRYING A PEA. Cl. 46.
670,314. QK AND DESIGN OF WOMAN. Cl. 46.
670,321. ROUND UP. Cl. 46.
670,322. NANCY K. Cl. 46.
670,326. CURLY HEAD. Cl. 46.
670,327. V FOR I. Cl. 46.
670,334. DUDE RANCH. Cl. 46.
670,335. A MOUNTAIN OF QUALITY AND DESIGN. Cl. 46.
670,337. CHINESE MAID AND DESIGN. Cl. 46.
670,342. EHLERS G AND DESIGN. Cl. 46.
670,345. GRAND CANAL. Cl. 46.
670,346. COMET BY SUPREME AND DESIGN. Cl. 47.
670,349. CROWN & ANCHOR AND DESIGN. Cl. 48.
670,352. THE JUNIOR PAINTER. Cl. 50.
670,353. CHALKY. Cl. 50.
670,355. FROST FOAM. Cl. 50.
670,356. K-T AND DESIGN. Cl. 50.
670,361. JM AND DESIGN. Cl. 51.
670,363. KUR-UM. Cl. 51.
670,364. ZORTEL. Cl. 51.
670,371. KIDDY KELLY'S FORMULA 38. Cl. 51.
670,374. ARROW CHEMICAL CO. AND DESIGN. Cl. 52.
670,376. BLACK GOLD. Cl. 52.
670,386. SECURITY SIMPLIFIED. Cl. 101.
670,398. KEYSTONE AND DESIGN. Cl. 105.
670,402. $64,000 QUESTION AND DESIGN. Cl. 107.
670,405. SPORTACULAR. Cl. 107.
670,407. DISPENS-A-PAK. Cl. 2.
670,415. THE NERVOUS PATIENT. Cl. 38.
670,419. PATMAN'S PORTION PAK. Cl. 46.
670,421. OLD HAVANA. Cl. 49.

# TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

16,066. MOGUL. Cl. 35. 12–4–88. Revere Rubber Company. United States Rubber Company, New York, N.Y. Amended: In the certificate, line 10, in the heading, and in the statement, column 2, line 2, "belting and" is deleted.

124,219. TOP NOTCH AND DESIGN. Cl. 39. 1–28–19. The Beacon Falls Rubber Shoe Company. United States Rubber Company, New York, N.Y. Amended: In the certificate, line 11, in the heading, and in the statement, column 1, line 10, "spats," is deleted.

508,053. THE "DATED." Cl. 39. 3–29–49. Arnold, Constable & Co., Inc. Arnold Constable Corporation, New York, N.Y. Amended: In the statement, column 1, lines 6 through 36, the description of goods is deleted and *Men's apparel, consisting of undershirts, dress, negligee and/or work shirts; underwear and pajamas* is inserted.

680,701. MINIFON AND DESIGN. Cl. 21. 6–23–59. Protona Produktionsgeeellschaft Fuer Elektroakustische Geraete G.m.b.H., Hannover, Germany. Amended to appear:




681,137. PAP AND DESIGN. Cl. 26. 6–30–59. Pacific Automation Products, Inc., Glendale, Calif. Corrected: In the statement, column 1, line 1, "Automatic" should be deleted and *Automation* should be inserted.

684,016. MEASURAID. Cl. 26. 8–25–59. Andrew F. Schott, Green Lake, Wis. Amended: In the statement, column 1, lines 2 and 3 are deleted and *Rte. 1, Green Lake, Wis.* is inserted, in column 2, line 1, "said devices and" is deleted, lines 2 through 5 are deleted and in line 6, "liquid measure cups," is deleted.

685,617. TAHITIAN. Cl. 44. 9–22–59. Helene Curtis Industries, Inc., assignee of Central Stamping and Manufacturing Company, Chicago, Ill. Amended: In the statement, column 2, lines 1 and 2, "and hair vaporizers" is deleted.

769,716. AB-SORB-DRI. Cl. 1. 5–12–64. Michael Wood Products, Inc., Garfield, N.J. Corrected: In the statement, column 2, line 2, "hardware" should be deleted and *hardwood* should be inserted.

771,852. ACCUDATA. Cl. 26. 6–23–64. Minneapolis-Honeywell Regulator Company. Honeywell Inc., Minneapolis, Minn. Corrected: In the statement, column 2, lines 1 through 4, the description of goods should be deleted and *amplifiers* should be inserted.

777,598. WHIP 'N CHILL. Cl. 46. 9–22–64. General Foods Corporation, White Plains, N.Y. Corrected: In the heading, "Service Mark" should be deleted.

778,879. SUPER KWICK. Cl. 6. 10–13–64. Walker Manufacturing Company, Racine, Wis. Corrected: In the statement, column 2, lines 1 and 2, the description of goods is deleted and *Rust solvent of the penetrating oil type for nuts, bolts and other threaded fittings and for cleaning rust welds and other rusty metal surfaces* should be inserted.

779,130. BARREL DESIGN. Cl. 46. 10–27–64. James Candy Company, Atlantic City, N.J. Corrected: In the statement, column 2, after line 5, *The trademark consists of the configuration of the package used as a container for the goods.* should be inserted.

779,893. CLASS MATE. Cl. 37. 11–10–64. Westab Inc., by change of name from Western Tablet & Stationery Corporation, Dayton, Ohio. Corrected: In the statement, column 2, line 4, after "put" up should be inserted.

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## JANUARY 12, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)


A-B-C Film Service : *See*—
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A.B.C. Film Service, Inc., d.b.a. A-B-C Film Service and ABC Film Service, Philadelphia, Pa. 783,392, pub. 10–27–64. Cl. 106.

AGE Development and Sales Cor., The, Baltimore, Md. 783,095, pub. 10–27–64. Cl. 13.

AMP Inc., Harrisburg, Pa. 783,185, pub. 10–27–64. Cl. 23.

Abbott Laboratories, North Chicago, Ill. 783,252, pub. 10–27–64. Cl. 88.

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Alina Corp., Plainview, N.Y. 783,168, pub. 10–27–64. Multiple Class (Classes 26 and 23).

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American Chain & Cable Co., Inc., Bridgeport, Conn. 783,068–9, pub. 10–27–64. Cl. 7.

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American Defender Life Insurance Co., Fayetteville, N.C. 783,334, pub. 10–27–64. Cl. 102.

American Home Products Corp., New York, N.Y. 783,116, pub. 10–27–64. Cl. 18.

American Kleer-Vu Plastics, Inc., New York, N.Y. 783,044, pub. 10–27–64. Cl. 8.

American Lecithin Co., Cleveland, Ohio, and Elmhurst, N.Y., to American Lecithin Co., Atlanta, Ga. 412,959, ren. 1–12–65. Cl. 6.

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Arden Jewelry Mfg. Co., Providence, R.I. 783,073, pub. 10–27–64. Cl. 8.

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Arizona Agrochemical Corp., Phoenix, Ariz. 783,059, pub. 10–27–64. Cl. 6.

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Graphic Electronics Inc., La Salle, Ill. 783,340, pub. 10–27–64. Cl. 50.
Graver Tank & Mfg. Co., Inc., East Chicago, Ind. 670,182, canc. Cl. 23.
Gray Pharmaceutical Co. Inc., Dover, Del., from Gray Pharmaceutical Co., Inc., Newton, Mass. 670,415, canc. Cl. 38.
Grayson-Robinson Stores, Inc., New York, N.Y. 670,267, canc. Cl. 39.
Gro-Green Chemical Co., Inc., Shelbyville, Ky. 783,082, pub. 10–27–64. Cl. 10.
Gross, John, & Co., Baltimore, Md. 783,388, pub. 10–27–64. Cl. 49.
Gross, John, & Co., Baltimore, Md. 783,427–8. Cl. 49.
Guiterman Bros., Inc., to Gordon & Ferguson Co., St. Paul, Minn. 410,033, ren. 1–12–65. Cl. 39.
Halbrand, Inc., Willoughby, Ohio. 783,283, pub. 10–27–64. Cl. 44.
Hallberg Canning Corp., Sebastopol, Calif. 783,293, pub. 10–27–64. Cl. 46.
Halliburton Co., Duncan, Okla. 783,436. Cl. 103.
Hammermill Paper Co., Erie, Pa. 783,242, pub. 10–27–64. Cl. 37.
Hanovia, Engelhard, Inc., Newark, N.J. 783,419. Cl. 44.
Harts Mountain Products Corp., New York, N.Y. 783,423. Cl. 46.
Haslett, John A., d.b.a. John A. Haslett Co., Los Angeles, Calif. 783,201, pub. 10–27–64. Cl. 31.
Haslett, John A., Co. : *See*—
Haslett, John A.
Heald Machine Co., The, Worcester, Mass. 783,162, pub. 10–27–64. Cl. 23.
Heltsley, Arthur H., Madisonville, Ky. 783,259, pub. 10–27–64. Cl. 39.
Hercules Chemical Co., Inc., New York, N.Y. 783,364, pub. 10–27–64. Cl. 52.
Hercules Powder Co., Wilmington, Del. 192,384–5, ren. 1–12–65. Cl. 16.
Hercules Powder Co., Wilmington, Del. 783,076, pub. 10–27–64. Cl. 9.
Heritage House Products, Inc., Pittsburgh, Pa. 783,079–80, pub. 10–27–64. Cl. 10.
Hewitt, Phillip J., d.b.a. Specialty Items Co., Menlo Park, Calif. 783,359, pub. 10–27–64. Cl. 52.
Hexcel Products Inc., Berkeley, Calif. 783,342, pub. 10–27–64. Cl. 50.
Hickory Chair Co., Hickory, N.C. 783,203, pub. 10–27–64. Cl. 32.
Highland Pharmacy, Inc., San Bernardino, Calif. 783,349, pub. 10–27–64. Cl. 51.
Hill Mfg. Co., Atlanta, Ga. 783,062, pub. 10–27–64. Cl. 6.
Holiday Foods, Inc., d.b.a. Gift of the Holidays Club, Waterloo, Iowa. 783,374, pub. 10–27–64. Cl. 101.
Holsten-Brauerei, Altona, Germany. 783,335, pub. 10–27–64. Cl. 48.
Homemaker Rugs, Inc., New York, N.Y. 670,280, canc. Cl. 42.
Hooper, Wm. E., & Sons Co., to Mount Vernon Mills, Inc., Baltimore, Md. 195,735, ren. 1–12–65. Cl. 42.
Hoover Ball and Bearing Co., Saline, Mich. 783,179, pub. 10–27–64. Cl. 23.
Horton-Barbee Co., Abilene, Tex. 783,107, pub. 10–27–64. Cl. 16.
House of Worsted-Tex, Inc. : *See*—
Cohen, Goldman & Co. Inc.
Hoyu Co., Ltd. : *See*—
Kabushiki Kaisha Hoyu Shokai.
Huber, J. M., Corp., Borger, Tex. 783,036, pub. 10–27–64. Cl. 1.
Hudson Vitamin Products, Inc., New York, N.Y. 783,114, pub. 10–27–64. Cl. 18.
Huston Research Corp., Miami, Fla. 783,240, pub. 10–27–64. Cl. 37.
ITT Bell & Gossett Inc., Morton Grove, Ill. 783,215, pub. 10–27–64. Cl. 34.
Ideal Industries, Inc., Sycamore, Ill. 783,104–5, pub. 10–27–64. Cl. 15.
Ideal Toy Corp., Hollis, N.Y. 783,149, pub. 10–27–64. Cl. 22.
Illinois Tool Works, Inc., Chicago, Ill. 783,141, pub. 10–27–64. Cl. 21.
Imperial Adhesives Inc., Cincinnati, Ohio. 783,054, pub. 10–27–64. Cl. 5.
Imperial Casualty and Indemnity Co., Omaha, Nebr. 783,381, pub. 10–27–64. Cl. 102.
Imperial Imitation Dairy Foods, Inc., Claremont, Calif. 783,297, pub. 10–27–64. Cl. 46.
Independent Irish Society, Inc., Newark, N.J. 783,398, pub. 10–27–64. Cl. 200.
Industrial Textile Corp., Los Angeles, Calif. 783,199, pub. 10–27–64. Cl. 31.
Inductotherm Corp., Rancocas, N.J. 783,135, pub. 10–27–64. Cl. 21.
International Flavor Machines, Inc., St. Louis, Mo. 783,372, pub. 10–27–64. Cl. 101.
International Flavor Machines, Inc., St. Louis, Mo. 783,376, pub. 10–27–64. Cl. 101.
International Pipe and Ceramics Corp., Los Angeles, Calif. 783,090, pub. 10–27–64. Cl. 12.
International Society of Christian Endeavor, Columbus, Ohio. 410,206, ren. 1–12–65. Cl. 50.
Ipco Hospital Supply Corp., New York, N.Y. 783,280, pub. 10–27–64. Cl. 44.
Italian Village, Inc., The, Cincinnati, Ohio. 783,303, pub. 10–27–64. Cl. 46.
J & K Creative Productions, Inc., Dallas, Tex. 783,085, pub. 10–27–64. Multiple Class (Classes 11 and 23).
Jacobs, R. C. : *See*—
Maser-Cressman Cigar Co., The.
Jalma Corp., Rockville Centre, N.Y. 783,362, pub. 10–27–64. Cl. 52.
James Candy Co., Atlantic City, N.J. 779,130, cor. Cl. 46.
Jean-Pierre Creations de Paris Inc., Montreal, Quebec, Canada. 783,197, pub. 10–27–64. Cl. 29.
Jeunesse Cosmetics, Inc., Dallas, Tex. 670,364, canc. Cl. 51.
Johns, Garwood L., d.b.a. Garwood L. Johns Co., Glendale, Ariz. 670,326, canc. Cl. 46.
Johns, Garwood L., Co. : *See*—
Johns, Garwood L.
Johns-Manville Corp., New York, N.Y. 783,218, pub. 10–27–64. Cl. 35.
Johnson & Johnson, from Le Page's, Gloucester, Mass. 670,124, canc. Cl. 16.
Jules Racine & Co. : *See*—
Wallace, George N.
Junior All-American Scholarship Foundation : *See*—
Connell, Mary W.
Junior Touch, Inc., Shamokin, Pa. 783,266, pub. 10–27–64. Cl. 39.
Kabushiki Kaisha Hoyu Shokai, d.b.a. Hoyu Co., Ltd., Higashi-ku, Nagoya-shi, Japan. 783,348, pub. 10–27–64. Cl. 51.
Kahn, Stephen, d.b.a. Women & Wall Street, New York, N.Y. 783,251, pub. 10–27–64. Cl. 38.
Kalamazoo Spice Extraction Co., Kalamazoo, Mich. 783,333, pub. 10–27–64. Cl. 48.
Kaytee Imports, Inc., New York, N.Y. 670,356, canc. Cl. 50.
Keller, Paul, and Associates, Inc., Minneapolis, Minn. 783,253, pub. 10–27–64. Cl. 38.
Ken-Books, The : *See*—
Koch, Harry W.
Kerley Chemical Corp., Antioch, Calif. 783,078, pub. 10–27–64. Cl. 10.
Kickaway Garments, Inc., Chicago, Ill. 670,259, canc. Cl. 39.
Kiddy Kelly, Inc., New York, N.Y. 670,371, canc. Cl. 51.
Kilgore, Inc., Westerville, Ohio. 670,179, canc. Cl. 22.
Kinley, A. J., Co. : *See*—
Kinley, Allen J.
Kinley, Allen J., d.b.a. A. J. Kinley Co., Emeryville, Calif. 783,208, pub. 10–27–64. Cl. 34.
Koch, Harry W., d.b.a. The Ken-Books, San Francisco, Calif. 783,249, pub. 10–27–64. Cl. 38.
Konigsberg Electronics, Inc., South San Francisco, Calif. 783,136, pub. 10–27–64. Cl. 21.
Kresge, S. S., Co., Detroit, Mich. 670,253, canc. Cl. 36.
Koreska, W., Vienna, Austria. 783,400. Cl. 11.
Kress, S. H., and Co., New York, N.Y. 783,354, pub. 10–27–64. Cl. 51.
Kur-Um Laboratories, Columbia, Miss. 670,363, canc. Cl. 51.
Lad 'N Dad Slacks, Inc., Cumming, Ga. 783,267, pub. 10–27–64. Cl. 39.
La Manufacture De Tabacs et de Cigarettes Heintz Van Landewyck s.a.r.l., Luxembourg-City. 783,406. Cl. 17.
Lander Co. Inc., New York, N.Y. 409,896, ren. 1–12–65. Cl. 51.
Langrall, J., & Bro., Inc., Baltimore, Md. 783,422. Cl. 46.
Lantz, Walter, Productions, Inc., Hollywood, Calif. 783,148, pub. 10–27–64. Cl. 22.

Lasso Western Wear, Inc., San Antonio, Tex. 783,276, pub. 10–27–64. Cl. 39.
Lear, Inc., Santa Monica, Calif. 670,216, canc. Cl. 26.
Lectro-Stik Co., Chicago, Ill. 783,246, pub. 10–27–64. Cl. 38.
Lee & Oshita Co., Castroville, Calif. 670,322, canc. Cl. 46.
Le Fevre Products Co.: *See*—
Big D Chemical Co.
Lepoutre, Excelsa A., Fils & Cie, Angers, Maine-et-Loirex, France. 670,269, canc. Cl. 39.
Lerner, Stuart M., Inc., Melville, N.Y. 783,098, pub. 10–27–64. Cl. 13.
Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. 783,431. Cl. 51.
Liberty Travel Service Inc., New York, N.Y. 670,398, canc. Cl. 105.
Lilly, Eli, and Co., Indianapolis, Ind. 783,061, pub. 10–27–64. Cl. 6.
Line-It Corp., Wilmington, Del. 783,150, pub. 10–27–64. Cl. 22.
Livingston, Edw., & Sons., Inc., Kansas City, Mo. 783,437. Cl. 103.
Loeb, Ben S., Inc., New York, N.Y. 783,147, pub. 10–27–64. Cl. 21.
Lojen Apparatus Inc., Bemidji, Minn. 783,156, pub. 10–27–64. Cl. 22.
Lombard, Floyd, d.b.a. Floyd Lombard Co., Topeka, Kans. 783,420. Cl. 46.
Lorenzana, Godofredo, Tondo, Manila, Philippines. 783,424. Cl. 46.
Lucky Sales Co., Inc., d.b.a. Rainy Daze Sales Co., Los Angeles, Calif. 783,258, pub. 10–27–64. Cl. 39.
M.G. Inc., Houston, Tex. 783,301, pub. 10–27–64. Cl. 46.
MacAndrews Ltd.: *See*—
Bohemian Distribution Co.
Magnavox Co., The, Fort Wayne, Ind. 783,133, pub. 10–27–64. Cl. 21.
Magnus Chemical Co. Inc., Garwood, N.J. 783,182–4, pub. 10–27–64. Cl. 23.
Maidenform, Inc., New York, N.Y. 783,274, pub. 10–27–64. Cl. 39.
Manufacture Industrielle de Cycles & Motocycles (MICMO), Machecoul, Loire Atlantique, France. 783,123, pub. 10–27–64. Cl. 19.
Manufactured Products Inc., from Vera Products Co., Philadelphia, Pa. 783,207, pub. 10–27–64. Cl. 34.
Maran Specialties, Inc., Baltimore, Md. 783,417. Cl. 38.
Margien, Juliette, Inc., Ridgefield, N.J. 670,361, canc. Cl. 51.
Mario's Restaurant Frozen Specialties Co., Detroit, Mich. 783,295, pub. 10–27–64. Cl. 46.
Mars, Inc., Chicago, Ill. 783,291, pub. 7–7–64. Cl. 46.
Martin, R. T., d.b.a. R. T. Martin Co., Salt Lake City, Utah. 670,235, canc. Cl. 31.
Martin, R. T., Co.: *See*—
Martin, R. T.
Matsumoto, Sojin, Kamakura-shi, Kanagawa-ken, Japan. 783,210, pub. 10–27–64. Cl. 34.
Matsushita Seiko Co. Ltd., Joto-ku, Osaka, Japan. 783,134, pub. 10–27–64. Cl. 21.
Mattress Specialists Inc., New York, N.Y. 783,413. Cl. 32.
May-Stern Co., Pittsburgh, Pa., to Drexel Enterprises, Inc., High Point, N.C. 412,714, ren. 1–12–65. Cl. 32.
Mayo-Reese Co. Inc., New York, N.Y. 783,346, pub. 10–27–64. Cl. 51.
Maser-Cressman Cigar Co., The, Philadelphia, Pa., to R. C. Jacobs d.b.a. G. W. Van Slyke & Horton, Red Lion, Pa. 191,148, ren. 1–12–65. Cl. 17.
McCrory Corp., New York, N.Y. 783,415. Cl. 38.
McCubbin Hosiery, Inc., Oklahoma City, Okla. 783,272–3, pub. 10–27–64. Cl. 39.
McKesson & Robbins, Inc., New York, N.Y. 410,331, ren. 1–12–65. Cl. 18.
McKesson & Robbins, Inc., New York, N.Y. 410,334, ren. 1–12–65. Cl. 18.
McKesson & Robbins, Inc., New York, N.Y. 783,337, pub. 10–27–64. Cl. 49.
McLean Trucking Co., Winston-Salem, N.C. 783,438. Cl. 105.
McQuay, Inc., Minneapolis, Minn. 783,212, pub. 10–27–64. Cl. 34.
Melville Shoe Corp., New York, N.Y. 783,269, pub. 10–27–64. Cl. 39.
Melville Shoe Corp., New York, N.Y. 783,271, pub. 10–27–64. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 783,122, pub. 10–27–64. Cl. 18.
Merritt, B., Inc., Chicago, Ill. 783,131, pub. 10–27–64. Cl. 21.
Meyer, Georges, Corp.: *See*—
Scherrer, E. C., Inc.
Michel Electric Hand Saw Co., to Skil Corp., Chicago, Ill. 198,104, ren. 1–12–65. Cl. 21.
Midwest Tool & Die Co., Inc., Minneapolis, Minn. 783,217, pub. 10–27–64. Cl. 34.
Miller, Fred, Mfg. Co., Inc., San Francisco, Calif. 783,089, pub. 10–27–64. Cl. 12.
Min Sun Trading Co., Chicago, Ill. 670,337, canc. Cl. 46.
Minneapolis-Honeywell Regulator Co., Honeywell Inc., Minneapolis, Minn. 771,852, cor. Cl. 26.
Model Brassiere Corp., Cortland, N.Y. 670,274, canc. Cl. 39.
Molson's Brewery Ltd., d.b.a. Molson's Crown & Anchor Lager Brewery Ltd., Montreal, Quebec, Canada. 670,349, canc. Cl. 48.
Molson's Crown & Anchor Lager Brewery Ltd.: *See*—
Molson's Brewery Ltd.
Monadnock Paper Mills, Inc., Bennington, N.H. 783,227, pub. 10–27–64. Cl. 37.
Monahan, Thomas, Co., The, Arcola, Ill. 783,089, pub. 10–27–64. Cl. 1.
Monarch Pipe Co., Inc., Tulsa, Okla. 783,074, pub. 10–27–64. Cl. 8.
Monarch Wine Co., Inc., Brooklyn, N.Y. 783,327–8, pub. 10–27–64. Cl. 47.
Monnier Bros., Inc., Algonac, Mich. 783,166, pub. 10–27–64. Cl. 23.
Monroe Calculating Machine Co.: *See*—
Monroe International Corp.
Monroe International Corp., from Monroe Calculating Machine Co., Orange, N.J. 783,187, pub. 10–27–64. Cl. 26.
Montesino Cigar Co.: *See*—
Suarez, Anthony.
Morris, Sewall & Co., Inc., Houston, Tex. 670,376, canc. Cl. 52.
Morrison, Robert K., d.b.a. The Dovtail System, Jamestown, N.Y. 670,239, canc. Cl. 32.
Mosler Safe Co., The, Hamilton, Ohio. 783,411. Cl. 25.
Mount Vernon Mills, Inc.: *See*—
Hooper, Wm. E., & Sons Co.
Murray Tile Co., Inc., Cloverport, Ky. 670,095, canc. Cl. 12.
Music Makers, Inc., New York, N.Y. 783,395, pub. 10–27–64. Cl. 107.
Musico, Sebastian J., d.b.a. VB Laboratories, Jersey City, N.J. 670,141, canc. Cl. 18.
Myrurgia, S.A., Barcelona, Spain. 192,166, ren. 1–12–65. Cl. 51.
National Dairy Products Corp., Chicago, Ill. 783,311, pub. 10–27–64. Cl. 46.
National Plastic Products Co., The, Odenton, Md. 670,058, canc. Cl. 1.
National Polychemicals, Inc., Wilmington, Mass. 783,110, pub. 10–27–64. Cl. 16.
National Queen's Kitchens, Inc., d.b.a. The National Queen's Kitchen, Inc., Mount Prospect, Ill. 670,314, canc. Cl. 46.
National Queen's Kitchen, Inc., The: *See*—
National Queen's Kitchens, Inc.
Nationwide General Insurance Co., Columbus, Ohio. 783,434. Cl. 102.
Nease Chemical Co., Inc., State College, Pa. 783,057, pub. 10–27–64. Cl. 6.
Neisner Brothers, Inc., Rochester, N.Y. 783,262–3, pub. 10–27–64. Cl. 39.
Neisner Brothers, Inc., Rochester, N.Y. 783,360, pub. 10–27–64. Cl. 52.
Nekoosa-Edwards Paper Co., Port Edwards, Wis. 783,230, pub. 10–27–64. Cl. 37.
Nesbitt, John J., Inc., Philadelphia, Pa. 783,214, pub. 10–27–64. Cl. 34.
New Bedford Cordage Co., New Bedford, Mass. 783,070, pub. 10–27–64. Cl. 7.
New England Business Service, Inc., Townsend, Mass. 783,236, pub. 10–27–64. Cl. 37.
Newark District Ford Dealers Advertising Association, Inc., Paterson, N.J. 783,396, pub. 10–27–64. Cl. 107.
Newton Pharmacal Co. Inc., Brooklyn, N.Y. 670,151, canc. Cl. 18.
Norcross, Inc., New York, N.Y. 783,247, pub. 10–27–64. Cl. 38.
Norris Inc., Atlanta, Ga. 783,289, pub. 10–27–64. Cl. 46.
North Star Reinsurance Corp., New York, N.Y. 783,382, pub. 10–27–64. Cl. 102.
Northland Chemical Corp., Northfield, Ill. 783,357, pub. 10–27–64. Cl. 52.
Northwood Construction Co., d.b.a. Waist High Fireplaces, Blue Springs, Mo. 783,209, pub. 10–27–64. Cl. 34.
Nutrilite Products, Inc., Buena Park, Calif. 783,350–1, pub. 10–27–64. Cl. 51.
Nyaco Laboratories, Inc., Long Island City, N.Y. 783,119, pub. 10–27–64. Cl. 18.
Oneida Ltd., Oneida, N.Y. 783,158, pub. 10–27–64. Cl. 23.
Orchard Yarn and Thread Co., New York, N.Y. 410,186, ren. 1–12–65. Cl. 43.
Orrell's Food Products, Inc., Oakland, Calif. 783,287, pub. 10–27–64. Multiple Class (Classes 45 and 46).
Oscar Enterprises, Inc., Berkeley, Calif. 783,160, pub. 10–27–64. Multiple Class (Classes 23, 34, and 46).
Ottenheimer Publishers, Inc., Owings Mills, Md. 783,229, pub. 10–27–64. Cl. 37.
Outboard Marine Corp., Waukegan, Ill. 783,163, pub. 10–27–64. Cl. 23.
Pacific Air Lines, San Mateo County, Calif. 783,391, pub. 10–27–64. Cl. 105.
Pacific Automation Products, Inc., Glendale, Calif. 681,137, cor. Cl. 26.
Pacific Match Co.: *See*—
Transamerican Match Corp.
Palm Beach Co., Portland, Maine. 670,262, canc. Cl. 39.
Pan American World Airways, Inc., New York, N.Y. 783,387, pub. 10–27–64. Cl. 105.
Park Electrochemical Corp., Flushing, N.Y. 783,037, pub. 10–27–64. Cl. 1.
Parke, Davis & Co., Detroit, Mich. 670,140, canc. Cl. 18.
Parkinson, Crosby & Works, Inc., Seattle, Wash. 783,370, pub. 10–27–64. Cl. 100.
Patman, Urban N., Inc., Los Angeles, Calif. 670,419, canc. Cl. 46.
Pennsylvania Broadcasting Co., Philadelphia, Pa. 670,405, canc. Cl. 107.
Petroleum Tool Research, Inc., Fort Worth, Tex. 670,211, canc. Cl. 23.
Pfizer, Chas., & Co., Inc.: *See*—
Barbasol Co., The.
Coty, Inc.
Philco Corp., to Philco Corp., Philadelphia, Pa. 413,411–12, ren. 1–12–65. Cl. 31.
Phonomatic, Inc., Los Angeles, Calif. 783,139, pub. 10–27–64. Cl. 21.
Photostat Corp., Providence, R.I. 670,181, canc. Cl. 23.
Pico Safe Stairs Co., Hyattsville, Md. 783,367, pub. 10–27–64. Cl. 100.





Pillsbury Co., The, Minneapolis, Minn. 783,368, pub. 10–27–64. Cl. 100.
Pittsburgh Plate Glass Co., to Pittsburgh Plate Glass Co., Pittsburgh, Pa. 410,509, ren. 1–12–65. Cl. 1.
Polymer Corp. Ltd., Sarnia, Ontario, Canada. 783,031–2, pub. 10–27–64. Cl. 1.
Porta Water Softener Co., Inc., Joliet, Ill. 670,233, canc. Cl. 31.
Postacular, Inc., from Triangle Outdoor Advertising Co., Chicago, Ill. 783,366, pub. 10–27–64. Cl. 100.
Preston, Seaton T., Jr., d.b.a. Preston Technical Abstracts Co., Evanston, Ill. 783,416. Cl. 38.
Preston Technical Abstracts Co.: *See*—
Preston, Seaton T., Jr.
Pro-Capa Laboratories: *See*—
Trapani, Michael.
Procter & Gamble Co., The, Cincinnati, Ohio. 783,352, pub. 10–27–64. Cl. 51.
Procter & Gamble Co., The, Cincinnati, Ohio. 783,355, pub. 10–27–64. Cl. 51.
Protona Produktionsgesellschaft Fuer Elektroakustische Geraete G.m.b.H., Hannover, Germany. 680,701. Am. 7(d.)
Quality Bakers of America Cooperative Inc., New York, N.Y. 783,290, pub. 10–27–64. Cl. 46.
Quality Courts Motels, Inc., Daytona Beach, Fla. 783,371, pub. 10–27–64. Cl. 100.
Radiator Specialty Co., Charlotte, N.C. 783,341, pub. 10–27–64. Cl. 50.
Rainy Daze Sales Co.: *See*—
Lucky Sales Co., Inc.
Ramco Enterprises, Inc., New York, N.Y. 783,277, pub. 10–27–64. Cl. 42.
Red Barn Chemicals, Inc., Shreveport, La. 783,399. Cl. 10.
Reddy Kilowatt, Inc.: *See*—
Collins, Ashton B.
Redwood National Bank, San Rafael, Calif. 783,386, pub. 10–27–64. Cl. 102.
Regal Knitwear Co., Inc., New York, N.Y. 783,265, pub. 10–27–64. Cl. 39.
Regina Cigar Co., Inc., Philadelphia, Pa. 783,112, pub. 10–27–64. Cl. 17.
Republic Foil, Inc., Danbury, Conn. 783,103, pub. 10–27–64. Cl. 14.
Research Products Corp., Madison, Wis. 783,200, pub. 10–27–64. Cl. 31.
Revere Rubber Co., United States Rubber Co., New York, N.Y. 16,066. Am. 7(d). Cl. 35.
Revolvator Co., North Bergen, N.J. 410,185, ren. 1–12–65. Cl. 23.
Rex Caps: *See*—
Edelmann, E., & Co.
Reynolds, George F., d.b.a. Dispens-A-Pak and Reynolds Engineering Co., Yonkers, N.Y. 670,407, canc. Cl. 2.
Rhodes Pharmacal Co., Inc., Chicago, Ill. 783,430. Cl. 51.
Riggs Sportswear, Inc., New York, N.Y. 670,268, canc. Cl. 39.
Roth, Otto, & Co., Inc., New York, N.Y. 783,300, pub. 10–27–64. Cl. 46.
Royalon, Inc., Sebring, Ohio. 783,040, pub. 10–27–64. Cl. 2.
Ruesch & Cie, A.G., Burg, Aargau, Switzerland. 783,111, pub. 10–27–64. Cl. 17.
Rust-Oleum Corp., Evanston, Ill. 783,404. Cl. 16.
Safety Industries, Inc., New Haven, Conn. 670,114, canc. Cl. 13.
Safeway Stores, Inc., Oakland, Calif. 783,321, pub. 10–27–64. Cl. 46.
Sage Laboratories, Inc., Natick, Mass. 783,145, pub. 10–27–64. Cl. 21.
Savage Arms Corp., Chicopee Falls, Mass. 670,205, canc. Cl. 22.
Savoy Rubber Co., from East Bay Tire Co., San Francisco, Calif. 783,219, pub. 10–27–64. Cl. 35.
Scantlin Electronics, Inc., Los Angeles, Calif. 783,140, pub. 10–27–64. Cl. 21.
Schedrich, H. J., Co., Louisville, Ky. 783,204–5, pub. 10–27–64. Cl. 32.
Scherrer, E. C., Inc., to Georges Meyer Corp., New York, N.Y. 411,865, ren. 1–12–65. Cl. 40.
Schleicher, Carl, & Schuell Co., Inc., Keene, N.H. 411,050, ren. 1–12–65. Cl. 31.
Schoellkopf, Buddy, Products Inc., Dallas, Tex. 783,045, pub. 10–6–64. Multiple Class (Classes 8, 9, 22, and 39).
Schott, Andrew F., Green Lake, Wis. 684,016. Am. 7(d). Cl. 26.
Schulte Marine Plastics: *See*—
Schulte, Robert M.
Schulte, Robert M., d.b.a. Schulte Marine Plastics, Portland, Oreg. 670,158, canc. Cl. 19.
Science Research Associates, Inc., Chicago, Ill. 783,244, pub. 10–27–64. Cl. 38.
Scot Lad Foods, Inc., Chicago, Ill. 783,307, pub. 10–27–64. Cl. 46.
Scott Paper Co., Philadelphia, Pa. 783,234, pub. 10–27–64. Cl. 37.
Scovill Mfg. Co., Racine, Wis. 783,407. Cl. 21.
Seamless Rubber Co., The, New Haven, Conn. 670,297, canc. Cl. 44.
Seidlits Paint & Varnish Co.: *See*—
Conchemco, Inc.
Selmer, H. & A., Inc., Elkhart, Ind. 783,221, pub. 10–27–64. Cl. 36.
Sexton, John, & Co., Chicago, Ill. 783,241, pub. 10–27–64. Cl. 37.
Seymour Mfg. Co., The, Seymour, Conn. 670,069, canc. Cl. 6.
Sifo Co., St. Paul, Minn. 670,353, canc. Cl. 50.
Sigma Instruments, Inc., South Braintree, Mass. 783,143, pub. 10–27–64. Cl. 21.
Simonds Saw and Steel Co., Fitchburg, Mass. 196,846–7, ren. 1–12–65. Cl. 28.
Simplified Tax Records, Inc., New York, N.Y. 670,386, canc. Cl. 101.
Sinclair Refining Co., New York, N.Y. 194,083, ren. 1–12–65. Cl. 15.
Sinclair Refining Co., New York, N.Y. 196,144, ren. 1–12–65. Cl. 15.
Sinclair Refining Co., New York, N.Y. 412,999, ren. 1–12–65. Cl. 15.
Skasol Corp., Webster Groves, Mo. 413,620, ren. 1–12–65. Cl. 52.
Skil Corp.: *See*—
Michel Electric Hand Saw Co.
Slumberest Co., Georgetown, Ky. 783,146, pub. 10–27–64. Cl. 21.
Smith, Verle C., Tulsa, Okla. 783,049, pub. 10–27–64. Cl. 4.
Socony Mobil Oil Co., Inc., New York, N.Y. 783,084, pub. 10–27–64. Cl. 10.
Solaronics, Inc., Richmond, Va. 783,211, pub. 10–27–64. Cl. 34.
Sooty Concessions Ltd., London, England. 670,301, canc. Cl. 46.
Southern States Cooperative Inc., Richmond, Va. 783,302, pub. 10–27–64. Cl. 46.
Southwestern Engineering Co., Los Angeles, Calif. 783,161, pub. 10–27–64. Cl. 23.
Specialty Items Co.: *See*—
Hewitt, Philip J.
Spellings, Lucian L., d.b.a. Tom-Cat Products Co., Jonesboro, Ark. 670,071, canc. Cl. 6.
Sperry Rand Corp., Wilmington, Del. 783,173, pub. 10–27–64. Cl. 23.
Spray Engineering Co., Burlington, Mass. 783,099, pub. 10–27–64. Cl. 13.
Standard Oil Co., Whiting, Ind., to The American Oil Co., Chicago, Ill. 193,535, ren. 1–12–65. Cl. 6.
Standard Oil Co., The, Cleveland, Ohio. 783,091, pub. 10–27–64. Cl. 12.
State Automobile & Casualty Underwriters, The, Des Moines, Iowa. 783,378, pub. 10–27–64. Cl. 102.
Sternco Industries, Inc., Allendale, N.J. 783,028, pub. 10–27–64. Cl. 1.
Studio Associates International, Inc., New York, N.Y. 783,375, pub. 10–27–64. Cl. 101.
Studio Girl-Hollywood, Inc., Chicago, Ill. 783,356, pub. 10–27–64. Cl. 51.
Suarez, Anthony, d.b.a. Montesino Cigar Co., Tampa, Fla. 783,118, pub. 10–27–64. Cl. 17.
Sun Garden Packing Co., San Jose, Calif. 670,345, canc. Cl. 46.
Sunbeam-Talbot Ltd., Ryton-on-Dunsmore, Conventry, England. 783,125, pub. 10–27–64. Cl. 19.
Suntreat Growers & Shippers, Inc., Lindsay, Calif. 783,325, pub. 10–27–64. Cl. 46.
Super Food Services, Inc., Chicago, Ill. 783,308, pub. 10–27–64. Cl. 46.
Supreme Wine Co., Inc., Boston, Mass. 670,346, canc. Cl. 47.
Surgical Appliance Industries, Inc., d.b.a. Convalescent Products Co., Ripley, Ohio. 783,281, pub. 10–27–64. Cl. 44.
Swack Fertiliser Co., Inc., Du Bois, Pa. 670,088, canc. Cl. 9.
Tafon Distributors, Inc., Los Angeles, Calif. 670,136, canc. Cl. 18.
Tenneco Corp., Houston, Tex. 783,055–6, pub. 10–27–64. Cl. 6.
Tennessee Valley Authority, Wilson Dam, Ala. 783,365, pub. 10–27–64. Cl. 100.
Tension Envelope Corp., Kansas City, Mo. 783,231, pub. 10–27–64. Cl. 37.
Tensor Corp., Brooklyn, N.Y. 783,138, pub. 10–27–64. Cl. 21.
Thermal Hydraulics, Inc., Denver, Colo. 783,410. Cl. 23.
Thermech Engineering Corp., Anaheim, Calif. 783,027, pub. 10–27–64. Cl. 1.
Timberline Equipment Co., Dallas, Tex. 783,169–70, pub. 10–27–64. Cl. 23.
Titeflex, Inc., Newark, N.J., to Atlas Corp., New York, N.Y. 410,484, ren. 1–12–65. Cl. 21.
Tobin, Sporn & Glaser, Inc., New York, N.Y. 412,770, ren. 1–12–65. Cl. 40.
Tom-Cat Products Co.: *See*—
Spellings, Lucian L.
Transamerican Match Corp., Englewood Cliffs, N.J., from Pacific Match Co., Tacoma, Wash. 783,077, pub. 10–27–64. Cl. 9.
Trans-Canada Air Lines, Montreal, Quebec, Canada. 783,390, pub. 10–27–64. Cl. 105.
Trapani, Michael, d.b.a. Pro-Capa Laboratories, Brooklyn, N.Y. 409,729, ren. 1–12–65. Cl. 51.
Trautmann Bros. Co. of Laredo, Texas, Inc., Laredo, Tex. 783,292, pub. 10–27–64. Cl. 46.
Travel Queen Coaches, Norco, Calif. 670,160, canc. Cl. 19.
Tress File Co.: *See*—
Goodhew Aviation Co. Ltd.
Triangle Outdoor Advertising Co.: *See*—
Postacular, Inc.
Trina, Inc., Fall River, Mass. 783,264, pub. 10–27–64. Cl. 39.
Triumph Werke Nurnberg Aktiengesellschaft, Nurnberg, Germany. 783,176–7, pub. 10–27–64. Cl. 23.
Tulite Auto Bulb Co., to Tung-Sol Electric Inc., Newark, N.J. 190,687, ren. 1–12–65. Cl. 21.
Tung-Sol Electric Inc.: *See*—
Tulite Auto Bulb Co.
Turners Asbestos Cement Co., Ltd.: *See*—
Asbestos & Electrical Fittings Co. Ltd., The.
Underwood & Hale, Inc., Lynwood, Calif. 670,285, canc. Cl. 42.
Uni-glide Corp., The, Northridge, Calif. 783,282, pub. 10–27–64. Cl. 44.
Union Steel Products Co., Albion, Mich. 783,344, pub. 10–27–64. Cl. 50.

United Biscuit Co. of America, Melrose Park, Ill. 783,309, pub. 10–27–64. Cl. 46.
United-Carr Fastener Corp.: *See*—
United-Carr Inc.
United-Carr Inc., from United-Carr Fastener Corp., Boston, Mass. 783,339, pub. 10–27–64. Cl. 50.
United States Box Co., Brooklyn, N.Y. 783,043, pub. 10–27–64. Cl. 2.
United States Gypsum Co., Chicago, Ill. 783,088, pub. 10–27–64. Cl. 12.
United States Pumice Supply Co., Los Angeles, Calif. 783,051, pub. 10–27–64. Cl. 4.
United States Rubber Co.: *See*—
Beacon Falls Rubber Shoe Co.
Revere Rubber Co.
United States Rubber Co., New York, N.Y. 783,033, pub. 10–27–64. Cl. 1.
United States Rubber Co., New York, N.Y. 783,058, pub. 10–27–64. Cl. 6.
Unitime Corp., New York, N.Y. 783,190, pub. 10–27–64. Cl. 27.
Universal Oil Products Co., Des Plaines, Ill. 670,077, canc. Cl. 6.
Van Slyke, G. W., & Horton: *See*—
Maser-Crossman Cigar Co., The.
Vanadium-Alloys Steel Co., Latrobe, Pa. 783,294, pub. 10–27–64. Cl. 106.
VB Laboratories: *See*—
Musico, Sebastian J.
Vera Products Co.: *See*—
Manufactured Products Inc.
Vibra Laxer Corp., Sherman Oaks, Calif. 670,296, canc. Cl. 44.
Visual Mountings Ltd., Island Park, N.Y. 783,194, pub. 10–27–64. Cl. 28.
Vita Food Products, Inc., New York, N.Y., from Vita Food Products, Inc., Chicago, Ill. 670,306, canc. Cl. 46.
Vit-A Way, Inc., Fort Worth, Tex. 783,115, pub. 10–27–64. Cl. 18.
Wade, Wenger Servicemaster Co., Chicago, Ill. 783,258, pub. 10–27–64. Cl. 52.
Waist High Fireplaces: *See*—
Northwood Construction Co.
Walker Bros. Ltd., Burnaby, British Columbia, Canada. 670,122, canc. Cl. 16.
Walker Mfg. Co., Racine, Wis. 778,379, cor. Cl. 6.
Wallace, George N., d.b.a. Jules Racine & Co., to Jules Racine & Co., Inc., New York, N.Y. 400,177, ren. 1–12–65. Cl. 27.
Want Ad Hobbyist, Inc., The, Pine Bluff, Ark. 783,250, pub. 10–27–64. Cl. 38.
Wear-Right Gloves, Inc.: *See*—
Wimelbacher & Rice.
Wellington Sears Co., New York, N.Y. 783,279, pub. 10–27–64. Cl. 42.
Wembley, Inc., New Orleans, La. 783,268, pub. 10–27–64. Cl. 39.
Wesco Merchandise Co., Los Angeles, Calif. 783,223, pub. 10–27–64. Cl. 37.
West End Brewing Co. of Utica, N.Y., The, Utica, N.Y. 783,332, pub. 10–27–64. Cl. 45.
Westab Inc., from Western Tablet & Stationery Corp., Dayton, Ohio. 779,893, cor. Cl. 37.
Westab Inc., Dayton, Ohio. 783,238, pub. 10–27–64. Cl. 37.
Western Tablet & Stationery Corp.: *See*—
Westab Inc.
Westway Enterprises, Inc., Los Angeles, Calif. 783,127, pub. 10–27–64. Cl. 19.
Weyerhaeuser Co.: *See*—
Crocker, Burbank & Co. Ass'n.
Whitin Machine Works, Whitinsville, Mass. 670,256, canc. Cl. 37.
Whopper Stopper, Inc., Sherman, Tex. 783,155, pub. 10–27–64. Cl. 22.
Wica Chemicals, Inc., Charlotte, N.C. 783,064, pub. 10–27–64. Cl. 6.
Wilsey-Bennett Co., San Francisco, Calif. 783,314–15, pub. 10–27–64. Cl. 46.
Wilson Jones Co., Chicago, Ill. 783,226, pub. 10–27–64. Cl. 37.
Wilson Sporting Goods Co., River Grove, Ill. 783,157, pub. 10–27–64. Cl. 22.
Wilson Sporting Goods Co., River Grove, Ill. 783,409. Cl. 22.
Wimelbacher & Rice, to Wear-Right Gloves, Inc., New York, N.Y. 189,319, ren. 1–12–65. Cl. 39.
Wimelbacher & Rice, to Wear-Right Gloves, Inc., New York, N.Y. 408,703, ren. 1–12–65. Cl. 39.
Wise, J., and Sons Co., Newark, N.J. 783,180, pub. 10–27–64. Cl. 23.
Wolf & Dessauer Co., Fort Wayne, Ind. 783,285, pub. 10–27–64. Cl. 44.
Women & Wall Street: *See*—
Kahn, Stephen.
Wood, Michael, Products, Inc., Garfield, N.J. 769,716, cor. Cl. 1.
Woodcrest Service Committee, The, Rifton, N.Y. 783,248, pub. 10–27–64. Cl. 38.
Wretched Mess Enterprises: *See*—
Bascom, David F.
Wundtextil G.m.b.H., Nordhorn, Niedersachsen, Germany. 783,284, pub. 10–27–64. Cl. 44.
Young's Market Co., Los Angeles, Calif. 783,317, pub. 10–27–64. Cl. 46.
Zalma Corp. of America, New York, N.Y. 783,075, pub. 10–27–64. Cl. 8.
Zollner & Co., Kiel-Gaarden, Germany. 783,129, pub. 10–27–64. Cl. 21.
Zoo-Piks, North Hollywood, Calif. 783,343, pub. 10–27–64. Cl. 50.

U.S. GOVERNMENT PRINTING OFFICE:1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
January 19, 1965 Volume 810 Number 3

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of December 1964

| | |
|---|---|
| Examiner affirmed | 308 |
| Examiner affirmed in part | 49 |
| Examiner reversed | 77 |
| Total | 434 |

### Disclaimers

2,813,260.—*Martin Kaplan*, Collingswood, N.J. MAGNETIC DEVICE. Patent dated Nov. 12, 1957. Disclaimer filed Oct. 13, 1964, by the assignee, *Radio Corporation of America*.

Hereby enters this disclaimer to claims 1, 5, 6 and 7 of said patent.

2,934,652.—*Richard L. Caldwell*, Dallas, Tex., *Gustave L. Hoehn, Jr.*, Palo Alto, Calif., and *Tom W. Bonner*, Houston, Tex. SELECTED SCATTERED GAMMA-RAY DENSITY LOGGING. Patent dated Apr. 26, 1960. Disclaimer filed Oct. 16, 1964, by the assignee, *Socony Mobil Oil Company, Inc.*

Hereby enters this disclaimer to claims 1, 2, 3, 4, 5, 6 and 8 of said patent.

3,134,753.—*Jack Kwiatek*, Schenectady, N.Y. OXIDATION OF ARYLOXY-SUBSTITUTED PHENOLS. Patent dated May 26, 1964. Disclaimer filed Oct. 9, 1964, by the assignee, *General Electric Company*.

Hereby enters this disclaimer to claims 1 to 19 inclusive, of said patent.

### Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,870,071, W. Juda and M. C. Cretella, Electrolytic production of titanium tetrahalides, decided Aug. 19, 1964, Interference No. 92,286, claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 12.

Patent No. 2,908,562, E. H. Dobratz, Activation of aluminum, decided Sept. 15, 1964, Interference No. 91,615, claims 1, 2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 16, 17 and 19.

Patent No. 2,957,990, G. R. Newton and J. E. Skinner, Well formation density logging, decided Sept. 16, 1964, Interference No. 92,411, claims 1 and 2.

Patent No. 2,980,707, P. H. Williams and W. J. Sullivan, 2, 3, 4, 5-Diepoxy compounds, decided Nov. 18, 1964, Interference No. 93,218, claims 4 and 7.

Patent No. 2,972,570, J. W. Haas and W. B. England, Thin film ceramic capacitor and method of making, decided Nov. 18, 1964, Interference No. 92,780, claims 1, 3, 6, 7, 8, 9 and 10.

Patent No. 2,985,356, N. Beecher, Pumping device, decided Dec. 1, 1964, Interference No. 93,406, claims 1 and 5.

Patent No. 2,990,296, R. M. Hoke, Chemical plating of metal-boron alloys, decided Nov. 24, 1964, Interference No. 93,469, claims 1, 2, 3, 4, 5, 7 and 8.

Patent No. 3,000,866, R. E. Tarney, Copolymers of ethylene, decided July 16, 1964, Interference No. 93,019, claims 1, 2 and 3.

Patent No. 3,006,122, A. Weishaus, Heat sealing apparatus and method, decided Dec. 1, 1964, Interference No. 94,272, claim 4.

Patent No. 3,055,632, D. Scaramucci, Lubricant recycling system for valve operating mechanism, decided Dec. 4, 1964, Interference No. 93,648, claim 4.

Patent No. 3,101,404, J. M. Hill, Welding method employing ultrasonic energy, decided Dec. 1, 1964, Interference No. 94,299, claims 1, 2, 3, 4, 5, 6 and 7.

### Notice of Automatic Ordering of Cited References

In the OFFICIAL GAZETTE of December 1, 1964, the Patent Office announced a new service permitting applicants to receive copies of cited references automatically with the cost of the references being charged to applicant's deposit account. This new service was instituted on January 4, 1965, for those applicants who requested this service prior to this date.

Owing to delays in typing and mailing Office actions, some actions mailed after January 4, 1965, for which authorization to send cited references has been received will not have references supplied automatically. All Office actions for which references are being supplied automatically will bear the applicant's deposit account number below the address block on the letterhead. Office actions in which the applicant's deposit account number does not appear below the address block on the letterhead are actions in cases where either the automatic mailing of cited references has not been authorized, or where the action was prepared before processing for this new service was initiated.

C. A. KALK,
*Director of Administration.*

Dec. 18, 1964.

### New Applications Received During November 1964

| | |
|---|---|
| Patents | 6,975 |
| Designs | 436 |
| Plant Patents | 8 |
| Reissues | 9 |
| Total | 7,428 |

### Issue—January 19, 1965

| | | | |
|---|---|---|---|
| Patents | 1003 | No. 3,165,754 to No. | 3,166,756, incl. |
| Designs | 57 | No. 200,089 to No. | 200,145, incl. |
| Plant Patents | 2 | No. 2,466 to No. | 2,467, incl. |
| Reissues | 4 | No. 25,711 to No. | 25,714, incl. |
| Total | 1066 | | |

## United States Adopted Names

List No. 9

*July 1, 1964–October 31, 1964*

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

**aletamine hydrochloride**: sympathomimetic amine
**benzisadamine hydrochloride**: analgesic; anti-inflammatory; antipyretic
**cactinomycin**: antineoplastic agent
**carbamazepine**: anticonvulsant
**cephaloglycin**: antibiotic
**cephaloridine**: antibiotic
**coumermycin**: antibiotic
**deferoxamine**: iron depleter
**denatonium benzoate**: denaturant
**ethamsylate**: hemostatic agent
**follicle stimulating hormone, human**: gonadotropin
**furazolium chloride**: antibacterial agent
**hetacillin**: antibiotic
**hexedine**: antibacterial
**ioglycamic acid**: radiopaque (cholecystographic and cholangiographic)
**methyl cysteine hydrochloride**: mucolytic agent
**nitrodan**: anthelmintic agent
**peliomycin**: antineoplastic agent
**porfiromycin**: antibiotic
**prednazate**: anti-inflammatory (veterinary)
**proadifen hydrochloride**: drug potentiator
**quinbolone**: anabolic agent
**quingestanol acetate**: progestational agent
**sancycline**: antibiotic
**sodium acetosulfone**: leprostatic agent
**thiamiprine**: anti-leukemic
**triamcinolone hexacetonide**: injectable glucocorticoid

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## Negotiation Authority Indicated on Office Actions

For some time, the full surname of the Examiner who prepared the Office action has been typed below the action on the left side; thus,

JHSmith: abc

One purpose was to facilitate making arrangements for an interview at a time when the Examiner would be conveniently available. However, if this Examiner did not have "negotiation authority," that is, could not definitely state at the interview that a proposed amendment would make a claim allowable, it was necessary that a more experienced Examiner also be present.

Effective immediately, therefore, the full surname will be typed only for those examiners with negotiation authority. Examiners without such authority will be identified by initials only; thus,

FDR: rbm

The Examiner responsible for releasing the action (whose signature is on the ribbon copy), will be identified by means of a rubber stamp applied to all carbon copies.

If the full surname of the Examiner appears at the *lower left*, the interview should be arranged with this Examiner, otherwise, with the Examiner whose name is stamped at the *lower right*.

Dec. 16, 1964.

RICHARD A. WAHL,
*Acting Superintendent,*
*Patent Examining Corps.*

## Suggested Form Letter for Authorizing the Automatic Furnishing of Cited References to Applicants

A notice in the December 1, 1964, issue of the OFFICIAL GAZETTE announced a new service to be provided by the Patent Office effective January 4, 1965, which will permit applicants (or their representatives) having deposit accounts to receive automatically copies of references cited by the Examiner in pending patent and design patent applications.

In response to inquiries received, it should be noted that there will be no charge for the two additional copies of the first page of the office action being furnished at the time of mailing of the ordered references and deposit account statements.

Subsequent inquiries have been made of the Patent Office concerning a form letter that might be used to simplify the procedure for authorizing the automatic furnishing of references.

Shown below is a suggested format that applicants or their authorized representatives, on their own letterhead, might wish to use for their authorization letter. In those instances where the authorization letter may be filed initially upon the filing of a new application and the serial number is unknown at the time of filing, the brief notation "Filed herewith," in addition to the applicant's name and title of invention, is deemed sufficient to identify the particular application in question.

Applicant:
Serial Number:
Filed:
For:
Group:

Authorization Letter for Providing Copies of Cited References

Authorization is hereby given to the U.S. Patent Office to automatically send to the addressee of record as indicated on the front of the file wrapper in the above-identified application all references cited by the Examiner in this case.

_____
Number of copies of cited references desired

_____
Deposit Account Number to be charged

Dated_____

_____
Applicant or Authorized Representative

December 22, 1964.

C. A. KALK,
*Director of Administration.*

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# PATENT EXAMINING CORPS

## H. B. WHITMORE, Superintendent

## CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 1, 1964

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 5-20-62 | 1-28-57 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Aso; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 12- 3-62 | 7- 9-56 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 9-23-58 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 8- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 10- 1-62 | 3-11-57 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-17-62 | 11- 7-55 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 12-29-55 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 10-5 -62 | 1-30-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 9- 3-59 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-10-62 | 12-22-53 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 4- 5-56 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 5-18-55 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-12-62 | 6-20-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 12-28-59 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 208,209 |
| Total number of Design applications pending | 5,762 |
| Total number of applications awaiting action (excluding Designs) | 138,972 |
| Total number of Design applications awaiting action | 2,593 |
| Date of oldest new application awaiting action | May 19, 1959 |
| Date of oldest amended application awaiting action | Dec. 22, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,433,824 to 2,435,186, inclusive

Plant Patents ..... Numbers 774 to 782, inclusive

| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| **MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner**<br>Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids. | 10- 2-62 | 10-31-60 |
| **METAL AND PLASTICS WORKING, GROUP 220—N. BERGER, Supervisory Examiner**<br>Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 12-12-58 |
| **MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 230—A. M. HORTON, Supervisory Examiner**<br>Special Article Making; Assembling, Tool and Implement Making; and Metal Working. | 11- 2-62 | 6-29-55 |
| **MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 240—F. H. BRONAUGH, Supervisory Examiner**<br>Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders. | 1-22-63 | 8-13-59 |
| **HARDWARE, TOOLS AND JOINTS, GROUP 250—T. J. HICKEY, Supervisory Examiner**<br>Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling. | 1-17-63 | 10- 3-58 |
| **FLUID HANDLING, GROUP 260—E. PAUL, Supervisory Examiner**<br>Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing. | 2- 1-63 | 9-22-59 |
| **POWER PLANTS, MOTORS AND PUMPS, GROUP 270—C. F. GARBAU, Supervisory Examiner**<br>Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3- 4-63 | 5-25-59 |
| **HEATING, COOLING AND VENTILATING, GROUP 280—P. L. PATRICK, Supervisory Examiner**<br>Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination. | 5-10-60 | 6-21-63 |
| **GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| **AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner**<br>Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working. | 7- 8-63 | 2- 2-60 |
| **CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner**<br>Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 1-20-58 |
| **PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner**<br>Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12- 6-62 | 7-23-57 |
| **TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner**<br>Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-19-63 | 12-10-59 |
| **TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner**<br>Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 2-26-63 | 12-26-58 |
| **FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner**<br>Furniture; Supports; Cabinet Structures; Receptacles; Baggage. | 3- 4-63 | 4-17-63 |
| **PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner**<br>Printing; Typewriters; Stationery; Material Treatment. | 6-11-62 | 1-26-57 |
| **PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner**<br>Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| **DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner**<br>Industrial Arts; Household, Personal and Fine Arts. | 10-16-61 | 2-21-64 |



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE IGNATIUS NURKIEWICZ

*No. 7219. December 10, 1964*

[— CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—OBVIOUSNESS—EVIDENCE—UNEXPECTED RESULT THEORETICAL—DOUBT RESOLVED IN FAVOR OF APPLICANT.

"In considering the patentability of claims to a fire extinguisher container in which the hemispherical configuration of the bottom member is the critical part of the claimed combination, it must be conceded that a good deal of the appellant's argument for his invention is more or less theoretical. However, the Patent Office has not cited anything to dispute the theory, and there is no prior art which discloses a bottom member in the shape of a hemisphere, nor is there any which claims any improvement in the sealing function due to the curved shape of that member. It is possible that in a practical construction, due to the necessary rigidity of the bottom member, the forces involved will not be significant enough to produce the new and unexpected result asserted and that, in such case, we would be left with nothing but a designer's choice over the prior art. However, the rule is that, in case of a doubt as to the factual basis supporting the conclusion of the Board of Appeals, the doubt should be resolved in favor of the applicant."

2. SAME—PARTICULAR SUBJECT MATTER—FIRE EXTINGUISHER.

The decision of the Board of Appeals, refusing certain claims to a fire extinguisher as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 772,481.

REVERSED.

*Edmund M. Jaskiewicz* for appellant.

*Clarence W. Moore* (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

KIRKPATRICK, *J.*, delivered the opinion of the court.

The invention which is the subject of this appeal relates to a fire extinguisher of the pressurized type and is particularly directed to an arrangement for mechanically securing the bottom of the cylindrical container within the shell. The problem to which the invention is addressed is that of maintaining unbroken contact (seal) between the bottom member and the cylindrical wall and so to prevent the internal pressure from disrupting the seal, with resultant leakage.

Claim 1 is representative and is as follows:

1. A fire extinguisher container comprising a shell having a top adapted to be closed by a dispensing mechanism, and cylindrical walls extending downwardly therefrom, a substantially hemispherical bottom member fitted within said shell with its convex side downwardly, a bottom supporting member having its central portion concentric with said bottom element, and in engagement therewith, and having peripheral downwardly extending flanges of a diameter to fit tightly within the walls of said shell below the body of said support, the lower edge of said shell extending below the lower edge of the flange of said support and being bent inwardly back upon itself around the lower edge of said flange.

The appellant in his brief states his understanding of his invention, specifying three features as essential.[1] Two of these, the supporting

[1] (1) A hemispherically shaped bottom tightly fitted within the shell;
(2) A bottom supporting member having a curved portion concentric to the hemispherical bottom and engaged therewith; and
(3) A mechanical interlock between the lower edges of the bottom supporting member flange and the container shell.

member [2] and the mechanical interlock,[3] or their full equivalents are to be found in the prior art and need be considered as no more than necessary structural parts which do not contribute to any new or unexpected result which the whole combination may achieve, and the appellant's catalog of essentials can be reduced to the single element of the bottom member of the container. The hemispherical configuration of this member is the critical part of the claimed combination for, unless a new and unexpected result is achieved by its admittedly novel shape, no more than a choice of design is achieved over Zwietusch and Calleson in combination.

The advantage of the hemispherical bottom is that a hemisphere is less likely to suffer distortion from internal pressures than one of any other shape. It should be remembered that the slightest distortion or bulge in the surface of the bottom member would tend to pull its upper edge away from the container wall and disrupt the seal.

The specification points out that the use of the hemispherical shape also achieves the result that some of the expansive force of the pressurized contents will be exerted radially against the edge of the hemisphere and thereby urge this edge into firm contact with the shell, increasing the frictional resistance of the bottom member to axial displacement.

Of course, theoretically, the contact between a cylinder and a perfect hemisphere fitted within it is a line—having no thickness and consequently affording no frictional resistence to an axial movement—but the specification was not drawn for geometers but for practical mechanics and, in dealing with such matters, even a knife edge has some thickness and, therefore, in practice the contact between the edge of the hemisphere and the shell will be more than a geometrical line. In addition, the bottom member, as claimed, is "substantially hemispherical" and a slight flattening of the curve of the upper part of the bottom member, as shown in the drawing, to give some surface to surface contact at its top edge, would not be a material departure from a geometric hemisphere.

[1] It must be conceded that a good deal of the appellant's argument for his invention is more or less theoretical. However, the Patent Office has not cited anything to dispute the theory, and there is no prior art which discloses a bottom member in the shape of a hemisphere, nor is there any which claims any improvement in the sealing function due to the curved shape of that member. It is possible that, in a practical construction, due to the necessary rigidity of the bottom member, the forces involved will not be significant enough to produce the new and unexpected result asserted and that, in such case, we would be left with nothing but a designer's choice over the prior art. However, the rule is that, in case of a doubt as to the factual basis supporting the conclusion of the Board of Appeals, the doubt should be resolved in favor of the applicant. *In re Sporck*, 49 CCPA 1039, 1044, 1045, 301 F.2d 686, 133 USPQ 360.

Resolving any doubt we may have in favor of the applicant, we conclude that the container of this application constitutes a patentable advance over the prior art.

[2] The decision of the Board of Appeals is reversed.

REVERSED.

[2] Zwietusch, 506,355, October 10, 1893.
[3] Calleson (German 713,514), November 8, 1941.



## In the United States Patent Office
## Commissioner's Decision

IN RE ORENICK *v.* SHIELD

*Interference No. 85,414. Decided April 22, 1953*

1. INTERFERENCE—RECONSIDERATION—CONTENTIONS NOT TIMELY RAISED.

"In his petition, Shield assails the Board for its refusal to review the record in the light of the numerous contentions raised by him in his request for reconsideration. Such refusal, however, was eminently correct. Whatever contentions Shield wished the Board to consider, should have been presented orally at the final hearing set, or advanced in a written brief meeting the requirements of Rule 254. None of the circumstances Shield recites suffices to excuse him from withholding his arguments until after the Board had awarded priority to his opponent."

ON PETITION.

DENIED.

MURPHY, *Assistant Commissioner.*

This interference comes before me on a petition by the senior party, Shield, filed April 20, 1953. The petition is brought by Shield himself, rather than by his principal or associate attorneys of record.

Priority was decided in favor of the junior party, Orenick, by the Board of Patent Interferences on January 15, 1953. In its opinion, the Board noted that Orenick had taken testimony, but that neither party had filed a brief or had appeared at the final hearing. On February 4, 1953, Shield filed a purported request for reconsideration, which the Board, in a decision dated March 23, 1953, characterized as "an argument against the junior party's testimonial record such as could have been presented on brief at final hearing." Because, in the view of the Board, Shield had "elected to stand upon the nude record," the Board concluded that he was "in no position to demand a new consideration of the record upon what is in effect a belated brief."

[1] In his petition, Shield assails the Board for its refusal to review the record in the light of the numerous contentions raised by him in his request for reconsideration. Such refusal, however, was eminently correct. Whatever contentions Shield wished the Board to consider, should have been presented orally at the final hearing set, or advanced in a written brief meeting the requirements of Rule 254. None of the circumstances Shield recites suffices to excuse him from withholding his arguments until after the Board had awarded priority to his opponent.

The petition is accordingly denied.

# REISSUES

## JANUARY 19, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

### 25,711
### METHOD FOR PRODUCING ELECTRICALLY CONDUCTIVE WINDSHIELD

Romey A. Gainer, Muncie, Ind., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Original No. 2,944,926, dated July 12, 1960, Ser. No. 563,679, Feb. 6, 1956. Application for reissue Aug. 31, 1961, Ser. No. 135,386
14 Claims. (Cl. 156—101)

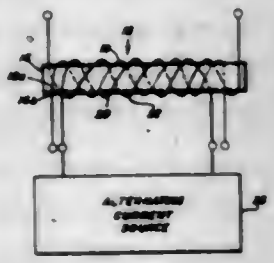
*12. The method of producing an electrically conductive bent glass windshield, comprising applying a pair of spaced, substantially parallel electrodes along opposite margins of a flat sheet of glass, applying an electrically conductive coating to the surface of the sheet containing the electrodes and in electrical contact with said electrodes, heating the sheet to bend it to the desired curvature, then removing a portion of said coating attaching lead-in wires to said electrodes at points intermediate the ends thereof, and laminating said sheet with a second similarly bent glass sheet and an interposed layer of thermoplastic material to form a composite structure.*

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### 25,712
### SUPER CONDUCTIVE SWITCHING ELEMENT

Albert E. Slade, Cochituate, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass.

Original No. 2,946,030, dated July 19, 1960, Ser. No. 669,669, July 2, 1957. Application for reissue Nov. 22, 1960, Ser. No. 71,110
21 Claims. (Cl. 336—155)

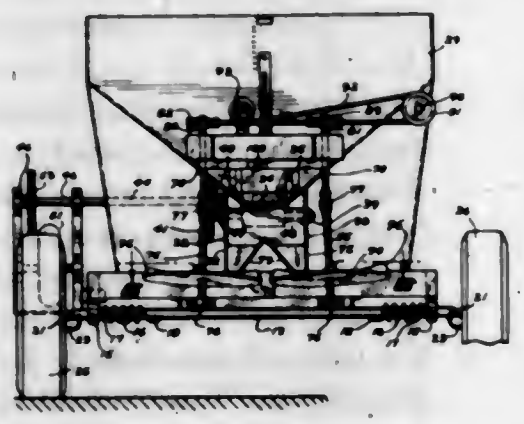


*18. A magnetic control device comprising a body of superconductive material capable of change between a flux-supporting and a flux-nonsupporting state, means directing to a first part of said body an alternating magnetic flux capable of acting at a second part of said body, means at said second part responsive to flux acting at said second part, and means for applying to said body a magnetic field sufficient to change said body from flux-nonsupporting to flux-supporting state thereby to control response of said responsive means to said directed flux.*

### 25,713
### FERTILIZER SPREADER

Loren E. Tyler, Benson, Minn., assignor to Tyler Manufacturing Company, Inc., Benson, Minn., a corporation of Minnesota

Original No. 3,085,807, dated Apr. 16, 1963, Ser. No. 110,310, May 11, 1961. Application for reissue July 24, 1964, Ser. No. 395,976
5 Claims. (Cl. 275—8)



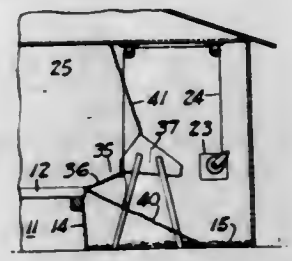
*5. The combination with a self-unloading wagon box having an endless conveyor capable of delivering bulk material to a discharge point outside of and to the rear of said wagon, of: a pair of distributor disc shafts rotatably mounted outside of an to the rear of said wagon box, the axes of said shafts being inclined from vertical toward each other and forwardly in an upward direction, a pair of distributor discs, one fixedly attached to each of said shafts, a plurality of up-standing blades on each of said distributor discs, said blades extending substantially radially outwardly from the axes of said discs, first and second driven distributor disc V-belt sheaves drivably mounted on the upper ends of said distributor disc shafts respectively, the planes of said sheaves being substantially at right angles to the axes of their respective shafts, a drive shaft rotatably mounted with respect to said wagon box and extending from the forward end thereof to the rear thereof in a substantially horizontal plan, a drive V-belt sheave drivably mounted on an rearwardly extending end of said drive shaft, the plane of said drive V-belt sheave being substantially perpendicular to said drive shaft, first and second guide V-belt sheaves rotatably mounted with respect to said wagon box, a V-belt mounted on said drive sheave, said first and second distributor disc sheaves and said first and second guide sheaves, said drive sheave and said guide sheaves being positioned so that the said V-belt will be driven by said drive sheaves and will drive said discs*

*without additional guide members, means for rotating said drive shaft at a predetermined speed, a distributing chute for material leaving said conveyor at said discharge point, said chute including a divider situated vertically below said discharge point and positioned to divert substantially half of the material coming from said conveyor toward each of said discs, said chute being provided with a separate bottom outlet opening located above each of said discs.*

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**25,714**
**MEANS FOR CONTROLLING THE LAYING HABIT OF HENS**
**Carl F. Kaegebein, 5515 E. River Road, Grand Island, N.Y.**
**Original No. 3,032,010, dated May 1, 1962, Ser. No. 135,865, Sept. 5, 1961. Application for reissue Apr. 16, 1963, Ser. No. 275,182**
**12 Claims. (Cl. 119—21)**

*12. A poultry house comprising an open work floor area, a litter floor area adjacent thereto, a barrier separating said floor areas and having an opening therein for the passage of fowl, a movable door for opening and closing said opening to control the passage of fowl between said areas and thereby create a memory pattern,*




*and said barrier including at least one nest closely adjacent said opening and also having a poultry entrance accessible from the open work floor area, whereby a hen will be prevented from getting behind said nest when said opening is closed by said door.*

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# PLANT PATENTS

## GRANTED JANUARY 19, 1965

**Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.**

**2,466**
**ROSE PLANT**
**Carl G. Duehrsen, Montebello, Calif., assignor to Constance A. Elmer, La Quinta, Calif.**
**Filed Nov. 18, 1963, Ser. No. 324,903**
**1 Claim. (Cl. Plt.—22)**

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a prolific flowering habit and an exceptionally good blooming habit, attractive, lustrous, shiny green foliage with red veins which well clothe the plant and present a very neat appearance at all times, good resistance to mildew and blackspot, attractive and distinctive clear bronze red new growth, a distinctive, attractive, full and clear flower color ranging from Moderate Reddish Orange in the bud stage through Strong Reddish Orange in the open flower stage which ages to an attractive Moderate Reddish Brown, said flowers being borne on reddish stems, a flower habit of dropping cleanly, a rare, exotic, very sweet flower fragrance, and exceptionally good keeping qualities of the flowers both on the bush and as cut flowers.

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**2,467**
**HOSTA PLANT**
**John James Grullemans, Harwichport, Mass.**
**Filed Jan. 3, 1963, Ser. No. 249,303**
**1 Claim. (Cl. Plt.—68)**

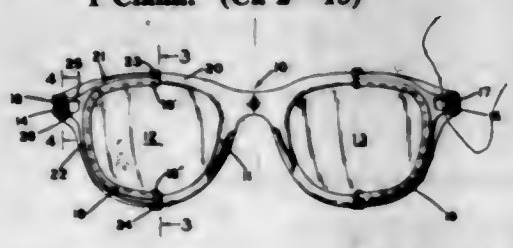
The new and distinct variety of Hosta or Funkia plant herein illustrated and described.

# PATENTS

## GRANTED JANUARY 19, 1965

## GENERAL AND MECHANICAL

**3,165,754**
**SIDE SHIELD MOUNTING FOR SPECTACLES**
**Alfred Rodgers, Jr., Rochester, and Raymond F. E. Stegeman, Greece, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York**
**Filed Mar. 27, 1961, Ser. No. 98,608**
**1 Claim. (Cl. 2—13)**



A quick detachable support member for a side shield, said member being characterized by the combination of a spectacle frame and

a pair of resilient extensions which embrace and extend continuously around the temporal, upper and lower portions of said spectacle frame,

a temple hinge forming a part of said frame and having a top and a bottom surface thereon,

means for securing the support member in operative position on said frame, said means comprising a pair of resilient arms formed on the temporal portion of said member and projecting substantially unidirectionally outwardly therefrom, said arms being spaced apart by a distance substantially equal to the distance between the top and bottom surfaces whereon the arms bear,

a hinge screw in said hinge,

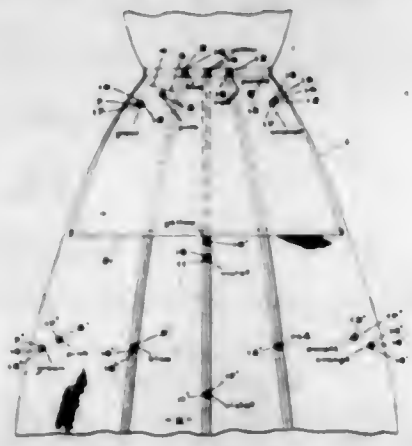
an axially directed extension formed on each end of said screw and projecting beyond said hinge, the extensions being fitted into and retained by corresponding openings formed in the outer ends of said arms, one of said extensions being slotted transversely to form a screw head,

whereby flexure of the arms away from each other permits each extension to be inserted into its respective opening.

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**3,165,755**
**GARMENT HAVING A BUSTLING CONSTRUCTION**
**Gertrude M. Graham, 1542 Pentwood Road, Baltimore 12, Md.**
**Filed May 29, 1961, Ser. No. 127,766**
**2 Claims. (Cl. 2—217)**

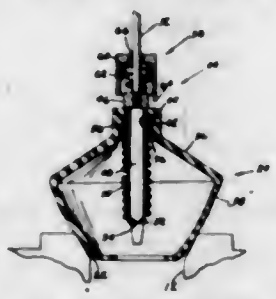
1. In a wedding gown or similar garment comprising a skirt and waistline and a train, bustling means for fixedly supporting the train in elevated position and forming a bustled area to said gown, comprising a plurality of separate independent sets of rings attached to and distributed over the underside of the skirt, at least one ring of each set being split whereby the rings of each set are adapted to be interengaged, each of said independent sets of rings providing means when interengaged to form a separate and independent puff in the bustle area for purposes of creating predetermined puff variations in the bustle structure, each of the said sets comprising a pair of rings, each pair being operated independently of the other pairs and each representing a composite unit of separately functioning pairs of rings producing separate independent puffs, each ring of each pair being attached and fixed to the underside of the skirt in a non-moving position in relation to its point of engagement to the skirt, the said rings of each respective set are spaced in a substantially vertical manner one from the other for various distances when in disengaged position in such a manner whereby upon the interengagement of the respective rings of the said sets of rings the said distances between the



said respective rings of the sets will be closed for purposes of providing means for lifting the train and forming the puffs, certain of said sets of rings being positioned at predetermined different distances from the waistline of the gown for purposes of producing variables in the location of the puffs in relation to the position of the waistline of the gown and to create original effects to the bustle appearance.

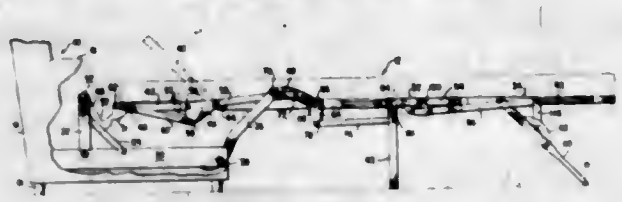
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**3,165,756**
**VENT MEANS TO VARY BUOYANCY OF A FLUSH VALVE**
**Robert L. Simpson, R.F.D. 1, Farmington, Conn.**
**Filed Dec. 12, 1962, Ser. No 244,214**
**4 Claims. (Cl. 318—29)**



1. In a water closet tank having an outlet, a discharge valve comprising an open bottom hollow buoyant ball for seating upon and closing the outlet, means for operating the dicharge valve including a handle supported on the tank and a lift rod connected therewith and with the ball, and a stationary guide for the lift rod, the improvement comprising an auxiliary valve means mounted on said ball and connected with said handle to vent the valve ball only when said handle is placed in a predetermined position after lifting said valve ball, the venting of the ball being effective to reduce its buoyancy whereby to cause it to close the outlet more promtply upon release of the handle and thus reducing the amount of water used in flushing.

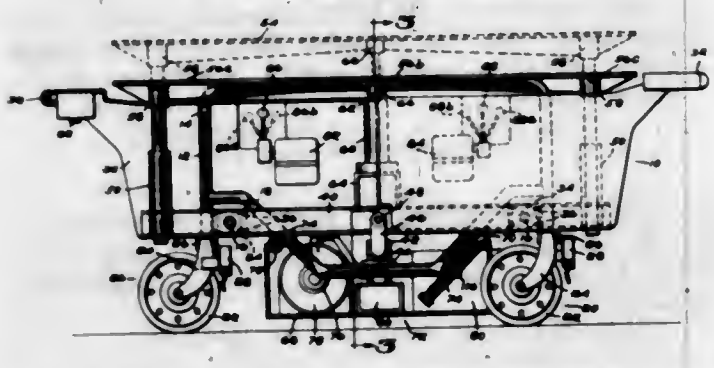
3,165,757
## SOFA BED MECHANISM
Walter Clark Rogers, Jr., High Point, N.C., assignor, by mesne assignments, to General Steel Products, Inc., High Point, N.C., a corporation of North Carolina
Filed Dec. 21, 1961, Ser. No. 161,019
14 Claims. (Cl. 5—13)



2. In a sofa bed mechanism, a frame having rear, intermediate and forward sections successively pivotally connected, said sections being foldable between collapsed and extended positions, a linkage system interconnecting said sections for guiding and controlling movement of said sections between the collapsed and extended positions including control lever means having one end pivotally and slidably connected to said forward section and the other end pivotally connected at the interconnection between said rear and intermediate sections, guide lever means having one end pivotally connected at the interconnection between said intermediate and forward sections and the other end pivotally and slidably connected to said rear section, and a connecting link pivotally interconnecting said control lever and said guide lever intermediate their ends, said control lever being curved between said one end thereof and its pivotal connection with said connecting link in a direction to project below the plane of said rear, intermediate and forward sections in the extended position, said guide lever assuming a position substantially parallel with said rear, intermediate and forward sections in the extended position, and said connecting link projecting from said guide lever below the plane of the extended bed frame sections to its connection with the control lever.

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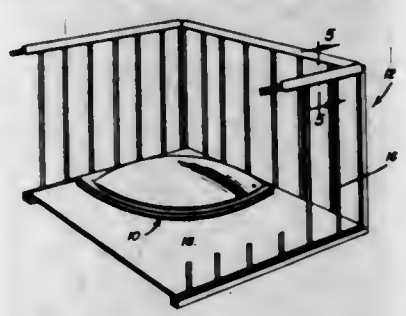
3,165,758
## COMBINATION WHEEL STRETCHER AND LIFTING APPARATUS
Omer H. Hebert, 652 Eastern Ave., Fall River, Mass.
Filed Sept. 27, 1963, Ser. No. 313,144
9 Claims. (Cl. 5—83)



1. A combination mobile stretcher and lifting apparatus for lifting a patient from one supporting surface on a hospital bed, operating table or the like and subsequently carrying said patient to an alternate supporting surface comprising: an elongated mobile stretcher frame having braking means associated therewith for locking said frame adjacent said one supporting surface; horizontally disposed lifting arms movable vertically on said frame powered; elevational means for raising and lowering said lifting arms; and powered extension means for horizontally extending and retracting said lifting arms in a direction transverse to the longitudinal axis of said stretcher frame; said powered elevational and extension means centrally controlled by an operator positioned adjacent said stretcher frame whereby said arms may be raised and extended to an inserted position between said patient and said supporting surface, subsequently raised above said supporting surface and thereafter, retracted and lowered in order to remove said patient from said supporting surface to a supported position on said stretcher.

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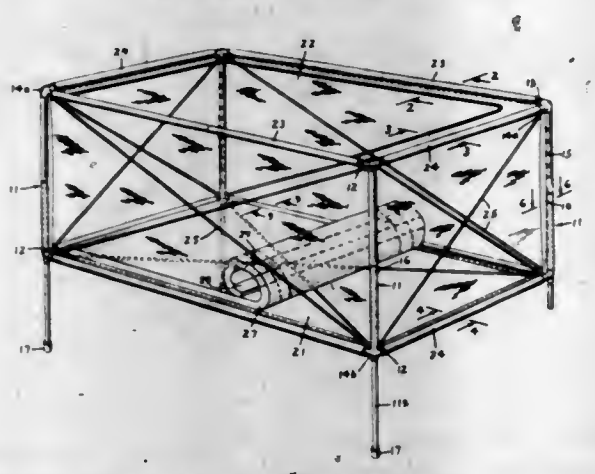
3,165,759
## INFLATED AMUSEMENT DEVICE FOR PLAYPENS
Oscar O'Daniell, 18 S. Hanover, Cape Girardeau, Mo.
Filed July 26, 1963, Ser. No. 297,775
7 Claims. (Cl. 5—93)



1. An inflatable amusement device particularly adapted for orientation within a corner of a playpen for use by a child placed therein, said device being utilized by the child coming forcibly in contact therewith, said device including a flat rigid base and an inflatable member, said inflatable member consisting of an upper and a lower layer sealed to each other in an airtight manner peripherally thereabout, said lower layer having a flat lower surface positioned on and fixed to the flat base, and means for enabling introduction of air under pressure between the layers, said air forming a cushion between the layers, said air cushion maintaining the upper layer in a generally domed manner having the major portion thereof spaced from the lower layer.

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3,165,760
## INFANT'S CRIB
Aram Christian Abajian, 135 E. 71st St., New York, N.Y.
Filed May 8, 1961, Ser. No. 108,443
10 Claims. (Cl. 5—97)

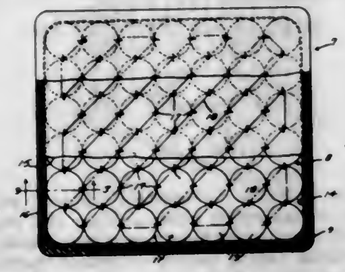


1. A crib comprising in combination:
(1) a rectangular take-apart frame including:
(*a*) four vertically disposed corner post members,
(*b*) two upper and two lower longitudinal members forming the sides of the crib,
(*c*) two upper and two lower lateral members forming the ends of the crib, the longitudinal and lateral members being connected to the vertical corner posts thereby forming a parallelepipedon, and
(2) a one-piece body portion of flexible sheet material completely covering said frame and having six rectangular panels forming the sides, ends, top and bottom panels of the crib, the combination of frame and body portion providing when assembled a strong,

durable stressed skin construction in which each of the six rectangular panels of the body portion is under tension thereby holding the frame together under compression and imparting rigidity and strength to the crib.

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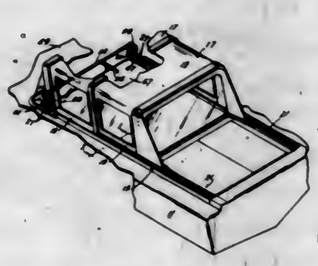
3,165,761
SPRING AND MOLDED CUSHION
Kenneth P. Ross, 8336 Washburn Ave. S., Minneapolis, Minn.
Filed July 27, 1962, Ser. No. 212,957
5 Claims. (Cl. 5—351)



1. A cushion comprising a resilient core unit including a plurality of coiled springs, a fabric casing enclosing all of said springs, and a one piece outer encasement of a pressure molded foam material completely enclosing said fabric casing, said fabric casing being of a loose weave material and having parts of the pressure molded foam material embedded therein and bonded thereto.

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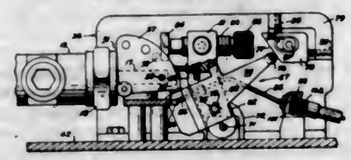
3,165,762
SLIDING TOP
Stanislas H. Hage, Lake Bluff, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Feb. 21, 1962, Ser. No. 174,758
12 Claims. (Cl. 9—1)



1. The combination of means mountable on a vehicle for establishing a channel shaped way, a sliding top received in said channel shaped way, and means on said way and on said top for guiding reciprocation of said top longitudinally along said way, effecting transverse displacement of said top respecting said way, and locating said top against reciprocation at any position longitudinally of said way when said top is in one position of transverse displacement with respect to said way, said means on said sliding top and on said way including a resilient member on one of said sliding top and said way engaged by the other of said sliding top and said way when said sliding top is in said one position, thereby also to prevent entry of fluid therebetween, and said means on said way and said sliding top including a displaceable member carried by said way for movement lengthwise of said way to effect displacement of said sliding top transverse to said way relative to said one position, whereby said top is unlocked when displaced from said one position.

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3,165,763
SAFETY LOCKING DEVICE FOR THE INFLATING MEANS IN AERIAL SURVIVAL KITS
John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a partnership
Filed Jan. 15, 1963, Ser. No. 251,647
12 Claims. (Cl. 9—11)



1. In a safety support and locking device for inflating means for a raft in an aerial survival kit, including a bottle carried by the raft and a valve on the bottle connected to the raft,

(*a*) a rigid support secured in the kit forming a bed for said bottle,

(*b*) side members on said support to prevent transverse movement of the bottle,

(*c*) an end member engaging the bottom of the bottle to limit longitudinal movement in one direction,

(*d*) a turnable valve opening device on the valve of said bottle operable by generally lineal pull thereon in a direction away from said bottom,

(*e*) an abutment device bearing against said turnable device to prevent longitudinal movement of the valve and the bottle on said support in the other direction and hold said bottle against said end member,

(*f*) releasable locking means to lock said abutment device in abutting relation to said turnable device,

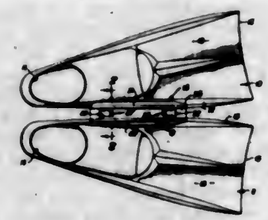
(*g*) means coacting with said abutment device and engaging said turnable device to turn said turnable device when said abutment device is moved out of said abutting position,

(*h*) actuating means to release said releasable means and move said abutment device from said abutting position thereby to pull said coacting means to turn said valve opening device for opening said valve,

(*i*) said coacting means being releasable from its engagement with said turnable valve opening device after said valve opening device is turned and the valve is opened.

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3,165,764
DETACHABLE COUPLING FOR SWIMMING FIN
James S. Christianson, Long Beach, Calif., assignor to Sports Industries, Inc., Gardena, Calif., a corporation of California
Filed Oct. 15, 1962, Ser. No. 230,582
16 Claims. (Cl. 9—309)

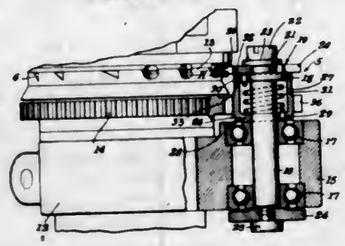


1. In combination: a pair of swimming fins each having longitudinally extending reinforcing ribs or flanges along the opposed inside edges of the respective fins, said reinforcing ribs or flanges each having top and bottom longitudinally extending edges; and releasable coupling means for detachably securing the fins in side by side relationship, said coupling means having parts engageable with the edges of the reinforcing ribs of both fins.



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3,165,765
BURRING MECHANISM FOR SCREW-SLOTTING MACHINES
Raymond O. Wilson, San Marino, Calif., assignor to Olympic Screw & Rivet Corporation, Downey, Calif., a corporation of California
Filed Feb. 12, 1962, Ser. No. 172,736
4 Claims. (Cl. 10—6)



1. Means to remove the burrs on the trailing ends of slots cut in the heads of screws moving in an arcuate path with the screw heads directed radially outward, said means comprising:

(*a*) a positively rotationally driven cup member on an axis normal to the plane of said arcuate path,

(*b*) a stud coaxial with said cup member and having an end closing the open end of the cup,

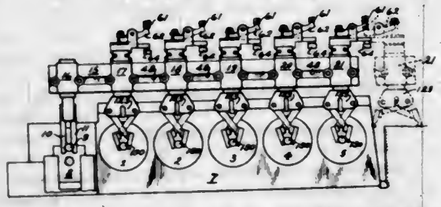
(*c*) a lost-motion connection between the cup and stud,

(*d*) a spring in the cup member connecting the cup and stud and imposing a resilient bias on and urging the stud to rotate in the same direction as that of the driven cup, and

(*e*) a cutter having a plurality of radial burring arms affixed to the stud above the cup in overlapping tangential relation to the mentioned arcuate path and in burr-removing wiping engagement with the trailing ends of the slots.

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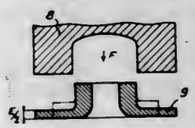
3,165,766
TRANSFER FOR METAL FORMING MACHINE
Robert E. Wisebaker, Tiffin, Ohio, assignor to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio
Filed Aug. 29, 1961, Ser. No. 134,659
18 Claims. (Cl. 10—76)



1. Transfer apparatus for a metal forming machine having a series of spaced die stations arranged along a die breast comprising a transfer bar mounted adjacent the die stations for bodily arcuate swinging movement, means to maintain said bar parallel to the die breast during such arcuate swinging movement, a transfer assembly housing mounted on said bar at each of said die stations, a yoke journalled in said housing, a pair of transfer fingers mounted on said yoke, means interconnecting said yoke and die breast to rotate the yoke in response to arcuate swinging movement of the transfer bar, a cam shaft mounted parallel to the die breast, separate finger opening cams mounted on said cam shaft for each pair of fingers, separate means interconnecting each of said cams and the associated transfer fingers operable substantially independent of movement of said fingers relative to said die breast to open and close the transfer fingers in response to cam shaft rotation wherein the timing of the operation of each pair of fingers is independently determined by the associated cam.

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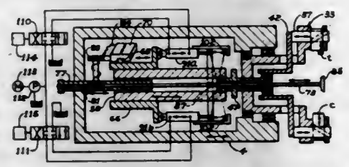
3,165,767
PROCESS FOR THE MANUFACTURE OF DEFORMABLE SELF-LOCKING NUTS
Maurice Beltoise, Paris, France, assignor to Société en nom collectif dite Beltoise Marguet & Cie, Suresnes-Seine, France, a French society
Filed Dec. 27, 1962, Ser. No. 247,564
3 Claims. (Cl. 10—86)



1. A process for producing an integral deformable self-locking nut having a barrel portion and a skirt portion of substantially lesser thickness than said barrel portion reversely folded about said barrel portion in coaxial relation therewith, comprising the steps of pressure-shaping said barrel portion from a metal plate of substantially the same thickness as said barrel portion so that said barrel portion projects outwardly from said plate, subjecting the portion of said plate adjacent to said outwardly projecting barrel portion to a pressing operation to substantially reduce its thickness, and folding said adjacent portion of said plate of reduced thickness about said barrel portion so as to form said skirt portion.

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3,165,768
DOUBLE COLLAPSE MECHANISM AND COMBINATION THEREOF WITH PIPE CUTTING AND THREADING MACHINES
Earle C. Herbkersman, Parma, Ohio, assignor to The Pipe Machinery Company, Wickliffe, Ohio, a corporation of Ohio
Filed Aug. 9, 1963, Ser. No. 301,018
7 Claims. (Cl. 10—87)

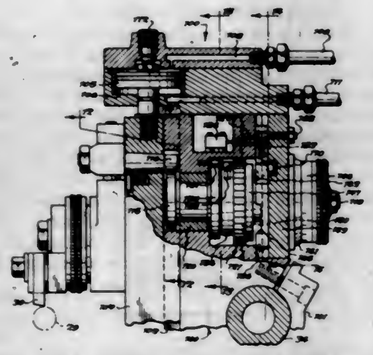


1. In a threading machine, a power driven rotary spindle, a tool head carried thereby, a tool carriage mounted on the head for movement, during rotation of the spindle, toward and away from the axis of rotation, collapse means carried by and rotatable with, the spindle and movable relative thereto and connected to the carriage for effecting movement of the carriage in one direction upon movement of the collapse means relative to the spindle in one direction during rotation of the spindle, driven taper control means, settable means drivingly interconnecting the taper control means and the collapse means and, by movement relative to at least one of said means, being settable, selectively, in different positions, in each of which positions it connects the taper control means to the collapse means for a normal movement of the col-

lapse means in said one direction by the taper control means, which normal movement is in a predetermined relation to the rate of rotation of the head, the connection of the settable means to the collapse means being such that said settable means, by its said movement from one set position to another, superimposes on said normal movement of the collapse means in said one direction an additional movement in said one direction, and power means for causing said movement of the settable means from one of said set positions to another at a rate which causes said additional movement of the collapse means in said one direction at a rate greater than said normal movement.

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**3,165,769**
**THREADING ATTACHMENT PIVOTALLY AND SLIDABLY MOUNTED ADJACENT THE LATHE SPINDLE**
**Hubert J. Parsons, Horseheads, William A. Kilmer and Anders A. Peterson, Elmira, and William D. Connors, Horseheads, N.Y., assignors to Hardinge Brothers, Inc., Elmira, N.Y.**
**Filed Dec. 21, 1961, Ser. No. 161,066**
**13 Claims. (Cl. 10—101)**

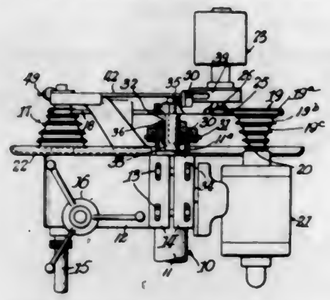


1. A threading attachment for a lathe having a spindle,
a lead screw mounted on said spindle,
a bar mounted on said lathe and extending parallel to said spindle,
a follower connected with said bar and movable into mesh with said lead screw for imparting lengthwise motion to said bar,
a head secured to said bar,
a cutting tool mounted on said head,
means on said head for controlling the depth of cut to be made by said tool, said means including a pneumatically actuated piston for urging said cutting tool to the work, and a cam which controls the extent of movement of said tool by said pneumatic means, means controlled by the movement of said tool for rotating said cam, and
means operable at the completion of a pass of said tool for turning said bar about its axis to move said follower out of engagement with said lead screw and for moving said tool out of engagement with the work.

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**3,165,770**
**TAPPING DRILL PRESS WITH INDEPENDENT MOTOR FOR REVERSING SPINDLE**
**Theodore E. Mead, 1020 Michigan Ave., Wilmette, Ill.**
**Filed Jan. 15, 1963, Ser. No. 251,654**
**11 Claims. (Cl. 10—138)**

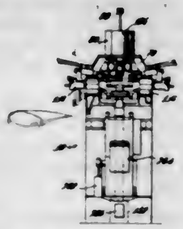
1. In a drill press adapted for tapping:
a frame equipped with a reciprocable spindle and a drill motor,
a pulley on each of said spindle and motor and a belt for interconnecting said pulleys for powering said spindle,
a tap motor pivotally mounted on said frame,



a pair of wheels connected to said motor and adapted to rotate in opposite directions, and
means on said frame for selectively engaging one of said wheels with said drill motor pulley.

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**3,165,771**
**APPARATUS FOR LASTING FOOTWEAR**
**Jacob S. Kamborian, 133 Forest Ave., West Newton, Mass., Robert B. Dunlap, Medway, and Henry v. d. Benken, West Roxbury, Mass.; said Dunlap and said Benken assignors to said Kamborian**
**Filed Apr. 5, 1961, Ser. No. 100,979**
**48 Claims. (Cl. 12—10.5)**

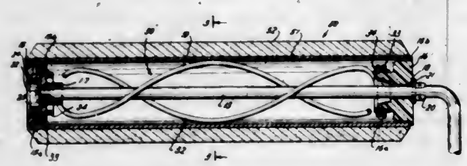


1. A shoe lasting machine comprising: a shoe support, mounted for vertical movement, for supporting bottom-up a last having a shoe upper and insole thereon; wiper means positioned rearwardly of the shoe support and mounted for horizontal movement from a retracted to a forward position; retarder means positioned above the wiper means and mounted for movement toward and away from the wiper means; a pincers support positioned on each side of the shoe support; a pincers located on each pincers support and positioned forwardy of the wiper means in its retracted positon and above the shoe support, each pincers comprising a first jaw slidably mounted in the associated pincers support for movement toward and away from the center line of the last, a first motor mounted on the pincers support and connected to the jaw for effecting said movement of the jaw, a second jaw movably mounted on the first jaw for movement toward and away from the first jaw, and a second motor mounted on the first jaw and connected to the second jaw for effecting said movement of the second jaw; means for moving the retarder means toward the wiper means to press the toe portion of the upper margin against the wiper means; means for actuating the second motors to move the second jaws toward the first jaws to thereby cause the pincers to grip the forepart portions of the upper margin; means for lowering the shoe support an amount sufficient to bring the insole below the bottom of the wiper means; wiper drive means actuable to move the wiper means from its retracted to its forward position across the insole to wipe the toe portion of the upper margin down upon the insole; and means operative concomitantly with the actuation of the wiper drive means for actuating the first motors to cause the pincers to move toward each other.



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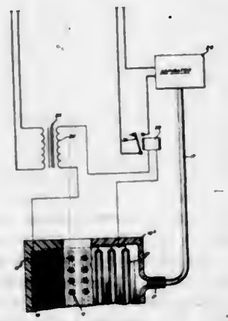
**3,165,772**
**PAINT ROLLER CONSTRUCTION**
**James J. McGinley, Williston Park, N.Y., assignor to Baker Brush Co., Inc., New York, N.Y., a corporation of New York**
**Filed Sept. 12, 1963, Ser. No. 308,475**
**4 Claims. (Cl. 15—230.11)**



3. A paint roller device comprising a support rod having one end leading to a handle and having its other end forming an axle portion, a spaced pair of end cap members rotatably supported on said axle portion, means on said axle portion for limiting separating relative movement of said end caps, cylindrical portions formed on said end cap members, a roll support member carried on said cylindrical portions, said roll support member comprising first and second substantially identical helices of resilient spring material, said helices being disposed coaxially about said axle portion and being angular and rotated 180° with respect to each other, annular means formed at the ends of said helices and uniting the latter, each said annular means being loosely supported on the cylindrical portion of one of said end cap members and being movable with respect to said end cap members longitudinally and transversely with relation to said end cap members.

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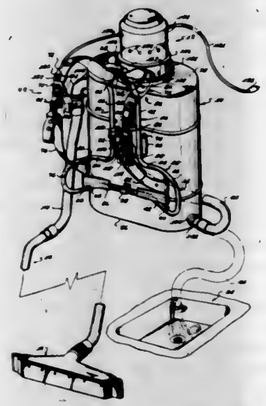
**3,165,773**
**ELECTRICALLY ACTUATED, AUTOMATIC SUCTION DOOR-MAT**
**Elio Palpacelli, Via Gallia 2, Rome, Italy**
**Filed Oct. 26, 1961, Ser. No. 147,797**
**Claims priority, application Italy Oct. 28, 1960**
**3 Claims. (Cl. 15—310)**



1. In a door-mat, a support of elastically yieldable material comprising a first and a second layer of said material disconnectable from one another, restrained connection means between said two layers, including an edge on the first one of said layers, seating into a groove in said second layer to restrain movement of the first layer relative to the second of said layers, a plurality of metal tubes arranged in parallel rows side by side and embedded in said first layer so as to protrude from one face thereof, a plurality of grooves in said first layer, each in register with a corresponding one of said rows of tubes, each of which grooves is formed with an elongated slit for communication between the embedded end of the tubes of one row and a corresponding groove, a plurality of grooves in said second layer, disposed in register with the grooves in said first layer so as to form therewith a plurality of channels with closed contour when said two layers are superimposed and connected to one another, electrically operated suction means and a connection duct between said suction means and said plurality of channels.

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**3,165,774**
**PORTABLE VACUUM APPARATUS FOR RAPID COLLECTION AND DISPOSAL OF DEBRIS-LADEN LIQUID**
**William G. Barba, Ontario, Calif., assignor to U.S. Divers Co., Inc., Santa Ana, Calif., a corporation of California**
**Filed Aug. 26, 1963, Ser. No. 304,605**
**10 Claims. (Cl. 15—323)**

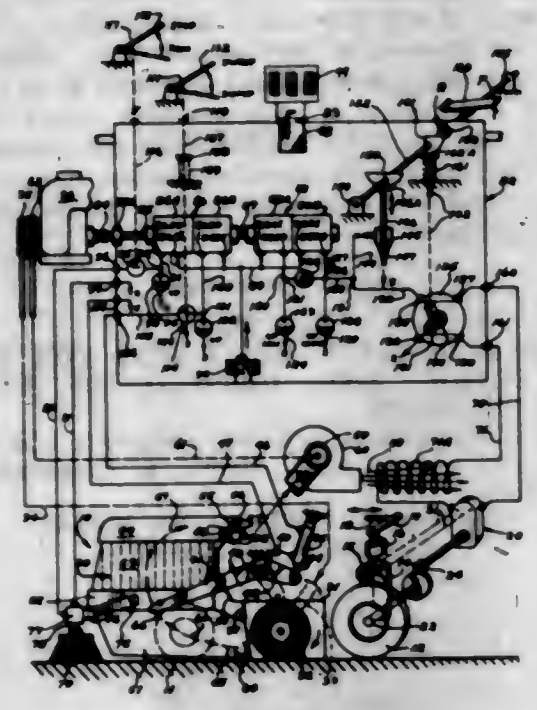


5. A portable liquid vacuum cleaner, comprising:
an upright tank having a top and a bottom and including an opening in the top, a liquid inlet port adjacent the top, and a liquid outlet port adjacent the bottom of the tank;
removable means for sealing the outlet port;
suction-creating means having an air intake in its lower surface and an air outlet remote from the air intake;
a compressible gasket seated around the opening in the top of the tank, the gasket including a vertically extending flanged portion for receiving and supporting a lower end of the suction-creating means over the opening in the top of the tank such that the air intake communicates with the opening and the air outlet is external to the tank;
a cover member dimensioned to fit over the suction-creating means, the cover member having a lower end portion which fits tightly around the outer surface of the vertically extending flanged portion of the gasket;
and hand operable means on the cover and engaging the top of the tank for coupling the cover and the suction-creating means to the tank.

## 3,165,775
## POWER SWEEPER DRIVE, VACUUM AND PROPULSION

Mac W. Lutz, Minneapolis, Minn., assignor to The G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 13, 1961, Ser. No. 137,863
4 Claims. (Cl. 15—340)

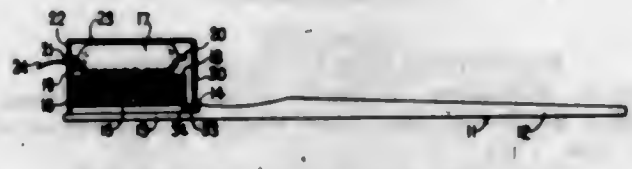


4. A power sweeper comprising a wheeled vehicle having propulsion and steering wheel means thereon, a manual steering control connected to the steering wheel means for steering the vehicle, hydraulic motor means, said hydraulic motor means being connected to the wheel means for propelling the vehicle, a power source on the vehicle, a sweeping enclosure on the vehicle, a sweeping brush on the vehicle in said enclosure, first mechanical power transmission means connecting the power source and brush for operating the brush, a debris receiving hopper mounted on the vehicle for movement from a position contiguous to the sweeping enclosure wherein it receives swept material to a dumping position, hydraulic hopper moving means on the vehicle connected to the hopper for moving it to the dumping position, a suction blower, second mechanical power transmission means connecting the power source and suction blower for operating the blower, said suction blower having a suction inlet on the vehicle and a discharge air outlet, said hopper having a port thereon which communicates with said suction inlet on the vehicle when the hopper is in a position contiguous to the sweeping enclosure, a closed casing on the vehicle forming an enclosure for hydraulic components and a common sump for hydraulic fluid for all hydraulic circuits, hydraulic pump means in said closed casing, pressure and return conduit means for supplying fluid under pressure from said hydraulic pump means to said hydraulic hopper moving means and said hydraulic motor means respectively, said pump means being connected to be mechanically driven by power connection means extending from said pump means and through the casing wall and to said power source, control valve means in said conduit means for controlling the fluid under pressure from said hydraulic pump means, a variable orifice flow control valve in the pressure conduit means carrying fluid under pressure to said hydraulic motor means, and a cooling section in one portion of said conduit means, and means to direct the discharge air from said suction blower over the cooling portion of said conduit means.

## 3,165,776
## DISPOSABLE TOOTHBRUSH WITH SELF-CONTAINED DENTIFRICE

Philip H. Tuseth, 3717 N. 26th St., Waco, Tex.

Filed May 29, 1963, Ser. No. 284,107
4 Claims. (Cl. 15—539)

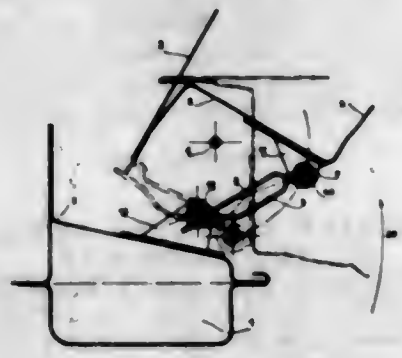


1. A disposable toothbrush with self-contained dentifrice of the character described, comprising, a toothbrush having a plurality of bristles located at one end thereof and a handle at the opposite end thereof, a sack filled with dentifrice and positioned adjacent the tips of said bristles, said sack having a tearable portion with a free end for releasing said dentifrice, and a covering cap for encasing said bristles and said sack filled with said dentifrice, said dentifrice being released onto said tips of said bristles of the said toothbrush when said free end of said tearable portion of said sack is pulled.

## 3,165,777
## DEVICE FOR MAINTAINING THE DOORS OF AUTOMOBILE VEHICLES IN A GIVEN POSITION OF OPENING

Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, French works

Filed May 25, 1961, Ser. No. 112,718
Claims priority, application France, June 24, 1960, 831,087
1 Claim. (Cl. 16—85)

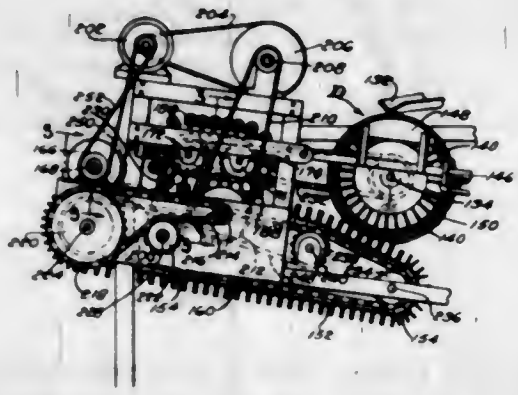


For use with a door contsruction of an automotive vehicle which construction includes a door frame having an edge portion and a door having a cooperating edge portion hingedly mounted on the edge portion of the frame, a door check comprising a first pin vertically fixed on the edge portion of the door frame, a second pin vertically fixed on the edge portion of the door, a one-piece spring clip having spaced apart, parallel extending, first and second arm portions, said arm portions having first ends terminating in a loop circumposed on the second pin, said first arm portion having a second end angularly extending inwardly toward the second arm portion and terminating in a straight end portion, said second arm portion having a second end arranged adjacent the inner end of the second end of the first arm portion and terminating in a U-shaped portion having an open end facing the straight end portion and being closed off thereby and having a free leg terminating in an end engageable with the straight end portion, said U-shaped portion and straight end portion cooperating to engage the first pin and limit the opening movement of the door, said arm portions having parallel extending portions transversely spaced apart a distance substan-

tially equal to the diameter of the first pin which slides between the inner ends of said arm portions when the door is being closed, said second arm portion has an angular bend joining the U-shaped portion to the second end of the second arm portion and being adjacent the inner end of the straight arm portion and being wedged away from said inner end to act to brake the opening movement of the door before said movement is completely stopped.

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**3,165,778**
**FISH CONVEYOR AND CUTTER**
**Harry E. Walker, Rte. 2, Mechanic Falls, Maine**
**Original application Aug. 13, 1959, Ser. No. 833,482, now Patent No. 3,104,756, dated Sept. 24, 1963. Divided and this application Sept. 20, 1962, Ser. No. 224,956**
**3 Claims. (Cl. 17—4)**

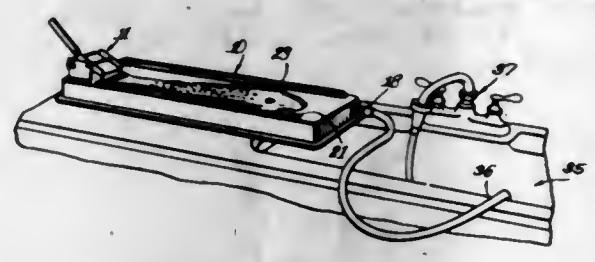


3. In an apparatus for cutting fish, a frame, a shaft rotatably mounted on said frame, two circular knives mounted on said shaft four inches apart, means for rotating said shaft and knives, an endless conveyor for fish mounted on said frame, said conveyor having an upper reach extending from a loading point to said knives, said conveyor including a series of troughs arranged transversely to the direction of movement thereof with a slot in each trough four inches from the front end thereof, one of said knives being supported tangent to the front ends of the troughs, the other knife being in line with said slots, a gauging mechanism mounted on said frame above said conveyor, said gauging mechanism comprising two parallel shafts, two spaced sprocket wheels on each said shaft, each wheel on one shaft being aligned with a wheel on the other shaft, a chain running on each pair of aligned wheels, transverse bars attached at their ends to the respective chains, an arm hinged to each said bar near one end thereof and extending toward the other and, a foraminous presser member mounted on the free end of each arm, said gauging mechanism being located so that the lower reach thereof is spaced above the upper reach of the conveyor, the presser members in said lower reach fitting in successive troughs in the upper reach of the conveyor about five inches from the front end of the troughs, means for driving said conveyor and gauging mechanism in synchronism, means for depositing fish in the troughs of the upper reach and means for flowing a stream of water into the front end of troughs into which a presser member has entered.

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**3,165,779**
**FISH CLEANER**
**Herman C Teetor and David Teetor, both % Perfect Circle Corp., 552 S. Washington St., Hagerstown, Ind.**
**Filed Apr. 26, 1962, Ser. No 190,407**
**7 Claims (Cl. 17—8)**

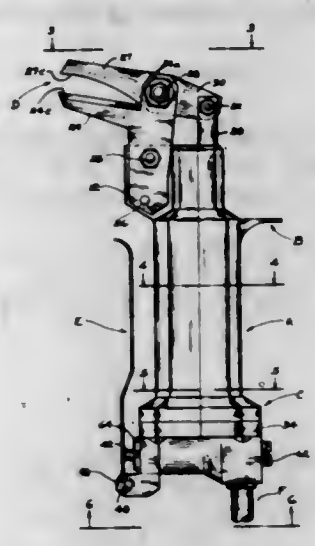
4. A fish cleaner comprising a supporting member having an elongated, substantially flat upper cleaning surface, said surface being transversely inclined, water discharge means arranged longitudinally of said cleaning surface and including a plurality of holes adjacent the upper longitudinal edge of said surface, and means for delivering water to said holes for discharge through said



holes to flow in sheet form downwardly across said transversely inclined surface.

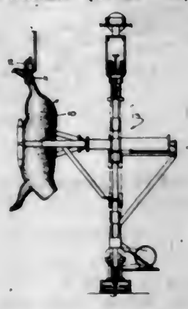
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**3,165,780**
**POULTRY NECK CUTTER**
**Robert Kellersman, Salem, Oreg., and Kenneth E. Belknap, Dinuba, Calif., assignors to Hydrahone Equipment Company, Milwaukee, Wis.**
**Filed Sept. 27, 1962, Ser. No. 226,495**
**1 Claim. (Cl. 17—12)**



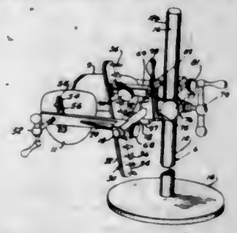
A poultry neck cutter of the type adapted for hand-held operation comprising an elongate body, said body being adapted to be manually grasped by an operator by encirclement of the body by the fingers and thumb of one hand of the operator, a thumb rest adjacent one longitudinal end of the body, a flange circumscribing the body adjacent the other longitudinal end of the body, said flange being spaced from said thumb rest by an amount sufficient to permit manual grasping of the body between the flange and thumb rest, a fixed blade mounted on the body substantially opposite said thumb rest and extending generally normal to the longitudinl axis of the body, a movable blade pivotally mounted on said fixed blade, said fixed blade and said movable blade being adapted to cooperate to shear a poultry neck along a shear line generally normal to the longitudinal axis of the body means responsive to compressed air for pivoting said movable blade relative said fixed blade, said compressed air responsive pivoting means being housed within said body, means disposed proximate said flange for controllably supplying air to said compressed air responsive pivoting means, and an operating handle on said air supplying means, said operating handle being pivotally mounted proximate said flange and extending longitudinally along the outer surface of said body opposite said thumb rest, whereby closure of the fingers moves said operating handle to admit air into said pivoting means to cause closure of said movable blade toward said fixed blade.

3,165,781
HOG DRESSING
Alan Donald Slotkin, Indianapolis, Ind., assignor to Hygrade Food Products Corporation, Detroit, Mich., a corporation of New York
Filed Mar. 5, 1963, Ser. No. 262,953
2 Claims. (Cl. 17—45)



1. A method of dressing a hog carcass comprising the steps of slaughtering the hog, securing the hide of the slaughtered hog to gripping means, mechanically moving said gripping means in relation to the carcass to strip substantially the entire hide therefrom in one piece, chilling the skinned carcass, and butchering the carcass into primal cuts.

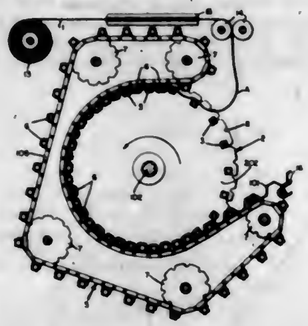
3,165,782
APPARATUS FOR CASTING LEG STUMPS
Henry F. Gardner, New York, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 26, 1963, Ser. No. 276,111
3 Claims. (Cl. 18—5.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An apparatus for casting limb stumps comprising a stand assembly, a cross member assembly adjustably mounted on said stand assembly, an adjustable posterior socket form adjustably mounted on said cross member assembly, an anterior socket form adjustably supported by said cross member assembly in opposing relation to said posterior socket form and a lateral socket form including an adjustable surface adjustably mounted on said cross member assembly and cooperating with said anterior and posterior socket forms.

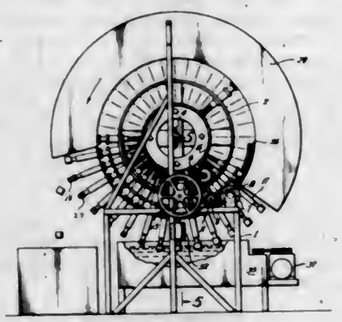
3,165,783
MACHINE FOR THE CORRUGATION OF CONTINUOUS THERMOPLASTIC SHEET MATERIAL
Nerio Martelli, Bologna, Italy, assignor to Solvay & Cie., societe en commandite simple, Ixelles-Brussels, Belgium, and Compagnia Italiana Nest-Pack S.p.A., Bologna, Italy
Filed Dec. 21, 1962, Ser. No. 246,419
Claims priority, application Italy, Dec. 28, 1961, 23,569/61
3 Claims. (Cl. 18—19)

1. A machine for corrugating continuous sheets of thermoplastic material, comprising a rotatable cage drum formed by a pair of sprocket wheel-like head pieces interconnected at their periphery by longitudinal spaced tubular bars open at their ends for passage of a coolant, means for supporting said cage drum for rotation about a horizontal axis, an endless chain grid including a pair of parallel endless chains each formed by a plurality of hinged links adapted to mesh with said sprocket wheel-like head pieces of said cage drum, and transverse tubular bars open at their ends for passage of a coolant each connected at each end to one link of a pair of facing links of said parallel endless chains, said drum bars and the said



chain grid bars being so spaced as to permit the said chain grid bars to intermesh with the said drum bars, driving means for driving in synchronism said drum and said chain grid, chain guide means for guiding said chain grid causing it to follow the periphery of said cage drum over a wide extent along which the drum bars intermesh with the grid bars, an inlet between the intermeshing drum bars and chain grid bars, means for feeding a continuous sheet of thermoplastic material towards said inlet, and heating means ahead of said inlet for heating said sheet to a plastic condition.

3,165,784
CAP FORMING DEVICE
Anthony F. Becker, 4377 Faculty Lane, Houston, Tex.
Filed Feb. 3, 1961, Ser. No. 86,925
2 Claims. (Cl. 18—24)

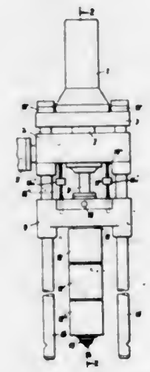


1. In a device for forming plastic articles of manufacture comprising a carrying wheel, a series of tubular housings radially mounted on said wheel, longitudinally movable shafts in said housings, molds on the extended ends of said housings, the extended ends of said shafts forming closures for said molds, a tank for liquid plastic beneath said wheel, means in said tank for maintaining a constant level of liquid therein, a heating means around said wheel above said tank comprising a housing inclosing



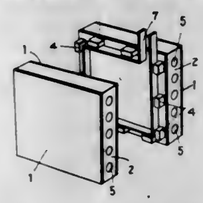
said molds as said wheel rotates and a conduit extending from a point adjacent one end of said housing to a point adjacent the other end of said housing and a heating element in said conduit and an air circulating means for moving heated air through said housing and said conduit, means for rotating said wheel, means for passing said molds through said tank and said heating means, an adjustable shaft actuator within said wheel having super imposed V-shaped shafts and a clamp embracing said shafts for maintaining the actuator in a selected position, said actuator being adapted to contact and move said shafts longitudinally in said housings to eject the molded articles from said molds.

3,165,785
RECIPROCABLE SCREW TYPE INJECTION MOLDING UNIT
Karl Hehl, Lossburg, Wurttemberg, Germany, assignor to Arburg-Feingeratefabrik o.H.G., Hehl & Söhne, Lossburg, Wurttemberg, Germany
Filed June 4, 1962, Ser. No. 199,751
Claims priority, application Germany, June 9, 1961, A 37,615; Nov. 9, 1961, A 38,782
20 Claims. (Cl. 18—30)



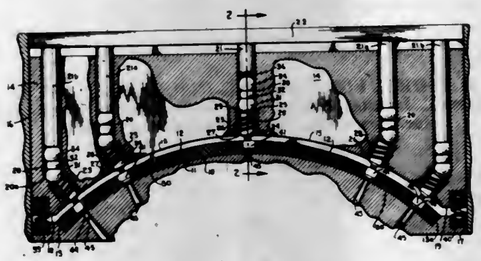
1. An injection unit for thermoplastic material, comprising, in combination:
(*a*) support means;
(*b*) a first component incorporating an injection cylinder, said first component being mounted on said support means for axial movement relative thereto;
(*c*) a second component incorporating a conveyer screw slidably and rotatably arranged in said injection cylinder and means for rotating said conveyer screw, said second component being likewise mounted on said support means for axial movement relative thereto;
(*d*) connecting means interconnecting said components for retarding the axial movement of said two components relative to each other at least when said components move away from each other, said connecting means permitting movement of said components toward each other; and
(*e*) a single drive means effective to move each of said components axially with respect to said support means, said drive means being connected to and acting directly on said second component; said driving means, when acting to move said second component away from said first component, also acting, through the intermediary of said connecting means, on said first component thereby to move the latter in the same direction as said second component.

3,165,786
APPARATUS FOR MAKING THIN SHEETS FROM SYNTHETIC RESIN
Ryutaro Yagi, Aboshi-ku, Himeji, and Hitoshi Miki and Kensuke Fukami, Ibogun, Hyogo, Japan, assignors to Takiron Chemical Company Limited, Osaka, Japan
Filed Sept. 16, 1963, Ser. No. 309,118
Claims priority, application Japan, Nov. 10, 1962, 37/50,573
5 Claims. (Cl. 18—39)



1. Apparatus for manufacturing thin synthetic resin sheets, comprising a pair of spaced metallic plates each having a mirror polished surface opposed to the mirror polished surface on the other plate, a supporting plate for at least one of said metallic plates, said supporting plate being of good heat conducting material and joined to at least one of said metallic plates in heat conducting relationship with said at least one metallic plate, said supporting plate having at least one passageway therethrough and opening out of the supporting plate for conducting a heat exchange medium through the supporting plate, and sealing and spacing means around the peripheries of the opposed metallic plates and between the metallic plates spacing them a distance equal to the thickness of the sheet to be manufactured and sealing off the edges of the space between the metallic plates, whereby the synthetic resin can be poured into the space between the sheets and a heat exchange medium circulated through the supporting plate for controlling the temperature of the synthetic resin.

3,165,787
MEANS FORMING RADIAL HOLES BY A VERTICALLY TRAVELING PUNCH
Cleo Francis Carmack, 924 Thornburg St., New Castle, Ind.
Filed Apr. 20, 1962, Ser. No. 189,027
3 Claims. (Cl. 18—42)



1. In a device for forming brake shoe linings with rivet holes therethrough,
a first die member having a cavity with an arcuate floor therearound;
a second die member having an arcuate face opposing said cavity;
said second die member having a plurality of spaced apart bores with parallel major lengths;
each of said bores having end bore portions of minor lengths leading from said major lengths and opening through the second die arcuate face with axes thereof coinciding with lines disposed radially of said first die member floor;

a punch shiftably carried in each of said minor length bores;

a pair of balls each of approximately the diameter of and in said bores freely movable therealong;

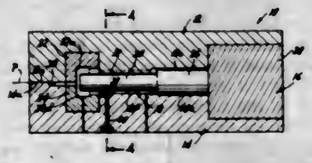
a plunger shiftably carried in each of said bore major lengths with said balls being disposed between said punches and said plungers; and

springs normally retaining said punches in retracted positions in said bore minor lengths;

said second die member being shifted by pressure on said plungers to close over said cavity of the first die member by the arcuate face of the second die member and through said balls, overcome said springs and move said punches radially across said cavity.

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**3,165,788**
**INJECTION MOLD**
**Emil Davidson, Scarsdale, N.Y., assignor to Guild Molders, Inc., Elmsford, N.Y., a corporation of New York**
**Filed Mar. 19, 1963, Ser. No. 266,326**
**5 Claims. (Cl. 18—42)**



1. In a multi-part injection mold including first and second cavity parts having confronting faces meeting in a parting plane when said cavity parts are in a closed position and having formed therein a mold cavity for a substantially tubular article, and a core part disposed symmetrically of said parting plane and having a cantilevered core member supported at one end and extending into said mold cavity, the improvement comprising a tripod support for said core member arranged to maintain said core member in an oriented position relative to said first and second cavity parts during injection molding, said tripod support including three projections on said first and second cavity parts extending into said mold cavity and engaging said core member at three circumferential locations spaced from the supported end thereof.

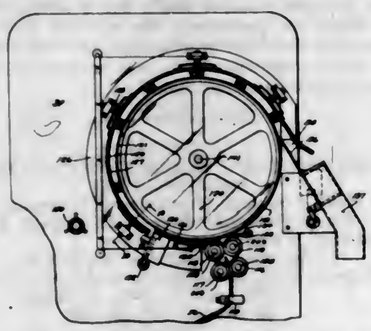
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**3,165,789**
**MANDREL FOR FORMING INSULATOR CASING**
**John T. Jackson, Louisville, Ohio, assignor to Mandrels, Inc., Louisville, Ohio, a corporation of Ohio**
**Filed Aug. 8, 1963, Ser. No. 300,739**
**12 Claims. (Cl. 18—45)**



1. A hollow mandrel for forming a shell having an accurate outer contour, said mandrel having a center axis and an outer wall of frangible material, reinforcing ribs extending longitudinally of the mandrel axis detachably embedded in said outer wall and each having a keystone cross sectional shape with the inner lateral dimension wider than the outer lateral dimension, and internal means removably supporting said ribs.

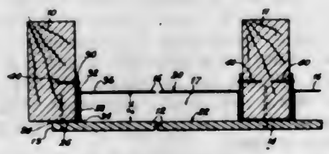
**3,165,790**
**COTTON BALL MACHINE**
**Robert H. Pratt, Fox Point, and Alfred J. Backus, West Bend, Wis., assignors to Pratt Mfg. Corp., Milwaukee, Wis., a corporation of Wisconsin**
**Original application Mar. 2, 1959, Ser. No. 796,495, now Patent No. 3,065,505, dated Nov. 27, 1962. Divided and this application Apr. 26, 1962, Ser. No. 190,384**
**9 Claims. (Cl. 19—144.5)**



1. A cotton ball forming machine provided with a rotatable wheel having a friction surfaced rim, a path-forming member having an entrance end, said member being positioned in increasingly widening spaced relation to the friction surfaced rim beginning at said entrance end to define a circumferential ball-forming path between said rim and member for reception of a sliver unit, sliver unit feed means positioned to feed a sliver at a predetermined rate onto said rim in a position for entrance into said ball-forming path, pneumatic means positioned in spaced relationship from the rim of said wheel in a location adjacent said entrance end of the circumferential path to act on the leading end of a recently-fed sliver to deflect said end and initiate a rolling action which is adapted to be completed in said ball-forming path, and means for causing breaking of said sliver at predetermined intervals.

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**3,165,791**
**WALL-FORMING STRUCTURE**
**Donald J. Valsvik, Stillwater, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware**
**Filed Nov. 15, 1960, Ser. No. 69,445**
**10 Claims. (Cl. 20—4)**



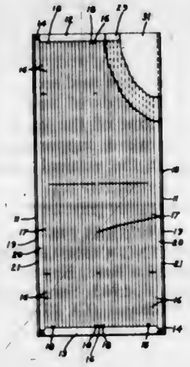
1. A wall-forming structure for covering a space of predetermined dimension in width, comprising rigid facing means having a width greater than said dimension, a spaced pair of foldable two-strip angular forms having their folding lines parallel and located at a face of said facing means and spaced apart by a distance the value of which is in the immediate vicinity of said dimension but not greater than said dimension, each of said forms comprising a first strip secured to said facing means in position to locate said folding lines at said face, and said forms each further comprising a flange-forming mounting strip extending from its folding line, and an exterior expandable panel of sheet material having panel-edges connected to said flange-forming strips at hinging lines parallel to said folding lines and intermediate the edges



of said flange-forming strips, said panel having an expandable width suitable to span said dimension when the outer edges of said flange-forming strips are spaced apart by said dimension, said panel being contracted in width between said hinging lines when said flange-forming strips are folded toward each other onto said face of said facing means.

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**3,165,792**
**STRUCTURE FOR DOORS AND THE LIKE**
**Louis Pick, 416 Iona St., Metairie, La.**
**Filed Apr. 3, 1961, Ser. No. 100,053**
**1 Claim. (Cl. 20—15)**

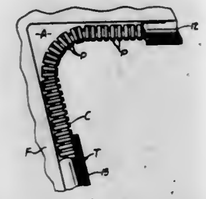


A flush type door comprising top, bottom and side frame members connected together at their ends to form a rectangular frame, a solid filler for said frame, and a covering on each face of said filler, said filler comprising a plurality of abutting vertical staves filling said rectangular frame, at least two of the staves most closely adjacent each of the side frame members and at least one of the staves located approximately midway between the side frame members being each made up of short stave lengths positioned adjacent the top and bottom frame members and a separate long stave length positioned between said relatively short stave lengths and completing the stave and extending across a horizontal line approximately midway between the top and bottom frame members, the remaining staves each comprising two stave lengths each extending approximately one-half and distance between the top and bottom frame members and abutting end to end along the horizontal line approximately midway between the top and bottom frame members.

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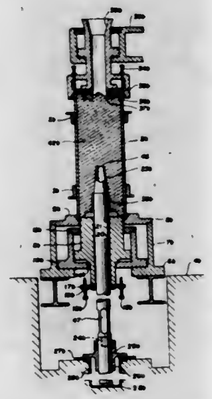
**3,165,793**
**FLANGE-GRIPPING FLEXIBLE SEALING-STRIP CARRIER**
**William R. Lynch, Birmingham, Mich., assignor to Republic Industrial Corporation, Newark, N.J., a corporation of Delaware**
**Filed June 5, 1961, Ser. No. 114,732**
**16 Claims. (Cl. 20—69)**

16. An elongated flexible spring metal carrier for trim, weather seals and the like, comprising a plurality of longitudinally spaced and aligned, parallel, transversely extending gripping elements of like generally U-shaped transverse configuration and dimension integrally connected one to another over the length of the carrier only by a succession of thin substantially planar relatively narrow bridging bands, there being at least one such bridging band between each one of the adjacent gripping elements, the plane of each bridging band between a first pair of adjacent gripping elements being orientated substantially parallel to a first plane extending longitudinally of said carrier to facilitate bending of said carrier about an axis extending transversely of said carrier and parallel to said first longitudinally extending plane, the plane of each bridging band between a second pair of adjacent gripping elements being orientated substantially parallel to a second plane extending longitudinally of said carrier generally normal to said first longitudinal plane to facilitate bending of said carrier about an axis extending transversely of said carrier and parallel to said second plane.



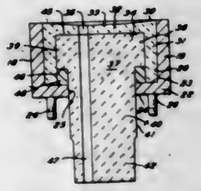
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**3,165,794**
**APPARATUS FOR FORMING FOUNDRY MOLDS**
**Loyal L. Johnston, Zelienople, Pa., assignor to Herman Pneumatic Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 19, 1961, Ser. No. 118,001**
**1 Claim. (Cl. 22—17)**



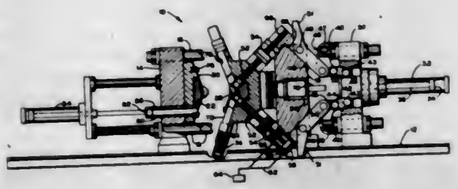
Apparatus for forming a foundry mold comprising an elongated flask having openings at both ends, means for mounting the flask with its longitudinal dimension generally vertical, an elongated former initially disposed with its longitudinal dimension generally parallel to the longitudinal dimension of the flask, adjacent the lower portion of the flask and in position to move upwardly through the flask when the flask is mounted in the mounting means and means for moving the former upwardly through the flask to form a cavity extending longitudinally of the flask in finely divided mold forming material in the flask and compact the mold forming material to form a mold for casting, the former having a passageway therein receiving and removing from the flask a predetermined quantity of the mold forming material while the former moves through the flask whereby to insure compacting the mold forming material to optimum hardness as a cavity of predetermined transverse dimension is formed.

3,165,795
APPARATUS FOR TEEMING OF MOLTEN METALS
George C. Bahm, 354 Austin Drive, Fairless Hills, Pa.
Filed May 8, 1963, Ser. No. 278,818
5 Claims. (Cl. 22—84)



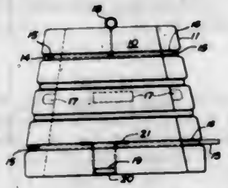
1. Teeming apparatus for use with the bottom wall of a ladle tank having an upper face comprising a cap having a top wall flush with said upper face and a side wall extending downwardly from said top wall, said cap having a vertical port in said top wall, a spindle rotatably mounted within said cap on a vertical rotational axis with its top extremity beneath said top wall and surrounded by said side wall, said spindle having a horizontally disposed supporting shoulder intermediate its top and bottom extremities, a supporting bearing beneath said shoulder, said spindle having an operating portion extending downwardly below said bottom wall, and said spindle having a vertically extending port therein normally in offset relation to said vertical port and movable into alignment therewith.

3,165,796
LARGE ANGULAR CORE LOCKING MECHANISM FOR DIE CASTING
John W. McDonald, Toledo, Ohio, assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 7, 1962, Ser. No. 171,715
5 Claims. (Cl. 22—93)



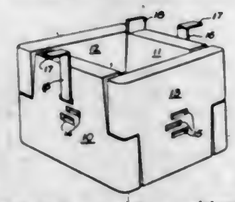
1. In a die casting machine, a stationary plate, a cover die supported by said plate, a sliding plate, an ejector die supported by said sliding plate, said cover die and said ejector die forming a die cavity when said ejector die is moved into register with said cover die by said sliding plate, a core member adapted to extend into said cavity, means for moving said core member out of said die cavity, and means for locking said core member in said die cavity, said locking means comprising a pivotal link, means for pivotally supporting said link on said sliding plate in predetermined relationship with respect to said core member, said link having a portion effective to lock said core member in said die cavity, a crosshead, means for moving said crosshead toward and away from said stationary plate, and means connecting said crosshead and said link to push said sliding plate toward said stationary plate, to cause said link to pivot as said crosshead and said sliding plate move toward said stationary plate, and to cause said link to lock said core member in said cavity as said sliding plate moves toward said stationary plate.

3,165,797
HOT TOP
Micheal Donald La Bate, Kay St., Wampum, Pa.
Filed Jan. 8, 1963, Ser. No. 250,045
5 Claims. (Cl. 22—147)



1. A sectional hot top comprising four vertically standing identical flat slab-like sections of consumable material, each of said sections having marginal openings in one of its vertical margins, rods disposed longitudinally and horizontally in each of said sections in vertical spaced relation and with the ends of said rods extending outwardly of the other one of the vertical margins of said sections for co-operative supporting relationship with marginal openings in the vertical margin of another of said sections.

3,165,798
SELF-SUPPORTING CONSUMABLE HOT TOP
Micheal Donald La Bate, Kay St., Wampum, Pa.
Filed Jan. 8, 1963, Ser. No. 250,046
5 Claims. (Cl. 22—147)



4. A consumable hot top for positioning in an ingot mold and comprising a rectangular walled structure having open upper and lower ends and wherein said walled structure is formed of four sections of solid consumable material, each of said sections having a plurality of vertically spaced recesses in its outer surface and each of said sections having a relatively wide lower body portion and a relatively narrower upper body portion centered on said lower body portion and together forming the respective upper and lower halves of said section and wherein two of said sections are positioned in said ingot mold in oppositely disposed relation with their wide body portions downwardly and the other two of said sections are positioned in said ingot mold in inverted position with their wide portions upwardly so as to rest on the lower wide portions of the first two sections, the vertical edges of said narrower upper body portions being tapered, and means for wedging said sections relative to one another to support same in said mold, said means comprising wedge members positioned between said sections for increasing the effective width of the upper portion of said hot top so as to cause it to conform to the shape of the tapered cavity of an ingot mold in which the same is positioned.

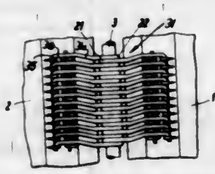
3,165,799
PROCESS AND SLURRY FORMULATION FOR MAKING PRECISION CASTING SHELLS
Claude H. Watts, Lyndhurst, Ohio, assignor to Precision Metalsmiths, Inc.
Filed Oct. 17, 1961, Ser. No. 145,713
7 Claims. (Cl. 22—196)

5. A process of building a shell mold around a disposable pattern having restricted passages comprising applying a first refractory coating to said pattern, drying said first coating, applying another refractory coating to said pattern by dipping the pattern into a refractory slurry bath, said refractory slurry bath being characterized by having a viscosity thin enough so that it can be forced into the restricted passages, a viscosity high enough so that it will remain in the restricted passages during subsequent draining operations to provide a solid and continuous shell mold, and having sufficiently large refractory grains so that the slurry packed into said restricted passages will not crack on hardening, applying a vacuum to said slurry bath with the pattern immersed therein until substantially all occluded air is removed, said vacuum being great enough that the slurry will be forced into the restricted passages of the pattern and will be caused to substantially uniformly coat said pattern when the vacuum is released and the slurry bath is restored to atmospheric pressure, restoring said slurry to atmospheric pressure so that the slurry is forced into the restricted passages to substantially uniformly coat said pattern, removing the pattern from the slurry bath, draining excess slurry from the pattern, and applying a stuccoing material to said another coating of slurry, drying said another refractory coating, and thereafter continuing to build up the shell mold by the steps including dipping the pattern into a refractory slurry, stuccoing, and drying.



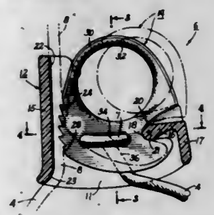


3,165,800
CONVEYOR-BELT CONNECTION
Hermann Stolz, Muhlheim (Main), Germany, assignor to Curt Matthaei, Offenbach (Main), Germany
Filed Apr. 11, 1963, Ser. No. 272,280
Claims priority, application Germany, Apr. 26, 1962, M 52,640
3 Claims. (Cl. 24—33)



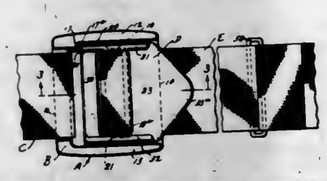
1. A connector for a belt, said connector comprising a plurality of generally V-shaped connector elements, each of said elements having two shanks lying substantially in a common plane, one shank of each element terminating in a prong extending inwardly towards the other shank and substantially lying in said common plane and said other shank having an inner portion lying within said plane, an intermediate portion extending out of said plane and an outer portion lying parallel to said plane but spaced apart therefrom and terminating in a bridge portion extending toward said plane and ending substantially within the same, the pronged shanks of said elements being disposed side by side in parallel planes and the intermediate and outer shank portions of the other shank of each element being disposed on the same side of said planes whereby said bridge portions all face in the same direction and define a substantially straight continuous line transverse of said planes.

3,165,801
ROPEHOLD AND NOOSE
Benjamin H. Stansbury, Jr., San Francisco, Calif., and Hugh Patrick Thornton, Jr., Newfoundland, N.J., assignors to The Hartford Company, Hartford, Conn., a corporation of Connecticut
Filed Mar. 9, 1962, Ser. No. 178,778
6 Claims. (Cl. 24—134)



1. A noose-clamp construction comprising, a shell having a pair of side walls and a pair of end walls one of which presents a clamping surface against which a rope may be clamped, a clamping member mounted within said shell, said shell having a ledge portion which presents a bearing surface and said clamping member presenting a bearing surface which mates therewith thereby to provide limited rocking movement of said clamping member within said shell, said clamping member having a rope-engaging surface which extends along said clamping surface of the shell and is separated therefrom by a rope passageway, the rocking movement of said clamping member moving said rope-engaging surface with one component of movement being parallel to said clamping surface and another component thereof being transverse thereto whereby the clamping member may be moved to and from a position wherein it clamps a rope against said clamping surface, said clamping member having rope-anchor means positioned substantially between said rope-engaging surface and the mating surfaces which form the rockable mounting for said clamping member, and a rope having one end anchored in said rope-anchor means of said clamping member and its other end extending through said rope passageway between said clamping surface and said rope-engaging surface and with the intermediate portion of the rope forming a noose toward which said rope clamping portion moves when said rope-engaging surface is moved toward said clamping surface, whereby tightening of said noose about materials causes said clamping member to be moved toward its rope-clamping position by the action of a pulling force exerted by said anchored end of said rope substantially between said rope-engaging surface and the rockable mounting of said clamping member.

3,165,802
QUICKLY RELEASABLE BUCKLE FOR SAFETY AND HARNESS STRAP
Leslie L. Irvin, Los Angeles, Calif., assignor to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York
Filed Feb. 8, 1963, Ser. No. 257,324
3 Claims. (Cl. 24—197)



1. As an article of manufacture, a quickly releasable buckle for the webbing of safety harnesses and the like comprising a first rigid buckle portion having a webbing

attaching cross bar, a pair of upwardly extending and parallel side bars rigidly connected at the ends of the webbing attaching cross bar in substantially right angled relation therewith, and an end cross bar connected to the ends of the side bars remote from the webbing attaching cross bar, said cross bars and side bars defining an inserting opening, and a second buckle portion comprising a pair of relatively spaced parallel cross bars, spaced side bars secured at the ends of the last mentioned cross bars, and a webbing attaching bar secured to the side bars in the space between the facing edges of the cross bars of the second buckle portion, the outer side surfaces of the side bars of the second buckle portion being spaced apart less than the width of said inserting opening, the side bars of the first mentioned buckle portion being provided with opposite and inward extensions, the upper surfaces of said inward extensions and the upper surface of the cross bar remote from said webbing attaching cross bar lying in the same plane to define a slideway, each side bar having an inner side recess, the recesses facing each other and communicating with the inserting opening of said first mentioned buckle portion and the said recesses being of unequal lengths, said cross bars of the second buckle portion having bottom surfaces adapted to engage the slideway of the first buckle portion, the side bars of the second mentioned buckle portion being of unequal heights whereby to insure that the second buckle portion can be correctly inserted through the opening of the first mentioned buckle portion only by having the side bar of the second mentioned buckle portion which is of greater height than the side bar of the second mentioned buckle portion inserted through the longer recess of the first mentioned buckle portion, the side bar of greater height having a height measurement greater than the length of the shorter recess, the side bar of the first mentioned buckle portion having the shorter recess being provide with a boss extension on the inner side thereof projecting into the inserting opening and defining one end of the shorter recess of said side bar, said boss extension projecting above the plane of the slideway of the first buckle portion to limit the longitudinal collapsing movement of the second mentioned buckle portion within the first mentioned buckle portion toward its webbing attaching cross bar when said buckle portions are in engaged relation, the side bar of said first mentioned buckle portion having the longer recess extending closer to the webbing attaching cross bar than the shorter recess of the side bar having said shorter recess.

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**3,165,803**
**QUICK ENGAGING BUCKLE FOR SAFETY BELTS**
John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a corporation of California
Filed May 20, 1963, Ser. No. 281,568
1 Claim. (Cl. 24—225)



A buckle comprising

(*a*) a male part formed of a transversely elongated substantially flat body having a loop at one end for a web,

(*b*) an elongated hook formed transversely on one side and spaced from the respective side edges of said elongated flat body,

(*c*) the inside periphery of said elongated hook defining substantially about five-eighths of a cylinder and the bottom of said periphery projecting partly to one side of said flat body and the curved hook point of said hook being turned back toward said loop and projecting beyond the other side of said flat body,

(*d*) a lifting flange extended generally in the plane of the bottom of said hook, and

(*e*) a female part formed of a substantially flat member with a pair of transverse parallel slits, one of said slits being engageable by another web, the other slit forming a keeper for said hook,

(*f*) the thickness of said female part at said other slit fitting against the inner periphery of said hook under said turned hook point in substantial registry with the plane of said flat body of said male part and in locked position overlying said lifting flange.

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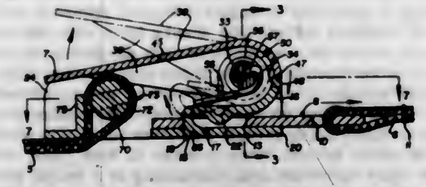
**3,165,804**
**SEPARABLE FASTENER**
Andre Marosy, 24731 Kipling St., Oak Park, Mich.
Filed Nov. 2, 1962, Ser. No. 235,159
4 Claims. (Cl. 24—230)



1. A jewelry snap comprising a pair of hollow bodies each having one open end; a U-shaped resilient member having respective arms and connecting curved section, one arm thereof secured to one side of one of said bodies at the open end; the other of said bodies being disposed for receiving said resilient member; tooth means and tooth engaging means, one of which is on the other arm and the other being on said other body and coacting to engage with one another; said one body including a vertical hole adjacent the open end thereof, said arm having a terminal end extending into the open end of said one body adjacent said vertical hole, a plunger threadably secured to said terminal end and extending from one side thereof through said vertical hole and from the other side thereof into said one body and having a length substantially equal to the vertical dimension of the open end, whereby said vertical hole limits movement of said plunger along a vertical line and whereby said plunger performs when screwed in one direction with respect to the one arm to hold said one arm in tight relationship to said other body and to effect engagement of said tooth means with said tooth engaging means.

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**3,165,805**
**SEAT-BELT BUCKLE**
James H. Lower, Pulaski, Va., assignor, by mesne assignments, to Three G Corporation, Akron, Ohio, a corporation of Ohio
Filed June 1, 1962, Ser. No. 199,516
3 Claims. (Cl. 24—230)



1. The combination of a safety-belt buckle and a tongue fastened to opposite ends of a safety belt, the tongue comprising an opening through which locking means passes in engagement with the base of the buckle, the belt being attached to the portion of the tongue in front of said opening and the tongue being located above and in contact with the forward portion of the base, a rearwardly facing abutment portion on the base, the locking means being pivotally supported above the tongue with the upper portion thereof directed rearwardly from its pivoted support and the locking means being downwardly and reversely bent from said upper portion and terminating in a bottom portion which is locked against the base, the load-bearing portion of the locking means being said reversely bent portion which transmits the load from the rear portion of the tongue to said abutment portion of the base.



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**3,165,806**
**SAFETY BELT BUCKLE**
Gerald M. Lehmann, Freeport, N.Y., assignor to Phillips-Van Heusen Corporation, New York, N.Y., a corporation of New York
Filed Jan. 18, 1963, Ser. No. 252,399
1 Claim. (Cl. 24—230)

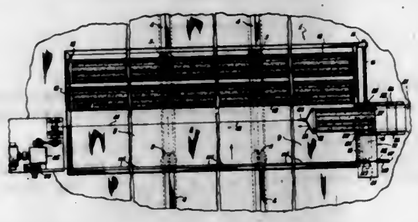


A safety belt buckle comprising, a sheet material casing of substantially rectangular form having a front wall, a rear wall, and a pair of side walls, said casing having an opening at one end, an apertured leaf adapted to be carried by an end of a safety belt, a sheet material latch plate disposed within the casing, said latch plate having first and second end portions lying in generally parallel planes connected by an inclined medial portion, said first portion positioned adjacent said opening, said latch plate having a foot portion at said first end portion provided with a projecting lip directed toward the second end portion, said lip being defined by the free edge of a slot partially defined by a pressed out portion of a generally U-shaped configuration in elevation, said latch plate having integral lugs projecting from its opposite side edges and located intermediate of its end portions, the side walls of the casing being provided with apertures receiving said lugs to thereby pivotally mount the latch plate wholly within the casing, said lugs being disposed between the lip and the inclined medial portion, said second portion being provided with a finger-engaging element by which the latch plate may be pivotally moved, the casing having an aperture in its front wall through which the finger-engaging element is exposed for manual engagement, the leaf being insertable between the foot portion of the latch plate and the rear wall of the casing and engaged by the lip to prevent its withdrawal out of the casing, and generally V-shaped spring means between the foot portion of the latch plate and the front wall adjacent the opening biasing the first end portion toward the rear wall and into engagement with the leaf aperture.

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**3,165,807**
**APPARATUS FOR HANDLING EXTRUDED CEMENTITIOUS MATERIAL AND THE LIKE**
Henry A. Berliner, Washington, D.C., and Frank B. Lane and William L. Greene, Annapolis, and Clarence J. Clements, Silver Spring, Md., assignors, by mesne assignments, to Institut International Financier, a Liechtenstein corporation
Filed Dec. 29, 1961, Ser. No. 163,294
13 Claims. (Cl. 25—11)

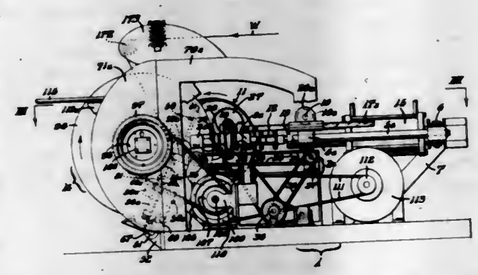
1. Apparatus for handling extruded material delivered from the die orifice of an extrusion machine, comprising: table means providing an upper supporting surface with one end of said table disposed adjacent to said die orifice and substantially at the same level as the bottom extremity of said orifice; and a plurality of conveyor belt means mounted on reels positioned at said one end of said table in side-by-side relation and each having free ends extending from said reels; means for training the free ends of said belts onto said supporting surface for movement therealong in longitudinally directed paths, said table being



transversely moveable to bring successive ones of said longitudinal paths into longitudinal alignment with said die orifice, whereby a plurality of lengths of said extruded material can be delivered onto said supporting surface in side-by-side relation.

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**3,165,808**
**WARPER**
Godfrey H. Browne, Woodrow W. Cloer, George Manning, John A. McColg, Sr., and Thomas Frank Suggs, all of Gastonia, N.C., assignors to Cocker Machine & Foundry Company, Gastonia, N.C., a corporation of North Carolina
Filed May 2, 1961, Ser. No. 107,159
7 Claims. (Cl. 28—32)

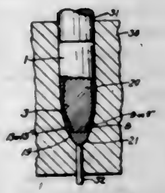


2. In a beam warper, a pair of beam engaging members endwise slidable at an elevation above base level in the warper, said beam engaging members being constructed for reception of the beam journals; means for driving the beam engaging members; a press roll; a supporting carriage for the press roll; a pressure fluid means connected to the carriage for normally maintaining the press roll yieldingly engaged with the warp windings on the beam during the beaming; a pair of normally retracted arms affixed to a rock shaft below the beam engaging members, said arms having notches and normally retracted latches for closing the notches; normally slacked chains connecting said arms to the carriage; means automatically operative as the arms are swung manually to engage their notches over the journaled ends of the beam inwardly of the beam engaging members, to stop the press roll drive means, to cause exhaustion of the rear end of the carriage cylinder, and admission of pressure fluid to the front end of the cylinder for retraction of the carriage and the press roll from the beam, means automatically operated as the carriage is retracted to cause the latches to close the notches of the arms and to retract the beam engaging members for release

of the beam; automatic means for thereafter exhausting the front end of the carriage cylinder and admitting pressure fluid to the rear end of the carriage cylinder to advance the carriage and gradually let down the arms until the beam is lowered to the base; and automatically operative means for causing retraction of the latches to permit release of the filled beam.

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**3,165,809**
**BULLET MAKING**
**Arthur K. Burns, Jr., and Charles M. Schreiber, Alton, Ill., assignors to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia**
**Original application Oct. 2, 1959, Ser. No. 844,062, now Patent No. 3,143,966, dated Aug. 11, 1964. Divided and this application Dec. 24, 1962, Ser. No. 253,777**
**2 Claims. (Cl. 29—1.23)**



1. The process of making a base jacketed, soft core bullet comprising the steps of assembling a slug of core material with an open mouth jacket cup having a front nose edge at the mouth and a cylindrical wall of substantially uniform thickness around said nose edge of the mouth, creasing the cup wall inwardly adjacent said mouth along uniformly circumferentially spaced lines intersecting said edge, and swaging the cup adjacent said creased wall to contract said mouth and the adjacent part of said slug to conform them to finished jacket shape about said material and to a finished bullet nose and form a pinch pleat at each of said lines by an inwardly extending bend of substantially 180° between bends each of about 90° providing a radial rib in said jacket having proclivity to splitting.

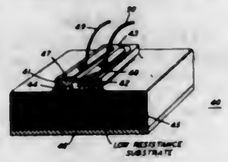
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**3,165,810**
**EXPANDED METAL**
**Wave B. Agler, Hammond, Ind., assignor to Pentron Electronics Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Aug. 3, 1962, Ser. No. 214,745**
**8 Claims. (Cl. 29—6.2)**



1. In the method of making an expanded metal sheet from an imperforate metal sheet, the steps which comprise:
(*a*) forming a row of openings in the sheet,
(*b*) slitting the sheet along one side of each opening and forming a strand adjacent thereto,
(*c*) drawing each strand into the respective opening and forming one-half of a generally diamond shaped opening, and
(*d*) continuing the slitting and drawing to form complete generally diamond shaped openings.

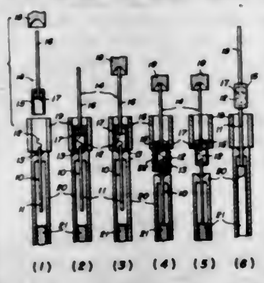
**3,165,811**
**PROCESS OF EPITAXIAL VAPOR DEPOSITION WITH SUBSEQUENT DIFFUSION INTO THE EPITAXIAL LAYER**
**Joseph J. Kleimack, Scotch Plains, and Howard H. Loar, Madison, N.J., and Henry C. Theuerer, New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed June 10, 1960, Ser. No. 35,152**
**4 Claims. (Cl. 29—25.3)**



1. The method of making a junction transistor comprising the steps of
forming by vapor deposition on a surface portion of a semiconductive body an epitaxial layer of higher specific resistivity than the specific resistivity of said surface portion,
diffusing into a surface portion of the epitaxial layer a conductivity-type impurity for forming in said layer a first region of a conductivity type opposite that of said surface portion of said semiconductive body, while leaving a high specific resistivity portion of said epitaxial layer between said first region and the original surface portion of said body, and
introducing into a limited surface portion of the first region a conductivity-type impurity of the type opposite that diffused into the first region for forming within said first region a second region of the opposite conductivity type, the second region serving as the emitter region, the first region serving as the base region, and the semiconductive body including the collector region of the junction transistor.

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**3,165,812**
**METHOD OF MANUFACTURING GLASS DIODES**
**Masao Takahashi, Setagaya-ku, and Kyoji Sato and Itaru Yasue, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan**
**Filed Sept. 27, 1961, Ser. No. 141,084**
**1 Claim. (Cl. 29—25.3)**

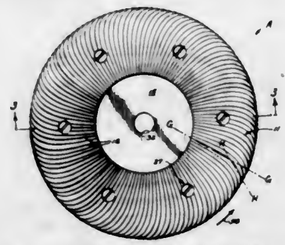



A method of assembling a glass diode with a first diode member and a second diode member, the first diode member comprising a semiconductor metal pellet having a wire lead connected to the semiconductor metal pellet and a glass cylinder having a bottom through which the wire lead extends and to which the wire lead is sealed with the semiconductor metal pellet enclosed within the glass cylinder so that the distance between the surface of the semiconductor metal pellet opposite to the surface onto which the wire lead is connected and the open end face of the glass cylinder be a predetermined value, the second diode member comprising a wire lead carrying at one end a resilient contact element and a glass bead secured to the wire lead at a point adjacent to the contact element so that the distance between the free end of the contact element and the surface of the glass bead remote from the contact element be another predetermined value, the method comprising steps of receiving the second diode member on a vertical tubular rod with the free end of the contact element of the second diode element directed upwardly, receiving the first diode member on the vertical tubular rod with the open end face of the glass cylinder of the first diode member contacting with the upper face of the vertical tubular rod to have the glass cylinder cover the contact element with the upper end of the element being adjacent to the lower surface of the semiconductor metal pellet, placing a weight on the upper end of the wire lead of the first diode member, lowering the vertical tubular rod with the second and first diode element with the weight received on the tubular rod, abutting the second diode member after a predetermined depth of vertical travel of the vertical tubular rod so that the glass cylinder of the first diode member departs from the vertical tubular rod and the first diode member loaded by the weight is supported solely by the contact element, and then heating the glass cylinder with a heater means to seal the glass cylinder with the glass bead of the second diode member.



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**3,165,813**
**ROTARY FILE**
**Robert Harvell and James L. May, Tallahassee, Fla., assignors to Rotary Disc File Corporation of America, Tallahassee, Fla., a corporation of Florida**
**Filed June 19, 1961, Ser. No. 118,178**
**7 Claims. (Cl. 29—78)**

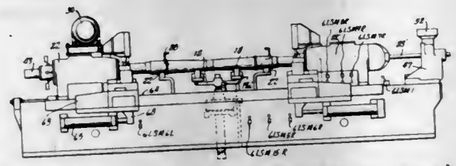


1. A rotary file comprising a file carrying disc revoluble in a definite direction of rotation for impinging the work when filing, said disc having its marginal portion rounded from its one face to its peripheral portion, and a plurality of closely spaced arcuate teeth carried by said disc and projecting from said face and said rounded and peripheral portions, said teeth having convex cutting edges foremost in said direction of rotation, and chords extending diagonally with respect to said direction of rotation, outwardly with respect to the central portion of the disc and rearwardly with respect to the said direcion of rotation, whereby at least the major portion of the cuttings produced when filing are guided by said teeth to a zone next adjacent and surrounding the periphery of the disc.

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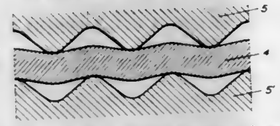
**3,165,814**
**BURNISHING LATHE FOR AXLES**
**William R. Miller, George B. Anderson, and Norris E. Bleck, Rochester, N.Y., assignors to Farrel Corporation, Ansonia, Conn., a corporation of Connecticut**
**Filed May 4, 1960, Ser. No. 26,837**
**20 Claims. (Cl. 29—90)**

5. An automated machine tool combination comprising an elevator for conveying workpieces and movable to up and down positions, a workpiece storage surface extending transversely from said up position and having an end registered therewith, said end having a workpiece escapement actuated by said elevator arriving at said up position and said storage surface having means for urging stored workpieces towards said end, a workpiece delivery conveyor extending transversely from a location between said positions, said elevator having means for unloading a workpiece therefrom to said conveyor and which is actuated by said elevator passing said conveyor while moving upwardly, and a machine tool having means responsive to the arrival of said elevator at said down position for supporting a workpiece free from said elevator and means responsive to operation of this supporting means for causing said machine tool to operate through one operating cycle and freeing said work so it returns to said elevator, and means responsive to said freeing for causing said elevator to move to said up position, said machine tool including at least one tool, means for mounting said tool for relative movement with respect to a surface of said workpiece supported free from said elevator and causing the tool to press against and traverse said surface, controllable means for applying variable forces to cause said movement, and control means for controlling said controllable means and which is responsive to a variation in the pressure between said tool and surface.



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**3,165,815**
**PROCESS FOR THE MANUFACTURE OF SECTIONS**
**Alfred Wögerbauer, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria**
**Filed July 23, 1962, Ser. No. 211,576**
**Claims priority, application Austria, July 28, 1961, A 5,828/61**
**10 Claims. (Cl. 29—155)**



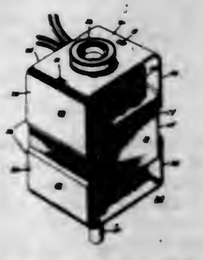
1. A process for the manufacture of sections from metal strip, comprising cold-rolling the strip through the gap between grooved rolls to impart to at least parts of said strip a ridge-and-groove profile without altering the width of the strip, said strip being strain-hardened thereby, continuously shaping said ridge-and-groove profiled strip into sections having at least one bending edge in the longitudinal direction, the inside of said bending edge being formed by a groove (wave trough) of said strip and the outside of said bending edge being formed by a ridge (wave crest) of said strip.

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**3,165,816**
**METHOD OF MANUFACTURING DYNAMO-ELECTRIC MACHINES**
**Paige W. Thompson, Morrison, Ill., and Lawrance W. Wightman, St. Louis, Mo., assignors to General Electric Company, a corporation of New York**
**Original application Nov. 4, 1958, Ser. No. 771,755. Divided and this application Dec. 30, 1960, Ser. No. 79,665**
**9 Claims. (Cl. 29—155.5)**

1. A method of assembling a dynamoelectric machine having a stator assembly, a rotor assembly including a

shaft, and rotor supporting means including a pair of bearing supports each mounting a bearing for rotatably supporting said rotor assembly from said stator assembly, comprising the steps of assembling said rotor and said stator assemblies in a predetermined concentric relationship with removable positioning means arranged in the air gap therebetween to maintain the assemblies in said concentric relationship; positioning each bearing support respectively adjacent a surface of said stator in loosely adjustable, generally spaced and non-engaging relation thereto, with a surface of the respective bearing supports and the associated surface of said stator assembly being in overlapping relation, with said shaft extending into and aligning said bearings therewith and with an adhesive

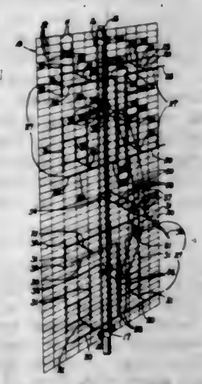


bonding material including a substantially non-shrinking organic thermosetting resin in a plastic state disposed in the space between the respective overlapping bearing support surfaces and the associated surfaces of said stator assembly; curing said adhesive bonding material as the shaft sustains the previously established relation with the bearings without interference from said overlapping surfaces and hardening adhesive material thereby rigidly securing together said stator assembly and said bearing supports; and removing said removable positioning means from the air gap to release said stator and said rotor assemblies for relative rotation, said cured material and bearing supports retaining the established relationships substantially free of stresses for the operating life of the machine.

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3,165,817
## METHOD OF MAKING A COLLAPSIBLE ANTENNA OF WIRE MESH

Grady L. Teague, Rte. 1, Box 726, Porterville, Calif.
Filed Sept. 10, 1962, Ser. No. 222,323
3 Claims. (Cl. 29—155.5)

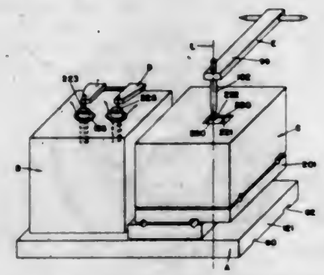


2. The method of making a unidirectional antenna in the form of a plane-reflector array comprising selecting a first elongated metallic reflecting screen having longitudinal and transverse wires arranaged in an open mesh, the screen being adapted to be supported in a plane substantially normal to the direction of electromagnetic energy to be intercepted thereby; selecting a second metallic screen having longitudinal and transverse members arranged in an open mesh substantially identical to that of said first screen wherein the members are secured in intersecting groups of respectively parallel members; cutting selected longitudinal and transverse members from a portion of said second screen to form a pair of transversely spaced laterally opposed phasing wires having opposite ends integrally joined to respective antenna elements formed by parallel segments of said transverse members, each of said antenna elements having a longitudinal member joined thereto at the approximate midpoint of the antenna element to serve as a spacer; and cutting each of said spacers at a substantially uniform length to provide an inner end portion for foldable connection to the first screen for movement of the antenna elements and the spacers between retracted positions substantially flush against the first screen and operable positions with the elements supported in a coplanar arrangement spaced outwardly from the first screen by the spacers.

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3,165,818
## METHOD FOR MOUNTING AND BONDING SEMICONDUCTOR WAFERS

Albert Soffa, Wynnewood, and Thomas L. Angelucci, Philadelphia, Pa., assignors to Kulicke & Soffa Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania
Original application Oct. 18, 1960, Ser. No. 63,380, now Patent No. 3,083,291, dated Mar. 26, 1963. Divided and this application Nov. 27, 1962, Ser. No. 243,699
9 Claims. (Cl. 29—155.5)



1. A method of assembling a wafer of semiconductor upon a partially assembled semiconductor translating device comprising the steps of positioning a wafer of semiconductor in a first zone; positioning a partially assembled semiconductor translating device in a second zone; lifting the wafer upwardly from the first zone on a fixed vertical axis; displacing both first and second zones in a horizontal plane until said fixed vertical axis passes through a predetermined point in said second zone, said point being within the confines of said partially assembled device, and lowering said wafer into juxtaposition with said translating device.

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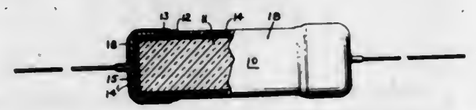
3,165,819
## METHOD OF PRODUCING CARBON FILM RESISTORS

William F. O'Shea, Hatboro, Pa., assignor to Continental-Wirt Electronics Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 15, 1961, Ser. No. 89,543
1 Claim. (Cl. 29—155.71)

The method of making a film type resistor comprising the steps of, coating a cylindrical ceramic form with a carbon film, applying a silver band over the carbon film at each end of the form so that the bands are separated



by an intervening unbroken portion of the carbon film, encapsulating the carbon film and silver bands with a mechanically stabilizing bonding agent first protective coating which holds the film together, mechanically securing a metal end cap upon each end of the form in good electrical contact with the silver bands by applying pressure to the cap sidewalls effective to press the same radially inward about the cylindrical surface of the form so that at least portions of the cap sidewalls press through and displace at least a portion of the first protective coating to

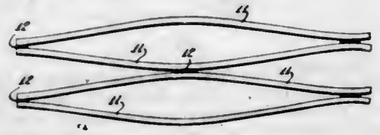


thereby contact the silver bands while the remainder of the cap inside walls engage said first protective coating to fill substantially all of the space between the inner surface of the end cap and the outer surface of the resistor end upon which it is secured to thereby prevent subsequent physical shifting of the end cap on the resistor to avoid fracture of the carbon film, removing from the form between the end caps a groove of the carbon film and the overlying first protective coating, and filling the groove with and encapsulating the composite structure in a second protective coating.

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3,165,820
## METHOD OF FORMING HONEYCOMB STRUCTURE

Howard A. Fromson, Rogues Ridge Road, Weston, Conn.
Filed Aug. 18, 1960, Ser. No. 50,486
3 Claims. (Cl. 29—157.3)



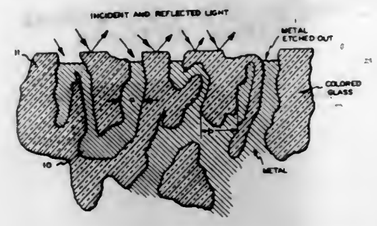
1. The method of forming a honeycomb structure of interconnected members having internal fluid conducting passages therein which comprises the steps of assembling a plurality of flat ribbon-like strips in superimposed vertically stacked relation relative to each other, each of said flat ribbon-like strips having unbonded opposing interior surfaces defining a central fissure extending lengthwise and confined within the sides thereof, said flat strips being expansible into hollow form, joining opposing central areas on exterior surfaces of adjoining strips at spaced points throughout their length, said joined central areas having a width less than the width of the flat strips separating unjoined opposing surfaces of adjacent strips and then forming an internal fluid conducting passage in each of the strips by inflating the respective strips and separating the unbonded opposing interior surfaces thereof.

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3,165,821
## COLORED METAL-GLASS COMPOSITES

Ernest J. Breton, West Grove, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,746
17 Claims. (Cl. 29—182.5)

1. A manufacture comprising a material of construction consisting of a sintered metal-glass composite made up of an intimate mixture of powdered metal, ground glass and a colorant contained within said glass as the vehicle, said colorant having a fastness surviving the maximum temperature of said glass in its softened state, and wherein said temperature of said glass in its softened state is




within about ±100° C. of the sintering temperature of said metal but below the melting point of said metal.

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3,165,822
## TUNGSTEN CARBIDE TOOL MANUFACTURE

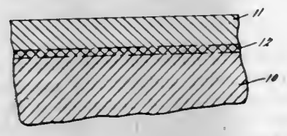
Robert T. Beeghly, Youngstown, Ohio, assignor to Metal Carbides Corporation, Youngstown, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 7, 1963, Ser. No. 300,683
16 Claims. (Cl. 29—182.7)

1. In the method of making a cemented hard metal carbide wherein a mixture of powdered hard metal carbides and a binder metal are compacted and sintered, the improvement comprising separately pelletizing at least two mixtures of metal carbide powder and binder metal, said binder metals differing in concentration and admixing said pellets prior to compacting and sintering.

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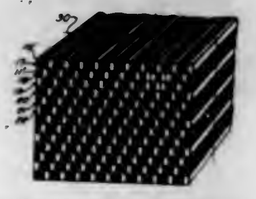
3,165,823
## METALLIC SURFACE COATING AND METHOD FOR MAKING THE SAME

Edward P. Rowady, Detroit, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed June 26, 1959, Ser. No. 823,214
5 Claims. (Cl. 29—197)



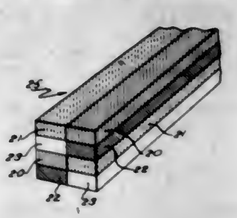
1. A metal article comprised of a ferrous base stainless alloy having on at least a portion of its surface a hard, corrosion-resistant surface coating, said coating consisting essentially of between about 35 and about 62 weight percent nickel, between about 1 and about 18 weight percent chromium, and between about 35 and about 50 weight percent aluminum, said coating being interposed between an underlying coating tenaciously bonded to the surface of the metal article and an outer coating, said underlying coating consisting of a metal selected from the group consisting of nickel and chromium, and nickel and chromium alloys comprised of at least 90 weight percent of the elements nickel and chromium, said nickel content ranging from about 97 to about 70 weight percent, said chromium content ranging from about 3 to about 30 weight percent, said outer coating consisting of a metal selected from the group consisting of aluminum and alloys of aluminum comprised of at least 90 weight percent aluminum.

3,165,824
**METHOD FOR PRODUCING JEWELERS' STOCK**
Greenlief Haskell Barney, Attleboro, Mass., assignor to Leach & Garner Company, a corporation of Massachusetts
Filed May 21, 1962, Ser. No. 196,128
4 Claims. (Cl. 29—411)



1. The method of providing a reproduceable pattern effect in jewelers' stock which comprises assembling and securing contrasting colored strips of metal in face to face relation to provide contrasting ends and edges, severing at an angle to the faces to provide a plate with generally contrasting parallel surface stripes and end areas, assembling and securing a plurality of such plates in face to face contact with the colored metals at least partially out of registry to provide a pattern in an end relation of the plates.

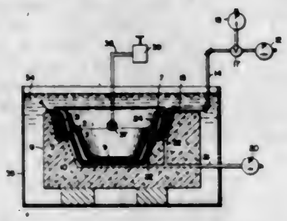
3,165,825
**JEWELER'S PATTERNED WIRE**
Greenlief H. Barney, Attleboro, Mass., assignor to Leach & Garner Company, a corporation of Massachusetts
Filed Nov. 27, 1963, Ser. No. 326,466
3 Claims. (Cl. 29—411)



1. The method of manufacturing variable colored wire comprising assembling and securing together in face to face relation a plurality of elongated strips of different colored metals into square cross sectional shape subjecting said assembled strips to a rod rolling mill by passing the assembled strips lengthwise through the rolling mill shaped to change the square cross sectional shape to substantially cylindrical shape with the stripes formed by the different colored metals extending longitudinally thereof.

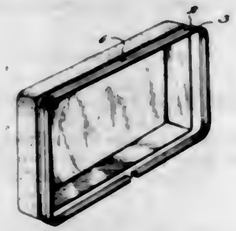
3,165,826
**METHOD OF EXPLOSIVELY FORMING FIBERS**
Itzhak E. Bentov, Belmont, Mass.
(% Synectics, Inc., 292 Main St., Cambridge, Mass.)
Filed May 16, 1962, Ser. No. 195,125
18 Claims. (Cl. 29—419)

1. A method of forming a shaped structure comprising arranging a quantity of deformable fibers in a web adjacent to restraining means having a surface conforming to a desired shape, immersing said fibers and said surface in an energy transmitting medium, and thereafter rapidly discharging sufficient energy in said medium to cause said medium to transmit sufficient energy to move said fibers toward said restraining means at a velocity between approximately 100 feet per second and a velocity such as to fragmentize said restraining means and to deform and bond said fibers



into an integral mass having a surface configuration conforming with said restraining means surface.

3,165,827
**METHOD OF OBTAINING REGISTRATION BETWEEN RELEASABLY FASTENED MEMBERS**
Oscar S. Stollman, 40 S. Deer Park Drive, Highland Park, Ill.
Filed Apr. 19, 1961, Ser. No. 104,162
4 Claims. (Cl. 29—445)



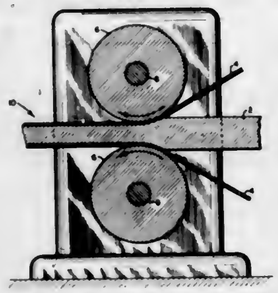
1. The method of obtaining registration of a pair of generally straight, plastically deformable and interengageable valance sections having a catch secured to one valance section and a latch mechanism secured to a cooperating valance section comprising securing the catch and latch inside their respective sections, latching the valance sections, and bending both sections of the valance together to conform to the configuration of the case with which it is to be used to insure registration between the sections of the case during opening and closing thereof.

3,165,828
**METHOD OF ROLL-BONDING COPPER TO STEEL**
James M. Kennedy, Byram, Conn., assignor to Revere Copper and Brass Incorporated, New York, N.Y., a corporation of Maryland
No Drawing. Filed Sept. 16, 1960, Ser. No. 56,342
5 Claims. (Cl. 29—487)

1. In the method of bonding sheet copper to sheet steel wherein the steel is plated on both sides with copper and the copper-plated surface of the steel is roll-bonded to the sheet of copper at an elevated temperature, the improvement which comprises bringing one side of the thus-plated steel sheet into physical contact with a sheet of a silver-containing copper base alloy the silver content of which is within the range of about 0.09 to about 0.20% and the balance of which is essentially copper, heating the resulting assemblage to a temperature within the range of about 800° F. to about 1950° F. in a reducing atmosphere containing an amount of hydrogen not in excess of that which will cause embrittlement of the copper suitable for bright annealing of copper, roll-bonding the thus-heated assemblage, and thereafter removing the copper plate from the other side of the steel sheet.

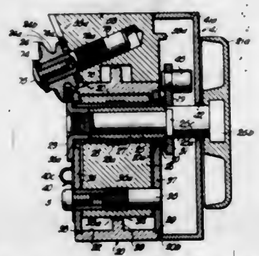


3,165,829
**METHOD OF CLADDING ALUMINUM WITH TITANIUM**
Tommie L. Wardlaw, Henderson, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware
Filed Jan. 29, 1962, Ser. No. 169,315
5 Claims. (Cl. 29—497)



1. A method of producing a product having an aluminum core clad with a strongly bonded outer layer of titanium which comprises:
(*a*) heating a core body of aluminum to a temperature between 700° F. and 1050° F.;
(*b*) placing a sheet of titanium at ambient temperature in direct face-to-face contact with said heated core body of aluminum; and,
(*c*) immediately passing said sheet of titanium and said aluminum core body conjointly through a rolling mill to obtain a reduction in thickness of said core body of aluminum of between 30% and 80% in one pass without deforming said sheet of titanium.

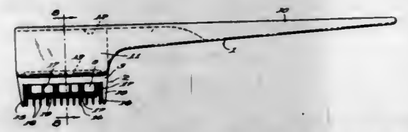
3,165,830
**CAN OPENER**
Robert E. McLean, Raytown, Mo., assignor, by mesne assignments, to Rival Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 4, 1963, Ser. No. 262,532
13 Claims. (Cl. 30—9)



1. In a can opener, the combination of a main body having a cavity therein, a link member, means supporting said link member in said cavity on opposite sides thereof for pivotal movement about a fixed pivot axis, a feed wheel shaft journaled in said link member for rotation about an axis parallel with said pivot axis, a feed wheel mounted on one end of said shaft, a crank arm carried by said shaft, a pawl assembly connected with said main body and having means cooperating with said crank arm and operable to effect shifting of said link member between two end positions within said cavity in response to rotation of the feed wheel shaft, a cutter member, and means connecting said cutter member with said main body and supporting same so that in one of said end positions, said feed wheel is in can cutting relationship with said cutter member.

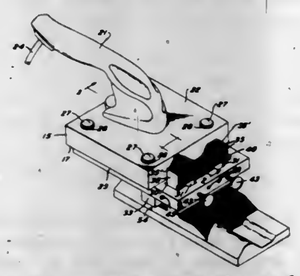


3,165,831
**MULTIPLE COMB AND BLADE HAIR TRIMMING DEVICE**
Dorothy A. Carrol, 310 W. Kenneth Road, Glendale, Calif.
Filed Mar. 4, 1963, Ser. No. 262,637
3 Claims. (Cl. 30—30)



1. A hair trimming device comprising a handle component having an elongated, comb assembly receiving socket defined by spaced, parallel resilient side walls, and a comb assembly component removably inserted in said socket and clamped therein by the resilience of said side walls; at least one of said side walls and the adjacent side of at least one of said comb assembly components including resiliently displaceable interlocking means operative to hold said comb assembly component against unintended movement longitudinally of said socket; said comb assembly component comprising a plurality of toothed comb elements arranged in side by side relation with the backs thereof disposed in said socket and the teeth thereof projecting in parallel relation beyond said pocket and at least one razor blade clamped between the adjacent faces of two of said comb element backs with a cutting edge thereof disposed between the edge of the comb back portions from which the teeth project and a plane containing the ends of at least certain of the comb teeth; the teeth of each of said comb elements being arranged in groups with spaces between adjacent groups which are greater than the spaces between the teeth comprising one of said groups.

3,165,832
**PAINT REMOVER SET**
John M. Stipcevich, Westmont, N.J.
(114 Hampton Road, Collingswood, N.J.)
Filed May 1, 1963, Ser. No. 277,300
1 Claim. (Cl. 30—140)



A device for intimately contacting and treating a contoured surface comprising a supporting member having a transverse slot, a plurality of flat contour-forming elements arranged in laminar array and having facing parallel shank portions extending into said slot and elongated parallel foot portions extending beyond said member and transversely to said shank portions, said elements being movable with respect to each other in a direction lengthwise of said shank portions, the outward edges of said foot portions providing in transverse direction a margin having complemental shape conformable to the contoured surface, and members for clamping said elements in adjusted complemental shape positions, said supporting member being a heat conducting plate, said plate having a mounting block secured thereto, a heating element enclosed in said block in heat transfer relation to said plate,

said elements being of good thermally conductive material, said elements being in heat transfer relation of said plate and said outward edges of said foot portions being engageable with the contoured surface over substantial lengths, and, in combination therewith, an adjustable scraper attached in tandem therewith, said scraper comprising an arrayed plurality of scraping elements respectively longitudinally adjustable for conforming to the same contour complemental shape as said flat elements.

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3,165,833
FLAYING TOOL
Richard W. Logan, York, Maine, Ronald T. Kjerulf, East Wakefield, N.H., and Newton H. Williams, Newtown, Conn., assignors to Packers Development Corporation, Rochester, N.H.
Filed Nov. 27, 1962, Ser. No. 240,262
4 Claims. (Cl. 30—306)

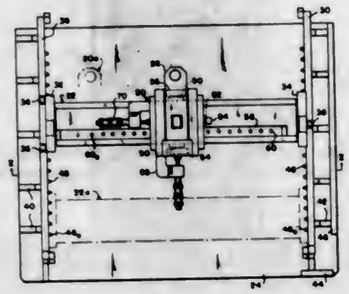


1. A flaying tool comprising a frame, a pair of superimposed disk-like blades, means mounted on said frame providing a common axis for said blades, said blades having peripheral cooperating teeth, a gear secured to one of said blades for rotation therewith about said axis, a rotatable drive shaft extending longitudinally of said frame, a pinion mounted on said shaft, gear means rotatably mounted on said frame drivably connecting said pinion and said gear, a plate member secured to the other of said blades having a slot defined therein, and a pin member in said frame extending into said slot to prevent rotation of said other of said blades.

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3,165,834
LAYOUT TABLE AND COORDINATE READER
Robert C. Benton, State College, Pa., assignor to Centre Circuits, Inc., State College, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1961, Ser. No. 87,859
12 Claims. (Cl. 33—1)

12. In apparatus comprising a pair of mutually perpendicularly disposed precision devices for holding an instrument of the character described, said devices capable of limited movement of travel each in a different one of the X and Y directions to the other: the combination of structures constituting moveable means for moving the pair of devices through large increments of displacement in X and Y directions, said structures comprising carriage structure for the devices having X ways therebeneath, a fixed base plate, a bridge structure supported on said base plate by Y ways so as to be constrained in guided movement thereon, and supporting the X ways beneath said carriage structure so that the latter has independent, constrained guided movement relative to the bridge structure, gage pins fixed along the respective paths of movement of said structures at points which occur at linearly equidistant units apart, said gage pins each having an engageable portion and a mounting portion which are mutually eccentric to one another, means formed on a portion of each pin for rotating it to change the position of its engageable portion relative to a companion gage pin



and thus effectively establish the pin positions so as to maintain them at said linearly equidistant units apart, and shiftable pawls mounted to and permanently carried by said structures for locking same and appropriately engageable with selected gage pins at the points in their paths, each successive gage pin having a position corresponding to a selected multiple of said linearly equidistant gage unit.

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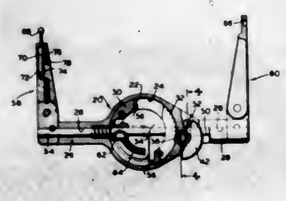
3,165,835
APPARATUS FOR CHECKING THE ALIGNMENT OF VERTICAL CHANNELS
Richard D. Duncan, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 19, 1962, Ser. No. 238,811
8 Claims. (Cl. 33—46)



1. A device for checking the alignment of rectangular vertical channels comprising: a body; means for freely suspending said body at a desired level in said channel; two arms connected to said body; solenoid actuated means for maintaining said arms in contact with adjacent sides of said channel; remotely controlled means for energizing said solenoid; means for maintaining said arms out of contact with said channel when said contact maintaining means is not actuated; a scaled target mounted on a side of said body exposed to vertical view; means for illuminating said target; and means for fixing a line of sight through said channel intersecting said target.



3,165,836
AUXILIARY SIGHTING DEVICE FOR GRENADE LAUNCHING FIREARMS
Robert F. Magardo, Springfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 12, 1962, Ser. No. 230,300
7 Claims. (Cl. 33—47)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A sighting device for a firearm adapted for propelling a high trajectory projectile having a known component of drift, the sighting device including a housing, a ring with a central axis mounted in said housing for relative rotation, means for fixedly attaching said ring to the firearm so that said housing is rotatable around the axis of said ring in a plane parallel to a vertical plane of a firearm, a knob with calibrated range markings mounted for rotation on said housing, means for linking said knob to said ring so that rotation of said knob is converted to rotation of said housing, a front sight, a rear sight, means for mounting said front and rear sights on said housing for pivotal displacement respective thereto around an axis disposed transversally to the axis of said ring, and means for converting rotation of said housing to pivotal displacement of said front and rear sights so that a sight line established therealong is progressively moved away from the firearm as said housing is rotated to elevate the sight line relative to the firearm.

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3,165,837
MOBILE TRACK LIFTING APPARATUS
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria
Filed Oct. 27, 1961, Ser. No. 149,816
Claims priority, application Austria, Oct. 31, 1960, A 8,135/60
6 Claims. (Cl. 33—60)



5. A mobile track lifting apparatus useful in track aligning operations wherein the track lifting is determined in relation to a reference line extending in the direction of the track and being vertically spaced therefrom, comprising a two-armed beam, a pivot arranged on the apparatus and mounting said beam pivotally, the pivoting plane of said beam being parallel to the track direction and perpendicular to the track, means on said pivotal beam establishing the reference line, means for arresting the pivotal beam in any pivotal position, brake means for stopping the apparatus on the track, and means connecting the brake means with the arresting means for arresting the pivotal movement of the beam in response to actuation of the brake means.

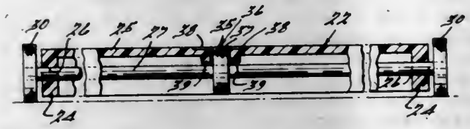
3,165,838
ARRANGEMENT FOR ALIGNING TRACK RAILS
Franz Plasser and Josef Theurer, both of Johannesgasse 3, and Egon Schubert, Sturzgasse 17, all of Vienna, Austria
Filed May 11, 1962, Ser. No. 194,141
Claims priority, application Austria, May 18, 1961, A 3,938/61
9 Claims. (Cl. 33—86)



1. An arrangement for aligning track rails comprising, in combination:
(*a*) two chordal reference elements of unequal length associated with one of said rails and extending generally in the direction of the track;
(*b*) support means for mounting the end points of the chordal elements;
(*c*) means for moving the support means along the track;
(*d*) a carriage movable along the track and arranged between the end points of the two chordal reference elements;
(*e*) an indicating means mounted on said carriage, said indicating means including two independently movable indicating elements;
(*f*) means for coupling each of said indicating elements with a respective one of said choral elements for moving said indicating elements in dependence on the chordal elements;
(*g*) a common pivot for said indicating elements about which one of said indicating elements is pivotal in relation to the other; and
(*h*) means for changing the distance of the common pivot from the associated one of said rails.

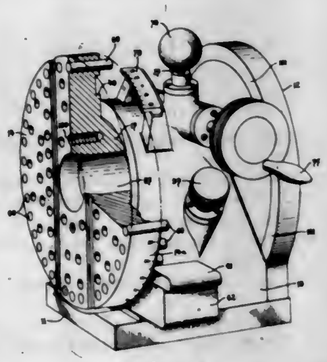
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3,165,839
DRAFTING DEVICE
Peter S. Hoagland, 18769 Saratoga, Lathrup Village, Mich.
Filed Feb. 12, 1963, Ser. No. 257,903
11 Claims. (Cl. 33—109)



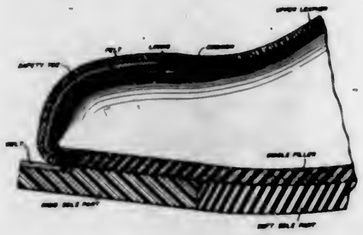
1. A device of the class described comprising, a body having a straight edge, an axle rotatably mounted on said body on an axis parallel to said straight edge, supporting rollers secured to said axle adjacent the ends thereof, an actuating wheel of slightly smaller diameter than said rollers secured to said axle intermediate said rollers, said actuating wheel having an exposed portion of its periphery located in substantially the same plane as an adjacent exposed nonrotatable portion of the body, said nonrotatable portion bridging over said axle and oriented substantially in parallel with said axle and the surface upon which the supporting rollers and the straight edge rest whereby the operator may rotate said actuating wheel by a finger jointly engaging said actuating wheel and nonrotatable portion and may hold the straight edge in adjusted position by shifting a predominance of finger pressure onto said nonrotatable portion.

3,165,840
**ANGLE MEASURING AND SETTING DEVICE**
Frank J. Woditsch, St. Clair Shores, Mich. (427 E. Eight Mile Road, Hazel Park, Mich.), assignor of twenty-five percent to Gregory S. Dolgorukov, Ferndale, Mich.
Continuation of application Ser. No. 572,564, Mar. 19, 1956. This application Aug. 27, 1962, Ser. No. 224,269
5 Claims. (Cl. 33—174)



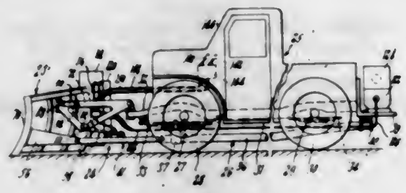
1. In a device for measuring and setting up work angles, a base structure providing a reference plane, a circular plate mounted on said structure and rotatable through 360 degrees in a plane normal to said reference plane, said plate including a peripheral surface divided into 360 degrees, at least twenty cylindrical pins of equal diameters permanently fixed on said plate and arranged thereon parallel to the axis thereof at equal distances from each other and with the axes of said pins lying in a cylindrical surface the axis of which coincides with the axis of rotation of said plate, said pins dividing the circumference of said plate into a corresponding number of division angles; a zero reference mark on said base structure provided with vernier and adapted to be used in conjunction with the divisions on the peripheral surface of said plate, manually operated means for rotating said plate; and a stationary platform provided on the base structure and having a flat surface parallel to said reference plane and providing a plane from which to measure with the aid of measuring blocks coming in direct contact with the respective pin the linear perpendicular distance to the pin adjacent said platform surface and constituting a trigonometric function of an angle related to the work angle, said platform clearing all of the pins when the plate is rotated, with said flat surface of the platform intersecting, if continued, the pin centers circle in a chord-like manner and approximately at the middle of the radius of the plate and of said pin centers perpendicular to the reference plane in order that a measuring block placed on said platform surface and abutting on the immediately adjacent pin would have a full bearing with its working surface on the next pin, with measuring of any work angle within the 360 degree range being done by measuring to the last full division angle by reading the graduated scale, and measuring the angle representing the exact difference between such reading and the work angle by measuring said linear distance only within the range of angles from 0 to 45 degrees of a quadrant as determined by the diameter of said plate parallel to said reference plane, the distance of said fixed pins from the axis of the plate being so selected that the linear perpendicular distance between the bearing surfaces of two adjacent pins as measured from the platform surface, with said pins being in positions which would give measurement of the angle equal to the angle between the adjacent pins, is expressed in simple fractional numbers of an inch.

3,165,841
**SHOE SOLE HAVING PORTIONS OF DIFFERENT ELASTICITY IN COMBINATION WITH SAFETY BOOT**
Heinz W. Rollman, Waynesville, N.C., assignor to Re-Search, Inc., Waynesville-Hazelwood, N.C., a corporation of North Carolina
Filed Mar. 19, 1962, Ser. No. 180,809
1 Claim. (Cl. 36—2.5)



A safety boot comprising an upper, a rigid toe cap secured to the toe portion of said upper, and a sole, said sole consisting of molded elastomeric material and having a front toe portion which underlies and is coextensive with the entire area of said toe cap, said front toe portion of said elastomeric material being of considerably lower elasticity than the major portion of said sole, so that when force is applied to the toe cap, said front toe portion of the sole will absorb the force and resist deformation.

3,165,842
**MECHANISM FOR ATTACHING IMPLEMENTS TO VEHICLES**
Vaino J. Holopainen, Rutland, Mass., assignor to Wain-Roy Corporation, Hubbardston, Mass., a corporation of Massachusetts
Filed July 26, 1962, Ser. No. 212,532
16 Claims. (Cl. 37—42)

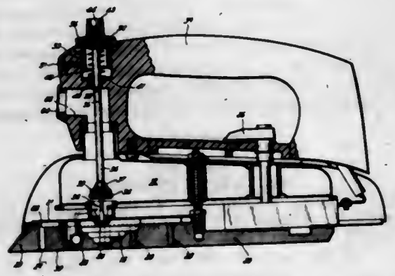


1. A vehicle and implement assembly comprising a vehicle having an unsprung running gear and a sprung chassis supported on said running gear, an implement to be supported on said vehicle, means pivotally connecting said implement to said running gear, a link pivoted on said chassis and pivotally connected to said implement above the connection thereof to said running gear, and extensible means acting between said link and said running gear for urging said link about its pivot on said chassis to support said implement on said vehicle.

13. A snow plow comprising a vehicle, a first prime mover for driving said vehicle, a snow plow blade connected to said vehicle, a rotary impeller mounted on said blade, a pressure fluid motor mounted on said blade, driving connections between said motor and said impeller, a link pivotally interconnecting said blade and said vehicle, a pressure fluid jack pivotally connected to said link and acting between said link and said vehicle for lifting said blade, a pressure fluid pump mounted on said vehicle, a second prime mover mounted on said vehicle for driving said pump, and pressure fluid conduits connecting said pump to said pressure fluid motor and to said jack.

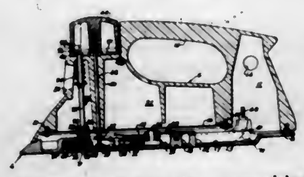


3,165,843
**JET STEAM IRON**
Philip E. Willman, St. Charles, Ill., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,226
4 Claims. (Cl. 38—77)



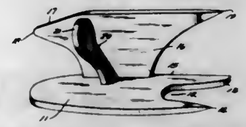
1. In an electric steam iron having a sole plate with a steam generating chamber associated therewith, a water reservoir mounted above said sole plate, openings in the lower face of said sole plate and steam delivery channels in said sole plate for delivering steam formed in said generating chamber to said openings, a water delivery mechanism comprising: a pump cylinder having a first opening normally in communication with said reservoir and a second opening interconnecting said cylinder with said chamber; closure means normally restricting flow through said second opening; a piston mounted coaxially with respect to said cylinder; actuating means for moving said piston in one direction within said cylinder to interrupt fluid communication through said first opening and to move said closure means to a non-restricting position to expel a quantity of water into said chamber, and control means operatively connected to said closure means for selective adjustment between a position wherein flow through said second opening is totally interrupted and a plurality of positions corresponding to varying rates of fluid communication through said second opening.

3,165,844
**STEAM IRON**
Roy L. Swanke, Southington, Conn., assignor to Landers, Frary & Clark, New Britain, Conn., a corporation of Connecticut
Filed June 19, 1962, Ser. No. 203,509
2 Claims. (Cl. 38—77)



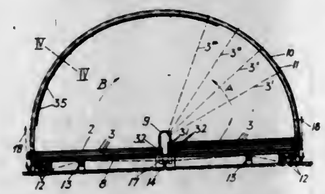
1. In a steam iron, a sole plate comprising, a body, a heating element in the body having a pair of legs extending along the sides of the body and meeting at a forward portion thereof, a tube embedded in the body in heat-exchange relationship with the heating element of forming a steam-generating chamber, said tube having outer legs extending along the outer side of the legs of the heating element, respectively, and having inner legs extending along the inner side of the legs of the heating element, respectively, said outer legs of the tube having a plurality of spaced steam outlet ports spaced from the bottom of the tube and a plurality of spaced ridges projecting inwardly from the bottom of the tube and respectively located between the outlet ports to form water traps, and said body having a plurality of steam-emission passages in registry with the outlet ports of the tube, respectively.

3,165,845
**CONTOUR PRESSING FORMS**
June Eudora Kroenke, 509 Oakwood Drive, Hartland, Wis.
Filed Apr. 26, 1962, Ser. No. 190,447
2 Claims. (Cl. 38—135)



2. A contour pressing form comprising a substantially oval base board having a cut-out portion in one end thereof, one side of said cut-out portion terminating in a tapered point, the opposite side of said cut-out portion terminating in a juncture of a curve and a straight edge, a second plate vertically disposed on one margin of said base element, said second plate having an anvil-shaped profile, a point formed on one side end of the anvil form, a short top slope cut on the opposite upper end of said second plate, and a narrow elongated member disposed at an angle on said base board immediately abutting said second board, said elongated member having unequal curved side edges at the upper end thereof.

3,165,846
**APPARATUS FOR DISPLAYING STACKABLE ARTICLES**
Friedolin Piller, Barthshof 5, Augsburg, Germany
Filed July 18, 1962, Ser. No. 210,770
Claims priority, application Germany, July 20, 1961, P 27,562
11 Claims. (Cl. 40—104)



1. Apparatus for displaying stackable articles, such as carpets, in a horizontal position, comprising:
a plurality of frames each having two articles mounted thereon in parallel back-to-back relation, the frames being arranged in two vertical stacks positioned in side-by-side relation so that the stacks have mutually adjacent and remote sides and so that the frames can be moved from one stack to the other in a manner similar to the turning of pages of a book;
a guide member extending over and crosswise of both stacks and whose ends are disposed adjacent to the mutually remote sides of said stacks;
an endless conveying means extending along said guide member and under both stacks and means for moving said conveying means;
coupling devices mounted on each frame at the remote sides thereof; cooperable coupling means on said conveying means, said coupling means being releasably drivingly engageable with said coupling devices so that the conveying means can convey the frames from one stack to the other, said coupling devices normally being out of engagement with said coupling means; and

control devices mounted adjacent to both of the ends of the guide member and means for moving said control devices independently of the conveying means, each of said control devices including means releasably engageable with the coupling device on the frame on top of the adjacent stack for moving said last-named coupling device into engagement with the coupling means on the conveying means, whereby the frames can be connected to said conveying means in response to movement of said control devices and at a rate which is independent of the rate at which the conveying means moves.

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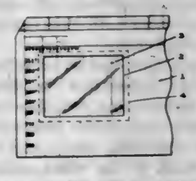
**3,165,847**
**FOLDABLE SUPPORT FOR A SIGN PANEL**
Ralph R. Gunderson, 5520 S. Shore Drive, Chicago, Ill.
Filed Sept. 18, 1961, Ser. No. 138,833
7 Claims. (Cl. 40—125)




5. In a foldable support for a sign having front and rear support members, a hinge structure for affording relative swingable movement to the support members between supporting and closed position, comprising: a pair of laterally extending portions one on each support member, the portions each having a surface positioned in opposed relation to each other and the portions when in opposed relation being movable with the support members between supporting and closed position, one of the laterally extending portions being provided with spaced lateral stops; retaining means on the laterally extending portions for holding said opposed surfaces in said swingable opposed relation; and a guide pin extending outwardly of the other of the laterally extending portions and between the spaced lateral stops of said one portion to prevent shifting movement of said laterally extending portions.

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**3,165,848**
**APERTURE CARD SYSTEM**
John F. Langan, Atlanta, Ga., assignor to Langan Aperture Cards, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,814
2 Claims. (Cl. 40—158)



1. In record cards of fibrous material intended to be apertured subsequently at predetermined locations of areas of given size and shape suitable for mounting sections of microfilm and like projectable transparencies, a card having a continuous uninterrupted fibrous card structure throughout and surrounding one of said areas, a portion of said uninterrupted fibrous structure containing heat-sensitive potentially adhesive material impregnated therein and distributed between and around the fibers of said structure beneath one surface of said card, said impregnating material being non-sticky at normal temperature but heat-softenable to adhere to and hold the section to be mounted, said material being arranged in a pattern of strips surrounding and outlining the aperture subsequently to be formed in said card.

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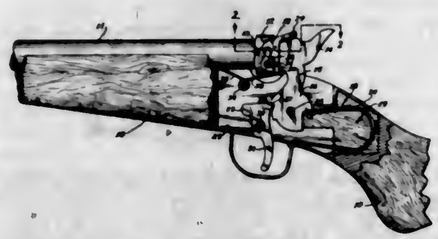
**3,165,849**
**MAGAZINE CUTOFFS**
Henry A. Into, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Nov. 28, 1962, Ser. No. 240,586
6 Claims. (Cl. 42—17)



1. In a firearm, a receiver, a barrel secured to said receiver, a tubular magazine mounted below said barrel and having a mouth opening into said receiver, a pair of cutoffs, means mounting said cutoffs in said receiver, one of said cutoffs being normally spring biased outwardly clear of the mouth of said magazine, the other cutoff being normally spring biased inwardly to block the mouth of said magazine tube, a pair of slide arms extending into said receiver, cam means on said slide arms operative to sequentially move and hold said one cutoff inwardly obstructing the mouth of said tubular magazine and to move said other cutoff outwardly each time the slide arms are reciprocated rearwardly, said cam means being arranged on said slide arms so that a complete back and forth reciprocation of said slide arms is effective to feed a single cartridge from said tubular magazine into said receiver.

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**3,165,850**
**FIREARMS**
Hector Mendoza Orozco, Bartolache 1914, Mexico City, Mexico
Filed Nov. 19, 1962, Ser. No. 238,468
3 Claims. (Cl. 42—34)

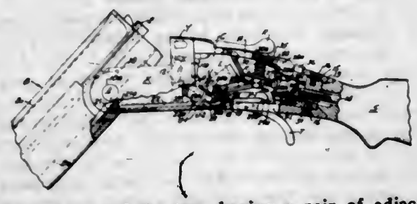


1. A one shot firearm comprising, in combination, a handle having a breech box, a barrel having at its rear end an integral block of quadrilateral cross section with a cartridge receiving opening therein and seated above said breech box, a pivot pin rotatably mounted within a bore through said block in the lower portion thereof, a rolling block mounted on said pivot pin to rotate from a load position to a firing position, said rolling block being a channel having two side flanges and a rear web and having a backwardly projecting tongue at the upper edge of the web, said rolling block when in its firing position embracing the sides and rear of said barrel block to fully obturate the cartridge opening, a pair of opposed openings in the side flanges of said rolling block, a pair of extracting nails yieldingly mounted on said pivot pin and having portions bent at right angles and passing through said side flange openings of the rolling block and snapping into a pair of cavities provided on both sides of said barrel block to operate as fired case extractors when the rolling block is moved to its load position, said opposed openings in the rolling block flanges which accommodate the said nails also serving as side vents to conduct gases, resulting from an accidental explosion of a cartridge case, in lateral directions to avoid injury to the face of a user, a boss projecting from the inner surface of said rear web of the rolling block and positioned to strike a cartridge case head to detonate the fuse thereof when the rolling block is in firing position, a percussion hammer pivoted in said breech box and having a plain striking surface to strike the outer surface of the rear web of said rolling block to operate said boss for detonating a cartridge, a cam surface at the lower end of said hammer, a trigger pivoted in said breech box, said hammer cam surface having at least one shoulder engaging a projection on the trigger and another shoulder engaging a bending spring urging the hammer toward said rolling block, said trigger being urged away from its firing position in which said projection disengages said cam shoulder by a second spring, and third spring urging said rolling block toward its firing position.



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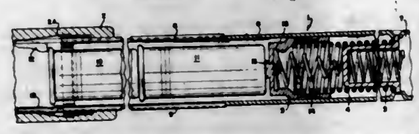
**3,165,851**
**FIRING MECHANISM FOR MULTIPLE BARREL FIREARMS**
Glen L. Mittelsteadt, Waseca, Minn., assignor to Herter's Inc., Waseca, Minn., a corporation of Minnesota
Filed May 13, 1963, Ser. No. 279,756
5 Claims. (Cl. 42—42)



1. In firearms of the type having a pair of adjacent parallel barrels,
a pair of spring-actuated hammers, one for each of said barrels,
hammer-cocking mechanism and a pair of trippable hammer-retaining elements, one for each hammer and provided with trip portions disposed in side-by-side relation,
the novel unitary tripping mechanism for successively tripping said retaining elements after cocking of said hammer through successive actuations of a single trigger comprising,
a body internally mounted within the firearm and disposed rearwardly of the two hammers and also adjacent the trip portions of said hammer-retaining elements,
said body being shiftably mounted for movement from a forward position slightly rearwardly to a predetermined first operative position, and also for limited up and down movement,
means for urging said body forwardly and for also urging said body downwardly,
a forward abutment element connected with said body and disposed in the paths of cocking travel of the rear extremities of both the said hammers,
one of said hammers having a rear projection extending slightly rearwardly of the rear of the other hammer in position to engage said abutment element for retracting said body into said rear or first-operative position when the hammers are cocked,
the rear extremity of said second hammer, in cocked position, by abutment with said abutment element determining after said first hammer is fired, the forward position of said body,
a pair of forwardly projecting trip feet secured to the lower portion of said body and extending forwardly (in a common plane), one being longer than the other for underlying the trip portion of one of said hammer-retaining elements when said body is positioned by abutment with the longer abutment element of said first hammer in the rearmost position,
the second and shorter of said trip feet being proportioned and positioned to underlie the trip portion of the second hammer-retaining element when said body is positioned in the recited forward position after the first hammer has been fired, and
a common trigger member having a portion underlying said feet and upwardly movable to upwardly move said body when the trigger is pulled.

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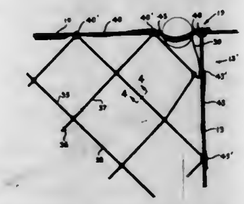
**3,165,852**
**AUXILIARY SPRING FOR A TUBULAR MAGAZINE**
Henry A. Into, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Sept. 25, 1963, Ser. No. 311,366
6 Claims. (Cl. 42—49)



1. In a firearm including a receiver, a tubular magazine connected to said receiver at one end to receive a plurality of shells, a follower slidable in said magazine, a magazine spring mounted in said tubular magazine exerting a force to move said follower rearwardly toward the receiver, means exerting an additional force to move said follower only when at least two shells are positioned in said tubular magazine, said means being positioned in said magazine and being inoperative when less than two shells are in said magazine.

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**3,165,853**
**FISH NET**
Lacy C. Ansell, 2616 Albermarle Terrace, Chesapeake, Va.
Filed May 17, 1963, Ser. No. 281,252
3 Claims. (Cl. 43—7)

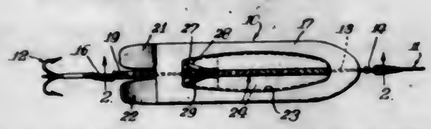


3. A fish net comprising outer support lines including an upper line, a lower line and a pair of side lines connected between said upper line and said lower line, the upper and lower end portions of said side lines being tied respectively to said upper line and said lower line, said

upper and lower lines including portions extending beyond said side lines for connection to suitable support means, auxiliary holding lines having portions thereof tied to each of said upper line, lower line and side lines at spaced intervals along said upper line, lower line and side lines, a mesh portion formed of flexible corrosion resistant wire means defining a mesh having a plurality of inner sections, said inner sections comprising an intertwining of said wire means whereby said wire means is firmly and securely tied at each of said inner sections, said auxiliary holding lines engaging spaced portions of the outer parts of said mesh portion for connecting said outer parts of the mesh portion with spaced portions of said outer support lines, a plurality of float members each of which is disposed in surrounding relationship to said upper line, said float members being held in place on said upper line by one of said auxiliary holding lines which is tied to the upper line and which engages the float members for holding them in position, and a plurality of weight members fixedly attached to spaced portions of said lower line.

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**3,165,854**
**SONIC FISH LURE**
**Herman Teetor, Hagerstown, Ind. (Box 347, Walloon Lake, Mich.)**
**Filed Oct. 8, 1962, Ser. No. 228,855**
**5 Claims. (Cl. 43—17.1)**



1. A sonic fish lure comprising an elongated member adapted to be attached to a fish line and drawn through the water, said elongated member being formed for producing a plurality of streams of water, and a shearing member mounted adjacent said elongated member, said members being relatively rotatable, said shearing member having at least one edge formed thereon which passes closely adjacent said elongated member and shears said streams of water as said elongated and shearing members rotate relative to each other, to thereby create vibrations in the water, said elongated member having a longitudinally extending cavity and a plurality of laterally extending slots formed therein from said cavity to its outer surface for producing said streams of water.

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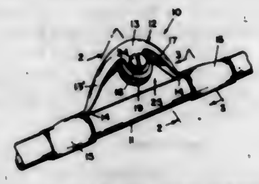
**3,165,855**
**AUTOMATIC CASTING ROD WITH LINE GRIPPING MEANS**
**James R. Stephenson, Kettering, Ohio; Carl M. Stephenson, administrator of said James R. Stephenson, deceased**
**Filed Apr. 17, 1961, Ser. No. 103,308**
**14 Claims. (Cl. 43—19)**



1. In a casting device including a fishing rod having a handle pivotally secured thereto, means to supply a fishing line, means to confine said line to a path extending along said rod, said rod being pivotable relative to said handle between a cocked position and a rest position, and means biasing said rod to the rest position for the purpose of casting the fishing line passing from the handle along the rod, clamping means for gripping the line in the cocked position, said clamping means including a pair of clamping members mounted for relative movement on one of said handle and rod elements, said line passing between said clamping members, cam means carried by one of said rod and handle elements and cam follower means carried by the other of said rod and handle elements coacting on pivotal movement of said rod relative to said handle to move said clamping members into and out of compressive engagement with the line such that the line is clamped in the cocked position and free of the clamping members in the rest position.

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**3,165,856**
**ROLLER GUIDE FOR FISHING RODS**
**James W. Gourley, Jr., La Habra, Calif., assignor to Axelson Fishing Tackle Mfg. Co., Newport Beach, Calif., a corporation of California**
**Original application Aug. 20, 1959, Ser. No. 835,119, now Patent No. 3,091,201, dated May 28, 1963. Divided and this application Mar. 4, 1963, Ser. No. 262,632**
**3 Claims. (Cl. 43—24)**



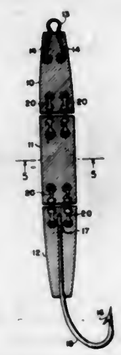
1. A roller guide for fishing rods, comprising a metal guide frame having a body of a generally U-shaped longitudinal cross-section and having integral coplanar foot portions at opposite ends of said body, said body being provided with two spaced openings each of which is encompassed by a return-bent beaded portion of said body to prevent fraying of a fishing line passing through said openings, said body having longitudinally curved sides generally conforming with said U-shaped longitudinal cross-section and disposed in spaced generally parallel planes, and at least one roller rotatably mounted between said sides and between said openings whereby a line passing through said openings may pass over said roller for minimization of friction, the open space provided between the U-shape of the curved body sides and the plane of said feet being greater than the diameter of said roller to permit insertion of said roller through said space without the necessity for springing or bending said sides, the transverse distance between said beaded portions at opposite sides of said openings being less than the distance between said sides of said body whereby the stated line may engage only said beaded portions but not the body sides, said transverse distance between said beaded portions being less than the width of said roller whereby said line is prevented by said beaded portions from moving out of engagement with said roller.

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**3,165,857**
**FISH LURE**
**Walter J. Koziba, 45 Pease St., Thompsonville, Conn., assignor of one-half to William F. Cioffi, Brooklyn, N.Y.**
**Filed June 22, 1961, Ser. No. 118,928**
**2 Claims. (Cl. 43—42.15)**

1. A fish lure comprising, in combination, a head portion, a body portion, a tail portion, said portions each having sides formed by two highly reflective surfaces, said portions having abutting end portions and being formed of a heavy metal so that the lure will sink in water, an attachment eye having a forward part extending from the front of said head portion and having a rearward part located within said head portion, a hook having a shank, said hook extending from said tail portion with the shank of said hook being located within said tail portion, and





swivels having two elements and a wire joining said elements, said swivels being located in pairs in abutting end portions of said lure with the wires of said swivels extending between adjacent abutting end portions of said lure, said swivels being disposed in a vertical plane.

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**3,165,858**
**METHOD OF MAKING A FISHING LURE**
**Charles R. Rutter, 1114 Walnut St., Mount Carmel, Ill.**
**Filed Jan. 24, 1963, Ser. No. 253,563**
**1 Claim. (Cl. 43—42.53)**

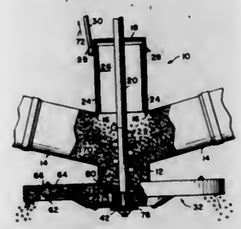


The method of making a lure which comprises the steps of providing an elongated worm-like body of soft flexible material, securing a plurality of fish hooks in longitudinally spaced relation to a length of a strong flexible line, embedding the line and at least a major portion of the shank of each hook in said body, the embedding of the line being accomplished by drawing thereof lengthwise through said body from adjacent one end to adjacent the other end, said drawing of the line including pulling to the outside of the body at least at one point along the length thereof a portion of the line and thereafter returning each said line portion to the inside of the body, and said embedding of the hook shank portions is accomplished by securing the shank portions to the line exteriorly of the body and drawing the shank portions into the body by said drawing of the line, said securing of the shank of a hook to each said line portion being accomplished while the line portion is outside the body.

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**3,165,859**
**DRY FEEDER SPRAY APPARATUS**
**John E. Waldrum, Ambler, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware**
**Filed Oct. 10, 1961, Ser. No. 144,191**
**1 Claim. (Cl. 43—145)**

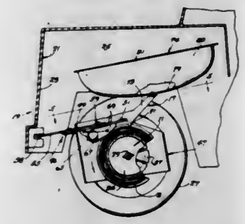
A dry feeder spray apparatus comprising a disc assembly including an upper plate and a lower plate connected to each other in a constant, spaced, face-to-face relationship to form a chamber therebetween, conduit means opening into said chamber between said plates to deliver particulate material to said chamber, at least one feed channel associated with said conduit means for delivering particulate material thereto, a sleeve valve within said conduit means, means for raising and lowering said sleeve valve within said conduit means to thereby control the amount of material delivered from said feed channel into said conduit means, a shaft secured to said lower plate



for rotating said disc assembly, agitating and vibrating means associated with said shaft and including a boss associated with said lower plate, said boss being eccentrically located with respect to said shaft, and a disc counterbalancing said boss, said disc having an ecccntric hole therein, said disc telescopingly engaging said boss through said hole, whereby said disc and said boss are positioned in counterbalancing relationship with respect to each other.

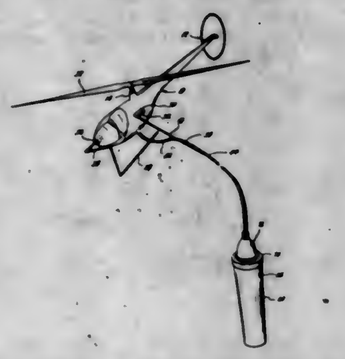
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**3,165,860**
**SOUNDING WHEELED TOY**
**Marvin I. Glass, Chicago, and Arthur E. Neumann, Winnetka., Ill., assignors, by direct and mesne assignments, to Marvin Glass and Associates, Chicago, Ill., a partnership**
**Filed Sept. 12, 1961, Ser. No. 137,666**
**7 Claims. (Cl. 46—111)**



5. A toy vehicle comprising a hollow body, a vibration-inducing element rotatably mounted on said body adjacent said vibratory member, means for effecting rotation of said vibration-inducing element, the surface of said vibration-inducing element being provided with a helical track commencing adjacent one end of said element and terminating in a continuous loop adjacent the opposite end of said element, said track and said loop each having a plurality of projections extending outwardly therefrom, a vibratory member mounted within said body and being adapted to ride on said track toward and onto said loop and to engage said projections as said element rotates, said projections of said track being dimensioned so as to induce vibrations in said vibratory member of such a nature as to cause sounds to be produced simulating those of an accelerating motor-driven vehicle, and said projections of said loop being dimensioned so as to induce vibrations in said vibratory member of such a nature as to cause sounds to be produced simulating those of a motor-driven vehicle being propelled at a constant speed, when said element is rotated at a constant speed.

3,165,861
ELECTRICALLY POWERED VERTICAL AIR-LIFT TOY
Victor Stanzel, P.O. Box 171, Schulenburg, Tex.
Filed June 4, 1962, Ser. No. 199,712
4 Claims. (Cl. 46—328)



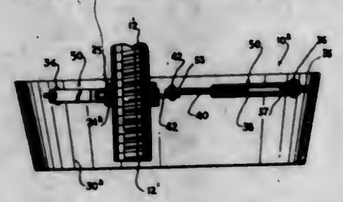
1. In a model aircraft of the helicopter type having a hollow fuselage and a rotatable propeller arranged above the fuselage in position to exert a lifting force on the fuselage upon rotation of the propeller, an elongated flexible, power transmitting element connected to the propeller to rotate the propeller and extending to a location remote from the aircraft, power means under the control of an operator at said location for rotating the element, said fuselage having laterally aligned, longitudinally extending slots in its opposite sides, a flattened tubular member extending laterally across the interior of said fuselage and open at one end to the exterior through one of said slots, an elongated, flexible shaft having a longitudinal axis distinct from that of said element and extending at one end into the open end of said member and having a U-shaped end portion in the member positioned for coaction with the member to tilt the fuselage vertically upon axial rotation of the shaft and extending to said location, and means forming a connection between said shaft and a fixed element of said power means to cause the shaft to rotate axially upon rotation of said fixed element.

3,165,862
MULCH PAPER
Rex S. Harper, Mobile, and Curtis A. Gentry, Chickasaw, Ala., assignors to International Paper Company, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 11, 1962, Ser. No. 243,720
5 Claims. (Cl. 47—9)

4. A mulching product consisting essentially of an embossed blanket of flash dried wood pulp fibers selected from the group consisting of groundwood and chemical wood pulp fibers, the blanket having a density of about 200 to 400 lbs. per 1,000 square yards.

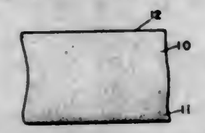
3,165,863
TELESCOPIC PLANT STAKE
Jacqueline Duran, 780 Locust St., New Milford, N.J.
Filed Aug. 22, 1963, Ser. No. 303,851
2 Claims. (Cl. 47—47)

1. A telescopic stake for supporting a plant in a flower pot, comprising a frusto-conical band adapted to fit snugly inside said pot, a flat ring inside the band and in the general horizontal plane thereof, three angularly spaced arms extending horizontally and radially from the ring to the inner side of said band, means for supporting the ring and arms in said horizontal plane each of said arms including two telescoped members axially slidable one within the other for adjusting the length of the arm, and said means for supporting the ring and arms including horizontally swingable substantially equi-angularly positioned pivot means between the inner and outer ends of the telescoped members and the ring and band, respectively, so that the ring and tubes supported thereby may be laterally shifted to off-center positions within the band, a first tube supported by said ring and extending axially upwardly therefrom perpendicular to the plane



of the ring, a second tube having an external diameter substantially equal to the internal diameter of the first tube axially disposed in the first tube and slidable therein, and catch means on the first and second tubes for adjustably holding the tubes in fixed axial extension with respect to each other, said ring having a central threaded hole, said first tube having an externally threaded end engaged in the threaded hole of the ring so that the position of axial extension of the first tube from the ring is adjustable.

3,165,864
REFRACTORY BODY HAVING HIGH RESISTANCE TO FLAME EROSION AND THERMAL SHOCK
Charles E. Sluhan, North Tonawanda, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,778
11 Claims. (Cl. 50—464)



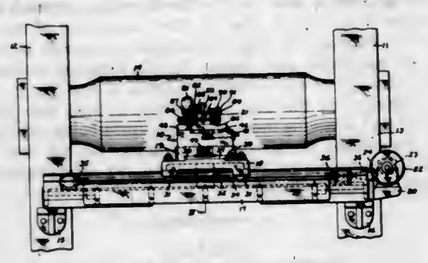
1. A hot pressed refractory body having high resistance to flame erosion and thermal shock, consisting essentially of a thin layer of a dense refractory material having a high Young's modulus of elasticity at all surfaces of said body which are adapted to be subjected to direct contact with high velocity flames, the remainder of said body from a point adjacent said surface extending into the interior thereof consisting of said high modulus material and a refractory material having a low Young's modulus of elasticity, the ratio of said high modulus material to said low modulus material gradually decreasing from said point adjacent said surfaces into said body.

3,165,865
ROLL GRINDER
Donald G. Bousquet, Holden, and Walter H. Kane, Worcester, Mass., assignors to R. S. Rey & Son Co., Worcester, Mass., a corporation of Massachusetts
Filed Dec. 31, 1962, Ser. No. 248,571
5 Claims. (Cl. 51—251)

1. A roll grinder, comprising
(a) an elongated main body adapted to extend across a housing in which a roll is mounted and to extend parallel to the roll axis,
(b) a traverse base slidably mounted for movement along a straight path over the main body and parallel to the roll axis.
(c) a cross-feed base slidably mounted for movement over the main body transversely of the roll,

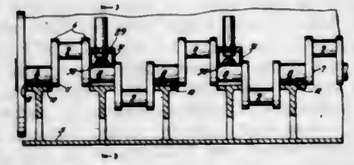


(d) a grinding apparatus mounted for movement with the cross-feed base,
(e) spring means to bias the cross-feed base and the grinding apparatus away from the roll,



(f) means attached to the main body and extending along a substantial portion of the length thereof, the said means limiting the movement of the cross-feed base away from the roll,
(g) a vacuum means associated with the grinding apparatus to remove the products of the grinding process, the vacuum means including a nozzle which is movable with the apparatus, a conduit adapted to be connected to a source of vacuum, and a commutator for connecting the nozzle and conduit at all times despite relative movement therebetween.

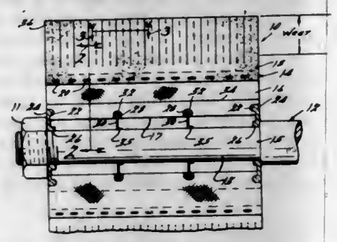
3,165,866
CRANKSHAFT MAIN JOURNAL REGRINDING PROCESS
Sigurd Golten, 210 Pines Lake Drive E., Wayne County, N.J.
Filed Nov. 16, 1962, Ser. No. 238,121
3 Claims. (Cl. 51—289)



3. In reconditioning an engine having a crankshaft with more than three main journals supported in main bearings, the surfaces of said journals (except for narrow ring areas at the ends thereof) having been damaged in service: the two-step process of regrinding all of said main journals which consists, first, of rotating the crankshaft supported on some of said damaged main journals while regrinding the other main journals coaxially with their narrow ring areas; and, second, of rotating the crankshaft supported on the reground main journals and their bearings while regrinding the remaining damage journals coaxially with their undamaged narrow ring areas.

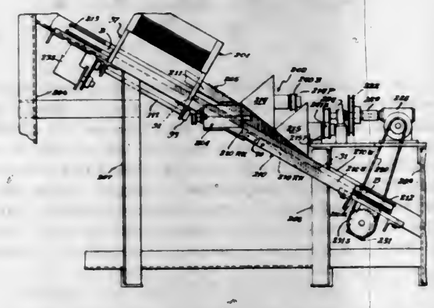
3,165,867
FINISHING WHEEL
Ernest E. Murray, 6765 Meadow Lake, Birmingham, Mich.
Filed Feb. 7, 1963, Ser. No. 256,988
7 Claims. (Cl. 51—334)

1. A work wheel comprising a plurality of flaps annularly disposed and tightly packed at their radially inner ends to define a dense hub portion, each of said flaps including a radially inwardly disposed flexible support member and a separate work member fixed to the radially outer end of said support member, said work member



having an abrasive surface and having a plurality of radially outwardly extending finger portions.

3,165,868
METHOD AND APPARATUS FOR PACKAGING NAILS AND SIMILAR ARTICLES
Kenneth W. Macdonald, Bridgewater, and Herman James Stone, Brockton, Mass., assignors to The Independent Nail Corporation, a corporation of Delaware
Filed Mar. 22, 1962, Ser. No. 181,696
35 Claims. (Cl. 53—35)

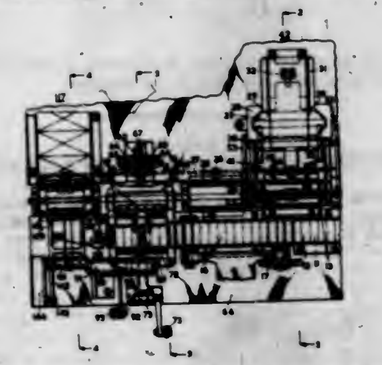


21. The method of loading nails into an elongated carrier strip comprising continuously conveying the strip endwise along a strip travel path, concurrently feeding nails in side-by-side immediately adjacent, single file, relation along a nail travel path extending in coplanar, registering, converging relation with the strip travel path to present successive nails in penetrating relation to immediately adjacent successive sections of a lengthwise extending entrant edge of the strip, maintaining predetermined uniform endwise directioned orientation of nails moving along the nail travel path, and concurrently producing gradual nail inserting forces endwise on a plurality of successive nails as they move into penetrating relation into the strip to load the nails gradually into the strip.

3,165,869
FORMATION OF PACKAGES
Peter Frank Cox, Gainsborough, England, assignor to Rose Brothers (Gainsborough) Limited, Gainsborough, England, a British company
Filed June 8, 1962, Ser. No. 201,176
Claims priority, application Great Britain, June 19, 1961, 21,975/61
4 Claims. (Cl. 53—62)

2. Apparatus for forming packages each containing a number of articles, comprising a band conveyor arranged to feed a continuous succession of articles towards a transfer station, a pocketed conveyor adapted to feed a succession of trays into article-receiving position at the transfer station, the pockets of the conveyor each being formed in a pocket member mounted on the conveyor for pivotal movement in a direction transverse to the normal plane

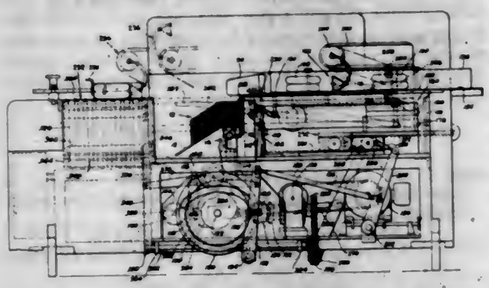
of the conveyor, a positioning member projecting from each pocket member, a track member extending lengthwise of the conveyor and formed with a guiding track arranged to receive said positioning members so as to locate the pocket members, a gap formed in said track member at the transfer station, an actuating block arranged in said gap and formed with an auxiliary track lying normally in line with the guiding track so as to receive the positioning member of each pocket member successively as is passes into said gap, said block being mounted for arcuate movement about an axis coincident with the pivotal axis of the pocket member at the transfer station,



means for moving said block about said axis as each pocket member reaches the transfer station so as to tilt the pocket member so that the edge of the tray adjacent the articles lies at or below the lower surface of the articles, a reciprocating pusher movable laterally of the band conveyor at the transfer station and adapted to engage a given number of articles at the leading end of the conveyor and transfer them into a waiting tray, means for ejecting the filled trays from the pocketed conveyor at a delivery station, and a feeler member adapted to be engaged by the leading article on the band conveyor and upon such engagement to actuate means for rendering the reciprocating pusher active.

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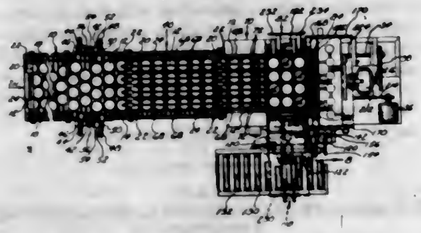
**3,165,870**
**PACKAGING MACHINE**
**Robert W. Sammiegle, Lexington, and Ralph L. Wing, Burlington, Mass., assignors to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts**
**Filed Apr. 25, 1961, Ser. No. 105,458**
**21 Claims. (Cl. 53—189)**



11. In a packaging machine, in combination, an elevating platform for replaceably supporting a stack of flat envelope type bags, each bag having an extended flap portion from one wall leaving the opposing wall free and exposed, said stack being initially provided with an inverted U-shaped retaining member having its vertical legs extended through openings in said flap portions and its horizontal connecting leg bearing against the top of the stack, the extended ends of said vertical legs being detachably received in openings in said platform, elevating means for urging the platform upwardly, a stop member engageable with said horizontal leg to maintain the top of the stack in operative position for withdrawal of successive uppermost bags, means for directing a stream of air against said exposed edge to effect separation of the walls and to expand the bag in readiness to receive an article to be packaged, and means for inserting an article into and beyond its fully seated position in the bag to effect withdrawal of the bag and tearing of said flap portion from said retaining means, said platform being depressible to receive the stack and its retaining member and upon elevation to present the horizontal leg into engagement with said stop member.

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**3,165,871**
**CARTON PACKING MACHINE**
**William F. Roth and Nevin E. Snyder, Hanover, Pa., assignors to Chisholm-Ryder Company of Pennsylvania, Hanover, Pa., a corporation of Pennsylvania**
**Filed Jan. 12, 1961, Ser. No. 82,322**
**16 Claims. (Cl. 53—247)**



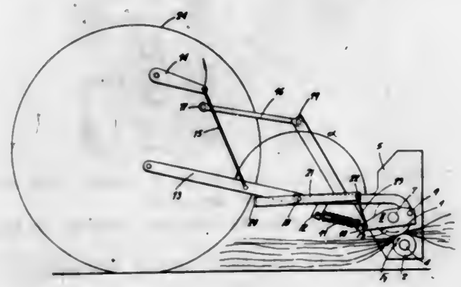
1. A carton packing machine comprising in combination, container conveyor means operable to move containers along a predetermined elongated substantially horizontal path from a loading zone to a discharge station comprising horizontal supporting means at the delivery end of said conveyor means, opposite sides of said discharge station being open for free passage of an assembly of containers of selected size transversely to said path thereof; carton supporting means adjacent at least one of said sides of said discharge station to receive a charge of containers therefrom; pusher means movable across said discharge station between said opposite sides thereof and transversely to said path for said containers; and actuating means for said pusher means mounted longitudinally beyond the end of said discharge station opposite said delivery end of said conveyor means to render the opposite sides of said discharge station free of obstruction to the passage of containers, said actuating means including power means, guide means supporting said pusher means reciprocally across said discharge station, drive means for said pusher means, clutch means operable to connect said power means and drive means when discharge of a charge of cans is to be made into a carton, and clutch actuating means controlled by the supporting of an empty carton upon said carton supporting means in position to receive a charge of containers from said discharge station.

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**3,165,872**
**HAY CONDITIONER SUPPORTING AND OPERATING MEANS**
**Casimir Praca, Flers-par-Lille, Nord, France, assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey**
**Filed Feb. 26, 1963, Ser. No. 261,088**
**4 Claims. (Cl. 56—1)**

1. A combination with a tractor having a draft arm pivotally mounted thereto for vertical swinging movement, a hay conditioning device comprising a frame, a pair of hay conditioning rolls supported on the frame, a pivot connection between said frame with said arm for jack-knifing action, and operating linkage interconnecting said arm and said rolls, said linkage comprising lever means pivoted to the connection between said frame and

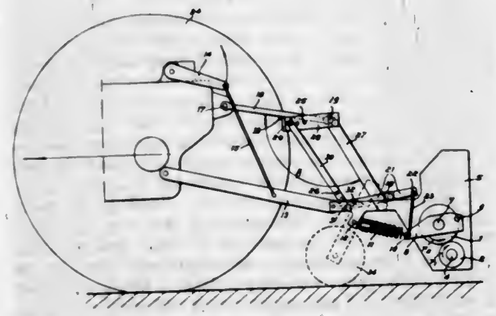




said draft arm and having one end reactably engaging said draft arm and having another end operatively connected to said linkage for automatically moving said rolls toward each other attendant to lowering of said device through downward swinging movement of the arm and separating the rolls when the device is elevated.

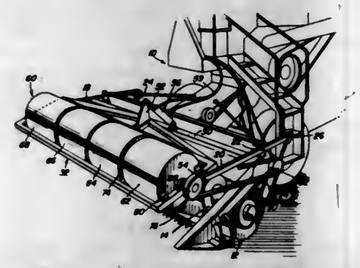
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**3,165,873**
**HAY CONDITIONER SUPPORTING AND OPERATING MEANS**
**Wilhelm Iven, Roubaix, Nord, France, assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey**
**Filed Feb. 26, 1963, Ser. No. 261,089**
**4 Claims. (Cl. 56—1)**



1. A combination with a tractor having a three-point hitch including lower draft arms pivotally mounted thereto and an upper link for vertical swinging movement, a frame, a hay conditioning device comprising a pair of hay conditioning rolls, means including yieldable means supporting said rolls from the frame in cooperative relation and for movement relative to each other, means including pivot connections between said frame with said arms and link for jack-knifing action, and operating linkage comprising lever means pivoted to the connection between said frame and said link and having a portion reactably engaging said link and having another portion operatively connected to said first-mentioned means for automatically moving said rolls toward each other attendant to lowering of said device through downward swinging movement of the link and separating the rolls through upward swinging of the link when the device is elevated.

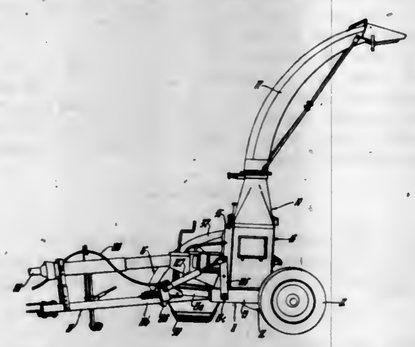
**3,165,874**
**BLOWER FOR COMBINES**
**Emmett H. Osteen, Box 273, Walsh, Colo.**
**Filed Jan. 7, 1963, Ser. No. 249,774**
**8 Claims. (Cl. 56—23)**



1. In a combine of the type including a header provided with means vertically adjusting the latter and having a cutter assembly and a conveying means mounted behind the cutter assembly to carry away cut grain together with vertically adjustable reel support arms; the improvement comprising a support frame movably mounted upon said support arms for movement therewith and for tilting movement independently thereof, a blower means mounted upon said support frame, an air inlet means for said blower means and air outlet means connected to said blower means and receiving air therefrom and directionally discharging air therefrom downwardly upon grain to be cut and causing the grain to incline toward said cutter assembly, said blower means including a housing having longitudinally spaced inwardly recessed portions, a blower shaft disposed longitudinally in said housing and extending across said recessed portions, blower impeller sections on said shaft each received in said housing between a pair of adjacent recessed portions, said support frame including support bars each received in a recessed portion and supporting said housing.

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**3,165,875**
**ROTARY FLAIL-TYPE FORAGE HARVESTER**
**Melville J. Mitchell, Birmingham, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland**
**Filed July 13, 1962, Ser. No. 209,605**
**5 Claims. (Cl. 56—24)**

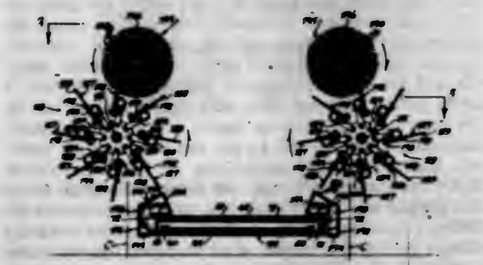


3. In a forage harvester having a frame supported by a pair of laterally spaced ground engaging wheels with a crop cutting and gathering unit mounted on said frame in advance of said wheels, the combination comprising, a draft tongue having a lower part adapted to be connected at its forward end to a tractor and pivotally connected at its rear end to said frame for swinging movement about a vertical axis, said tongue also having an upper part

slidably interconnected at its forward end with said lower part and pivotally connected at its rear end to said frame for swinging movement about a horizontal axis, an upright secured to said frame adjacent said horizontal axis, a hydraulic actuator interposed between said forward end of said upper tongue part and said upright for altering the posture of said frame about the axis of rotation of said wheels between a transport position in which said crop cutting and gathering unit is raised and an operating position in which said crop cutting and gathering unit is lowered, and adjusting means for selectively defining the lower limit of said crop cutting and gathering unit in said operating position.

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**3,165,876**
**BEAN PICKER**
**Arthur Lee Towson, Lewiston, N.Y., assignor to Chisholm-Ryder Company, Inc., Niagara Falls, N.Y., a corporation of New York**
**Filed Jan. 16, 1963, Ser. No. 251,827**
**4 Claims. (Cl. 56—130)**



1. In a snap bean harvester having a frame adapted to be propelled along a row of bean plants in the field, a threshing reel journalled on said frame to rotate about an axis arranged above and extending longitudinally of said row, picking fingers projecting in a generally radial direction from said reel to engage and comb said bean plants in said row, means rotating said reel to effect upward movement of said picking fingers through said plants and a conveyer arranged on the upwardly moving side of said reel to receive the bean pods, leaves and stems removed from said bean plants by said upwardly moving picking fingers; the combination therewith of means retaining the bean plants as a mat of uniform thickness toward the outer ends of said picking fingers, comprising an annular series of rods secured to said reel to extend lengthwise of and generally concentric with its axis, said rods being held intermediate the length of said picking fingers and releasably touching the advancing sides of said spring fingers thereby to avoid interference with the individual spring action of the picking fingers on encountering an immobile object.

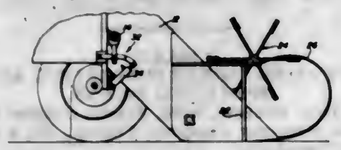
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**3,165,877**
**MOWER BAG ATTACHING DEVICE**
**Joseph S. Leader, 2116 Xerxes Ave. N., and Solomon Leader, 1114 Russell Ave. N., both of Minneapolis, Minn.**
**Filed Aug. 6, 1963, Ser. No. 300,350**
**4 Claims. (Cl. 56—202)**

1. A supporting and attaching means for a grass catching bag in connection with the discharge outlet of a rotary type lawn mower, said means comprising
- a substantially rigid collar defining an inlet for said bag, being integral therewith and corresponding to said discharge outlet, said collar having a pair of spaced apertures in the upper side thereof,
- a plate member having a pair of spaced apertures in register with said apertures in said collar,
- said plate member having a plurality of apertures including only one of said first mentioned spaced apertures, said plurality of apertures respectively being spaced relative to said other of said first mentioned spaced apertures to be in register with said apertures in said collar therewith,
- means swingably securing said plate member to said housing, and
- means carried by said plate member supporting said bag in extended position.

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**3,165,878**
**COMBINE HEADER LEVELLER**
**Orville C. Harper, Dumont, Iowa**
**Filed Feb. 12, 1963, Ser. No. 257,973**
**5 Claims. (Cl. 56—289)**



1. A farm machine comprising a mobile frame, a working header, a transverse shaft mounting said header on said frame, bearings receiving the opposite ends of the shaft, said bearings being mounted on said frame for allowing a raising and lowering of the header relative to the frame, one of said bearings being mounted on said frame for movement solely in a vertical plane carrying therewith the corresponding shaft end, said vertical plane paralleling the longitudinal axis of the shaft, and means for effecting this vertical movement, said means comprising an elongated lever pivoted to said frame for movement in a vertical plane, said lever projecting transversely past said shaft in spaced relation thereto and in general vertical alignment with the movable bearing, pivotally mounted link means interconnecting the lever and shaft end received within the movable bearing, and an extensible motor means having one end thereof fixed to the frame and the other end thereof fixed to the lever whereby an extension of said motor means will effect a pivoting of the lever and consequently a vertical movement of movable bearing and shaft end received therein.

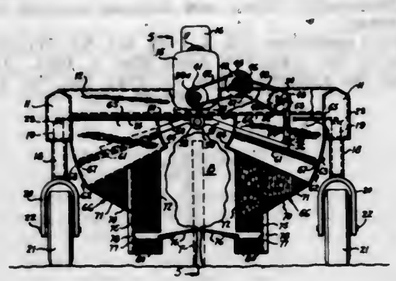
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**3,165,879**
**BERRY PICKING APPARATUS**
**Jack R. Chapin, Rte. 2, Box 135, Salem, Oreg.**
**Filed July 19, 1963, Ser. No. 296,346**
**12 Claims. (Cl. 56—330)**

1. Berry picking apparatus comprising a main frame, spaced front and rear legs at the front and rear corners of said main frame supporting the frame a substantial distance above the ground and defining a longitudinally extending central channel, an engine and steering means supported by said frame, drive wheels carried by said rear legs operatively connected to said engine, steerable wheels carried by said front legs and operatively connected to said steering means, plates defining confronting air tunnels on opposite sides of said channel,

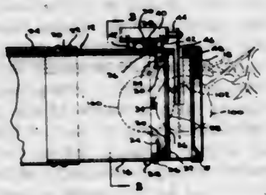


plunger means connected with each tunnel, and means alternately operating each plunger means to force alternate blasts of air against a berry bush in said channel from opposite sides to shake said bush to dislodge berries therefrom.



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**3,165,880**
**FRUIT PICKING AND TRANSPORTING DEVICE**
**Archie P. Buie, Jr., Maitland, Fla.**
**(Rte. 1, Box 962A, Longwood, Fla.)**
**Filed Dec. 22, 1961, Ser. No. 161,644**
**13 Claims. (Cl. 56—336)**

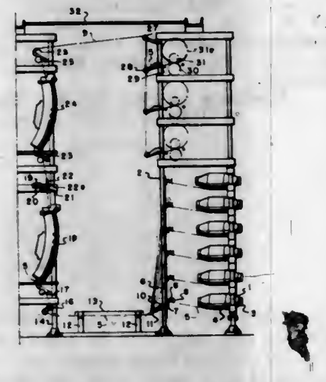


1. A fruit picking assembly comprising, in combination, a picker head, and a suction and collection unit operatively connected to said picker head, said picker head being generally tubular and having an open front end and an open rear end connected by an intermediate conduit to said suction and collection unit, a knife blade operatively connected to said picker head and movable through a path transverse to the longitudinal axis of said picker head, an electrically operated motor means operatively connected to said blade, contact means in said picker head including at least one pair of electrical contacts normally out of engagement but arranged to be engaged upon movement of a solid object into said open front end, said electrical contacts being positioned to establish an electrical circuit between said motor means and a source of electrical energy when engaged, said intermediate conduit leading into a housing of said suction and collection unit, said housing defining a fruit receiving and a suction chamber, a foraminous screen separating said fruit-receiving chamber from said suction chamber, a suction fan in said suction chamber, drive means operatively connected to said suction fan, and a fruit collecting hopper in selective communication with said fruit-receiving chamber.

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**3,165,881**
**PRODUCTION OF HIGH BULK YARNS**
**Yves de Moncuit, Chavanoz, Isere, and Henri Crouzet, Roanne, Loire, France**
**Filed Jan. 31, 1961, Ser. No. 86,141**
**Claims priority, application France Feb. 3, 1960**
**6 Claims. (Cl. 57—34)**

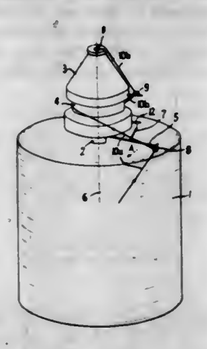
4. Apparatus comprising a yarn voluminizing frame and a creel frame each carrying thread guides, said creel frame being disposed beside the voluminizing frame, said voluminizing frame carrying a false twisting and yarn heating assembly for twisting and heat setting twist within a yarn, and said creel frame carrying both yarn supply and yarn take-up means, suitable cross-bars holding together the overhead sides of said frames, and a platform



disposed between the lower sides of said frames, said platform providing an operator supporting surface and passageway beneath said surface so that yarn can travel in a cyclic path from the yarn supply under the platform along the voluminizing frame and across the overhead sides of said frames to take-up.

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**3,165,882**
**THREAD BRAKE, IN PARTICULAR FOR DOUBLE TWISTING SPINDLES**
**Rudolf Kreuschmer, Kottern-Neudorf, Germany, assignor to Allma Allgauer Maschinenbau G.m.b.H., Kempten, Allgau, Germany**
**Filed May 29, 1963, Ser. No. 284,182**
**11 Claims. (Cl. 57—58.83)**

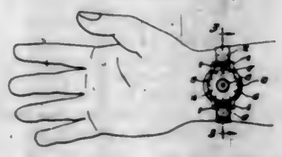


1. A rotatable thread guide and thread brake head, especially for double twisting spindles, comprising:
- a hollow spindle;
- a take-off carrier mounted on said spindle;
- a take-off flyer mounted on said carrier, said take-off flyer including a first thread guide;
- a brake cylinder projecting from said carrier;
- a cap mounted for rotation with respect to said carrier;
- a second thread guide mounted on said cap for rotation therewith with respect to said first thread guide;
- a torsion coil spring arranged within said cap and concentric with said spindle and connected to said cap and said carrier for yieldably restraining relative rotation therebetween whereby when the tension of a

thread engaging said thread guides increases, said cap and said take-off carrier rotate relatively to each other against the spring pressure to decrease the angle through which the thread is wrapped around said brake cylinder.

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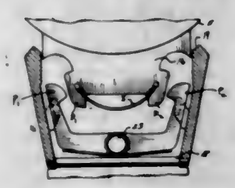
3,165,883
FAST DRAW TIMER
Harold W. Nash, Los Angeles, Edgar L. La Bonniere, Gardena, and Albert M. Torok, Torrance, Calif., assignors to LNT Enterprises, Gardena, Calif., a copartnership
Filed June 14, 1962, Ser. No. 205,162
13 Claims. (Cl. 58—22.9)



1. In a fast draw timer: a case member; means for attaching the case member to the arm of a user; a movable member mounted by the case member for movement in a path fixed with respect to the case; power means interposed between the case member and the movable member for urging the movable member in one direction in its path; movable means sensitive to the orientation of the case member with respect to the horizontal for releasing and stopping the movable member; means controlling the speed of the movable member so that the movable member assumes a number of discernible positions during the running time of the order of a second; and pointer means carried by one of the members for indicating time increments of the order of fractions of a second and corresponding to successive positions of the movable member.

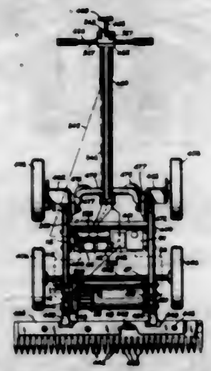
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3,165,884
WATCH BAND CONNECTOR
Hans E. Gwinner, Cranston, and Robert Meesmer, Warwick, R.I., assignors to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 14, 1962, Ser. No. 237,658
4 Claims. (Cl. 58—88)



1. A connector assembly for coupling the ends of a wrist bracelet to a watch casing, comprising a pair of tongues attached to opposing ends of the casing, and a pair of mouthpieces attached to the ends of said bracelet, each tongue being receivable within one of said mouthpieces and including a pair of spaced detents and a forwardly projecting spring bow extending between said detents, each mouthpiece being provided with a pair of inwardly-biased pivoted dogs formed by oppositely disposed L-shaped elements which are separated when said tongue is introduced therein to engage said detents, said dogs having pawl members to catch said detents when said tongue is inserted in said mouthpiece and having leg portions which are engaged by said bow to subject said dogs to tension to prevent free play thereof, said mouthpiece having a lip conforming to the contours of said casing.

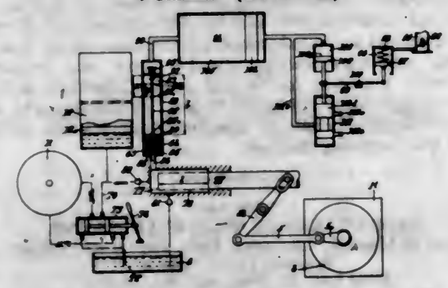
3,165,885
ENGINE
William L. Tenney, Crystal Bay, and John E. Eastman, Minneapolis, Minn.; said Eastman assignor to said Tenney
Original application Feb. 4, 1959, Ser. No. 791,107, now Patent No. 3,023,564, dated Mar. 6, 1962. Divided and this application Feb. 27, 1962, Ser. No. 176,143
5 Claims. (Cl. 60—14)



1. Apparatus for starting an engine having a cylinder and a piston freely movable relative to each other and normally resiliently bliased in a direction to reduce the volume of the power cylinder formed therebetween, said engine having charge introduction means for supplying combustible charges to said power cylinder during normal operation of said engine, comprising a source of vaporized starting fuel, a source of air under sufficient pressure to produce relative movement between said piston and said cylinder against the normal bias thereon, means connected to supply starting fuel and compressed starting air from said sources to said engine independently of said normal charge introduction means and in quantities proper to form a combustible starting charge, means for igniting said starting charge in said chamber to initiate self-sustaining operation of said engine, and means between said starting fuel supply source and said starting charge supply means for maintaing the supply of starting charges during several starting strokes of said engine.

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3,165,886
VARIABLE-RATIO HYDRAULIC TRANSMISSIONS, MORE PARTICULARLY FOR MOTOR VEHICLES
Paul Panhard, Paris, France, assignor to Societe Anonyme des Anciens Etablissements Panhard & Levassor, Paris, France, a society of France
Filed Dec. 16, 1963, Ser. No. 331,068
Claims priority, application France, Dec. 15, 1962, 918,758
4 Claims. (Cl. 60—19)



1. A variable-ratio hydraulic transmission, more particularly for motor vehicles, comprising a motor driving a reciprocating pump of constant swept volume said pump supplying at least one driven machine usually consisting of a rotary hydraulic motor, characterised in that a hydro-pneumatic pressure accumulator is connected, upstream of a non-return valve, to the delivery conduit connecting the pump cylinder to said driven machine, the whole being such that said non-return valve opens only during the delivery stroke of the pump piston when the pressure developed in said accumulator reaches the countering pressure prevailing downstream of said non-return valve as the result of the resistance offered to said driven machine, in consequence whereof the effective liquid delivery of the pump to the driven machine is equal to $1/n$ times its swept volume at a pressure P equal to $n$ times the pressure $p$ corresponding to an effective liquid delivery equal to the total swept volume, where $n$ is the ratio of the number of cycles accomplished in unit time by the driving engine to the numer of cycles accomplished in that time by the driven motor.



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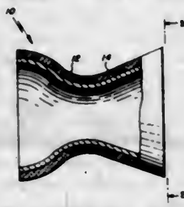
3,165,887
METHOD OF OPERATING A PROPULSION ENGINE WITH POLYSUBSTITUTED METHANE FUEL
Stanley D. Koch, Swampscott, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,026
5 Claims. (Cl. 60—35.4)

1. A high energy fuel composition for use in a reaction type power plant containing from 10 to 50 volume percent of a cyclopentyldicyclohexylmethane in which the cyclopentyl ring substituents are selected from the class consisting of hydrogen and methyl groups, the substituents of each cyclohexyl ring are selected from the class consisting of hydrogen and alkyl groups containing from 1 to 4 carbon atoms, the maximum number of said methyl groups on said cyclopentyl ring is one, and the maximum number of said alkyl groups on each said cyclohexyl ring is one to two.

2. The method of operating a reaction type power plant, said method comprising injecting a stream of an oxidizing agent and a stream of a fuel containing 10 to 50 volume percent of a polysubstituted methane as defined in claim 1 into the composition chamber of said reaction type power plant, oxidizing said fuel in said combustion chamber so as to impart thrust.

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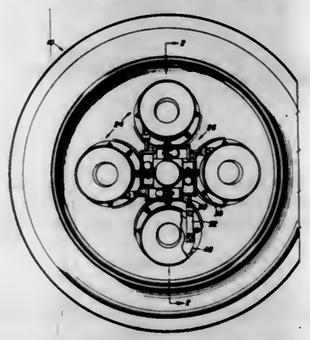
3,165,888
EXHAUST NOZZLE FOR REACTION ENGINES AND THE LIKE
Edward F. Keon, Lowell, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 18, 1959, Ser. No. 840,889
4 Claims. (Cl. 60—35.6)



1. An improved reaction engine exhaust nozzle comprising a tubular member for directing the flow of a hot propellant medium therethrough, the inner surface of said tubular member being first convergent and then divergent along the length thereof in the direction of such flow in order to compress and subsequently expand such hot propellant medium, said tubular member constituting a tubular substrate and a deposit of pyrolytically-formed graphite on the inner surface thereof, providing high thermal conductivity along such surface and low thermal conductivity through the thickness of said member.

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3,165,889
JET CONTROL BY ROTATABLE OFFSET NOZZLE
Richard B. Kershner and Frank H. Swaim, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 24, 1958, Ser. No. 776,154
1 Claim. (Cl. 60—35.55)



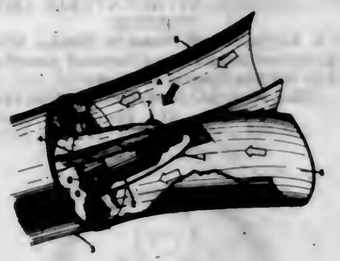
In a reaction propelled missile, an attitude control device for said missile, said missile having an end cap on its aft end, said end cap having apertures arranged in diametrically opposed pairs, said control device comprising; an even plurality of primary thrust nozzles arranged in diametrically opposed pairs on said end cap in registry with said apertures and each having an expansion section, an approach section and a throat section, bearing means on the expansion section and having a stationary race attached to the end cap and an outer race secured to the expansion section, ball bearings between the races and a seal for preventing fluid flow to the bearings, said bearings rotatably mounting each of said nozzles on said end cap in a symmetrical array about and radially spaced from the longitudinal axis of said missile, the axes of rotation of said bearing means intersecting the longitudinal axis of said missile at a common point, and each said axis of rotation intersecting the axis of symmetry of its respective nozzle expansion section at an angle equal to the angle between said axis of rotation and said longitudinal axis, and means mounted on said end cap and connected with the exterior of said nozzles for rotating said nozzle expansion sections about said axis of rotation in response to control signals from said missile, said last-mentioned means comprising an actuator mechanism consisting of a plurality of cylinders mounted in a cluster about the axis of the missile, diametrically opposed pairs of said cylinders being mounted between diametrically opposed nozzles, each of said cylinders having a rod and a link connecting said rod with the outer race of one of the bearings.

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3,165,890
ARRANGEMENT FOR PREVENTING ANY RECYCLING OF GASES INTO THE STARTING TURBINE OF AIRCRAFTS CARRYING THE JET ENGINE INSIDE THE FUSELAGE
Gaston Bayard, Toulouse, Haute-Garonne, France, assignor to Technopatent, Paris, France, a company of France
Filed May 7, 1962, Ser. No. 192,721
Claims priority, application France, June 2, 1961, 4,720
3 Claims. (Cl. 60—39.14)

1. In an aircraft comprising a jet engine, a fairing therefor and two juxtaposed air intakes the rear ends of

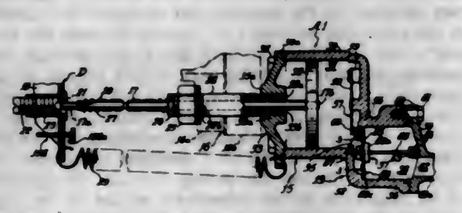
which are separated by a medial partition, fitted over the fairing, the combination of a gas turbine engine carried inside the fairing and including a compressor, means feed-



ing fresh air into said turbine engine compressor to one side of the partition, and means exhausting the burnt gases out of said turbine engine to the other side of the partition.

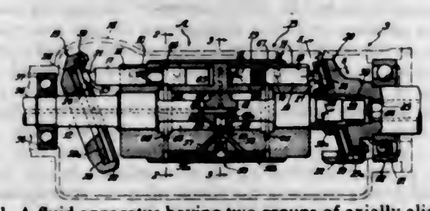
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3,165,891
SERVO-MOTOR FOR AUTOMATIC CLUTCH CONTROL
Richard L. Smirl, La Grange, Mieczyslaw J. Waclawek, Olympic Fields, and John W. Adelmann and Edward F. La Buda, Chicago, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Aug. 2, 1961, Ser. No. 128,916. Divided and this application Dec. 9, 1963, Ser. No. 336,331
4 Claims. (Cl. 60—52)



1. In a drive engagement control apparatus having a source of fluid pressure, a fluid accumulating means for controlling fluid pressure supplied to said apparatus comprising: a housing having walls defining a generally cylindrical chamber, a pin shaft disposed in said chamber and mounted between opposite walls thereof, an outlet from said chamber and an inlet to said chamber, an annular protuberance formed about said outlet and a boss disposed within said cavity and formed adjacent said inlet, a thin disc valve mounted on said pin shaft for sliding movement thereon and having the plane of said valve disposed generally radially of said chamber, said disc valve having a generally circular periphery spaced from the walls of said chamber, said disc valve being moved by fluid pressure between a first position wherein said valve annularly engages said protuberance to close off said outlet and a second position in which said valve engages said boss without obstructing said inlet, said disc valve having at least one opening provided therein which is much smaller than said outlet, and brake means mounted on said disc valve adapted to frictionally engage said pin shaft for providing a braking force which holds said disc valve in the position to which it is moved by a predetermined fluid force.

3,165,892
SMALL CAR TRANSMISSION
Richard W. Roberts, Lombard, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 23, 1963, Ser. No. 297,077
9 Claims. (Cl. 60—53)

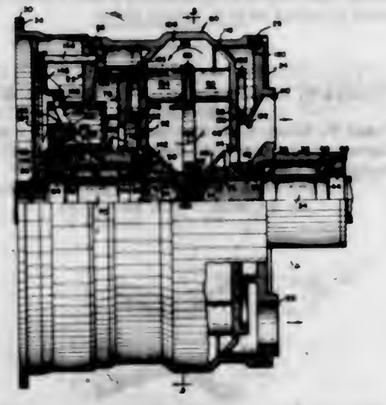


1. A fluid apparatus having two groups of axially aligned cylinders in an integral cylinder block comprising in combination:

(*a*) high pressure and low pressure ports in each group of said cylinders,
(*b*) reciprocable pistons fitted in said cylinders,
(*c*) cylindrical bores in said pistons,
(*d*) ports in said pistons communicable with said high pressure and low pressure ports,
(*e*) a fixed angle swash plate relatively rotatable with respect to one group of said cylinders,
(*f*) a variable swash plate operable with respect to the other group of said cylinders,
(*g*) flow passages between said high pressure ports,
(*h*) flow passages between said low pressure ports, and
(*i*) means connecting said pistons to said respective swash plates, said means comprising slippers connected to said pistons by single axis joints.

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3,165,893
FLUID COUPLINGS
Bo N. Hedstrom, Los Angeles, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Jan. 2, 1962, Ser. No. 163,778
3 Claims. (Cl. 60—54)

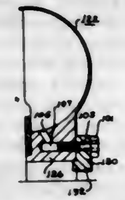


1. A fluid coupling comprising a housing forming the outer periphery of a toroidal working chamber adapted to be substantially filled with fluid, a pair of spaced radial wall members forming the sides of said chamber, one of said wall members being connected to an input shaft and the other of said wall members being connected to an output shaft, a series of impeller blades carried by said one wall member for rotation in said working chamber adjacent the outer periphery thereof, a series of turbine blades carried by the other radial wall member for rotation in said working chamber adjacent the outer periphery thereof and opposite said impeller blades, means providing a radially extending divider ring between the adjacent inner ends of said impeller blades and said turbine blades, said divider ring extending radially inwardly and radially outwardly of said turbine blades and said impeller blades, each of said impeller blades having an arcuate surface facing in the direction of rotation of said input shaft and each of said turbine blades having an oppositely directed face whereby upon rotation of said impeller blades said fluid in said working chamber is caused to rotate circumferentially in said working chamber, said rotating body of fluid impinging on said turbine blades to drive said turbine blades and said output shaft, means providing fluid openings in said housing communicating with the inner periphery of said chamber, means forming outlet openings in said housing communicating with the outer periphery of said chamber to accommodate a through flow of fluid during operation of said coupling, means providing balancing chambers on the sides of said radial wall members remote from said working chamber, and means for maintaining fluid in said balancing chambers at substantially the same pressure as the fluid in said working chamber whereby said radial wall members are axially balanced during operation of said coupling.



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3,165,894
TORQUE LIMITING PORTS-FLUID DRIVES
Richard M. Nelden, Birmingham, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Continuation of abandoned application Ser. No. 762,489, Sept. 22, 1958. This application Aug. 13, 1962, Ser. No. 221,926
1 Claim. (Cl. 60—54)

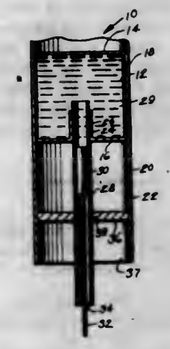


In a fluid coupling having relatively rotatable and juxtaposed vaned impeller and runner shells forming a toroidal work chamber, said runner being carried by a rotatable output shaft and being bolted thereto at the inner periphery by bolts passing through a flange of the output shaft and into threaded holes in the runner shell, the improvement of a fluid intercepting baffle carried by the runner shell interiorly thereof and outside of the full load fluid vortex, said baffle having an upstream side, fluid passage means in said runner shell opening interiorly thereof and upstream of said baffle and connected to the base of the threaded, bolt receiving holes, and the bolts being longitudinally bored to provide a metering orifice for controlled exhaust of fluid, and the bores being tailored to meet overload demands of the unit, whereby fluid exhaust from the coupling is metered in accordance with overload design of the unit.

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3,165,895
HYDRAULICALLY OPERATED PISTON
Trevor J. Riley, 11431 94th Ave., North Surrey, British Columbia, Canada
Filed Feb. 21, 1962, Ser. No. 174,784
3 Claims. (Cl. 60—54.5)

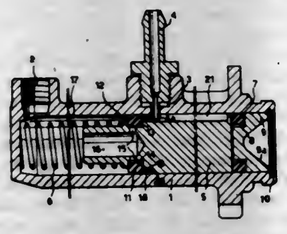
1. In a hydraulically operated power means, the combination of a circular wall and cylinder body forming the confines of a large cylinder, a piston in said cylinder, an upper end wall and a lower end wall forming a hollow space in said piston of a substantially large diameter for receiving of a force transmitting fluid therein, a substantially smaller diameter cylinder mounted in the circular wall and having an open end projecting into



the hollow space, said smaller cylinder rigidly secured to in said large cylinder, a smaller piston and rod mounted to slide within said smaller diameter cylinder, said smaller piston in its respective cylinder having its head end exposed to the open end and to the hollow space.

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3,165,896
HYDRAULIC BRAKE
Philip Sidney Baldwin, 54 Via Maggio, Florence, Italy, assignor of fifty percent to Fiat Societa per Azioni, Turin, Italy
Filed Dec. 6, 1963, Ser. No. 328,580
Claims priority, application Italy, Dec. 15, 1962, 25,360/62
9 Claims. (Cl. 60—54.6)

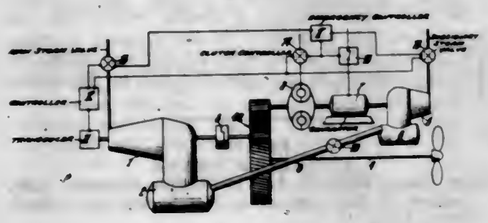


1. A master cylinder for a hydraulic brake system, said cylinder comprising a body having a longitudinal bore therein, one of said bore ends being closed, the other end being open, a piston member slidably mounted in the bore, a tappet means fitted on said piston member and a trip means for the tappet means in the cylinder bore, a retaining means for preventing the said piston member from sliding out of said bore, said cylinder body having a first opening connecting with said bore at its closed end and a second opening connecting with said bore at a location between said first opening and the open end of said bore, a spring biasing said piston member towards said open end of the bore, a compression chamber between said piston and said closed end, said piston member comprising a circumferential groove including axially spaced radial shoulders and a bottom wall extending between said shoulders, a freely mounted resilient sealing ring within said groove, said ring being axially shorter than the axial distance between said shoul-

ders and having sealing engagement with the cylinder bore and having inner diameter greater than the outer diameter of the groove bottom wall to form a first passage therebetween, said piston member including a second passage which connects said compression chamber with said first passage, said sealing ring being located at an axial position on said piston member so that when said piston member is substantially at one end of its stroke said tappet means abuts said trip means whereby the sealing ring is pushed axially towards one of said groove radial shoulders thereby forming a third passage between said sealing ring and the other radial shoulder of said groove, said first, second and third passages all forming a fluid conduit connecting said compression chamber to said second opening.

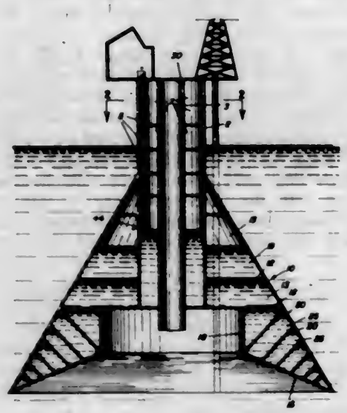
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**3,165,897**
**STEAM TURBINE MACHINERY**
**Robert Coats, Ponteland, and Michael Leslie Ryall, Whitley Bay, England, assignors to Parnetrada, Wallsend, England**
**Filed Dec. 14, 1962, Ser. No. 244,627**
**Claims priority, application Great Britain, Dec. 15, 1961, 44,971/61**
**6 Claims. (Cl. 60—102)**



1. A steam turbine installation comprising a condensing main steam turbine, a steam inlet valve for said main turbine, a condensing subsidiary steam turbine, a steam inlet valve for said subsidiary turbine, an electrical generator drivably connected to said subsidiary turbine, means for switching said generator in or out of service, a power output shaft, a releasable coupling connecting the main turbine to the power output shaft, a clutch arranged to couple the subsidiary turbine and generator to the power output shaft, speed sensitive means coupled to said main turbine, and control means, responsive to said speed sensitive means for controlling the operation of said clutch, switch means and the steam inlet valves, supply to the turbines, said control means maintaining the steam inlet valve for the main turbine in open position, closing the steam inlet valve for the subsidiary turbine, switching the generator into service, and engaging the clutch when the speed of said main turbine exceeds a predetermined limit whereby under high speed operation of the main turbine the generator and the power output shaft are driven by the main turbine, said control means having dual pre-selectable modes of operation when said main turbine speed is below the predetermined speed, one of said pre-selectable modes of operation being to open both steam inlet valves, to disengage the clutch and to switch the generator into service whereby the power output shaft is driven solely by the main turbine and the generator in operation is driven by the subsidiary turbine, and the other of said pre-selectable modes of operation being to close the steam inlet valve to the main turbine, to open the steam inlet valve to the subsidiary turbine, to switch the generator out of service and to engage the said clutch whereby the generator idles and the power output shaft is driven by the subsidiary turbine with the main turbine out of service.

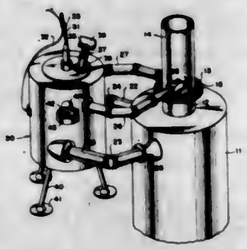
**3,165,898**
**OFF-SHORE OIL DRILLING APPARATUS**
**Melvin R. Elliott, Lake Charles, Fla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**
**Filed June 11, 1962, Ser. No. 201,681**
**3 Claims. (Cl. 61—46.5)**



1. Apparatus for drilling into earth formations at the bottom of a body of water comprising, in combination, a cylindrical column; a tubular sleeve concentrically disposed in said cylindrical column; a frusto-conical skirt connected to the exterior of said cylindrical column above its horizontal center line and extending downwardly for a substantial distance below the bottom thereof whereby the base of the skirt has a diameter substantially in excess of that of the cylindrical column; transverse partitions connecting the exterior of said cylindrical column and the interior of said frusto-conical skirt and defining water-tight compartments therebetween; an inner wall member connected to said frusto-conical skirt adjacent the bottom thereof and extending upwardly and divergently with respect thereto; transverse partitions connecting said frusto-conical skirt and said inner wall member and defining water-tight compartments therebetween; a platform atop said cyindrical column; means for flooding each of said compartments with water; and means for evacuating said compartments.

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**3,165,899**
**UNDERWATER MANIPULATOR WITH SUCTION SUPPORT DEVICE**
**Howard L. Shatto, Jr., Palos Verdes, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Sept. 11, 1963, Ser. No. 308,270**
**4 Claims. (Cl. 61—69)**



1. Apparatus for carrying out operations at underwater installation comprising

a housing lowerable through a body of water,



television camera means carried by said housing and adapted to be directed to a work area adjacent said underwater installation,

propulsion means carried by said housing for moving said housing at least laterally through a body of water,

connector means carried outwardly on said housing for securing it to said underwater installation, said connector means including a rigid plate,

mounting means securing said plate to the outside of said housing, said plate having perforations therethrough,

said rigid plate and perforation forming suction means directed outwardly from said housing and adapted to engage a surface of said underwater installation,

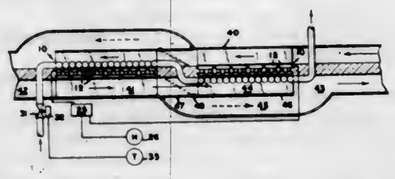
said suction means including a resilient suction cup surrounding each of said perforations and having a flow passage through said cup in communication with said perforation,

a source of suction carried by said housing, and

conduit means in communication between said source of suction and said perforation, said suction means of a size to maintain said housing in secured arrangement on said underwater installation.

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**3,165,900**
**THERMOELECTRIC TEMPERATURE AND HUMIDITY CONTROL**
**Robert G. Huntington, Louisville, Ky., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed May 18, 1962, Ser. No. 195,907**
**13 Claims. (Cl. 62—3)**

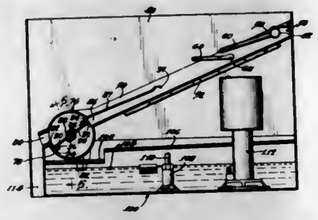


1. In an air conditioning system, including a conditioned air supply duct, means for controlling temperature and humidity of the air passing through said duct, said means comprising: thermoelectric means having a cold junction in heat exchange relationship with the air passing through the air conditioning duct; a hot junction on said thermoelectric means, said hot junction arranged within said duct relative to said cold junction so that air flowing from the cold junction will flow over the hot junction; and control means selectively regulating the transfer of heat from said hot junction to the air passing through the air conditioning duct, whereby under conditions requiring cooling of the air below desired temperature levels in order to obtain desired humidity levels, the temperature of the air may be raised after dehumidification.

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**3,165,901**
**ICE MAKING AND CRUSHING APPARATUS**
**Albert G. Weil and Walter A. Zeuschner, Chicago, Ill., assignors to Remcor Products Company, Chicago, Ill., a corportion of Illinois**
**Filed Apr. 27, 1961, Ser. No. 105,999**
**11 Claims. (Cl. 62—138)**

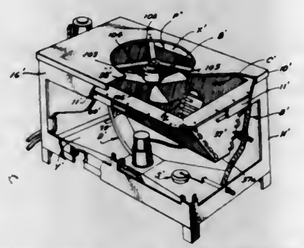
11. In an icemaker, the integrated combination of an inclined freezing plate and a crusher assembly, said crusher assembly including housing component means integral with and extending along the lower edge of said plate, said housing component means including lower portions adjacent said plate having small holes therein for drainage of water and portions spaced from said plate extending upwardly from said lower portions and having



larger holes therein at a location spaced from said plate and elevated relative to said lower portions for discharge from said assembly of relatively dry crushed ice.

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**3,165,902**
**WATER TOWER**
**Fred E. Paugh, Bell, Calif.**
**(6008 S. Atlantic, Maywood, Calif.)**
**Filed Aug. 21, 1962, Ser. No. 218,343**
**5 Claims. (Cl. 62—171)**



1. A water tower including, a box-like housing having a top with an air discharge opening, vertical sides and a bottom, openings in the sides of the housing, evaporative cooling and filtering pads arranged within the openings, a fin-type coolant-conducting coil within the housing and air-circulating means within the housing and establishing a flow of air through the pads into the housing, through the coil and thence out through the discharge opening, an irrigating means in the housing and maintaining the pads moistened with water, said housing having a partition with a central opening therein defining upper and lower chambers in the housing, said lower chamber adapted to accommodate cool air flowing from the pads, said openings in the sides of the housing in which the pads occur communicating with the lower chamber, said coil being supported by the partition and overlying the opening therein, said air circulating means occurring within the upper chamber and drawing cool air upwardly from the lower chamber and through the coil.

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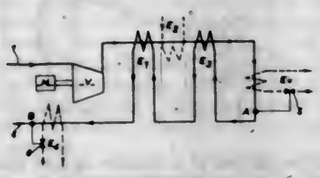
**3,165,903**
**GAS DESICCATION APPARATUS**
**Guy Roc, La Garenne-Colombes, and Claude Andre, Paris, France, assignors to Societe Rateau et Cabinet André Faure, both of Paris, France, both companies of France**
**Filed Feb. 26, 1963, Ser. No. 261,062**
**Claims priority, application France, Mar. 23, 1962, 892,049**
**9 Claims. (Cl. 62—173)**

1. An apparatus for desiccating or dehumidfying a wet gas, comprising

(*a*) a cooling device for cooling the gas;

(*b*) feed means for feeding the gas under pressure to the cooling device;

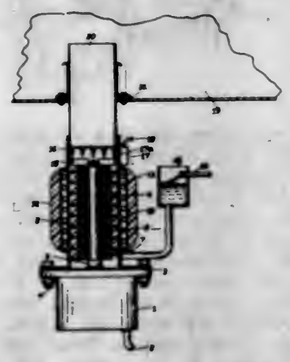
(c) means for discharging the gas outgoing from the cooling device;
(d) exchanger means for placing the gas incoming to the cooler device in heat exchange relation with the gas outgoing therefrom and including first and second exchanger devices arranged in series in the path of said incoming gas and in the path of said outgoing gas;



(e) a third exchanger device for placing the said incoming gas in heat exchange relation with a cooling agent which is available in substantial quantity at a temperature below the temperature of the wet gas, the third exchanger being arranged in series between the first and second exchangers in the path of said incoming gas, and
(f) means for discharging condensed moisture from the exchanger devices.

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**3,165,904**
**APPARATUS FOR MAKING CRUSHED ICE**
**Glen D. Jones, 1922 NE. 44th St., Oklahoma City, Okla.**
**Filed Dec. 22, 1961, Ser. No. 161,483**
**4 Claims. (Cl. 62—188)**

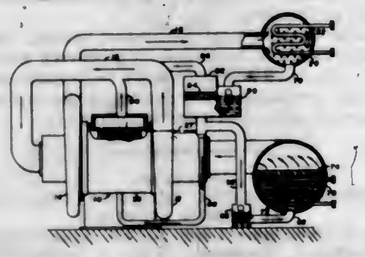


1. An apparatus for continuously producing crushed ice, said apparatus including
(1) a case adapted to hold water,
(2) refrigerant coils surrounding said case,
(3) water supply means connected with said case,
(4) control means associated with said water supply means for controlling the water level in said case,
(5) auger means rotatably located within said case,
(6) means for rotating said auger, and
(7) a rotor member located within said case adapted to rotate with said auger means,
(7a) said rotor having blades thereon having a pitch greater than the pitch of said auger means.

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**3,165,905**
**REFRIGERATING MACHINE INCLUDING AN ECONOMIZER**
**Chester D. Ware, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis.**
**Filed Aug. 15, 1962, Ser. No. 217,080**
**9 Claims. (Cl. 62—219)**

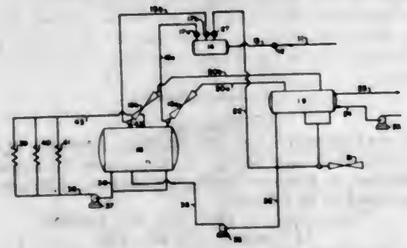
1. A refrigerating machine comprising:
(a) an evaporator,
(b) a condenser,
(c) a first stage compressor,
(d) means for conducting refrigerant vapor from said evaporator to said first stage compressor,
(e) a second stage compressor,
(f) first conduit for conducting compressed refrigerant vapor from the discharge of said first stage compressor to the inlet of said second stage compressor,
(g) second conduit for conducting the compressed refrigerant from the discharge of said second stage compressor to said condenser,
(h) a casing,
(i) an electric motor stator mounted in said casing,
(j) means providing an annular passageway between said electric motor stator and said casing,
(k) a rotor and shaft assembly rotatably mounted in said casing,



(l) impellers mounted on said rotor and shaft assembly and operating in said first stage compressor and said second stage compressor,
(m) an economizer chamber,
(n) third conduit for conducting refrigerant from said condenser to said economizer chamber,
(o) means in said third conduit for controlling the flow of refrigerant in said third conduit,
(p) means for conducting refrigerant liquid from said economizer chamber to said casing,
(q) means for conducting refrigerant vapor from said economizer chamber to said first conduit,
(r) means for conducting refrigerant liquid from said economizer chamber to said evaporator when the refrigerant liquid in said casing is above a predetermined level, and
(s) means for conducting refrigerant vapor from said casing to said first conduit.

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**3,165,906**
**AIR CONDITIONING-STEAM JET SYSTEM**
**Alfred E. Stanford, Glen Rock, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed May 15, 1963, Ser. No. 280,695**
**2 Claims. (Cl. 62—268)**



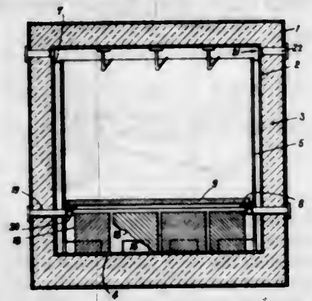
1. An integrated marine steam jet/air conditioning system comprising in combination:
(a) a source of high pressure steam having a value of about 145 to 150 p.s.i.g.;



(b) a steam ejector nozzle operatively connected to said steam source, said ejector having a vacuum outlet;
(c) an evaporation chamber having a vacuum inlet connected with said ejector vacuum outlet and additionally having a first water inlet, a second water inlet and a water outlet;
(d) a marine steam turbine condenser adapted to receive exhaust steam from said steam ejector and further being adapted to provide steam condensate to said first water inlet of said evaporation chamber wherein said condenser is a two pass type and is maintained at a vacuum of about 2.5 inches Hg absolute;
(e) an air cooling system having an inlet end and an outlet end, said inlet end being operatively connected to said evaporation chamber water outlet and said outlet end being operatively connected to said evaporation chamber second water inlet, whereby cooled water from said evaporation chamber is circulated through said air cooling system and returned to said evaporation chamber.

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**3,165,907**
**APPARATUS FOR STORING AND SHIPPING PERISHABLE MATERIAL**
**Herbert B. Ellis, Pasadena, Calif., assignor to Reliquefier Corporation, New York, N.Y., a corporation of New York**
**Filed May 29, 1961, Ser. No. 113,501**
**2 Claims. (Cl. 62—373)**

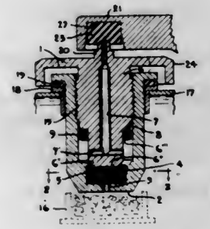


1. A shipper container including an insulated housing having insulating walls, means defining a storage chamber within said insulated housing and resting on the bottom wall of the housing, a horizontal partition dividing the storage chamber into a frozen food chamber below and a fresh food chamber above, said storage chamber defining means being spaced from the insulating walls to thereby define vertical flues between the storage chamber and the insulating walls, said vertical flues extending continuously from the bottom of the storage chamber to the top thereof alongside the frozen food and fresh food chambers, and including openings defined in the storage chamber at a point adjacent the bottom wall of the housing whereby said vertical flues communicate with the frozen food chamber at the bottom, said storage chamber defining means being open at the top for communication with said vertical flues, and wherein the horizontal partition inhibits gas flow between the frozen food and fresh food storage chambers.

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**3,165,908**
**BLOW-OUT VALVE FOR GAS OF GAS LIGHTER**
**Yoshio Kihara, Koshigaya-shi, Saitama-ken, Japan, assignor to Kabushiki Kaisha Hirota, Tokyo, Japan**
**Filed Oct. 15, 1962, Ser. No. 230,636**
**4 Claims. (Cl. 67—7.1)**

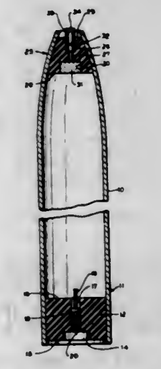
1. A blow-out device for gas for a gas lighter, comprising a fixed tubular member secured on a fuel tank and provided into a tubular form with a bottom, said bottom being provided with a small passage in the center and a hollow space in the upper surface of said bottom which communicates with said passage, a porous spongy elastic member, said elastic member being accommodated within said hollow space, a packing of round section, and a regulating block adapted to be screwed up on said fixed tubular member by said packing, said regulating



block being provided with a central passage and a horizontally running passage for fuel, said central passage being communicated with said horizontally running passage, and said regulating block having a reversely frustroconical lower end having a pressure surface of which diameter is smaller than that of said elastic member so as to press on the central part of the upper surface of said elastic member to regulate the flow of said fuel gas.

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**3,165,909**
**RECHARGEABLE GAS CANDLE**
**George A. Green, 3232 Bradford Road, Cleveland Heights, Ohio, and Robert H. Green, 19011 Mitchell Ave., Rocky River, Ohio**
**Filed Apr. 17, 1963, Ser. No. 273,773**
**3 Claims. (Cl. 67—87)**



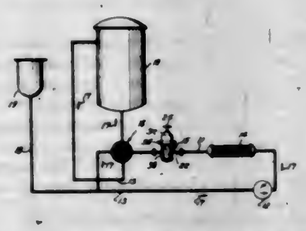
1. A liquid petroleum gas burner comprising
an above-atmospheric pressure chamber for containing a supply of petroleum gas under sufficient pressure to maintain it in a liquid state,
an outlet passage extending from said chamber to atmosphere,
porous ceramic pressure-reducing and metering means in said outlet passage for maintaining a pressure differential between said chamber and atmosphere sufficient to maintain petroleum gas within said chamber in a liquid state and to permit the escape of metered amounts of petroleum gas in an evaporated state from said chamber,
a yieldable resilient length of said outlet passage on the atmospheric pressure side of said porous ceramic pressure-reducing and metering means and

a pin stopper having an outside diameter greater than the bore of said yieldable resilient passage for frictional retaining engagement therewith and adapted to be removed and replaced from and into sealing engagement and frictional retention with and within said yieldable resilient passage and against pressure in said above-atmospheric pressure chamber for permitting and preventing the escape of the contents of said chamber out of said outlet passage.

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**3,165,910**
**APPARATUS FOR DYEING TEXTILE MATERIAL**

Alfred Thies, Coesfeld, Westphalia, Germany, assignor to B. Thies K.G., Coesfeld, Westphalia, Germany
Filed July 18, 1961, Ser. No. 126,835
Claims priority, application Germany, July 19, 1960, T 18,711
2 Claims. (Cl. 68—13)



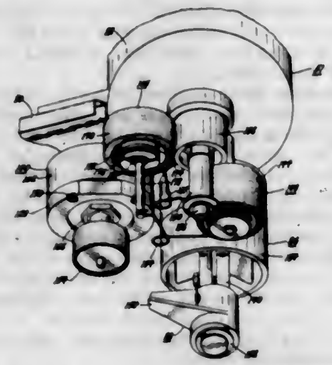
1. A dyeing apparatus for textile materials comprising, in combination, a dyeing vat for the textile material; conduit means connected to and defining with said vat an endless path for the circulation of a liquid through said vat; pump means mounted in said conduit means for circulating the liquid in said path; a housing connected in said conduit means so that the liquid may flow therethrough; a filter removably received in said housing and adapted to contain a supply of liquid-soluble particulate dyestuff, the mesh of said filter being less than the dimensions of the particles of the dyestuff to be placed in the filter whereby only the dyestuff dissolved in the liquid flowing through said filter can leave the filter to form with the liquid a dye liquor; and means for moving said filter substantially transversely to the direction of liquid flow through said housing so as to vary the extent to which the filter and the dyestuff are immersed in the liquid.

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**3,165,911**
**CLOTHES WASHING MACHINE WITH AN IMPROVED ROLLER DRIVE MECHANISM**

Kenneth O. Sisson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,386
6 Claims. (Cl. 68—23)

6. In a washing machine, a tub, means for agitating in said tub, a motor, power transmitting means drivingly connecting said motor to said agitating means for moving said agitating means, said power transmitting means comprising a plurality of self-energizing motion transmitting rollers having different moment arms, and means for selectively transmitting motion through a combination of rollers to select a predetermnied speed ratio between said motor and said agitating means, at least one of said rollers scuffing the surface of another of said rollers when they are not in the combination of rollers being used to transmit motion, said at least one of said rollers having a resilient tire subjected to irregular wear by said scuffing, and inertia means on said another of said rollers and rotatable therewith and having sufficient weight to overcome the inconsistent motion transmitting effects of said irregular wear on the transmission of power from said at least one of said rollers to said another of said rollers

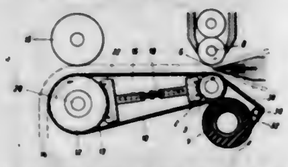


thereby to provide smooth acceleration and deceleration of said agitating means.

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**3,165,912**
**FEEDING DEVICE FOR BAND KNIFE SPLITTING MACHINES**

Günter Groesmann, Frankfurt am Main, Germany, assignor to Maschinenfabrik Moenus A.G., Frankfurt am Main, Germany, a firm of Germany
Filed Aug. 8, 1962, Ser. No. 215,747
9 Claims. (Cl. 69—10)



1. A work feeding device for band knife splitting machines having a conveyor and a power driven bed roll on a shaft for feeding the work to the band knife, a ring roll having rings, a rubber roll and a pressure roll for jointly urging the work pieces into contact with the edge of the band knife so as to compensate for irregularities in the thickness of the material to be split by the resiliency of the rubber roll acting through the agency of the rings of the ring roll, a plurality of juxtaposed conveyor bands each enclosing one of the rings of said ring roll and capable each independently of swinging about its end remote from said ring roll under the influence of said irregularities in the material, means for driving said conveyor bands collectively, control means within the confines of each of said bands for maintaining said rings and said driving means at working distances from each other and for adjusting the position of the rings in relation to the edge of the band knife.

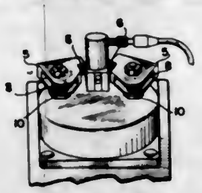
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**3,165,913**
**METHOD AND APPARATUS FOR FIELD CALIBRATING PRESSURE AND ACCELERATION MEASURING INSTRUMENTATION SYSTEMS**

Thomas A. Perls, Los Altos, Eric Rule, Atherton, Jesse R. Field, Santa Clara, and Frederick J. Suellentrop, Mountain View, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 8, 1959, Ser. No. 858,125
2 Claims. (Cl. 73—1)

1. A device for calibrating force measuring instrumentation systems comprising a vibration generator, a potentiometer connected between a power line source and said vibration generator for varying the vibration amplitude thereof, said vibration generator having an oscillatory spindle upon which is threadably mounted a substantially rectangular loading block, said loading block having a pair of contiguous circles on at least one vertical surface thereof longitudinally aligned with the axis of vibration of said spindle, the radius of each of said circles being substantially equal to the zero-to-peak excursion of said spindle, a portion of said spindle extending



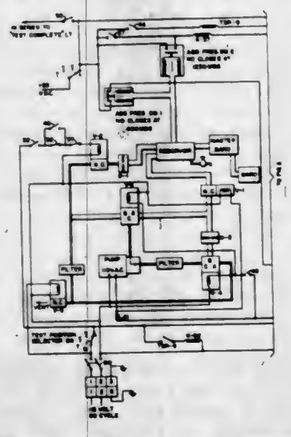


through said loading block and adapted to threadably receive a transducer assembly thereon, and at least one detent pivotally connected to the upper surface of said vibration generator, said detent having a notch adapted to receive at least a corner portion of said loading block to maintain the same against twisting movement as a transducer is attached or disengaged from said spindle, said detent being normally spring biased out of contact with said loading block.

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**3,165,914**
**TEST SET FOR BAROMETRIC PRESSURE SWITCHES**

Robert L. Schmidt, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 2, 1960, Ser. No. 33,604
9 Claims. (Cl. 73—4)
(Granted under Title 35, U.S. Code (1952), sec. 266)

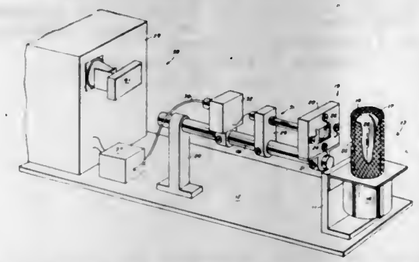


1. A barometric tester for testing baroswitches in a baroswitch assembly comprising a source of power, a pumping device connected to said source of power and having pneumatic means for simulating various discrete pressures above and below sea level, a pneumatic reservoir connected to said pneumatic means, valve means having a restricting orifice connected to said pneumatic reservoir for regulating the rate of change of pressure in said reservoir to simulate a dive rate at each of said discrete pressure levels, a plurality of master baroswitches including an upper limit master baroswitch and a lower limit master baroswitch for each of said discrete pressures, said master baroswitches and said baroswitches in the baroswitch assembly being pneumatically connected to said reservoir, electrical means connecting said master baroswitches and said baroswitches in the baroswitch assembly for indicating the sequence of closing of the baroswitch in said baroswitch assembly as compared with the closing of said master baroswitches.

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**3,165,915**
**DETERMINATION OF THERMAL PROPERTIES OF MATERIALS**

William J. Parker, 246 Hillside Drive, Pacifica, Calif.; Clay P. Butler, 738 Sequoia, San Mateo, Calif.; Gaynor L. Abbott, 1345 Taylor St., San Francisco, Calif.; and Robert J. Jenkins, 501 Midvale Way, Mill Valley, Calif.
Filed July 25, 1961, Ser. No. 128,626
16 Claims. (Cl. 73—15)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A method for determining the thermal properties of thermal diffusivity, heat capacity and thermal conductivity of materials comprising performance of the following steps on a given material specimen having front and rear surfaces and side edges: irradiating the front surface of said specimen with a high-intensity, short-duration light pulse while at the same time substantially maintaining the rear surface and side edges of said specimen in thermal insulation and shielded from said irradiating light pulse, the irradiation absorbed by the front surface of said specimen in response to said light pulse giving rise to a temperature gradient between the front and rear surface of said specimen; detecting the temperature of the rear surface of said specimen throughout the period of transient heat flow initiated by said pulse-established temperature gradient until steady state equilibrium condition is reestablished in said specimen; and recording on a time basis the varying temperature of the rear surface of said specimen during said period of transient heat flow to produce a temperature-versus-time history of the rear surface of said specimen during said transient heat flow period; thermal diffusivity being determinable from the curve depiciting said temperature-versus-time history of the rear surface of said specimen by virtue of the equation

$$\alpha=\frac{1.38L^2}{\pi^2 t_{1/2}}$$

wherein $\alpha$ is the thermal diffusivity in square centimeters per second, L is the thickness of the specimen, measured from front to rear surfaces, in centimeters, $\pi$ is 3.14 and $t_{1/2}$ is the time in seconds for the rear surface of said specimen to reach one-half its maximum temperature rise above ambient temperature as reflected in said temperature-time curve; heat capacity being determinable from said curve depicting said temperature-versus-time history of the rear surface of said specimen by virtue of the equation $C=Q/LT_MD$ wherein C is the heat capacity in degrees per calorie per gram for said specimen, Q is the heat energy in calories per square centimeter absorbed per square centimeter by the front surface of said specimen during the irradiation thereof, L is the thickness between front and rear surface of said specimen in centimeters, $T_M$ is the maximum temperature above ambient temperature in degrees centigrade at the rear surface of said

specimen as reflected in said temperature-time curve and D is the density of the material of said specimen in grams per cubic centimeter; thermal conductivity being determinable from said curve depicting said temperature-versus-time history of the rear surface of said specimen by virtue of the equation $K=\alpha DC$ wherein K is the thermal conductivity in calories per centimeter per second per degree centigrade, $\alpha$ is the thermal diffusivity in square centimeters per second, D is the density of the material of said specimen in grams per cubic centimeter and C is the heat capacity of said specimen in degrees per calorie per gram.

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**3,165,916**
**NOISE-REDUCING STRUCTURE**
Frank Abraham Loving, Jr., Wenonah, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 9, 1962, Ser. No. 165,162
5 Claims. (Cl. 73—35)



1. A noise-reducing structure comprising a chamber within which explosives are detonated, said chamber having walls of sufficient mass and tensile strength to withstand an equivalent internal hydrostatic working pressure, P, in pounds/square inch, in accordance with the equation

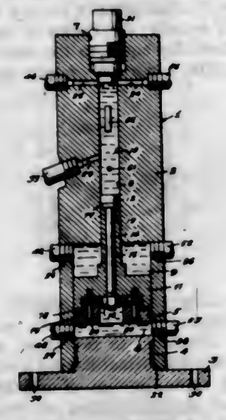
$$P=K\frac{W}{V}$$

wherein K is an empirical constant dependent upon the explosive used, W is the weight of the explosive in pounds, and V is the volume of the chamber measured in cubic feet; a closable access means into said chamber; gas-venting means emanating from said chamber; and a mass of loose granular solid contained within said chamber.

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**3,165,917**
**APPARATUS FOR MEASURING BULK MODULUS OF VISCOELASTIC MATERIAL**
Neal C. Wogsland, Bel Air, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 19, 1962, Ser. No. 245,942
3 Claims. (Cl. 73—37)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An apparatus for measuring bulk modulus of viscoelastic materials including in combination, a pressure intensifier comprising a low pressure cylinder; an intermediate pressure cylinder coaxially arranged with said low pressure cylinder and a high pressure cylinder having a lesser diameter than said low and intermediate cylinders and arranged in coaxial relation therewith, said high pressure cylinder adapted to receive a specimen for measuring therein; a piston assembly slidably mounted between said low and intermediate cylinders, said piston assembly including a portion slidable in said high pressure cylinder; a first pump in connection with the upper portion of said high pressure cylinder for filling said cylinders with a hydraulic fluid; a second pumping means connected to said low pressure cylinder for compressing said hydraulic fluid in said cylinders; visual means for reading fluid displacement in said cylinders and connected to said intermediate cylinder; means for measuring fluid pressure



connected to said high pressure cylinder and means thereby for measuring the bulk modulus of said specimen and the porosity of said specimen.

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**3,165,918**
**TESTING TOOL FOR WELL PIPE OR THE LIKE**
Glenn L. Loomis, P.O. Box 728, Pasadena, Tex.
Filed Feb. 2, 1962, Ser. No. 170,711
19 Claims. (Cl. 73—40.5)

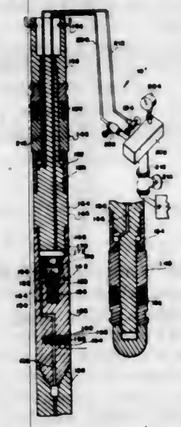


1. In a testing device adapted to be connected to a fluid conduit and lowered into a well pipe or the like for testing the same with a testing fluid under pressure supplied through the conduit: an elongated body member having a generally longitudinally extending bore therein communicating with the conduit at its upper end and closed at its lower end, at least one packer element mounted exteriorly on each end portion of said body member, each packer element having a smaller outside diameter than the inside diameter of the pipe to be tested, means for expanding said packers into sealing engagement with the well pipe to seal off a section of the same and to then supply fluid under pressure to the sealed off section, said means including passages communicating with said bore for supplying fluid pressure to expand the packer elements and a passage in said body member opening to the outside of the same between said packer elements and having a pressure responsive valve member therein normally closing the same to said bore, said valve member being operable at a predetermined pressure to permit fluid to flow into the sealed off section of well pipe, and valve means in said bore adjacent the end of the same connected to the conduit, said last-mentioned valve means being normally closed to prevent flow of fluid through said bore and said passages to said packer elements, said last-mentioned valve means being pressure responsive to open when pressure of fluid in the conduit is increased above the pressure of its hydrostatic head on said last-mentioned valve means whereby fluid can be maintained in the conduit in between tests.



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**3,165,919**
**METHOD AND APPARATUS FOR TESTING WELL PIPE SUCH AS CASING OR FLOW TUBING**
Glenn L. Loomis, P.O. Box 728, Pasadena, Tex.
Filed Feb. 8, 1962, Ser. No. 171,882
16 Claims. (Cl. 73—40.5)

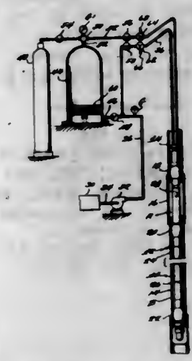


5. In an apparatus for testing at least a portion of the length of a well pipe for leaks; an elongated tester body of smaller diameter than the inside diameter of the well pipe for insertion therein; at least one upper and one lower packer element mounted exteriorly on the upper and lower end portions of said tester body and each having a smaller diameter than the inside diameter of the well pipe when in a relaxed position; a first fluid pressure operated means to set one of said packer elements in sealing engagement with the wall of the well pipe while the other of said packer elements remains relaxed; means to flow a testing liquid through said tubular body after said one packer is set and including a passageway opening to the exterior of said tubular body intermediate said upper and lower packer element; a second fluid pressure operated means independently operable with respect to said first means to set the other of said packer elements; and means to apply a measurable pressure to the liquid flowing through said passageway when both of said packers are set.

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**3,165,920**
**TOOL FOR TESTING PIPE WITH WATER AND GAS SIMULTANEOUSLY**
Glenn L. Loomis, P.O. Box 728, Pasadena, Tex.
Filed July 2, 1962, Ser. No. 206,630
27 Claims. (Cl. 73—40.5)

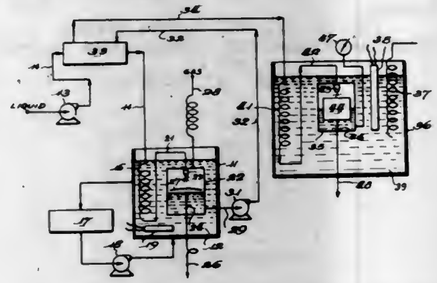
17. In a system for testing at least one stand and one threaded joint of a well pipe made up of a plurality of stands coupled together in sequence by threaded joints: a testing tool for insertion into the well pipe; said testing tool having a pair of closely spaced packer elements thereon adapted to be set on either side of the joint to be tested and a third packer element thereon distantly spaced from one of said pair of said packer elements and adapted to be set adjacent an end of the stand to be tested opposite the end of the joint to be tested; a source of gas under pressure; gas conduit means connecting said source of gas with said tool and including a passage in said tool opening to the exterior thereof between said closely spaced packer elements; a source of liquid under pressure higher than the pressure of the source of gas; liquid conduit means connecting said source of liquid to said tool and including a passage in said tool opening to the exterior



thereof between said third packer element and the one of said pair of packer elements; means for boosting pressure of gas flowed to said tool through said gas conduit means, said last-mentioned means including a cylinder having one end in selective communication with said gas conduit means for the other end in selective communication with said liquid conduit means; and means to measure pressure of gas and liquid flowed into the testing tool to respectively test the joint and stand.

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**3,165,921**
**CONTINUOUS VAPOR PRESSURE APPARATUS**
Joseph C. Rhodes, Park Forest, and Robert B. Jacobs, Homewood, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Original application Sept. 29, 1959, Ser. No. 862,629, now Patent No. 3,037,375, dated June 5, 1962. Divided and this application July 31, 1961, Ser. No. 128,093
7 Claims. (Cl. 73—53)

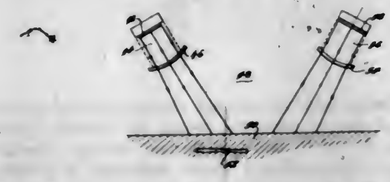


1. An apparatus for continuously determining the vapor pressure of a gasoline which apparatus comprises means for supplying gasoline to said apparatus at a steady flow rate; a constant temperature bath; heat exchange means for receiving and adapted to cool said gasoline to a temperature between about 32° F. and about 40° F.; a saturation chamber immersed in said bath; means for introducing said cooled gasoline from said heat exchange means into said saturation chamber, said saturation chamber being vented to the atmosphere and containing air therein, whereby said gasoline absorbs an equilibrium

amount of air; means for maintaining a pre-selected liquid level in said saturation chamber; means for withdrawing said gasoline containing said dissolved air from said chamber; a second constant temperature bath; preheater means immersed in said bath, said preheater for receiving said withdrawn gasoline and adapted to heat said gasoline to about 100° F.; a float chamber to receive said heated gasoline from said preheater and adapted to permit said liquid gasoline, equilibrium vapors and air to achieve equilibrium; means for maintaining a substantially constant volume of liquid in said float chamber; means for withdrawing said liquid gasoline, equilibrium vapors and air from said float chamber; and means for indicating the total pressure within said float chamber.

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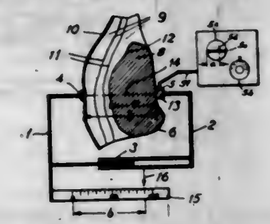
**3,165,922**
**METHOD OF APPLYING LAMB WAVES IN ULTRASONIC TESTING**
**Daniel C. Worlton, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Apr. 16, 1962, Ser. No. 187,995**
**7 Claims. (Cl. 73—67.7)**



1. A method of detecting subsurface flaws in a metal sample comprising the steps of generating ultrasonic plane waves, refracting said ultrasonic waves to generate a spectrum of angles therein, causing said refracted ultrasonic waves to impinge on the surface of said sample, said refracted ultrasonic waves exciting Lamb wave modes within said sample in the presence of subsurface flaws therein, and detecting the excited Lamb wave modes, whereby the presence of said flaws is detected.

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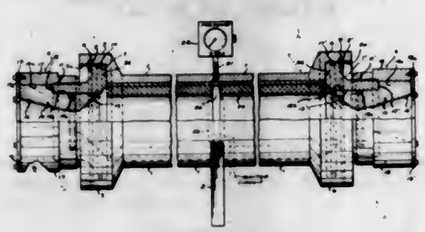
**3,165,923**
**NONDESTRUCTIVE MEASUREMENT OF THICKNESS OF FAT LAYERS OF ANIMAL CARCASSES**
**Svend Aage Lund, Bistrup, Denmark, assignor to Dansk Svejsecentral, Copenhagen, Denmark, a company of Denmark**
**Filed Mar. 12, 1962, Ser. No. 178,966**
**Claims priority, application Denmark, Mar. 13, 1961, 1067/61**
**10 Claims. (Cl. 73—67.8)**



1. A method of non-destructive measurement of the thickness of layers of fat on the carcass of an animal comprising, applying ultra-acoustic waves to the carcass locally from a meat side of the carcass in a direction toward the outside layers of fat for reflecting from a boundary between meat tissue and fat the acoustic waves and determining therefrom the thickness of the meat tissue in accordance with an ultra-acoustic impulse-echo method, comparing the thickness of said meat tissue with the overall thickness of said carcass to determine from said comparison the thickness of the outside layers of fat in a local zone in which said waves were applied, and prior to said comparison measuring the overall thickness of said carcass in the same locality and direction in which said acoustic waves are applied by mechanically gauging the carcass.

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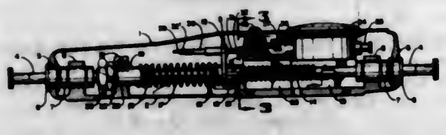
**3,165,924**
**NOZZLE MATERIAL FIRING EVALUATION MEANS AND SYSTEM**
**Harry Wolff, Los Gatos, Calif., assignor to the United States of America as represented by the Secretary of the Air Force**
**Filed July 18, 1963, Ser. No. 296,146**
**4 Claims. (Cl. 73—116)**



1. A rocket nozzle material evaluation test motor comprising an elongated cylindrical combustion chamber open at its opposite ends, a rocket nozzle receiving assembly removably carried by each end of the combustion chamber shaped to receive a similarly shaped nozzle insert therein with said nozzle inserts facing in opposite directions concentric to the axis of the combustion chamber, means carried by each of said rocket assemblies for removably securing one of said rocket nozzle inserts therein against outward movement away from said combustion chamber, whereby when a propellant means is introduced in said combustion chamber and fired both of said nozzle inserts will be simultaneously subjected to identical heat, pressure and test duration conditions so as to compare the durability of one of said nozzle inserts in one of said nozzle assembles with the other nozzle insert in the other nozzle assembly simultaneously under identical combustion pressure, heat and test duration conditions.

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**3,165,925**
**PUSH-PULL GAUGE AND MAGNETIC OVERRUNNING LOCKING MEANS**
**Fritz E. Sechers, New York, N.Y., assignor to Aero-Chatillon Corporation, a corporation of New York**
**Filed June 15, 1962, Ser. No. 202,835**
**4 Claims. (Cl. 73—141)**



1. A push-pull gauge comprising a member mounted for linear movement in response to externally applied force, means for resiliently resisting such linear movement of said member, indicating means for measuring the extent of such linear movement, and overrunning locking means for holding said member against return movement in the opposite direction, said overruning locking means comprising:

(*a*) a wedging element having two edge portions extending at opposed angles to the line of movement of said member,

(*b*) a locking element disposed between said edge portions of the wedging element and an edge portion of said member,

(*c*) magnetic means arranged to urge the locking element selectively into wedging engagement between said member and either of said edge portions of the wedging element, and

(*d*) means for moving said locking element away from its position of wedging engagement and freeing it from the locking effect of said magnetic means to permit said member to return to its zero position when said externally applied force is removed,

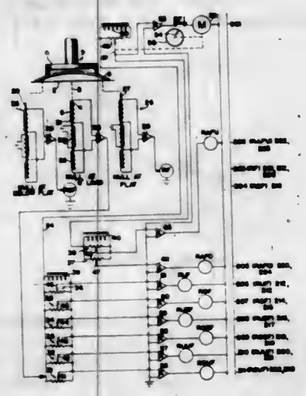
(*e*) said means for moving said locking element being movable alternatively in the direction of either edge portion to release the wedging element for such selective engagement,

by virtue of all of which said member can be locked in either of two opposed positions according to the direction of movement produced by said externally applied force.



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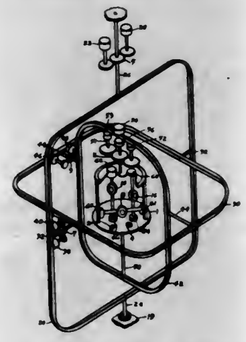
**3,165,926**
**CONTROL CIRCUIT FOR SPRING TESTERS AND THE LIKE**
**Robert F. Orr and Kenneth F. Wetzel, both of Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio**
**Filed June 29, 1961, Ser. No. 126,774**
**9 Claims. (Cl. 73—161)**



1. A control circuit comprising, in combination, first and second signal circuits, the first signal circuit providing a voltage proportional to a quantity to be measured and the second signal circuit providing a signal signifying the quantity is ready to be measured, a reference circuit providing two adjustable preset reference voltages one defining the upper limit and the other defining the lower limit of a tolerance zone and both opposing the proportional voltage, a signal comparing circuit for comparing the magnitudes of the proportional voltage with the preset reference voltages, and an output circuit so connected to the second signal circuit and to the signal comparing circuit that it responds to the signal provided by the second signal circuit and provides an output signal condition in accordance with the comparison of the magnitudes of the proportional voltage with the preset reference voltages.

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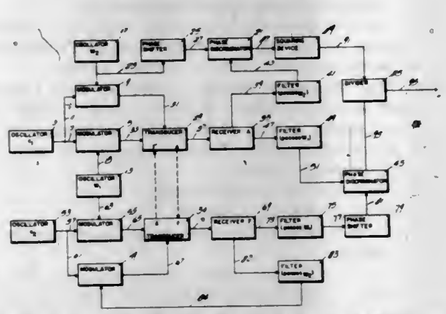
**3,165,927**
**VERTICAL INDICATING AND NAVIGATION SYSTEM**
**William H. Heath, New York, Yves Nubar, Mount Vernon, George Arshal, Jamaica, Stewart Reiner, New Rochelle, and David C. Hughes, New York, N.Y., and John R. White, Los Angeles, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed May 12, 1954, Ser. No. 429,418**
**2 Claims. (Cl. 73—178)**



2. A stable vertical reference device comprising a gimballed gyro, accelerometer means for measuring the inertial acceleration of said vertical reference device, ground velocity measuring means, differentiating means operable with said ground velocity measuring means to produce ground acceleration, computing means operable with said accelerometer means and said differentiating means to compute the algebraic sum of the inertial and ground accelerations, said computing means being operable with said gyro to precess said gyro in accordance with said computed algebraic sum.

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**3,165,928**
**FLOW METER**
**Leo Poulos, Randallstown, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Feb. 14, 1963, Ser. No. 258,967**
**4 Claims. (Cl. 73—194)**



1. Apparatus for measuring the flow of a fluid comprising:

(*a*) first and second transducers located in the fluid at upstream and downstream positions relative to one another;

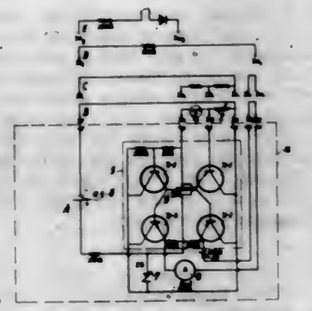
(*b*) means for generating a first energy signal and transmitting said first energy signal from the first transducer to the second transducer;

(*c*) means for generating a second energy signal and transmitting said second energy signal from the second transducer to the first transducer;

(*d*) means for developing a potential proportional to the difference in phase of the first and second energy signals after transmission through the fluid;
(*e*) means for transmitting a third energy signal from the first transducer to the second transducer back to the first transducer;
(*f*) means for developing a potential proportional to the sum of the phase shifts experienced by the third signal in traveling from the first transducer to the second transducer back to the first transducer;
(*g*) means for squaring the potential proportional to the sum of the phase shifts experienced by the third signal;
(*h*) and means for dividing the potential proportional to the phase difference between the first and second signals by the squared potential, the output of the dividing means providing a measure of the flow of the fluid.

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3,165,929
**CLINICAL THERMOMETER**
Hans Günter Nöller, Fasanenweg 4, Heidelberg, Germany
Filed Nov. 16, 1962, Ser. No. 238,123
Claims priority, application Germany Nov. 22, 1961
9 Claims. (Cl. 73—362)



1. A temperature measuring instrument comprising, in combination,
(*a*) a first coupling element;
(*b*) temperature sensitive resistor means;
(*c*) variable resistor means, said temperature sensitive resistor means and said variable resistor means constituting two measurement resistor means;
(*d*) first conductor means connecting said temperature sensitive resistor means and said variable resistor means to said first coupling element;
(*e*) a second coupling element engageable with said first coupling element;
(*f*) two reference resistor means;
(*g*) a source of electric current;
(*h*) electrical measuring instrument means having two terminals;
(*i*) second conductor means connecting said two reference resistor means, said source, and said instrument means to said second coupling element, said two measurement resistor means and said two reference resistor means being connected by said first and second conductor means to constitute the four resistors of a Wheatstone bridge circuit when said coupling elements are engaged, said source and said instrument means being connected to said four resistors by said conductor means for respectively energizing said bridge circuit and for indicating the state of balance thereof; and
(*j*) amplifier means including a measurement amplifier section interposed between said measurement resistor means and one of said terminals, and a reference amplifier section interposed between said reference resistor means and the other one of said terminals.

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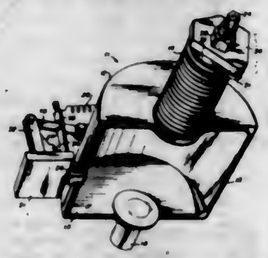
3,165,930
**GOLF GAME DEVICE**
Stanley Halpern, 206—16 86th Road, Hollis, N.Y., and Joseph Halpern, 810 Howard Ave., Brooklyn, N.Y.
Filed Oct. 31, 1962, Ser. No. 234,487
2 Claims. (Cl. 73—379)



1. A game apparatus comprising an elongated flexible tape with graduations on one surface thereof representing yardage, a semicircular protractor pivotally connected to one end of the tape, said protractor having graduations representing degrees of angularity relative to the center of the semicircular body thereof, said tape adapted to extend across said graduations, a weighted ball movably positioned on the pivotal point of the protractor, a rope tied at one end to said weighted ball, a golf ball tied to the other end of the rope whereby upon striking of the golf ball with a golf club the weighted ball is moved along the tape, the graduations indicating the distance in yards travelled by the weighted ball, and a pole at the free end of the tape providing a target for the golf ball when struck.

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3,165,931
**SEA FLOOR SEDIMENT SAMPLER**
Carl J. Shipek, 3639 Pio Pico St., San Diego 6, Calif.
Filed June 22, 1962, Ser. No. 204,656
6 Claims. (Cl. 73—425.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



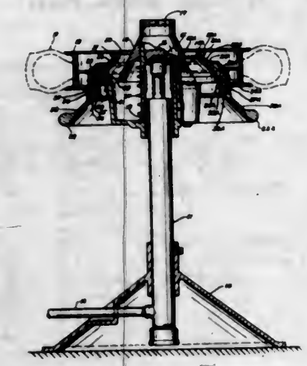
3. A sea floor sediment sampler comprising a half cylinder top in combination with a half cylinder bottom rotatively supported axially by and snuggly within said top when armed for sampling, power means for rotating said bottom to cut out a sediment sample from the sea floor, said rotation being in relation to said top so that said top and bottom will close to form a cylindrical enclosure for encasing said sample said rotative support for said bottom being provided externally of the bottom whereby said enclosure remains open-centered for encasing said sample in a relatively undisturbed condition.

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3,165,932
**ADAPTER FOR WHEEL BALANCER**
George T. Hemmeter, Mountain View, Calif., assignor to Bishman Manufacturing Company, Osseo, Minn.
Filed Apr. 19, 1963, Ser. No. 274,143
4 Claims. (Cl. 73—484)

1. In combination with apparatus of the class above described, a two part adapter for large apertured wheels comprised of a first member having a radially, downwardly flaring wheel centering portion, a downwardly depending portion adapted to adjustably engage a second member, a surface in a plane normal to the longitudinal axis thereof and a further annular surface adapted to engage a wheel mounting so that the axes thereof are coincident, a second member having an upwardly extend-

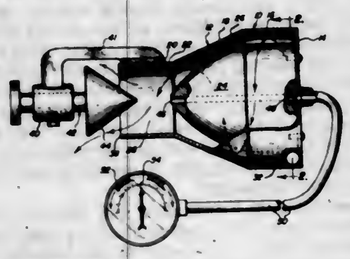




ing, planar wheel engaging portion, and means axially, adjustably interconnecting said first and second members, said means being adapted to maintain the plane of said wheel engaging surface parallel to the plane surface on said first member.

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3,165,933
**PNEUMATIC INERTIAL SENSOR**
Ben B. Levitt, Norfolk, Va.
(835 NW. 7th St. Road, Miami, Fla.)
Filed July 8, 1963, Ser. No. 293,567
13 Claims. (Cl. 73—515)
(Granted under Title 35, U.S. Code (1952), sec. 266)

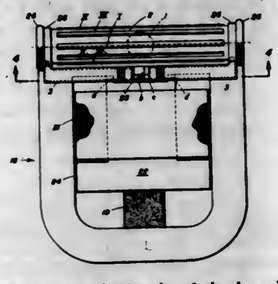


13. In an inertial sensor,
(*a*) means providing a vortex,
(*b*) said vortex having a pressure distribution profile, an element immersed in an coaxial with the vortex, said element being shaped to correspond substantially to said vortex pressure distribution profile, said element also being axially inertially displaceable relative ot the vortex in one direction or the other according as the element undergoes axial acceleration or deceleration,
(*c*) and means responsive to such displacement for sensing the magnitude and direction of such displacement.

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3,165,934
**ACCELEROMETER**
Allen E. Small, Palo Alto, Calif., and Weyman S. Crocker, Lynnfield Center, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 30, 1962, Ser. No. 213,559
4 Claims. (Cl. 73—516)

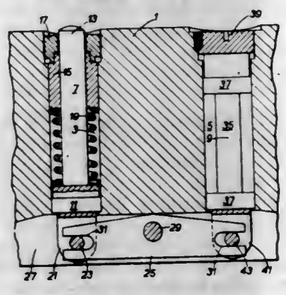
1. In an apparatus for measuring the acceleration of a body, the combination comprising
a hollow housing cylindrical in cross section;
fluid located within said housing;
a solid seismic mass, spherical in shape, freely floating within the fluid for movement in response to acceleration of the body;
a plurality of electrodes spaced around the circumference of said housing and forming a portion thereof, said electrodes being energized in pairs so as to vibrate the walls of the housing in a plane transverse to its longitudinal axis;
phase shift means to apply potential sequentially to the pairs of electrodes so as to rotate the vibration



about the longitudinal axis of the housing and therefore the fluid within the housing;
pick-off means located within said housing for detecting movement of the seismic mass;
restoring means operably connected to said pick-off means for returning said seismic mass to its steady-state position; and
read-out means operably connected to said pick-off means for converting the indication of movement of said seismic mass into a measure of the acceleration of the body.

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3,165,935
**OVERSPEED TRIP DEVICES FOR TURBINES**
Thomas Lowthian Gardner, Sale, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed July 10, 1963, Ser. No. 294,104
Claims priority, application Great Britain July 20, 1962
5 Claims. (Cl. 73—548)



1. An overspeed trip device for a rotary machine, comprising:
(*a*) a plurality of bodies mounted in or on the rotor of the machine;
(*b*) pivoted lever means coupled to each of the plurality of bodies in such a manner that the bodies can move relative to the rotor in substantially parallel paths which extend transversely to the longitudinal axis of the rotor and in such a manner that a first of the bodies moves in the opposite direction to a second of the bodies; one of the bodies having its centre of mass offset from the axis of the rotor so that upon rotation of the rotor centrifugal force tends to move

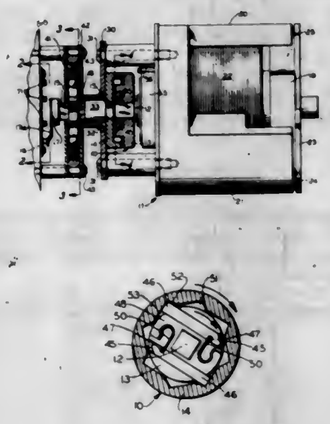
that body along its said path outwardly from the rotor axis,

(*c*) spring means carried by the rotor and arranged to act upon the bodies to prevent or limit this outward movement of the said body of offset centre of mass, until a predetermined maximum safe rotor speed is reached, and upon the occurrence of an excessive speed to permit the body to move outwardly; and

(*d*) trip gear external to the rotor and arranged when tripped to slow or stop the machine, and having a triggering member so arranged that it is released by the said body, or parts moving with it, only when outward movement of the said body has taken place; the masses of the bodies and the lever means and the mechanical advantage of the lever means being so selected that transverse accelerations of the rotor fail to cause sufficient relative movement between the first and second bodies and the rotor along the said paths to cause operation of the trip gear.

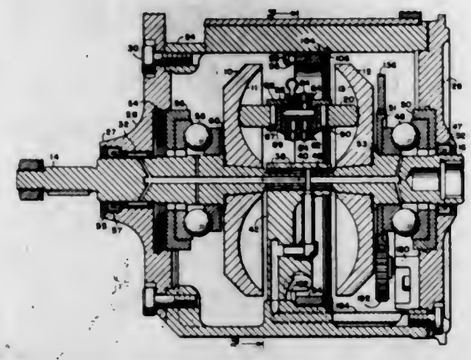
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**3,165,936**
**RATCHET MECHANISM**
**Ralph K. Daugherty, San Jose, Calif., assignor of one-half to Genevieve I. Magnuson, and one-half to Genevieve I. Magnuson, Robert Magnuson, and Lois J. Fox, as trustees**
**Filed Mar. 26, 1962, Ser. No. 182,172**
**6 Claims. (Cl. 74—126)**



1. A ratchet mechanism comprising a shaft, means operatively connected to said shaft for rotating back and forth through a predetermined angle, means for converting said back and forth rotation to step by step rotation in one direction comprising a driving member connected to said shaft, said driving member having a pair of parallel slots, a driven member disposed parallel to said driving member, said driven member having an annular portion with a plurality of recesses, one side of each of said recesses having a more gradual slope than the other, a pawl slidably supported in each of said pair of slots, means urging one end of each of said pawls to project from said driving member into engagement with selected ones of said recesses so that when said driving member is rotated in one direction said pawls engage the abrupt slope of said selected recesses and cause rotation of said driven member in the same direction and when said driving member is rotated in the opposite direction said pawls slide over the more gradual slope of said selected recesses without rotating said driven member, and a second shaft connected to said driven member to be rotated therewith.

**3,165,937**
**CONSTANT SPEED TOROIDAL DRIVE**
**Edward P. Tomaszek, Shelton, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware**
**Filed Aug. 31, 1962, Ser. No. 220,683**
**16 Claims. (Cl. 74—190.5)**

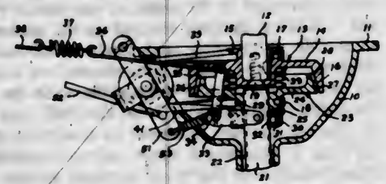


1. In a toroidal drive, the combination comprising:
first and second coaxially positioned spaced rotatably supported disks having opposed toroidal races;
a plurality of rollers, one of said rollers being a master roller, the remaining of said rollers being slave rollers;
a mounting for each of said rollers, for supporting each of said rollers in tractive contact between the opposed toroidal races of said disks, each of said mountings including an annular bearing member for rotatably supporting a roller on its roller axis, a steering pin in said annular bearing member, the axis of said pin being positioned on the steering axis of said roller, said annular bearing member being supported by said steering pin, and a yoke for supporting said steering pin, said yoke being rotatable on the axis of precession of said roller, said roller axis, said steering axis, and said axis of precession having normal positions which are mutually perpendicular;
a control ring positioned intermediate said disks and coaxially therewith;
a pivotal linkage between the said bearing member of each of said rollers and said control ring; and
additional means connected to the annular bearing member of said roller for rotating said master roller on its steering axis,
whereby said control ring is rotated on the axis of said disks and said slave rollers are each rotated on said steering axes, and whereby said rollers precess on said axis of precession to new positions between said races until said master roller is rotated on said steering axis to its normal position.

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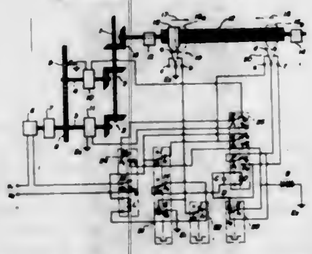
**3,165,938**
**POWER TRANSMISSION UNIT**
**William L. Hayes, New Carlisle, Ohio, assignor to Quick Manufacturing, Inc., Springfield, Ohio, a corporation of Ohio**
**Filed Oct. 12, 1960, Ser. No. 62,247**
**11 Claims. (Cl. 74—220)**

1. A dual selectively operated power transmission unit, including longitudinally spaced apart driving and driven shafts, opposing clutch discs on respective shafts relatively adjustable to engage and disengage said driven shaft to and from said driving shaft, supplemental belt drive means between said driving and driven shaft, said belt drive means including idler means adjustable to render said belt drive means effective and ineffective, and control means for adjusting said clutch discs and for adjusting said idler means to drive said driven shaft alternatively through said clutch discs or through said belt drive.



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**3,165,939**
**ROTARY SHAFT CONTROL SYSTEM**
**Leo Mori, Setagaya-ku, Tokyo, Isamu Niikura, Hiratsuka-shi, and Tsuyoshi Ishida, Kanagawa-ku, Yokohama, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan**
**Filed May 11, 1962, Ser. No. 194,021**
**Claims priority, application Japan, Feb. 17, 1962, 37/5,631**
**7 Claims. (Cl. 74—365)**



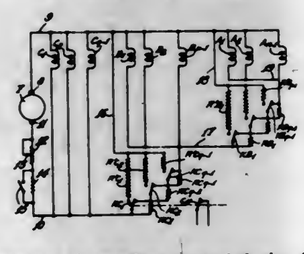
1. A rotary shaft control system comprising a rotary shaft rotatable in either direction, a drive motor, a drive mechanism including a first solenoid-operated clutch and operatively engaged with said rotary shaft upon actuation of said first solenoid-operated clutch to transmit the rotation of said drive motor to said rotary shaft in a manner so as to rotate the latter in one direction at one speed, another drive mechanism including a second solenoid-operated clutch and operatively engaged with said rotary shaft upon actuation of said second solenoid-operated clutch to transmit the rotation of said drive motor to said rotary shaft in a manner so as to rotate the latter in the opposite direction at a higher speed than said one speed, a threaded shaft operatively engaged with said rotary shaft, a first spring-loaded switch and a second spring-loaded switch both arranged adjacent to said threaded shaft and spaced apart from each other by a predetermined distance, each of said switches having a normally closed and a normally open contact, a movable finger engaged with said threaded shaft and adapted for reciprocatory movement between the two positions of said first and second switches, said movable finger during forward travel adapted to move away from the first switch to permit restoring of the first spring-loaded switch to its normal position and to actuate the second spring loaded switch to close its normally open contact, said movable finger during return travel adapted to move away from the second switch to permit restoring of the second switch to its normal position and to actuate the first spring-loaded switch to close its normally open contact, a first relay and a first solenoid, a relay circuit including the normally closed contact of the second switch connected in series with the solenoid of the first relay and energizable upon actuation of said first relay, a motor circuit and a circuit including said first solenoid-operated clutch both connected to be completed upon actuation of said first relay, a self-holding circuit for said first relay including the normally closed contact of the first switch and the normally closed contact of the second switch connected in series with the solenoid of said first relay, a second relay and second solenoid, another relay circuit including the normally closed contact of the first switch and the normally open contact of the second switch connected in series with the solenoid of the second relay and operable when completed to actuate said second relay, two further circuits for actuating said first relay and for actuating said second solenoid-operated clutch both arranged to be completed upon actuation of said second relay, and a self-holding circuit for said second relay arranged to be connected in parallel with said self-holding circuit for actuating said first relay upon actuation of said second relay.





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**3,165,940**
**AUTOMATIC GEARBOX CONTROL DEVICE**
**Philippe Marie Joseph Grau, Tourcoing, Nord, France, assignor to Compagnie de Chemins de Fer Departementaux, Paris, Seine, France**
**Filed June 4, 1962, Ser. No. 199,917**
**Claims priority, application France, June 5, 1961, 863,901**
**16 Claims. (Cl. 74—365)**



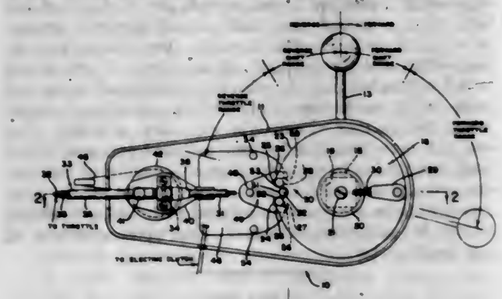
1. In an automatic gearbox control device for regulating the drive of an output shaft, said device having a multiplicity of successive stages and in each stage a multiplicity of coupled gear trains constituting couplings of different multiplication ratios: a group of control relays divided into as many sets as there are stages in the gearbox, tachometer means associated with the output shaft of said gearbox and connected to the control relays to deliver variable voltage representing continuously varying variable-information to said relays for selectively energizing the same, each relay having a particular sensitivity and being adapted for being energized for a specific value of variable-information, the system of said relays having, with respect to said variable-information, sensitivities that are stepped substantially in accordance with the multiplication factors of said gear trains, and feedback means coupled to sets of relays of an end stage and of subsequent stages for acting on the groups of respectively subsequent relays, to affect the sensitivity of a set of relays at least upon the energization of at least one relay of a preceding stage.

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**3,165,941**
**SINGLE LEVER CONTROL FOR A THROTTLE AND AN ELECTRICALLY OPERATED CLUTCH**
**John F. Morse, 21 Clinton St., Hudson, Ohio**
**Filed Feb. 26, 1962, Ser. No. 175,570**
**17 Claims. (Cl. 74—472)**

1. A single lever control unit for the throttle and electrically actuated clutch of an engine comprising, a control lever, a drive member rotatable by said control lever from a neutral position to operate a throttle, switch means for energizing and de-energizing said electrically actuated clutch, switch actuating means to operate said switch means, interconnecting means between said drive member and said switch actuating means to move said switch

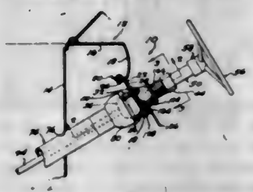
actuating means in response to the first portion of rotation from neutral of said drive member and to move said switch actuating means in a reverse direction during the



return rotation to neutral of said drive member, and said drive member adapted to disconnect from said switch actuating means during continued rotation of said drive member beyond said first portion of rotation.

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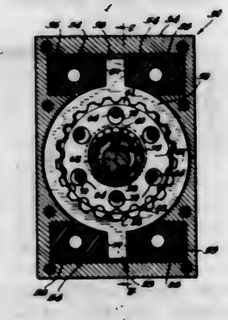
3,165,942
FLEXIBLE STEERING COLUMN
George Steiner, 58531 Main Blvd., and Joseph H. De Maire, 30929 Prospect, both of New Haven, Mich., assignors of fifty percent to Frazier F. Steiner, George S. Steiner, and Nelson L. Steiner, all of New Haven, Mich.
Filed Feb. 15, 1963, Ser. No. 258,698
3 Claims. (Cl. 74—493)



1. A flexible steering column, comprising:
(*a*) a tubular lower section containing a rotary lower steering shaft section adapted to be connected at one end to a steering gear;
(*b*) a tubular upper section containing an upper rotary steering shaft section, a steering wheel rotatably carried by the upper column section and operatively connected to the upper shaft section;
(*c*) a universal joint connecting the other ends of the steering column sections and providing for angling of the upper column section relative to the lower column section;
(*d*) means operatively connecting together the other ends of the steering shaft sections;
(*e*) spring means acting between the upper steering column section and a part of the universal joint and biasing the upper and lower column sections into alignment with each other and enabling flexing the upper column section out of alignment with the lower column section, said universal joint comprising a ball joint socket fixed on the upper end of the lower column section, a ball fixed on the adjacent end of the upper column section; said ball being abutted with and engaged in said socket, said connecting means (*d*) being located within the ball and the socket and comprising a housing enclosing cube-shaped members on the other ends of the steering shaft sections, each of said members having its side faces rounded, and
(*f*) a locking means comprising a locking ring having a concave skirt mounting bracket, said locking ring having a concave skirt in engagement with the ball in opposition to the socket, said locking ring being freely connected to the socket at one side of the ring, and a locking member secured to the socket at the other side of the ring, and freely connected to the other side of the ring, a cam pivoted on said member and having a nose engageable with the end of the locking ring remote from the ball, and means for rotating the cam to retract its nose from the locking ring to enable the upper column section to be flexed relative to the lower column section against the resistance of said spring means (*e*) and to forcibly engage the cam nose with the locking ring for clamping the locking ring skirt, the ball, and the socket together to preclude flexing of the upper column section relative to the lower column section.

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3,165,943
STEERING GEAR MECHANISM
Edward V. Sundt, 118 Sterling Lane, Wilmette, Ill.
Filed Dec. 23, 1959, Ser. No. 861,486
6 Claims. (Cl. 74—498)



1. A steering gear mechanism for the steering means of vehicles or the like comprising, a manipulatable rotatable control shaft, a rotatable driven shaft operating the steering means pursuant to manipulations of the control shaft, a stationary internal toothed annulus concentric with the axis of the control shaft, an eccentric carried by the control shaft, an external toothed rotor meshing with the internal toothed annulus and rotatably mounted on the eccentric for oscillation with respect to the annulus and for rotation at a reduced speed with respect to the control shaft in accordance with the relative members of teeth on the rotor, the teeth of the annulus and rotor being based on a looped prolate center path generated by a tracing point on the tooth centers of the annulus with respect to the rotor upon rotation of the annulus and rotor in accordance with the speed reduction ratio, an output member rotatably mounted concentrically with the axis of the control shaft and connected to the driven shaft for rotating the same, and coupling means between the rotor and the output member for rotating the output member as the rotor is rotated.

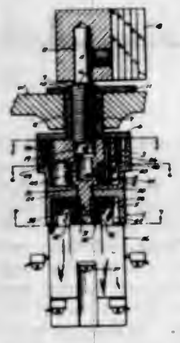
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3,165,944
SWITCH OPERATING DEVICE
Don J. Arneberg, Milwaukee, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Mar. 23, 1961, Ser. No. 97,831
3 Claims. (Cl. 74—527)

1. A switch operating device for explosion resistant enclosures for electrical equipment and comprising a body, a stationary member on the body having an internally



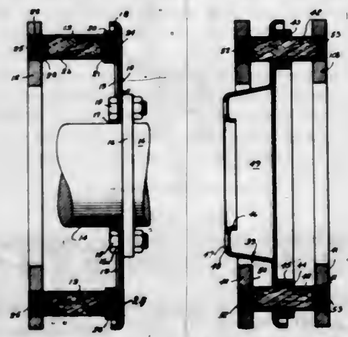
threaded bore, an externally threaded stem member coaxial with said bore and in threaded engagement with the threads thereof and sufficiently close fitting to substantially prevent passage of gases between the stem member and stationary member, whereby upon rotation of the stem member, the stem member moves axially relative to the body, a rotatable cam member mounted in the body in coaxial relation to the stem member for rotation, relative to the body, with the stem member and constrained by the body from movement relative to the body in a direction endwise of the body toward the stationary member beyond a predetermined spaced relation to the stationary member, an intermedate member rotatably mounted in



the body between the stem member and cam member and supported by the body in coaxial relation to the stem member and in fixed position endwise of the body, first connecting means connecting the stem member and intermediate member for co-rotation, additional connecting means connecting the intermediate member and cam member for co-rotation, and said first connecting means affording relative axial movement of the stem member and intermediate member while connecting them for co-rotation.

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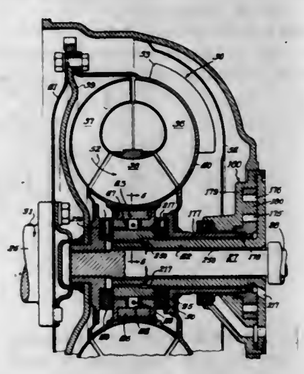
3,165,945
TORSIONAL VIBRATION DAMPER
Gervase M. Magrum, Williamsville, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of New York
Filed Sept. 22, 1961, Ser. No. 140,038
10 Claims. (Cl. 74—574)

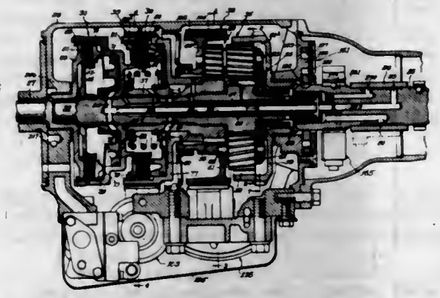


1. A torsional vibration damper comprising supporting means adapted to be secured to a main rotatable mass, load-free inertial mass, and spring-action, semi-rigid resiliently flexible cable elements joining said supporting means and said load-free inertial mass and effective to absorb energy of rotational vibration from the main rotatable mass.

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3,165,946
CONTROLS FOR POWER TRANSMISSION
Robert W. Wayman, North Riverside, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 5, 1950, Ser. No. 166,136
106 Claims. (Cl. 74—645)





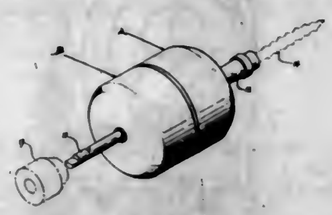
60. In transmission mechanism for an automotive vehicle having a driving engine with a throttle, the combination of a drive shaft adapted to be driven by the vehicle engine, a driven shaft adapted to drive the vehicle, a control for the engine throttle, means for providing a low speed power train between said drive shaft and said driven shaft and including a friction engaging mechanism for completing the power train when engaged, means providing a high speed power train between said drive shaft and said driven shaft and including a friction engaging mechanism for completing the power train when engaged, means responsive to changes in speed of said driven shaft, means for disengaging one of said friction mechanisms when predetermined engaging pressures on the other friction engaging mechanisms are reached for changing the drive between said drive shaft and said driven shaft and providing an overlap between the engagements of said friction mechanisms, and means under the control of said throttle control and said speed responsive means for changing said predetermined engaging pressures at which said one friction mechanism is disengaged to increase said predetermined friction engaging pressures with engine throttle opening and to decrease said predetermined pressures with driven shaft speed.

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3,165,947
REVERSIBLE DRIVE FOR POWER TOOLS
Charles L. Smith, 2214 E. Towner St., Tucson, Ariz.
Filed May 9, 1960, Ser. No. 27,640
4 Claims. (Cl. 74—760)

1. A reversible drive mechanism comprising
(*a*) a housing having forward and rear portions,

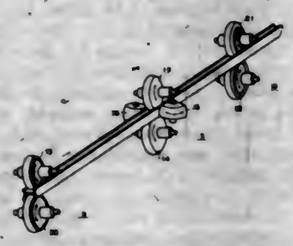
(*b*) an input shaft journaled in the rear housing portion,
(*c*) an output shaft journaled in the forward housing portion,
(*d*) a ring gear within the forward housing portion and integral therewith,
(*e*) a face plate within the forward housing portion integral with the output shaft,
(*f*) a driving gear on said input shaft,
(*g*) a sun gear within and secured to the rear housing portion in concentric relation with said input shaft,



(*h*) a pair of concentric functionally integral planetary gears carried by said face plate in mesh with said sun gear and driving gear respectively, one of said planetary gears meshing also with said ring gear,
(*i*) the relation of such gears causing said planetary gears to orbit and carry the output shaft with them when the forward housing portion is held stationary and to orbit in a reverse direction to rotate the face plate and output shaft in an opposite direction when said rear housing portion is held stationary.

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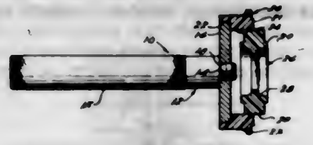
**3,165,948**
**METHOD OF ROLLING H-SECTIONED STEEL MEMBERS AND MILL TRAIN FOR THE SAME**
Kanichi Kishikawa, Tobata, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed July 24, 1961, Ser. No. 126,191
Claims priority, application Japan, July 23, 1960, 35/32,579
1 Claim. (Cl. 80—66)



A method of rolling H-sectioned steel members with a rolling mill train, said rolling mill train comprising a universal rolling mill, an anterior horizontal edging mill and a posterior horizontal edging mill, comprising the steps of
(1) rolling said steel member between the universal mill and the anterior edging mill and passing the steel member through said posterior edging mill, said universal and anterior mills operating in synchronization for reducing and shaping the steel member and said posterior edging mill only guiding the steel member during the rolling operation, for at least one-half of the total rolling steps, and
(2) rolling said steel member between the universal mill and the posterior edging mill and passing the steel member through said anterior edging mill, said universal mill and posterior mills operating in synchronization for reducing and shaping the steel member and said anterior edging mill only guiding the steel member during the rolling operation, for the remainder of the rolling steps.

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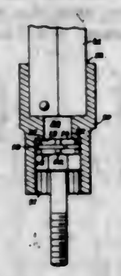
**3,165,949**
**SEAL DRIVER ASSEMBLY**
Walter E. Thill, Grosse Pointe Woods, Mich., assignor to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Filed Aug. 30, 1961, Ser. No. 134,926
5 Claims. (Cl. 81—8.1)



4. A seal driver assembly for mounting an annular seal onto an annular member comprising an elongated handle, an enlarged driver plate member secured to one end of said handle and having an annular support surface located substantially radially outwardly from said handle, an adaptor member being frictionally supported and removably disposed upon said annular support surface of said driver plate member, said adaptor member having a substantially centrally located axially straight aperture disposed substantially coaxially with said handle member and being defined by a surface spaced radially outwardly from the periphery of said handle, and a pilot member having a circular, radially outer surface for receiving a seal to be assembled and having said outer surface frictionally located in said aperture and movable axially within said aperture whereby the movement of said pilot member into said aperture causes the seal supported thereon to be moved therefrom onto the annular member.

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**3,165,950**
**MAGNETIC ATTACHMENT FOR SOCKET WRENCHES**
Clarence A. Gooley, Ronald C. Gooley, James E. Gooley, and William H. Gooley, all of Harrington, Wash.
Filed Feb. 2, 1962, Ser. No. 170,645
1 Claim. (Cl. 81—125)



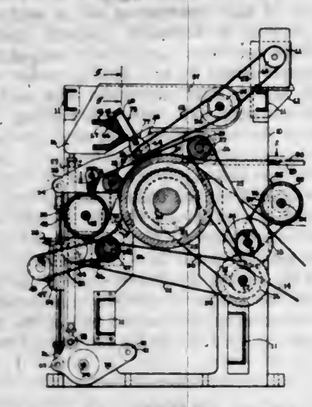
A magnetic insert adapted for use in a socket having an axial aperture adapted to rotatably grip an object, comprising:
a cylindrical disk of magnetic material having an outside diameter slightly less than the minimum interior diameter of the socket aperture;
a groove formed about the circumference of said disk intermediate its axial ends;
and a resilient ring mounted in said groove, the outside diameter of said ring being greater than the minimum interior diameter of the socket aperture whereby said ring may be compressed radially within said groove when inserted in the aperture of a socket;



said disc being provided with a plurality of radial projections extended outwardly about its circumference and adapted to be received within a socket recess, said projections being grooves so as to mount said ring therein.

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**3,165,951**
**MACHINE FOR SPLITTING ONE LAYER OF A LAMINATED WEB OF MATERIAL**
Jonas Theodore Lindquist, 7654 Tripp, Skokie, Ill.
Filed Feb. 2, 1962, Ser. No. 171,334
1 Claim. (Cl. 83—12)

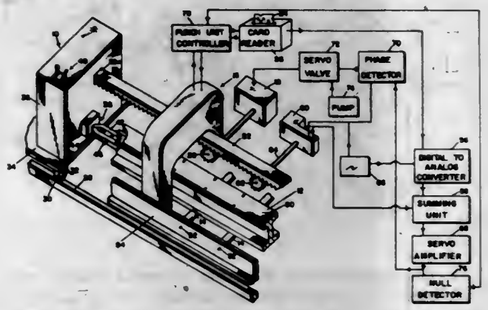


A machine for longitudinally splitting one layer of a moving web of laminated layers comprising
(*a*) an elongated rotatable backing roller for said web,
(*b*) a pair of elongated movable retaining belts arranged in parallel spaced relation with respect to each other and each having their lower run in close proximity to the cylindrical surface of the roller for engagement with the paper web moving between said lower runs and said backing roller,
(*c*) a splitting disc assembly including a rotatable splitting disc disposed to engage said web between said belts and arranged tangentially with respect to the cylindrical surface of the backing roller,
(*d*) movable means for supporting said splitting disc assembly with the splitting disc disposed between said belts in splitting engagement with respect to said web,
(*e*) means operable independently of said movable assembly-supporting means for adjusting said splitting disc in splitting position with the outer layer only of said web and free from contact with the under layer of said web,
(*f*) and means for simultaneously moving said movable splitting-disc-assembly-supporting means and said belts in spaced relation with respect to said backing roller to permit threading of said web over the cylindrical surface of said backing roller.

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**3,165,952**
**AUTOMATIC POSITIONING SYSTEM HAVING TAPE RESPONSIVE SERVO MEANS**
Thomas W. Thompson, Nashua, N.H., Richard E. Sipfle, Hamden, Conn., and Frederick L. Fullam, Jr., and Robert L. Maynard, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Jan. 6, 1961, Ser. No. 81,003
9 Claims. (Cl. 83—71)

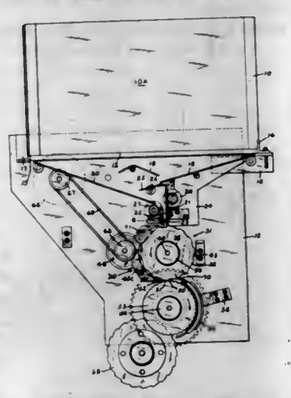
1. Apparatus for punching an elongated member, said apparatus comprising, in combination: ways along which said member travels, a guide extending along said ways, a carriage engaging said guide for movement therealong, a punch unit extending across said ways and adapted to punch said member, means on said carriage for gripping an end of said member, program means for setting up punching instructions in digital form, said program means electrically connected to a servosystem, said servosystem traversing said carriage along said guide to position said member along said ways in response to said instructions, detecting means emitting a signal when said member has finally come to rest in a position in accordance with said instructions, means for initiating operation of said punch unit in response to said signal, said detecting means




including switching means having a pair of control terminals and operable at a given potential between said control terminals corresponding to the maximum positional error of said servosystem, means generating a unidirectional voltage which is a function of the magnitude of the positional error of said member, and an integrating circuit coupling said voltage to said terminals so as to delay the appearance of said potential at said control terminals until said member has finally come to rest.

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**3,165,953**
**DEVICE FOR CUTTING AND SUPPLYING FILTER PLUGS**
Isaac T. Brown, Gibsonville, and Herbert F. Adebahr, Greensboro, N.C., assignors to P. Lorillard Company, New York, N.Y., a corporation of New Jersey
Filed July 18, 1962, Ser. No. 210,804
13 Claims. (Cl. 83—102)

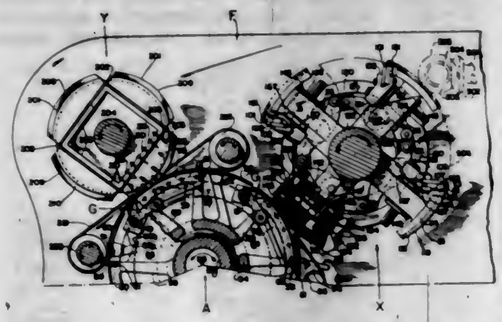


1. Apparatus for dividing filter tip rods into sections of equal length and arranging said sections in echelon comprising a first member for receiving a substantially cylindrical rod of filter tip material equal in length to a plurality of filter tips, a second member adjacent to said first member and frictionally engageable with said rod, means for cutting said rod into sections of substantially equal length and means for moving said first and second members relatively to roll said sections on said first member unequal distances and displace them into staggered relation to each other and to said first member.

### 3,165,954
### APPARATUS FOR TRIMMING SHEETED MATERIAL

William F. Huck, 81 Greenway Terrace, Forest Hills, N.Y.

Filed Oct. 14, 1960, Ser. No. 62,712
27 Claims. (Cl. 83—139)

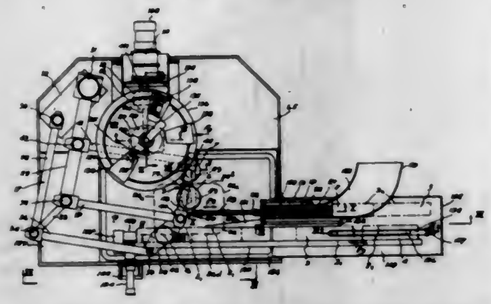


1. An apparatus for trimming pieces of sheeted material, which comprises a carrier having a surface adapted to support one of the pieces in face-to-face relation thereto, means on said carrier for holding said piece firmly to said surface, means for moving said carrier unidirectionally and cyclically through a path in which said surface is moved through a trimming zone, and means disposed opposite to said surface and moved with it in said zone for trimming said piece transversely with shear action, said trimming means including a second carrier carrying a transverse cutting knife having its cutting edge lying transverse to said path, and by which said knife is moved through said zone counter to and with said surface, and means operative as said knife is so moved to displace said knife bodily relative to said second carrier in a curved path lying within the plane of said knife.

### 3,165,955
### BOX CUTTING MACHINE

André Chanseau, Asnieres, France, assignor to Societe Anonyme des Usines Chanseau, Asnieres, France, a company of France

Filed July 28, 1960, Ser. No. 45,963
3 Claims. (Cl. 83—151)

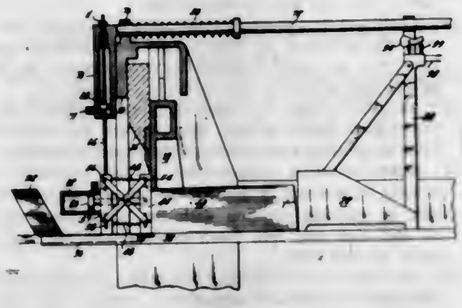


1. A machine for cutting the lower portions of water boxes for radiators after stamping of said water boxes comprising a plane table, guides extending parallel on said table defining two pasageways, support members slidably movable in said passageways for seating the water boxes, said members having a substantially rectangular shape and being located side by side in one passageway forming an entrance way, a pushing device having reciprocating motion provided in said entrance way to engage the support members, a similar pushing device in the other passageway engaging said support members for evacuation thereof and of the cut water boxes they carry, a set of two disc shaped rotating saws horizontally disposed above said table and continuously driven, a shape reproducing device mounted above said table, a driving motor operatively engaged with said reproducing device to drive thereof, a vertically movable cap carried by said reproducing device, actuating means operating said cap to engage successively said water boxes fitted on said support members and to release said water boxes at the end of each cycle of movement of said reproducing device, and a template member having a contour homothetic to said water boxes and which is engaged with and controls the movement of said reproducing device and a control mechanism having a rotatable element and fixedly mounted control members successively engaged by said rotatable element driven by said driving motor, said control members having inter-connection with said pushing device of the entrance way, with said pushing device of the passageway for evacuation, with said driving motor and with said actuating means operating said cap so that when said cap has engaged a water box in the entrance way the water box is moved transversely in one direction and one end of the box is cut by one of said saws, the template guiding the reproducing device and cap so as to move the grasped water box longitudinally between the two saws for cutting the lateral sides of the box, and to finally move the grasped water box transversely in the opposite direction to cut the second end of the box, said cap releasing the grasped box in the entrance of the second passageway.

### 3,165,956
### PAPER PILE ALIGNER FOR AUTOMATIC CUTTER

Carl Thumim, Lombard, Ill., assignor to Miehle-Goss-Dexter, Inc., Chicago, Ill., a corporation of Delaware

Filed May 2, 1962, Ser. No. 191,965
14 Claims. (Cl. 83—155)



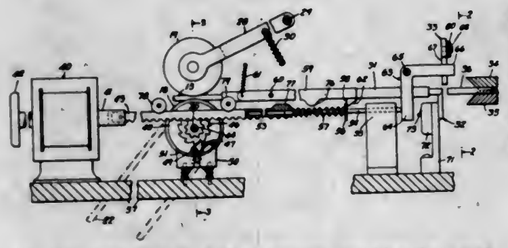
1. An aligning mechanism for alignment of the forward face of a paper pile in a paper cutting machine, comprising a bar means movably mounted for engagement with said face, and a first actuating means for effecting movement of said bar means toward said face, and a second actuating means for effecting reverse movement of said bar means away from said face, wherein said movements occur in a horizontal plane, and a third actuating means for moving said bar means in a vertical plane so as to completely clear said face, said second actuating means comprising a pressure operating cylinder having a piston rod operatively connected to move said bar means, said third actuating means comprising a pressure operated cylinder having a piston rod operatively connected to said first-mentioned cylinder for bodily movement thereof, including a belt conveyor means disposed below said aligning mechanism for removing cut away sections of said paper pile.



### 3,165,957
### PLASTIC TUBE CUTTER AND DISPENSER

Arnold W. Kaplan, Brooklyn, N.Y., assignor to Jay Dee Products Co., Inc., Brooklyn, N.Y., a corporation of New York

Filed Nov. 1, 1961, Ser. No. 149,325
7 Claims. (Cl. 83—167)

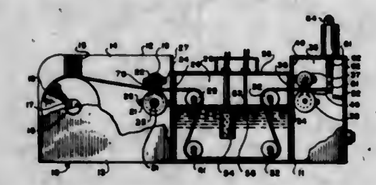


1. The combination with a vending machine for vending liquids, of an apparatus for forming and dispensing a straw, a spool supporting a supply of plastic tubing, a frame spaced with respect to said spool, two pairs of rollers for feeding plastic tubing from the spool into and through said frame, one roller in each pair being positively driven, one pair of rollers being mounted in the frame, the other pair of rollers being arranged adjacent said spool, said frame including two cutters widely spaced from the first pair of rollers, means in the frame for guiding the tubing from the first pair of rollers into position between and beyond said cutters, means for driving the driven roller of said frame in feeding a predetermined length of tubing through said guide means beyond the cutters, means in direct engagement with said driving means to then actuate at least one of the cutters to sever a predetermined straw length from the advanced tubing, means for supporting the formed straw in position on the vending machine to be accessible for manual removal, said second named means comprising a rack bar, means directly coupled with the rack bar for actuating said bar in one direction, the means for actuating said cutter comprising a lever, a rod mounted in connection with the rack bar and operatively engaging said lever in actuation of the cutter, a coil spring mounted on said rod between the end of the rack bar and a member fixed to the rod, a trigger lever operatively engaging said member in retaining said rod against movement during the feed stroke of said rack bar, and means on the rack bar operatively engaging the trigger lever to move the same into operative position in releasing the rod for actuation of the lever operating said cutter.

### 3,165,958
### DISPENSING APPARATUS FOR WAX-IMPREGNATED MATERIAL

Kelvin G. Anderson, Milton, Ontario, Canada, and Peter P. Spolsino, Revere, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Mar. 14, 1962, Ser. No. 176,056
2 Claims. (Cl. 83—170)

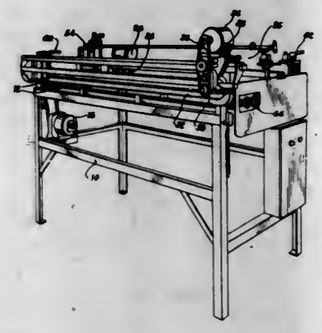


1. A sheet delivery and cut-off device adapted to deliver variable lengths of wax-impregnated bone-protecting material from a web thereof, comprising a base, side walls, end walls, and interior partitions together forming a compartmented box-like structure, means to support a supply-roll and means to support a transversely arranged pair of pull rolls in the rear compartment, means for maintaining the wax-impregnated material in said rear compartment below the softening temperature of said wax, roll means to guide and to submerge the web through liquid contained in the second compartment, means to heat said liquid above the softening temperature of said wax, a pair of take-up and delivery rolls, a bed-knife and a reciprocating cut-off knife transversely arranged in a third compartment, power means to reciprocate the knife, power transmitting means arranged to drive both roll pairs simultaneously and at identical surface speeds, and means to power the device.

### 3,165,959
### CUTTING MACHINE HAVING MEANS TO CONTROL SIZE OF CUT MATERIAL

James M. Eidson, Atlanta, Ga., assignor to Anderson Machine and Tool Works, Inc., Chaska, Minn., a corporation of Minnesota

Filed Nov. 6, 1961, Ser. No. 150,388
14 Claims. (Cl. 83—174)



1. In an apparatus for cutting material into specific lengths including driving means for passing the material through said apparatus and cutoff means adapted to cut the material transversely to provide said lengths, the improvement comprising automatic control means adapted to initiate operation of said cutoff means, said control means being connected to said drive means whereby the cycling speed of said control means is determined by the speed of the drive means, a plurality of operating means carried by said control means, means engageable by one of said operating means for controlling the movement of said material through said apparatus, means engageable by another of said operating means for controlling operation of said cutoff means, means for adjusting the relative position of said operating means on said control means to thereby alter the time period between the material movement and cutoff operations, and means for adjusting the relative speed of said drive means and said control means.

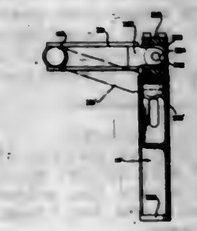
### 3,165,960
### STACK FRONT CLAMPING SYSTEM FOR AUTOMATIC CUTTING MACHINES

Carl Thumim, Lombard, Ill., assignor to Miehle-Goss-Dexter, Inc., Chicago, Ill., a corporation of Delaware

Original application Nov. 7, 1956, Ser. No. 620,928, now Patent No. 3,033,067, dated May 8, 1962. Divided and this application May 2, 1962, Ser. No. 191,991
2 Claims. (Cl. 83—282)

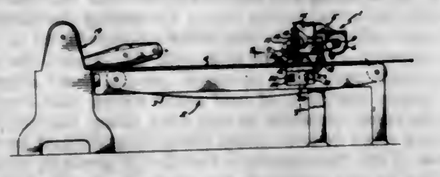
1. In a machine of the character described for successively cutting a stack of sheets transversely across a work table supporting the stack, a frame, a reciprocable

knife system with a blade arranged transverse of the table for successively cutting forward portions of the stack when projected into the knife system, a clamp mounted on said table adjacent said knife system and, means for successively actuating said clamp to grip firmly the forward stack portion during cutting cycles thereof by said blade including mechanism for maintaining said clamp predeterminedly parallel to said work table and stack of sheets



during its stack gripping phase, said mechanism comprising a torque bar carried parallel to said clamp and trunnioned to said frame, spaced arms rigidly secured to said bar and having freely rotative rollers at respective free ends, said clamp having respective recesses for said rollers, each recess having a top plate against which the respective roller engages for effecting leveling forces on said clamp to maintain substantial parallelism with said table.

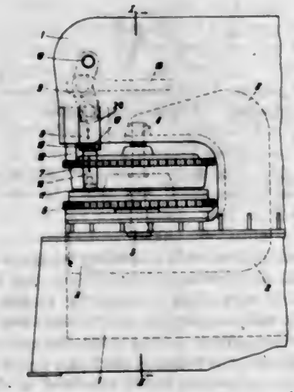
3,165,961
APPARATUS FOR AUTOMATICALLY CUTTING DEFECTIVE VENEER SHEETS
Albert S. Hammond, North Bend, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Nov. 30, 1962, Ser. No. 241,223
7 Claims. (Cl. 83—365)



1. An apparatus for cutting defective portions of veneer sheets, comprising: a clipper table adapted to convey veneer sheets to a clipper mechanism; a veneer saw mounted above said clipper table including a saw adapted to be lowered and raised; and means for detecting open defective portions in the veneer sheets and adapted to lower the saw to cut the defective portion of the veneer sheet in half.

3,165,962
TOOLHOLDER FOR MULTIPLE PUNCH PRESSES
Walter Brodow, Vormasch 2, Alfeld (Leine), Germany
Filed Nov. 17, 1961, Ser. No. 153,101
Claims priority, application Germany, Mar. 7, 1961, B 61,562
4 Claims. (Cl. 83—540)

1. In a punch press, a C-shaped main frame, a rotatable die plate mounted in the gap of the frame, a bearing frame located in the gap of the main frame, the bearing frame being unstressed by deformation of the main frame, a rotatable punch plate supported by the bearing frame in the gap of the main frame, a plurality of punches slidably disposed in the punch plate, and a ram slidably disposed in the main frame and engageable with any selected one of the punches to operate the latter



so that only forces in an axial direction are transmitted by the ram and punch with all forces generated during operation of a punch being absorbed directly by the main frame and the bearing frame being unstressed by such forces.

3,165,963
REEDS FOR MUSICAL INSTRUMENTS
John Keith Anthony Burns, 10 Rapley Green, Easthampstead, Bracknell, England
Filed Apr. 16, 1962, Ser. No. 187,780
Claims priority, application Great Britain, May 4, 1961, 16,222/61
1 Claim. (Cl. 84—383)



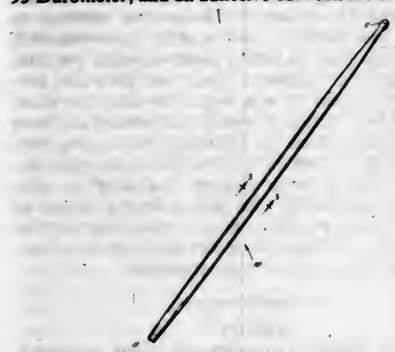
A woodwind reed comprising a root portion, an intermediate forwardly-tapering portion of substantial length terminating at a sharp step extending transversely the full width of the reed, said step substantially reducing the thickness of the reed to a thin tip portion extending forwardly and being of progressively smaller thickness forwardly of said step, the maximum thickness of said tip portion being at the bottom of said step, the said root portion, intermediate portion and tip portion being integrally formed of synthetic resin having embedded therein reinforcing glass fibers extending longitudinally of the reed and running to the tip of the reed.

3,165,964
DRUMSTICK
Harold R. Styx, 3849 W. Barnard Ave., Caledonia, Wis., and Marion J. Kosicki, 5430 W. Hayes Ave., West Allis, Wis.
Filed Nov 27, 1962, Ser. No. 240,290
12 Claims. (Cl. 84—422)

11. In a drumstick; a body formed of a magnesium alloy; a vinyl plastisol coating on said body for improving the tone produced by the drumstick, said vinyl plastisol

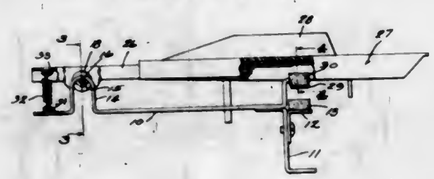


coating having a hardness ranging from 85 Durometer to 95 Durometer; and an adhesive between the surface of said



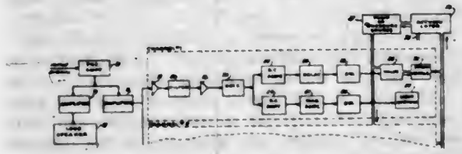
body and said vinyl plastisol coating for securely adhering said coating to said body.

3,165,965
BRASS ROLLER ACTION KEY PIVOT MOUNTING
Thomas S. Lo Duca, 2245 N. 24th Place, Milwaukee 5, Wis.
Filed Aug. 13, 1962, Ser. No. 216,534
1 Claim. (Cl. 84—435)



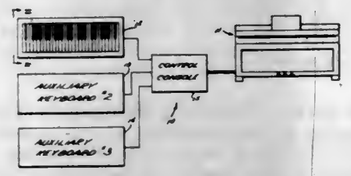
A mounting for an instrument key including a base element, an axle supported thereby, an inverted channel underlying and integral with the instrument key, and a plurally circumferentially slotted cylindrical brass roller retained freely on said axle, said slots receiving recessed enlarged portions on said channel with a forced fit whereby the channel and roller pivot together on said axle, and spring means for normally maintaining said key in raised position.

3,165,966
FOUNTAIN DISPLAYS
John P. Pribyl, 402 Harriet, Arlington, Tex.
Filed Feb. 24, 1961, Ser. No. 91,421
10 Claims. (Cl. 84—464)



1. A device for controlling a plurality of water spray fountains and a plurality of illuminating systems therefor, comprising: first means for providing an input potential having audio frequency components of varying amplitudes; a plurality of filtering means for filtering said potential connected to said first means, each said filtering means comprising a frequency band-pass circuit adapted to transmit a particular frequency range of said components; illumination control means operatively associated with each said filtering means, each of said control means responsive to the potential components transmitted by a particular one of said filtering means for varying the intensity of illumination of a particular one of said illuminating systems in accordance with the varying amplitude of the potential components transmitted by said particular filtering means; fountain control means operatively associated with each said filtering means for increasing the water flow of a particular one of said fountains when the amplitude of the components transmitted by the filtering means exceeds a predetermined value and means responsive to said input potential for increasing the water flow of all said spray fountains upon the occurrence in said potential of an audio frequency component of a predetermined amplitude.

3,165,967
PIANO TEACHING DEVICE
Edward J. Amrein, South Haven, Mich., assignor, by mesne assignments, to Everett Piano Company, South Haven, Mich., a corporation of Delaware
Filed Apr. 10, 1962, Ser. No. 186,419
4 Claims. (Cl. 84—470)




1. A piano teaching device comprising, in combination, a piano having strings and hammers for striking said strings, a plurality of auxiliary dummy piano-type keyboards remote from said piano each having a plurality of keys, a first set of electrical switches for each of said keyboards, said set having a switch associated with each key, said switches being adapted to be closed in response to the playing of the associated keys, a series of electrical solenoids adapted to operate said hammers individually, each solenoid being electrically connected to all the corresponding ones of said switches of said plurality of keyboards in parallel, and a second set of clustered electrical switches remote from said keyboards, one for each of said first sets of switches connected in series with the first sets associated therewith and in parallel with each other for operatively disconnecting each keyboard from said solenoids.

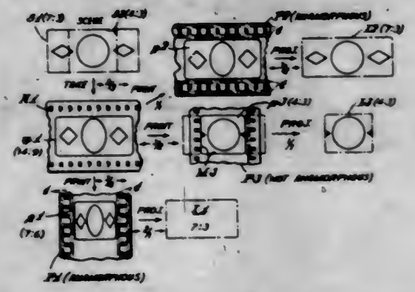
3,165,968
SYNTHETIC PLASTIC NAILING STRIP
Edgar P. Anstett, 21 Lakewood Place, Highland Park, Ill.
Filed July 23, 1962, Ser. No. 211,809
1 Claim. (Cl. 85—17)



A nailing strip for use in a nailing machine comprising an elongated substantially flat molded synthetic plastic strip having substantially parallel side edges, and a plurality of synthetic plastic pointed nail shanks integrally molded with the strip and extending from one side of the strip intermediate the side edges of the strip in longitudinally spaced apart relation along the strip, said synthetic plastic strip having slots transverse to said side edges between adjacent nail shanks, said slots defining parallel openings for indexing the nailing strip in the nailing machine and being shearable about each synthetic plastic nail shank through the slots to provide synthetic plastic

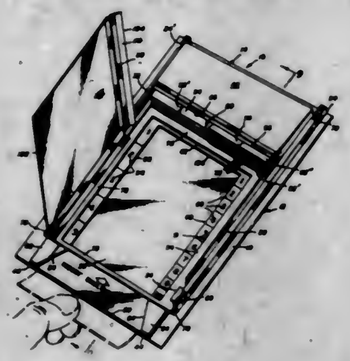
headed nails which may be sequentially severed and driven from the nailing strip by the nailing machine.

3,165,969
PHOTOGRAPHIC PRODUCTION OF ANAMORPHOUS RECORDS
Frank George Gunn, Pinner, England, assignor to Technicolor Corporation of America, Hollywood, Calif., a corporation of Maine
Filed Oct. 24, 1955, Ser. No. 542,426
Claims priority, application Great Britain Nov. 2, 1954
2 Claims. (Cl. 88—24)



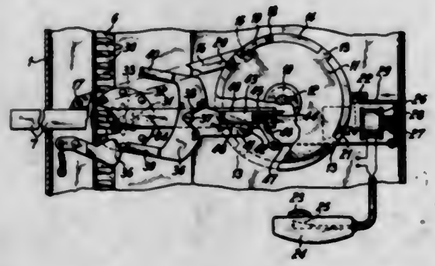
1. The method of producing photographically anamorphous motion picture records of scenes comprising the steps of photographing the scene by compression in only one direction of the image of the scene so as to produce a primary record having a degree of anamorphism, and printing the primary record with an additional degree of anamorphism by compression in the same direction as said one direction of the image of the scene upon a secondary record, the degree of anamorphism in the photographing and printing steps respectively being less than the total degree of anamorphism and the total degree of anamorphism, in the secondary record being the product of anamorphism separately introduced in the two stages, said secondary record comprising substantially the whole of said primary record, and wherein the primary record extends lengthwise and the secondary record extends crosswise of a motion picture film strip.

3,165,970
PHOTOGRAPHIC PROJECTION EASEL
Gerard J. Pelletier, 2 Rex Gate Drive, Rexdale, Ontario, Canada
Filed Apr. 24, 1962, Ser. No. 189,725
15 Claims. (Cl. 88—24)



1. Projection easel apparatus for producing a plurality of strip enlargements of variable intensity comprising a support base assembly including orienting means for positioning a masking frame on said support base thereon, and a masking frame assembly removably received on said support base assembly, said masking frame assembly including a base plate including paper-receiving portions, a masking collar juxtaposed on said base plate and having reciprocal movement with respect to said base plate, and a pivotal lever assembly connected between said base plate and masking collar for affording and causing relative reciprocable movement between said base plate and collar, said masking frame assembly including an abutment portion engageable with said orienting means of said support base whereby relative movement will be afforded between said base plate and masking collar during operation of said pivotal lever assembly.

3,165,971
AUTOMATIC SLIDE PROJECTOR WITH REMOTE CONTROL FOR REVERSING TRAVEL DIRECTION OF MAGAZINE
Erich Zillmer and Gerhard Brinkmann, Braunschweig, Germany, assignors to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Nov. 19, 1962, Ser. No. 238,349
Claims priority, application Germany, Nov. 24, 1961, Z 9,094
12 Claims. (Cl. 88—28)

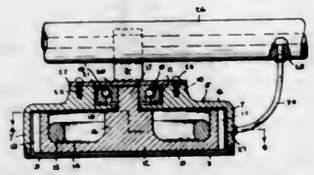


1. A slide projector comprising, in combination, a housing having a slide window substantially centered transversely of the optical axis of the projector, and slide support means adjacent said window; a slide magazine movable substantially parallel to said optical axis; a slide changer reciprocable transversely of said optical axis to transfer slides between said magazine and said support means; driving means, including means coupled to said slide changer, operable, when activated, to reciprocate said slide changer through a slide changing cycle; a single control means selectively operable to activate said driving means; magazine stepping mechanism, including a shiftable drive member reciprocable with said slide changer, operable, during each slide changing cycle, to step said magazine; said drive member, in a first position, stepping said magazine in one direction and, in a second position, stepping said magazine in the opposite direction; and shifting means operable, responsive to one mode of operation of said single control means, to shift said drive member to said first position and, responsive to another mode of operation of said single control means, to shift said drive member to said second position, said stepping mechanism including a ratchet wheel cooperable with said magazine and rotatably mounted on an axis situated in a plane which includes the centerline of reciprocation of said slide changer; said shiftable drive member comprising a forked pawl oscillatably mounted on said slide shifter at substantially the center



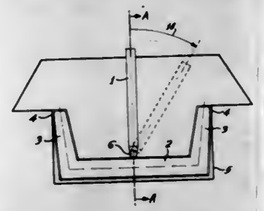
line of reciprocation thereof, the arms of said forked pawl being normally spaced uniformly to either side of such center line; said drive member, when shifted to said first position, having a first arm positioned to cooperate with said ratchet wheel to turn the same in one direction and, when shifted to said second position, having a second arm cooperable with said ratchet wheel to turn the same in the opposite direction, means biasing said forked pawl to a position in which its forked arms extend in substantially parallel uniformly spaced relation to either side of the line of reciprocation of said slide changer, said forked pawl including a guide arm projecting radially from its center of oscillation in a direction opposite to the projection direction of its forked arms; said shifting means including a switching cam positioned in the path of movement of said guide arm during reciprocation of said slide changer and operable to shift said forked pawl to either said first position or said second position dependent upon the mode of operation of said single control means.

3,165,972
GYRO WEAPONS STABILIZER
Harold B. Cumbo, 1757 NE. 35th St., Fort Lauderdale, Fla.
Filed Oct. 28, 1963, Ser. No. 319,467
2 Claims. (Cl. 89—14)



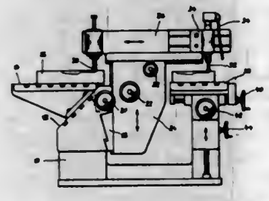
1. A gyroscopic stabilizer for weapons having a barrel that comprises a cylindrical housing open at its bottom and with the bottom being closed by a plate having a circular row of openings, the housing having a top and with the top being provided with a lug that is concentric with the housing, the lug being axially recessed, a ball bearing having inner and outer raceways and with the outer raceways having a force fit into the recess, a rotor disposed within the housing and with the rotor being concentric to the housing, the rotor being downwardly recessed, a weight producing ring disposed in the recess and fixed therein against movement, the recess of the rotor having a centrally arranged upstanding lug that is flush with the upper edge of the rotor, the lug having an axially arranged upwardly projecting shaft that has a force fit engagement with the inner raceway of the ball bearing, the shaft extending through a cylindrical opening in the top, a cover plate for the first named boss having a diameter substantially identical to the boss, screws for fastening the last named cover plate with respect to the boss and to cover the ball bearing and the upper end of the shaft, a spring clip fixed upon the second named cover plate and with the clip overlying the cover plate and secured thereto by opposite fastening screws of the cover plate, the said clip adapted to have a clipping engagement with the barrel of the weapon and whereby to mount the gyroscope below the barrel, the rotor having a circumferential row of turbine blades, a port formed in a side wall of the housing and a port formed in the barrel of the weapon that communicates with a bore of the barrel and a tube connecting the ports whereby gaseous pressure within the barrel of the weapon will be directed to the turbine blades and whereby to spin the rotor for stabilizing the weapon.

3,165,973
MANNER OF MOUNTING HEAVY ARMS IN VEHICLES
Kurt Bohrmann, Kassel, Germany, assignor to Henschel-Werke A.G., Kassel, Germany, a corporation of Germany
Filed Mar. 12, 1963, Ser. No. 264,498
Claims priority, application Germany Mar. 13, 1962
6 Claims. (Cl. 89—40)



1. A vehicular mount for a heavy firearm, including a vehicle having channel-type frame with a longitudinal axis, a horizontal support member positioned transversely to the longitudinal axis of the vehicle frame, a side arm connected to each end of the horizontal member, each side arm being connected to one side of the vehicle frame, a heavy firearm, and means for mounting said heavy firearm on the horizontal support member.

3,165,974
DUPLICATING MILLING MACHINE
Kurt Zwick, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich Wilhelm Deckel, Zug, Switzerland
Filed Sept. 8, 1961, Ser. No. 136,901
Claims priority, application Germany Sept. 14, 1960
11 Claims. (Cl. 90—13)

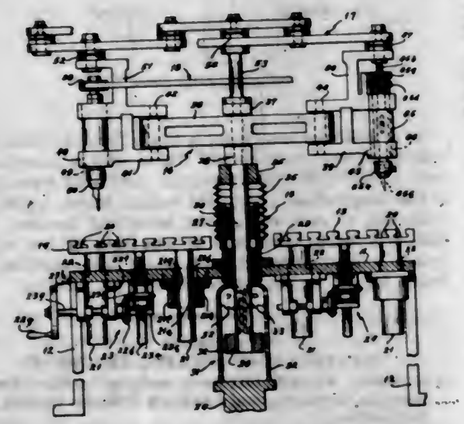


1. A duplicating milling machine, comprising substantially horizontal carrier support means adapted to be adjusted in three orthogonal directions, tool means and feeler means at said carrier support means, essentially horizontally extending work table means, adapted to remain stationary during the milling operation, essentially horizontally extending model table means spatially separated from said work table means adapted to remain stationary during the milling operation, said work table means including a substantially vertical longitudinal side facing said model table means, and means for supporting said carrier support means on said substantially vertical side of said work table means including guide means disposed in said substantially vertical side for enabling horizontal movements of said carrier support means in the longitudinal direction of the work table means and means for enabling movements of said carrier support means in the remaining of said orthogonal directions.

3,165,975
THREE-DIMENSIONAL DUPLICATING MACHINE
Curt P. Schneider, 4133 Dryden, St. Louis, Mo.
Filed June 12, 1961, Ser. No. 116,535
3 Claims. (Cl. 90—13.1)

1. A three-dimensional reproducing machine comprising a base, a tracer table, a work table, means adapted

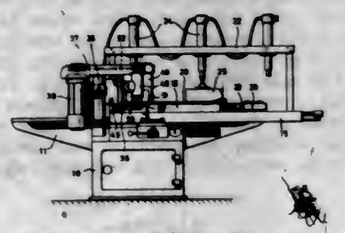
for vertical movement vertically movable in linear ball bushings housed in said base, means adapted for horizontal movement pivotally carried by said vertical movement means and movable therewith, said horizontal movement means including a beam pivotally supporting a tracer spindle and a cutter spindle, means synchronizing the movement of said tracer and cutter spindles in two horizontal directions, drive means at a different vertical elevation from said cutter spindle, and a drive transmission for communicating the rotary motion from said drive means to said cutter spindle, said drive transmission including grooved constant diameter pulleys on said cut-



ter spindle and said drive means, a vertical motion transmitting assembly including a pair of spindles rotatable in common and longitudinally relatively movable, grooved constant diameter pulleys on each of said spindles, a first belt having lugs engageable with the pulley grooves connecting the drive means pulley with the pulley on one of said spindles, a second belt having lugs engageable with the pulley grooves connecting the cutter spindle pulley with the pulley on the other of said spindles, and means for vertically shifting the spindles with respect to each other, said means being tied to the vertical motion of said cutter spindle, whereby the belts are maintained in constant horizontal alignment.

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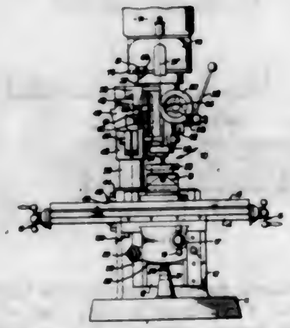
**3,165,976**
**TEMPLATE CONTROLLED MACHINE TOOL**
**Karl Wilhelm Haspel, Oberkochen, Germany, assignor to Firma Wilhelm Grupp K.G., Werkzeug und Maschinenfabrik, Oberkochen, Germany**
**Filed Oct. 30, 1961, Ser. No. 148,342**
**10 Claims. (Cl. 90—13.2)**



1. In a template controlled machine tool, in combination, a first unit comprising elongated template means having at least two guide tracks crossing each other at a crossing point, each guide track having a first track portion on one side of said crossing point and a second track portion on the other side of said crossing point, and holder means for holding a workpiece fixed in a selected position relative to said template means; a second unit comprising at least two feeler means respectively engaging said guide tracks, said feeler means being spaced from each other along said guide tracks, and two tool means operatively connected to said feeler means for movement with the same and adapted to operate on two faces of the workpiece, respectively, said tool means being spaced from each other along said workpiece the same distance as said feeler means are spaced along said template; and means for moving one of said units relative to the other unit so that said feeler means move along said first track portions and successive one at a time over said crossing point to said second track portions and said tool means move along crossing paths whereby said faces are fully machined to a line successively passed by one tool at a time where said faces merge or intersect, while each feeler means moves from the respective first track portion to said second track portion and over said crossing point.

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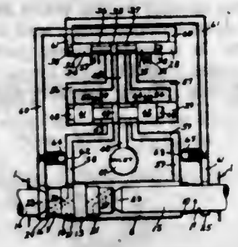
**3,165,977**
**MACHINE TOOL WITH AN ANGULARLY ADJUSTABLE SPINDLE HEAD**
**Bernard Farmen, 3323 Lime Ave., Long Beach 7, Calif.**
**Filed Dec. 12, 1961, Ser. No. 158,738**
**4 Claims. (Cl. 90—17)**



1. A machine tool, comprising a base, a work support table on the base, a speed head including a rotary quill movable above the table, said head also including a body in which the quill is journaled for driven rotation and quill drive means carried on said body for rotary adjustment about the quill axis, means including swivel apparatus and a post extending axially vertically at the rear of the table for carrying the speed head body to swivel about a horizontal axis and the post vertical axis, characterized in that the speed head has a first position in which the quill extends vertically above the table and a second position in which the quill after rotation about said axes extends horizontally from front to rear with respect to the table, a frontwardly and rearwardly oriented vertical plane through the quill axis in each of said positions being centered with respect to table center and sidewardly offset with respect to said post to such an extent that work centered on the table and rearwardly elongated beneath the quill may project rearwardly without interfering with said post, and said means including a unidirectionally adjustable slide connection carried on the post to swivel about the post vertical axis and carrying said body so that in said first position the vertical quill may be moved forwardly and rearwardly and in said second position the horizontal quill may be moved sidewardly all in response to unidirectional adjustment of said connection, said horizontal axis and said quill axis intersecting in each of said first and second positions and said horizontal axis being offset from a vertical projection of the post in each of said positions.



**3,165,978**
**FLUID PRESSURE OPERATED RECIPROCATORY MOTOR**
**Norbert A. Von Ruden, Claremont, and Jan Boers, Owatonna, Minn., assignors to Von Ruden Mfg. Co., Claremont, Minn., a corporation of Minnesota**
**Filed Nov. 15, 1962, Ser. No. 237,798**
**4 Claims. (Cl. 91—291)**

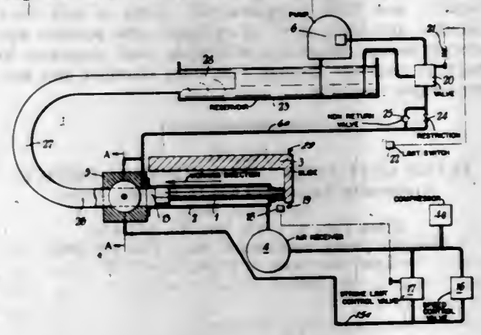


1. In a fluid pressure operated reciprocatory motor,
(*a*) structure including body means defining a power cylinder and reversing and pilot valve cylinders and axial position rod receiving bores at opposite ends of said power cylinder,
(*b*) a power piston axially movable in said power cylinder and having aligned piston rods in said bores for common movements with said piston,
(*c*) said structure having an inlet port for connection to a source of fluid pressure and an outlet port and passage means connecting said inlet and outlet port with said valve cylinders and connecting said reversing valve cylinder with said power cylinder,
(*d*) a pilot valve and a reversing valve axially movable in respective ones of said valve cylinders,
(*e*) said pilot valve having axially spaced valve pistons and intervening circumferential grooves for controlling flow of fluid to and from said reversing valve cylinder,
(*f*) said reversing valve having axially spaced valve pistons and intervening circumferential grooves for controlling flow of fluid to and from said power cylinder,
(*g*) said structure further having a pair of fluid passages each extending from a different one of said bores axially outwardly of the adjacent end of said power cylinder to a different end of said pilot valve cylinder, said fluid passages being disposed to maintain a pressure balance at opposite ends of said pilot valve cylinder during movement of said power piston between opposite ends of said power cylinder,
(*h*) and a pair of check valves one each connecting one of said fluid passages to the adjacent end of said power cylinder,
(*i*) said piston rods each defining passage means connecting one end of said power cylinder with the adjacent one of said fluid passages responsive to movement of said power piston toward the adjacent end of said power cylinder, said last mentioned passage means each cooperating with a different one of said fluid passages and one of the passage means connecting said reversing valve cylinder and said power cylinder to provide a passage connection to said outlet port.

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**3,165,979**
**DRIVING AND CONTROL MECHANISMS FOR POWER-OPERATED MACHINE TOOLS**
**Robert Cecil Clerk, 97 High St., Maidenhead, Berkshire, England**
**Filed July 12, 1962, Ser. No. 209,437**
**3 Claims. (Cl. 91—321)**

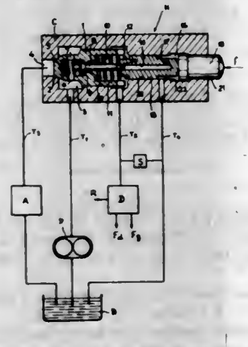
1. A driving and control mechanism for power operated machine tools comprising a power operated slide, a hydraulic power cylinder, a piston within the cylinder connected to and operating the slide, an hydraulic liquid circuit connected to the power cylinder so as to feed liquid under pressure to one side of the piston for effecting the movement of the slide in a non-working direction, and a substantially enclosed chamber for gas under pressure connected to the cylinder to apply gas to the other side of the piston for effecting the movement of the slide in a working direction, means for controlling the speed of the



working stroke of the slide by adjustment of air pressure in said enclosed chamber, a large capacity low resistance path being provided for hydraulic liquid expelled from the cylinder during a working stroke, a valve openable to full bore size of the cylinder located in said low resistance path for controlling the flow of liquid in the path, and means for adjusting said valve to control the back pressure applied to the piston to effect deceleration thereof towards the end of a working stroke.

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**3,165,980**
**CONTROL DEVICES WITH COAXIAL THROTTLE AND PRESSURE REDUCER FOR HYDRAULIC BRAKING SYSTEMS OF VEHICLES**
**Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France**
**Filed Feb. 4, 1963, Ser. No. 255,908**
**Claims priority, application France, Mar. 2, 1962, 889,876, Patent 1,344,879**
**2 Claims. (Cl. 91—370)**

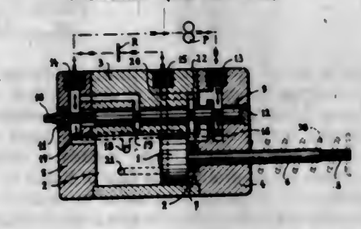


1. In a vehicle having a hydraulic system including a fluid reservoir, a pump, a main load apparatus and an operating means; a central control unit comprising a body member having three coaxial bores, three coaxial valve assemblies mounted in said bores and each having valve members, said bores defining first, second and third chambers, the first valve assembly being a throttling valve disposed between the first and second chambers, an auxiliary load apparatus, conduit means connecting one of said first and second chambers to the fluid reservoir through the auxiliary load apparatus, conduit means conencting

the other of said first and second chambers to the pump, the second valve assembly being disposed within the valve member of the first valve assembly and being closed in its inoperative condition, conduit means interconnecting said pump and the main load apparatus through said second valve assembly, a member carrying the valve members of the second and third valve assemblies, said third valve assembly having a slidable seat member, means responsive to the operating means to actuate said seat member, said third valve assembly being in said third chamber and being open in its inoperative position and conduit means connecting said main load apparatus to the fluid reservoir through said third chamber and said third valve assembly.

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**3,165,981**
**FLUID ACTUATED SERVO-CONTROL DEVICE**
**Alessandro Amour, 39 Via G. Casalis, Turin, Piedmont, Italy**
**Filed Feb. 5, 1962, Ser. No. 171,156**
**Claims priority, application Italy, Feb. 13, 1961, 2,947/61; Aug. 2, 1961, 13,838/61**
**6 Claims. (Cl. 91—402)**

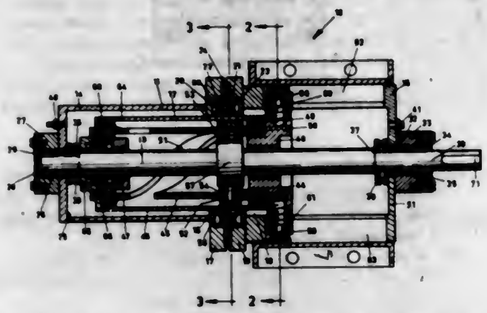


1. A pressure fluid actuated servo-control device, comprising a cylinder, a piston reciprocable within said cylinder, and defining in said cylinder a first chamber and a second chamber separated from said first chamber, a connection for arrival of a pressure fluid flow actuating said reciprocable piston, a pipe connecting said arrival connection with said first chamber of the cylinder, a connection for discharge of the pressure fluid, a pipe connecting said discharge connection with said second chamber of the cylinder, ports bored in the wall of said cylinder, pipes connecting said ports with said discharge connection, means inserted in one of said pipes for restraining the fluid flow therein, and a slide valve inserted in said pipes, whereby said slide valve controls the fluid flow actuating the forward and rearward movements of said piston reciprocable in said cylinder, whilst the rearward movement of said piston takes place with a different speed according to the position of the piston with respect to said ports bored in the wall of the cylinder.

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**3,165,982**
**HYDRAULIC TORQUE ACTUATOR**
**John H. Taylor, % Canadian Research & Development Foundation, 1437 Van Horne Ave., Lachine, Quebec, Canada**
**Filed June 1, 1961, Ser. No. 114,136**
**5 Claims. (Cl. 92—33)**

1. A hydraulic torque actuator including a cylinder assembly, a piston assembly and a torque shaft; said cylinder assembly comprising a first cylinder having a closed end wall and an open end and a second cylinder having a closed end wall and an open end, each of said open ends being flanged and said flanges joined to unite said cylinders at their open ends in axial alignment; peripheral sealing means between said flanges extensible into the bore of said cylinder assembly; said piston assembly comprising integral, coaxial inner and outer hollow cylindrical members; first and second end wall maintaining said cylindrical members substantially fluid-tight; said piston assembly being axially slidable within said cylinder assembly, the end embodying said first end wall remaining within said first cylinder, the end opposite embodying said second end wall remaining within said second cylinder and the outer surface of said outer cylindrical member being in slidable, fluid tight contact with said peripheral sealing means; said first cylinder having a longitudinally slotted inner wall; radial extensions from said first end wall of said outer cylindrical member of said piston assembly slidably cooperable with said slotted inner wall to maintain said piston assembly in a predetermined path upon moving within said cylinder assembly; said torque shaft extending axially through said cylinder assembly and being sealably



and rotatably supported by said closed ends thereof; said torque shaft passing axially through said piston assembly in rotatable, sealed relationship; said inner cylindrical member of said piston assembly being helically slotted substantially throughout the length thereof; spool means extending radially outwardly from said torque shaft slidably cooperable with said helically slotted inner cylindrical member; said torque shaft being in shouldered cooperation with said closed ends of said cylinders to restrain said shaft from axial movement while permitting free rotary movement thereof; and adapter means in each of said closed ends of said cylinder assembly to permit the selective ingress and egress of fluid to said first and second cylinders.

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**3,165,983**
**CYLINDER BLOCK CONSTRUCTIONS AND METHODS AND APPARATUS FOR MAKING SAME OR THE LIKE**
**Jesse B. Thomas, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Filed Sept. 22, 1961, Ser. No. 140,111**
**15 Claims. (Cl. 92—169)**

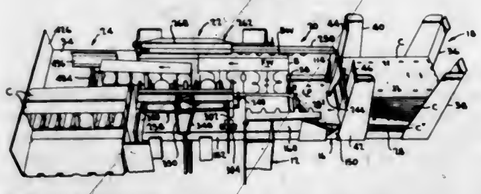


1. A cylinder block construction comprising a cylinder-defining member having a plurality of outwardly tapering fins extending from the exterior thereof, a coating of bonding material disposed on the exterior surfaces of said fins, and cylinder block material surrounding said cylinder-defining member and being bonded to said fins by said coating from the tips of said fins toward the bases thereof, said tips of said fins and said coating and said cylinder block material in the region of said tips of said fins being fused to provide substantially homogeneous structures at said tips of said fins.



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**3,165,984**
**CARTON SET-UP MACHINE**
**William S. Peppler, Chappaqua, N.Y., and Le Roy F. Carkhuff, Morris, Ill., assignors to Diamond National Corporation, New York, N.Y., a corporation of Delaware**
**Filed Dec. 6, 1962, Ser. No. 242,877**
**8 Claims. (Cl. 93—37)**

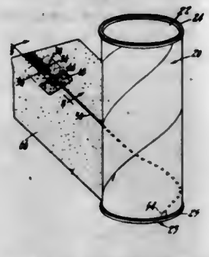


1. In an egg carton set-up apparatus for erecting a collapsed, cellular, transverse-partition type egg carton characterized by a tubular body having a hinged lid and including a longitudinal partition forming a plurality of separated post segments extending from the under surface of the lid to the lower margins of the erected carton, said set-up apparatus comprising a support stand having a longitudinal path of travel for cartons therethrough and having mounted thereon drive means, said support stand including a support platform, a supply hopper on said platform for receiving collapsed, longitudinally-disposed carton preforming means on said support stand adjacent said hopper for forming a collapsed carton into a tube with the longitudinal partition panel disposed in a vertically extending planar condition, carton "lock-up" means on said support stand adjacent said carton preforming means, and a carton transport reciprocably mounted along the longitudinal path of travel on said support stand beneath said supply hopper and carton preform means; the improvement characterized in that said support platform includes a vertically extending channel-forming member extending the length of said carton preforming means and carton "lock-up" means and above said carton transport for receiving and guiding the planar longitudinal partition panel during movement through said apparatus, said carton preform means comprising a preform plate displaceably mounted on said support stand and movable transversely of said longitudinal path of travel and toward and away from said channel-forming member.

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**3,165,985**
**METHOD OF FORMING PULL STRING CONTAINERS**
**Ralph Kennicott Pottle, Georgetown, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey**
**Original application Dec. 17, 1958, Ser. No. 781,152, now Patent No. 3,042,286, dated July 3, 1962. Divided and this application Oct. 23, 1961, Ser. No. 154,088**
**9 Claims. (Cl. 93—94)**

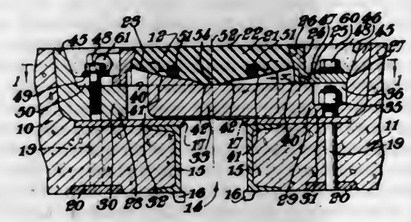
1. The method of forming helically wound tear open container bodies, comprising helically winding a first ply to form an endless tube provided with a helical line of opening, adhesively securing tearing means to a surface of a second ply, cutting through said second ply at spaced intervals to sever said tearing means and to define pull tabs to which said severed tearing means is adhesively secured, helically winding said second ply around said endless tube



with said tearing means in superposed registration with said helical line of opening to form a completed endless tube, and cutting said completed tube, including said tearing means, adjacent each of said pull tabs to form individual container bodies each of which is provided with a pull tab affording access to said tearing means.

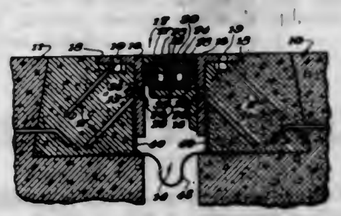
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**3,165,986**
**EXPANSION JOINTS**
**Archie John Hirst and Kazimierz Siwek, Leicester, England, assignors to Metalastik Limited, Leicester, England, a British company**
**Filed Mar. 9, 1961, Ser. No. 94,477**
**Claims priority, application Great Britain, Mar. 22, 1960, 10,202/60**
**10 Claims. (Cl. 94—18)**



1. An expansion joint for accommodating the expansion of a pair of surfacing members separated by the joint, the joint bridging an expansion gap between the surfacing members, the joint comprising a body of rubber held always in a state of compression between the surfacing members, said body having a substantially plane upper surface and a thickness in the region of its mid longitudinal plane between the surfacing members which is substantially greater than its thickness in regions adjacent its longitudinal edges whereby the body tends to buckle downwardly under the action of the compressive forces exerted upon it by the surfacing members and support means under the body and supporting the body against downward buckling with its upper surface substantially in the plane of the upper surfaces of the surfacing members, the support means comprising interdigitated elements carried respectively from the two surfacing members so as to be adjustable by expansion of the surfacing members, said elements having oppositely inclined, inter-facing support surfaces for the rubber body which move away from one another upon expansion of the surfacing members to accommodate bulging of the undersurface of the rubber body.

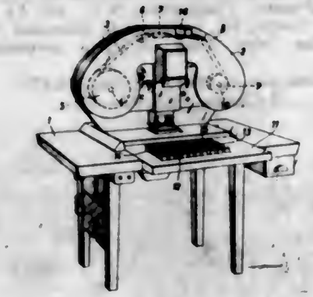
3,165,987
EXPANSION JOINTS
Archie John Hirst and Kazimierz Siwek, Leicester, and Terrence John Potterton, Glen Parva, Leicester, England, assignors to Metalastik Limited, Leicester, England, a British company
Filed June 11, 1962, Ser. No. 201,485
Claims priority, application Great Britain, Mar. 19, 1962, 10,459/62
5 Claims. (Cl. 94—18)



1. An expansion joint accommodating the expansion of a pair of surfacing members, the joint comprising a body of rubber confined between and bridging, in load carrying manner, an expansion gap between the surfacing members, the width of the expansion gap being always less than the unconfined width of said body of rubber whereby the body of rubber is held always in a state of compression between the surfacing members, said body having a substantially plane upper surface and a transversely convex undersurface so as to present a thickness in its mid-longitudinal plane between the surfacing members which is substantially greater than its thickness in regions adjacent its longitudinal edges whereby the body tends always to buckle downwardly under the action of the compression forces exerted upon it by the surfacing members, and support means carried from one of the surfacing members and extending beneath the rubber body across the expansion gap towards the other of the surfacing members, the support means presenting a flat upwardly directed support surface lying tangentially in engagement with the convex undersurface of the rubber body and supporting the body against its downward buckling tendency at all times within the range of normal ambient temperature conditions to be encountered, with the upper surface of the body lying substantially in the plane of the upper surfaces of the surfacing members, the support convex undersurface of the rubber body lying clear of the support surface on each side of the mid-longitudinal plane of the body so as to define therewith a space, said spaces accommodating downward bulging of the undersurface of the rubber body upon expansion of the surfacing members.

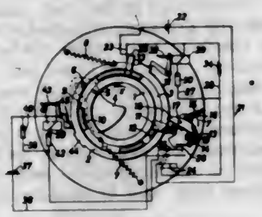
3,165,988
INDICATOR ARRANGEMENTS
Richard Wick, Grunwald, near Munich, and Kurt Rassmuss and Günther Ross, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed July 24, 1961, Ser. No. 126,821
Claims priority, application Germany, July 23, 1960, A 35,187/60; July 26, 1960, A 35,205/60
32 Claims. (Cl. 95—1.1)

1. In a photographic device, in combination, a plurality of manually operable selecting means operable by the operator for selecting one of several values of a plurality of exposure-determining factors respectively regulated by said plurality of manually operable selecting means; a first means formed by a plurality of carriers each carrying symbols, said carriers respectively corresponding to said plurality of selecting means and said symbols respectively corresponding to the values which can be selected with said plurality of selecting means; support means supporting said plurality of carriers for movement each independently of the other; means actuated by operation of said plurality of manually operable selecting means and cooperating with said plurality of carriers for automatically moving the same to positions where the marking symbols thereof are respectively in marking positions to indicate the values selected by the



operator at said plurality of manually operable selecting means; a second means supporting a photographic sheet with its reverse side directed toward said symbols which are in said marking positions; and moving means located adjacent one of said first and second means for moving said one means toward the other of said first and second means to record on the reverse side of said photographic sheet said marking symbols which are in said marking positions.

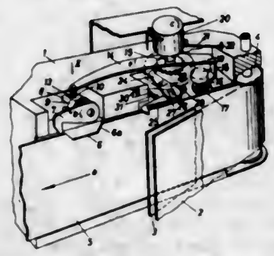
3,165,989
LIGHT CONTROLLED SHUTTER
Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Sept. 29, 1960, Ser. No. 59,375
Claims priority, application Germany, Oct. 2, 1959, A 32,974; Oct. 31, 1959, A 33,161
32 Claims. (Cl. 95—10)



29. In a camera, in combination, shutter means movable between closed and open positions; actuating means for moving said shutter means between closed and open positions, said actuating means including solenoid means; light-sensitive resistance means cooperating with said solenoid means for automatically maintaining said shutter means in its open position for a length of time corresponding to the lighting conditions so as to make a proper exposure; and blocking means cooperating with said shutter means for preventing movement thereof to said open position thereof when the lighting conditions are such that a proper exposure cannot be made.

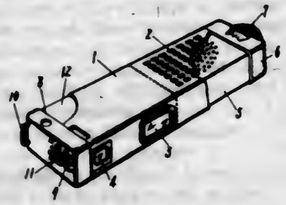


3,165,990
CAMERA WITH MEANS FOR AUTOMATICALLY INTRODUCING INTO THE SAME THE FACTOR OF FILM SPEED
Gerd Kiper, Unterhaching, near Munich, and Richard Denk, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Mar. 22, 1961, Ser. No. 97,628
Claims priority, application Germany, Apr. 2, 1960, A 34,359
31 Claims. (Cl. 95—10)



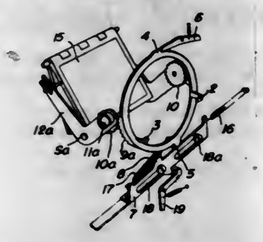
1. In a camera which has an at least partly automatic structure for determining the exposure of film in the camera, in combination, setting means for setting into the camera the factor of film speed; indicating means carried by an initial portion of a film strip in the camera for indicating the speed of the film in the camera; sensing means carried by the camera and cooperating with said indicating means for sensing the film speed indicated thereby during movement of said initial film strip portion relative to said sensing means; and moving means automatically actuated by said sensing means when the latter senses the film speed, said moving means being driven by longitudinal movement of the film strip for the period of time that said sensing means senses said film speed and said moving means being operatively connected to said setting means for moving the latter to an extent determined by the film speed sensed by said sensing means for automatically setting into the camera the factor of film speed, and said setting means maintaining in the camera, after movement of said indicating means beyond said sensing means, the film speed setting resulting from actuation of said setting means by said moving means.

3,165,991
RADIO-CAMERA UNIT CASE
Kiyoharu Yoshida, Ibaraki, Japan, assignor to Echo Electronics Company Limited, Koryocho, Japan, a corporation of Japan
Filed May 25, 1962, Ser. No. 197,762
Claims priority, application Japan June 6, 1961
2 Claims. (Cl. 95—12)



1. A combined radio-camera comprising, a casing having a longitudinal axis and uniform in cross section in planes normal to said axis, said casing being open at both ends, there being a plurality of closely spaced apertures in said casing adjacent one end thereof, there also being view finder and lens openings in said casing adjacent the other end thereof, a self-contained radio including a first housing constructed and arranged to have a smooth sliding guided fit within said one end of said casing, said first housing having a plurality of holes through which sound from said radio may emerge, said apertures being superimposed over said holes when said first housing is fully positioned within said casing, a camera including a second housing constructed to have a smooth sliding guided fit within the other end of said casing, the arrangement being such that when said second housing is fully positioned within said casing, a view finder and a lens thereof are aligned with the view finder and lens openings, respectively, of said casing, said first and second housing including respectively, first and second end caps, each closing a corresponding end of said casing, manually operable control means for said radio mounted upon and projecting from said first cap, and manually operable control means for said camera projecting from said second cap, whereby the radio and camera can be operated by one hand.

3,165,992
SINGLE-LENS REFLEX CAMERA
Sazo Ando, Gamagori-shi, Japan, assignor to Kowa Company, Ltd., Naka-ku, Nagoya, Japan, a corporation of Japan
Filed Sept. 19, 1961, Ser. No. 139,168
8 Claims. (Cl. 95—42)

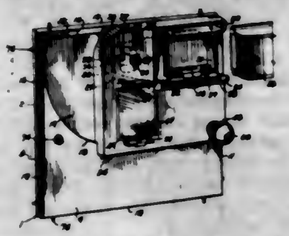


1. A single-lens reflex camera having a shutter, a shutter release button, a mirror, a light-shielding plate and a film-winding mechanism, said camera comprising a setting member supported for reciprocatory movement, an operating member supported for movement between first and second positions, means providing connection between the setting member and the operating member to cause the latter to be moved between the first and second positions thereof during a selected portion of the forward and backward strokes of said reciprocatory movement of said setting member, means connecting said mirror and light-shielding plate with said operating member to cause movement of the mirror and the light-shielding plate in accordance with movement of said operating member, and a safety device for the film-winding mechanism of the camera including a pair of operatively interconnected pivotal levers biased to rotate in opposite directions, cam means mounted on said winding mechanism, one of said pivotal levers being arranged to engage with said cam means and the shutter release button, and a member adapted to operate subsequently to the operation of the mirror and the light-shielding plate with the shutter operated and engageable with the other of the pivotal levers.

3,165,993
AUXILIARY BACK FOR ADAPTING STUDIO CAMERAS FOR USE OF SMALL FILM
Leo Stern, 1122 Grand Ave., Kansas City 6, Mo.
Filed Dec. 13, 1961, Ser. No. 159,134
7 Claims. (Cl. 95—48)

1. An auxiliary back for studio and like cameras to adapt such cameras to small film contained in a film holder, said auxiliary back including a support member for attachment to the back of the camera and having a picture opening substantially centrally thereof, and a

carrier member having pivotal connection with the support member at a point spaced from one side of the picture opening, said carrier member having a viewing opening and an opening seating the film holder thereover with said openings being each arranged symmetrically of a plane passing radially through the pivotal connection



and located substantially 90° apart and all of said openings being equally spaced from the pivotal connection whereby said viewing opening and the opening seating the film holder are alternately registrable with the picture opening upon oscillation of the carrier member about said pivotal connection.

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3,165,994
## SHUTTER CONTROL STRUCTURE FOR CAMERAS

Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany

Filed Mar. 9, 1960, Ser. No. 13,944
Claims priority, application Germany, Mar. 10, 1959, A 31,550
16 Claims. (Cl. 95—63)

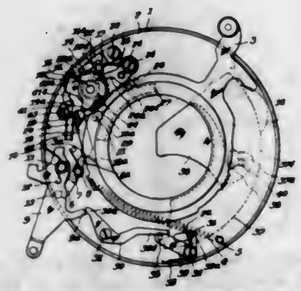


1. In a camera having a between-the-lens shutter, in combination, support means; a shutter ring supported by said support means for oscillatory movement about the optical axis to open and close the shutter; rotary shutter drive means supported for rotation by said support means, said drive means being located adjacent and operatively connected to said shutter ring to oscillate the latter during rotary movement of said drive means; spring means cooperating with said rotary shutter drive means for driving the latter in only one direction; rotary tensioning means coaxial with said drive means and cooperating with said spring means for tensioning the latter; and a combined blocking and release arrangement including blocking and release means cooperating with said rotary shutter drive means on the one hand and said rotary tensioning means on the other hand in such a manner that a release means releases operation of said rotary shutter drive means when a blocking means blocks operation of said rotary tensioning means, and vice-versa, that a release means releases operation of said rotary tensioning means when a blocking means blocks operation of said rotary shutter drive means.

3,165,995
## LENS SHUTTER

Naoyuki Ohara, Soshigaya, Setagaya-ku, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hattori Tokeiten (also known as K. Hattori & Co. Ltd.), Tokyo, Japan

Filed July 31, 1961, Ser. No. 128,242
Claims priority, application Japan, Aug. 3, 1960, 33,486/60
1 Claim. (Cl. 95—63)



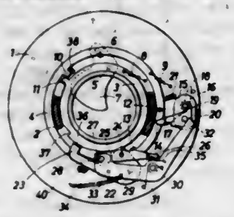
A lens shutter for photographic cameras which comprises, in combination, a set of shutter blades for effecting ordinary exposure operation by opening and closing said shutter blades, a main spring constituting a power source for said exposure operation, a setting ring provided at its outer periphery with teeth and arranged so as to be rotated around the optical axis to charge said main spring, a latching pawl for holding said setting ring at its set position, a shutter release lever having an arm and being adapted to disengage said latching pawl, a master member including said main spring to operate said shutter blades for exposure, thus carrying out exposure operation, a set of screening blades consisting of five blades installed independently of and separately from said shutter blades and used for the purpose of shutting off the light rays tending to infiltrate through the shutter blades even when the shutter is closed, a ring-shaped flat control member for controlling said screening blades, said control member having a notch at its outer periphery and five recesses of T-form spaced uniformly about said control member, said ring-shaped flat control member having an additional function as a partition wall between the space for the movement of the shutter blades and the space for the movement of said screening blades, a stud embedded in each of said screening blades adapted to operate said screening blades, each said stud engaging in one of the T-form recesses of said control member, a second pawl adapted to engage with said notch in the periphery of said control member to maintain said screening blades in their fully opened positions, said master member releasing said second pawl upon the completion of the exposure operation by said master member, said shutter release lever both releasing the latching pawl of said setting ring and operating said screening blades, an intermediate member engaged by said release lever adapted to rotate said control member to open said screening blades at the initiation of the release of the latching pawl and then to complete the release of said shutter after said control member has been latched in position with the screening blades open, an arm on said intermediate member adapted to coact with the arm of said release lever so that when said release lever moves further after said screening blades have been opened said screening blades do not open further, and a spring acting in a direction to close said screening blades and tending to return said intermediate member to its initial position.



3,165,996
## COMBINED SHUTTER AND DIAPHRAGM ASSEMBLY FOR CAMERAS

Gerd Kiper, Unterhaching, near Munich, and Rudolf Kremp, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany

Filed Sept. 29, 1960, Ser. No. 59,270
Claims priority, application Germany, Oct. 3, 1959, A 32,984
15 Claims. (Cl. 95—64)



8. In a camera, in combination, a blade assembly located substantially in a plane normal to the optical axis of the camera; blade moving means movable between open and closed positions and cooperating with said blade assembly for moving the latter from a closed position preventing an exposure to an open position providing an exposure and then back to said closed position, during in the open position of said blade moving means a closed position to said open position thereof and then back to said closed position thereof, respectively; adjustable lever means cooperating with said blade moving means for controlling the extent to which said blade moving means moves said blade assembly from said closed position thereof so as to determine the aperture provided by said blade assembly, said adjustable lever means having in the open position of said blade moving means a position temporarily holding said blade moving means at said open position thereof; and spring means of a predetermined force operatively connected to one of said means for urging said blade moving means to said closed position thereof and said adjustable lever means from said position temporarily holding said blade moving means in said open position thereof, said spring means expending a relatively large proportion of said predetermined force thereof in moving said blade moving means and said blade assembly when a relatively large aperture is provided by said blade assembly so that the remaining force of said spring means is relatively small and thus the blade moving means and lever means move at a relatively slow rate to provide a relatively long exposure time while a relatively small portion of said predetermined force of said spring means is expended in moving said blade moving means and said blade assembly when said blade assembly provides a relatively small aperture so that a relatively large proportion of said predetermined force of said spring means remains for moving said blade moving means and lever means quickly to provide a relatively short exposure time, whereby exposure times which vary directly with the size of the aperture are automatically provided and a retarding mechanism is rendered superfluous, while said blade assembly performs the functions of a diaphragm and shutter.

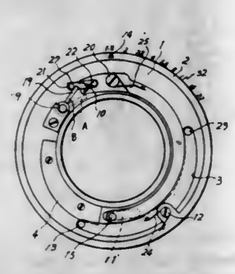
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3,165,997
## DIAPHRAGM DEVICE FOR SINGLE LENS REFLEX CAMERA

Shigeaki Sugano, Sumiyoshi-ku, Osaka, and Osamu Tanizaki, Sakai, Japan, assignors to Minolta Camera Kabushiki Kaisha, a corporation of Japan

Filed Aug. 18, 1961, Ser. No. 132,395
Claims priority, application Japan, Aug. 30, 1960, 35/36,581/60
4 Claims. (Cl. 95—64)

1. In a diaphragm device for a single lens reflex camera, the combination comprising an objective lens frame, a diaphragm controlling ring rotatably mounted around the outer periphery of said lens frame, a cam plate secured to said lens frame, a diaphragm controlling lever pivotally attached to said ring and having one end engaging said cam plate, a diaphragm actuating ring, diaphragm blade means carried by said actuating ring, a diaphragm actuating lever having one end operatively connected to said actuating ring and an opposite end pivotally attached to said lens frame, said actuating lever having an arcuate shape and being engaged by the opposite end of said dia-



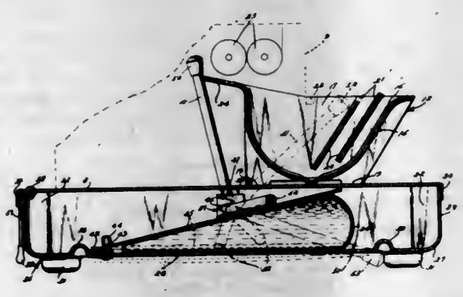
phragm controlling lever, an interlocking lever having two positions and being operatively connected to said diaphragm actuating lever, and shutter means operatively connected to said interlocking lever whereby said diaphragm blade means is moved to an open state when said interlocking lever is moved to one of its positions as said shutter means is charged and said diaphragm blade means is automatically moved to a preset opening as said interlocking lever is moved to its other position prior to release of said shutter means.

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3,165,998
## PHOTOCOPY MACHINE WITH DEVELOPER SOLUTION STORAGE AND SUPPLY MEANS

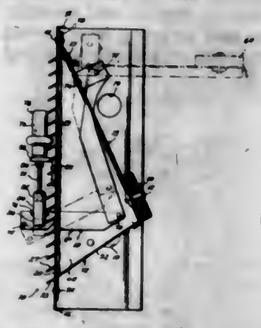
Kenneth R. Reick, Downers Grove, Ill. (146 Home Ave., Villa Park, Ill.)

Filed June 1, 1962, Ser. No. 199,353
9 Claims. (Cl. 95—89)



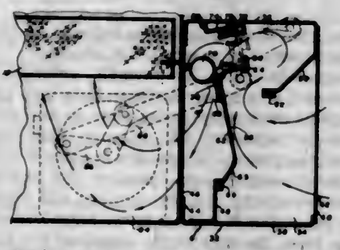
1. In a photocopy machine including a developer solution tray mounted at a substantial elevation,
an expansible and contractable solution container mounted at a lower elevation than said tray,
a pivotally mounted pressure plate on said container,
means for actuating said pressure plate including a crank arm manually operable to actuate said pressure plate to contract said container for supplying solution to said tray and for releasing said pressure plate for expansion of said container for return of the solution from the tray to the container for storage and means for releasably retaining the crank arm in position to maintain pressure on said plate to maintain the container contracted.

3,165,999
**VENTILATING GRILLE AND TEMPERATURE RESPONSIVE DAMPER ACTUATING MEANS**
Frank P. Noll, Lindenwold, N.J.
(132 Chews Landing Road, Clementon, N.J.)
Filed July 11, 1961, Ser. No. 123,232
5 Claims. (Cl. 98—37)



1. A ventilating device for a building-wall opening comprising an openwork grille plate adapted to extend across a building-wall opening, a lower housing wall extending upwardly and inwardly from a lower region of said grille plate, laterally spaced side walls extending inwardly from said grille plate to said lower housing wall, a closure extending from an upper region of said grille plate downwardly and inwardly into closing relation with said side and lower housing wall to close fluid communication through said grille plate, hinge means mounting said closure on said grille plate for upward swinging to open said fluid communication, an extension on said lower housing wall extending forwardly and downwardly through and beyond said grille plate for gravitationally conducting liquid exteriorly of said grille plate, said grille plate having a through hole formed in its lower region, a generally horizontal lever extending through said hole having its ends on opposite sides of said grille plate and rockably mounted on the lower edge of said hole for up-and-down movement of its ends, inwardly extending bracket means carried by the upper region of said closure, and a generally upstanding link having its lower end pivoted to the inner end of said lever and its upper end pivoted to the free end of said bracket means, whereby upon upward movement of said inner lever end said upper link end swings generally upward and forward with the free end of said bracket means to decrease the torque arm applying swinging force to said closure.

3,166,000
**FLUID CONTROL DEVICE**
Frederick W. Taylor, Fairfax, Va., assignor to The Trane Company, La Crosse, Wis.
Filed Feb. 6, 1963, Ser. No. 256,559
5 Claims. (Cl. 98—39)



2. A ventilating device for supplying outside air to an enclosure comprising: a fan for moving outside air to said enclosure, an electric motor for driving said fan; means for energizing said electric motor; an air passageway for providing fluid communication between the inlet of said fan and an outside source of air; means bisecting said air passageway into a first and second air passage; a first damper means for adjustably restricting and closing said first air passage; a second damper means for closing said second air passage; means for biasing said first damper means toward an open position; means for biasing said first damper means toward a closed position in response to a fluid pressure differential across said first air passage; means for actuating said second damper means to the open position when said electric motor is energized and to the closed position when said motor is not energized; means for closing said first damper means in response to the closure of said second damper means; and means for permitting relative movement of said several damper means when said second damper means is in a substantially open position.

3,166,001
**AIR DISTRIBUTION UNIT**
Ernest Hjalmar Person, New Britain, and William J. Walsh, Newington, Conn., assignors to Allied Thermal Corporation, New Britain, Conn., a corporation of Connecticut
Filed Mar. 29, 1962, Ser. No. 183,526
11 Claims. (Cl. 98—40)



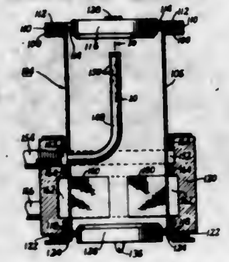
1. An air distribution unit adapted to be mounted in an air supply duct comprising, a tubular casing of rectangular shape having an upstanding collar forming an air inlet at one end thereof and outwardly tapered side walls forming an air outlet at the other end thereof of greater area than said inlet, a perforated plate covering said outlet end, and air deflecting means within said casing including, a support member positioned between the inlet and outlet ends, relatively narrow elongated support means attached to said support member and extending outwardly therefrom toward the corners of said casing formed by the mating ends of said tapered side walls and secured thereto, a plurality of inner directional vanes adjacent said support member, a plurality of outer directional vanes adjacent the outer sides of said inner directional vanes, and supported by said support means, and hinge means pivotally mounting said inner and outer directional vanes along the inner edges thereof for movement outwardly toward said perforated plate, the area of said perforated plate which is covered by the combined areas of said support member and said vanes in all positions thereof being greater than the area of said inlet.

3,166,002
**HOT BEVERAGE PROCESSING MACHINE**
William Danziger, Malverne, Charles D. Rush, Stony Brook, and Joseph Gold, Old Bethpage, N.Y., assignors to Continental Vending Machine Corp., Westbury, N.Y., a corporation of New York
Original application Dec. 2, 1957, Ser. No. 700,005, now Patent No. 3,045,870, dated July 24, 1962. Divided and this application July 2, 1962, Ser. No. 206,706
4 Claims. (Cl. 99—289)

2. In a coffee dispensing machine, apparatus for brewing the coffee comprising, in combination, a cylindrical tube open at both ends to permit the passage of coffee components into and out of said tube, first and second circular closure plates insertable into said tube ends, the diameters of said plates being slightly smaller than the inner diameter of said tube, means external of said tube

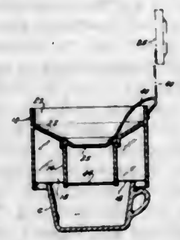


for shifting said closure plates into said tube ends with the planes of said plates perpendicular to the tube axis, and first and second washers of flexible material positioned at the ends of said tube and coaxially therewith, the inner



diameters of said washers being slightly smaller than the diameters of said closure plates whereby the insertion of said plates into the ends of said tube deforms said washers towards the interior of said tube to provide liquid-tight seals.

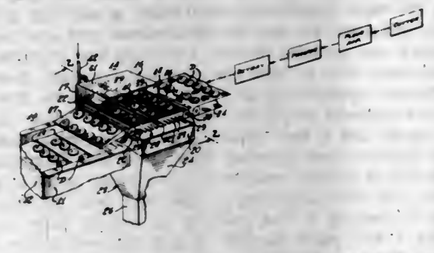
3,166,003
**DRIP TYPE COFFEE MAKER**
Harold Merson, East Meadows, N.Y., assignor to RMS Electronics, Inc., New York, N.Y., a corporation of New York
Filed June 22, 1961, Ser. No. 118,957
2 Claims. (Cl. 99—306)



1. A drip grind coffee maker comprising inner and outer spaced concentric shells integrally connected with a plurality of angularly spaced ribs extending across the spacing between said shells, the upper edge of said outer shell extending above the upper edge of said inner shell, a bottom wall extending between the upper edge of said inner shell and said outer shell above said ribs to form a water-receiving pocket above said bottom wall, said ribs at their lower edges being exposed for engagement with the rim of a cup to support said device thereon, the lower edges of said shells terminating at approximately the lower edges of said ribs so that they are at the rim of said cup when said device is resting thereon, including means at the lower end of said inner shell for retaining a charge of coffee grounds therein and means at the upper end of said inner shell for effecting restricted flow of water from said pocket into said grounds.

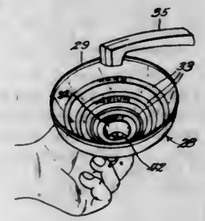
3,166,004
**FLOUR REMOVAL**
Edward W. Fries, Baltimore, Md., assignor to DCA Food Industries Inc., New York, N.Y., a corporation of New York
Filed Dec. 28, 1960, Ser. No. 78,979
7 Claims. (Cl. 99—352)

1. An improved cooking apparatus of the character described, comprising a receptacle containing a liquid cooking medium, a cabinet trailing said receptacle and having oppositely disposed entrance and exit openings formed therein, said exit opening being directed toward said receptacle, an endless belt conveyor disposed in said cabinet and extending between said exit and entrance openings and having an upper run advancing from said entrance opening to said exit opening and to a discharge



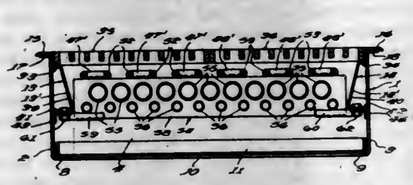
end of said conveyor, and means to direct high velocity air along said upper run of said conveyor, and air suction means connected to said cabinet.

3,166,005
**AUTOMATIC EGG COOKER**
Ivar Jepson, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Apr. 14, 1950, Ser. No. 155,977, now Patent No. 2,761,375, dated Sept. 14, 1956. Divided and this application July 17, 1956, Ser. No. 598,363
3 Claims. (Cl. 99—440)



3. A cover for an egg cooking device of the type in which the cooking interval is varied by placing varied quantities of water in said device, said cover being cup-shaped and forming a closure for a cooking chamber, circumferential ridges on the walls of said cover for indicating quantities of water to be placed in said chamber, an egg piercing needle mounted on the inside of the bottom of said cup-shaped cover, an annular shoulder on said cover adjacent the end of said needle limiting the entrance of said needle into an egg, said portion of said cover between said annular shoulder and mounting of said needle defining a receptacle for measuring small quantities of water, said receptacle completely enclosing said needle.

3,166,006
**ELECTRIC BROILER**
Thomas H. Lennox, 1947 Via Santiago, Corona, Calif.
Filed Oct. 29, 1962, Ser. No. 233,544
2 Claims. (Cl. 99—446)

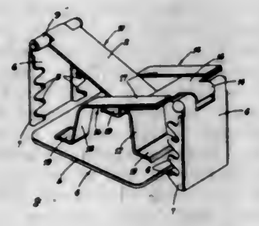


1. In an electrical broiler, a hollow rectangular body open at the top and bottom and including front, back

and side wall portions, a hollow rectangular frame structure disposed within said body and supported by engagement with the upper edge of said body; said frame structure including wall portions disposed within and spaced from the wall portions of said body, a cooking grid means supported by said frame structure and covering the entire area bounded thereby, a cooking heat supplying means comprising at least one electrical resistance heating element supported by said body and said frame structure and disposed in parallel spaced relation below said grid means, and a heat reflecting means carried by said frame structure and disposed below said heat supplying means and in parallel relation to a horizontal plane containing said heat supplying means; said heat reflecting means comprising a first plurality of parallel tubes occupying a first plane parallel to and disposed below a horizontal plane containing said heat supplying means, a second plurality of tubes extending parallel to each other and to the tubes of said first plurality and disposed in a plane below and parallel to the plane containing said first plurality of tubes, and means holding the tubes of both of said pluralities in the said parallel, spaced relation; certain ones of said second plurality of tubes being disposed one each beneath each of the spaces defined by adjacent ones of said first plurality of tubes; said heat reflecting means comprising a plurality of laterally and vertically spaced, parallel, horizontal elements constituting a substantially uninterrupted heat reflecting area substantially equal to the area of said cooking grid means; the spaces between said parallel elements affording tortuous passages through which drippings may escape.

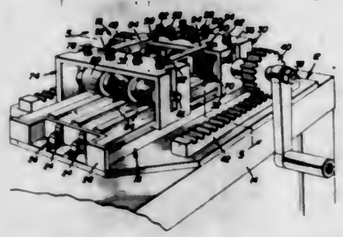
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**3,166,007**
**FOOD MOLD COVER UNIT**
**Richard A. Hawley, San Leandro, and Harold B. Hanson, Oakland, Calif., assignors to Meat Packers Equipment Co., Oakland, Calif., a California corporation**
**Filed Nov. 12, 1963, Ser. No. 322,885**
**2 Claims. (Cl. 100—219)**



1. A cover unit for the initially open end of a meat loaf mold comprising a pressure plate adapted to slidably fit in the open end of the mold, catch members disposed beyond opposite sides of the pressure plate and adapted for releasable connection with the mold, and springs between the catch members and pressure plate above the latter and functioning independently of each other to be placed under load and together to cause inward pressure on said plate to be exerted when the catch members are connected with the mold; said springs being leaf springs attached at their upper ends to the catch members and extending thence crosswise of the pressure plate in side-by-side opposed relation and sloping from the catch members toward the pressure plate in intersecting relation intermediate their ends; said springs including substantially vertical legs depending from their lower ends to the pressure plate, and flat feet projecting away from each other on the lower ends of the legs and secured on said pressure plate.

**3,166,008**
**APPARATUS FOR IMPRESSING TYPE FACE**
**Anton N. Lewandoski, 1706 St. Clair River Drive, Algonac, Mich.**
**Filed July 26, 1962, Ser. No. 212,578**
**5 Claims. (Cl. 101—6)**



1. An apparatus for impressing the transverse base of type slugs with a predetermined design, said apparatus comprising an elongated base adapted to be secured to a supporting surface, said base including a bed plate extending longitudinally thereof and having a plurality of upwardly opening and longitudinally extending slots formed therein adapted to receive an elongated type slug with the transfer face thereof disposed uppermost and above the portions of the bed plate defining the upper extremities of said slots, said bed plate including a pair of longitudinally extending opposite sides and means defining a pair of longitudinal slots therein opening outwardly away from said bed plate, said sides, above said slots, being parallel and planar, a generally inverted U-shaped carriage including a pair of depending plate-like legs interconnected at their upper ends by means of a plate-like bight portion extending transversely of said bed plate and disposed a spaced distance above the first-mentioned slots, the lower ends of said legs including inwardly directed flanges snugly and slidably received in the opposite side slots, the lower ends of said legs, immediately adjacent said flanges, slidingly engaging said sides above said opposite side slots, each of said legs defining an upstanding slot disposed above the corresponding flange, a support shaft, the opposite ends of said support shaft being snugly, slidably and rotatably received in the last-mentioned slots, a plurality of embossing rollers journaled on said shaft and spaced longitudinally of the latter in registry with certain of the first-mentioned slots, individual journal means on said shaft between each pair of adjacent rollers and disposed between said bed plate and said bight portion, means mounting each of said journal means from said bight portion for individual positive adjustment toward said bed plate, journal means on said shaft between each of said legs and the adjacent roller, and individual adjustment means connected between said bight portion and said last-mentioned journal means operable to adjustably vary the maximum spacing between said bed plate and said last-mentioned journal means.

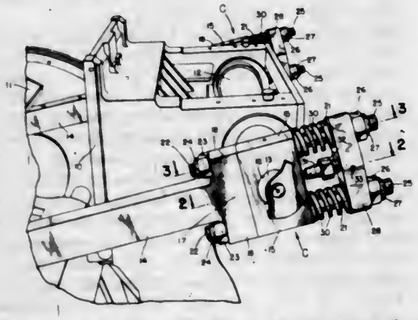
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**3,166,009**
**SQUEEZE IMPACT PRESS FOR LEAF STAMPING, EMBOSSING AND THE LIKE**
**Henry A. Brandtjen, Jr., 589 Montcalm Place, St. Paul, Minn.**
**Filed Dec. 26, 1962, Ser. No. 247,124**
**7 Claims. (Cl. 101—10)**

1. A press having a platen and a bed with a pivot stud thereon, the bed being movable toward and back from the platen, the platen being adapted to support stock to be worked, the bed being adapted to support a working medium for impressional engagement with stock on the platen, a reciprocating drive arm for moving the bed, said arm being driven from one end thereof and having a work throw wherein it is adapted to move the bed toward the platen and in the final stage of said throw



to effect impressional engagement between the working element on the bed and the stock on the platen, said arm having a return throw wherein the working element on the bed is retracted from the stock on the platen; in combination with a connection pivotally connecting the other end of the arm of the press with the bed, said connection including a bearing block journalled on the pivot stud of the bed and normally abutted by said other end of the arm of the press, a pair of parallel tie rods issuing from said arm, said rods being slidably guided by said bearing block and extending therebeyond, a head block slidably mounted on said rods, each rod having a helical spring encircling the same and compressed between the bearing block and head block, a spring tensioning nut threaded on each of said rods and bearing against the head block in opposition to its respective spring, said springs being adapted upon initiation of



impressional engagement between the working element on the bed of the press and the stock on the platen to yield during a period of such engagement, an adjustable stop screw threaded at one end into said head block for longitudinal adjustment, said stop screw being positioned for abutment at its free end against the bearing block, said stop screw being adapted upon abutment with the bearing block, in the different adjustments of said screw, variably to limit the compression of said springs and thereby variably limit the length of the period of yielding impressional engagement between working element and stock following the same with a solid bottoming out of the impression, said tie rods being oppositely equally spaced from a plane containing the axis of the pivot stud on the bed of the press and the longitudinal axis of the reciprocating arm, said stop screw, being in axial coincidence with said plane and with a plane common to the axes of said tie rods.

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**3,166,010**
**RETURN SPRING BUMPER FOR PRINT HAMMERS**
**Joseph Fradkin, Plainview, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York**
**Filed May 3, 1962, Ser. No. 192,251**
**3 Claims. (Cl. 101—93)**

1. In a high speed printer apparatus including print hammers adapted to be actuated at rapid rates to effect a printing operation, each hammer comprising,

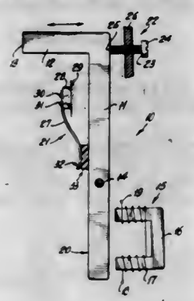
a main body portion adapted to be pivoted about a predetermined axis intermediate of its ends,

one end of the body portion having a hammer head with a surface adapted to strike a print type,

electromagnetic means positioned adjacent the hammer body portion on the opposite side of the pivot means from the hammer head and including energization means whereby the hammer may be pivoted in a predetermined manner upon the excitation of the electromagnetic means,

a hammer stop positioned adjacent the hammer head to limit the retracted, non-printing position of the hammer head when the electromagnetic means is de-energized,

a leaf spring having one end fixedly attached to a reference surface and the opposite end disposed in

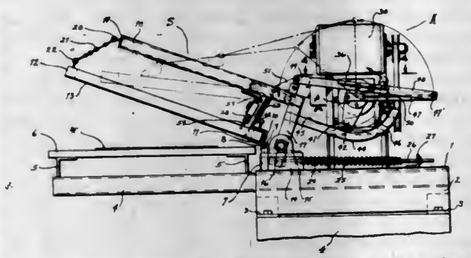


an arcuate manner in the direction of the body portion of the hammer, and

a resilient pad fixedly attached to the hammer body portion on one surface and having the opposite surface in abutting relation to the opposite end of the leaf spring and in sliding relation therewith.

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**3,166,011**
**SCREEN PRINTING MACHINE WITH OSCILLATING STENCIL FRAME**
**Eugene Landesman, 516 East Drive, University City, Mo.**
**Filed Oct. 15, 1962, Ser. No. 230,321**
**5 Claims. (Cl. 101—123)**



1. A screen printing machine comprising a base having a fixed work-receiving table, a screen-bearing frame disposed above said table, means for pivotally mounting said screen-bearing frame in its rearward portion for swingable movement between lowered, operative position and elevated inoperative position, a squeegee-support frame disposed above said screen-bearing frame, support arms integral with the rearward end of said squeegee-support frame and extending perpendicularly downwardly therefrom, means pivotally mounting said support arms for swingable movement of said squeegee-support frame between elevated and lowered positions, means connecting said screen-bearing frame and said squeegee-support frame for joint swingable movement, a squeegee carrier mounted on said squeegee frame for reciprocal movement forwardly and rearwardly therealong, a prime mover mounted on said base rearwardly of said squeegee-support frame, a crank operatively engaged to, and driven by, said prime mover, and having an axis of rotation parallel to the pivot axis of said squeegee-support frame, said axis of rotation of said crank being aligned with or above the path of rearward movement of said squeegee carrier, a cam follower carried on said crank, a cam mounted on one of said support arms and projecting perpendicularly rearwardly therefrom, said cam having an upwardly

curved end portion extending beyond the axis of rotation of said crank, said cam being disposed for engagement by said cam follower for effecting reciprocal raising and lowering of said squeegee-support frame together with said screen-bearing frame, means biasing said squeegee-support frame in downwardly swung position, and means driven by said crank for effecting reciprocal travel of said squeegee carrier.

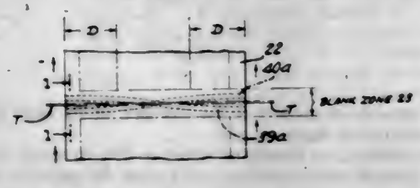
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3,166,012

## COACTING CYLINDERS HAVING SKEWED GAPS TO MAINTAIN BALANCED PRESSURE CONTACT

George Hantscho, Tuckahoe, N.Y., assignor to George Hantscho Company, Inc., a corporation of New York

Filed Aug. 22, 1962, Ser. No. 218,587
1 Claim. (Cl. 101—220)




In an offset web printing press, in combination, a blanket transfer cylinder including blanket-securing means establishing a transverse gap joint in the peripheral blanket surface of said cylinder, a second blanket transfer cylinder disposed in tangential parallelism with said first cylinder and establishing mutually therewith a contact zone of compressive gripping pressure on a web passing between said cylinders, and blanket-securing means establishing a transverse gap joint disposed in the peripheral blanket surface of said second cylinder and orientated to move through said contact zone conjunctively with said first gap joint, said transverse gap joints being peripherally skewed with respect to the axes of their respective cylinders at predetermined operationally opposite directional angles, said skewed gap joints move through said contact zone in crisscross relationship producing mutual pressure areas extending inwardly from opposite sides of the web and which areas increase as the central contact area decreases until the gaps are in centered crisscross relationship in the contact zone whereupon said central contact area increases as the side pressure areas decrease thereby effecting a balanced gripping pressure on said web as the gaps move through the contact zone.

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3,166,013

## EXPANSIBLE CYLINDER FOR ROTARY PRINTING PRESS

Donald R. Wyllie, Cheektowaga, and Everett B. Kellogg, Grand Island, N.Y., assignors to Graphic Controls Corporation, Buffalo, N.Y., a corporation of New York

Filed Dec. 15, 1961, Ser. No. 159,578
12 Claims. (Cl. 101—378)



1. An expansible cylinder adapted for uniform radial expansion along its peripheral cylindrical surface and comprising:

a precision, solid, cylindrical metal body;

a pair of aligned axial shafts integral with said body at opposed ends thereof for rotatably mounting said body in a supporting structure;

a thin, cylindrical, tubular, essentially rigid, radially expansible elastic steel shell coaxial with and coextensive with said body and contiguous with the peripheral cylindrical surface thereof;

said shell being disposed about said body in intimate surface contact therewith to provide an interference fit between said body and said shell;

fluid-impervious annular welds adjacent opposed ends of said body and comprising sealing means between said body and said shell to provide high mechanical strength, fluid-tight, longitudinally spaced junctions therebetween;

fluid flow means in communication with the inner surface of said shell, said fluid flow means comprising channels on the peripheral surface of said body and extending along said peripheral surface between said longitudinally spaced junctions;

conduit means for supplying hydraulic fluid under pressure to said channels to force said fluid between said body and said shell to provide a continuous annular fluid film of uniform transverse thickness between adjacent cylindrical surfaces of said body and said shell, said film extending laterally between limits defined by said spaced fluid-tight junctions;

said elastic shell being responsive to fluid pressure applied between said body and said shell to expand radially, uniformly along the length thereof between said limits in response to fluid pressure exerted between said body and said shell, said elastic shell being responsive to release of fluid pressure from between said body and said shell to contract radially to become contiguous with said body.

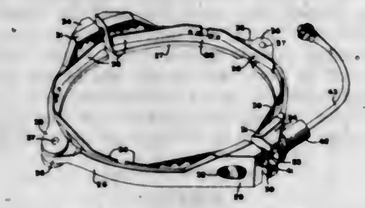
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3,166,014

## SEPARATION MECHANISM

Elmer W. Travis, Clarksville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 27, 1960, Serial No. 78,792
3 Claims. (Cl. 102—49)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. The combination, in a missile, of bird section, a motor section cap and a clamp securing said bird section to said motor section clamp, said bird section having a tapered rear section formed with a sealing groove and a clamping groove, a sealing O-ring housed in the sealing groove, said clamping groove having a front annular wall substantially normal to the wall of the bird section and a beveled annular rear wall, said clamp having a beveled rim coacting with the beveled rear wall of the clamping groove when in clamping position, said motor section cap being formed with a central opening having a tapered wall to coact with the tapered rear section of the bird and with the sealing O-ring, said clamp engaging the inner wall of the cap and the beveled wall of the clamping groove to hold said bird section and said cap in sealing relationship, and explosive bolt means connected to each of adjacent ends of the clamp for securing the clamp in clamping position.

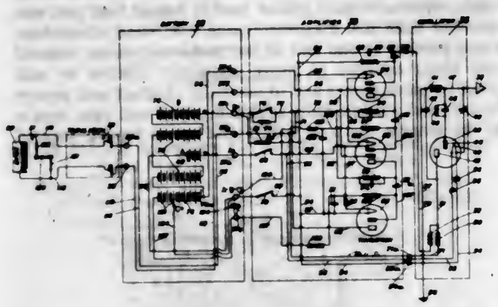


3,166,015

## RADIO FREQUENCY PROXIMITY FUZE

Merle A. Tuve, Chevy Chase, Md., and Richard B. Roberts, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

Filed Jan. 6, 1943, Ser. No. 471,388
10 Claims. (Cl. 102—70.2)



6. In a projectile containing an explosive charge, a proximity fuze comprising an oscillator having an antenna, an electrically operable detonator for exploding said charge, an amplifier tube through which the oscillator is coupled to the detonator and through which the detonator is operated in response to a change in the loading of the oscillator by reflection of magnetic waves emitted therefrom, and means for biasing the grid of said tube progressively less negatively during flight of the projectile.

7. In an explosive projectile, a proximity fuze comprising an antenna, an oscillator coupled to the antenna and normally loaded to non-oscillating condition and becoming operative upon a change in the radiation impedance of the antenna, and means coupled to the oscillator and operable thereby to explode the projectile.

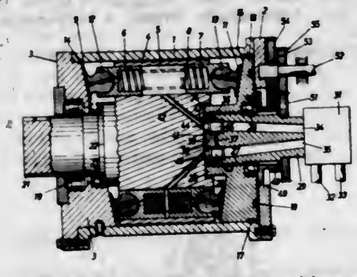
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3,166,016

## AXIAL PISTON PUMP OR MOTOR

Oswald Thoma, Charlton Kings, Gloucester, England, assignor to Unipat A.G., Glarus, Switzerland, a company of Switzerland

Filed Feb. 26, 1964, Ser. No. 347,429
Claims priority, application Germany, Mar. 1, 1963, U 9,622
6 Claims. (Cl. 103—37)



1. An axial piston apparatus comprising a stationary support structure having first and second annular end plates, a rotary cylinder block having a first and second end portion, means for rotationally mounting said block within said support structure, said block having a plurality of cylinder bores formed therein and extending in a generally axial direction, a pair of pistons in each of said cylinder bores, said first and second annular end plates having first and second cam means disposed thereon, each of which has a cam surface inclined to the block rotation axis, said pair of pistons in each of said bores being biased into sliding engagement with the cam surface of said first and second cam means, valve means for controlling fluid entry to and fluid delivery from each of said bores, means supporting said valve means so that the latter means extends through the central opening in said second annular end plate and said second cam means so as to abut the second end portion of said block, passage means in said block for connecting said valve means to said bores, and means engaging said second cam means and said valve means for angularly adjusting both of said latter mentioned means about the rotational axis of said block such that the angular adjustment of said valve means is half the angular adjustment of said second cam means for adjustment of the volumetric displacement of fluid per revolution of said block.

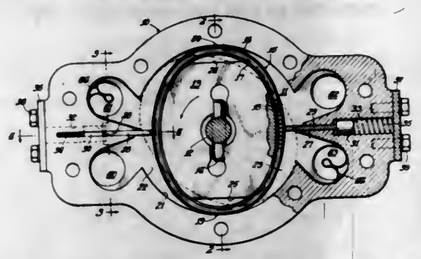
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3,166,017

## FLEX PUMP

Anthony C. Mamo, Des Plaines, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Dec. 26, 1962, Ser. No. 247,057
14 Claims. (Cl. 103—123)



1. A rotary pump comprising; a casing having a bore therein defining a cylindrical cavity provided with a peripheral wall and side walls; a multiple lobed rotor journaled in said casing coaxially within said cylindrical cavity; a bearing having an inner member and a nonelastic flexible outer member mounted over said multiple lobed rotor thereby providing multiple lobes on said bearing equal in number to the number of lobes on said multiple lobed rotor, said multiple lobes on said bearing extending radially to a degree such as to be in fluid sealing contact with said peripheral wall thus providing working areas in the area encompassed by said multiple lobes on said bearing, the adjacent portion of said inner periphery, the adjacent portion of the outer face of said outer nonelastic flexible member and the adjacent portions of said side walls, the said outer nonelastic flexible member being of a width to be in fluid sealing contact with said side walls, the said inner member being in rotatable engagement with said rotor which causes said outer nonelastic flexible member to flex as said inner member rotates with respect to said outer nonelastic flexible member rolling progressively on said peripheral wall with scant sliding thereon; a vane reciprocally mounted in said casing extending through said peripheral wall towards said outer nonelastic flexible member and in fluid sealing engagement therewith; a suction port in said peripheral wall on one side of said vane in fluid communication with said cylindrical cavity; and a pressure port in said peripheral wall on the opposite side of said vane in fluid communication with said cylindrical cavity.

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3,166,018

## FLUID PUMP BODY AND GEAR SET

Cresswell E. Stedman, Jr., 7840 SW. 21st St., Miami, Fla.

Filed Nov. 8, 1963, Ser. No. 322,489
4 Claims. (Cl. 103—126)

1. A fluid pump for supplying fluid under pressure to an automatic transmission system of the torque con-

verter type of the character described, said pump comprising, in combination

(*a*) a pump body member adapted to receive a gear set therein,

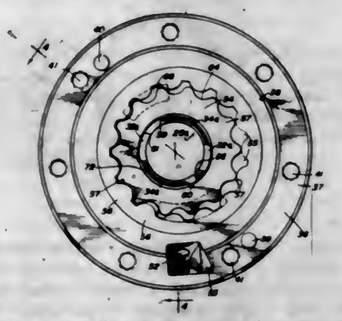
(*b*) a front cylindrical bore entering said pump body at the front thereof and having a first bore axis,

(*c*) a second, gear set-receiving cylindrical bore disposed in said pump body member communicating with said first bore, and opening to the rear of said pump body member and having a second bore axis,

(*d*) a pair of continuous-contact, non-concentrically arranged rotor gears disposable in said second cylindrical bore, said pair of gears comprising

(1) an inner rotor gear including a plurality of outwardly extending tooth-like projections and two inwardly extending driving lugs, said inner rotor gear being rotatable about a first center of rotation coincident with said first bore axis, and

(2) an outer rotor gear including a plurality of inwardly extending, tooth-like projections and a smooth outer portion, said plurality of inwardly extending projections being in number only one more than said plurality of outwardly extending projections on said inner rotor, said outer rotor



being rotatable about a second center of rotation coincident with said second bore axis while in meshing engagement with said first gear,

(*e*) a flat rear surface portion on said pump body member, said flat rear surface portion having disposed therein

(1) an oil return orifice,

(2) an upper locating dowel relatively remote from said orifice, and

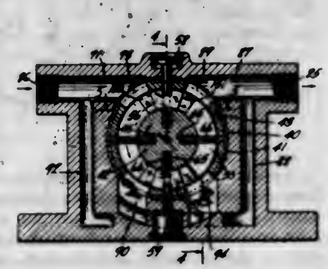
(3) a lower locating dowel relatively near said orifice,

said pair of rotor gears being constructed and arranged such that when said gears are operated in a meshing relationship, said second center of rotation is located a distance of substantially 0.092" from said first center of rotation, and said pump body member being constructed and arranged so that the center of said second bore is 0.092 inch from the center of said first bore and said second center is disposed on a line extending outwardly to the right from the center of said first bore in a direction which is 129½° of clockwise rotation about said first center from said upper locating dowel when said pump body member is viewed from the rear thereof.

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**3,166,019**
**ROTARY MOTION APPARATUS**
**Michael J. Krawacki, Englishtown, N.J., assignor to Trojan Corporation, Plainfield, N.J., a corporation of New Jersey**
**Filed May 15, 1959, Ser. No. 813,592**
**11 Claims. (Cl. 103—139)**

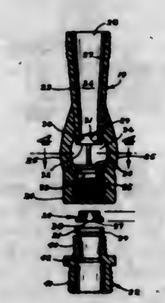
1. In rotary motion, aligned impulsion apparatus comprised of a pair of relatively rotatable members in the respective forms of a cylindrical drum and of a casing mounted adjacent to said drum and separated therefrom by a clearance space, one of said members having formed therein a continuous fluid-receiving groove extending thereinto from said space, reaction block means coupled in angularly fixed relation with the other of said members and seated in said groove, and vane means received within slot means formed in said one member to be in transverse relation to said groove and to extend into said one member from said clearance space, said vane means having a portion at one end of the transverse extent thereof and being adapted to move angularly relative to said reaction block means and to normally obstruct said groove by said end portion while so moving, and said vane means at the margin thereof nearest said space having formed



therein a transversely central notch and being additionally adapted to undergo reciprocating movement in said slot means to pass by said reaction block means in the course of said angular movement by containing said block means within said notch, the improvement in said apparatus in which the bottom of said slot means has formed therein a recess adjacent to the margin of said vane means nearest said slot means and at the same transverse position as said groove and said vane means has formed in said last named margin a recess at the same transverse position as said notch and has also formed therein a pair of aperture means extending through said vane means from, respectively, the margin of said vane means nearest said clearance space and the said notch to, respectively, said recesses to each provide a conduit or flow of fluid through said vane means.

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**3,166,020**
**VENTURI MIXER NOZZLE**
**Ernest E. Cook, Anoka, Minn., assignor to Hypro Engineering, Inc., Minneapolis, Minn., a corporation of Minnesota**
**Filed Sept. 20, 1961, Ser. No. 139,479**
**3 Claims. (Cl. 103—262)**



2. A venturi mixer assemblage comprising, a venturi pipe having a forward housing defining an axial open



ended expansion chamber therethrough, a rearward housing having an open ended orifice chamber in axial alignment with the axis of said expansion chamber and spaced rearwardly therefrom, said rearward housing having a shouldered seat at its forward opening, an orifice disc removably seated on said shouldered seat and aligned with both said orifice chamber and said expansion chamber a means threadedly engaging said orifice chamber for retaining said orifice disc in seated position, and circumferentially spaced bridging means for securing in fixed relation said forward housing to said rearward housing.

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**3,166,021**
**SKI-LIFT**
**Dirk Michiel Schippers, La Treille, Magagnosc, France**
**Filed May 18, 1962, Ser. No. 197,169**
**Claims priority, application France, May 23, 1961, 862,585, Patent 1,308,570; Feb. 20, 1962, 888,661, Patent 1,308,570**
**8 Claims. (Cl. 104—173)**

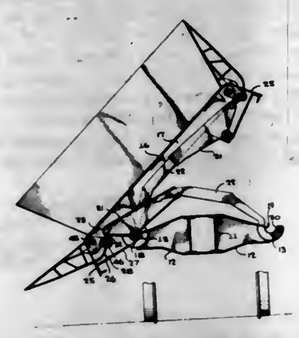


1. Ski-lift comprising: a chassis, slide members solid with said chassis whereby the latter can slide on the snow and the ground, a motor rigidly fixed on said chassis, a drive pulley rotatively mounted on said chassis, gear means operatively connected with said motor and said drive pulley, an end pulley spaced from said chassis, removable chassis anchoring means for anchoring said chassis in the snow or the ground, removable pulley anchoring means for anchoring said end pulley in the snow or the ground, an endless cable extending round said drive pulley and said end pulley, at least one friction-operated hooking device for detachably hooking a load at any point of said endless cable, and an automatic disconnecting device comprising a helical spring encompassing said cable and having one end bearing on a fixed part of said chassis and another end being directed upstream relative to the movement of said cable within said spring, for automatically disconnecting from said cable said hooking device when the latter, at the end of its travel, engages said free end of said spring.

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**3,166,022**
**SIDE DOOR CONSTRUCTION FOR DUMP VEHICLES**
**Henry Fort Flowers, 3023 Del Monte Drive, Houston, Tex.**
**Filed July 2, 1963, Ser. No. 292,227**
**6 Claims. (Cl. 105—261)**

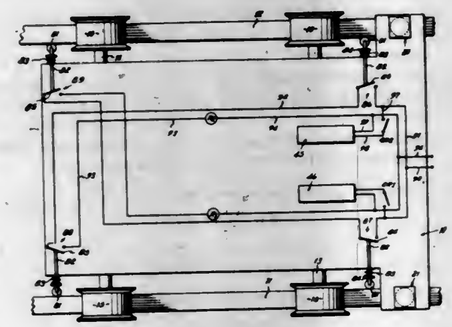
1. In a dump vehicle having an underframe, a body tiltably journaled on the underframe, said body having a bottom and ends, an apertured apron extending downwardly from each side of the bottom, side doors hinged to the body, means on the underframe for tilting each door, each door comprising an inner side, a top panel attached thereto, a brace connecting the lower edge of the panel to the side, a longitudinal box girder on the lower portion of the side, and outer brace plates attached to



the panel and to the midportion of the girder and having portions extending through the apertures of the apron.

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**3,166,023**
**CRANE ANTI-SKEW DEVICE**
**Samuel V. Lynd, Jr., Cincinnati, Ohio, assignor to The Tool Steel Gear and Pinion Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed June 4, 1963, Ser. No. 285,508**
**6 Claims. (Cl. 105—163)**



1. An anti-skew device for an overhead crane including a bridge having flanged wheels running upon horizontally spaced rails, said device comprising,

frictional braking means selectively engageable with each of said rails to slow the movement of one side relative to the other,

means for detecting transverse misalignment between said bridge and said rails,

and means responsive to transverse misalignment between said bridge and rails to apply said braking means to the rail on that side of the bridge which is longitudinally forward of the other side.

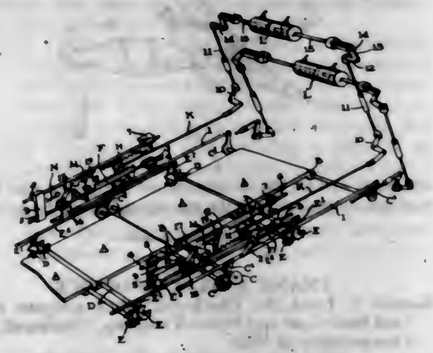
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**3,166,024**
**PNEUMATICALLY OPERATED CLOSURE FOR DROP-BOTTOM HOPPER CAR**
**Samuel C. Hamilton, Clifton, N.J., assignor to Magor Car Corporation, Clifton, N.J., a corporation of Delaware**
**Filed June 8, 1962, Ser. No. 201,097**
**5 Claims. (Cl. 105—240)**

1. A hopper type car having a plurality of bottom outlets,

(*a*) a pair of door sections of greater width than depth for each outlet and having free meeting edges,

(*b*) axially aligned hinge pins rigidly secured to each of said door sections and projecting from the edges of the sections opposite the free edges, said hinge pins journalled transversely of the car to suspend the door sections across the width of the outlets,
(*c*) door operating means for each hinge pin,
(*d*) a radial arm for said door operating means,
(*e*) keeper pins projecting outwardly from the bottom corner portions of the door sections,
(*f*) door keeper segments having radial slots for receiving the keeper pins and connected for simul-



taneous turning movement alternately from a horizontal position to a vertical position to release and hold said keeper pins,
(*g*) a radial arm on one of said door keeper segments,
(*h*) and combined reversible power and sequencing means connected with the said radial arms of the door operating means and the radial arms of the door keeper segments to first cause the free edges of the door sections to be released from closed position and then moved downwardly to open position, and thereafter returned to closed and locked position.

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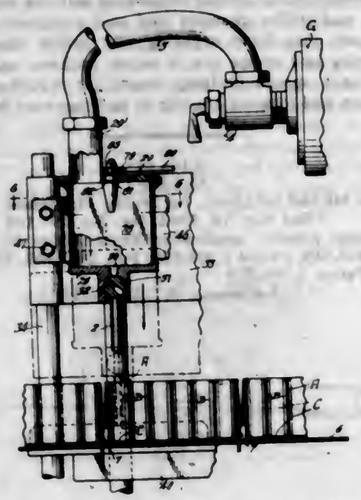
**ERRATUM**

For Class 105—261 see:
Patent No. 3,166,022

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**3,166,025**
**AUTOMATIC DEPOSITING MACHINE FOR ICE CREAM OR THE LIKE**
**Thomas H. J. Hulse, Scotch Plains, N.J., assignor, by mesne assignments, to The Quaker Oats Company, a corporation of New Jersey**
**Filed Dec. 5, 1961, Ser. No. 157,150**
**4 Claims. (Cl. 107—8)**

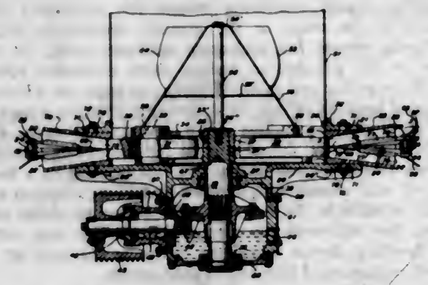
4. In a depositing machine for fluent substances, in combination with a frame and a support thereon for a mold having a cavity with side and bottom walls angularly related to each other, a filling head having an accumulating chamber therein that has an inlet at the upper end thereof and an outlet at the lower end thereof and a nozzle in register with said outlet, a valve between said chamber and said nozzle controlling the flow of a fluent substance from said outlet through said nozzle, means for continuously supplying a fluent substance to said accumulating chamber through said inlet under pressure and at the same time entrapping and compressing a quantity of air in said chamber above the fluent substance, means on said frame mounting and reciprocating said filling head vertically to move said nozzle into and out of said mold cavity, and means on said frame for successively holding said valve in closed position during the descent of said filling head nozzle into said cavity, opening the valve and holding it open while the nozzle is in and rising out of said mold cavity providing for expansion of said air in the chamber and forcing of the fluent substance into the angles between the walls of the mold cavity and closing the valve at a point below the top of the mold cavity during upward movement of the nozzle out of the mold cavity to relieve the pressure of the substance in the nozzle, said



means for reciprocating the filling head providing after closing of the valve movement of the filling head at a predetermined rate while the nozzle is in said cavity and thereafter momentary acceleration of the upward movement when the discharge end of the nozzle reaches a point close to the top of the mold cavity.

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**3,166,026**
**HARVESTING APPARATUS**
**Jack W. Crane, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware**
**Filed May 22, 1962, Ser. No. 196,780**
**14 Claims. (Cl. 107—14)**



1. A ring die pelleting machine comprising a ring die structure and coacting rolling means relatively revolvable about a common axis, said ring die structure comprising a pair of spaced apart ring frame side plates, an annular series of separable abutting die cell units intervened between said side plates, each of said die cell units being integrally formed and embodying a side wall portion, a plurality of end wall portions and a pair of intermediate wall portions, said end wall portions extending cantilever fashion from opposite sides of said side wall portion at each end of said side wall portion, said intermediate wall portions extending cantilever fashion from opposite sides of said side wall portion midway between said end wall portions, each of said cell units individually forming less than a complete die cell but coacting with each other



when abutted together in said annular series of units to define independently of said side plates a pair of annular series of radially extending die cells, each of which cells has one side defined by the side wall portion of one of said cell units, the other side defined by the side wall portion of an adjacent cell unit, one end defined by the abutting end wall portions of said one cell unit and said adjacent cell unit, and the other end defined by the abutting intermediate wall portions of said one cell unit and said adjacent cell unit.

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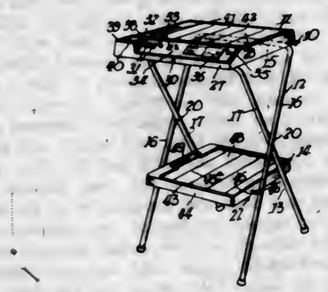
**3,166,027**
**DOUGH FORMING AND SIZING DEVICE**
**Adolph Sprenzel, 2745 N. Mason Ave., Chicago, Ill.**
**Filed Nov. 14, 1962, Ser. No. 237,644**
**2 Claims. (Cl. 107—46)**



1. In a device for sizing and shaping dough for making pies and the like, a form comprising an annular structure having a generally planar intermediate base portion and axially extending different diameter annular rims extending outwardly from opposite sides of the base portion and each providing a mold cavity and an outer cut-off and rolling pin guiding edge and each rim having a concave outer side and a dough supporting outer ring, and said base portion comprising finger holes therethrough, and shim means comprising at least one disc of elastomer material insertable into the mold cavities in covering relation to the holes and providing a dough working surface and a support for the rolled dough attendant to withdrawal from the device upon the operator prying the shim means out of the cavity through said finger holes.

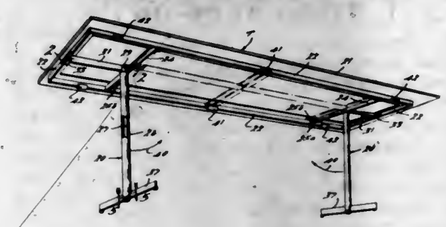
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**3,166,028**
**PROJECTION TABLE**
**Samuel J. Zagel, Chicago, Ill., assignor to Compco Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Dec. 10, 1962, Ser. No. 243,267**
**6 Claims. (Cl. 108—25)**



1. A projector table comprising a generally rectangular platform providing pairs of longer and shorter sides, first and second supports interconnected for nesting for storage, said first support being pivotally fixed to said platform adjacent one longer side thereof, means for releasably connecting said second support to said platform adjacent the other longer side to dispose said platform horizontally, and a reel can receiving-well formed in said platform adjacent and parallel to one of the shorter sides, said well having arcuate wall portions to define a cylindrical segment for supporting a reel can in upstanding position.

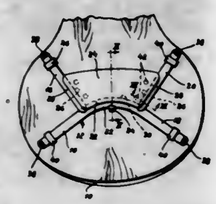
**3,166,029**
**FOLDING TABLE**
**Hugh C. Acton, 582 Brookside, Birmingham, Mich.**
**Filed July 25, 1962, Ser. No. 212,425**
**10 Claims. (Cl. 108—124)**



1. A folding table comprising a table top, a hinge mechanism connected to the underside of the table top at about the center thereof, a pedestal support for the table top having its upper end connected to said hinge mechanism, said pedestal support comprising a pair of concentrically arranged, relatively rotatable, tubes with the upper end of one of said tubes being fixedly connected to said hinge mechanism, a cross bar projecting radially from and fixedly connected to the upper end of the other of said tubes and arranged to rotate through a substantial angle of approximately ninety degrees beneath the table top, and a cross bar mounted on the lower end of said pedestal support, said table top being rotatable about said hinge mechanism from a substantially vertical position to a substantially horizontal position.

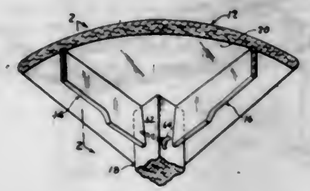
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**3,166,030**
**PIECE OF FURNITURE PROVIDED WITH AN ATTACHABLE AND DETACHABLE SUPPORTING STRUCTURE**
**Niels Peter Ludvigsen, Agerbaek, Denmark, assignor to Brdr. Ludvigsen A/S, Agerbaek, Denmark**
**Filed Jan. 31, 1963, Ser. No. 255,261**
**Claims priority, application Denmark, Jan. 31, 1962, 448**
**11 Claims. (Cl. 108—155)**



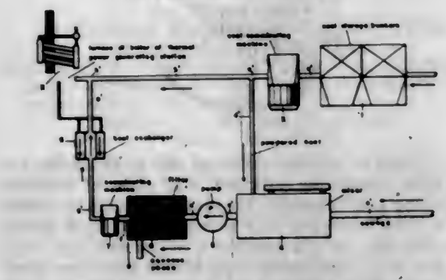
1. A piece of furniture provided with an attachable and detachable supporting structure, said piece of furniture comprising a substantially flat member having an underside, a block secured to said underside, said block having a first side face and a second side face opposite each other, said two side faces having longitudinal directions forming a block angle with each other thereby having a smallest distance at one end of said block, each said side face being provided with a groove leaving a flange projecting outwardly from said block at the lower side thereof, said supporting structure comprising a cross-member adapted to support said substantially flat member, and at least one leg secured to said cross-member, said cross-member comprising a first and a second rod having axes forming a rod angle with each other, said rod angle being equal to said block angle, said two rods being adapted to engage one of said two grooves each above said two flanges, and clamping members adapted to urge said cross-member towards said end of said block for retaining said two rods in engagement with said two grooves.

3,166,031
FURNITURE CONSTRUCTION
Olley C. Lauber, Archbold, Ohio, assignor to Lauber Manufacturing Company, Archbold, Ohio, a corporation of Ohio
Filed Dec. 28, 1962, Ser. No. 247,929
10 Claims. (Cl. 108—156)



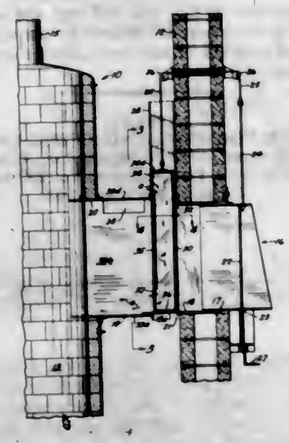
1. An article of furniture of the class described comprising a supporting member having a flat surface, said surface having a pair of shallow grooves lying at a predetermined angle with respect to one another, a pair of aprons affixed in said grooves, said aprons being of uniform thickness throughout their entire lengths, said aprons forming an apron angle which is equal to the angle between said grooves, said aprons also forming predetermined surface-apron angles, a leg having two leg grooves extending from an end thereof, said leg grooves extending toward the other end of said leg a distance substantially at least as great as the width of end portions of said aprons, said leg grooves being substantially as wide as said aprons are thick, the bottoms of said leg grooves being at least as close together as the ends of said aprons, said leg grooves forming a groove angle which is substantially equal to said apron angle, each of said leg grooves forming a surface-leg groove angle equal to the surface-apron angle of the respective apron, said end portions of said aprons being held in said grooves.

3,166,032
SEWAGE DISPOSAL BY COMBUSTION
Hugo Klesper, Michelbach, Nassau, Germany, assignor to Passavant-Werke, Michelbacher Hutte, Germany
Filed Apr. 9, 1962, Ser. No. 186,278
Claims priority, application Germany, Apr. 14, 1961, P 26,964
10 Claims. (Cl. 110—10)



1. A process of disposing of mud formed in sewage disposal systems and including organic matter in solid form, said process comprising in combination the steps of
(*a*) removing a large portion of the content of liquid from mud having a relatively large content of liquid by compacting said mud in the presence of powdered coal and through a mass of powdered coal thereby obtaining a semi-dried composite of powdered coal and mud;
(*b*) thereafter adding coal to said composite to obtain a readily combustible furnace fuel, and
(*c*) thereafter subjecting said fuel to combustion in a furnace of a thermal power generating station.

3,166,033
INCINERATOR
Bruce F. McLouth, Hopkins, Minn., assignor to Burn-Zol Inc., a corporation of Minnesota
Filed Apr. 25, 1961, Ser. No. 105,412
7 Claims. (Cl. 110—18)



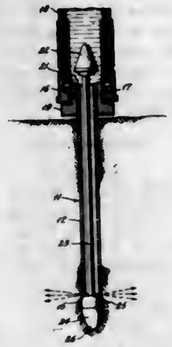
6. A feed throat for attachment to an incinerator sidewall at the feed opening therein, said feed throat having a substantially rectangular shape and including a pair of upright air-cooled sidewalls disposed opposite each other, each of said sidewalls having thickness and an open interior extending transversely of the thickness of the sidewall, said feed throat also including horizontal top and bottom walls opposite each other and affixed to said air-cooled sidewalls to cooperate therewith in defining a feed throat enclosure, the enclosure having an inner end to be disposed adjacent the incinerator sidewall and an outer end, an upright air-cooled fire door in obstructing relation with the outer end of the enclosure, means on said enclosure and mounting said door for movement out of obstructing relation with the outer end of the enclosure, said door having thickness and having an open interior extending transversely of the thickness of the door, said open interior of the door being unobstructed in a vertical direction to permit passage of air vertically therethrough for cooling the door, said air-cooled sidewalls and said fire door having air outlets communicating with said open interiors and with the enclosure, each of said outlets being disposed adjacent a respective one of said horizontal walls to direct air thereacross for cooling, said air-cooled sidewalls and fire door also having air inlets respectively disposed remotely in a vertical direction from said outlets and said air inlets of the air-cooled sidewalls and fire door respectively communicating between the open interior of said sidewalls and said door and the exterior of the enclosure whereby to supply combustion and cooling air to move vertically through said air-cooled sidewalls and fire door and horizontally across said top and bottom walls for cooling the entire feed throat and fire door.

3,166,034
SUB-IRRIGATING TOOL
Ole Haroldson, 5421 E. Dickenson Place, Denver, Colo., and George B. Haroldson, 824 59th St. NW., Seattle, Wash.
Filed Jan. 21, 1964, Ser. No. 339,279
1 Claim. (Cl. 111—7.3)

An irrigating tool for irrigating soil beneath the ground level comprising
an elongated tubular body having a fluid inlet end and a fluid outlet end,

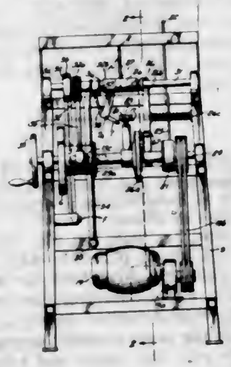


said outlet end being provided with a plurality of spaced radially extending notches formed in the bottom face thereof,
a valve seat at said inlet end,
normally closed valve means cooperating with said valve seat for automatically controlling the supply of fluid to said body,
a stem connected to said valve means extending through and projecting beyond said outlet end, said



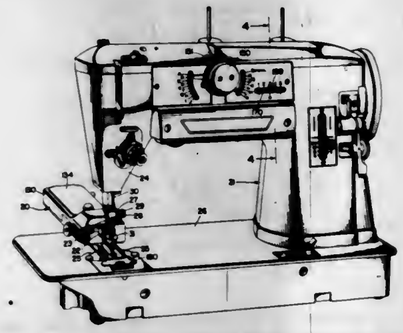
said valve means being movable to an open position when said tool is inserted into the soil,
and a pointed plug connected to the projecting end of said stem, said plug having a cylindrical upper portion with a flat top surface for engaging the bottom face of said outlet end and closing the same when said valve means is in an open position to thereby cause the fluid supplied to said body to be deflected and discharged laterally through said notches into the soil.

3,166,035
MACHINE FOR APPLYING SUSPENSION LOOPS FOR ARTICLES TO BE SUSPENDED
Hermann Wiegand, Am Anger 27, Rasdorf, Kreis Hunfeld, Germany
Filed Dec. 4, 1961, Ser. No. 157,323
Claims priority, application Germany, Dec. 6, 1960, W 28,741
9 Claims. (Cl. 112—2)



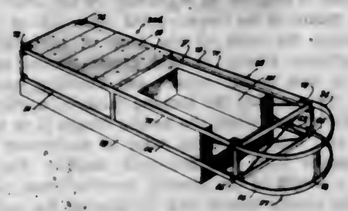
1. In a machine for inserting loops of looping material into articles, such as meat articles: frame means, table means supported by said frame means for receiving the article to be looped, needle means supported by said frame means on one side of the table and having the point end thereof free and being moveable in the direction of the point end thereof from a retracted position to an advanced position and being adapted when so moved for piercing an article on the table and for guiding looping material through the article, means for moving said table means and needle means relatively from a position wherein the table is spaced from said needle means for loading the table to a working position where the table is in the path of said needle means to position an article on the table in position to be pierced by the needle means, knotting means in the frame on the other side of the table for knotting the ends of the loop of material in the article, gripper means in said frame means moveable relative to said needle means and knotting means and operable for grasping the looping material at the end of said needle means when the needle means is in retracted position and being movable prior to movement of said needle means from the retracted position thereof for drawing a length of the looping material from the point end of the needle means and for placing the end of the looping material in said knotting means, means for moving said needle means when the table is in advanced position relative thereto to thereby cause said needle means to pierce an article on said table means and insert looping material therethrough, said needle means being moveable past said knotting means when piercing an article on said table and being operable to place the looping material in the knotting means thereby to form a loop extending through the article on the table and having ends in the knotting means, and means for actuating said knotting means to cut off said looping material and knot the ends of the loop together.

3,166,036
METHOD OF OPERATING A SEWING MACHINE WORK JOGGING ATTACHMENT
John P. Enos, Union, N.J., assignor to The Singer Company, a corporation of New Jersey
Original application Dec. 3, 1959, Ser. No. 857,224, now Patent No. 3,121,410, dated Feb. 18, 1964. Divided and this application Feb. 26, 1962, Ser. No. 175,621
1 Claim. (Cl. 112—266)



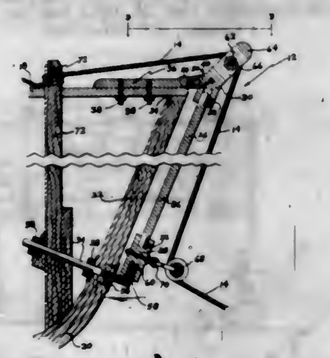
The method of manipulating a zigzag sewing machine having a bight control means for determining the extent of lateral jogging of the sewing needle and a neutral position control member accessible to the machine operator for adjusting the lateral position of the sewing needle in the zero position of said bight control means, and a work shifting attachment actuated by said sewing machine for imparting stitch-by-stitch movement to the work fabric in a predetermined closed path relatively to the sewing machine frame, comprising, operating the sewing machine with the work shifting attachment applied thereto and the sewing machine bight control means set at the zero position of adjustment, and simultaneously shifting the neutral position control member in one direction from one extreme position to the other in regular increments, one increment during each traverse of the predetermined closed path of the work fabric under the influence of said work shifting attachment.

3,166,037
FLOTATION AND STRUCTURAL UNITS AND BUILDING STRUCTURES
Roger H. Otis, P.O. Box 161, McAlester, Okla.
Filed June 20, 1962, Ser. No. 203,973
7 Claims. (Cl. 114—.5)



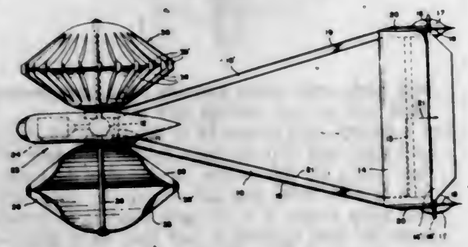
1. A floatable module including: a rigid frame embedded in an expanded plastic substance; said frame having upwardly facing support surfaces above said expanded plastic substance for holding support means above said expanded plastic substance, said expanded plastic substance extending below said frame whereby said module may float on the water with said frame disposed above the surface of the water.

3,166,038
APPARATUS FOR ANCHORING, MOORING, TOWING OR OTHERWISE SECURING OR ATTACHING A LINE TO A BOAT
Thomas P. Brittain, 6606 44th Ave., University Park, Hyattsville, Md., and Robert N. Reley, 414 Rocky Place, Alexandria, Va.
Filed Jan. 3, 1962, Ser. No. 164,069
2 Claims. (Cl. 114—230)



1. Apparatus for attaching a line to a boat hull at a location thereon which is substantially along the fore and aft center line thereof, said apparatus comprising
an elongate, bodily rigid, rod-like structure,
securing and adjusting means for removably and adjustably securing the rod-like structure in a generally upstanding position in a vertical plane substantially common with the fore and aft center line of the boat hull,
said securing and adjusting means comprising
lower rod-like and upper plate-like elements,
upper and lower bracket-like members adjustably mounted on the end portions of the rod-like structure,
said upper member having a recess for receiving a portion of the upper element,
said lower member having a socket for receiving a part of the lower element,
an anti-friction device carried by each end portion of the rod-like structure, and
a universal connection between the lower of said anti-friction devices and the securing means,
said adjustment means enabling the anti-friction devices to be positioned along the rod-like structure with the upper anti-friction device being disposed adjacent to and forward of the fore peak of such boat hull and extending beyond the deck of the boat hull with the lower anti-friction device being disposed adjacent the water line thereof,
whereby, a line may have an intermediate portion thereof pass about said anti-friction devices to enable one end portion of such line to be secured to the boat hull with the line being attached to the rod-like structure in a manner which enables a force created thereby to act substantially through the center of gravity of the boat hull.

3,166,039
WATER CRAFT
Ralph W. Weymouth, Box 160, Star Rte. 1, Grapeview, Wash.
Filed Feb. 28, 1963, Ser. No. 261,651
5 Claims. (Cl. 115—1)

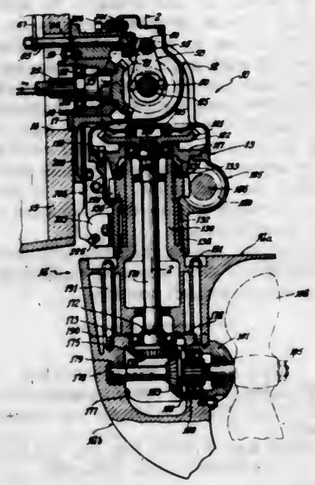


1. An amphibious craft of the character described comprising a horizontal frame structure including laterally spaced opposite side beams, a frame supporting shaft mounted by said side beams across the forward end portions thereof with its ends extended beyond the corresponding side beams, paired flotation and propelling wheel-like pontoons mounted for rotation on the opposite end portions of said cross-shaft, power means mounted by said frame with connections for rotatably driving said pontoons for craft propulsion, an elevator mounted across the trailing end portion of said frame structure and a pair of flotation and steering wheels mounted by said frame in transverse alignment at its trailing end and means for controlling said wheels for steering the direction of travel of the craft.

3,166,040
DRIVE UNIT FOR BOATS
Kenneth M. Armanstrout and Donald W. Kelbel, Muncie, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 21, 1960, Ser. No. 70,616
17 Claims. (Cl. 115—41)

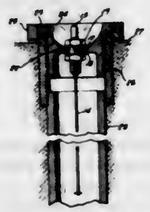
1. A marine outboard drive unit for a boat having an inboard engine and comprising the combination of a series of three interconnected casings, a first casing being mounted on the boat, a second casing being pivotally connected to said first casing and adapted to pivot about an axis through said first casing, said second and a third of said casings being rotatably interconnected, a gear train mounted in said casings for providing a forward and reverse drive, said gear train having a drive shaft in said first casing adapted to be driven by the engine and a propeller shaft in said third casing adapted to drive a propeller, said gear train including a forward and a reverse gear in meshing engagement with a drive gear on said drive shaft and rotatably mounted on a horizontal axis perpendicular to said drive shaft to provide for pivotal movement of said second casing with respect to said first casing about an axis perpendicular to the axis of said drive shaft means for selectively shifting said gear train between forward and reverse, inde-





pendently selectively operable means for pivotally positioning said second casing about said first casing for adjusting the depth of the propeller, means for maintaining said second casing in its selected position, and means for rotating said third casing relative to said second casing for steering the boat.

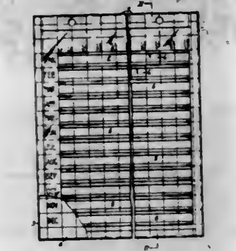
3,166,041
RETRACTABLE SIGNAL DEVICES
James Caggainello, Stamford, Conn., assignor to Cost Reductions, Inc., Stamford, Conn.
Filed June 16, 1961, Ser. No. 117,641
2 Claims. (Cl. 116—114)



1. A retractable signal device for locating the filler cap of an underground tank comprising in combination,
(*a*) a filler cap having a central depression,
(*b*) an externally threaded rigid tubular support extending through a threaded opening in the bottom of the depression of the filler cap,
(*c*) a resilient signal rod of length greater than maximum expected snow depth in the area where the cap is used, and
(*d*) resilient sleeve packing in the support and surrounding the resilient rod to form a liquid type joint, stops adjacent both ends of the rod the upper stop being of blunt configuration and a color contrasting vividly with white, said upper stop having dimensions such that when it strikes the support it does not protrude above the depression in the filler cap,
(*e*) the resilient sleeve packing being at least six times the diameter of the rod.

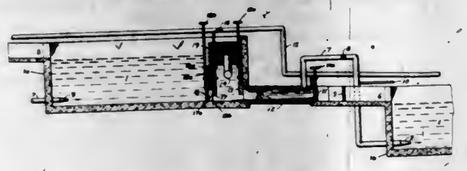


3,166,042
INFORMATION INDICATING DEVICES
John Francis Hill, Bickley, England, assignor to Self-Adhesive Sign Company Limited, Kent, England
Filed July 6, 1961, Ser. No. 122,236
Claims priority, application Great Britain, Aug. 4, 1960, 27,048/60
1 Claim. (Cl. 116—135)



An information indicating device comprising a pair of flat identically shaped superposed members having mating edges joined together except at one portion so as to form a pocket, at least one of said members being transparent, a datum sheet inserted into the pocket through the unattached edges so as to be viewable through the transparent member, said transparent member having an outer surface, a plurality of elongated transparent C-shaped elements affixed to the outer surface of the transparent member and arranged in parallel relation, each of said C-shaped elements having a web portion fixedly superimposed on the outer surface of the transparent member and having inwardly facing curved leg portions to define an indicator carrier, said indicator carriers being in parallel adjoining relation and elongated flat slidable indicators slidably disposed in said carriers and selectively slidable to various positions along the carriers.

3,166,043
METHOD AND APPARATUS FOR THE HANDLING OF FISH
Joe Castillo, 540 J St., Sparks, Nev.
Filed Oct. 14, 1963, Ser. No. 316,085
9 Claims. (Cl. 119—3)

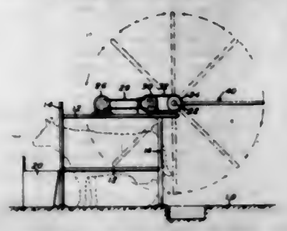


3. Apparatus for rearing fish wherein floating foreign matter and sediment is removed from the apparatus while water is continuously passed therethrough, comprising the combination of a plurality of successive rearing ponds having inlet and outlet ends, means for delivering water and fish to the inlet end of each of said rearing ponds, first screen means for collecting floating foreign matter thereon, second screen means vertically spaced from said first screen means and permitting passage of sediment and water therethrough while retaining the fish in said rearing ponds, means at the inlet end of each of said rearing ponds creating a current therein for moving said sediment toward said outlet end of each of said ponds and through said second screen means, means for delivering water under pressure to each of said ponds for removing sediment retained on said second screen means, a sediment removal conduit connected to each outlet end of said ponds, gate means for controlling the flow of water and sediment into and out of said sediment removal

conduits, and means for passing water in each of said sediment removal conduits to the next successive rearing pond for creating a current therein so as to move the sediment in said successive rearing pond toward the outlet end thereof.

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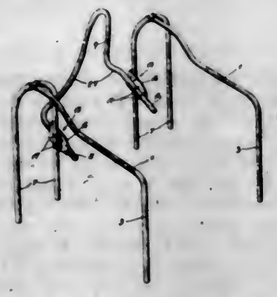
**3,166,044**
**DEVICE FOR RELEASING COWS**
**Norman E. Darling, Warren Center, Pa.**
**Filed Mar. 28, 1963, Ser. No. 268,616**
**2 Claims. (Cl. 119—27)**



1. In a stall system having a plurality of stalls formed by parallel vertical partition frameworks interconnected at one end by horizontal transverse stringers to close off that end of the stalls and leave the other end open for entering and exiting and gate means for opening and closing the open end of the stalls, said gate means comprising a shaft rotatably mounted horizontally across the open ends of the stalls, said shaft being mounted at such a height that the opening is unobstructed for the necessary height depending on the animal using the stall, a gate mounted on said shaft in alignment with each stall, locking means for securing the gates to the shaft for rotation therewith, and reversible power means for selectively rotating the shaft to thereby swing the gates secured thereto through a complete 360° arc to open and then close each stall and subsequently reversed the direction of the gate movement to open and close the stall, the direction of rotation being controlled by whether the animal is entering or leaving the stall.

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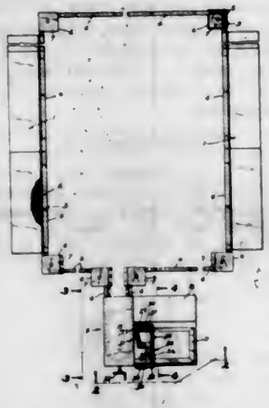
**3,166,045**
**CONSTANT ANGLE ADJUSTABLE YOKE FOR STALL DIVISIONS**
**Georges Henri Bessette, Rte. 2, Iberville, Quebec, Canada**
**Filed Apr. 19, 1963, Ser. No. 274,084**
**3 Claims. (Cl. 119—27)**



1. In an animal stall construction, the combination comprising:
(*a*) two spaced parallel upright posts secured to a base and disposed in a generally vertical plane;
(*b*) a restraining element formed of a restraining part, inclined in relation to said vertical plane an angle corresponding generally to the inclination of the animal's shoulder bones, and a straight supporting member at each lower end of said restraining part; said members extending perpendicularly of said inclined restraining part;
(*c*) a bracket on each post for mounting said restraining element;
(*d*) first means, on said brackets, to secure said restraining element at selective levels on said posts;
(*e*) second means, on said brackets defining a passage inclined at said angle, for slidably receiving and guiding said straight supporting members to allow displacement along the longitudinal axes of the members whereby said restraining part may be displaced along an inclined relative to said vertical plane to occupy anyone of a series of parallel positions while retaining the said angle, relative to said vertical plane, corresponding to the inclination of the animal's shoulder bones;
(*f*) said second means including releasable locking means whereby said restraining element may be fixed in one of said parallel positions.

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**3,166,046**
**EGG COLLECTION SYSTEM**
**Seymour Peterson, Dassel, Minn., assignor to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota**
**Filed Aug. 9, 1962, Ser. No. 215,825**
**4 Claims. (Cl. 119—48)**



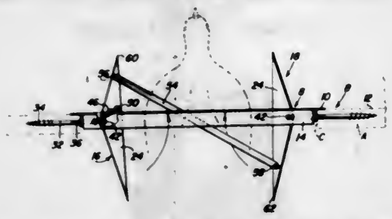
1. In an egg collection system for use wherein the egg laying rate may change due to a variance in the relative laying rate at certain locations of the system as compared with other locations thereof or due to a fluctuation in the total laying rate between relatively heavy laying time periods and relatively light laying periods:
(*a*) a plurality of laying nests arranged in generally side-by-side relationship about the laying area and further arranged in spaced groups of nests,
(*b*) a movable endless loop collection conveyor for moving the eggs from the nests to a position generally remote from the nests and having portions disposed adjacent the groups of nests and other portions disposed in the spaces between the groups of nests, and
(*c*) control means for imparting movement to said movable collection conveyor in response to anticipated changes in the laying rate, said control means including:
(1) a timer adapted to be pre-set to correspond with the anticipated changes in said laying rate, and



(2) timer actuated means connecting with said timer and disposed so as to effect a change in the movement of said collection conveyor whereby to position the portions of the conveyor previously disposed adjacent the spaces between the nests to a position adjacent the nests.

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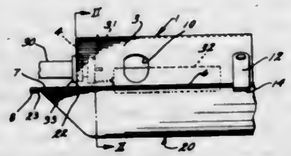
**3,166,047**
**CLOSURE MEANS FOR POULTRY NESTS**
**Dwaine G. Gentry, Manson, Iowa**
**Filed Nov. 21, 1962, Ser. No. 239,137**
**4 Claims. (Cl. 119—50)**



1. In combination, an enclosure having a nest for a turkey hen and embodying a front wall provided with an entrance-exit opening aligned with said nest and adapted to permit the hen to enter and leave the nest at will, a frame mounted on said front wall and having an opening aligned with said entrance-exit opening, said frame being mounted in a vertical plane and having cooperating horizontal and vertical frame members, closure means for the frame's opening embodying a pair of hen-actuated gate-like doors having upper and lower median portions hingedly bracketed on associatively cooperable upper and lower corner portions of said frame, a single coil spring having one end anchored on a component member of the frame and the other end anchored on a generally central part of an upper end portion of a cooperating one of said doors adjacent but beyond the upper hinge point of said one door, and a single door connecting and operating link having one end portion pivotally connected to an upper end portion of said one door adjacent said upper hinge point and proximal to the vertical inner leading edge of said one door, said link spanning the existing space between the inner adjacent vertical edges of both doors and having its other end pivotally connected to the upper end of the other door outwardly beyond the upper hinge point thereof but inwardly of its outer vertical trailing edge, said link functioning to cause simultaneous operation of the two doors while they are being swung from an outdoors position outwardly of said frame to an indoors position inwardly of said frame.

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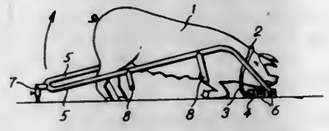
**3,166,048**
**TROUGH WATERER**
**Robert L. Van Huis, Zeeland, and Jerome M. Essink, Holland, Mich., assignors to Automatic Poultry Feeder Company, Zeeland, Mich., a corporation of Michigan**
**Filed Dec. 18, 1961, Ser. No. 160,200**
**3 Claims. (Cl. 119—78)**



1. An improved trough waterer, including: a trough; an upstanding canopy housing rising over and covering an end of said trough; a source of pressurized water; a valve having a float associated with said water source, said valve being secured to said housing, said float valve positioned within said housing substantially above the confines of said trough; means associated with said housing whereby said float may be raised and thereby shutting off said valve; and said housing detachably secured to said end of said trough whereby said housing, said water source and said float valve may be slidably removed from said trough for cleaning of said trough so that there is no alteration or diminution of the water pressure at the said source.

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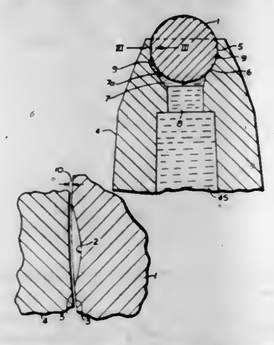
**3,166,049**
**DEVICE FOR PREVENTING A SOW FROM LYING HER PORKLINGS TO DEATH**
**Liss Axel Lundin, Bjorkhult Gard, Hjorted Station, Sweden, assignor to Aktiebolaget Tillvaxtfaktorer, Hjorted Station, Sweden, a joint-stock company of Sweden**
**Filed June 11, 1962, Ser. No. 201,353**
**Claims priority, application Sweden, June 20, 1961, 6,438/61**
**9 Claims. (Cl. 119—96)**



9. A frame, for use in conjunction with tethering means, for preventing a sow from lying her porklings to death comprising a substantially rigid U-shaped member which includes a pair of parallel shafts and a rear connecting portion, the front intermediate portions of said shafts being bowed upwardly with respect to the floor so that the highest points thereof are located substantially at the withers of a sow standing between said shafts, pivot means providing a pivotal connection between the front end of each shaft and the floor, and means for maintaining the rear end of said U-shaped member spaced above the floor.

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**3,166,050**
**BALL-TIP WRITING INSTRUMENT AND BALL THEREFOR**
**Hans Reinhard Fehling, Zug, Switzerland, and Edward Henry Harvey, Finchley, England, assignors to I.R.C. Limited, London, England, a company of Great Britain**
**Filed May 17, 1960, Ser. No. 29,608**
**Claims priority, application Great Britain May 19, 1959**
**10 Claims. (Cl. 120—42.4)**



1. A ball for a ball-tip writing instrument comprising a sphere having a smooth, continuous spherical outer surface and having a plurality of shallow craters distributed substantially uniformly over the outer surface substantially all of the craters having a depth no less than about 5 microns and a diameter between about 10 and about

70 microns and having sides inclined at an angle between about 10 degrees and about 25 degrees to the surface of the sphere, the total area of the creaters being between about one-fifth and about two-thirds of the total surface area of the sphere.

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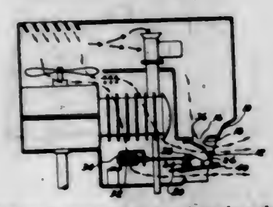
3,166,051
UNTHROTTLED INTERNAL COMBUSTION ENGINE
Irving H. Hallberg, Des Plaines, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Sept. 28, 1960, Ser. No. 59,087, now Patent No. 3,079,901, dated Mar. 5, 1963. Divided and this application Dec. 26, 1962, Ser. No. 264,462
3 Claims. (Cl. 123—32)



1. In an unthrottled internal combustion engine having a cylinder, air intake means and exhaust means for said cylinder, a cylinder head, a piston, said piston having an irregular crown and reciprocally operable in said cylinder, a combustion space between said cylinder head and said irregular crown, the said combustion space comprising an auxiliary ignition chamber and a residual combustion space when the said piston is substantially at T.D.C., said irregular crown providing means which separates said auxiliary ignition chamber from said residual combustion space, a spark plug inserted in said auxiliary ignition chamber, fuel injection means for supplying fuel to said auxiliary ignition chamber, fuel injection means for supplying fuel to said combustion space, said fuel supply being richer in mixture in said auxiliary ignition chamber than in the remainder of said combustion space and means for supplying electric current to said spark plug to thereby ignite said richer fuel mixture in said auxiliary ignition chamber.

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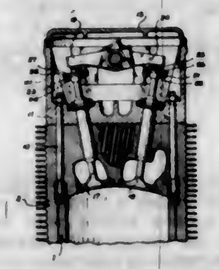
3,166,052
THERMO-SHUTTER
John B. Parsons, 1210 River Road, Maumee, Ohio
Filed Aug. 6, 1963, Ser. No. 300,249
8 Claims. (Cl. 123—41.05)



1. In an engine compartment, a housing through which engine cooling air is circulated, said housing having a first opening through which a moving airstream heated by passing around the engine may be directed over the engine carburetor and a second opening through which said airstream may be directed outwardly of said housing, a damper mounted in said housing for movement between a first position closing said second opening and a second position opening said second opening, a shutter carried by said damper and extending angularly therefrom, said shutter having an aperture through which said airstream may flow in either position of said damper and a solid portion which deflects said airstream from said first opening when said damper is in second position.

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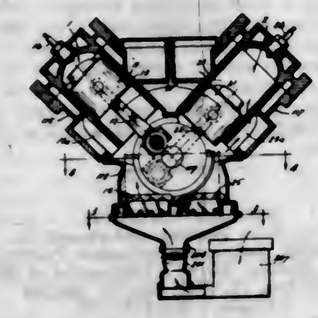
3,166,053
MONOBLOC AIR-COOLED INTERNAL COMBUSTION ENGINE CYLINDER
Hans Fischer, Siegfried Meurer, and Julius Liebel, Nurnberg, Germany, assignors to Maschinenfabrik Augsburg-Nurnberg AG., Nurnberg, Germany
Filed Nov. 18, 1963, Ser. No. 324,539
Claims priority, application Germany, Dec. 3, 1962, M 54,991
6 Claims. (Cl. 123—41.69)



1. A monobloc air-cooled internal combustion engine cylinder comprising a cylinder liner, a single piece finned cylinder block portion and cylinder head portion cast around both sides of said liner, and said liner having an extension into said head portion for being tightly connected to said head portion only where said head portion joins said block portion for taking combustion gas pressure stresses from said head portion.

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3,166,054
ENGINE
Warren C. Conover, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,350
14 Claims. (Cl. 123—55)

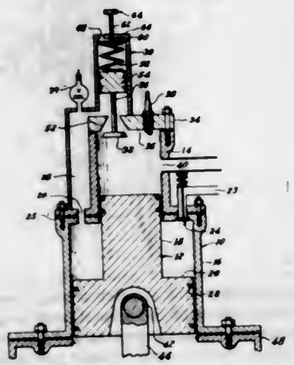


1. A V type internal combustion engine including a first cylinder bank including, in series, first, third and fifth cylinders, a second cylinder bank including, in series, second, fourth, and sixth cylinders, said banks being disposed at an angle of 90 degrees relative to each other, a separate piston reciprocably movable in each of said cylinders, a piston rod extending from each of said pistons, a crankshaft including means connecting said piston rods to said crankshaft for effecting, with respect to crankshaft rotation, oppositely directed piston movement throughout the piston stroke in said first and second cylinders, in said third and fourth cylinders, and in said fifth and sixth cylinders, and for effecting balanced operation of the cylinders in each of said banks.



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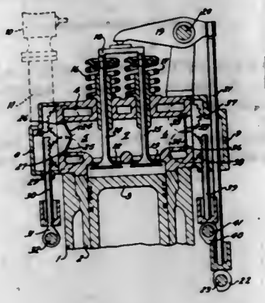
3,166,055
POWER UNIT
Eugene R. Barnett and Willard L. Barnett, both of 6268 Windsor Drive, Indianapolis, Ind.
Filed Oct. 11, 1962, Ser. No. 229,805
11 Claims. (Cl. 123—71)



1. An engine means, comprising:
a stepped cylinder having concentrically aligned axially spaced portions of relatively smaller and relatively larger diameter;
a stepped piston having concentrically aligned axially spaced portions of relatively smaller and relatively larger diameter, operatively mating with corresponding portions of the cylinder;
the piston being movable within the cylinder between a top-dead-center position and a bottom-dead-center position;
a head for said smaller-diameter cylinder-portion, and located thereon to provide clearance volume between said head and said smaller piston-portion when in top-dead-center position;
means communicating fuel-air to said larger cylinder-portion above said larger piston-portion to admit fuel-air to said larger cylinder-portion during downstroke of said larger piston-portion;
means providing an entrance chamber for fuel-air adjacent said head;
means providing a passage leading from said larger cylinder-portion to communicate fuel-air therefrom, during upstroke of said larger piston-portion, to said entrance chamber;
valve means for admitting fuel-air from said entrance chamber into said smaller cylinder-portion;
biasing means for biasing said valve to valve-open position;
said biasing means including a plunger one end of which is open to and operatively affected by pressure of fuel-air in said entrance chamber and in said smaller cylinder-portion when said valve is open;
screw means for adjusting the bias of said biasing means and operative in conjunction with said pressures for regulating the time of closure of said valve and thus the total pre-ignition pressure within said smaller cylinder-portion; and
the said smaller cylinder-portion being provided with exhaust port means operatively adjacent the lower end of said smaller cylinder-portion but above the upper limit of said smaller piston-portion when in bottom-dead-center position.

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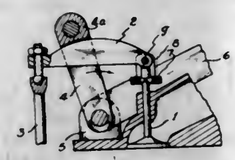
3,166,056
SUPERCHARGER FOR AN INTERNAL COMBUSTION ENGINE
Daisaku Odawara, 520–5 cho, Uenoshiba-cho, Sakai, Japan
Filed Jan. 30, 1964, Ser. No. 341,259
1 Claim. (Cl. 123—79)



In an internal combustion engine comprising a cylinder casting having a cylinder therein, a piston in the cylinder and a cylinder head,
a pair of valves in said head, said valves serving as both intake and exhaust for the cylinder,
cam operated means to simultaneously actuate both of said valves simultaneously,
said head having an intake port therein extending to the the valve,
said cylinder having an exhaust port extending to the valve,
said cylinder having a passage therein connecting the intake and exhaust ports,
a pair of flap valves positioned in the intake port to close the intake port in one position of the valves,
a pair of meshing gears attached to said flap valves,
a rack engaging one of the meshing gears, cam means engaging the rack to reciprocate the same,
another pair of flap valves mounted in the exhaust port, a pair of meshing gears attached to the last named flap valves, a rack engaging one of the last named meshing gears, and cam means engaging the last named rack to reciprocate the same.

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3,166,057
METHOD AND APPARATUS OF UTILIZING EXHAUST GASES IN THE INTERNAL COMBUSTION ENGINE CYCLE
Jakob Konrad, Nurnberg-Reichelsdorf, and Erhard Mühlberg, Nurnberg, Germany, assignors to Maschinenfabrik Augsburg-Nurnberg AG, Nurnberg, Germany
Filed Mar. 26, 1963, Ser. No. 268,188
Claims priority, application Germany, Oct. 17, 1959, M 43,089
2 Claims. (Cl. 123—90)

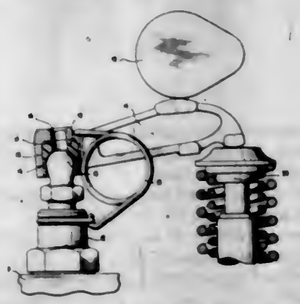


1. A method of utilizing the waste gases obtained after combustion in the cylinder of an internal combustion engine comprising regulating the gas changeover system for the cylinder to retain in the cylinder during the next combustion stroke a variable percentage of the waste gases in accordance with typical operation criteria such as variables directly or indirectly related to the engine

temperature, the proportion of waste gas so retained being increased for operation on fuel having a low ignition quality and lowered for operation under conditions of high engine temperature and increased for conditions of low fuel feed such as for low load and engine speed and raised for operation under conditions where minimum obnoxious constituents are required in the exhaust gases.

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**3,166,058**
**VALVE ACTUATING MECHANISM**
**Anton Zink, Fellbach, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart - Unterturkheim, Germany**
**Filed Mar. 28, 1963, Ser. No. 268,645**
**Claims priority, application Germany Mar. 30, 1962**
**1 Claim. (Cl. 123—90)**



In a valve actuating mechanism for actuating a valve shaft of an internal combustion engine by means of a rocker arm driven by a cam shaft in which said rocker arm is constituted as a drag lever actuating with an end thereof said valve shaft, the other end of said lever being movably supported on an approximately ball-shaped bearing part secured to the housing of said engine,

the improvement essentially consisting of means on said other end providing a noise-damping, wear-resistant, shock-proof, slightly resilient connection with said bearing part, said other end comprising a hollow cylindrical portion having an open end, wall means partially closing the other end of said hollow cylindrical portion, said wall means having an exteriorly opening central aperture of relatively large diameter extending vertically therethrough adapted to receive oil spray, a cup-shaped member composed of a synthetic plastic composed of polyamide engagingly disposed within said hollow cylindrical portion and in engagement with said approximately ball-shaped bearing portion, said cup-shaped member having an aperture extending through the bottom portion thereof, said bottom portion seating against said wall means, said last-named aperture being in registry with said first-named aperture and providing with the latter a lubricant-admitting passageway to the upper portion of said ball-shaped bearing portion.

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**3,166,059**
**AIRCRAFT FUEL INJECTION SYSTEM**
**Harry J. Botterud, Jr., Tujunga, Frank I. Crittenden, Van Nuys, and Roger A. Fulton, Canoga Park, Calif., assignors, by mesne assignments, to The Bendix Corporation, South Bend, Ind., a corporation of Delaware**
**Filed Feb. 13, 1961, Ser. No. 88,825**
**5 Claims. (Cl. 123—119)**

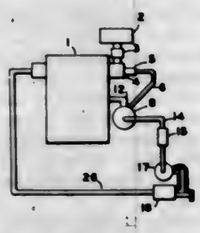
1. In fuel supply apparatus for a combustion engine having a manifold in communication with a plurality of cylinders, an impeller for pressurizing air flowing to the manifold and an impeller air intake section containing a right angle passageway therethrough provided with arcuate turning vanes, the combination of tubular means connected to an inlet of the impeller air intake section and having a passageway therethrough for the passage of air and containing a side wall, a fuel injector nozzle mounted on said side wall and projecting into said passageway for



injecting fuel into said tubular means substantially normal to the direction of air flow therethrough, a fuel conduit connected to supply pressurized fuel to said fuel injection nozzle, and control means operatively connected to said fuel conduit for controlling the flow of fuel therethrough to said nozzle.

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**3,166,060**
**ANTI-SMOG MEANS**
**Joseph S. Falzone, 62 Crescent Court, Old Bethpage, N.Y., assignor of twenty percent to James P. Malone, Mineola, N.Y.**
**Filed May 8, 1962, Ser. No. 193,085**
**5 Claims. (Cl. 123—119)**



1. Anti-smog means for internal combustion engines of the type having a fuel intake channel and an exhaust pipe comprising;

pickup means connected to said exhaust pipe,

a chamber connected to said pickup means,

a tank connected to said chamber,

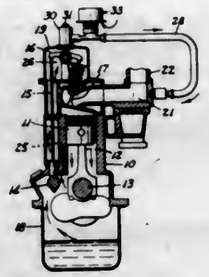
means connecting said intake channel to said tank, and

pressure responsive valve means connecting said tank to the atmosphere.

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**3,166,061**
**CRANKCASE VENTILATING SYSTEM**
**Norman J. Weiser, 213 E. Jewett Ave., Buffalo 14, N.Y., assignor of one-fourth to Clifford Rauschenberg, Youngstown, Ohio**
**Filed Sept. 30, 1963, Ser. No. 312,432**
**4 Claims. (Cl. 123—119)**

1. In an internal combustion engine crank case ventilating system, an internal combustion engine having a crank case at the bottom thereof, a valve rocker arm compartment at the top thereof, and a fuel-air intake manifold, passage means extending upwardly in said engine from the crank case to said rocker arm compartment, said crank case being normally closed and unvented excepting for said passage means, a conduit establishing continuous open communication between said rocker arm compartment and said intake manifold, a passage leading from



said conduit to the atmosphere, and one-way valve means in said passage continuously operable to permit ingress of atmospheric air to said conduit whenever pressure in said conduit is substantially subatmospheric but preventing reverse fluid flow.

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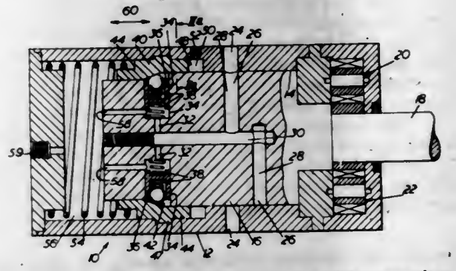
**3,166,062**
**SMOG DEVICE FOR AUTOMOBILE ENGINES**
**Arnold J. Yerman, 9459 Kaiser St., Fontana, Calif., assignor of ten percent to Earl E. Moore, Upland, Calif.**
**Filed Dec. 16, 1963, Ser. No. 330,804**
**8 Claims. (Cl. 123—119)**



1. A filtering system for internal combustion engines having a crank case with a body of oil therein and a plurality of power cylinders having suction valves and exhaust valves and wherein fuel is conducted to the suction valves from a carburetor through a passage means; a filtering device, means connecting the filtering device with an area over the body of oil, means connecting the filtering device to said passage means so that when the gases from over the body of oil are cleaned in the filtering device they are conducted into said passage means for mixing purposes with the fuel from the carburetor for purposes of saving fuel and to materially reduce smog emanation from the exhaust, the filtering device including a vacuum chamber with a vacuum registering meter connected to the vacuum chamber to indicate the amount of suction in the vacuum chamber and thus the clogging condition of the filtering device, means connecting the filtering device with an area over the body of oil including a check valve to prevent back-firing pressures from the engine from entering the filtering device.



**3,166,063**
**METERING PUMP SUITABLE FOR USE AS A FUEL INJECTOR PUMP**
**Theo Werner Schettler, Ermelo, Transvaal, Republic of South Africa, assignor to T. W. Schettler (Proprietary) Limited, Ermelo, Transvaal, Republic of South Africa**
**Filed Apr. 8, 1963, Ser. No. 271,331**
**Claims priority, application Republic of South Africa, Apr. 10, 1962, 62/1,513**
**15 Claims. (Cl. 123—139)**



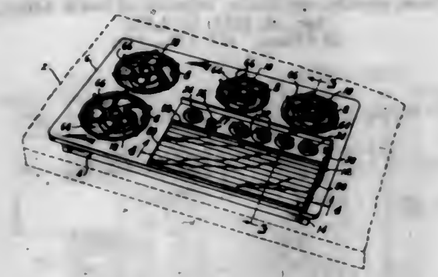
1. A pump of the kind referred to which comprises a stator and rotor assembly, the rotor having at least one port directed outwardly, an axial inlet passage connected with the or each port in the rotor, and at least one transverse bore connected to the inlet passage and having an inlet opening into it; at least one plunger member reciprocable within the bore; plunger bias means biassing the plunger member outwardly; a cam sleeve within the stator and connected to it, and around the rotor and slidable co-axially with it and having at least one cam lobe on its inner periphery adapted to engage with the plunger, the cam lobe having a face which slopes relative to the sleeve axis, and the connection between the stator and cam sleeve comprising at least one helical groove and mating element; cam sleeve bias means for biassing the cam lob having the highest lift engages with the plunger member; cam sleeve position governing means for governing the position of the cam sleeve axially relative to the stator and rotor against the action of the cam sleeve bias beans; and drive connecting means for receiving rotary power applied to the rotor; the stator having at least one port with which the rotor port is adapted to register during rotation of the rotor within the stator; the arrangement being such that when the rotor rotates within the stator, the plunger reciprocates within its bore under the action of the cam lobe and the plunger bias means and thereby performs a pumping action, the rotor and stator ports being arranged to register when the plunger is on its delivery stroke, and the arrangement also being such that axial displacement of the cam sleeve relative to the stator and rotor by the cam sleeve position-governing means causes arcuate displacement of the cam sleeve about its axis relative to the stator thereby providing an advance and retard characteristic to the cam sleeve relative to the rotor.

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**3,166,064**
**COUNTER TOP RANGE**
**Charles T. Waltman, Lake Forest, Ill., assignor to Magic Chef, Inc., Cleveland, Tenn.**
**Filed June 11, 1963, Ser. No. 286,966**
**5 Claims. (Cl. 126—37)**

1. A counter top range comprising: an open-top housing adapted to be mounted in an opening in a counter top; a plurality of heater means in said housing; a plurality of manual controls for said heater means, mounted in said housing and extending upwardly through said open top; a first cover hinged to one edge of the open top of said housing and having a plurality of openings therethrough registering respectively with said heater means and said manual controls, individually when said first

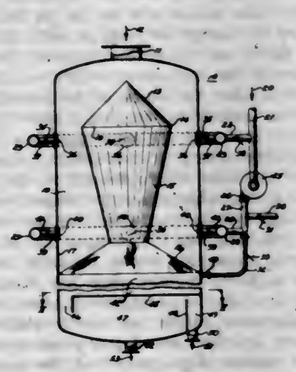
cover is closed, with said manual controls projecting upwardly above said first cover through their respective openings; an open-topped pan defining an open top storage compartment removably positioned in said housing



adjacent said controls; a further opening in said first cover registering with the open top of said pan when said first cover is closed; and a second cover hinged to said first cover and overlying said compartment for closing said further opening and said compartment.

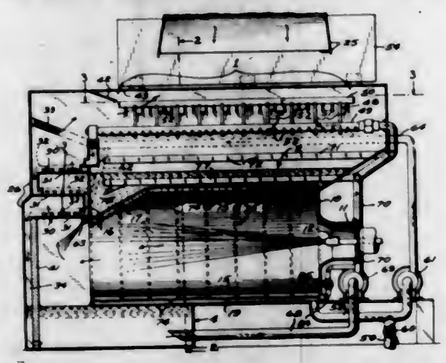
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**3,166,065**
**ICE MELTING SYSTEM**
**William Earl Dunn, Mount Lebanon Township, Allegheny County, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed July 18, 1961, Ser. No. 124,924**
**4 Claims. (Cl. 126—343.5)**



1. In an ice melting system, steps comprising, in combination, discharging substantially water-free particles of ice to be melted into a vessel having a passage for the descent of said particles of ice therein a substantial distance through space, introducing vaporized fluid into said passage and space to engage said particles of ice during the descent thereof, said vaporized fluid being in a quantity substantially sufficient to melt substantially all of said ice during the descent thereof in said passage, condensing said vaporized fluid in the course of said melting, withdrawing at least water and condensed vapor from said vessel, said introduction of said vaporized fluid into said vessel being in a lower portion of said passage, bleeding a lesser amount of vaporized fluid into said vessel adjacent but below the lower end of said passage, and restraining any unmelted particles of ice from leaving said passage.

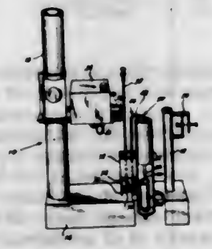
**3,166,066**
**MELTING APPARATUS**
**John Dunn, Tenafly, and Robert Kopita, Fanwood, N.J., assignors to Peabody Engineering Corporation, New York, N.Y., a corporation of New York**
**Filed July 26, 1961, Ser. No. 126,977**
**12 Claims. (Cl. 126—343.5)**



1. A melting apparatus comprising a material melting section, a liquid heating section and a gas-liquid contact section, a fuel burner in said liquid heating section adapted to produce products of combustion, a furnace tube in said liquid heating section carrying said products of combustion, a liquid jacket surrounding said furnace tube, means directing the products of combustion from said furnace tube through said gas-liquid contact section for cleaning and heat transfer, means passing the liquid from the melted material in said melting section into said liquid jacket for heating, means discharging a portion of the liquid from said jacket, means passing the remainder of the liquid from said jacket through said gas-liquid contact section for final heating, hot liquid pipes in said material melting section, and means feeding hot liquid from said gas-liquid contact section to said pipes for heat transfer to the material therein.

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**3,166,067**
**SUBMERSIBLE HEATER WITH HEATED FUEL VALVE**
**Joseph Koborst, Rte. 1, Arcadia, Iowa**
**Filed Apr. 1, 1963, Ser. No. 269,386**
**12 Claims. (Cl. 126—360)**



1. In a heater unit of the type designed for use out-of-doors in cold temperatures to keep water from freezing in a tank or trough, said heater having a submersible housing, a fuel oil burner means for heating said housing and a fuel oil reservoir exposed to the atmosphere, the combination therewith of an improved needle valve assembly comprising:

a fuel oil flow line connected for flow communication to said reservoir and having a discharge end disposed in operable relationship relative to said burner means,



a needle valve seat in said flow line,

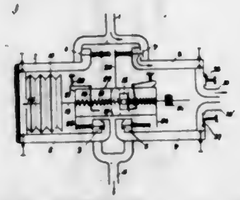
a needle valve in said flow line operable with said valve seat and with manual means for adjusting the same,

said flow line being provided with a vent opening, and

means positioning a portion of said flow line in direct contact with a portion of said housing to receive heat therefrom by conduction for heating said valve seat.

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**3,166,068**
**AUTOMATIC APPARATUS FOR ARTIFICIAL RESPIRATION**
**Robert Kubán and Zdeněk Kalenda, Prerov, Czechoslovakia, assignors to Meopta, narodni podnik, Prerov, Czechoslovakia**
**Filed Feb. 2, 1961, Ser. No. 86,793**
**7 Claims. (Cl. 128—29)**



1. In a respiration device, in combination:

(*a*) expandable container means including a fixed wall and a wall reciprocable relative to said fixed wall in a predetermined path to vary the volume of a gas space in said container means;

(*b*) a source of gas under pressure;

(*c*) a source of suction;

(*d*) a feed conduit communicating with said source of gas and with said gas space;

(*e*) a discharge conduit communicating with said gas space;

(*f*) connector means for connecting said device to respiration mask means;

(*g*) a gas supply conduit communicating with said source of gas and with said connector means;

(*h*) a suction conduit communicating with said source of suction and with said connector means;

(*i*) four shut-off valve means, each valve means being reciprocable in a respective one of said conduits in a path parallel to said predetermined path between a conduit closing and a conduit opening position; and

(*j*) abutment means operatively connected to said movable wall for movement therewith in a path parallel to said path, and abuttingly engageable with said shut-off valve means for moving the same between said positions thereof when said movable wall moves relative to said fixed wall, said abutment means including

(1) an abutment member fixedly connected to said wall for joint movement therewith,

(2) slide means reciprocable between two operative positions thereof in a path parallel to said predetermined path,

(3) two releasable stop means for respectively limiting movement of said slide means toward said operative positions thereof in respective intermediate positions,

(4) two yieldably resilient members extending from said abutment member in opposite directions parallel to said predetermined path, said resilient members being interposed between said abutment member and respective portions of said slide means for actuating movement of said slide means responsive to said movement of said abutment member, whereby said slide means moves with said abutment member between said intermediate positions thereof when said abutment member moves between corresponding positions, and said resilient members are compressed when said abutment member moves beyond said corresponding positions while said stop means limit movement of said slide means,

(5) motion transmitting means interposed between said abutment member and each of said stop means for respectively releasing said stop means responsive to movement of said abutment member a predetermined distance beyond a respective corresponding position thereof, and

(6) arm means mounted on said slide means for joint movement therewith parallel to said predetermined path and engageable with said shut-off valve means for moving the same between said positions thereof.



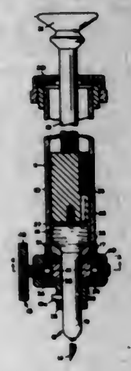
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**3,166,069**
**OPERATING MECHANISM FOR AUTOMATIC HYPODERMIC SYRINGES**
**Hans Gosta Enstrom, Ostertalje, Rune Gerold Fredriksson, Jarna, Rudolf A. I. Lundgren, Overenhorna, and John Adolf Nojd, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden, a company of Sweden**
**Filed Feb. 14, 1961, Ser. No. 89,250**
**Claims priority, application Sweden, Feb. 16, 1960, 1,549/60**
**3 Claims. (Cl. 128—218)**



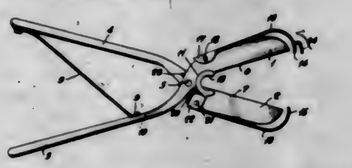
1. An operating mechanism for an automatic hypodermic syringe of the type including a spring-driven operating device for the moving parts of the syringe, a retaining catch for holding the operating device taut, and an arrangement for releasing the operating mechanism from the retaining catch, characterized in that said mechanism comprises a generally cylindrical hollow body the same being at one end thereof threaded to mate a threaded end of such syringe, a coil spring and an actuating rod within the coil thereof, said coil spring and actuating rod being disposed within said hollow body, said actuating rod being provided with a shoulder at the rear end of the same which is remote from said threaded portion, a plurality of resilient tongues extending from and mounted on said hollow body rearwardly with respect to said threaded portion and surrounding the adjacent rear portions of said actuating rod and coil spring, said tongues being interiorly provided with a first shoulder constituting a support for the rear end of said coil spring and with a second shoulder engaging the said shoulder of said operating rod to hold the operating rod in spring-loaded position, a release arrangement movable along said hollow body and adapted to engage said shouldered tongue and which, when moved toward the threaded end of said body, presses said shouldered tongue outwardly so as to release said spring-loaded actuating rod from said tongues.

3,166,070
**SYRINGE FOR HYPODERMIC INJECTION**
Samuel James Everett, London, England, assignor to Lapis Engineering Company Limited
Filed Dec. 5, 1961, Ser. No. 157,105
4 Claims. (Cl. 128—218)



1. In a hypodermic syringe a casing having at its forward end an end wall defining an aperture for removably receiving a collapsible bag, said aperture being of reduced cross-sectional size relative to the interior of the casing, the end wall at said forward end of the casing constituting a bushing of elastic material sealed to a side wall of the casing, a plunger extending slidably into the casing from the rear end thereof, a collapsible bag with a needle hub for holding fluid contents of the syringe, said bag in laterally collapsed condition being removably insertable through said aperture into said casing, means for sealing said bag in said aperture with the interior of the bag opening through said aperture to the exterior of the casing, said means comprising clamping means operable to deform said bushing to collapse the aperture, thereby forming a fluid-tight seal around the bag, rearward movement of said plunger operating to reduce air pressure within said casing and causing said bag to fill with fluid passing through said aperture, whereby said bag is expanded to fill the interior of the casing over its full cross section.

3,166,071
**SURGICAL CUTTERS WITH CLAMP RETAINING MEANS**
Thomas C. Mayer, Barking, Essex, England
(163 Longwood Gardens, Ilford, Essex, England)
Filed June 10, 1963, Ser. No. 286,855
3 Claims. (Cl. 128—318)



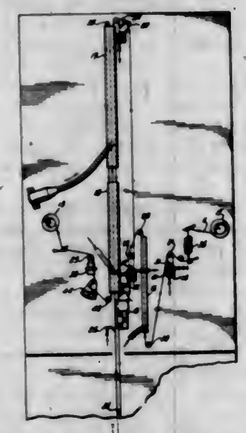
1. A surgical cutter comprising a pair of blades each attached to a handle and a hinge coupling between said blades and handles to form a pair of scissors, containing means normally constraining said pair of scissors to a position in which the blades are held apart, a first clamp retaining member on one side of said scissors, disposed and coupled to said scissors close to said hinge coupling, a recess in said first clamp retaining member facing the blade end of said scissors, second and third clamp retaining members, one mounted on each blade, disposed adjacent the ends of the respective blades remote from the handles and both on said one side of the scissors, and recesses in said second and third clamp retaining members facing each other, so that the recesses in said second and third clamp retaining members are spaced apart when the blades of the scissors are apart, and said recesses in the second and third clamp retaining members are in proximity and substantial alignment with each other when the blades of the scissors are partially overlying each other in a closed position.

3,166,072
**BARBE[illegible]CLIPS**
John T. Sullivan, Jr., 2040 W. Wisconsin Ave., Milwaukee, Wis.
Filed Oct. 22, 1962, Ser. No. 232,174
9 Claims. (Cl. 128—334)



1. A joining clip for anastomosis of body tissue and the like including a substantially flat base, said base having a long spike and a short spike extending from one surface thereof, said spikes having substantially rectilinear axes, each of said spikes having barbs extending outwardly from the axis thereof, said short spike having a length sufficient to penetrate a thickness of body tissue, said long spike having a length exceeding that of the short spike by an amount at least equal to the thickness of the base, whereby the long spikes of an opposed pair of clips may penetrate the base of an opposed clip without penetration of the base by the short spike.

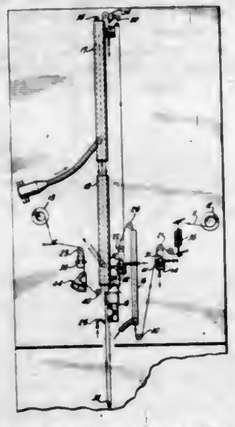
3,166,073
**QUINONE, ALDEHYDE AND CHROME TANNED ARTICLES AND THEIR PRODUCTION**
Richard Leonard Kronenthal, Fair Lawn, N.J., assignor to Ethicon, Inc., Somerville, N.J., a corporation of New Jersey
Filed May 29, 1963, Ser. No. 284,209
14 Claims. (Cl. 128—335.5)



1. In a method of tanning collagen that has been acid-swollen, extruded and reconstituted; the steps of contacting said collagen with at least two different solutions, one of said solutions containing a quinone selected from the group consisting of monocyclic, dicyclic and tricyclic quinones, and another of said solutions containing an aldehyde and a basic trivalent chromium salt.

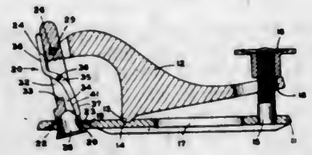


3,166,074
**ALDEHYDE, CHROME AND POLYHYDRIC ALCOHOL TANNED COLLAGEN ARTICLES AND THEIR PRODUCTION**
John Kurilla, Plainfield, N.J., assignor to Ethicon, Inc., Somerville, N.J.
Filed May 29, 1963, Ser. No. 284,244
14 Claims. (Cl. 128—335.5)



1. In a method of tanning collagen that has been acid-swollen, extruded and reconstituted; the steps of contacting said collagen with at least two different solutions, one of said solutions containing a polyhydric phenol selected from the group consisting of monocyclic and dicyclic polyhydric phenols, and another of said solutions containing an aldehyde and a basic trivalent chromium salt.

3,166,075
**SURGICAL CLAMP FOR CIRCUMCISION**
Arthur P. Kebel, 3507 N. Grant Ave., Indianapolis 18, Ind.
Filed Aug. 3, 1962, Ser. No. 214,575
1 Claim. (Cl. 128—346)

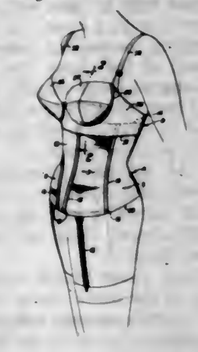


In a surgical clamp of the class described, the combination including:
an essentially flat base member having forward and rearward ends;
a bell port in the base member adjacent to the forward end thereof;
an angular clamp arm of roughly the same length as the base member separably and pivotally engaging the base member intermediate its ends, a rearward section of the arm extending from the region of the pivot in the general direction of the rearward end of the base member with its end being adjacent to the rearward end of the base member and a forward section of the arm extending from the region of the pivot in the general direction of the bell port, but angularly away from the base member with its end being removed a suitable distance from the bell port;
adjustable pivoting means secured to the rearward end of the base member removably engaging with cooperating means integral with the adjacent end of the clamp arm to effect adjustable pivoting of the arm on the base member;
a bell member comprising an elongated bell stem having a bell-shaped body integral with one of its ends and having arm engaging means at its opposite end separably engaging cooperating means integral with the forward end of the clamp arm to support the bell member centered longitudinally in the bell port, the bell-shaped body comprising a hollow main body portion open at its end and a bell lip surrounding the open end of the main body portion;
a tissue clamp slot extending longitudinally of and transversely through the bell stem with at least one side of the slot extending into the main body portion of the bell-shaped body and intersecting the hollow interior thereof;
a roughly S-shaped tissue clamp secured rotatively near its center in the tissue clamp slot on a clamp pin secured in the bell stem and extending transversely through the slot, one end of the tissue clamp being adapted to engage tissue surrounding the bell-shaped body and, in cooperation with the tissue clamp slot, to clamp tissue surrounding the main body portion of the bell-shaped body securely to the bell member and the other end of the tissue clamp being elongated beyond the clamp pin and serving as a handle wherewith to rotate the tissue clamp around the clamp pin, the parts being dimensioned to provide for passage of the bell stem, the main body portion of the bell-shaped body, the tissue clamp when clamping tissue on the bell-shaped body and the clamped tissue through the bell port in the direction of the forward end of the clamp arm, but to prevent passage through the bell port of the bell lip and tissue surrounding it whereby, upon effecting such passage with the arm in pivotal engagement with the base member and effecting engagement of the arm engagement means of the bell member with the forward end of the clamp arm and of the adjustable pivotal means with the rearward end of the clamp arm, and upon manipulation of the adjustable pivoting means to cause pivoting of the clamp arm on the base member, tissue surrounding the bell lip is clamped securely between the lip and the wall of the bell port.

3,166,076
**CORSELET**
William D. Brown, Glendale, Calif., assignor to Munsingwear, Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 7, 1962, Ser. No. 192,874
2 Claims. (Cl. 128—436)

1. In an undergarment: a girdle portion having an upper front edge and an upper rear edge; an entirely separate brassiere portion; said brassiere portion having cups as well as a body member to which the cups are attached, said body member having ends located at opposite sides of the brassiere portion, said brassiere portion having straps at the said ends of the body member adapted to extend from the sides of the wearer toward the back; the body member being designed substantially to overlie the upper front edge of said girdle portion; and two sets of detachable fastening means, one set of fastening means joining the end of one of said straps to the back of the girdle portion, and the other set of fastening means joining the end of the other of the straps to the back of the

girdle portion; said detachable fastening means being the sole means for joining the brassiere portion to the girdle portion; each set of fastening means comprising a pair of fastening elements, one element being a tape structure attached substantially along its entire length to the back of the girdle portion below the said rear edge of the said girdle portion on the corresponding side of the girdle portion, said tape structure slanting from the center of the back of the girdle portion upwardly toward the corresponding strap, there being a series of eyes spaced longitudinally



of the tape structure, the second element being a hook member carried by the end of the corresponding strap for cooperative engagement with any one of the eyes of the corresponding tape structure; each of said straps upon attachment to the girdle portion slanting downwardly at its end so as to extend below the level of the body member to exert a force having a substantial downward component on said brassiere portion, said straps being attached to each other at the center of the back of the undergarment only through the girdle portion.

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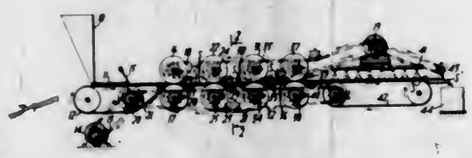
**3,166,077**
**BRASSIERE**
**Mario Laguzzi, Long Island City, N.Y., Ann F. Martelli, Ridgewood, N.J., and Jack E. Robbins, Larchmont, N.Y., assignors to Poirette Corsets, Inc., New York, N.Y.**
**Filed July 26, 1961, Ser. No. 127,009**
**4 Claims. (Cl. 128—485)**



1. In a brassiere construction, a pair of complementary front portions having first side edge reinforcing strips sewed together at the center, second reinforcing side strips along the opposite side edges, one-way stretch elastic side and back portions secured to the last mentioned reinforcing side strips with complementary fastening means at the ends of said back portions, each of said front portions comprising an inelastic cup portion bounded on its sides by one of said first and second side reinforcing strips and on its bottom by an inelastic bottom strip and on its top by an arcuate inelastic top strip, respectively, a pair of elastic inserts interiorly of each cup portion, each insert extending along the bottom strip a distance slightly greater than half the distance between said first and second side strips, stitching securing each insert to the bottom strip and to the adjacent side reinforcing strip, and additional stitching securing the top of each insert along a relatively short portion of said arcuate top strip adjacent the associated side strip, the tops of said elastic inserts being spaced from each other and the bottoms of said elastic inserts crossing but being unsecured to each other and unsecured to said cup portions, said inserts being comprised of one-way stretch elastic, stretchable only in a vertical direction, and an arcuate elastic reinforcing strip secured along the inner edge of each elastic insert, the bottom portions of said strips crossing in unsecured relation.

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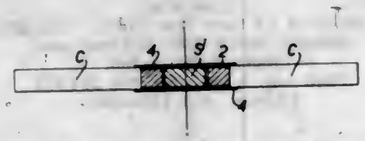
**3,166,078**
**CHEWING TOBACCO PRODUCT**
**Harris B. Parmele, Glen Ridge, N.J., and Frederick J. Schultz, Chase W. Lassiter, and Jimmy H. Bell, Greensboro, N.C., assignors to P. Lorillard Company, New York, N.Y., a corporation of New Jersey**
**Filed Apr. 5, 1961, Ser. No. 100,842**
**2 Claims. (Cl. 131—5)**



1. A chewing tobacco product comprising in excess of 60% by weight of finely-divided tobacco thermally bonded together by and dispersed in a matrix of less than 40% and more than 20% by weight of a water insoluble polymeric vinyl ester resin plasticized with triacetin, said product being of chewable plasticity at body temperature to release tobacco flavors without disintegration.

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**3,166,079**
**MOUTHPIECES FOR CIGARETTES**
**David Theodore Nelson Williamson, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a British company**
**Filed Apr. 11, 1963, Ser. No. 272,274**
**Claims priority, application Great Britain, May 23, 1962, 19,760**
**1 Claim. (Cl. 131—20)**

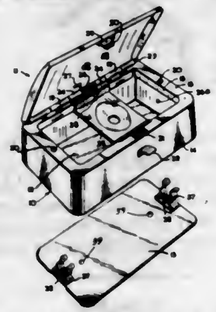


A method of producing composite mouthpieces, comprising the step of producing stubs each consisting of a core of material enclosed within a tube, displacing the core of each such stub lengthwise of the tube to form a recess at one end of the tube, arranging two such stubs with their recessed ends directed toward each other, placing a further stub, of the same diameter as that of the said two stubs, between the two said stubs in endwise abutment with the tubes of both the said two stubs where the latter are recessed, thereby forming a composite stub unit, placing the said stub unit between the ends of two cigarette lengths both of which have the same diameter as that of the stub unit, the only contact between the stub unit and the cigarette lengths being abutting contact between end faces thereof, uniting the unit and the cigarette lengths by an encircling band which forms a tubular cover for the stub unit and part of the end portions of the two cigarette lengths and which is the sole means of joining the stub unit to the cigarette lengths, the inside diameter of the said tubular cover being equal throughout to the outside diameter of the stub unit and cigarette lengths, and subdividing the assemblage so formed by cutting through the central stub of the stub unit.



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**3,166,080**
**VEHICLE ACCESSORIES**
**Michael R. Neale, Old Hill, England, assignor to Raydyot Limited, Old Hill, England, a British company**
**Filed Dec. 20, 1962, Ser. No. 246,034**
**Claims priority, application Great Britain, Jan. 27, 1962, 3,195/62**
**6 Claims. (Cl. 131—241)**



6. A vehicle accessory comprising a tray and a mounting plate, said tray comprising side and end walls and a base and being open-topped, an outer shell comprising side and end walls surrounding said tray side and end walls and spaced therefrom one of said shell side-walls being apertured, a flange projecting inwardly from the walls of the said outer shell, a flange projecting outwardly from the walls of the tray, said flange being interrupted along opposite sides, said shell flange overlying the tray flange and being secured thereto, said flanges being located at the mouth of the tray, hinge knuckles provided on said tray and located at the positions of the interruptions along one side of the tray, a lid hinged upon a pin passing through said hinge knuckles, a pair of co-axial cups, one cup secured to each end wall of the tray, the cups being located between the end-walls of the tray at the end walls of the shell, a bracket disposed between the side-walls of the tray and shell and adjacent said shell aperture, a catch mechanism release member of L-shape pivoted to said bracket end having a hook end projecting through interruptions in the flanges on the side opposite to the lid hinge, the other end of the said release member projecting through said outer shell aperture, spring means urging said hook end towards the tray; said lid having a hook member for engagement with said hook end of the release member, a spring wound upon said hinge pin and urging the lid open, a bridge piece across said tray and hinged upon said hinge pin, said spring which urges the lid open urging the bridge piece downwardly, said bridge piece having a free end portion to overlap said flanges on the side opposite to the hinge, said mounting plate comprising a plate adapted for permanent connection to the vehicle and being of dimensions to fit within the outer shell, a pair of spring clips, each spring clip being of substantially U-shape with the bridge of the U secured to said plate, said clips having outturned end portions and a neck below said end portions to guide the said cups for snap-engagement with said clips.

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**3,166,081**
**COMB WITH RETRACTABLE STYLING TOOL**
**Merlyn O. Larson, 924 S. Grand Ave., Spencer, Iowa, and Sebastian J. Franco, 316 S. 19th St., Omaha, Nebr.**
**Filed July 27, 1962, Ser. No. 212,875**
**3 Claims. (Cl. 132—122)**

1. A multipurpose style comb for use as a hair styling tool, said comb comprising:

an elongated back portion that is substantially rectilinear longitudinally thereof and defines a top portion and an under portion along oppositely positioned longitudinally extending edges thereof,

a substantially planar toothed portion that comprises a plurality of comb teeth affixed to the under portion of said back portion and projecting away from said back portion oppositely of said top portion in the plane of said toothed portion and transversely of said back portion,

said comb teeth at one end of said back portion being proportioned and spaced from each other to define fine comb teeth,

said comb teeth at the other end of said back portion being proportioned and spaced from each other to define coarse comb teeth,

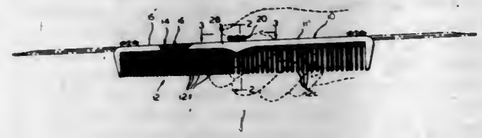
said back portion being formed to define a rectilinear dovetail type slot extending longitudinally of said back portion between the ends of said back portion and having:

its opposite ends open at the respective ends of said back portion and its mouth disposed along said top portion of said back portion and lying in the plane of said toothed portion,

and having cross-sectional configurations transversely and longitudinally of said back portion that are substantially uniform over the length of said slot between the ends thereof,

with said ends of said slot being aligned with the longitudinal axis of said slot,

and an elongated tail comb forming element shiftably mounted in said slot,



said element comprising an elongate rectilinear member having oppositely projecting rounded end portions and a transverse cross-sectional configuration between said member end portions that substantially complements that of said slot,

said member having its length proportioned to dispose both its end portions within said slot but respectively adjacent said slot ends when said element is centered within said slot with respect to said back portion ends,

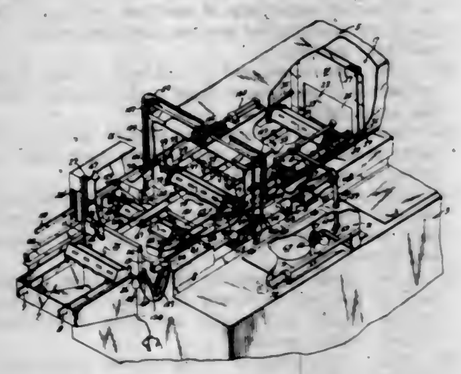
said element further comprising a handle fixed to said member adjacent the mid portion thereof and projecting outwardly of said slot through said mouth thereof,

said handle including a pad type thumb or finger engaging portion positioned over said top portion of said comb back portion,

whereby, when said tail comb forming element is in its centered position within said slot, said comb may be used as either a fine tooth or a coarse tooth style comb by grasping the comb and placing the comb in operating position to use said comb teeth at said one end or said comb teeth at said other end of said back portion, respectively,

and when using the comb as either a fine tooth or a coarse tooth style comb, and a tail comb operation is required, said tail comb forming element may be moved to extend the end portion thereof that is disposed adjacent the end of the comb in use outwardly of said back portion by finger or thumb manipulation of said handle thumb or finger engaging portion without changing said operating position of said comb.

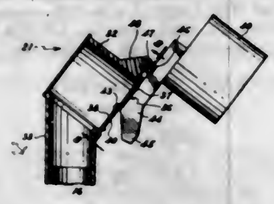
3,166,082
INDUSTRIAL PARTS WASHER
Orlan M. Arnold, Grosse Pointe Park, and Dewey M. Evans, Pinckney, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed Mar. 6, 1962, Ser. No. 177,907
11 Claims. (Cl. 134—78)



1. Apparatus for processing manufactured parts comprising a base tank, a removable upper housing seated on said base tank and having entry and exit ports, base tank partitions defining the chambers therein, partitions in the upper housing contiguous with the base tank partitions, respectively, with each cooperating therewith to define chambers for a given processing section and having transfer ports therein, which are disposed along a path of travel for said parts, means for impinging streams of liquid against said parts at said processing stages, cradles positioned along a transfer path within said housing to receive and support said parts, respectively, at said processing stages within said chambers, transfer means for advancing parts through the apparatus, door means for sealing all of said ports, flange members extending inwardly and downwardly from the mating rims of the base tank and upper housing, from their partitions, and from the door means, gasket means positioned and pressed between said mated flange members to effect a seal, a plurality of hood structures corresponding, respectively, to said processing stages, and adapted to be positioned over said stages whereby each is substantially isolated during active processing of a part therein, actuating means for elevating and lowering said door means and said hood structures to allow transfer of parts between stages, inactivating means adapted to interrupt operation of said impingement means during the transfer of said parts, rotating means adapted to rotate the cradles while the latter hold the parts in place for overall impingement of the latter by said impinging means, and control means to synchronize the inactivating, actuating, rotating, and transfer means.

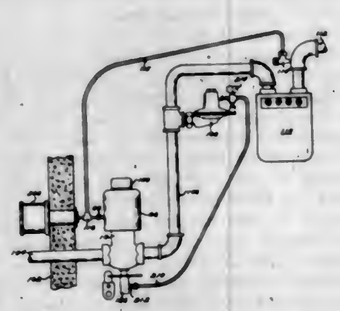
3,166,083
BREATHING APPARATUS FOR SWIMMERS
Barney B. Girden, 32 W. 76th St., New York, N.Y.
Filed Dec. 12, 1962, Ser. No. 244,120
5 Claims (Cl. 137—63)

1. A valve assembly for controlling the admission of air to a snorkel breathing tube, said assembly comprising means defining a valve housing with a valve seat thereon, a valve member rockable on an axis about which said valve member is symmetrical so as to be movable between a closed position against said seat and an open position while being insensitive to different pressures acting against the opposite sides of the valve member, cooperative magnet means fixed to said housing and movable with said valve member, respectively, for urging said valve member to rock to said closed position thereof, and a valve control body connected to said valve member and being of substantial weight to overcome said magnet means and rock said valve member to said open



position upon removal of said body from water, said valve control body having substantially neutral buoyancy in water to permit movement of said valve member to said closed position by said magnet means upon submerging of said body in water without regard to the orientation of the valve assembly in the water.

3,166,084
SAFETY CONTROL SYSTEM FOR FLUID DISTRIBUTION AND APPARATUS
Harold E. Handley, Jackson, Mich., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Original application July 28, 1958, Ser. No. 751,559, now Patent No. 3,021,866, dated Feb. 20, 1962. Divided and this application Nov. 29, 1961, Ser. No. 155,702
2 Claims. (Cl. 137—77)



1. In an automatic fluid flow control valve comprising a valve casing having inlet and outlet ports in communication through a valve seat and a normally open valve element releasable to engage said seat including a chamber formed on said valve and pressure sensitive, magnetic, valve element releasing means within said chamber for maintaining said valve element in an open position and being responsive to a pressure reduction below a predetermined minimum in said chamber to release said valve element for engagement with said seat, means communicating said chamber with the fluid to be controlled comprising a fitting having an inlet port in communication with the controlled fluid and a first outlet port, conduit means interconnecting said first outlet port with said chamber, a restriction orifice within said fitting inlet port, and a second outlet port in said fitting in communication with said first outlet port, said second outlet port having a diameter larger than the diameter of said orifice and being sealed with a low temperature fusible plug whereby excessive temperature adjacent said fitting opens said fitting outlet ports to the atmosphere reducing the chamber pressure and thereby releasing said valve element.



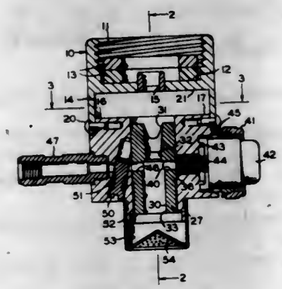
3,166,085
PNEUMATIC RELAYS
Thomas M. Holloway, Waukesha, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 6, 1961, Ser. No. 150,356
5 Claims. (Cl. 132—82)



5. In a pneumatic relay having a body with a recessed face to provide a supply fluid chamber and having a supply fluid inlet port leading thereto; an inherently flexible valve flap movably supported in said chamber; body means having one side positioned over said supply fluid chamber and having an opening therethrough adapted to be sealed by said flexible flap and having an output pressure chamber on its other side in communication with said opening; a movable wall adjacent said other side of said body means and having an exhaust fitting with a tubular stem providing an exhaust duct, one end of said stem and exhaust duct being positioned to be controlled by said flap; means whereby the other end of said exhaust duct is in communication with the atmosphere; biasing means normally urging said movable wall and exhaust fitting stem away from said supply fluid chamber and flap; and controlling means for urging said movable wall in the opposite direction, said stem, when the movable wall is moved in a direction opposing said biasing means, being so positioned and of such length as to project into said supply fluid chamber to move said valve flap away from the opening of the output pressure chamber, said flap being so positioned that during said last-mentioned movement it stays in engagement with the controlled end of the stem so that the exhaust duct of the stem is maintained closed by the supply fluid pressure in the supply fluid chamber and by the inherent flexibility of the flap.

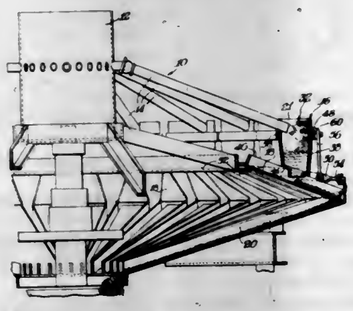
3,166,086
FLUID MIXING DEVICE
Lambert Holmes, Creve Coeur, Mo., assignor to Bela Deutsch, Herman Deutsch, and Carl Deutsch, doing business as Standard Machine & Manufacturing Co.
Filed Jan. 10, 1963, Ser. No. 250,713
14 Claims. (Cl. 137—217)

1. In a vacuum breaker for a fluid mixing device:
(*a*) a cap adapted to be attached to a source of fluid under pressure,
(*b*) a partition across said cap,
(*c*) a valve body attached to said cap and spaced from said partition to provide a chamber therebetween,
(*d*) means communicating with said chamber to place said chamber under atmospheric pressure,
(*e*) the partition being provided with an aperture at one side of said chamber,
(*f*) the valve body being provided with a passage at the opposite side of said chamber,
(*g*) a nozzle disposed in said passage having a main channel therethrough with an inlet aligned with said aperture, and
(*h*) said nozzle providing at least one auxiliary channel in said passage, the said nozzle having its inlet end spaced inwardly of the entrance to said passage



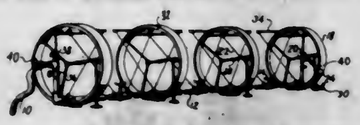
so that the deflection of the excess fluid flow to said auxiliary channel occurs in said passage,
(*i*) the flow of fluid being through said partition aperture, across the chamber and into said inlet for movement through the main channel, any excess fluid flow moving along said auxiliary channel.

3,166,087
FLOW-DISTRIBUTING DEVICE
Harry B. Cannon, P.O. Box 2432, Lakeland, Fla.
Filed July 15, 1960, Ser. No. 43,233
11 Claims. (Cl. 137—262)



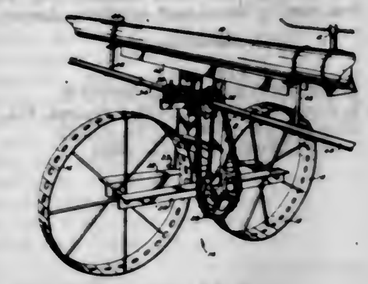
1. A flow-distributing device comprising a receptacle made of wear-resistant material having an uncovered top, one side of said receptacle including an opening for inserting an inlet conduit into said receptacle, a number of outlet conduits upon said receptacle, a splash-suppressing means mounted upon a side of said receptacle opposite said side through which said inlet conduit extends, said splash-suppressing means comprising a plurality of substantially parallel spaced ribs having sides and relatively shorter edges extending from said side of said receptacle substantially directly opposite said inlet opening toward the interior of said receptacle, and said sides of said ribs being disposed substantially in line with the path of the flow discharged from said inlet conduit whereby said flow from said inlet conduit impinges upon said edges of said ribs in the interior of said receptacle and enters in between said sides of said ribs to suppress splashing of said flow through said uncovered top which facilitates visual surveillance.

3,166,088
WHEELED IRRIGATION PIPE MOVER
Hadley H. Kirn, Cochran County, Tex. (Star Rte. 2, Morton, Tex)
Filed May 24, 1962, Ser. No. 197,337
11 Claims. (Cl. 137—344)



1. A moveable agricultural irrigation system comprising:
(a) an elongated pipe, and
(b) a plurality of wheels,
(c) said pipe affixed to each wheel in a fixed relationship to the wheel,
(d) said pipe affixed eccentric to each wheel within the perimeter of the wheel,
(e) said eccentricity being the same for each wheel.

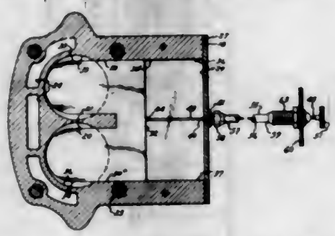
3,166,089
IRRIGATION SYSTEM
Leonard V. Wagner, P.O. Box 427, Brownfield, Tex.
Filed Nov. 16, 1962, Ser. No. 238,246
2 Claims. (Cl. 137—344)



1. An irrigation system including
an elongated pipe adapted to carry water under pressure,
a plurality of spatially disposed vehicles and each attached to the pipe,
an elongated shaft parallel to the pipe and having substantially the same length thereof;
each vehicle having the improvement comprising:
at least one wheel and having a substantially cylindrically shaped rim,
said rim having a plurality of circumferentially equally spaced radial holes therethrough,
a pinion having teeth and mounted parallel to the wheel,
the teeth of the pinion meshing with said radial holes in the rim,
a frame interconnecting the wheel and pinion,
means on said frame for journaling said shaft thereto, and
means interconnecting the pinion and shaft for rotating the pinion responsive to rotation of said shaft.

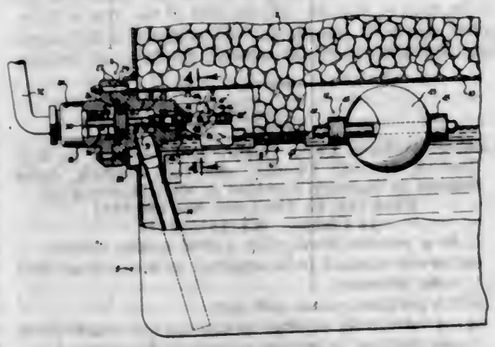
3,166,090
ACCELERATION CONTROL SYSTEM FOR A VEHICLE
Belford L. Davis, 4428 Worth Drive W., Jacksonville, Fla.
Filed May 7, 1962, Ser. No. 192,634
12 Claims. (Cl. 137—353)

1. An acceleration control system for a vehicle wherein said vehicle includes an internal combustion engine having an intake manifold and a downdraft carburetor communicating with said manifold through a vacuum passageway, said system comprising a housing mounted between said manifold and said carburetor, said housing having a chamber therein with a forward portion of said chamber in communication with said vacuum passageway and its rearward portion extending rearwardly and laterally thereof, said housing having a passage communicating within said rearward portion of said chamber and opening exteriorly of said housing, a valve element slidingly supported within said chamber, said valve element being movable from an inoperative position in said chamber rearward portion to an operative position in said chamber forward portion, an elongated wire having



one end portion extending through said passage and attached to said valve element and the other end portion terminating exteriorly of said housing, sealing means between said elongated wire and said housing for vacuum sealing said passage, and selective control means attached to said other end of said wire for sliding said valve element from said inoperative position forwardly to said operative position, said valve element having an end portion which extends over said passageway and partially obstructs same when said valve element is positioned in its said operative position, said valve element end portion being adapted to substantially constrict said vacuum passageway whereby the rate of flow of the gas and air mixture is reduced and the acceleration of the vehicle is selectively controllable.

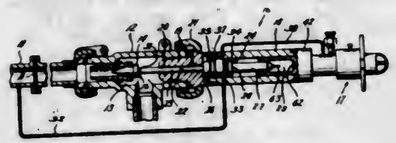
3,166,091
FLOAT CONTROLLED VALVE
John Radelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 23, 1961, Ser. No. 119,133
2 Claims. (Cl. 137—391)



1. A valve through which liquid can be both filled into and withdrawn from a vessel, and which terminates flow of liquid to and from the vessel when liquid therein reaches predetermined maximum and minimum levels, respectively, said valve comprising:
(A) a valve body having
(1) a passage therethrough opening to spaced apart external ports in the valve body, to and from each of which liquid can flow,
(2) a valve chamber provided by an intermediate portion of said passage,
(3) annular valve seats in said passage that oppose one another and face into the valve chamber;
(B) a stem member in the valve body extending through the valve chamber and coaxially through the valve seats and having a portion projecting to the exterior of the valve body;
(C) a valve element coaxially fixed on said stem member, intermediate the ends thereof, and disposed in said valve chamber, said valve element having a pair of surfaces that oppose and are engageable with said valve seats;
(D) means in the valve body slidably supporting the stem member at axially opposite sides of the valve chamber to provide for liquid pressure responsive movement of the valve element in opposite axial directions, to each of a pair of closed positions at which one of said surfaces engages its opposing valve seat, and to an intermediate open position in which both of said surfaces are spaced from their opposing seats;
(E) a float member mounted for movement in opposite directions relative to the valve body between defined upper and lower limits; and
(F) a pair of cooperating latch elements, each connected with one of said members for movement therewith, comprising cooperating abutments on the float member and on said portion of the stem member that are engaged whenever the float member is between its limits of motion to provide an interlock by which the valve element is held in its intermediate position, against flow responsive movement to a closed position, but which are disengaged in consequence of movement of the float member to one of its limits of motion to release the stem member for liquid pressure responsive movement of the valve element to a closed position.

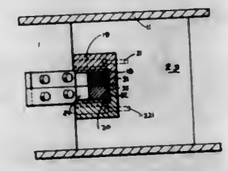


3,166,092
AUTOMATIC HIGH-LOW PRESSURE CUTOFF
George D. Hall, Houston, Tex., assignor to Thornhill-Craver Company, Houston, Tex., a corporation of Texas
Filed Nov. 8, 1963, Ser. No. 322,376
4 Claims. (Cl. 137—458)



1. A pressure control apparatus comprising,
a main valve having a passageway therethrough adapted to be connected in a line on the high pressure side of a choke,
a valve member and valve seat controlling flow through said passageway,
means for moving the main valve member between open and closed positions including first and second variable volume chambers having opposed movable walls connected to each other and to the valve member,
said wall of the first chamber having a larger area than said wall of the second chamber,
means for establishing fluid communication between said second chamber and said passageway,
means for establishing fluid communication between said first chamber and said line downstream of said choke including an orifice,
conduit means connecting said first and second chambers,
control valve means controlling flow through said conduit means,
and a valve seat in said second chamber and a valve member connected to said wall of said second chamber controlling flow from said second chamber into said conduit means.

3,166,093
CHECK VALVE
Arthur J. Hopper, 1408 W. Grandview Blvd., Erie, Pa.
Filed Mar. 6, 1963, Ser. No. 263,264
4 Claims. (Cl. 137—512.15)

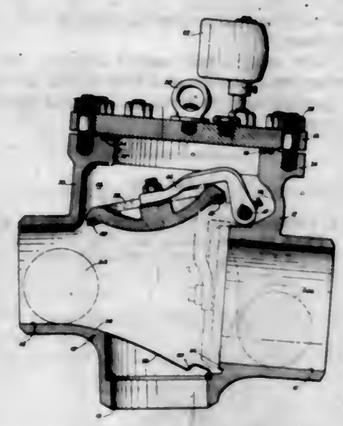


2. A valve comprising a hollow body, a supporting member in said body, an axle attached to said body and extending across the inside thereof, said supporting member having two arcuate L-shaped slots therein, two oval wings, and an arcuate L-shaped flanged member attached to each said wing with one leg of each L-shaped flanged member disposed in alignment with a corresponding leg of the other said flanged member, each said flanged member being complementary in shape to one said slot, one of said flanged members being attached to one said wing, the other said flanged member being attached to the other said wing, a side defining an inside surface of each said wing defining the said flanged member, said inside surfaces being in sliding engagement each with the other whereby said flanged members are held in said slots.

3,166,094
RECEIVING VALVE
Harold N. Eagleton, Colorado Springs, Colo., assignor to Charles Wheatley Company, Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 8, 1962, Ser. No. 164,943
4 Claims. (Cl. 137—544)

1. A receiving valve for pipe line pigs in a high pressure fluid system and comprising a body having opposed inlet and outlet bores for passing a pig therethrough, said inlet and outlet bores disposed in aligned angular positions to provide an inclined passageway for facilitating movement of the pigs through the valve, a second outlet interposed between the inlet and outlet ports for discharging fluid from the body independently of the pigs, perforated means provided in the body for precluding discharge of the pigs through the second outlet, a valve seating portion provided in the body conterminous with the outlet bore, a clapper member disposed within the body and pivotally secured in the proximity of the valve seating portion and upstream thereof to provide alternate open and closed positions for the valve, sealing means carried by the clapper member to preclude leakage of fluid through the outlet bore in the closed position of the valve, said clapper member being retained in a normally open position during a receiving operation to permit passage of a plurality of successive pigs through the outlet bore, shoulder means spaced upstream from the valve seat for directing the

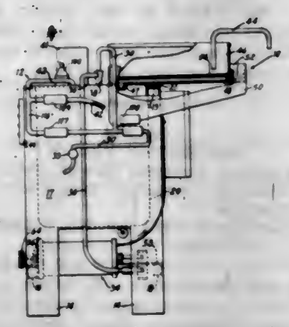
pigs into the outlet bore without interference from the valve seat, and means operably connected with the clapper to selectively open and close the valve whereby the



valve may be closed subsequent to the passage of successive pigs to facilitate removal of the plurality of pigs having moved through the valve.

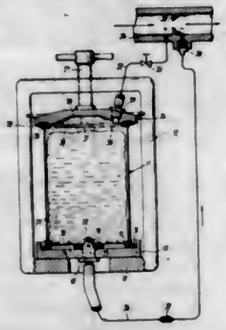
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3,166,095
**PRINTING PRESS WATER SOLUTION MIXING AND DISTRIBUTING MECHANISM**
Harold W. Gegenheimer, Darien, Conn., Andrew N. Stad, Syosset, N.Y., and Philip E. Tobias, Abington, Pa., assignors to Baldwin-Gegenheimer Corporation, Brooklyn, N.Y., a corporation of New York
Filed Nov. 14, 1961, Ser. No. 152,205
4 Claims. (Cl. 137—563)



1. In a device for supplying water fountain solution to the water fountain pan of a printing press the combination a supply tank having a pair of separate compartments, one of said compartments being provided for holding etch and gum concentrate, means for supplying water to the second of said compartments, means interconnecting said compartments, means for feeding a pre-selected amount of etch and gum concentrate from said first compartment into said second compartment in response to the entry of water into said compartment to form said water fountain solution, means for feeding said solution from said second compartment to the water fountain pan of a printing press, and control means interconnecting said water supply means, said etch and gum concentrate feeding means and said solution feeding means and responsive to the level of solution in said second compartment to maintain the amount of solution therein between pre-determined limits.

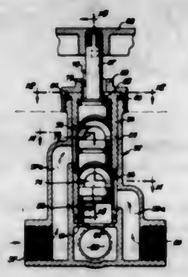
3,166,096
**DISPENSER FOR LIQUID ADDITIVES TO FLUID STREAMS**
Helmut Lang, Wernleiten, Stegsdorf, Upper Bavaria, Germany
Filed Oct. 3, 1961, Ser. No. 142,695
Claims priority, application Germany, Oct. 3, 1960, L 37,167; Mar. 22, 1961, L 38,528
22 Claims. (Cl. 137—564.5)



1. A system for dispensing liquid additives into a fluid stream flowing in a conduit wherein a pressure differential exists between an upstream location and a downstream location, comprising a vessel, a receptacle for a liquid additive removably mounted in said vessel and having a movable wall member freely displaceable in said vessel and subdividing the interior thereof into a first compartment and a second compartment, said second compartment being constituted by said receptacle, piercing means on said vessel penetrating said receptacle, said piercing means having a channel communicating with the said second compartment, said first compartment being separated from said channel by said movable wall member and said second compartment containing an additive to be dispensed, first connection means on said vessel forming a path for fluid from said upstream location to said first compartment, and second connection means on said vessel communicating with said channel and forming a path therethrough for said additive from said second compartment to said downstream location.

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3,166,097
**SHEAR SEAL VALVE**
Gottlob Hinderer, Sylmar, and Ralph E. Thorp, Glendale, Calif., assignors to Price-Pfister Brass Mfg. Co., Los Angeles, Calif., a corporation of California
Filed Nov. 17, 1961, Ser. No. 153,113
6 Claims. (Cl. 137—625.17)



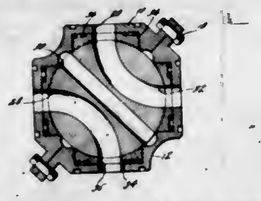
1. In a valve structure for controlling the flow of fluid: a valve body having provisions for attachment at an opening of a member with one end of the body within the member; said body providing an interior space of substantially circular cross-section and a lateral valve port extending from said space exteriorly of the body; a closure



mounted in and supported at the interior space and having an interior chamber; said closure having a slot extending from the periphery of said closure to said interior chamber, the slot being defined substantially by upper and lower intersecting planes both transverse to the axis of the closure and diverging outwardly from each other from an area of intersection; the projected line of intersection of said planes being located adjacent the axis of said closure and substantially perpendicular thereto; the said projected line of intersection being located axially beyond the lateral valve port of said body; substantially the entire space between the planes on one side of said intersection line being open; one of said planes being oblique to the closure and sweeping across said lateral valve port as the closure is angularly moved; an oblique sealing ring mounted peripherally of the said closure, and substantially paralleling said one oblique plane for corresponding traverse across said lateral valve port; and seal means cooperating with said sealing ring to define a sealed space on the periphery of said closure to which said lateral valve port is exposed when said slot is out of registry with said lateral valve port.

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3,166,098
**BALL VALVE**
David C. Jennings, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 12, 1961, Ser. No. 158,730
1 Claim. (Cl. 137—625.43)



A fluid valve comprising a parallel piped shaped ported body portion formed from a pair of triangularly shaped casing members each having a semi-spherical cavity portion mating to define a spherical cavity portion, said casing members when assembled defining a parting plane extending diagonally through the housing,

(*a*) a ball type member rotatably mounted in said spherical cavity portion,

(1) said ball type member including a hub, a generally partially spherically contoured rim and web-like members supporting said rim to said hub,

(2) said web-like members having passages terminating in said rim,

(*b*) a shaft carried by said ball projecting through an opening formed between said casing members,

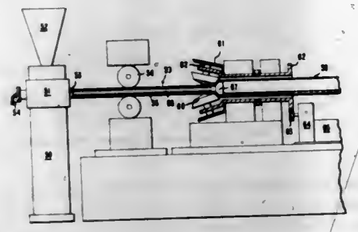
(*c*) circular seat members each having an opening coextensive with said ports, and having a complementary partially spherically shaped recess adapted to engage the spherically contoured rim,

(1) said contoured rim adjacent each of said passages dimensioned to have sufficient surface area to span said opening in the circular seat when said ball is rotated from an open position to a closed position,

(*d*) means for compressing said circular seats against said spherically contoured wall means so that said circular seat performs the combined function of sealing and being the sole support for said ball, and

(*e*) means engaging the projecting end of said shaft for imparting rotary movement to said ball for aligning said passages with the opening in said circular seat members.

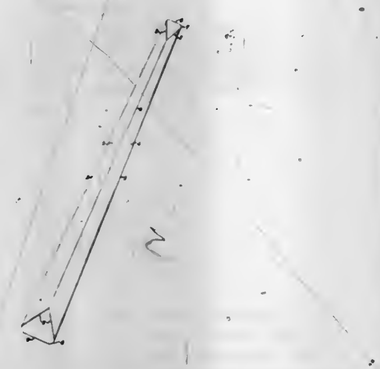
3,166,099
**THERMOPLASTIC PIPE**
Paul Dillon Wolfe, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,310
2 Claims. (Cl. 138—118)



1. As an article of manufacture, seamless pipe of acetal resin, roll-extended substantially in the circumferential direction to a degree of extension in the range between about 1.05 and about 1.4.

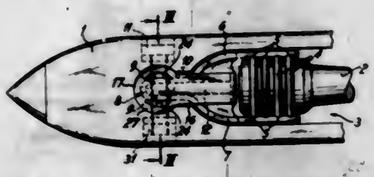
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3,166,100
**TUBULAR MEMBER FOR FURNITURE AND ITS METHOD OF MANUFACTURE**
Joseph Marius Tiola, Les Mauruches, Vallauris, France
Filed Dec. 29, 1960, Ser. No. 79,421
Claims priority, application France, Jan. 11, 1960, 815,483
2 Claims. (Cl. 138—171)



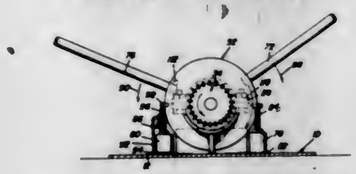
1. A method of forming a tubular tapered element, said method comprising: providing a sheet metal blank having a trapezoidal central section of a height substantially greater than the base thereof and two tapering lateral sections on the sides of the trapezoidal central section, the said lateral sections being provided with cut away extremities merging with the top and base of the trapezoidal central section, folding the blank at right angles along two converging lines constituting the sides of the trapezoidal central section to form an element having a base and upfolded sides, bending the free edges of the upfolded sides towards one another while leaving the element base free to deform along a curved path and joining the previously free edges of the upfolded sides together whereby a tapered tubular element of approximately triangular cross-section is formed.

3,166,101
SHUTTLE BODY AND CLAMPING SPRING CONSTRUCTION
Emil Forster, Hinwil, Zurich, Switzerland, assignor to Firma Emil Forster A.G., Hinwil, Zurich, Switzerland
Filed Sept. 26, 1962, Ser. No. 226,241
Claims priority, application Germany, Nov. 4, 1961, F 35,280
5 Claims. (Cl. 139—207



1. Securing means for the clamping spring holding a weft thread carrier in a shuttle, comprising a shuttle body having a cylindrical recess with an axis substantially vertical to the bottom of said shuttle body, and an elongated recess including a neck portion of a lesser dimension than said cylindrical recess defined in said shuttle in communication with the side of said cylindrical recess and being large enough for accommodating an end of a clamping spring and the weft thread carrier, a substantially cylindrical intermediate piece larger than the elongated recess so that it cannot pass therethrough and positioned in the cylindrical recess of the shuttle body, said piece having a slot defined through the center thereof extending outwardly to one side into communication and alignment with the elongated recess to accommodate said clamping spring means for engaging, said clamping spring over each end of said intermediate piece, said intermediate piece including a bore defined therethrough, and a clamping spring securing screw extending through the bore of said intermediate piece.

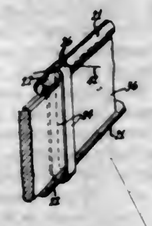
3,166,102
ARMATURE WINDING MACHINE
Willie D. Strickland, Box 41, Wylie, Tex.
Filed Oct. 4, 1962, Ser. No. 228,417
12 Claims. (Cl. 140—2)



1. A machine for bending the ends of hairpin conductors extending through the slots of an armature core, certain of said conductors being disposed in a first circle and innermost in said slots while others of said conductors are disposed in a second circle and outermost in said slots, said circles being concentric with the axis of rotation of said armature, said machine comprising two coaxial relatively rotatable members provided with closely adjacent concentric circles of inner and outer bores generally paralleling and concentric with the axis of rotation of said members and adapted to receive said ends, means connected with said members for relatively rotating said members.

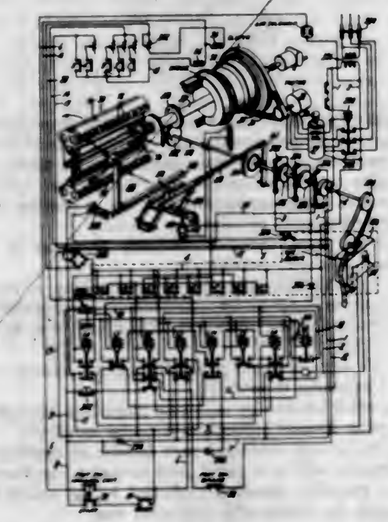
3,166,103
GRID MANUFACTURING APPARATUS
Gerard Samuels, Teaneck, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 20, 1961, Ser. No. 125,567
21 Claims. (Cl. 140—71.5)

1. Apparatus for securing and winding a lateral wire about a grid frame, said frame being provided with an extending ear adapted for clamping said lateral wire between said ear and a portion of said frame, said apparatus comprising a frame supporting member, means for mounting a frame on said frame supporting member, means for feeding a lateral wire towards a frame mounted on



said frame supporting member, means for grasping said lateral wire adjacent said wire feeding means and for moving said wire for positioning it between said ear and said portion of said frame, and means for crimping said ear against said portion for clamping said lateral wire therebetween.

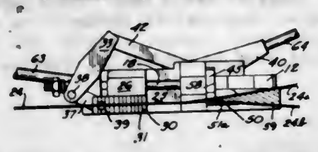
3,166,104
COIL WINDING MACHINE
Leroy E. Foley, Jr., Schenectady, N.Y., and John F. Paterson, Balboa, Canal Zone, assignors to General Electric Company, a corporation of New York
Filed Oct. 1, 1958, Ser. No. 764,616
9 Claims. (Cl. 140—92.2)



1. A coil winding machine for winding random wound coils comprising a motor selectively engageable with a drive shaft supporting a mandrel, said mandrel comprising arms movable between an extended and collapsed position and having wire receiving means on the arms for receiving wire utilized in forming coils comprising a winding, a mechanism mounted adjacent said mandrel for guiding wire into said receiving means, and a device connected with the mechanism and responsive to changes in a component associated therewith for controlling the number of turns of wire wound in each coil and the movement of the mechanism longitudinally of the mandrel.



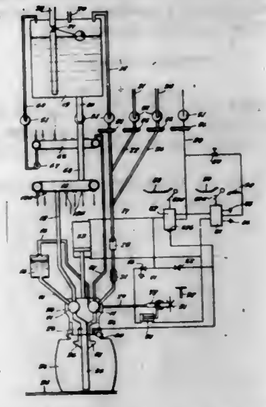
3,166,105
BANDING TOOL
William Hucal, 3336 W. 63rd St., Chicago, Ill.
Filed Nov. 14, 1960, Ser. No. 68,745
5 Claims. (Cl. 140—93.2)



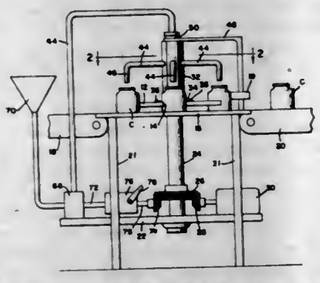
1. In a banding machine for tensioning and fastening a band of wire and a clip about an object, said clip interposed between the ends of the wire, said clip having at least two longitudinal securing openings with yaws extending inwardly from its opposite end edges, a partition portion of said clip disposed between the said openings therein, the openings having a width to grip the sides of the wire and secure the wire therein when pressure is applied to the wire, one end of the band of wire secured within one opening of said clip leaving the opposite end of the wire a free end and leaving the second opening in said clip a vacant opening; said banding machine comprising a frame with top and bottom surfaces, a guideway for positioning the wire longitudinally relative to the frame surface, a clip inserting recess formed upwardly within the bottom surface portion of said frame and located between the ends thereof, a clip nesting hollow cavity arranged adjacent and forwardly of said clip inserting recess and between the top and bottom surfaces and joining said clip inserting recess, said guideway forming a wire groove disposed upwardly in said bottom surface and joining said nesting cavity and extending forwardly therefrom, said guideway forming a vertical opening through the rear portion of said frame and extending forwardly of said clip nesting cavity, an anvil means assembled with said frame, said nesting cavity being adapted to receive the assembled clip therein and said wire groove being adapted to receive the assembled end of the wire therein, resilient pawl means mounted upon said frame for gripping the free end portion of the said wire placed longitudinally through said vertical opening in the frame and over the top surface of the forward end thereof, gripper means slidably mounted with said frame and in said vertical opening for exerting tension in said band of wire secured to said clip, a severing arm means pivotally mounted on the said frame whereby downwardly movement of one of its end portion engages the wire forcing it against said anvil and detaching the extreme free end portion of said band of wire leaving the remaining free end portion in vertical alignment with said vacant opening of said clip in said cavity, whereby continued downward movement of said severing arm means forces the free end of said wire into said vacant opening of said clip, whereby the ends of said wire are spaced apart from each other.

3,166,106
CASK CLEANSING AND FILLING SYSTEMS
John Edwin Reeve and Frank Jesse Kingsman, London, England, assignors to G. Hopkins & Sons Limited, London, England, a company of Great Britain and Northern Ireland
Filed May 26, 1961, Ser. No. 112,820
Claims priority, application Great Britain, May 27, 1960, 18,845/60
11 Claims. (Cl. 141—91)

1. Apparatus for use with containers provided with a filling valve comprising, in combination, a valve member having two concentric passages on one side of the valved portion of the member, conduits for the inflow and outflow of cleansing and filling fluids leading to said valve member and terminating at the other side of said valved portion, first control means connected to said valve member and moving said member including its valved portion to control the application of said two passages to the container valve continuously throughout a cleansing and filling cycle, second control means connected to said valved portion to control the successive stages of said cycle by operation of said valved portion to bring said conduits into communication with said two passages in a pre-determine sequence, location indication means, including a pressure fluid connection leading to an orifice on the valve member adjacent the container valve ends of said two passages, operable by the correct engagement of the valve member with the container by said first control means, and an interlocking device controllable from said pressure fluid connection for actuating said second control means.



3,166,107
APPARATUS FOR SERIALLY FILLING CONTAINERS
Donald L. Swenson, San Leandro, and Robert F. Krupp, Oakland, Calif., assignors to Gerber Products Company, Oakland, Calif.
Filed Jan. 23, 1963, Ser. No. 253,464
9 Claims. (Cl. 141—145)

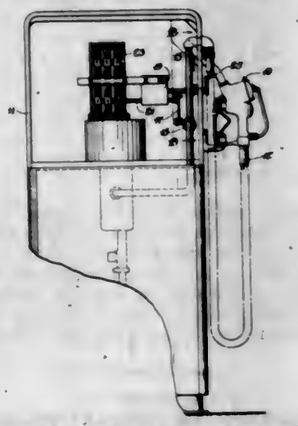


1. Apparatus for serially filling containers with a predetermined amount of a viscous substance comprising a feeder tube having a wall with a cylindric outer surface and a hole through the wall terminating in an orifice in the cylindric surface, a sleeve mounted for rotative running fit on said feeder tube, said sleeve having at least one opening therethrough adapted to move into and out of at least partial coincidence with the feeder tube orifice in response to rotation of said sleeve relative said feeder tube so that viscous substance is delivered from said feeder tube orifice to said sleeve opening only when said opening coincides with said orifice, means for rotatably driving said sleeve, means for transporting a container along a path defined by an arc of a circle concentric with

the cylindric outer surface of said feeder tube, said container transporting means being adapted to move the container at a rotative speed equal to the rotative speed of said sleeve, means defining a conduit rotatably movable with said sleeve for conveying viscous substance from said sleeve opening to a container in said container transporting means during viscous substance delivery to said sleeve opening, means for supplying viscous substance to said feeder tube at a pressure, and means for regulating the viscous substance supply pressure and volume relative to the speed of rotation of said sleeve.

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**3,166,108**
**AUTOMATIC SHUTOFF DEVICE**
**Robert Thomas Hearn, Willards, Md., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland**
**Filed July 18, 1961, Ser. No. 124,974**
**9 Claims. (Cl. 141—225)**

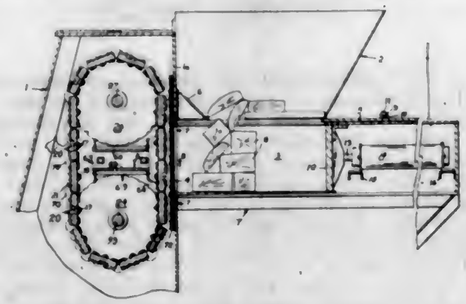


1. A pressure control arrangement comprising a fluid dispensing nozzle, a fluid supply source, a conduit connecting said nozzle to said fluid supply source, a supply shutoff valve installed between said conduit and said fluid supply source, said supply shutoff valve being operable to provide normal and minimal flow areas for normal and minimal flow therethrough, an automatic shutoff valve in said nozzle which closes said nozzle when the flow of fluid supplied to it is cut off, a check valve in said nozzle between said automatic shutoff valve and said supply shutoff valve for preventing premature closure of said automatic valve, a pressure detecting conduit connecting said automatic valve to a portion of said nozzle between said check valve and said supply shutoff valve for actuating said automatic valve to close when the pressure in said portion of said nozzle drops below a predetermined minimum pressure, resilient means urging said check valve to close when the fluid supply pressure approaches said predetermined minimum pressure for maintaining said predetermined minimum pressure under said minimal flow rate conditions in said portion of said nozzle, and a restricted bypass passageway through said check valve of an area which facilitates the maintenance of said predetermined minimum pressure in said portion of said nozzle when the rate of fluid flow is suddenly and appreciably reduced.

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**3,166,109**
**WOOD CHIPPER**
**William R. Matthews, W. 1022 7th, Spokane, Wash.**
**Filed Dec. 1, 1960, Ser. No. 72,939**
**10 Claims. (Cl. 144—162)**

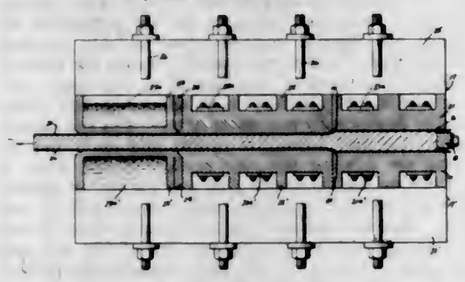
1. A wafer cutting machine, adapted to slice wafers from a wood billet, comprising an endless power driven conveyor made up of two endless chains trained around spaced sprocket wheels and cross bars removably secured to and connecting said chains, a billet feed box having an outlet opening to said conveyor and having means therein operable to press a billet therein through said opening against the cross bars, certain of said cross bars having cutter heads thereon provided with means to slice a wafer from the billet as the cross bar is drawn



across the billet, a chain backing frame positioned on the inside of the conveyor opposite the outlet opening of the feed box, having guide bars for said chains operable to prevent movement of the chains away from the feed box outlet by pressure of the billet, said chains having lateral extensions provided with bearing members opposite the cross bars and bearing plates affixed to the feed box at the sides of the outlet opening, on which said members ride.

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**3,166,110**
**METHOD FOR CASE HARDENING OF WOOD**
**Carroll H. Van Hartesveldt and Buddy D. Wahl, Toledo, Ohio, assignors to Hoover Ball and Bearing Company, Ann Arbor, Mich., a corporation of Michigan**
**Original application Feb. 2, 1960, Ser. No. 6,189. Divided and this application Sept. 14, 1962, Ser. No. 223,625**
**8 Claims. (Cl. 144—327)**



1. The method of forming a hardened compressed layer on the surface of wood by forcing the same through opposite surface compressing assemblies at least one of which has a continuous surface including a first flat surface, a second flat surface parallel to said first flat surface and a compressing surface inclined inwardly from said first to said second flat surface, comprising the steps of sandwiching said wood in between two flexible sheets, relatively moving said sheets with the wood therebetween through said surface assemblies and during such movement (1) preheating the surface of the wood at said first flat surface, (2) applying a progressively increasing pressure to the surface of the wood at said compressing surface, and (3) while maintaining the pressure on the surface of the wood during movement past said second flat surface, heating the surface of the wood to a stabilizing temperature and thereafter cooling the surface of the wood.



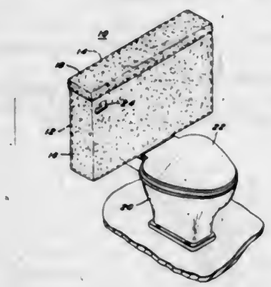
**3,166,111**
**BILLFOLD WITH GUSSET POCKET**
**George Markus, West Orange, N.J., assignor to Aristocrat Leather Products, Inc., New York, N.Y., a corporation of New Jersey**
**Filed Feb. 12, 1963, Ser. No. 258,000**
**3 Claims. (Cl. 150—38)**



1. In a wallet, billfold or the like having a compartment which includes a wall member having a surface of heat sealable material, a pocket member mounted on said surface and having inturned perforated end portions overlapping each other provided with surfaces of heat sealable material, said surfaces of heat sealable material confronting the heat sealable material of said wall member, said perforations being registered with each other, fastening means projecting through said perforations and secured to said wall member for positionally affixing said overlapping end portions to said wall member, and means forming an integral part of said pocket heat sealed to said wall member in said positions over said perforated end portions for securing them in said position, said pocket having a front wall and gussets integral with said front wall at the opposite ends of the pocket and disposed between said inturned perforated end portions and the adjacent ends, respectively, of said front wall, said integral part of said pocket being disposed at the inner side of said front wall.

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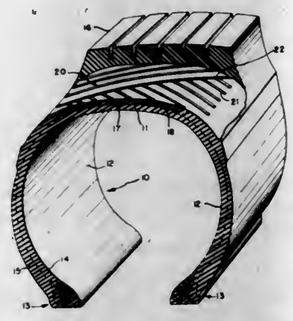
**3,166,112**
**TOILET TANK COVER SET**
**Manuel Fisher, Charlotte, N.C., assignor to Perfect Fit Industries, Inc., New York, N.Y., a corporation of Pennsylvania**
**Filed Mar. 14, 1963, Ser. No. 265,228**
**3 Claims. (Cl. 150—52)**



1. A toilet tank cover set comprising a single flexible, planar rectangular piece of moisture absorbent fabric adapted for universal mounting on the sides of any toilet tank by wrapping it therearound, said rectangular piece having parallel long edges and parallel short edges, a pair of elastic connecting strips, said connecting strips being removably connected in parallel relation to said long edges between said short edges, a part of said rectangular piece having a slot therein, and a separate second rectangular piece of moisture absorbent fabric, said second rectangular piece having an elastic strip sewn about its periphery whereby it may be universally mounted on the top of any toilet tank.

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**3,166,113**
**PNEUMATIC TIRE**
**Robert L. Keefe, Jr., Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Jan. 8, 1963, Ser. No. 250,169**
**2 Claims. (Cl. 152—361)**



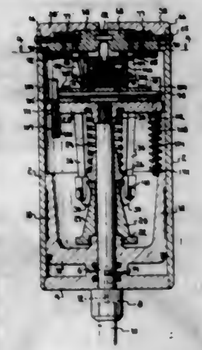
1. In a pneumatic tire comprising a carcass made up of cord-reinforced plies and a ground-contacting tread portion on the outer periphery of said carcass, a reinforcing strap disposed above the outer periphery of said carcass and underneath said tread, said strap extending circumferentially in a complete circle around the tire and extending laterally for a width not less than the width of said tread and not greater than the inner diameter of the tire cross-section, said strap comprising an endless ribbon of elastomeric material having embedded therein a multiplicity of discrete, parallel cord-like elements extending essentially for the full width thereof and at an angle of not less than 70° to the equatorial plane of the tire, each of said cord-like elements being a monofil of a melt-extrudible synthetic textile polymer and having the properties of both extensibility and compressibility in the direction of its length, whereby said strap as a whole endows the tire with a circumferential reinforcement having extensibility and compressibility in the direction transverse to the equatorial plane of the tire.

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**3,166,114**
**INDENTING TYPE CRIMPING TOOL**
**Herbert C. Stoltz, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Filed Aug. 29, 1961, Ser. No. 134,717**
**4 Claims. (Cl. 153—1)**

1. Apparatus for indenting electrical connectors, comprising, a housing, a plurality of indentors radially spaced around, and movable towards and away from, a common center in said housing, means at said common center for holding an uncrimped connector, stop means engageable with each of said indentors for limiting the degree of penetration of said connector, and actuating means for driving each of said indentors towards said common center, said actuating means for each of said indentors comprising a lever pivotally mounted intermediate its ends, one end of said lever being in engagement with its indentor, a reciprocable cam engaging the opposite end of each of said levers, said cam being relatively movable towards said common center to rock each of said levers and thereby drive each of said indentors towards said common center, said cam being capable of limited move-

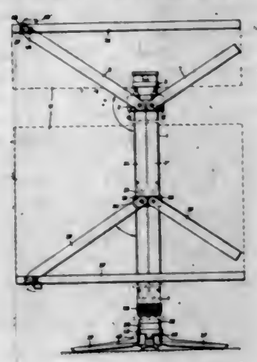
ment transversely of its path of reciprocation whereby, said cam yields with respect to one of said levers if the indentor associated with said one lever engages its re-



spective stop means and said connector is indented by each of said indentors only to the extent permitted by said stop means.

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**3,166,115**
**COLLAPSIBLE STAND FOR A FLEXIBLE PROJECTION SCREEN**
**Herbert Riedel, Spitalmuhlenstrasse 13, Schwabisch-Hall, Germany**
**Filed May 11, 1961, Ser. No. 109,472**
**Claims priority, application Germany May 14, 1960**
**9 Claims. (Cl. 160—24)**



1. In a collapsible stand for a projection screen, in combination, a base; an upright post mounted on said base; an upper and a lower carrier member secured to said post at an upper location close to its top and at a lower location remote from said top, respectively; a pair of rigid first arms pivotally connected with said upper carrier member for swinging displacement substantially in a plane parallel to said post outwardly into an operative position, wherein said first arms diverge upwardly beyond said post, from an inoperative position wherein said first arms extend substantially codirectionally with said post; a pair of rigid second arms pivotally connected with said lower carrier member for swinging displacement substantially in said plane outwardly into a downwardly diverging operative position from an in-operative position wherein said second arms extend substantially codirectionally with said post; a projection on the free end of said first and second arms engageable with an upper and a lower batten, respectively, of a projection screen; latch means at each of said free ends for releasably maintaining the battens so engaged in positively connected relationship with said arms; holding means on each of said members for retaining the respective arms in their operative positions, at least one of said members being longitudinally shiftable on said post; and tightening means on said post operatively connected with said one of said members for relatively displacing said members longitudinally away from each other, thereby tensioning the projection screen spanning said battens in the operative positions of said arms.

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**3,166,116**
**SCREEN FOR MOTOR VEHICLES**
**Norman G. Cole, Jr., 367 Little Falls Road, Cedar Grove, N.J.**
**Filed Aug. 30, 1962, Ser. No. 220,367**
**7 Claims. (Cl. 160—40)**



7. A framed screen, removably attachable over a window opening in a vehicle, comprising flat resilient packing means disposed around the periphery of said screen, to conform to the normally vertical flat surface of the vehicle around the window opening and close the space between said periphery and said surface, so as to fit vehicles with openings of different sizes, resilient clips disposed near the bottom edge of said screen to clamp the inner surface of said packing means against the outer surface of the upper edge portion of a window pane in the window opening, swingable clamps at the side edges of said screen, and thumb screw means adjacent the free end portions of said clamps for adjustably holding said screen in place with respect to said vehicle.

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**3,166,117**
**FABRIC WALL AND CEILING SUPPORTING MEANS**
**Ivan V. Abadjieff, 20 Bergin Lane, Worcester, Mass.**
**Filed Jan. 14, 1963, Ser. No. 251,326**
**11 Claims. (Cl. 160—392)**



1. Apparatus for stretching and mounting a fabric panel on a superstructure comprising an elongated substantially rigid channel, said channel comprising a base member and a pair of spaced side edge arms extending outwardly therefrom at an angle thereto, means to secure the channel to the superstructure, said arms each terminating in an inwardly directed portion extending along the length of the channel,

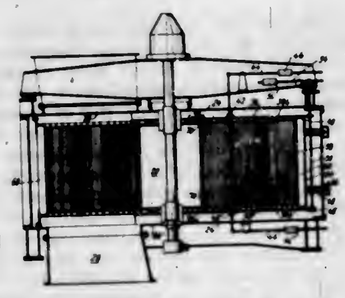


and a series of strip-like resilient elongated spring clips for engagement with the fabric panel adjacent an edge thereof, each said spring clip terminating at its ends in inclined portions engaging in and behind said inwardly directed terminal portions of the channels, said spring clips each having an original length greater than the distance between the terminal portions of the channel.

and a lock having ends engaging the inclined portions at the ends of said spring clips and forcing the same into tight locking engagement with the inside surfaces of the outwardly directed arms of the channel, locking the spring clips in place within the channel and substantially permanently holding the cloth of the fabric, the locks each having a length greater than the distance between the inclined portions at the ends of the spring clips.

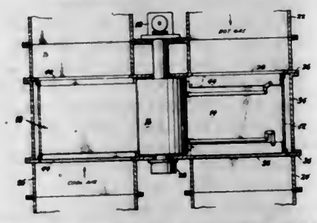
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**3,166,118**
**ROTOR END SEALING MEANS FOR ROTARY REGENERATIVE HEAT EXCHANGERS**
**Jakob Koch, Heidelbergerstrasse 27, Edingen, near Heidelberg, Germany**
**Filed Mar. 2, 1960, Ser. No. 12,348**
**6 Claims. (Cl. 165—9)**



1. In a rotary regenerative heat exchanger of the type in which a stationary component provides adjacent ducts for flow of separate streams of heat exchanging fluid media through the exchanger and in which heat exchange is effected by means of regenerative heat exchanging material carried by a rotor component so as to pass through said ducts successively and in alternation, the combination of axially spaced apart sector plates forming a part of said stationary component extending transversely of said ducts and including imperforate sector portions having plane sealing surfaces located between said ducts, and a rotor component mounted to revolve between said sector plates, said rotor components being substantially filled with said regenerative heat exchanging material and said material providing a multiplicity of channels of relatively small cross sectional area for flow of said fluid media through said rotor component and said rotor component carrying at it's opposite ends material gratings disposed between the ends of the regenerative material and the sector plates between which the rotor component revolves, said grating comprising a plurality of bars interconnected to form relatively rigid grid means having openings therethrough, the cross sectional areas of the individual openings being substantially larger than the cross sectional area of the individual channels, the exposed edges of said bars presenting smooth planar envelope surfaces located in closely adjacent relationship to the confronting sealing surfaces of the sector plates at the respective ends of the rotor component, whereby to provide an efficient labyrinth type seal resisting cross flow of fluid from one to the other of said ducts between the ends of the rotor component and the respectively adjacent sector plates.

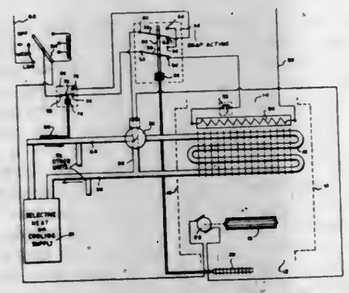
**3,166,119**
**RADIAL SEAL FOR ROTARY REGENERATIVE HEAT EXCHANGER**
**Richard W. Bellows, Wellsville, N.Y., assignor, by mesne assignments, to Combustion Engineering, Inc., a stock corporation of Delaware**
**Filed Apr. 13, 1961, Ser. No. 102,725**
**2 Claims. (Cl. 165—9)**



1. Regenerative heat exchange apparatus having a rotor that includes a cylindrical rotor shell joined to a rotor post by radial partitions to form sectorial compartments that carry a mass of heat absorbent material, and a cylindrical housing surrounding the rotor provided at opposite ends thereof with end plates including imperforate portions located between circumferentially spaced apertures that direct the flow of heating fluid and fluid to be heated through the heat absorbent material carried by the rotor; radial sealing means bridging the space between an end edge of each radial partition and the confronting face of an adjacent end plate adapted to preclude fluid flow therebetween, said sealing means comprising a leaf member laterally abutting an end edge of the radial partitions and having one end pivotally attached thereto to permit movement of a free end toward and away from the adjacent end plate; a bell crank pivotally attached to the radial partition adjacent the free end of the leaf member; thermal expansion means having one end affixed to said partition and an opposite end pivotally attached to an arm of said bell crank; and a pivotal linkage between a spaced arm of said bell crank and said free end of the leaf member arranged to transform radial movement of said thermal expansion means into an axial force moving the sealing leaf relative to its adjacent end plate.

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**3,166,120**
**HEATING OR COOLING CONTROL SYSTEM FOR HEAT EXCHANGERS**
**Peter Butterfield and Melvin C. Gill, Jackson, Mich., assignors to Acme Industries, Inc., Jackson, Mich., a corporation of Michigan**
**Filed May 23, 1962, Ser. No. 196,965**
**6 Claims. (Cl. 165—26)**



1. An air temperature control system comprising, in combination, means defining an air flow path, a fluid-transfer medium heat exchanger and an electric heater within said flow path, means selectively supplying said heat exchanger with a heating or a cooling medium, means forcing air through said flow path, an inlet and an outlet

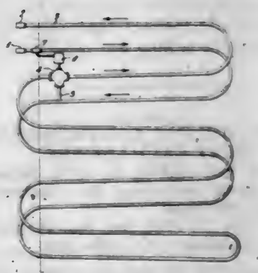
passage associated with said heat exchanger, a by-pass conduit establishing communication between said inlet and outlet passages by-passing said heat exchanger, an electrically operated valve located within one of said passages and communicating with said by-pass conduit selectively closing said conduit and permitting flow through said heat exchanger, and opening said conduit establishing communication between said passages and preventing flow through said heat exchanger, an electric heater circuit including a first switch movable between first and second positions, an electric valve circuit including a second switch movable between first and second positions, a fluid-transfer medium temperature-sensing circuit including a third switch movable between first and second positions, fluid medium temperature-sensing means operatively associated with said third switch positioning said third switch to said first position upon a cooling medium being supplied to said valve and positioning said third switch to said second position upon a heating medium being supplied to said valve, air temperature-sensing means operatively associated with said first and second switches, said first switch in said first position being in series with said third switch in said first position energizing said electric heater, said second switch in said first position being in series with said third switch in said second position energizing said valve closing said conduit to fluid flow and directing fluid through said heat exchanger, said first switch in said second position being in series with said second switch when in said second position, thereby energizing said valve and directing a cooling medium through said heat exchanger when said third switch is in said first position.

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3,166,121
## SPACE HEAT EXCHANGE UNIT

Arne Boysen, Lidingo, and Birger Lärkfeldt and Gösta Steinholtz, Jonkoping, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Feb. 8, 1962, Ser. No. 171,930
1 Claim. (Cl. 165—35)



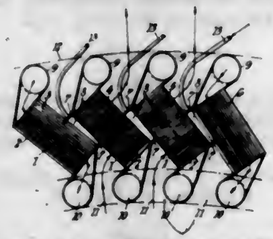
A space heat exchange unit comprising a heat exchange fluid conducting tube having an inlet end, and outlet end, and an extended loop length in series between the inlet and outlet ends and having adjacent passes near the inlet and outlet ends, a by-pass tube arranged between said adjacent passes and communicating therewith in a position to short out a certain portion of the total heat exchange tube length and leave in a shortened length of the heat exchange tube, a three-way by-pass valve located at the junction of said by-pass tube and one of said passes, said by-pass valve being formed and arranged to open the full length of the heat exchange tube to the flow of heat exchange fluid therethrough and fully close said by-pass tube, when a cooling medium is supplied to the heat exchange unit, or to fully close said certain portion of the heat exchange tube and open said by-pass tube for the flow of heat exchange fluid therethrough and through said shortened length of heat exchange tube, when a heating medium is supplied to the heat exchange unit, and means located at the inlet end of said tube and responsive to the temperature of the heat exchange fluid at said inlet end for controlling the two positions of said by-pass valve.

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3,166,122
## PLATE TYPE HEAT EXCHANGERS WITH PAIRS OF SPACED PLATES AND CORRUGATED INSERTS

Waldemar Hryniszak, Newcastle-upon-Tyne, England, assignor to C. A. Parsons & Company Limited, Newcastle-upon-Tyne, England

Filed Mar. 11, 1963, Ser. No. 264,112
Claims priority, application Great Britain, Mar. 30, 1962, 12,444/62
5 Claims. (Cl. 165—139)



1. A plate type heat exchanger comprising a plurality of separate plate type heat exchanger elements each element comprising pairs of spaced plates or sheets with flow channels between each pair of sheets, corrugated inserts being disposed between each pair of sheets, the direction of the corrugations between one pair of sheets being at right angles to those between adjacent pairs of sheets, channels for hot fluid alternating with channels for cold fluid, the elements being disposed in a ring, and means directing one fluid in substantially parallel streams through portions of two adjacent elements, each stream passing first through one element and then through the other element in a substantially straight line, and means directing the other fluid only through each element connected in parallel with one another in a direction at substantially right angles to the first fluid.

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3,166,123
## METHOD AND APPARATUS FOR UNDERWATER WELLS

Bruce J. Watkins, West Covina, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 23, 1962, Ser. No. 197,093
10 Claims. (Cl. 166—46)



1. A method of establishing a connection between a vessel on the surface of a body of water and an assembly positioned at a distance below the surface of water, said method comprising



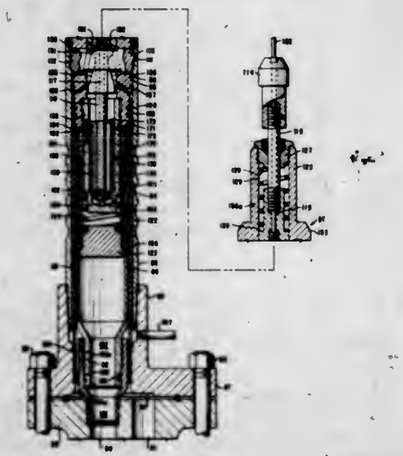
(*a*) positioning said vessel substantially over said underwater assembly,
(*b*) removably mechanically attaching one end of an elongated connector element to a self-propelled submersible manipulator,
(*c*) lowering said manipulator and said attached elongated connector element in said body of water,
(*d*) simultaneously increasing the length of said elongated connector element as it is lowered through the water with the manipulator so that the upper end of said elongated connector element is above the surface of the water,
(*e*) locating the underwater assembly with a television camera carried by the manipulator and observing on the vessel at the surface the position of the underwater assembly relative to the manipulator,
(*f*) remotely moving and guiding from the vessel the manipulator and the attached elongated connector element through the water to a position adjacent said assembly,
(*g*) positioning the manipulator in movably supported contact on said assembly,
(*h*) positioning the lower end of the elongated connector element in contact with said assembly,
(*i*) remotely actuating the manipulator from the vessel to attach the lower end of the elongated connector element to said assembly, and
(*j*) mechanically remotely actuating the manipulator from the vessel to disconnect the manipulator from the elongated connector element attached to the assembly.

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3,166,124
## WELLHEAD CLOSURE PLUG

Glenn D. Johnson, Downey, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 24, 1962, Ser. No. 197,496
10 Claims. (Cl. 166—66.5)



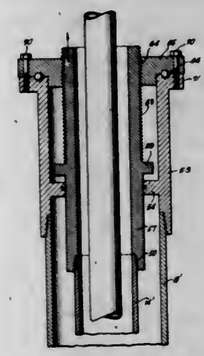
1. A wellhead closure plug connectible to an underwater wellhead for closing concentric conduit means therein having space within each of said conduit means, said plug comprising
(*a*) a plug body having formed thereon sealing surface means engageable with said each of said conduit means of said wellhead,
(*b*) sealing means carried by each of said sealing surface means for forming a fluidtight seal against an adjacent wall of said conduit means when positioned thereagainst, and
(*c*) latching means carried by said plug body and extendible beyond the outer surface thereof and adapted to engage one of said well conduit means for anchoring the plug body in the wellhead against upward movement therefrom.

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3,166,125
## ADJUSTABLE CASING HEAD

Laurence M. Hubby, Bellaire, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 20, 1961, Ser. No. 153,303
3 Claims. (Cl. 166—67)



1. In combination with a deep well having surface pipe set therein for bearing the load of a long casing string set in said well, said casing string being cemented near the lower extremity thereof into said well, first collar means attached to the upper end of said casing string, second collar means attached to the upper end of said surface pipe adjacent to said first collar means, and means for adjustably supporting said first collar means on said second collar means, said supporting means comprising screw threads on said first collar means, an annular load bearing member having complementary threads meshing with said screw threads, and means for rotatably supporting said annular member on said second collar means.

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3,166,126
## MULTIPLE ZONE WELL PRODUCTION APPARATUS

Kenneth F. Wents, La Mirada, and Joseph Libal, Glendale, Calif., assignors to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California

Filed June 5, 1961, Ser. No. 114,786
20 Claims. (Cl. 166—120)

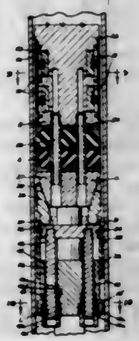


1. In well apparatus adapted to be set in a well bore: first, second and third parallel tubular body members

adapted to be placed in communication with first, second and third tubular strings extending to the top of the well bore; an expander on said body members; slip means engaged by and movable outwardly by said expander to anchor the well apparatus in the well bore; means securing said first body member to said slip means; said second and third body members being movable longitudinally of said slip means; and means for transmitting the longitudinal movement of said second and third body members to said expander to move said expander longitudinally of said slip means and first body member to expand said slip means.

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**3,166,127**
**WELL PACKER APPARATUS**
Cicero C. Brown, 8490 Katy Road, Houston, Tex., and Chudleigh B. Cochran, Houston, Tex.; said Cochran assignor to said Brown
Filed Jan. 19, 1962, Ser. No. 167,312
18 Claims. (Cl. 166—120)



12. The combination with a well tool having anchoring means for anchoring the same within a well pipe, of a pressure-actuated setting means for effecting setting of said anchoring means which comprises two parts movable relative to each other, said setting means including,

a cylinder and a piston movable relative to each other, means for conducting pressure fluid into the cylinder to move the piston and cylinder relative to each other, means connecting one part of said anchoring means to the cylinder and the other part to the piston, whereby movement of the cylinder and piston relative to each other in one direction will set said anchoring means,

a locking rod,

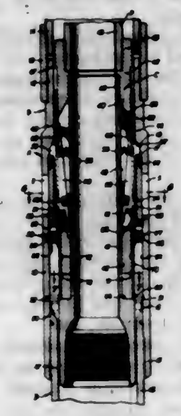
a gripping member engageable with said rod,

the locking rod and gripping member being secured one to the cylinder and the other to the piston,

said gripping member having means constructed to permit movement of the rod and member in the direction which these parts move when the piston and cylinder move to set the anchoring means,

said means of said gripping member preventing relative movement of said rod and gripping member in an opposite direction which would permit movement of the piston and cylinder relative to each other in a direction to unset the anchoring means, whereby said locking rod and gripping member mechanically lock the piston and cylinder to prevent unsetting of the anchoring means.

**3,166,128**
**APPARATUS FOR OPERATING SUBSURFACE SLEEVE VALVES AND SIMILAR WELL BORE DEVICES**
William D. Myers, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 31, 1962, Ser. No. 248,425
15 Claims. (Cl. 166—214)



1. In subsurface well bore apparatus: a ported member adapted to form part of a conduit positioned in a well bore; valve means for controlling flow of fluid through the port of said member; support means movable through the conduit; latch means movably mounted on said support means and including an upper portion adapted to be coupled to said valve means for moving said valve means downwardly within said ported member and a lower portion adapted to be coupled to said valve means for moving said valve means upwardly within said ported member; means on said support means engageable with said upper portion for uncoupling said upper portion from said valve means upon continued downward movement of said support means; and means on said support means engageable with said lower portion for uncoupling said lower portion from said valve means upon continued upward movement of said support means.

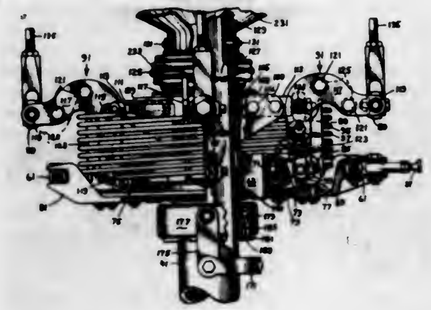
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**3,166,129**
**DUAL THRUST PROPELLER AND CONTROLS FOR ROTARY WINGED AIRCRAFT**
Harvard J. Bryan, 9303 Sorrento, Dallas 28, Tex.
Filed Feb. 27, 1961, Ser. No. 93,830
1 Claim. (Cl. 170—160.25)

A control mechanism for rotary winged aircraft having a rotor shaft with rotor blades mounted thereon, a cylindrical central trunk member concentric with and axially movable external of the rotor shaft, an externally splined sleeve connected with the outer surface of said shaft for transmitting torque to an internally splined ring connected with said trunk, a plurality of identical bell-cranks connected with said trunk to pivot about axes radial of said trunk, each of said bell-cranks being pivotal also about axes perpendicular to and intersecting said radial axes, one of the two legs of each of said bell-cranks extending from point of attachment of said bell-cranks with said trunk parallel to said trunk and the other leg extending radial of said trunk when said controlling mechanism is not actuated, a plate comprising a nonrotatable portion concentric with a rotatable portion which is joined in a universally pivotal manner with said parallel legs



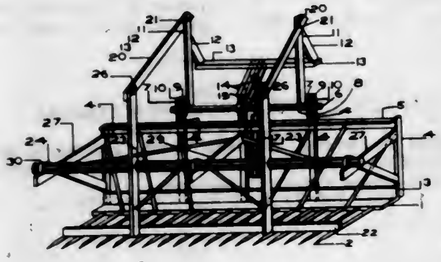
of said bell-cranks, said plate being concentric with said trunk when said controlling mechanism is not actuated and having a circular opening concentric with said trunk and of greater diameter than said trunk to permit moving said plate off center for actuation of said controlling



mechanism, spring-like members spiraling collectively around parallel legs of said bell-cranks from points of attachment with said trunk to points of attachment with the rotatable portion of said plate to transmit torque from said trunk to rotatable portion of said plate, and to stabilize said mechanism in a neutral position.

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**3,166,130**
**ROCK PICKER**
Angus William Mactavish, Acadia Valley, Alberta, Canada
Filed Feb. 27, 1963, Ser. No. 261,364
1 Claim. (Cl. 171—63)



In a rock gathering attachment for tractors a fork for picking up rocks, said fork including a base plate and a series of teeth fixed in the base plate forwardly projecting, uprights on the fork base plate, a pair of angle brackets fixed to the uprights, said brackets including vertical portions adapted for bolting to the uprights and arms extending horizontally forward, a shaft mounted on the arms of the angle brackets free to turn axially, push arms fixed transversely to the shaft projecting above and below the shaft, a blade carried by the lower ends of said arms movable backward and forward over the fork teeth for shifting rocks on said teeth by a backward and forward movement applied to the upper ends of said arms, and hydraulic means for imparting the forward and backward movement to the upper end of the push arms, said hydraulic means including upstanding arms on the fork, tie bars connecting said upstanding arms and push arms, a hydraulic element, and means connecting the hydraulic element to the upstanding arms for moving the upstanding arms forward and backward.

**3,166,131**
**ROTARY PERCUSSIVE ROCK DRILL HAVING COUNTER ROTATION MEANS**
Martin Worman, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 6, 1962, Ser. No. 215,114
6 Claims. (Cl. 173—105)



1. In a rock drilling tool comprising,

(*a*) a casing and a piston disposed in said casing for reciprocation therein,

(*b*) a drilling implement extending in said casing to be intermittently axially moved by said piston,

(*c*) means to rotate said drilling implement in one direction,

(*d*) a first cam means in said casing, and

(*e*) a second cam means on said drilling implement complementary to said first cam means and coacting with the latter upon axial movement of said drilling implement to render the drilling implement rotationally stationary by tending to rotate said drilling implement at an angular velocity equal to and in a direction opposite to the rotation of the drilling implement in said one direction.

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**3,166,132**
**GROUTING TOOL**
Thomas P. Lenahan, Billie Jack Bradley, and Allen H. Limbaugh, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed June 22, 1961, Ser. No. 118,850
7 Claims. (Cl. 175—235)

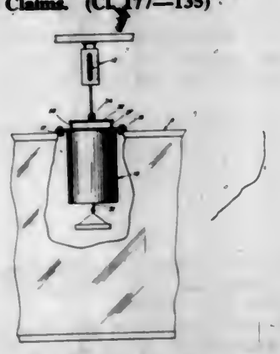


1. Apparatus for drilling wells and for injecting grouting materials into unconsolidated subsoil formations comprising a casing, means for securing the casing to the end of a conduit, said casing having apertures in the wall thereof, a nozzle secured to the end of the casing

for directing a stream of fluid downwardly to erode the soil beneath the pipe, valve means in the nozzle, a tube telescoped within the casing in fluid sealing relation across said apertures, means for removing the tube, and means for shutting off outward flow of fluid through the nozzle when the tube is removed.

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3,166,133
SEALING MEANS
Donald W. Hall and Bryce D. Troyer, Boulder, Colo., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 23, 1963, Ser. No. 275,176
10 Claims. (Cl. 177—135)



1. A device of the character described comprising in combination an annular cup assembly including a pair of spaced apart coaxial upright walls, an inverted cup secured to said cup assembly with a wall portion thereof extending into the cup assembly intermediate said spaced apart upright walls to define therewith a labyrinthic passage, and means disposed in and extending through said passage for facilitating the transmission of force through said passage.

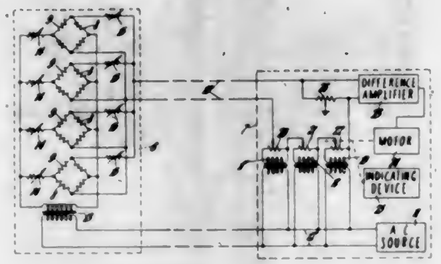
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3,166,134
PIEZOMETRIC WEIGHING DEVICES
André Taupin, Le Vivier, Urzy, France
Filed Apr. 8, 1963, Ser. No. 271,339
Claims priority, application France, Apr. 6, 1962, 893,544, Patent 1,327,255
3 Claims. (Cl. 177—209)



1. A piezometric weighing device, support structure comprising a plate for supporting a load, at least one flexible enclosure positioned between the plate and a support structure, the said enclosure containing a volume of incompressible liquid which volume is less than the maximum capacity of the enclosure, said enclosure being bounded by walls made of a fluid-tight, pliable and inextensible material, and a device connected to the enclosure for measuring the pressure of the liquid therein, said enclosure resting freely on the support structure exclusively at the lower part and the plate resting on the wall of the enclosure at at least two spaced bearing surfaces, the center of gravity of the plate and the load being located between said bearing surfaces, the parts of the plate and of the enclosure adjacent to those bearing surfaces which are in contact being of such configuration as to permit relative rolling between said plate and said enclosure whereby the measurement is substantially accurate, even if the load is off center.

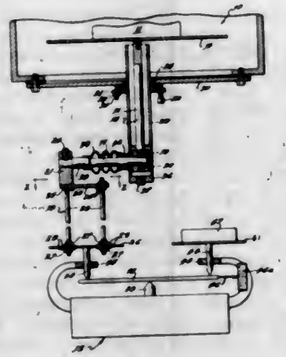
3,166,135
VOLTAGE MEASURING APPARATUS FOR USE IN WEIGHBRIDGES
David Warwick Lloyd Clamp, Knowle, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Apr. 1, 1963, Ser. No. 269,338
Claims priority, application Great Britain, Apr. 17, 1962, 14,781/62
1 Claim. (Cl. 177—211)




A weighbridge comprising in combination a weighing station and a recording station, a plurality of load cells at the weighing station to which the load to be measured is applied, an input cable extending between the recording and weighing stations for supplying A.C. to the load cells, the input cable incorporating a transformer intermediate its ends, an output cable for conducting the output voltage of the load cells to a difference amplifier at the recording station, means supplying an A.C. reference voltage to the difference amplifier, so that the amplifier produces an output only when the signals it receives are not equal, means operable by the output from the amplifier for adjusting the reference voltage until the inputs to the amplifier are equal, means for indicating the reference voltage, a resistor connected across the amplifier, and means earthing a variable point on said resistor.

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3,166,136
APPARATUS FOR WEIGHING MATERIAL IN A SEALED ENCLOSURE
Raphael T. Coffman, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 12, 1963, Ser. No. 294,775
3 Claims. (Cl. 177—262)

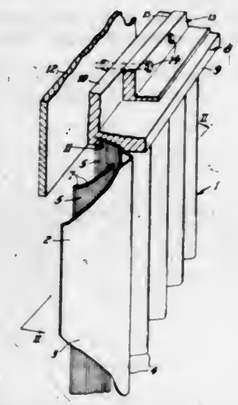


1. In an assembly comprising
(1) a sealed enclosure, and
(2) a weighing apparatus external to the enclosure for weighing a mass in the enclosure; the combination therewith, of
(3) a tubular part extending exteriorly of the enclosure and having one end open and sealed to an opening in the enclosure, the other end of the tubular part being closed, the tubular part being provided with a side opening adjacent the closed end,
(4) an offset force transmitter comprising (*a*) a first longitudinal portion projecting from a force-receiving end in the enclosure freely through the tubular member, (*b*) a transverse portion projecting from the first longitudinal portion freely through the side opening in the tubular member, and (*c*) a second longitudinal portion extending from the transverse portion in transversely offset relation to the first longitudinal portion for engagement with the weighing apparatus, and
(5) a hollow expanso-contractable element extending from the tubular part transversely thereto and loosely containing the transverse portion of the force transmitter, the element being sealed at one end to the side opening in the vertical tubular part and at its other end to the force transmitter.



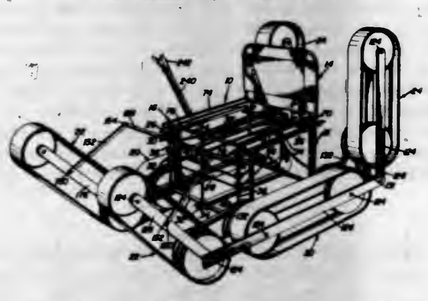
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3,166,137
FLEXIBLE DUCTING
David Henry D'Oyly Cooper, Acocks Green, Birmingham, England, assignor to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York
Filed Apr. 12, 1963, Ser. No. 272,573
15 Claims. (Cl. 180—7)



1. A skirt for a Hovercraft which comprises adjoining parallel folds of flexible resilient sheet material extending from the upper to the lower edge of said skirt and arranged in series throughout the periphery of said skirt to form alternate, substantially vertical, inner and outer ridges, fold supporting members, at least one for each pair of inner and outer ridges of said series, each of said fold supporting members comprising a strip of flexible, resilient, material extending from the upper edge to the lower edge of said skirt and each being secured in fixed position in said skirt, and means at the upper edge margin of said skirt to hold said folds and said fold-supporting members in fixed position with the plane of said strip of each fold supporting member at a substantial angle with the peripheral direction of the portion of the skirt to which it is attached, each said strip having sufficient stiffness to hold said skirt in position under normal operating conditions and of sufficient resilience to twist and bend under force applied at its lower end.

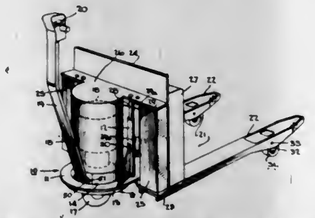
3,166,138
STAIR CLIMBING CONVEYANCE
Edward D. Dunn, Jr., 1911 Preston Drive, Columbus, Ga.
Filed Oct. 26, 1961, Ser. No. 147,795
16 Claims. (Cl. 180—9.24)



1. A power operated stair climbing conveyance comprising a mobile frame with a chair seat mounted thereon and including transversely spaced longitudinal frame side members, a plurality of pairs of support and driving units mounted upon said frame side members and including forward, central and rear pairs of units, each pair of units having its units disposed upon the exterior outer surfaces of said frame side members with each unit being mounted solely upon one frame side member, adjustable connecting means extending transversely between and secured to said frame side members and connecting the latter for controlled movement towards and from each other whereby to vary the width of said conveyance, operating means connected to said connecting means and actuating the latter, a power source mounted upon said frame, driving means disposed between said frame side members and connecting said power source to each unit of a pair of units and connecting said central pair of units to said forward and rear pairs of units, said driving means remaining connected to said central pair of units during actuation of said connecting means by said operating means.

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3,166,139
LIFTING HEAD FOR INDUSTRIAL TRUCK
Bronislaus I. Ulinski, Flossmoor, Ill., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Dec. 18, 1961, Ser. No. 160,073
2 Claims. (Cl. 180—13)

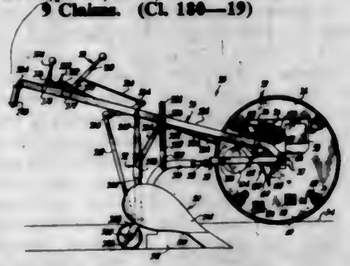


1. In a lift truck of the class described, a main frame having a forward vertical portion and an integral rearward extending load supporting portion, a pair of spaced free standing rods supported at their lower ends on a lower part of said forward vertical portion and fixed at their upper ends to an upper part of said forward vertical portion, a lifting head plate having a central opening and a pair of spaced vertically extending tubes secured integrally thereto, said tubes being centrally bored for the accommodation of said vertically spaced shafts, and being secured to said lifting head plate in the same spaced relation as said rods, and shorter than said rods, a pair of spaced

hydraulic rams mounted between said tubes and an upper part of said forward vertical portion of said main frame and parallel to said tubes, whereby extension of said rams lifts said forward vertical portion relatively to said tubes and said lifting head plate, a steering and traction unit comprising a motor and a traction wheel driven by said motor, means securing said steering and traction unit for rotation as a unit relatively to said lifting head plate, lifting wheels mounted on the rearwardly extending load supporting portion of said main frame, and means for moving said lifting wheels relatively to said load supporting portion simultaneously with the vertical movement of said forward vertical portion of said main frame relatively to said tubes and lifting head plate.

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**3,166,140**
**POWERED GARDEN TILLAGE IMPLEMENT**
**Ralph T. Butler, 945 E. University, Springfield, Mo.**
**Filed Sept. 16, 1963, Ser. No. 309,262**
**9 Claims. (Cl. 180—19)**



1. A tractor unit adapted to be coupled to a work attachment comprising:

a frame having an outer periphery;

a ground-engaging wheel rotatably mounted in an upright position on the outer periphery of said frame for rotation relative thereto about the axis of the wheel;

drive means carried by the frame and operably coupled with said wheel for rotating the latter;

a mounting member extending laterally from the frame beyond the latter;

elongated guide structure alongside the wheel connected to said member and extending rearwardly therefrom;

mounting means within the perimeter of said wheel and rotatably securing said frame to the member for pivotal movement of the frame relative to the member and guide structure about a vertical axis in intersecting relationship to said wheel axis;

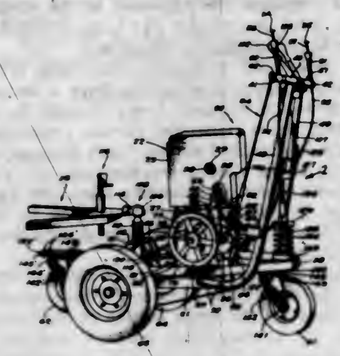
control means carried by said guide structure and coupled with said frame for pivoting the latter and thereby said wheel relative to said guide structure about said vertical axis; and

drawbar means for coupling a work attachment to said mounting member.

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**3,166,141**
**TRACTOR**
**Morton K. Shields, 7050 Yolanda, Reseda, Calif., and Russell K. Shields, Encino, Calif. (5735 Halbrent, Van Nuys, Calif.)**
**Filed July 15, 1960, Ser. No. 43,154**
**10 Claims. (Cl. 180—21)**

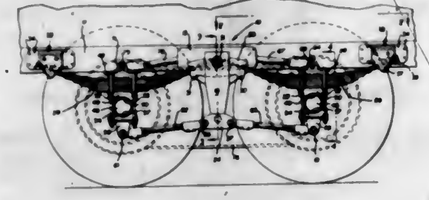
5. A tractor comprising: a chassis; a first caster-type wheel mounted on one end of said chassis; a driven wheel mounted on each side of said chassis, said driven wheels being fixed to shafts in positions to rotate in respective longitudinal planes; power means including a mechanical differential mounted on said chassis for rotating said driven wheels; a U-shaped member having legs extending toward both said first caster-type wheel and said driven wheels in an approximately horizontal plane, said U-shaped member having the ends of its legs mounted on said chassis to rotate about a horizontal transverse axis; a second caster-type wheel suspended from the



bight portion of said U-shaped member; and means to adjust the position of the other end of said chassis relative to the bight portion of said U-shaped member.

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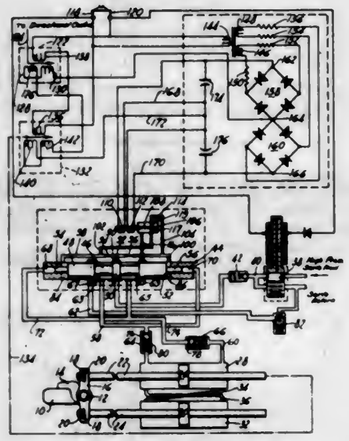
**3,166,142**
**SUSPENSION SYSTEM FOR TANDEM AXLES INTERCONNECTED BY POWER TRANSMISSION MEANS**
**Van L. Frazier, Dayton, Ohio, assignor to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio**
**Filed Aug. 22, 1961, Ser. No. 133,191**
**4 Claims. (Cl. 180—22)**



1. A suspension system for tandem axles, said suspension being adapted for attachment to the frame of a vehicle and having tandem semielliptic, leaf springs mounting said axles, means for equalizing the adjacent ends of said springs, and a torque assembly comprising a rigid torque connecting arm attached to said frame medially of said axles, lower torque rods, one end of a lower torque rod being connected to each axle below the axis thereof, the other end of each said torque rod being connected to said rigid arm, the connection to said rigid arm being higher than the connection to said axle when the vehicle is unloaded and in substantially the same plane when said vehicle is loaded, and upper torque rods, one end of an upper torque rod being connected to each axle above the axis thereof, the other end of each said upper torque rod being connected to said frame medially of said axles, the upper and lower torque rods connected to each axle being substantially parallel, and flexible power transmitting means interconnecting the forward and rear wheels on said tandem axles whereby the force applied to the wheels on one of said axles is transmitted to the wheels on the other of said axles.



**3,166,143**
**POWER STEERING MEANS**
**Edwin Gonter, Jr., and Robert A. Elliott, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware**
**Filed Dec. 17, 1962, Ser. No. 245,131**
**8 Claims. (Cl. 180—79.1)**



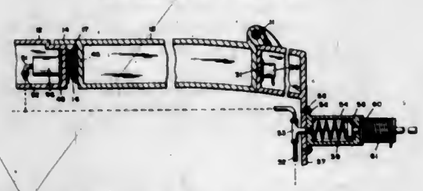
1. In a power steering system including a steerable wheel, a motor means including a cylinder and a piston in said cylinder effective to divide said cylinder into two chambers, which piston is operably connected to steer the wheel, servo valve means controlling the motor means, an actuator for said servo valve means comprising:

a torque motor; and

electrical means for controlling said torque motor, which electrical means includes a differential command transducer, a differential feedback transducer in series with said command transducer and operatively connected to said wheel, a power transformer having means to divide a signal supplied thereto into separate phases, a demodulator circuit having parallel connected groups of detector rectifying diodes each of which receives a separate phase of said signal from said power transformer to provide intermittent direct current signals which singularly and combined control said torque motor.

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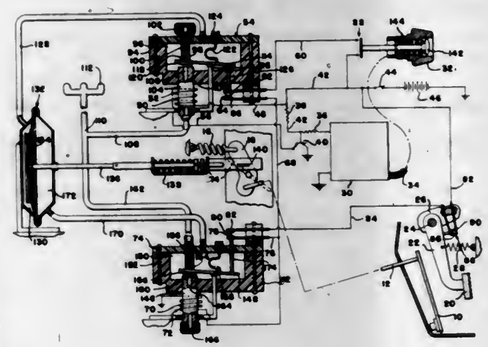
**3,166,144**
**SAFETY AUTOMOBILE DOOR LOCKING DEVICE**
**Hollas K. Price, Box 701, Oak Hill, W. Va.**
**Filed Aug. 31, 1962, Ser. No. 220,656**
**6 Claims. (Cl. 180—82)**



4. In an automobile having a door frame, a door and an ignition switch, a safety device for locking said door when the ignition switch is closed, said safety device comprising a pair of similarly constructed keeper members interposed between said door frame and said door and secured respectively thereto in reversely oriented positions, said keeper members being provided with apertures which are in register when the door is closed, a projectable and retractable keeper pin slidable in said apertures, resilient means for urging said pin to its retracted position, a hydraulic cylinder mounted in said door frame, a piston provided on said keeper pin and slidable in said cylinder, a hydraulic master cylinder having a reciprocable piston rod, a fluid transmitting conduit connecting said hydraulic cylinder in said door frame to said master cylinder, a solenoid including a reciprocable armature constituted by said piston rod of the master cylinder, and an electric circuit connecting said solenoid to said ignition switch whereby the solenoid may be energized upon closing of the ignition switch to actuate said master cylinder and the door frame cylinder to project said keeper pin against the action of said resilient means.

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**3,166,145**
**VEHICLE ROAD SPEED WARNING AND SPEED CONTROL SYSTEM**
**Roscoe M. Wheeler, Bayport, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 29, 1963, Ser. No. 276,317**
**2 Claims. (Cl. 180—82.1)**



1. A vehicle road speed control comprising, means defining a constant range of vehicle speed including a selected desired vehicle speed and substantially less than the total range of vehicle speed generating a vehicle speed error signal within the constant range of vehicle speed, servo means receiving said signal and maintaining vehicle speed thereby subject to energization of a speed maintaining lock-in circuit, said circuit having normally open manually operated circuit opening and closing means and normally open circuit closing means in series with said manually operated circuit opening and closing means, said vehicle speed error signal generating means being connected to close said normally open circuit closing means when the vehicle enters said constant range of vehicle speed, and a holding circuit subject to energization of said lock-in circuit for holding said lock-in circuit energized independently of said normally open circuit closing means and said manually operated circuit opening and closing means.

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**3,166,146**
**SAFETY BELT IGNITION CUTOUT SWITCH**
**Harold O. Shaw, 1309 Muncie Pike, Jonesboro, Ind.**
**Filed May 14, 1963, Ser. No. 280,325**
**1 Claim. (Cl. 180—82)**

In a motor vehicle, a safety system comprising a pair of flexible seat belt segments secured to the vehicle adjacent the operator's seat thereof and having interlocking rigid buckle members for securing the seat belt segments around an occupant of the seat, one buckle member being provided with a housing having a front wall provided with an aperture, the other buckle member having a rigid front end portion located closely adjacent to said front wall

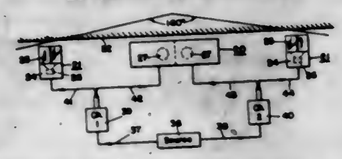
when the buckle members are connected together, a normally open switch mounted in said housing and provided with a pivoted operating arm having its free end portion projecting through aperture in a position to engage with and be rotated inwardly by said rigid front end portion of the other buckle member when said buckle members are



interlocked, said switch being closed responsive to inward rotation of said operating arm, said vehicle having an ignition energizing circuit, and a pair of flexible conductors mounted on the seat belt segment carrying said one buckle member and connecting said switch into said ignition energizing circuit, whereby said energizing circuit cannot be closed unless the switch is closed.

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3,166,147
LOUDSPEAKER SYSTEM
Daniel K. Greenfield, Elkins Park, Pa., assignor of one-fourth to Walter B. Udell, Philadelphia, Pa.
Continuation of application Ser. No. 6,771, Feb. 4, 1960. This application Dec. 20, 1962, Ser. No. 246,096
25 Claims. (Cl. 181—31)

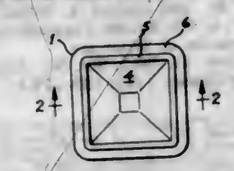


1. A multiple sound source loudspeaker system comprising a central sound source and a pair of flanking sound sources spaced laterally on opposite sides of said central sound source, each of said sound sources positioned to direct the sound wave output therefrom away from the listening area directly toward a common acoustical reflecting surface located closely adjacent to all of said sound sources, the acoustical sound waves from each source diffusing radially outward therefrom along the reflecting surface and merging in an overlapping pattern with the sound waves from each of the other sources in the plane of the reflecting surface to form an integrated wavefront, which wavefront is reflected outward into the listening area, wherein each of said flanking sound sources comprises a loudspeaker positioned to face said common reflecting surface and housed in an enclosure having a reflecting baffle plate secured thereto, said baffle being disposed in front of the cone of said loudspeaker at an angle to the cone axis, whereby the sound waves produced by said loudspeaker are directed toward and reflected outward from said baffle along said common reflecting surface.

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3,166,148
DIAPHRAGM MEANS FOR ACOUSTIC TRANSLATING DEVICES
George C. Tibbetts, Camden, Maine, assignor to Tibbetts Industries, Inc., Camden, Maine, a corporation of Maine
Filed July 6, 1962, Ser. No. 208,057
13 Claims. (Cl. 181—32)

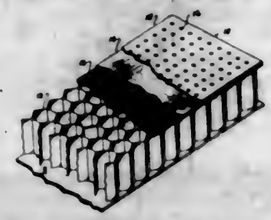
1. A diaphragm means for an acoustic translating device comprising a laminate sheet including two materials of differing elastic modulii, part of said laminate sheet defining a diaphragm portion, another part restricted to the material of lower elastic modulus defining a diaphragm




surround, and a third part, comprising the two materials, defining a support area exterior of the surround.

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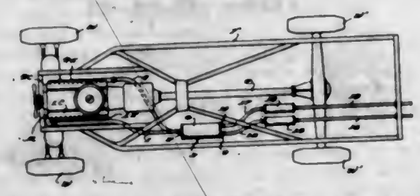
3,166,149
DAMPED-RESONATOR ACOUSTICAL PANELS
Bruce T. Hulse, Renton, and Milton W. Jeter, Bellevue, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,904
5 Claims. (Cl. 181—33)



1. A laminated-resonator acoustical panel comprising in combination:
(*a*) a stressed-skin flexurally rigid composite layer having two sheets and a cellular core, said cellular core positioned between said sheets and bonded thereto so that when laterally directed forces are applied to the composite layer both sheets assume tension and compression loads,
(*b*) one of said sheets being a rigid open-weave screen,
(*c*) the other of said sheets being a substantially air impervious sound reflecting solid layer,
(*d*) a porous material layer bonded to said open-weave screen, and
(*e*) a perforated decorative facing layer bonded to said porous material layer.

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3,166,150
ENGINE EXHAUST SILENCER
William H. Phelps, 4927 Granada St., Los Angeles, Calif.
Filed Feb. 17, 1961, Ser. No. 90,018
7 Claims. (Cl. 181—46)



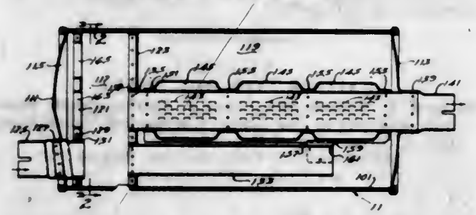
1. In a silencer for the exhaust of a V-type internal combustion engine, an elongated hollow metal body having a pair of walls closing the opposite ends thereof and further having partition means dividing the interior thereof into two, longitudinally extending, parallel, substantially identical chambers, a first conduit means including an inlet port formed in one of said end walls operative to conduct the entire exhaust from one bank of engine cylinders into said body, a second conduit means including a port formed in said one wall of said body operative



to conduct the entire exhaust from the other bank of engine cylinders into said body; each of said inlet ports having adjacent to the downstream end thereof an exhaust gas flow diverting means operative to divert the exhaust gases received in each of said inlet ports into said chambers in substantially equal proportions, a first exhaust discharge port formed in another wall of said body effective to discharge all of the exhaust gases delivered into one of said chambers, and a second discharge port formed in said other wall of said body effective to discharge all of the exhaust gases delivered into the other of said chambers.

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3,166,151
MUFFLER
Walter H. Powers, Racine, Wis., assignor to Walker Manufacturing Company, a corporation of Delaware
Original application Sept. 18, 1957, Ser. No. 684,792, now Patent No. 3,036,654, dated May 29, 1962. Divided and this application July 28, 1961, Ser. No. 127,581
1 Claim. (Cl. 181—54)



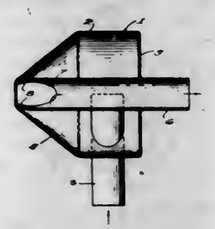
A small muffler for use as a second silencing component in an internal combustion engine exhaust line to silence a very low frequency and very high frequencies, said muffler comprising an elongated casing having inlet and outlet headers closing opposite ends, said casing having a transverse partition extending thereacross located close to the inlet header and defining an inlet chamber at the inlet end of the casing, said transverse partition and said outlet header defining a large resonator chamber inside said casing which extends substantially more than half the length of the casing, a long open-ended outlet conduit extending longitudinally through the resonator chamber and having its outlet end secured in said outlet header and its inlet end secured in said transverse partition, said outlet conduit receiving all of its gas flow from said inlet chamber, a portion of said outlet conduit inside said resonator chamber being perforated, an imperforate shell around the entire perforated portion of said outlet conduit in said resonator chamber to define with said perforated portion a series of high frequency silencing chambers inside of the resonator chamber, a long open-ended imperforate tuning tube secured at its inlet end in said transverse partition and extending longitudinally through said resonator chamber and terminating near the outlet header, said tuning tube having a length more than half that of the casing, said tuning tube receiving its entire gas flow from said inlet chamber and returning its entire flow to said inlet chamber, said tuning tube and resonator chamber forming a very low frequency silencing means, and an inlet bushing in said inlet header delivering the entire exhaust gas flow to said inlet chamber.

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3,166,152
MUFFLER DEVICE
Patrick J. Conlin, 1770 Davie St., Vancouver, British Columbia, Canada
Filed Dec. 4, 1961, Ser. No. 156,584
3 Claims. (Cl. 181—58)

1. A muffler device for the exhaust of an internal combustion engine comprising

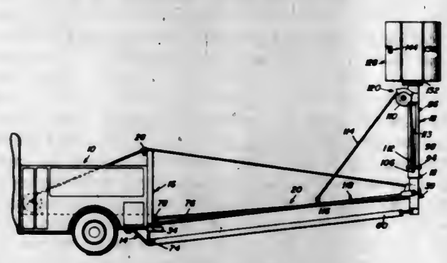
a hollow, cylindrical body having a circular side wall, a first end wall comprising a flat plate at one end of said side wall, and a frusto-conical portion closing the opposite end of said side wall,
an inlet pipe extending through said side wall disposed substantially tangentially thereto operative to conduct received exhaust gases into said body,



and an exhaust pipe extending through said first named end wall in the axial line of said body operative to conduct exhaust gases from said body;
said exhaust pipe within said body being attached to the inner face of said frusto-conical portion and having a pair of laterally opposite side openings adjacent to said frusto-conical portion through which the exhaust gases enter said exhaust pipe.

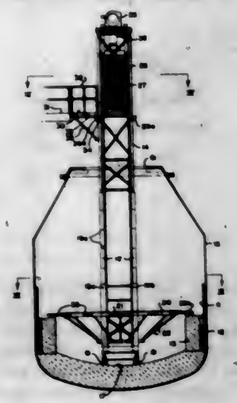
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3,166,153
LINE TRUCK LIFT FOR ELEVATING LINEMAN TO OVERHEAD POWER LINES
Christian H. Reed, 917 Fremont, Iowa Falls, Iowa
Filed June 20, 1962, Ser. No. 203,793
12 Claims. (Cl. 182—2)



1. A truck lift for elevating lineman to overhead power lines comprising an elongated boom assembly, means on one end of said boom assembly adapted to pivotally secure the latter to a truck for rotation about an axis extending transversely of said boom, an elongated support standard, means on the lower end of said standard pivotally securing the latter to the other end of said boom assembly for movement about an axis generally paralleling the first mentioned axis, a rigid elongated stabilizer member, means pivotally securing one end of said stabilizer to said standard for rotation about an axis generally paralleling the second mentioned axis and means adapted to pivotally secure the other end of said stabilizer member to said truck for movement about an axis generally paralleling and spaced from the first mentioned axis a distance substantially equal to the distance between the second and third mentioned axes, the effective length of said boom and said stabilizer member being substantially equal, and a support platform carried by said support standard, said elongated standard being extendable, and means interconnected between said boom assembly and said standard for automatically extending said standard in response to the raising of the other end of said boom assembly relative to said one end thereof.

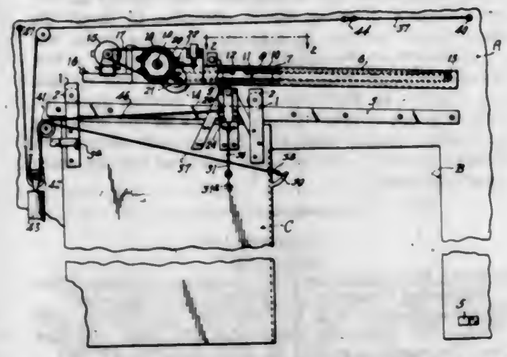
3,166,154
**PORTABLE SCAFFOLDS AND WORK TOWERS**
John M. Titzel, Fox Chapel, Pa., assignor to Titzel Engineering Inc., Pittsburgh, Pa.
Filed Feb. 2, 1962, Ser. No. 170,747
4 Claims. (Cl. 182—128)



1. A portable work tower particularly adapted for use in vessels having an opening smaller than the interior comprising an elongated tower means adapted to pass through the opening in said vessel and be normally free standing, said tower means including upper and lower portions having spaced apart vertically extending members at the corners of a quadrangle, said vertically extending members on the lower portion being provided with carrier means vertically movable thereon, base means on the lower portion adapted to engage the vessel bottom at spaced apart adjustable level points whereby the tower may be levelled and supported, a plurality of support arms spaced about said carrier means and pivoted thereon from a position parallel to the lower portion of the tower to a position transverse to the tower means to form a working platform, spaced cage guides within the upper and lower portions forming an inner cage guide extending from adjacent one end of the tower to the opposite end of said tower, cage means vertically movable on said cage guides within the upper and lower tower portions and lift means on the tower means selectively raising and lowering the cage means, said cage means being selectively coupled with said carrier means for raising and lowering said carrier means with said cage means.

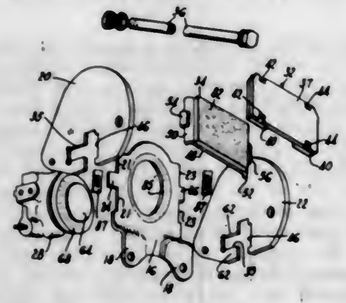
3,166,155
**MOTOR OPERATED FIRE DOORS WITH AUTOMATIC DOOR RELEASE**
Henry B. Clark, 1247 Clinton Place, Elizabeth, N.J.
Filed May 10, 1961, Ser. No. 109,047
14 Claims. (Cl. 189—47)

1. The combination with a wall having a door opening therein, a mounting track to be secured on a wall above the door opening, and a door movable on said track into open and closed positions, of a motor and a connection between it and said door for opening and closing the door including two parts that are normally connected to each other to move together in both of opposite directions but are separable, a guide track along which one part is normally driven by said motor alternately in opposite directions while the other part is carried by said door to open and close the door, respectively, under control of said motor, automatic means including a heat-responsive element connected to one of said parts of said connection to separate said parts upon response of said element to a temperature rise in the vicinity of said heat-responsive element and thereby completely disconnect the door from the motor and prevent operation of the door by the motor



in both directions, and means for closing the door upon separation of said parts.

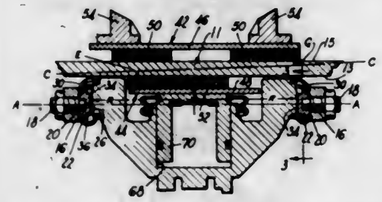
3,166,156
**CALIPER-TYPE DISC BRAKE**
Richard T. Burnett and James J. Powlas, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,640
9 Claims. (Cl. 188—73)



1. A brake comprising a rotor having two annular braking surfaces one at each side of said rotor, a fixed support member located solely on one side of said rotor, said support member comprising circumferentially spaced generally flat plate portions generally parallel to said braking surfaces each having an edge defining an anchoring abutment surface, two circumferentially spaced brackets straddling the outer periphery of said rotor and providing anchoring abutment surfaces thereon disposed opposite of a respective one of said support member anchoring edges for engagement therewith, said brackets rocking on said anchoring abutment surfaces of said support member about an axis parallel to said braking surfaces, a slot in each of said brackets, said support member having a projection extending into a respective one of said slots, each of said slots being oversized relative to their respective projections to allow sliding movement of said brackets in a direction toward and away from said braking surfaces and rocking movement of said brackets about perpendicular axes generally parallel to the plane of said rotor friction faces, actuating means having spreadable members one of which is secured to said brackets for effecting lateral displacement thereof, and the other of which is displaceable in a brake applying direction toward one of said rotor braking surfaces, and two friction members one on each side of said rotor braking surfaces, one of said friction members being carried by said brackets and moveable thereby into engagement with the other of said rotor surfaces and the other of said friction members being located between said brackets and having sliding engagement surfaces with said brackets at its opposite ends, said other friction member being applied against said one rotor braking surface by the spreadable member of said actuating means which is displaceable in a brake applying direction towards said rotor.

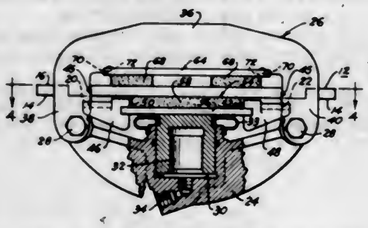


3,166,157
**SPOT TYPE BRAKE**
Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Apr. 13, 1962, Ser. No. 187,274
16 Claims. (Cl. 188—73)



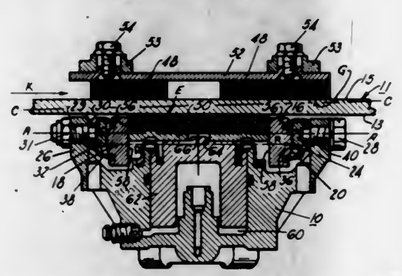
13. In a disk brake: a rotor having friction faces thereon, a housing straddling said rotor, support means, rotatable means, said rotatable means being rotatably connected to said support means about an axis generally parallel to said rotor friction face, means for slidably securing said housing to said rotatable means for transverse movement relative to said rotatable means toward and away from said rotor friction faces and for rockably connecting said housing to said rotatable means for rocking movement of said housing relative to said rotatable means and said support means about an axis generally parallel to the plane of said rotor friction faces and generally perpendicular to said first named axis.

3,166,158
**SPOT TYPE DISC BRAKE**
Richard T. Burnett and James J. Powlas, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed May 2, 1963, Ser. No. 277,504
3 Claims. (Cl. 188—73)



1. A brake comprising: a rotor having a pair of friction surfaces thereon, first friction means located opposite one of said rotor friction surfaces, a fixed support member comprising a pair of circumferentially spaced arms extending opposite said one rotor friction surface and embracing said first friction means, said arms providing at their inner edges guiding and anchoring surfaces for movement of said first friction means toward and away from said rotor and for anchoring of said first friction means thereon, a housing straddling said rotor and having circumferentially spaced portions slidably connected to each of said arms for slidable movement in a direction transverse to the plane of said rotor friction surfaces, the slidable connection of said housing portions to said arms providing circumferentially spaced sets of coacting anchoring surfaces, said anchoring surfaces on said arms and on said housing being so arranged relative to each other that when the coacting anchoring surfaces of one of said circumferentially spaced sets are engaging each other there is a clearance between the coacting anchoring surfaces of the other of said circumferentially spaced sets and when the coacting surfaces of said other of said circumferentially spaced sets are engaging each other there is a clearance between the coacting anchoring surfaces of said one of said circumferentially spaced sets, second friction means located opposite the other of said rotor friction surfaces, said second friction means being connected to said housing for movement therewith, actuating means carried by said housing for effecting movement of said first friction means into engagement with said one rotor friction surface and effecting movement of said housing to bring said second friction means into engagement with its respective rotor friction surface, whereby torque exerted on said second friction means by said rotor will be transferred through said housing to one of said arms of said support member and the torque exerted on said first friction means by said rotor will be transferred directly to the other of said arms of said support member while braking during rotation of said rotor in one direction and the torque exerted on said second friction means by said rotor will be transferred through said housing to said other arm of said support member and the torque exerted on said first friction means by said rotor will be transferred directly to said one arm of said support member while braking during rotation of said rotor in the opposite direction.

3,166,159
**SPOT TYPE DISC BRAKE**
Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed May 23, 1963, Ser. No. 282,794
4 Claims. (Cl. 188—73)

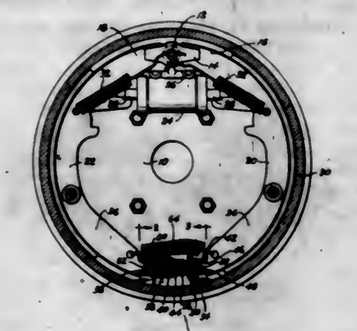


1. In a disc brake comprising: a rotor having a pair of friction surfaces thereon, first friction means located opposite one of said rotor friction surfaces, a fixed support member comprising a pair of circumferentially spaced arms extending opposite said one rotor friction surface and embracing said first friction means, said arms providing at their inner edges guiding and anchoring surfaces for movement of said first friction means toward and away from said rotor and for anchoring of said first friction means thereon, a housing straddling said rotor and said first friction means, a second friction means opposite the other of said rotor friction surfaces, said housing carrying said second friction means for engagement with said other rotor friction surface, said housing having a pair of circumferentially spaced ends embracing said arms, the outer edge of each of said arms being located adjacent to and facing a respective one of said housing ends, a bearing member located between each of said housing ends and their respective arms, each said bearing member being rotatably mounted on a re-

spective one of said arms about an axis generally parallel to the plane of said rotor friction surfaces, a slot located on each of said housing ends and facing their respective arms, the side faces of said slots extending toward said one rotor friction surface, each said bearing member having flat side surfaces engaging the side faces of said slots thereby providing a slidable connection between said flat surfaces of said bearing members and said side faces of said slots of said housing for movement in a direction generally perpendicular to the plane of said rotor friction surfaces and providing a rotatable connection of said housing and bearing members relative to said support member, each of said slots having a closed end surface, each of said bearing members having an end surface transverse to said side surfaces for engaging said closed end surface of said slot, each of said end surfaces on said bearing members and the closed end surface of their respective slots being so spaced that when one set of end surfaces are in engagement with each other there is a clearance between the other set of end surfaces, and actuating means carried by said housing and engaging said one friction member for sliding the same into engagement with said one rotor friction surface whereby upon engagement of said one friction member with said rotor said housing will slide to bring said second friction member into engagement with said other friction surface.

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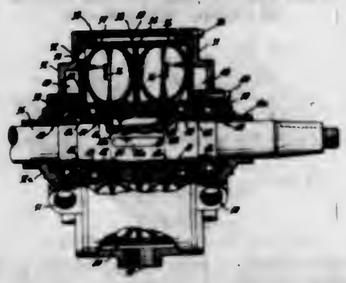
**3,166,160**
**TWO-PIECE ADJUSTING SCREW FOR BRAKES**
**Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware**
**Continuation of application Ser. No. 145,115, Oct. 16, 1961. This application Apr. 12, 1963, Ser. No. 272,772**
**3 Claims. (Cl. 188—79.5)**



1. A brake assembly comprising: a support, T-shaped brake shoes slidably mounted on said support, means for moving said brake shoes in response to actuating signals, each brake shoe having a flat web with a flat projection formed integrally therewith at one end thereof, said shoes being disposed sb the ends of said projections of the adjacent brake shoes will be opposed to each other, a two-piece adjusting device located between the opposed projections and comprising a first member with a threaded stem at one end and a second member having a threaded bore at one end receiving said threaded stem, one of said members having a hollow cylindrical flange at its other end defining a recess therein for receiving one of said projections, the other of said members having a hollow flange at its other end defining a slot therein for receiving the other of said projections, whereby said one member is rotatable relative to its respective shoe and said other member is prevented from rotating by its respective brake shoe, the ends of said projections engaging a respective bottom surface of said recess and said slot, each of said bottom surfaces being substantially flat and each of said projection ends being rounded to provided relative rocking movement between the ends of said projections and their respective surfaces during brake application, and means for maintaining said projections within their respective slot and recess.

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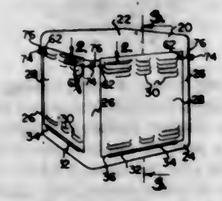
**3,166,161**
**HYDRODYNAMIC TORQUE TRANSMITTING APPARATUS**
**Charles T. Hayes, Coffeyville, Kans., assignor to Parkersburg Rig and Reel Company**
**Filed Sept. 5, 1961, Ser. No. 135,860**
**11 Claims. (Cl. 188—90)**



1. A stator for a hydrodynamic brake including a pocket defining plate having an annular depression formed around a central axis thereof, said plate having a series of vanes extending generally radially from said axis and positioned in said depression so as to define pockets on one side of the wall defining said depression, a supporting element positioned on one side of said plate and in sealing contact with said plate on the other side of said depression wall and along a circular line extending around said axis, means defining an annular air equalization passage on one side of said line and means defining an annular water passage on the other side of said line, some of said vanes having conduits formed therethrough and leading to each of said annular passages so as to communicate the annular passages with a generally central point at the leading edge of said vanes.

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**3,166,162**
**EVAPORATIVE COOLER AND PAD FRAME LATCH MEANS THEREFOR**
**Adam D. Goettl and John Goettl, Phoenix, Ariz., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware**
**Original application Dec. 28, 1959, Ser. No. 862,396, now Patent No. 3,071,218, dated Jan. 1, 1963. Divided and this application Apr. 16, 1962, Ser. No. 187,781**
**4 Claims. (Cl. 189—36)**

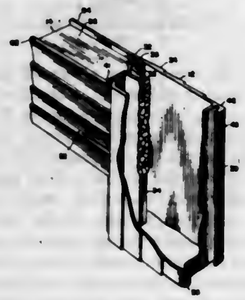


1. In a pad frame latch means for evaporative coolers the combination of: an evaporative cooler main frame having a corner frame member; evaporative cooler pad frames adjacent thereto; latch means movably mounted in said corner frame member and having a pad frame holding portion projecting outwardly beyond the outer side of one of said evaporative cooler pad frames and engaging the outer side thereof; lever means connected to said latch means and a spring portion of asid latch means tending to hold said latch means in engagement with said one pad frame to hold it in position relative to said corner frame member; said lever means being a single lever member; said corner member having an opening through which said lever extends outwardly of said corner member; said latch means having opposite ends, one of which carries said pad frame holding portion and the other end of which carries a similar portion, said corner member having openings therein through which said first mentioned and similar portions extend.



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**3,166,163**
**METAL DOOR CONSTRUCTION**
**James A. Wahlfeld, 216 W. Stratford Drive, Peoria, Ill.**
**Filed Dec. 6, 1961, Ser. No. 157,475**
**2 Claims. (Cl. 189—46)**

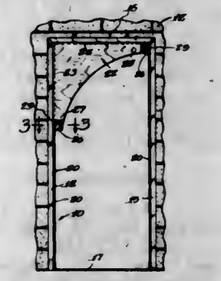


1. An all metal door frame structure comprising open ended first tubular frame members each substantially rectangular in cross section and having the opposed inner edges thereof angularly contoured including a ridge member extending outwardly from said inner edges, a groove extending inwardly from said inner edges adjacent said ridge and open at the bottom thereof to the interior of said frame members adjacent the ends thereof, said ridge member and groove being centrally offset adjacent a side wall of said first frame members; second tubular frame members each having end surfaces thereof angularly contoured for reception of the inner edges of said first frame members including an internal rib member integrally formed therein throughout its length in parallel relation with the side walls of said second frame members and extending outwardly past the end surfaces thereof and centrally offset adjacent to one of the side walls for alignment with said grooves and terminally exposed in said groove openings to the interior of said first frame members for access through said open ends; and means accessible through said open ends integrally securing said second frame members at right angles to said first frame members with said extending rib member secured in said groove at said openings to provide a unitary door frame structure.

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**3,166,164**
**DOOR FRAME AND BRACE THEREFOR**
**Walter Daniels, 7610 N. Eastlake Terrace, Chicago, Ill.**
**Filed Jan. 28, 1963, Ser. No. 254,165**
**3 Claims. (Cl. 189—46)**

1. In a rectangular door frame installation of the type including a rectangular metal door frame having peripheral sides and an inwardly extending door stop on at least two sides thereof and presenting stop surfaces lying in a plane transverse to the peripheral sides, a rigidifying device for bracing said door frame to prevent said door frame from twisting out-of-plumb during the operation of setting masonry adjacent thereto, said rigidifying device comprising a generally planar elongated member adapted to lie in the plane of the door, said elongated member engaging the said stop surfaces of said door stop and providing a pair of edges intersecting at right angles and defining a first corner which engages a corner of the door frame, said edges engaging peripheral sides of the



door frame substantially along the length of said edges, said edges terminating in second and third corners, respectively, at least one of said corners engaging a corner adjacent the first corner of the door frame, and fastening means for detachably connecting said rigidifying device in position in said door frame.

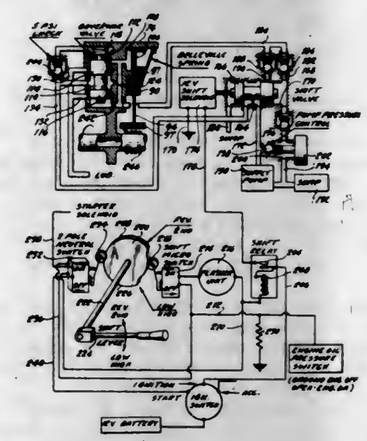
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**ERRATUM**

For Class 189—47 see:
Patent No. 3,166,155

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**3,166,165**
**SPEED RESPONSIVE FLUID RELEASED CLUTCH**
**Arnold E. Anderson, Livonia, and Robert E. Kaptur, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Sept. 9, 1963, Ser. No. 307,470**
**6 Claims. (Cl. 192—3.5)**



1. An automatic clutch and control system for a power transmission mechanism comprising: a driving member, a gear system, a first friction element connected to said driving member, a second friction element connected to a power input member of said gear system, a spring means carried by one of said members for normally applying an engaging pressure to said friction elements, a fluid pressure servo carried by rotary portions of said clutch including a pressure operated part adapted to release said spring means, a source of fluid pressure, and governor valve means carried by said rotary portions including pressure distributor passages extending from said source to

said servo for controlling release and supply of pressure from the latter in response to changing speed of said driving member whereby said friction elements will effect a smooth engagement upon an increase in the speed of said driving member, the pressure distributed to said servo acting upon said pressure operated part to create a pressure force thereon that opposes the force of said spring means, said governor valve means being disposed in and partly defining said distributor passages and including a movable element with a pressure area thereon in fluid communication with the pressure in said servo, the centrifugal force acting upon said movable element opposing the force on said movable element that is created by said servo pressure.

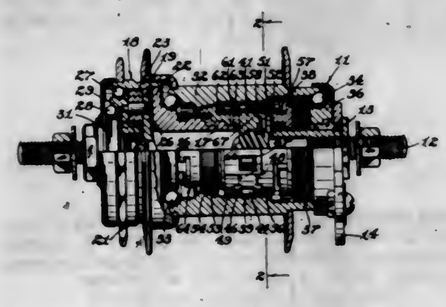
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3,166,166

## HUB AND COASTER BRAKE FOR VELOCIPEDES AND THE LIKE

Hollis K. Gleasman, Elmira, N.Y., assignor to The Bendix Corporation, Elmira Heights, N.Y., a corporation of Delaware

Filed Dec. 6, 1962, Ser. No. 242,873
8 Claims. (Cl. 192—6)



6. In a two-speed hub and coaster brake for velocipedes and the like:

a fixed axle;

an anchor member secured to the axle;

a hub rotatably mounted relative to the axle;

brake means interengaging the axle means and the hub for braking hub rotation;

a low speed screw shaft journalled on the axle;

a low speed clutch nut threaded on the low speed screw shaft adapted to operatively engage the brake means, said low speed clutch nut including a plurality of radial recesses opening toward the hub, each of said recesses including a cam surface eccentrically located relative to the axis of said low speed clutch nut;

apertured cage means supported on the low speed clutch nut, said cage means being axially fixed and rotatably movable relative to said low speed clutch nut, said cage apertures being adapted to overlie one of said low speed clutch nut recesses;

a roller of a predetermined diameter positioned in each of said low speed clutch nut recesses and having a portion thereof extending through an overlying aperture in said cage means, said rollers adapted to be wedged between the recess cam surface and the hub for establishing a unidirectional driving engagement with the hub;

means responsive to relative rotation between the low speed clutch nut and the hub for urging said rollers into and out of a wedged position;

a high speed screw shaft journalled on the low speed screw shaft;

a high speed clutch nut threaded on the high speed screw shaft for drivingly engaging the hub;

a driving member;

gear means for rotating the screw shafts at different speeds relative to each other; and

retarder means frictionally and yieldably retarding the clutch nuts.

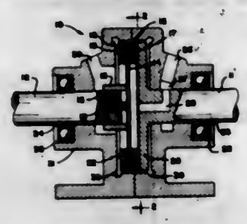
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3,166,167

## FLUID CLUTCH-BRAKE

Frank W. Kinsman, 149 Pleasant Way, Penfield, N.Y.

Filed May 18, 1962, Ser. No. 195,906
3 Claims. (Cl. 192—18)



1. A clutch-brake comprising a pair of axially aligned shafts closely arranged end to end, a circular plate axially movably, but non-rotatably mounted upon the end of one of the shafts and a disk rigidly mounted upon the end of the other shaft parallel to the plate, with the plate and disk being coaxial with the shafts; a fixed housing having an integral, circular-in-cross-section, sealed chamber, coaxial with and receiving the ends of the shafts and disk and plate, with the shafts being rotatably supported in said housing and with the circular wall of the chamber being closely adjacent to the peripheral edge of said plate; said chamber having one end arranged parallel to and closely adjacent to the plate and forming a fixed contact surface, the plate being between and normally being spaced a short distance from the disk and said fixed contact surface; a pair of passageways, for carrying high pressure fluid, formed in said housing and each opening into the chamber at an opposite face of the plate for selectively carrying high pressure fluid into the chamber at one or the other faces of the plate; wherein the plate is axially movable by the fluid into face to face contact with either the fixed contact surface for braking rotation of the shaft upon which it is mounted or with the disk for clutching the shafts together.

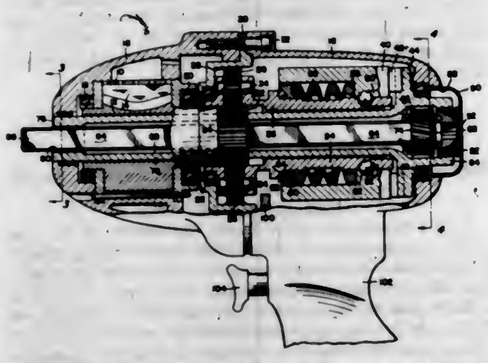
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3,166,168

## IMPACT TOOL TORSION BAR

Hanns Hornschuch, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 10, 1961, Ser. No. 101,927
2 Claims. (Cl. 192—30.5)



1. For an impact tool having a motor, a rotary hammer, a rotary anvil, said motor, hammer and anvil being coaxial and centrally apertured to form a continuous passage therethrough, means cooperative with said hammer and said anvil to cause said hammer to impact said anvil rotatively, a torque limiting means comprising a rigid tubular member fixedly attached to said anvil and extending through said passageway, a flexible rod extending the length of said impact tool supported by said anvil and extending through said tube to receive a wrench socket, screwdriver blade and the like, and coupled to said tube adjacent such socket, and means to twist said flexible rod at said anvil to a predetermined torque value with respect to said tube.



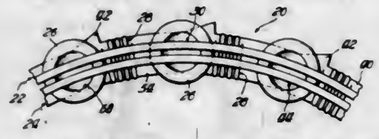
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3,166,169

## ONE-WAY ROLLER CLUTCH WITH PLURAL CAGE MEANS

Daniel M. Wade, River Forest, and Ernest A. Ferris, Downers Grove, Ill., assignors to Borg-Warner Corporation, a corporation of Illinois

Filed Dec. 22, 1961, Ser. No. 161,493
7 Claims. (Cl. 192—45)



1. A one-way engaging device of the roller and cam type comprising: inner and outer race members, one of said members being a cammed race member; a plurality of roller elements positioned between said members to effect locking engagement of said members in one direction of relative rotation of said members; a first cage member disposed between said race members for supporting said roller elements and for synchronizing the circumferential movement of the roller elements; individual spring means disposed in said cage member adjacent each of said roller elements for urging said roller elements into engagement with said races; coacting means on said first cage member and said spring means for supporting said spring means and preventing contact of said spring means with either of said races; and a reaction cage member disposed in radial spaced relationship to said cage member to provide a reaction point for each of said spring means.

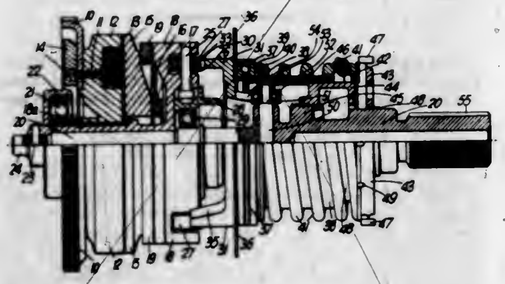
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3,166,170

## TORQUE CONTROLLED CLUTCH MECHANISMS FOR POWER TRANSMISSIONS

David John Forster, Redditch, and Norman Donald Sutherland, Cheltenham, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company

Filed Mar. 1, 1962, Ser. No. 176,615
14 Claims. (Cl. 192—48)



1. A torque-controlled clutch mechanism comprising two clutches each having two operative conditions in one of which it is engaged to transmit torque applied thereto, and in the other of which it is disengaged to inhibit transmission thereby of applied torque; torque responsive means which is coupled in mechanical series with a first of the two clutches to receive torque transmitted by the first clutch, the torque responsive means having two members one of which is displaced with respect to the other, in dependence upon the magnitude of torque applied to the torque responsive means, the displacement of said one member with respect to the other being of a first extent in response to the applied torque of a first predetermined magnitude and of a second, larger extent in response to applied torque of a second predetermined magnitude larger than said first magnitude; control means for the first clutch which means is responsive to the extent of said displacement to maintain said first clutch engaged to transmit torque when said displacement is less than said first extent and to disengage said first clutch when said displacement is at least equal to said first extent; means coupling the second clutch in mechanical series with said first clutch, and control means for the second clutch which means is responsive to displacement of said one member to said second extent to disengage said second clutch so that no torque is transmitted by the second clutch.

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3,166,171

## PAWL COUPLING

Hans Joachim Schwerdhöfer, Schweinfurt (Main), and Richard Gerstner, Schonungen, Germany, assignors to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany

Filed May 2, 1962, Ser. No. 192,304
Claims priority, application Germany, May 5, 1961, F 33,847
5 Claims. (Cl. 192—64)



1. A pawl coupling for a bicycle hub and the like comprising, in combination:

(*a*) a circular ratchet;

(*b*) a pawl carrier rotatable relative to said ratchet in two directions in a radial plane about a common axis, said pawl carrier having a circumferential face portion opposite said ratchet, said face portion defining a radially open recess therein, at least a portion of said recess being cylindrical about a pivot axis transverse of said plane;

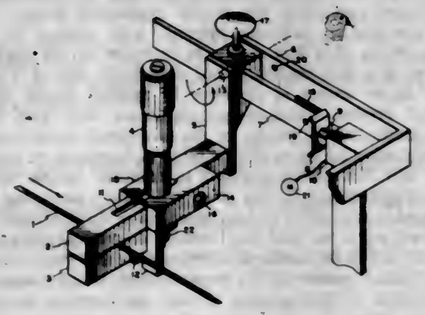
(*c*) a pawl having an inner portion received in said recess and substantially conforming to said cylindrical portion thereof for pivoting movement about said pivot axis, and an outer portion engageable with said ratchet, said outer portion including

(1) first abutment means circumferentially engageable with said ratchet when said pawl carrier rotates in one of said directions for transmitting torque between said pawl carrier and said ratchet, and

(2) second abutment means radially engageable with said ratchet for sliding movement of said second abutment means relative to said ratchet, and for substantially preventing contact between said first abutment means and said ratchet when said pawl carrier rotates in the other direction; and

(*d*) resilient means for urging said inner portion into conforming engagement with said cylindrical recess portion.

3,166,172
MONITORING RIBBON THREAD THICKNESS AND STOP DEVICE
Winfield F. Kelsey and Arthur L. Liberty, Easthampton, Mass., assignors to United Elastic Corporation, Easthampton, Mass., a corporation of Massachusetts
Filed Mar. 20, 1962, Ser. No. 181,096
4 Claims. (Cl. 192—127)



1. In a machine for winding a continuous length of material of predetermined thickness the improvement which comprises

(*a*) a gauging element attached to the winding machine and provided with jaws positioned so that the moving material passes between them,

(*b*) the jaws having micrometric adjusting means to adjust the spacing of the jaws a predetermined opening,

(*c*) relatively wide plates connecting each jaw to the micrometric adjusting means,

(*d*) a guide slot composed of two relatively wide and thin plates having their wide dimensions at right angles to the plates connecting the jaws to the micrometric means, the latter plates sliding in the guide slot formed between the second plates,

(*e*) pivot means permitting the jaws to move the gauging element in a circle when the friction of the material passes through the jaws exceeds a predetermined value, and

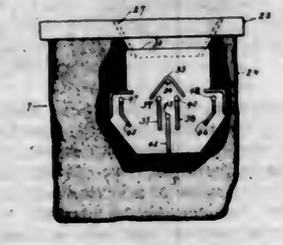
(*f*) switching means actuated by pivoting of the gauging member to stop the winding machine.

3,166,173
ELECTROMAGNETICALLY CONTROLLED SORTER
Pierre Wagrez, 4 Ave. Courteline, Colombes, France
Filed June 26, 1962, Ser. No. 205,445
Claims priority, application France, June 28, 1961, 866,286
28 Claims. (Cl. 193—31)



1. Material handling apparatus for sorting objects in response to sorting signals, including first means for successively conveying each of said objects to a common point in space and for releasing them at said common point; a plurality of movable guide means having each an inlet end and an outlet end and having a first extreme stable position and a second extreme stable position, said inlet end of each guide means cooperating with said common point in said second position for receiving a released object, each said inlet end occupying substantially the same point in space in said second position; a plurality of second means, one for each of said movable guide means, for causing, in response to said sorting signals, said guide means selectively to move from said first position to said second position; third means for causing said guide means to move from said second position to said first position; individual fourth means communicating with a corresponding one of said outlet ends for receiving said objects, whereby said objects, on being released, are guided to the appropriate one of said fourth means.

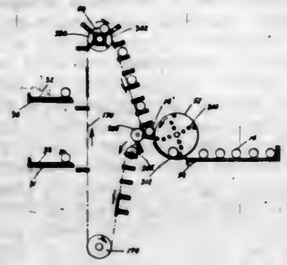
3,166,174
DOUBLE SECURITY COIN COLLECTING SYSTEM
Louis L. Epstein, 25 Van Velsor Place, Newark, N.J., and Julius Epstein, 70 S. Munn Ave., East Orange, N.J.
Filed Sept. 19, 1962, Ser. No. 224,788
1 Claim. (Cl. 194—1)



A double security coin collecting system comprising an electrically operated register adapted to separately count and record coins of different denominations, a coin selector-rejector having slots to receive respectively coins of different denominations and comprising coin chutes adapted to receive coins from their respective coin slots, electrical means associated with said slots and adapted to effect the actuation of said register when a coin passes through one of said slots, a pilfer-proof vault adapted to receive coins, means detachably locking said vault to the selector-rejector, said coin vault having an open top to receive coins, a coin retainer within said coin vault, a plurality of depending, pivotally mounted plates in said retainer positioned to allow coins to flow therebetween, said pivotally mounted plates being further adapted to move, when said vault is inverted, to pivot and close openings through which said coins would otherwise pass, said retainer having a coin slot at its lower end below said plates, and a flexible coin receptacle enclosing said retainer.

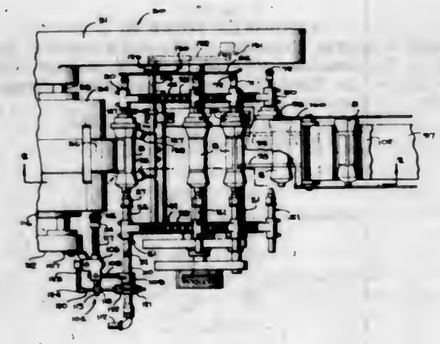
3,166,175
EGG COLLECTION AND TRANSVEYOR SYSTEM
John S. Kurtz, Ephrata, Pa., and Jewel Graves, Holland, Mich., assignors to Automatic Poultry Feeder Company, Zeeland, Mich., a corporation of Michigan
Filed July 9, 1962, Ser. No. 208,302
12 Claims. (Cl. 198—25)

1. An egg handling apparatus comprising: an egg elevator having a plurality of egg carrying flights mounted to move in an endless manner; egg conveyor means adjacent said elevator egg diverter means cooperative with said conveyor means to laterally divert eggs from said conveyor unto flights of said elevator as the flights move past said conveyor means; and egg transfer control element means normally projecting into the transfer path of eggs to prevent transfer from said conveyor means to said elevator, and being repeatedly shifted out of said transfer path by passing of individual elevator flights as each flight approaches alignment with said conveyor means, to thereby obtain optimum egg transfer without breakage.



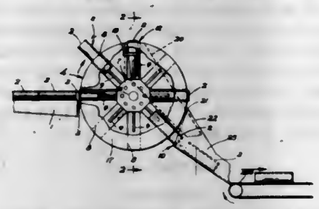


3,166,176
DEVICE FOR INDEXING CYLINDRICAL PLASTIC BOTTLES FOR OFFSET PRINTING
Howard M. Turner, Oak Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 8, 1962, Ser. No. 164,903
22 Claims. (Cl. 198—33)



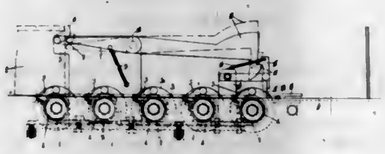
21. For use in combination with a printing machine of the type including a rotary printing drum, article feed and indexing means for presenting articles each having a cylindrical portion on which printing is to take place to said printing drum in an indexed position, said article feed and indexing means comprising a plurality of holder units for supporting articles for rotation during the printing thereof, means mounting said holder units for movement about a predetermined path and for sequentially presenting articles to said printing drum, each of said holder units comprising a fixed holder member and a movable holder, a supporting shaft, means mounting said movable holder on said supporting shaft, for rotation about the axis of said supporting shaft, a housing supporting said supporting shaft for sliding movement axially of said supporting shaft to shift said movable holder between an article clamping position and a released position, article indexing means carried within said movable holder for indexing an article, said article indexing means including an indexing finger adapted to be engaged in an article recess, and means mounting said finger within the general confines of said movable holder for retracting movement axially of said movable holder and holding said finger fixed against rotational movement.

3,166,177
HOPPER FEEDING MECHANISM
Martin J. Laverty, Jericho, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed Oct. 31, 1963, Ser. No. 320,373
4 Claims. (Cl. 198—33)



1. A feeding mechanism for orienting in a preferred direction hollow parts having open and closed ends which comprises, a rotatable feeding member having open slots radially disposed therein extending to the periphery thereof and adapted to receive and confine therein a hollow part at a first station, a part-supporting finger in each of said slots extending radially from the bottom thereof and terminating intermediate the bottom and the top of each of the slots, said finger being adapted to enter the hollow of said part and carry it to a discharge station of the rotatable member, said discharge station being located relative to said first station to cause an axial reversal of said part, a pawl mounted near one face of said rotatable member and biased to enter each of said slots during rotation of said member and exert a transverse deflecting force without reversing the axial orientation of parts confined in said slots but not carried by the fingers therein, a chamber adjacent the other face of said rotatable member for receiving parts deflected therein by said pawl, and an output chute cooperatively associated with the rotatable member communicating with said chamber for receiving oriented parts delivered by said chamber and by said slots.

3,166,178
ASSEMBLY UNIT FOR ARTICLES DISCHARGED FROM A CONVEYOR SYSTEM
John H. W. Smith, New Malden, Surrey, Edward F. Thomson, Otford, near Sevenoaks, Kent, and William Gibson, St. Leonards-on-Sea, Sussex, England, assignors to The Daily Mirror Newspapers Limited, London, England
Filed June 29, 1962, Ser. No. 206,367
1 Claim. (Cl. 198—34)

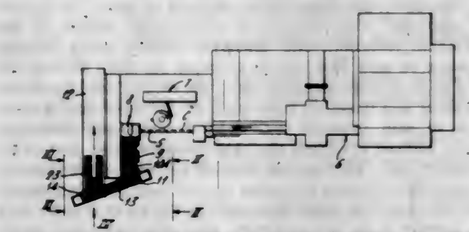


An assembly unit for articles discharged from an end section of a conveyor system, the assembly unit including means for releasing, one at a time, articles which may have accumulated at the discharge end of the conveyor system for successive and separate discharge, said means comprising a retractable stop member for holding back following articles by engagement against the first thereof, the discharge end portion of the conveyor inclining downwardly so as to afford a gravity feed, and incorporating idler rollers having overspeed controls affording predetermined maximum speeds, the maximum speed for the conveyor section beyond the stop member being greater

than that in advance of the stop member to create a gap between the two leading articles, into which gap the stop member can be inserted, latch means for releasably retaining said stop member in article engaging position, a swingable transfer device for receiving an article from said conveyor and movable in one direction to transfer an article from said conveyor to another location, and means on said transfer device for engaging said latch means upon movement of said transfer device in the other direction to release said latch means and permit said stop member to move out of article engaging position, thereby permitting the article previously engaged by said stop member to move along said conveyor.

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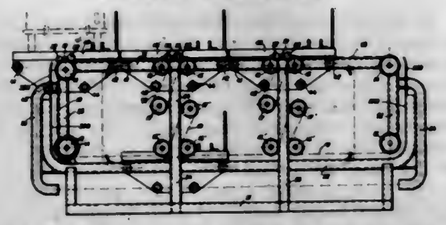
**3,166,179**
**APPARATUS FOR HANDLING ROD-LIKE ARTICLES SUCH AS CIGARETTES**
**Desmond Walter Mollins and Tom Rowlands, Deptford, London, England, assignors to Mollins Machine Company Limited, London, England, a company of Great Britain**
**Filed Dec. 11, 1962, Ser. No. 243,795**
**Claims priority, application Great Britain, Dec. 13, 1961, 44,646**
**8 Claims. (Cl. 198—34)**



1. Apparatus for handling rod-like articles comprising conveyor means to convey articles in succession in a direction transverse to their axes, further conveyor-means to convey the said articles in the opposite direction, a transfer conveyor to receive articles from the first said conveyor-means and deliver them to the said further conveyor-means, said transfer conveyor extending obliquely from one to the other of said conveyor-means, consisting of an endless conveyor band of flexible material, and having article-receiving, flutes formed therein and extending obliquely across the transfer conveyor so as to be substantially parallel with the axes of the articles on both the said conveyor-means, and means to move the transfer conveyor with a component in the direction of movement of one of the said conveyor-means.

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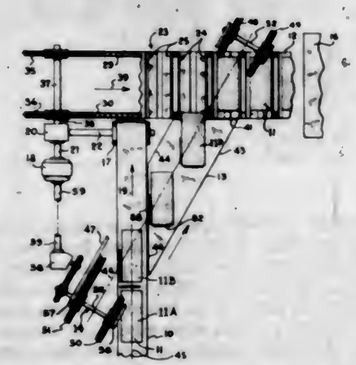
**3,166,180**
**AUTOMOBILE PARKING MECHANISMS**
**Jean-Pierre Sonderegger, Flughafenstrasse 8, Basel, Switzerland**
**Filed Apr. 3, 1962, Ser. No. 184,879**
**Claims priority, application Switzerland, Apr. 7, 1961, 4,062/61**
**13 Claims. (Cl. 198—85)**



1. A parking mechanism for automobiles or the like comprising, in combination, a stationary structure defining a rectangular path having a pair of substantially horizontal portions and a pair of substantially vertical portions; a plurality of platform carriages arranged on said stationary structure for movement parallel to themselves along said rectangular path and in such a manner that two diagonally opposite corners of said path are simultaneously unoccupied; and drive means for moving said platform carriages along said path and including endless flexible conveyor means, a plurality of first coupling means, one for each platform, fixed spaced from each other to said endless flexible conveyer means, a plurality of second coupling means respectively fixed to said platform carriages and respectively adapted to be engaged by said first coupling means for coupling said platform carriages to said conveyer means, guide means for guiding at any instant a plurality of first portions of said endless flexible conveyer means substantially parallel to said rectangular path for keeping thereby the first coupling means fixed to said first portions of said conveyer means engaged with the respective second coupling means, a plurality of deflector means respectively arranged along spaced points of said horizontal portions of said path for deflecting a plurality of second portions of said endless flexible conveyer means transversely with respect to said first portions for disengaging the first coupling means fixed to said second portions from the respective second coupling means, and moving means connected to said endless flexible conveyer means for continuously moving the same along said guide and deflector means.

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**3,166,181**
**TRANSFER DEVICE**
**Harold V. Ruthus, Fullerton, Calif., and Thomas P. Van Iten, Menasha, and Richard H. Frick, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**
**Filed July 19, 1962, Ser. No. 211,062**
**7 Claims. (Cl. 198—102)**

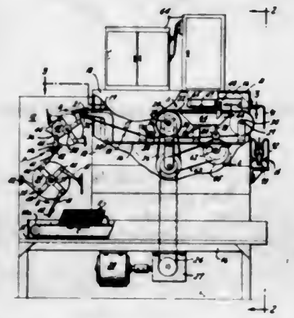


2. In conveying apparatus, an article feeding conveyor movable in a predetermined path and comprising an endless flexible member supported by a plurality of rolls, an article receiving conveyor movable in a path which intersects and is at angles to the path of said feeding conveyor and comprising a second endless flexible member supported on a plurality of rolls, transferring mechanism extending between said two conveyors and including a third endless flexible member and article engaging means carried by the third flexible member for engaging articles and moving them from said feeding conveyor to said receiving conveyor, means for driving said feeding conveyor at a certain speed, means for driving said receiving conveyor at a different speed, and means for driving said transferring mechanism in timed relationship with said two conveyors so that said third flexible member has substantially the same component of speed as said first named flexible member in the direction of movement of said first named flexible member and has substantially the same component of speed as said second flexible member in the direction of movement of said second flexible member.



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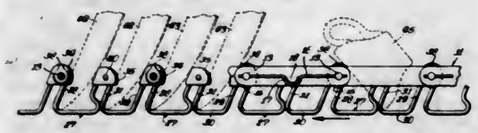
**3,166,182**
**HANDLING APPARATUS**
**Robert T. Vaughan, Cheltenham, Donald E. Kelley, Glenside, and William H. Scott, Sellersville, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware**
**Filed Dec. 21, 1962, Ser. No. 246,447**
**14 Claims. (Cl. 198—103)**



1. Mechanism for conveying data bearing articles past a data recognizing device, comprising: conveyor means mounted to travel in a path passing the location of the recognizing device to bring the data bearing articles to said location in succession; intercepting means for first arresting an article at said location for a predetermined time period, and thereafter to release the article for continued movement; article-engaging means operable during the aforesaid time period for first removing the arrested article from the conveyor means and placing such article in a position to be recognized by the device and for then removing the article from said position for continued movement; and means for receiving the recognized article after its removal and release from said position.

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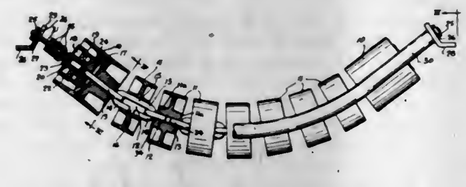
**3,166,183**
**DISHWASHING MACHINE CONVEYOR**
**John Cumming, River Forest, Ill., assignor to G. S. Blakeslee & Co., Chicago, Ill., a corporation of Illinois**
**Filed Mar. 5, 1962, Ser. No. 177,947**
**3 Claims. (Cl 198—131)**



1. In an endless conveyor having an upper run and a lower run and intended for use in dish washing machines in which the articles to be washed are subjected to liquid sprays projected upward thereagainst from beneath the upper run of the conveyor, said conveyor comprising side driving chains extending lengthwise of the conveyor path, parallel cross rods connecting said chains and extending transversely of the conveyor path and spaced apart lengthwise thereof, a plurality of links of substantially U-shape lengthwise of the conveyor path disposed between each two adjacent rods and spaced apart transversely of the conveyor path, said links extending inwardly between said runs and respectively comprising a leading arm and a following arm and a connecting element joining the inner ends of said arms, each of said arms of the respective links being provided at its outer end with a loop opening inwardly of the conveyor path, the openings of said loops being of a size to receive said rods to accommodate removal and replacement of said links transversely of said rods, and non-metallic protective cap members provided with grooves opening inwardly of the conveyor path and fitting snugly over and enclosing said loops, one of said two adjacent rods passing snugly through said cap members and loops of the leading arms of said links and the other of said two adjacent rods passing snugly through said cap members and loops of the following arms of said links, said arms and cap members being thereby pivoted on said two adjacent rods, the latter restraining said cap members against movement outwardly of the conveyor path and said cap members in cooperation with said rods restraining said links against movement outwardly of the conveyor path, said links being open and unobstructed at their sides for downward insertion thereinto of dishes from the upper run of said conveyor.

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**3,166,184**
**BELT CONVEYOR ROLLER STRANDS**
**Alexander Boyd, 27 Wildwood Drive, Calgary, Alberta, Canada**
**Filed June 13, 1962, Ser. No. 202,311**
**8 Claims. (Cl. 198—192)**



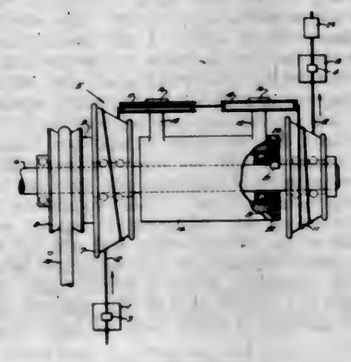
1. A belt conveyor roller strand comprising,
(*a*) a plurality of rollers,
(*b*) each roller being formed with a non-circular slot extending axially therethrough,
(*c*) and a plurality of rigid links of cross-section complementary to said slots to fit therein,
(*d*) said links having hooked ends joined together in a chain to support said rollers,
(*e*) each of at least some of said links extending fully through the slot of an associated roller to project a said hooked end from each end of said roller with the roller serving to form a closed loop with the hooked end and thereby prevent separation of the links,
(*f*) a surface at each end of each roller engaging the projecting ends of adjacent links to position such roller axially in relation to the links, and to maintain said rollers spaced apart from each other.

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**3,166,185**
**WIRE TENSIONING DEVICES**
**Axel C. Nystrom, Rutherford, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Sept. 13, 1962, Ser. No. 223,482**
**5 Claims. (Cl. 205—16)**

1. A tension device for wire drawing units comprising:
a driven capstan having a variable pulling force on a wire created by a variable number of partial turns of the wire thereon to pull the wire through a first unit,
a rotatable shive having a number of partial turns of the wire thereon and disposed in advance of a second unit,
means to pull the wire through said second unit, and
means interposed between said capstan and said shive

to maintain a predetermined tension in the wire between said units by transferring partial turns from said shive to said capstan when the tension increases to increase the pulling force of said capstan on the wire.



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**3,166,186**
**PRESSURE SENSITIVE LABELS, LABEL STOCKS, AND METHODS FOR MANUFACTURING THE SAME**
Andrew B. Karn, 420 E. 86th St., New York, N.Y.
Filed June 25, 1962, Ser. No. 206,135
22 Claims. (Cl. 206—56)

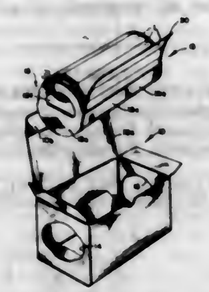


1. A label comprising a sheet for receiving printed matter on one surface thereof, a layer of pressure-sensitive adhesive on the other surface of said sheet, an inner liner having one side adhered to and covering said layer of adhesive and separable from said layer of adhesive, and an outer liner on the opposite side of said inner liner and at least one narrow strip of adhesive adhering said liners to each other more strongly than said inner liner is adhered to said layer of adhesive, both of said liners being removable from said sheet and said outer liner having at least one portion adjacent to said strip readily separable from said inner liner, said separable portion of said outer liner carrying with it a portion of said inner liner adhered to the outer liner by said strip when said outer liner is removed completely.

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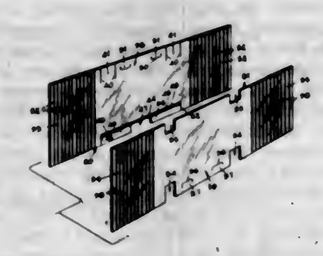
**3,166,187**
**DISPENSING CONTAINER**
Armando Araujo, Freeport, N.Y., assignor to Oxford Filing Supply Company, Inc., Garden City, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,482
4 Claims. (Cl. 206—58)

1. A strip dispensing assembly, comprising in combination a container having an opening in an end wall and a slot, a roll of strip material in said container with the end of the strip extending through said slot, an open-sided cage enclosing said roll, said cage comprising a pair of discs overlying the respective ends of said roll and at least one strip connecting said discs, and means on said cage accessible through said opening to effect rewinding rotation of said roll and cage to return said strip through said slot, said rewinding rotation causing said strip to move within the convolutions of said roll to increase the frictional engagement between said roll and cage.



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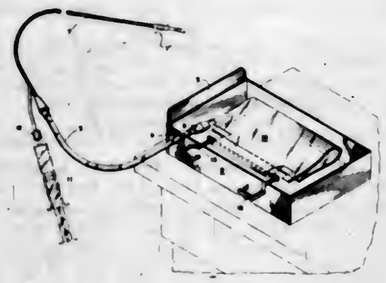
**3,166,188**
**PACKAGING DEVICE**
Melvin C. Koester, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 18, 1964, Ser. No. 360,471
3 Claims. (Cl. 206—62)



1. A unitary packaging device for sheets of frangible material such as automobile rear windows or the like, which comprises a frangible sheet, a supporting panel overlying one face of the sheet and having dimensions greater than said sheet, a first pair of spaced integral flaps formed by parallel slits extending inwardly from one edge of said panel and folded over an edge and along the other face of said sheet, a pair of spaced parallel slits extending inwardly from the opposite edge of said panel, a longitudinal fold line extending between said last-named pair of slits and spaced inwardly from said opposite edge to form an edge supporting strip, a second pair of spaced flaps formed integrally with said edge supporting strip, a longitudinal fold line defining the junction between said second flaps and said edge supporting strip, said edge supporting strip abutting the opposite edge of the sheet with said second spaced flaps folded along said other face of the sheet, a cover panel having dimensions greater than said sheet overlying said other face thereof and engaging the folded-over portions of said flaps, transversely aligned notches in the opposite edges of said cover panel in registry with the notches in said supporting panel created by the folding of said flaps, banding straps encircling said sheet and said supporting and cover panels and received in said notches to hold said folded-over flaps against said other face of said sheet, and means securing the overlapping portions of said supporting and cover panels together outside the periphery of said sheet.



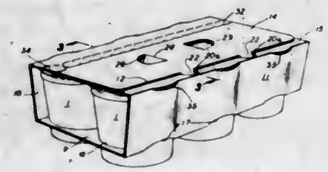
**3,166,189**
**CATHETERIZATION PACKAGE**
Hamilton S. Disston, Basking Ridge, N.J., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Mar. 26, 1963, Ser. No. 268,110
10 Claims. (Cl. 206—63.2)



1. A catheterization package comprising, an openable container of relatively stiff material and a pre-assembled drainage system including a catheter, a drainage tube and a drainage bag, said drainage system being packed in said container and said container being adapted, when open, to hold said bag in a position for temporary use.

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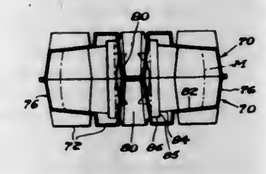
**3,166,190**
**MULTI-CUP PACKAGE**
David E. Conrades, Menlo Park, Calif., assignor to Andre-Matic Machinery Company, San Leandro, Calif., a corporation of California
Filed Oct. 29, 1962, Ser. No. 233,653
4 Claims. (Cl. 206—65)



1. A multi-container package comprising:
(*a*) at least one row of a plurality of upright containers having an intermediate portion thereof of larger cross section than the lower end thereof;
(*b*) an open-ended sleeve enclosing said row with the end containers in said row at the open ends of said sleeve;
(*c*) said sleeve being formed from a single elongated cardboard blank having side edges extending longitudinally thereof;
(*d*) said blank being transversely scored and folded to form a longitudinally extending series of panels including a central panel, a pair of side panels along opposite ends of said central panel and a pair of terminal end panels along opposite ends of said side panels;
(*e*) said central panel having at least one row of spaced apertures therein of smaller cross section than said intermediate portion of said containers and each of said apertures extending partially into said side panels and receiving said lower end of one of said containers therethrough;
(*f*) said side panels extending across and in engagement with the oppositely outwardly facing sides of said intermediate portions of said containers;
(*g*) said terminal end panels extending over and in engagement with the ends of said containers opposite said lower end thereof; and
(*h*) means securing said terminal end panels together maintaining said containers within said apertures.

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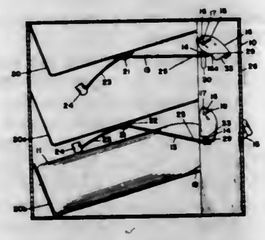
**3,166,191**
**MOLDED PULP PACKAGE**
Charles J. Chaplin, Portland, Maine, assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware
Application July 11, 1961, Ser. No. 130,448, which is a division of application Ser. No. 759,111, Aug. 22, 1958, now Patent No. 3,016,177, dated Jan. 9, 1962, which is a division of application Ser. No. 697,369, Nov. 19, 1957. Divided and this application Dec. 10, 1963, Ser. No. 336,090
2 Claims. (Cl. 206—65)



1. A molded pulp package comprising, in combination, four watt-hour meters and a pair of separable, identical package halves, each said package half including a bottom integral with side and end walls, a plurality of projections integrally formed at the juncture of said bottom and side and end walls independently supporting the meters in spaced relation with respect to each other and said walls, additional projections extending from said bottom centrally between end walls on a generally common center line, pairs of said meters being arranged in back-to-back relationship with said further projections maintaining said meters out of contact with one another, additional projections adjacent each of said end walls generally along said common center line engaging said meters and supporting the same in spaced relation from said bottom, said projections at the intersections of said bottom, side and end walls including stepped arcuate surfaces engaging opposite sides of said meters, said stepped arcuate surfaces comprising one surface of greater radius than an adjacent surface for engaging conforming portions of said meters.

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**3,166,192**
**THEFT-PROOF BOTTLE RACK**
Henry G. Schultz, De Forest, Wis., and Kenton J. Karow, Roynette, Wis.; said Karow assignor to said Schultz
Filed Feb. 11, 1963, Ser. No. 257,644
14 Claims. (Cl. 211—4)

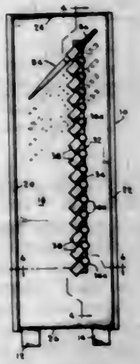


1. A self-locking bottle compartment having an opening for insertion of a bottle, a locking bar adapted to be

positioned in an open position permitting the insertion of a bottle through said opening and into said compartment and in a locking position wherein said locking bar extends across said opening to prevent the removal of a bottle from said compartment, actuating means for engaging said locking bar to hold it in said open position when said compartment is empty and for releasing said locking bar to permit it to move to said locking position when a bottle is inserted through said opening into said compartment, and means to secure said locking bar in said locking position.

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**3,166,193**
**DISPLAY STAND**
**Roger F. Rex, Hales Corners, Wis., assignor to Display Corporation, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Apr. 3, 1964, Ser. No. 357,192**
**14 Claims. (Cl. 211—4)**



1. A display stand for writing implements comprising, in combination,
- a base,
- a body member extending vertically from said base and including a panel portion, at least one vertical portion defining a surface extending laterally of said panel portion, and an elongated, vertically extending slot spaced horizontally from said lateral surface,
- a writing implement holder including a planar mounting portion disposed in said slot for movement therein and a writing implement receiving portion spaced from said lateral surface,
- said receiving portion including a plurality of vertically spaced hollow receivers arranged in relative parallel relation and each disposed at an angle to the vertical and opening toward said lateral surface,
- said mounting portion including a plurality of generally U-shaped apertures each including horizontally spaced, upwardly directed legs connected by an opening,
- and pin means fixed on said panel portion and engaged in each of said apertures,
- said holder being movable on said pin means relative to said body member for selectively engaging said pin means in said legs to determine first and second positions of said holder relative to said body member with one position being spaced laterally of the other position with respect to said panel portion, said lateral surface having a predetermined extension from said panel portion to be positioned in the path of movement of writing implements from said receivers when said holder is in its first position and to be spaced from said path of movement when said holder is in its second position.

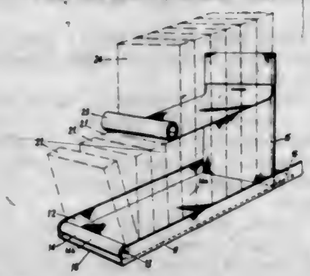
**3,166,194**
**DESK MOUNT**
**Gordon E. Nichols, Middleboro, Mass., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts**
**Filed Aug. 17, 1962, Ser. No. 217,625**
**4 Claims. (Cl. 211—49)**



1. A structure comprising a first part, a second part hingedly connected to one end of the first part, each of said first and second parts comprising superposed, substantially coextensive panels, said second part being adapted to be placed at an angle to the first part, a third part hingedly connected to the distal end of the second part, said third part being formed out of one of the panels of the second part, said third part being adapted to be placed at an angle to the second part with its distal end engaged with the first part closer to the one end of the first part than the other, means on one of the panels of the first part, cooperable with the distal end of the third part, to hold said end spaced from and parallel to the hinge joining the first and second parts such that the dihedral angle between the second and third parts corresponds substantially to the conoidal angle of a writing implement, said second and third parts defining a hollow supporting leg of triangular section, the divergent ends of which are based on the first part and the hinged convergent ends of which are spaced from and parallel to the other end of the first part and form conjointly therewith supporting feet, and a fourth part formed out of one of the panels of the first part, said fourth part being hingedly connected to the first part near the distal end thereof and extending therefrom into engagement with the hinged convergent ends of the second and third parts, said hollow supporting leg defining a pocket, the bottom of which is spaced from the first part and is formed by said dihedral angle, and said first part containing holes through it situated between the divergent ends of the second and third parts on the median of the dihedral angle which affords access to the pocket.

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**3,166,195**
**DISPLAY DEVICE**
**Russell E. Taber, 510 Dogwood Valley Drive NE., Atlanta, Ga.**
**Filed June 25, 1963, Ser. No. 290,385**
**13 Claims. (Cl. 211—49)**

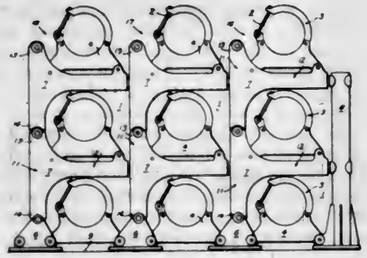


1. A display device comprising a multi-convoluted self-recoiling roll having an inner and outer surface, mounting means for said roll permitting free rotation thereof, and a back support member secured to the inner surface of said roll adjacent the outer transverse edge of said roll, said back support member having a rearwardly extending foot at its lower extremity, whereby the self-recoiling properties of said roll cause said back support member to press against a large portion of the surface of an article carried by said device.



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**3,166,196**
**DETACHABLY STACKED CHOCK STOWAGE APPARATUS**
**Ralph F. Hereth, Port Orchard, and Richard L. Linkletter, Bremerton, Wash., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Jan. 24, 1964, Ser. No. 340,110**
**11 Claims. (Cl. 211—60)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

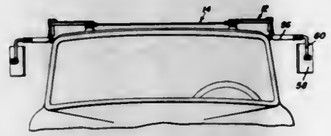


1. Apparatus for stowing elongate objects comprising,
- a plurality of base chocks adapted to be secured to a base support surface and formed at their upper ends with hinge pin-receiving means,
- a plurality of detachable chocks each formed with a base portion having hinge pin receiving means at each end and each further being formed with an arm portion of a fixed length extending laterally-outwardly from one side thereof,
- hinge pins received in said pin-receiving means of both said base and detachable chocks, hingedly connecting said chocks,
- a plurality of chock coupling pin means,
- said arm portions each being provided at its outer end with a socket for mounting one of said chock coupling pin means, and said arm portions each being provided on its opposite end with a pin-receiving socket substantially aligned with the socket of its outer end,
- some of said detachable chocks hingedly supported on a horizontal pivotal axis on said base chocks and other of said detachable chocks stacked on said hingedly supported chocks also on horizontal pivotal axes to form parallel rows of laterally-spaced stacks, the arms of each detachable chock spanning the space between the stacks and being supportably-coupled to laterally-adjacent chocks by said coupling pins engaging the pin-receiving sockets of adjacent chocks.

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**3,166,197**
**REMOVABLE ATTACHMENT FOR VEHICLES**
**Robert C. Caylor, 7057 E. Redbud Road; Frank W. Slater, 3840 N. Vine Ave.; and Lester E. Rice, 6365 E. Calle Castor, all of Tucson, Ariz.**
**Filed May 27, 1963, Ser. No. 283,472**
**2 Claims. (Cl. 211—86)**

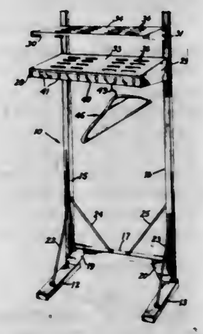
1. A removable attachment for vehicles consisting of an elongated member, laterally projecting vehicle engaging means secured to each end of said elongated member, means for drawing the vehicle engaging means inwardly toward each other for varying the effective length of the elongated member and clamping the vehicle therebetween, and an external vehicle accessory means mounted on at least one of the vehicle engaging means, said elongated member including a central rod, and said laterally projecting vehicle engaging means consisting of substantially right angular brackets, said brackets having a first leg aligned with the central rod and slidably engaged with



the opposite ends thereof, the second leg of each bracket terminating in an inwardly directed flange engageable beneath a vehicle rain gutter, said accessory means including an elongated hollow tube secured to the second leg of the corresponding bracket and projecting, at an angle, laterally outwardly therefrom, an elongated rod adjustably telescoped witihn the outer end of the hollow tube, and an accessory secured to the outer end of said rod.

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**3,166,198**
**HANGER STRUCTURE**
**Carl E. Gingher, 304–328 Depot St., Scranton, Pa.**
**Filed Apr. 1, 1963, Ser. No. 269,375**
**4 Claims. (Cl. 211—123)**



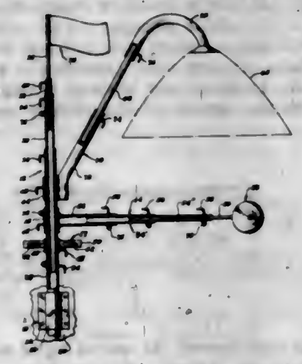
1. A garment hanger bar, a plurality of vertically extending hook receiving apertures therein, said apertures being of teardrop shape with outwardly turned flanges along the side and bottom edges of said aperture on one side only of said bar, said flanges forming a funnel-shaped opening on the other side of the bar, the lower portion of the walls forming the opening being V-shaped and the bottom of the V-shaped portion terminating at the upper face of the bottom outwardly turned flange whereby the hook of the garment hanger contacts the flange and is supported thereby.

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**3,166,199**
**ATTACHMENT FOR TRACTORS**
**Alta F. Hawkins and Robert T. Hawkins, both of R.R. 1, Whitestown, Ind.**
**Filed Feb. 18, 1963, Ser. No. 259,066**
**5 Claims. (Cl. 211—182)**

3. An attachment for vehicles, comprising:
A pair of support members, a first one of which is a column member adapted to be mounted on an

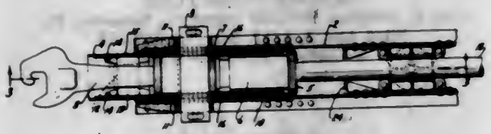
associated vehicle, and a second one of which is an elongated arm member rotatably carried by the first,



and means provided on both said members to interchangeably carry an associated auxiliary device.

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**3,166,200**
**DRAFT GEAR RIGGING**
Vernon S. Danielson, Chicago, Ill., assignor to Standard Car Truck Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1962, Ser. No. 231,772
10 Claims. (Cl. 213—8)

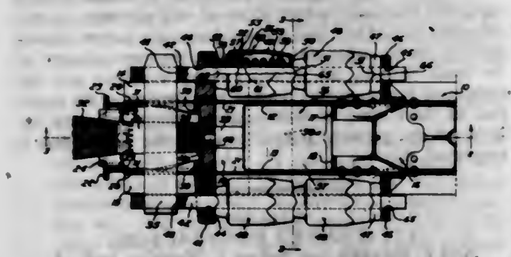


1. A draft gear rigging for a railway car including a coupler and an associated cushioning element at each end of the car, an intermediate floating cushioning element between the coupler-associated elements free to move longitudinally of the car adapted to cooperate with one another in buff, the intermediate cushioning element being inoperative in draft and compression means interposed in series between all said cushioning elements,

the cushioning elements at the end of the car being free to move away from the compression means.

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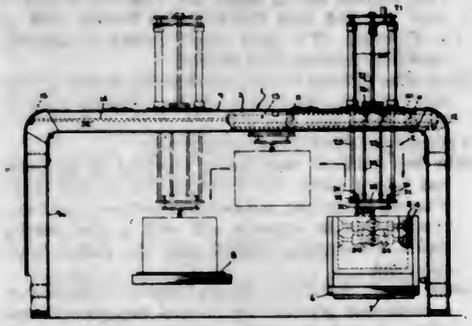
**3,166,201**
**RAILWAY CAR SHOCK ABSORBING SYSTEM**
William D. Wallace, Homewood, and Laurence T. La Bella, Westchester, Ill., assignors to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,546
8 Claims. (Cl. 213—43)



1. In a railway car, a longitudinally extending center sill, a transverse force transmitting member carried by and being longitudinally slidable relative to said sill, a hydraulic shock absorber disposed within said sill and having a hydraulic cylinder element and a hydraulic piston rod element, one of the elements of said hydraulic shock absorber having connection with said force transmitting member, coupler means engageable with said force transmitting member, a transverse draft key carried by and slidable relative to said coupler means and said sill, a pair of longitudinally extending drawbars one on each side of said sill, said drawbars extending through said force transmitting member with the forward ends thereof having connection with said draft key, reaction and support means for slidably receiving the rear ends of said drawbars, a force transmitting element carried by each drawbar, friction draft gear means carried by said drawbars intermediate of said force transmitting elements and said force transmitting member, said coupler means in response to buff forces applied thereto being engaged with said force transmitting member for moving the latter and said one element of said hydraulic shock absorber rearwardly for actuating the latter whereupon said hydraulic shock absorber serves to absorb the buff forces, said force transmitting member during rearward movement serving to compress said friction draft gear means against said force transmitting elements and said reaction and support means whereupon said friction draft gear means serve to cooperate with said hydraulic shock absorber in absorbing the buff forces, and said coupler means in response to draft forces applied thereto serving to move said draft key and said drawbars forwardly causing said force transmitting elements to compress said friction draft gear means against said force transmitting member whereupon said friction draft gear means serve to absorb the draft forces.

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**3,166,202**
**TANK LIFTING MECHANISM**
Alanson James Arnold, New Orleans, La., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 24, 1961, Ser. No. 126,177
9 Claims. (Cl. 214—1)

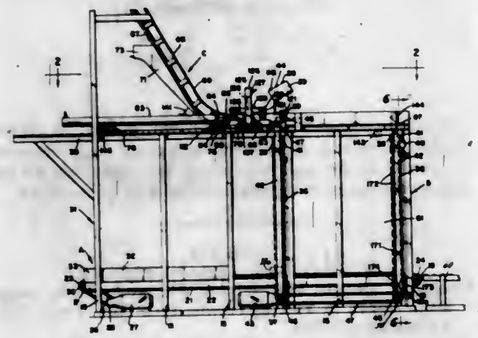


1. An article lifting mechanism comprising a frame, means moving said frame to a position spaced from an article to be lifted, a plurality of gripper head assemblies carried on said frame, each gripper head assembly comprising a controlling cylinder having a piston therein and a gripper head mounted on the piston, each of said gripper heads having a suction groove from which air is to be evacuated, means on said frame supplying fluid to said controlling cylinders for independently moving each piston and its respective gripper head relative to the frame and with the same force against said article to be lifted as the frame is maintained in a stationary position, the movement of each gripper head being stopped by engagement with said article such that each gripper head contacts and engages the articles with the same force irrespective that some gripper heads may have moved further than others, and means on said frame for evacuating such suction groove to create a reduced pressure in said gripper heads to permit each of the heads to grip the article with a substantially equal force to reduce the tendency of the gripper head to distort and otherwise damage the article.



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**3,166,203**
**CAN PALLETIZING MACHINE**
Earl E. Jeremiah, Los Altos, Calif., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed June 28, 1962, Ser. No. 206,091
6 Claims. (Cl. 214—6)

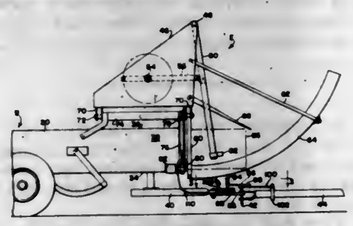


1. In a can palletizing machine, a horizontal conveyor for moving a pallet from a first position to a second position rearward of said first position, an elevator for raising said pallet upwardly from said second position and then lowering said pallet to said second position in increments, and a can loading mechanism at the top of said elevator, a plate, means for reciprocating said plate across the top of said elevator, a chute for cans discharging cans on to said plate terminating displaced from said second position, said plate in its retracted position being under said chute and in its projected position over said elevator, means for inserting a separator between said cans discharged from said chute and said plate, first means for retaining cans in position above said elevator as said plate is withdrawn to deposit a layer of cans on said pallet, and stripper means comprising a stripper bar resting upon and extending transversely across said plate, said stripper bar being movable with said plate between a retracted position forward of the lower end of said chute and a projected position approximately over the rearward edge of said elevator, first latch means on said stripper bar, second latch means on said can loading mechanism cooperable with said first latch means to hold said stripper bar in projected position stationary relative to said plate, unlatching means movable with said plate to disengage said first and second latch means when said plate has been withdrawn to a position adjacent but spaced from its retracted position, and second means for retaining cans in position above said elevator during the interval between unlatching of said stripper bar and completion of movement of said plate to retracted position.

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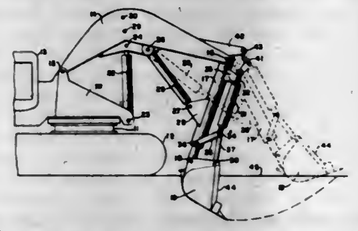
**3,166,204**
**BALE HANDLING APPARATUS**
Harold E. de Buhr, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Continuation of application Ser. No. 857,588, Dec. 7, 1959. This application Dec. 3, 1962, Ser. No. 242,347
5 Claims. (Cl. 214—42)

1. In combination with a baler having a rear discharge portion from which bales emerge rearwardly as the baler operates, and a trailing vehicle including a bale-catching receptacle rearwardly spaced and relatively remote from said discharge portion and an articulate draft connection to the baler to normally cause the receptacle to trail the baler in a predetermined relationship to said discharge portion during straight-ahead travel of the baler and vehicle but enabling lateral departure of the receptacle from said relationship during deviation of the baler and vehicle from straight-ahead travel: bale handling mechanism disposed closely rearwardly adjacent to said discharge portion and forwardly spaced from the receptacle for receiving a bale from said portion and for throwing such bale upwardly and rearwardly through the air to the receptacle, said mechanism including bale-throwing means normally so aimed at the receptacle during said straight-ahead travel that the trajectory of the bale will be directly to the receptacle; support means exclusive of the receptacle and mounting the mechanism on the baler on a fore-and-aft rocking axis spaced vertically from the throwing means for lateral rocking of the mechanism so as to enable lateral changes in the aiming of the throwing means; adjusting means normally operative between the baler and mechanism for establishing the normal aim of the throwing means during straight-ahead travel; and control means operative on the adjusting means to rock the mechanism about said axis and thereby to correctively change the aim of the throwing means so as to accommodate the trajectory of the thrown bale to the changed position of the receptacle.



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**3,166,205**
**EXCAVATING AND LOAD HANDLING APPARATUS**
William D. Symmank, Genas Isere, France (24 Rue Bavodet, Lyon, France)
Filed Aug. 2, 1963, Ser. No. 299,507
14 Claims. (Cl. 214—138)



1. An excavating apparatus comprising the combination of:

support means;

a boom structure pivotally mounted upon said support means for motion about a first horizontal axis;

first power means operatively attached to said boom structure to swing said boom structure about said first horizontal axis;

a dipper stick structure pivotally mounted upon said boom structure for motion about a second horizontal axis;

second power means operatively attached to said dipper stick structure to swing said dipper stick structure about said second horizontal axis;

a tool structure pivotally mounted upon said dipper stick structure for motion about a third horizontal axis;

a linkage having two ends,

one of said ends of said linkage being pivotally connected to said tool structure at a point spaced from said third horizontal axis,

first pivotal attaching means for pivotally attaching the other of said ends of said linkage to said dipper stick structure, and

second pivotal attaching means for alternatively pivotally attaching said other of said ends of said linkage to said boom structure at a point spaced from said second horizontal axis,

whereby, by said alternative attaching means there is made available two alternative patterns of tool structure motion when said dipper stick structure is swung about said second horizontal axis.

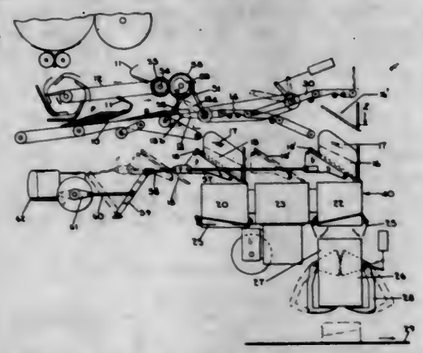
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**3,166,206**

## STACKING PRINTED PRODUCTS

Clive H. Porter, Park Ridge, John J. McDonald, East Paterson, and Richard C. Woessner, Fair Lawn, N.J., assignors to R. Hoe & Co., Inc., New York, N.Y., a corporation of New York

Filed July 24, 1962, Ser. No. 212,108
3 Claims. (Cl. 214—152)



1. Method of stacking printed products which comprises forming a moving stream of overlapped products, separating the said stream into a succession of batches, directing alternate batches of the said succession to a stack by one path and the remaining batches to the same stack by a second path, turning batches in the second path in their own planes successively through two quarter turns while delivering two batches from the first said path along with interspersed preceding batches from the second path to the stack and then delivering batches from the second said path to the stack in alternation with those of the first said path, whereby the batches from the second said path are retarded in the stack by relation to their position in the said succession of batches, each such batch from the second path now following the batch which followed it in the said succession.

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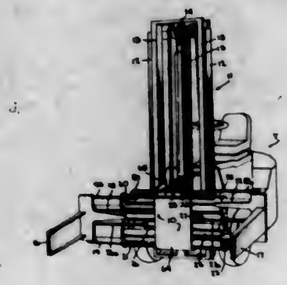
**3,166,207**

## CONTROL FOR LOAD SIDE SHIFTING

George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio

Filed Mar. 2, 1961, Ser. No. 92,841
5 Claims. (Cl. 214—653)

3. In a truck having a pair of load engaging members, means for moving both said members in the same direction toward one side or the other of the truck to side shift a load engaged by said members and for also moving said members toward and away from each other to engage or disengage a load, the improvement comprising, a movable member, means operatively connecting said movable member with each of said load engaging members whereby said movable member is moved responsive to the position of the center point of the load, and control means actuated by said movable member to prevent further movement of said load engaging members when the center of the load has moved to a safe limit on one side or the other of the longitudinal axis of the truck.



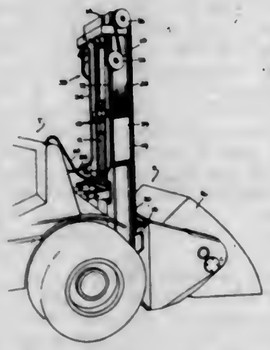
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**3,166,208**

## HOSE GUIDE ARRANGEMENT

George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio

Filed Aug. 24, 1962, Ser. No. 219,182
1 Claim. (Cl. 214—701)



In a lift truck, a pair of I section primary uprights each providing a pair of vertical channels,

a pair of I-section extendable uprights mounted for vertical movement through means cooperating with one channel of each of said primary uprights,

a load carriage, including a load manipulator, mounted for vertical movement on said extendable uprights,

a mounting member slidably mounted in the other channel of one of said primary uprights,

means secured to said one primary upright for retaining said mounting member in said channel during vertical sliding movement thereof,

a take-up reel for a flexible power line rotatably mounted on said mounting member for vertical movement with said mounting member,

a reel rotatably mounted on the upper end of one of said uprights above said take-up reel, and

a flexible power line connected at one end to a power source on said truck and extending downwardly from the upper end of said one primary upright, around said take-up reel, upwardly around said reel secured to the upper end of said one upright and connected at the other end to the load manipulator on said load carriage, whereby said flexible power line is maintained under tension and slack in said power line is taken up by vertical movement of said take-up reel as said extendable uprights and load carriage are raised and lowered.



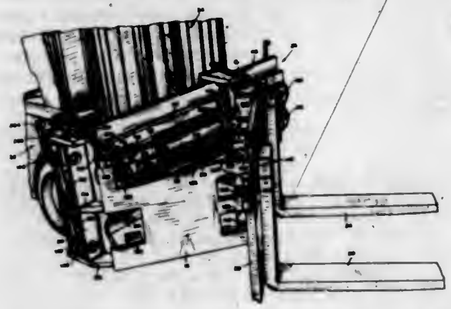
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**3,166,209**

## FORKLIFT TRUCK WITH FORKS THAT ARE PIVOTED ABOUT A VERTICAL AXIS BY LATERAL MOVEMENT OF THE FORK ASSEMBLY CARRIAGES

Louis A. Haddock, Jr., Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed July 27, 1961, Ser. No. 127,273
7 Claims. (Cl. 214—730)



1. A load handling device for industrial vehicles including elongated guide means, a pair of longitudinally spaced guide members mounted on the guide means and actuatable in either direction therealong, means pivotal centrally thereof and pivotally connected at opposite ends to different ones of the guide members, load carrier means pivotally connected to said pivotal means centrally thereof and extending parallel of said guide means, means for latching the load carrier means to said pivotal means so that said load carrier means can be actuated longitudinally of the guide means while in parallel relation thereto and means for unlatching said latching means from one side of said load carrier means upon such parallel movement of said carrier means so that said load carrier means and pivotal means are actuatable into transverse relation to said guide means and longitudinally of said guide means when in such transverse relation thereto, said unlatching means including at least one stop member fixed to the said guide means and at least one trip lever pivotally connected to one of the said guide members and disposed to engage the said stop member upon a predetermined parallel movement of the said guide members.

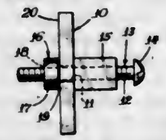
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**3,166,210**

## SCREW ANCHOR SECURING TOOL

Milton C. Nelson, 10155 S. Eberhart Ave., Chicago, Ill.

Filed May 9, 1962, Ser. No. 193,453
1 Claim. (Cl. 218—43)




A screw anchor securing tool, comprising, in combination, a rigid gauging and positioning plate means having an internally threaded and circular aperture therethrough and having first and second flat and smooth opposite side surfaces, a tubular and cylindrical anvil means having screw threads on a portion of its outer cylindrical surface and adjustably threaded through the aperture in said plate means and rigidly extending from said first side surface and having a free end spaced from said first side surface and having an inner and coaxially and longitudinally extending and cylindrical bore hole opening outwardly through said free end of said anvil means and in coaxial relation with the aperture in said plate means and having the inner end of said bore hole terminate at shoulder means adapted to be positioned in the plane of said first side of said plate means, said plate means having dimensions perpendicular to the axis of said aperture and said bore hole which dimensions are relatively large compared to the maximum dimensions of said anvil means perpendicular to the axis of said aperture and said bore hole, screw means having tool engaging means at one end thereof and having a threaded shank freely extending through the coaxial aperture and bore hole in said plate means and said anvil means respectively, said tool engaging means of said screw means being positioned adjacent said second side of said plate means, and nut means threaded onto said threaded shank, said nut means having maximum dimensions perpendicular to the axis of the aperture and bore hole in said plate means and said anvil means greater than the maximum diameter of said aperture and bore hole.

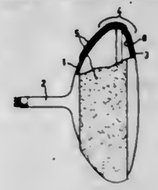
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**3,166,211**

## GLASS CATHODE RAY TUBE FOR REPRODUCING IMAGES

Marinus Stel, Pieter Harm Fennema, Willem Fokko Nienhuis, and Constantius Johannes Waltherus Panis, all of Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 9, 1961, Ser. No. 143,893
Claims priority, application Netherlands Nov. 3, 1960
5 Claims. (Cl. 220—2.1)



1. A cathode-ray tube comprising a transparent window portion and a cone portion adjoining said window portion and an implosion resistant noncompressive coating covering a zone adjoining the window portion and extending over a portion of the cone, said implosion resistant coating comprising a layer of strongly adherent synthetic resin containing wire-like fibers.

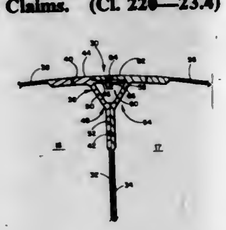
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**3,166,212**

## SEGMENTED TANKS

Eugene P. Resos, Hacienda Heights, Calif., assignor to North American Aviation, Inc.

Filed Sept. 4, 1962, Ser. No. 221,112
4 Claims. (Cl. 220—23.4)

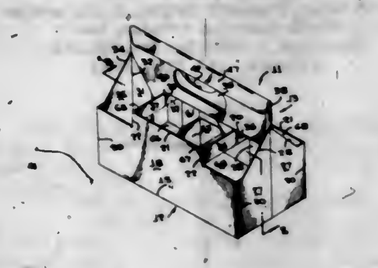


1. A segmented container assemblage comprising a plurality of independently sealable containers in the form of longitudinal segments of an annular cylinder, said as-

semblage having a smooth cylindrical outer surface and a smooth cylindrical inner surface; a first one of said containers comprising a first wall, a second wall angularly disposed to said first wall, and a first edge part fixed to said first wall and said second wall, said edge part comprising three angularly disposed edge members joined at a common conjunction, the first of said edge members being fixed to said first wall substantially parallel therewith and remote from the conjunction, the second of said edge members being substantially parallel to said first edge member and having an outer surface that is a smooth continuation of the outer surface of said first edge member, the third of said edge members being angularly disposed to said first and second edge members at their conjunction and angulated so as to have a portion parallel to said second wall, said portion being fixed to said second wall remote from the conjunction; a second one of said containers comprising a third wall substantially parallel with said first wall, a fourth wall angularly disposed to said third wall and adjoining said second wall, and a second edge part fixed to said third wall and said fourth wall, said second edge part comprising three angularly disposed edge members joined at a common conjunction, the first of said latter edge members being fixed to said third wall substantially parallel therewith and remote from the conjunction, the second of said latter edge members being substantially parallel to said first edge member and having an outer surface that is displaced inwardly from the surface of said latter first edge member a distance equal to the thickness of said former second edge member so that said second edge members are in overlapping and underlapping relationship respectively and said edge parts cooperate to have a substantially smooth outer surface on said assemblage, the third of said latter edge members being angularly disposed to said latter first and second edge members at their conjunction and angulated so as to have a portion parallel to said fourth wall, said portion being fixed to said fourth wall remote from the conjunction, the angulated portions of said third edge members forming a fastener receiving recess therebetween external to the sealable portion of said containers; and blind fastener means in securing engagement with said second edge members to secure said first and second containers together, said fastener means having a flush outer head and an inner portion extending into said fastener receiving recess.

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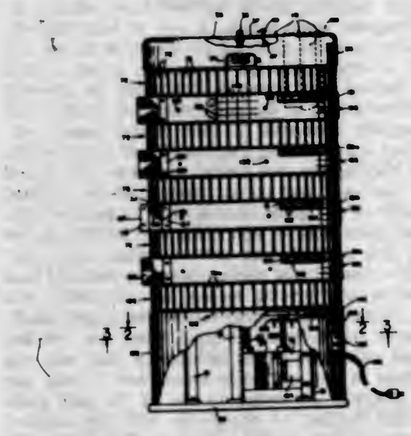
**3,166,213**
**BOTTLE CARRIER WITH DOUBLE HIGH CENTER CELL**
George S. Holmes, Middlesex, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 1, 1963, Ser. No. 262,153
11 Claims. (Cl. 220—115)



1. A carrier blank constructed from a sheet material blank comprising two substantially identical blank portions integrally joined along a central transverse fold line, each blank portion including a bottom panel, a side panel adjoining the bottom panel along a transverse fold line, an end panel joined to each side panel along each of a first pair of longitudinal fold lines, a first transverse severance line extending between the first pair of longitudinal fold lines and defining with the first transverse fold line, the maximum effective height of the side panel, a severance line traversing each one of the end panels and terminating at a pair of short parallel fold lines of the side panel to form a pair of cross partitions from the material of the side panel, a longitudinally extending partition forming fold line cooperative with one of the severance lines traversing one of the end panels to define therewith a partition forming panel, and a transverse severance line in the partition forming panel forming a partition member from the partition forming panel foldable for location between the cross partitions to separate a portion of maximum height of the side walls into two bottle receiving cells when the carrier blank is erected to form a carrier.

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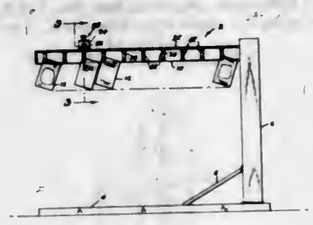
**3,166,214**
**MACHINE FOR AUTOMATICALLY EJECTING CUSTOMERS' CARDS WHEN FUEL DELIVERY IS DUE AND FOR OTHER PURPOSES**
George R. Stevens and James J. Stipe, both of 291 River Road, Bogota, N.J.
Filed Oct. 24, 1962, Ser. No. 232,769
22 Claims. (Cl. 221—4)



16. A machine for automatically ejecting customers' record cards when fuel delivery is due having an upright supporting frame provided with a horizontal cylindrical band, a turntable rotatably mounted on the frame adjacent said band and in axial alignment therewith, means constraining the turntable to rotational movement on its axis; the turntable having circumferentially equidistantly spaced radial pockets open at their radially outward ends, said pockets being adapted to hold customers' record cards, an electric motor for rotating the turntable, means for ejecting said cards radially outward from the pockets in succession as a pocket arrives at a given circumferential position during rotation of the turntable, said given position lying substantially in a vertical plane through a given fixed point on said band, the turntable being adapted to be rotated by the motor through an arc whose length is proportional to a selected number of degree days, and control means for presetting the machine before energization of the motor to limit rotation of the turntable to a length of arc which is proportional to the selected number of degree days.



**3,166,215**
**ARTICLE VENDING MACHINE**
Joseph J. Harding, 3405 Monument Ave., Richmond, Va.
Filed Apr. 25, 1963, Ser. No. 275,552
14 Claims. (Cl. 221—69)



1. A device for vending articles, each of said articles having a bore therethrough, comprising: a rail, said rail having at least one transverse bore therein; an arm, one end of said arm being secured to said rail, and the other end thereof being spaced from said rail and positioned to confront said transverse bore; a shaft received for translation within said transverse bore, and movable into and out of engagement with said other end of said arm, said shaft being receivable through said bores in said articles; means at least partially within said rail, and operable to translate said shaft both into and out of engagement with said arm; and check-operated means arranged and operable to secure said shaft translating means against and release it for operation thereof.

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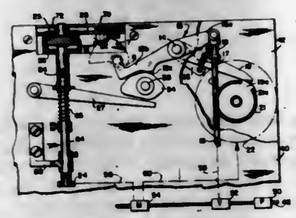
**3,166,216**
**PILL DISPENSER**
Joseph S. Geary, 1617 Mulvane, Topeka, Kans., assignor of one-half to Robert F. Kelley, Kansas City, Mo.
Filed Feb. 25, 1963, Ser. No. 260,688
3 Claims. (Cl. 221—289)



1. A pill dispenser comprising:
(*a*) a barrel having one end closed and the other end having a longitudinal bore therein, said barrel having an opening in a side wall spaced from its closed end,
(*b*) a hollow plunger reciprocable in said barrel and having a stem on one end extending through the bore opening in said other end of said barrel,
(*c*) a piston on the other end of the plunger forming a compartment in said plunger for housing said pills in aligned relation therein, said hollow portion of the plunger having an opening adjacent said piston and capable of being aligned with the opening in the barrel,
(*d*) means engaging the closed end of said barrel and said piston to normally urge the plunger to non-pill dispensing position, said piston portion of the plunger having a longitudinal groove in its outer wall extending beyond the inner end of said piston and forming a slot in the side wall of said plunger on the side opposite said first named opening in the plunger, and
(*e*) a pawl secured in said groove in said piston having a free end moveable through said slot in said plunger, the free end of said pawl facing said slot having a cam surface adapted to engage the edge of said slot facing said pawl whereby said free end of said pawl upon reciprocation of the plunger toward said closed end of the barrel will move through said slot and contact one of said pills in said compartment so that only one pill will be dispensed at each operation of said plunger.

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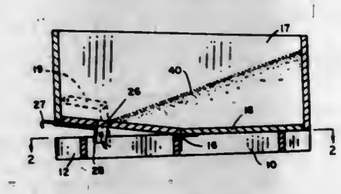
**3,166,217**
**LIQUID FLOW CONTROL APPARATUS**
Louis Auguste Carriol, Aulnay-sous-Bois, France, assignor to Societe d'Etudes, d'Inventions et de Brevets, S.E.I.B., Paris, France, a company of France
Filed Mar. 5, 1962, Ser. No. 177,538
Claims priority, application France Mar. 3, 1961
5 Claims. (Cl. 222—20)



1. Liquid delivery apparatus comprising a cylinder having a plurality of steps of successively greater cylindrical height formed therein, means to effect rotation of said cylinder through a fraction of a revolution upon delivery of liquid, means to interpose a stop in the path of said cylinder at a height along the axis of said cylinder corresponding to a selected one of said steps, and means responsive to engagement of said cylinder with said stop means to discontinue delivery.

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**3,166,218**
**AUTOMATIC GRAIN FEED CONTROL**
Claude R. Paintin, P.O. Box 579, Souris, Manitoba, Canada
Filed June 10, 1963, Ser. No. 286,802
3 Claims. (Cl. 222—56)

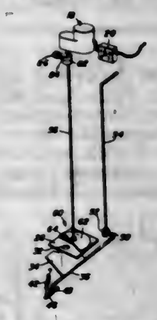


1. An automatic feed control for grain, comprising: a grain holding hopper; hinge means on the bottom of said hopper for rocking movement thereof; said hopper normally tipped in one of its rockable positions; power means for delivering grain up and into the elevated end of said tipped hopper, to change the center of gravity thereof and tip said hopper on the hinge means into the other rockable position; control means operable by said rocked hopper to stop said power means, and therefore the grain delivery to said hopper; an opening in the bottom of said hopper, at said grain receiving end thereof, for outflow of grain therefrom; and the center of gravity of said hopper changeable with said outflow of grain, when the power means is stopped, to rock the hopper back to its original position, including the actuation of the control means to re-start the delivery of grain to the hopper by the power means.

## 3,166,219
## REMOTE CONTROLLED METERING DEVICE FOR FEED DISPENSERS

Joseph H. Rudd, Manteca, Calif.
(P.O. Box 537, Ripon, Calif.)

Filed Oct. 18, 1962, Ser. No. 231,429
10 Claims. (Cl. 222—70)



10. In a feed dispensing system, a metering chamber having a bottom wall with a fixed outlet therein, a drive member rotatably mounted above the metering chamber and extending through the bottom wall thereof, at least two angularly overlapping plates mounted on the drive member above the bottom wall defining an angular gap therebetween exposing the outlet once each revolution of the drive member and friction clamp means mounted on the drive member for releasably holding the plates in angularly overlapping relation.

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## 3,166,220
## DISPENSING HOLDER AND RECEPTACLE

Stuart W. Rabb, Kenilworth, Fleming D. Long, Monmouth, and Joseph J. Masi, Chicago, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Original application Apr. 9, 1962, Ser. No. 186,191. Divided and this application Aug. 19, 1963, Ser. No. 303,090
1 Claim. (Cl. 222—107)



A flexible, plastic bag, for packaging a liquid material, adapted for use in connection with a dispensing device having a pair of relatively movable pouring spout engaging members and a pair of pouring spout flange tab engaging members, comprising:

(*a*) a pair of relatively thin, flexible sheets of plastic material secured together in face-to-face engagement along marginal edges to form an envelope;

(*b*) said envelope including a flat, generally triangular outwardly tapering pouring spout projecting therefrom adjacent a corner thereof and terminating in a sealed outlet section arranged to be opened by severance of its free end;

(*c*) relatively narrow, flat, marginal flanges extending outwardly along the sides of said pouring spout; and

(*d*) a pair of aligned holding tabs projecting outwardly from respective marginal flanges on opposite sides of said pouring spout;

(*e*) said holding tabs having pin receiving openings formed therein for engagement with tab engaging members of a dispensing device to facilitate opening of the pouring spout for dispensing.

## 3,166,221
## DOUBLE-TUBE DISPENSING CONTAINER

Helmuth Nielsen, Herlev, Denmark, assignor to Løvens kemiske Fabrik ved A. Kongsted, Ballerup, Denmark, a Danish firm

Filed Apr. 24, 1962, Ser. No. 189,862
Claims priority, application Denmark, Apr. 27, 1961, 1,739/61
6 Claims. (Cl. 222—137)



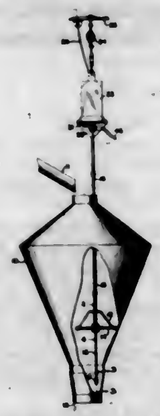
1. Double-tube dispensing container consisting of a rigid tube member and a housing member, the tube member consisting of two juxtaposed cylindric tubes having parallel axes, the distance between the axes being greater than the sum of the radii of the said tubes, said tubes being open at one end and closed at the opposite end by a wall integral with a substantially cylindric nozzle portion, the axis of which is central between the axes of the two tubes, said nozzle portion having channels leading into the interior part of each tube, and the housing member comprising two part-cylindric walls united to form a tubular body and a base plate closing said tubular body at said one end and carrying two shafts protruding in coaxial position into the tubes and carrying at their ends pistons fitting therein.

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## 3,166,222
## VIBRATORY BIN AGITATOR

Preston H. Schrader, Louisville, Ky., assignor to Rex Chainbelt Inc., a corporation of Wisconsin

Filed Aug. 11, 1961, Ser. No. 130,892
9 Claims. (Cl. 222—195)



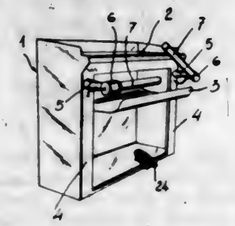
9. In an apparatus for handling a finely divided material in a fixed container, in combination, a member adapted to be immersed in the material, said member being adapted to cover a substantial horizontal area of the container, a stem connected to the member, a vibrator connected to the stem remote from the member and adapted to produce vibration of said member, and means for supplying aeriform fluid to the space beneath the upper surface of the member for discharge through the material.



## 3,166,223
## STOCKING AND SOCK CHECKING MACHINE

Pasquale Agostino Gazzaniga, Strada Statale 10, Tortona, Italy

Filed Mar. 4, 1963, Ser. No. 262,537
Claims priority, application Italy, May 15, 1962, 9,708/62
8 Claims. (Cl. 223—41)



1. A device for inspecting both the inside and the outside of stockings, comprising, in combination,

a frame;

a first tubular member of predetermined length and diameter and made mainly of light-permeable material and having one rounded closed end;

first support means mounted in fixed position on said frame for rotarily supporting said first tubular member so as to permit rotation of the latter substantially about its longitudinal axis;

first light source means arranged inside said firs. tubular member for transilluminating the latter;

a second tubular member of predetermined length and diameter and made mainly of light-permeable material and having one rounded closed end;

second support means tiltably mounted on said frame for rotarily supporting said second tubular member so as to permit rotation of the latter substantially about its longitudinal axis, said second support means being itself tiltable between a first position in which said second tubular member is substantially aligned axially with said first tubular member, with said rounded end of said first tubular member facing at close distance said rounded end of said second tubular member, and a second position in which said axis of said second tubular member is angularly displaced relative to said axis of said first tubular member;

biasing means continuously urging said second support means into said second position thereof;

arresting means for holding said second support member in said first position thereof against the action of said biasing means; and

release means for temporarily eliminating the action of said arresting means so as to permit said second support means automatically to assume said second position thereof.

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## 3,166,224
## FILM CUTTING DEVICE

Edward Waltz, Grand Rapids, Mich., assignor to E. O. Bulman Manufacturing Company, Inc., Grand Rapids, Mich., a corporation of Michigan

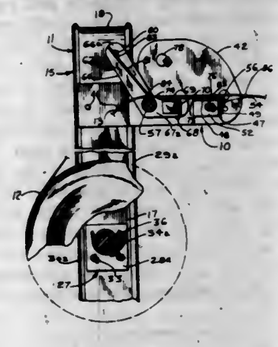
Filed July 9, 1962, Ser. No. 208,328
2 Claims. (Cl. 225—80)

1. A structure for supporting a roll of sheet material and for cutting said material into predetermined lengths, comprising:

an upright mounting frame;

a cutter bar and bracket means supporting said bar upon said mounting frame, said bar having an elongated, upwardly facing and substantially horizontal cutting edge;

a pivot member including a pivot shaft supported upon said bracket means for pivotal movement of said pivot member around an axis spaced from and substantially parallel with said cutting edge, said pivot member including a guide plate movable with said pivot member between a substantially horizontal position between said shaft and said cutting edge and an inclined, raised position above said shaft;



support means on said mounting frame for holding the roll of sheet material below the pivot member for rotation around an axis substantially parallel with the first-mentioned axis, so that the sheet material can be threaded over said pivot shaft, across said guide plate and across said cutting edge;

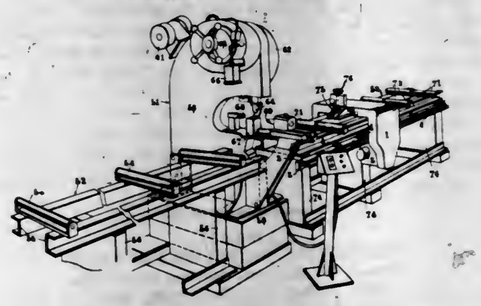
counterbalance means on and movable with said pivot member for continuously urging same to pivot said guide plate into the inclined position, said counterbalance means including holding means pivotally supported upon said pivot member for releasably holding the sheet material against said pivot shaft and thereby opposing accidental movement of said sheet material toward the roll thereof and with respect to the pivot member.

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## 3,166,225
## FEED CONTROL DEVICE, NOTABLY FOR PUNCHING MACHINE

Edouard Victor Sirugue, Paris, France, assignor to Etablissements Sirugue & Cie, Societe à Responsabilite Limitee, Saint-Ouen, France

Filed Sept. 11, 1961, Ser. No. 137,407
Claims priority, application France, Sept. 9, 1960, 838,172, Patent 1,232,941
2 Claims. (Cl. 226—9)

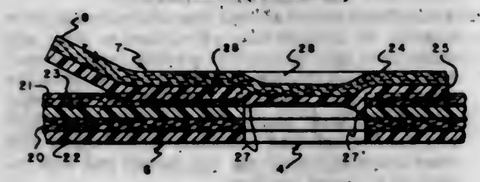


1. Device for controlling the feed of a workpiece to be machined at a machining station, notably in punching

machines, which comprises a working bed, a movable carriage for causing the workpiece to travel past said machining station on said bed, an electromotor for imparting a movement of translation to said movable carriage, braking means carried by said movable carriage for decelerating said movable carriage, locking means carried by said movable carriage for stopping said movable carriage, riders acting as reference marks which are disposed on the path of said movable carriage at a relative spacing corresponding to those contemplated between the successive machining steps to be performed on the workpiece, at least one photoelectric unit for stopping said carriage, said photoelectric unit being carried by said carriage and comprising a light source and a photocell receiving the light beam emitted from said light source, said riders being disposed so that they intersect the path of said light beam, electrical circuit means connected to said photoelectric unit, said electrical circuit means being adapted to deliver a first electrical pulse when the light beam of said photoelectric unit is blocked up by a rider, and a second electrical pulse when the blocking of the light beam is removed, first switching means energized by said first pulse for causing said electromotor to be de-energized and said braking means to be actuated for decelerating said carriage, and second switching means energized by the second pulse for controlling the actuation of said locking means and consequently the stopping of said movable carriage.

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**3,166,226**
**CONTAINER**
**George A. Mobley, Spartanburg, S.C., assignor to Milliken Tetra Pak, a division of Clemson Industries, Inc., Pacolet, S.C., a corporation of Delaware**
**Filed Feb. 25, 1963, Ser. No. 260,594**
**3 Claims. (Cl. 229—7)**



1. A liquid filled tetrahedron container formed of laminated material, the innermost lamina of which is a thermoplastic continuous layer substantially impervious and inert to the contents of the container, a wall of which container bears an aperture through one wall only thereof for providing access to the contents of the container positioned at about that apex of the wall which is uppermost when the container is resting on the wall opposite the aperture bearing wall, the aperture being sealed by a tape having the surface that faces the container wall being formed of a thermoplastic material, at least a portion of which is infused around at least the outermost lamina of the container to form a liquid tight seal between the tape and the container and a portion of which forms a bead around the edge of the aperture, and with at least one corner of the end portion of the tape which is positioned uppermost with respect to the upright container being unsealed to the container wall and extending outwardly away from the walls of the container, thus providing a readily locatable pull tab with which to remove the tape from the container.

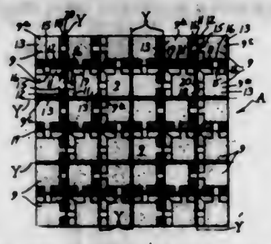
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**3,166,227**
**PROTECTIVE PADS FOR PACKING**
**Richard W. Ragnow, Stevens Point, Wis. (Rte. 2, Box 433, Cedarburg, Wis.)**
**Filed Mar. 22, 1962, Ser. No. 181,561**
**3 Claims. (Cl. 229—14)**

1. In a device of the class described,

(*a*) a pair of cooperating pad elements having opposed front and back surfaces and substantially abutting side edge portions,

(*b*) a flexible sheet-like backing member attached to said back wall surfaces and providing a hinge connection between said pad elements,



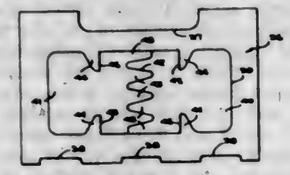
(*c*) said side edge portions being beveled to provide a mitered joint when said pad elements are disposed at right angles to each other, providing resilient cushioning material throughout all surfaces of said corner pad,

(*d*) one of said pad elements defining a recess in the beveled edge portion thereof,

(*e*) and the other of said pad elements having a lug extending outwardly from its beveled edge portion and frictionally received in said recess when said pad elements are disposed at substantially right angles to each other to frictionally hold said pad elements in said angularly disposed relationship.

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**3,166,228**
**SEPARATOR FOR BOTTLE CARRIER**
**Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**
**Filed Jan. 13, 1960, Ser. No. 2,225**
**14 Claims. (Cl. 229—15)**



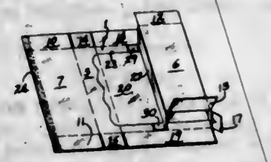
1. A cell forming partition structure for a container which has a rectangular bottom with side walls extending upwardly from said bottom, said partition structure comprising a panel adapted to provide a longitudinally extending main divider wall substantially parallel to and intermediate between the side walls of said container, at least two sections formed entirely from the material within said panel and hingedly connected thereto to provide other divider walls extending transverse to and on either side of said main wall when pivoted out of the plane of the panel, each of said divider sections being defined by cuts extending continuously entirely within said panel except along two spaced apart hinge connection lines for each section in said panel located substantially midway between and extending in the same general direction as the ends of such sections to provide pivotal connections permitting said sections to be pivoted to a position transverse to said main divider wall in said partition structure and thereby form cells substantially uniform in size on either side of said main divider wall, said cuts within said panel together with said hinge connection lines defining an outer unbroken border which forms said main divider wall, the adjacent ends of said sections in the panel being segregated by a cut common to both sections, said common cut being of such shape as to define at least one projecting end tab portion on one section captured from



material of the other section thus providing a recess in said other section, the combined lengths of said sections being greater than the length of the space from which said sections are cut, and the lengths of said sections between their extremities being substantially the same.

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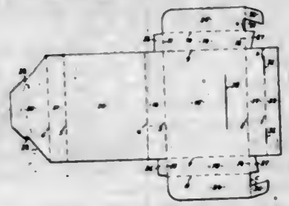
**3,166,229**
**DISPLAY CARTON WITH PARTITION**
**Earle C. Sherman and Richard L. Schuster, Monroe, La., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia**
**Filed Nov. 6, 1962, Ser. No. 235,698**
**2 Claims. (Cl. 229—27)**



1. A carton formed from a one piece blank comprising a top wall, side walls hingedly secured to said top walls, a bottom wall including first and second panels hingedly secured to respective side walls and joined together to form an integral bottom wall, a longitudinal central partition hingedly connected to at least one of said bottom panels, a pair of spaced tabs formed integral with said partition and adapted to be joined to the top wall to securely hold said partition member in place while leaving the intermediate portions of said partition between said tabs and said top wall unattached, end panels hingedly connected to respective top, bottom and side walls adapted to be folded into end walls, and a display panel formed integral with said top wall and removably secured thereto along a predetermined perforated line.

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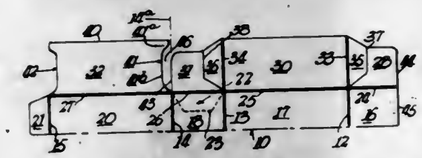
**3,166,230**
**BOX BLANKS AND BOXES OF CARDBOARD OR PASTEBOARD**
**Bengt Urban Engström, Umea, Sweden, assignor to Per Sigurd Nes, Umea, Sweden**
**Filed Mar. 18, 1963, Ser. No. 265,808**
**Claims priority, application Sweden Apr. 2, 1962**
**5 Claims. (Cl. 229—36)**



1. A box blank of cardboard or pasteboard, having crease lines defining a rectangular bottom panel, a long side wall panel extended beyond its outer margin with a cover flap, a second long side wall panel extended beyond its outer margin with a top flap, two short side wall panels, each of them being extended beyond its outer margin with a top flap, a locking tongue integral with and extending outwardly beyond each end of said top flaps of said short side wall panels adjacent said second long side wall panel, each of said two locking tongues being spaced from the crease line across the junction of the adjacent top flap and its short side wall panel, two slits in the crease line across the junction of the said second long side wall panel and its top flap, each of said slits being spaced from the adjacent end edge of said top flap of said second long side wall panel a distance equal to the spacing of each of said locking tongues from said crease line across the junction of its adjacent top flap and its short side wall panel, said slits being disposed for receiving said locking tongues with their inner side edges engaging the outer ends of said slits, the inner edge of each of said locking tongues being substantially straight and standing at an angle of 70–85 degrees to the free portion of the end edge of its adjacent top flap.

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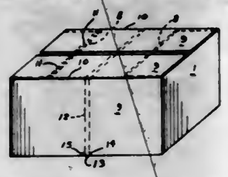
**3,166,231**
**SEAL END CARTON**
**Robert J. Hickin, Seville, Ohio, and Arthur A. Olson, Jr., Glenview, Ill., assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware**
**Filed June 6, 1962, Ser. No. 200,397**
**9 Claims. (Cl. 229—37)**



1. A foldable carton blank for use in forming a seal end carton, said blank comprising a pair of side panels and a pair of end panels, the panels of one pair being alternately arranged in side by side relation with the panels of the other pair and being foldably connected thereto to cooperate with one another to form upright walls of the carton; transversely extending first and second side flaps foldably connected to corresponding peripheral portions of said side panels, said first side flap being foldable into overlapping relation with respect to said second side flap; transversely extending end flaps foldably connected to corresponding peripheral portions of said end panels, said end flaps when folded being adopted to subtend said second side flap, an edge portion of one of said end flaps adjacent said second side flap being separated therefrom by a slot; and ears extending laterally from opposite peripheral portions of said first side flap, said ears being adapted to overlie and be secured to the end panel exposed surfaces when the carton seal end is formed; said second side flap having the edge portion thereof opposite the foldably connected edge portion thereof of lesser dimension than said foldably connected edge portion whereby the slot-forming edge portion of said second side flap will have the segment thereof remote from the foldline of said second side flap recessed and spaced from the adjacent ear when the latter is folded and secured to the end panel exposed surface.

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**3,166,232**
**REINFORCED HINGED CONTAINER**
**Harold D. Tichenor, Terre Haute, Ind., assignor to Weston Paper & Manufacturing Co., Dayton, Ohio, a corporation of Ohio**
**Filed Nov. 14, 1962, Ser. No. 237,673**
**13 Claims. (Cl. 229—51)**



1. A shipping container comprising, a box-like structure, means providing reinforcing bands bonded to interior surface portions thereof substantially coextensive with at least three outer sides, means defining areas of weakness in said structure localized to provide access to

said bands intermediate the extremities thereof, said bands being of a character, that on grasping thereof at said areas of weakness and pulling outwardly thereon portions of said bands are torn from the structure and portions of said structure in the path thereof are caused to separate, converting said structure into a plurality of connected receptacles.

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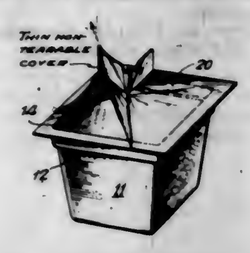
3,166,233
PACKAGING
Morris Cutler, Philadelphia, Pa., and Bernard J. Tamarin, Whitemarsh, Pa. (W. Valley Green Road and Hunt Lane, Flourtown, Pa.); said Cutler assignor to said Tamarin
Filed Apr. 30, 1963, Ser. No. 276,789
6 Claims. (Cl. 229—51)



2. Cigarette package or the like comprising an inner wrapper tucked and folded over a plane surface of the package, an outer wrapper covering the same, the inner wrapper tucked and folded over the plane surface having a portion detachable from the rest and including at least one multilayered generally triangular piece, a fixed closure located alongside the inner detachable portion and over a portion of the rest of the inner wrapper tucked and folded over the plane surface, the outer wrapper having a detachable portion covering the plane surface and secured to each multilayered triangular piece of the inner detachable portion, the securing thereof precluding the inner detachable portion from unfolding upon detachment thereof together with the outer detachable portion, and the fixed closure preventing unfolding of the rest of the inner wrapper tucked and folded over the plane surface upon detachment of the outer detachable portion and the inner detachable portion secured thereto.

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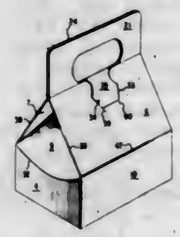
3,166,234
PLASTIC CONTAINER WITH PLAIT FORMED PULL TAB
Stephen W. Amberg, Syosset, N.Y., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1961, Ser. No. 101,775
3 Claims. (Cl. 229—51)




1. A plastic container comprising a receptacle having an integral peripheral rim both formed of a plastic and a cover overlying the open end of said receptacle and formed of a tough, tear resistant plastic, said cover being folded back upon itself along parallel crease lines to form a manually engageable plait extending across the open end of said receptacle, the lower surface of the margin of said cover being severably adhered to the upper surface of the rim of said receptacle and the facing surfaces of said plait being secured to one another at the marginal ends thereof overlying said rim, said plait extending across said receptacle to its open end including said rim flange and being free to pivot about its juncture with said cover, the folds of said plait at said pivotal juncture being substantially stronger than the severable adherence between said cover and the upper face of said rim flange, whereby a tension force exerted on said plait peels the cover from the rim flange while leaving said plait attached to said cover.

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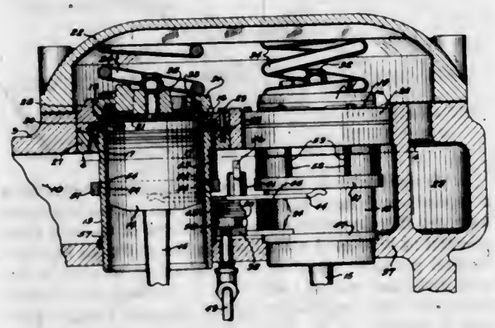
3,166,235
FLAT-FOLDABLE FOOD BOX
Edward W. Schroeder, Silver Spring, Md., assignor to Marriott-Hot Shoppes, Inc., a corporation of Delaware
Filed Apr. 3, 1964, Ser. No. 357,213
4 Claims. (Cl. 229—52)



1. In a flat-foldable box including vertical walls hinged together at vertical corners and closed at the bottom by lower wall extension portions hinged, respectively, to said walls being unfoldable to form overlapping bottom panels, and having a gabled upper closure, in combination
a pair of hinged upper wall extensions on opposed sides, respectively, being dimensioned to fold inwardly to form lateral gable roof surfaces,
a pair of end closure members hingedly connected as upper wall extensions of opposed ends, respectively, along arcuate lines convex downwardly and being creased from the ends of said lines upwardly toward a central point to form fold lines whereby said end extensions form each a "pie-shaped" closure member sloped from the end walls inwardly toward the center of said gable,
said side walls extensions further having upper extensions foldable to form a composite handle and including locking means for holding said upper extensions joined at said handle,
one said side wall extension having a further extension hingedly foldable beneath the other said wall extension and immediately above points of said "pie-shaped" closure members to form a reinforced gable closure,
the other said side wall extension having a further hinged locking member foldable over said further extension thereby to overlap a portion of the side wall extension opposite thereto for locking said lateral surfaces in mutual engagement above said further extension, means hinging said end members along arcuate lines comprising tensioned spring means when in the closed position to thrust said "pie-shaped" member upward against said reinforced gable closure.



3,166,236
RECIPROCATING PISTON TYPE GAS COMPRESSOR
William E. Michener, Milwaukee, Wis., assignor to Vilter Manufacturing Corporation, a corporation of Wisconsin
Original application June 23, 1961, Ser. No. 119,069, now Patent No. 3,131,856, dated May 5, 1964. Divided and this application Aug. 9, 1963, Ser. No. 308,052
4 Claims. (Cl. 230—30)

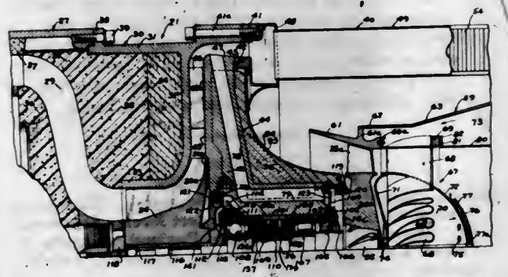


1. A gas compressor comprising, a main frame, a cylinder mounted in said frame and having a bore and an integral external flange near an end of the bore provided with a series of suction ports and with a series of through holes, said cylinder also having an annular external groove remote from said flange, a piston reciprocable within said bore toward and away from said flanged cylinder end, an annular guide detachably secured to said flange, an annular suction valve coacting with said guide and with said suction ports, a ring slidable along the cylinder exterior and being provided with rods movable through said holes to lift the suction valve, an annular stop seated within the external groove of said cylinder to provide a seat for limiting movement of said ring, a closure plate for said bore end loosely coacting with said suction valve guide and having therein a series of discharge ports, a second annular guide secured to said plate and also loosely coacting with said suction valve guide, an annular discharge valve coacting with said second guide and with said discharge ports, a cover cooperable with said frame to provide a compressed gas chamber, and resilient means interposed between said cover and said second guide to detachably maintain said guides and said closure plate in position, said guides coacting with said valves to prevent lateral displacement of the latter relative to their axes of annularity.

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3,166,237
GAS TURBINE POWER PLANT
Charles C. Hill, 1148 Vesper, Ann Arbor, Mich.
Original application June 26, 1959, Ser. No. 823,197, now Patent No. 3,118,278, dated Jan. 21, 1964. Divided and this application Mar. 22, 1963, Ser. No. 267,091
8 Claims. (Cl. 230—116)

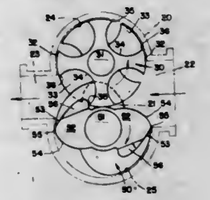
1. In a turbine, the combination comprising
a shaft,
an impeller on said shaft,
a turbine on said shaft,
a bearing housing,
and a bearing cartridge for rotatably mounting said shaft in said bearing housing,
said bearing housing and said bearing cartridge being so constructed and arranged that there is a radial clearance between the bearing housing and the bearing cartridge,
non-linear resilient means interposed between said bearing cartridge and said bearing housing at each end thereof for supporting said bearing cartridge in said bearing housing,



and friction means at each end for damping the oscillations of said bearing cartridge relative to said bearing housing.

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3,166,238
AXIAL COMPRESSOR
Richard E. White and John B. Marsden, Corning, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 1, 1962, Ser. No. 214,086
4 Claims. (Cl. 230—143)



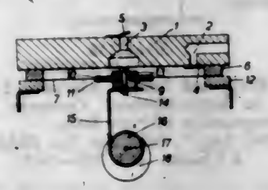
1. A compressor comprising:
(a) a casing having a chamber with axially spaced walls for closing the ends thereof;
(b) a pair of rotors disposed in said chamber between the end walls;
(c) said chamber having an inlet and an outlet axially spaced from one another at opposite ends of the chamber and being disposed on opposite sides of a plane through the axes of rotation of both rotors;
(d) said rotors having helical lobes and grooves meshing with one another and operating to cyclically define pressure pockets being formed at the inlet end of the chamber which move progressively axially to the outlet end thereof;
(e) each of said pockets communicating with the inlet when formed and increasing in volume during such communication to receive fluid, sequentially being blocked from the inlet and reducing in volume thereafter before communication with the outlet to compress the fluid received then communicating with the outlet to discharge the compressed fluid;
(f) each of said lobes have a leading flank surface and a trailing flank surface intersecting to provide a crest edge surface;
(g) each of said grooves being defined by an arcuate surface generated entirely by the meshing lobe crest edge surfaces and terminating in a crest edge surface that generates the meshing lobe leading flank surfaces;
(h) said crest edge surfaces of meshing lobes and grooves cooperating to form seal lines with the surfaces they generate spaced by a formed pocket of varying volume defined by the lobe and groove between the seal lines;

(*i*) said formed pockets tending to form fluid traps when said lobes and grooves are in mesh at the outlet ends of said rotors and the formed pockets are closed to the compressor outlet after discharge; and

(*j*) the outlet end of one of said rotors being bevelled removing the outlet ends of all of one of said co-operating surfaces forming said seal lines to provide escape paths to the compressor inlet for fluid from said formed pockets when such traps are formed after discharge to relieve fluid trapped therein.

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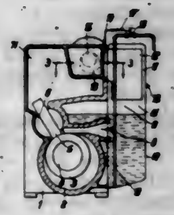
**3,166,239**
**DIAPHRAGM PUMPS**
Donald Matthias Somerville Greenhalgh, Goring-on-Thames, Oxon, England, and Robert Jeremy Sherwood, Dry Sandford, near Abingdon, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed June 12, 1961, Ser. No. 116,513
8 Claims. (Cl. 230—170)



1. In a diaphragm pump, a diaphragm having an aperture, an attachment member located in said aperture, said member having an annular portion in interleaved slidable engagement with a peripheral region of the diaphragm surrounding the aperture, and means for imparting to the attachment member a reciprocating movement normal to the plane of the diaphragm.

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**3,166,240**
**PUMP**
Willy Röllinger, Cologne-Konigsforst, Germany, assignor, by mesne assignments, to Leybold Holding A.G., Zug, Switzerland
Filed Dec. 18, 1961, Ser. No. 160,111
Claims priority, application Germany, Dec. 24, 1960, L 37,815
11 Claims. (Cl. 230—207)



1. An oil sealed rotary pump assembly, comprising, in combination:

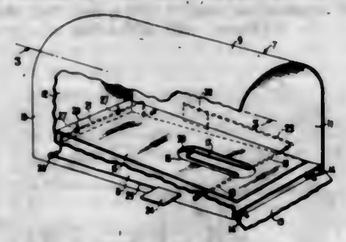
(*a*) a pump housing including a rotary pumping mechanism having an inlet port and a laterally arranged outlet valve,

(*b*) an oil reservoir housing laterally detachable from said pump housing and containing an oil separating section, and an oil supply section for superposing a volume of oil on said outlet valve,

(*c*) an outlet chamber in said pump housing in communication with said outlet valve via said oil supply section in said detachable oil reservoir housing, and

(*d*) an inlet chamber in said pump housing in communication with said inlet port.

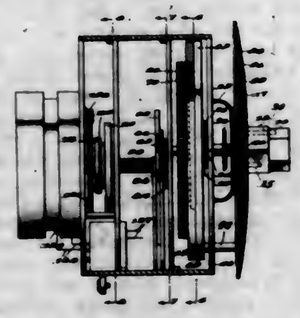
**3,166,241**
**MAIL BOX WITH LETTER HOLDER AND VISUAL SIGNAL MECHANISM**
Andrew Leuthesser, 4107 Estateway Road, Toledo 7, Ohio
Filed Aug. 15, 1962, Ser. No. 217,173
3 Claims. (Cl. 232—34)



1. A mail box of the character described, comprising a typical rural mail box having a mail supporting plate mounted therein, structure near the front of the said plate adapted to hold mail placed within the said mail box in a vertical position, visual signal mechanism secured to the said mail box and said structure to indicate to the postman that mail has been placed in the said box for him, and a second set of signal mechanism secured to said supporting plate to give the owner of the said mail box a visual signal when the postman has placed mail in the box for him.

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**3,166,242**
**OVEN TIMER**
Frank A. Shomaker, 306 Green Gorge Road, Signal Mountain, Tenn.
Filed Sept. 29, 1958, Ser. No. 764,047
9 Claims. (Cl. 235—61)



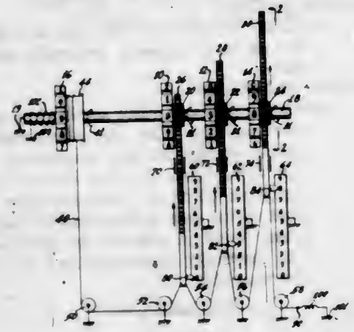
1. In timer mechanisms, the combination including, control means for a device to be regulated, said control means having an element shiftable between a zero position and a plurality of other positions and having an inactive condition in the zero position and an active condition in said other positions, the amount of said shift being a function of time, integrating means having first and second input means and at least one output means, said first input means having a zero position and including scale means having progressive values in accordance with a first function of time and being manually movable in one direction away from the zero position to a predetermined setting to move said output means a first amount, said second input means having a zero position and including scale means having progressive values in accordance with a second function of time and being manually movable in one direction away from the zero position to a predetermined setting to move said output means a second amount, said first and second amounts of movement of the output means being the product of the scale values of the setting



of the two input means, both said input means being movable in their respective reverse directions by reverse movement of said output means, means connecting said output means of the integrating means with said shiftable element of the control means to shift the element proportionally to the movement of the output means, and constant speed motor means connected with said output means, said motor means including means responsive to an active condition of said control means to move said output means in said reverse direction at said constant rate of speed and to stop said movement in said inactive condition.

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**3,166,243**
**CHECK NUMBER COMPUTING AND PRINTING APPARATUS**
Alton J. Torre, Woodbury, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,593
1 Claim. (Cl. 235—61)

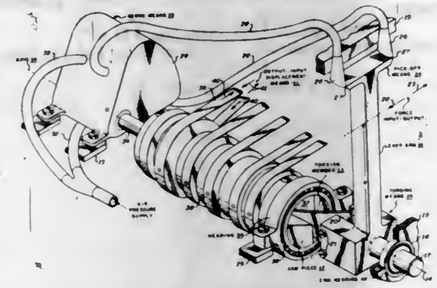


In combination, a plurality of identical number printing wheels; a check number printing wheel; a plurality of pinions, each fixed to a different number printing wheel; a drum fixed to the check number printing wheel; biasing means coupled to said check number printing wheel and tending to rotate the same in a given direction; a plurality of gear racks, each engaged with a different pinion for rotating the pinions and printing wheels to different positions, each gear rack including a cable guide at its free end; a plurality of pulleys; and a cable which is fixed at one end to a chassis and which is looped through the pulleys and the cable guides of the gear racks, and around the drum on said check number printing wheel in a direction to oppose the bias imparted by the biasing means, and is fixed at its other end to said pulley, in such manner that movement of any gear rack causes rotation both of the number printing wheel coupled to the gear rack and the check number printing wheel.

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**3,166,244**
**REVERSIBLE ANALOG COMPUTERS**
Frederick Saphra, Levittown, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 21, 1962, Ser. No. 204,148
13 Claims. (Cl. 235—61)

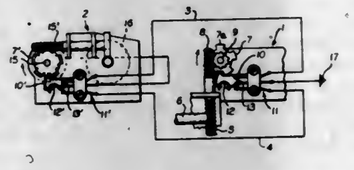
1. In a computer system of the mechanical, self-balancing type, means for exerting an input-output torque about an axis, servo means for providing an output-input angular displacement about the axis, a cam piece with a curved face, and a torsion member of constant length fixedly connected to the cam piece at one end and engaging the face of the piece along its length in longitudinally twisted condition about the torque axis to determine the mathematical relation between the input and output means as the twist slope angle and effective length of the member change in relation to a base twist condition with a resulting change in the torsional characteristic of the member, and means connecting the one end of the member and piece and the other end of the member to the respective



servo means and torque means so that the member operates in a range that is above its characteristic level at the base twist condition.

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**3,166,245**
**ELECTRIC REVOLUTION COUNTER**
Edgar Maschke, Frankfurt am Main, Germany, assignor to VDO Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Mar. 5, 1964, Ser. No. 349,719
Claims priority, application Germany, Apr. 2, 1963, V 23,884
3 Claims. (Cl. 235—95)



1. An electric revolution counter, particularly a counter of covered distances by automotive vehicles, comprising

an impulse sender including a driven shaft,

a counter mechanism, including a counter,

two feeding lines for alternate connection of said impulse sender with said counter mechanism,

said counter mechanism including an electric motor,

said electric motor driving stepwise said counter and being controlled by said impulse sender in response to predetermined number of revolutions of said driven shaft,

a first switching contact coordinated to said impulse sender,

a second switching contact coordinated to said counter mechanism,

said switching contacts switching alternately said electric motor from one to the other of said feeding lines,

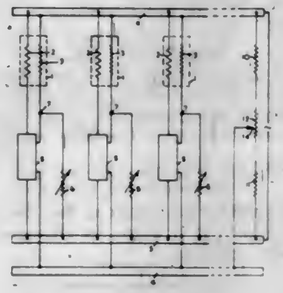
said first switching contact switching on said electric motor alternately to one of said feeding lines within a cycle of predetermined numbers of revolutions, and

said second switching contact automatically disconnecting said electric motor from said one of said feeding lines upon further rotation of said counter for one counting step corresponding with the value of the predetermined number of revolutions and switching over to the other of said feeding lines for the preparation of the next counting step.

3,166,246
## CONTROL OF TEMPERATURE ON MULTIPLE PROCESSES

John E. Fielden, Altrincham, England, assignor to Fielden Electronics Limited, Manchester, England, a British company

Filed Feb. 7, 1962, Ser. No. 171,677
Claims priority, application Great Britain, Feb. 7, 1961, 4,501/61
2 Claims. (Cl. 236—1)

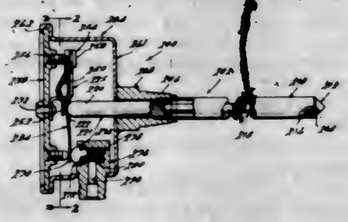


1. Means for the control of temperature on multiple processes, comprising a multiplicity of random value resistances, all of the same thermal co-efficient of electrical resistance, each positioned at a separate heat zone to be controlled, a similar multiplicity of adjustable resistances each connected in series with a said random resistance, an electrical source across which all of the series combinations of random resistances and adjustable resistances are connected, and a source of reference voltage, the value of which corresponds to the desired temperature of all the zones, the range of adjustment of each adjustable resistance being such that the voltage drops across the random resistance may be made equal irrespective of their individual resistance values, the voltage at each junction of random resistance and adjustable resistance being compared with the reference voltage and the resultant signal being used to control a heater at the respective heat zone to maintain said desired temperature.

3,166,247
## TEMPERATURE RESPONSIVE VALVE

Homer F. Malone and Lloyd E. Quint, Jackson, Mich., assignors, by mesne assignments, to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Filed July 3, 1962, Ser. No. 207,263
1 Claim. (Cl. 236—43)

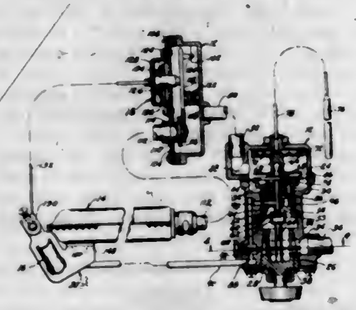


A temperature responsive valve comprising
a valve section
defining a fluid flow path including
a mounting base having
a conical valve seat thereon,
a ball type valve
aligned with the valve seat on said base and movable into engagement and disengagement therewith to close and open said flow path, respectively, a valve spring constantly biasing said valve away from said seat and
a snap-acting blade having one end portion adjustably supported by said base, said snap-acting blade having
a nondevelopable surface and
a free end portion
for controlling movement of said valve, said valve spring constantly biasing said valve against the free end portion of said blade,
resilient means
on said base engageable with one side of the nondevelopable surface of said blade for continuously biasing said blade in one direction,
a thermally responsive section
substantially thermally isolated from said valve section comprising
a thermally responsive member having
one end portion
fixedly supported with respect to said base and
a free end portion,
a thermally nonresponsive member having
one end portion
engaging and movable with the free end portion of said thermally responsive member, and
another end portion
extending into said valve section into engagement with the other side of the nondevelopable surface of said snap-acting blade, said valve being movable into and out of engagement with said valve seat upon movement of the free end portion of said snap-acting blade in response to movement of said thermally responsive and nonresponsive members.

3,166,248
## BURNER CONTROL SYSTEM

Thomas P. Fleer, Affton, Mo., assignor, by mesne assignments, to White-Rodgers Company, a corporation of Missouri

Filed Jan. 27, 1961, Ser. No. 85,250
1 Claim. (Cl. 236—68)



In a burner control system having a main burner, a normally closed main burner fuel control valve, a main burner valve actuator including an elongated bulb containing a high boiling point liquid which when evaporated effects opening of said main burner valve, a pilot burner which when operated at a high fuel input rate heats said bulb sufficiently to effect evaporation of the liquid therein but when operated at a low fuel input rate is ineffective to do so, and temperature responsive means controlling the fuel flow to the pilot burner; the improvement which consists in the provision of a support member having a portion thereof adapted for attachment to a main burner, the provision of a non-aerated pilot burner construction

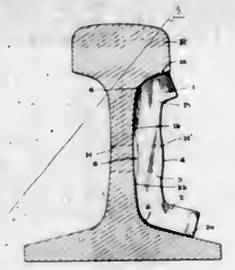


comprising a horizontal fuel orifice member mounted on another portion of said support member and an upwardly open, elongated, channel-formed flame guide attached at its lower end to said orifice member and extending upwardly therefrom at an acute angle, said channel-form flame guide also being inclined with respect to a vertical plane parallel with and through the axis of said orifice member, and in the provision of means on another portion of said support member attaching the elongated actuator bulb in a horizontal position and in outward spaced relationship with the upper end of said flame guide with the longitudinal axis of said bulb substantially intersecting a longitudinal axis through said channel-form flame guide.

3,166,249
## MEANS FOR BONDING BOLTED RAIL JOINT BARS

Horace L. Lansing, Rutherford, N.J., assignor to Poor & Company, Chicago, Ill., a corporation of Delaware

Filed Feb. 15, 1963, Ser. No. 258,815
3 Claims. (Cl. 238—243)



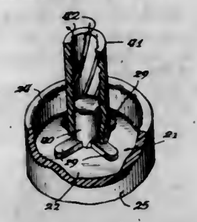
1. Means forming continuous bolted and adhesively bonded rail from individual rail sections, comprising, the combination with the rail sections having head, web, and base flanges defining a fishing area,
connector members of uniform vertical cross-sectional thickness throughout and including a web provided with bolt holes, the upper and lower portions of said web conforming to the web of the rail between the head and base fillets thereof and also having upper and lower flanges of greater pitch than the under side of the rail and the upper side of the base flange of the rail, whereby the outer edges of the connector are initially disposed a greater distance apart than the related head and base surfaces of the rail fishing into which the member is applied, initially to provide an adhesive receiving pocket and to subsequently prevent said upper and lower flanges from pulling away from the related surfaces of the rail as the conforming web of the connector moves inwardly under bolt pressure to engage the related profile of the rail between said head-web and base-web fillets of the rail ends,
the medial portion of the web offset laterally to provide a bearing for the nuts and heads of bolts, whereby, upon tightening thereof, the portions of the bar which conform to the web between said head and base fillets above and below the zone of the bolt holes are forced into substantially flush relationship with the web to trap adhesive between the flanges of greater pitch and which flanges are forced inwardly toward each other to avoid kicking out when bolt pressure is applied to said offset portion of the web and which adhesive upon hardening becomes a homogeneous structural element of the means for connecting the rail ends and causes the bar to bend uniformly with the wave motion of the rail and absorb longitudinal shear.



3,166,250
## AEROSOL VALVE ASSEMBLY

Henry C. Kappel, Elmhurst, Ill., assignor to Uni-Valve, Incorporated, Melrose Park, Ill., a corporation of Illinois

Filed Mar. 29, 1961, Ser. No. 99,262
4 Claims. (Cl. 239—337)

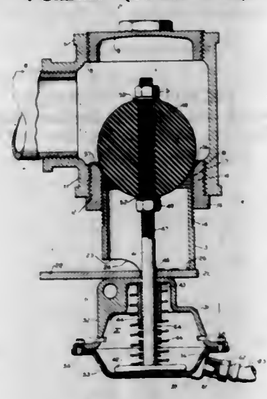


1. In an aerosol valve assembly:
a reciprocable valve having a cup-shaped portion provided with a base and a continuous flange;
a retainer extending upwardly from said base and provided with a plurality of projections adjacent the base, presenting spaces between the projections;
a valve seat;
means yieldably holding the valve closed with the flange engaging the seat; and
a discharge nozzle having a tubular stem provided with an imperforate side wall and being spaced inwardly from the flange, said stem receiving the retainer and bearing against the projections, there being passages between the stem and the retainer for the flow of fluids from said spaces into the lower end of the stem and thence to the nozzle via said passages when the valve is opened by movement of the flange away from the seat.

3,166,251
## SPRINKLER AND VALVE

William J. Stitt, Sr., Rte. 8, Box 1219, and William J. Stitt, Jr., Rte. 8, Box 1221, both of Sacramento, Calif., and Thomas F. James, Rte. 1, Box 207, Pleasant Grove, Calif.

Filed Oct. 28, 1963, Ser. No. 319,360
4 Claims. (Cl. 239—583)



4. A sprinkler and valve comprising a T, a supply conduit connected to one branch of said T, a plug closing an adjacent branch of said T, a bushing having an annular seat thereon connected to a branch of said T opposite said plug, a tubular frame threaded at one end and connected to said bushing, a deflector plate spanning the other end of said tubular frame, means defining an orifice in said tubular frame adjacent said deflector plate, an elastomeric ball movable within said T toward and

away from said seat, a stem engaging said ball and extending through said tubular frame and said deflector plate, and a pneumatic actuator mounted on said deflector plate and engaging said stem.

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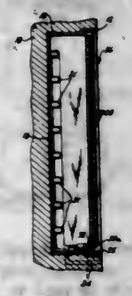
3,166,252
SWIVEL MOUNT FOR SPRAY NOZZLES
Edward J. O'Brien, Glen Ellyn, and Robert P. Williams, Naperville, Ill., assignors to Spraying Systems Co., a corporation of Illinois
Filed May 1, 1963, Ser. No. 277,241
6 Claims. (Cl. 239—587)



2. In a mounting structure for spray nozzles, an elongated swivel body and a nozzle-carrying outlet body positioned side by side with aligned passages formed therethrough and a swivel stem extending through the aligned passages, said swivel stem having a head at one end thereof, and said swivel stem having a cap nut threaded onto the other end thereof to hold the bodies together, cooperating cylindrical surfaces on the stem and said outlet body and on said outlet body and said swivel body to support said outlet body for pivotal movement on the axis of the stem and with respect to said stem and said swivel body, packing rings disposed about said swivel stem between said head and the outlet body, between said swivel body and outlet body, and between the cap and nut and said swivel body so that all three packing rings are compressed when said cap nut is tightened, and said swivel body and said outlet body having inlet and outlet bores formed respectively therein and terminating respectively at the passages of said bodies, said swivel stem having a reduced portion intermediate its ends spaced from the walls of said passages between said inlet and outlet bores, and the swivel stem and the passage of said swivel body having interengaged surfaces to prevent rotation of the swivel stem in said swivel body.

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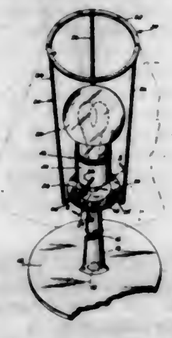
3,166,253
LIGHTING FIXTURES
Kurt Aron, 34—35 74th St., Jackson Heights, N.Y.
Filed Jan. 22, 1962, Ser. No. 167,558
2 Claims. (Cl. 240—46.09)



1. In a lighting fixture, a combination of:
(*a*) a cabinet structure with at least one open side,
(*b*) a plurality of electric lamps within said cabinet,
(*c*) a plurality of thin parallel slats overlying said one open side,
(*d*) means to rotate said slats whereby said slats may be moved to a first position whereby they will seal the interior of said cabinet and to a second position whereby they will provide openings to the interior of said cabinet,
(*e*) and an electrical activating switch to control the lighting of said plurality of electric lamps,
(*f*) and means to automatically activate said switch when said slats are in said second position whereby said plurality of lamps will be lit and to de-activate said switch when said slats are in said first position, whereby said plurality of lamps will be off,
(*g*) said last mentioned means including an outwardly biased stem projecting from said switch, said stem being in interfering relationship with one of said slats whereby when said one slat is in said first position, said slat will depress said stem and when said slat is in said second position, said slat will be free of said stem.

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3,166,254
LAMP HARP ASSEMBLY
Howard Goodman, 63 E. 9th St., New York, N.Y.
Filed May 1, 1963, Ser. No. 277,187
3 Claims. (Cl. 240—81)



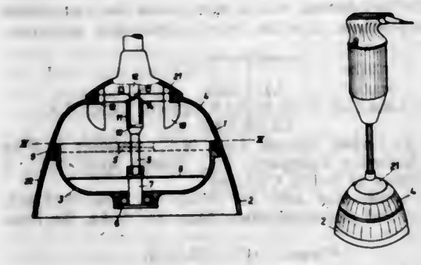
3. A table lamp comprising a disc-shaped base with a central hole therein, an upright tubular post supported on the base over said hole, a conducting cable passing upwardly through the hole in the base and through the post, a lamp bulb assembly detachably secured to the top of the post, said assembly including a lamp bulb, means of connection between the bulb and conducting cable, a lamp shade assembly mounted on the top of the post, said shade assembly including a ring, arms extending radially from the inner periphery of the ring, a disc supported on the post at the top thereof, a second ring detachably superimposed on the disc, pairs of lugs protruding from the top of the latter ring, within the confines of the ring receiving the inner ends of the radial arms on the ring, and a lamp shade on the outer periphery of said latter ring.

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3,166,255
FLY CUTTER MILL
Werner Spiegler, Schutzenhaus 11, Nenffen, Wurttemberg, Germany, and Ferdinand Schou, Gartenstrasse 19, Beuren, Kreis Nurtingen, Germany
Filed Aug. 4, 1961, Ser. No. 129,400
Claims priority, application Germany, Aug. 13, 1960, E 19,769
4 Claims. (Cl. 241—101)

1. In combination, a bowl having a downwardly open portion adapted to rest on a flat surface and a part within said downwardly open portion adapted to be held above such flat surface, and having a removable cover portion with a central opening therein, bearing means carried by said part on the lower side thereof, a vertical cutter shaft journalled in said bearing means and extending upwardly into said part, a chopping blade within the bowl carried by the shaft and secured thereto, a mixer adapted to be held in the hand including an electric motor and a motor shaft driven thereby, said mixer having a

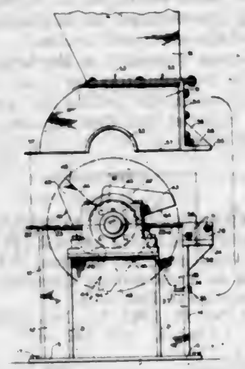




part adapted to engage in said central opening with the motor shaft directed downwardly through the opening towards the interior of the bowl in alignment with the vertical shaft, and a releasable coupling between the two shafts.

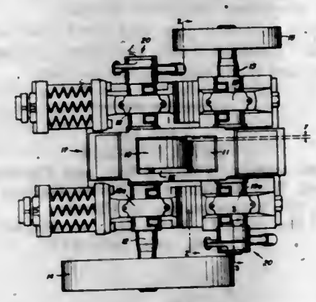
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3,166,256
BARK CRACKER
T. L. Whaley, Redding, Calif., assignor to Scott Lumber Company, Inc., Burney (Shasta County), Calif., a corporation of New Jersey
Filed Jan. 18, 1963, Ser. No. 252,411
4 Claims. (Cl. 241—190)



1. In a machine for cracking bark and other forest products a hollow shell, a drive shaft rotatably mounted at the entrance to said shell, a series of bladed discs mounted alternately with spacers on said shaft for rotation therewith, each disc having a plurality of cracking blades said blades being radially offset and having a flat operating face cooperating with a stationary anvil surface, said discs being mounted on the shaft with the juxtaposed blades in a series of rows axially with respect to said shaft, each row being in the form of a partial turn of a helix, a series of substantially triangular anvils rigidly mounted vertically within said shell with spacers for passing the blades between said anvils with slight clearance and with the short base of the triangle upwardly collectively presenting an anvil surface in a horizontal plane common to the axis of said shaft, said flat operating faces of each blade becoming parallel to the anvil surface in a plane above said surface during rotation, and power means for rotating said shaft and bladed discs.

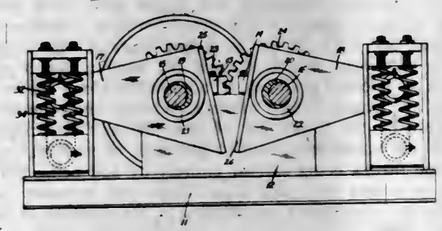
3,166,257
FLEETING MECHANISM FOR CRUSHING ROLLS
Hans H. Pick and Norman Stanley, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Dec. 11, 1962, Ser. No. 243,876
6 Claims. (Cl. 241—205)



6. A roll crusher, comprising a plurality of mutually coacting, crushing rolls mounted on respective shafts for rotation relative to one another; and fleeting means for axially shifting one roll relative to another, said fleeting means including means for cyclically shifting said one roll along its axis independently of the rotation of its shaft, and control means to regulate the operation of said means for cyclically shifting the roll along its axis.

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3,166,258
ROCK CRUSHING MACHINES
Herbert Turner, Jr., Boscobel, Wis.
Continuation of application Ser. No. 50,189, Aug. 17, 1960. This application Mar. 1, 1963, Ser. No. 266,126
5 Claims. (Cl. 241—218)

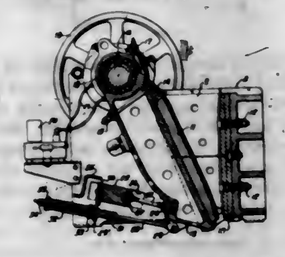


1. A rock crusher comprising:
a base,
first and second downwardly converging crushing jaws supported by said base,
a horizontally disposed shaft mounted for rotation in said base, and means for rotating said shaft,
an eccentric fixed to said shaft,
means for imparting a compound movement to said first jaw toward, downwardly, and away from said second jaw, said movement comprising:
(*a*) a rotary movement toward, downwardly and away from said second jaw, imparted by said eccentric, plus
(*b*) a rocking movement around said eccentric, adding downwardly to the said downward rotary movement,
said means comprising:
a horizontally extending carrier mounting the first jaw on its inner end, said carrier being disposed perpendicularly to said shaft,
a bearing in said carrier abreast said first jaw and at substantial vertical distances respectively from the top and bottom thereof, said bearing being mounted on said eccentric,

a vertical link pivotally attached at one of its ends to the outer end of said carrier, said bearing being between said first jaw and said outer end,
and a bearing block mounted on said base and pivotally attached to said link at the other end of the latter,
said bearing block being mounted on said base for vertical movement relatively thereto,
and spring means urging said block downwardly to a normal position while permitting limited upward movement from said normal position.

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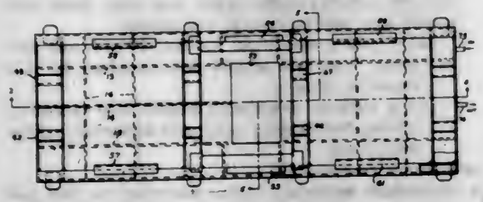
3,166,259
JAW CRUSHER
Fred Curtis Archer, Whitefish Bay, and Thomas H. Lohr, Hartford, Wis., assignors to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Filed Mar. 11, 1963, Ser. No. 264,448
7 Claims. (Cl. 241—219)



7. A jaw crusher comprising, a housing having alined elongated openings forming way slots in the side walls thereof, a movable jaw suspended within said housing, a toggle plate within said housing and rockably supporting the lower end of said jaw, a toggle beam extending across said housing and projecting through the way slots therein for rockably supporting said toggle plate, fluid pressure actuators operably connected between a stationary support and each of the projecting ends of said toggle beam exteriorly of said housing for moving said toggle beam to selected positions of adjustment along the way slots, and tension means mounted between and supported entirely by the lower end of said jaw and said toggle beam for maintaining said toggle plate in position, said tension means being carried entirely by and being movable as a unit wtih said toggle beam and movable jaw whenever adjustments are effected in the position of the toggle beam.

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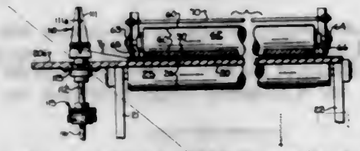
3,166,260
REFINER BASE STRUCTURE
Herman W. Steiniger and James E. Irvine, Springfield, Ohio, assignors to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Filed Feb. 10, 1961, Ser. No. 88,438
11 Claims. (Cl. 241—285)



1. A base for a double disc refiner, including a bottom beam, spaced apart pedestals on said beam, said beam and pedestals being compartmented and interconnected for circulation of a liquid coolant therethrough, longitudinally extending side plates projecting vertically from said bottom beam, said side plates having lateral openings for circulation of air intermediate said pedestals, and longitudinally extending rail beams in vertical superposed relation to said side plates substantially to the height of said pedestals, said rail beams being hollow to serve as enclosure conduits for hydraulic and electrical lines and having means superposed for suspending motor and refiner structure intermediate said pedestals.

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3,166,261
APPARATUS FOR SEPARATING TEXTILE ARTICLES
Howard L. Lofton, Mount Airy, N.C., assignor to Pine State Knitwear Company, Inc., Mount Airy, N.C., a corporation of North Carolina
Original application July 26, 1962, Ser. No. 212,503. Divided and this application Mar. 16, 1964, Ser. No. 352,375
3 Claims. (Cl. 242—18)



1. A thread pulling device for removing transversely extending connector threads from a continuous length of textile material to separate the material into individual textile articles, said device comprising
(1) an elongated tapered rotatable mandrel having a relatively narrow slot extending inwardly a predetermined distance from the smaller end of said mandrel and adapted to receive the connector threads therein for being wound on the mandrel, said mandrel being smooth-faced for facilitating stripping of the wound threads therefrom, and
(2) drive means connected to the larger end of said mandrel for imparting rotation to said mandrel about its longitudinal axis for pulling the connector threads from the material and thus separating the articles from each other.

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3,166,262
YARN TRANSFER TAIL FORMING AND CONTROLLING APPARATUS
Leigh O'Neill Vanneman, Sr., Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,631
7 Claims. (Cl. 242—19)

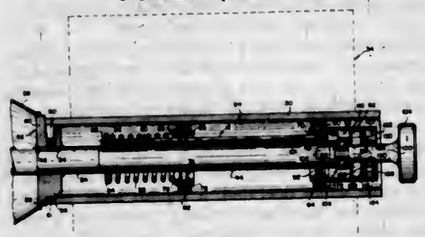


1. An improved high-speed yarn windup apparatus for forming yarn packages with transfer tails of accurately controlled lengths on rotating yarn supports, said apparatus adapted for use in combination with means for temporarily collecting and disposing of a running yarn line as it is forwarded from a yarn source, said apparatus comprising, in combination, a supporting structure, a rotary drive roll operatively mounted on said structure, at least one driven rotatable chuck element mounted on said structure for supporting a yarn bobbin in frictional engagement with said drive roll, a movable yarn traversing guide mounted on said structure operatively associated with said drive roll and a bobbin on said chuck element to form a yarn package on a main portion of such a bobbin, the arrangement of parts being such that a yarn line proceeding from a yarn source to the means for collecting and disposing of the yarn is urged toward engagement with said traversing guide, a yarn guiding and deflecting means mounted on said structure constructed and arranged to engage and hold a running yarn line clear of said yarn traversing guide and in operative alignment with another portion of a bobbin on said chuck, a movable yarn releasing means mounted on said structure in cooperation with said yarn guiding and deflecting means for movement between a first position in which said yarn line is cooperatively, releasably engaged by the releasing means and the guiding and deflecting means and maintained in alignment with said other portion of said bobbin, and a second position in which said yarn line is released for movement into engagement with said yarn traversing guide for guided traversed application on said main portion of a bobbin mounted on said rotatable chuck, a yarn cutting means mounted on said structure positioned adjacent a running yarn line for operative engagement therewith when said yarn line is in engagement with said guiding and deflecting means and a bobbin on said chuck, a fluid pressure means mounted on said structure cooperating with said releasing means for maintaining the releasing means in its first position, said fluid pressure means also cooperating with said cutting means for operating the cutting means to sever a running yarn line engaged with said guiding and deflecting means and a bobbin on said chuck to commence windup of yarn on said other portion to form a transfer tail, said fluid pressure means comprising a control mechanism for rendering said fluid pressure means inoperative to maintain said releasing means in its first position in response to operation of the cutting means, and a means opposed to said fluid pressure means and supported on said structure in cooperation with said releasing means and operative to move the releasing means to its second position a predetermined time interval after operation of the cutting means so that the yarn line transfer tail length is accurately controlled.



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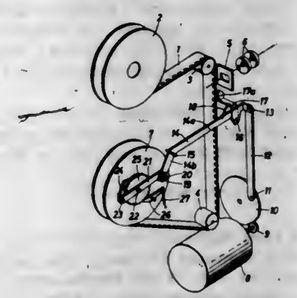
3,166,263
THREAD WINDING MACHINE
Horace L. Smith, Jr., Richmond, and Edward G. Mueller, Bon Air, Va., assignors to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Nov. 9, 1962, Ser. No. 236,572
8 Claims. (Cl. 242—46.4)



1. A collapsible arbor for thread winding machines, comprising:
(*a*) first and second resilient, radially expandable, spaced apart package retaining members;
(*b*) first and second retaining member supporting means;
(*c*) means for simultaneously varying to substantially the same degree the effective diameters of said first and second retaining member supporting means;
(*d*) means normally maintaining the effective diameters of said first and second supporting means at a maximum; and
(*e*) means having a cooperating cam and roller spaced outboard of both package retaining members for simultaneously reducing the effective diameters of said first and second supporting means to and maintaining them at a minimum and including means solely in said collapsible arbor for locking said first and second retaining member supporting means with their effective diameters at a minimum to maintain the first and second package retaining members collapsed.

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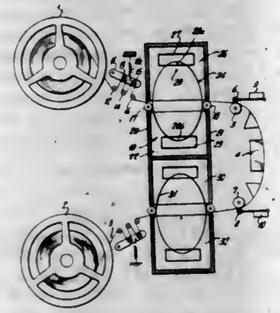
3,166,264
ELECTRICAL DRIVE FOR MOTION PICTURE CAMERAS
Richard Denk, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Dec. 20, 1962, Ser. No. 246,252
Claims priority, application Germany, Jan. 13, 1962, A 39,209
7 Claims. (Cl. 242—55.11)



1. In a motion picture camera, in combination, a rotary take-up spool shaft adapted to carry a take-up spool on which exposed film is to be wound; an electric motor; film-advancing means for advancing film past a film gate; and transmission means operatively connected to said electric motor and said shaft and film-advancing means for intermittently turning said shaft during given intervals and for actuating said film-advancing means during intervals which alternate with said given intervals, so that the winding of exposed film on a take-up spool carried by said shaft takes place intermittently during said given intervals when said motor is not loaded by said film-advancing means while actuation of the latter takes place when said motor is not loaded by turning of said spool shaft.

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3,166,265
PERFORATED TAPE VACUUM BUFFER
Robert Edward Schoeneman, Roslyn Heights, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Apr. 11, 1963, Ser. No. 272,476
6 Claims. (Cl. 242—55.12)



1. In a perforated tape handling system with progressive control means, the combination comprising,

a pair of tape reels for receiving and for paying out tape,
a transducer head,
a multiple loop tension arm to provide tensioned tape loops between one of said reels and said head,
tape driving means to drive tape in at least one direction between said reels,
a first vacuum chamber on one side of said head including a tape-receiving opening
a second vacuum chamber having a tape-receiving opening,
the second vacuum chamber being positioned relative to said first vacuum chamber so that the tape-receiving opening of the second vacuum chamber is opposite the tape-receiving opening of the first vacuum chamber,
a continuous loop of flexible, imperforate tape, and
means to connect a source of vacuum to said first and second chambers to suspend said imperforate loop therebetween with said loop extending between and having a portion thereof entering each of said first and second chambers,
whereby said loop is positioned for engaging a perforated tape to seal the perforations and permit a loop of perforated tape to be drawn into the first vacuum chamber.

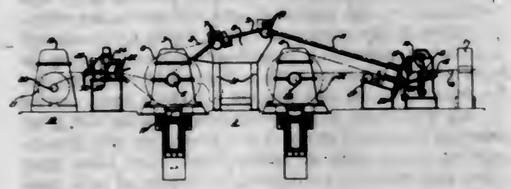
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3,166,266

## APPARATUS FOR PROCESSING STRIP MATERIAL

Robert J. Erskine, Howland Township, Trumbull County, Ohio, assignor to The Wean Engineering Company, Inc., Warren, Ohio, a corporation of Ohio

Original application Dec. 30, 1959, Ser. No. 863,036, now Patent No. 3,084,425, dated Apr. 9, 1963. Divided and this application July 23, 1962, Ser. No. 211,695
4 Claims. (Cl. 242—56)



1. Apparatus for processing coiled strip material having prime and reject sections comprising an element constituting the entry end of a strip treatment line, coil holding means adjacent said element for holding coils from which strip is adapted to pass to said element, strip cutting means intermediate the coil holding means and said element for shearing strip extending from the coil holding means to said element, reject strip coiling means for receiving reject strip from said coil holding means, said coil holding means being disposed intermediate said element and said said coiling means, and second strip cutting means intermediate the coil holding means and the reject strip coiling means for cutting strip extending from the coil holding means to the reject strip coiling means.

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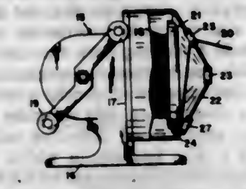
3,166,267

## SPINNING REEL

Lacy A. Rowe, 1602 Lynchburg Turnpike, Salem, Va.

Filed Aug. 22, 1963, Ser. No. 303,835
12 Claims. (Cl. 242—84.2)

1. In a spinning reel, the combination of a line carrying spool, a rotatable spooling member with a retractable line engaging pick-up pin, and line guiding means disposed adjacent said member and offset eccentrically from the axis of rotation thereof, whereby said pick-up pin may move toward and away from said guiding means for reeling in of a line through the guiding means at alternately fast and slow rate while said member is rotated at substantially constant speed.



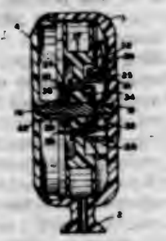
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3,166,268

## MANUALLY CONTROLLED BRAKE AND CLUTCH FOR A FISHING REEL

Joseph C. Clark, Orlando, Fla., assignor to L & S Bait Company of Florida, Inc., Clearwater, Fla., a corporation of Florida

Filed Aug. 16, 1962, Ser. No. 217,442
2 Claims. (Cl. 242—84.44)



2. In a reel of the character described a means forming a housing, a spool secured for rotation in said housing about the axis thereof on a coaxial axle journalled at opposite ends thereof in said housing for casting and retracting a line wound thereon, a clutch drive dog journalled for rotation on said axle and retained between one side of said spool and said housing, a driven clutch member slideably retained on said axle on the opposite side of said spool including a pair of integral spaced projections extending therefrom parallel and equi-spaced from said axis at opposite sides of said axle and slideably retained in corresponding apertures through said spool, said member operatively positioned for reciprocation from a retracted idle position for free spool rotation to an extended drive position with each of said projections in the said path for rotation by said dog for engaging and rotating said spool when said dog is rotated, means for urging said member into said idle position, a manual crank means journalled in said housing and coupled to said dog for rotating same when operated, a thumb lever pivoted in said housing for movement from a neutral to a reeling position, detent means operatively associated with said lever and said housing for yieldably holding said lever in said reeling position, rocker means operatively associated with said lever and pivoted against said housing for engaging and moving said clutch member into said drive position when said thumb lever is moved into said reeling position.

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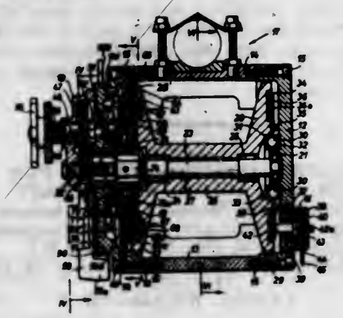
3,166,269

## FISHING REEL WITH FRICTION CLUTCH

Elio Verell, 21/23 Via B. Franklin, Modena, Italy

Filed Dec. 10, 1962, Ser. No. 243,407
Claims priority, application Italy, Jan. 5, 1960, 233/60, Patent 623,169
4 Claims. (Cl. 242—84.54)

1. A fishing reel comprising in combination:
(*a*) a stationary reel body,
(*b*) a driving mechanism including a drive handle, a reducing gear assembly actuated by the drive handle, and a main drive shaft rotatably journaled in the reel body,
(*c*) a line spool rotatably journaled on said main drive shaft,
(*d*) an adjustable maximum torque limiting friction coupling disposed on one side face of said line spool and including two sets of driving and driven friction discs, one set of said discs being connected to said main shaft, the other set being connected to said line spool, and spring means for normally biasing and maintaining the discs in said two sets out of frictional engagement,



(*e*) means including an adjusting lever operable from outside the stationary reel body for variably overcoming the action of the spring means for normally biasing and maintaining the discs of said two sets out of frictional engagement thereby controllably varying the maximum torque transmitted by the friction coupling before slipping, and
(*f*) a graduated dial on the outside of the reel body adjacent a portion of the adjusting lever having a plurality of different scales each corresponding to a diameter of line package wound on the line spool for indicating the pull on the line corresponding to a setting of the adjusting lever.

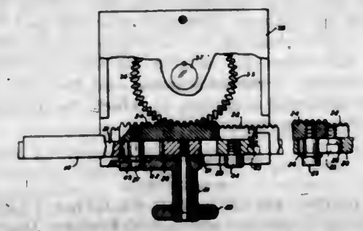
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3,166,270

## STRAND DISTRIBUTOR FOR SPOOLS OF DIFFERENT LENGTHS

Benny A. de Jong, Erie, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 11, 1963, Ser. No. 264,136
5 Claims. (Cl. 242—158)



1. A device for selectively oscillating different sections of a distributor bar at different speeds to distribute strands on a plurality of spools mounted on a common axis, said device comprising:
a distributor bar having at least a first and second section each section carrying a plurality of strand guides so as to distribute a strand on each of said spools upon oscillation of said distributor bar,
a rack rigidly mounted on said first section,
a floating rack,
means for oscillating the rack mounted on the first section and for oscillating the floating rack at different rates of speed, and
means for selectively connecting the second section to either the floating rack or to the first section.

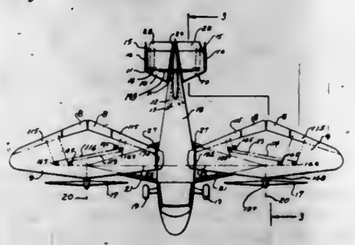
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3,166,271

## AIRPLANE HAVING NON-STALLING WINGS AND WING-MOUNTED PROPELLERS

Daniel R. Zuck, San Fernando, Calif. (Sylmar, Calif.)

Substituted for abandoned applications Ser. No. 102,072, Apr. 10, 1961, and Ser. No. 405,863, Jan. 25, 1954. This application Aug. 20, 1962, Ser. No. 218,174
10 Claims. (Cl. 244—7)



1. A monoplane for take-off and landing at very steep angles which includes: a fuselage, right and left wings extending symmetrically from the right and left sides of said fuselage, and adapted to rotate freely and independently of each other about the same wing rotation axis transverse to said fuselage, said wing rotation axis being located forward of the center of lift of said wings; at least one propeller mounted at the forward edge of each of said right and left wings, symmetrically with respect to said fuselage, and adapted to direct a slipstream rearward over said wing surfaces; a pilot-controlled control surface at the trailing edge of said wings, rotatable about an axis transverse to said fuselage, and disposed in the slipstream of the propeller on said wing; said fuselage having a tail assembly spaced to the rear of said wings; said tail assembly having stabilizer means extending to the right and left of said fuselage and freely rotatable about a common axis transverse to said fuselage; pilot-controlled surfaces at the trailing edge of each of said right and left stabilizers, and said stabilizer control surfaces having an axis of rotation at the trailing edge of said stabilizers; wing support means extending from each side of said fuselage to said wing, and supporting said wing at said axis of rotation at a point substantially outboard of said fuselage, said wing support means limiting the rotation of said wings about said wing rotation axis to an angle at which the vertical component of the wing's lift is at least as great as the vertical component of the propeller's thrust.

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3,166,272

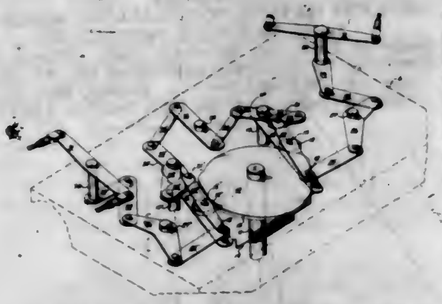
## MIXING MECHANISM

Maurice S. Liddell, Bellevue, and Lawrence M. Thien, Seattle, Wash., and Roman K. Wojciechowski, 1516 Front St., Binghamton, N.Y.; said Liddell and said Thien assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Oct. 28, 1963, Ser. No. 319,232
5 Claims. (Cl. 244—42)

1. In a pilot operated aircraft having wings and a fuselage:
(*a*) a plurality of movable aerodynamic control surfaces mounted on said wings, at least one control surface mounted on each wing,

(*b*) a control unit for said control surfaces comprising
(1) a pivotable cam linked to a pilot operated member,
(2) a pair of cam followers resiliently urged against said cam,
(3) linkages operatively interconnecting said cam followers to said control surfaces,
(4) means for equally and oppositely displacing said linkages relative to said cam independent of



the position of said cam, said means being selectively responsive to a second pilot operated member, whereby displacement of said linkage by said displacing means moves said control surfaces together and equally, and displacement of said followers by said cam moves said control surfaces on opposite wings differentially relative to the position of said control surfaces produced by said displacing means.

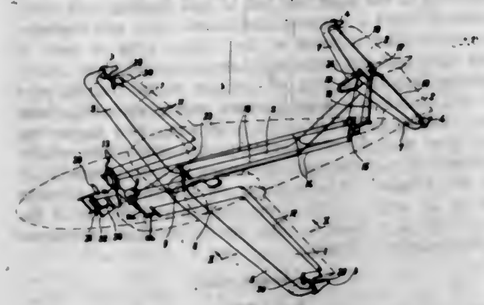
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3,166,273

## METHOD AND APPARATUS FOR PROPULSION AND DIRECTIONAL CONTROL OF WINGED AIRCRAFT

Helmut Bellut, Donauwerth, Germany, assignor to Siebelwerke-ATG G.m.b.H., Donauwerth, Germany, a corporation of Germany

Filed Sept. 17, 1962, Ser. No. 223,986
Claims priority, application Germany, Mar. 3, 1962, S 78,326
21 Claims. (Cl. 244—52)



1. A method of propelling and directionally controlling winged aircraft about its three axes, comprising the steps of: producing a supply of gaseous medium at a single power plant aggregation, feeding said gaseous medium to predetermined exit locations on said aircraft, and controlling the feed of said gaseous medium to said exit locations and the direction of efflux of said gaseous medium from said exit locations, in order to provide flight sustaining thrust for at least forward movement and lift of the winged aircraft as well as to directionally control said winged aircraft about its three axes during all phases of flight solely by means of the gaseous medium emanating from said exit locations, said step of controlling including directing said efflux of gaseous medium forwardly in the direction of flight at least at some of said exit locations, whenever it is desired to decelerate said aircraft.

3. A system serving for both propulsion and directionally controlling winged aircraft about its three axes, comprising control nozzles disposed on the aircraft, a common supply means incorporating a single power plant aggregation for supplying gaseous medium to said control nozzles for efflux as propulsive jets therefrom, said control nozzles controlling said aircraft on the reaction principle and providing propulsive jets for flight sustaining thrust for at least lift and forward motion of said winged aircraft as well as defining the sole control means for directionally controlling said aircraft about its three axes, and means for controlling the feed of said propulsive jets emerging from said control nozzles, at least a portion of said control nozzles being disposed on the wings and a tail unit.

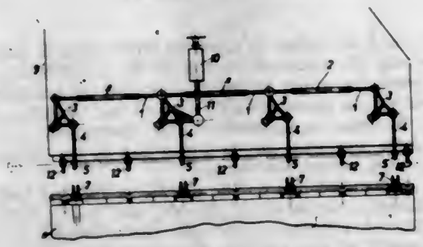
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3,166,274

## PRE-TENSIONED CONTROL SYSTEM FOR CONTROL SURFACES OF AN AIRCRAFT

Willy Messerschmitt, Munich, Germany, assignor to Messerschmitt A.G., a corporation of Germany

Filed Mar. 25, 1963, Ser. No. 267,417
Claims priority, application Germany, Apr. 28, 1962, M 52,672
4 Claims. (Cl. 244—75)



1. A control system for an aircraft, comprising, in combination, a control member such as a rudder, flap, aileron or elevator; mounting means for mounting said control member on the aircraft for turning movement about an axis between two end positions and an intermediate neutral position; pre-tensioning means including at least two tensioning members connected to said control member at points spaced along said axis, bell-crank levers connected to said tensioning members, threaded rod means and turnbuckle means connecting said bell-crank levers, said turnbuckle means being adjusted so that said tensioning members with said control member are urged in opposite directions whereby said control member is pre-tensioned; and actuating means connected to said rod means for moving the same so that said control member is moved between said positions thereof in a pre-tensioned condition in which the natural frequency thereof is increased.

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3,166,275

## MONITORING DEVICE FOR PILOTED VEHICLES

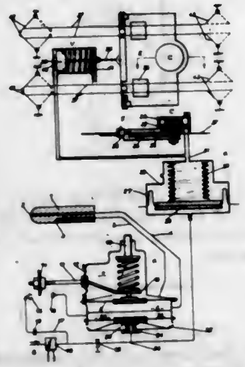
René Perret, Colombes, and Alfred Trinkler, Dammarie-les-Lys, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

Filed June 29, 1962, Ser. No. 206,387
Claims priority, application France, July 4, 1961, 866,898
7 Claims. (Cl. 244—76)

1. In an engine-driven piloted vehicle provided with a monitoring device for the power of at least one engine, a friction coupling embracing with a calibrated frictional



clamping force the linkage connecting the engine to a throttle lever in the usual manner, thus enabling the pilot to feel the correction effected by the monitoring device and to intervene manually at any instant without even having to render the device inoperative on condition that



the clamping force of said coupling has a value lower than the muscular force which the pilot is able to transmit to the linkage, said friction coupling comprising two pivoting jaws each of which is equipped with a lining having a high coefficient of friction and which clamp the linkage between them.

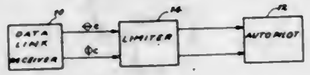
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3,166,276

## SIGNAL LIMITING SYSTEM

Johannes G. Goerner, Snyder, Theodore Lerner, Amherst, and Charles E. Martin, North Tonawanda, N.Y., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.

Filed July 1, 1963, Ser. No. 291,626
9 Claims. (Cl. 244—77)




1. In an aircraft control system,
an airborne data link having an output responsive to ground-generated command signals,
limiting means connected to the output of said data link,
and an autopilot connected to said limiting means,
said limiting means including first resistor means connected in series between said data link and said autopilot; second resistor means and capacitor means connected in series with each other and in parallel with said data link; and voltage breakdown reference means connected between said autopilot and said capacitor means.

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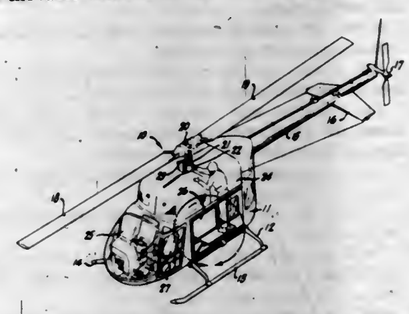
3,166,277

## VEHICLE WORK PLATFORM

Robert L. Brison, Mountain View, and Edward H. Jacobsen, Menlo Park, Calif., assignors, by mesne assignments, to Hiller Aircraft Company, Inc., Menlo Park, Calif., a corporation of Delaware

Filed July 19, 1963, Ser. No. 296,310
10 Claims. (Cl. 244—129)

1. In combination with an aircraft having a fuselage provided with an upwardly extending wall structure and having also along the upper portion of said fuselage components that require servicing, a support structure carried by said wall structure intermediate the upper and lower edges thereof for longitudinal displacement therealong, a work platform carried by said support structure and being selectively movable between an extended position of use in which a workman standing thereon is within reach of at least certain of said components and a retracted position of storage, said work platform thereby being movable relative to said fuselage generally along



the longitudinal axis thereof to provide convenient access to a greater number of components along the upper portion of said fuselage, and means for releasably securing said platform in both the extended and retracted positions thereof.

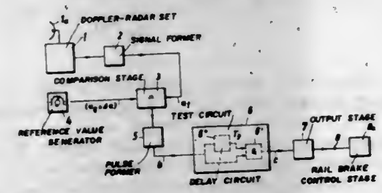
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3,166,278

## CONTROL SYSTEM

Karl Steinbach, Alexandria, Va., and Peter Wentzel, Munich, and Konrad Dinter, Konstanz (Bodensee), Germany, assignors, by mesne assignments, to Siemens & Halske A.G., Munich, Germany

Filed Jan. 30, 1961, Ser. No. 85,766
Claims priority, application Germany, Jan 30, 1960, T 17,805 II/20h
21 Claims. (Cl. 246—182)




17. In a speed control system, the combination which comprises: means for continuously measuring the speed of a vehicle; means for producing an output value which is a function of said speed; and means for comparing said output value to a reference value and for producing a command signal only when said output value passes said reference value and remains past said reference value throughout a time interval which is longer than a predetermined test interval.

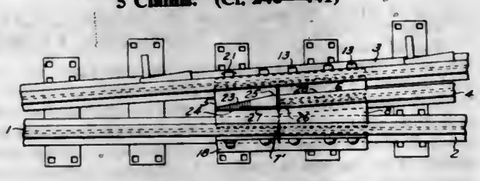
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3,166,279

## RAILWAY SWITCH HEEL BLOCK

Fred W. Kern, Bethlehem, Pa., assignor to Bethlehem Steel Company, a corporation of Pennsylvania

Filed Feb. 6, 1962, Ser. No. 171,492
5 Claims. (Cl. 246—441)

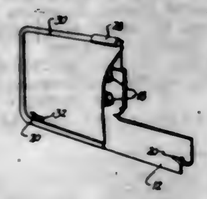


1. In a railway switch:
(*a*) a curved stock rail;
(*b*) a curved guard rail adjacent said stock rail;

(*c*) a straight switch point;
(*d*) a straight closure rail;
(*e*) a switch heel block comprising a main body member interposed between the curved stock rail and the switch point;
(*f*) a pair of spacing members extending rearwardly from said main body member;
(*g*) one of said spacing members being positioned between the stock rail and the aforesaid guard rail;
(*h*) the other of said members being positioned between the guard rail and the closure rail and being integral with the main body member;
(*i*) means securing the switch point to the main body member of the heel block;
(*j*) a raised rib on the main body member forward of the guard rail;
(*k*) the height and width of the rib at its rear end being substantially equal to the height and width of the head of the guard rail; and
(*l*) said rib tapering forwardly and downwardly and having the side facing the straight closure rail substantially parallel thereto.

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**3,166,280**
**LICENSE PLATE HOLDER**
Ervin J. Parusklewicz, 18989 Teppert, Detroit, Mich.
Filed July 31, 1961, Ser. No. 128,020
1 Claim. (Cl. 248—28)

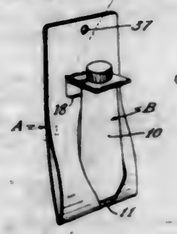


A license plate holder comprising a rigid vertically disposed bracket plate having a horizontally extending cross arm, a pair of tangs integral with said cross arm, one tang being located at each end of said cross arm and projecting upwardly and forwardly from the cross arm, a centrally located rearwardly offset mounting tab integral at its lower end with said cross arm and projecting upwardly from said cross arm, a resilient clip member of sheet material having a lower body portion adapted to lie in face-to-face engagement with said mounting tab, detachable fastening means fixedly securing the lower portion of said clip to said tab, a forwardly offset upper body portion on said clip projecting upwardly above said tab and terminating at its upper end in a downwardly and forwardly inclined retaining hook, said upper body portion of said clip being in substantial vertical alignment with the forward surface of said cross arm, said hook and said tangs being operable to cooperatively grip and retain a license plate upon said holder.

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**3,166,281**
**TUBE DISPLAY**
Joseph J. Maro, Morton Grove, Ill., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Jan. 3, 1963, Ser. No. 249,161
5 Claims. (Cl. 248—108)

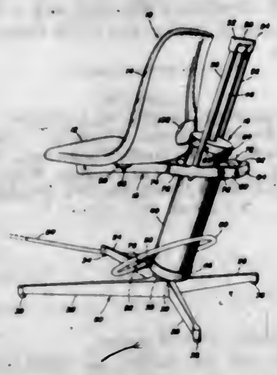
1. A tube display adapted for use in combination with a flexible collapsible tube including a generally cylindrical body having a dispensing neck of smaller diameter than the body at one end thereof, and a flattened opposite tube end which is wider than the tube diameter, the display including an elongated strip transversely folded to provide a front panel and a rear panel, said front panel having an aperture therethrough through which the body of the tube is adapted to extend, said aperture being narrower in width than the flattened end of the tube to retain the flattened tube end between said panels, a tab hingedly secured to



said rear panel along a fold line generally parallel to the transverse line of fold, said tab extending through said front panel and including an aperture adapted to encircle said dispensing neck.

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**3,166,282**
**BATHLIFT DEVICE**
John E. Nolan, Jeffersontown, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 13, 1962, Ser. No. 172,905
18 Claims. (Cl. 248—124)

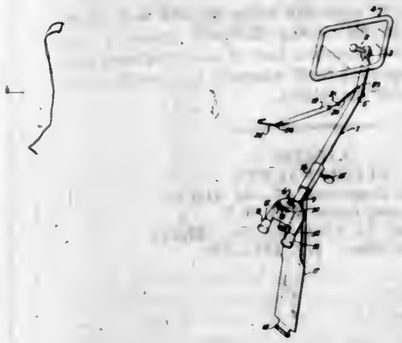


1. In a portable lift device, the combination comprising, a base, a guide structure means for pivotally supporting said guide structure on said base, a carriage on said guide structure, power means associated and pivotal with said guide structure for raising said carriage as the carriage is guided on said guide structure, means external of said guide structure between the guide structure and carriage providing rolling contact for the carriage on the guide structure as the carriage is raised by said power means.

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**3,166,283**
**QUICK-DETACHABLE REAR VIEW MIRROR**
Vann E. Farnsworth, 624 Glenwood Road, Glendale 2, Calif.
Filed Nov. 21, 1963, Ser. No. 325,268
10 Claims. (Cl. 248—226)

1. A rear view mirror mounting means capable of quick attachment to and removal from a motor vehicle front door; said mounting means comprising, an elongated bracket arm carrying a mirror at one end thereof and a foot element at the other end thereof adapted to engage and rest on the side surface of a vehicle front door, a hook adapted to engage the front edge of a vehicle front door, means connecting said hook to said bracket arm at a point thereon outwardly from said foot element, and spring means having one end thereof attached to said bracket arm and having the other end thereof adapted for detachable engagement with a rearwardly facing component of the vehicle door disposed rearwardly of the point of engagement of a vehicle door by said foot element and effective to apply a bias tending

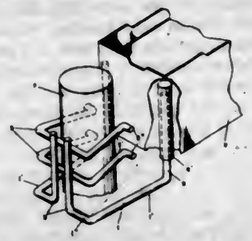


to rock said bracket arm about the point of engagement of a vehicle door by said foot element as a fulcrum with resultant tension on said means connecting said hook to said bracket arm with resultant clamping of said mounting means on a vehicle door.



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**3,166,284**
**MAST-MOUNTING CLIP-AND-BRACKET**
Isaac S. Blonder, West Orange, N.J., assignor to Blonder Tongue Electronics, Newark, N.J., a corporation of New Jersey
Filed Nov. 2, 1962, Ser. No. 235,027
14 Claims. (Cl. 248—230)

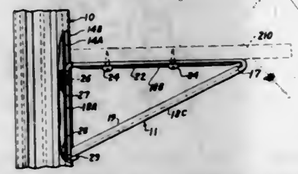


1. A mast-mounting clip-and-bracket having, in combination, a substantially U-shaped base member provided with first support means extending upward from the neck of the substantially U-shaped base and second support means integral with and extending upward from the base near at least one of the free ends thereof, and resilient substantially C-shaped clip means secured to and carried by the first support means substantially parallel to but displaced upward from the base member and with its free ends disposed on the same side of the first support means as the said free ends of the base member.

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**3,166,285**
**SHELF BRACKET ASSEMBLY**
Leonard O. Downes, 4077 2nd St., Wayne, Mich.
Filed Sept. 10, 1962, Ser. No. 222,294
6 Claims. (Cl. 248—245)

2. In combination, a framing member and a shelf bracket,
(*a*) said framing member having a longitudinal recess,
(*b*) each side of said recess having a pair of spaced parallel flanges extending toward and in common planes with the pair of flanges on the other side of said recess,
(*c*) the innermost pair of said flanges being spaced closer together than the outermost pair of said flanges,
(*d*) said shelf bracket comprising
an elongated strip,
said strip being provided with laterally extending slots dividing said strip into three portions,
said strip being bent at each of said slots to form a right triangle,
one end of said strip being provided with a flange portion,
the portion of said strip provided with said end flange portion being provided with a pair of longitudinally extending flanges,



the other end of said strip being provided with a slotted flange portion receiving said first mentioned flange portion whereby said strip may be locked in the form of a right triangle, and
said longitudinally extending flanges bearing against said portion of said strip having said slotted flange portion whereby to retain said strip in the locked position,
(*e*) one of said portions of said shelf bracket being dimensioned to pass between said outermost pair of flanges and to engage said innermost pair of flanges of said framing member,
(*f*) connecting means securing said shelf bracket to said innermost pair of flanges.

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**3,166,286**
**DRAPERY CORNICE DUAL ROD AND HANGER ASSEMBLY**
Homer C. Pfaff, Toledo, Ohio, assignor to Up-Rite Hook Company, Toledo, Ohio, a partnership
Filed Oct. 3, 1963, Ser. No. 313,543
8 Claims. (Cl. 248—263)

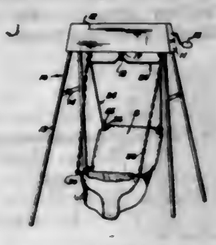


4. An easily integrated and hung drapery assembly comprising, paired spaced wall brackets having a wall contacting back portion, a top extending flange having a vertically extending hook receiving aperture, and vertically extending lower clamping flanges; paired hangers each having like top and bottom legs, like opposed inner hook ends and like outer prong ends; a center brace leg disposed between said prong ends interconnecting said top and bottom legs in assembled relationship; said top and bottom leg outer prong ends each having a sidewise inwardly extending foot portion doubling back in a U-loop portion to a sidewise outwardly extending toe portion forming a drapery rod engaging prong; said center brace leg leading between said prong toe portions; all said elements being made from a single piece of wire formed as stated; and paired top and bottom drapery rods having receiving channels enclosing said prongs for support and positioning; said paired spaced rods being adapted to support a drapery member such as a cornice by insertion therein; said hangers, rods, and a drapery member thereon being hangable and removable as a unit

relative to said wall brackets by respectively inserting and extracting said hooks relative to said wall bracket top flange apertures.

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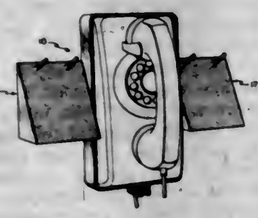
3,166,287
**TORSION BAR ASSEMBLY FOR MECHANICAL SWING**
Joseph Di Pasqua, Detroit, Mich., assignor to Mechanical Swinging Cradle Company, Inc., Detroit, Mich.
Filed June 25, 1963, Ser. No. 290,515
5 Claims. (Cl. 248—370)



1. In a swing suspension, a horizontally arranged support housing having a pair of spaced apart end wall supports;
a horizontally arranged torsion bar made of stiff, rod-like material and having its opposite ends each rotatably connected to one of said end wall supports, the central portion of said torsion bar being bent into an upwardly opening, deep U-shape whose legs are substantially vertically arranged and whose base is horizontally arranged; a motor supported in said housing; the motor having a driven reciprocating lever extending downwardly therefrom and being connected to the center of said base for reciprocating said torsion bar about its rotatably connected ends;
a pair of elongated, upright swing support rods, each arranged adjacent one of said legs;
interlocking means between the upper end of a support rod and the torsion bar at spaced points located on the respective leg, said support rods each extending downwardly below said base and having its lower end located at a considerable distance beneath the torsion bar with the lower end being formed with means for connection to a swing.

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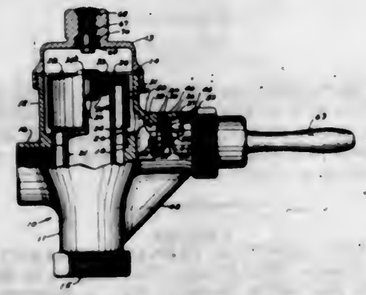
3,166,288
**MEMORANDUM PAD HOLDER FOR WALL TELEPHONE**
William Ehrenberg, 4475 Broadhurst Drive, Columbus, Ohio
Filed Dec. 13, 1963, Ser. No. 330,448
5 Claims. (Cl. 248—441)



1. A wall-telephone accessory for holding memorandum pads comprising:
a generally rectangular loop-shaped clamp member formed and vertically positioned to be secured around the body of a wall type telephone having a mounting face and adapted to be mounted on a vertical supporting wall;
a first wedge-shaped tablet-supporting platform member located at one side of said clamp member with its apex upward; and
a second wedge-shaped tablet-supporting platform member located on the other side of said clamp member with its apex upward,
said platform members being formed with front panel portions sloping obliquely upwardly and toward the mounting face of said telephone and said supporting wall whereby to provide rigid support for the tablets.

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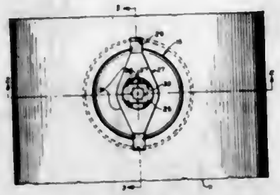
3,166,289
**FLUSH VALVES**
Oscar L. Engstrom, 45—54 41st St., Long Island City, N.Y.
Filed Mar. 21, 1962, Ser. No. 181,431
4 Claims. (Cl. 251—35)



1. In a flush valve, the combination comprising, a housing structure having a water inlet opening and a water outlet opening, a first conduit within said housing structure and communicating at one end with said outlet opening, a second conduit within said housing structure having a greater cross-sectional size than said first conduit and surrounding said first conduit, a communicating passageway between said water inlet opening and the space between said first and second conduits, the other end of said first conduit providing a valve seat, a valve cap member freely movable within said housing structure, said valve cap member comprising a resilient washer arranged to seat against said valve seat from time to time upon movement of said valve cap member, said washer comprising a substantially flat annular peripheral portion, a central cylindrical portion and an outer frusto-conical portion coaxial with said first conduit, said central cylindrical portion having a diameter slightly less than the insider diameter of said first conduit, and being arranged to fit within said first conduit when said washer is seated against said valve seat, said valve cap member having a peripheral sleeve portion arranged in closely spaced surrounding relation with respect to the outer wall of said second conduit, a chamber within said housing structure at the other side of said valve cap member, said space between the peripheral sleeve portion of said cap member and said outer wall of said second conduit providing a passageway communicating between said first and second conduits and said chamber for by-passing to said chamber water under pressure from said inlet opening, and means to temporarily release the pressure of water in said chamber to allow movement of said valve cap member away from said valve seat for flushing action through said first conduit, the interior wall of said peripheral sleeve portion of said valve cap member being formed at its inner end with a reduced diameter portion substantially co-extensive with the length of said central cylindrical portion of said washer, whereby said bypassing space is automatically substantially reduced in area just prior to the seating of said washer against said valve seat.



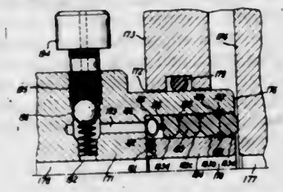
3,166,290
**GATE FOR USE IN IRRIGATION GATE LINES AND THE LIKE**
Roger M. Sherman, Palo Alto, Calif., assignor to Hiller Engineering Corporation, San Jose, Calif., a corporation of California
Filed Sept. 12, 1963, Ser. No. 308,457
5 Claims. (Cl. 251—145)



1. A gate adapted for use in an irrigation gate line of the type including an elongated pipe having at least one opening through the wall thereof, said gate comprising a cylindrical body member, the periphery of said body member being greater than that of the opening, sealing means at one end of said body member adapted to be positioned against the interior of said elongated pipe about the opening therein, a first lock member secured within said body member, said first lock member having a first and a second dimension in a plane transverse to said cylindrical body member, said first dimension being greater than said second dimension, a second lock member disposed about said first lock member, said second lock member including a pair of arms having end portions overextending said sealing means and adapted to be positioned against the exterior of said elongated pipe adjacent the opening therein, said second lock means defining an opening, the dimension of said opening corresponding to said first and second dimensions of said first lock member whereby said first and second lock members may be selectively released and secured together by relative rotation therebetween, and plate means in selective engagement with the other end of said body member for selectively opening and closing communication from the interior of said elongated pipe through said body member.

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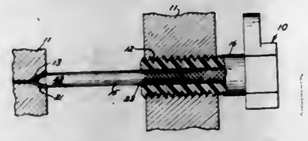
3,166,291
**VALVE CONSTRUCTION AND METHOD**
Marvin H. Grove, Piedmont, Calif., assignor to M & J Engineering Co., Houston, Tex., a partnership
Filed Apr. 25, 1962, Ser. No. 190,174
8 Claims. (Cl. 251—172)



1. In a valve construction for controlling fluid flow wherein body and valve parts are relatively movable between open and closed positions and have cooperating valve working surfaces, one of said parts having an annular recess formed therein and defined by at least one cylindrical surface and a bottom surface, a seal ring formed of resilient material disposed within said recess and with one peripheral surface of the same adjacent said cylindrical surface, said ring being sealed with respect to said one part, one end face of said ring engaging the valve working surface of the other valve part to form a seal therewith, snap-in means acting between said cylindrical surface and said peripheral surface of the seal ring for retaining the seal ring within said recess without preventing operating movements of the same, and spring means disposed between the bottom surface and the seal ring for urging said seal ring toward said other part.

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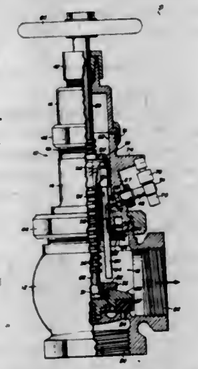
3,166,292
**CARBURETOR NEEDLE VALVES**
Benjamin G. Forman, Massapequa, N.Y., assignor to Formar Industries, Inc., New York, N.Y., a corporation of Illinois
Filed Aug. 20, 1962, Ser. No. 218,059
1 Claim. (Cl. 251—215)



In an improved carburetor needle valve, a body member having a threaded opening, a metallic centrally disposed core element, and a synthetic resinous outer sleeve element, said core element including an elongated shaft having a conically-shaped inner end thereon, and a cylindrical surface; said outer sleeve element having a tool-engaging means on an outer end thereof, and having a cylindrical core corresponding in diameter to that of the cylindrical surface of said core element, and having a threaded outer cylindrical surface; the threads on said threaded outer cylindrical surface being misaligned with respect to said body opening threads and mechanically distortable upon the engagement of the same within said threaded opening.

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3,166,293
**ADJUSTABLE STOP MEANS**
Glenn E. Specht, Charlestown, W. Va., assignor to Powhatan Brass & Iron Works, Ranson, W. Va., a corporation of West Virginia
Filed June 15, 1962, Ser. No. 202,784
4 Claims. (Cl. 251—285)

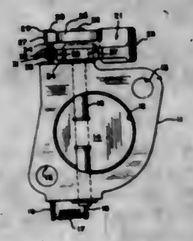


1. A valve comprising a housing having a fluid path between an inlet and an outlet, a valve seat formed in said path, a closure member complementary with said seat, a spindle attached to said closure member, said housing having a first interior opening threadably receiving said spindle and a second interior opening having a central axis parallel with the central axis of said first opening, means to reciprocate said spindle along its longitudinal axis, a stop collar adjustable along the length of said spindle, a rod having an irregular surface along its length slidably received in said second opening and movable

between said stop collar and the top of said closure member, a lock pad having an inner irregular surface disposed within said housing, and means supported by said housing moving said pad into and out of engagement with said rod.

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3,166,294
**BUTTERFLY VALVE**
Alexander G. Middler, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 1, 1961, Ser. No. 106,778
2 Claims. (Cl. 251—287)

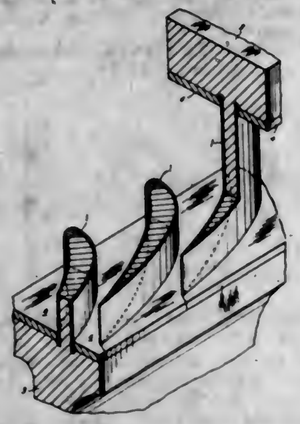


1. A butterfly valve comprising a housing having a flow passage therein, a shaft journaled by said housing, a closure member affixed to said shaft within said flow passage, said shaft and said closure member being rotatable from a closed position wherein flow is substantially retarded to an open position permitting flow, an end of said shaft extending adjacent said housing at one side thereof, a pin secured to said housing adjacent to said shaft with its longitudinal axis substantially parallel to said shaft, a coil spring encircling said pin, and a motion limiting member affixed to said shaft end for rotation therewith, said motion limiting member having a first portion adapted to contact said coil spring upon movement of said closure member into its open position and a second portion adapted to contact said coil spring upon movement of said closure member to its closed position to absorb the inertial energy of said motion limiting member, said closure member, and said shaft upon impact-contact of said portions with said coil spring.

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3,166,295
**GUIDE WHEEL FOR CONDENSING TURBINES OF GREAT AND GREATEST POWER**
Robert Tadeusz Szewalski, Gdansk, and Benedykt Teodor Wiecierak, Warsaw, Poland, assignors to Zaklady Mechaniczne Im. Gen. K. Swierczewskiego
Filed Aug. 23, 1960, Ser. No. 51,759
Claims priority, application Poland, Aug. 24, 1959, P 91,903
1 Claim. (Cl. 253—78)

A turbine guide wheel comprising, in combination, a first annular plate member composed of a plurality of sections welded together and having edges defining circumferentially spaced stream lined openings in said plate member; a second annular plate member composed of a plurality of sections welded together to define circumferentially spaced stream lined openings in said second plate member, said first and second plate members confronting each other so that corresponding openings in the first and second plate members are aligned; and a set of rigid tubular blades extending between said first and second plate members, each blade including a rigid curved plate means shaped to provide a stream lined cross section for the blade matching a pair of openings in said first and second plate members, the ends of each blade being located in a pair of said openings, respectively and positioned adjacent to said edges of said first and second plate members, respectively; a pair of cast annular members respectively welded to said plate members and closing the open ends



of said blades; and cast cores in said tubular blades forming an integral cast structure with said cast annular members.

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3,166,296
**APPARATUS FOR EXTRACTING METAL STAPLES**
Michel Fournier, 26 Rue Croupin, Le Perreux (Seine), France
Filed Nov. 15, 1961, Ser. No. 152,526
Claims priority, application France, Dec. 28, 1960, 848,140
9 Claims. (Cl. 254—28)



1. A staple extractor, comprising in combination an upper and a lower jaw, a pivot, said jaws being pivoted at one of their extremities on said pivot, a blade pivoted on the upper jaw at a distance from said pivot extending toward the said lower jaw at an angle thereto and having an extremity designed to engage the crossbar of a staple to be extracted, said lower jaw being designed to constitute a support base and having a paper hold down and staple engageable stop means at its end remote from said pivot, and guide means provided on said lower jaw to guide the movement of said extremity of said blade engaging the crossbar of the staple toward said hold down and stop means as a consequence of the relative movement of said jaws.

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3,166,297
**CONNECTOR WITH TAKE-UP MEANS**
Henry G. Colmer, Jr., 4203 Belvedere St., Mobile, Ala.
Filed Sept. 7, 1961, Ser. No. 136,508
5 Claims. (Cl. 254—67)

1. A connector comprising, a base having a pair of spaced parallel side bars, the side bars each having an opposed plurality of longitudinally spaced notches forming a plurality of seats, a bridge member having means for seating in selected opposed notches of the pluralities of notches in the side bars, a nut rotatably carried by the bridge member, a screw threaded through the nut for axial movement longitudinally of the base when the nut is rotated, a hook carried at one end of the screw, means



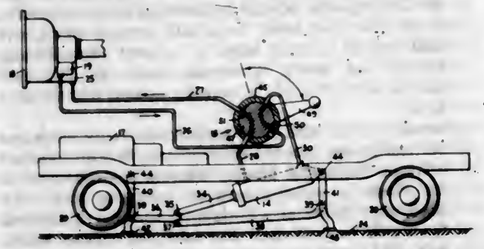
carried by the bridge member and coupled to the nut for manual rotation of the screw, and a carriage mounted



on the side bars for sliding movement therealong, said carriage supporting the hook and the end of the screw carrying the hook.

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3,166,298
**FLUID OPERATED MOTOR VEHICLE LIFTING JACK**
Peter Di Stefano, 3416 Grace Ave., New York, N.Y.
Filed Dec. 4, 1962, Ser. No. 242,146
1 Claim. (Cl. 254—86)

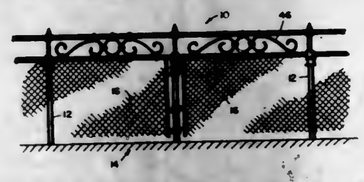


An inbuilt lifting jack for a motor vehicle, said lifting jack activated by the flow of transmission fluid through the transmission system of the motor vehicle, said lifting jack comprising the combination with a motor vehicle chassis including a pair of sides, a pair of oil cylinders, each of the oil cylinders adjacent one of the sides of the chassis and spaced therefrom, a horizontally reciprocating piston rod in each oil cylinder, a transmission, a hydraulic valve, the hydraulic valve interposed between the transmission and the oil cylinders, lines leading from the transmission through the hydraulic valve to the oil cylinders, the reciprocation of the piston rods in the oil cylinders caused by the flow of transmission fluid into and out of the oil cylinders; of a pair of longitudinally spaced legs pivotally mounted at one end to each side of the chassis, the other end of each leg defining a foot, one end of one leg of each pair having one of said cylinders secured thereto, first link means pivotally connected to said one leg of each pair, second link means pivotally connected to the other leg of each pair, said first and second link means being pivotally connected to each other remote from said legs of each pair, means pivotally connecting each of said piston rods to said second link means, control means on said valve for controlling the flow of oil into and out of said cylinders to thereby reciprocate said pistons to raise and lower said legs.

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3,166,299
**FENCE STRUCTURE**
Verino De Chellis, 250 Hyde Park Ave., Jamaica Plain, Mass.
Filed Sept. 17, 1963, Ser. No. 309,463
1 Claim. (Cl. 256—32)

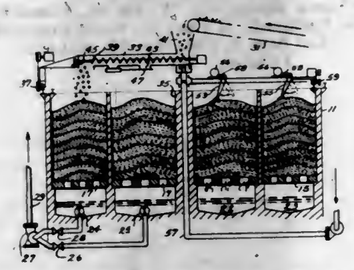
A fence structure comprising; an aligned plurality of vertical fence posts having their lower ends embedded in the ground; chain link fencing mesh extending along the line of fence posts and fastened thereto, said fencing mesh vertically positioned from adjacent the ground to adjacent the upper ends of said fence posts; a plurality of rail support caps seated upon said fence posts, each said rail support cap having a lower seat portion and an upper vertical rail support portion, said rail support portion having an I-beam shaped mid-section and enlarged top and bottom portions each having equal diameter cylindrical rail openings formed therein; two horizontal



continuous equal diameter tubular railings positioned through the rail openings in said rail support caps, the cylindrical interior surfaces of said rail openings dimensioned to provide a sliding fit and firm support to said continuous rails; sections of decorative scrollwork disposed between said continuous railings; and means for fastening said scrollwork to said railings.

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3,166,300
**STORAGE CONTAINER FOR CELLULOSIC PULP AND METHOD OF OPERATION THEREOF**
Johan C. F. C. Richter, St. Jean Cap Ferrat, France, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden
Filed Apr. 1, 1963, Ser. No. 269,246
Claims priority, application Sweden, Apr. 16, 1962, 4,186/62
11 Claims. (Cl. 259—4)



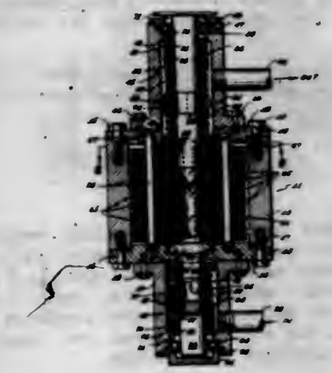
1. Method of storing and mixing cellulosic pulp in a container, consisting in spreading pulp supplied to the container for storage therein by displacing the point of supply of pulp horizontally over the container at a rapid rate, whereby pulp supplied within a short time interval is distributed over the entire bottom area of the container as a thin horizontal sheet, forming a great number of superimposed thin pulp layers by repeating said spreading operation, and discharging pulp from said container by means of flush water brought to flow in an inclined downwardly directed path across the pulp charge thereby bringing along and mixing pulp particles belonging to all of said layers into a suspension leaving the container.

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3,166,301
**MIXER**
William A. Wootten, Palos Verdes Estates, Calif., assignor to Magnetic Film and Tape Company, Inc., Gardena, Calif., a corporation of California
Filed Oct. 22, 1962, Ser. No. 232,003
7 Claims. (Cl. 259—21)

1. A mixing device comprising: a central shaft; a plurality of discs mounted on said shaft to be rotatable therewith but slidable axially thereof; a plurality of outer discs mounted for rotation about axes disposed adjacent to the peripheries of said central shaft discs, said outer

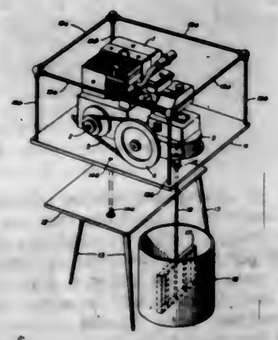
discs being interleaved with said central discs so that said central discs are separated from each other by said outer discs, said outer discs being freely rotatable and axially movable; means axially biasing said central and outer discs together; means for rotating said shaft; and means



for passing particulate material past the adjacent surfaces of said central and outer discs, the edges of said outer discs engaging not substantially outwardly of the peripheries of said central discs so as to prevent direct communication between the spaces between said central discs and the spaces outwardly of the peripheries thereof.

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3,166,302
**MIXING APPARATUS**
William Harris Dixon, 671 W. 4th St., Plainfield, N.J., and John Yankivich, 31 Deer St., North Plainfield, N.J.
Filed Nov. 8, 1963, Ser. No. 322,455
3 Claims. (Cl. 259—108)



1. Apparatus for mixing drywall cement in a cylindrical container which comprises

a rotatable vertical shaft provided with an upper end and a lower end,

a first pair of first and second horizontal blades vertically spaced from said lower end of said vertical shaft and respectively secured at first and second predetermined angles of equal magnitude but opposite orientation to diametrically opposite points on said vertical shaft so that the leading edges of said first horizontal blade and said second horizontal blade are respectively inclined at said first and second predetermined angles toward said upper end of said vertical shaft, wherein the combined horizontal extension of said first pair of horizontal blades is smaller than said uniform diameter of said cylindrical container,

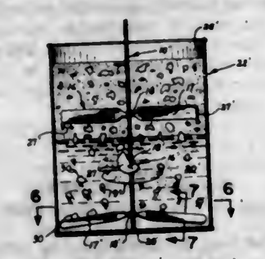
a second pair of third and fourth horizontal blades coplanar with said first pair of horizontal blades and respectively secured at corresponding third and fourth predetermined angles of equal magnitude but opposite orientation to diametrically opposite points on said lower end of said vertical shaft so that said first and third horizontal blades are vertically spaced from one another and said second and fourth horizontal blades are vertically spaced from one another, wherein the leading edges of said third and fourth horizontal blades are respectively inclined at said third and fourth predetermined angles toward said lower end of said vertical shaft, and the combined horizontal extension of said second pair of horizontal blades is equal to the combined horizontal extension of said first pair of horizontal blades,

a first pair of first and second vertical blades horizontally separated from one another by a spacing equal to said combined horizontal extensions of said first and second pairs of horizontal blades and secured between said first and second pairs of horizontal blades, wherein said first vertical blade is secured between said first and third horizontal blades so that the leading edge of said first vertical blade is parallel to and inclined away from said vertical shaft, and said second vertical blade is secured between said second and fourth horizontal blades so that said second vertical blade is parallel to said first vertical blade,

a second pair of third and fourth horizontally separated vertical blades secured between said first and second pairs of horizontal blades, wherein said third vertical blade is secured between said first and third horizontal blades at a horizontal spacing equidistant from said vertical shaft and said first vertical blade, and said fourth vertical blade is secured between said second and fourth horizontal blades at a horizontal spacing equidistant from said vertical shaft and said second vertical blade, and each of said third and fourth vertical blades is parallel to and offset in opposite directions from a vertical axis passing through the center of said vertical shaft and parallel to the leading edges of said first and second pairs of horizontal blades so that said third vertical blade is parallel to and nearer the leading edges of said first and third horizontal blades and said fourth vertical blade is parallel to and nearer the leading edges of said second and fourth horizontal blades.

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3,166,303
**POWER-DRIVEN MIXING APPARATUS**
Burton B. Chapman, 124 S. Almansor St., Alhambra, Calif.
Filed Aug. 9, 1961, Ser. No. 130,399
4 Claims. (Cl. 259—135)



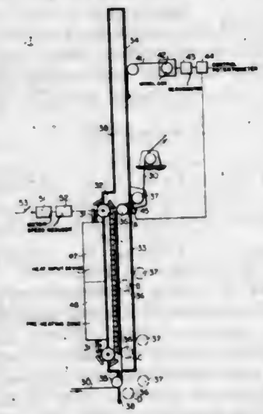
1. Power-driven mixing apparatus comprising a longitudinal shaft means, normally vertically directed when in use, having an upper portion adapted to be rotatively driven by a driving motor means, said longitudinal shaft



means being provided with projecting blade means including a first portion thereof comprising a plurality of individual blades each being substantially transversely carried by said longitudinal shaft means at longitudinally spaced locations therealong with said individual blades being provided at opposite ends thereof with downwardly and forwardly directed blade tip means for restricting centrifugal-force-caused outward splashing of a liquid medium adapted to be mixed by the blade means when rotated within a container, each of said plurality of individual blades comprising said first portion of said blade means being inclined upwardly and forwardly in the direction of rotation thereof and having an upwardly and forwardly inclined bottom surface whereby to exert a downward force upon a liquid medium to be mixed during rotation of said blade means by said driving motor means, said projecting blade means also including a second portion comprising a bottom blade substantially transversely carried by the longitudinal shaft means below said plurality of individual blades comprising said first portion of said blade means and being downwardly and forwardly inclined in the direction of rotation of said longitudinal shaft means and having a downwardly and forwardly inclined upper surface whereby to throw upwardly heavy constituents of the liquid medium being mixed by said blade means and to exert an upward force thereupon, the total area of said upwardly and forwardly inclined bottom surfaces of said plurality of individual blades comprising said first portion of said blade means being substantially greater than the total area of said downwardly and forwardly inclined upper surface of said bottom blade comprising said second portion of said blade means whereby to exert a net differential downward force upon the liquid medium to be mixed during rotation of said blade means by said driving motor means and whereby to produce an oppositely and upwardly directed net differential reactive force tending to partly neutralize the weight of the driving motor means, the longitudinal shaft means, and the blade means, and whereby to positively produce vertical circulation of the liquid medium which is to be mixed by reason of said unbalanced vertical forces produced thereon by said first and second portions of said blade means.

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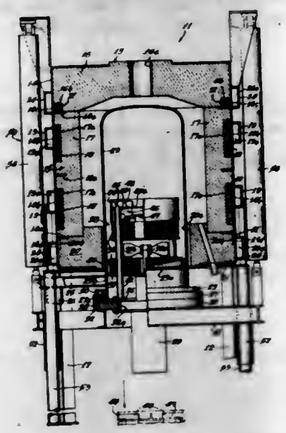
3,166,304
**HEATING MEANS FOR STRIP MATERIAL**
Alexander V. Alexeff, Cleveland, Ohio, assignor to Industrial Ovens, Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed May 26, 1961, Ser. No. 116,645
1 Claim. (Cl. 263—3)



Heating apparatus for treating a strip comprising first means for establishing a path along which the strip travels, at least one train of heating elements, second means for establishing a reach of said heating elements longitudinally coextending in the same direction as said path along a linear distance between an end of said reach and a train-and-strip-path juncture with respect to said path, said coextension establishing an area of presentation of said heating elements to said strip, means for varying said presentation area, said varying means comprising means for shifting at least one of said first and second means with respect to the other along said direction to vary said linear distance.

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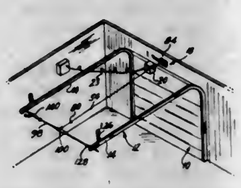
3,166,305
**GAS FIRED VACUUM FURNACE**
Vincent R. Troglione, Jonathan Smith, and Willard Roth, all of Meadville, Pa., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 23, 1961, Ser. No. 119,215
6 Claims. (Cl. 263—41)



1. A vacuum furnace comprising a pressure-tight cylindrical retort supported with the axis thereof extending vertically and having a closed upper end and an open lower end, a closure plate for said retort carried by an elevator vertically movable between an upper position in sealing engagement with said open lower end and a lowered position, a plurality of vertically spaced, horizontally disposed radiation shields mounted on the upper surface of said closure plate, and a work supporting means carried by said closure plate and positioned above said radiation shields, said work supporting means being spaced below said retort when said elevator is in said lowered position.

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3,166,306
**GARAGE DOOR OPERATOR**
Henry C. Peltier, Hackensack, N.J., assignor to Astrotec, Inc., Garfield, N.J., a corporation of New Jersey
Filed July 18, 1963, Ser. No. 295,947
17 Claims. (Cl. 268—59)

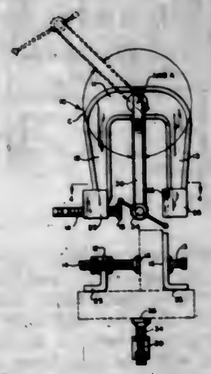


1. A motorized garage door operator for selectively opening and closing a sectionalized overhead garage door supported and guided by dual track means for shifting

the garage door between a closed vertical terminal position and an overhead open horizontal terminal position, said garage door operator comprising a horizontal central front-to-rear flexible elongated element fixed at its ends and located above the garage door, a drive assembly mounted on the door adjacent the top edge thereof, said drive assembly including traction means operatively engaging the elongated element for reversible movement therealong, follower means mounted for rotational movement about an axis relative to the garage door, said follower means being guided by the elongated element and thereby swinging to an operative location when the garage door approaches its closed vertical terminal position, said follower means being further mounted for movement along a different axis and moving along said axis to an operative location when the garage door approaches its open horizontal terminal position, means for energizing the drive assembly, and switch means carried by the garage door and mechanically responsive to the follower means to deenergize the drive assembly only when the follower means assumes either of its operative locations.

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**3,166,307**
**TRI-DIMENSIONAL CLAMPING DEVICE**
Harold L. Sego, 8292 Dorinda Drive, Pleasure Ridge Park, Ky.
Filed Jan. 9, 1963, Ser. No. 250,441
3 Claims. (Cl. 269—155)



1. An improvement in a tri-dimensional clamping device of the type utilizing a C clamp having a rigid main C frame presenting a major front face and including a main bight, a pair of main jaws having base and outer end portions with their base end portions integral with the bight, a main clamp screw threaded to the outer end portion of one jaw for screw movement across the mouth of the C toward and away from the outer end portion of the other jaw, and a pair of opposed work-engaging members in the mouth of the C, one fixed to the outer end portion of one jaw and the other carried by the adjacent end of said main clamping screw, comprising:

(A) auxiliary means located on the front face side of the main C frame, mounted on the bight thereof and arranged to cooperate therewith to form an auxiliary clamp of the C type,

(1) said auxiliary means including

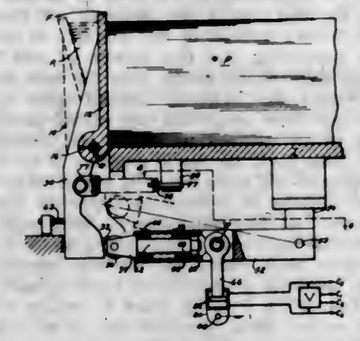
(*a*) an auxiliary jaw having base and outer end portions and being spaced forwardly from said front face with its base end connected to said main bight for angular movement (i) about an axis passing through the main C clamp adjacent the mid portion of its bight at a right angle to said major front face and (ii) extending over an angle corresponding to one formed between lines passing through said axis from opposite ends of the mouth of said main C clamp,

(*b*) an auxiliary clamping screw threaded to the outer end portion of said auxiliary jaw for screw movement toward and away from said front face, and

(*c*) an auxiliary work-engaging member carried by the front face end of said auxiliary screw for angular movement with said auxiliary screw and jaw over a range of clamping positions included in said angle and for lineal movement with said auxiliary screw and relative to said auxiliary jaw in a direction proceeding toward and away from said front face.

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**3,166,308**
**MOVABLE FRONT SIDE GAUGE FOR PAPER CUTTING MACHINES**
Carl Thumim, Lombard, Ill., assignor to Miehle-Goss-Dexter, Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,571
10 Claims. (Cl. 269—303)



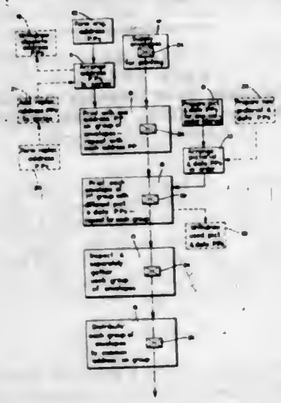
1. A front side gauge for paper cutting machines having a cutting table, said gauge comprising a guide plate and means for pivotally mounting said plate adjacent the side of the table to be engaged by the side of a paper pile; holding means for maintaining said plate normal to the plane of said table, actuating means for swinging said plate away from said normal position prior to a cutting operation so as to provide space for slanting transverse movement of said side of said paper pile while being cut, wherein said holding means comprises a spring, said actuating means comprising a spring dominated by said holding means spring, and means for precluding holding action of said holding means spring to permit said actuating means spring to actuate said guide plate.

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**3,166,309**
**METHODS FOR MAKING AND DISTRIBUTING PRINTED ARTICLES**
Joseph A. Pidgeon, 2920 Deer Track, Rte. 2, Box 737G, Tucson, Ariz.
Filed Feb. 11, 1963, Ser. No. 257,603
10 Claims. (Cl. 270—1)

1. The method of making and distributing a series of articles printed for a series of different individual persons with sequential alphabetic-indicia, different selected calendar-indicia for each article of each of a series of calendar intervals, and selected pictorial and textual matter for each article of each calendar interval; the steps of forming a series of individually different printing plates with alphabetic-indicia thereon each identifying a different individual person; alpha-sequentially arranging the individual plates in the series; preparing a series of printing plates for a calendar interval with different selected calendar-indicia of said calendar interval and selected pictorial and textual matter thereon; printing on a selected number of articles, corresponding in number to the number of plates in the calendar interval series, the alphabetic-indicia of one alphabetic-indicia-containing plate of the arranged series for an individual person; then printing on the selcted number of thus alphabetic-indicia-printed articles for an individual person, each article with different selected calendar-indicia and selected pictorial and textual matter from the series of calendar interval plates; gathering the selected number of articles thus printed with the same alphabetic-indicia and each article with





different calendar-indicia into a calendar interval pack for an individual person; repeating said successive alphabetic-indicia and calendar-indicia printing operations for each alphabetic-indicia-containing plate of the arranged series, thereby providing a pack of printed articles for the calendar interval for each individual person identified by the alphabetic-indicia plates of the series; distributing said packs to each individual person identified by the alphabetic-indicia printed thereon; then for the next calendar interval, withdrawing the series of calendar interval plates previously used and preparing a series of printing plates for said next calendar interval with different selected calendar-indicia of said next calendar interval and selected pictorial and textual matter thereon; and repeating the printing, gathering and distributing operations.

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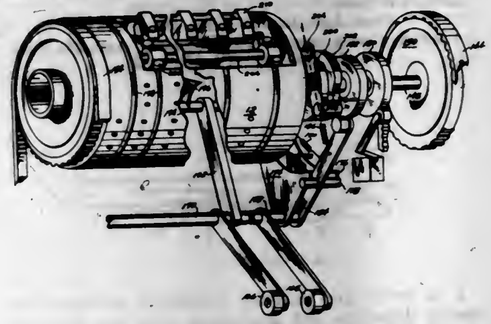
**3,166,310**
**DOCUMENT TRANSPORT APPARATUS**
Raymond E. Kittredge, Binghamton, N.Y., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Nov. 30, 1962, Ser. No. 241,222
10 Claims. (Cl. 271—5)

10. A document transport apparatus adapted for use with, and controlled by, a character recognition system comprising,

(*a*) means for retaining a supply of documents, each of said documents having at least one dimension in common;

(*b*) first vacuum means selectively operable by said character recognition system to feed one of said documents from said retaining means to a further station;

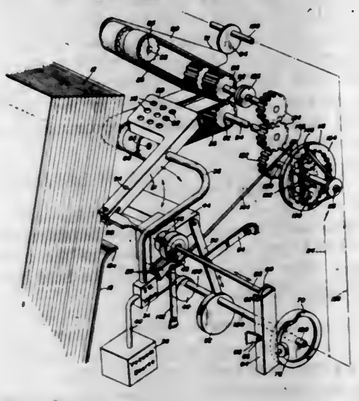
(*c*) a continuously rotating read drum including mechanical and second vacuum means in combination for maintaining a document in contact with the outer surface thereof, said second vacuum means including a plurality of apertures spaced about said outer surface of said read drum, means coupling all of said apertures to a suction means, each of said apertures comprising first and second sections, said first section being a recessed area in said outer portion having a first diameter and said second section being an orifice connected thereto having a second diameter, said first diameter being greater than said second diameter whereby each of said apertures applies said suction means to a document and alternatively reduces the coupling of said suction means to atmospheric pressure in accordance with the ratio of second to first diameters; and



(*d*) means responsive to the presence of a document at said further station for transporting said document to said drum and removing a preceding document from said drum each during a predetermined portion of a single cycle of rotation of said drum.

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**3,166,311**
**SHEET AND CARD FEED DEVICE**
Jacob Rabinow, Bethesda, Md., and John G. Macdonald, Washington, D.C., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 2, 1962, Ser. No. 227,751
5 Claims. (Cl. 271—12)



1. A feeder for card sets which include at least two flexible superposed sheets joined at one edge, means to retain the card sets in a stack, and an abutment extending across the face of the end set of the stack, means to engage the end set and bend a first part thereof about said abutment to thereby separate said first part from the stack and form the initial separation of the set from the stack, conveying means adjacent to said stack into which said first part of said set is fed by said set-engaging means, means for actuating said conveying means to complete the withdrawal of said set from the stack

by pulling the set over said abutment, and means timed with said engaging means to accelerate said conveying means when a set is presented thereto.

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**3,166,312**
**CONVEYING DEVICE**
**Karl Rehm, Konstanz (Bodensee), Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany**
**Filed Apr. 26, 1963, Ser. No. 275,818**
**Claims priority, application Germany, Apr. 28, 1962**
**20 Claims. (Cl. 271—32)**



1. A device for receiving irregularly arranged overlapping shipments and discharging them one at a time, comprising, in combination

(*a*) feed conveying means;

(*b*) a conveying section arranged to receive shipments from said feed conveying means and including

(1) a separating section having an input depth which is substantially larger than its discharge depth, and having a side wall defining a suction port for connection with a low pressure chamber, and

(2) suction conveying means disposed over the suction port and defining suction openings extending uniformly over the periphery thereof;

(*c*) discharge conveying means for gripping the leading edges of respective shipments moved forwardly by the suction conveying means and moving them at uniform speed to a discharge outlet, said discharge conveying means being disposed at a distance from said suction port which is less than the length of the smallest shipments to be processed; and

(*d*) at least one stripping means disposed between said suction port and said discharge conveying means for holding back overlapping shipments, the length *b* of the suction port as measured in the conveying direction being so short that it approximately satisfies the condition

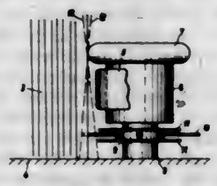
$$b<15\cdot d\cdot(n+1)$$

where *d* is the thickness of the thinnest shipments to be processed and *n* is the number of the multiple shipments which can simultaneously be held back by the stripping elements.

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**3,166,313**
**ARTICLE HANDLING DEVICE**
**Karl Rehm, Konstanz (Bodensee), Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany**
**Filed Aug. 24, 1961, Ser. No. 133,611**
**Claims priority, application Germany Aug. 27, 1960**
**16 Claims. (Cl. 271—86)**

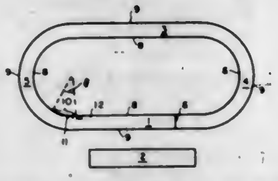
1. A stacking device for flat material to be conveyed, especially mail shipments, comprising, in combination: means forming a conveying path for shipments; a stationary wall against which the leading edges of shipments abut by being delivered from said conveying path; and a rotating stacking member at the delivery end of said path for aiding the stacking of shipments being delivered from said path against said wall by engagement with such shipments, said stacking member being a roller having bristle means extending therefrom and including bristles



which are relatively limited in their flexing movement in the axial direction of the roller with respect to their flexing movement in the radial direction.

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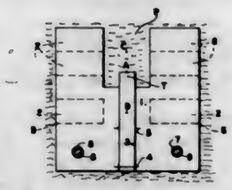
**3,166,314**
**RACE TRACK**
**Albert A. Weinstein, 2440 Sedgwick Ave., Bronx, N.Y.**
**Filed Apr. 18, 1962, Ser. No. 188,428**
**6 Claims. (Cl. 272—5)**



1. A race track comprising a generally fixed oval track having straight homestretch and backstretch portions interconnected by curved turn portions, a hub rail extending around the track along the inside edge and conforming to the shape of the track a portion of said hub rail along a turn portion preceding the homestretch portion being separable from the remainder and being movable, said movable portion comprising a curved section substantially adjacent the homestretch portion and a straight section remote from the homestretch portion movably connected to the curved section, and means for moving the said movable rail portion from a first position wherein the curved section connects together the fixed rail portion on the turn and the fixed rail portion on the homestretch and the straight section extends inside the hub rail, to an open position wherein the straight section forms a tangent to the fixed rail portion on the turn and to the curved section and the latter extends over the track running area spaced outward from the fixed rail portion on the homestretch affording an additional passing lane on the inside substantially at the beginning of the homestretch portion.

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**3,166,315**
**FLOATABLE DIVING ASSEMBLY**
**Harold A. Jewett, 5451 42nd St. NW., Washington 15, D.C.**
**Filed Aug. 18, 1958, Ser. No. 755,680**
**22 Claims. (Cl. 272—66)**



8. A watercraft

(*a*) having a deck providing a floor for users of the watercraft and also having buoyant portions at least partially underlying said floor,

(*b*) said watercraft further comprising a diving port re-entrantly located in respect to the preemptive boundary of said watercraft,

(*c*) said watercraft also comprising a springboard having a take-off surface for diving,

(*d*) which surface has a take-off edge at its front,

(*e*) said springboard being in operative proximity to water in said diving port,

(*f*) the total area of water-surface displaced by said watercraft, measured in the plane which includes the water level, being within the range of 10 to 640 square feet.

(*g*) at least one point in said take-off edge being within the distance $M/X$ from the axis of uniform sinkability of said watercraft,

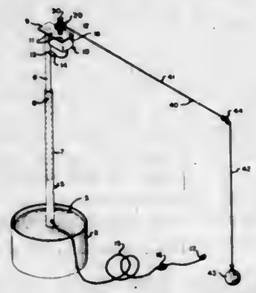
(*h*) M being the maximum distance, measured in said plane, from said axis to any point in the area of water-surface displaced by said watercraft, and

(*i*) X being at least $\frac{4}{3}$.



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**3,166,316**
**BATTING PRACTICE DEVICE COMPRISING A TETHERED BALL DRIVEN BY A MOTOR THROUGH A FRICTION CLUTCH**
**Robert E. O'Leary, McKeesport, Pa., assignor to Olos Corp., Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 10, 1963, Ser. No. 286,574**
**3 Claims. (Cl. 273—26)**

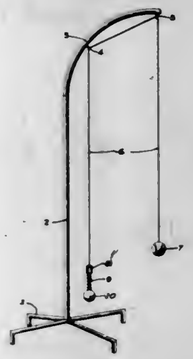


1. A batting practice device comprising a rigid vertical post member, tether ball means including a ball secured to a line which in turn is secured to a stiff flexible horizontal arm member, motor means disposed near the upper end of said post member, said motor means having a rotating drive member, and tether carrying means in which said arm member is secured, said tether carrying means being connected to said drive member through frictionally engaging clutch means whereby said tether carrying means and the tether ball means are rotated horizontally with respect to said post member, said clutch means permitting said tether ball means and tether carrying means to be rotated by external forces against the rotational movement of the drive member without injury to said motor means, and means for selectively varying the degree of frictional engagement of said clutch means, whereby the power imparted from said motor means to said tether carrying means may be selectively varied to control the rotational speed of said tether ball means.

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**3,166,317**
**BATTING PRACTICE AND TRAINING DEVICE**
**Eugene E. Tumelson, 1367 Lamboll St., Jacksonville, Fla.; Evelyn Tumelson, administratrix of said Eugene E. Tumelson, deceased**
**Filed May 31, 1962, Ser. No. 198,967**
**4 Claims. (Cl. 273—26)**

1. A ball game training device supported on the ground comprising a base, an elongated post having one of its ends connected to said base and extending generally vertically therefrom, an elongated arm having one of its ends connected to the other post end, the other arm end being spaced horizontally outwardly from said post, a first eye attached adjacent to said other arm end, a second eye attached to said arm spacedly between said arm ends, an elongated cord threaded through said eyes and having end portions wherein one end portion is adjacent said post and the other end portion is remote therefrom, said second eye being spaced outwardly from said post sufficiently to prevent entanglement of said one cord end portion around said post during movement of said cord, a ball securely attached to said other cord



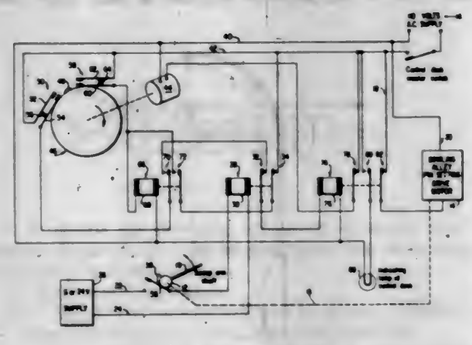
end portion, cushioning means attached to said one cord end portion for stopping said cord, said ball being suspended by said cord from said first eye, said ball being adapted and arranged for swinging on said other cord end portion and for striking by player whereby said ball moves in a free trajectory path, said cord moving through said eyes during the movement of said ball in its trajectory path, said cord being limited in its movement by said cushioning means engaging said second eye thereby stopping said ball in its trajectory path, said cord extending outwardly from said one eye sufficiently for said ball to engage the ground after said cushioning means stops said ball in its trajectory path.

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**3,166,318**
**AUTOMATIC INDICATORS AND CONTROLS FOR BOWLING ALLEYS**
**Meredith M. Barger, Marlow Heights, Md. (4803 Hagan Road, Temple Hills, Md.)**
**Filed Jan. 2, 1962, Ser. No. 163,627**
**6 Claims. (Cl. 273—54)**

5. A control and indication system for inhibiting unauthorized use of a bowling alley, said bowling alley having automatic pin-setting equipment including a deadwood sweep arm, comprising a first source of power, a second source of power, first and second normally open switch means each having one contact connected to said first source of power, means coupling said first and second switch means to said interval defining means for successive closure respectively thereby, a first relay circuit having its operating winding connected to the other contact of said first switch means and to said first source of power, a second relay circuit having its operating winding connected to said second source of power, a normally open switch between said second source of power and the operating winding of said second relay circuit, means coupling said normally open switch to the deadwood sweep arm for closure of the switch when the sweep arm is moved to clear the alley of deadwood, normally open

contacts closed by operation of said first relay and normally closed contacts opened by operation of said second relay, a third relay including a third relay circuit, said second normally open switch means being circuit connected through said contacts of said first and second relays to the operating windings of said third relay whereby said third relay is energized only if the contacts of said first relay circuit are closed and the contacts of said second relay circuit remain closed within an interval before closing of said second switch means, a pair of nor-



mally closed contacts in said third relay circuit connecting said first source of power to said interval defining means, a second pair of normally closed contacts in said third relay circuit connecting first source of power to the automatic pin-setting equipment of the bowling alley, indicating means, and a pair of normally open contacts connecting said indicating means to said first source of power.

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3,166,319

## TUBULAR LAMINATED GOLF CLUB SHAFT AND METHOD OF FORMING SAME

Arnold R. Brilhart, Carlsbad, Calif., assignor to Brilhart Musical Instrument Corporation, Carlsbad, Calif., a corporation of New York

Filed Mar. 20, 1961, Ser. No. 96,834
12 Claims. (Cl. 273—80)



1. A tubular laminated golf club shaft comprising a hollow shaft including a plurality of successive radially spaced layers of cloth and metal bonded together in lengthwise contacting relation, each of said metal layers having a thickness in the range of .001" to .004" and forming a spiral in cross section at any point lengthwise of said shaft, at least some of said layers of cloth being radially spaced by an intermediate layer of metal.

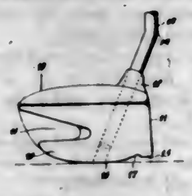
7. The method of forming a laminated golf-club shaft from a layer of fabric and a layer of metal having a thickness in the range of .001" to .004", one of said fabric and metal layers being coated with an adhesive selected from the group consisting of an epoxy resin and a phenolic resin suitable for bonding said metal layer to said fabric layer, comprising the steps of arranging said layers in contacting lengthwise relation, rolling said layers while in contacting relation into a generally cylindrical form comprising a plurality of turns wherein said metal layer is situated intermediate said fabric layer, and curing said adhesive to bond said metal and fabric layers together.

3,166,320

## GOLF CLUB

John Henry Onions, Alma House, Upper Spring Lane, Kenilworth, England

Filed Nov. 20, 1961, Ser. No. 153,493
Claims priority, application Great Britain, June 29, 1961, 23,503/61
1 Claim. (Cl. 273—80)



A golf club of the wood type comprising a head provided with a substantially flat striking face and having a sole, a toe portion, and a heel end, a straight hosel formed at the heel end and having a longitudinal hole which extends into the club head behind the striking face nearly to the sole, said hosel being inclined upwardly and rearwardly away from the toe portion and forwardly toward the striking face of the club so that the hole extends obliquely downwardly towards the toe portion of the head and rearwardly away from the striking face, a longitudinal shaft having a straight short lower end inserted into the hole a sufficient distance so that it is positioned behind the striking face and a straight upper long end, said shaft having a single bend adjacent the point where the shaft emerges from the hosel to form a line of demarcation between said ends with the upper end being substantially greater in length than the lower end, said upper end of the shaft being disposed relative to the striking face of the head so that said flat striking face of the club lies behind a plane which is transverse to the plane in which the club swings when striking a ball with said flat striking face and contains the longitudinal axis of the upper end of the shaft and means fixedly securing the lower end of the shaft in the hole.

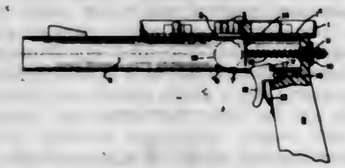
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3,166,321

## BALL PROJECTING GUN WITH BALL FEEDING OBSTACLE GAME TABLE

Myron Fleishman, 3471 Fenton Ave., New York 69, N.Y.

Filed July 20, 1962, Ser. No. 211,232
2 Claims. (Cl. 273—95)



1. A toy obstacle gun comprising a table having an opening therein guarded by a plurality of upwardly projecting obstacle members for a projectile adapted to pass through said opening, a device carrying the table and consisting of a tubular member having an opening corresponding with that of the table and in register therewith, a handle receiving and securing the tubular member under the table, spring-engaged means for projecting said projectile out of said tubular member, said last named means consisting of a plunger rod within the tubular member rearwardly of its opening and projected through the rear of the handle, a coiled spring encircling the plunger rod, and a detent member adapted to releaseably hold a projectile against movement toward the discharge end of the tubular member and having action forwardly of the opening in the table.

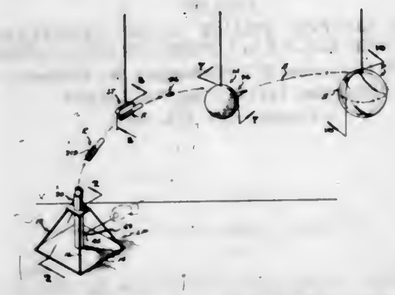


3,166,322

## TOY SATELLITE SYSTEM

Leonard Branneman, 9 Sheffield Road, Winchester, Mass.

Filed Oct. 1, 1963, Ser. No. 313,026
5 Claims. (Cl. 273—95)



1. A satellite system comprising a launch pad, a space station spaced above and down-line from the launch pad, said station having a magnet on its underside, a moon in line with and spaced down-line from the space station and having a magnet on the side thereof remote from the station, a planet in line with and spaced down-line from the moon, said planet having rotating magnet means therein, a multi-stage rocket having a magnet on its upper side to be attracted to and held by the space station magnet when launched from the launching pad, said rocket having a second stage and means for launching the second stage toward the moon as the rocket reaches and is secured to the space station, said second stage having a magnet to be attracted to and held by the magnet of the moon, said second stage having a releasable magnetizable satellite, and means for launching the satellite toward the planet as the second stage is secured to the moon, the satellite being adapted to be attracted and moved around the planet by its rotating magnet means.

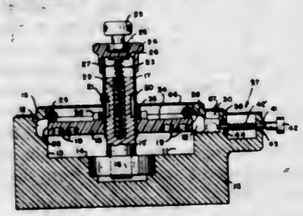
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3,166,323

## POCKETED BALL GAME WITH PROJECTING MEANS

Thor A. Anderson, 500 Brookside Drive, Fairfield, Conn.; Amy W. Anderson, executrix of said Thor A. Anderson, deceased, assignor of one-half to Alvan J. Schmedlin, Jr., Trumbull, Conn.

Filed Feb. 9, 1962, Ser. No. 172,166
8 Claims. (Cl. 273—119)



1. In a game, a base; a circular chamber having a side wall with an upper extremity located within said base; a post mounted in, and concentric with, said chamber and extending vertically thereabove; an annular track means of a diameter greater than that of said chamber located within the side wall of said chamber, beneath the upper extremity of said side wall and in communication with said chamber; a rotatable disk mounted on said post and adapted to be moved axially of said post between upper and lower limits; means for resiliently urging said disk to its upper position where its peripheral edge cooperates with the upper extremity of said chamber side wall to block access from said chamber to said track means; balls adapted to roll at random on the top of said disk; ball-receiving means in communication with said track means, whereby upon spinning said disk, the balls thereon are given a radially outward and orbital motion, and movement of said disk to its lower limit causes said balls to enter said track means and ultimately to enter said ball-receiving means; and manually operable means for ejecting the balls from said ball-receiving means to said disk when said disk is at its lower limit.

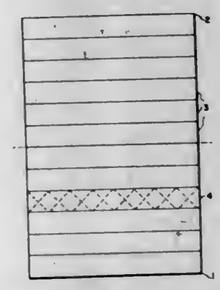
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3,166,324

## GAME PLAYED WITH A BOARD AND SYMBOL MATCHING COUNTERS

Philip E. Diamant, 63 Belltown Road, Stamford, Conn.

Filed May 31, 1962, Ser. No. 198,850
5 Claims. (Cl. 273—131)



1. A game consisting of a board and sets of counters, (*a*) the board having a starting line and a finish line and representing a course between the two made up of successive symbol matching strips defined by spaced, essentially parallel, line markings, each strip having a width sufficient to accommodate the corresponding dimension of the counters used and a length at least sufficient to accommodate simultaneously at least one each of said sets of counters, each symbol matching strip being devoid of vertical dividing lines defining distinctly recognizable zones of width commensurate with the corresponding dimension of a single counter,

(*b*) the sets of counters being for at least two players and each counter being provided with two symbols, and

(*c*) all of the counters of each set having a common basic symbol and a second symbol different from the basic symbol, at least one such second symbol being different from the others and at least one second symbol corresponding to the basic symbol of another set of counters.

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3,166,325

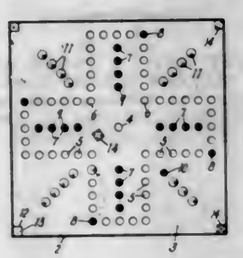
## GAME APPARATUS HAVING PLAYING BOARD WITH MARBLE RECEIVING HOLES AND DICE RECEIVING OPENINGS

Harry W. First, Benton Harbor, Mich., assignor to Co-5 Company, Inc., Benton Harbor, Mich., a corporation of Michigan

Filed Apr. 20, 1962, Ser. No. 189,129
2 Claims. (Cl. 273—134)

2. A game apparatus comprising a rectangular box-like outer body member having vertical side walls, a plate-like second body member having a planar top surface fittingly disposed within said outer body member and having a central hole therein and a first series of holes disposed in Maltese cross formation, there being a plurality of holes in each reach thereof, said second body member also having a series of holes disposed radially of said central hole and centrally between and in parallel relation to the holes constituting the side reaches of the arms of said

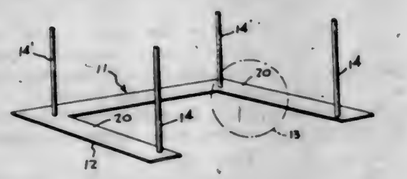
first series of holes, said first body member having distinctive coloring below said radial series and below the outer hole of one reach of each arm of the holes constituting the Maltese cross series, sets of marbles having distinguishing colors thereon corresponding to the colors of said distinctive coloring of said holes, said second body



member also having angular notches in its corners coacting with the walls of said outer body member to provide dice sockets, and dice adapted to be supportedly positioned in said dice sockets or to be played on the surface of said second body member.

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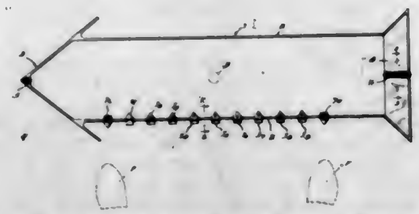
**3,166,326**
**DEVICE FOR INDICATING AN IMPROPER PUTTING STROKE**
**John E. Mundy III, Liberty St., Waynesboro, Ga.**
**Filed Sept. 7, 1962, Ser. No. 222,161**
**1 Claim. (Cl. 273—186)**




In combination, a golf putter, an outdoor golf ball, and a golf putting practice device, said practice device comprising a generally U-shaped flat rigid base of generally rectangular shape defining an open-ended enclosure of sufficient width to receive said outdoor golf ball, said base having opposed parallel side arms spaced apart by a distance greater than the diameter of said golf ball, a pair of upstanding pin elements secured respectively to the forward and rear end portions of each side arm, said pin elements being of substantially uniform height and being substantially greater in height than the diameter of said outdoor golf ball, whereby the top ends of the pin elements are located a substantial distance above the head of said golf putter when the putter head is engaged against said outdoor golf ball received in the enclosure, the side arms being separated by a distance such that there is approximately an inch of extra space between each arm and the adjacent end of the head of said putter disposed transversely therebetween, said pairs of upstanding pin elements being located in parallel vertical planes spaced apart by a distance only a relatively small amount greater than the length of said head of the golf putter, whereby to define an unimpeded guide path for said putter head when said head is swung correctly during a full putting stroke commencing in back of the base and continuing until the head comes into contact with said golf ball disposed in the forward portion of said enclosure, the bottom ends of the pin elements being substantially flush with the bottom surface of said flat rigid base.

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**3,166,327**
**ARROW-SHAPED FRAME WITH ADJUSTABLE FOOT AND GOLF-BALL POSITION INDICATORS**
**Robert S. Champion, 873 Washington St., Elmhurst, Ill.**
**Filed Oct. 16, 1961, Ser. No. 148,008**
**6 Claims. (Cl. 273—187)**

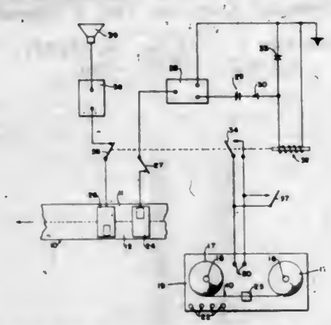


3. As an article of manufacture, a golf instructional device comprising a base structure including a frame-like structure including a longitudinally extending side member, said side member extending parallel to the direction of flight and along which and spaced from the longitudinally extending side member a golf ball is to be placed, an angularly arranged member affixed to the side member at the front end thereof providing an angular-shaped head portion, a tail portion affixed to the rear end of said side member to form a general arrow-like indicating means for aligning the arrow-like indicating means in the direction desired in the flight of a golf ball, foot-positioning indicia means operatively carried by said longitudinally extending side member and slidably movable relative to the side member for indicating the desired stance position of each foot of the user, ball-locating indicia means similarly formed and oppositely positioned to said foot-positioning indicia means and operatively carried by the aforesaid side member of said base structure for simultaneously individually indicating the desired position of a golf ball for the indicated stance position of each of a plurality of different golf clubs, said last-mentioned ball-locating indicia means reversed in direction to the foot-positioning indicia means for locating the golf ball parallel to the side member along the longitudinal axis of the base structure, and sighting means provided contiguous to the leading and trailing ends of said base structure by aligned ends of said angularly arranged member and said tail portion of said frame-like structure, and said aligned ends of the angularly arranged member and said tail portion being in the line of flight of a ball placed intermediate thereof and spaced from the side member in said line of flight.

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**3,166,328**
**MAGNETIC TAPE RECORDING AND PLAYBACK SYSTEMS**
**Irving Roberts, 182—18 Henley Road, Jamaica, N.Y.**
**Filed July 25, 1962, Ser. No. 212,365**
**6 Claims. (Cl. 274—4)**

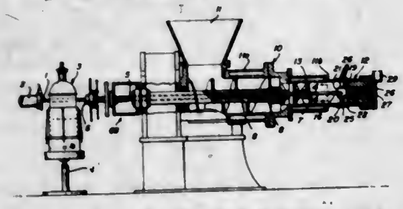
1. A magnetic tape playback system comprising a magnetic tape carrying a continuously related sequence of information recorded at a first relatively slow normal speed, a control signal carried by said tape and coextensive with preselected portions of said information, means selectively advancing said tape at said normal speed, and at a relatively rapid speed, and means responsive to said control signal alternatively advancing said tape at said normal and at said rapid speed, whereby to play back and rapidly



bypass alternate successive portions of said recorded information as delineated by said control signal.

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**3,166,329**
**APPARATUS AND METHOD FOR INSERTING INDICIA IN SOAP**
**James Garvey, P.O. Box 669, Station A, Vancouver, British Columbia, Canada**
**Filed Sept. 11, 1961, Ser. No. 137,293**
**12 Claims. (Cl. 264—171)**

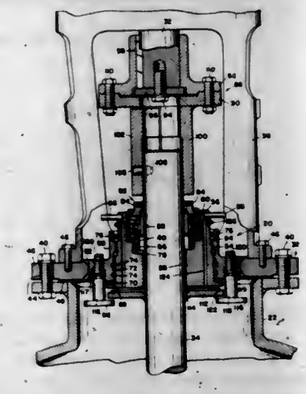


1. A method of forming in a finishing plodder a continuous column of soap consisting of body soap surrounding a rod of indicia, comprising the steps of: (*a*) coating said rod with a bonding solution; (*b*) simultaneously advancing the rod and body soap through the plodder while preventing contact therebetween until a predetermined location near the exit end of the plodder; (*c*) creating a region of reduced pressure on said body soap at said predetermined location; (*d*) permitting in said region at least partial contact between said body soap and said rod whereby the rod is automatically drawn into the mass of said body soap and the same is formed around the rod; (*e*) further advancing the rod and body soap past said region whereby the body soap is compressed about the rod and is bonded thereto.

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**3,166,330**
**SEALING MEANS FOR RECEPTACLE SHAFT OPENING**
**Richard D. Boutros, Fairport, N.Y., assignor to Mixing Equipment Co., Inc., Rochester, N.Y., a corporation of New York**
**Continuation of application Ser. No. 848,995, Oct. 27, 1959. This application July 12, 1962, Ser. No. 212,181**
**14 Claims. (Cl. 277—8)**

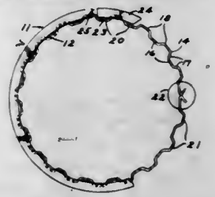
1. In a shaft construction for use with a fluid containing receptacle having an opening therein, said construction comprising a rotatable shaft element extending through said opening; driving means; means for separably connecting said driving means to said shaft element; a closure member attachable to the receptable adjacent the opening therein and having an opening therethrough for the reception of said shaft element; and mechanical sealing means associated with said shaft means and said closure member for sealing said opening in said closure member, the improvement comprising: formation of said shaft element to define a discontinuity therein having a non-axial surface and positioned inboard of said mechanical sealing means; means associated with said closure member and cooperable with said discontinuity for holding said shaft element in situ against axial movement; said driving means being separable from said shaft element at said connecting means for allowing removal and



replacement of said sealing means, said holding means being movable from a first position out of engagement with said shaft element to a second position in engagement with said non-axial surface of said discontinuity of said shaft element for holding said shaft element in situ against axial movement when said driving means and said shaft element are separated for removal of said mechanical sealing means.

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**3,166,331**
**PISTON RING SPACER-EXPANDER WITH OVERLAP INDICATION MEANS**
**Frank G. Warrick, Muskegon, Mich., assignor to Sealed Power Corporation, Muskegon, Mich., a corporation of Michigan**
**Filed June 25, 1962, Ser. No. 205,030**
**21 Claims. (Cl. 277—139)**



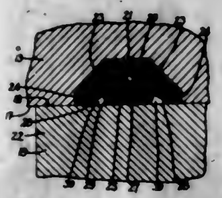
1. A spacer-expander for supporting, spacing and outwardly urging generally flat, parted rails in a piston oil ring comprising a parted ring of the self-supporting type, said parted ring having ends that abut when said spacer-expander and said rails are disposed in an oil ring groove and said spacer-expander is in its operative circumferentially-compressed condition, each of said ends being provided with a return bent portion, each return bent portion forming an acute included angle with the contiguous portion of said parted ring.

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**3,166,332**
**PRESSURE ASSEMBLY COMPRISING A SEALING STRIP OF ELASTOMERIC MATERIAL HAVING COMPRESSIBLE GAS CELLS**
**Richard Laurence Olson, Chicago, Ill.**
**Filed May 26, 1961, Ser. No. 123,917**
**5 Claims. (Cl. 277—171)**

1. A pressure assembly comprising:
a pair of separable substantially rigid members with

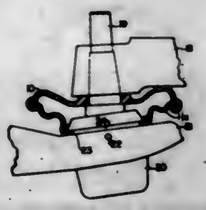
opposed parting faces providing a parting joint about a cavity to be substantially sealed against a fluid pressure differential,
one of said members having in its parting face an elongated recess opening therefrom toward the opposing parting face,
a strip of elastomeric material having substantially separate, independently acting, small, generally bubble-like gas cells having flexible interconnected walls of the elastomeric material,
said strip having a main portion sealingly engaged in



and initially filling said recess, said strip having an initially outwardly projecting rib portion containing said bubble-like gas cells which extend approximately to an outer surface so that said gas cells may be compressed and conformed to the parting face of the other member and to any irregularities thereon, and said rib portion being compressibly displaced by said parting face of said other member entirely into the initial volume of said main portion by the elastic volume reduction of said gas cells in said main portion.

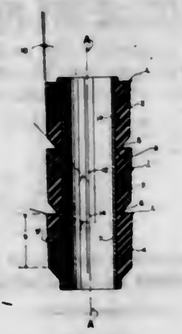
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3,166,333
ARTICULATED SEAL
John W. Henley, Willoughby, Ohio, assignor to The Eagle-Picher Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 18, 1961, Ser. No. 110,972
3 Claims. (Cl. 277—199)



1. A seal for enclosing a joint defined by two members adapted for movement with respect to each other about a common point of the joint, said seal comprising two substantially cup-shaped elastomeric members of hard rubber having rim portions disposed substantially in registry with each other, the rim portion of one cup-shaped member having a circumferential groove, the rim portion of the other cup-shaped member having a circumferential lip portion adapted snugly to engage such groove, each of the cup-shaped members having means to engage one of the relatively movable joint members, said hard rubber of the cup-shaped members providing desirable wear characteristics and yet enabling by said defined structural relation therebetween a distribution of the forces attendant flexing over a relatively wide area of the cup-shaped members as said joint members are moved with respect to each other.

3,166,334
MULTIPLE ELEMENT SWAB
Thomas C. Waldrop, Arlington, Tex., assignor to Empire Rubber Company, Grapevine, Tex., a corporation of Texas
Filed June 27, 1963, Ser. No. 291,151
6 Claims. (Cl. 277—208)



1. A resilient swab structure comprising an elastomeric body of circular cross-section taken transversely of the axis of the swab, and said body including multiple mutually adjacent similar swabbing elements each of axial length greater than one-third the diameter of the swab and each having an upwardly and outwardly tapered frustoconical side wall making an angle in the range of ½–3 degrees with respect to said axis, and the elements being separated by annular grooves extending into the body by a distance which is less than one-quarter the diameter of the swab, the lower end of each swabbing element tapering into the bottom of the groove at an angle between 45 and 60 degrees with respect to said axis, and the upper end of each swabbing element falling into the bottom of the groove at an angle of 75 to 90 degrees with respect to said axis, and metal reinforcing means embedded in the body at a diameter near to but less than the bottoms of the grooves and extending the full length of the body.

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3,166,335
EXPANDING MANDREL ASSEMBLY
William L. Mason, Pequea Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed May 6, 1963, Ser. No. 278,065
4 Claims. (Cl. 279—2)

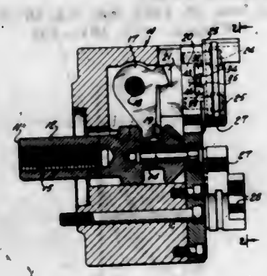


1. An expanding mandrel assembly comprising in combination a hollow, open-ended, cylindrical rubber sleeve having raised external flanges at each end thereof, a pair of supporting cylindrical caps having shoulders thereon adapted to receive said flanges, said shoulders having sufficient depth to form a gap between the outer edges of said flanges and the inner corresponding surfaces of said shoulders to allow said flanges to bend outwardly in the axial direction during expansion of said sleeve, the caps being mounted on the open ends of said sleeve to form airtight seals thereon, and means for admitting air under pressure into the sealed interior of said sleeve to cause said sleeve to expand, and supporting means for said caps and said expanded sleeve.



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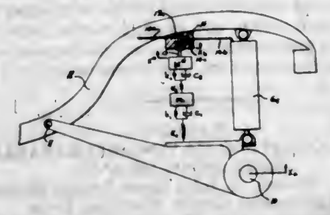
3,166,336
ADJUSTABLE JAW KEYWAY
Richard B. Goodrum, Kensington, Conn., assignor, by mesne assignments, to The Cushman Chuck Company, Hartford, Conn., a corporation of Connecticut
Filed Jan. 15, 1962, Ser. No. 166,347
13 Claims. (Cl. 279—123)



1. In a chuck having a plurality of radial keyways and work-clamping jaws respectively movable radially in said keyways, means for adjusting the radial position of a jaw comprising adjusting means having a wall disposed at an acute angle relative to a direction of movement of said jaws,
said adjusting means being movable in a direction parallel to said wall and to control the relative position of a said jaw in a said respective keyway,
and means cooperating with said adjusting means to adjustably secure said adjusting means in fixed position along said direction of movement,
and calibration means on said adjusting means to precisely determine the degree of movement.

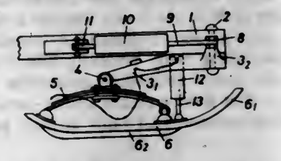
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3,166,337
VEHICLE SUSPENSION
Marvin Panzer, Staten Island, N.Y., assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 17, 1961, Ser. No. 132,218
6 Claims. (Cl. 280—6.1)



1. In combination in a suspension for an automotive vehicle, a vehicle body, an axle secured to said body for vertical movement with respect thereto and substantially limited to such vertical movement, resilient support means carrying said body above said axle and transferring the weight of the body to said axle, and dynamic vibration absorber means including a plurality of masses substantially smaller than the mass of said axle serially resiliently connected thereto and to each other independently of said frame for vertical movement only relative to said frame and said axle, each of said masses being connected to its respective support by way of a hydraulic damper and a first spring in parallel connection with each other.

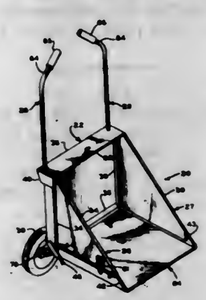
3,166,338
STEERING MEANS FOR VEHICLES
Håkon Ole Romedal, Marcellis gate 27, Oslo, Norway
Filed Mar. 13, 1963, Ser. No. 264,950
Claims priority, application Norway, Mar. 16, 1962, 143,678
3 Claims. (Cl. 280—21)



1. Means for the steering of vehicles provided with skids, wherein each skid is pivotably mounted on an approximately vertical axis positioned adjacent to the foremost end of the skid, the individual skid being connected to a fixed frame of the vehicle through one arm of a substantially horizontal bell crank lever which is pivotably mounted about a substantially vertical axis and the other arm of which is connected to a control means.

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3,166,339
FOLDING LAWN CART
Samuel C. Earley, Toledo, Ohio, assignor to Sam C. Earley Corporation, Toledo, Ohio, a corporation of Ohio
Filed Nov. 17, 1961, Ser. No. 153,162
5 Claims. (Cl. 280—36)



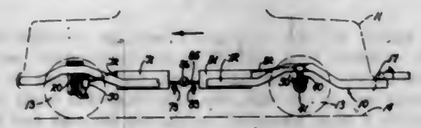
1. In a loose material carrying cart of the type comprising a bottom and a front and an open position for carrying said loose material and a closed position for storage; the improvement comprising outwardly directed, fixably secured, flanges on said bottom, an outwardly directed lip on said bottom extending between said outwardly directed flanges, mating flanges fixably secured on said front directed toward said bottom, a mating lip on said front extending between said mating flanges and directed toward said bottom, and means for pivotally connecting said mating flanges to said outwardly directed flanges for swinging movement about an axis adjacent to but spaced from both said lips whereby said lips move from substantial juxtaposition in said open position for containing said loose material to a spaced apart position in said closed position forming a slot therebetween for the passage of material residue.

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3,166,340
AUTO CHASSIS LEVELING DEVICE
Theodore C. Rusconi, 927 W. Fairmont, Fresno, Calif.
Filed Apr. 12, 1962, Ser. No. 187,013
3 Claims. (Cl. 280—104)

1. In a vehicle having a longitudinally extended frame supported at opposite ends by respective pairs of laterally opposed wheels, the wheels at one end each being mounted on separate axles rotatably mounted in a housing, the

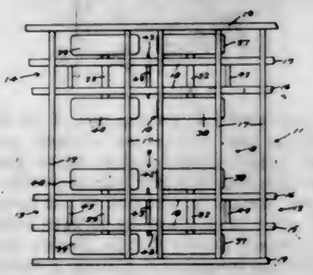
wheels at the opposite end each being mounted on axles resiliently connected to the frame by independent suspension means including upper and lower support arms pivotally connected to a frame and a spring connected between the frame and the lower support arm thereby to support the frame on the spring outboard of its respective lower arm pivotal connection; the combination of a lever extended from each of the lower support arms inboard of their respective pivotal connections; respective single-action pressure fluid rams pivotally interconnecting the frame and the levers and being extensible to compress said springs; a first fluid pressure system establishing fluid communication between said rams at their pressure ends,



the system including a reservoir of a volumetric capacity greater than the combined capacity of the rams; respective single-action pressure fluid rams pivotally interconnecting the frame and the axle housing at respective points adjacent each of the wheels at said one end and adapted to move the frame relative to the housing; a second fluid pressure system establishing fluid communication between the last said rams at their pressure ends, the system including a reservoir of a volumetric capacity greater than the combined capacity of the rams; conduit means interconnecting said first and second systems; and valve means disposed on said conduit means shiftable alternatively to block and to admit fluid between said systems.

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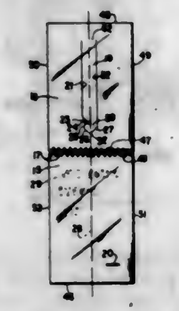
**3,166,341**
**TANDEM RUNNING GEAR ASSEMBLY**
**Francis W. Flowers, 4th and Lake Drive, Brooklawn, N.J.**
**Filed Apr. 3, 1963, Ser. No. 270,419**
**3 Claims. (Cl. 280—104.5)**



1. A trailer vehicle chassis including transversely spaced frame sides, cross members extending between and secured to said frame sides, sill members secured to and disposed beneath said cross members and disposed substantially parallel to the frame sides; a running gear composed of two corresponding bogies connected to said sill members and disposed in transversely spaced relation to one another, each bogie including a front axle and a rear axle, a pair of half elliptic springs connected to each axle, each axle being connected to intermediate portions of the springs thereof, shackles secured to and depending from the sill member and to which the remote ends of the springs of the front and rear axles are connected, adjacent ends of the springs of the front and rear axles being disposed in spaced apart aligned relation to one another, two equalizing means connected to and depending from the sill member, each equalizing means interconnecting adjacent ends of aligned springs, and ground engaging wheels journaled on the ends of each axle including a single outer wheel and a single inner wheel, said outer and inner wheels straddling the sill member and the springs of the axles thereof, said axles being connected to the chassis solely by the springs, shackles and equalizing means.

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**3,166,342**
**NOTEBOOK**
**John A. Yerkes, New York, N.Y.; Gulda Morrison Yerkes, executrix of John A. Yerkes, deceased, assignor to Gulda Morrison Yerkes**
**Filed June 28, 1962, Ser. No. 207,850**
**3 Claims. (Cl. 281—33)**



1. In a book structure, the combination including two relatively thick covers and a multiplicity of relatively thin leaves, said covers and leaves being bound togetter at their upper edges, the covers being adapted to rest upon their lower edges in easel conformation so that any selected leaf may be displayed, a tongue hingedly connected to a first of said covers at a point substantially above said lower edges, said tongue being pierced from the first cover lying wholly within the confines of and substantially along the longitudinal axis of said first cover and being formed at its unhinged end to define a hook member, and a second of said covers having a narrow transverse slot therein, said slot being laterally offset relative to the longitudinal axis of said covers and said tongue, said hook member being adapted to be manually inserted into said slot and to slide laterally into engagement with the uncut wall of the second cover at the end of said slot so that said covers can be latched together in easel conformation, said tongue being stressed laterally when in latched position in said slot so as to apply stresses to said tongue, cover and binding means, whereby the hook of the tongue tends to move into engagement with the cover at the end of the slot toward which it is biased.

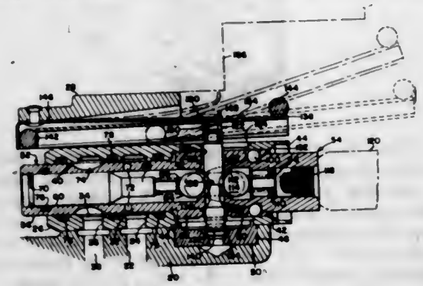
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**3,166,343**
**PIPE COUPLING HAVING RELEASABLE RETAINING MEANS**
**Richard A. Wittrea, % John Deere Tractor Research & Engineering Center, Waterloo, Iowa**
**Original application Jan. 27, 1960, Ser. No. 4,930, now Patent No. 3,130,749, dated Apr. 28, 1964. Divided and this application Mar. 20, 1961, Ser. No. 96,878**
**4 Claims. (Cl. 285—1)**

1. A fluid line coupling assembly, comprising: male and female coupling parts connectible and disconnectible by relative movement along a straight-line path, said female part having a pocket at one end opening along said path and a portion bordering said pocket provided with an opening transverse to said path, said male part adapted to be received in and withdrawn from said pocket along said path to respectively achieve connected and disconnected conditions of said parts, said male part having a recess therein transverse to said path and adapted to



register with the opening when the parts are connected; a lock element normally received in part in the opening and in part in the registered recess and movable transverse to said path for escape from the recess and into the opening to free the parts for disconnection; a retainer mounted for movement along said path between a first position blocking said opening and engaging the element to confine said element against escape from the recess when the parts are connected and a second position unblocking said opening and freeing the element for such escape to enable disconnection of the parts; support means mounting the two parts, when connected, for movement in unison along

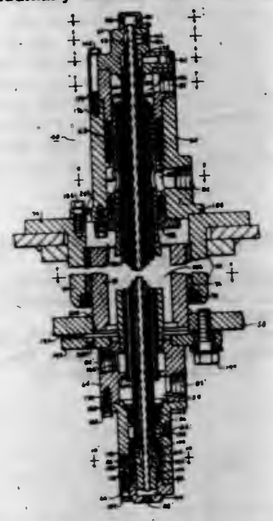


said path in response to a separating force tending to withdraw the male part from the female part; means on one part operative upon movement of said parts in unison to apply to the element a transverse force urging said element into such tighter engagement with the retainer as to cause the retainer to move along with said parts and relative to the support means; and stop means on the support means operative, after limited travel of said parts and retainer in unison, to engage said retainer so that continued travel of said parts in unison causes relative shifting of the retainer to its second position so as to enable escape of the element from the recess whereby the parts become disconnected.

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**3,166,344**
**COUPLING**
**George Davis, Dowagiac, Mich., assignor, by mesne assignments, to Link Belt Company, a corporation of Illinois**
**Filed Dec. 5, 1960, Ser. No. 73,717**
**7 Claims. (Cl. 285—134)**

1. A coupling for connecting a plurality of hydraulic lines on one structure with the corresponding lines on a structure rotatable relative to and spaced from said first structure, comprising an upper body having a cylindrical vertical chamber therein and a flange for securing said body to one of said structures, a lower body having a cylindrical vertical chamber therein in alignment with said first cylindrical chamber and a flange for securing said lower body to the other of said structures, each of said bodies having first, second, third, fourth, and fifth ports spaced longitudinally therealong from the outer ends toward the respective flange for connection with hydraulic lines, a third body between said first and second bodies having two cylindrical telescopic sections rotatable relative to each other and with the first and second bodies, respectively, said sections forming a low pressure fluid chamber with ports therefor adjacent said first mentioned bodies, the ports of said low pressure chamber being formed in the relatively rotatable upper and lower bodies, a tube extending longitudinally in both vertical chambers and connecting said first ports and being rigidly joined to said upper body for rotation therewith and yieldably connected in fluid tight relation to said lower body for relative rotation therewith, a tube extending longitudinally in both vertical chambers around said first mentioned tube connecting said second ports and being rigidly joined to said upper body for rotation therewith and yieldably connected in fluid tight relation to said lower body for relative rotation therewith, a tube extending longitudinally in both vertical chambers around said first and second mentioned tubes connecting said third ports and being rigidly joined to said upper body for rotation therewith and yieldably connected in fluid tight relation to said lower body for relative rotation therewith, a tube extending longitudinally in both vertical chambers around



said previously mentioned tubes connecting said fourth ports and being rigidly joined to said lower body for rotation therewith and yieldably connected in fluid tight relation to said upper body for relative rotation therewith, and a tube extending longitudinally in both vertical chambers around said previously mentioned tubes connecting said fifth ports and being rigidly joined to said lower body for rotation therewith and yieldably connected in fluid tight relation to said upper body for relative rotation therewith.

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**3,166,345**
**METALLIC SEAL ASSEMBLY**
**Jerry L. Pinkard, Fort Worth, Tex., assignor to Rector Well Equipment Company, Inc., Fort Worth, Tex., a corporation of Texas**
**Filed June 10, 1960, Ser. No. 35,337**
**2 Claims. (Cl. 285—332.3)**

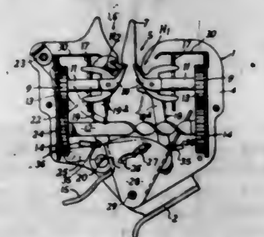


1. A seal assembly including a tubular member having a neck portion thereon having an outer angled surface disposed at an acute angle to the axis of said tubular member and a cylindrical outer portion having an end surface parallel to the axis of the tubular member, a member provided with an annular recess therein disposed coaxially about said tubular member, said recess having a surface tapered inwardly at an acute angle toward the axis of the said tubular member, said last mentioned angle being different from said first mentioned angle, said taper being on the inner side thereof, said neck portion being

insertable in said recess and being spaced from the wall of said recess when disposed therein, a seal ring of slightly malleable metallic material having an outer surface substantially parallel with the angled inner surface of said recess, a first surface on the inner side of the ring being substantially parallel to the angled surface on the neck, and a second surface on the inner side of the ring being substantially parallel to the surface of the cylindrical end portion of said neck portion, the said seal member being placed in said space between said neck portion and the recess wall, an intermediate surface on the inner side of said seal ring and between said first and second surfaces parallel to said angled inner surface of said recess and bridging that part of the neck where the cylindrical surface meets the outer angled surface whereby said seal ring is adapted to be compressed therein to provide sealing contact in both axial directions with said two surfaces on said neck and with the tapered wall of said recess.

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**3,166,346**
**KNOTTER FOR FISHERMAN'S KNOTS IN THE TEXTILE INDUSTRY**
**Hans Gotz, Steinhagen, Westphalia, Germany, assignor to Wildt Mellor Bromley Limited, Leicester, England, a British company**
**Filed May 7, 1963, Ser. No. 278,636**
**Claims priority, application Germany May 12, 1962**
**11 Claims. (Cl. 289—2)**

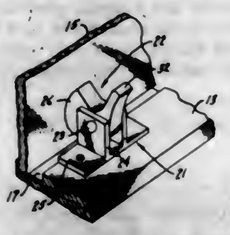


1. A knotter comprising, in combination, two spaced side plates having formations to receive and support across the side plates two yarn ends to be tied together; knotting mechanism including two tying heads mounted between the side plates and each having a rotary bill and associated means for looping said yarn ends around the bills; a stripper for stripping from said bills a knot formed in the yarn ends by rotation of the bills; a thumb-operated trigger adapted when depressed to actuate the tying heads and the stripper; detecting means arranged adjacent the yarn end receiving formations to be contacted by yarn ends placed in said formations; and means arranged between said detecting means and said knotting mechanism whereby whenever yarn ends are not received in said formations the knotting mechanism will be locked and prevented from functioning to tie knots and wherever yarn ends are located in the said formations the locking effect will be released so that the knotting mechanism can be actuated to tie a knot.

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**3,166,347**
**LOCK FOR SLIDING WINDOWS**
**Raleigh C. Andrews, 9341 Springfield, Skokie, Ill.**
**Filed Oct. 30, 1961, Ser. No. 148,459**
**4 Claims. (Cl. 292—202)**

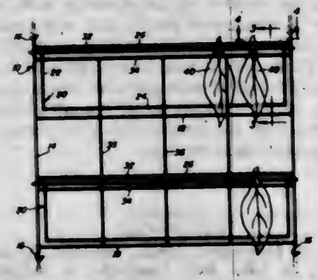
1. A window snubbing device including a supporting bracket and a rigid snubbing element supported for rotation about an axis on said bracket, handle means for rotating said element, said element having a plurality of flat surfaces extending generally parallel to said axis and connected to form corners between adjacent surfaces, each of said surfaces being located at varying radial distances from the axis of rotation of said elment, the included angle defined by said adjacent surfaces at said corners being an obtuse angle, the angle between adjacent surfaces and the distances of adjacent surfaces from said axis of rotation being such that said element may have one flat surface engaged with a window pane



and then be rotated to a position disposing an adjacent surface of greater radial distance adjacent said pane and in pressure engagement therewith without substantial obstruction from said corner in moving between said positions, the snubbing surface at each corner and of greater radial spacing than its adjacent snubbing surface being generally perpendicular to the radius at that corner.

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**3,166,348**
**TOBACCO CURING APPARATUS**
**Charles C. Granger, 1203 Chestnut St., Henderson, N.C.**
**Filed Mar. 5, 1963, Ser. No. 262,867**
**6 Claims. (Cl. 294—5.5)**



1. A tobacco leaf curing apparatus comprising a generally rectangular frame having connected vertical side members and horizontal and upper and lower members, a hinged rectangular section pivoted to one vertical side member and having a hook for resiliently engaging the other vertical side member, said hinged section having upper and lower crossbars, said frame having a pair of horizontal vertically spaced bars fixedly secured to said vertical side members and cooperating with said hinged section upper crossbar for clamping tobacco leaves therebetween.

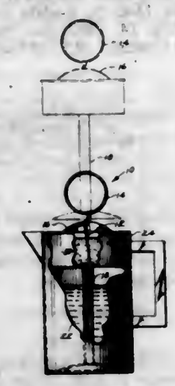
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**3,166,349**
**PERCOLATOR BASKET AND STEM REMOVING TOOL**
**Herbert L. Hagler, 2312 W. Dengar St., Midland, Tex.**
**Filed July 22, 1963, Ser. No. 296,768**
**1 Claim. (Cl. 294—33)**

A tool for removing the basket and stem from within a hot coffee pot comprising in combination a shallow 8-shaped wire of stainless steel, a concave circular shield carried by said wire providing protection for the user from hot coffee which may rise during the removal of a basket and stem from a coffee pot, a circular loop bent in the upper end of said wire for receiving the finger of a person providing means for lifting said tool, said 8-shaped end of said wire being receivable through coffee grounds within a basket of a coffee pot and being



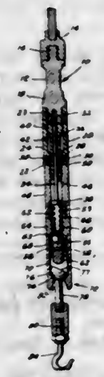
frictionally receivable within hollow bore of a stem of a coffee pot providing means for lifting a basket and stem from within the interior of a coffee pot, said 8-shaped end of said wire adapted to springingly engage and encroach upon the inner periphery of a stem to frictionally secure said tool within a stem, said tool comprising a wire with a rectangular cross sectional configuration, said



corners of said rectangular configuration of said wire providing multi-points of contact within the bore of a stem to increase the holding action of said tool within a stem and providing a non-slip grip therewith, and said shield centrally receiving said wire therethrough, said shield providing a means for deflecting said hot coffee away and downwardly if it should spurt upwardly during the removal of a basket and stem.

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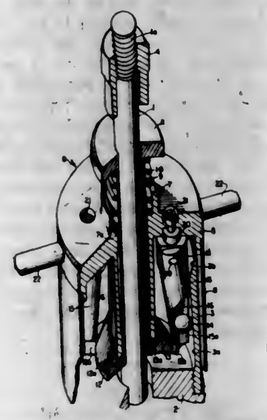
**3,166,350**
**KICK-OVER FISHING TOOL**
**Roy R. Richert, P.O. Box 60, Jennings, La.**
**Filed Mar. 8, 1962, Ser. No. 178,482**
**14 Claims. (Cl. 294—86.13)**



1. In a well fishing tool apparatus, an assembly comprising a housing, spring means located in said housing, first and second releasable means associated with said spring means for maintaining said spring means in a compressed state, universal joint means located within said housing, means connecting said spring means to said universal joint means, said first releasable means being operable to deflect said universal joint means at an angle with respect to said housing means when said housing means is jarred, said second releasable means being operable when said housing means is jerked in a direction away from said universal joint means to release said compressed spring for returning said universal joint means to its normal undeflected position.

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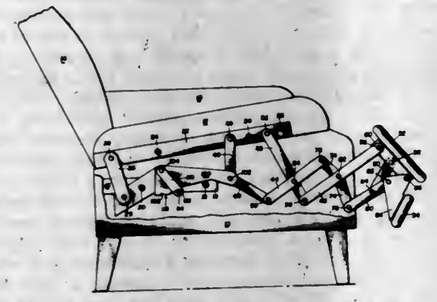
**3,166,351**
**DEVICE FOR ACTUATING A DROP-HAMMER OR THE LIKE**
**Jean Francois Marcel Baudrillard, 52 Ave. Egle, Maisons-Laffitte, France**
**Filed Oct. 8, 1962, Ser. No. 228,989**
**Claims priority, application France, Oct. 9, 1961, 875,379**
**4 Claims. (Cl. 294—96)**



1. A mechanical device to control the vertical displacement of a drop-hammer along a vertical rod surrounded by the drop hammer comprising, in combination, cylindrical guiding means slidably mounted and longitudinally displaceable relative to said rod, an inner sleeve rigidly fixed onto said hammer and provided with a substantially conical inner surface coaxial with said cylindrical guiding means, a movable body slidably mounted relative to said guiding means, engagement means movably mounted on said body, cam means fixed on said guiding means and cooperating with said engagement means so that said engagement means engage or disengage instantaneously said conical sleeve for a predetermined position of said body relative to said guiding means, and an adjustable upper abutment, mounted upon said rod, to limit the longitudinal displacement of said guiding means over said rod.

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**3,166,352**
**RECLINING CHAIR**
**Frank M. Re, Holyoke, Mass., assignor to Dual Manufacturing and Engineering, Incorporated, Holyoke, Mass.**
**Filed Jan. 24, 1963, Ser. No. 253,610**
**4 Claims. (Cl. 297—75)**



1. In an article of repose for supporting the body of a person and including a support and an integral seat and back unit rockably mounted on the suport and a two part leg rest constituted by a main portion and an auxiliary portion angularly movable relative to the main portion,

the improvement in an interconnecting linkage mechanism for moving the leg rest between a non-operative retracted position with the main and auxiliary portions thereof being positioned beneath the seat of the seat and back unit and one of a plurality of operative extended positions and with the auxiliary portion rotating in an arc relative to the main portion as the main portion is motivated generally rectilinearly, a support bracket fixed to the support, a seat bracket fixed to the seat of the seat and back unit, a control linkage pivotally related to the forward end of the seat of the seat and back unit and including a leg rest supporting sublinkage constituted by a secondary pivot link pivoted to the seat and a secondary propeller link pivoted to the seat and a primary elevator link pivoted to said secondary pivot and secondary propeller links and a secondary elevator link pivoted to said secondary propeller link, the main portion of the leg rest being pivoted to said secondary elevator link, a first connecting link pivoted to said primary elevator link and to said secondary elevator link, a second connecting link pivoted to the auxiliary portion of the leg rest and to said first connecting link, a control link pivoted to the main portion of the leg rest and to said second connecting link and a brass link pivoted to said secondary pivot link and rotative about a pivot relative to said support bracket.

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3,166,353
## RECLINING CHAIR
Frank M. Re, Holyoke, Mass., assignor to Dual Manufacturing and Engineering, Incorporated, Holyoke, Mass.
Filed Mar. 26, 1963, Ser. No. 268,050
3 Claims. (Cl. 297—75)



1. A reclining article of furniture comprising, a stationary frame, a body-supporting unit including a seat portion and a back-rest portion pivotal relative thereto and pivotal each relative to the other, means comprising a trio of support links mounting said body-supporting unit to said stationary frame for movement successively between a sitting position and an intermediate resting position and a fully reclined position and positions therebetween, a multi-part fold-away leg-rest unit including a main leg-rest portion and an auxiliary leg-rest portion pivoted thereto, a system of linkage for moving said leg-rest unit between a stored position beneath the seat portion and a position forwardly of the seat portion and including: a primary elevator link pivoted to one of said support links, a secondary propeller link pivoted to said seat portion and to said primary elevator link, a secondary elevator link pivoted to said secondary propeller link and to said main leg-rest portion, a first connecting link pivoted to said primary and secondary elevator links, a second connecting link pivoted to said first connecting link and to said auxiliary leg-rest portion, a control link pivoted to said main leg-rest portion and to said second connecting link whereby said auxiliary leg-rest portion describes an arcuate path relative to said main leg-rest portion while the latter describes a rectilinear path when when said body-supporting unit is moved, a base link pivoted to said one of said support links and to said stationary frame, a pivot link pivoted to said stationary frame and to another of said support links, and a tertiary connecting link pivoted to said base link and to said pivot link whereby generally rectilinear movement of said seat portion imparts a generally swining movement to said back-rest portion assuring the maintenance of the desired angular relationship between said seat portion and said back-rest portion in all positions of said body-supporting unit.

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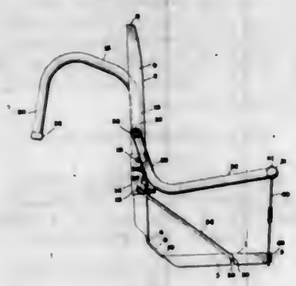
3,166,354
## CLAMP-ON TABLE FOR LAWN FURNITURE
Arne Sorensen, 1845 N. Kedzie Ave., Chicago, Ill.
Filed Aug. 14, 1962, Ser. No. 216,863
3 Claims. (Cl. 297—194)



2. A tray mounting for arm chairs comprising a clamp for clamping on an arm chair and means for mounting a tray on the clamp for pivotal movement thereon about axes at right angles to each other.

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3,166,355
## CHILD'S CAR SEAT
Elmer Rocker, Shaker Heights, Ohio, assignor to Century Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 11, 1963, Ser. No. 294,419
7 Claims. (Cl. 297—256)



1. In a child's car seat of the character described, a seat proper comprising a seat portion and a back portion, said back portion having rearwardly-extending flanges at its sides, brackets of U-shaped cross-section secured to and embracing said flanges, said brackets having inclined abutment flanges, a handle bar, and means pivotally connecting said handle bar to said first-named flanges, said handle bar maintained in operative position by abutment of portions thereof with said abutment flanges.

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3,166,356
## BALANCE WEIGHT DISTRIBUTOR
Delbert A. Sutherland, 276 S. County Road, Palm Beach, Fla., and Clark E. Bovela, Indian River Drive, Rockledge, Fla.
Filed Jan. 16, 1964, Ser. No. 338,070
5 Claims. (Cl. 301—5)

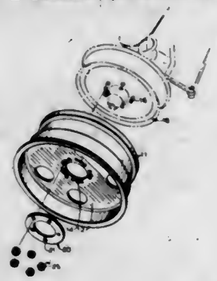


1. In an automatic wheel balancer, the improvement comprising a hollow annular member having an electrically non-conductive wall, said wall having an interior surface defining said hollow and an exterior surface, means engaging said member at said exterior surface for securing said member to an automotive wheel, a plurality of magnetizable metal weight components disposed and free to move about in said hollow to automatically balance the automotive wheel upon rotation thereof, and electrically conductive means establishing a flow path for static electricity between the interior surface of said wall and the automotive wheel.



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3,166,357
## CUSTOM WHEEL INSTALLATION
Roy R. Vachon, Inglewood, and Merlyn R. Reppert, Torrance, Calif., assignors to Appliance Plating Co. Inc., Gardena, Calif., a corporation of California
Filed Aug. 8, 1963, Ser. No. 300,762
2 Claims. (Cl. 301—9)



1. A custom wheel installation for an automobile comprising

an automobile wheel drum having a plurality of mounting studs protruding therefrom,

a wheel rim,

a hub fixedly attached to said wheel rim, said hub having a relatively large circular aperture formed therein at the central portion thereof, said hub further having a plurality of sets of relatively small apertures, each set comprising at least five apertures with each set being adapted for utilization with a particular type of automobile and each of the apertures in said sets being of a diameter substantially equal to that of said studs and being formed in said hub surrounding said relatively large aperture,

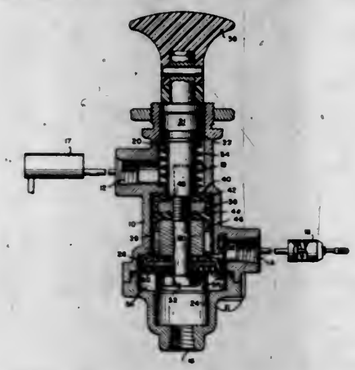
an alignment plate having a relatively large circular aperture formed therein at the center thereof, said alignment plate further having a plurality of sets of relatively small apertures surrounding said large aperture, said alignment plate further having a circular rim-like register integral with said plate running adjacent to said large aperture formed therein, the outer diameter of said register being substantially equal to the diameter of the large aperture formed in said hub, and

means for attaching said hub and said alignment plate to the studs protruding from said wheel drum, one of the sets of apertures in said hub and the relatively small apertures in said alignment plate mating with said studs and said register abutting against the portion of said hub surrounding the relatively large aperture formed therein.

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3,166,358
## FLUID PRESSURE SYSTEM AND CONTROL VALVE
Harry M. Valentine, Elyria, Ohio, assignor to Bendix-Westinghouse Automotive Air Brake Company, Cleveland, Ohio, a corporation of Delaware
Filed Mar. 21, 1963, Ser. No. 266,957
8 Claims. (Cl. 303—48)

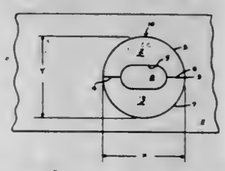
4. A valve for the control of fluid pressure comprising a casing having first and second axially aligned inlet and exhaust bores and a chamber between said bores communicating with both of said bores, said chamber being provided with opposed inlet and outlet valve seats, a piston slideably mounted in said chamber and having one side exposed to the exhaust valve seat and other side exposed to the inlet valve seat, inlet and exhaust valves connected to said piston on opposite sides thereof for movement therewith and cooperating with said valve seats to connect said inlet bore with said chamber while disconnecting said exhaust bore from said chamber and vice versa, said exhaust valve being connected to said piston in spaced relationship and having an effective cross sectional area substantially equal and opposed to the effective cross sectional area of the side of said piston facing said valve, inlet and exhaust ports in said casing respectively continuously connected to said inlet and exhaust bores,



an outlet port in said casing continuously connected to said chamber in the space between said exhaust valve and said piston, a one way check valve carried by said piston clear of said inlet valve for permitting the flow of fluid from the inlet bore past said piston to the outlet port upon opening of said inlet valve but preventing flow in the reverse direction, the effective cross sectional area of the piston on the side thereof carrying said inlet valve being greater than the effective cross sectional area of the inlet valve, fluid pressure at said inlet port when said inlet valve is open and said exhaust valve is closed acting on said piston to maintain said inlet and exhaust valves in their respective open and closed positions, and resilient means positioned in said casing and acting on said piston for moving the same to a position closing said inlet valve and opening said exhaust valve when the fluid pressure at said inlet port drops to a predetermined value.

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3,166,359
## SPLIT BUSHING
Robert L. Bleicher, Dayton, Ohio, assignor to Dayton Perforators, Inc., Dayton, Ohio, a corporation of Ohio
Filed Dec. 21, 1961, Ser. No. 161,192
7 Claims. (Cl. 308—3)

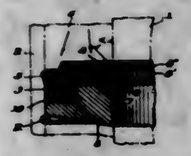


1. In combination, a device having means defining a through aperture and a guide unit confined within said through aperture; characterized by said guide unit consisting of sections defining a plane of separation therebetween and having means provided substantially at right

angles to said plane of separation so dimensioned in reference to the cross section of said aperture and arranged on confinement thereof within said means defining said through aperture to produce a stress on said means defining said through aperture and a resultant pressure on said guide unit which is at a maximum substantially at right angles to said plane or separation.

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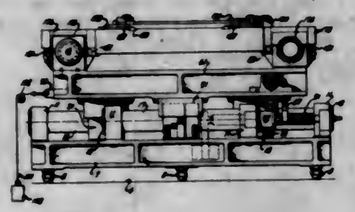
3,166,360
PISTON ROD SEALING DEVICE
Ernst Dieter Amelung, Opladen, Hans Deuring, Burscheid, near Cologne, and Josef Pulfrath, Bergisch-Neukirchen, Germany, assignors to Goetzewerke Friedrich Goetze Aktiengesellschaft, Burscheid, near Cologne, Germany, a corporation of Germany
Filed Mar. 15, 1962, Ser. No. 179,872
Claims priority, application Germany, Mar. 16, 1961, G 31,835
9 Claims. (Cl. 308—3.5)



1. A sealing device for piston rods of hydraulic shock absorbers for motor vehicles, comprising a cylindrical tube, a piston rod, an annular sealing member positioned between the walls of the tube and piston rod, said annular sealing member being made of elastic material which is stiffened by a metallic disk-like support joined therewith, an inner sealing lip formed by said sealing member for sealing engagement with said piston rod, said sealing lip being adapted to be acted upon by the pressure of a hydraulic medium, the end face of said sealing lip embracing with the free surface of said piston rod an angle which is less than 90°, the area of engagement of the lip with said piston rod being greater than the projection area of the end face of the lip on said piston rod, and the radially outwardly extending area from the area of engagement and the projection area of the sealing lip which is adapted to be acted upon by the hydraulic medium being greater than the projection area and smaller than the engaging area and the projection area taken together.

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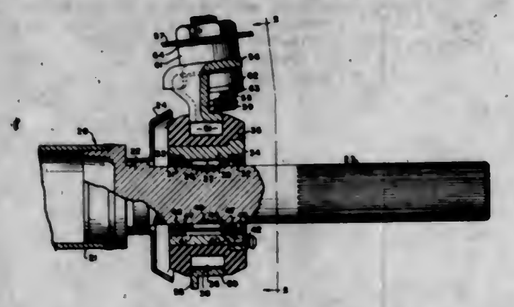
3,166,361
MEASURING ENGINE
Max L. Pasmer, Pebble Beach, Allan M. Hudson and Glynn H. Lockwood, Carmel, and Sheldon Cyr Crane, Monterey, Calif., assignors to Del Monte Technical Associates, Monterey, Calif., a partnership
Filed July 13, 1961, Ser. No. 123,897
9 Claims. (Cl. 308—4)



8. A measuring engine comprising a base, a pair of primary guide rods supported in parallelism on said base, bearings mounted for reciprocation on said guide rods, bearing blocks adjacent said bearings, means for interconnecting all of said bearing blocks, and means supporting said bearing blocks on said bearings, each supporting means having linear freedom in at least one direction in the plane including said guide rods, said direction being different for different ones of said supporting means.

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3,166,362
INTERMEDIATE PROPELLER SHAFT BEARINGS MEANS
William W. Slaght, Fairview Park, Ohio, assignor to Cleveland Steel Products Corporation, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 704,125, Dec. 20, 1957. This application Apr. 26, 1962, Ser. No. 193,042
6 Claims. (Cl. 308—184)



1. In a propeller shaft linkage for torque transmission along a chassis, a subassembly comprising a propeller shaft surrounded by a bearing, said shaft constituting an inner race of said bearing, a metal bearing sleeve surrounding the outer race of said bearing, a housing of resilient flexible material surrounding said sleeve and bonded thereto, said housing having an annular groove extending around its outer surface and across which extend annularly distributed axially extending ribs, said ribs being tapered radially outwardly from their roots, annular sealing rings received within the ends of said bearing sleeve and surrounding said propeller shaft in sealing relationship therewith, means surrounding said housing for supportedly suspending said housing from said chassis, said last named means being in gripping relationship with said ribs, the outer race of said bearing being substantially unrestrained except through said housing against displacement relative to said chassis, including both angular displacement about transverse axes and longitudinal displacement, a grease gun fitting on one end of said sleeve, grease channel means in said sleeve communicating with said fitting and with said bearing and the inner sides of said sealing rings, the inner peripheries of said sealing rings being annularly grooved to provide grease dams whereby said bearing and the portion of said propeller shaft which serves as the inner race for said bearing are sealed at each end against dirt by flushable grease dams maintained within said housing.

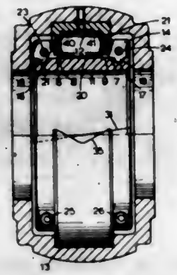
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3,166,363
SPLIT ROLLER BEARINGS
Sydney Kay, deceased, late of Norfolk, England, by Sydney Pitfield Kay, executor, Bexley, England, assignor to Cooper Roller Bearings Company Limited, Norfolk, England, a British company
Filed Aug. 15, 1962, Ser. No. 217,211
Claims priority, application Great Britain, Aug. 24, 1961, 30,558/61
1 Claim. (Cl. 308—207)

A roller bearing comprising an inner race split into two approximately semi-circular parts along lines of split that are at an angle to the axis of the bearing, an outer race split into two approximately semi-circular parts along lines of split that are at an angle to the axis of the bearing, cylindrical rollers located radially between the races and having their axes parallel to the axis of the



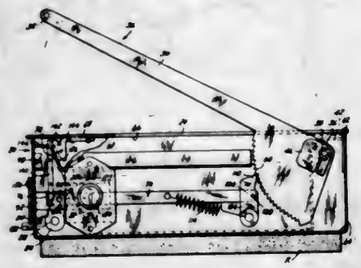
bearing, a cage for locating the rollers in spaced relationship circumferentially of the races, the cage having portions disposed axially beyond both ends of the rollers, annular clamping means split into ring parts and located on each side of the inner race, said inner race having an axial length which is no greater than the axial length between the outer faces of said clamping means, screw means having substantial clearance with one of said ring parts for clamping the ring parts together tightly on the inner race, means positively locating said ring



parts in both directions axially on the inner race, at least one integral annular lip on each ring part extending inwardly past adjacent cage parts into contact with the rollers, said ring parts being composed of hardenable steel, said lips being hardened at least where they contact the rollers, means having interengaging surfaces substantially normal to the axis of the bearing positively locating said inner race parts against axial displacement relative to each other in both directions, and inwardly directed abutment surfaces on the outer race parts for axial location against the rollers.

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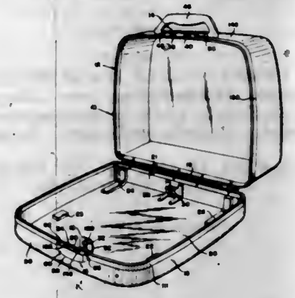
3,166,364
SECURITY BOX
Joseph E. Shorin, Jr., 109—10 Queens Blvd., Forest Hills, N.Y.
Filed Jan. 10, 1964, Ser. No. 336,982
9 Claims. (Cl. 312—204)



1. A portable strong box adapted to be locked against removal from a drawer or a like structure, slidably mounted in an article opening having a depending bead portion comprising a container having a closure, abutment means movably mounted on said container and shiftable between projecting and retracted positions with respect to said container, lock means on said container operatively associated with said abutment means and movable between two positions, respectively a locking position whereat movement of said abutment means from said projecting to said retracted position is prohibited, and a releasing position whereat movement from said projected to said retracted position is permitted and a readily compressible, high friction layer on a bottom portion of said box.

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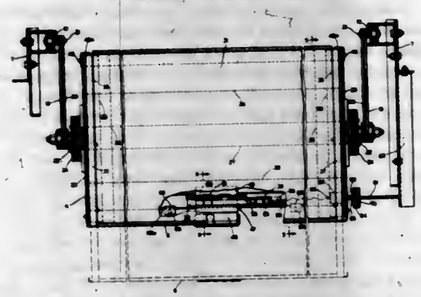
3,166,365
TYPEWRITER CARRYING CASE
Aaron C. Zeamer and James E. Harmon, Groton, N.Y., assignors to SCM Corporation, a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,765
14 Claims. (Cl. 312—208)



4. In a carrying case for a portable typewriter or the like, a cover, a base, and a case machine lock including means for locking a typewriter or like machine to said base and thereby preventing accidental opening movement of said carrying case from permitting said machine to drop from said case and cover operated means including an actuator positioned for engagement by said cover as it moves toward said base and operatively connected to said locking means for actuating said locking means and locking said machine to said base.

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3,166,366
POWER FILE SAFETY DEVICE
Newton J. Krug, Canton, Carl D. Graber, Orrville, and Raymond L. Alvarez, Canton, Ohio, assignors to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Sept. 3, 1963, Ser. No. 305,990
9 Claims. (Cl. 312—223)

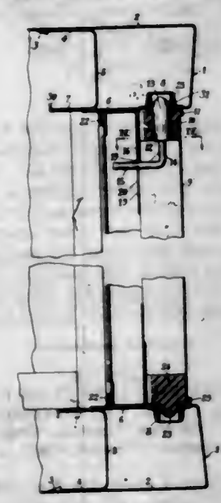


1. A power file safety device including a plurality of pans, means for mounting and moving the pans in a continuous orbit of travel including upper and lower turning portions and intermediate vertical portions, a housing enclosing the pans and said means and including a pan-access opening, a record-card-carrying drawer in each pan and being horizontally slidable between extended and retracted positions through the access opening, latch means engageable between each drawer and pan, the latch means when latched holding its related drawer normally latched in the retracted position and when unlatched releasing such drawer preliminarily to sliding the drawer to the extended position, an electric circuit including motor means for moving the pans through the orbit of travel, the circuit including pan-selector switch means for selecting and stopping a selected pan at the access opening, the circuit also including a contact strip adjacent the access opening, the circuit also including

a latch switch for each drawer and pan and having a switch contact engageable with the contact strip, the latch switch for any drawer being movable by the latch means for such drawer between opened and closed positions, and the latch switch opening the circuit through the motor in one of said positions when the drawer latch means is unlatched.

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**3,166,367**
**DEMOUNTABLE DOOR HINGE**
**René Vincens, Martin-Eglise, near Dieppe, France, assignor to Societe Civile de Recherches et d'Etudes Industrielles, Neuville-les-Dieppe (Seine-Maritime), France**
**Filed Oct. 15, 1962, Ser. No. 230,586**
**4 Claims. (Cl. 312—329)**

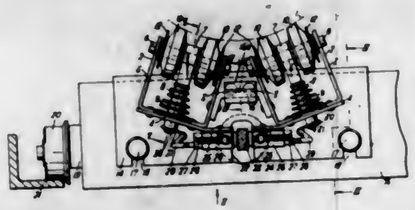


1. Collapsible metal cabinet consisting of assembled frames each comprising vertical posts and horizontal cross members, said posts and cross members consisting of section elements adapted to interfit by frictional engagement, a pair of strips secured on the upper and lower cross members of the front frame, each strip having a U-shaped cross section and such dimensions as to correspond exactly in shape to the relevant cross member, one flange of each strip having its free edge bent at right angles inwardly of the frame for anchoring the strip on the free edge of the corresponding flange of the cross member of the cabinet, the other flange of said strip having lugs punched in the vicinity of its free edge for snapping into locking engagement with the free edge of the other flange of said cross member, door hinges having a female element consisting of apertures formed in said strips, channel sections fitted along the outer edges of each door, a bushing fitted in said channel section and molded integrally with the male element of the door hinge.

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**3,166,368**
**ROLLER CONTACT DEVICE FOR ELECTRICAL COIL**
**Edward C. Higgins, 33 Rednal Hill Lane, Rubery, Rednal, Birmingham, England, and Albert E. Pearson, 75 Tagwell Road, Droitwich, England**
**Filed Dec. 4, 1962, Ser. No. 242,122**
**6 Claims. (Cl. 339—9)**

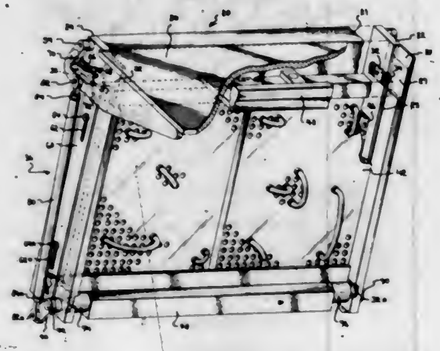
1. An electric contact device for traversing a path parallel with the axis of a coil and including a frame; a contact member movably mounted in the frame for contact with the exterior of the coil, a spring interposed between the frame and the contact member to bias the latter towards said axis, an insulating base plate lying in a plane normal to said axis to support the frame, and mounting means for supporting and locating the frame on the plate; the mounting means comprising U-shaped bracket means mounted on the plate and opening towards said axis, the bracket means having opposed spaced limbs and a base joining the limbs, the limbs lying in parallel planes normal to the axis and the base lying in a plane which is parallel both to the axis and to a tangent to the coil, the mounting



means also comprising a locating member on the frame received in the bracket means and forced into contact with said base by said spring when the contact member engages the coil thus limiting outward movement of the frame relative to the axis, the locating member also engaging between said limbs to provide location of the frame axially of the coil, movement of the frame against the spring permitting disengagement of the locating member from the bracket means and dismounting of the frame from the base plate.

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**3,166,369**
**MULTIPLE CONTACT CLOSURE ASSEMBLY**
**Robert G. Trump, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Filed Apr. 2, 1962, Ser. No. 184,091**
**3 Claims. (Cl. 339—18)**

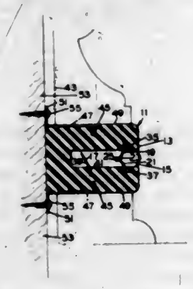


1. In a connecting assembly of the type including a first panel having an array of contacts secured thereto and a second panel having a similar array of contacts secured thereto, each panel being mounted in an assembly capable of driving the panels in relative movement resulting in an exact engagement and disengagement of the contact member thereof; the improvement comprising rail members secured to the first panel having interiorly disposed slots defining vertical and horizontal movements of the second panel with respect to the first panel, actuating means disposed in certain of the slots including a groove housing projections of the second panel and capable of restraining the second panel from horizontal movement with respect to the actuating member, a panel driving assembly mounted exteriorly of at least one of the rail members including an actuating member at one end thereof having a first linkage capable of driving cam means located interiorly of the rail members at the opposite end thereof to effect vertical movement of the second panel, and further including a second linkage connected through the rail members to the actuating member capable of driving the second panel in horizontal movement, with respect to the first panel.



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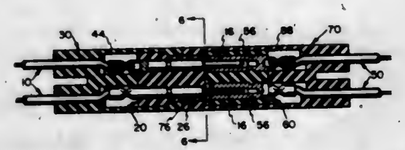
**3,166,370**
**ELECTRICAL OUTLETS**
**Richard H. Parker, Lockbourne Air Force Base, Ohio (Rte. 3, Box 288, Seagoville, Tex.)**
**Filed Apr. 13, 1962, Ser. No. 187,308**
**2 Claims. (Cl. 339—21)**



1. An electric outlet comprising:
(*a*) an elongated strip of insulating material having a slot disposed lengthwise along one side thereof;
(*b*) a pair of resilient first conductive strips each attached to a side wall of said slot, near the opening thereof, and disposed along the length of said slot, said first conductive strips having contiguous edges substantially midway between the side walls of said slot and completely closing said slot;
(*c*) at least one resilient second conductive strip mounted in said slot farther than said first conductive strips (*b*) from the opening of said slot, and disposed along the length of said slot;
(*d*) said pair of first conductive strips (*b*) being connected to a grounded line from an electrical voltage source, and said at least one second conductive strip (*c*) being connected to at least one other line from said other line from said electrical voltage source.

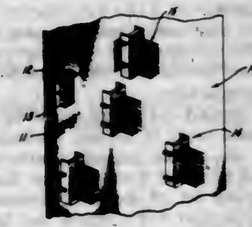
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**3,166,371**
**WATERPROOF ELECTRICAL CONNECTOR**
**Robert R. Brown, Bernardsville, and Leonard E. Daum, Morristown, N.J., assignors to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey**
**Filed Sept. 13, 1962, Ser. No. 223,436**
**1 Claim. (Cl. 339—60)**



A waterproof electrical connection having component parts capable of being assembled in the field to establish an electrical connection between a first set of leads and a second set of leads, each lead being comprised of an electrical conductor and a covering of insulating material, said component parts comprising:
(A) a first connector element including
(1) a first insert of resilient insulating material having an axially extending external surface bounded by radial front and rear faces,
(2) a first set of electrical contacts fixed in said insert for being mechanically secured and electrically connected to the conductors of the first set of leads,
(3) a first continuous unitary casing of resilient insulating material for receiving and securing said insert therein after the contacts are secured to the conductors;
(B) a second connector element including
(1) a second insert of resilient insulating material having an axially extending external surface bounded by radial front and rear faces,
(2) a second set of electrical contacts complementary to said first contacts and fixed in said second insert for being mechanically secured and electrically connected to the conductors of the second set of leads,
(3) a second continuous unitary casing of resilient insulating material for receiving and securing said second insert therein after the second contacts are secured to the conductors; and
(C) means for mechanically securing the first connector element to the second connector element and establishing an effective, watertight electrical connection between corresponding first and second contacts within the secured elements, said means including
(1) a generally cylindrical portion in the first insert extending axially along a portion of said first set of contacts and including a generally cylindrical continuous external surface for projecting beyond the axial extent of the first casing when the first insert is received within the first casing such that the first face of the insert is axially displaced beyond the axial extent of the casing,
(2) a generally cylindrical resiliently dilatable internal surface in the second casing for projecting beyond the first face of the second insert when the second insert is received within the second casing such that the first face of the second insert is displaced from the axial extent of the second casing, said internal surface having an internal diameter less than the external diameter of said generally cylindrical axially projecting external surface of the first insert for receiving and overlapping with said external surface of the first insert with the external surface of the first insert resisting radial contraction and effecting radial dilation of the internal surface of the second casing so as to establish an interference fit therewith having sufficient strength to mechanically secure the first element to the second element and maintain said electrical connection,
(3) the axial displacement of the first face of the first insert beyond the axial extent of the first casing and the axial displacement of the first face of the second insert from the axial extent of the second casing being great enough so that upon securing the first element to the second element the first insert will enter the second casing axially far enough to allow the generally cylindrical portion of the first insert to reinforce the connection at the juncture of the casings and resist forces tending to bend the connection and the contacts at said juncture.

3,166,372
METHOD AND APPARATUS FOR CONNECTOR ORIENTATION
Alex Just, River Forest, Ill., assignor, by mesne assignments, to Malco Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 29, 1961, Ser. No. 141,841
10 Claims. (Cl. 339—186)



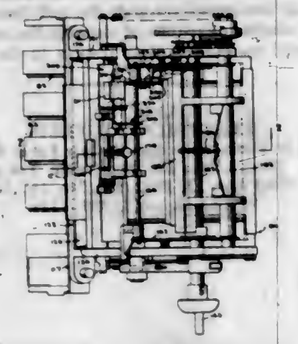
7. In a polarization assembly for terminal blocks on a terminal board, the combination of a terminal board having a plurality of spaced holes extending therethrough, bushings seated in a group of said holes, female terminal pins mounted in said bushings, a terminal block for mounting on said terminal board, said terminal block including a plurality of male terminal connectors for connecting with corresponding female terminal pins in said group, said block further including a skirt shielding said male terminal connectors, a plurality of members seated in preselected holes adjacent said group of holes, said skirt being characteristically notched to coincide with the placement of said members and forming complementary index means for mating with said members to assure proper placement and connection of said block on said board.

3,166,373
COMPOSITE STRAND CONNECTORS
Arthur A. Berndt, 2817 NE. 32nd St., Apt. 217, Fort Lauderdale, Fla.
Filed Mar. 6, 1962, Ser. No. 177,875
2 Claims. (Cl. 339—248)



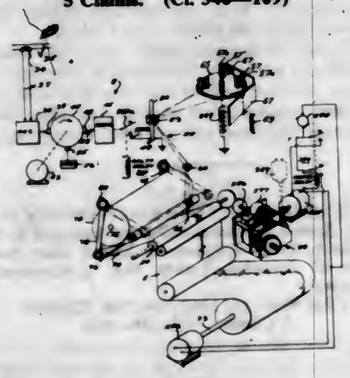
1. A connector for gripping the outer strands of a stranded wire cable when in telescoping relation with the cable, in combination, a tubular casing, a tensioning nut threaded to each end of the casing exteriorly thereof, a plurality of gripping rods extending longitudinally within the casing and projecting a short distance from each end, a retaining washer having a fixed relation with the gripping rods at each projecting end and whereby the washers are located exteriorly of the tubular casing at the respective ends, said washers each having a central opening for receiving the cable to be gripped by the gripping rods, said rods at each retaining washer being disposed and angularly spaced in a circle around the central opening, and the said gripping rods having a helical formation from end to end, whereby rotation of the tensioning nuts to cause them to extend beyond the casing at respective ends will engage the retaining washers and tension the gripping rods.

3,166,374
TAMPER-PROOF METER
Anthony F. Greenfield, 2905 Frederick Ave., Baltimore, Md., assignor of one-half to Herman M. Gittleman, Baltimore, Md.
Filed Feb. 20, 1963, Ser. No. 259,849
7 Claims. (Cl. 346—104)



1. In a device of the character described, a carriage for receiving a sales slip, a pair of rocker frame members adjacent said carriage and one of said rocker frame members having a bar affixed thereto, a U-shaped channel member supported by said carriage, said carriage having a recess therein defining a seat, a ball coacting with said bar for selectively engaging said seat, a block affixed to said carriage, and a body member having a portion swivelly mounted in said block, and said body member having an end portion selectively engageable by the sales slip, and the other end of the body member defining a holding element for engaging the ball when the ball is in its seat.

3,166,375
OSCILLOGRAPHIC FAULT RECORDER
Claude M. Hathaway, Colorado Springs, Colo., assignor to Western Electrodynamics, Inc., a corporation of Colorado
Filed June 20, 1963, Ser. No. 293,557
5 Claims. (Cl. 346—109)



1. In recording apparatus:
a normally inoperative radiation source having a voltage input;
an image display medium against which the radiation is directed;
means directing the radiation from the said source to the image display medium, including:
movable deflector means responsive in motion to the time variations of the phenomenon to be recorded and positioned with respect to said directed radiation so as to influence the direction of said radiations as a function of said time variations; and means responsive to the initiation of the phenomenon to be recorded to cause radiations to be emitted from said source, including:
an abnormally high voltage source,
a normal voltage source,
a feedback loop having an output and a radiation sensitive device in a position to receive radiation from the radiation source, and
switching means alternatively interconnecting said voltage sources with the radiation source and responsive to the output of the feedback loop to make a change from one of said voltage sources to the other.



# CHEMICAL

3,166,376
PROCESS FOR MAKING HYDRAZINE DIBORANE
John A. Brown, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Feb. 23, 1960, Ser. No. 10,837
6 Claims. (Cl. 23—14)

1. In a process for preparing hydrazine diborane by reacting a borohydride salt from the group consisting of alkali metal, alkaline earth metal, aluminum, and quaternary ammonia borohydride salts with a hydrazine salt containing a diprotic hydrazinium ($N_2H_6^{++}$) in an inert liquid organic diluent with evolution of hydrogen to form hydrazine diborane having the empirical formula $B_2N_2H_{10}$ and a solid by-product salt from the cation of the borohydride salt and from the anion of the hydrazine salt in the resulting reaction mixture, followed by separation of unreacted salt and said by-product salt from a solution of the hydrazine diborane in the diluent, and recovery of the hydrazine diborane from the diluent, the improvement which comprises effecting the reaction of the borohydride salt with the hydrazine salt in the presence of a polar oxygen-containing promoter selected from the group consisting of water, methanol and ethanol in a proportion of about 1 to 5 moles per mole of the hydrazine salt in the reaction mixture to increase the rate of reaction.

3,166,377
PREPARATION OF HYDRAZINE BORANES
John A. Brown, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 29, 1960, Ser. No. 52,730
9 Claims. (Cl. 23—14)

1. Process for preparing hydrazine boranes having the empirical formulas $B_1N_2H_7$ and $B_2N_2H_{10}$ which comprises, reacting hydrazine with about one to two equivalents of a borohydride salt of a metal from the group consisting of alkali and alkaline earth metals and about one to two equivalents of an acid from the group consisting of mineral acids at least as strong as $H_3PO_4$ and ammonium chloride as a Lewis acid per mole of the hydrazine at a reaction temperature between about 0° and 40° C. in a reaction mixture containing an inert liquid diluent selected from the group consisting of tetrahydrofuran, dihydropyran, and dioxan, the equivalents of the borohydride salt and acid used being the same, controlling the rate of reaction by cooling the reaction mixture and controlling the rate at which the acid is admixed with the hydrazine in the presence of the borohydride salt, forming a solution of resulting hydrazine borane reaction product of the aforesaid formulas dissolved in said diluent, removing from the reaction mixture hydrogen gas evolved by the reaction, separating said solution of hydrazine borane from the undissolved borohydride salt and undissolved by-product, and recovering the dissolved hydrazine borane product from the inert liquid diluent.

3,166,378
BORON HYDRIDE CARBONYL COMPOUNDS AND PROCESSES FOR MAKING THEM
Walter H. Knoth, Jr., Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 28, 1962, Ser. No. 206,553
14 Claims. (Cl. 23—14)

1. A compound of the formula

$$B_{10}H_{8-m-n}X_mR_n(CO)_2$$

wherein X is halogen, R is hydrocarbyl of up to 18 carbon atoms wherein any unsaturation is aromatic, $m$ is a whole number of from 0 to 8, inclusive, and $n$ is an integer of from 0 to 2, inclusive, the sum of $m$ and $n$ being at most 8.

11. Process for preparing $B_{10}H_8(CO)_2$ which comprises reacting $B_{10}H_8 \cdot 2N_2$ with CO.

14. Process for preparing a compound of the formula

$$B_{10}H_{8-m-n}X_mR_n(CO)_2$$

wherein X is halogen, R is hydrocarbyl of up to 18 carbon atoms free of aliphatic unsaturation, $m$ is a whole number from 1 to 8, inclusive, $n$ is an integer of from 0 to 2, inclusive, the sum of $m$ and $n$ being at most 8, which comprises reacting a compound of the formula

$$B_{10}H_{8-n}R_n(CO)_2$$

with a halogenating agent selected from the class consisting of halogen and interhalogen.

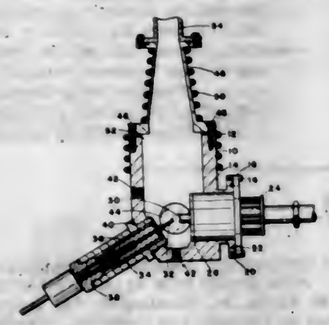
ERRATUM
For Class 23—151 see:
Patent No. 3,166,390

3,166,379
PURIFICATION OF HYDROFLUORIC ACID
Howard B. Bradley and Robert G. Pankhurst, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 4, 1962, Ser. No. 199,642
9 Claims. (Cl. 23—153)

9. A process for removing phosphorus impurities from hydrofluoric acid which comprises contacting the hydrofluoric acid with a halogen selected from the group consisting of iodine, bromine and chlorine to form high-boiling point halogen-impurity compounds, and then separating such high-boiling point halogen-impurity compounds from the hydrofluoric acid.

3,166,380
PROCESS FOR THE PRODUCTION OF SUBMICRON SILICON CARBIDE
William E. Kuhn, Niagara Falls, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed May 1, 1961, Ser. No. 106,596
4 Claims. (Cl. 23—208)

1. A method of making finely-divided silicon carbide of submicron particle size which comprises forming a rod



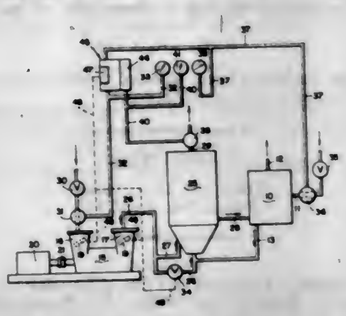
containing silica and carbon in approximately stoichiometric proportions required by the equation:

$$SiO_2+3C \rightarrow SiC+2CO$$

drawing a high-temperature, low-intensity arc between the rod and an electrode in an enclosure, vaporizing the rod by the thermal energy created by the arc, reacting the resulting vapors to form a particulate silicon carbide having submicron grain sizes and withdrawing the silicon carbide from the enclosure.

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**3,166,381**
**AIR FEED SYSTEM**
**Isidor R. Loos, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Dec. 26, 1961, Ser. No. 162,121**
**7 Claims. (Cl. 23—288)**



1. In a catalyst cracking unit including a reactor with an inlet adapted to receive gas oil to be cracked in the presence of a catalyst, and a regenerator with an inlet connection from the reactor for receiving spent catalyst, an exhaust outlet and an outlet connection to the reactor for providing catalyst thereto, an air feed system comprising:

(*a*) a blower having an inlet adapted to receive air, and an outlet connected to the regenerator for providing air for combustion and to the regenerator inlet for providing air for carrying spent catalyst;

(*b*) means connected to the blower for controlling air flow;

(*c*) means connected to the reactor inlet and to the blower inlet for sensing gas oil flow and air flow, and for providing signals representing each of such flows;

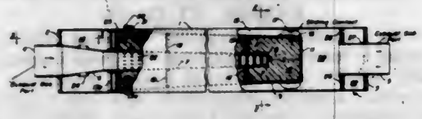
(*d*) an automatic controller connected to the sensing means and to the flow control means for controlling air flow in accordance with signals from the sensing means;

(*e*) means connected to the regenerator exhaust outlet for analyzing the oxygen content of regenerator exhaust, and for providing signals representing such oxygen content; and

(*f*) means connected to the controller and to the analyzing means for overriding the controller response to signals representing gas oil flow and air flow to control air flow in accordance with regenerator exhaust oxygen content.

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**3,166,382**
**CONVERTER-MUFFLER**
**Frank V. Purse, Northfield, and Clarence G. Gerhold, Palatine, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed Sept. 7, 1962, Ser. No. 222,081**
**3 Claims. (Cl. 23—288)**



1. A catalytic converter-muffler apparatus for treating an engine exhaust gas stream comprising in combination, an elongated outer housing having an exhaust gas port at each end thereof, an inner tapering perforate tubular gas conducting member extending from a gas port at one end of said housing axially through a major portion of the length of said housing, said tubular member tapering and reducing in cross section from the end of said housing to a smaller end having a transverse perforate end section, an outer tapering perforate particle retaining member positioned substantially symmetrically around and spaced from said inner perforate member, said outer member extending longitudinally from said end of said housing for a distance greater than the longitudinal extent of said inner member and having an outer perforate end section spaced from said perforate end section of said inner member, subdivided particles retained in said outer tapering member uniformly around said inner member and within the spaced distance between said perforate end sections of said perforate members, said outer tapering perforate member providing with the inside of said outer housing a variable cross sectional area annular-form gas manifold section longitudinally inside of said outer housing whereby an exhaust gas stream may pass radially through said particles between said perforate tubular members as well as in part longitudinally through the particles between said perforate end sections thereof as such stream passes from one end of said apparatus to the other end thereof.

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**ERRATUM**

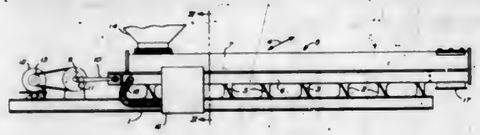
For Class 29—197 see:
Patent No. 3,165,823

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**3,166,383**
**METHOD OF TREATING FLUIDIZED PARTICLES WHILE CONVEYED**
**John M. Morris, Louisville, Ky., assignor, by mesne assignments, to Rex Chainbelt Inc., a corporation of Wisconsin**
**Continuation of application Ser. No. 629,380, Dec. 19, 1956. This application Mar. 29, 1960, Ser. No. 30,040**
**4 Claims. (Cl. 34—10)**

1. A method of changing the temperature of material containing a substantial proportion of fluidizable fine particles, while conveying the material along a conveyor deck, comprising the steps of (*a*) maintaining only part of the material in a gas-fluidized phase above the deck by passing a gas upwardly through the material at a rate sufficient to fluidize only part of the material and insufficient to produce substantial entrainment of such material, (*b*) causing said gas-fluidized phase to flow along the deck, (*c*) conveying the remainder of the material along the deck by vibrating the deck in a controlled path of motion having a substantial vertical component and a

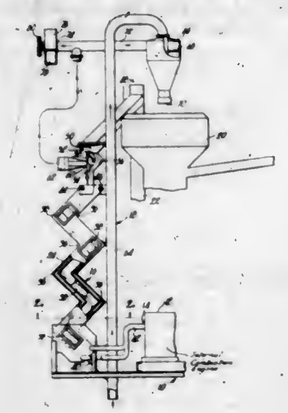




substantial horizontal component, (*d*) subjecting the material to heat exchange, said material containing a substantial proportion of relatively coarse particles, and (*e*) regulating the relative rates of flow of the gas fluidized phase and the vibratorily conveyed material such that the fluidized phase and the coarser particles reach a discharge point on the deck at the same time they have attained a predetermined temperature.

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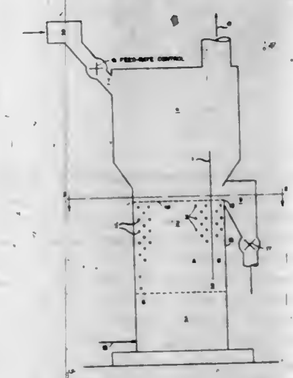
**3,166,384**
**GRAIN DRYING AND CONVEYING APPARATUS FOR COMBINES AND THE LIKE**
**Francis H. Clute, Rocky Ford, Colo., assignor to Francis H. Clute & Son, Inc., Rocky Ford, Colo., a corporation of Colorado**
**Filed Oct. 17, 1960, Ser. No. 62,915**
**9 Claims. (Cl. 34—57)**



1. For use on a combine provided with a frame, a source of hot products of combustion, a grain receiving hopper adjacent the upper part of the combine and a threshed grain conduit for conveying grain to said upper part of the combine, the combination of an upright, imperforate, tubular member adapted to be mounted on the frame and having an open upper end positioned to receive grain from said conduit whereby the grain gravitates through said member; imperforate wall means spaced from and extending along the outer surface of said member for defining with the latter an enclosed fluid passage extending continuously between the ends of said member and adapted to be coupled to said source of hot products of combustion for bringing said products into heat exchange relationship with the grain along a path exteriorly of said member as the grain gravitates through said member; conveyor means adapted to be mounted on said frame and disposed to receive the grain from the lower extremity of said member and extending upwardly therefrom for discharge of grain into said hopper; and suction means connected to said conveyor for forcing currents of air therethrough in a direction and under sufficient pressure to convey the grain from said lower extremity of the member, upwardly through the conveyor as the grain is entrained in said currents of air and whereby the grain is ultimately discharged from said conveyor into the hopper.

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**3,166,385**
**SEALED FLUIDIZATION CHAMBER**
**Marcel Pahlavouni, Brussels, Belgium, assignor to Solvay & Cie., Société en Commandite, a simple of Belgium**
**Filed Jan. 13, 1961, Ser. No. 82,426**
**Claims priority, application Belgium Jan. 20, 1960**
**1 Claim. (Cl. 34—57)**



Apparatus for continuous drying of thermoplastic, particulate solids in the form of a fluidized bed, said apparatus comprising, in combination:

a fluidization chamber;

a gas inlet chamber directly below said fluidization chamber and connected to a source of gas;

gas distribution means separating said fluidization chamber from said inlet chamber;

heat exchange tubes positioned in said fluidization chamber and connected to a source of heat exchange fluid;

a disengagement chamber, directly above said fluidization chamber, having a greater cross-sectional area than said fluidization chamber, and in open communication therewith;

gas-tight means for feeding solids continuously, at a controlled rate, into the upper part of said disengagement chamber;

a gas outlet in the upper part of said disengagement chamber;

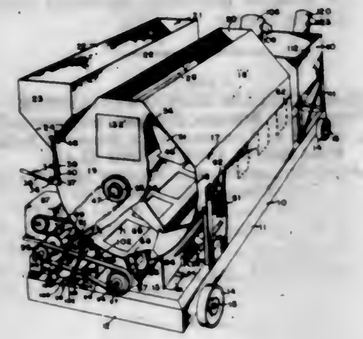
a generally upright partition in said fluidization chamber, dividing said chamber into a main drying compartment and a finishing compartment in open communication with each other at their lower ends, said partition being adapted to direct flow of solids from said solids supply means into said main drying compartment and subsequently into said finishing compartment;

solids withdrawal means in communication with the upper part of said finishing compartment, said withdrawal means being provided with gas-tight valve means for regulating solids flow;

and a weir positioned between said finishing compartment and said solids withdrawal means and adapted to regulate solids flow from said finishing compartment into said solids withdrawal means.

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**3,166,386**
**GRAIN DRYER AND COOLER**
Andy Maksymec, Box 104, Egremont, Alberta, Canada
Filed Oct. 16, 1961, Ser. No. 145,365
2 Claims. (Cl. 34—62)



1. In a grain dryer, the combination of a horizontal base plate, a substantially cylindrical hollow body mounted horizontally above said base plate and defining a drying chamber therein, said body having closed ends, a bottom portion, a pair of side portions and a top portion provided with an outlet opening for drying gases, means on the upper portion of said body for delivering grain to be dried into said chamber, a screw conveyor for dried grain provided longitudinally on said base plate below said body, the bottom portion of the body being formed with a dried grain outlet opening communicating the bottom of said chamber with said conveyor, a grain agitator rotatably mounted in said chamber, said grain agitator comprising a shaft extending axially in said chamber and rotatably journalled in the closed ends of said body, pairs of arms extending radially from said shaft, a horizontally elongated scoop carried by the outer ends of each pair of said arms, said scoop having a closed outer wall, a pair of closed side walls and an open inner portion oriented radially with respect to said shaft so that the open inner portion is uppermost when the scoop is in the bottom portion of said chamber but is lowermost when the scoop is in the upper portion of the chamber to permit grain to fall from the scoop to the bottom portion of the chamber, means carried by one side wall of each scoop and in wiping contact with the bottom and side portions of said body for gathering and delivering grain from the bottom portion of said chamber into the scoop, a pair of vertical side plates extending downwardly from the side portions of said body to said base plate, a pair of longitudinal partitions disposed at opposite sides of said conveyor and extending downwardly from the bottom portion of the body to the base plate in inwardly spaced relation from the respective side plates, said side plates and said partitions coacting with the bottom and side portions of said body and with the base plate to define a pair of burner compartments, burners provided in said compartments, the side portions of said body being provided with screened openings communicating said burner compartments with said chamber, openable closure means provided for the grain outlet opening in the bottom portion of said body, a dried grain cooler provided on said base plate at one end of said body, and means for delivering dried grain from said conveyor to said cooler.

**3,166,387**
**AMMONIUM CARBOXYLATE POUR POINT DEPRESSANTS FOR FUEL OIL COMPOSITION**
Herman G. Ebner, Whiting, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed July 17, 1961, Ser. No. 124,365
13 Claims. (Cl. 44—62)

1. A fuel oil composition comprising a major amount of a distillate fuel oil and an amount in the range of 0.001 to 5 weight percent of a quaternary ammonium salt having the structural formula:

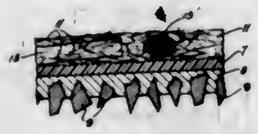
$$\left[\begin{array}{c} R_3 \\ | \\ R_2\text{—}N\text{—}H \\ | \\ R_1 \end{array}\right]_x \left[\left(O\overset{O}{\overset{\|}{C}}R_4\right)_z H_y\right]$$

wherein $R_1$ and $R_2$ are alkyl groups having from about 10 to about 22 carbon atoms, $R_3$ and $R_4$ are each selected from the class consisting of hydrogen and a $C_1$ to $C_{22}$ alkyl group, $x$ and $z$ are each integers of from 1 to 4 inclusive and $y$ is an integer of from 0 to 1 inclusive and where $x$ is 1, $y$ is 0.

3. The fuel oil composition of claim 1 which contains in addition to said ammonium salt, from 0.01 to 5 weight percent of an oil-soluble low-density low molecular weight hydrocarbon polymer of ethylene selected from the class consisting of polyethylene and copolymers of ethylene with $C_3$ to $C_8$ mono-olefinic hydrocarbon which polymers have an intrinsic viscosity of from 0.05 to 0.25 dl./g.

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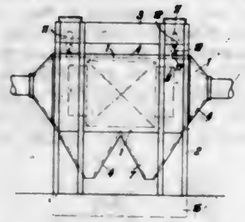
**3,166,388**
**SANDPAPER**
George C. Riegger, Miami Beach, Fla., and Richard M. Smith, New Brunswick, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Jan. 23, 1962, Ser. No. 169,704
9 Claims. (Cl. 51—296)



1. An abrasive paper which comprises a reinforced paper backing web, a layer of grit supporting making varnish on one side of said paper with a multiplicity of abrasive grits imbedded in said varnish, and a flexible barrier material preventing the making varnish from penetrating substantially into the backing, said barrier material being compatible with both the backing and the making varnish and bonding the backing to the varnish, said web comprising a continuous network of kraft-type wood-pulp fibers arranged in overlapping crossing relationship with one another so as to define a multiplicity of interstices between them, and a multiplicity of flexible and tough thermoplastic reinforcing members distributed substantially uniformly throughout the web in bonding relation with the wood-pulp fibers, said reinforcing members being between about 1 and 35 mils in cross dimension and at least about five times larger in cross-sectional area than said woodpulp fibers and defining a multiplicity of spaces between said members, the average distance across the spaces between the reinforcing members being considerably greater than the average distance across the interstices between the woodpulp fibers whereby several of said interstices generally are located in each of the spaces between the reinforcing members.



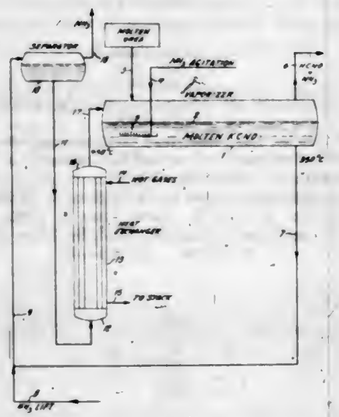
**3,166,389**
**HOT GAS ELECTROFILTER**
Friedrich Kappis, Essen-Uberruhr, and Jean Wiemer, Oberhochstadt, Taunus, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 28, 1960, Ser. No. 65,853
Claims priority, application Germany, Nov. 18, 1959, M 43,420
2 Claims. (Cl. 55—146)



1. A hot gas electrofilter comprising a reinforced concrete frame, a filter-housing of reinforced concrete of a thickness of not over 20 cm. within the frame, discharge and precipitating electrodes within said filter housing, means directly supporting said discharge electrodes from said frame independently of the filter-housing and electrically insulating said discharge electrodes from said frame, means directly supporting the precipitating electrodes from said frame independently of the filter-housing, a layer of insulation around the outside of said housing, and means resiliently mounting said filter-housing in the frame, whereby the temperature drop in the walls of the filter-housing does not exceed 20° C.

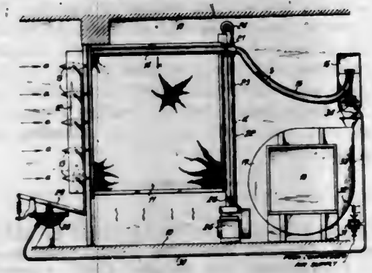
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**3,166,390**
**METHOD OF MAKING HCNO**
Edward S. Roberts, Ridgewood, and Ludwig J. Christmann, Bronxville, N.Y., assignors to Carbogen Corporation, Bronxville, N.Y., a corporation of New York
Filed Apr. 4, 1960, Ser. No. 19,921
8 Claims. (Cl. 23—151)




1. A method of producing HCNO in the vapor form which comprises providing a melt of a salt of cyanic acid at a temperature substantially above about 325° C., introducing into said melt a substance taken from the class consisting of urea, biuret, cyanuric acid, said salt being liquid at about 325° C. and having solubility for said substances, removing the gaseous products formed, and recovering HCNO from said products.

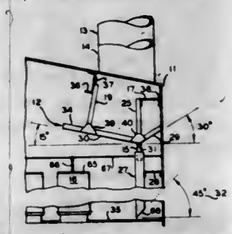
**3,166,391**
**FILTER CLEANING DEVICE FOR AIR EXHAUST SYSTEMS AND THE LIKE**
Walter Keser, Stuttgart-Feuerbach, Germany, assignor to Lufttechnische Gesellschaft m.b.H., Stuttgart-Zuffenhausen, Germany, a corporation of Germany
Filed Mar. 30, 1961, Ser. No. 99,575
Claims priority, application Germany, Apr. 11, 1960, L 35,884
5 Claims. (Cl. 55—273)



1. In filtering apparatus for removing dust, fibers and other particles from an exhaust air or the like stream passing through a horizontal conduit, a plurality of juxtaposed vertical filtering screens disposed transversely across said conduit, whereby each of said screens intercepts a fractional cross-sectional portion of the total stream through said conduit, to remove the particles contained therein, screen cleaning means comprising a blowing tube for each screen arranged closely adjoining the surface on the downstream side thereof, said tubes being provided with exit ports on their sides adjacent to said screens, first operating means to move all said tubes in unison to and fro over the areas of the respective screens, a plurality of adjustable shutters one for each screen and disposed on the upstream side thereof, to pass and intercept, respectively, the respective fractional portions of the total stream through said conduit, second operating means effective during the operation of said first operating means, to selectively apply compressed air to any one of said tubes, to clean the associated screen substantially without interrupting the filtering action of the remaining screens, and means synchronized with said second operating means to close the shutters of the respective screens during the cleaning thereof by its associated blowing tube.

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**3,166,392**
**STACK CONDENSATE TRAY IN CARBON BLACK FILTER HOUSING**
Lawrence C. Keaton, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 28, 1961, Ser. No. 134,420
2 Claims. (Cl. 55—280)

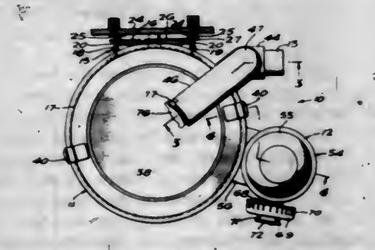


1. A bag filter system for separating carbon black from gases containing carbon black in suspension comprising, in combination, an enclosure having a floor, enclosing sidewalls and a roof, a plurality of upright cylindrical filter bags in said enclosure, a plurality of openings in said floor, the lower end of each filter bag

being open and operatively communicating with one of said plurality of openings in such a manner that gases containing carbon black in suspension upon passing upwardly through said openings enter said bags, means for introduction of gases containing carbon black in suspension into said openings and thence into said bags, the upper ends of said bags being closed and terminating at a level short of said roof, at least one vent pipe in said roof, a tray positioned directly below said pipe and above the top level of said bags, said tray being of greater lateral extent than that of said pipe and being a V-shaped sloping trough, a drain spout in operative communication with the lowermost portion of said tray in such a manner that liquid on said tray drains therefrom into said drain spout, and a conduit communicating operably with said drain spout and extending substantially to said floor.

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**3,166,393**
**INSTALLED SUCTION CLEANER SYSTEM**
**Clarence E. Stevens, Pasadena, Calif., assignor to The Filtex Corporation, Los Angeles, Calif., a corporation of Michigan**
**Filed Sept. 15, 1958, Ser. No. 760,956**
**6 Claims. (Cl. 55—358)**

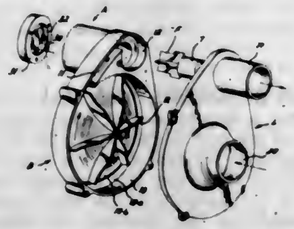


1. A permanently installed type suction cleaner comprising a main outer casing with means for securing the same to a building wall and having a removable cover for an access opening thereinto, said opening having a seating ledge, an air pervious filtering means seated on said ledge, said cover having tubular air duct means secured thereto and opening at one end into said filtering means and the other end of said duct means being shaped to open into and form an airtight seal with suction air passage means exteriorly of said casing and leading through ducting installed in the walls of a dwelling to remote areas of a dwelling to be cleaned, a motor driven air suction assembly detachably supported as a unit on the exterior of said casing independently of said cover and having an air inlet opening into said casing on the exterior side of said air filtering means, a hollow bracket fixedly secured to the exterior side wall of said casing for supporting said motor driven air suction unit and having an outlet opening into said suction unit, final filter means in said hollow bracket, said hollow bracket having an inlet opening through the wall of said casing and into the inlet end of said air suction unit, said hollow bracket having a normally closed access opening through the wall thereof located between said inlet and said outlet openings, and a closure for said access opening including means for supporting and positioning said final filter means.

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**3,166,394**
**SELF-DUMPING CENTRIFUGAL SEPARATOR**
**Robert Addis Lockwood, Reseda, Calif., assignor, by mesne assignments, to Arthur R. Adams, Glendale, Calif.**
**Filed Apr. 12, 1961, Ser. No. 102,536**
**6 Claims. (Cl. 55—416)**

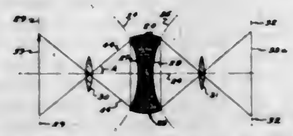
1. A combined blower and separator comprising, in combination: an integrally formed substantially flat base member having an open face in which are formed an approximately cylindrical rotor chamber, an approximately cylindrical separator chamber, and an interconnecting passageway, said chambers having their longitudinal axes parallel and being substantially aligned with said passageway in a direction perpendicular to the direction of their longitudinal axes, each end of said passageway opening into the corresponding chamber tangentially to the circumference thereof and cooperating with the associated chamber wall to form a smooth spiral wall surface on the outer edge of said passageway; a shaft journaled in the wall of said base member and projecting into said rotor chamber; a centrifugal rotor disposed within said rotor chamber and carried on the end of said shaft; a lid member removably attached to said face of said base member so as to enclose said chambers and said passageway, said lid member having an air inlet opening formed therein at



the center of said rotor chamber; means coupled to said base member providing a longitudinal conduit portion contiguously adjoining said separator chamber as a longitudinal extension thereof, the interior wall surface extending abruptly inwardly to provide an interior diameter decrease at the point of passing from said separator chamber to said conduit portion, a discharge port being formed in the circumferential wall of said separator chamber; and an air outlet opening provided at the end of said conduit portion remote from said abruptly inwardly extending wall surface; the action being such that velocity developed in the air stream flowing circumferentially within said rotor chamber is transmitted substantially undiminished through said passageway into said separator chamber whereby heavy particulate separated by centrifugal force from said air stream is discharged through said discharge port together with a limited amount of air.

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**3,166,395**
**METHODS OF MAKING FIBER OPTICAL DEVICES**
**John W. Hicks, Jr., Fiskdale, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts**
**Original application June 3, 1958, Ser. No. 739,535, now Patent No. 3,033,071, dated June 8, 1962. Divided and this application July 13, 1961, Ser. No. 130,450**
**6 Claims. (Cl. 65—4)**



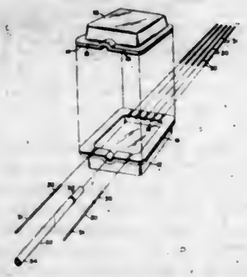
1. The method of making a fiber optical device of the character described for use in an optical system having at least one optical image-forming component having a known focal distance and curvature of field, said method comprising, forming an assembly of intimately bundled light-conducting fibers in side-by-side connected relation with each other and having at least one section of said assembly necked down so that the longitudinal axes of said fibers in said section are oriented to converge at a



common point spaced from said section at a distance substantially corresponding to said focal distance of said optical component, cutting transversely through said section of said assembly to form a first face part thereon, optically finishing said first face part to a curvature corresponding to said known curvature of field of said optical component, and optically finishing a second face part at the end of said assembly opposite to said first face part.

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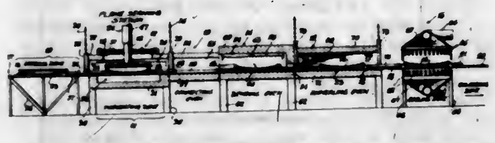
**3,166,396**
**METHOD OF FORMING SEALED ARTICLE**
**Carl F. Miller, Bath, and Hilmar M. Heyn, Elmira, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Sept. 15, 1960, Ser. No. 56,303**
**5 Claims. (Cl. 65—32)**



1. The method of joining a first member to a second member comprising the steps of depositing a quantity of a suspension of a sealing material having a flow point lower than that of either of said members on a surface of at least one of said members, heating said member having said sealing material thereon in an oxidizing atmosphere at a first temperature to remove the liquid constituents of said suspension, placing said second member in sealing relationship with said surface of said first member, and heating said first and second members in an inert atmosphere to a second temperature higher than the flow point of said sealing material but not as high as the flow point of either of said members.

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**3,166,397**
**APPARATUS FOR HEAT TREATING GLASS SHEETS**
**Frederick R. Hohmann, New Kensington, and Homer E. Neely, Tarentum, Pa., assignors to Pittsburgh Plate Glass Company, a corporation of Pennsylvania**
**Application Mar. 8, 1957, Ser. No. 644,951, now Patent No. 2,971,294, dated Feb. 14, 1961, which is a continuation of application Ser. No. 243,148, Aug. 22, 1951. Divided and this application Mar. 14, 1960, Ser. No. 18,210**
**2 Claims. (Cl. 65—268)**

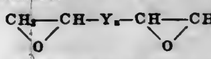


1. Apparatus for converting a flat sheet of glass into a flame seamed curved sheet of glass including a gas burner having a row of nozzles directed horizontally and at least as long as one edge of the glass sheet, said nozzles being closely spaced so as to form effectively a sheet of flame, upward lifting means for moving said sheet broadside in a direction at right angles to the plane of the flame to bring an edge of the glass sheet into alignment with said row of nozzles so that said sheet of flame impinges on said edge, preheating means located below said burner, said upward lifting means being operable to lift a sheet from said preheating means to said burner and return it to said preheating means, lateral conveyor means for moving a sheet horizontally into said preheating means and removing a sheet horizontally from said preheating means, and glass sheet support means including a bending mold having extremities located in a horizontal plane, and an upper shaping surface of concave elevation, and a movable glass support member located between the mold extremities and movable into a first position above the intermediate portion of said upper shaping surface terminating in the horizontal plane defined by the mold extremities to contact and support the bottom surface of the flat glass sheet intermediate its extremities, and movable into a second mold position below said upper shaping surface.

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**3,166,398**
**PRE-EMERGENCE CONTROL OF PLANT GROWTH**
**Bryant L. Walworth, Pennington, and Albert W. Lutz and Kathryn Wood, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed May 31, 1962, Ser. No. 198,772**
**4 Claims. (Cl. 71—2.5)**

1. A method for the control of undesirable plant growth which comprises: applying to an area to be protected from such growth a bis-epoxy compound represented by the formula:

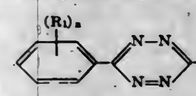


wherein Y is a divalent radical selected from the group consisting of $-CH_2OCH_2-$ and lower alkylene from one to four carbon atoms and $n$ is an integer from 0 to 1, in an amount sufficient to effect herbicidal action.

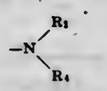
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**3,166,399**
**CONTROLLING UNDESIRABLE PLANT GROWTH WITH UNSYMMETRICALLY SUBSTITUTED s-TETRAZINES**
**Albert W. Lutz, Princeton, and Bryant L. Walworth, Pennington, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed Dec. 3, 1962, Ser. No. 241,501**
**6 Claims. (Cl. 71—2.5)**

1. A method for the control of undesirable plant growth which comprises: applying to an area to be protected from such growth an unsymmetrically disubstituted s-tetrazine compound represented by the formula:



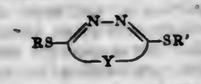
where $R_1$ is a radical selected from the class consisting of hydrogen, lower alkyl, halogen, hydroxy, lower alkoxy, lower alkylthio, carboxyl, (lower) carbalkoxy, amino, lower monoalkyl amino, and lower dialkyl amino; $n$ is an integer from 1 to 3, and $R_2$ is a substituent selected from the group consisting of hydrogen, halogen and



wherein $R_3$ and $R_4$ each represents a radical selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, hydroxy-substituted lower alkyl, carboxy-substituted lower alkyl, and when joined, $R_3$ and $R_4$ constitute a 3- to 6-membered heterocyclic moiety selected from the group consisting of aziridinyl, morpholino and piperidinyl, in an amount sufficient to produce herbicidal action.

3,166,400
METHOD FOR THE CONTROL OF UNDESIRABLE PLANT GROWTH
Albert W. Lutz, Princeton, and Bryant L. Walworth, Pennington, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 3, 1962, Ser. No. 241,502
5 Claims. (Cl. 71—2.5)

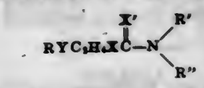
1. A method for the control of undesirable plant growth with comprises: applying to an area to be protected from such growth disubstituted s-letrazines having the formula:



wherein R and R' each represents a substituent selected from the class consisting of lower alkyl and lower alkenyl, and Y is a linking bridge selected from the class consisting of —N=N— and —NH—NH—, in an amount sufficient to effect herbicidal action.

3,166,401
CONTROLLING VEGETATION WITH ARYLOXY-ETHYL ESTERS OF DIALLYLTHIOCARBAMIC ACIDS
Anton G. Weiss, Nitro, W. Va., and Philip C. Hamm, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Original application Oct. 7, 1959, Ser. No. 844,872. Divided and this application Sept. 26, 1962, Ser. No. 253,235
5 Claims. (Cl. 71—2.6)

1. The method of controlling vegetation which comprises applying thereto a phytotoxic concentration of a phytotoxic thiocarbamate of the structure



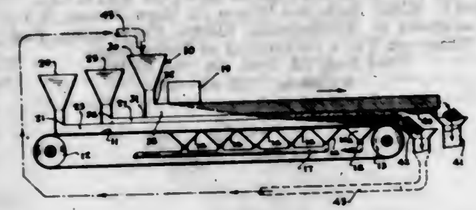
where R represents a member of the group consisting of phenyl and halogen substituted phenyl containing at least one, but not more than three, halogen atoms selected from the group consisting of chlorine and bromine, Y, X and X' represent a member of the group consisting of oxygen and sulfur at least one of X and X' being sulfur and R' and R'' represent radicals selected from the group consisting of allyl monochloro substituted allyl.

3,166,402
BRAZING COMPOSITIONS HAVING POLYVINYL BUTYRAL AS A BINDER
Jerome A. Berson, Madison, Wis., and Arthur T. Cape, Monterey, Calif., assignors to Powder Melting Corporation, Monterey, Calif., a corporation of California
No Drawing. Filed Sept. 24, 1963, Ser. No. 311,212
4 Claims. (Cl. 75—.5)

1. A brazing composition consisting of from about 5% to about 11% by weight of polyvinyl butyral, from about .5% to about 5% by weight of water, and the balance essentially all a metallic brazing powder selected from the group consisting of nickel-base alloys, manganese-base alloys, copper-base alloys, cobalt-base alloys, and copper.

3,166,403
SINTERING PROCESS
Arthur M. Schwarz, Munster, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 24, 1960, Ser. No. 10,780
7 Claims. (Cl. 75—5)

1. A process of simultaneously preparing a fluxed iron ore sinter product substantially free of arsenic and treating an iron ore containing arsenic as an impurity which comprises; continuously depositing on a continuously moving gas-permeable sintering conveyor means a first layer of a substantially flux-free iron ore sinter mixture containing iron ore having at least about .03% by weight arsenic as an impurity and depositing thereabove a distinct second layer of a fluxed iron ore sinter mixture in which the iron ore has an arsenic content below about .03% by weight, subjecting both said layers of sinter mixtures during movement of said conveyor means to a downdraft sintering heat treatment to effect formation of distinct layers of sinter products of said first and second layers of sinter mixture and reduction of the arsenic content of the said iron ore sinter product of said first layer substantially below about .03% by weight, and continuously separating on said sintering conveyor means said layers of sinter products along a cleavage plane between said layers; whereby a fluxed sinter product suitable for charging into a metallurgical furnace is recovered separately from the sintered iron ore of said first layer of iron ore sinter mixture.



3,166,404
RECOVERY OF RHODIUM FROM FISSION PRODUCTS
Eugene A. Hausmann, Cranford, N.J., assignor, by mesne assignments, to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Mar. 4, 1959, Ser. No. 797,026
2 Claims. (Cl. 75—83)

1. A process for recovering rhodium from fission products which comprises treating an acid solution containing rhodium to precipitate insoluble sulfides therefrom, converting redissolved rhodium sulfide to a base-soluble complex rhodium salt, adjusting the pH of the solution to the basic range, removing precipitated base metal compounds, separating rhodium from the solution, and recovering rhodium metal.

3,166,405
PURIFICATION OF GALLIUM
Stanley M. Kulifay, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 17, 1962, Ser. No. 244,863
2 Claims. (Cl. 75—84)

1. A process for purifying gallium comprising contacting liquid gallium with a mixture of nitric and hydrochloric acids, and subsequently removing the acid solution from said gallium.

3,166,406
ALLOY FOR ELEVATED TEMPERATURES
Stephen Floreen, Westfield, and Raymond F. Decker, Fanwood, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 3, 1962, Ser. No. 214,475
6 Claims. (Cl. 75—124)

1. A steel having an advantageous combination of mechanical characteristics including strength and toughness at temperatures ranging from about room temperature up to about 1000° F. and consisting essentially, in percent by weight, of about 14% to about 16% nickel, about 8.5% to about 9.5% cobalt, about 4.6% to about 5.2% molybdenum, about 0.1% to about 0.8% titanium, about 0.1% to about 1.2% aluminum, up to about 3% vanadium, up to about 0.03% carbon, up to about 0.2% manganese, up to about 0.2% silicon, up to about 0.01% boron, up to about 0.1% zirconium, up to about 0.05% calcium with the balance being essentially iron, the titanium, aluminum and vanadium contents of said steel being so correlated so that the number X calculated by

$$X=5\times\%Ti+3\times\%Al+\%V$$

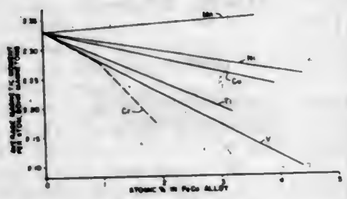
is about 4.5 to about 7.



3,166,407
ALLOY STEEL AND CAST ROLL MADE THEREFROM
Roy J. Knoth, Deal, and Norman A. Matthews, Franklin Lakes, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 18, 1962, Ser. No. 245,408
6 Claims. (Cl. 75—128)

1. A cast steel primary breakdown roll made of a cast steel consisting essentially of about 0.55% to about 0.65% carbon, about 0.2% to about 0.55% silicon, about 0.3% to about 0.7% manganese, about 3.4% to about 3.7% nickel, about 0.8% to about 1% chromium, about 0.35% to about 0.45% molybdenum, about 0.1% to about 0.2% vanadium, and the balance essentially iron.

3,166,408
MAGNETIC ALLOYS
Charles W. Chen, Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 16, 1961, Ser. No. 153,263
9 Claims. (Cl. 75—134)



1. A magnetically soft alloy of high purity consisting of, by weight, from 3.2% to 10% manganese, from 35% to 60% cobalt, and the balance at least 35% iron and small amounts of incidental impurities, including detrimental impurities not exceeding 200 parts per million.

3,166,409
SILICON-NIOBIUM ALLOYS
Roger Thomas John Hubbard, Sutton Coldfield, England, assignor to Imperial Metal Industries (Kynoch) Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 31, 1963, Ser. No. 284,378
Claims priority, application Great Britain, June 1, 1962, 21,195/62
5 Claims. (Cl. 75—134)

1. A niobium-silicon alloy consisting essentially of: 64⅓ to 68⅓ atomic percent silicon, an addition agent selected from the group consisting of 1⅓ to 10 atomic aluminum, 1⅓ to 23⅓ atomic percent chromium, 1⅓ to 23⅓ atomic percent iron and 6⅓ to 23⅓ atomic percent titanium, and the balance essentially niobium.

3,166,410
FORGING BRASS ALLOY CONTAINING SMALL AMOUNTS OF BERYLLIUM
Philip S. Hanson, Wyomissing, and Robert E. Saxtan, Reading, Pa., assignors to The Beryllium Corporation, Reading, Pa., a corporation of Delaware
No Drawing. Filed Apr. 29, 1963, Ser. No. 276,155
5 Claims. (Cl. 75—153)

1. A forging brass alloy consisting of the following constituents in the following range proportion:

| | Percent |
|---|---|
| Copper | 58.0 to 68.0 |
| Lead | 1.5 to 2.5 |
| Beryllium | 0.18 to 0.70 |
| Balance | Zinc |

3,166,411
NICKEL-CHROMIUM ALLOYS
Reginald Massey Cook, Birmingham, and John Henry Gittus, Wrea Green, near Preston, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 21, 1962, Ser. No. 181,437
Claims priority, application Great Britain Oct. 21, 1958
4 Claims. (Cl. 75—171)

1. An alloy capable of being age-hardened consisting essentially of about 10% to about 18% chromium, about 3% to about 9% molybdenum, about 15% to about 25% cobalt, at least about 4.5% aluminum, at least about 1.1% titanium, with the proviso that the ratio of aluminum content to titanium content is between about 3 to 1 and about 4.5 to 1, about 0.05% to about 0.3% zirconium, about 0.001% to about 0.01% boron, together with carbon in amounts from about 0.10% to about 0.30%, the balance essentially nickel, said alloy having the amounts of aluminum plus titanium and chromium so interrelated that the alloy contains the percentage of aluminum plus titanium in amounts equal to about ¼ times the quantity (42 minus percent chromium) to about ¼ times the quantity (46 minus percent chromium), said alloy when vacuum treated being characterized by having a life-to-rupture in excess of 200 hours at a temperature of 940° C. and at a stress of 7 tons per square inch.

3,166,412
CAST NICKEL-BASE ALLOY FOR GAS TURBINE ROTORS
Clarence G. Bieber, Roselle Park, N.J., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,857
4 Claims. (Cl. 75—171)

2. A nickel-base alloy containing not more than about 0.06% carbon, about 10% to 18% chromium, about 0.5% to 6% of a metal from the group consisting of molybdenum and tungsten and with the total contents of chromium, molybdenum and tungsten being about 15% to about 20%, about 5% to 8% aluminum, up to about 15% cobalt with the proviso that when the cobalt content is less than about 10% the aluminum content is about 5% to 7%, up to about 1.5% titanium, about 1% to 3% columbium, about 0.01% boron, up to about 0.15% zirconium, up to about 0.05% calcium, and the balance essentially nickel.

3,166,413
TUNGSTEN-CONTAINING NICKEL-CHROMIUM ALLOYS
Stuart W. K. Shaw, Sutton Coldfield, and Reginald M. Cook, King's Heath, Birmingham, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 4, 1963, Ser. No. 256,090
Claims priority, application Great Britain Feb. 7, 1962
9 Claims. (Cl. 75—171)

1. A cast alloy consisting essentially of about 5% to 10% chromium, about 7% to 16% tungsten, up to about

5% molybdenum, up to about 4% niobium with the sum of the percentages of tungsten, molybdenum and niobium plus two-thirds the percentage of chromium being about 17.5% to 20.5%, about 2% to 8% aluminum, about 0.03% to 0.3% carbon, up to about 1% zirconium, and up to about 0.05% boron with the balance being essentially nickel.

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3,166,414
TANTALUM BASE ALLOYS
Leonard L. France, Wilkinsburg, and Lee S. Richardson and Duane H. Feisel, Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed July 9, 1962, Ser. No. 208,617
4 Claims. (Cl. 75—174)

1. A cast member comprising a tantalum base alloy consisting essentially of by weight 2 to 8% hafnium, 2 to 10% tungsten and the balance tantalum with incidental amounts of impurities.

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3,166,415
MAGNESIUM-BASED ALLOYS
Louis A. Conant, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 28, 1960, Ser. No. 78,849
5 Claims. (Cl. 75—202)

1. The method of preparing a magnesium-base alloy product characterided by an increased modulus of elasticity and a decreased coefficient of thermal expansion which comprises preparing a mixture consisting essentially of from about 10 to about 50 volume percent of particles of borides of at least one metal selected from the group consisting of titanium, chromium, zirconium, tantalum, columbium, hafnium, vanadium and molybdenum, and the balance a powdered magnesium material selected from the group consisting of magnesium and magnesium-base alloys, compacting the resulting mixture into a coherent slug, heating the resulting slug in the absence of air at a temperature at which the magnesium material melts without substantial vaporization and below the melting temperature of the metal borides, cooling the slug to a temperature below the freezing temperature of the selected magnesium material, and forming the slug into a desired shape.

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3,166,416
PROCESS FOR PRODUCING DISPERSION-HARDENED ALLOYS
David Kenneth Worn, Solihull, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 26, 1961, Ser. No. 105,560
Claims priority, application Great Britain, May 12, 1960, 16,843/60
6 Claims. (Cl. 75—206)

1. A process for producing a dispersion-hardened nickel-chromium alloy which comprises providing, by weight, about 6 parts of thoria having a mean particle size of about 0.05 micron and about 75 parts, by weight, of carbonyl nickel powder having a mean particle size of less than about 2 microns, ball milling said nickel powder and thoria to form a substantially homogeneous mixture, heating said mixture to about 400° C. in a hydrogen atmosphere to remove traces of oxygen, pressing said mixture to form a compacted mixture, crushing the compacted mixture, reheating the crushed mixture to about 400° C. in the presence of hydrogen to remove traces of oxygen, infusing said mixture by vapor-deposition in an essentially oxygen-free atmosphere with about 19 parts, by weight, of chromium to form chromized aggregates and extruding said aggregates to produce a substantially homogeneous dispersion-hardened alloy containing not more than 0.05%, by weight, of metal oxides other than thoria.

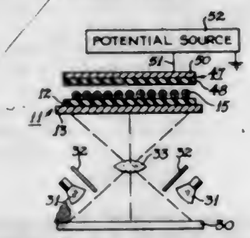
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3,166,417
PLATINUM-GROUP METAL SHEET
Peter Edward Gainsbury, Ruislip, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 29, 1963, Ser. No. 276,187
Claims priority, application Great Britain, May 7, 1962, 39,850/61
5 Claims. (Cl. 75—206)

2. The process for producing a metallic sheet product containing about 0.1% up to about 5%, by volume, of a dispersed, hard, metal oxide phase which comprises mixing metallic flake powder containing up to about 50%, by weight, of metal from the group consisting of gold, silver, nickel and copper and the balance a metal from the group consisting essentially of platinum, palladium and rhodium with an organic solvent solution of a metal salt decomposable to a hard metal oxide from the group consisting of thoria, zirconia, alumina, beryllia, yttria, ceria and lanthana with said metal salt being in an amount sufficient to provide about 0.1% to about 5%, by volume, of said hard metal oxide in said flake metal powder, removing said organic solvent, compacting the resulting treated flake powder, sintering the resulting compact at a temperature of at least about 800° C. to form a sintered compact having a hard metal oxide phase dispersed therethrough, and working the sintered compact into sheet form to provide a sheet product having very substantially higher strength at elevated temperatures as compared to a similar product produced by conventional melting and working procedures.

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3,166,418
IMAGE DEVELOPMENT
Robert W. Gundlach, Spencerport, N.Y., assignor to Xerox Corporation, a corporation of New York
Filed May 7, 1959, Ser. No. 811,591
2 Claims. (Cl. 96—1)

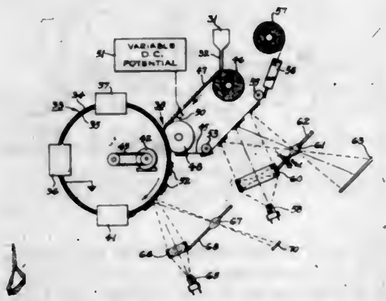



1. The method of producing a powder image on an insulating transfer surface which comprises, in sequence:
forming a substantially uniform layer of charged powder particles on the surface of a photoconductive insulating layer supported on a conductive base;
placing the transfer surface in contact with said layer of charged particles with an electrical field externally applied behind and across said transfer surface, said field of direction and magnitude to oppose movement of the charged particles toward said transfer surface and to create a condition of no field between said insulating surface and the charged particles;
exposing said photoconductive insulating layer to a pattern of light and shadow to selectively vary the conductivity through said photoconductive insulating layer, and, simultaneously therewith, reducing said electrical field in accordance with the varying conductivity through the areas of the photoconductive layer exposed to light to maintain a condition of no field between said insulating surface and the particles on said areas exposed to light;
whereby a powder image is transferred to the insulating transfer surface from the non-exposed areas in accordance with the shadow areas of said pattern.



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3,166,419
IMAGE PROJECTION
Robert W. Gundlach, Spencerport, N.Y., assignor to Xerox Corporation, a corporation of New York
Filed May 7, 1959, Ser. No. 811,592
6 Claims. (Cl. 96—1)

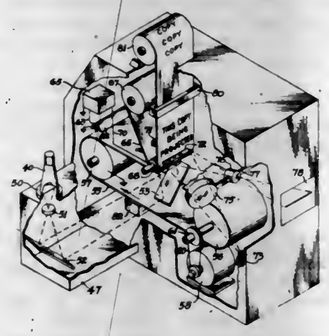



1. A method of projecting and recording an image which comprises:
(A) providing a developer dispersing member having a specularly reflecting surface;
(B) coating said member with electrostatic developing particles at least just sufficiently to substantially mask the specularly reflecting properties of its surface;
(C) contacting said developer dispersing member with an electrostatic image bearing layer, said layer comprising a photoconductive insulating material having a resistivity at least sufficient to permit the storage of an image from the time of formation until contact with said dispersing member;
(D) thereby allowing said developer to be attracted by an opposite polarity of the image pattern on said image bearing layer thereby detaching themselves from said dispersing member and attaching to the electrostatic image bearing member and
(E) thereby forming a pattern on said dispersing member by the absence of developer thereon corresponding to a negative of the positive image formed on said image bearing member;
(F) separating said dispersing member from said image bearing member;
(G) and specularly projecting the image formed on said dispersing member to an image receiving member while substantially simultaneously recording the image formed on said electrostatic image bearing member by transferring the developed image to a transfer member.

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3,166,420
SIMULTANEOUS IMAGE FORMATION
Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, a corporation of New York
Filed May 7, 1959, Ser. No. 811,653
4 Claims. (Cl. 96—1)

1. A method of projecting and recording an image which comprises:
(A) providing a developer dispensing member having a conductive and specularly reflecting surface;
(B) coating said member with a thin layer of a conductive developing powder at least just sufficiently to substantially mask the specularly reflecting properties of said surface;
(C) contacting said coated surface with the surface of a sensitized electrophotographic plate having a substantially uniform electrostatic charge thereon, said plate comprising a transparent supporting substrate having thereon a photoconductive layer;
(D) exposing said plate through said transparent supporting substrate to an image pattern, thereby causing selective discharge of the sensitive surface and selective adherence of said developer particles to said plate in accordance with said image pattern,



forming thereby on said plate a positive developed image and forming a negative of said image on said specular reflecting dispensing member by the absence of developer thereon;
(E) separating said dispensing member from said plate and specularly projecting the image formed on said dispensing member to an image receiving means, while substantially simultaneously recording the positive image formed on said plate by transferring the developed image on said plate to a transfer medium.

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3,166,421
METHOD AND COMPOSITION FOR DEVELOPING LITHOGRAPHIC PLATES
Charles Gramlich, Highland Park, Ill., assignor to American Zinc Institute, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed June 29, 1961, Ser. No. 120,507
3 Claims. (Cl. 96—49)

1. A developer for exposed diazo resin sensitized zinc, aluminum or stainless steel plates upon which the resin has been applied by the wipe-on process, said developer consisting essentially of a water oil emulsion having hydrophilic and lipophilic properties and consisting essentially of
(*a*) an emulsifier-stabilizer,
(*b*) an oily non-drying developer ink phase constituting from 9–35% of the emulsion and consisting essentially of a pigment, a non-drying mineral oil and a hydrocarbon terpene resin, and
(c) a water phase constituting the remainder of the emulsion in which is dissolved in the water of said phase, a component consisting essentially of a gum having hydrophilic action, said gum being selected from the group: sodium carboxymethyl cellulose, gum arabic, copolymer of methyl vinyl ether and maleic anhydride.

3. In the method of developing lithographic plates made from zinc, aluminum or stainless steel, having thereon a light-sensitive coating of a water-soluble diazo resin applied thereon by the wipe-on process, the step of applying to said plate after imagewise exposure thereof, a developer as set forth according to claim 1.

3,166,422
**DIAZOTYPE HEAT DEVELOPMENT PHOTOGRAPHIC PAPER COMPRISING A SUGAR BRIGHTENING AGENT**
John Joseph McKinney, Binghamton, and Bernard I. Halperin, Glen Aubrey, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 1, 1963, Ser. No. 292,114
6 Claims. (Cl. 96—75)

1. A two-component diazotype photo-printing material having on the surface of a supporting sheet a light-sensitive diazonium compound, an azo coupler, an acid stabilizer against premature coupling, a neutral to acid compound which on heating to a temperature of 100 to 200° C. produces an alkaline reaction, and a sugar selected from the class consisting of sucrose, lactose, cellobiose, mannose and raffinose.

5. A diazotype photo-printing material as defined in claim 1 wherein said diazonium compound and said acid to neutral compounds are contained in separate but superposed contiguous layers.

3,166,423
**TENDERIZATION OF MEAT**
Rhule B. Sleeth, Park Forest, and John F. Campbell, Brookfield, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed July 25, 1963, Ser. No. 297,679
5 Claims. (Cl. 99—107)

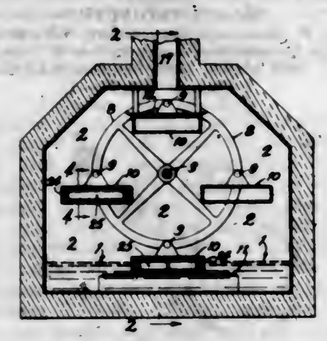
1. In a post-mortem process for tenderizing meat consisting largely of muscle and connective tissue, the steps of forming a saline water solution of bromelin and papain, in which the bromelin is from 0.0040 to 0.0410 percent by weight of the solution and the papain is from 0.0020 to 0.0210 percent and the sodium chloride is from 8 to 12 percent, warming the solution to about 100° F., and injecting the solution into the meat under a pressure of about 75 to 175 pounds per square inch and in the proportion of about 2 to 3.5 percent of the solution based on the weight of the meat.

3,166,424
**EGG YOLK PROCESS**
Robert A. Stewart, San Lorenzo, Vincent J. Kelly, Alameda, and Leonard J. Duckworth, Union City, Calif., assignors to Gerber Products Company, Oakland, Calif.
Filed Jan. 14, 1963, Ser. No. 251,184
6 Claims. (Cl. 99—182)

1. An improved method for preparing a sterile high protein content food material which is coagulable when subjected to heat which comprises providing an aqueous slurry of such food material, then preliminarily flash heat sterilizing said slurry prior to the final coagulation thereof and then further aseptically processing the sterilized product including the further heating thereof to obtain a product of final coagulative consistency.

3,166,425
**METHOD FOR FREEZING COOKED FOODS**
Willard L. Morrison, Lake Forest, Ill., assignor to Liquefreeze Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 22, 1960, Ser. No. 24,067
3 Claims. (Cl. 99—192)

1. The method of preparing cooked solid foods for storage and shipment which comprises the steps of housing liquid nitrogen within a chamber having an inlet portion and an outlet portion in communication with said chamber above the liquid nitrogen level, introducing said cooked solid food into the inlet portion, sealing off the inlet portion from communication with said chamber, expelling a substantial proportion of the air from said inlet portion, sealing off the inlet portion from communication with the atmosphere, placing said inlet portion into communication with said chamber thereby to expose said foods to gaseous nitrogen from within the chamber, advancing said foods from the inlet portion into the chamber, exposing the foods in said chamber to heat exchange with the liquid nitrogen in said chamber while maintaining said chamber at substantially atmospheric pressure to reduce

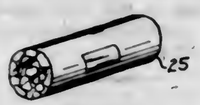


the temperature of the foods to below the freezing point, advancing the frozen foods to the outlet portion, expelling a substantial proportion of nitrogen gas accompanying said foods into said outlet portion for return of nitrogen gas to said chamber, sealing off the outlet portion from said chamber, and removing the frozen foods from said outlet portion.

3,166,426
**METHOD OF PRESERVING CANNED REFRIGERATOR DOUGHS**
Samuel A. Matz, Liverpool, Ernest G. Linke, North Syracuse, and Donald E. Mook, De Witt, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 9, 1962, Ser. No. 172,226
3 Claims. (Cl. 99—192)

1. The method of preventing the formation of visible crystals of disodium phosphate dodecahydrate in canned cereal doughs for refrigerated storage and subsequent baking containing phosphate leavening acids, comprising cooling the dough to at least its freezing point prior to storage at refrigeration temperatures above 32° F.

3,166,427
**POULTRY PROCESSING METHOD**
Willi A. Herrmann, 4612 W. Pratt Ave., Lincolnwood, Ill.
Filed Dec. 27, 1960, Ser. No. 78,611
4 Claims (Cl. 99—194)



1. The process for preparing a ready to eat boneless package of poultry including the steps of removing the skin and limbs from a poultry carcass and separating the meat of the carcass into relatively large sections, soaking several such meat sections in a brine solution having a salt content of approximately twenty percent by volume of the solution and for a period of time long enough for the solution to pass into the meat sections, the time being on the order of 20 hours soaking time for a brine solution having a salt content of approximately 20 percent by volume of the solution, bringing the sections together to form a single mass of the sections, compressing the sections into a shape of a regular order with the pressure being such as to produce said shape without destroying the fibrous and cellular nature of the meat, subjecting the mass in said shape and under said compression to a temperature such that it causes the internal temperature of the sections to reach 160° F., the temperature of the heat to which the mass is subjected being equal to that produced by water at a temperature of approximately 170° F. to boiling temperature, removing said mass after said internal temperature is reached and thereafter subjecting said mass while maintaining said compression to lower temperatures until an internal meat temperature of 40° F. is attained, and thereafter freezing said sections in said shape.



3,166,428
**GLASS FIBER COMPOSITIONS**
George L. Thomas, Parma, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed July 11, 1963, Ser. No. 294,239
7 Claims. (Cl. 106—50)

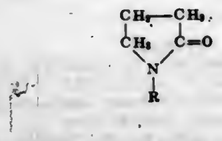
1. Aluminum silicate glass fibers consisting in percent by weight of:

| | |
|---|---|
| $SiO_2$ | 44.0–55.3. |
| $Li_2O$ | 1.7–10.2. |
| $Na_2O+K_2O$ | 5.2 with the sum of $Li_2O+Na_2O+K_2O$ always equal to 1.7–10.2. |
| Alkaline earth oxide | 4–15 selected from the group consisting of CaO, and CaO+MgO wherein when both CaO and MgO are employed, the ratio of CaO to MgO is at least 9:1. |
| ZnO | Up to 10. |
| $Sb_2O_3$ | Up to 10. |
| $Al_2O_3$ | 28.2–34.2. |

said glass fibers having an average tensile strength at least 30% greater than the tensile strength of E glass fibers of corresponding gauge.

3,166,429
**PIGMENTED COATING COMPOSITIONS CONTAINING PYRROLIDONE COMPOUNDS**
Emil A. Wich, Plainfield, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 22, 1958, Ser. No. 730,068
8 Claims. (Cl. 106—176)

6. A liquid coating composition for protective and decorative use, comprising a liquid film-forming coating composition vehicle, a pigment and a pyrrolidone compound having the formula



wherein "R" represents a member of the group consisting of hydrogen, lower alkyl and lower alkenyl hydrocarbon radicals of 1 to 4 carbon atoms, the quantity of said pyrrolidone compound ranging up to 10% by weight of the other non-volatile components exclusive of pigments.

7. A coating composition as defined in claim 6 wherein said coating composition vehicle is a nitrocellulose lacquer, and the proportion of pigment to said pyrrolidone compound is from 1:1 to 1:3.

3,166,430
**IRON CERAMIC PIGMENT**
Clarence A. Seabright, Lakewood, Ohio, assignor to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Feb. 27, 1964, Ser. No. 347,952
14 Claims. (Cl. 106—299)

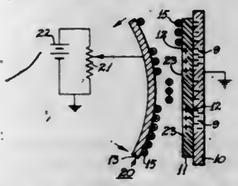
1. A coral pink ceramic pigment composition consisting essentially of from about 30 percent to about 80 percent by weight of oxide of zirconium, from about 15 percent to about 55 percent by weight of oxide of silicon and from about 0.25 percent to about 25 percent by weight of oxide of iron, associated together to the extent of at least about 40 percent of said oxides by weight in the form of an iron-containing zircon crystal lattice having at least about 0.25 percent by weight iron oxide contained in said lattice.

3,166,431
**CATALYST COMPOSITION**
Arthur B. Mullaly, 2925 Park Blvd., P.O. Box 11,283, Palo Alto, Calif.
No Drawing. Filed Mar. 28, 1962, Ser. No. 183,051
11 Claims. (Cl. 106—264)

1. As a new catalyst composition, a mixture of organic salts of at least two metals, the organic moiety of said salts being selected from the group consisting of acetylacetone, aliphatic acids having 6 to 24 C atoms, and naphthenic acid, one of said metals being selected from the group consisting of cobalt, manganese, and mixtures thereof, the other metal being samarium in an amount of 5 to 85 percent of the combined metal content.

7. A polymerizable resin composition containing as polymerization catalyst the composition of claim 1.

3,166,432
**IMAGE DEVELOPMENT**
Robert W. Gundlach, Spencerport, N.Y., assignor to Xerox Corporation, a corporation of New York
Filed May 7, 1959, Ser. No. 811,609
11 Claims. (Cl. 117—17.5)

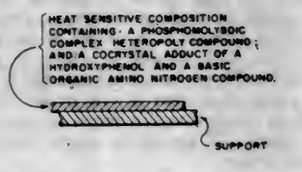


1. The method of image development in xerography comprising loading uniformly a dispensing member having a conductive surface layer with uncharged conductive developer particles, said particles being loaded on said conductive surface layer, maintaining said particles in adherence with said conductive surface layer substantially only by Van der Waal's forces, positioning said dispensing member adjacent to and across an electrostatic image pattern bearing surface with said conductive particles in contact with said pattern bearing surface and said dispensing member, and removing said dispensing member from said electrostatic image pattern bearing surface to form a developed image.

3,166,433
**HEAT SENSITIVE COPY AND RECORDING SHEET**
Michael F. Baumann, Hudson, and William R. Lawton, Nashua, N.H., assignors to Nashua Corporation, Nashua, N.H., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,899
6 Claims. (Cl. 117—36.8)

1. A copy and recording sheet responsive to a temperature in the range of 50–150° C. to produce a visibly

contrasting mark by the formation of a colored compound comprising a thin flexible backing and a coating thereon comprising, in intimate physical association, a solid phosphomolybdic complex heteropoly compound, and a solid potentially reactive reducing agent therefor comprising a solid co-crystal adduct formed from an hydroxyphenol compound selected from the class consisting of bisphenols




and hydroxyphenol substituted chromans and a basic organic amino nitrogen compound, the said co-crystal adduct being stable at normal temperatures and dissociable at a temperature in the range of 50–150° C. to provide the said reducing agent in reactive contact with the said heteropoly compound to initiate the formation of the said colored compound.

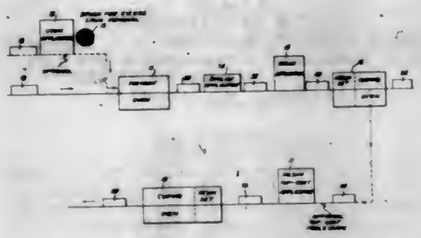
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**3,166,434**

**PROCESS OF COATING POROUS SUBSTRATES WITH POLYESTER RESINS COMPRISING FUMARIC ACID, POLYOXYALKYLENE GLYCOL AND DICYCLOPENTADIENE**

**Edward A. Ganger, Jr., Oakland, Calif., assignor to De Soto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware**

**Filed Dec. 11, 1961, Ser. No. 158,341**
**18 Claims. (Cl. 117—57)**



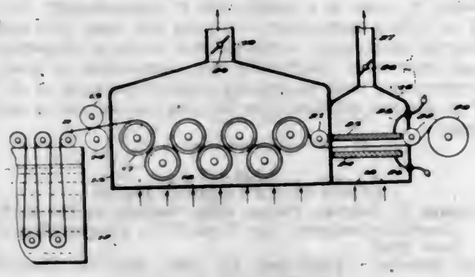
1. A process of coating a porous substrate comprising, in any order, preheating said substrate to a temperature of at least 120° F. to drive off air entrapped therein, applying a solution containing dissolved free-radical generating polymerization catalyst to said substrate to impregnate the surface of said substrate with catalyst, thereafter applying to said catalyst-impregnated heated substrate, while said substrate is at an elevated temperature sufficient to cause said catalyst to release free-radicals, a coating of liquid mixture of ethylenically unsaturated resinous polyester heat-reaction product of ethylenically unsaturated dicarboxylic acid comprising a major molar proportion of fumaric acid, glycol comprising a major molar proportion of polyoxyalkylene glycol having a molecular weight up to about 1200 and diene comprising a major molar proportion of dicyclopentadiene in an amount providing from 0.2–0.6 mol of dicyclopentadiene per mol of said dicarboxylic acid, said dicarboxylic acid and said glycol being employed in equivalent proportions of from 1.5:1 to 1:1.5 based on carboxyl and hydroxyl radicals respectively, and a copolymerizable ethylenically unsaturated monomer for curing said resinous polyester, contact of said liquid mixture with said catalyst-impregnated heated substrate causing gelation of said liquid mixture to seal the surface of said substrate and then heating said coated substrate to at least partially cure said coating.

**3,166,435**

**DRYING PROCESS FOR HYDROPHILIC FILMS**

**John W. Meier, Hendersonville, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**Filed Nov. 28, 1961, Ser. No. 155,332**
**7 Claims. (Cl. 117—119.6)**



1. The process comprising drying a non-fibrous film of gel hydrophilic material to a moisture content within the range of 75 to 15 percent, based on the dry weight of the hydrophilic material, by contacting said film with a heated supporting surface, completing the drying of said film to a moisture content within the range of 1 to 10 percent by passing said film through at least one span in which said film is suspended out of contact with a heated surface, coating the dried film with a liquid coating composition containing an organic polymeric material and a liquid medium which swells the hydrophilic film and drying the coated film.

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**3,166,436**

**TREATMENT OF FIBROUS MATERIALS**

**Dorothy Joyce Guest, Leslie Bedworth Morgan, and John Bryn Owen, all of Manchester, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain**

**No Drawing. Filed June 25, 1962, Ser. No. 205,096**
**Claims priority, application Great Britain, July 11, 1961, 25,079/61**
**13 Claims. (Cl. 117—139.5)**

1. A process for treating a fibrous organic material which comprises impregnating said fibrous material with a dispersion of (1) a polymer selected from the group consisting of homopolymers of acrylonitrile and copolymers thereof which contain at least 50% by weight of acrylonitrile, in (2) a mixture which is not a solvent for said polymer and contains from 50 to 99.9% water and from 50 to 0.1% of a water miscible organic solvent for said polymer having a boiling point greater than water; evaporating the water from the fibrous material impregnated with said dispersion thereby leaving a quantity of said organic solvent and heating said fibrous material in the presence of said organic solvent.

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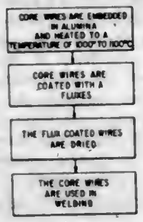
**3,166,437**

**METHOD FOR MAKING A SILICON COATED CORE WIRE FOR WELDING CAST IRON**

**Kiyoshi Yokota, 537–1 Minami-tanaka-machi, Nerima-ku, Tokyo, Japan**

**Filed Sept. 6, 1960, Ser. No. 54,038**
**Claims priority, application Japan, Sept. 10, 1959, 34/28,651**
**4 Claims. (Cl. 117—202)**

1. A process of producing cast iron welding electrodes, comprising imbedding iron wire having a carbon content of less than 0.1% and having a silicon content of less than 0.03% in a mass of pulverized alumina, then heating the mass and iron wire from between about 1000° C. to 1100° C. for a sufficient period of time in an atmosphere produced by heating a pulverized mixture of ferro silicon and ammonium chloride whereby the silicon




is diffused into the iron in a quantity to constitute 5–12% by weight of the wire.

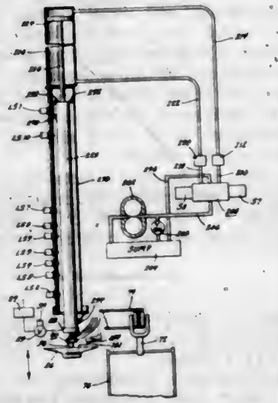
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**3,166,438**

**ELECTROSTATIC PAINTING APPARATUS**

**Frank D. Wampler, Brookville, and Howard E. Smith and John E. Marman, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Nov. 23, 1960, Ser. No. 71,325**
**14 Claims. (Cl. 118—2)**



2. In a coating system for moving articles, a coating device, means for repeatedly moving said coating device relative to said articles, means responsive to the normal movement of the articles for supplying coating material to the coating device, means responsive to an interruption of the normal movement of said articles for stopping the repeated movement of said coating device in a predetermined position relative to said articles, means coincidentally stopping the supply of coating material to said device, and means thereafter coincidentally supplying a solvent and a gas in consecutive periods to said coating device.

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**3,166,439**

**APPARATUS FOR THE PREPARATION OF SURGICAL GLOVES**

**Heinrich Dennhofer, Rodenkirchen, near Cologne, Germany, assignor to Heinrich Dennhofer, Rodenkirchen, near Cologne, Germany, a firm**

**Filed Mar. 13, 1961, Ser. No. 95,404**
**Claims priority, application Switzerland, Mar. 17, 1960, 2,996/60**
**9 Claims. (Cl. 118—9)**

1. A device for handling gloves during testing, washing, drying, dusting and the like comprising a hollow base portion having an upper end and a lower end and an outer wall and being open at its lower end, the outer wall of the base portion tapering outwardly as it extends upwardly away from the lower end, a plurality of flexible plastic laterally closed finger-receiving members extending from the upper end of the base portion having passages therethrough from end to end communicating



with the space within the base portion and opening at the tips of the members, said base being connectible to different types of apparatus by engagement of the base over a tapered receiving member of the apparatus.

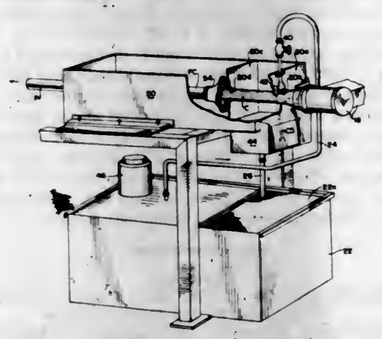
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**3,166,440**

**APPARATUS FOR COATING ELONGATED BODIES**

**George N. Carmichael, South Amboy, and Vincent Rylka, Nixon, N.J., assignors to Triangle Conduit & Cable Co., Inc., New Brunswick, N.J., a corporation of Delaware**

**Filed Dec. 27, 1961, Ser. No. 162,529**
**2 Claims. (Cl. 118—109)**



1. In an apparatus of the type described the combination comprising means for advancing an elongated body in an axial direction along a straight line, means for applying a fluid coating to the surface of said body, and a knitted tubular elastic fabric sleeve mounted on the axis of said body through which it passes, said sleeve snugly engaging the surface of said body to smooth the applied coating.

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**3,166,441**

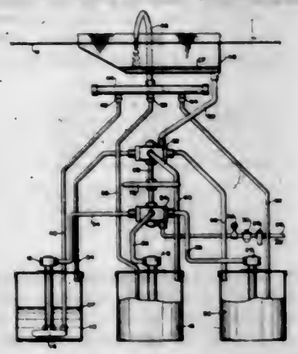
**MACHINE FOR COLOR COATING STRANDS**

**Vincent P. Rylka, Nixon, N.J., assignor to Triangle Conduit & Cable Co., Inc., New Brunswick, N.J., a corporation of Delaware**

**Filed May 8, 1962, Ser. No. 193,181**
**3 Claims. (Cl. 118—325)**

1. A strand coating machine comprising applicator means for applying a fluid to a strand moving lengthwise, a tray positioned to collect excess coating fluid from said applicating means, a plurality of containers for fluid coatings of different colors, color fluid supply piping between said respective containers and said applicator means, color fluid return piping between said tray and containers, power

operated means for forcing the respective fluid coatings through said supply piping, a selector valve in said return piping for selectively connecting said tray to said con-



tainers to return the respective fluids from said tray to said containers from which they were supplied, and selector means for selectively energizing said power operated means.

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3,166,442

## METHOD FOR TREATING SUGAR LIQUOR

James B. Duke, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed May 23, 1963, Ser. No. 282,583
15 Claims. (Cl. 127—48)

1. A method for decolorizing defecated sugar liquor simultaneously while removing matter suspended therein which comprises adding a small amount of an organic amine into defecated sugar liquor, incorporating a multiplicity of finely divided gas bubbles throughout said liquor containing organic amine at elevated temperature, maintaining said liquor containing organic amine quiescent at elevated temperature, whereby defecating material with occluded solid impurities originally in said liquor rise to the surface of said liquor and form a scum, and separating the scum from the liquor, leaving as a residue clarified liquor of lighter color than the starting liquor.

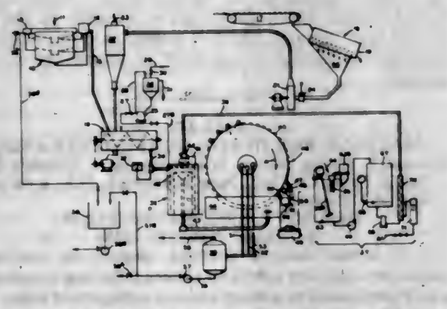
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3,166,443

## TREATMENT OF CANE MUD CONTAINING A SUSPENSION OF IMPURITIES

Harry V. Miles, Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Jan. 30, 1961, Ser. No. 85,756
11 Claims. (Cl. 127—55)



1. The method of treating cane mud by continuous vacuum filtration, which comprises subjecting the cane mud to flocculation by the addition of a coagulant liquid wherein the coagulating agent is a polyelectrolyte defined as a water-soluble polymer, said flocculation being carried out in the presence of a substantially inert finely divided auxiliary material adsorbed by said electrolyte remaining in solution, whereby the suspension of solids in the mud is formed into floc structures including substantially all the fines contained originally in the mud, subjecting the thus conditioned cane mud to continuous filtration through a fabric type filtration media in the presence of a fibrous filter aid material in the mud, whereby said floc structures form a highly liquid-permeable filter cake rendering the resulting filtrate at a clarity suitable for sending such filtrate directly to evaporation, and washing said media free of solids after the release of the filter cake therefrom.

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3,166,444

## METHOD FOR CLEANING METAL ARTICLES

Irwin R. Ehren, Cleveland Heights, and David G. Ellis, Parma Heights, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 26, 1962, Ser. No. 190,259
6 Claims. (Cl. 134—3)

1. An acidic aqueous solution adapted for the cleaning of metal articles which consists essentially of water; from about 0.05 to about 3 percent each of tartaric acid anion, oxalic acid anion, and citric acid anion; a cation selected from the group consisting of ammonium, substituted ammonium, and metal cations in an amount sufficient to adjust the pH of said acidic aqueous solution to a value within the range from about 3.0 to about 6.5; and at least one surface-active agent which is stable at a pH less than 7 and which is selected from the group consisting of alkali metal aliphatic sulfonates, alkali metal alkaryl sulfonates, alkali metal aliphatic sulfates, and alkaryloxypolyalkoxyalkanols.

5. A method for cleaning a metal article which comprises contacting said article with the acidic aqueous solution of claim 1, said solution being maintained at a temperature within the range from about 100° F. to about 212° F.

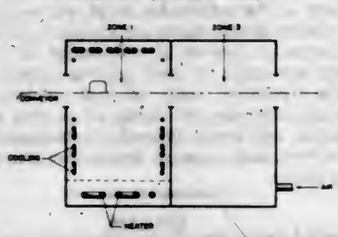
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3,166,445

## METHOD OF DRYING HERMETICALLY ENCLOSED REFRIGERATING MACHINES VIA SPECIAL VAPORS

Arne Fromm Enemark, Sonderborg, and Gunner Sørensen and Gustav Adolf Johansson, Nordborg, Denmark, assignors to Danfoss ved ing. M. Clausen, Nordborg, Denmark, a company of Denmark

Filed Aug. 21, 1961, Ser. No. 134,042
7 Claims. (Cl. 134—31)



1. A method of dehydrating and degreasing the mechanism of a hermetically-enclosed refrigeration machine which comprises, assembling a motor-compressor unit comprising a motor having electrical windings and a hermetic enclosure, adding a lubricant to said unit and test running the motor-compressor unit without the enclosure being permanently hermetically sealed, removing the lubricant from said unit, exposing said unit including said electric motor while a part of the hermetic enclosure is removed therefrom, to the action of a first normally-liquid dehydrating first agent which is a grease-and-oil-dissolving fluid, in a treating zone; said fluid being brought into contact with said unit in heated vapor form, and subsequently exposing said unit while a part of the hermetic enclosure is removed therefrom in a second treating zone to a second normally-gaseous dehydrating agent maintained at a temperature for drying said unit.



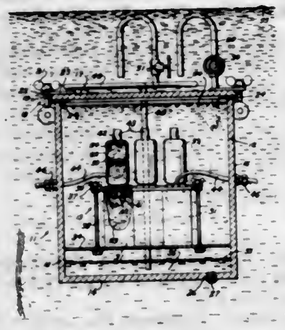
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3,166,446

## INVERTIBLE DEEP-SUBMERGENCE POWER SUPPLY

Williston E. Hutchison, 7945 Michelle Drive, La Mesa, Calif.

Filed Mar. 9, 1964, Ser. No. 350,616
16 Claims. (Cl. 136—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A submersible power supply, adapted to be immersed in a water medium in immediate contact therewith and to operate over a wide range of depths, up to and including great depths, in said water medium, comprising:

(*a*) a watertight housing;

(*b*) a liquid-electrolyte multi-cell battery centrally disposed in fixed position within said housing, said battery comprising a plurality of individual cells and having a top, a bottom and a plurality of sides, the top of said battery being provided with a plurality of openings at least one of which is associated with each of said individual cells;

(*c*) a plurality of liquid-electrolyte reservoirs mounted atop said liquid-electrolyte battery, each of said reservoirs being in fluid communication with one of said battery cells by way of one of said openings in the top of said battery, each of said liquid-electrolyte reservoirs having an opening in its uppermost end;

(*d*) electrolyte liquid, respective parts of which completely fill the various cells of said battery and respective parts of which fill a substantial portion of each of the various electrolyte reservoirs, the electrolyte liquid in each of said plurality of electrolyte reservoirs being in free fluid exchange with the electrolyte liquid in its associated battery cell;

(*e*) dielectric liquid, characterized by a specific gravity which is less than the specific gravity of said outside water medium and which is also less than the specific gravity of said electrolyte liquid, filling the balance of each of said reservoirs which is not filled by said electrolyte liquid and filling the otherwise-void spaces within said housing;

(*f*) valve means, positioned in the opening in the uppermost end of each of said reservoirs, for permitting free fluid communication by way of said reservoir opening between the given reservoir and the interior portion of said housing which is extraneous to the combination of said battery and said reservoirs when said watertight housing is in its upright position and for blocking fluid flow by way of said reservoir opening when said housing has been tilted from its upright position;

(*g*) pressure-equalizing means, passing into said housing in watertight connection therewith, for permitting free flow of the outside water medium into and out of said housing while at the same time preventing outward flow from said housing of any significant portion of said dielectric liquid present in said housing, whereby to effectuate a dynamic equalization of the hydrostatic pressure within said housing with the hydrostatic pressure of the outside water medium while at the same time preventing disablement of said power supply due to tilting of said housing from its upright position in said water medium; and

(*h*) a pair of electrical conduction means, one of which is connected to each of the respective poles of said battery, and which are adapted to interconnect to a pair of power leads which are external to said housing, for transporting electrical power to said power leads and any power consumer to which said power leads run.

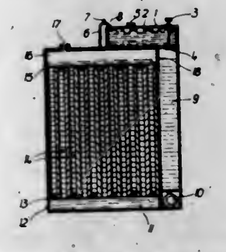
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3,166,447

## APPARATUS FOR FORMING, CHARGING AND DISCHARGING THE ELECTRODE PLATES OF A STORAGE BATTERY WITH AN ACID ELECTROLYTE

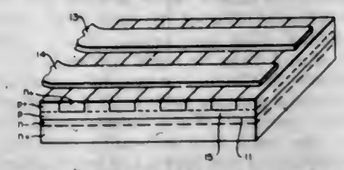
Franz Bronstert, Homburg vor der Hohe, Hans Bode and Herbert Haebler, Frankfurt am Main, and Hans-Georg Lindenberg, Hannover, Germany, assignors to Varta Aktiengesellschaft, a corporation of Germany

Filed Aug. 19, 1960, Ser. No. 50,668
Claims priority, application Germany, Aug. 19, 1959, A 32,693
23 Claims. (Cl. 136—82)



1. A storage battery with an acid electrolyte comprising a container for the electrolyte, electrode plates in said container, a first housing defining an electrolyte overflow chamber above said container and in communication therewith, at least one additional housing, each of said additional housings defining an addition chamber, inlet means for each addition chamber to permit the addition of a liquid medium which controls the specific weight of the electrolyte, a further housing defining a mixing chamber, liquid passageways between said overflow and addition chambers, respectively, and said mixing chamber, valve means in the passageway between the addition and mixing chambers, a pump having an input and an output, the input of the pump being in communication with the mixing chamber, and another housing defining an electrolyte distributing chamber below the electrolyte container, said distributing chamber being in communication with the output of the pump and the electrolyte container, respectively, whereby electrolyte may be continuously pressed and circulated through the active mass of the plates of at least one polarity and a liquid medium controlling the specific weight of the electrolyte may be added to the circulating electrolyte to obtain a desired specific weight level at the formation and each operating cycle of the battery.

3,166,448
METHOD FOR PRODUCING RIB TRANSISTOR
Kurt Hubner, Palo Alto, Calif., assignor to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 7, 1961, Ser. No. 101,437
6 Claims. (Cl. 148—177)



1. The method of manufacturing a semiconductor device which includes the steps of forming on one face of a semiconductor wafer, which has at least a zone of one conductivity type, a plurality of regions of opposite conductivity type and forming on said one face a contact strip of the same conductivity type as said plurality of regione to provide ohmic contact with said plurality of regions and rectifying contact with said zone.

3,166,449
METHOD OF MANUFACTURING SEMICONDUCTOR DEVICES
George B. Finn, Jr., Los Angeles, Calif., and Robert C. Parsons, Cincinnati, Ohio, assignors to Sarkes Tarzian, Inc., Bloomington, Ind., a corporation of Indiana
Original application May 2, 1957, Ser. No. 656,621, now Patent No. 3,051,878, dated Aug. 28, 1962. Divided and this application Jan. 2, 1962, Ser. No. 163,610
5 Claims. (Cl. 148—177)



1. A method of making a semiconductor diode which comprises superimposing upon one another in the following order, a transition member formed of one of the group consisting of tantalum and niobium, a thin sheet consisting essentially of tin, a thin sheet of an alloy consisting essentially of aluminum and 1 to 5% by weight of gallium, a thin wafer of an N-type silicon, a thin sheet of a solder consisting essentially of tin and a donor impurity, and another transition member formed of one of the group consisting of tantalum and niobium maintaining each of the components of said stack in contact with the adjacent components; heating said stack to a temperature of between 850° and 1100° C.; maintaining said stack at said temperature for a predetermined time interval, and thereafter reducing the temperature of said stack.

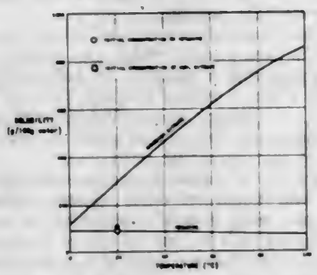
3,166,450
AMMONIUM NITRATE-CHROMATE SALT EXPLOSIVE COMPOSITIONS
Charles W. Kaufman, New Haven, Conn., assignor, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Filed May 1, 1961, Ser. No. 106,455
11 Claims. (Cl. 149—46)

1. A process for preparing an explosive composition which comprises (A) forming an ammonium nitrate-chromate salt melt by admixing a chromate salt selected from the group consisting of the monochromates and dichromates of ammonia, sodium, potassium and lithium with molten ammonium nitrate at a temperature of from about 170° C. to about 200° C., the amount of the said chromate salt being from about 0.5 to about 10 percent by weight of the ammonium nitrate, (B) forming from the said melt a solid particulate material, and (C) admixing with the said solid particulate material a hydrocarbon oil which is a liquid at room temperature and atmospheric pressure.

3,166,451
SENSITIZING AGENTS COMPRISING THE REACTION PRODUCT OF UREA-FORMALDEHYDE-HYDROGEN PEROXIDE
Luther O. Young, Baltimore, Md., assignor to W. R. Grace & Co., a corporation of Connecticut
No Drawing. Filed Mar. 22, 1963, Ser. No. 267,321
5 Claims. (Cl. 149—46)

1. An explosive composition comprising a sensitizing amount of a sensitizing agent having an empirical formula $C_3H_6N_2O_3$ obtained by reacting urea, formaldehyde, and hydrogen peroxide in the presence of nitric acid, said sensitizing agent melting with decomposition at 200° C., and an explosive selected from the group consisting of ammonium perchlorate, ammonium nitrate, sodium nitrate, and trinitrotoluene.

3,166,452
EXPLOSIVE COMPOSITIONS CONTAINING AMMONIUM NITRATE-HEXAMETHYLENETETRAMINE COMPLEXES
William E. Gordon, Pittsburgh, Pa., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Original application June 6, 1962, Ser. No. 200,489. Divided and this application June 12, 1963, Ser. No. 287,295
4 Claims. (Cl. 149—46)



1. An explosive composition comprising an adduct of ammonium nitrate and hexamethylenetetramine in the molar ratio of 2 to 1 and sufficient oxidizer to render the composition in substantial oxygen balance.

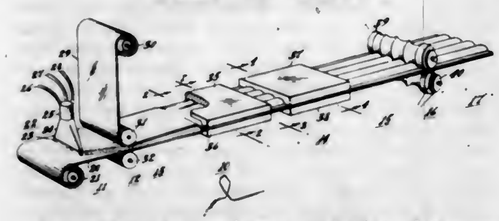
2. A cap sensitive cartridge explosive consisting essentially of an adduct of ammonium nitrate and hexamethylenetetramine in the molar ratio of 2 to 1 and sufficient additional ammonium nitrate to render the explosive in substantial oxygen balance.

3,166,453
GAS GENERATOR COMPOSITION COMPRISING A POLY(VINYL LOWER ALKYL ETHER) AND OXALOHYDROXAMIC ACID
John C. Merges, Jr., Wilmington, Del., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed July 1, 1963, Ser. No. 292,099
8 Claims. (Cl. 149—109)

1. A gas generating composition comprising essentially a poly(vinyl lower alkyl ether) and oxalohydroxamic acid.



3,166,454
METHOD FOR PRODUCING CORRUGATED POLYURETHANE FOAM PANELS
Walter D. Voelker, Philadelphia, Pa., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed Jan. 15, 1962, Ser. No. 166,101
2 Claims. (Cl. 156—78)



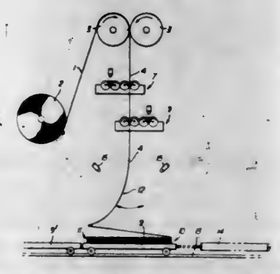
1. A method for continuous production of a corrugated panel comprising a pair of facing sheets and interposed polyurethane foam layer, which comprises the steps of:
advancing a pair of facing sheets from a feed position into a coating zone;
preparing a froth of a liquid phase foam-forming composition comprising a polyol and an organic polyisocyanate by dissolving a compressed gas in said liquid phase composition and subsequently permitting said gas to expand;
applying a layer of said froth of predetermined thickness between said advancing facing sheets in said coating zone to form a sandwich structure;
partially curing said sandwich structure to develop appreciable tensile strength through partial reaction of the components thereof;
passing said sandwich structure continuously through shaping dies to form a continuously longitudinally corrugated structure, said corrugated structure subsequently retaining the corrugated configuration as a result of the tensile strength developed by said partial curing;
fully curing said corrugated structure to complete reaction between the components thereof so as to form a corrugated panel comprising a pair of facing sheets and interposed layer of cured polyurethane foam; and
removing the advancing corrugated panel in a product removal zone.

3,166,455
METHOD OF PRODUCING A LAMINATED CARPET TILE
Robert G. Levitch, Lexington, Va., assignor to James Lees and Sons Company, Bridgeport, Pa., a corporation of Delaware
Filed July 19, 1962, Ser. No. 211,035
11 Claims. (Cl. 156—88)




1. The method of producing a laminated carpet tile which comprises the steps of cutting a section of pile fabric to a predetermined shape, cutting a section of backing material in the same shape as the fabric section but with sufficiently greater dimensions to provide an extended marginal edge when the fabric section and the backing material are superposed, adhering the fabric section and the backing material together to provide said extended marginal edge, placing the adhered backing and fabric in a mold, maintaining said marginal edge around the fabric section, applying a heat curable sealing compound around said marginal edge, and curing the thus formed laminated section at an elevated temperature.

3,166,456
STRUCTURAL HONEYCOMB MATERIALS
Desmond Deverell White, Radlett, Peter John Thwaites, London, and Geoffrey Ronald Judd, Ware, England, assignors to Dufaylite Developments Limited, London, England
Filed Mar. 14, 1962, Ser. No. 179,703
Claims priority, application Great Britain Mar. 22, 1961, 10,441/61
3 Claims. (Cl. 156—197)



1. A method for producing structural honeycomb material consisting in forming rows of colinear spaced apart slits transversely of a flat web of bibulous sheet material, spacing said rows of slits at equal intervals along the length of said web dividing said web into sheet sections, spacing the slits in each of said rows thereof providing hinge sections of intact material between each pair of said slits joining adjacent sheet sections, applying wet bands of adhesive to both faces of said web at positions thereon such that the bands applied to one face are staggered with reference to the bands applied to the other face of said web, feeding said web of bibulous sheet material in a downward direction onto a receiving support, accumulating said web on said receiving support in stacks of superimposed layers in which each layer is constituted by one of said sheets and which layers are joined together by their hinge sections folded under the reaction of each sheet section reaching the material therebeneath on said receiving support, bonding said layers together in their stacked condition by said adhesive and slicing said bonded stacked layers into expandable sections.

3,166,457
METHOD OF MAKING BAGS
Robert G. Nichols, 211 Skyline Drive, Barrington, Ill.
Filed Aug. 31, 1962, Ser. No. 220,718
4 Claims. (Cl. 156—269)

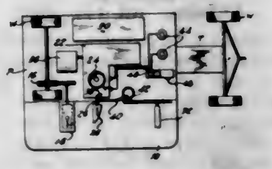


1. A method of mass producing bags each inclusive of a U-shaped envelope of thermoplastic material, closed at the bottom by the bight or fold of the material, and an insert of stiffer material between the panels of the envelope comprising; advancing a first web of the thermoplastic material, having the shape aforesaid, and a second web of the stiffer material in juxtaposed relation to an inserter element, with the second web being disposed atop the first web, said inserter being interposed between the upper panel of thermoplastic material and the second web to bring the upper thermoplastic panel over the paper web, thereafter sealing the upper panel of thremoplastic material to the adjacent face of the second web, joining

the thermoplastic panels at spaced intervals corresponding to the desired width of the bags, and thereafter cutting the bags from the joined webs.

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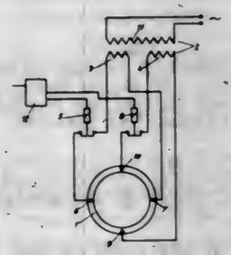
3,166,458
LARGE AREA SHEET SEALING
Hyman G. Chinn, Somerville, and Walter H. Heusenthaler, Lebanon, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 24, 1961, Ser. No. 133,723
16 Claims. (Cl. 156—295)



1. Method of sealing strips to form a large area sheet, which comprises laying out a pair of strips one atop the other in stationary substantially flat parallel relation with their adjacent edges aligned and their margins overlapping, progressively picking up a localized portion of the upper of said margins to raise the same above the other, progressively extruding a sealing medium under said raised localized portion, progressively depressing said upper margin behind said extrusion operation into contact with the lower of said overlapping margins, and simultaneously progressing said picking up, extruding and depressing steps in tandem longitudinally along said upper margin by traction along a path parallel thereto.

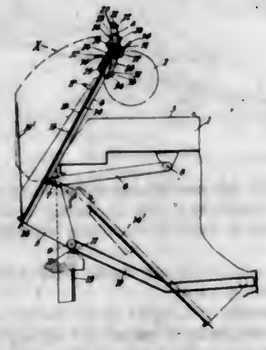
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3,166,459
DEVICE FOR WELDING PLASTICS
Walter Imhof, deceased, late of Uster, Switzerland, by Waltraud Imhof, administratrix, Oberhochstadt, Taunus, Germany, assignor to Firma Gebr. Mäder AG., Uster, Switzerland, a corporation of Switzerland
Original application Aug. 7, 1959, Ser. No. 832,395, now Patent No. 3,056,712, dated Oct. 2, 1962. Divided and this application Oct. 1, 1962, Ser. No. 231,053
Claims priority, application Switzerland, Aug. 9, 1958, 62,758
10 Claims. (Cl. 156—380)



1. An apparatus for welding plastic, particularly along curved lines, comprising a welding member adapted to contact the plastic to be welded and including as a part thereof an electrical conductor having at least four contacts spaced along the length thereof, at least two circuits having means therein for applying power thereto and connected to said contacts such that a least a part of said electrical conductor is common to both circuits, and switching means in said circuits for energizing first one circuit and then the other circuit while the one circuit is deenergized.

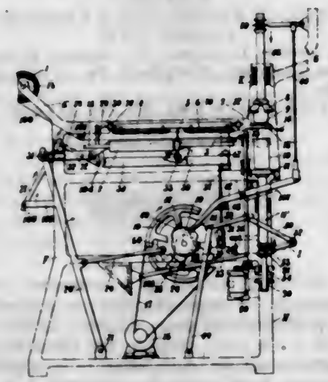
3,166,460
DRUM LOADING
Kenneth George Hoar, Beckenham, Kent, England, assignor to Muirhead and Co. Limited, Kent, England, a British company
Filed Sept. 4, 1963, Ser. No. 306,532
Claims priority, application Great Britain, July 31, 1963, 30,303/63
5 Claims. (Cl. 156—446)



1. A mechanism for attaching an edge of a thin pliant sheet longitudinally across the curved peripheral surface of a cylindrical drum, comprising means for mounting the drum for rotational movement, means mounted thereon for supporting a strip of adhesive tape longitudinally across and adjacent to the drum surface, cam means engaging said supporting means for lowering the tape towards the drum surface to overlie the edge of the sheet and the drum surface, roller means secured to said cam means for rolling the strip onto the edge of the sheet and drum surface and means pivotally secured to said supporting means for moving said cam means and roller means to effect said tape lowering and rolling operations.

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3,166,461
APPARATUS FOR FORMING AND SECURING A SECONDARY CONTAINER WITHIN A PRIMARY CONTAINER
Pietro Seda, Aprilia, Latina, Italy
Filed Sept. 30, 1963, Ser. No. 312,384
Claims priority, application Italy, Dec. 10, 1958, 18,204/58
10 Claims. (Cl. 156—447)

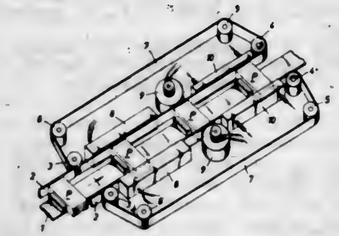


1. An apparatus for forming and securing a secondary container of plastic material in a primary container, comprising a frame, a shaft rotatably mounted in said frame, a pulley fixed to said shaft, a motor for rotating said pulley, a series of cams fixed to said shaft comprising a first, second, third and fourth cam, an eccentric dividing said shaft in two sections forming an integral unit therewith, feeding means on said frame for feeding a strip of plastic material, a first linkage system operatively connected to said eccentric and feeding means, cutting means pivoted on said feeding means for cutting a sheet from said strip operated by said first cam, gripping means on said frame for gripping said cut sheet, a first lever system connected to said gripping means cooperating with said second cam, punch means slidably mounted vertically in said frame for drawing said sheet into a primary container, support means slidably and rotatably arranged in said frame beneath said punch means for supporting said primary container, a second linkage system operatively connected to said frame and support means cooperating with said third cam, a third lever system operatively connected with said punching means and cooperating with said fourth cam, adhering means pivotally mounted on said frame cooperating with said feeding means for adhering said secondary container to said primary container and heating means operatively connected to said adhering means for heating said adhering means.



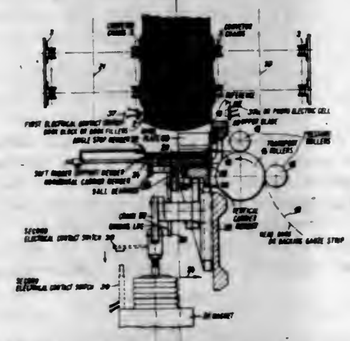
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3,166,462
METHOD AND APPARATUS FOR HEAT SEALING PACKAGES
Eduard Josef Schoder, Stuttgart-Bad Cannstatt, Germany, assignor to Firma Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany
Filed Nov. 1, 1961, Ser. No. 149,333
4 Claims. (Cl. 156—499)



1. Apparatus for heat sealing a folded unsealed end of a thermoplastic package, said end having a folded form constituted by differing numbers of overlapped thicknesses of material, said apparatus comprising: conveyor means for advancing the package in a longitudinal direction with the folded end of said package facing transversely, a heating plate located along the path of travel of the package such that the end of the package passes the heating plate, a pressing member located downstream of the heating plate relative to the direction of travel of the package, a belt, means for driving the belt between the path of the end of the package and the heating plate and pressing member to cause the belt to be heated by the heating plate and in turn transfer heat to the end of the package ina quantity sufficient to preheat the folded end of the package while avoiding fusing of the material thereof and means supporting said pressing member to urge the same into pressure contact with the belt which in turn contacts the end of the package, said pressing member having a raised surface in the form of the outline of the multiple thicknesses of overlapped material to press the thus heated belt against the preheated end of the package only against the multiple thicknesses of overlapped material to complete heat sealing of the overlapped thicknesses of material of the end of the package.

3,166,463
APPARATUS FOR STICKING PAPER STRIPS AND HEAD BANDS OR BACKING GAUZE ONTO BOOK-BLOCK SPINES
Heinz Klostermann, District of Lubbecke, Westphalia, Germany, assignor to Rahdener Maschinenfabrik August Kolbus, Rahden, Westphalia, Germany, a firm of Germany
Filed Jan. 10, 1962, Ser. No. 165,426
Claims priority, application Germany, Jan. 11, 1961, R 29,435
7 Claims. (Cl. 156—477)



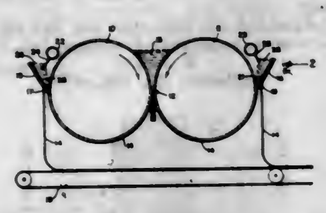
1. In an apparatus for back-lining paper strips, head bands, backing gauze or the like on book fillers, comprising in combination, continuously moving book filler carrying means for moving book fillers in a longitudinal direction, first vertical carrier means operatively arranged underneath said book filler carrying means, second horizontal carrier means movably mounted on said first vertical carrier means, said second carrier means adapted to move to and fro in a direction parallel to the direction of movement of said book fillers, back strip feeding and cutting means operatively mounted in said apparatus adjacent to said vertical and horizontal carrier means, said back strip feeding and cutting means being adapted to transversely feed, cut and place a backstrip onto said horizontal carrier means in coordinated movement therewith, combination stop and guiding means mounted on said second horizontal carrier means for limiting the movement of said cut backstrip thereon, and electrical contact means arranged in the path of said moving book fillers and operatively connected to said first vertical carrier means and to said backstrip feeding and cutting means, whereby when said combination stop and guiding means of said second horizontal carrier means activate said electrical contact means, the former means are biased against a moving book filler by said first vertical carrier means, so that said moving book filler entrains said second horizontal carrier means thereby moving the latter a predetermined short distance due to the abutting contact of said combination stop and guiding means and said moving book filler, said electrical contact means also simultaneously operatively activating said backstrip feeding and cutting means so that said latter means sequentially place a cut backstrip onto said second horizontal carrier means after said latter means returns to its original position.

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3,166,464
SPRAY CLEANING DEVICE FOR DRYING DRUM SCRAPER BLADES
Dave Eolkin, Oakland, Calif., assignor to Gerber Products Company, Fremont, Mich.
Filed Oct. 9, 1961, Ser. No. 143,617
2 Claims. (Cl. 159—11)

1. An improvement in the art of drum drying slurried foods comprising a pair of spaced apart but juxtaposed

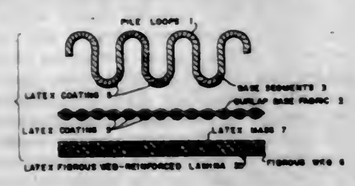
drying drums forming a nip to support a pool of slurry and arranged for rotation in opposite directions respectively and means to rotate the same, means to heat the drums to dry product on the surfaces thereof, means to supply product to the drum surfaces for drying thereon, a doctor blade for each drum arranged to remove dried



product from each drum surface, each said doctor blade having a product cutting face and a back portion, water header means, means including said header to spray water on the back portion of each said blade opposite said cutting face comprising nozzles arranged the full length of each said blade and disposed adjacent the back thereof, and means to supply water to said water header means.

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**3,166,465**
**BACKED PILE FABRIC AND METHOD OF PRODUCING THE SAME**
**Donald W. Rahmes, Dover, Del., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware**
**Filed May 27, 1960, Ser. No. 32,207**
**14 Claims. (Cl. 161—66)**



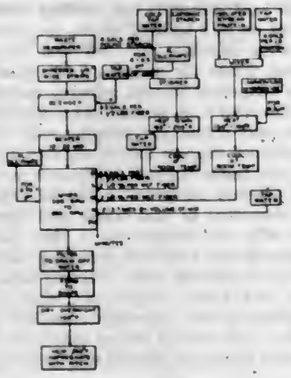

1. An article comprising a composite textile having a finished upper surface of filamentary material, said material having base portions held in a base fabric, a nonwoven fibrous web contacting said base portions, and a mass of binder coating the fibers of said web and permeating and penetrating the interstices thereof to unite the web to said base portions and to substantially completely embed said web in a binder matrix.

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**3,166,466**
**FIBROUS CELLULOSIC PRODUCTS**
**Robert C. Puydak, West Orange, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware**
**Filed June 28, 1962, Ser. No. 205,869**
**8 Claims. (Cl. 162—135)**

1. A wood fiber product comprising a mixture of dried wood fiber pulp, cationic starch and soybean protein, the quantities of said starch and protein being each from one and one-half precent to three and one-half percent by weight of said fiber.

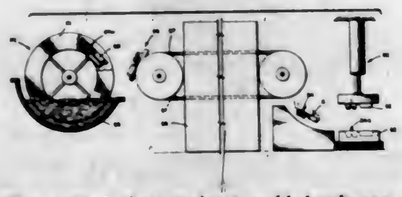
5. The method of producing an aqueous wood fiber mixture adapted as a base product for producing shaped wood fiber products which comprises beating a shredded mass of wood fiber into water to form a slurry; preparing a cationic starch solution by adding cationic starch to water containing an acid in an amount to give the solution a pH of 4.0 to 4.5, and heating the solution to approximately 200° F. while stirring the same; preparing a protein solution by adding soybean protein extract to water, heating the solution from approximately 150° F. to 185° F. while stirring the same and adding ammonium hydroxide to give the solution a pH of approximately 8;



and adding said starch and protein solutions to said slurry while stirring said slurry at a speed from 300 r.p.m. to 800 r.p.m.

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**3,166,467**
**METHOD FOR PRODUCING MOLDED PULP ARTICLES**
**Richard F. Reifers, New Canaan, Conn., and Henry A. Lord, Palmer, Mass., assignors to Diamond National Corporation, New York, N.Y., a corporation of Delaware**
**Continuation of application Ser. No. 844,438, Oct. 5, 1959. This application Oct. 18, 1962, Ser. No. 231,435**
**5 Claims. (Cl. 162—223)**



1. The method of producing a molded pulp egg carton having a cellular bottom tray including a peripheral margin integral and hingedly connected along one edge to a dished cover having a planar top panel and depending sides engageable on the peripheral margin of said cellular bottom tray, and wherein a plurality of cells are formed about vertically extending hollow post integral with said cellular bottom tray and projecting vertically above the peripheral margin thereof, said method comprising the following steps:

(*a*) sucking a pulp fiber preform formation for a pulp slurry onto a foraminous die of the general shape and contour of said egg carton including said hollow-post forming portions;

(*b*) removing said pulp fiber preform formation from said foraminous die;

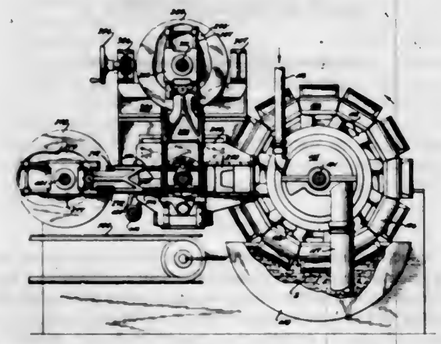
(*c*) drying said pulp fiber preform formation after having removed it from said foraminous die; and

(*d*) pressing said pulp fiber preform formation between mated pressing dies which include male and female hollow-post accommodating portions smaller in horizontal cross section near the top thereof than the corresponding horizontal cross section of said foraminous die, and compacting and reforming the pulp fiber at the top of said hollow-post portion on said preform and reducing the outer and inner margins of a transverse section near the top of said hollow-post forming portion.



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**3,166,468**
**PULP MOLDING MACHINE**
**Donald T. Daniele, East Longmeadow, and Edgar C. Witt, Jr., Palmer, Mass., assignors to Diamond National Corporation, New York, N.Y., a corporation of Delaware**
**Filed Apr. 6, 1960, Ser. No. 20,340**
**24 Claims. (Cl. 162—392)**



1. For use in a machine for producing molded pulp articles by deposition on a forming cylinder, a turret, means rotatably supporting said turret for rotation about an axis of rotation, said turret having a plurality of faces, a die on each said face, means for extending each said die radially of said turret when disposed in a predetermined oriented position for effecting transfer of articles onto said turret, means for maintaining fluid connection between the interior of said turret and said dies in all positions thereof, a pressing die, means mounting said pressing die for movement towards and from said turret for pressing of articles between said pressing die and the dies of said turret, a conveyor below said turret, an auxiliary die, means mounting said auxiliary die for movement towards and from said turret for removal of articles from said turret die and for repositioning of said articles on said turret die or for deposition of said articles on said conveyor, said auxiliary die mounting means comprising a support shaft having said auxiliary die thereon, an oscillatable actuator shaft having an arm connected thereto, said support shaft being journalled in said arm, a guide arm fixed to said support shaft and having a groove therein, and a fixedly mounted guide in said grooves.

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**3,166,469**
**PESTICIDAL COMPOSITION**
**Herbert A. Pass, St. Lambert, Quebec, Michael S. H. Nurse, Lachine, Quebec, and Beresford J. Watt, Valois, Quebec, Canada, assignors to The Sherwin-Williams Company of Canada Limited, Green Cross Division, Montreal, Quebec, Canada**
**No Drawing. Filed June 11, 1962, Ser. No. 201,735**
**Claims priority, application Canada, June 13, 1961, 825,575**
**10 Claims. (Cl. 167—22)**

1. A synergistic pesticidal composition, comprising, as essential active constituents glyodin and dodine in the proportion of from about 0.5 part by weight to about 10 parts by weight of glyodin and from about 5.2 parts by weight to about 0.65 part by weight of dodine calculated on the basis of the pure substances.

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**3,166,470**
**METHOD OF PROTECTING ORGANIC MATERIALS AGAINST FUNGI WITH DODECYL AMIDINOCARBAMATES**
**Daniel Elmer Nagy, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed Apr. 3, 1963, Ser. No. 270,172**
**6 Claims. (Cl. 167—22)**

1. A method for the protection of organic materials susceptible to attack by fungi which comprises: applying to said organic material a preparation comprising a minor amount of a dodecyl amidinocarbamate selected from the group consisting of n-dodecyl amidinocarbamate, n-dodecyl amidinocarbamate hydrochloride, n-dodecyl amidinocarbamate acetate and n-dodecyl amidinocarbamate sulfate, and a major amount of a fungicidal adjuvant therefor, said adjuvant comprising a surface-active agent.

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**3,166,471**
**POLYAMINE-QUATERNARY NITROGEN ALGICIDAL COMPOSITION**
**Joseph R. Gump, Alma, and Lionel Dale McCowen, St. Louis, Mich., assignors to Michigan Chemical Corporation**
**No Drawing. Filed Aug. 22, 1960, Ser. No. 50,839**
**17 Claims. (Cl. 167—33)**

1. An algicidal composition comprising as an ingredient the synergistic combination of about 1.0 to about 18 parts, by weight, of aminoethyl ethanolamine and about 48 to about 67 parts, by weight, of cetyl picolinium bromide, about 10 parts, by weight, to about 35 parts, by weight, of isopropanol, about 1.0 part, by weight, to about 18.0 parts, by weight, of diethylene glycol and about 1.0 part, by weight, to about 25 parts, by weight, of water.

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**3,166,472**
**ANTHELMINTIC COMPOSITIONS AND METHOD OF EMPLOYING SAME**
**Jacob J. Menn, Kirkwood, Mo., and Frank B. Folckemer, Union, and Alexander Miller, Short Hills, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Jan. 12, 1962, Ser. No. 165,941**
**6 Claims. (Cl. 167—53)**

1. A method for controlling internal parasitic worms in warm-blooded animals which comprises orally administering to the animal a parasiticidally effective dosage of a composition comprising dimethyl 2,2-dichlorovinyl phosphate in solution in a polyvinyl chloride resin.

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**3,166,473**
**NEW ESTERS OF 1,3,5-ESTRATRIENE-3,16,17-TRIOL AND NOVEL PHARMACEUTICAL COMPOSITIONS CONTAINING NEW ESTERS OF 1,3,5-ESTRATRIENE-3,16,17-TRIOL AND ESTERS OF 1,3,5-ESTRATRIENE-3,16,17-TRIOL**
**Ei Mochida and Nobuhisa Ogawa, Tokyo, and Seiichiro Komiya, Omiyasi, Japan, assignors to Mochida Seiyaku Kabushiki Kaisha, Tokyo, Japan**
**No Drawing. Filed Apr. 9, 1963, Ser. No. 271,609**
**Claims priority, application Japan, Apr. 12, 1962, 37/13,749**
**2 Claims. (Cl. 167—58)**

1. A pharmaceutical composition applicable in the treatment of vaginitis, cervicitis, menorrhagia, climacteric disturbance, and for induction of labour and shortening of labour stadium, comprising 1,3,5(10)-estratriene-3,16(α), 17(β)-triol tripropionate and pharmaceutical dilution mediums, the components of said compositions being in pharmaceutically acceptable amounts.

3,166,474

## STABLE AQUEOUS PROPYLENE GLYCOL SOLUTIONS OF ALUMINUM GLUCONATE COMPLEXES OF CERTAIN TETRACYCLINE ANTIBIOTICS

George Madison Sieger, East Paterson, N.J., William Charles Barringer, Pearl River, N.Y., and Edward Grant Rozmarin, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed May 26, 1961, Ser. No. 116,644
1 Claim. (Cl. 167—65)

A stable pharmaceutical product adapted for parenteral use comprising a solution of a complex of a broad spectrum antibiotic selected from the group consisting of 6-deoxy-6-demethyltetracycline, 6 - demethyltetracycline, 6-deoxytetracycline, and 7-chloro-6-demethyltetracycline; aluminum; a cation selected from the group consisting of the cations of hydrogen, calcium and magnesium; and gluconic acid; said components being present in the molar ratio of antibiotic to aluminum to cation to acid of not less than 1:1:1:1 and not greater than 1:6:9:28 dissolved in an aqueous propylene glycol solution having from 20% to 50% by weight of water, and said solution having a pH within the range of from 7.5 to 9.5.

3,166,475

## ANTI-CONVULSANT PYRAZOLONES

Fernanda Minani Fiordalisi, 40 Tamaques Way, Westfield, N.J.

No Drawing. Original application Dec. 29, 1959, Ser. No. 862,450, now Patent No. 3,079,397, dated Feb. 27, 1963. Divided and this application Dec. 31, 1962, Ser. No. 248,216
6 Claims. (Cl. 167—65)

1. The method of combating convulsions in animals which comprises administering into the animal dosage units of a pharmaceutically acceptable form of a 4,4-disubstituted pyrazolone of formula



wherein each of R and R' is a member selected from the group consisting of lower alkyl containing between 1 and 4 carbons atoms and phenyl, further characterized by the fact that the sum of carbon atoms of R and R' is greater than 4 and that R may be the same as R' when R and R' total at least eight carbon atoms, and R'' is selected from the group consisting of hydrogen and lower alkyl.

3,166,476

## POWDER BASED TABLETS

Hans Lowey, 677 Forest Ave., Larchmont, N.Y.

Filed Sept. 1, 1961, Ser. No. 135,645
5 Claims. (Cl. 167—82)

1. A time delay medicament comprising a multiplicity of powderized therapeutic particles of different sizes and shapes substantially equal proportions of which have been impregnated with a time delay material and the impregnated powderized particles compressed into tablets, the particles being pre-treated to alter their surface receptivity prior to impregnation by a mechanical agent.

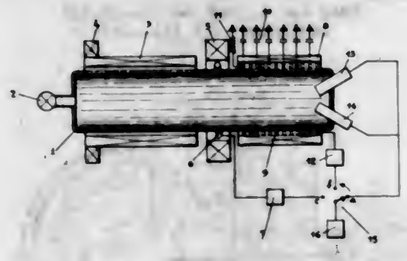
3,166,477

## INJECTION SYSTEM FOR ELECTRIC DEVICE

Hubert Leboutet, Paris, France, assignor to Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Dec. 7, 1959, Ser. No. 857,831
Claims priority, application France Dec. 24, 1958
4 Claims. (Cl. 176—5)

1. In a plasma-confining device, an evacuated vessel comprising a high temperature production chamber and a plasma injection chamber, means for establishing in said high temperature production chamber a magnetic field having lines of force extending substantially along said chamber between both extremities thereof to effectively confine plasma particles to be injected therein, magnetic mirror means at both said extremities to prevent escapement of said particles from said chamber, said injection chamber being defined between one of said magnetic mirror means and one extremity of said vessel, means



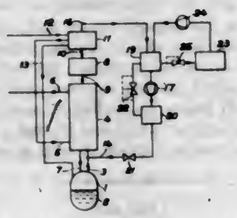
for injecting ions and electrons for forming plasma into said injection chamber, means effectively constituting magnetic piston means for compressing plasma and effectively pushing it towards said one magnetic mirror means, and means effectively constituting magnetic shutter means for momentarily canceling the effect of said one magnetic mirror means after the compression of said plasma to thereby inject said compressed plasma into said high temperature production chamber.

3,166,478

## METHOD AND MEANS FOR CONTROLLING THE QUANTITY OF FISSION GAS IN HOMOGENEOUS BOILING REACTORS

Olle Lindström, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Nov. 28, 1960, Ser. No. 72,205
Claims priority, application Sweden, Dec. 2, 1959, 11,339/59
8 Claims. (Cl. 176—37)



1. In a reactor system comprising a homogeneous boiling water reactor in which steam having a content of heat is produced during operation, a condenser, the system including means to conduct steam from the reactor to the condenser and means to conduct water from the condenser to the reactor, at least one storage tank containing a permanent gas, conduits connecting the storage tank to the reactor system on both sides of the condenser, and a gas conveying means for conveying the gas to and from the reactor system and through the condenser and the storage tank, the permanent gas taking up fission gas in its passage in the system.



3,166,479

## METHOD FOR PRESSURE RELIEF IN GAS CONTAINERS AND MEANS FOR CARRYING OUT THE METHOD

Björn Widell, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed May 21, 1962, Ser. No. 196,105
Claims priority, application Sweden, May 26, 1961, 5,496/61
1 Claim. (Cl. 176—37)

Method of relieving pressure in a gas container containing a mass of gas under pressure which comprises connecting the gas container successively to each of a plurality of gas collecting vessels while maintaining it out of communication with any other of the vessels, and maintaining the connection each time until the pressure in the collecting vessel with which the container is connected reaches substantial equilibrium with the pressure of the gas in the container, said gas container being connected to a homogeneous nuclear reactor and containing collected radioactive fission gas formed during operation of the homogeneous reactor, and the last collecting vessel with which the gas container is connected being evacuated to sub-atmospheric pressure before the connection is made.

3,166,480

## HOMOGENEOUS BOILING REACTOR

Olle Lindström, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Nov. 28, 1960, Ser. No. 72,204
Claims priority, application Sweden, Dec. 1, 1959, 11,291/59
3 Claims. (Cl. 176—47)



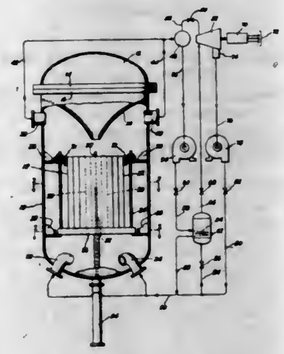
1. A boiling homogeneous nuclear reactor comprising a pressure vessel, an inner container having an upper opening and containing fuel comprising a fissile material and a liquid selected from the group consisting of light and heavy water and standing at a level in the inner container, from the water of which steam is evaporated during boiling while the fissile material remains in the inner container, the container being arranged substantially within the lower portion of and in spaced relationship to the pressure vessel, the pressure vessel and the inner container forming between them a reflector chamber for receiving the condensate of the evaporated water, said vessel and said inner container defining above said inner container a pressure equalizing space, the space being in communication with both the inner container and the reflector chamber, condensing means connected with said space for condensing evaporated water, the level of the fuel in the inner container and of the condensate in the reflector chamber being below the upper opening of the inner container, means for leading the condensate from the condensing means into the reflector chamber, and means adjacent to the bottom of the inner container for the return of condensate from said reflector chamber to the inner container.

3,166,481

## HETEROGENEOUS NUCLEAR POWER REACTOR CORE STRUCTURE

Howard E. Braun, San Jose, Calif., assignor to General Electric Company, a corporation of New York

Filed Mar. 18, 1960, Ser. No. 15,965
10 Claims. (Cl. 176—50)



1. An improved nuclear fission chain reacting assembly which comprises a plurality of shaped members formed of relatively thin-walled structural material having a low neutron absorption cross section and disposed on edge adjacent one another to form a cellular reactor core structure providing elongated, parallel, neutron moderating coolant flow passages, each extending from an inlet opening at one end of the structure to an outlet opening at the other end of the structure, said flow passages being of substantially identical geometric cross section and each being separated substantially throughout its entire periphery from the immediately adjacent passages only by a wall comprising a single thickness of said structural material, a nuclear fuel element assembly removably supported in each of at least a sufficient number of said passages to maintain a self-sustaining nuclear fission chain reaction in said structure in the presence of a neutron moderating coolant liquid, each said fuel assembly being provided with a plurality of linear elongated nuclear fuel elements spaced apart from and parallel to one another in said assembly by a distance sufficient to provide, with the moderating coolant in the intervening space therebetween, a given moderator-to-fuel atom ratio, the fuel element assemblies being proportioned with respect to the flow passage to space the peripheral fuel elements in each assembly apart from the proximate peripheral fuel elements in the adjacent fuel assembly by a distance through said wall sufficient to provide, with the moderating coolant in the intervening spaces therebetween on each side of said wall, a moderator-to-fuel atom ratio which is substantially the same as that within each of the said fuel element assemblies, at least one control poison element having a geometric cross section which is substantially the same as that of at least one fuel element in said assembly and positioned reciprocably within said chain reacting assembly in a space otherwise occupied by said fuel element, and a follower element secured to and axially aligned with said control element and having substantially the same geometric cross section as that of said control element.

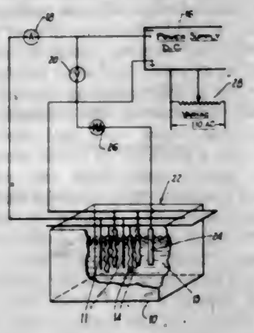
3,166,482
**PROCESS FOR THE MANUFACTURE OF 16β-METHYLPREDNISONE**
Dieter Kluepfel and Carolina Corenelli, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy
No Drawing. Filed Apr. 16, 1963, Ser. No. 273,293
Claims priority, application Great Britain, May 9, 1962, 17,842/62
3 Claims. (Cl. 195—51)

1. A process for preparing 16β-methylprednisone, which comprises subjecting 16β-methyl-5α-pregnane-17α,21-diol-3,11,20-trione-21-acetate to the oxidizing activity of a microorganism of the class consisting of *Arthrobacter simplex* (*Corynebacterium simplex*) and its mutants and variants.

3,166,483
**METHOD OF LOWERING THE SULFUR CONTENT OF COAL**
Philip X. Masciantonio, Penn Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Sept. 21, 1961, Ser. No. 139,756
3 Claims. (Cl. 202—25)

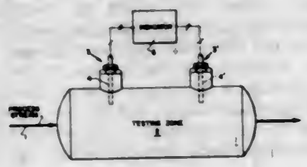
1. A method of lowering the sulfur content of coking coal without destroying its coking properties comprising treating the coal for a period up to about 45 minutes in a molten bath of material selected from the group which consists of sodium hydroxide, potassium hydroxide, anhydrous sodium acetate, anhydrous potassium acetate, and mixtures thereof, the bath temperature being about 200° C. to 450° C., whereby the bath material reacts with sulfur in the coal to form an alkali metal sulfide soluble in the bath, separating the coal particles from the bath, and re-using the separated bath material.

3,166,484
**METHOD AND APPARATUS FOR DETERMINING CURRENT DENSITY**
Howard J. Hentz, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Continuation of application Ser. No. 729,169, Apr. 17, 1958. This application Apr. 20, 1962, Ser. No. 189,207
10 Claims. (Cl. 204—1)



1. In electrolytic mechanism having an electrolytic tank adapted to house an electrolyte, the combination of
a source of electricity,
a first electrode housed within the tank and connected to said source,
a second electrode including a workpiece of unknown area positioned within the tank and connected to said source,
a third electrode of known area and of the same material as said second electrode positioned within the tank and connected to said source in parallel with said second electrode,
and means operatively connected to said third electrode for determining the electrical current flow therethrough whereby the current density of said known area is known,
said known current density being the same as that of said workpiece of unknown area.

3,166,485
**CORROSION ELECTRO-POTENTIOMETER PROBE**
Gordon R. Lloyd, Montreal, Quebec, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 31, 1963, Ser. No. 255,236
1 Claim. (Cl. 204—1)

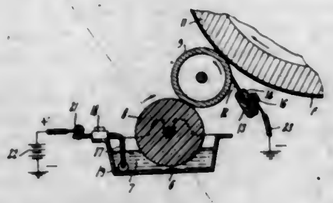


A method for continuously determining the cyanide concentration in a process stream comprising contacting said cyanide-containing process stream with a steel electrode and a copper alloy electrode, said electrodes being connected by an external circuit, whereby a potential reversal proportional to the concentration of cyanide in the process stream is induced in said circuit, and measuring said induced potential reversal.

3,166,486
**RECOVERY OF LACTOSE AND PROTEIN FROM WHEY**
Maurice E. Hull, La Grange, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Aug. 7, 1961, Ser. No. 129,542
10 Claims. (Cl. 204—180)

1. In a process for the recovery of lactose and protein from whey, the steps of removing about 60–65% of the whey ash while keeping the whey proteins in solution, evaporating the remaining whey material to increase the whey solids to about 60%, crystallizing the lactose, and thereafter separating the lactose from the protein solution.

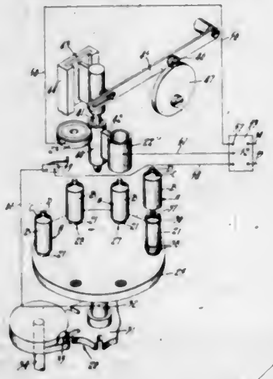
3,166,487
**CATHODIC PROTECTION OF PRINTING APPARATUS**
Erling B. Owren, Foster Center, R.I., assignor to Cranston Print Works Company, Cranston, R.I., a corporation of Rhode Island
Filed Feb. 14, 1962, Ser. No. 173,171
1 Claim. (Cl. 204—196)



In a rotary printing machine for fabrics which includes a color box constituting a reservoir containing printing paste, a rotatable print roll having a cylindrical outer copper printing surface, a rotatable brush roll in said color box for supplying printing paste from said reservoir and spreading it on the said surface of said print roll as it rotates, a steel doctor blade with an edge positioned against said cylindrical print roll surface to remove excess paste therefrom as it rotates, and a printing cylinder traversing and pressing a fabric web against said print roll printing surface following spreading of paste thereon by said brush roll and after removal of excess paste therefrom by the edge of said doctor blade, that improvement comprising a metal electrode insulatedly supported by said color box in contact with the paste contained therein, a source of direct current having a positive and a negative terminal, a conductor electrically connecting the positive terminal of said direct current source to said electrode and a conductor electrically connecting the negative terminal of said source to said doctor blade, whereby said blade is the cathode, said paste is the electrolyte and said electrode is the anode, and electrolytic corrosion and pitting of said blade edge is thereby prevented.



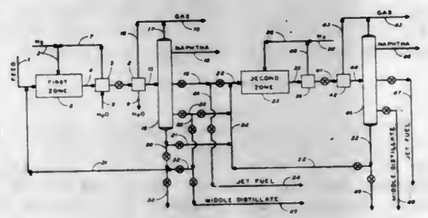
3,166,488
**APPARATUS FOR TREATING THERMOPLASTIC CONTAINERS BY CORONA DISCHARGE**
Alexander George Makowski, Fayville, Mass., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 803,246, Mar. 31, 1959. This application Dec. 2, 1960, Ser. No. 73,232
11 Claims. (Cl. 204—312)



1. An apparatus for treating the side wall and head surfaces of tubular thermoplastic containers having one end thereof open, comprising a first electrode for holding a container telescoped thereover, said electrode having spaced means on its surface to snugly engage the inner surfaces of the container at spaced points and provide substantial air gap between said electrode and the interior of the container, a second tubular electrode movable into position surrounding said first electrode and being dimensioned to provide an annular space between its inner surface and said spaced means on said first electrode to receive the side wall of the container, a head electrode movable into position over the end of said first electrode in spaced relation thereto to provide an end space to receive the head of the container, means for moving said second and said head electrodes into their respective positions, and means for impressing one voltage between said first and second electrodes to produce a corona discharge therebetween to treat the side wall of the container and for impressing another voltage between said head and first electrodes to produce a corona discharge therebetween to treat the head of the container.

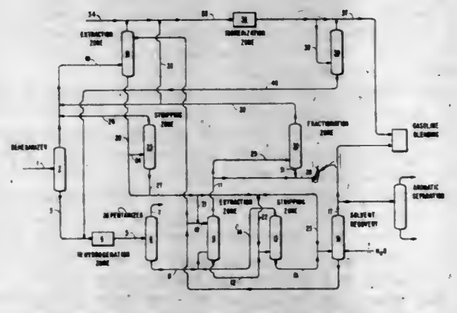


3,166,489
**HYDROCRACKING PROCESS**
Harold F. Mason, Berkeley, John W. Scott, Jr., Ross, and Jack W. Unverferth, Walnut Creek, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Sept. 21, 1961, Ser. No. 139,717
6 Claims. (Cl. 208—57)



1. In a process for converting a hydrocarbon feed selected from the group consisting of hydrocarbon distillates boiling from 500°–1100° F. and hydrocarbon residua boiling above 1050° F. which comprises contacting said feed in a hydrocracking zone with a nickel-containing hydrocracking catalyst at a temperature of about 450°–850° F., a space velocity from about 0.2 to 5.0, and a hydrogen partial pressure of at least 350 p.s.i.g., the method of suppressing the rate of growth of nickel crystallites on said catalyst for the purpose of maintaining said catalyst in a regenerable condition, which comprises maintaining the polynuclear aromatics content of said feed at not more than about 20 volume percent; correlating the aromatics of said feed, the nitrogen content of said feed, said space velocity and said pressure at the operating temperature so that substantially all of the hydrogen consumed in said hydrocracking zone is consumed in hydrocracking reactions and the amount of hydrogen consumed in saturating aromatics is minimized; continuously operating said hydrocracking zone for at least one extended on-stream period of at least 750 hours; regenerating said catalyst; and using the regenerated catalyst in hydrocracking service for at least one additional extended on-stream period of at least 750 hours.

3,166,490
**COMBINATION PROCESS FOR UPGRADING GASOLINE FRACTIONS**
Harry D. Evans, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 26, 1962, Ser. No. 239,914
16 Claims. (Cl. 208—66)



1. A process for upgrading gasoline fractions which comprises in combination catalytically reforming a heavy gasoline fraction comprising cyclohexane and $C_7$ and heavier hydrocarbons, passing reformate product to an

aromatics recovery system wherein the reformate is separated into an aromatic rich extract and a paraffinic raffinate by means of a solvent selective for aromatics, contacting a light normal paraffin fraction containing normal hexane and benzene in an extraction zone with said solvent selective for aromatics to obtain an aromatic rich extract phase and a normal paraffin raffinate phase, passing the extract phase to said aromatics recovery system to recover said benzene, and isomerizing the normal paraffin raffinate with a Friedel-Crafts catalyst to obtain an isomerizate product rich in isoparaffins.

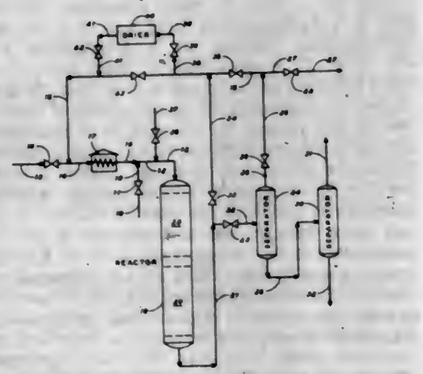
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3,166,491

## IN SITU SULFIDING OF NICKEL- AND COBALT-CONTAINING CATALYSTS

Phillip D. Harvey, Walnut Creek, James A. Robbers, Lafayette, John W. Scott, Jr., Ross, and Harold F. Mason, Berkeley, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed Mar. 27, 1962, Ser. No. 182,875
4 Claims. (Cl. 208—111)



1. In a process wherein a catalyst, comprising at least one hydrogenating-dehydrogenating component selected from the group consisting of nickel, nickel oxide, cobalt and cobalt oxide associated with a catalyst support, located within a reaction zone is treated in situ so as to convert at least a portion of said hydrogenating-dehydrogenating component to its corresponding sulfide, the improvement in said process, so as to prevent undesirable temperature run-aways within said reaction zone caused by contact of heated hydrocarbons with said catalyst prior to the sulfiding of said hydrogenating-dehydrogenating component, which comprises treating said catalyst in the following sequence of steps:

(*a*) Purging said reaction zone and catalyst of substantially all oxygen-containing fluids;

(*b*) Passing a hydrogen-rich gas substantially free of $C_3+$ hydrocarbons into said reaction zone at a pressure in excess of 50 p.s.i.g.;

(*c*) Adjusting the temperature of the catalyst within said reaction zone in the range of from about 350° to 750° F., said temperature adjusting step being conducted such that essentially no water contacts the catalyst at a temperature below about 250° F.;

(*d*) Injecting a sulfide into said hydrogen-rich gas such that the resulting hydrogen-sulfur containing mixture contains at least 0.2 mol percent sulfur; and

(*e*) Continuing the addition of said sulfide until the sulfur content of the effluent gas from said reaction zone indicates substantially complete sulfiding of the hydrogenating-dehydrogenating component of the catalyst.

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3,166,492

## DESULFURIZATION OF HYDROCARBONS

Georg Richard Schultze, Friedrich Boberg, and Gerhard Meuzel, Hannover, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Dec. 13, 1960, Ser. No. 86,919
1 Claim. (Cl. 208—237)

A process for desulfurizing hydrocarbons contaminated with sulfur which comprises reacting at a temperature between 20 and 200° C. metallic sodium with a hydrocarbon halide in contact with said hydrocarbon contaminated with sulfur to form an organic sodium compound in which the sodium is directly bonded to carbon in situ in said hydrocarbon, the quantity of sodium supplied to said hydrocarbon contaminated with sulfur by said organic sodium compound and any residual metallic sodium being at least 2.1 gram atoms of sodium per gram atom of sulfur contained in said contaminated hydrocarbon.

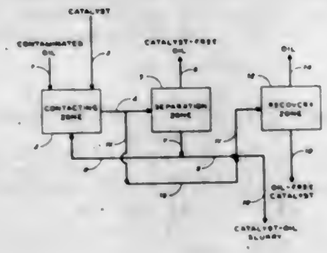
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3,166,493

## CONTROLLING NITROGEN CONTENT OF HYDROCARBON OILS

Phillip D. Harvey, Walnut Creek, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,253
5 Claims. (Cl. 208—254)



1. A process for adjusting downward to a relatively constant value the nitrogen content of a flowing hydrocarbon oil stream subject to temporary increases in nitrogen content, which comprises continuously passing said stream to a contacting zone, adding finely-divided cracking catalyst free of coke and nitrogen compounds to said contacting zone to form therein an oil-catalyst slurry at conditions at which a substantial portion of the nitrogen compounds in said oil adsorb on said catalyst,

continuously passing a portion of said slurry to a separation zone and therein separating said portion into catalyst-free oil reduced in nitrogen content and a dense slurry of catalyst and oil having a higher catalyst:oil ratio than the slurry in said contacting zone,

continuously retwining at least a major portion of said dense slurry directly to said contacting zone,

continuously recovering said catalyst-free oil,

separately recovering cracking catalyst having nitrogen compounds adsorbed thereon,

and regulating the rate of recovering cracking catalyst having nitrogen compounds adsorbed thereon and the rate of adding cracking catalyst free of coke and nitrogen compounds to maintain the catalyst in said contacting zone in a partially spent condition providing excess adsorptive capacity for removing nitrogen compounds from said oil.



3,166,494

## HYDROREFINING OF PETROLEUM CRUDE OIL AND CATALYST THEREFOR

John G. Gatsis, Des Plaines, and William K. T. Gleim, Island Lake, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,552
6 Claims. (Cl. 208—264)

1. A catalyst which comprises a colloidal suspension of molybdenum trioxide and phosphoric acid in a hydrocarbon, the suspension containing from about 0.1% to about 10% by weight of molybdenum, calculated as the element, and the molar ratio of molybdenum to phosphorus being within the range of about 1:1 to about 18:1, calculated as the elements.

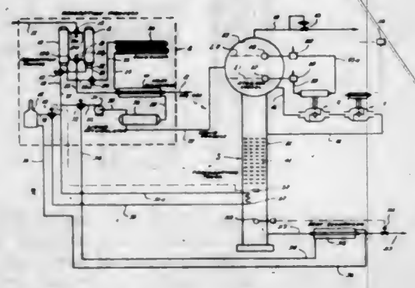
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3,166,495

## RATE CONTROL APPARATUS FOR CONTROLLING LIQUID FEEDS

Asbury S. Parks, Houston, Tex., assignor, by mesne assignments, to National Tank Company, Tulsa, Okla., a corporation of Nevada

Filed Oct. 31, 1958, Ser. No. 771,092
5 Claims. (Cl. 208—340)



2. The method of recovering hydrocarbon components from a gas stream including,

adsorbing hydrocarbon fractions from a gas stream by directing the stream through a bed of adsorbent material,

halting the flow through the bed after a predetermined time,

thereafter directing a heated regeneration gas stream through the bed for a preselected period of time to remove the adsorbed fractions from the bed,

subsequently condensing the fractions to recover hydrocarbon liquids,

directing said liquids to a receiving area,

diverting a portion of the heated regeneration gas stream to the fractionating zone to heat said zone during the intermittent time periods that regeneration gas is circulated through the bed,

flowing liquid at a preselected rate from the receiving area to the fractionating zone only during the period that the zone is heated and when the liquid level in the receiving area is between maximum and minimum limits,

increasing the rate of flow from the receiving area to the fractionating zone during a fractionating period and upon a predetermined rise in liquid level in the receiving area,

and decreasing the rate of flow from the receiving area to the fractionating zone during a fractionating period upon a predetermined fall in the liquid level in the receiving area.

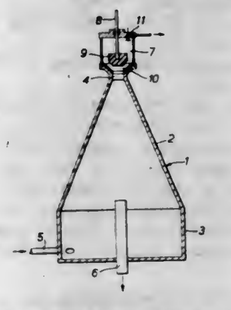
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3,166,496

## METHOD AND APPARATUS FOR THE SEPARATION OF SOLID PARTICLES INTO SIZED FRACTIONS

Denis Fletcher Kelsall, Sandringham, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate

Filed July 25, 1961, Ser. No. 126,612
Claims priority, application Australia, Aug. 1, 1960, 63,071/60
4 Claims. (Cl. 209—211)



1. Apparatus for separating a sample of solid particles into two separate sized fractions, comprising a conical cyclone elutriator having a fluid inlet arranged to introduce fluid tangentially into the elutriator, means to introduce all the particles of the sample into the fluid stream of the elutriator, a vortex finder, an underflow orifice at the apex of the cyclone, said cyclone having an inner surface converging to said orifice, means defining a generally cylindrical chamber arranged coaxially with said cyclone, said chamber having a cylindrical wall surface portion with a diameter larger than the orifice and a diverging wall surface portion extending from said orifice to said cylindrical wall surface portion so that said underflow orifice opens directly and without restriction into said chamber whereby the whole of the underflow discharge of the cyclone can be continuously circulated through said chamber and returned to the cyclone, and a discharge valve in said chamber operable to permit discharge of the contents of the elutriator after elutriation has been concluded.

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3,166,497

## CLARIFICATION OF AQUEOUS SUSPENSIONS WITH POLYVINYL ALCOHOL-AMINO ALDEHYDE REACTION PRODUCT

Kanji Matsubayashi and Saburo Imoto, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Okayama Prefecture, Japan, a corporation of Japan

No Drawing. Filed Apr. 3, 1962, Ser. No. 184,687
Claims priority, application Japan, May 27, 1961, 36/18,656
10 Claims. (Cl. 210—54)

1. A process for clarifying an aqueous suspension which comprises adding to said suspension from 0.01 to 0.5%, based on the weight of suspended material, of a water-soluble acetalized polyvinyl alcohol acetalized with an aminoaldehyde wherein the degree of acetalization of the polyvinyl alcohol is at least about 1% but less than about 15%.

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3,166,498

## OIL FILTER WITH CHECK VALVE

Herbert R. Otto, Jr., 4 Dickson Drive, Westfield, N.J.

Continuation of application Ser. No. 9,849, Feb. 19, 1960. This application Oct. 2, 1962, Ser. No. 228,782
1 Claim. (Cl. 210—130)

An improved replaceable oil filter comprising, in combination:

(*a*) a filter shell;

aromatics recovery system wherein the reformate is separated into an aromatic rich extract and a paraffinic raffinate by means of a solvent selective for aromatics, contacting a light normal paraffin fraction containing normal hexane and benzene in an extraction zone with said solvent selective for aromatics to obtain an aromatic rich extract phase and a normal paraffin raffinate phase, passing the extract phase to said aromatics recovery system to recover said benzene, and isomerizing the normal paraffin raffinate with a Friedel-Crafts catalyst to obtain an isomerizate product rich in isoparaffins.

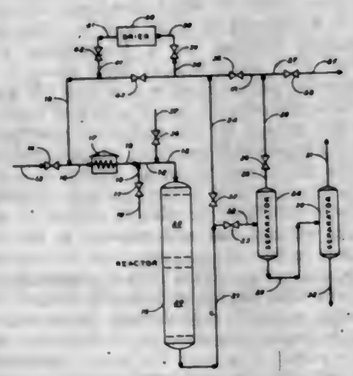
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**3,166,491**

**IN SITU SULFIDING OF NICKEL- AND COBALT-CONTAINING CATALYSTS**

**Phillip D. Harvey, Walnut Creek, James A. Robbers, Lafayette, John W. Scott, Jr., Reno, and Harold F. Mason, Berkeley, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware**

**Filed Mar. 27, 1962, Ser. No. 182,875**
**4 Claims. (Cl. 208—111)**



1. In a process wherein a catalyst, comprising at least one hydrogenating-dehydrogenating component selected from the group consisting of nickel, nickel oxide, cobalt and cobalt oxide associated with a catalyst support, located within a reaction zone is treated in situ so as to convert at least a portion of said hydrogenating-dehydrogenating component to its corresponding sulfide, the improvement in said process, so as to prevent undesirable temperature run-aways within said reaction zone caused by contact of heated hydrocarbons with said catalyst prior to the sulfiding of said hydrogenating-dehydrogenating component, which comprises treating said catalyst in the following sequence of steps:

(*a*) Purging said reaction zone and catalyst of substantially all oxygen-containing fluids;

(*b*) Passing a hydrogen-rich gas substantially free of $C_3+$ hydrocarbons into said reaction zone at a pressure in excess of 50 p.s.i.g.;

(*c*) Adjusting the temperature of the catalyst within said reaction zone in the range of from about 350° to 750° F., said temperature adjusting step being conducted such that essentially no water contacts the catalyst at a temperature below about 250° F.;

(*d*) Injecting a sulfide into said hydrogen-rich gas such that the resulting hydrogen-sulfur containing mixture contains at least 0.2 mol percent sulfur; and

(*e*) Continuing the addition of said sulfide until the sulfur content of the effluent gas from said reaction zone indicates substantially complete sulfiding of the hydrogenating-dehydrogenating component of the catalyst.

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**3,166,492**

**DESULFURIZATION OF HYDROCARBONS**

**Georg Richard Schultze, Friedrich Boberg, and Gerhard Meussel, Hannover, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany**

**No Drawing. Filed Dec. 13, 1960, Ser. No. 86,919**
**1 Claim. (Cl. 208—237)**

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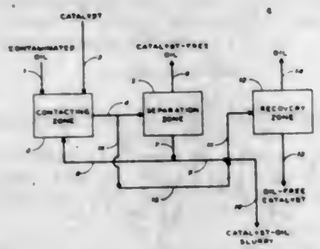
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**3,166,493**

**CONTROLLING NITROGEN CONTENT OF HYDROCARBON OILS**

**Phillip D. Harvey, Walnut Creek, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware**

**Filed May 14, 1962, Ser. No. 194,253**
**5 Claims. (Cl. 208—254)**



1. A process for adjusting downward to a relatively constant value the nitrogen content of a flowing hydrocarbon oil stream subject to temporary increases in nitrogen content, which comprises continuously passing said stream to a contacting zone, adding finely-divided cracking catalyst free of coke and nitrogen compounds to said contacting zone to form therein an oil-catalyst slurry at conditions at which a substantial portion of the nitrogen compounds in said oil adsorb on said catalyst,

continuously passing a portion of said slurry to a separation zone and therein separating said portion into catalyst-free oil reduced in nitrogen content and a dense slurry of catalyst and oil having a higher catalyst:oil ratio than the slurry in said contacting zone,

continuously retwining at least a major portion of said dense slurry directly to said contacting zone,

continuously recovering said catalyst-free oil,

separately recovering cracking catalyst having nitrogen compounds adsorbed thereon,

and regulating the rate of recovering cracking catalyst having nitrogen compounds adsorbed thereon and the rate of adding cracking catalyst free of coke and nitrogen compounds to maintain the catalyst in said contacting zone in a partially spent condition providing excess adsorptive capacity for removing nitrogen compounds from said oil.



**3,166,494**

**HYDROREFINING OF PETROLEUM CRUDE OIL AND CATALYST THEREFOR**

**John G. Gatsis, Des Plaines, and William K. T. Gleim, Island Lake, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**No Drawing. Filed Aug. 17, 1962, Ser. No. 217,552**
**6 Claims. (Cl. 208—264)**

1. A catalyst which comprises a colloidal suspension of molybdenum trioxide and phosphoric acid in a hydrocarbon, the suspension containing from about 0.1% to about 10% by weight of molybdenum, calculated as the element, and the molar ratio of molybdenum to phosphorus being within the range of about 1:1 to about 18:1, calculated as the elements.

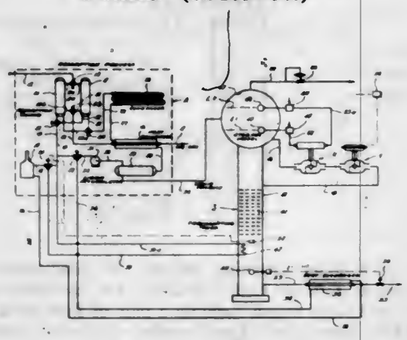
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**3,166,495**

**RATE CONTROL APPARATUS FOR CONTROLLING LIQUID FEEDS**

**Asbury S. Parks, Houston, Tex., assignor, by mesne assignments, to National Tank Company, Tulsa, Okla., a corporation of Nevada**

**Filed Oct. 31, 1958, Ser. No. 771,092**
**5 Claims. (Cl. 208—340)**



2. The method of recovering hydrocarbon components from a gas stream including,

adsorbing hydrocarbon fractions from a gas stream by directing the stream through a bed of adsorbent material,

halting the flow through the bed after a predetermined time,

thereafter directing a heated regeneration gas stream through the bed for a preselected period of time to remove the adsorbed fractions from the bed,

subsequently condensing the fractions to recover hydrocarbon liquids,

directing said liquids to a receiving area,

diverting a portion of the heated regeneration gas stream to the fractionating zone to heat said zone during the intermittent time periods that regeneration gas is circulated through the bed,

flowing liquid at a preselected rate from the receiving area to the fractionating zone only during the period that the zone is heated and when the liquid level in the receiving area is between maximum and minimum limits,

increasing the rate of flow from the receiving area to the fractionating zone during a fractionating period and upon a predetermined rise in liquid level in the receiving area,

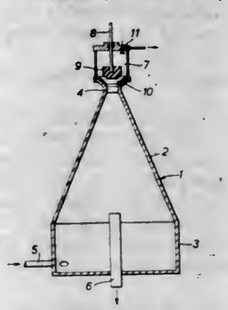
and decreasing the rate of flow from the receiving area to the fractionating zone during a fractionating period upon a predetermined fall in the liquid level in the receiving area.

**3,166,496**

**METHOD AND APPARATUS FOR THE SEPARATION OF SOLID PARTICLES INTO SIZED FRACTIONS**

**Denis Fletcher Kelsall, Sandringham, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate**

**Filed July 25, 1961, Ser. No. 126,612**
**Claims priority, application Australia, Aug. 1, 1960, 63,071/60**
**4 Claims. (Cl. 209—211)**



1. Apparatus for separating a sample of solid particles into two separate sized fractions, comprising a conical cyclone elutriator having a fluid inlet arranged to introduce fluid tangentially into the elutriator, means to introduce all the particles of the sample into the fluid stream of the elutriator, a vortex finder, an underflow orifice at the apex of the cyclone, said cyclone having an inner surface converging to said orifice, means defining a generally cylindrical chamber arranged coaxially with said cyclone, said chamber having a cylindrical wall surface portion with a diameter larger than the orifice and a diverging wall surface portion extending from said orifice to said cylindrical wall surface portion so that said underflow orifice opens directly and without restriction into said chamber whereby the whole of the underflow discharge of the cyclone can be continuously circulated through said chamber and returned to the cyclone, and a discharge valve in said chamber operable to permit discharge of the contents of the elutriator after elutriation has been concluded.

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**3,166,497**

**CLARIFICATION OF AQUEOUS SUSPENSIONS WITH POLYVINYL ALCOHOL-AMINO ALDEHYDE REACTION PRODUCT**

**Kanji Matsubayashi and Saburo Imoto, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Okayama Prefecture, Japan, a corporation of Japan**

**No Drawing. Filed Apr. 3, 1962, Ser. No. 184,687**
**Claims priority, application Japan, May 27, 1961, 36/18,656**
**10 Claims. (Cl. 210—54)**

1. A process for clarifying an aqueous suspension which comprises adding to said suspension from 0.01 to 0.5%, based on the weight of suspended material, of a water-soluble acetalized polyvinyl alcohol acetalized with an aminoaldehyde wherein the degree of acetalization of the polyvinyl alcohol is at least about 1% but less than about 15%.

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**3,166,498**

**OIL FILTER WITH CHECK VALVE**

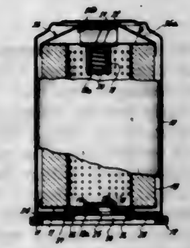
**Herbert R. Otto, Jr., 4 Dickson Drive, Westfield, N.J.**

**Continuation of application Ser. No. 9,849, Feb. 19, 1960. This application Oct. 2, 1962, Ser. No. 228,782**
**1 Claim. (Cl. 210—130)**

An improved replaceable oil filter comprising, in combination:

(*a*) a filter shell;

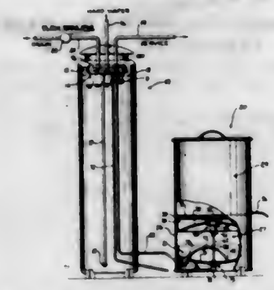
(*b*) an end closure sealed to said filter shell;
(i) said end closure being provided with an axial aperture;
(*c*) a filter cartridge within said filter shell;
(*d*) said filter cartridge including
(i) a perforated tube;
(ii) upper and lower cups abutting against the ends of said perforated tube;
(iii) said upper cup being provided with an aperture;
(iv) said lower cup being provided with a sleeve extending axially thereof;
(v) one end of said sleeve being provided with an annular lip;
(vi) said annular lip defining an aperture in said lower cup;
(vii) said aperture communicating with the interior of said perforated tube;
(viii) a pleated paper annulus being seated within said upper and lower cups and disposed annularly of said perforated tube;
(*e*) said filter cartridge being supported at its upper end by springable means abutting against the upper cup and the inner surface of said filter shell;



(*f*) a rigid plate disposed inwardly of said end closure and adjacent thereto;
(i) said rigid plate being formed integrally with a tubular element extending axially of said rigid plate.
(ii) said tubular element defining an aperture disposed centrally in said rigid plate;
(iii) said rigid plate being provided with a plurality of apertures surrounding said centrally disposed aperture;
(iv) said plurality of apertures and centrally disposed aperture communicating with the axial aperture in said end closure;
(*g*) a resilient plate disposed between said rigid plate and said lower cup;
(i) the upper and lower surfaces of said resilient plate being in continuous contact with the lower surface of said lower cup and the upper surface of said rigid plate respectively;
(ii) the lower surface of said resilient plate yieldably covering said purality of apertures provided in said rigid plate and providing a channel for communication between them and the outer periphery of said pleated paper annulus when said lower surface of said resilient plate is subjected to fluid pressure exerted through said plurality of apertures provided in said rigid plate;
(iii) said resilient plate being compressible by said fluid pressure to uncover said plurality of apertures in said rigid plate, whereby fluid flow through said plurality of apertures and said pleated paper annulus and into said perforated tube and said aperture in said lower cup may be established to permit filtration of said fluid and discharge thereof from said filter through the aperture disposed centrally in said rigid plate and said axial aperture provided in said end closure;
(iv) said tubular element being received within said sleeve and being abuttable against said annular lip;
(*h*) said perforated tube also being provided with means for by-passing said fluid flow through said pleated paper annulus when it becomes clogged;
(*j*) said by-pasing means communicating with the aperture provided in said upper cup and with said perforated tube.

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**3,166,499**
**ION EXCHANGE WATER SOFTENING SYSTEM**
**John Rudelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin**
**Original application Oct. 26, 1960, Ser. No. 66,379, now Patent No. 3,058,816, dated Oct. 16, 1962. Divided and this application May 21, 1962, Ser. No. 196,208**
**4 Claims. (Cl. 210—136)**



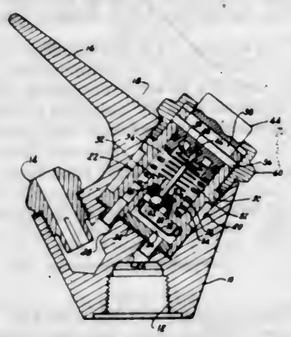
4. In a water softening system, the combination of: an upright softener tank containing ion exchange material and having means defining a pair of flow ports, one of which opens into a lower portion of the tank and the other of which opens into an upper portion of the tank; a control valve having a body provided with a hard water inlet port, a service outlet port, a drain port, a pair of system ports, one for each of said flow ports of the softener tank and connected therewith, first and second regenerating ports, a bore to which all of said valve ports open, and a valve element in the bore normally occupying a service position communicating its hard water inlet port with one of its system ports and its service port with the other of its system ports so that hard water to be softened flows through the softener tank and softened water issuing from the tank is available at the service outlet port of the control valve, said valve element being movable to a regenerating position at which it is adapted to effect both brining and rinsing of the ion exchange material in the softener tank and at which position the valve element communicates one of said system ports with the drain port and communicates its hard water inlet port with said first regenerating port and its second regenerating port with the remaining system port; means providing a substantially closed storage tank which is adapted to be filled with concentrated brine; means for expelling brine from the storage tank, comprising a brine outlet duct connected at one end with said second regenerating port and having a portion at its other end disposed inside the storage tank with its mouth spaced a distance from the top thereof, a water inlet duct connected at one end with said first regenerating port, a brine valve having an inlet port connected with the other end of the water inlet duct, a discharge port communicated with the top interior portion of the storage tank and communicable with said inlet port of the brine



valve, a pressure responsive valve member controlling communication between said brine valve ports and movable from a normally closed position blocking communication between the brine valve ports to an open position allowing hard water to flow into the top portion of the storage tank from the water inlet duct in response to the pressure of hard water in the latter, so that water thus admitted into the top portion of the storage tank will displace to the softener tank all of the brine which is above the level of the mouth of the brine outlet duct, after which hard rinse water can enter the outlet duct for flow through the softener tank to rinse brine from the ion-exchange material therein, and a return spring at all times exerting force on the valve member to yieldingly hold the same in its closed position; and means governed by the valve element of the control valve for venting the inlet port of the brine valve in the service position of the valve element, whereby fluid pressure forces acting upon the valve member of the brine valve can be quickly dissipated and the valve member promptly returned to its closed position by the spring acting thereon as soon as the valve element of the control valve is returned to its service position from its regenerating position.

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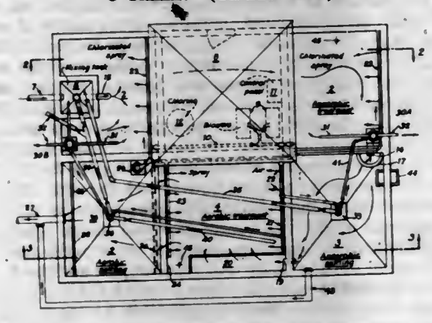
**3,166,500**
**COMBINED RECIPROCATING VALVE APPARATUS AND FLOW CONTROLLER**
**Thomas E. Noakes, Detroit, and Henry W. Kogan, Oak Park, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware**
**Filed Apr. 18, 1962, Ser. No. 188,317**
**9 Claims. (Cl. 210—137)**



6. In a drinking fountain head having a cavity in one face thereof for defining a bottom cavity surface, water entrance and exit openings extending through said surface, and a removable cartridge disposed in said cavity: the improvement comprising a partition extending within the cartridge and cooperating therewith to define a straight walled inlet chamber adjacent one end of the cartridge having communication with the entrance opening, and a straight walled outlet chamber adjacent the other end of the cartridge having communication with the exit opening; said partition having an opening therethrough and an annular shoulder surrounding said opening on the partition face exposed to the water entrance opening; a resilient flow control annulus seated on said shoulder and responsive to variations in water pressure for maintaining a substantially constant volumetric flow through the opening; a strainer screen disposed within the inlet chamber in close parallel adjacency to the flow control annulus; a movable valve element disposed immediately upstream from the flow control annulus and movable thereagainst to halt the flow of water therethrough; a movable push button slidably mounted in the straight walled outlet chamber for movement toward and away from the flow control annulus; and an operating stem extending between the push button and movable valve element so that depression of the push button is effective to open the valve element.

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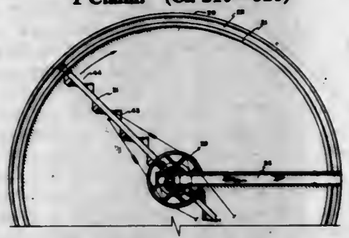
**3,166,501**
**PLANT FOR SEWAGE TREATMENT**
**Guenter Spohr, 2243 Carlisle Road, York, Pa.**
**Filed May 17, 1963, Ser. No. 281,275**
**3 Claims. (Cl. 210—195)**



1. A compact centralized plant for the anaerobic and aerobic treatment of sewage comprising an anaerobic digestion tank having a mixing tank at one end thereof in communication with the digestion tank for receiving raw sewage and the sewage to be recycled, an anaerobic settling tank immediately adjacent and integral with the other end of the anaerobic tank and in communication with the latter, an aerobic digestion tank immediately adjacent and integral with the middle portion of the anaerobic digestion tank and in communication with the anaerobic settling tank, an aerobic settling and chlorination tank immediately adjacent and integral with the first-mentioned end of the anaerobic digestion tank and in communication with the aerobic digestion tank, an overflow weir and a discharge conduit at the remote end of the aerobic settling and chlorination tank, the latter tank being separated from the aerobic digestion tank by an overflow wall, a series of baffles along the latter, a bypass line extending from the anaerobic settling tank to the discharge conduit, an equipment housing mounted over the middle portion of the anaerobic digestion tank, an air conduit extending along the floor of the anaerobic digestion tank, and a blower mounted in said housing and connected to both ends of said air conduit for circulating heated air through the latter.

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**3,166,502**
**SLUDGE DISCHARGE MEANS FOR SEDIMENTATION APPARATUS**
**Earl M. Kelly, Hillsborough, Burlingame, Calif., assignor to The Elmco Corporation, Salt Lake City, Utah, a corporation of Delaware**
**Filed Sept. 12, 1960, Ser. No. 55,592**
**1 Claim. (Cl. 210—528)**



Sedimentation apparatus comprising a tank having a bottom and upstanding marginal sidewalls, means for sup-

plying solids-bearing liquid to said tank for sedimentation therein to yield effluent liquor and settled sludge, effluent liquor discharge means, a sludge outlet, and means in said tank for collecting settled sludge and transporting it to said sludge outlet, said means comprising a hollow arm mounted in said tank adjacent the bottom thereof and communicating at one end with the sludge outlet, drive means connected to said arm enabling movement of said arm across said bottom, a plurality of straight blades dependingly mounted on said arm at spaced apart points therealong and transversely at acute angles thereto, alternate ones of said blades being mounted oppositely to the others of said blades whereby adjacent blades converge to collectively form the sidewalls of a plurality of adjacent sludge collecting and concentrating hoppers closed at the rear and tapering continuously from said rear to an opening at the front facing the direction of movement of said arm, a cover plate interconnecting the top of adjacent sidewalls at least in a rear portion of each of said hoppers thereby to form between said walls, said cover and the tank bottom a confined sector that continuously diminishes in volume on approach to the rear thereof, separate sludge conducting conduits providing communication between the rear of said covered portion of each of said hoppers and the interior of said hollow arm, and flow-restricting orifice means in each of said sludge conducting conduits having an effective open area less than the cross sectional area of the forwardly facing sludge entrance area of each of said associated hoppers.

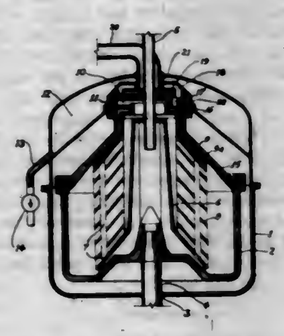
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3,166,503

## APPARATUS FOR CENTRIFUGAL SEPARATION

Henric Wilhelm Thylefors, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden

Filed Feb. 28, 1962, Ser. No. 176,283
2 Claims. (Cl. 233—4)



1. A centrifugal separator comprising a hollow rotor forming a zone for centrifugally separating a mixture of liquids into first and second separated liquids, the rotor having an inlet for feeding the mixture to said zone, means forming an air-tight first chamber outside the rotor for receiving the first separated liquid from said zone, the rotor having a second chamber for collecting the second separated liquid from said zone and which is in vacuum-conveying communication with said first chamber, a first discharge pipe leading from said first chamber, a second discharge pipe leading from said second chamber, pump means in said second chamber operable to discharge through said second pipe a mixture of air from said first chamber and second separated liquid from said second chamber, and a pump connected to said first discharge pipe and operable to withdraw said first liquid from said first chamber, whereby said first chamber is maintained under vacuum by said pump means and vapors from said first chamber are exhausted by way of the second chamber.

3,166,504

## OIL-SOLUBLE POLYMERIC GLYCIDYL COMPOUNDS AND FUNCTIONAL ORGANIC COMPOSITIONS CONTAINING THEM

Maurits Kruizinga and Petrus N. van der Heydt, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 19, 1960, Ser. No. 56,654
Claims priority, application Netherlands, Dec. 4, 1959, 246,087
5 Claims. (Cl. 252—46.6)

1. A mineral oil composition having improved stabilizing properties comprising a major amount of a mineral oil and from about 0.1% to about 5% of an oil-soluble polar modified copolymer of (A) an unsaturated glycidyl compound selected from the group consisting of unsaturated glycidyl ether, unsaturated thioglycidyl ether, glycidyl ester of unsaturated aliphatic carboxylic acid and thioglycidyl ester of unsaturated aliphatic carboxylic acid and (B) polymerizable ester selected from the group consisting of ester of unsaturated alcohol and saturated carboxylic acid and ester of saturated alcohol and an acrylic acid, said ester (*b*) having at least one oleophilic radical of 8 to 30 carbon atoms, the polar modifying agent being selected from the group consisting of an alkyl acid phosphite, an alkyl acid thiophosphite, and diaryl phosphinodithionic acid, the mol ratio of components (A) and (B) varying from 1:10 to 1:1 respectively.

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3,166,505

## COPOLYMERS OF DIALKENYL PHOSPHORUS ESTERS AS LUBRICATING OIL ADDITIVES

Peter Kirby, Kelsall, England, assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Oct. 4, 1960, Ser. No. 60,303
Claims priority, application Great Britain, Jan. 29, 1960, 3,281/60
6 Claims. (Cl. 252—49.8)

1. A mineral lubricating oil composition comprising a major proportion of a mineral lubricating oil and from about 0.01% to about 20% by weight of a copolymer of a dialkenyl substituted phosphorus compound selected from the group consisting of dialkenyl phosphate, dialkenyl phosphonate and dialkenyl phosphine oxide and a $C_{8-30}$ alkyl acrylate, in the mol ratio of 1:20 to 20:1, respectively and having a molecular weight of from about 20,000 to about 1,000,000.

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3,166,506

## HIGH TEMPERATURE GREASE

Stephen J. Zajac, Whiting, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Feb. 21, 1962, Ser. No. 175,871
4 Claims. (Cl. 252—49.6)

1. A lubricant grease composition comprising an oleaginous lubricant base thickened to grease consistency with a reaction product of an aromatic polyisocyanate and from 0.01 weight percent to 50 weight percent based on aromatic polyisocyanate of a boric acid, said reaction having been conducted at a temperature within the range of about 100–300° F. for a period up to about two hours.

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3,166,507

## LUBRICATING OILS CONTAINING ALKYL ACRYLATE-VINYLPYRIDINE N-OXIDE COPOLYMERS

Frederick E. Bailey, Jr., Charleston, and Walter J. Toussaint, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,348
6 Claims. (Cl. 252—51.5)

1. A lubricating oil which comprises a hydrocarbon lubricating oil and an amount sufficient to improve the viscosity index and sludge dispersion of said oil of a copolymer of:

(*a*) an oil-solubilizing quantity of alkyl acrylate wherein the alkyl moieties have up to 18 carbon atoms, and

(*b*) the remainder being a vinylpyridine N-oxide, the said copolymer having a reduced viscosity of from about 0.2 to about 1.5 measured in a solution of 0.2 gram of copolymer per 100 milliliters of benzene at 30° C.

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3,166,508

## HYDROCARBON OILS OF REDUCED FOAMING PROPERTIES

Joseph E. Fields, Ballwin, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 16, 1963, Ser. No. 251,717
16 Claims. (Cl. 252—51.5)

1. A composition of matter of reduced foaming properties consisting essentially of a hydrocarbon oil having foaming tendencies and a quantity less than 0.06% by weight, based on the weight of said oil, said quantity being sufficient to suppress said foaming tendency but insufficient to modify substantially the viscosity characteristics of the oil, of an alkyl acrylate polymer having a molecular weight less than 10,000 and selected from the class consisting of (A) a normally fluid homopolymer of an alkyl acrylate having at least 3 but less than 7 carbon atoms in the alkyl radical, (B) a normally fluid copolymer of at least two different alkyl acrylates in which the alkyl radical has from 1 to 18 carbon atoms and in which the average number of carbon atoms in the alkyl radicals of the copolymer molecule is at least 3 but less than 7 on a molar basis and (C) a copolymer having the oil-solubility of (A) and containing at least 50% by weight of an alkyl acrylate in which the alkyl radical has from 1 to 18 carbon atoms with the balance being a compound other than said acrylate and copolymerizable with the acrylate, the said compound being selected from the group consisting of alkyl methacrylates, styrenes, alkyl fumarates, alkyl maleates, alkyl itaconates, acrylonitrile, methacrylonitrile and vinyl esters of aliphatic monocarboxylic acids.

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3,166,509

## ANTIOXIDANT COMPOSITION

George G. Ecke, Detroit, Mich., and Alfred J. Kolka, O'Hara Township, Allegheny County, Pa., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 9, 1963, Ser. No. 250,237
8 Claims. (Cl. 252—57)

1. A liquid composition comprising from 60 to 80 weight percent of 2,6-di-tert-butylphenol, from 5 to 30 weight percent of 2-tert-butylphenol and from 3 to 15 weight percent of 2,4,6-tri-tert-butylphenol.

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3,166,510

## ELECTROGRAPHIC PRINTING INK, PROCESS FOR THE MANUFACTURE THEREOF, AND METHOD OF ELECTROSTATIC PRINTING THEREWITH

Charles P. West, Metuchen, and Jacques Beauvenists, Union, N.J., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Aug. 7, 1957, Ser. No. 676,716
12 Claims. (Cl. 252—62.1)

1. As a new article of manufacture, a free-flowing electrically conductive ink powder for developing latent electrostatic images, 98 percent of the powder particles having diameters comprised between the limits of 5 and 80 microns, and the geometric mean diameter of all the particles being between the limits of 12 and 40 microns, said particles having a substantially uniform composition comprising at least 35 percent by weight of a furnace carbon black dispersed in a solidified thermoplastic resin, and a mass of said particles having an angle of repose of not more than 40° relative to the horizontal.

10. A process for the manufacture of electrically conductive ink powders suitable for developing latent electrostatic images, comprising the steps of ball-milling a slurry made up of a furnace carbon black, a thermoplastic hydrocarbon resin dissolved in a solvent chosen from the group consisting of toluene, xylene and benzene, and a wetting agent, thereby to obtain a uniform dispersion of the furnace carbon black in the resin solution, the ratio by weight of said resin to said furnace black being within the range of 0.8 to 1.6 and said wetting agent being less than 2.6 percent by weight of the slurry, spray drying the slurry to extract the solvent and selecting from the resultant dry powder a mass of particles having a geometric mean diameter of 12–40 microns and of which 98 percent by weight have a diameter within the range of 5–80 microns.

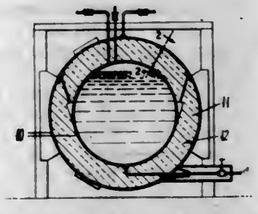
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3,166,511

## THERMAL INSULATION

Ladislas C. Matsch, Kenmore, and Arthur W. Francis, New City, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 1, 1960, Ser. No. 73,028
15 Claims. (Cl. 252—62)



1. An insulating material characterized by a low rate of heat transfer by conduction and radiation, consisting essentially of finely divided low heat conductive particles of calcium silicate having a chemical analysis essentially the same as shown in Table II, a surface area of 95 sq. meters/gm. agglomerate sizes less than about 420 microns, ultimate size less than about 0.1 micron, and settled density between about 3 and 10 lbs. per cu. ft.; and finely divided radiant heat reflecting bodies of sizes less than about 500 microns and having metallic surfaces, such bodies constituting between about 1% and 30% by weight of said insulating material.

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3,166,512

## STABLE, SOLID CHLORINATED CAUSTIC PRODUCT CONTAINING AVAILABLE CHLORINE AND METHOD OF PREPARATION THEREOF

William G. Mizuno, St. Paul, Minn., assignor to Economics Laboratory, Inc., St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 6, 1961, Ser. No. 101,055
9 Claims. (Cl. 252—99)

1. A method for producing a stable, solid chlorinated caustic product containing up to about 18% available chlorine which comprises intimately contacting a finely divided solid reaction mixture consisting essentially of sodium hydroxide and at least one hygroscopic material selected from the class consisting of sodium pyrophosphate, sodium tripolyphosphate and sodium metasilicate, the weight ratio of sodium hydroxide to hygroscopic material being about 1 to 9:1, with a gas stream containing sufficient chlorine to initiate an exothermic reaction, reacting the gas stream with the solid reaction mixture while maintaining a reaction temperature within the range from about 110° to 140° F. until the available chlorine content of the solid reaction mixture is about 8 to 18%, increasing the reaction temperature to about 135° to 160°

F., maintaining the reaction temperature within the range from about 135° to 160° F. for a reaction period of at least about 10 minutes but insufficient to decrease the available chlorine content of the solid reaction mixture by more than about 2%, and cooling the solid reaction mixture, the finely divided solid reaction mixture being agitated throughout the reaction and subsequent cooling such that agglomeration does not occur.

7. A machine dishwashing composition consisting essentially of at least one detergent salt wherein the cation is selected from the class consisting of sodium and potassium and the anion is selected from the class consisting of bicarbonate, carbonate, polyphosphate, orthophosphate, orthosilicate, metasilicate and hydroxide, and sufficient to provide an available chlorine content of about 0.5 to 8% of the product of claim 1.

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### 3,166,513
### STABLE DETERGENT COMPOSITION

William G. Mizuno and Thomas M. Oberle, St. Paul, Minn., assignors to Economics Laboratory, Inc., St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,518
5 Claims. (Cl. 252—99)

1. A stable detergent composition consisting essentially of:

(A) builder salts in major amount comprising
  (1) from about 15 to about 60% by weight based on the final composition of at least one alkali metal phosphate werein the ratio of $Me_2O$ to $P_2O_5$ is from 1 to 3:1, Me being selected from the class consisting of sodium and potassium,
  (2) from about 10 to about 50% by weight based on the final composition of at least one solid, water-soluble alkali metal silicate wherein the ratio of $SiO_2$ to $Me_2O$ is 0.5 to 3.22:1, Me being selected from the class consisting of sodium and potassium,
  (3) from about 0 to about 28% by weight based on the final composition of sodium carbonate;
(B) from about 5 to about 30% by weight based on the final composition of a caustic material selected from the group consisting of sodium hydroxide and potassium hydroxide; and
(C) from about 1 to about 5% by weight based on the final composition of a chlorinating agent consisting of granular potassium dichlorocyanurate having a particle size distribution of at least about 60% by weight through U.S. Standard Screen No. 50 and retained on U.S. Standard Screen No. 100;

the components of the detergent composition being substantially anhydrous, at least one of the caustic material and the chlorinating agent being first admixed with at least about 30% by weight of builder salts based on the total weight of builder salts in the formulation, and the components being admixed for a period of about three minutes after admixture of the caustic material and the chlorinating agent prior to packaging in sealed containers.

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### 3,166,514
### HYDROGEN GENERATION BY HYDROLYSIS OR ALCOHOLYSIS OF A POLYHYDROPOLYBORATE-GROUP VIII METAL MIXTURE

George W. Parshall, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 9, 1962, Ser. No. 208,646
22 Claims. (Cl. 252—188)

1. A mixture capable of generating hydrogen upon addition of a member of the group consisting of water and liquid alcohols, the active ingredients of which consist essentially of (*a*) at least one polyhedral boron compound of the formula $M_aQ_b$, wherein M is a cation of valence 1–3 and Q is a boron-containing anion of the formula $(B_xH_{y-z}X_z)$, *a* is a positive whole number between 1 and 4 inclusive, and *b* is a positive whole number between 1 and 3 inclusive, *x* and *y* are positive numbers of at least 10, z is a number between 0 and 6 inclusive, and the sum of *x*, *y* and the valence of Q is a positive even number, and X is selected from the group consisting of halogen, hydroxyl and alkyl and aralkyl of 1–11 carbons, and (*b*) a catalytic amount of at least one metal of Group VIII of the Periodic Table having an atomic number between 28 and 78, inclusive.

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### 3,166,515
### PRODUCTION OF URANIUM AND PLUTONIUM MONOCARBIDE

Ronald George Sowden, Wallingford, England, assignor to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Nov. 29, 1961, Ser. No. 155,846
Claims priority, application Great Britain Dec. 2, 1960
2 Claims. (Cl. 252—301.1)

1. The method of producing a mixture of uranium monocarbide and plutonium monocarbide comprising reacting a mixture of uranium oxide and a plutonium oxide containing not more than 30 moles percent of the plutonium oxide with substantially the stoichiometric proportions of elemental carbon to form uranium monocarbide and plutonium monocarbide at a temperature not in excess of about 1500° C. and maintaining a pressure not in excess of 200 microns of mercury over the reactants by continuously pumping off the gaseous products of the reaction, and recovering the formed uranium monocarbide and plutonium monocarbide.

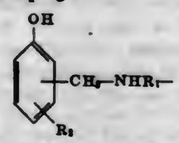
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### 3,166,516
### PROCESS FOR BREAKING PETROLEUM EMULSIONS

Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale, Houston, Tex., assignors to Nalco Chemical Company, a corporation of Delaware

No Drawing. Filed Oct. 28, 1960, Ser. No. 65,564
10 Claims. (Cl. 252—344)

1. A process for breaking a petroleum oil emulsion of the water-in-oil type which comprises breaking said emulsion by subjecting said emulsion to the action of a polyoxyalkylated alkyl phenol-formaldehyde-alkylene polyamine resin, said resin being formed by the polycondensation of a mixture selected from the group consisting of (A) said alkyl phenol, said formaldehyde, and said alkylene polyamine, the latter having two primary amino groups and 2–6 carbons per alkylene group, and (B) a precondensate of said alkyl phenol and formaldehyde, said alkyl phenol monomer, said formaldehyde, and said alkylene polyamine, the latter having two primary amino groups and 2–6 carbons per alkylene group, said alkyl phenol being at least 75% difunctional alkyl phenol with the alkyl groups of the alkyl phenol having an average number of carbons in the range of 4–15, the mol ratio of the phenol to the polyamine in said resin being in the range of 1:1 to 10:1, respectively, at least a part of the phenol and the polyamine being combined in the resin structure by the grouping




wherein $R_2$ is the alkyl group of the phenol and is in one of the positions ortho and para to the —OH group, and $R_1$ is the monovalent residue of the alkylene polyamine, the oxyalkylene groups of said oxyalkylated resin having a number of carbons in the range of 2–3, and the weight ratio of oxyalkylene groups to resin being between about 2:3 and 10:1, respectively, and separating the oil and water phases of the broken emulsion.



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### 3,166,517
### CATALYST SYSTEM

Rolland S. Ro, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 5, 1960, Ser. No. 60,579
4 Claims. (Cl. 252—429)

1. A catalyst system prepared by reacting, in the presence of a halogenated hydrocarbon selected from the group consisting of carbon tetrachloride and trichloromonofluoromethane as the sole diluent for said system, (*a*) an organoaluminum compound selected from the group consisting of aluminum triisobutyl, diisobutylaluminum chloride, isobutylaluminum dichloride and the reaction product of 0.5 to 2.0 moles of aluminum chloride with 1.0 mole of aluminum triisobutyl, with (*b*) vanadium tris(acetylacetonate), the proportions of (*a*) and (*b*) being selected so that the value of the molar ratio of isobutyl radicals to vanadium atoms is at least 6:1, the vanadium concentration in said system being about 0.0001 to 0.1 molar.

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### 3,166,518
### ELECTRICALLY CONDUCTIVE CONCRETE

Earl H. Barnard, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,153
3 Claims. (Cl. 252—503)

2. An electrically conductive composition consisting essentially of by volume, from about 33⅓% to about 50% cement mixture and from about 50% to about 66⅔% aggregate, the cement mixture consisting essentially of, by weight, from about 1% to about 3% carbon black, from about 50% to about 75% Portland cement, and from about 5% to about 30% iron filings, and the surfaces of said aggregate being covered with a coating consisting essentially of carbon black and iron filings incorporated in an epoxy resin binder.

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### 3,166,519
### PREPARATION OF ORGANOBORANES AND ORGANOALUMINUM-NITROGEN POLYMERS

William G. Woods, Anaheim, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Nov. 3, 1960, Ser. No. 66,915
14 Claims. (Cl. 260—2)

1. The method for preparing organoboranes and organoaluminum-nitrogen polymers which comprises reacting a substituted borazole having the formula $(XBNR')_3$ with an organoaluminum compound having the formula $AlR_3$ in an inert solvent, slowly distilling the reaction mass, recovering substantially pure organoborane as the distillate and recovering said organoaluminum-nitrogen polymers from the residue, where R is selected from the group consisting of unsubstituted saturated aliphatic hydrocarbon radicals, phenyl and lower alkyl substituted phenyl radicals, X is selected from the group consisting of chlorine, bromine, unsubstituted saturated alkoxy radicals, phenoxy radicals, quinoline-8-oxy, unsubstituted saturated aliphatic hydrocarbon radicals, unsubstituted aromatic hydrocarbon radicals, lower alkyl substituted aromatic hydrocarbon radicals and biphenylyl, and R' is selected from the group consisting of hydrogen, unsubstituted saturated aliphatic hydrocarbon radicals, unsubstituted aromatic hydrocarbon radicals, lower alkyl substituted aromatic hydrocarbon radicals and biphenylyl.



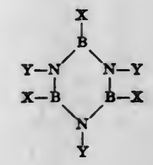
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### 3,166,520
### PROCESS FOR PRODUCING BORON-NITROGEN POLYMERS FROM BORAZOLES

William David English, Garden Grove, and Harry Goldsmith, Long Beach, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed June 19, 1961, Ser. No. 117,834
8 Claims. (Cl. 260—2)

1. The method of producing thermally stable polymers which consist essentially of heating two different substituted borazoles in a closed system at a temperature of from about 350° C. to about 600° C., wherein one of the borazole reactants has at least one substituent bonded thereto which is not present as a substituent on the other borazole reactant, said borazoles having the formula




where X is selected from the class consisting of hydrogen, alkyl of from 1 to 12 carbon atoms, phenyl, alkyl substituted phenyl containing alkyl substituents of from 1 to 12 carbon atoms, xenyl, alkyl substituted xenyl containing alkyl substituents of from 1 to 12 carbon atoms, naphthyl and secondary amino groups, and Y is selected from the class consisting of hydrogen, alkyl of from 1 to 12 carbon atoms, phenyl, alkyl substituted phenyl containing alkyl substituents of from 1 to 12 carbon atoms, xenyl, alkyl substituted xenyl containing alkyl substituents of from 1 to 12 carbon atoms, and naphthyl.

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### 3,166,521
### POLYMERS OF AMINOPYRIMIDINES AND PROCESS THEREFOR

Edward George Howard, Jr., Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,763
5 Claims. (Cl. 260—2)

1. A process for forming a polymer containing aminopyrimidine nuclei as repeating units which comprises heating at a temperature of at least about 100° C. (*a*) a compound of the formula

$$NCCH_2RCH_2CN$$

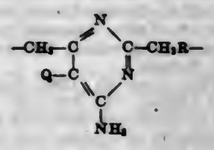
(*b*) a compound of the formula

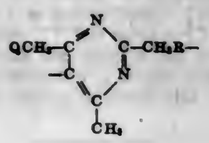
$$QCH_2CN$$

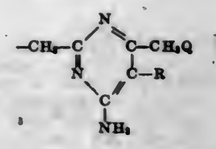
and (*c*) a derivative of an alkali metal from the class consisting of (1) an alkyl derivative, (2) an α-cyanoalkyl derivative, (3) a cycloalkyl derivative, (4) an alkoxide, (5) a cycloalkoxide and (6) a hydride, wherein —R— is a divalent, aliphatically saturated hydrocarbyl radical containing from about 4 to about 14 carbon atoms and separating the carbons to which it is joined in the said compound (*a*) by at least four carbon atoms, Q— is a member of the class consisting of hydrogen and a monovalent, aliphatically saturated hydrocarbyl radical containing from about 1 to about 10 carbon atoms, the mol ratio of (*a*) to (*c*) being from about 100 to 1 to 1 to 1 and the mol ratio of (*a*) to (*b*) being from 100 to 0 to about 1 to 1.

2. A polymer consisting essentially of at least about

four repeating units of at least one of the aminopyrimidine structures of the formulae







wherein —R— is a divalent, aliphatically saturated hydrocarbyl radical containing from about 4 to about 14 carbon atoms and separating the carbons to which it is joined by at least 4 carbon atoms; and —Q is a member of the class consisting of hydrogen and a monovalent, aliphatically saturated hydrocarbyl radical containing from about 1 to about 10 carbon atoms.

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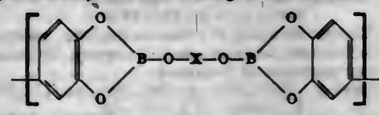
3,166,522

## ORGANOBORON POLYMERS

Kiyoshi Kitasaki, Garden Grove, and George W. Willcockson, Anaheim, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed June 29, 1962, Ser. No. 206,191
13 Claims. (Cl. 260—2)

1. Solid, thermally stable organoboron polymers consisting essentially of the recurring structural unit



where X is selected from the group consisting of alkylene radicals of from 2 to 20 carbon atoms in length and containing a total of from 2 to 20 carbon atoms, cycloalkylene radicals the cyclic portion of which is of from 4 to 6 carbon atoms and containing a total of from 4 to 20 carbon atoms, 1,3-phenylene and 1,4-phenylene.

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3,166,523

## ADHESIVE COMPOSITION

Herbert C. Weinheimer, Baldwinridge, N.Y., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 17, 1960, Ser. No. 9,190
8 Claims. (Cl. 260—6)

1. An adhesive comprising an aqueous dispersion of the reaction product of an alkali soluble protein that is insoluble in water in the pH range 4–5 and an alkylene polyamine-polymerizable glycidyl ether of a polyhydric phenol containing more than one epoxy equivalent per molecule of the ether in contact with an acidic water soluble salt in amount to establish the pH at about 5–7, the proportions on the dry basis being about 5–100 parts by weight of the glycidyl ether for 100 parts of the protein and the said reaction product in dried film form retaining its adhesive properties in boiling water.

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3,166,524

## POLYMER SYSTEMS AND METHOD OF PREPARATION THEREOF

Claude J. Schmidle, Moorestown, N.J., Robert S. Shaw, Philadelphia, Pa., and George L. Brown, Moorestown, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 13, 1961, Ser. No. 88,633
13 Claims. (Cl. 260—23)

1. As a composition of matter, an anhydrous dispersion comprising

(A) a polymerizable material selected from the group consisting of

(1) monoethylenically unsaturated monomers having an $H_2C{=}C<$ group,

(2) drying oils selected from the group consisting of vegetable and animal drying oils, and

(3) such drying oils modified by reaction with such a monoethylenically unsaturated monomer and

(B) a dispersed particulate polymeric material obtained by the polymerization of monomeric material (M) in an anhydrous volatile liquid hydrocarbon solvent medium containing dissolved therein

(1) a hydrocarbon-soluble polymer selected from the group consisting of

(*a*) natural rubbers,

(*b*) diene polymers,

(*c*) polyisobutylenes,

(*d*) oil-soluble polymers formed exclusively of monoethylenically unsaturated molecules comprising at least one ester of an acid selected from the group consisting of acrylic acid and methacrylic acid with alcohols having 1 to 18 carbon atoms having sufficient hydrocarbon groups of at least 4 carbon atoms to impart oil-solubility to the ester polymers, and

(*e*) oxidative degradation products of natural rubbers, diene polymers, and poly($(C_2–C_4)$-monoolefins),

the extent of degradation being such that a solution of the degraded polymer in mineral spirits at 25° C. and a concentration of 10% has a viscosity from 1 cp. to 1,200 cps. and

(2) about 0.1 to 5% by weight, based on the weight of the dissolved polymer (1), of an addition polymerization catalyst selected from the group consisting of free-radical initiators, Friedel-Crafts catalysts, and anionic polymerization catalysts,

said monomeric material (M) comprising at least one monoethylenically unsaturated monomer selected from the group consisting of vinyl esters of a fatty acid having 1 to 18 carbon atoms, esters of acrylic acid with an alcohol having 1 to 18 carbon atoms, esters of methacrylic acid with an alcohol having 1 to 18 carbon atoms, phenyl acrylate, phenyl methacrylate, acrylonitrile, methacrylonitrile, acrylamide, methacrylamide, styrene, α-methyl styrene, vinyl toluenes, acrylic acid, acrylic acid anhydride, methacrylic acid, methacrylic acid anhydride, fumaric acid, crotonic acid, allyl acetate, glycidyl methacrylate, t-butylaminoethyl methacrylate, β-hydroxyethyl vinyl ether, β-hydroxyethyl vinyl sulfide, vinyl pyrrolidone, N,N-dimethylaminoethyl methacrylate, ethylene, propylene, vinyl chloride, vinyl fluoride, vinylidene fluoride, hexafluoropropylene, chlorotrifluoroethylene, tetrafluoroethylene, lower alkyl vinyl ethers in which the alkyl group has 1 to 4 carbon atoms, p-methoxy-α-methylstyrene, vinylidene cyanide, α-trifluoromethylacrylonitrile, N,N-dialkylacrylamides, and N,N-dialkylmethacrylamides,

the proportion of polymerizable material (A) supra being at least 3% by weight of the total weight of (A) and polymeric material of (B) supra, and



the polymeric material of (B) being dispersed in at least one of the materials selected from the group consisting of (A) and the aforesaid liquid hydrocarbon solvent.

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3,166,525

## COPOLYMERS OF N-VINYL-2-PYRROLIDONES AND VINYL ESTERS AS EMULSIONS OR LATICES

William M. Perry, Bethlehem, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 11, 1959, Ser. No. 812,108
10 Claims. (Cl. 260—29.6)

1. The process of preparing emulsions of a copolymer of N-vinyl pyrrolidone and a vinyl ester of an acid of the fatty acid series containing from 1 to 18 carbon atoms which consists essentially of copolymerizing 1–1.5 moles of an N-vinyl pyrrolidone with 1.3–2.0 moles of said vinyl ester in an aqueous system in the presence of at least 1 polymerization catalyst selected from the group consisting of organic peroxides and 2,2'-azodiisobutyronitrile and in the presence of an inert gas with continuous stirring at reflux temperature for a period of time sufficient to form an emulsion and recovering the said emulsion.

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3,166,526

## VINYLIDENE CHLORIDE POLYMER COMPOSITIONS HAVING IMPROVED LOW TEMPERATURE PROPERTIES

George J. Butzler, George B. Sterling, and Robert E. Lee, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1962, Ser. No. 202,064
12 Claims. (Cl. 260—31.8)

1. A polymeric composition comprising a blend of (I) from 70 to 95% by weight of the composition of normally crystalline polymer selected from the group consisting of polyvinylidene chloride and interpolymers of at least about 70% by weight of vinylidene chloride with up to about 30% by weight of at least one other monoethylenically unsaturated comonomer and (II) complementarily from 5 to 30% by weight of the composition of a rubber-like terpolymer consisting of (1) from 70 to 95% by weight of an open chain aliphatic conjugated diolefin having from 4 to about 9 carbon atoms and (2) 5 to 30% by weight of a monomeric composition consisting of a blend of a lower alkyl-lower alkenyl-ketone and a lower alkyl alkacrylate.

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3,166,527

## ANTI-CORROSION, AMINO-ORGANOSILICON-EPOXY FINISHING COMPOSITIONS

Hans H. Ender, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 3, 1960, Ser. No. 59,857
40 Claims. (Cl. 260—33.2)

3. A curable finishing composition comprising a mixture of:

(*a*) a siloxane copolymer composed in aminoalkylsiloxane units having at least one amino nitrogen atom connected to a silicon atom thereof through not less than three carbon atoms of a divalent hydrocarbon group and having from one to two amino hydrogen atoms bonded to said nitrogen atom and hydrocarbon siloxane units said siloxane copolymer containing from 0.1 to 2 silicon-bonded alkoxy groups per silicon atom, any valence of the silicon atoms in said siloxane copolymer that are not attached to oxygen atoms forming part of the siloxane chain, to said divalent hydrocarbon groups, and to said alkoxy groups being attached to a member selected from the group consisting of the monovalent hydrocarbon groups and the hydroxyl groups,

(*b*) an epoxy compound containing at least one pair of vicinal carbon atoms to which oxirane oxygen is attached said epoxy compound being present in an amount that provides from 0.05 to 5.0 epoxy equivalents for each amino hydrogen equivalent provided by the siloxane copolymer, and

(*c*) a volatile organic diluent in which said siloxane copolymer and epoxy compound are soluble, said volatile organic diluent comprising an aromatic hydrocarbon and at least one member selected from the class consisting of hydrocarbon ethers, hydrocarbon alcohols and hydrocarbon alcohol-ethers, said siloxane copolymer and said epoxy compound being present in said mixture in an amount up to about ten percent by weight of said mixture, said siloxane copolymer, said epoxy compound and said volatile organic diluent being in the form of a solution.

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3,166,528

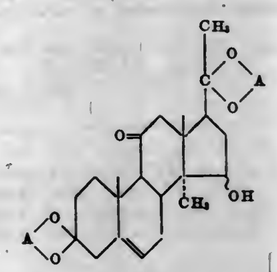
## PROCESS FOR THE PREPARATION OF 14α-METHYL 11-KETOPROGESTERONE AND INTERMEDIATES PRODUCED THEREFROM

Philip F. Beal, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 27, 1962, Ser. No. 213,056
20 Claims. (Cl. 260—239.55)

1. In a process for the preparation of 14α-methyl-11-ketoprogesterone the steps comprising selectively reducing 14α - methyl - 11,15 - diketoprogesterone 3,20-bis(alkylene ketal), wherein the alkylene radical contains from 2 to 6 carbon atoms, inclusive, and the attaching oxygen to carbon bonds of the alkylene ketal group are separated by a chain of from 2 to 3 carbon atoms, inclusive, with an alkali metal borohydride in the presence of an inert organic solvent to obtain the corresponding 15-hydroxy-14α-methyl-11-ketoprogesterone 3,20-bis(alkylene ketal), reacting the latter compound with a dimethylcarbonate in the presence of an alkali metal hydride and an inert organic solvent to obtain the corresponding 15-hydroxy-14α-methyl-11-ketoprogesterone 3,20-bis(alkylene ketal) 15-methylcarbonate, pyrolyzing the latter compound by heating at a temperature within the range of about 300° C. to about 350° C. to form the corresponding 14α-methyl-pregna-4,15(16) - diene - 3,11,20 - trione 3,20-bis(alkylene ketal), hydrogenating the latter compound in the presence of a hydrogenation catalyst to obtain the corresponding 14α-methyl-11-ketoprogesterone 3,20-bis(alkylene ketal), and subjecting the latter compound to acid hydrolysis to obtain 14α-methyl-11-ketoprogesterone.

10. A compound having the formula:



wherein A is an alkylene radical containing from 2 to 6 carbon atoms, inclusive, and the attaching carbon to oxygen bonds are separated by from 2 to 3 carbon atoms, inclusive.

### 3,166,529
### LIGHT STABILIZED, POLY-α-OLEFIN PLASTIC COMPOSITION

Gordon C. Newland and John W. Tamblyn, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,963
1 Claim. (Cl. 260—45.8)

A light stabilized plastic composition consisting essentially of a normally solid, normally light unstable, and polypropylene at an effective light stabilizing concentration an aromatic nitro compound that is a member of the group consisting of

1,3,5-trinitrobenzene,
2-(2,4-dinitrobenzyl)pyridine,
4-(β-hydroxyethoxy)-β-nitrostyrene,
5-(p-nitrobenzylidene)-3-phenyl-2-phenylimino-4-thiazolidinone,
3,5-dinitroveratrol,
4-(o-nitrophenyl)-4-hydroxy-2-butanone,
2,4-dihydroxybenzophenone-2',4'-dinitrophenylhydrazone,
N,N-di(o-nitrobenzylidene)-p-phenylenediamine,
3,4,5-trinitroveratrol,
2-(4'-nitroanilino)benzothiazole,
Salicylaldehyde-2',4'-dinitrophenylhydrazone,
4,4'-dinitrostilbene,
4,7-dibromo-5-nitro-2,1,3-benzothiadiazole,
Benzaldehyde-2',4'-dinitrophenylhydrazone,
4-(p-anisidino)-7-bromo-5-nitro-2,1,3-benzothiadiazole,
2-nitrobenzylidene-p-anisidine and
6-nitropiperonal-p-toluidine.

### 3,166,530
### POLYOXYMETHYLENE COMPOSITIONS STABILIZED WITH POLYMETHYLENE POLYUREAS

Tamotsu Eguchi, Kurashiki, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,509
Claims priority, application Japan, Apr. 22, 1961, 14,421/61
3 Claims. (Cl. 260—45.9)

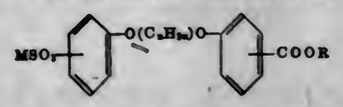
1. A polyoxymethylene composition comprising solid high molecular weight polyoxymethylene and incorporated therein a high molecular weight polymethylene polyurea in an amount of 0.001 to 20 percent by weight of the composition.

### 3,166,531
### DYEABLE POLYESTERS MODIFIED BY A (METALLO - SULFOPHENOXY)ALKOXY - SUBSTITUTED AROMATIC MONOCARBOXYLIC ACID OR ESTER

Christian F. Horn, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 1, 1961, Ser. No. 149,229
19 Claims. (Cl. 260—49)

1. A dyeable linear polyester consisting essentially of the condensation product of (*a*) a dicarboxylic acid compound selected from the group consisting of the monocyclic aromatic dicarboxylic acids and the dialkyl esters thereof; (*b*) an aliphatic glycol containing from 2 to 10 carbon atoms; and, based upon the total amount of said dicarboxylic acid compound, (*c*) from about 0.1 to about 3.5 mole percent of a compound of the formula:




wherein M is an alkali metal, *n* is an integer of from 1 to 12, and R is selected from the group consisting of hydrogen and alkyl.

### 3,166,532
### PROCESS FOR POLYMERIZING AN AROMATIC DIALDEHYDE

Wilfred Sweeny, Wycliffe, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 14, 1961, Ser. No. 116,971
9 Claims. (Cl. 260—67)

1. A novel catalytic process comprising polymerizing in a reaction medium an aromatic dialdehyde in the presence of a catalytic amount of up to about 20% by weight based upon the dialdehyde of a metal alkyl of the formula $M(R)_n$ where R is a lower alkyl radical having from 1 to 6 carbon atoms, M is a metal of Group I to III of the Periodic Table and *n* is the valence of the metal.

### 3,166,533
### METHOD FOR THE ADIABATIC PRODUCTION OF CASTINGS OF POLYCAPROLACTAM AND SIMILAR POLYAMIDES HAVING ANY REQUIRED SHAPE AND SIZE

Otto Wichterle, 2 Vaclavkova, Prague 6, Czechoslovakia; Jan Šebenda, 53 Bubenska, Prague 7, Czechoslovakia; and Jaroslav Králiček, 12 Taboritska, Prague 11, Czechoslovakia

No Drawing. Filed Dec. 16, 1959, Ser. No. 859,854
5 Claims. (Cl. 260—78)

1. A method of forming by exothermic polymerization of 6-caprolactam a solid substantially void-free body of predetermined shape, comprising the steps of introducing into a heat insulated mold a reaction mixture consisting essentially of 6-caprolactam and an alkali metal salt of 6-caprolactam together with an N-alkylimide selected from the group consisting of acetylcaprolactam, caproylcaprolactam, diacetyl-ethylamine, dicaproyl butylamine, tetraacetylhexamethylenediamine and styrene-methacryloylcaprolactam copolymer as a polymerization catalyst for said 6-caprolactam so as to fill said mold with said reaction mixture, said reaction mixture being introduced into said heat insulated mold at a predetermined elevated temperature being sufficiently high to initiate polymerization of said 6-caprolactam and being at least 50° C. below the softening point of the polymerization product thereof so that during polymerization of said 6-caprolactam under adiabatic conditions the temperature of said reaction mixture will remain below said softening point despite increase of the temperature due to heat created by said polymerization; and maintaining said reaction mixture in said mold under substantially adiabatic conditions so as to substantially completely polymerize said 6-caprolactam in said mold without reaching an elevated temperature exceeding the softening point of the polymerized 6-caprolactam, whereby a solid body corresponding to the shape of said mold and consisting essentially of said polymerized 6-caprolactam, said body being substantially free of voids and internal stress, is formed in said mold.

### 3,166,534
### PROCESS FOR PRODUCTION IN AQUEOUS MEDIUM OF COPOLYMERS OF VINYL CHLORIDE WITH MONOMERS CONTAINING FREE CARBOXYLIC ACID GROUPS

Lyle Eugene Perrins, St. Albans, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 27, 1961, Ser. No. 148,045
Claims priority, application Great Britain, Nov. 4, 1960, 37,950/60
8 Claims. (Cl. 260—80.5)

1. A process for the preparation in aqueous medium of a vinyl chloride polymer containing free carboxyl groups which comprises copolymerizing together a monomeric mixture selected from the group consisting of

(i) a mixture of (*a*) vinyl chloride



and (*b*) a monomer containing a free carboxylic acid group under the conditions of polymerization and selected from the group consisting of mono-ethylenically unsaturated mono- and polycarboxylic acids containing from three to six carbon atoms, anhydrides and acid chlorides of said acids and partial esters derived from mono-ethylenically unsaturated polycarboxylic acids containing from four to six carbon atoms and alcohols containing from one to six carbon atoms

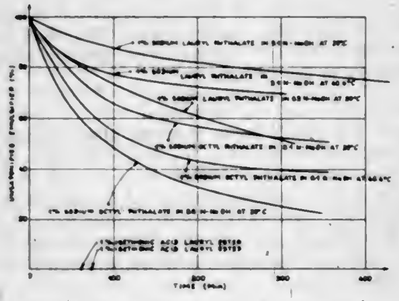
and (ii) a mixture of *a*, *b* and (*c*) a monomer selected from the class consisting of acrylonitrile, methacrylonitrile and vinyl esters of saturated monocarboxylic acids containing from one to four carbon atoms

in the presence of a high molecular weight water soluble polymer as a dispersing agent and a monomer-soluble free radical polymerization catalyst and in an aqueous medium containing from 5% to 25% by weight of the water of at least one organic compound which is a liquid solvent miscible with water in the proportion used and under the conditions of the polymerization.

### 3,166,535
### PROCESS FOR THE POLYMERIZATION OF ETHYLENICALLY UNSATURATED MONOMERS

Günter Messwarb, Kelkheim, Taunus, and Peter Seibel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 26, 1962, Ser. No. 168,976
Claims priority, application Germany, May 7, 1956, F 20,232
9 Claims. (Cl. 260—87.1)



1. In an aqueous emulsion polymerization process comprising agitating a mixture of at least one ethylenically unsaturated monomer, water, an emulsifier and a radical forming polymerization initiator, said mixture having a pH value in the range between 2 and 8, and subsequently separating the polymer product formed from the aqueous phase, the improvement comprising the steps of (A) using as the emulsifier from 0.1 to 5 percent, by weight of said monomer, of a compound of the formula

$$X—(CH_2)_n—O—CO—R$$

wherein X is a member selected from the group consisting of the sulphonic acid group, the phosphonic acid group, an alkali metal salt of any of said groups, and a trialkyl ammonium halide radical the alkyl groups of which having up to 6 carbon atoms each, R is an aliphatic hydrocarbon radical of 5 to 24 carbon atoms, and n is an integer from 1 to 2; and (B) decomposing the emulsifier at a temperature of from 5° to 60° C. by hydrolysis by raising the pH value of the aqueous emulsion to at least 10 prior to separating the polymer product formed from the aqueous phase.

### 3,166,536
### BORON-CONTAINING POLYMERIZATION CATALYSTS

Donald R. Witt, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 19, 1960, Ser. No. 9,694
19 Claims. (Cl. 260—88.2)

1. A catalyst active for polymerization consisting essentially of the reaction product of a compound selected from the group consisting of transition metal borohydrides and hydrocarbon and halogen substituted transition metal borohydrides and a solid material selected from the group consisting of silica, alumina and silica-alumina, said solid material having been activated prior to reaction with said compound by heating at an elevated temperature for a period of time sufficient to remove substantially free water present therein.

### 3,166,537
### CHROMIUM, TUNGSTEN OR MANGANESE OXIDE OLEFIN POLYMERIZATION CATALYST ACTIVATED WITH CARBON MONOXIDE AND ULTRAVIOLET LIGHT AND POLYMERIZATION THEREWITH

Robert Q. Gregg and Jack N. Finch, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 17, 1960, Ser. No. 69,813
9 Claims. (Cl. 260—88.2)

7. A process for the preparation of a polymer of ethylene which comprises contacting a monomeric mixture containing at least 75 weight percent ethylene, the remaining monomer being a higher molecular weight 1-olefin, with an activated catalyst under polymerization conditions of temperature and pressure, said catalyst before activation consisting essentially of a silica-alumina base promoted with from 0.1 to 10 weight percent of an oxide of chromium, activation of said catalyst before use thereof in said polymerization being effected by calcining said catalyst by heating at an elevated temperature above about 500° C. with an oxygen-containing medium, and treating said calcined catalyst with electromagnetic radiation having a wave length spectrum in the range 0.25 to 0.40 micron (2500 to 400 Angstrom units) while simultaneously contacting said catalyst with carbon monoxide at a temperature below said calcination temperature to produce said activated catalyst.

9. In a process for the preparation of a highly active polymerization catalyst composite consisting of a silica-alumina base containing a major proportion of silica promoted by from 0.1 to 10 weight percent of an oxide of at least one metal selected from the group consisting of chromium, tungsten and manganese, by heating said composite with air at a calcination temperature ranging from 500° to 700° C. the improvement comprising activating said composite by irradiating same with electromagnetic waves ranging from 0.125 to 0.80 micron in length and having high intensity in the spectral region 0.25 to 0.40 micron while simultaneously contacting said composite with carbon monoxide at a temperature below said calcination temperature.

### 3,166,538
### COPOLYMERIZATION PROCESS

Setha G. Olson, Moorestown, N.J., and Harold M. Spurlin, Wilmington, Del., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 13, 1961, Ser. No. 82,386
12 Claims. (Cl. 260—88.2)

1. The process of copolymerizing ethylene with a linear 1-olefin which comprises passing ethylene and said olefin into an inert organic liquid solvent therefor and for the copolymer produced, at a temperature of from about 0° C. to about 150° C., in the presence of at least a catalytic amount of a catalyst dissolved in said solvent, varying

the ratio of ethylene to said olefin fed to the reaction to maintain the ratio of ethylene to said olefin dissolved in the solvent constant throughout the copolymerization reaction and recovering as the total product of copolymerization a copolymer which is essentially homogeneous as to its composition and has a narrow molecular weight distribution, said catalyst being the catalyst formed on mixing in situ in the polymerization reaction mixture an aluminum compound selected from the group consisting of aluminum compounds having the formula $R_2AlX$ where R is a hydrocarbon radical and X is halogen and alkylaluminum sesquihalides with a vanadium oxy trihalide, the latter being added continually throughout the copolymerization reaction.

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3,166,539

## POLYMERIZATION OF ACRYLATE MIXTURES OF POLYMER/MONOMER USING A CATALYST SYSTEM OF A TERTIARY-AMINE AND A QUADRIVALENT SULFUR COMPOUND

Werner Schnabrdt, Grenzach, Baden, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed July 17, 1961, Ser. No. 124,322
Claims priority, application Germany, Dec. 31, 1948, P 30,108
6 Claims. (Cl. 260—89.5)

1. In a process for the bulk polymerization of a polymerizable mass comprising a mixture of (1) a monomer selected from the group consisting of lower alkyl esters of acrylic and methacrylic acid and (2) a polymer of such monomer, the step which comprises carrying out such polymerization in the presence of a catalytic amount of a catalyst system comprising a tertiary amine, a compound containing quadrivalent sulfur which is soluble in such monomer selected from the group consisting of sulfur dioxide, dilower alkyl sulfoxides, diaryl sulfoxides, aryl sulfinic acids, aryl sulfinic acid lower alkyl esters, the aryl groups in said diaryl sulfoxides, aryl sulfinic acids and aryl sulfinic acid lower alkyl esters being of the benzene series, and in the presence of a source of oxygen selected from the group consisting of organic peroxides and air.

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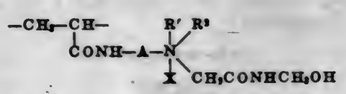
3,166,540

## NOVEL POLYMERIC QUATERNARY AMMONIUM COMPOUNDS

Sidney Melamed, Elkins Park, Pa., and Ruth H. Shimizu, San Francisco, Calif., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,326
3 Claims. (Cl. 260—89.7)

1. A water-soluble polymer of monoethylenically unsaturated monomers having a group of the formula $H_2C{=}C<$, said polymer being soluble to the extent of at least about 5% in water, and comprising at least 30 mole percent of units of the formula



wherein:

A is an alkylene group having 2 to 10 carbon atoms, at least two thereof being connected in a chain between the two N atoms,

R' is a saturated hydrocarbon group having 1 to 4 carbon atoms,

$R^2$ is a saturated hydrocarbon group having 1 to 4 carbon atoms, and

X is a halogen.

3,166,541

## SURFACE TREATED CARBON BLACK AS POLYMERIZATION CATALYST AND METHOD OF POLYMERIZATION THEREWITH

Adam Orzechowski, Brookline, and James C. MacKenzie, Wellesley Hills, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Mar. 1, 1960, Ser. No. 11,961
11 Claims. (Cl. 260—93.7)

1. A process for polymerizing a substance chosen from a group consisting of a mono-olefin, mixtures of mono-olefins, a di-olefin, mixtures of di-olefins, and mixtures thereof which comprises contacting said substance at temperatures between about −25° C. and 250° C. with a catalyst comprising (*a*) carbon black having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about $5\times10^{-4}$ equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

where T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a*, VI*a*, VII*a* and VIII; O is oxygen; *a* is a number from 0 to 1; each X is any halogen; *b* is a number from 1 to 6; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said carbon black, and (*b*) a compound conforming to the general formula

$$MM'_\nu X_n R_\gamma$$

wherein M is chosen from the group consisting of the metals of Groups I, II and III; M' is a metal of Group I; $\nu$ is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; and *y* is a number from 1 to 4.

6. A catalyst comprising carbon black having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about $5\times10^{-4}$ equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

where T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a*, VI*a*, VII*a* and VIII; O is oxygen; *a* is a number from 0 to 1; each X is any halogen; *b* is a number from 1 to 6; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said carbon black, and a compound conforming to the general formula:

$$MM'_\nu X_n R_\gamma$$

wherein M is chosen from the group consisting of the metals of Groups I, II and III; M' is a metal of Group I; $\nu$ is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; and *y* is a number from 1 to 4.

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3,166,542

## SURFACE TREATED INORGANIC SOLID POLYMERIZATION CATALYST AND METHOD OF POLYMERIZATION THEREWITH

Adam Orzechowski, Brookline, and James C. MacKenzie, Wellesley Hills, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Original application Apr. 11, 1960, Ser. No. 21,110. Divided and this application Feb. 3, 1961, Ser. No. 86,868
25 Claims. (Cl. 260—93.7)

1. A proccess for polymerizing a substance chosen from the group consisting of a mono-olefin, mixtures of mono-olefins, a di-olefin, mixtures of di-olefins, and mixtures thereof which comprises contacting said substance



at temperatures between about −25° C. and about 250° C. with a catalyst comprising (*a*) a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about $1\times10^{-4}$ equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

wherein T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a* and VI*a*; O is oxygen; *a* is a number from 0 to 2; each X is any halogen; *b* is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid, and (*b*) a compound conforming to the general formula

$$MM'_\nu X_n R_\gamma$$

wherein M is chosen from the group consisting of the metals of Groups I, II and III; M' is a metal of Group I; $\nu$ is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 3; each R is chosen from the group consisting of any monovalent hydrocarbon radical and hydrogen; and *y* is a number from 1 to 4.

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3,166,543

## PROCESS FOR POLYMERIZING OLEFINS

Adam Orzechowski, Waltham, and James C. MacKenzie, Wellesley Hills, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Aug. 1, 1962, Ser. No. 213,872
18 Claims. (Cl. 260—93.7)

1. A process for polymerizing a substance chosen from the group consisting of a mono-olefin, mixtures of mono-olefins, a di-olefin, mixtures of di-olefins, and mixtures thereof which comprises contacting said substance at temperatures between about −25° C. and 250° C. with a catalyst comprising (*a*) carbon black having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about $5\times10^{-4}$ equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

wherein T is a metal chosen from the group consisting of the metals of Groups IV*a*, V*a*, VI*a*, VII*a* and period 4 of Group VIII; O is oxygen; *a* is a number from 0 to 1; each X is any halogen; *b* is a number from 1 to 6; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of the carbon black, and (*b*) a compound conforming to the formula

$$R_pH_tSiO_{\frac{4-(m+n)}{2}}$$

wherein each R is chosen from the group consisting of monovalent hydrocarbon radicals, monovalent alkoxy radicals, monovalent aryloxy radicals and the halogens; *n* is a number from 0 to 3; each H is a hydride radical; *m* is a number from 1 to 4; Si is silicon; and O is oxygen.

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3,166,544

## PROCESS AND CATALYST FOR POLYMERIZING OLEFINS

Adam Orzechowski, Waltham, and James C. MacKenzie, Wellesley Hills, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,107
16 Claims. (Cl. 260—93.7)

12. A process for polymerizing a substance chosen from the group consisting of a mono-olefin, mixtures of mono-olefins, a di-olefin, mixtures of di-olefins, and mixtures thereof which comprises contacting said substance at temperatures between about −25° C. and 250° C. with a catalyst comprising

(*a*) a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and carrying in chemical combination on the surface thereof at least about $1\times10^{-4}$ equivalents per gram of structures conforming to the formula

$$TO_aX_b$$

where T is a metal chosen from the group consisting of the metals of Groups IVa, Va and VIa; O is oxygen; *a* is a number from 0 to 2; each X is any halogen; *b* is a number from 1 to 5; and where said structures are chemically linked directly from T to at least one oxygen atom in the surface of said solid, and

(*b*) an organometallic compound conforming to the formula

$$R_pH_tSiO_{\frac{4-(t+p)}{2}}$$

wherein each R is chosen from the group consisting of monovalent hydrocarbon radicals, monovalent alkoxy radicals, monovalent aryloxy radicals, and the halogens; *p* is a number from 0 to 3; each H is a hydride radical; *t* is a number from 1 to 4; Si is silicon; and O is oxygen.

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3,166,545

## POLYMERIZATION OF ISOBUTYLENE WITH AN ALUMINUM - TITANIUM DIOXIDE - TITANIUM TETRACHLORIDE CATALYST

George F. Pezdirtz, Hampton, Va., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 6, 1961, Ser. No. 101,047
5 Claims (Cl. 260—94.8)

1. A process for the polymerization of isobutylene to form higher molecular weight polymers thereof which comprises contacting said isobutylene in an inert liquid reaction medium under polymerization conditions including a temperature in the range of from about −100° F. to 200° F. and under a pressure of from about 0 p.s.i.g. to 200 p.s.i.g. with a polymerization catalyst prepared by mixing together aluminum and titanium dioxide at a temperature of from about 600° F. to 1400° F. and for a time from about 15 minutes to 3 hours, and adding titanium tetrachloride to said heated mixture, the molar ratio of total titanium to aluminum in said catalyst being about 0.25 to 5 mols of titanium to 1 mol of aluminum.

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3,166,546

## VAPOR PHASE PROCESS FOR THE POLYMERIZATION OF ISOBUTYLENE

John T. Nolan, Jr., Wappingers Falls, and Harry Chafetz, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 9, 1961, Ser. No. 115,919
7 Claims. (Cl. 260—94.8)

1. A method for preparing polyisobutylene which comprises providing a reaction zone containing a gaseous reaction medium consisting of boron trifluoride and sulfur dioxide, the molar proportion of said sulfur dioxide being equal to or greater than that of said boron trifluoride, feeding gaseous isobutylene into said reaction zone while maintaining the vapor phase in said zone and effecting polymerization at a temperature below 50° C.

3,166,547

## POLYMERIZATION OF ALPHA-MONOOLEFINS IN AN AQUEOUS DILUENT

William E. Loeb, Berkeley Heights, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 15, 1959, Ser. No. 840,008
12 Claims. (Cl. 260—94.9)

1. A process for polymerizing alpha-monoolefins which comprises contacting said alpha-monoolefins in an aqueous medium with a catalyst composition consisting of a compound which can be represented by the general formula:

$$R_nM$$

wherein R is a monovalent hydrocarbon radical free of aliphatic unsaturation, M is a member selected from the group consisting of boron, tin and lead, and $n$ is an integer having a value equal to the valence of M, and a member selected from the group consisting of the inorganic halide salts and hydroxides of titanium.

3,166,548

## CONDENSATION PRODUCTS

Willard H Kirkpatrick, Sugar Land, and Virgil L. Seale, Houston, Tex., assignors to Nalco Chemical Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 596,816, July 10, 1956. This application Aug. 5, 1960, Ser. No. 47,608
22 Claims. (Cl. 260—97.5)

1. A condensation product with the elimination of water of a compound from the group consisting of hydroxy polyalkylene polyamines and polyalkylene polyamines containing at least three amino groups from the group consisting of primary and secondary amino groups and an organic carboxy detergent-forming acid in which a carboxy group is linked to a hydrocarbon group containing at least six carbon atoms from the class consisting of saturated hydrocarbon groups and unsaturated hydrocarbon groups wherein the unsaturation consists of double bonds, the proportions of said organic carboxy acid being a molar excess of at least 1% and not more than 40% over a 1:1 molar ratio of the carboxy groups in the organic carboxy acid to the amino nitrogens of the polyalkylene polyamine, the amino groups being reacted with said acid to produce a product containing no residual basic amino groups.

8. A condensation product with the elimination of water of a polyalkylene polyamine containing at least three amino groups from the group consisting of primary and secondary amino groups and the alkylene groups therein being selected from the group consisting of ethylene and propylene groups, and tall oil, the proportions of tall oil being a molar excess within the range from 1% to 40% of a 1:1 molar ratio of carboxy groups in tall oil to amino nitrogens of the polyalkylene polyamine, the condensation being effected at temperatures within the range of 165° C. to 300° C. to produce a product containing no residual basic amino groups.

9. A condensation product with the elimination of water of a polyalkylene polyamine containing at least three amino groups from the group consisting of primary and secondary amino groups and a dimer of linoleic acid, the proportions of said dimer acid being a molar excess within the range from 1% to 40% over a 1:1 molar ratio of the carboxy groups in the dimer acid to the amino nitrogens of the polyalkylene polyamine, the amino groups being reacted with said acid to produce a product containing no residual basic amino groups.

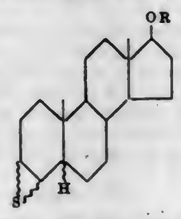
3,166,549

## 3,4-EPITHIOSTEROIDS

Taichiro Komeno, Sumiyoshi-ku, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,482
Claims priority, application Japan, Dec. 29, 1962, 37/59,785
12 Claims. (Cl. 260—239.5)

1. A 3,4-epithiosteroid of the formula:



wherein R is a member selected from the group consisting of hydrogen and lower alkanoyl.

### ERRATUM

For Class 260—239.55 see:
Patent No. 3,166,528

3,166,550

## PROCESS FOR 14α-METHYL-11-KETOPROGESTERONE AND INTERMEDIATES THEREFOR

Brian Bannister, Kalamazoo Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 27, 1962, Ser. No. 213,027
15 Claims. (Cl. 260—239.55)

4. In the process for the preparation of a 3,20-bis(alkylene ketal) of 14α-methylpregn-4-ene-3,11,15,20-tetrone wherein the alkylene radical contains from 2 to 6 carbon atoms, inclusive, and the attaching oxygen to carbon bonds of the alkylene ketal group are separated by a chain of from 2 to 3 carbon atoms, inclusive, the steps comprising reducing the corresponding 3,20-bis(alkylene ketal) of 15α-hydroxypregn-4-ene-3,11,20-trione using a reducing agent selected from the class consisting of alkali metal aluminum hydrides and alkali metal borohydrides in the presence of an inert organic solvent to obtain the corresponding 3,20-bis(alkylene ketal) of 11β,15α-dihydroxypregn-4-ene-3,20-dione selectively oxidizing the latter compound by treatment with aluminum isopropoxide in the presence of a ketone and an inert solvent to produce the corresponding 3,20-bis(alkylene ketal) of 11β-hydroxypregn-4-ene-3,15,20-trione, isomerizing the latter compound in the presence of a base to yield the corresponding 3,20-bis(alkylene ketal) of 15β-hydroxy-14β-pregn-4-ene-3,11,20-trione, oxidizing the latter compound to yield the corresponding 3,20-bis(alkylene ketal) of 14β-pregn-4-ene-3,11,15,20-tetrone and reacting the latter compound with a methyl halide in the presence of an alkali metal alkoxide to produce the corresponding 3,20-bis(alkylene ketal) of 14α-methylpregn-4-ene-3,11,15,20-tetrone.

11. 3,20-bis(ethylene ketal) of 11α-hydroxy-14α-methylpregn-4-ene-3,15,20-trione.

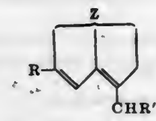
3,166,551

## PROCESS FOR THE PREPARATION OF 3-OXO-$\Delta^4$-6-METHYL STEROIDS

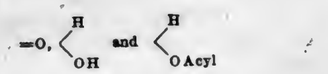
Derek Burn and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,685
Claims priority, application Great Britain Jan. 2, 1962
8 Claims. (Cl. 260—239.55)

1. A process for the preparation of a compound selected from the group consisting of 3-oxo-$\Delta^4$-6-methyl steroid compounds of the androstane, 19-norandrostane, 9β,10α-androstane, pregnane, 19-norpregnane, 9β,10α-pregnane, cholestane, stigmastane, ergostane and spirostane series comprising treating a 6-substituted steroidal-3,5-diene of said series having in Rings A and B of the steroid nucleus the structure



where Z represents the remainder of the steroid molecule, R is selected from the group consisting of O-alkyl, O-hydroxyalkyl, O-*cyclo*alkyl and O-alkaryl and R′ is selected from the group consisting of



with an acidified metallic catalyst selected from the palladium and platinum group of metals in the presence of at least one equivalent with respect to the steroid of an unsaturated organic hydrogen donor in a hydroxylic organic solvent.



3,166,552

## PREPARATION OF 9(11)-DEHYDROTIGOGENIN

Joseph Elks and Leslie Stephenson, London, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company

No Drawing. Filed July 5, 1963, Ser. No. 293,170
Claims priority, application Great Britain, July 9, 1962, 26,294/62
5 Claims. (Cl. 260—239.55)

1. A process for the reduction of a compound selected from the group consisting of 9(11)-dehydrohecogenin and a 3-lower alkanoate thereof to 9(11)-dehydrotigogenin which comprises forming the ethylene dithioketal of said compound and reducing this to said 9(11)-dehydrotigogenin by means of a metal selected from the group consisting of alkali metals and alkaline earth metals in a medium selected from the group consisting of liquid ammonia and primary amines containing 1–5 carbon atoms.

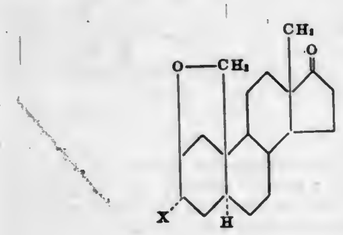
3,166,553

## 2β,19-EPOXY-3α-HALO-5α-ANDROSTAN-17-ONES AND DERIVATIVES THEREOF

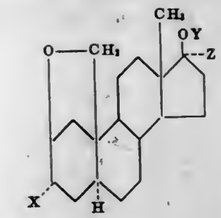
Raymond E. Counsell, Skokie, and Paul D. Klimstra, Northbrook, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 9, 1963, Ser. No. 293,839
12 Claims. (Cl. 260—239.55)

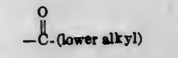
1. A member selected from the group consisting of compounds of the formulas



and



wherein X represents a halogen of atomic weight less than 100, Y is selected from the group consisting of hydrogen and radicals of the formula



and Z is a member of the class consisting of hydrogen and lower aliphatic hydrocarbon radicals.

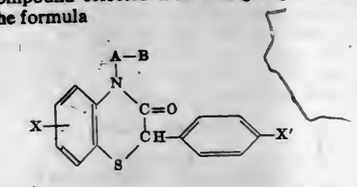
3,166,554

## BENZOTHIAZINES

John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 25, 1962, Ser. No. 205,128
6 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of bases of the formula



and pharmaceutically-acceptable acid-addition salts thereof, wherein X is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, nitro, halo and trifluoromethyl; X′ is selected from the group consisting of bromo and chloro; A is lower alkylene; and B is a basic nitrogen-containing radical of less than twelve carbon atoms selected from the group consisting of amino, (lower alkyl)amino, di(lower alkyl)amino, (hydroxy-lower alkyl)amino, di(hydroxy-lower alkyl)amino, phenyl(lower alkyl)amino, N-(lower alkyl)-phenyl(lower alkyl)amino, piperidyl, (lower alkyl) piperidyl, di(lower alkyl)piperidino, (lower alkoxy)piperidino, pyrrolidyl, (lower alkyl)pyrrolidyl, di(lower alkyl)pyrrolidino, (lower alkoxy)pyrrolidino, morpholino, (lower alkyl) morpholino, di(lower alkyl)morpholino, (lower alkoxy) morpholino, thiamorpholino, (lower alkyl)thiamorpholino, di(lower alkyl)thiamorpholino, (lower alkoxy)thiamorpholino, piperazino, (lower alkyl)piperazino, di (lower alkyl)piperazino and (lower alkoxy)piperazino.

3,166,555

## AMMONIUM NITRATE-HEXAMETHYLENETETRAMINE ADDUCT

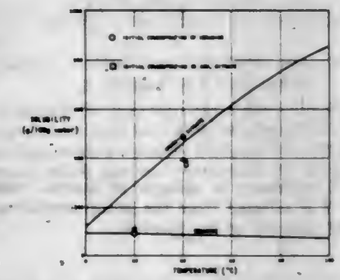
William E. Gordon, Bethesda, Md., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed June 6, 1962, Ser. No. 200,489
3 Claims. (Cl. 260—248.5)

1. The adduct of ammonium nitrate and hexamethylenetetramine in the molar ratio of 2 to 1.

3. The method of making an adduct of ammonium nitrate and hexamethylenetetramine which comprises dis-

solving said ammonium nitrate and hexamethylenetetramine in water in the molar ratio of about 2 to 1, and



removing the water at a temperature below about 40° C. until the adduct is formed.

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**3,166,556**
**PREPARATION OF NITROGEN-HETEROCYCLIC COMPOUNDS**

Maximilian I. Fremery and Ellis K. Fields, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed May 28, 1962, Ser. No. 197,856
16 Claims. (Cl. 260—251)

1. A method of producing nitrogen-heterocyclic 6-atom ring structures from a feed stock having a 5-atom diolefinic ring structure, said ring structure having each of its double bonds located between carbon atoms, with not more than one of said double bonds being derived from an aromatic ring, which comprises reacting said feed stock with ozone while in an emulsion with ammonia.

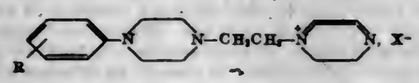
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**3,166,557**
**PIPERAZINE DERIVATIVES**

Sidney D. Ross, Williamstown, and Manuel Finkelstein, North Adams, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,876
4 Claims. (Cl. 260—268)

1. A compound of the formula



wherein X is selected from the group consisting of halogen, pentaborate and nitrate and R is at least one electron-withdrawing activiating substituent selected from the group consisting of NO, $NO_2$, $CH_3SO_2$, $CF_3$, CN and COOH.

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**3,166,558**
**METHOD FOR PREPARING DIAZABICYCLO-(2,2,2)-OCTANE**

Rocco L. Mascioli, Media, Pa., assignor to Air Products and Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Aug. 11, 1961, Ser. No. 130,750
2 Claims. (Cl. 260—268)

1. The method of preparing diazabicyclo-(2,2,2)-octane which comprises initially reacting diethanolamine under acid condensation conditions to eliminate water and effect ring closure producing a reaction product rich in N-N'-bis-hydroxyethylpiperazine, and passing the total reaction product over silica-alumina cracking catalyst at 500–800° F., together with at least 2 mols $NH_3$/mol of charge and fractionating the liquid effluent to isolate a cut consisting essentially of diazabicyclo-(2,2,2)-octane.

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**3,166,559**
**3-LOWER ALKOXY-4-PHENYLOXY-14-HYDROXY-N-METHYLMORPHINANS**

Yoshiro Sawa and Shin Maeda, Hyogo Prefecture, and Naoki Tsuzi, Osaka Prefecture, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,555
Claims priority, application Japan, Apr. 9, 1962, 37/14,252
2 Claims. (Cl. 260—285)

1. 3-lower alkoxy-4-phenyloxy-14-hydroxy-N-methylmorphinan.

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**3,166,560**
**6-ALKYLMORPHINAN DERIVATIVES**

Yoshiro Sawa and Shin Maeda, Hyogo Prefecture, and Naoki Tsuzi, Osaka Prefecture, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,556
Claims priority, application Japan, Apr. 9, 1962, 37/14,252
2 Claims. (Cl. 260—285)

1. 3-lower alkoxy-6,N-di(lower)alkyl-14-hydroxy-morphinan.

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**3,166,561**
**1-[2-(1,4-BENZODIOXANYL)-METHYL]-4-PHENYL-4-CARBONYLAMINO OR 4-CARBALKOXY AMINO PIPERIDINES**

Paul Adriaan Jan Janssen, Vosselaar, near Turnhout, Belgium, assignor to Research Laboratorium Dr. C. Janssen N.V., a corporation of Belgium

No Drawing. Filed Aug. 20, 1962, Ser. No. 218,119
11 Claims. (Cl. 260—294)

1. A member selected from the group consisting of 1-[2-($R_1$-1,4-benzodioxanyl)-methyl] - 4 - $R_2$-4-phenyl-piperidine and the non-toxic acid addition salts thereof, wherein $R_1$ is a member of the group consisting of hydrogen and fluoro, and $R_2$ stands for $(CH_2)_nNHCOR_3$ where $n$ is a postitive integer from zero to one and $R_3$ is a member of the group consisting of lower alkyl, lower alkoxy, phenyl, cyclopropyl, benzyl and tri-lower alkoxy phenyl.

3. 1-[2-(1,4-benzodioxanyl)-methyl] - 4 - (N-acetyl-amino-methyl)-4-phenyl-piperidine.

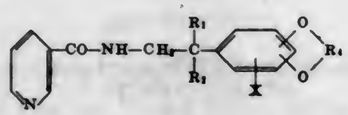
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**3,166,562**
**NOVEL NICOTINIC ACID PHENYL-ETHYLAMIDES AND PROCESS FOR PREPARING THEM**

Heinrich Leditschke, Leopold Ther, and Gerhard Vogel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,104
Claims priority, application Germany, Dec. 6, 1961, F 35,483
4 Claims. (Cl. 260—295.5)

1. Substituted nicotinic acid-phenyl-ethylamides of the formula



wherein $R_1$ and $R_2$ each represents an alkyl of from 1 to 4 carbon atoms, X is a member selected from the group consisting of alkoxy having from 1 to 4 carbon atoms, chlorine and hydrogen, and $R_4$ is lower alkylene.

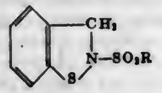


**3,166,563**
**2-LOWER ALKYL SULFONYL-BENZISOTHIAZOLINE**

Peter F. Epstein and George E. Lakes, El Cerrito, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,547
2 Claims. (Cl. 260—304)

1. A compound of the formula



wherein R is lower alkyl.

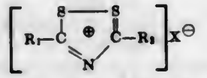
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**3,166,564**
**DITHIAZOLIUM SALTS**

William R. Diveley, Newark, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

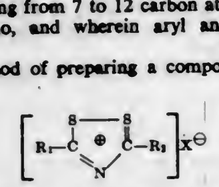
No Drawing. Filed Sept. 4, 1962, Ser. No. 221,328
7 Claims. (Cl. 260—306.8)

1. A compound of the formula

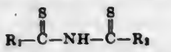


wherein X is an anion of an acid, HX, having an ionization constant of at least $1\times10^{-7}$ and $R_1$ and $R_2$ are substituted amino radicals selected from the group consisting of dialkylamino having from 2 to 36 carbon atoms, diarylamino having from 12 to 20 carbon atoms, alkylarylamino having from 7 to 12 carbon atoms, piperidino, and morpholino, and wherein aryl and alkylaryl are hydrocarbon.

6. The method of preparing a compound of the formula



wherein X is an anion of an acid, HX, having an ionization constant of at least $1\times10^{-7}$ and $R_1$ and $R_2$ are substituted amino radicals selected from the group consisting of dialkylamino having from 2 to 36 carbon atoms, diarylamino having from 12 to 20 carbon atoms, alkylarylamino having from 7 to 12 carbon atoms, piperidino and morpholino, and wherein aryl and alkylaryl are hydrocarbon which comprises reacting at a reaction temperature below about 70° C. a dithiobiuret of the formula



with an oxidizing agent capable of converting a sulfhydryl compound to a disulfide compound in the presence of said acid, HX.

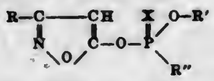
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**3,166,565**
**O-(ISOXAZOLYL) O-ALKYL PHOSPHORAMIDATES AND PHOSPHORAMIDOTHIOATES**

Raymond H. Rigterink, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 14, 1961, Ser. No. 116,955
6 Claims. (Cl. 260—307)

1. A compound of the formula



wherein R is a member of the group consisting of phenyl, halophenyl, nitrophenyl, lower alkylphenyl and lower alkoxyphenyl, R' is lower alkyl, R'' is a member of the group consisting of amino and lower alkylamino and X is a member of the group consisting of oxygen and sulfur.

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**3,166,566**
**PRODUCTION OF 2-AMINO-5-ARYL-1,3,4-OXADIAZOLE**

Joseph J. Piala, Metuchen, and Harry Louis Yale, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corportion of Virginia

No Drawing. Application July 25, 1961, Ser. No. 126,493, now Patent No. 3,141,022, dated July 14, 1964, which is a division of application Ser. No. 552,246, Dec. 12, 1955. Divided and this application Mar. 20, 1964, Ser. No. 357,003
3 Claims. (Cl 260—307)

1. The method for preparing 2-amino-5-(R'-phenyl)-1,3,4-oxadiazole wherein R' is selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy, which comprises heating the corresponding 1-substituted thiosemicarbazide with lead tetraoxide at a temperature in the range of about 85° C. to about 200° C. and recovering the oxadiazole formed.

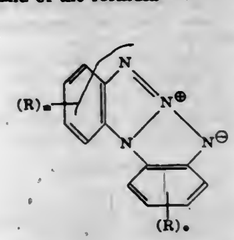
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**3,166,567**
**2,3;4,5-DIBENZO-1,3a,6,6a-TETRAAZA-PENTALENES**

Rudolph A. Carboni, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,059
3 Claims. (Cl. 260—308)

1. A compound of the formula



wherein the R's are selected from at least one of the group consisting of nitro, halo, azido, amino, sulfonyl and 1 to 4 carbon atom hydrocarbon radicals free from non-benzenoid unsaturation and $m$ plus $n$ equals a cardinal number of up to 4.

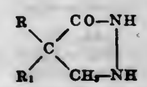
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**3,166,568**
**4,4-DISUBSTITUTED 3-PYRAZOLIDINONES AND THERAPEUTIC COMPOSITIONS CONTAINING THE SAME**

Bruno J. R. Nicolaus, Milan, Italy, and Emilio Testa, Vacallo, Tessin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,540
Claims priority, application Great Britain, Apr. 14, 1961, 13,586/61
4 Claims. (Cl. 260—310)

1. A compound of the formula



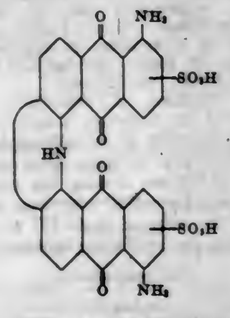
wherein R indicates a member of the class consisting of lower alkyl, phenyl and phenyl-lower alkyl; and $R_1$ is a member of the class consisting of lower alkyl having at least 2 carbon atoms, phenyl, and phenyl-lower alkyl.

### 3,166,569
### 5,5'-DIAMINO-1,1'-DIANTHRIMIDE CARBAZOLE-SULFONIC ACIDS AND A PROCESS FOR THEIR PREPARATION

Max Jost, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 6, 1962, Ser. No. 235,861
Claims priority, application Switzerland, Nov. 10, 1961, 13,091/61
2 Claims. (Cl. 260—316)

1. 5,5' - diamino - 1,1' - dianthrimide carbazole-sulfonic acids of the formula



and whose sulfonic acid groups are split off in the alkaline hydrosulfite vat.

### 3,166,570
### DERIVATIVES OF BENZO[e]ISOINDOLINE AND THEIR PREPARATION

Stanley O. Winthrop, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 15, 1963, Ser. No. 258,915
3 Claims. (Cl. 260—319)

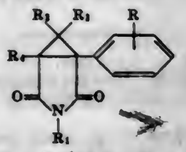
1. A compound selected from the group which consists of 5 - phenyl-2-methyl-3a,4,5,9b-tetrahydrobenzo[e]isoindoline and the hydrochloride salt thereof.

### 3,166,571
### 1-PHENYL-1,2-CYCLOPROPANE DICARBOXIMIDES

Patrick T. Izzo, Pearl River, N.Y., and Sidney R. Safir, River Edge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 6, 1962, Ser. No. 200,296
7 Claims. (Cl. 260—326.5)

1. A compound of the formula:



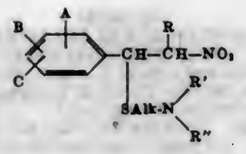
where $R_1$ and $R_4$ are members of the group consisting of hydrogen and lower alkyl, $R_2$ and $R_3$ are members of the group consisting of hydrogen, lower alkyl and phenyl, R is a member of the group consisting of hydrogen, halo, lower alkyl and lower alkoxy, and at least one of the R groups being other than hydrogen.

### 3,166,572
### SUBSTITUTED [(α-NITROALKYL)BENZYLTHIO] ALKYLAMINES

Robert C. Tweit, Wilmette, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,614
20 Claims. (Cl. 260—340.5)

1. A compound of the formula



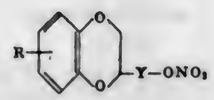
wherein A, B, and C are selected from the group consisting of hydrogen, halogens of atomic weight less than 100, lower alkyl, nitro, methoxy, cyano, and trifluoromethyl radicals, A and B together comprise a methylenedioxy radical, R, R', and R'' are selected from the group consisting of hydrogen and lower alkyl radicals, and Alk is a lower alkylene radical.

### 3,166,573
### 2-(NITRATOALKYL)-1,4-BENZODIOXANES

Jerry E. Robertson, St. Paul, Minn., assignor to Colgate-Palmolive Company, a corporation of Delaware

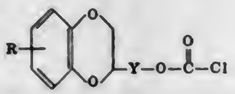
No Drawing. Filed Nov. 8, 1963, Ser. No. 322,512
4 Claims. (Cl. 260—340.3)

1. A compound of the formula

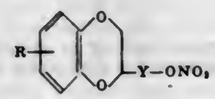


wherein R is a member of the group consisting of hydrogen, chlorine, bromine and trifluoromethyl and Y is a member of the group consisting of straight chain alkylenes and branched chain alkylenes containing from one to five carbon atoms.

4. The process which comprises reacting a compound of the formula



with an inorganic nitrate to produce a compound of the formula



wherein R is a member of the group consisting of hydrogen, chlorine, bromine and trifluoromethyl and Y is a member of the group consisting of straight chain alkylenes and branched chain alkylenes containing from one to five carbon atoms.

### 3,166,574
### PROCESS OF DEODORIZING γ-BUTYROLACTONE

David E. Gensheimer and Andrew S. Wood, Paducah, Ky., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,847
7 Claims. (Cl. 260—343.6)

1. The process of deodorizing γ-butyrolactone which comprises contacting said lactone with a deodorizing amount of a member selected from the class consisting of oxide and hydroxide of calcium, barium, magnesium, and strontium, and anion exchange resin in the hydroxide form.



### 3,166,575
### 2(2-METHYL-1-PROPENE)-YL - 4 -METHYL-TETRAHYDRO-PYRANS AND 2(2-METHYL-2-PROPENE)-YL-4-METHYL-TETRAHYDRO-PYRANS

Yves Rene Naves, Petit-Lancy, near Geneva, and Paul Tullen, Satigny, near Geneva, Switzerland, assignors to The Givaudan Corporation, New York, NY., a corporation of New Jersey

No Drawing. Filed Mar. 7, 1962, Ser. No. 177,986
Claims priority, application Switzerland, Mar. 15, 1961
7 Claims. (Cl. 260—345.1)

1. The process which comprises treating a first member selected from the group consisting of β-citronellol and an ester of β-citronellol with a second member selected from the group consisting of air and oxygen to form the corresponding hydroperoxide, reducing the latter to 2,6-dimethyloctene-3-diol-2,8, isomerizing the latter to 2,6-dimethyloctene-2-diol-4,8 and dehydrating and cyclizing the latter to form a mixture of (methyl-2-propene-1)-yl-2-methyl-4-tetrahydro-pyrans and (methyl-2-propene-2)-yl-2-methyl-4-tetrahydro-pyrans.

### 3,166,576
### PROCESS FOR THE PREPARATION OF ROSE OXIDE

Richard L. Markus, Montclair, N.J., assignor to Stepan Chemical Company, Maywood, N.J., a corporation of Delaware

No Drawing. Filed June 11, 1963, Ser. No. 286,907
13 Claims. (Cl. 260—345.1)

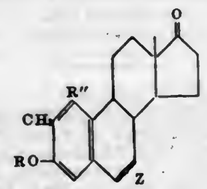
1. A process for preparation of Rose Oxide which comprises reacting a saturated, unsubstituted lower aliphatic carboxylic acid with a citronellol compound in the presence of a compound selected from the group consisting of lead tetroxide, tertiary butyl hydroperoxide and tertiary butyl peracetate thereby causing an allylic rearrangement in an alpha position to the double bond in said citronellol compound to take place thereby forming an intermediate compound which spontaneously cyclizes, neutralizing said cyclized compound with a soluble alkali to form said Rose Oxide and recovering said Rose Oxide from the reaction medium.

### 3,166,577
### 1,2-DIMETHYL ESTROGENS AND INTERMEDIATES USED IN THE PRODUCTION THEREOF

Howard J. Ringold and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Aug. 9, 1960, Ser. No. 48,352
Claims priority, application Mexico May 29, 1956
20 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



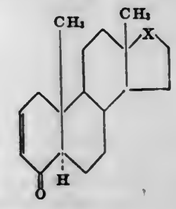
wherein R'' is selected from the group consisting of hydrogen and methyl; R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms and Z is selected from the group consisting of a double bond between C–6 and C–7 and a saturated linkage between C–6 and C–7.

### 3,166,578
### (OPTIONALLY 17-ALKYLATED) 17-OXYGENATED 5α - ANDROST-2-EN-4-ONES AND INTERMEDIATES THERETO

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,063
14 Claims. (Cl. 260—397.3)

1. A compound of the formula



wherein X is a member of the class of radicals consisting of carbonyl, β-hydroxymethylene, β-(lower alkanoyl) oxymethylene, and α-(lower alkyl)-β-hydroxymethylene.

### 3,166,579
### S-(10-PHENOXARSINYL)THIOPSEUDOUREA SALTS

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 7, 1962, Ser. No. 242,921
10 Claims. (Cl. 260—440)

1. The picric acid salts of the S-(10-phenoxarsinyl) thiopseudoureas having the formula



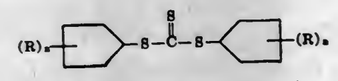
wherein the R's taken together represent ethylene, and the R's taken separately each represent a member of the group consisting of hydrogen, lower alkenyl, alkyl containing up to 18 carbon atoms, phenyl, benzyl, halophenyl and naphthyl.

### 3,166,580
### DICYCLOPENTYLTRITHIOCARBONATE

James W. Stanley, Jr., Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 15, 1963, Ser. No. 295,603
7 Claims. (Cl. 260—455)

1. Dicyclopentyltrithiocarbonates of the formula



wherein each R is a member selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl and aralkyl radicals containing from 1 to 10 carbon atoms, *n* is an integer from 1 to 4, and wherein the total carbon atoms in said compound range from 11 to 40.

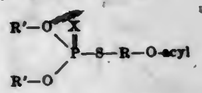
3,166,581

## S-ACYLOXYALKYL AND S-ACYLOXYALKENYL ESTERS OF O,O-DIORGANO-PHOSPHOROTHIOLIC ACIDS

Geert C. Vegter, Herne Bay, Kent, England, assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Nov. 13, 1959, Ser. No. 852,604
Claims priority, application Great Britain, July 18, 1958, 23,137/58; Dec. 23, 1958, 41,489/58
9 Claims. (Cl. 260—456)

1. The ester having the formula:



wherein R' represents a member of the group consisting of alkyl from 1 to 8 carbon atoms, phenyl, nitro-substituted phenyl and halogen substituted phenyl, R contains up to 10 carbon atoms and is a member of the group consisting of alkenylene and halogen-substituted alkenylene, and acyl represents the actyl moiety of an acid of the group consisting of alkanemonocarboxylic acids of up to 4 carbon atoms, mononuclear aromatic hydrocarbon monocarboxylic acids of from 6 to 10 carbon atoms and mononuclear aromatic hydrocarbon sulfonic acids of from 6 to 10 carbon atoms, and X represents a member of the group consisting of oxygen and sulfur.

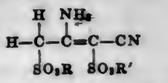
3,166,582

## 3-AMINO-2,4 BIS SULFONYL-CROTONONITRILES AND PRODUCTION THEREOF

Rudolph A. Carboni and John R. Roland, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 24, 1961, Ser. No. 125,940
9 Claims. (Cl. 260—465)

1. Compounds of the formula



wherein R and R' are monovalent radicals of up to and including 18 carbon atoms attached to the sulfone by a bond stemming from a carbon atom.

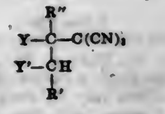
3,166,583

## ARALKYLCYANOFORMS

Elmore L. Martin and John K. Williams, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 1, 1962, Ser. No. 191,449
6 Claims. (Cl. 260—465)

1. An aralkylcyanoform compound of the formula



wherein

R' and R'' are members selected from the class consisting of hydrogen, alkyl and aryl,

Y is a member selected from the class consisting of hydrogen, aryl, alkaryl, alkoxyaryl, chloroaryl, and dimethylaminoaryl,

Y' is a member selected from the class consisting of hydrogen, alkyl, aryl, alkaryl, alkoxyaryl, chloroaryl, and dimethylaminoaryl

provided that at least one of Y and Y' is a member selected from the class consisting of aryl, alkaryl, alkoxyaryl, dimethylaminoaryl and chloroaryl, and

provided that R', R'', Y, and Y' each contains not more than 18 carbon atoms.

3,166,584

## TETRACYANOETHYLENE

Theodore Le Soeur Cairns, Newark, and Edith Ann Graef, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 28, 1953, Ser. No. 382,842
2 Claims. (Cl. 260—465.8)

1. Tetracyanoethylene.

3,166,585

## 2-DIMETHYLAMINOETHYL BETA-CYCLOPENTYL PROPIONATE AND THE MALEIC ACID SALT THEREOF

Raymond Valette, Paris, France, assignor to Les Laboratoires Albert Rolland, Paris, France, a French society

No Drawing. Filed Nov. 18, 1960, Ser. No. 73,160
Claims priority, application Great Britain, Nov. 20, 1959, 39,488/59
2 Claims. (Cl. 260—468)

1. 2-dimethylaminoethyl beta-cyclopentyl propionate.

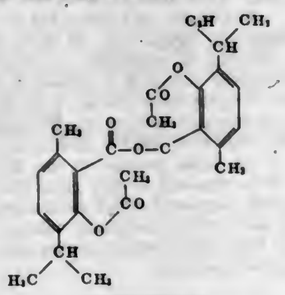
3,166,586

## O-ACETYL THYMOTIC ACID ANHYDRIDE AND PREPARATION THEREOF

Piero Maria Carrara, 36 Corso Monforte, Milan, Italy

No Drawing. Filed July 24, 1964, Ser. No. 385,064
3 Claims. (Cl. 260—479)

1. The anhydride of O-acetyl thymotic acid as represented by the following structural formula:



2. The method of preparing the anhydride of O-acetyl thymotic acid, comprising the steps of reflux reacting thymotic acid with an excess of acetic anhydride at a temperature of between 100° and 150° C. for a period of time between 1 and 4 hours, subsequently evaporating from the reaction product the unreacted acetic anhydride, reacting the residue by dissolving said residue in at least three parts of glacial acetic acid per part of said residue at a temperature between about 70° and 80° C., and precipitating the O-acetyl thymotic acid anhydride from the glacial acetic acid solution by dilution of said glacial acetic acid solution with water in a volume not exceeding that of said glacial acetic acid solution, said water being added gradually with constant stirring.

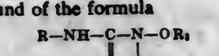
3,166,587

## ALKANOYL, HYDROXY-UREAS

Jack Bernstein and Kathryn Alice Losee, New Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 29, 1963, Ser. No. 298,456
11 Claims. (Cl. 260—553)

1. A compound of the formula



wherein R is a member of the group consisting of hydrogen and lower alkyl, $R_1$ is a member of the group consisting of lower alkyl and lower alkanoyl, and $R_2$ is a member of the group consisting of hydrogen, lower alkyl and lower alkanoyl, at least one of $R_1$ and $R_2$ being lower alkanoyl.



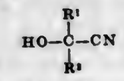
3,166,588

## PROCESS FOR THE PRODUCTION OF α-HYDROXY AMIDES

Herbert E. Johnson, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 14, 1961, Ser. No. 102,963
1 Claim. (Cl. 260—559)

A process for preparing alpha-hydroxy amides which comprises reacting, under anhydrous conditions, a cyanohydrin of the formula



and an alcohol of the formula

$R^1OH$

in admixture with a hydrogen halide of the group consisting of hydrogen chloride, hydrogen bromide, and hydrogen iodide to form an imido ester and pyrolizing the imido ester to form the alpha-hydroxy amide; each $R^1$ above, individually is selected from the group consisting of alkyl of 1 to 12 carbons, alkenyl of 3 to 12 carbons, and aromatic hydrocarbon; and $R^2$ is of the group consisting of hydrogen, alkyl of 1 to 12 carbons, alkenyl of 3 to 12 carbons and aromatic hydrocarbon.

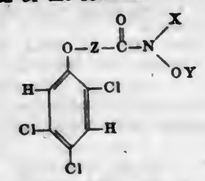
3,166,589

## PHENOXYACETAMIDES FOR THE CONTROL OF PESTS

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,071
9 Claims. (Cl. 260—559)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen and alkyl containing from one to ten carbon atoms, Y is alkyl containing from one to ten carbon atoms, and Z is unsubstituted alkylene containing from one to four carbon atoms.

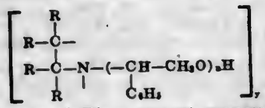
3,166,590

## POLYMERS OF THE BETA-(N-AZIRIDINO) ALCOHOLS

Kwan C. Tsou, Huntingdon Valley, Pa., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed July 29, 1960, Ser. No. 46,064
3 Claims. (Cl. 260—570.5)

1. A liquid polymer of a beta-(N-aziridino) alcobol of the formula



in which the several R's represent monovalent components selected from the group consisting of hydrogen and $C_1$–$C_4$ alkyls, $n$ is an integral number within the range 1–10, and $y$ is an integer within the range 2–50.

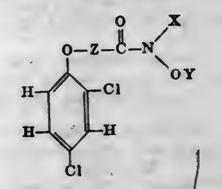
3,166,591

## PHENOXYACETAMIDES FOR THE CONTROL OF PESTS

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,072
9 Claims. (Cl. 260—559)

1. A compounds of the formula



wherein X is selected from the group consisting of hydrogen and alkyl containing from one to ten carbon atoms, Y is alkyl containing from one to ten carbon atoms, and Z is unsubstituted alkylene containing from one to four carbon atoms.

3,166,592

## PRODUCTION OF ALKYL META-AMINO PHENYL SULFIDES

Joseph Levy, Paramus, N.J., and Joseph H. Mayer, New York, N.Y., assignors, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 20, 1960, Ser. No. 30,440
5 Claims. (Cl. 260—580)

1. In a method of producing a lower alkyl meta-aminophenyl sulfide in high yield comprising reacting an alkali metal salt of meta-nitrothiophenol with an alkylating agent to form a lower alkyl meta-nitrophenyl sulfide and reducing the nitro group of the latter compound to form the corresponding lower alkyl meta-aminophenyl sulfide, the improvement which comprises carrying out said reduction without separating the lower alkyl meta-nitrophenyl sulfide from its reaction mixture and utilizing as a reducing agent for said reduction an aqueous alkaline solution of a compound selected from the group consisting of alkali metal and ammonium sulfides, polysulfides and hydrosulfites.

3,166,593

## PROCESS FOR PREPARING TETRACHLORO-DI-NITROBENZENE AND TETRACHLORO-PHENYLENE DIAMINE

John Frederick Harris, Meldreth, near Royston, and David William John Lane, Barton, England, assignors to Fisons Pest Control Limited, Harston, Cambridgeshire, England

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,347
Claims priority, application Great Britain, Nov. 10, 1962, 42,553/62
15 Claims. (Cl. 260—580)

1. A process for the preparation of 1,2,3,4-tetrachloro-5-nitrobenzene which comprises chlorinating 1,2,4-trichloro-5-nitrobenzene by treatment with chlorine in the presence of 0.2–4.0 mols of chlorosulphonic acid per mol of 1,2,4-trichloro-5-nitrobenzene and 0.15-2% by weight of iodine based on the 1,2,4-trichloro-5-nitrobenzene, at a temperature in the range 30–150° C.

10. A process for the preparation of tetrachloro-o-phenylenediamine which comprises nitrating 1,2,4-trichlorobenzene by treatment with nitric acid of a concentration in the range 95–100% by weight in amount comprising 1.5–30 mols of nitric acid per mol of 1,2,4-trichlorobenzene, at elevated temperature, to form 1,2,4-trichloro-5-nitrobenzene and chlorinating the 1,2,4-trichloro-5-nitrobenzene by treatment with chlorine in the presence of 0.2–4.0 mols of chlorosulphonic acid per mol

of 1,2,4-trichloro-5-nitrobenzene and 0.15–2% by weight of iodine based on the 1,2,4-trichloro-5-nitrobenzene, at a temperature in the range 30–150° C., and reducing the formed 1,2,3,4-tetrachloro-5,6-dinitrobenzene under conditions selected from acid and neutral conditions.

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**3,166,594**

## PROCESS FOR PREPARING TETRACHLORO-5,6-DINITROBENZENE AND TETRACHLORO-O-PHENYLENE DIAMINE

John Frederick Harris, Meldreth, near Royston, and David William John Lane, Barton, England, assignors to Fisons Pest Control Limited, Harston, Cambridgeshire, England

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,351
Claims priority, application Great Britain, Nov. 10, 1962, 42,553/62
13 Claims. (Cl. 260—580)

1. A process for the preparation of 1,2,3,4-tetrachloro-5,6-dinitrobenzene which comprises di-nitrating 1,2,3,4-tetrachlorobenzene by treatment with a mixture of nitric acid of a concentration in the range 80–100% by weight and sulphuric acid of a concentration in the range 90–100% by weight, the nitric acid being used in amount comprising a 5-fold excess over the stoichiometric equivalent, the sulphuric acid being used in amount comprising at least the molecular equivalent of the nitric acid, the di-nitration being carried out at a temperature in the range 50–115° C.

13. A process for the preparation of tetrachloro-o-phenylene-diamine which comprises chlorinating 1,2,3-trichlorobenzene in the presence of 0.05–5% by weight of a nuclear chlorination catalyst at a temperature in the range 50–100° C. to give 1,2,3,4-tetrachlorobenzene, and di-nitrating the formed 1,2,3,4-tetrachlorobenzene by treatment with a mixture of nitric acid of a concentration in the range 80–100% by weight and sulphuric acid of a concentration in the range 90–100% by weight, the nitric acid being used in amount comprising a 5-fold excess over the stoichiometric equivalent, the sulphuric acid being used in amount comprising at least the molecular equivalent of the nitric acid, the di-nitration being carried out at a temperature in the range 50–115° C., and reducing the formed 1,2,3,4-tetrachloro-5,6-dinitrobenzene under conditions selected from acid and neutral conditions.

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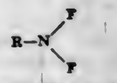
**3,166,595**

## N,N-DIFLUOROALKYLAMINES

Jack W. Fraser, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 28, 1961, Ser. No. 98,985
3 Claims. (Cl. 260—583)

1. The compounds N,N-difluoroalkylamines, having the formula



where R is a straight chain alkyl group having one to six carbon atoms.

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**3,166,596**

## MANUFACTURE OF TRIMETHYLENE DIAMINE AND N-PROPYLAMINE

Arthur F. Miller, Cleveland, and Wilfred B. Howsmon, Jr., Marietta, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 3, 1962, Ser. No. 192,044
10 Claims. (Cl. 260—583)

1. A process for the simultaneous production of trimethylene diamine and n-propylamine which comprises the step of reacting at a temperature in the range of 50 to 350° C. and a pressure of 15 to 200 atmospheres a mixture of acrylonitrile, ammonia, and hydrogen in the presence of a hydrogenation catalyst and water, said water being present in not more than about 10 moles per mole of ammonia.

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**3,166,597**

## ORGANOBORON ALCOHOLS AND METHOD FOR THEIR PREPARATION

John W. Ager, Jr., Buffalo, and Theodore L. Heying, Tonawanda, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Mar. 25, 1959, Ser. No. 801,960
14 Claims. (Cl. 260—606.5)

11. $RR'B_{10}H_8(CR''CR''')$ wherein R and R' are each selected from the class consisting of hydrogen and an alkyl radical containing from 1 to 5 carbon atoms and wherein R'' and R''' are selected from the class consisting of hydrogen, an alkyl radical, and hydroxyalkyl radicals, at least one hydroxyalkyl radical being present, and the total number of carbon atoms in R'' and R''' together not exceeding 8.

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**3,166,598**

## MERCAPTANS PRODUCTION

Ralph C. Cole, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 14, 1962, Ser. No. 244,708
2 Claims. (Cl. 260—609)

1. A process for forming tertiary butyl mercaptans from tertiary octyl mercaptans which comprises reacting said tertiary octyl mercaptans with hydrogen sulfide at a temperature within the range of about 300° to 400° F. and a pressure within the range of about 700 to 850 p.s.i.g. in the presence of an acid activated montmorillonite absorption contact catalyst.

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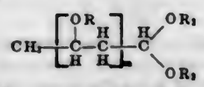
**3,166,599**

## PROCESS OF PREPARING BISYMMETRICAL PHENOLIC COMPOUNDS

Robert Steckler, Chagrin Falls, Ohio, assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 13, 1960, Ser. No. 28,824
2 Claims. (Cl. 260—611)

1. The process of preparing bisymmetrical phenolic compounds which comprises condensing 2 moles of phenol with 1 mole of a polyalkoxy acetal having the following general formula:



wherein R and $R_2$ represent an alkyl radical of 1 to 5 carbon atoms, and *m* represents a positive integer of from 2 to 30, at a temperature of 160–180° C. in the presence of a catalytic amount of a sulfonic acid cation exchange resin and removing the resulting alcohol as formed.

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**3,166,600**

## PROCESS FOR THE PREPARATION OF SIMPLE KETALS

Nicholas B. Lorette and William L. Howard, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 25, 1961, Ser. No. 105,260
6 Claims. (Cl. 260—611)

1. In the method for preparing ketals which comprises reacting in the presence of an acid catalyst and at a temperature of from about 0° to about 150° C. a ketone having the formula:

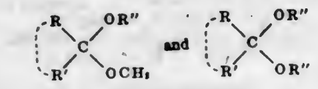




wherein R and R' each represent a member independently selected from the group consisting of the phenyl radical and alkyl radicals having from 1 to 6 carbon atoms, and wherein R and R' can be joined together to form with the carbon atom of attachment a cycloaliphatic 5 to 6 membered ring, and an alcohol having the formula

R''OH

wherein R'' represents a member selected from the group consisting of the residue of primary and secondary aliphatic and cycloaliphatic alcohols having from 2 to 10 carbon atoms, the improvement of carrying out the reaction in the presence of about a molar equivalent of acetone dimethyl acetal based on the ketone reactant; removing at least one of the products acetone and methanol as formed; and recovering at least one of the products



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**3,166,601**

## CHLORINATION OF ETHANE

Keith M. Taylor, Dickinson, Tex., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 21, 1961, Ser. No. 90,618
3 Claims. (Cl. 260—654)

1. A process for the chlorination of ethane to produce unsaturated chlorinated hydrocarbons which comprises reacting ethane with chlorine in a reaction zone heated to a temperature in the range from about 600° C. to about 900° C., the mole ratio of chlorine to ethane being in the range from about 1.0 to 4.0, said gaseous mixture of chlorine and ethane being diluted with an inert gas in sufficient concentration by volume to maintain the gaseous mixture out of the flammable region, and the residence time of the reacting gas mixture in the reaction zone being maintained within the range from about 1 to about 50 milliseconds.

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**3,166,602**

## PROCESS FOR PREPARING DICHLOROETHANES

Keith M. Taylor, Dickinson, Tex., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Feb. 21, 1961, Ser. No. 90,617
2 Claims. (Cl. 260—662)

1. A process for the chlorination of ethane to produce dichloroethanes which comprises reacting chlorine and ethane in mole proportions of from about 1:1 to 3:1 in a reaction zone heated to a temperature in the range from about 500° C. to about 550° C., said gaseous mixture of chlorine and ethane being diluted with 50% by volume of an inert gas and the residence time of the reacting gas mixture in the reaction zone being maintained within the range from about 4 to about 8 milliseconds.

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**3,166,603**

## ALKYL BERYLLIUM COMPOUNDS

Walter Strohmeier, Wurzburg, Germany, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 29, 1962, Ser. No. 169,635
Claims priority, application Germany, July 25, 1961, St 18,116
15 Claims. (Cl. 260—665)

1. A process for the manufacture of high purity beryllium compounds which comprises treating a beryllium compound selected from the group consisting of alkyl and aryl beryllium compounds contaminated with an ether by dissolving therein a salt selected from the group consisting of alkali metal halides, alkali metal alcoholates, alkali metal cyanides, alkali metal cyanates, alkali metal thiocyanates, alkali metal amides, alkali metal mercaptides, alkali metal azides, alkali metal salts of organic acids, alkali metal sulfates, alkali metal nitrates, alkali metal borates, alkali metal phosphates, alkali metal arsenates, and tetraalkylammonium halides, subjecting the mixture so obtained to distillation for removal of the ether therefrom, then subjecting the reaction mixture to further treatment for removal of the beryllium compound desired.

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**3,166,604**

## PROCESS FOR THE PRODUCTION OF 1,2,4-TRIETHYLBENZENE

Fritz Derichs, Otto Glosauer, Rudolf Muller, Wolfgang Schade, and Walter Franke, all of Marl, Kreis Recklinghausen, Germany, assignors to Chemische Werke Hüls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany, a corporation of Germany

No Drawing. Filed Jan. 8, 1962, Ser. No. 165,014
Claims priority, application Germany, Mar. 1, 1961, C 23,538
8 Claims. (Cl. 260—668)

1. Process for the production of 1,2,4-triethylbenzene which comprises heating 1,2,4-trivinylcyclohexane to a temperature within the range from 80° C. to 240° C. in the presence of from 1 to 20% by weight of an alkali metal and from 0.1 to 10% by weight of a promoter selected from the group consisting of aniline, ethylene diamine, o-chlorotoluene and tert. butanol calculated upon the weight of the 1,2,4-trivinylcyclohexane in an inert atmosphere.

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**3,166,605**

## REARRANGEMENT OF TERMINAL POLYACETYLENES

John H. Wotiz and Charles G. Parsons, Mentor, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Sept. 7, 1960, Ser. No. 54,337
5 Claims. (Cl. 260—678)

1. The method of rearranging a terminal acetylenic bond in an acetylenic hydrocarbon consisting essentially of contacting said compound with a basic material selected from the group consisting of alkali metal amides, acetylides and hydroxides and alkaline earth metal amides, acetylides and hydroxides and anhydrous ammonia at a temperature within the range from −20° to 60° C.

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**3,166,606**

## POLYCARBONATE RESINS HAVING IMPROVED FLOW PROPERTIES

Norman H. Reinking, Millington, and John Wynstra, Berkeley Heights, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,821
6 Claims. (Cl. 260—860)

1. A polycarbonate resin composition possessing improved extrudability which comprises a blend of from 10 to 90 percent by weight based on the total polycarbonate resin content of a high molecular weight polycarbonate resin comprising recurring carbonate groups linking residues of at least one dihydric phenol having a reduced viscosity value of at least 0.6 and a complementary amount of from 90 to 10 percent by weight based on the weight of the total resin content of a low molecular weight polycarbonate comprising recurring carbonate groups linking residues of at least one dihydric phenol having a reduced viscosity value of not greater than 0.5 with the proviso that the difference in reduced viscosity values of the two resin masses be not less than about 0.2, and with the further proviso that the said blend has a reduced viscosity value within the range of about 0.4 to about 0.8.

3,166,607

## READILY DYEABLE COMPOSITIONS COMPRISING POLYPROPYLENE CONSISTING PREVAILINGLY OF ISOTACTIC MACROMOLECULES AND METHOD OF PREPARING SAME

Enrico Cernia and Alberto Bouvicini, both of Terni, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Feb. 11, 1958, Ser. No. 714,495

Claims priority, application Italy Feb. 19, 1957

7 Claims. (Cl. 260—878)

1. A process for producing molded articles of linear, regular head-to-tail polypropylene consisting of over 50% of isotactic macromolecules having modified dyeing properties throughout the cross-section thereof, which process comprises the steps of mixing the polypropylene with from 1% to 25% by weight of a monomer selected from the group consisting of maleic acid, esters of maleic acid, halides of maleic acid, amides of maleic acid, nitrile of maleic acid, fumaric acid, esters of fumaric acid, halides of fumaric acid, amides of fumaric acid, nitrile of fumaric acid, acrylic acid, esters of acrylic acid, halides of acrylic acid, amides of acrylic acid, nitrile of acrylic acid, styrene, divinylbenzene and nitrostyrene to obtain a homogeneous mixture, heating the mixture at a temperature between about 170° C. and about 250° C. for at least five minutes to obtain a homogeneous melt, introducing the melt into an extruder in which it is maintained at a temperature between about 140° C. and 250° C. to obtain a homogeneous mass consisting of the polypropylene having short polymeric chains of the polymerizable monomer substantially uniformly distributed along and chemically bonded to the main chains of the isotactic macromolecules, and extruding said mass, at the selected temperature between about 140° C. and 250° C., through a shaping device to obtain the shaped article.

3,166,608

## ELASTIC PRODUCTS CONSISTING OF HYDROCARBON ELASTOMERS REINFORCED BY FIBERS OF A HIGHLY ISOTACTIC POLYMERIC HIGHER ALPHA-OLEFIN AND PROCESSES FOR OBTAINING THE SAME

Giulio Natta, Milan, Giovanni Crespi, Busto Arsizio (Varese), and Giancarlo Bonini, Milan, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, a corporation of Italy

No Drawing. Filed Nov. 21, 1958, Ser. No. 775,343

Claims priority, application Italy Nov. 27, 1957

20 Claims. (Cl. 260—878)

1. A vulcanized elastic product consisting essentially of hydrocarbon elastomers selected from the group consisting of (*a*) natural rubber, (*b*) linear, substantially saturated and amorphous copolymers of higher alpha-olefins of the formula $CH_2$=CHR wherein R is an alkyl radical containing from 1 to 5 carbon atoms with ethylene containing from 20% to 70% of ethylene in the copolymer macromolecule, (*c*) mixtures of said higher alpha-olefin ethylene copolymers with at least one member selected from the group consisting of (1) natural rubber and (2) unsaturated synthetic hydrocarbon rubbery polymers of aliphatic conjugated dienes, said hydrocarbon elastomers being reinforced by fibers of a linear, polypropylene containing over 80% isotactic macromolecules, and said elastomer being co-vulcanized with and chemically bound to the polypropylene reinforcing fibers through short polymeric bridge linkages formed of units of a substance selected from the group consisting of styrene and divinyl benzene.

3,166,609

## BLENDS OF TRANS-POLYBUTADIENE WITH RUBBER

Charles R. Wilder, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 21, 1960, Ser. No. 70,420

9 Claims. (Cl. 260—894)

1. As a new composition of matter, a blend comprising an unvulcanized trans-poly butadiene having at least 70 percent trans 1,4-addition, not more than 10% 1,2-addition and the remainder being cis 1,4-addition, and from 10 to 60 weight parts per 100 parts of blend of a different unvulcanized rubbery polymer containing at least 50 weight percent of a polymerized conjugated diene having from 4 to 10 carbon atoms per molecule and having a Mooney viscosity (ML—4 at 212° F.) of at least 75.

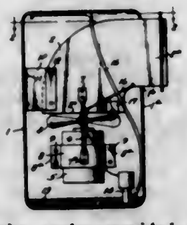
3,166,610

## EVAPORATIVE COOLERS

James D. Cole, Austin, Tex., assignor to Myers K. Parsons, Austin, Tex.

Filed May 11, 1961, Ser. No. 109,306

1 Claim. (Cl. 261—29)



In an evaporative cooler provided with a rectangular casing having an air inlet in one side thereof and evaporative cooling pad means therein, and having a rectangular opening in another side thereof, a fan-duct assembly within and spaced from the walls of said casing consisting of an arcuate-shaped duct of rectangular cross-section having its air inlet end disposed horizontally adjacent the mid-height of the casing and having its outlet end extending through the casing opening and disposed vertically of the casing; means for mounting the duct in spaced relation within the casing; a pair of vertically disposed straps mounted on the air inlet end of the duct and extending below said end; a pair of split clamps disposed horizontally and mounted on the lower ends of the pair of straps respectively; a motor having a casing secured by said split clamps and having a vertically disposed shaft; a fan on said shaft between the air inlet end of the duct and the motor casing for directing the air upwardly onto the curved surface of the duct and out through the air outlet end thereof; and means for drawing the split clamp members together around the motor casing.

3,166,611

## CARBURETOR

Robert L. Conant, 426 Fairmont Drive and Max L. McNeely, 76 Valley Drive, both of Decatur, Ill.

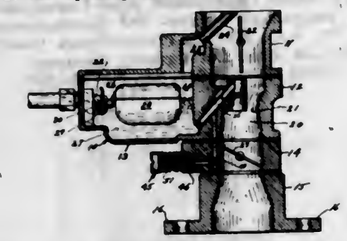
Filed Sept. 6, 1962, Ser. No. 221,721

4 Claims. (Cl. 261—41)

1. In a carburetor of the downdraft type, an air horn at the upper end thereof having a conduit therethrough with a choke valve therein, a venturi casing below said air horn having a venturi extending therethrough and with a fuel nozzle therein, a barrel casting below said venturi casting having a conduit therethrough and having a throttle valve therein to control the passage of gasses through said conduit, a slow running fuel channel with a wall between it and the conduit of said barrel casting, said wall having an opening therethrough extending from the slow running fuel channel to said conduit adapted for



conveying gases therein formed from atmospheric air and fuel, a threaded aperture extending horizontally through the external wall of said barrel casting for supporting an adjusting screw, a solid adjusting screw having a threaded shank assembled in said threaded aperture, said screw having a conical end portion adjacent but spaced from the bore of said opening in said wall adjacent said conduit, said screw having a needle portion between said threaded shank and said conical end portion and of a diameter less than that of said threaded shank, said screw serving to control the opening in said wall, and said adjusting



screw having a continuous V-shaped groove along its exterior longitudinal surface and extending to the apex of said conical end portion thereby communicating with the atmosphere outside said barrel casting and said slow running fuel channel forming gasses therein of a mixture of fuel and air at a location in said channel upstream from the portion of the opening controlled by the screw, and said V-shaped groove of said conical end portion communicating between said slow running fuel channel and said conduit, bypassing some of the gasses from said fuel channel to said conduit in said barrel casting.

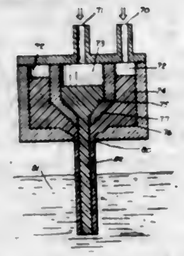
3,166,612

## PROPELLANTS AND METHOD FOR MAKING THEM

Charles W. Sauer, Cambridge, Ekkehard L. Kreidl, Wayland, Bessie A. Lepper, Cambridge, and Bruce S. Old, Concord, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Original application June 20, 1955, Ser. No. 516,374. Divided and this application Jan. 21, 1963, Ser. No. 254,855

3 Claims. (Cl. 264—3)



1. A process for forming propellant grains each containing a core and at least one discrete outside layer, which comprises forming a first gel of explosive core material and a liquid solvent therefor, forming a second gel of an outside layer of deterrent material capable of sustaining combustion without external oxygen and a liquid solvent therefor, simultaneously forcing said first and second gels through concentric apertures to form a composite globule of said second gel containing a globule of said first gel therein, conducting the composite globule so formed into a liquid medium miscible with both of said solvents and a non-solvent for the core and the layer material, diffusing the solvents of the respective gels of said composite globule into said liquid medium until substantially a complete interchange has taken place between said solvents and said liquid medium without changing the shape of the globule, removing from the resultant propellant grains the absorbed liquid medium and drying the grains in any suitable manner.

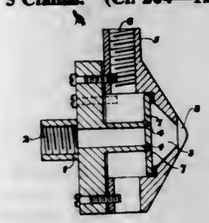
3,166,613

## POLYOLEFIN POWDER PROCESS

James F. Wright and Norman D. Shahan, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 8, 1962, Ser. No. 171,919

5 Claims. (Cl. 264—12)



1. A process which comprises

(1) adding molten polyolefin under a pressure of from about 100 p.s.i.g. to 500 p.s.i.g. and at a temperature of from about 120° C. to 300° C. to a high velocity gas stream maintained at a pressure substantially above atmospheric temperature, said molten polyolefin being added in substantially non-filamentary form,

(2) turbulently mixing the combined molten polyolefin and gas upstream from a nozzle having a single fluid inlet at one end thereof and an orifice at the other end thereof,

(3) forcing the mixture of molten polyolefin and gas under pressure through the orifice of the nozzle and into an area of substantially reduced pressure whereby the molten polyolefin is atomized into finely divided discrete particles.

3,166,614

## PROCESS OF MAKING NUCLEAR FUEL ELEMENT

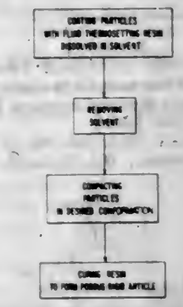
Kenneth M. Taylor, Lewiston, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Nov. 30, 1959, Ser. No. 856,236

4 Claims. (Cl. 264—21)

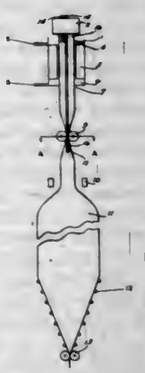
1. In a process for making a solid spherical nuclear fuel element particularly adapted for use in a pebble bed type reactor and comprising an internal core, and an integral and substantially impervious, external refractory metal carbide cladding encasing said core, the steps including forming said core to include thermal neutron fissionable material, forming said cladding by coating said core with a porous outer layer deposited from a slurry consisting essentially of at least one refractory metal carbide selected from the group consisting of silicon carbide, zirconium carbide and titanium carbide and carbonaceous material, rendering said layer substantially impervious by heating to cause a reaction between said carbonaceous material and at least one metal selected from the group consisting of silicon, zirconium and titanium in an environment supplying said metal and thereby form additional refractory metal carbide selected from said group, and forming one of said core and cladding to include within said layer refractory ceramic neutron moderator material selected from the group consisting of carbon, beryllium, beryllium oxide, beryllium carbide, and mixtures of carbon and beryllium carbide.

3,166,615
**METHOD OF FORMING POROUS RIGID STRUCTURES**
James A. Farrell, 113 Pleasant Ave., Romeo, Mich.
Filed Dec. 30, 1960, Ser. No. 79,920
13 Claims. (Cl. 264—23)



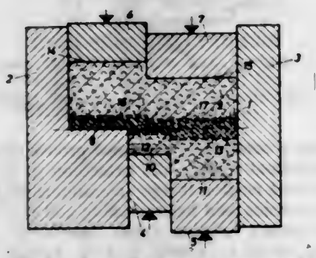
1. The method of forming a porous rigid structure comprising the steps of uniformly coating the surfaces of finely divided individual solid particles with a fluid thermosetting resin dissolved in a volatile solvent, removing the solvent from the coated particles whereby said particles are uniformly coated with a thin fluid film of said resin leaving interstices between the particles, said film being of a thickness insufficient to fill the interstices between the particles when said coated particles are forced into direct contact with each other and the film displaced from the points of contact, compacting the coated particles into a mass of predetermined configuration before said resin has acquired its hardened state to force said particles into direct contact with each other and to displace the resin film from the points of contact into the interstices but without filling the interstices thereby forming a porous mass, maintaining said compacted porous mass in said configuration and subject the same to curing conditions for a period of time sufficient to cure said resin whereby said particles are bonded together thereby.

3,166,616
**MANUFACTURE OF PLASTIC TUBES**
Frederick Bild, London, and William Robinson, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Feb. 14, 1962, Ser. No. 173,198
Claims priority, application Great Britain, Feb. 14, 1961, 5,446/61
10 Claims. (Cl. 264—95)



1. A method of continuously passing a thick walled resilient plastic tube between nip rollers, wherein the tube is prevented from being wholly flattened at its edges which comprises passing said tube provided at its interior with two stationary probes between said nip rollers, said probes passing through the nip at a position such that they give internal support to the tube at the said edges, so that the tendency of the tube to be creased at the edges is reduced.

3,166,617
**METHOD AND APPARATUS FOR PRODUCING ARTICLES OF MOLDED PARTICLE BOARD**
Edmund E. Munk, Oberstenfeld, Kreis Ludwigsburg, Germany, assignor to Furnier- und Sperrholzwerk J. F. Werz, Jr., K.G. Werzalit-Pressholzwerk Oberstenfeld, Oberstenfeld, Kreis Ludwigsburg, Germany
Filed May 1, 1961, Ser. No. 106,557
13 Claims. (Cl. 264—109)



1. A method of producing pressure-molded articles from a loose mixture of fibrous material and a binder, each of said articles having a plurality of adjacent portions of different thicknesses with surfaces extending substantially in the same direction and disposed at different levels at least at one of two opposite sides thereof, and each being separated from the surface of the adjacent portion by at least one angular edge in a mold housing having fixed opposite walls and a pair of dies movable in opposite directions in said housing, at least one of said dies being divided into separably movable parts corresponding essentially in area to said portions of different thicknesses comprising retracting each part of said one die from a neutral plane defined by the plane of the most deeply impressed surface of said article a distance below said neutral plane essentially corresponding to the distance of the finished portion produced thereby times a predetermined volumetric ratio of compression of said loose mixture as compared with the volume of the finished article, filling said mold housing with a loose mixture of fibrous materials and a binder in said predetermined volumetric ratio of compression, said mixture being incapable of flowing when under pressure, and thereafter compressing said mixture to the degree of compression determined by said volumetric ratio of compression, whereby after being compressed each of said adjacent portions of different thicknesses has a uniform degree of compression at all parts thereof.

**ERRATUM**

For Class 264—171 see:
Patent No. 3,166,329

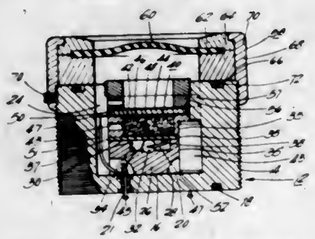
3,166,618
**METHOD OF MAKING A NIB FOR A BALL POINT WRITING INSTRUMENT**
Hans Reinhard Fehling, Zug, Switzerland, and Edward Henry Harvey, Finchley, England, assignors to I.R.C. Limited, London, England, a company of Great Britain
Filed Sept. 27, 1960, Ser. No. 58,759
Claims priority, application Great Britain Oct. 2, 1959
5 Claims. (Cl. 264—242)

1. A method for making a nib for a ball point writing instrument comprising the steps of preparing a deformable plastic material loaded with at least ten percent by volume of a finely divided solid filler material so that the resultant mixture is capable of injection molding and has an elasticity modulus in compression of at least $6\times10^5$ p.s.i. when dry, and injecting the mixture into a mold to form a nib housing having a central ink duct, a ball-receiving socket communicating with the ink duct provided with a plurality of base seat mounds surrounding the ink duct and a rim portion adapted to be deformed to retain a ball in the socket.





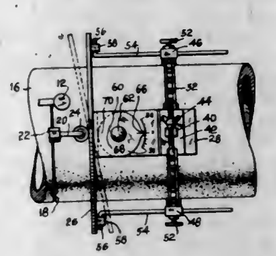
3,166,619
**METHOD FOR MAKING A TRANSDUCER**
Forrest E. Coyle, Glen Burnie, Md., assignor, by mesne assignments to the United States of America as represented by the Secretary of the Navy
Filed May 25, 1962, Ser. No. 197,806
3 Claims. (Cl. 264—272)



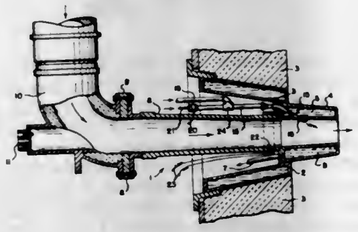
1. The manufacture of a sound absorbing pad for a high frequency oil filled trandsucer comprising producing curled copper chips,
sifting the chips over a 50 gauge screen and discarding the fines,
fluffing a polyester of ethylene glycol fibrous material,
distributing the filing throughout said fibers in the proportion of about three units by weight of copper chips to 1 unit of weight of fibrous material to form a batt,
depositing said batt between sheets of nylon in an enclosing mold of the desired shape and size,
applying heat until the nylon encases the batt and obtains a firm, good dimensional stability.

3,166,620
**PIPE CUTTING APPARATUS**
Joseph L. Galezniak, 1104 Newton Ave., West Collingswood, N.J.
Filed Sept. 26, 1962, Ser. No. 226,281
4 Claims. (Cl. 266—23)

1. In a pipe cutting machine having a cutting means and means to cause said cutting means to move circumferentially around a pipe, a guide means comprising a roller operatively connected to said cutting means to guide the movement of said cutting means as said cutting means moves around said pipe, a guide ring, means for mounting said guide ring on said pipe in circumjacent relation thereto, and means for maintaining said roller in engagement with said guide ring as said cutting means is moved around said pipe, means for retaining said ring in angularly adjusted position in relation to the longitudinal axis of said pipe including a link chain, means for wrapping said chain around said pipe in gripping relation thereto, a plurality of brackets spaced circumferentially around said link chain, a plurality of brackets fixed to said guide ring, one of said guide ring brackets aligned with each of said link chain brackets, rod means fixed to each of said guide ring brackets and slidably engaged with its aligned link chain bracket, means for angularly adjusting said guide ring in relation to the longitudinal axis of said pipe and means in each of said guide ring brackets for securing said rod means in its adjusted position.



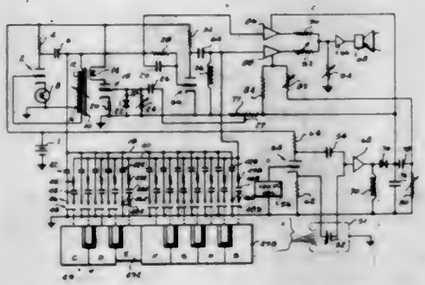
3,166,621
**BURNER TUYERE ARRANGEMENT FOR A BLAST FURNACE**
John W. Carlson, Pueblo, Colo., assignor to The Colorado Fuel and Iron Corporation, Denver, Colo., a corporation of Colorado
Filed Mar. 16, 1961, Ser. No. 96,171
2 Claims. (Cl. 266—41)



1. A burner for a blast furnace comprising a tuyere formed as a unitary member having an inner air passage and a cooling jacket for cooling water, means for circulating cooling water in and through said cooling jacket, said cooling jacket having an inner wall defining the air passage and a rearward wall which closes the cooling jacket for cooling water, and a nozzle for burning liquid fuel comprising a pipe for the discharge of a cooling gas passing through the rearward wall and the inner wall of the cooling jacket and extending into the air passage, and a tube mounted inside the pipe for charging liquid fuel into the inner air passage.

# ELECTRICAL

3,166,622
**BREATH CONTROLLED ELECTRONIC MUSICAL INSTRUMENT**
Herbert M. Neustadt, 257 Hanover St., Annapolis, Md.
Filed Aug. 4, 1959, Ser. No. 831,654
22 Claims. (Cl. 84—1.01)



2. A breath-controlled electronic musical instrument including in combination means responsive to static breath pressure for providing a direct-current control signal, means providing a musical signal having a predetermined value of pitch, a high-pass filter circuit, means coupling the control signal to the filter circuit, and means responsive to the filter circuit for varying the pitch from such value.

3,166,623
**SPHERICAL LENS IMAGING DEVICE**
John A. Waidelich, Jr., Endwell, N.Y., assignor to Link Division of General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Dec. 29, 1960, Ser. No. 79,236
6 Claims. (Cl. 88—1)



1. An imaging device comprising: a spherical core element, at least one spherical shell element concentric with said core element; light obstruent means having an aperture located substantially about the common center of said elements said aperture having a diameter equal to the diameter of said spherical core element; total reflective means positioned in said aperture, a fiber image conduit means operatively associated with said imaging device, said fiber image conduit means being rigidly affixed to the surface of the exit hemisphere of said imaging device; and the radius of the exit hemisphere of said imaging device being equal to the focal length of the entrance hemisphere of said imaging device.

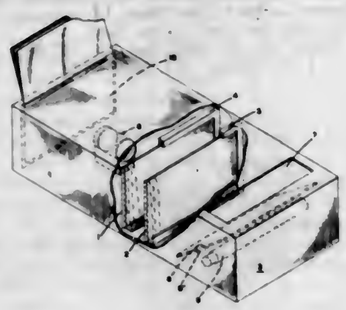
3,166,624
**MOIRE FRINGE DEVICE HAVING LINE GRIDS OF GRADUALLY CHANGING PITCH**
Leslie O. Vargady, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 5, 1961, Ser. No. 108,021
2 Claims. (Cl. 88—1)

1. A moire fringe device comprising a pair of superimposed similar line grids having parallel spaced lines and clear intervals, the width of a grid line and its adjacent interval defining a pitch, and the pitch of said grids having a gradually increasing dimension transverse of the grid, corresponding lines and intervals of the respective grids being of substantially equal widths, and means mov-



ably mounting said grids in a superimposed position with their respective grid lines at a small inclination to each other for movement substantially normal to the grid lines of one of the line grids whereby a fan-like fringe is generated.

3,166,625
**OPTICAL CRYPTOGRAPHIC DEVICE**
Corwin H. Brumley, Pittsfield, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Feb. 7, 1962, Ser. No. 171,661
6 Claims. (Cl. 88—1)

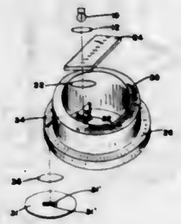


1. An optical cryptographic device comprising means defining a limited field in a selected object plane, and a screen comprising relatively small optical image forming elements which are small relative to said field and spaced from said field at an object distance, each of the elements of said screen forming aerial images of relatively small portions of said field at an image distance which is conjugate to said object distance whereby the aerial images formed by said screen are differently oriented relative to each other from the relative orientations of the corresponding respective portions of said field, a second screen of optical image forming elements which are small relative to said field and spaced from said first screen at a second object distance, each of said elements of said second screen forming aerial images of a portion of the aerial image formed by said first screen whereby the aerial images formed by said second screen are differently oriented relative to each other from the relative orientations of the corresponding respective portions of said first aerial images, a selected image plane and means for relaying the aerial images formed by said second screen to said image plane.



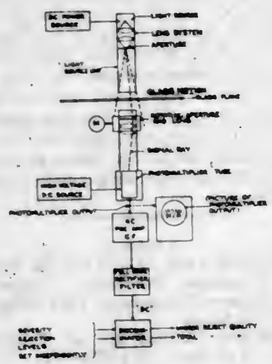


3,166,626
**OPTICAL READ-OUT SYSTEM HAVING A ROTATABLE OPTICAL DEVIATING ELEMENT OF VARIABLE WALL THICKNESS**
Leslie O. Vargady, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 4, 1962, Ser. No. 199,709
4 Claims. (Cl. 88—1)



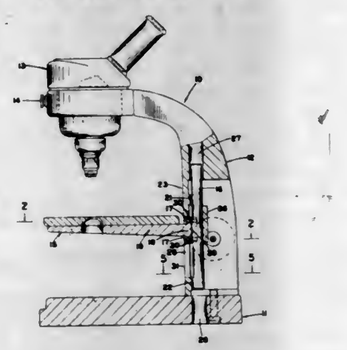
1. An optical read-out system comprising a primary scale, an image plane, and projecting means including a light source for projecting an image of said primary scale onto said image plane, a rotatable optical deviating element including a curved wall of progressively increasing radial thickness located in the ray path between said primary scale and said image plane, and a circular scale located in the projection ray path between said optical deviating element and said image plane, said element and said circular scale rotatable about an axis passing through an area defining the approximate center of said circular scale whereby an image of the circular scale is projected onto the image plane together with an image of the primary scale and the relative positions of the two images are displaced by said element.

3,166,627
**METHOD AND APPARATUS FOR PHOTOELECTRICALLY INSPECTING DEFECTS ON GLASS SURFACES**
Hugh E. Shaw, Jr., New Kensington, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1964, Ser. No. 350,937
7 Claims. (Cl. 88—14)



1. Apparatus for detecting areal type surface defects on a plate of glass that refract, diffuse, scatter or absorb light comprising means, including a source of light that is substantially a point source, to transmit a beam of light of given intensity; a conveyor for supporting and transporting glass through the path of said beam of light so that a surface of said glass intersects said beam; means, including a light sensitive element aligned with said beam, and responsive to variations in intensity of light impinging thereon, to provide signals indicative of the presence and severity of said defects; a rotary disc in the path of said beam of light between said source and said light sensitive element to interrupt said beam of light; an aperture in said disc, correlated in size with areas of the beam in the plane of said disc that are of different light intensities and caused by the defects to be detected, to permit a small portion only of said light beam to impinge upon said light sensitive element; means to move said light source, said rotary apertured disc and light sensitive element in a direction substantially transverse to the direction of movement of the glass so as to detect the presence of areal type defects in a zigzag path on the surface of the glass; means to rotate said apertured disc at a rate that moves the aperture at a speed rapid with respect to the speed of glass travel and the speed of transverse travel of said light source, disc, and light sensitive element; electrical circuit means to diminish signals indicative of point type defects; and means to compare the signals indicative of the presence and severity of said areal type defects provided by said light sensitive element with predetermined signal levels to determine the severity of such defects.

3,166,628
**MICROSCOPE STAGE GUIDE AND OPERATING MECHANISM**
Helmut F. W. Walter, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 25, 1962, Ser. No. 197,747
10 Claims. (Cl. 88—39)

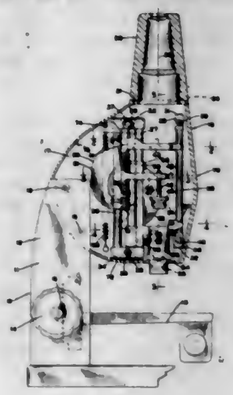


1. In a microscope having a frame and a stage which is mounted thereon for vertical movement,
a vertical mounting post,
means for fixing said stage to said post so as to project laterally therefrom in cantilever manner,
a pair of vertically aligned and mutually spaced bearing members having smooth reentrant surfaces whereon said post is slidably engaged, said members being formed on a rigid wall of said frame and being open on one side to receive said post,
a shaft journaled in said frame crosswise to and adjacent to the rear side of said post,
yieldable means carried by said post and coacting with said shaft to force said post against said bearing members, said means extending axially of said post into contact with said shaft for all positions of the post, and
means cooperatively constructed on said post and shaft for moving the post along said bearing members.

### 3,166,629
### MOUNTING MECHANISM FOR ZOOM OPTICAL SYSTEM OF MICROSCOPES

Helmut F. W. Walter, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed July 2, 1962, Ser. No. 206,791
3 Claims. (Cl. 88—39)



1. A microscope having a stage on which a specimen is held, said stage being carried on an arm extending upwardly therefrom, a housing formed on the upper portion of the arm, said housing including a flat mounting plate, mounting means for a variable focus optical system which includes an upper and a lower movable lens holder wherein two lens components of said system are secured, a pair of closely spaced vertical and parallel mounting rods on which the two lens holders are slidably mounted individually, said rods lying close to and parallel to said plate,

a guide rod extending parallel to said mounting rods near said plate and spaced therefrom on opposite sides of said lens components so as to interpose said components therebetween,

an outreaching arm formed on each said holder and extending laterally into sliding contact with said guide rod,

means for anchoring all of the rods in spaced relation to said plate,

a pair of mutually inclined contact surfaces forming a V groove in at least two widely spaced vertically aligned locations of each said holders so as to slidably fit against both of the mounting rods and said guide rod, the bottoms of the V grooves in each holder lying in the space between said mounting rods,

a spring blade fixed on each holder in a position to force said mounting rods into their respective grooves,

a cam wheel rotatably mounted on said plate on an axis extending between said rods for simultaneously moving each holder with a prescribed different motion so as to vary the magnification of said system, said wheel being located in the space between said rods and plate and being characterized by two different spiral cam surfaces formed on the rim portions of two opposite radial cam lobes on said wheel,

cam follower means formed on each holder and projecting into operative engagement with the respective cam surfaces,

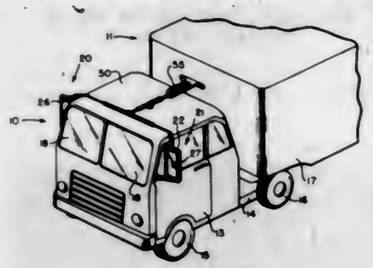
means for rotating said wheel, and

means for viewing the image formed by the variable focus optical system, whereby a flat and compact construction for a demountable housing is provided for the optical parts which may be separately assembled and tested per se.

### 3,166,630
### REAR VISION CONSTRUCTION FOR TRACTOR-TRAILER VEHICLES AND THE LIKE

Lloyd Esslinger, 8544 Wnest Road, Cincinnati, Ohio

Filed July 6, 1961, Ser. No. 122,257
6 Claims. (Cl. 88—86)

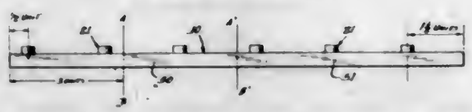


1. A tractor-trailer vehicle construction comprising a tractor, a trailer hingedly secured behind said tractor for hinging movements relatively to said tractor, a rear vision mirror construction on said tractor, and means connected between said tractor and trailer automatically responsive to said hinging movements between said tractor and trailer to adjust said mirror construction to compensate for said hinging movements.

### 3,166,631
### UNDERFLOOR DUCT WITH PARTICULARLY SPACED ACCESS OPENINGS

Frank D. Reiland, Chicago, Ill., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Continuation of application Ser. No. 760,961, Sept. 15, 1958. This application Sept. 28, 1962, Ser. No. 226,960
2 Claims. (Cl. 174—49)



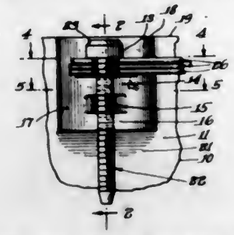
1. For use in an underfloor duct assembly for distributing electrical conductors, a standard-length tubular duct having at least three access fittings spaced longitudinally therealong, the centers of each of said access fittings being equally spaced a predetermined distance from each other, and the centers of the two access fittings adjacent the respective ends of the duct being spaced from the respective ends of the duct by unequal distances whose sum equals said predetermined distance by which said centers of said access fittings are spaced from each other, said spacing of said access fittings enabling said duct to be cut transversely in two at any point along its length without cutting through an access fitting so long as a cut length is an integral multiple of one-half of said predetermined distance.

### 3,166,632
### ENCLOSURE FOR ELECTRICAL DEVICE

Murray H. Woodman, Downsview, Ontario, Canada, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed July 23, 1962, Ser. No. 211,819
4 Claims. (Cl. 174—51)

1. An enclosure for an electrical device, said enclosure comprising an open-front box, an inwardly offset portion in a side of said box, screw shank receiving loop means integrally formed in said inwardly offset portion, and a screw having a threaded shank portion and an enlarged head portion, said shank portion of said screw being threadedly received in said loop means, said loop means being spaced rearwardly of a front edge of said box, and the portion of said box between said loop means and said front edge being disposed radially outwardly of but closely adjacent to said enlarged head portion of said screw, whereby the end portions of a plurality of bonding wires



may be received and clamped between said loop means and said enlarged head portion of said screw and between said shank portion of said screw and the portion of said box between said loop means and said front edge.



### 3,166,633
### TRENCH DUCT HAVING AN ADJUSTABLE CLOSURE ASSEMBLY

Michael Guzan, Jr., Ambridge, Thomas E. Hoskins, Moon Township, Allegheny County, and Frederick J. O'Reilly, Bethel Park, Pa., assignors to Wheatland Electric Products Co., Carnegie, Pa.

Filed May 6, 1963, Ser. No. 278,095
11 Claims. (Cl. 174—101)



1. A trench duct assembly for wiring distribution systems comprising a duct and an adjustable closure assembly; said duct including a pair of upstanding side walls with an outwardly and upwardly extending substantially right angle portion at their upper edge, the outwardly extending wall of said right angle portions having a plurality of elongated slots formed therein; and said cover assembly includes a nut slideably supported in each of said slots, an adjusting rim supported in each of said right angle portions by means of adjusting screws threaded into said nuts, and a cover plate secured in position on said adjusting rims, whereby said cover plate is longitudinally movable along said duct by sliding said nuts in said slots.

### 3,166,634
### UNITARY CONTROLLED MEMORY HERMETIC TERMINALS

Richard U. Clark, R.F.D., South Lyndeboro, N.H.

Filed Jan. 23, 1964, Ser. No. 339,723
2 Claims. (Cl. 174—153)

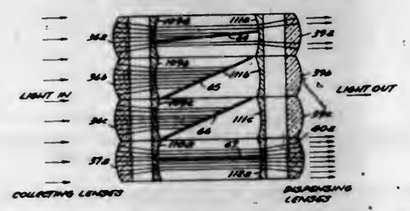


1. An hermetic electric terminal comprising in combination three elements only, an integral circumferentially flanged terminal electrode, a non-conductive flanged non-resilient insert and a push-on nut, said electrode being fitted axially and concentrically into said insert, the said electrode flange and the said insert flange being in abutting relationship and the said push-on nut riding on the electrode at the insert end away from said insert flange, the non-conductive insert being of a material having an elongation factor of at least two hundred percent, a limited memory produced by included reinforcing filaments, and a restricted cold flow tendency.

### 3,166,635
### THIN FILM MAGNETIC SHUTTER DISPLAY PANEL

Joachim H. Todt, 301 Rice Creek Terrace, Minneapolis, Minn.

Filed Sept. 25, 1961, Ser. No. 141,258
22 Claims. (Cl. 178—7.3)

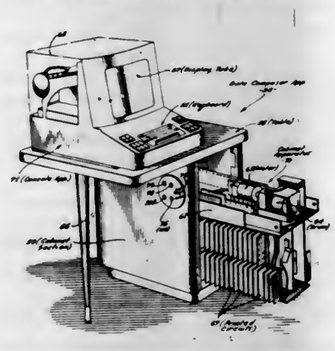



1. A magnetically operable display panel for producing visual images for an observer comprising: thin film means including supporting means, said thin film means having magnetic properties and light absorbing surfaces constructed and arranged for limited movement under predetermined conditions; said thin film surfaces being oriented generally in a plane normal to that in which the images are formed; current conducting means cooperating with said thin film means for conducting a plurality of energizing currents therethrough to control the movement of said thin film means; magnetic field producing means located in opposed and non-communicating relationship from said supporting means and cooperating with said thin film means for controlling the position thereof; and intermittently controlled energizing means connected to said current conducting means so that light is allowed to pass towards, and be blocked from the view of the observer in accordance with said limited movement of said thin film means whereby images are produced on said display panel.

### 3,166,636
### DATA COMPOSER

David F. Rutland, Sherman Oaks, Biagio F. Ambrosio, Tarzana, and Rein Turn, Van Nuys, Calif., assignors to The Electrada Corporation, Beverly Hills, Calif., a corporation of Delaware

Filed Dec. 30, 1960, Ser. No. 79,884
42 Claims. (Cl. 178—24)

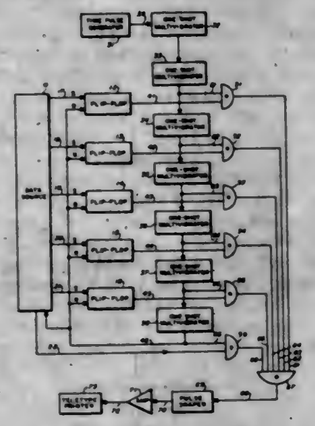


1. In combination for recording messages on a display member having properties of providing a visual display of such messages,

means for receiving sequences of signals in a coded form to represent a message,
means responsive to the signals in the sequence for converting such signals into the information represented by such signals,
means operatively coupled to the converting means for displaying the information in the message on the display member,
means operatively coupled to the display member for providing a visual marking as to the particular position on the display member wherein information is being received at each instant, and
means operatively coupled to the display member for providing an advance of the visual marking to the next position on the display member upon the display of the received information at the particular position on the display member.

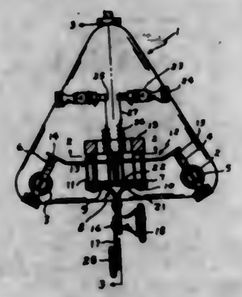
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**3,166,637**
**DIGITAL READOUT SYSTEM**
William M. Oleson, 2234 Guy St., San Diego, Calif.
Filed Apr. 18, 1962, Ser. No. 188,588
6 Claims. (Cl. 178—26)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A Teletype distributor for converting $(n-2)$-bit characters, which are emitted in parallel from a storage with $n-2$ outputs, to serially arranged $n$-bit Teletype characters, comprising $n-2$ flip-flops each having set and reset inputs and an output, means for coupling said storage outputs to said set inputs, respectively, $(n-2)$ AND logic circuits each having first and second inputs and an output, said outputs of said flip-flops being coupled to said first inputs of said AND logic circuits, respectively, $n$ pulse generators each having a trigger input and an output, means having an output for generating timing pulses, said generating means output being coupled to said input of said first pulse generator, said outputs of said first through $n-1$ generators being coupled to said inputs of said second through $n$th generators, respectively, said outputs of said second through $n-1$ generators also being coupled to said second inputs of said AND logic circuits, respectively, an OR logic circuit having $n-1$ inputs and one output, means for coupling said output of said $n$th pulse generator to said reset inputs of all of said flip-flops and to one input of said OR logic circuit, means for coupling said outputs of said AND logic circuits to said remaining inputs of said OR logic circuit, respectively, said OR logic circuit adapted to serially emit said $n$-bit Teletype characters.

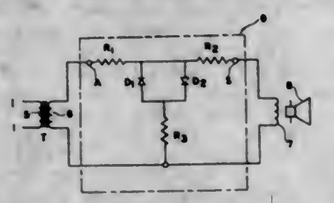
**3,166,638**
**CODE SENDING KEY**
Joseph A. Hills, 8165 Inwood Ave., Dayton, Ohio
Filed Jan. 30, 1962, Ser. No. 169,876
16 Claims. (Cl. 178—108)



1. A signalling unit including, a base means, pin-like elements mounted on said base means in a manner to have their projected extremities lie in a common plane and define a triangle, a key assembly including an integrally connected plate-like base which moves therewith, and means biasing said key assembly to have its base bear and dynamically balance on the projected extremities of said pin-like elements in a manner to provide for a pivoting movement of said key assembly normally limited to axes which are symmetrically and relatively inclined to each other.

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**3,166,639**
**NOISE ELIMINATING CIRCUITS**
James Wilbur C. Babb, deceased, late of McAlester, Okla., by Tom E. Garrard, executor, 209 E. Wyandotte, McAlester, Okla.
Filed Feb. 9, 1960, Ser. No. 7,562
1 Claim. (Cl. 179—1)



An audio output circuit comprising an input transformer energized by a source of audio-frequency current, a loudspeaker, and means for eliminating noise from said loudspeaker consisting essentially of a pair of resistors connected serially from the secondary of said transformer to one side of said loudspeaker, a connection from the secondary of said transformer to the other side of said loudspeaker, and the series combination of a pair of oppositely-polarized, paralleled silicon rectifiers and a resistance, said series combination being connected from the junction of said serially connected resistances to said other side of said loudspeaker said rectifiers having threshold sensitivities greater than signal amplitudes but less than peak noise amplitudes.

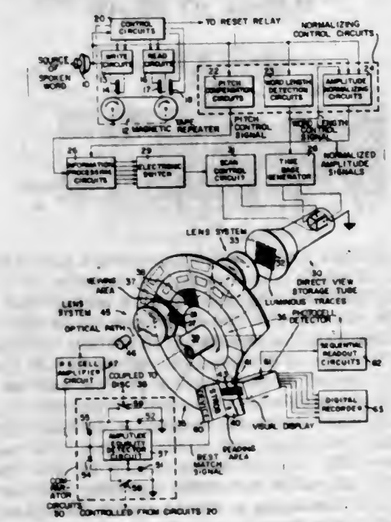
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**3,166,640**
**INTELLIGENCE CONVERSION SYSTEM**
William C. Dersch, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 12, 1960, Ser. No. 8,368
10 Claims. (Cl. 179—1)

6. Apparatus for identifying unknown spoken words comprising means responsive to the unknown spoken



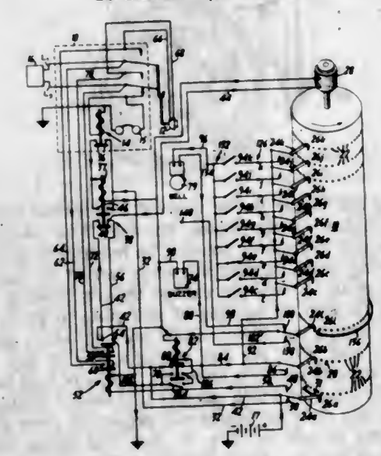
words for providing a frequency segmented visual display of selected characteristics of each individual word, reference means including a plurality of stored reference patterns movable individually past the displayed character in succession for scanning the reference patterns across



the patterns of the unknown word, optical sensing means for detecting the degree of match between the unknown word patterns and the reference patterns, and means responsive to the best match for serially providing successive digital characters representative of the characters of the unknown spoken word.

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**3,166,641**
**REMOTELY MONITORING CODE SIGNALING SYSTEM UTILIZING A ROTATABLE CODED SURFACE WHICH ACTIVATES A BISTABLE DEVICE AND SIGNALLING MECHANISM**
John E. Kreiner, Wilton, Conn., assignor to Edwards Company Inc., a corporation of Connecticut
Filed Feb. 5, 1962, Ser. No. 171,050
10 Claims. (Cl. 179—5)

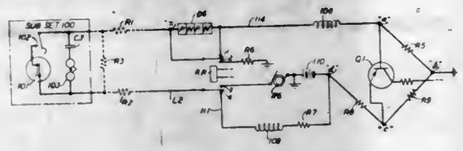


1. A system for monitoring the operating condition of equipment at one location from another location comprising

(a) a communication system capable of transmitting signals between the monitoring location and the location of the equipment,
(b) a signal producing means for producing signals capable of transmission from the location of the equipment to the monitoring location over the communication system,
(c) a plurality of bistate devices which by their state indicate the operating condition of the equipment to be monitored,
(d) a plurality of switching means which switch circuits by their switching action,
(e) a plurality of circuits each containing said signal producing means and at least one each of said bistate means and said switching means so that transmission of signals over the communication system is dependent on the operating condition of the equipment and the switching action of said switching means,
(f) a rotatable member means with a coded surface which as the rotatable member means rotates causes said switching means to switch said circuits in coded sequence so signal transmission over the communications system will be a function of the operating condition of the equipment and the coded sequence,
(g) motor means coupled to said rotatable member means to rotate said rotatable member means and thereby cause said coded surface to switch said switching means in coded sequence and
(h) means responsive to signals received over said communication system at the equipment location to activate said motor means so it rotates said rotating member to switch said switching means in said coded sequence.

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**3,166,642**
**SIGNALING ARRANGEMENT**
Henry H. Abbott, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 21, 1961, Ser. No. 161,020
12 Claims. (Cl. 179—84)



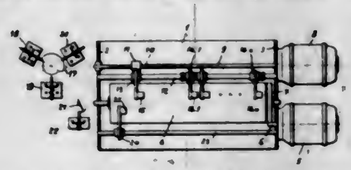
10. In a telephone system, a central office, a subscriber line having a station thereon, and a dial pulse and ringing repeater interconnecting said central office and said subscriber line, said repeater including a supervisory detector, detector circuitry including a low voltage source and a resistor, said detector being connected to said resistor, a high voltage ringing source, and means responsive to a ringing signal from said central office for removing said low voltage source from said detector circuitry, for including said high voltage ringing source therein, and for changing said detector circuitry to maintain a constant electrical condition at said detector.

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**3,166,643**
**SOUND REPRODUCING DEVICE FOR ELEVATORS**
Karl Stutz, Hinterbramberg 6, Lucerne, Switzerland
Filed Oct. 4, 1960, Ser. No. 60,459
Claims priority, application Switzerland, Oct. 5, 1959, 79,112
3 Claims. (Cl. 179—100.1)

1. A sound reproducing device for elevators for making announcements by means of a loudspeaker in an elevator cab, said device comprising a rotatable drum having a

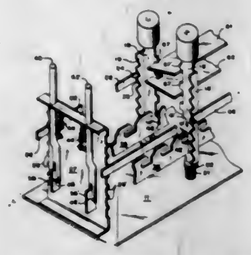
magnetizable medium at its periphery on which announcements are recorded in closed peripheral lines lying side by side and forming first and second groups, means for reproducing announcements on said first group automatically in dependence of the position of the elevator cab, control means for producing an announcement from said second group independently of the position of the elevator cab and upon operation of said control means, a first electric motor for rotating said drum, said means for producing announcements comprising a sound pick-up device common to the lines of said first group, means including a second electric motor for axially displacing



said sound pick-up device relatively to the periphery of said drum, means for automatically operating said pick-up device in dependence of the position of the elevator cab, and motor control means for controlling said first electric motor, said motor control means including a relay switch means for starting said first motor when in a first state, means for energizing said relay switch means to said first state, said relay switch means stopping said first motor when in said second state, auxiliary switch means for energizing said relay switch means to said second state, and a cam connected to said drum for operating said auxiliary switch means.

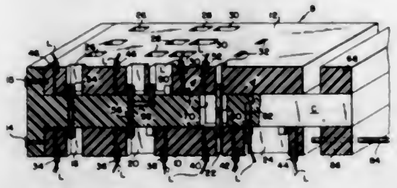
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**3,166,644**
**MULTIPLE PUSH BUTTON ELECTRICAL SWITCH APPARATUS**
**John W. Feldmayer, Levittown, Pa., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Dec. 27, 1961, Ser. No. 162,615**
**8 Claims. (Cl. 200—5)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



6. A multiple push button switch apparatus for preventing preselected electrical circuits from being connected, comprising: a rigid frame, a plurality of longitudinally movable push button-type plungers parallel aligned in two rows slidably mounted in said frame including means for actuating the armatures of separate electric switches, obstructing means formed on each of said plungers along the length thereof and extending toward the row opposite thereof for preventing movement of said plungers, and a lock-out beam pivotally connected at the ends thereof to said frame between said rows of plungers and nested underneath said obstructing means, said beam having the side edges thereof indented at predetermined intervals along the length thereof adjacent to a preselected number of said obstructing means; whereby depressing any one plunger in either of said rows immobilizes certain plungers in the other of said rows.

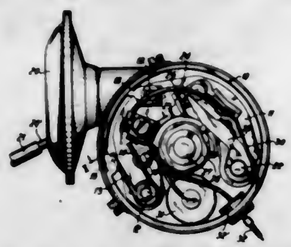
**3,166,645**
**MULTIPLE CONTACT SWITCH WITH ELASTIC OPERATOR**
**Bernard Edward Shlesinger, Jr. Annandale, Va. (945 Munsey Bldg., Washington, D.C.)**
**Filed Mar. 27, 1963, Ser. No. 268,321**
**19 Claims. (Cl. 200—16)**



1. A multiple contact switch comprising a pair of members one of which is non-elastic and the other of which is elastic, said elastic member having a portion fixed and a portion movable, said non-elastic member having a set of substantially in line serially spaced contacts, said elastic member having a set of substantially in line serially spaced contacts mounted on said movable portion, each set cooperating with each other to successively operate a series of circuits when the elastic member is stretched, means for linearly stretching said elastic member, and means for sequentially limiting the stretching of said elastic member in successive increments beginning with one increment and continuing in sequence with the succeeding increments in the direction away from said one increment and preventing movement of said contacts on said elastic member when said circuits are successively operated.

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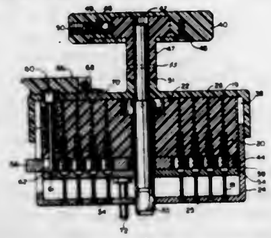
**3,166,646**
**DISTRIBUTOR FOR INTERNAL COMBUSTION ENGINES WITH ADJUSTABLE SPRING**
**Karl Straub, Stuttgart, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany**
**Filed Dec. 11, 1962, Ser. No. 243,865**
**Claims priority, application Germany, Dec. 15, 1961, B 65,193**
**6 Claims. (Cl. 200—31)**



1. In a distributor for an internal combustion engine, in combination, a distributor housing; first abutment means on said distributor housing; an interruptor plate in said housing; second abutment means carried by said interruptor plate; a pivot pin carried by said housing and extending through an opening of said plate to guide the latter for turning movement in said housing; and a spring carried by said pivot pin and having a pair of legs one of which engages said first abutment means of said housing and the other of which engages said second abutment means on said plate for urging said projection away from said portion of said housing, so that said spring urges said plate to turn in a given direction with respect to said pin, one of said abutment means being adjustable in a direction transverse to the respective leg to adjust the force with which said spring urges said plate to turn in said direction.



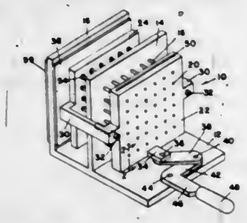
**3,166,647**
**BINARY SWITCH KEY**
**Edward C. Bean, Washington, D.C., and Cyrus J. Creveling, Oxon Hill, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 29, 1961, Ser. No. 155,874**
**6 Claims. (Cl. 200—46)**



4. A code key for setting a switch matrix comprising, a storage block, a plurality of spring-loaded key pins mounted for movement within and partially extending externally of said storage block, a housing cover attached to said storage block, a key skirt covering the extended portion of said partially externally extending key pins and movably secured to said housing cover and said storage block, a dual purpose shaft extending through said housing cover, said storage block and said key skirt, a locking plate movably mounted between said key skirt and said storage block for locking said key pins in selective relative positions to said storage block, and means for rotating said dual purpose shaft.

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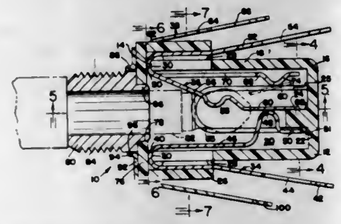
**3,166,648**
**PUNCH CARD-OPERATED SWITCH DEVICE**
**Rune H. I. Soderman, Stockton, N.J., Herbert L. Markman, Stockton, N.J. (P.O. Box 8503, Philadelphia, Pa.), and Abraham Markman, Stockton, N.J. (P.O. Box 8503, Philadelphia, Pa.); said Soderman assignor to Herbert L. Markman, Philadelphia, Pa.**
**Filed Sept. 26, 1962, Ser. No. 226,225**
**14 Claims. (Cl. 200—46)**



8. A punch card-operated switch assembly comprising a single panel of electrically non-conductive material, a bank of electrical switch housings in said panel, a plunger movable in each of said switch housings, each switch housing including a pair of electrical conductors spaced from each other in the direction of movement of the corresponding plunger, each plunger having an electrical contact thereon arranged to open and close an electrical circuit between said spaced electrical conductors upon movement of said plunger from one position to another, a punch card holder movable toward and away from said support and having apertures therein to correspond in number and position with said switch housings and plungers, said holder being constructed to hold a punch card so that any perforations in the card mate with corresponding apertures in said holder, punched portions of said card permitting penetration therethrough of corresponding plungers when said holder is moved toward said support and unpunched portions acting to push the corresponding plungers in the direction of movement of the holder when the holder is moved toward said support, and means rigidly connected to said holder to move said plungers away from said support as said holder is moved away from said support.

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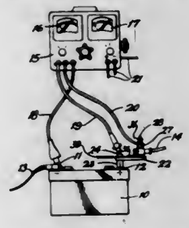
**3,166,649**
**ELECTRICAL DEVICE HAVING A HOLLOW HOUSING WITH ONE OR MORE CONTACT ELEMENTS MOUNTED THEREON**
**Nicholas Frantz, Skokie, and Nobu Kawamoto, Chicago, Ill., assignors to Carter Parts Company, Skokie, Ill., a corporation of Illinois**
**Filed Feb. 2, 1961, Ser. No. 86,786**
**18 Claims. (Cl. 200—51.1)**



1. In an electrical device, a hollow housing having a pair of ends and a longitudinally extending side wall extending between said ends, a pair of spring contact elements, said housing having means on the outer side of said side wall on transversely opposite sides of the housing for supporting said spring contact elements, each of said spring contact elements being of a generally U-shape having a base portion and a pair of leg portions which tend to assume relatively diverging positions, said supporting means providing for the mounting of said contact elements so that one leg portion for each element is maintained in a supported position outside said housing and the other leg portion extends into said housing into resilient contact engagement with the corresponding leg portion of the other element.

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**3,166,650**
**SWITCH ADAPTER AND CONNECTOR FOR AUTOMOBILE ELECTRICAL SYSTEM TESTERS**
**Robert C. Heidrich, Harwood Heights, Ill., assignor to Sun Electric Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Nov. 20, 1961, Ser. No. 153,640**
**3 Claims. (Cl. 200—52)**

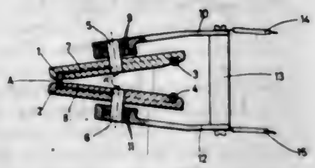


1. In an automobile electrical system tester including a test instrument having leads for connection in series with an automobile battery and an automobile electrical system including a battery having connector posts thereon and cables terminating in connector sockets to fit onto said posts, a switch adapter and connector comprising an insulating supporting member, a tapered metal socket to fit onto a battery connector post, means securing the socket to the supporting member, a connector post adapted to receive a connector socket secured to the supporting member spaced from and insulated by the supporting member from the tapered metal socket, electrical

connectors connected to the tapered metal socket and the connector post respectively to receive the test instrument leads, switch parts connected to the tapered metal socket and the connector post respectively, one of the switch parts being movable into and out of contact with the other, the switch parts when in contact being capable of transmitting relatively heavy current for starting an automobile engine in shunt with the test instrument and when out of contact causing all of the battery current to flow through a test instrument connected to the electrical connectors.

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**3,166,651**
**FEELER DEVICE FOR MOVING RUNS OF SHEET MATERIAL**
**Albert Leimer, Beimlerstrasse 15, Augsburg, Germany, and Siegfried Brunner, Leitershofen, near Augsburg, Germany; said Brunner assignor to said Leimer**
**Filed June 5, 1962, Ser. No. 200,260**
**Claims priority, application Germany, Oct. 2, 1961, E 21,739**
**8 Claims. (Cl. 200—61.13)**



1. Apparatus for controlling lateral shifting of running sheet material comprising,

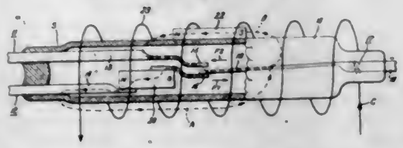
a pair of substantially circular discs both adapted to rotate about respective axes which are substantially collinear and substantially perpendicular to the plane of said sheet material,

resilient support means for at least one of said discs normally urging said discs toward each other and into contact at at least that portion of their circumferential portions most closely adjacent a selvedge of said sheet material,

and means responsive to the separation of said contacting portions of said discs for laterally shifting said sheet material.

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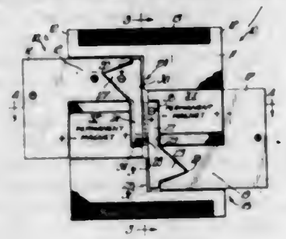
**3,166,652**
**MAGNETIC REED SWITCH WITH LATCHING FEATURE**
**Everett W. Werts, Normal, Ill., assignor to General Electric Company, a corporation of New York**
**Filed Apr. 17, 1963, Ser. No. 273,772**
**6 Claims. (Cl. 200—87)**



1. A switch comprising a sealed tube, a pair of electrically and magnetically conductive electrodes mounted by said tube having terminal parts outside the tube and having contact parts within the tube in spaced relation, an electrically and magnetically conductive deflectable reed mounted in said tube and having a terminal part outside the tube, said reed extending longitudinally of the tube between and in overlapping relation with the contact parts of said electrodes for deflection into and out of engagement with the contact parts in response to the application of an external magnetic field, a first permanent magnet positioned with its poles spaced longitudinally of said tube for attracting said reed towards the contact part of a first one of said electrodes, and a second permanent magnet spaced from the second electrode with its poles spaced longitudinally of said tube for attracting the reed towards the contact part of the second electrode, said permanent magnets being poled in the same direction so that magnetic fluxes from the two magnets traverse a substantial longitudinal portion of the reed in opposing directions and the flux from each magnet traverses a portion of a separate one of said electrodes, each permanent magnet being effective to hold the reed in engagement with the contact part of the associated electrode subsequent to removal of an external magnetic field.

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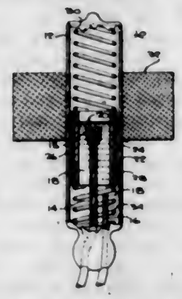
**3,166,653**
**POLARIZED MAGNETIC SWITCH MECHANISM**
**Alfred R. Lucas, Elmwood Park, Ill., assignor, by mesne assignments, to Alfred R. Lucas, Oak Park, Ill.**
**Filed Aug. 30, 1961, Ser. No. 135,028**
**19 Claims. (Cl. 200—93)**



1. A switch comprising, in combination, an electrically conducting magnetic core forming a first circuit terminal, means forming a second circuit terminal in insulated spaced relation to said first circuit terminal, a contact of electrically conducting magnetic material mounted on said magnetic core for movement into bridging relation between said first and second circuit terminals, a permanent magnet on said magnetic core and between it and said contact member to hold the latter out of said bridging relation, and means for causing magnetic flux to traverse said core and contact and generally along the magnetic axis of said permanent magnet in an amount sufficient to overcome the attractive force between said permanent magnet and said contact and move it into said bridging relation.

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**3,166,654**
**MERCURY RELAY**
**Irving L. Mitchell, Rockville Centre, N.Y., assignor to Ebert Electronics Corporation, Queens Village, N.Y., a corporation of New York**
**Filed Oct. 31, 1961, Ser. No. 149,012**
**4 Claims. (Cl. 200—112)**



1. A mercury relay of the displacer type comprising a pool of mercury, a container for said pool of mercury, energizing coils surrounding a portion of said container to produce, when energized, an electromagnetic field therein, a pair of spaced electrodes mounted therein at least one of which is always immersed in said pool of mercury, insulating means surrounding the other of said pair of electrodes including a cup portion spaced from the bare end thereof, a mercury displacing element normally buoyant in said mercury pool and movable toward the central plane of said coil in response to the energization of said coils to displace an amount of mercury in said pool, said element being substantially symmetric as seen from above and below, resilient means biasing said mercury displacing element against the direction of movement thereof responsive to the energization of said coil, the position of said resilient means being selectively either above or below said mercury displacing element in said container, whereby when the level of said mercury pool is normally above said cup and the resilient means is positioned above said mercury displacing element, the movement of said displacing element responsive to the energization of said coils causes the mercury pool to be displaced, and the electrical contact between said electrodes to be broken, and when the level of said mercury pool is normally below said cup and said resilient means is positioned below said mercury displacing element in said container the movement of said displacing element due to the energization of said coil causes the mercury pool to be displaced thereby establishing electrical contact between said electrodes.



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**3,166,655**
**HOT WIRE REGULATED MECHANICAL MOVEMENTS**
**Herbert J. Kline, 210 E. High St., Jackson, Mich.**
**Filed Dec. 21, 1959, Ser. No. 860,917**
**19 Claims. (Cl. 200—113)**

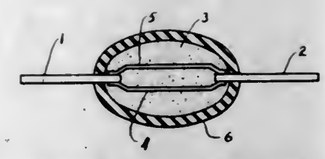


1. A snap-acting three-link, shallow, obtuse, triangular linkage for control or regulation purposes having at least two of its links angularly movable to control or regulate, means constituting a biasing force applied to said linkage putting the longest link in tension loading and the shorter links in compression loading, one of said links being longitudinally extensible or contractible under directly applied forces of control or regulation and in the form of a long continuous metallic element comprising a loop of one or more turns and stop means restricting the movements of said linkage.

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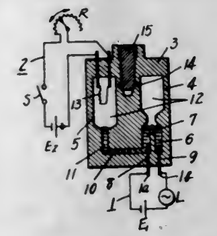
**3,166,656**
**CARTRIDGE FUSE**
**Fritz Hollmann, Rheydt, Rhineland, and Hans Emmerich, Rheydt-Giesenkirchen, Germany, assignors to Fritz Driescher Spezialfabrik für Elektrizitaetswerkbedarf, Rheydt, Rhineland, Germany**
**Filed Jan. 25, 1961, Ser. No. 84,769**
**Claims priority, application Germany, Nov. 10, 1960, D 34,704**
**1 Claim. (Cl. 200—120)**

In a cartridge fuse having a pair of contact members bridged by a fusible link, an arc-quenching core encapsulating said link in intimate contact therewith and a housing enclosing said core, the improvement whereby said core is a solid body which consists of a molded porous mass of sand having admixed therewith a minor proportion of a binder selected from the group which consists of melamine resins, silicone resins, calcium sulfate, and mixtures thereof.



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**3,166,657**
**TIME DELAY MERCURY SWITCH WITH GAS EQUALIZATION MEANS**
**Yasunosuke Ishiguro, 1,639 Nishi-Terao-Machi, Kanagawa-ku, Yokohama, Japan**
**Filed Aug. 7, 1961, Ser. No. 129,618**
**Claims priority, application Japan, Aug. 22, 1960, 35/35,274**
**3 Claims. (Cl. 200—122)**



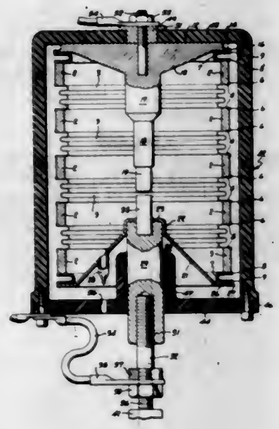
1. A time delay switch for electrical circuits comprising a casing formed of insulator material, a first and second compartment formed in said casing, said compartments being filled with inert gas, a partition extending upwardly from the bottom of said first compartment to form a first and second cavity therein, said first compartment being provided with a constricted portion immediately above said partition, a first passage communicating between said first cavity and said second compartment, said passage and said first and second cavities being filled with mercury, a first electrode extending through said housing into said first cavity and in electrical contact with the mercury contained therein, a second electrode extending through said housing into said second cavity and in electrical contact with the mercury contained therein, electrically actuated heater means to selectively heat the gas in one of said compartments to transfer mercury to the other compartment in response to operation of said heater, and a second passage communicating between said first and second compartments, a plug normally inserted in said passage to block said passage preventing gas transfer between compartments during operation of said switch and being selectively removable to open said passage for communication between said first and second compartments to permit equalization of gas pressure in said compartments.

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**3,166,658**
**VACUUM SWITCH AND ENVELOPE CONSTRUCTION THEREFOR**
**Jo Emmett Jennings, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware**
**Filed July 5, 1962, Ser. No. 207,668**
**6 Claims. (Cl. 200—144)**

1. A vacuum switch comprising an evacuated envelope including a composite tubular sidewall comprising alternate metal and ceramic portions and axially spaced metallic endwalls closing opposite ends of the tubular sidewall, a switch contact supported on each opposite metal-

lic endwall with in the evacuated envelope, said sidewall including an expansible portion enabling relative movement of the metallic endwalls to effect corresponding relative movement of the switch contacts to make or break



a circuit through the switch, and a dielectric housing enclosing the evacuated envelope and supporting at least one of the endwalls of the evacuated envelope for movement relative to the dielectric housing.

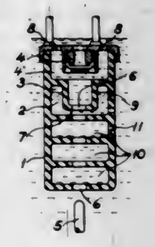
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**3,166,659**

**OIL CIRCUIT BREAKER COMPRISING AN EXTINGUISHING CHAMBER FOR HIGH VOLTAGES**

**Walter Pucher, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation**

**Filed Dec. 1, 1960, Ser. No. 73,129**
**Claims priority, application Sweden, Dec. 16, 1959, 11,851/59**
**3 Claims. (Cl. 200—150)**



1. Oil circuit breaker comprising an extinguishing chamber for high voltages immersed in oil, means dividing said extinguishing chamber into at least one pressure accumulating chamber having a wall, and an arcing channel through said extinguishing chamber having openings at both ends, a stationary contact spaced at a distance from the arcing channel and a movable contact arranged to pass into the arcing channel at the end remote from said stationary contact and to pass through the arcing channel and engage said stationary contact, the wall of said accumulating chamber having an oil-opening therein so positioned that said chamber is filled with oil only to a predetermined level, thus providing a gas-filled and closed space inside the accumulating chamber above said level, and a slot communicating with the oil space in the accumulator chamber opening into said arcing channel, said slot being uncovered by the movable contact during the opening movement of this contact, and means providing free and permanent comunication between the oil in the space between said stationary contact and said arcing channel with the oil surrounding the extinguishing chamber, whereby oil can be forced out of such space without substantial counterpressure by the gases generated at the beginning of the breaking movement, the slot being located at such a distance from the stationary contact that said slot is uncovered by the movable contact not earlier than half a current cycle after the contacts have been separated.

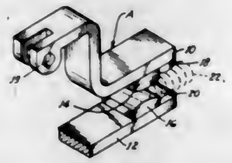
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**3,166,660**

**CONTACT CONSTRUCTION WITH METALLIC CONTACT MEMBERS AND AUXILIARY METALLIC ARC SUPPRESSANT CONDUCTING MEMBERS**

**Joseph J. Gribble, Fox Point, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan**

**Filed May 9, 1960, Ser. No. 27,702**
**7 Claims. (Cl. 200—166)**



1. A contact construction comprising a pair of elongated load current conducting bars extending lengthwise alongside each other in face to face spaced relation from each other transversely of their lengths and movable transversely of their length toward and away from each other so that the load current path therein is endwise of the bars, metallic contact members on the adjacent faces of the bars, respectively, near to, but spaced from, one end of the pair, and supported by the bars in spaced face to face relation, and movable by the bars into contact with each other upon movement of the bars transversely of their length toward each other, whereby, upon establishment of an arc between the members when they are moved apart, a magnetic field is established by the load current which forces the arc to travel from between the contact members endwise of the bars towards and beyond said one end of the pair of bars, auxiliary conducting members of highly arc suppressant metallic material mounted on the bars, respectively, outwardly from the contact members toward said one end of the pair and arranged so that they extend directly from the adjacent outer ends of the contact members, respectively, outwardly toward said end of the pair of bars, and are in spaced face to face relation to each other in the direction of separation of the contact members in all positions of the contact members, means supporting the bars so that the direct path of travel of the arc from between the contact members under the influence of the magnetic field created by the load current, outwardly endwise of the bars past said one end of the pair, is unobstructed, endwise of the bars, outwardly from the contact members, past said auxiliary members and therebeyond a distance sufficient to permit interruption of the arc while it is substantially unconstrained endwise and laterally of the bars, said metallic contact members being of material of high electrical conductivity and high resistance to welding, wear, and arc erosion, and said auxiliary conducting members being of metallic material of high arc interrupting capacity.

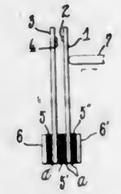


**3,166,661**

**ELECTRIC DEVICE HAVING A MOVABLE MEMBER IN WHICH NOISE VOLTAGE IS SUPPRESSED**

**Masanori Yasui and Tatsuo Yamazaki, Tokyo, Japan, assignors to Toa Denpa Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan**

**Filed June 21, 1960, Ser. No. 37,761**
**Claims priority, application Japan, June 27, 1959, 34/20,831**
**4 Claims. (Cl. 200—166)**



1. An electrical device for use in a high resistance circuit, said device comprising a plurality of electrically conducting members at least one of which is movable, insulating means in contact with and supporting said members such that the movable member moves in a zone proximate the insulating means, said insulating means including an insulating member having opposite side surfaces of relatively broad area with dimensional extent in two dimensions and an edge surface joining the side surfaces, said insulating member including an electrically conductive layer constituting in entirety one of the side surfaces of the insulating member, the movable of said electrically conducting members being secured to the insulating member and extending across the insulating member along one entire dimensional extent thereof, said conductive layer being effective by virtue of its coverage to reduce static charge on said insulating member whereby noise voltage produced by movement of said movable member in the field of said charge is suppressed.

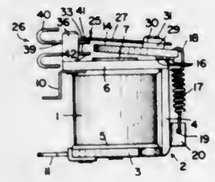
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**3,166,662**

**RELAY CONTACT ASSEMBLY**

**Willard A. Roberts, Hanover, Mass., assignor to Joseph Pollak Corp., Dorchester, Mass., a corporation of Massachusetts**

**Filed Aug. 21, 1961, Ser. No. 132,819**
**10 Claims. (Cl. 200—166)**



5. In a relay construction for use in radio frequency circuits, a pair of fixed contacts having portions lying in a common plane, means for electrically interengaging said contacts comprising electrically conductive means having a pair of areas that pass through a pair of planes defining an angle of 120° therebetween, said areas arranged symmetrically and equidistant from a common center in the line of intersection of said planes, means for moving said areas in a plane substantially normal to said common plane and symmetrical with respect to said portions, whereby said areas may simultaneously make and break contacts with said portions.

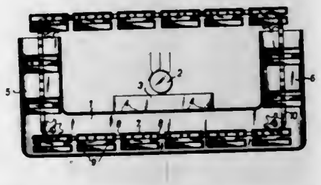


**3,166,663**

**MICROWAVE OVEN**

**Karl Fritz, Freiburg, Breisgau, Germany, assignor to Miwag Mikrowellen AG., Basel, Switzerland, a corporation of Switzerland**

**Filed July 13, 1960, Ser. No. 42,631**
**11 Claims. (Cl. 219—10.55)**



1. Apparatus for treating objects with microwave energy comprising a horizontal treating chamber, a source of microwave energy communicating with said chamber, a vertical entry conduit leading to said chamber, a vertical exit conduit leading from said chamber, and conveyor means for leading objects to be treated through said entry conduit, chamber, and exit conduit, said conveyor including a plurality of spaced horizontal panels for supporting objects to be treated in exposure to said source, said panels being carried horizontally to extend across said entry conduit and exit conduit during their passages therethrough and provide a seal therein preventing the escape of microwave energy from said chamber.

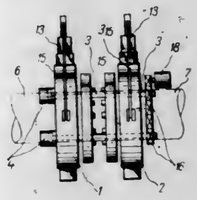
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**3,166,664**

**WELDING HEAD FOR ELECTRICAL RESISTANCE WELDING OF CIRCULAR TUBE JOINTS**

**Boris Evgenievich Paton, Vladimir Konstantinovich Lebedev, Nickolai Gerasimovich Ostapenko, Rafail Ivanovich Lashkevich, Platon Ivanovich Sevbo, Vasily Alexeevich Sakharnov, Mark Davydovich Litvinchuk, and Grigory Vasilievich Gorbunov, all of Kiev, U.S.S.R., assignors to Institute Elektrosvaiki Imeni Patona EO, Kiev, U.S.S.R.**

**Filed Mar. 20, 1962, Ser. No. 181,087**
**4 Claims. (Cl. 219—101)**



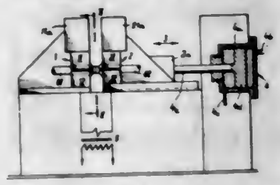
1. A welding device for electrical contact resistance welding of circular joints of axially aligned tubes, said device comprising a pair of spaced body portions to be received around tubes to be joined adjacent the opposed ends thereof, said body portions being supported solely by said tubes, clamping shoes on each body portion comprising a plurality of circumferentially spaced radially movable members for engaging the associated tube, rolls engaging said members, a pair of semicircular cam rings on each body portion, inclined cam surfaces on said rings engaging said rolls, a hydraulic cylinder on each body portion to rotate said cam rings and actuate said members, means for supplying electric welding current to each tube and means for moving said body portions and tubes toward each other for bringing the opposed ends of said tubes into contact and forcing the same together to complete the weld.

**3,166,665**

## METHOD OF BUTT WELDING OF METALLIC WORKPIECES

**Alfred Neukom, Dubendorf, Zurich, Rolf Suter, Meilen, Zurich, and Josef Widmer, Spreitenbach, Aargau, Switzerland, assignors to H. A. Schlatter A.G., Zollikon, Zurich, Switzerland**

**Filed June 11, 1962, Ser. No. 201,730**
**9 Claims. (Cl. 219—104)**



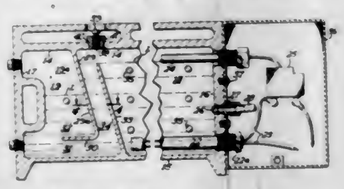
1. A method of forming a welded joint between a pair of metallic workpieces, comprising the steps of clamping each workpiece closely adjacent one end thereof; placing the workpieces at the clamped ends thereof in end-to-end abutment with each other; passing an electric current through the abutting ends of the workpieces to thereby heat to fusion temperature such end portions of the workpieces which are immediately adjacent to the abutting ends thereof whereby the metallurgical structure of the end portions of the workpieces changes; subjecting at least one of the workpieces to a first compressive force acting in a direction to upset the end portions and to form a welding flash which surrounds a joint between the workpieces; reclamping said workpieces at portions thereof spaced further from said welding flash; and subjecting at least one of the workpieces to a second compressive force acting in a direction to further upset the end portions of the workpieces and to thereby enlarge the welding flash so that, upon removal of the welding flash, at least the major part of the joint consists of metallic material whose metallurgical structure is the same as the metallurgical structure of the remainder of the workpieces.

**3,166,666**

## SELF-CONTAINED ELECTRICAL RADIATOR UNIT

**Herald J. Williams, Jr., Minneapolis, Minn., assignor to Aqua-Lectric, Inc., Minneapolis, Minn., a corporation of Minnesota**

**Filed Jan. 28, 1963, Ser. No. 254,282**
**8 Claims. (Cl. 219—341)**



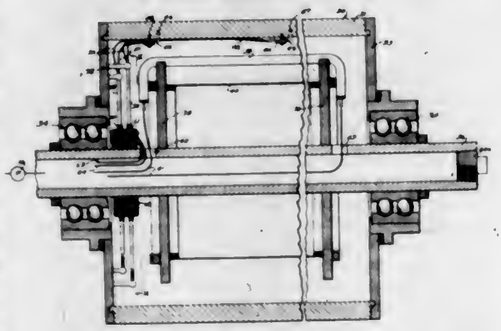
1. A space heating unit,
comprising an elongate and generally horizontally oriented heat-conductive and sealed hollow housing having upright front and rear walls and also a top and bottom, said housing having adjacent heating and expansion chambers therein,
a divider wall within said housing and separating said chambers from each other, said divider wall extending between said front and rear walls and downwardly from said top into spaced relation with said bottom to permit liquid flow adjacent the bottom and between said heating and expansion chambers,
a quantity of liquid filling said heating chamber and also partly filling said expansion chamber,
a quantity of gas above the liquid in said expansion chamber,
and an electric heating element immersed in said heating chamber adjacent the bottom thereof and spaced from said divider wall, said heating element having means mounted on the housing and supplying electrical power from the exterior thereof,
whereby to produce heating without developing excessive pressures within the housing.

**3,166,667**

## ELECTRICALLY HEATED ROLL WITH ELECTRICAL CIRCUIT

**William H. Norton, Mundelein, Ill., assignor to Thermel Incorporated, Franklin Park, Ill, a corporation of Delaware**

**Original application May 23, 1960, Ser. No. 30,971, now Patent No. 3,105,133, dated Sept. 24, 1963. Divided and this application June 3, 1963, Ser. No. 292,180**
**6 Claims. (Cl. 219—469)**



1. A heat transfer roll comprising a cylindrically shaped shell, an electrically energized heating element stationarily mounted within the shell, a thermal sensitive element mounted for rotation with the shell and generating an electrical voltage corresponding to the temperature of the shell, a control switch means for controlling the electrical supply to said heating element, and a connector between said thermal element and said control switch means including slip ring members and relatively rotating elongated wire brush members supported at their ends with an intermediate portion in tensioned positive rubbing contact with said ring members and said ring and brush members being relatively rotatable so that a substantially negligible electrical resistance is offered by said connector and an accurate voltage will be received by the control switch means from said thermal element.

**3,166,668**

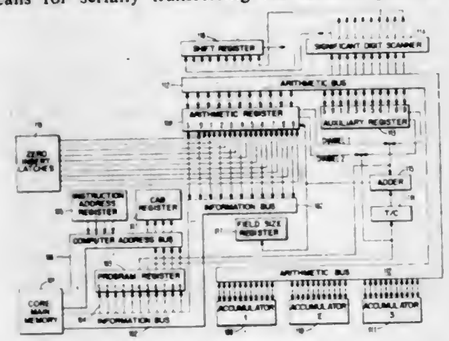
## COMPUTER PROGRAM SYSTEM

**Elliott R. Marsh, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Mar. 24, 1960, Ser. No. 17,422**
**51 Claims. (Cl. 235—157)**

28. An electronic digital computer in which an arithmetical operation is performed on a predetermined number of digits of a first operand, said predetermined number of digits being specified by a field control section of an instruction word, said computer comprising a plurality of addressable storage locations, said first operand being stored at one of said addressable storage locations, a second operand stored in a second one of said addressable storage locations, an arithmetic register having a number of positions at least equal to the maximum number of digits in said first operand, means for transferring said first operand to said arithmetic register under control of said instruction word, an auxiliary register, means for transferring said second operand to said auxiliary register under control of said instruction word, a field register, said field control section of said instruction word being stored in said field register, a field ring, said field ring sequentially producing a plurality of control signals each of which reads a particular digit of said first operand out of that position in said arithmetic register in which the digit is stored, a switch matrix associated with said field register, the output of said switch matrix being connected to said field ring, said switch matrix producing a start signal for initiating sequential operation of said field ring with the control signal causing read-out of the least significant digit of said first operand specified by the field control section of said instruction word, means for reading said second operand out of said auxiliary register serially, said second operand reading means including a program ring, said program ring sequentially producing a plurality of control signals each of which reads a particular digit of said second operand out of that position in the auxiliary register in which the digit is stored, an arithmetic computing section, means to serially transfer said second operand to said arithmetic computing section, means for serially transferring the selected portion of






said operand to said arithmetic computing section, said arithmetic computing section performing the desired arithmetic operation on said first operand, a field ring check circuit including a field match comparator, said field register being connected to said field match comparator, said field ring being connected to said field match comparator, said field match comparator producing an output when said field ring produces a control signal which reads out the most significant digits specified by the field control section of said instruction word, a field ring check comparator, the output of said field match comparator being connected to said field ring check comparator, said program ring being connected to said field ring check comparator, means responsive to said field control section of said instruction word, said last-named means being connected to said field ring check comparator, said field ring check comparator producing a field ring check signal only when said field ring has functioned properly during the serial read-out of said first operand, and means under control of said field register for stopping the serial read-out of said first operand at the most significant digit specified by said field control section of said instruction word.

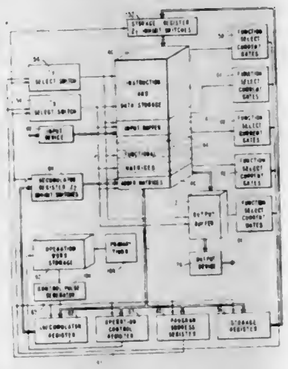
**3,166,669**

## CORE MATRIX CODED DECIMAL PARALLEL ADDER UTILIZING PROPAGATED CARRIES

**Harry W. Cochrane, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Original application June 28, 1960, Ser. No. 39,315. Divided and this application Dec. 26, 1961, Ser. No. 164,642**
**9 Claims. (Cl. 235—175)**

9. In a digital computer for adding a multidigit addend to a multidigit augend, in combination, an adder of a type that develops a partial sum digit for each digit position of the sum without regard to carry and which separately indicates an initial carry in each digit position in which a carry originates, a register for said partial sum, a carry register for said initial carries, means for applying information defining said addend and said augend to said adder to develop said partial sum and said initial carries and to place the resultant information in said respective registers, means controlled by both said registers to develop all resultant propagated carries and to register said propagated carries in said carry register together with said initial carries, and means controlled by said carry register following the registering therein of the propagated carries for advancing by one digit the partial sum in each digit position into which a carry is required as indicated by the presence of a carry in the carry generator, including an advance from radix minus one to zero in every case where the partial sum is equal to the radix minus one and a carry is indicated by the carry register, all said advancing being done without introducing any further carries, the digits of said partial sum which are not so advanced remaining without change, whereby the said partial sum contained in the register therefor is converted into the true sum of said addend and said augend.

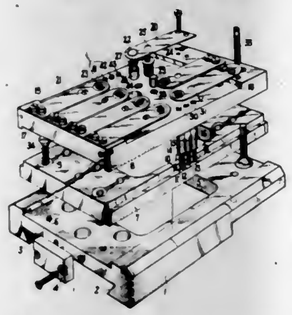


**3,166,670**

## SPECIMEN ANALYZING SYSTEM FOR USE WITH AN ELECTRON PROBE MICROANALYZER

**Roger Theisen, Brussels, Belgium, and Jacques Lemaitre, Cocquio, Andrea, Italy, assignors to The Communaute Europeenne de l'Energie Atomique International Organization, Brussels, Belgium**

**Filed Sept. 19, 1962, Ser. No. 224,769**
**Claims priority, application Belgium, Sept. 29, 1961, 485,104**
**4 Claims. (Cl. 250—49.5)**



1. A specimen holder assembly for electron microprobe including a galvanometer comprising a base plate,

a slide way and a stop on said base plate for accurate mechanical positioning of said plate, an insulating plate of a dielectric material mounted on said base plate, a metallic mounting plate mounted on said insulating plate, a first electron trap carried by said mounting plate selectively connected to the galvanometer for measuring the electron current, thimbles containing massive reference pieces mounted in said mounting plate and selectively connected to the galvanometer for measuring electron absorption of the reference pieces and a plurality of sample carrying subassemblies mounted on said mounting plate and selectively connected to the galvanometer for measuring the electron current absorbed by the samples and a second electron trap beneath each of the samples selectively connected to the galvanometer for measuring the electron current passing through the sample.

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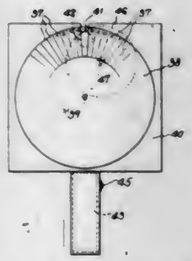
**3,166,671**
**X-RAY EXAMINING TABLE WITH DETACHABLE FLUOROSCOPIC TUNNEL TOWER**
**Frans Alfons Maria Morel, Antwerp, Belgium, and John J. Vlach, Concord, Mass., assignors, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware**
**Filed Oct. 20, 1961, Ser. No. 146,495**
**6 Claims. (Cl. 250—91)**



1. X-ray apparatus for mounting a fluoroscopic tunnel to an X-ray generator carriage within an X-ray examining table comprising, a support tower carrying said fluoroscopic tunnel; ceiling mounted means for pivotally suspending said support tower; a connecting member mounted on said support tower for electrically and mechanically coupling and decoupling said support tower to said X-ray generator carriage in a non pivoting relation, said support tower and said connecting member being slideably adjustable with respect to one another; said fluoroscopic tunnel and said support tower being entirely counterbalanced within said ceiling mounted means.

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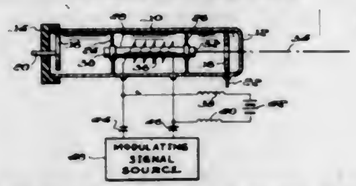
**3,166,672**
**SYSTEM FOR TRANSMITTING MESSAGES BY MEANS OF COLORED BEAMS OF LIGHT**
**Charles B. Gardner, Catskill, N.Y.**
**(3914A S. Ledbetter, Dallas, Tex.)**
**Filed Feb. 16, 1960, Ser. No. 9,136**
**17 Claims. (Cl. 250—199)**



15. A system for sending a message from one station to another which comprises means for transmitting from a sending station to a receiving station a succession of distinctively different color light beams, each color corresponding to a characteristic identifying character, and a series of panels of corresponding color hues at the receiving station, each marked with a corresponding identifying character, said panels being movable individually into said light beam to match the color of the transmitted beam.

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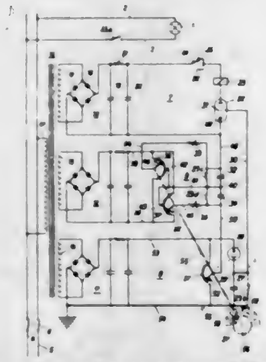
**3,166,673**
**MODULATION OF LASERS BY MAGNETOSTRICTION**
**Ronald C. Vickery, Saxonburg, Pa., and Joseph V. Fisher, Ridge Road, R.D. 1, Valencia, Pa.; said Vickery assignor to said Fisher**
**Filed Aug. 10, 1962, Ser. No. 216,279**
**8 Claims. (Cl. 250—199)**




1. Apparatus for effecting a modulated output beam of radiation produced by stimulated emission of radiation comprising solid-state material having both paramagnetic and ferromagnetic properties, opposing ends of the solid-state material being reflective with one end being totally reflective and the other being partially reflective, the reflective ends of the material forming a resonant cavity effect for wave energy amplified in the material by stimulated emission of radiation, means for pumping wave energy into the material, and means for subjecting said material to a varying wave energy field to thereby change the spacing between said opposing ends.

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**3,166,674**
**TIME SWITCH FOR PHOTOGRAPHIC APPARATUS**
**Richard Wick, Am Dullanger 3, Grunwald, near Munich, Germany, and Othmar Schneider, Heimgartenstrasse 4, Munich, Germany**
**Filed Oct. 26, 1961, Ser. No. 147,791**
**Claims priority, application Germany, Oct. 28, 1960, A 35,907**
**15 Claims. (Cl. 250—217)**

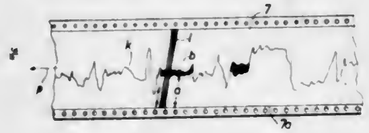


1. In an electric timing arrangement for controlling the duration of exposures of photo-sensitive material to radiating energy, in combination, means for interrupting the exposure of said material to said radiating energy, an electron tube controlling said exposure interrupting means in dependence of a conductive condition of said tube whereby said conductive condition itself depends upon a predetermined potential relation between two electrodes of said tube, a first condenser connected to one of said electrodes of said tube, means for varying the electric charge of said first condenser during the exposure of said material, means for applying a first predetermined potential to the other one of said electrodes, and correction means for modifying the time limiting action of said timing arrangement, said correction means including at least two RC-circuit means including second capacitors, respectively, means which at the beginning of the exposure period commence the bringing about of the charging of each of said second capacitors to a respective predetermined charge potential condition, and means for varying the electric charge of each of said second capacitors during the exposure of said material, each of said RC-circuit means having a predetermined charging time constant different from that of the other one and said second capacitors being connected in series with each other and in circuit with said other one of said electrodes for changing said first potential applied to said other electrode in accordance with the change of charge potentials of said second capacitors during the exposure of said material.



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**3,166,675**
**SCANNING TRACE CONVERTER**
**Hubert Dedden, Leverkusen, Heinrich Nassenstein, Cologne-Stammheim, and Helmut Steudel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**Filed Sept. 15, 1960, Ser. No. 56,322**
**5 Claims. (Cl. 250—219)**



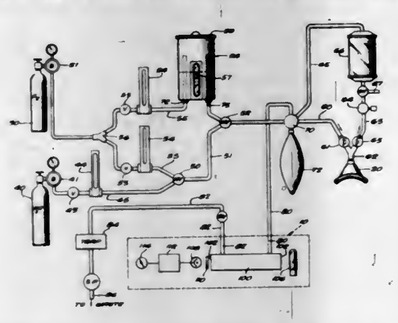
1. A trace converter for providing a digital indication of the ordinates of a recorded marking, comprising scanning means for scanning a moving tape including detecting means for producing an electric signal when the scan intercepts a suitable marking on the tape, generating means operating at a predetermined frequency, frequency divider means triggered by said generating means, said frequency divider means being operable to generate pulses at one half of said predetermined frequency, means operable in response to said generating means for synchronizing said scanning means relative to the rate of movement of said tape, means associated with said generating means and said frequency divider means and controlled by said detecting means to transmit an output of a number of digital electric pulses from said generating means corresponding to the position of one edge of said marking in relation to a reference line on said tape and an output to transmit of a number of digital electric pulses from said frequency divider means corresponding to half the transverse width of said marking, and means for adding said electric pulses to produce a digital output for said trace converter corresponding to the instantaneous transverse medial position of said marking on said tape.

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**3,166,676**
**ULTRA-VIOLET GAS ANALYSIS APPARATUS TO DETERMINE THE RELATIVE GASEOUS CONCENTRATION IN AN ANESTHETIC SYSTEM**
**Alfred D. Robinson, El Monte, Calif., assignor to Analytic Systems Company, Pasadena, Calif., a corporation of California**
**Filed Feb. 24, 1961, Ser. No. 91,428**
**6 Claims. (Cl. 250—43.5)**

4. In a system of inhalation anesthesia in which a mixture of oxygen and a gaseous anesthetic are fed through a supply line to a patient, said anesthetic having an absorption spectrum with an edge in a region in which other gas components flowing in said line are substantially free of absorption:

means for measuring the absorption of radiation by said anesthetic gas in a narrow band adjacent said absorption edge, said means comprising a radiant-energy source and a detector mounted on opposite sides of

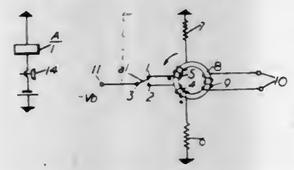


a region through which said sample flows, said source emitting a line spectrum that includes a line within said band and a filter between said source and said detector for selectively restricting the radiation reaching said detector from said source to the line in said narrow band; and

means responsive to the intensity of radiation detected for indicating the concentration of gaseous anesthetic in said mixture.

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**3,166,677**
**ELECTRIC SIGNAL DETECTOR**
**David J. Morris, Beeston, Nottingham, England, assignor to Ericsson Telephones Limited, London, England, a British company**
**Filed Apr. 5, 1961, Ser. No. 100,922**
**Claims priority, application Great Britain, May 5, 1960, 15,858/60**
**5 Claims. (Cl. 307—88)**



1. An electric signal detector comprising a core of magnetisable material having a substantially rectangular hysteresis loop, the core being capable of stability when magnetised either in a first or in a second opposed direction of magnetisation; a first winding inductively coupled with the core in a first sense, and a second winding inductively coupled with the core in a second opposed sense; change-over switching means for connecting the first and second windings alternately to a voltage source, signal-responsive means for operating the switching means on the application of a signal thereto and for restoring the switching means on the termination of said signal; the change-over switching means being operable on the application of a signal to the signal-responsive means to interrupt a flow of current through the first winding and to establish a flow of current through the second winding thereby changing the direction of magnetisation of the core, and being restorable on the termination of said signal to interrupt the flow of current through the second winding and to re-establish the flow of current through the first winding thereby reversing said change in the direction of magnet-

isation of the core; and an output winding inductively coupled to the core at which an output signal is delivered at each change and reversal in the direction of core magnetisation.

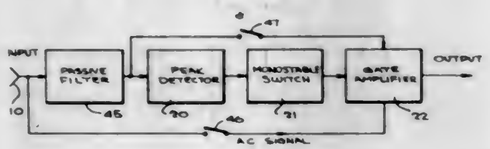
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3,166,678

## SIGNAL-SENSITIVE GATING CIRCUIT CONTROLLED BY A SIGNAL-OPERATED SWITCH HAVING DIFFERENT THRESHOLD LEVELS FOR TURN OFF AND TURN ON

Ward S. Fleshman, Jr., Cincinnati, Ohio, and Richard W. Bradmiller, Winter Park, Fla., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Mar. 7, 1960, Ser. No. 13,143
5 Claims. (Cl. 307—88.5)



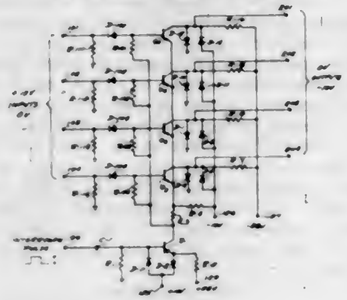

1. The combination comprising: a source of alternating current signals; a gating circuit coupled to said source for passing said alternating current signals, said gating circuit comprising a transistor having an emitting electrode, a collecting electrode, and a current flow control electrode; a two-terminal direct current source of biasing potential; a resistive load for said signal connected to said collecting electrode, said resistive load and said collecting and emitting electrodes being connected in series between said terminals; an electronic filter having a pass-band characteristic having at least one skirt of predetermined finite slope, said alternating current signal being applied to said filter, and said filter passing at least one frequency component of said alternating current signal; and means for maintaining said transistor non-conductive when the amplitude of said alterating current signal is below a predetermined level, said means comprising a rectifying device for converting the alternating current signal output from said filter to a direct voltage having a magnitude proportional to said signal, and a monostable switch responsive to said direct voltage connected directly to said control electrode, said switch in one state providing an output voltage of a polarity and magnitude sufficient to maintain said device non-conductive to said alternating current sighals when said direct voltage is below a predetermined magnitude, and in its other state providing an output voltage of fixed value and having a polarity and magnitude sufficient to maintain said device conductive at a linear point in its operating range, said monostable switch comprising a first transistor having a first collector, base and emitter, a second transistor having a second collector, base and emitter, first and second voltage supply leads having a voltage difference therebetween, a first resistance connected between said first voltage supply lead and said first collector, a second resistance connected between said first emitter and said second voltage supply lead, a first voltage divider for said first base, said first voltage divider being connected between said voltage supply leads and arranged to maintain said transistor normally conductive, a third load resistance connected between said first voltage supply lead and said second collector, said second resistance being connected between said second emitter and said second voltage supply lead, a second voltage divider for said second base connected between said first collector and said second voltage supply lead, said second voltage divider arranged to maintain said second transistor normally non-conductive; and a direct connection between said second collector and the said current control electrode.

3,166,679

## SELF-REGENERATIVE, LATCHING, SEMICONDUCTOR VOLTAGE SELECTION CIRCUIT

Eldred H. Paufve, Binghamton, N.Y., assignor to Link Division of General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Filed Apr. 24, 1961, Ser. No. 104,897
10 Claims. (Cl. 307—88.5)



1. A selection circuit comprising:
(*a*) a substantially constant current source for providing a predetermined amount of current;
(*b*) a plurality of self-regenerative semiconductors, each of said semiconductors having a control terminal and first and second electrodes;
(*c*) a plurality of input lines, each of said input lines being connected to a respective one of said control terminals and directing varying voltages thereto;
(*d*) a plurality of output lines, each of said output lines being connected to a respective one of said first electrodes;
(*e*) an interrogation source for comparing the respective inputs to said semiconductors to determine which of said inputs is an extreme;
(*f*) an enabling circuit normally connecting said constant current source to said second electrodes to provide an excitation current for a single semiconductor of the plurality of semiconductors, said enabling circuit being operative to decouple said constant current source from semiconductors upon the receipt of a signal from said interrogation source, and, upon cessation of said signal to recouple said excitation current to said semiconductors, whereby said semiconductors whose input is an extreme will conduct and prevent the remaining semiconductors from conducting.

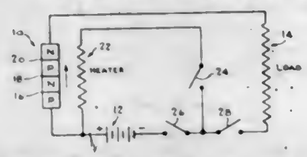
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3,166,680

## TIME DELAY SWITCH

Clement J. Kevane, Tempe, and Raymond J. Schulte, Phoenix, Ariz., assignors to Controls Company of America, Schiller Park, Ill., a corporation of Delaware

Filed July 26, 1962, Ser. No. 212,687
9 Claims. (Cl. 307—88.5)




1. A time delay switching device comprising, in combination, a P-N-P-N diode; means for impressing a voltage on said diode below its normal breakover voltage, an electrically energized heater adjacent said diode to raise the temperature of said diode to a temperature at which said diode will breakover at said impressed voltage, and switch means for selectively deenergizing said heater and said diode.

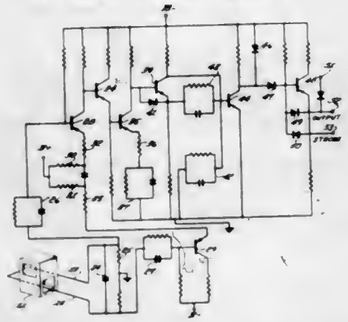


3,166,681

## MEMORY READOUT SENSING CIRCUIT EMPLOYING CLIPPING-CLAMPING NETWORK CONNECTED TO STROBED LOGIC AND GATE

Willard J. Strong, Costa Mesa, Calif., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Nov. 7, 1962, Ser. No. 235,957
5 Claims. (Cl. 307—88.5)



1. In a sensing circuit for determining flux storage conditions in a block of magnetic material, said block of magnetic material having a sense winding providing a positive sine wave signal for one polarity of flux storage and a negative sine wave signal for the other polarity of flux storage,
amplifier means responsively connected to said sense winding for amplifying the difference between the positive and negative halves of said sine wave signal,
clamping means responsively connected to the output of said amplifier means for clipping the negative half of said sine wave signal,
gating means having one input responsively connected to the output of said clamping means,
and the other input responsively connected to receive a signal from a source of time strobe pulses,
the signal from said time strobe pulse source being in time coincidence with the first half of said sine wave signal,
whereby said gating means delivers an output when the first half of said sine wave signal is positive.

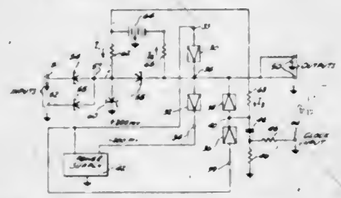
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3,166,682

## TUNNEL DIODE NOR GATE

O D Parham, Downey, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 24, 1963, Ser. No. 282,920
4 Claims. (Cl. 307—88.5)



1. A digital computer device comprising:
(*a*) first and second tunnel diodes having first and second peak currents, respectively, connected in the order named from a first junction to an output junction and from said output junction to a second junction, said first and second tunnel diodes being poled to allow normal current flow therethrough in a common direction from said first to said second junction;
(*b*) means connected across said first and second junctions for maintaining the potential difference thereacross of a polarity to effect current flow in said common direction and of a value to preclude both said first and second tunnel diodes simultaneously conducting in the switched state;
(*c*) third and fourth tunnel diodes serially connected in the order named from said output junction to a clock input junction and from said clock input junction to said first junction, said third and fourth tunnel diodes being poled to allow normal current flow therethrough in said common direction from said first junction to said output junction;
(*d*) means connected to said output junction for normally maintaining a predetermined residual current flow through said second tunnel diode;
(*e*) means responsive to no less than one bilevel input signal and connected to said means for maintaining said predetermined residual current flow through said second tunnel diode for diverting said predetermined residual current flow through said second tunnel diode in response to a preselected combination of potential levels of said no less than one input signal; and
(*f*) means coupled to said clock input junction for periodically decreasing and increasing the potential level thereat thereby to periodically switch said second tunnel diode to the switched mode of current conduction when said predetermined residual current flow through said second tunnel diode is not diverted whereby a substantially constant first potential level is produced at said output junction and to allow said second tunnel diode to remain in the unswitched mode of current conduction when said predetermined residual current flow therethrough is diverted whereby a substantially constant second potential level is produced at said output junction.

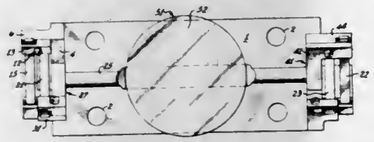
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3,166,683

## SCANNING BIMORPH TRANSDUCER

Jerome W. Gootherts, Redwood City, Calif., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed May 1, 1961, Ser. No. 106,941
6 Claims. (Cl. 310—8.6)



1. A transducer comprising a base; two spaced bimorph reeds mounted on said base cantileverwise for flexure in parallel planes; a rotor disposed between said reeds and having an axis of rotation perpendicular to said reeds and passing through the flexure points of said reeds; and means for supporting the ends of said rotor from the free ends of said bimorph reeds.

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3,166,684

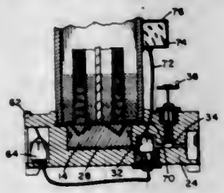
## HYDRAULICALLY ACTUATED PIEZOELECTRIC VOLTAGE GENERATOR

Alfred L. W. Williams, Cleveland, and Halley H. Hamlin, Lyndhurst, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Apr. 1, 1964, Ser. No. 356,427
15 Claims. (Cl. 310—8.7)

1. A hydraulically actuated piezoelectric voltage source comprising, in combination: housing means providing an abutment and being rigid against longitudinal expansion; a high pressure and a low pressure fluid reservoir opera-

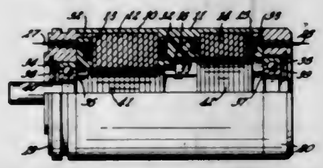
tively associated with said housing; fluid passageway means between said reservoirs; piezoelectric element means disposed within said housing means and piezoelectrically responsive in compression, one end of said piezoelectric element means being disposed in fixed relation to said abutment; pressure applying means operably disposed in relation to said high pressure reservoir



and to the other end of said element means for compressing the latter against said abutment; pressure producing means operably disposed in relation to said high pressure reservoir to increase the pressure in said reservoir in response to actuation of said pressure producing means; and valve means within said fluid passageway for controlling the pressure differential between the fluids in said reservoirs.

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**3,166,685**
**DUAL ENCAPSULATED STATORS**
**William Hargreaves, Jenkintown, Pa., assignor, by mesne assignments, to Weston Instruments, Inc., a corporation of Texas**
**Filed Nov. 3, 1959, Ser. No. 850,585**
**7 Claims. (Cl. 310—43)**

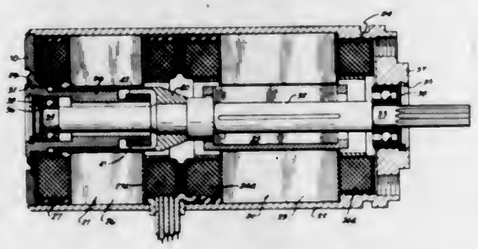


1. An electrical motor type structure comprising a first stator including a first annular core with windings supported thereon, a second stator including a second annular core with windings supported thereon, said first and second cores being in substantial axial alignment with one another and also being secured in spaced relationship with their inner ends disposed substantially opposite one another, a shield disposed between said cores and provided with a central aperture having a diameter greater than the inner diameter of said first stator core, a first end cap secured in fixed relationship with the outer end of said first core, a second end cap secured in fixed relationship with the outer end of said second core, a first filling of bonding material in the region between said shield and said first end cap, a second filling of bonding material in the region between said shield and said second end cap, said first filling having a different internal diameter than said second filling and having an internal diameter larger than said inner diameter of said first stator core and being established by said aperture in said shield.

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**3,166,686**
**TUNING ATTACHMENT AND SYSTEM FOR MOTOR GENERATORS**
**Anthony N. Mea, New Providence, N.J., assignor to General Precision, Inc., a corporation of Delaware**
**Filed Oct. 1, 1959, Ser. No. 843,826**
**17 Claims. (Cl. 310—168)**

1. In a servo generator; said servo generator including an output winding and a magnetic circuit for said output winding; said magnetic circuit including a magnetic return path member; means whereby the magnetic characteristics of said return path member are adjustable with respect to said magnetic circuit; said output winding having an output voltage induced therein responsive to flux changes in said magnetic circuit; said output voltages including a first and second component in quadrature with one another; an adjusting means including conductive means operatively associated with said return path member; adjustment of said adjusting means controlling said second



component of voltage independently of said first voltage component; said adjusting means being operable to reduce said second voltage component to substantially zero while said first component of voltage is substantially zero to impart a substantially zero fundamental null to said servo generator, said adjusting means comprising a tubular conductive ring movable with respect to said magnetic return path member for adjusting said second voltage component.

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**3,166,687**
**TRANSPARENT ELECTROLUMINESCENT CELL AND GLASS BLOCK**
**Frank Veres, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio**
**Filed Dec. 30, 1960, Ser. No. 79,606**
**3 Claims. (Cl. 313—108)**



1. An electroluminescent cell of improved construction comprising two parallel light-transmitting layers each coated on the sides facing each other with a transparent conducting layer, a light-transmitting liquid dielectric contained between said layers in sealed relationship, an electroluminescent phosphor carrying solid plastic dielectric member disposed within said liquid dielectric and substantially parallel to said light-transmitting layers and out of contact with said conducting layers, and a source of alternating current connected to each of said conductive layers for excitation of said phosphor carrying dielectric.

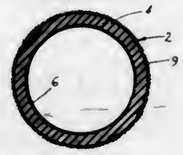
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**3,166,688**
**POLYTETRAFLUOROETHYLENE TUBING HAVING ELECTRICALLY CONDUCTIVE PROPERTIES**
**Ronald P. Rowand, 24 Nevins Ave., and Harry William La Rose, Jr., 117 Sheffield Ave., both of Longmeadow, Mass.**
**Filed Nov. 14, 1962, Ser. No. 238,322**
**5 Claims. (Cl. 317—2)**

1. A tube of polytetrafluoroethylene and the like for conducting fluids under pressure and including means for discharge of internal static electricity to the ends of the tube and grounding the same from the tube interior at said ends in order to maintain the polytetrafluoroethylene tubing performance characteristics, said tubing having an



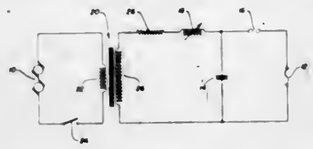
integral polytetrafluoroethylene wall structure with an interior liner portion of a substantially annular conformation from end to end and having a uniform dispersion of electrically conductive particles embedded therein, the



major portion of said tubing wall completely surrounding said liner portion exteriorly and being relatively nonconductive in character, said surrounding portion together with said liner containing fluid under pressures uniformly within said tubing.

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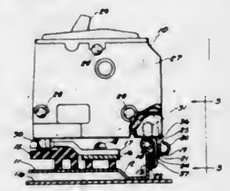
**3,166,689**
**CHARGING CIRCUIT FOR EXPLODING BRIDGE WIRES**
**Rudolph W. Buntenbach, San Francisco, Calif., assignor to General Precision, Inc., a corporation of Delaware**
**Filed Feb. 19, 1962, Ser. No. 174,090**
**2 Claims. (Cl. 317—80)**



1. A firing circuit for firing an exploding bridge wire comprising a firing condenser, a spark gap, an exploding bridge wire in series with said spark gap connected across said condenser, and means for charging the condenser from an alternating source of electromotive power of relatively low voltage to a voltage level substantially above the voltage of said source including a step-up transformer having primary and secondary windings, means for connecting said primary across said source of voltage, and an inductance connected in series with said secondary winding and said firing condenser to form a series-resonant circuit tuned to the frequency of the source of voltage whereby said alternating current source is built up to charge said condenser and without the use of a switch to discharge said condenser across said gap into said bridge wire to cause the same to explode.

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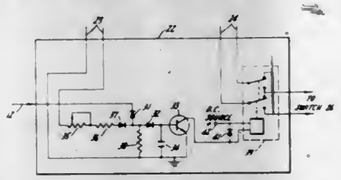
**3,166,690**
**CIRCUIT CONTROLLING DEVICES**
**Joseph Clifford, Cedar Rapids, Iowa, Frank Kussy, Birmingham, Mich., and Harris I. Stanback, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan**
**Filed Oct. 12, 1960, Ser. No. 62,124**
**7 Claims. (Cl. 317—119)**



1. A circuit breaker comprising:
(*a*) a molded case having a clip retaining portion,
(*b*) a mounting clip held in said clip retaining portion and projecting therefrom, and
(*c*) a groove in said case weakening said case adjacent said clip retaining portion, whereby attempted alteration of the configuration of said mounting clip ruptures said case at said groove.

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**3,166,691**
**PHASE ERROR CORRECTION CIRCUIT**
**Newman McGee, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Mar. 23, 1962, Ser. No. 182,147**
**2 Claims. (Cl. 317—148.5)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



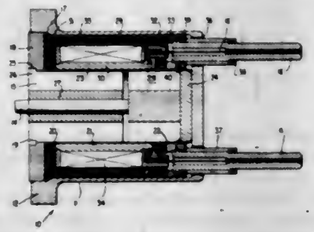
1. A phase sensitive control circuit comprising:
an electrical relay phase reversing switch means having input means for receiving an alternating current driving potential, output means for supplying said alternating current driving potential with the same and reversed phase to a load, and control coil means for receiving an energizing current to enable said phase reversing switch means to reverse the phase of said alternating current driving potential to said load from that supplied to said input means;
an electronic conduction controlling means having an emitting electrode, a control electrode, and a collecting electrode, said collecting electrode being coupled through said control coil means to a source of direct current potential;
a pair of input terminals for receiving an alternating current reference voltage, one of said terminals being coupled to said emitting electrode;
an input means for receiving an alternating current error voltage;
first and second diode means coupled in series with each other, the remaining end terminal of said second diode means being coupled to said control electrode of said conduction controlling means;
a potentiometer means for adjusting the amplitude of said alternating current reference voltage, said potentiometer means being coupled between the other of said pair of input terminals and the remaining end of said first diode means; and
a third diode means having one terminal thereof coupled to said input means for receiving an alternating current error voltage and having the other terminal coupled to the common junction of said first and second diode means, and being polarized in a direction opposite to that of said first diode means with respect to said control electrode of said conduction controlling means.

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**3,166,692**
**ALTERNATING CURRENT SOLENOID**
**Robert E. Forrester and Alan H. Cornish, Corry, Pa., assignors to Aero-Flow Dynamics, Inc., Corry, Pa., a corporation of New York**
**Filed Sept. 25, 1961, Ser. No. 140,277**
**2 Claims. (Cl. 317—186)**

1. A solenoid adapted for use with high pressure systems, comprising a hollow body structure having an open end and a closed end, an inner housing assembly including a thin, cylindrical sidewall formed by two end sec-

tions of magnetic material integrally connected to a center section of non-magnetic material, a thick end wall secured to one of the end sections at the closed end of the body structure, the remaining end section being provided with a laterally extending shoulder, said shoulder being attached to the open end of said body structure, whereby said inner housing assembly is completely enclosed within said body structure with said thin, cylindrical sidewall being maintained in spaced relationship thereto and said thick end wall in juxtaposition with said closed end thereof, a slotted core member secured within said inner housing assembly, said core member having an axial bore extending therethrough, a slotted plunger provided within said inner housing assembly in axial, spaced relationship to said core member, said plunger being relatively movable between said core member and the thick end wall of said inner housing assembly, an actuating pin connected to said plunger and extending through the bore



of said core member, and a field and coil assembly tightly surrounding the exterior of the thin, cylindrical wall of said inner housing assembly and extending coaxially thereof between said thin, circular wall and said body structure, said field and coil assembly including a ceramic spool mounted upon said thin wall, an exciting coil wound upon said ceramic spool, said exciting coil being encased in cured ceramic potting compound of rock-like consistency, a plurality of ferromagnetic laminations mounted at either end of said ceramic spool and tightly encircling and engaging the thin wall of said inner housing assembly, and a stack of ferromagnetic laminations tightly encasing said exciting coil and extending between said exciting coil and said body structbre into engagement with the end laminations, said spool, exciting coil, and laminations being formed to cooperate with said body structure in absorbing substantially all of the pressure applied to the interior of said inner housing assembly.

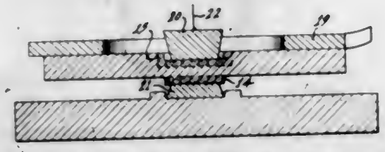
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**3,166,693**
**DRY ELECTROLYTIC DEVICE**
**Horace E. Haring, Summit, and Raymond L. Taylor, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Apr. 2, 1953, Ser. No. 346,416**
**6 Claims. (Cl. 317—230)**



1. A capacitor comprising a body of compressed particles of a film forming metal, an electrolytically formed dielectric oxide film of the film forming metal over the exposed surface of each of said particles, a layer of manganese dioxide impregnating said body and in intimate contact with said dielectric film, a layer of graphite overlying said layer of manganese dioxide, a metal casing encompassing the major portion of said body insulated therefrom and in electrical contact with said layer of graphite, and electrical lead means attached to each said porous body and said casing.

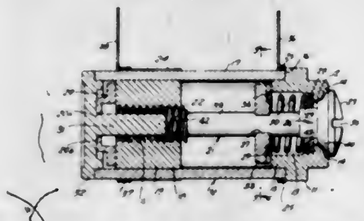
**3,166,694**
**SYMMETRICAL POWER TRANSISTOR**
**Charles W. Mueller, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware**
**Original application Feb. 14, 1958, Ser. No. 715,393, now Patent No. 2,967,344. Divided and this application Apr. 6, 1960, Ser. No. 20,313**
**5 Claims. (Cl. 317—235)**



1. A transistor comprising a given conductivity type monocrystalline semiconductor wafer having a recess in one major wafer face, a surface layer of opposite conductivity type in said recess, a raised wafer portion on the opposite major wafer face, said raised portion being concentric with said recess and consisting of the aforesaid monocrystalline semiconductive wafer a surface layer of said opposite conductivity type on said raised portion, an emitter connection to said opposite type layer in said recess, an annular base connection to said one major wafer face around said recess, and a collector connection to said opposite type surface layer on said raised portion.

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**3,166,695**
**TRIMMER CAPACITOR**
**Llewellyn T. Barnes, 155 Atlantic Ave., Freeport, N.Y., assignor of one-third to Charles T. Barnes, Freeport, and one-third to John F. Woog, Garden City, N.Y.**
**Filed Oct. 12, 1960, Ser. No. 62,295**
**3 Claims. (Cl. 317—249)**



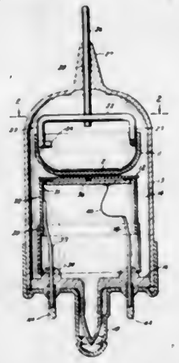
1. A trimmer capacitor comprising a hollow cylinder formed of a material having a high dielectric constant, a bushing frictionally interfitting with and closing off one end of said cylinder, said bushing having a through aperture communicating with the interior of said cylinder, a rotatable adjusting member having a head located outside said bushing and a shank carried by said head and extending rotatably through said bushing into the interior of said cylinder, an externally-threaded terminal portion at the end of said shank, a cylindrical piston electrode slidable in said cylinder and having an internally-threaded bore receiving the threaded terminal portion of said shank, said piston carrying a member having a non-circular aperture in communication with said threaded bore, and an end cap secured to the end of said cylinder opposite said bore and having a longitudinally-extending post of non-circular cross-section, said post fitting slidably within said non-circular aperture and preventing rotation of said piston electrode within said cylinder whereby said piston electrode is moved longitudinally through said cylinder when the shank is rotated, the threaded terminal portion of said bore having a transverse slot therein, the free end of said post engaging the free end of said threaded terminal portion, and a spring between said bushing and said shank urging the latter into firm engagement with said post whereby said slot is compressed



by said post to deform the threading on said terminal portion and create a tensioned drag on said piston electrode for facilitating fine adjustment thereof.

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**3,166,696**
**VIBRATING CAPACITOR**
**Jacob Furman, Newark, N.J., assignor, by mesne assignments, to Electronic Automation Systems, Inc., a corporation of New York**
**Filed July 12, 1961, Ser. No. 123,516**
**4 Claims. (Cl. 317—250)**

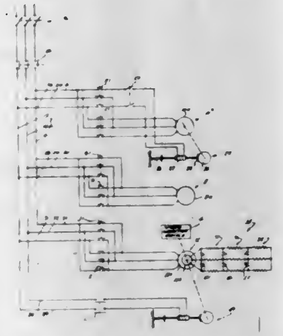


1. A device for converting a D.C. signal into an A.C. signal which comprises: a sealed envelope including a base cemented thereto and connector pins extending therefrom; a dish shaped fixed electrode having a flat bottom surface mounted in said envelope; cylindrical mounting means supported in said envelope; a flat, cylindrical movable electrode secured at its edges to said cylindrical mounting means; an electrostrictive ceramic element secured to said mounting means and spaced from said movable electrode, said movable electrode and said ceramic element being mechanically interconnected at their midpoints; circuit means for connecting said ceramic element and said movable electrode to said connector pins; and means for driving said ceramic element within the frequency range of 1 kc. to 5 mc. to vibrate said ceramic element in a flexural mode within said frequency range whereby said D.C. voltage is converted to an A.C. voltage of a frequency corresponding to the frequency of said drive voltage.

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**3,166,697**
**DUAL MOTOR CONTROL SYSTEM FOR CRANES**
**Edward Alexander Horsley, Niagara Falls, Ontario, Canada, assignor to Provincial Engineering Ltd., Niagara Falls, Ontario, Canada, a corporation of Canada**
**Filed Mar. 31, 1961, Ser. No. 99,836**
**3 Claims. (Cl. 318—17)**

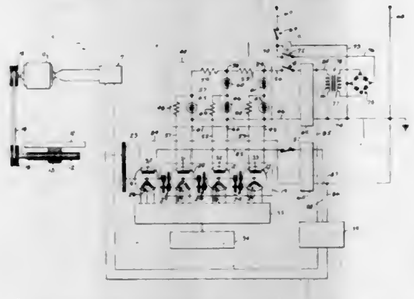
1. A dual control system for a wound rotor induction motor drive, the motor having a primary winding and a rotor winding, comprising an accelerating circuit adapted to be connected to the rotor winding, said accelerating circuit including a network of resistors and relay contacts connected in such a manner that said resistors are successively shorted out as said relay contacts are closed, a control circuit that includes the operating windings for said relay contacts in said accelerating circuit, said control circuit including first and second control stations, said first control station including a master control having a plurality of points in each of two directions, a plurality of timing means in said control circuit, said control circuit being adapted to close said relay contacts in said accelerating circuit successively as said master control is turned to the various points and said plurality of timing means operate, said second control station being connected to operate said plurality of timing means and said relay contacts, and means coupled to said first control station which is responsive to the speed of the



motor for making said accelerating circuit unavailable when the speed of the motor varies outside of a predetermined limit thereby maintaining a predetermined speed of said motor.

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**3,166,698**
**BACKLASH TAKE-UP SYSTEM**
**Joseph R. Moser, Brookfield, and Hubert R. Schatteiner, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Aug. 15, 1962, Ser. No. 217,155**
**5 Claims. (Cl. 318—28)**

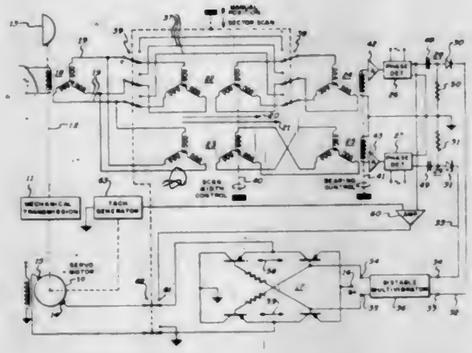


1. In an object position control system, the combination comprising: input signal means adapted to produce input voltages indicative of a selected position for the object; a preliminary positioning induction device having input windings connected to said input signal means to receive said input voltages and an output winding that is inductively coupled to the input windings, one of the output winding and the input windings being movable with respect to the other in response to movement of the object; driving circuit means for said object connected to the output winding of said preliminary positioning induction device and to which error voltages induced in such output winding are fed; said preliminary positioning induction device yielding zero error voltage at a position of the object offset from a preselected final position thereof, said offset position being always to the same one side of said final position; a final positioning induction device having input windings connected to said input signal means to receive said input voltages and a single output winding adapted for connection to said driving circuit means and that is inductively coupled to the input windings, one of the output winding and the input windings being movable with respect to the other in response to movement of the object, said final positioning induction device having a higher rate of change of error voltage induced in its output winding relative to movement of the object than said

preliminary positioning induction device, said final positioning induction device yielding zero error voltage at said preselected final position of said object; and means adapted to break the connection between the output winding of said preliminary positioning induction device and said driving circuit means and to complete the connection between the output winding of said final positioning induction device and said driving circuit means when the object has been moved to the offset position.

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**3,166,699**
**REVERSIBLE MOTOR CONTROL FOR SECTOR SCANNING SYSTEM**
**Clarence W. Dalzell, Garden City, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware**
**Filed June 9, 1961, Ser. No. 116,074**
**13 Claims. (Cl. 318—30)**

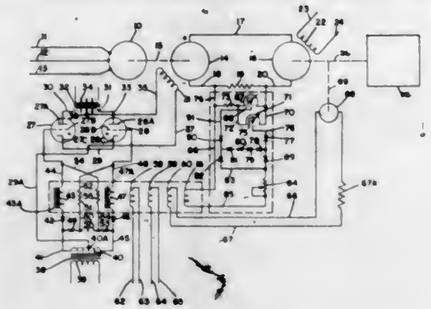


1. A scanning system for oscillating a rotatable element through a determined sector in relation to a determined angular reference position including a reversible D.C. motor connected to drive the element; a circuit providing a phase reversing output including synchro generating means having a rotor driven by the motor, synchro differential means connected to the generating means having stator and phase changing rotor parts adjustable angularly with respect to one another to determine the width of the scanning sector, and synchro output means connected to the differential means having stator and phase changing rotor parts adjustable angularly with respect to one another to determine the angular reference position; means for operating and reversing the direction of operation of the D.C. motor including a polarity switching circuit, and means providing a differential pulse output for operating said switching circuit depending on the adjusted output of the phase reversing circuit.

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**3,166,700**
**GENERATOR FED MOTOR CONTROL WITH CURRENT LIMIT CIRCUITRY**
**Steve A. Zarleng, Akron, Ohio, assignor to The Clark Controller Company, Cleveland, Ohio, a corporation of Ohio**
**Filed July 11, 1960, Ser. No. 41,816**
**15 Claims. (Cl. 318—144)**

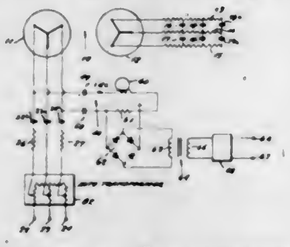
1. An electrical circuit for detecting the flow of excess load current through a load circuit independent of the direction of current flow through said load circuit comprising an impedance connected in said load circuit, a first and second voltage divider connected across said impedance, rectifying means for separately connecting said first and second voltage divider to an output, said rectifying means connected in a manner to prevent the flow of current from either said first or second voltage divider to said output until load current reaches a predetermined value whereby said rectifying means allows current to flow from



either said first or second voltage divider to said output to produce a positive or negative output dependent upon the direction of load current flow.

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**3,166,701**
**A.-C. HOIST CONTROL SYSTEM**
**Donald I. Bohn, Asheville, N.C., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed July 25, 1962, Ser. No. 212,335**
**7 Claims. (Cl. 318—212)**



1. A hoist control system for a polyphase A.-C. hoist motor; said hoist control system including a source of polyphase A.-C. voltage connectable to said motor, control means for reversing the phase sequence of said polyphase A.-C. voltage for reversing the mode of operation of said system from hoisting to lowering, and means for injecting D.-C. current into said stator winding while driving said motor in said lowering mode of operation from said polyphase A.-C. voltage source; a rectifier means having an input and an output; an auxiliary A.-C. voltage source connected to said input of said rectifier means; said means for injecting said D.-C. current including the connection of said output of said rectifier means across two lines of said polyphase A.-C. voltage source.

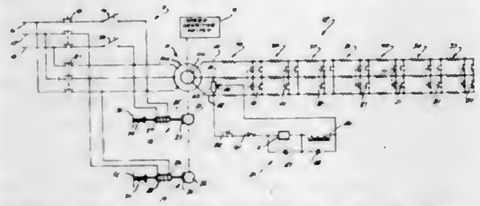
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**3,166,702**
**SPEED CONTROL FOR INDUCTION MOTOR HAVING VARIABLE RESISTANCE SECONDARY**
**Edward Alexander Horsley, Niagara Falls, Ontario, Canada, assignor to Provincial Engineering Ltd., Niagara Falls, Ontario, Canada, a corporation of Canada**
**Filed Oct. 2, 1961, Ser. No. 142,212**
**3 Claims. (Cl. 318—240)**

1. In a control circuit for a wound rotor hoisting drive motor having primary and secondary windings, control means having a plurality of positions including at least one hoisting position and first and second lowering positions, means operative in said hoisting position for connecting said primary windings to an A.C. line and for connecting resistance means having a first predetermined



value in circuit with said secondary windings, means operative in said first lowering position for connecting said primary windings to an A.C. line and for connecting resistance means having a second predetermined value in circuit with said secondary windings, said second predetermined value being substantially greater than said first predetermined value, means operative in said second lowering position for connecting said primary windings to an A.C. line and for connecting resistance means having a third predetermined value in circuit with said secondary



windings, said third predetermined value being substantially greater than said second predetermined value, and speed sensitive means responsive to a speed of operation of said motor greater than a certain value and operative in said first lowering position of said control means for reducing the amount of resistance in circuit with said secondary windings to a value equal to said first predetermined value, said speed sensitive means being operative in said second lowering position for reducing the amount of resistance in circuit with said secondary windings to a value equal to said second predetermined value.

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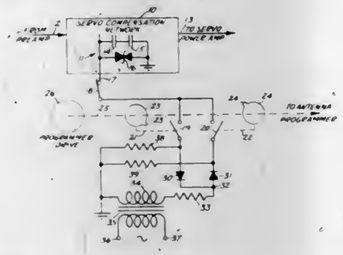
**3,166,703**
**SIMPLIFIED AIDED TRACKING AND COASTING SYSTEM**
**Alfred I. Mintzer, Riverton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 9, 1963, Ser. No. 271,825**
**2 Claims. (Cl. 318—327)**



1. An aided tracking system comprising:
(*a*) a variable source of potential;
(*b*) an electric motor;
(*c*) a rate tachometer which is mechanically coupled to the output shaft of the motor and which provides an electrical potential opposite in polarity to the potential of the variable source;
(*d*) means for inverting the polarity of the output potential of the tachometer;
(*e*) means for combining the inverted potential of the tachometer with the potential of the variable source;
(*f*) and means responsive to the difference between the said combined potential and the output potential of the tachometer for energizing the motor.

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**3,166,704**
**SERVO MECHANISM TRANSIENT AND VELOCITY ERROR COMPENSATION MEANS**
**Arnolds Jansons, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Mar. 22, 1961, Ser. No. 97,705**
**1 Claim. (Cl. 320—1)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



A means for alternately charging and recharging in opposite polarity a servo capacitor means in a servo compensation network in synchronism with radar antenna scanning operation comprising:
switch means having alternately switchable positions from two inputs to a single output;
servo capacitive means in said compensation network having one plate means coupled to said switch means single output and the other plate means coupled to a fixed potential;
voltage supply means of alternating current voltage having one lead output coupled to said fixed potential and having another lead output coupled to one of said two switch inputs through a rectifier polarized in one direction and coupled to the other of said two switch inputs through a rectifier polarized in the other direction to supply said one of said two switch inputs with voltage of one polarity and the other of said two switch inputs with voltage of the opposite polarity;
a resistance means coupled between each of said one and said other of said two switch inputs, respectively, and said fixed potential to establish optimal charging time constants for said servo capacitive means; and
driving means having a cam means driven thereby with a cam follower switch actuating means operative to alternately switch said switch means to its alternate switch positions to alternately charge and recharge said servo capacitive means to potentials of opposite polarity from said fixed potential at preselected times with respect to predetermined limit positions whereby the reversing transient errors and velocity errors of an antenna scanning operation are minimized.

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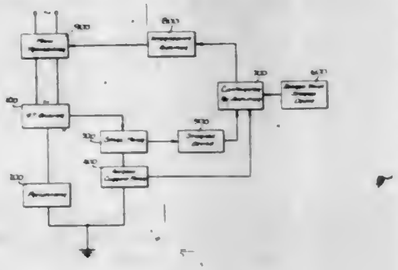
**3,166,705**
**AUTOMATIC VOLTAGE CONTROL FOR ELECTRICAL PRECIPITATORS**
**Herbert Brandt, Rothemuehle, near Olpe, Westphalia, Germany, assignor to Apparatebau Rothemuehle Dr. Brandt & Co., Rothemuehle, near Olpe, Westphalia, Germany, a corporation of Germany**
**Filed Feb. 13, 1961, Ser. No. 88,796**
**13 Claims. (Cl. 323—66)**

1. In combination with an electrical precipitator having two electrodes connected to an A.C. power supply via a transformer and a rectifier, an automatic voltage control system comprising, in combination:
first limit sensor means for picking up excess current consumed by the precipitator due to the number and intensity of transient flashovers occurring during a given unit time;

second limit sensor means for picking up the increased voltage drop due to arcovers;

each of said sensor means incorporating an oscillator having two coupled induction coils which are physically spaced apart to form an air gap between themselves, a decoupling shield, and means for moving said shield into said air gap between said coils for decoupling the same from each other when the respective limit sensor picks up a value corresponding to the limit to which it is set, thereby to interrupt the oscillations of said oscillator;

two variable condensers;



rectifying and pre-amplifying for connecting the output of each of said sensor means to a respective one of said two condensers, in consequence of which the latter are continuously charged until such time as each respective sensor picks up a value corresponding to its set limit;

secondary circuit means for continuously disharging said condensers;

transductor means for amplying the discharge currents of said condensers; and

means responsive to the condenser discharge currents for controlling the voltage of the precipitator.

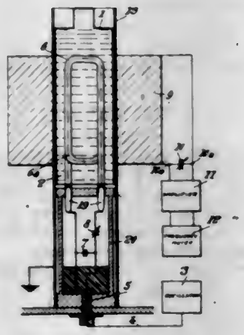
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**3,166,706**

**MAGNETIC RESONANCE DEVICE FOR MEASURING MAGNETIC FIELD INTENSITY**

**Georges Bonnet, Grenoble, and Antoine Salvi, Saint-Egreve, France, assignors to Commissariat a l'Energie Atomique, Paris, France, an organization of France**

**Filed Dec. 11, 1959, Ser. No. 859,066**
**Claims priority, application France Dec. 16, 1958**
**8 Claims. (Cl. 324—.5)**



1. A device for measuring the intensity of magnetic fields in a range of intensities including the intensity of earth magnetic field, which comprises, in combination, a container, in this container a solution consisting of a solvent containing atomic nuclei having an angular momentum and a magnetic moment different from zero and of a paramagnetic substance having a hyperfine structure of the stationary type with at least one unpaired electron in S-state, said substance being dissolved in said solvent, whereby said solvent emits, when one of the electronic resonance lines of the paramagnetic substance is saturated, energy at the nuclear resonance frequency of said atomic nuclei, at least one high frequency coil disposed with respect to said container so as to create therein a magnetic field when electric energy is passed through said coil, means for supplying said high frequency coil with electric energy at the frequency of said electronic resonance line so as to saturate said line, at least one low frequency coil disposed with respect to said container in such manner as to collect said energy at the nuclear resonance frequency, electric circuit elements connected with said low frequency coil to constitute, at said nuclear resonance frequency, an oscillating circuit of high Q factor, means for measuring the frequency of the energy collected by said low frequency coil, an electric shield opaque to the transmission of energy at the frequency of said electronic resonance line but transparent to the transmission of energy at the nuclear resonance frequency, said electric shield being located between said low frequency coil and both said container and said high frequency coil, to prevent coupling between said coils although allowing said low frequency coil to collect said energy at the nuclear resonance frequency, and consisting of a tubular element at least a portion of which is made of an electricity conducting material, said element being provided on the one hand with a slot extending along a first generatrix and on the other hand with several slots respectively located in planes substantially perpendicular to said generatrix, and means for connecting the conducting strips thus insulated by said slots to the ground substantially along a second generatrix of said tubular element.

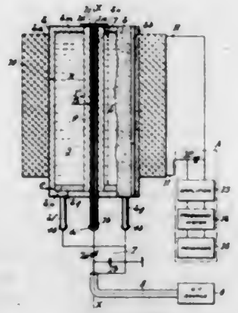
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**3,166,707**

**NUCLEAR MAGNETOMETERS OF THE TYPE MAKING USE OF A HIGH FREQUENCY PUMPING ON AN ELECTRONIC TRANSITION**

**Georges Bonnet, Grenoble, France, and Antoine Salvi, Quartier des 3 Ponts, Pavilion 32, St.-Egreve, France; said Bonnet assignor to Commissariat à l'Energie Atomique, Paris, France, a society of France**

**Filed July 18, 1961, Ser. No. 126,829**
**Claims priority, application France July 18, 1960**
**4 Claims. (Cl. 324—.5)**



1. In a device for measuring the intensity of a magnetic field and comprising at least one vessel including a sample of matter containing a first system of spins having in such a field a resonance line saturable at the first frequency by an electro-magnetic field produced in said vessel and a second system of spins coupled with the first system so



that saturation of this line produces a polarization of the spins of the second system and increases the intensity of the signal of precession of said spins of the second system about the direction of the magnetic field to be measured at a second frequency lower than said first frequency and proportional to the intensity of said magnetic field to be measured, which frequency is measured after detection of said signal, the combination with said vessel of an electric coaxial line including an internal conductor and an external conductor arranged to house said vessel between them, said conductors being short-circuited at one of their ends, the length of said coaxial line being at most one tenth of the wavelength in said matter at said first frequency, means at the other ends of said conductors for energizing said coaxial line at said first frequency, said means including a high frequency generator and a tuning capacitor connected with said conductors so as to constitute therewith a circuit tuned to said first frequency, the region of the space between said conductors where said vessel is located corresponding to an antinode of the variation along the axis of said coaxial line of the transverse magnetic field produced by said energizing means, and at least one coil mounted around said coaxial line for detecting said signal of precession.

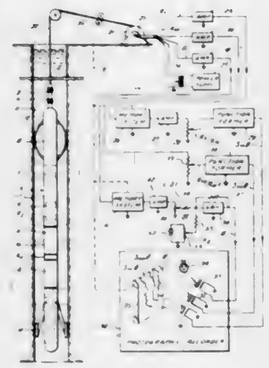
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**3,166,708**

**METHOD OF INVESTIGATING EARTH FORMATIONS BY DETERMINING THE AMOUNTS OF DIFFERENT TYPES OF FLUIDS THAT MAY BE PRESENT IN THE FORMATIONS**

**Marcus L. Millican, Midland, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas**

**Filed May 7, 1962, Ser. No. 192,662**
**6 Claims. (Cl. 324—1)**



5. A method of investigating a subsurface earth formation traversed by a borehole containing a drilling fluid comprising: obtaining measurements of the electrical resistivity of first and second portions of the formation, the first portion being immediately adjacent the borehole and the second portion being at a greater distance from the borehole; converting each of the first and second resistivity measurements into a measurement proportional to

$$\frac{1}{\sqrt{R}}$$

where R is the resistivity of the corresponding formation portion; and comparing the converted resistivity measurements to provide indications of the amounts of water and movable hydrocarbons that may be present in the formation.

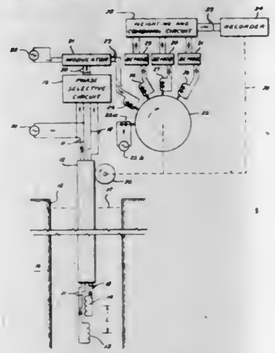
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**3,166,709**

**METHOD AND APPARATUS FOR PROVIDING IMPROVED VERTICAL RESOLUTION IN INDUCTION WELL LOGGING INCLUDING ELECTRICAL STORAGE AND DELAY MEANS**

**Henri-Georges Doll, Ridgefield, Conn., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas**

**Filed Apr. 17, 1959, Ser. No. 807,221**
**39 Claims. (Cl. 324—6)**



1. A method of electromagnetically investigating earth formations traversed by a borehole which comprises the steps of: successively positioning a unitary electromagnetic exploring means having a given, fixed geometrical characteristic at each of a plurality of different depths in a borehole to derive a corresponding plurality of electrical signals individually representative of electrical properties of the adjacent earth formations as sensed by said unitary exploring means when at a corresponding one of the aforesaid depths; combining said plurality of electrical signals individually obtained at different depths in the borehole in a prescribed manner to provide an electrical output signal; and obtaining indications in response to said output signal.

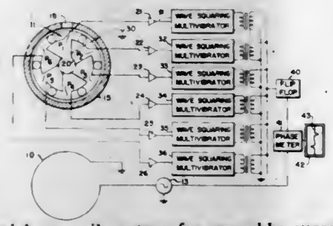
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**3,166,710**

**APPARATUS HAVING SEGMENTED PICKUP COIL AND OUTPUT CIRCUIT MEANS RESPONSIVE TO SIGNALS FROM A SINGLE COIL SEGMENT**

**Thomas R. Schmidt, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**Filed Nov. 14, 1960, Ser. No. 68,737**
**3 Claims. (Cl. 324—34)**

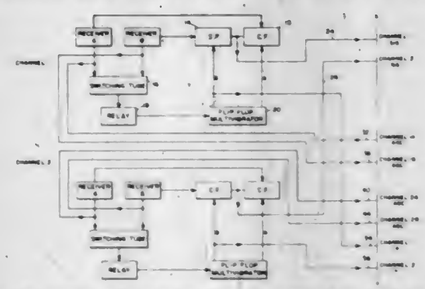


3. A pick-up coil system for an eddy current testing instrument having an exciter coil coupled to a source of alternating current, said pick-up coil system comprising: a pick-up coil formed from a plurality of individual coils, said individual coils being disposed in a closed pattern with equal spacing between the centers of the coils; a plurality of individual amplifying and differentiating circuit means, each of said individual coils being coupled to one of said amplifying and differentiating circuit means; an auctioneering circuit, said individual amplify-

ing and differentiating circuits being coupled to said auctioneering circuit in parallel, said auctioneering circuit passing only the first occurring signal from said individual coils.

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**3,166,711**
**DUAL DIVERSITY SWITCHING UNIT**
**Kelton Casper Agrelius, Camarillo, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Feb. 24, 1961, Ser. No. 91,552**
**5 Claims. (Cl. 325—304)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

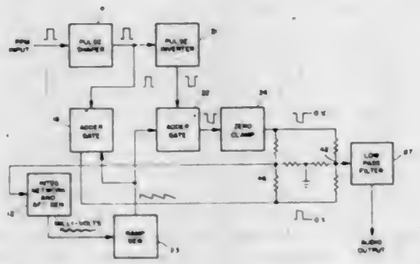


1. In combination with a diversity switching unit including a plurality of channels, a plurality of receivers within each channel for receiving a signal in diversity, each receiver having an independent gain control circuit, a comparator within each channel responsive to the AGC voltages of the receivers of its channel for selecting the strongest AGC voltage of said receivers, a circuit within each channel coupled to a respective one of the comparators and responsive to the strongest AGC voltage of its channel for producing a single intermediate voltage, the intermediate voltage of each channel indicating by a yes or no answer which receiver of the channel is receiving the strongest signal and another circuit within each channel responsive to the intermediate voltage for gating the strongest signal of its channel; an auxiliary diversity switching unit comprising a plurality of networks, each network receiving the AGC voltages and the intermediate voltage from a respective channel, means within each network responsive to the intermediate voltage for selecting the strongest AGC voltage of the respective channel, means responsive to the selected AGC voltages for passing a biasing voltage to one of a plurality of paths representing said channels, and means responsive to the biasing voltage for gating the strongest signal of all of the channels whereby the strongest signal received by all the receivers is made available.

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**3,166,712**
**BALANCED OUTPUT DEMODULATOR FOR PULSE POSITION MODULATION**
**Lawrence H. Graham, Orlando, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland**
**Filed Nov. 5, 1962, Ser. No. 235,315**
**9 Claims. (Cl. 325—321)**

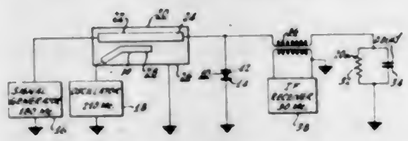
1. A balanced output pulse position modulation detector comprising input means for receiving a train of incoming pulse position modulated pulses, controllable frequency waveform generator means for generating at the output thereof at least one recurring voltage waveform having an amplitude at any instant which is a linear function of time and having an average frequency approximately that of the source of said incoming pulses, means for combining said pulse train and the output from said waveform generator means, for developing first and second trains of resultant positive and negative pulse pairs containing amplitude information, means for adding said pairs of opposite polarity resultant pulses to produce a pulse train of difference pulses whose envelope represents the modulated information from the source of incoming pulses, and means for sensing the non-symmetry of said



envelope with respect to a reference voltage level to generate a signal for correcting the phase and frequency of said waveform generator means to restore the envelope of said difference pulses to the symmetry condition.

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**3,166,713**
**TUNNEL DIODE CONVERTER WITH FORWARD BIAS OF THE DIODE BY RECTIFICATION OF SIGNAL WAVE**
**Kern K. N. Chang, Princeton, and Hans John Prager, Maplewood, N.J., assignors to Radio Corporation of America, a corporation of Delaware**
**Filed Feb. 24, 1961, Ser. No. 91,533**
**9 Claims. (Cl. 325—449)**



1. A frequency converter comprising in combination a negative resistance diode having a current-voltage characteristic which exhibits a greater current conductivity in the reverse direction than in the forward direction and which has a nonlinear region in the forward current conductive direction, means for applying oscillatory waves to said diode, and means providing a load impedance coupled to said diode for developing a direct voltage thereacross in response to rectification of waves applied to said diode which forward biases said diode to operate in said nonlinear region.

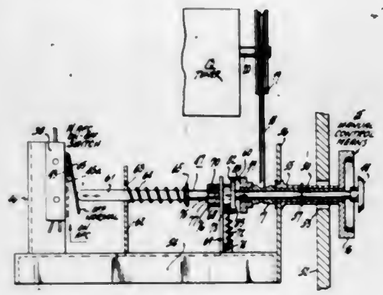
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**3,166,714**
**MANUAL TUNING CONTROL SYSTEM FOR FM RADIO RECEIVERS WITH AFC**
**Vo Dinh Hien, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed Oct. 9, 1962, Ser. No. 229,359**
**7 Claims. (Cl. 325—457)**

1. A tuning control system for signal receivers with automatic frequency control comprising in combination:
a rotary tuning control shaft,
a switch operating rod extending coaxially through said control shaft and movable axially thereof,
resilient means connected for biasing said rod axially in one direction,
an automatic-frequency-control switch connected with said rod for operation thereby to an automatic-frequency-control position,
a sleeve element rotatable on said rod and having a locking element,



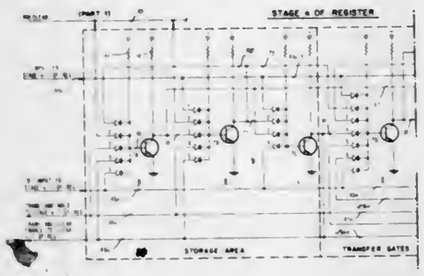
a pin on said rod meeting and engaging said locking element to lock said pin and rod and hold the switch in the automatic-frequency-control position,



clutch means connected for engaging and rotating said sleeve in response to rotation of said control shaft to release said locking element from said pin, thereby to release said switch from the automatic-frequency-control position, and
means connected with said sleeve for imparting resilient rotational restoring force thereto tending to move said sleeve to the locking position for said pin and switch operating rod.

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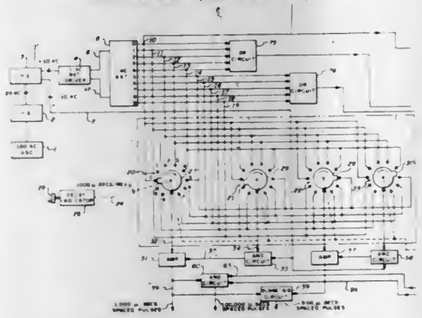
**3,166,715**
**ASYNCHRONOUS SELF CONTROLLED SHIFT REGISTER**
**George Cogar, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 6, 1962, Ser. No. 221,706**
**14 Claims. (Cl. 328—37)**



1. In a device for reading data from a data storage media, a multi-stage asynchronous shift register capable of receiving, storing and transferring data from stage to stage, each stage comprising:
(*a*) means to store data in a first signal pattern to indicate a first type of data and in a second signal pattern to indicate a second type of data and to provide a third signal pattern to indicate the absence of any stored data;
(*b*) first means to sense said signal patterns and transfer a first signal over a first signal line if a first signal pattern is stored;
(*c*) second means to sense said signal pattern and transfer a second signal over a second signal line if a second signal pattern is stored;
(*d*) and means responsive to the signals stored in a further stage to control the transfer of said first and second signals into said further stage.

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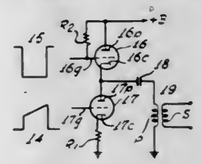
**3,166,716**
**GENERATOR SYSTEM PRODUCING POSITIONABLE OUTPUT PULSES, EMPLOYING BEAM SWITCHING TUBES AND GANGED ROTATABLE SWITCHES**
**Ronald K. Rockwell, Old Bethpage, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware**
**Filed Dec. 11, 1961, Ser. No. 158,333**
**12 Claims. (Cl. 328—64)**



1. A delayed pulse generator comprising
a source of successive timing signals,
multiple output switching means coupled to said source for sequentially energizing each output in response to said successive timing signals,
a pair of ganged rotatable switches, each switch having multiple input contacts and a rotor contact, one input contact of each switch being connected to a respective output of said multiple output means, the rotor contacts of said switches being out of phase relative to each other by a fixed angular amount irrespective of the rotation of said rotor contacts,
an AND circuit connected to the rotor contact of one of said switches, said AND circuit being connected to receive said timing signals,
and summing means connected to the output of said AND circuit and the rotor contact of the other of said switches.

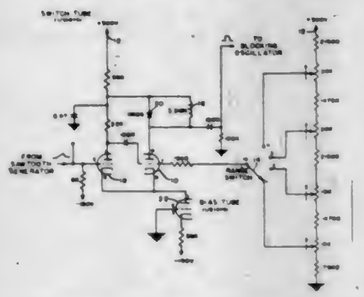
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**3,166,717**
**AREA BALANCED WAVEFORM GENERATOR**
**Susumu Nojima, Tokyo, Japan, assignor to Anritsu Dempa Kogyo Kabushiki Kaisha, Setagaya-ku, Tokyo, a company of Japan**
**Filed Jan. 22, 1960, Ser. No. 4,043**
**7 Claims. (Cl. 328—67)**



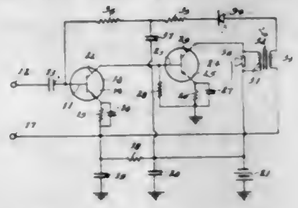
6. Area balanced current waveform generator comprising a pulse generator producing unidirectional current pulses spaced in time, a load, a charge accumulating condenser connecting said generator and load said generator producing current pulses in said load and leaving a charge on said condenser at the conclusion of each pulse, and pulse producing means operable independently of said pulse generator and connected to said condenser and energized by said accumulated charges during the intervals between successive pulses of said generator and producing current pulses through said load of a polarity opposite to that of the first said pulses and of substantially equal area.

3,166,718
**PULSE GENERATOR EMPLOYING SHOCK-EXCITED CIRCUIT AND FIRST AND SECOND VARIABLE-BIAS MEANS FOR STABILITY AND FREQUENCY ADJUSTMENT**
Joseph J. Zyskowski, Rockaway, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 28, 1962, Ser. No. 227,690
2 Claims. (Cl. 328—183)



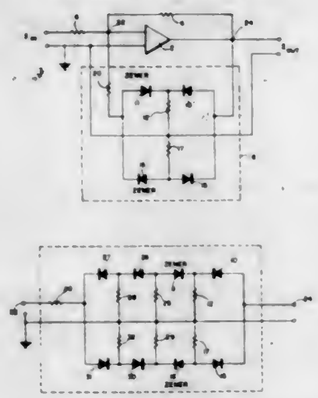
1. A pulse generator for providing a stable output pulse which is independent of the magnitude of a sawtooth input signal applied thereto, comprising:
a switch means;
a shock excited oscillator means, coupled to said switch means, having an electronic valve means including, a control means, an electron emitting means, and an electron collecting means;
first variable bias means, directly switchably coupled to said control means, for providing a value of bias thereon which conforms to the magnitude of said sawtooth input signal,
second variable bias means, directly coupled to said electron emitting means, for automatically adjusting the bias of said electronic valve means for different values of bias derived from said first variable bias means.

3,166,719
**TRANSISTORIZED SLIDING CLASS A AMPLIFIER**
Zbigniew Wiencek, Rolling Meadows, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Mar. 7, 1961, Ser. No. 93,917
7 Claims. (Cl. 330—17)



1. A two-stage, sliding class A transistor amplifier, comprising: a driver stage including a transistor of one conductivity type having a base input element and an emitter-collector output circuit; a source of signal connected to said base element; an output stage including a transistor of the opposite conductivity type, having a base input element direct current connected to the output circuit of said driver stage and having an emitter-collector output circuit; and an automatic bias control circuit for both stages of said amplifier including a diode having a generally linear forward current-voltage characteristic and a low pass filter connected in series between the emitter-collector output circuit of said output stage and the base of said driver stage, applying to the base of the driver stage and through the driver to the base of the output transistor, a direct current bias directly proportional to the amplitude of the signal in the output circuit of said output stage.

3,166,720
**LINEAR AMPLIFIER WITH A NON-LINEAR FEED-BACK NETWORK**
Frank L. Rosen and John F. Flood, Anaheim, Calif., assignors to North American Aviation, Inc.
Filed June 25, 1962, Ser. No. 204,788
2 Claims. (Cl. 330—110)



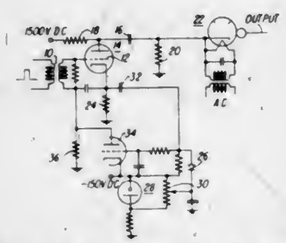
1. In a linear amplifier having a pair of input and a pair of output terminals, and having a predetermined transfer impedance,
a non-linear feedback network connected between said output and said input terminals comprising first and second ladder networks connected in parallel,
in which said first parallel network comprises a first T network whose shunt element is a resistor connected to the common cathodes of a first zener diode and a first non-zener diode in which the anode of said non-zener diode is connected to the output terminal of said amplifier, and in which said second parallel network comprises a second T network whose shunt element is a resistor connected to the common anodes of a second zener diode and a second non-zener diode with the cathode of said second non-zener diode connected to the output terminal of said amplifier and the cathode of said second zener diode connected to the input terminal of said amplifier,
a series resistor connected between said T networks in parallel and the input terminal of said amplifier,
and additional ladder network sections in series with each of said parallel connected T networks, each said ladder network section having a diode in series with and a resistor in shunt with said T networks, said additional ladder sections being connected between said zener diodes and the input terminal of said amplifier with the diodes in each being connected opposite in polarity to the connection of their associated zener diodes.

3,166,721
**REGULATED PULSE MODULATOR**
Laurence R. Smith, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed May 16, 1960, Ser. No. 29,323
7 Claims. (Cl. 331—87)

1. A pulse modulator circuit including in combination, an electron device having an output electrode and at least one control electrode, pulsing means coupled to said control electrode, bias voltage means coupled to said

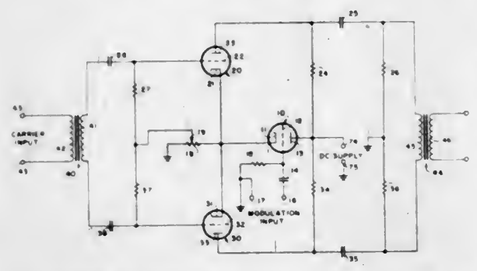


control electrode to apply a bias voltage thereto to cause said device to operate in a quiescent condition wherein said device conducts current at less than a fully saturated condition, energy supply means coupled to said output electrode, energy storage means coupled to said output electrode and to said supply means, a load coupled to said storage means, impedance means coupled in series with said load, said pulsing means applying a pulse voltage to said control electrode to cause said device to operate in its fully saturated condition, said storage means being responsive to said device in its saturated condition to



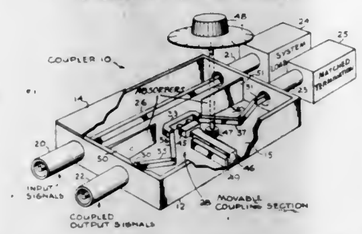
apply a pulse of energy to said load whereby pulse current is caused to flow through said load and said impedance means, the magnitude of said pulse current being determined by the amount of energy stored in said storage means, said impedance means developing a control voltage in response to said pulse current, means coupling said impedance means to said bias voltage means for applying said control voltage thereto to control said bias voltage on said electron device to thereby regulate the amount of energy storage in said storage means so that said pulse current remains substantially constant.

3,166,722
**BALANCED AMPLITUDE MODULATOR**
Albert C. Reid, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed June 1, 1961, Ser. No. 114,190
2 Claims. (Cl. 332—43)



1. A balanced push-pull modulator including a pair of electron space discharge devices, each including a cathode, a control electrode, and an anode, an impedance connected at one end thereof to said cathodes, means connected to each said anode and the other end of said impedance for impressing anode supply potential on each said anode, a carrier signal input circuit coupled to said control electrodes of said balanced modulator, said control electrodes being coupled to a point intermediate the ends of said impedance, the portion of said impedance between said one end connected to said cathodes and said point intermediate the ends of said impedance being the cathode bias impedance of said electron space discharge devices, means for coupling an input signal across said impedance, and an output circuit coupled across said anodes of said balanced modulator.

3,166,723
**VARIABLE DIRECTIONAL COUPLER HAVING A MOVABLE ARTICULATED CONDUCTOR**
Marvin J. Bock, Santa Barbara, and Frederick S. Howard, Los Angeles, Calif., assignors, by mesne assignments, to Micro-Radionics, Inc., Van Nuys, Calif.
Filed Mar. 6, 1961, Ser. No. 93,590
3 Claims. (Cl. 333—10)

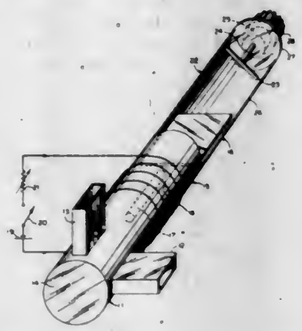


1. A variable microwave coupler including first and second spaced apart ground plane conductors, first, second, third and fourth coaxial terminal conductors positioned about the spaced apart ground plane conductors, a first fixed center conductor positioned between the ground plane conductors and connected to each of the first and second terminal conductors to provide a first slab transmission line electrically coupling the first and second terminal conductors, a second center conductor positioned between the ground plane conductors and providing a selected coupling length which is substantially one-quarter wavelength at the operating wavelength of waves propagated along the first slab transmission line, first and second articulated center conductor means, the first articulated center conductor means being coupled from the third terminal conductor to the adjacent end of the second center conductor and the second articulated center conductor means being coupled from the fourth terminal conductor to the adjacent end of the second center conductor, the first articulated center conductor means, the second center conductor and the second articulated center conductor means providing a second slab transmission line between the third and fourth terminal conductors, means coupled to the second center conductor for moving the second center conductor transversely relative to the first while maintaining the coupling length parallel to the length of the first center conductor, thus to provide variable coupling of waves between the first and second wave transmission lines, microwave energy absorbing means disposed between the first and second slab transmission lines between the first and second ground plane conductors for the suppression of higher order modes excited by waves propagated along the slab transmission lines.

3,166,724
**ELECTRICAL FREQUENCY SHIFTER UTILIZING FARADAY PHASE SHIFTER AND DUAL MODE COUPLER WITH ROTATABLE REFLECTION DIPOLE**
Philip J. Allen, North Forestville, Md. (8000 Marion St., Washington 28, D.C.)
Filed Nov. 24, 1961, Ser. No. 154,911
6 Claims. (Cl. 333—24.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An electrical signal shifter device comprising, a dual mode coupler having first and second ports coupling to orthogonal planes therein, a 45° Faraday rotator connected to said coupler, a 90° birefringent device connected to said rotator, said device being characterized by 90 degree differential phasing in the orthogonal planes of the dual mode coupler, a 180° differential reflector connected to said birefringent device for reflecting energy back through said birefringent device with 180° differential phasing in orthogonal planes, and means for adjust-

ing the position of the orthogonal planes of the differential reflector, whereby output energy is obtained at one port of the dual mode coupler in response to energy of



appropriate wavelength for transmission through the device applied to the other port of the dual mode coupler and with relative shifting controllable by the adjustment of said means.

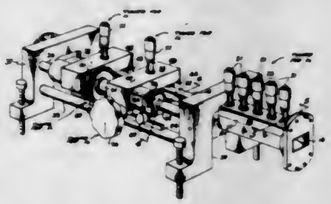
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3,166,725

## BROADBAND TUNING TRANSFORMER PERMITTING INDEPENDENT MATCHING AT ADJACENT FREQUENCIES

Glenn F. Engen, Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce

Filed June 4, 1962, Ser. No. 199,999
5 Claims. (Cl. 333—33)



4. In an arrangement for tuning a waveguide, said waveguide being dimensioned to support only one mode of popagation over a frequency range including a first and second frequency, means for generating said first and second frequency, means for launching said first and second frequency in said mode in the waveguide, first adjustable tuning means positioned in said waveguide for providing an impedance match at said first frequency, and second adjustable tuning means positioned in said waveguide for maintaining the second tuning means reflectionless at said first frequency and for providing an impedance match at said second frequency.

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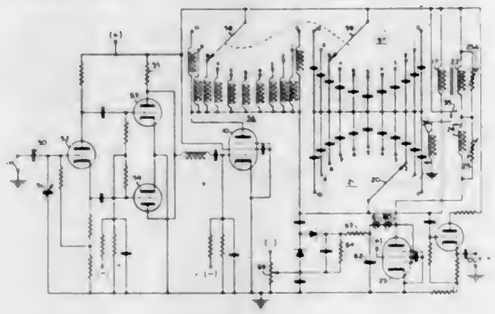
3,166,726

## AUTOMATIC SWEEP TUNING CIRCUIT WITH MEANS TO CHANGE THE RANGE OF REACTANCE AFTER EACH SWEEP THROUGH A SUB-BAND

Garold K. Jensen, Pinecrest, Va., and James E. McGeogh, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 19, 1962, Ser. No. 245,943
4 Claims. (Cl. 334—19)
(Granted under Title 35, U.S. Code (1952), sec. 266)

4. A tunable electrical circuit comprising,
a variable reactance device sensitive to a control signal to provide reactance variation in accordance with the control signal,
means for producing a basic control signal to sweep said device over a range of reactance at a selected recurrence frequency,
means to change said range of reactance after each sweep, and



signal amplitude responsive bias developing means for developing an auxiliary control signal in opposition to the basic control signal to stop said recurrent sweep when said device reaches a selected critical reactance.

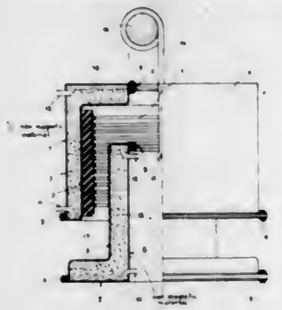
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3,166,727

## MAGNETIC COIL AND CORE STRUCTURE

Charles Alphonse Emile Beurtheret, Seine-et-Oise, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a French body corporate

Filed Dec. 7, 1962, Ser. No. 243,147
Claims priority, application France, Dec. 18, 1961, 882,233, Patent 1,316,558
13 Claims. (Cl. 336—57)



9. Electromagnetic apparatus comprising in combination electromagnetic winding means for creating a magnetic field, magnetic circuit structure comprising rigid wall members, means for interassembling said members, the outer surfaces of said members when assembled defining at least one generally cylindrical structure coaxial with said winding means and the inner surfaces of said members when assembled defining an enclosure therebetween, and a body of loose ferrimagnetic particles filling the enclosure with interstitial gaps between the particles.

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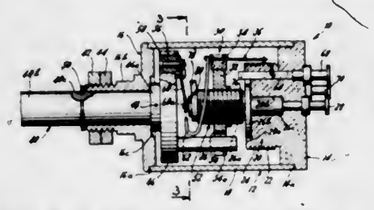
3,166,728

## POTENTIOMETER

Morris Nirenberg, Howard Beach, and Michael Sekerich, Brooklyn, N.Y., assignors to Vogue Instrument Corporation, Brooklyn, N.Y., a corporation of New York

Filed Aug. 28, 1961, Ser. No. 134,427
9 Claims. (Cl. 338—144)

1. An infinite resolution potentiometer comprising spaced mounting members, a wire form having an outer surface provided with a helical groove and projecting inwardly of one of said mounting members, a helically wound resistance wire mounted within said groove, a stationary lead screw extending axially of said resistance wire and projecting outwardly from said wire form toward the other of said mounting members, a follower threadedly engaging said lead screw and movable therealong in response to being rotated, a brush underlying said resistance wire in electrical contact therewith and arranged to lift successive portions of said resistance



wire from within said groove, means mounting said brush on said follower for movement therewith along a helical adjustment path such that said brush makes contact with successive portions of said resistance wire, and rotatable control means operatively connected to said follower for rotating the same, said control means including a control shaft journalled on the other of said mounting members and extending axially of and toward said lead screw and drive means carried on said control shaft and slidably coupled to said follower for rotating said follower.

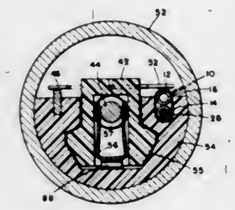
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3,166,729

## RECTILINEAR POTENTIOMETER

Donald C. Baker, 449 Pine Needles Drive, Del Mar, Calif.; Richard L. Smith, National City, Calif.; and Alan L. Baumgart, 6828 Halifax St., San Diego, Calif.; said Smith assignor to California General, Inc., Chula Vista, Calif.

Filed Feb. 19, 1962, Ser. No. 173,876
9 Claims. (Cl. 338—183)



1. The combination comprising:
an elongated guide member having a substantially U-shaped elongated longitudinal slot;
an elongate conductive bar positioned along the top of one side of said guide member;
an elongate resistance-wire unit positioned along the top of said other side of said guide member;
a wiper block slidably positioned in said U-shaped slot for longitudinal movement therein said block being of complementary shape compared to said slot;
a wiper mounted on said block, said wiper having one end in slidable contact with said bar, and having the other end in slidable contact with said resistance wire unit;
an actuating rod having one end attached to said block, said attachment comprising a hairpin-type spring, whereby said rod may rotate freely with respect to said block without applying any torque thereto, but may move said block slidably along said slot.



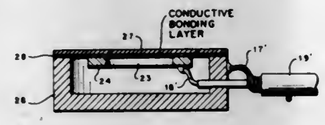
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3,166,730

## ANNULAR ELECTROSTRICTIVE TRANSDUCER

James R. Brown, Jr., Hatboro, and John D. Wallace, Oreland, Pa., assignors to the United States of America as represented by the Secretary of the Navy

Filed Sept. 29, 1959, Ser. No. 843,314
16 Claims. (Cl. 340—10)
(Granted under Title 35, U.S. Code (1952), sec. 266)




1. An electromechanical transducer comprising: a circular diaphragm; means bonded to and supporting said diaphragm at the periphery thereof; an electrostrictive prepolarized ceramic annulus; means bonding said annulus to said diaphragm wherein the annular axis is located at the portions of said diaphragm displaced from the periphery thereof a distance equal to 0.22L, where L is the free length of any diametrical segment of said diaphragm, and means electrically connecting a pair of conductors to said annulus.

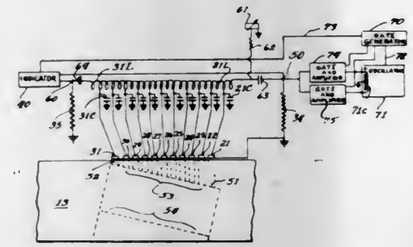
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3,166,731

## ULTRASONIC TESTING DEVICE

Ivan L. Joy, Topeka, Kans., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 24, 1959, Ser. No. 855,150
3 Claims. (Cl. 340—15)



2. In combination: an electromechanical transducer, an oscillator generating an actuating signal for said transducer, said signal having components of the same frequency and of opposite phase, a first gate circuit for applying one of said signal components to said transducer, a second gate circuit for applying the other of said signal components to said transducer, and means for briefly initiating the first gate circuit and then the second gate circuit.

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3,166,732

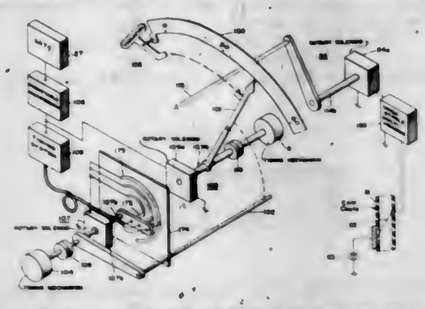
## VEHICULAR PARKING SYSTEMS

Nils Ljungman, 218 Forrest Ave., Narberth, Pa., and James E. Brown, Jr., Philadelphia, Pa. (810 Chetwynd Apts., Rosemont, Pa.)

Filed Aug. 22, 1962, Ser. No. 218,780
9 Claims. (Cl. 340—51)

1. The combination with a parking meter having a time-controlled element movable from a zero position through a coin-controlled path-length proportional to the value of a coin payment, of a time-controlled member movable from a maximum timing position toward a zero-timing position and having structure extending into the path of movement of said element, and means responsive to the arrival of a vehicle in a parking space for initiating movement of said member from its said maximum posi-

tion, said structure of said time-controlled member in its movement in the path of said element restricting said coin-controlled movement of said element to limit the coin-



controlled time-period for which said parking meter may be set to one which begins with the arrival of the vehicle in said parking space.

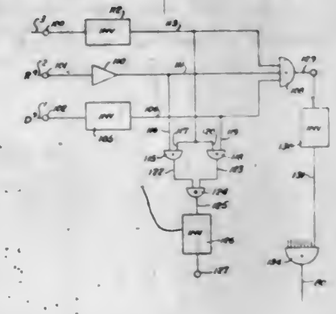
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**3,166,733**

## NUMBER COMPARING SYSTEMS

**Ralph H. Schuman, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio**

**Filed Apr. 21, 1960, Ser. No. 23,742**
**3 Claims. (Cl. 340—146.2)**



1. A comparator for comparing two multidigit numbers having binary valued digits represented by bivalued electrical signals and comprising a comparator stage for each digit of the numbers with the stages being arranged in the order of significance of the digits; the stages intermediate the most significant stage and the least significant stage comprising first and second input terminals for the respective digits of the numbers to be compared and a control terminal, said control terminal being adapted to have a bivalued electrical signal applied thereto for control purposes, first AND gating means connected to said terminals for detecting the condition that the digit applied to the stage of one number is larger than the digit applied to the stage of the other number and that said control terminal is at a first level and having a first output for said condition and a second output for all other conditions of said terminals, second logic gating means connected to said terminals for detecting the condition that the applied digit of said one of said numbers is less than the applied digit of the other number and said control terminal is at said first level and having a first output for the defined condition and a second output for all other conditions of said terminals, the least significant stage of said comparator comprising a control terminal and first and second digit input terminals and first AND gating means for discriminating the condition when the control terminal of the stage is at a first level and the digit applied thereto of said one number is larger than the applied digit of the other number and said most significant stage having digit input terminals and first AND gating means for discriminating the condition that the most significant digit of said one number is larger than the corresponding digit of said other number and having a first output for the defined condition and a second output for all other conditions and second logic gating means for discriminating the condition that the most significant digit of said one number is less than the corresponding digit and having a first output under the defined condition and a second output for all other conditions, and means for connecting the output of the second gating means of the more significant stages of the comparator to the control terminal of the next lesser significant stage, and logic means for discriminating between the condition when all of said first AND gating means have their said first output and the condition when less than all of said first AND gating means have their first output.

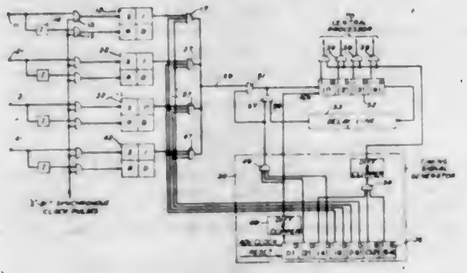
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**3,166,734**

## SIGNAL ASSEMBLER COMPRISING A DELAY LINE AND SHIFT REGISTER LOOP

**John H. Helfrich, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Dec. 6, 1962, Ser. No. 243,213**
**12 Claims. (Cl. 340—147)**



1. In a time division switching system having a plurality of incoming time division multiplexed message bit streams that include supervisory signal bits at uniformly spaced positions in each frame which form unique S-characters, a supervisory signal assembler comprising a delay line and a shift register connected end to end in a loop configuration, the total loop delay being equal to the time duration between successive signal bits in each message bit stream $\pm 1$ bit spacing in the delay loop, means for sequentially and cyclically scanning the message bit streams for signal bits and delivering samples thereof to the input of said delay loop, and means for reading assembled S-characters out of the delay loop after the last signal bit of each S-character has been inserted therein.

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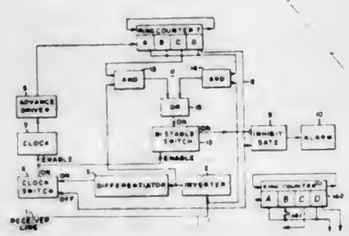
**3,166,735**

## CODE SELECTORS FOR SELECTIVE CALLING SYSTEMS

**Robert C. Clark, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed Oct. 6, 1958, Ser. No. 765,423**
**8 Claims. (Cl. 340—164)**

1. A code selector of the type used in the receiver of a selective calling system in which an alarm is actuated at a particular receiver only when a particular binary code is received and recognized by the selector comprising a receiver line upon which is impressed a received binary code consisting of a number of binary bits, a ring counter having a number of stages, each stage corresponding to one bit of the received code, means including a source of clock pulses for driving said ring counter through one complete cycle in response to the first binary bit which is received, an inverter for inverting each received bit to produce a corresponding inverted bit, means for comparing the output of each stage of the ring counter with the corresponding received bit on the receiver line if that bit in the code which selector is designed to recognize is a "1," means for comparing the output of each stage of the ring



counter with the corresponding inverted bit from the inverter if that bit in the code which the selector is adapted to recognize is a "0," an alarm, said alarm being actuated upon completion of the ring counter cycle only when each bit of the received code is the same as the corresponding bit of the code which the selector is designed to recognize.

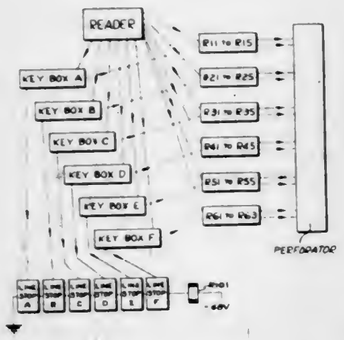
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**3,166,736**

## DATA SENSING APPARATUS INCLUDING MEANS FOR REPLACING INCORRECT OR OUTMODED DATA

**George L. Heminger, Cicero, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**

**Filed Aug. 25, 1960, Ser. No. 51,872**
**3 Claims. (Cl. 340—172.5)**




1. Data processing apparatus comprising data storing means, keyboard means for manual encoding of data for storage in said storing means, data sensing means connectable to said storing means for feeding prerecorded data to said storing means, means for interrupting operation of said data sensing means, and means for connecting said data sensing means to said interrupting means through said keyboard means, whereby said keyboard means may be preset to permit actuation of said interrupting means by said sensing means only when a data signal generated by said sensing means corresponds to the setting of said keyboard means.

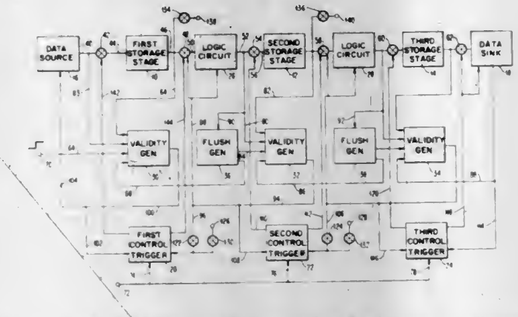


**3,166,737**

## ASYNCHRONOUS DATA PROCESSOR

**Frank J. Sparacio, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Dec. 23, 1960, Ser. No. 77,921**
**39 Claims. (Cl. 340—172.5)**




1. A data processor comprising logic means adapted for processing electronic signals representing data and for propagating output signals representing processed data, said logic means being non-oscillatory and thereby exhibiting useful information upon each change of said output signals, input means for the supply of said electronic signals, gate means coupling said input means to said logic means for the transmission of said electronic signals thereto, said gate means being adapted to isolate the logic means from the input means whereupon said logic means assumes a flushed state in which data is absent therefrom, output means coupled to said logic means and adapted to receive output signals therefrom, and control means coupled to said gate and output means and to said logic means and responsive to the first change of signals transmitted from said logic means to said output means following a flushed state in said logic means for controlling the gating of signals from said input means to said logic means.

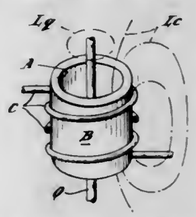
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**3,166,738**

## SUPERCONDUCTIVE CONTROL DEVICE

**Albert E. Slade, Cochituate, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts**

**Filed Mar. 15, 1957, Ser. No. 646,485**
**6 Claims. (Cl. 340—173.1)**

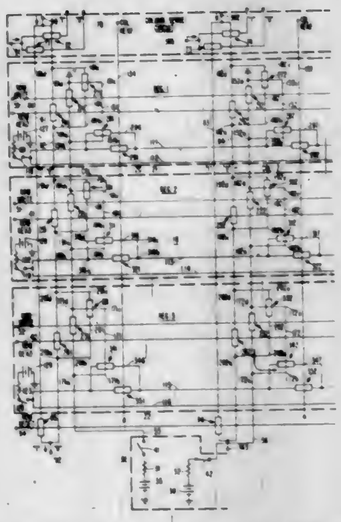


1. An electrical memory comprising current-supply means and current-collection means, superconductive means forming at least two paths between said current means, each path including superconductive gate means, a closed loop of superconductive material embracing each gate means, means for applying to the loop a first magnetic field whose lines of force are oriented to establish persistent current in the loop, means for applying to the loop a second magnetic field whose lines of force are oriented so as to be incapable of establishing current in the loop thereby to quench said persistent current, and for each path, control means for applying a magnetic field to gate means therein so as to influence a change

of the gate means to resistive state, whereby the paths may be made resistive by persistent current in the said loops or by current applied to one of said control means.

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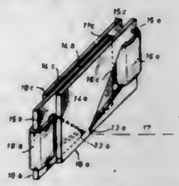
**3,166,739**
**PARALLEL OR SERIAL MEMORY DEVICE**
**Munro K. Haynes, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed May 18, 1960, Ser. No. 30,010**
**6 Claims. (Cl. 340—173.1)**



1. A memory array having storage units disposed in columns and rows, means coupled to the array to write information in parallel in different storage units disposed along any row of the array, means coupled to the array to read information in parallel from any given storage unit disposed along any row of the array to output means external of the array, and means coupled to the array to read information serially from any combination of the rows of the array simultaneously with parallel write operations in any combination of the remaining rows.

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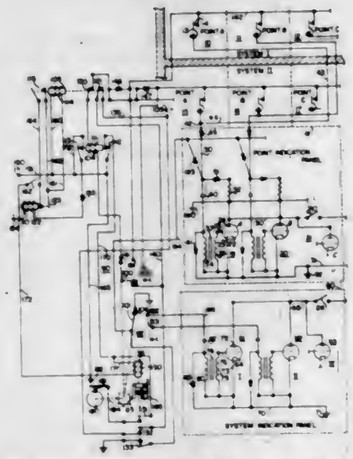
**3,166,740**
**MULTIPLE MAGNETIC HEADS**
**Yves-Jean Francois Brette, Sevres, France, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France**
**Filed Dec. 30, 1959, Ser. No. 862,852**
**Claims priority, application France, Jan. 6, 1959, 783,351, Patent 1,213,217**
**3 Claims. (Cl. 340—174.1)**



1. A multiple magnetic head comprising a plurality of identical flat electromagnetic transducers each including a magnetic core having the general shape of a rectangular plate provided with a substantial triangular inner aperture, one side of said aperture being parallel to and near one of the short sides of the rectangular plate, a first leg of said core being defined between these parallel sides, and the apex of said triangular aperture opposite said one side thereof being close to the middle of one of the long sides of said rectangular plate, a second leg of said core being defined between a second side of said aperture and the second one of the short sides of the rectangular plate, said plate being further provided with a slit perpendicular to said long side joining said side to said apex and forming a working air gap in said core, each of said transducers further including a coil carried by said first leg of the core, and said transducers being assembled side by side with their air gaps in alignment within a common plane and with coils of adjacent transducers on opposite sides of said common plane, the second leg of the core of each transducer overlapping large portions of the second leg of adjacent cores.

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**3,166,741**
**CONTROL APPARATUS**
**Gary W. Spence, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Sept. 15, 1961, Ser. No. 138,391**
**3 Claims. (Cl. 340—213)**



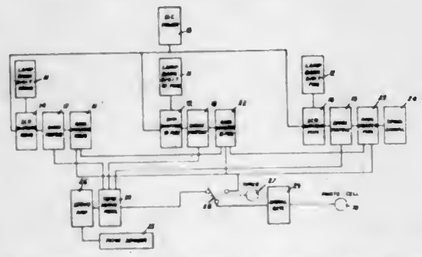
3. In an indicating system for indicating the presence of a predetermined temperature in any one of a plurality of spaces, a plurality of temperature responsive switch means for providing a closed circuit when a predetermined temperature exists in each of said spaces, a group of said switch means for each of at least two areas, a plurality of indication means divided into two groups, one of said groups for indicating the temperature condition in said spaces and a second group for indicating the area having the space with said predetermined temperature condition, circuit means connecting each of said switch means of said first group to a respective indication means, circuit means connecting each of said switch means of said second group in a corresponding manner to said indication means of said first group so that one of said switch means of each group can effect the same indication means, stepping switch means having a first and second portion, a source of power, relay means connected to be energized when any one of said temperature responsive switch means closes, circuit means including said relay means when energized for connecting said stepping switch means to said source to operate said stepping switch means through a cycle of operation, means including said first portion of said stepping switch means for connecting said source to said groups of switch means in sequence in one of said cycles of operation so that upon each group being energized said indication means corresponding to said switch means which is closed is energized, and



means including a second portion of said switch means and said closed temperature responsive switch means for connecting one of said indication means to said source each time said source is connected to said group of switches in said one cycle of operation to indicate one of said switches of said group is closed.

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**3,166,742**
**CONTROL FOR LAMP BANK DISPLAYS**
**Richard N. Sherwin, Rockford Bay, Idaho, assignor to American Sign & Indicator Corporation, Spokane, Wash., a corporation of Washington**
**Filed Mar. 22, 1963, Ser. No. 267,202**
**7 Claims. (Cl. 340—334)**



1. A control apparatus for lamp bank displays comprising:

a source of power;

a lamp bank including a plurality of lamps wired in lamp groups adapted to be selectively activated to produce a desired lighted display;

gate controlled rectifier means, said lamp groups and said gate controlled rectifier means being wired in series across said source of power, said gate controlled rectifier means including gate connections for reception of an activated signal;

gate signal generator means;

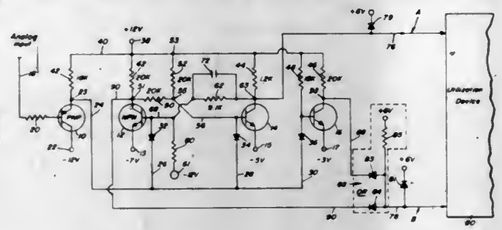
selector means operatively connected to the gate connections of said gate controlled rectifier means and to said gate signal generator means for completing selected connections between said gate signal generator means and said gate controlled rectifier means to thereby establish desired connections across said power source through said lamp groups and gate controlled rectifier means;

and a diode matrix comprising a plurality of parallel blocking diodes wired individually in series between said selector means and said lamp groups for preventing the completion of undesired circuits through lamp groups utilized in more than one of the desired lighted displays.

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**3,166,743**
**QUANTIZER WITH BINARY OUTPUT**
**Sidney Greenwald, Hyattsville, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota**
**Filed Sept. 18, 1961, Ser. No. 138,868**
**13 Claims. (Cl. 340—347)**

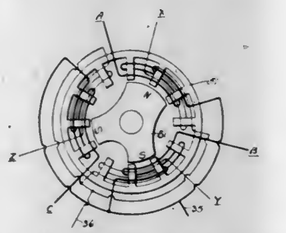
6. A circuit to quantize analog signals and provide output codes on a pair of code output lines where the codes correspond to four levels of input signals, said circuit comprising an analog input signal conductor, a first and a second and a third transistor all connected in parallel to said input signal conductor so that each of the three transistors experiences all possible levels of the analog input signals, means providing a first potential to one terminal of each transistor, source signal conducting means connected to another terminal of each transistor, said source signal conducting means providing a different source signal level to bias the respective transistors in a manner that each separate source signal represents a signal value division at which the incoming signals are to be quantized, said incoming signals tending to drive each transistor to cut-off, an OR gate, conductors con-



nected to the output terminals of said first and third transistors and connected to said OR gate, one of said pair of code output lines being the output line of said OR gate, and the other code line connected to the output terminal of said second transistor.

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**3,166,744**
**DIGITAL READOUT DEVICE WITH BINARY TO DECIMAL CONVERSION**
**Walter Leonchick, 6961 Vine St., La Grange, Ill.**
**Filed Jan. 28, 1963, Ser. No. 256,188**
**4 Claims. (Cl. 340—347)**



4. Apparatus for reading out the numerals 1, 2 . . . 0 from binary coded versions of said numerals where the numerals from 1 to 6 are represented as 0, $2^2$, $2^1$, $2^0$ and the numerals from 7 to 0 as $2^3$, $2^2$, $2^1$, $2^0$ or as a weighting factor in the first position and $2^2$, $2^1$, $2^0$ comprising a device providing an output of said numerals in said binary coded form, said output being applied to four conductors and common ground, there being one individual to each of the four binary components, an annular stator having twelve poles, two wye-windings, the legs of one winding being each wound on a first group of three adjacent poles, the legs of the other winding being each wound on a second group of three adjacent poles two of which are included in the poles of the first group whereby the legs of said other winding overlap the legs of said first winding by the amount of two poles, a relay having an armature and front and back contacts, the common end of each winding being connected to said front and back contacts respectively, said armature being connected to ground, the conductor corresponding to the first component of the four-bit binary code being connected to the winding of the relay, the other end of said relay winding being connected to ground whereby signal or no-signal applied to the relay winding is effective to connect the common end of the one wye-winding or the other to said first component conductor, the other ends of the overlapped legs of the wye-windings being connected in common and to each of the remaining three conductors, a rotatable shaft coaxial with the stator, a bi-polar magnetic rotor mounted on said shaft, said rotor having one magnetic pole spanning three stator poles and a diametrically opposite magnetic pole comprised as two separate parts,

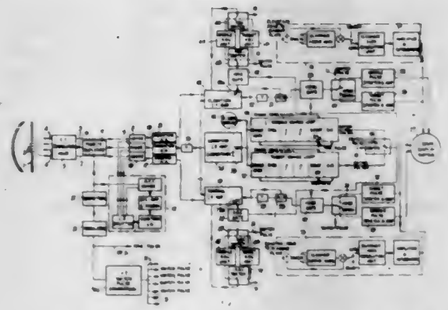
each part spanning two stator poles and the two stator poles associated with each part being separated by one stator pole, and means for utilizing the angular positions of the rotor resulting from selective energization of the wye-windings as a decimal number readout.

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3,166,745
## RADAR TRACKING

John Edward Engledew, Leverstock Green, and Roland Ernest Ford, Edgware, England, assignors to Elliott Brothers (London) Limited, Lewisham, London, England, a company of Great Britain

Filed Mar. 16, 1960, Ser. No. 15,468
Claims priority, application Great Britain, Mar. 19, 1959, 9,633/59
36 Claims. (Cl. 343—7.4)



1. A radar tracking system adapted to radiate pulses of electromagnetic energy in a directional beam and, in the interval between radiated pulses, to receive pulses of energy reflected from an object irradiated by the beam and to produce from the received pulses three output signals corresponding respectively to the amplitude sum of the received energy which represents the range of the object by its position in time relative to the immediately preceding radiated pulse, an elevation error signal the phase and amplitude of which relative to the sum signal denotes the sense and magnitude respectively of departure of the elevation of the object from the mean beam axis and a bearing error signal the phase and amplitude of which relative to the sum signal denotes the sense and magnitude respectively of departure of the bearing of the object from the mean beam axis, means for cyclically detecting the phase and amplitude difference between each elevation error signal and the corresponding sum signal produced from the pulses of energy reflected from each of at least two irradiated objects, means for cyclically detecting the phase and amplitude difference between each bearing error signal and the corresponding sum signal produced from the pulses of energy reflected from each of the irradiated objects, means responsive to both phase and amplitude difference detecting means to cause the aerial system to follow a predetermined one of the irradiated objects, means for deriving the bearing and elevation of each other irradiated object relative to said predetermined one object and means responsive to the respective sum signals derived from the irradiated objects to determine the respective ranges thereof.

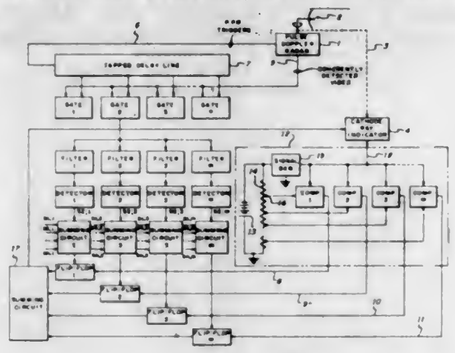
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3,166,746
## TARGET VELOCITY-AZIMUTH INDICATOR

Robert S. Jacobson, Northport, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Sept. 23, 1960, Ser. No. 58,142
7 Claims. (Cl. 343—9)

1. Apparatus comprising a radar for the detection of target echo signals, a plurality of bandpass filters, each filter being tuned to a different but neighboring frequency within the spectrum of anticipated Doppler echo signal frequencies, means for jointly applying the detected target echo signals to said plurality of bandpass filters, a plurality of signal storage units, each storage unit being coupled to the output of a respective one of said plurality of bandpass filters, a programming circuit for producing a plurality of successively occurring pulses during a predetermined time interval, each of said successively occurring pulses being applied to a respective one of said plu-



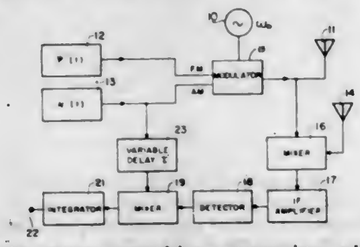
rality of storage units, each storage unit producing an output pulse in the event that it first receives a signal from its respectively associated filter and then receives a respective one of said successively occurring pulses, a cathode ray tube indicator having an electron beam, means for intensity modulating said beam, means for jointly connecting the output of each of said plurality of storage units to said means for intensity modulating, and means coupled to said programming circuit for deflecting said beam during said predetermined time interval.

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3,166,747
## FM-AM CORRELATION RADAR SYSTEM

Donald J. Adrian, Corona, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 7, 1961, Ser. No. 87,723
1 Claim. (Cl. 343—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)




A radar system comprising a transmitter adapted to emit a combined frequency modulated and amplitude modulated radio frequency noise signal and a receiver adapted to receive an echo of said emitted signal from a target; said transmitter comprising a modulator having an oscillator, a frequency modulating signal and an amplitude modulating signal coupled thereto and an output coupled to a transmitting antenna; said receiver comprising a first mixer having a first input coupled to a receiving antenna, a second input coupled directly to the output of said oscillator and an output, an intermediate frequency amplifier tuned to receive signals of frequencies above doppler frequencies and having an input coupled to the output of said first mixer and an output,



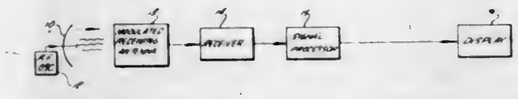
a detector for detecting the amplitude modulated signal having an input coupled to the output of said intermediate frequency amplifier and an output, variable delay circuit means having an input coupled to said amplitude modulating means and an output, a second mixer having a first input coupled to the output of said detector, a second input coupled to the output of said variable delay circuit means and having an output and integrator means coupled to the output of said second mixer to receive an output pulse from said mixer which in indicative of the range of said target.

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3,166,748
## METHODS AND APPARATUS FOR MEASURING ANTENNA RADIATION PATTERNS

Howard E. Shanks, San Marino, and Robert W. Bickmore, Santa Monica, Calif., assignors, by mesne assignments, to Teledyne Systems Corporation, Hawthorne, Calif., a corporation of California

Filed July 17, 1961, Ser. No. 124,609
20 Claims. (Cl. 343—100)



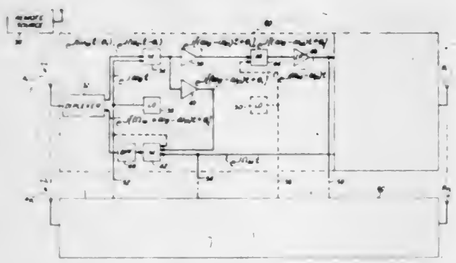
1. A method for measuring the Fraunhofer pattern of an antenna in other than the Fraunhofer zone comprising radiating electromagnetic energy from a source, receiving the radiated energy at a preselected range outside of the Fraunhofer zone in a periodic time modulated fashion, and electronically processing the thus modulated signal to derive the Fraunhofer pattern of the antenna.

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3,166,749
## COMMUNICATION STATION EMPLOYING AN ANTENNA ARRAY

John C. Schelleng, Interlaken, and Le Roy C. Tillotson, Holmdel, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 31, 1962, Ser. No. 234,382
7 Claims. (Cl. 343—100)

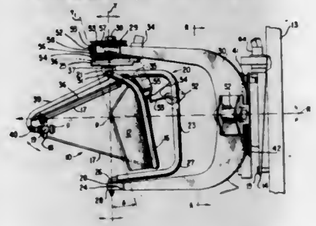


1. In a communication system, an array of antenna elements, a source of information-bearing electromagnetic waves for irradiating said array, combining means, and apparatus individual to each antenna element comprising means for recovering an information component and an unmodulated sine wave signal to serve as a pilot component from the portion of said wave impinging upon said element, means for mixing said information component with said pilot component, and means for applying the difference frequency side band resulting from said mixing means to said combining means.

3,166,750
## ANTENNA INTERSECTING-ORTHOGONAL-AXES GIMBAL MOUNT UTILIZING ROTARY BEARINGS FOR TWO AXES AND PUSH-PULL LINKAGE FOR THIRD AXIS

Eldon W. Ball, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Feb. 14, 1961, Ser. No. 89,155
9 Claims. (Cl. 343—705)



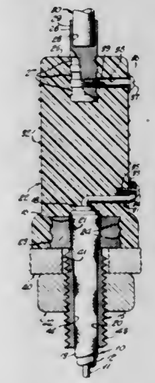
1. A stabilized gimbal mounting arrangement for a directive mechanism located on a vehicle comprising, in combination, a base plate of planar configuration, means to secure said base plate to the vehicle in a fixed position in a plane which contains lines which lie substantially parallel to the yaw and pitch axes and normal to the roll axis of the vehicle, a circular trackway mounted on said base plate with the center thereof coincident with the vehicle roll axis, an antenna mechanism including a reflective surface having three pivot axes mutually perpendicular to one another and intersecting in a common pivot point forward of such surface, said axes being designated as yaw, pitch, and roll, a pair of yoke members pivotally attached to said surface along the yaw axis thereof and extending rearwardly of such surface for moving said surface about the other two of said axes, a support pivot secured to the base of each yoke member in a fixed relation thereto with the support pivot axis aligned with said common pivot point, a pair of yoke support elements operatively coupled to said yoke base support pivots, and driving means coupled to said yoke support elements to selectively position the same along said circular trackway.

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3,166,751
## ANTENNA MOUNTING FIXTURE WITH LOADING COIL

John B. Roll, Plainfield, N.J., assignor to DPZ Corporation, New York, N.Y., a corporation of New York

Filed Sept. 27, 1962, Ser. No. 226,611
7 Claims. (Cl. 343—749)



1. An antenna structure comprising
(*a*) a base mounting screw having a longitudinal central bore, a threaded shank, and a head;

(*b*) a coaxial cable passing upward through the central bore of the base mounting screw and having an inner conductor, an insulating layer surrounding the inner conductor, and a shielding braid surrounding the insulating layer, the upper end of the inner conductor projecting beyond the head of the base mounting screw;

(*c*) a ferrule wedge having an axial hole, the insulating layer and the inner conductor of the coaxial cable passing upward through the axial hole and the ferrule wedge lying at least partly inside the shielding braid, said ferrule wedge forcing the shielding braid outward against the wall of the central bore of the base mounting screw and thus cooperating with said wall to grip the shielding braid tightly;

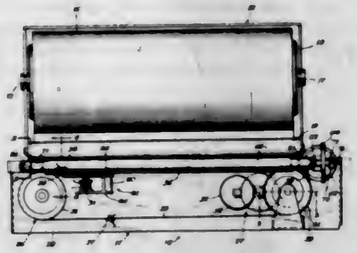
(*d*) an antenna connection socket adapted to couple to an antenna rod;

(*e*) a molded base of insulating material molded about and securely gripping the head of the base mounting screw and partially enclosing the upper end of the inner conductor, said molded base partially surrounding and securely gripping the antenna connection socket while maintaining said antenna connection socket out of direct electrical contact with said base mounting screw; and

(*f*) electrical connecting means for carrying current between the upper end of the inner conductor and the antenna connection socket.

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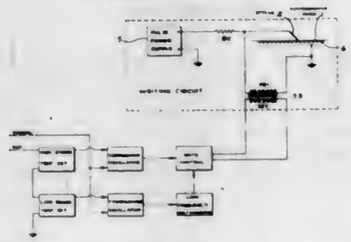
**3,166,752**
**PAGE PRINTING DEVICE UTILIZING A SCANNING ELECTRODE STRUCTURE**
**Herbert C. Waterman, Chicago, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois**
**Filed Dec. 4, 1959, Ser. No. 857,444**
**15 Claims. (Cl. 346—74)**



1. Apparatus for recording information on a recording sheet, said apparatus including in combination, means for causing the recording sheet to move in a predetermined direction, at least one movable electrode structure, scanning means attached to said movable electrode structure and adapted to scan said movable electrode structure repeatedly across the recording sheet in a direction transverse to the direction of movement of the recording sheet, said electrode structure including a plurality of conductive electrode fingers extending therefrom and aligned transversely with respect to the direction of movement of said electrode structure, said electrode fingers having spaced portions following substantially parallel linear paths as said electrode structure scans across the recording sheet, means insulating said electrode fingers from one another, a plurality of stationary conductors insulated from one another and positioned to be engaged respectively by said electrode fingers as they move across the recording sheet, and circuit means for selectively applying electrical impulses to said conductors, with said impulses being coded and timed with respect to the scanning movement of said movable electrode structure to produce an array of marks arranged in columns on the recording sheet such that complete symbols are formed one after the other as said movable electrode structure scans across the recording sheet.

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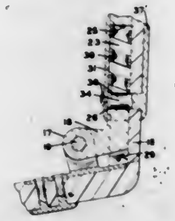
**3,166,753**
**MONITOR CONTROL CIRCUIT**
**Herbert R. Ryerson, Garfield Heights, and Andrew Csala, Cleveland, Ohio, assignors to Avtron Manufacturing, Inc., a corporation of Ohio**
**Filed Jan. 31, 1961, Ser. No. 86,224**
**12 Claims. (Cl. 346—74)**



5. A monitor control circuit for an event recorder wherein events are recorded on a moving electrosensitive paper chart by a writing circuit supplying voltage pulses to a conductive stylus in contact with said paper and wherein writing is prevented by effectively short circuiting the secondary of a control transformer having a primary shunted across said writing circuit, comprising a comparator oscillator including a blocking oscillator having a feedback loop wherein feedback is negative when a preset trip voltage exceeds an input signal voltage, and positive when the input signal voltage exceeds the trip voltage whereby said blocking oscillator goes into oscillation, a sensing circuit responsive to said oscillations, a low frequency multivibrator controlled by said sensing circuit, a gate control circuit receiving the output of said multivibrator and caused thereby to open circuit intermittently the secondary winding of said control transformer whereby said stylus writes a dotted line, and means causing said gate control circuit to open circuit continuously the secondary winding of said control transformer when the input signal voltage attains a high level whereby said stylus writes a solid line.

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**3,166,754**
**TEMPLE HINGES**
**Raymond F. E. Stegeman, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York**
**Filed Jan. 25, 1961, Ser. No. 84,784**
**1 Claim. (Cl. 351—153)**



A resilient hinge for pivotally mounting a temple on an ophthalmic frame so as to resiliently oppose pivoting movement of said temple outwardly beyond normal open position,

said hinge comprising in combination a compression spring,

an elongated hinge plate including a plurality of aligned hinge lugs disposed at one end of said hinge plate, said plate including a bottom surface disposed in sliding contact with a surface of said temple,

a pair of parallel mutually spaced interior walls formed longitudinally of said plate and terminating at their ends in a pair of connecting walls, said walls forming an opening through said plate, the thickness of said plate and the distance between the first pair of walls slightly exceeding the diameter of the spring, and said spring disposed in and fully accommodated by the opening defined by said walls,

a retainer plate overlaying the top and side surfaces of said hinge plate and fixed to said temple with sliding clearance between said retainer plate and said hinge plate, and

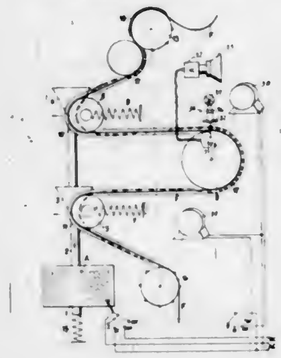
an anchor stud extending through said temple and through said opening to secure the retainer plate on the temple in fixed operative position thereon,

said spring bearing at one end under compressive stress against one side of said stud and at the other end against one of the connecting walls so that the opposite connecting wall is forced by the spring against the other side of said anchor stud to establish normal position of said hinge plate.



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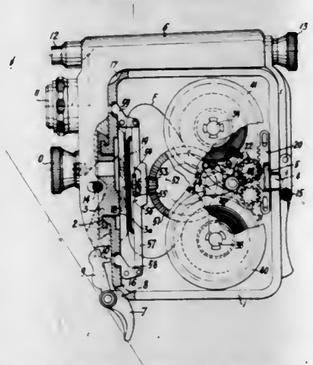
**3,166,755**
**MEANS FOR FEEDING A KINEMATOGRAPHIC FILM IN SOUND FILM APPARATUS**
**Alfred Eisinger, Griesheim, near Darmstadt, and Heinrich Zahn, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany**
**Filed Sept. 7, 1961, Ser. No. 136,593**
**Claims priority, application Germany, Sept. 10, 1960, F 32,083**
**5 Claims. (Cl. 352—27)**



3. In a motion picture apparatus, in combination, a rotary drum associated with a sound reproducing device; guide means located adjacent said drum for guiding film to and from the same; a pair of film driving sprockets located before and after said drum and guide means along the path of film movement; a pair of guide rollers respectively located between said sprockets and guide means and around which the film is guided for movement from the sprocket located before said guide means around one guide roller through part of said guide means around the drum through the remainder of the guide means and around the other guide roller to the other sprocket; and means operatively connected to said guide rollers for oscillating the latter toward and away from said drum during threading of the film along said path.

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**3,166,756**
**MOTION PICTURE CAMERA WITH ROTATABLE AND REMOVABLE CASSETTE**
**Jan Hampl, Prerov, Czechoslovakia, assignor to Meopta, narodni podnik, Prerov, Czechoslovakia**
**Filed Dec. 22, 1961, Ser. No. 161,646**
**Claims priority, application Czechoslovakia, Dec. 27, 1960, 7,755/60**
**17 Claims. (Cl. 352—78)**



1. In a motion picture camera, the combination

(*a*) a support member in the form of a frame;

(*b*) a cassette member having means mounting the same in said frame for rotation relative to the latter about a predetermined axis between two operative positions which are angularly offset relative to each other about said axis, said frame encompassing a major portion of the periphery of said cassette member in each of said operative positions of the latter;

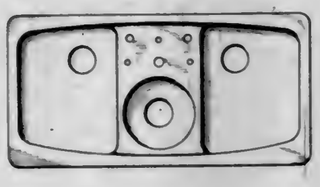
(*c*) lens means on said frame defining an optical axis which is parallel to said axis of rotation and passes through said cassette member in both of said operative positions of the latter; and

(*d*) actuating means for moving a light sensitive film in said cassette member in a predetermined path having a portion defining a gate plane which transversely intersects said optical axis and axis of rotation in both of said operative positions, the points of intersection of said axes with said gate plane being spaced from each other.

# DESIGNS

## JANUARY 19, 1965

**200,089**
**SINK**
William H. Armstrong, Birmingham, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 27, 1963, Ser. No. 76,774
Term of patent 14 years
(Cl. D4—2)



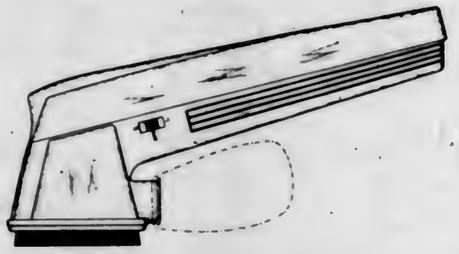
**200,090**
**TOWEL HOLDER OR SIMILAR ARTICLE**
Charles O. Bliss, P.O. Box 47607, Los Angeles, Calif.
Filed Feb. 18, 1964, Ser. No. 78,673
Term of patent 14 years
(Cl. D4—3)



**200,091**
**SHOE SOLE**
John F. Meredith, Malden, Mass., assignor to Converse Rubber Corporation, a corporation of Massachusetts
Filed Apr. 28, 1964, Ser. No. 79,717
Term of patent 14 years
(Cl. D7—5)



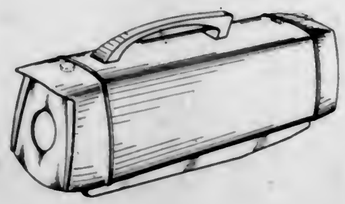
**200,092**
**BATTERY POWERED VACUUM CLEANER**
Alvin Polatchek, New York, N.Y., assignor to Shields, Inc., Attleboro, Mass., a corporation of Massachusetts
Filed Mar. 2, 1964, Ser. No. 78,844
Term of patent 14 years
(Cl. D9—2)



**200,093**
**VACUUM CLEANER CLEANING ATTACHMENT OR THE LIKE**
George H. Frost, Ashland, Ohio, assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Mar. 25, 1964, Ser. No. 79,185
Term of patent 14 years
(Cl. D9—2)



**200,094**
**SUCTION CLEANER**
Edward George Grinyer, Pinner, England, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed June 23, 1964, Ser. No. 80,533
Claims priority, application Great Britain Jan. 30, 1964
Term of patent 14 years
(Cl. D9—2)







**200,095**
**KNOB**
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Dec. 13, 1962, Ser. No. 72,841
Term of patent 14 years
(Cl. D10—8)



**200,096**
**PULL FOR DOORS, DRAWERS AND THE LIKE**
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed July 8, 1963, Ser. No. 75,695
Term of patent 14 years
(Cl. D10—8)



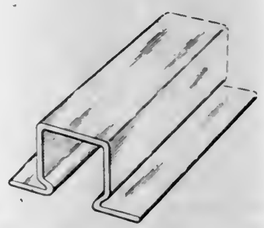
**200,097**
**KNOB FOR DOORS, DRAWERS AND THE LIKE**
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed July 8, 1963, Ser. No. 75,698
Term of patent 14 years
(Cl. D10—8)



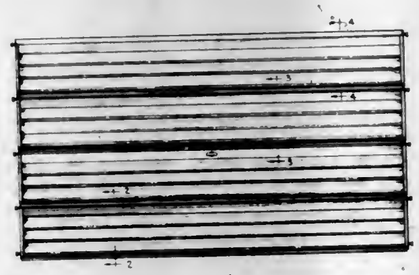
**200,098**
**PULL FOR DOORS, DRAWERS AND THE LIKE**
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed July 29, 1963, Ser. No. 76,045
Term of patent 14 years
(Cl. D10—8)



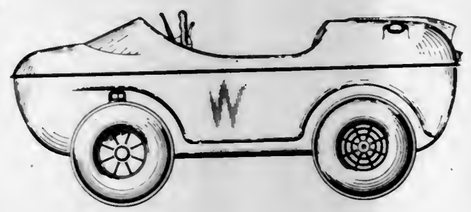
**200,099**
**CHANNEL SECTION PARTICULARLY FOR USE IN THE CONSTRUCTION OF LOAD-CARRYING FRAMEWORKS**
Warren R. Attwood, 4077 2nd St., Wayne, Mich.
Filed Sept. 25, 1961, Ser. No. 66,851
Term of patent 14 years
(Cl. D13—1)



**200,100**
**OVERHEAD DOOR**
Eugene H. Sawyer, West Bend, Wis., assignor to Phenix Manufacturing Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 18, 1963, Ser. No. 77,461
Term of patent 14 years
(Cl. D13—1)



**200,101**
**AMPHIBIOUS VEHICLE**
John Sutherland Smeaton, Ottawa, Ontario, Canada, assignor to Pengor Ltd., Ottawa, Ontario, Canada
Filed Sept. 30, 1963, Ser. No. 76,792
Claims priority, application Canada June 24, 1963
Term of patent 3½ years
(Cl. D14—3)



**200,102**
**COMBINED BRAKE DRUM AND WHEEL**
Leonard Dexter, R.R. 1, Constantine, Mich.
Filed Sept. 28, 1962, Ser. No. 71,920
Term of patent 14 years
(Cl. D14—30)



**200,103**
**CAN OPENER**
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 23, 1963, Ser. No. 77,892
Term of patent 14 years
(Cl. D22—2)



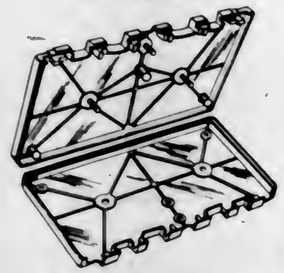
**200,104**
**DENTAL SYRINGE**
Richard B. Cocherell, 85 N. Marengo St., Pasadena, Calif., and James B. Pamplin, 11612 Morgan Lane, Garden Grove, Calif.
Filed Dec. 9, 1963, Ser. No. 77,720
Term of patent 14 years
(Cl. D24—1)



**200,105**
**HEAT SINK FOR A TRANSISTOR**
Raymond C. Root, Columbus, Nebr., assignor to Richleu Corporation, Columbus, Nebr., a corporation of Nebraska
Filed Feb. 4, 1964, Ser. No. 78,504
Term of patent 14 years
(Cl. D26—1)



**200,106**
**TAPE MAGAZINE FOR A MAGNETIC TAPE RECORDER OR SIMILAR ARTICLE**
Victor Sussin, Chicago, Ill., assignor to Radon Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 29, 1963, Ser. No. 77,194
Term of patent 14 years
(Cl. D26—14)



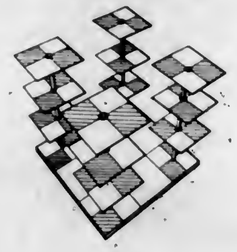
**200,107**
**FURNITURE GLIDE**
John C. Rasor and Norman A. Johnson, Youngstown, Ohio, assignors to The General Fireproofing Company, Youngstown, Ohio, a corporation of Ohio
Filed July 23, 1964, Ser. No. 80,986
Term of patent 14 years
(Cl. D33—1)



**200,108**
**EYE FOR TOY ANIMAL OR SIMILAR ARTICLE**
Jacob Swedlin, Rockville Centre, N.Y., assignor to J. Swedlin, Inc., Brooklyn, N.Y., a corporation of New York
Filed May 11, 1964, Ser. No. 79,928
Term of patent 14 years
(Cl. D34—4)

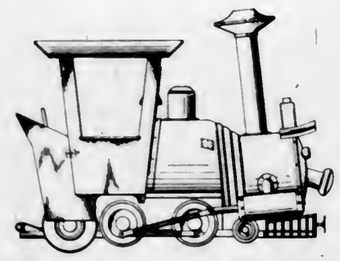


**200,109**
**THREE-DIMENSIONAL GAME BOARD**
Richard F. Hirsch, 2665 Honolulu Ave., Montrose, Calif.
Filed Feb. 17, 1964, Ser. No. 78,665
Term of patent 14 years
(Cl. D34—5)





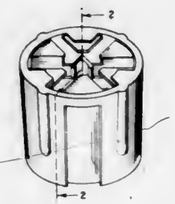
**200,110**
**AMUSEMENT VEHICLE**
David E. Bradley, Jr., 749 Via Somonte, Palos Verdes Estates, Calif.
Filed June 22, 1964, Ser. No. 80,508
Term of patent 14 years
(Cl. D34—15)



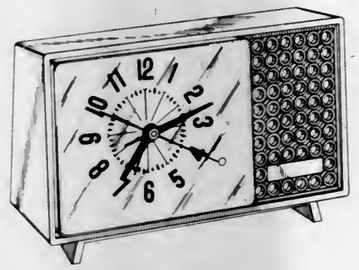
**200,111**
**TUMBLER OR SIMILAR ARTICLE**
George L. Traner, Barrington, Ill., and Don A. Schreckengost, East Liverpool, Ohio, assignors to Royalon, Inc., Sebring, Ohio, a corporation of Ohio
Filed Apr. 6, 1964, Ser. No. 79,368
Term of patent 14 years
(Cl. D36—8)



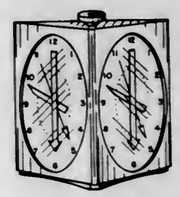
**200,112**
**ADAPTOR INSERT FOR A RIBBON SPOOL**
John W. H. Bishop, Montreal, Quebec, Canada, assignor to Bishop Spools, Inc., New York, N.Y., a corporation of New York
Filed Oct. 2, 1962, Ser. No. 71,961
Term of patent 14 years
(Cl. D41—1)



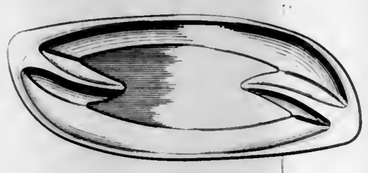
**200,113**
**CLOCK OR SIMILAR ARTICLE**
William V. Judson, Westport, and Walter C. Anderson, Southport, Conn., assignors to General Electric Company, a corporation of New York
Filed Jan. 27, 1964, Ser. No. 78,383
Term of patent 7 years
(Cl. D42—7)



**200,114**
**DUAL-FACED CLOCK**
William Trojnacki, 475 Bronx River Road, Yonkers, N.Y.
Filed May 18, 1964, Ser. No. 80,022
Term of patent 14 years
(Cl. D42—7)



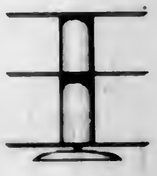
**200,115**
**DESSERT DISH**
Henry Albert Holzwarth, Bayside, N.Y., Charles Lewis Metzler, Alpine, N.J., and John Duncan Wark, Freeport, N.Y., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 28, 1964, Ser. No. 79,721
Term of patent 14 years
(Cl. D44—10)



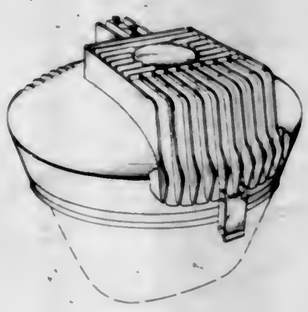
200,116
INSULATED PITCHER
Arthur V. Olsen, Scarborough, Ontario, Canada, assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Apr. 23, 1964, Ser. No. 79,669
Term of patent 14 years
(Cl. D44—21)



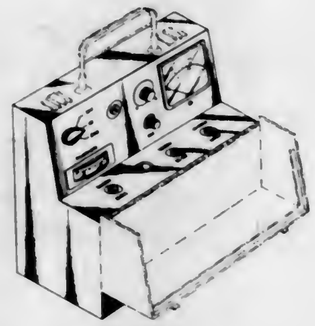
200,117
CONDIMENT SHELF
Louis F. Kolarik, 606 Ardmore Ave., Erie, Pa.
Filed Jan. 26, 1962, Ser. No. 68,530
Term of patent 14 years
(Cl. D44—29)



200,118
OUTDOOR LUMINAIRE
Frank Van Steenhoven, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1963, Ser. No. 76,946
Term of patent 14 years
(Cl. D48—31)



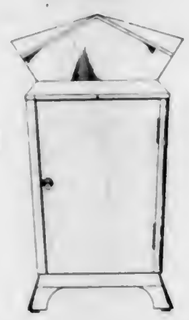
200,119
INSTRUMENT FOR MEASURING DISSOLVED OXYGEN OR THE LIKE
Joseph Alan Huntsman, 3041 West Chester Pike, Broomall, Pa.
Filed Apr. 17, 1964, Ser. No. 79,561
Term of patent 14 years
(Cl. D52—6)



200,120
COMBINED DISPENSING CONTAINER AND CLOSURE
Robert B. Schaefer, Malvern, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 6, 1964, Ser. No. 79,341
Term of patent 14 years
(Cl. D58—5)



200,121
TRASH RECEPTACLE
Maurice C. Lumley, Cincinnati, Ohio, assignor to The F. H. Lawson Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 5, 1964, Ser. No. 78,893
Term of patent 14 years
(Cl. D58—17)





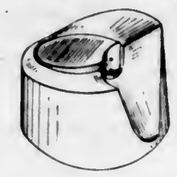
200,122
JAR
Brooks D. Fuerst, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 6, 1963, Ser. No. 74,766
Term of patent 14 years
(Cl. D58—25)



200,123
JAR
Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Apr. 15, 1964, Ser. No. 79,518
Term of patent 14 years
(Cl. D58—25)



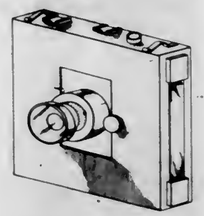
200,124
DISPENSER TOP FOR A PRESSURIZED CAN
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 76,977
Term of patent 14 years
(Cl. D58—26)



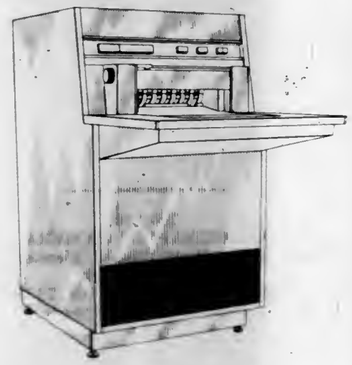
200,125
SPRAYHEAD FOR A PRESSURIZED PACKAGE
Edward H. Green, 11 Army Trail Road, Addison, Ill.
Filed Oct. 22, 1963, Ser. No. 77,092
Term of patent 14 years
(Cl. D58—26)



200,126
CAMERA
George A. Drucker, 321 S. Wabash Ave., Chicago 4, Ill.
Filed Aug. 22, 1963, Ser. No. 76,325
Term of patent 7 years
(Cl. D61—1)



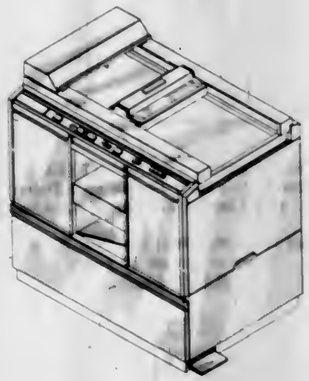
200,127
FACSIMILE TRANSMITTER
James G. Balmer, Jr., 3670 Forest Hill Drive, Birmingham, Mich., and Charles J. Mahler, 62 Alina St., Fairport, N.Y.
Filed Dec. 30, 1963, Ser. No. 77,960
Term of patent 14 years
(Cl. D61—1)



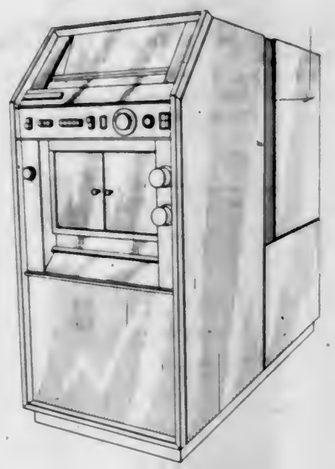
200,128
FACSIMILE RECEIVER
James G. Balmer, Jr., 3670 Forest Hill Drive, Birmingham, Mich., and Jack R. Oagley, 133 Whelehan Drive, Rochester, N.Y.
Filed Dec. 30, 1963, Ser. No. 77,981
Term of patent 14 years
(Cl. D61—1)



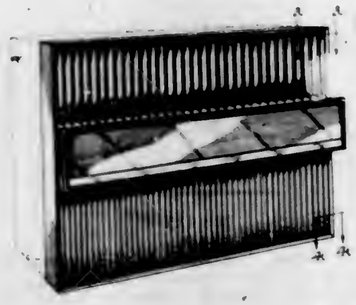
200,129
XEROGRAPHIC TRANSFER AND FUSING APPARATUS
Robert G. Plantholt, 1184 W. Tienken Road, Rochester, Mich.
Filed Jan. 2, 1964, Ser. No. 78,006
Term of patent 14 years
(Cl. D61—1)



200,130
XEROGRAPHIC CAMERA
Robert G. Plantholt, 1184 W. Tienken Road, Rochester, Mich.
Filed Jan. 2, 1964, Ser. No. 78,008
Term of patent 14 years
(Cl. D61—1)



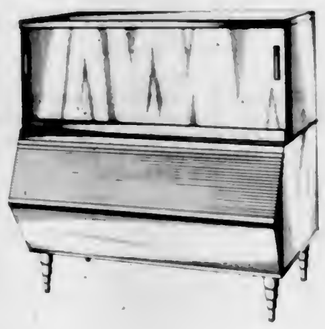
200,131
AIR CONDITIONER
Ray C. Sandin, Winnetka, and Jon F. Morgan, Glen Ellyn, Ill., assignors to General Electric Company, a corporation of New York
Filed Sept. 27, 1963, Ser. No. 76,760
Term of patent 14 years
(Cl. D62—4)



200,132
AIR CONDITIONER
Ray C. Sandin, Winnetka, and Jon F. Morgan, Glen Ellyn, Ill., assignors to General Electric Company, a corporation of New York
Filed Sept. 27, 1963, Ser. No. 76,764
Term of patent 14 years
(Cl. D62—4)

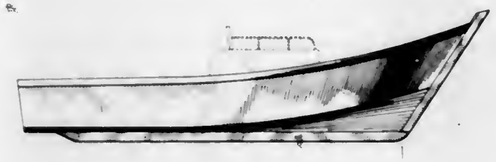


200,133
COMBINED ICE MAKER AND ICE STORAGE CABINET
Raymond C. Young, Manitowoc, Wis., assignor to The Manitowoc Company, Inc., Manitowoc, Wis., a corporation of Wisconsin
Filed May 17, 1963, Ser. No. 74,925
Term of patent 14 years
(Cl. D67—3)





200,134
BOAT
Masakichi Yotsuda, 3407 Eono St., Lihue, Hawaii
Filed Oct. 9, 1962, Ser. No. 72,048
Term of patent 14 years
(Cl. D71—1)



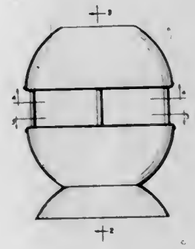
200,135
BOAT LADDER
Donald C. Peters, 833 Oak Ave., and Yancey N. Juergenson, 401 E. 11th St., both of Davis, Calif.
Filed June 15, 1964, Ser. No. 80,380
Term of patent 14 years
(Cl. D71—1)



200,136
BOTTLE HANDLING RACK
Adrian B. Scott, Anaheim, Calif., assignor to Vita Pakt Citrus Products, Covina, Calif., a corporation of California
Filed Aug. 15, 1962, Ser. No. 71,300
Term of patent 14 years
(Cl. D80—9)



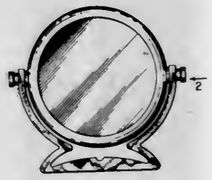
200,137
INFRA-RED WARMER FOR CELLOPHANE WRAPPED FOOD
Joseph A. Hanna, 1210 Hills Bldg., Utica, N.Y.
Filed July 18, 1963, Ser. No. 75,870
Term of patent 7 years
(Cl. D81—10)



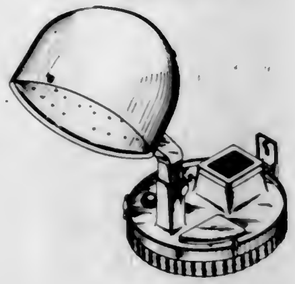
200,138
COMBINED SCALP AND CHIN VIBRATOR
Roy G. Steele, 2720 E. 13th Ave., Denver, Colo.
Filed May 14, 1964, Ser. No. 79,986
Term of patent 14 years
(Cl. D83—1)



200,139
STANDUP MIRROR
Philip J. O'Brien, Ashby, Mass., assignor to Standard Pyroxoloid Company, Leominster, Mass., a corporation of Massachusetts
Filed May 23, 1963, Ser. No. 75,027
Term of patent 14 years
(Cl. D86—10)



**200,140**
**HAIR DRYER**
Walter P. Niemiec, 1883 Pinehurst Ave., and Donald E. Satterlee, 1790 Sheridan Ave., both of St. Paul, Minn.
Filed Feb. 12, 1964, Ser. No. 78,611
Term of patent 14 years
(Cl. D86—10)



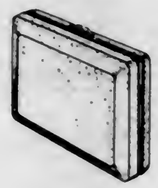
**200,141**
**LUGGAGE CASE OR SIMILAR ARTICLE**
Steven S. Feinberg, 28 Linden Drive, Providence, R.I.
Filed June 26, 1963, Ser. No. 75,522
Term of patent 14 years
(Cl. D87—5)



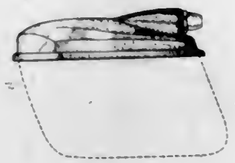
**200,142**
**LUGGAGE CASE OR SIMILAR ARTICLE**
Steven S. Feinberg, 28 Linden Drive, Providence, R.I.
Filed June 26, 1963, Ser. No. 75,523
Term of patent 14 years
(Cl. D87—5)



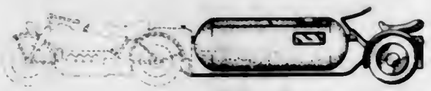
**200,143**
**LUGGAGE CASE**
John P. Ronvik, Chicago, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Aug. 14, 1963, Ser. No. 76,208
Term of patent 14 years
(Cl. D87—5)



**200,144**
**MOTORCYCLE SADDLEBAG COVER**
John L. Marchello, Ann Arbor, Mich., assignor to Joseph Buegeleisen Co., Southfield, Mich.
Filed Feb. 19, 1964, Ser. No. 78,689
Term of patent 14 years
(Cl. D90—3)



**200,145**
**AMBULANCE, OR SIMILAR VEHICLE**
Gaylord W. Jones, 1121 E. Chevy Chase Drive, Glendale, Calif.
Filed Aug. 28, 1962, Ser. No. 71,484
Term of patent 14 years
(Cl. D90—8)



# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 19TH DAY OF JANUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Gaiser, Romey A., to Libbey-Owens-Ford Glass Co. Method of producing electrically conductive windshield. Re. 25,711, 1-19-65, Cl. 156—101.
Kaegebein, Carl F. Means for controlling the laying habit of hens. Re. 25,714, 1-19-65, Cl. 119—21.
Libbey-Owens-Ford Glass Co.: *See*—
Gaiser, Romey A. Re. 25,711.
Little, Arthur D., Inc.: *See*—
Slade, Albert E. Re. 25,712.
Slade, Albert E., to Arthur D. Little, Inc. Superconductive switching element. Re. 25,712, 1-19-65, Cl. 336—155.
Tyler, Loren E., to Tyler Mfg. Co., Inc. Fertilizer spreader. Re. 25,713, 1-19-65, Cl. 275—8.
Tyler Mfg. Co., Inc.: *See*—
Tyler, Loren E. Re. 25,713.

# LIST OF PLANT PATENTEES

Duehrsen, Carl G., to Constance A. Elmer. Rose plant. 2,466, 1-19-65, Cl. 22.
Elmer, Constance A.: *See*—
Duehrsen, Carl G. 2,466.
Grullemans, John J. Hosta plant. 2,467, 1-19-65, Cl. 68.

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American Can Co.: *See*—
Holswarth, Henry A., Metzler, and Wark. 200,115.
Amerock Corp.: *See*—
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Anderson, Walter C.: *See*—
Judson, William V., and Anderson. 200,113.
Armstrong, William H., to Borg-Warner Corp. Sink. 200,089, 1-19-65, Cl. D4—2.
Attwood, Warren R. Channel section particularly for use in the construction of load-carrying frameworks. 200,099, 1-19-65, Cl. D13—1.
Balmer, James G., Jr., and C. J. Mahler. Facsimile transmitter. 200,127, 1-19-65, Cl. D61—1.
Balmer, James G., Jr., and J. R. Oagley. Facsimile receiver. 200,128, 1-19-65, Cl. D61—1.
Bishop, John W. H., to Bishop Spools, Inc. Adaptor insert for a ribbon spool. 200,112, 1-19-65, Cl. D41—1.
Bishop Spools, Inc.: *See*—
Bishop, John W. H. 200,112.
Bliss, Charles O. Towel holder or similar article. 200,090, 1-19-65, Cl. D4—3.
Borg-Warner Corp.: *See*—
Armstrong, William H. 200,089.
Bradley, David E., Jr. Amusement vehicle. 200,110, 1-19-65, Cl. D34—15.
Buegeleisen, Joseph, Co.: *See*—
Marchello, John L. 200,144.
Clayton, La Verne E., to Amerock Corp. Knob. 200,095, 1-19-65, Cl. D10—8.
Cocherell, Richard B., and J. B. Pamplin. Dental syringe. 200,104, 1-19-65, Cl. D24—1.
Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 200,124.
Converse Rubber Corp.: *See*—
Meredith, John F. 200,091.
Dexter, Leonard. Combined brake drum and wheel. 200,102, 1-19-65, Cl. D14—30.
Douglas, Livingston C., to Colgate-Palmolive Co. Dispenser top for a pressurized can. 200,124, 1-19-65, Cl. D58—26.
Drucker, George A. Camera. 200,126, 1-19-65, Cl. D61—1.
Feinberg, Steven S. Luggage case or similar article. 200,141, 1-19-65, Cl. D87—5.
Feinberg, Steven S. Luggage case or similar article. 200,142, 1-19-65, Cl. D87—5.
Frost, George H., to Westinghouse Electric Corp. Vacuum cleaner cleaning attachment or the like. 200,093, 1-19-65, Cl. D9—2.
Fuerst, Brooks D., to Owens-Illinois Glass Co. Jar. 200,122, 1-19-65, Cl. D58—25.
General Electric Co.: *See*—
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Sandin, Ray C., and Morgan. 200,132.
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Green, Edward H. Spraybead for a pressurized package. 200,125, 1-19-65, Cl. D58—26.
Grinyer, Edward G., to The Hoover Co. Suction cleaner. 200,094, 1-19-65, Cl. D9—2.
Halophane Co., Inc.: *See*—
Van Steenhoven, Frank. 200,118.
Hanna, Joseph A. Infra-red warmer for cellophane wrapped food. 200,137, 1-19-65, Cl. D61—10.
Heyer, Don, to Hyer Hardware Mfg. Co. Pull for doors, drawers and the like. 200,096, 1-19-65, Cl. D10—8.
Heyer, Don, to Hyer Hardware Mfg. Co. Knob for doors, drawers and the like. 200,907, 1-19-65, Cl. D10—880.
Heyer, Don, to Hyer Hardware Mfg. Co. Pull for doors, drawers and the like. 200,098, 1-19-65, Cl. D10—8.
Hirsch, Richard F. Three-dimensional game board. 200,109, 1-19-65, Cl. D34—5.
Holswarth, Henry A., C. L. Metzler, and J. D. Wark, to American Can Co. Dessert dish. 200,115, 1-19-65, Cl. D44—10.
Hoover Co., The: *See*—
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Huntsman, Joseph A. Instrument for measuring dissolved oxygen or the like. 200,119, 1-19-65, Cl. D52—6.
Hyer Hardware Mfg. Co.: *See*—
Heyer, Don. 200,096.
Heyer, Don. 200,097.
Heyer, Don. 200,098.
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Jones, Gaylord W. Ambulance, or similar article. 200,145, 1-19-65, Cl. D90—8.
Judson, William V., and W. C. Anderson, to General Electric Co. Clock or similar article. 200,113, 1-19-65, Cl. D42—7.
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Kolarik, Louis F. Condiment shelf. 200,117, 1-19-65, Cl. D44—29.
Lawson, F. H., Co., The: *See*—
Lumley, Maurice C. 200,121.
Lorenzen, Arnold I., deceased, by G. M. Lorenzen, executrix, to Owens-Illinois Glass Co. Jar. 200,123, 1-19-65, Cl. D58—25.
Lorenzen, Gertrude M.: *See*—
Lorenzen, Arnold I. 200,123.
Lumley, Maurice C., to The F. H. Lawson Co. Trash receptacle. 200,121, 1-19-65, Cl. D58—17.
Madl, Alfred W., to John Oster Mfg. Co. Can opener. 200,103, 1-19-65, Cl. D22—2.
Mahler, Charles J.: *See*—
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Meredith, John F., to Converse Rubber Corp. Shoe sole. 200,091, 1-19-65, Cl. D7—5.
Morgan, Jon F.: *See*—
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Sandin, Ray C., and Morgan. 200,132.
Niemiec, Walter P., and D. E. Satterlee. Hair dryer. 200,140, 1-19-65, Cl. D86—10.
Oagley, Jack R.: *See*—
Balmer, James G., Jr., and Oagley. 200,128.
O'Brien, Philip J., to Standard Pyroxoloid Corp. Standup mirror. 200,139, 1-19-65, Cl. D86—10.
Olsen, Arthur V., to King-Seeley Thermos Co. Insulated pitcher. 200,116, 1-19-65, Cl. D44—21.
Oster, John, Mfg. Co.: *See*—
Madl, Alfred W. 200,103.
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Pengor Ltd.: *See*—
Smeaton, John S. 200,101.

Pennsalt Chemicals Corp.: *See*—
Schaefer, Robert B. 200,120.
Peters, Donald C., and Y. N. Juergenson. Boat ladder. 200,135, 1–19–65, Cl. D71—1.
Phenix Mfg. Co., Inc.: *See*—
Sawyer, Eugene H. 200,100.
Plantholt, Robert G. Xerographic transfer and fusing apparatus. 200,129, 1–19–65, Cl. D61—1.
Plantholt, Robert G. Xerographic camera. 200,130, 1–19–65, Cl. D61—1.
Polatchek, Alvin, to Shields, Inc. Battery powered vacuum cleaner. 200,092, 1–19–65, Cl. D9—2.
Radon Corp.: *See*—
Sussin, Victor. 200,106.
Rasor, John C., and N. A. Johnson, to The General Fireproofing Co. Furniture glide. 200,107, 1–19–65, Cl. D33—1.
Richleu Corp.: *See*—
Root, Raymond C. 200,105.
Ronvik, John P., to Sears, Roebuck and Co. Luggage case. 200,143, 1–19–65, Cl. D87—5.
Root, Raymond C., to Richleu Corp. Heat sink for a translator. 200,105, 1–19–65, Cl. D26—1.
Royalon, Inc.: *See*—
Traner, George L., and Schreckengost. 200,111.
Sandin, Ray C., and J. F. Morgan, to General Electric Co. Air conditioner. 200,131, 1–19–65, Cl. D62—4.
Sandin, Ray C., and J. F. Morgan, to General Electric Co. Air conditioner. 200,132, 1–19–65, Cl. D62—4.
Satterlee, Donald E.: *See*—
Niemiec, Walter P., and Satterlee. 200,140.
Sawyer, Eugene H., to Phenix Mfg. Co., Inc. Overhead door. 200,100, 1–19–65, Cl. D13—1.
Schaefer, Robert B., to Pennsalt Chemicals Corp. Combined dispensing container and closure. 200,120, 1–19–65, Cl. D58—5.
Schreckengost, Don A.: *See*—
Traner, George L., and Schreckengost. 200,111.
Scott, Adrian B., to Vita Pakt Citrus Products. Bottle handling rack. 200,136, 1–19–65, Cl. D80—9.
Sears, Roebuck and Co.: *See*—
Ronvik, John P. 200,143.
Shields, Inc.: *See*—
Polatchek, Alvin. 200,092.
Smeaton, John S., to Pengor Ltd. Amphibious vehicle. 200,101, 1–19–65, Cl. D14—3.
Standard Pyroxoloid Corp.: *See*—
O'Brien, Philip J. 200,139.
Steele, Roy G. Combined scalp and chin vibrator. 200,138, 1–19–65, Cl. D83—1.
Sussin, Victor, to Radon Corp. Tape magazine for a magnetic tape recorder or similar article. 200,106, 1–19–65, Cl. D26—14.
Swedlin, J., Inc.: *See*—
Swedlin, Jacob. 200,108.
Swedlin, Jacob, to J. Swedlin, Inc. Eye for toy animal or similar article. 200,108, 1–19–65, Cl. D34—4.
Traner, George L., and D. A. Schreckengost, to Royalon, Inc. Tumbler or similar article. 200,111, 1–19–65, Cl. D36—8.
Trojnacki, William. Dual-faced clock. 200,114, 1–19–65, Cl. D42—7.
Van Steenhoven, Frank, to Halophane Co., Inc. Outdoor luminaire. 200,118, 1–19–65, Cl. D48—31.
Vita Pakt Citrus Products: *See*—
Scott, Adrian B. 200,136.
Wark, John D.: *See*—
Holzwarth, Henry A., Metzler, and Wark. 200,115.
Westinghouse Electric Corp.: *See*—
Frost, George H. 200,093.
Yotsuda, Masakichi. Boat. 200,134, 1–19–65, Cl. D71—1.
Young, Raymond C., to The Manitowoc Co., Inc. Combined ice maker and ice storage cabinet. 200,133, 1–19–65, Cl. D67—3.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 19TH DAY OF JANUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Stoltz, Herbert C. 3,166,114.
Trump, Robert G. 3,166,369.
Abadjieff, Ivan V. Fabric wall and ceiling supporting means. 3,166,117, 1–19–65, Cl. 160—392.
Abajian, Aram C. Infant's crib. 3,165,760, 1–19–65, Cl. 5—97.
Abbott, Gaynor L.: *See*—
Parker, William J., Butler, Abbott, and Jenkins. 3,165,915.
Abbott, Henry H., to Bell Telephone Laboratories, Inc. Signaling arrangement. 3,166,642, 1–19–65, Cl. 179—84.
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Butterfield, Peter, and Gill. 3,166,120.
Acton, Hugh C. Folding table. 3,166,029, 1–19–65, Cl. 108—124.
Adams, Arthur R.: *See*—
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Adebahr, Herbert F.: *See*—
Brown, Isaac T., and Adebahr. 3,165,953.
Adelman, John W.: *See*—
Smirl, Richard L., Waclawek, Adelman, and Labuda. 3,165,891.
Adrian, Donald J., to United States of America, Navy. FM-AM correlation radar system. 3,166,747, 1–19–65, Cl. 343—14.
Aero-Chatillon Corp.: *See*—
Sachers, Fritz E. 3,165,925.
Aero-Flow Dynamics, Inc.: *See*—
Forrester, Robert E., and Cornish. 3,166,692.
Ager, John W., Jr., and T. L. Heying, to Olin Mathieson Chemical Corp. Organoboron alcohols and method for their preparation. 3,166,597, 1–19–65, Cl. 260—606.5.
Agfa Aktiengesellschaft: *See*—
Denk, Richard. 3,166,264.
Kiper, Gerd. 3,165,989.
Kiper, Gerd. 3,165,994.
Kiper, Gerd, and Denk. 3,165,990.
Kiper, Gerd, and Kremp. 3,165,996.
Wick, Richard, Ramsauer, and Roos. 3,165,988.
Agler, Wave B., to Pentron Electronics Corp. Expanded metal. 3,165,810, 1–19–65, Cl. 29—6.2.
Agrellus, Kelton C., to United States of America, Navy. Dual diversity switching unit. 3,166,711, 1–19–65, Cl. 325—304.
Air Products and Chemicals, Inc.: *See*—
Mascioli, Rocco L. 3,166,558.
Ajem Laboratories, Inc.: *See*—
Arnold, Orlan M., and Evans. 3,166,082.
Alexeff, Alexander V., to Industrial Ovens, Inc. Heating means for strip material. 3,166,304, 1–19–65, Cl. 263—3.
Allen, Philip J. Electrical frequency shifter utilizing Faraday phase shifter and dual mode coupler with rotatable reflection dipole. 3,166,724, 1–19–65, Cl. 333—24.1.
Allen-Bradley Co.: *See*—
Moser, Joseph R., and Schatteiner. 3,166,698.
Allied Thermal Corp.: *See*—
Person, Ernest H., and Walsh. 3,166,001.
Allma Allgauer Maschinenbau G.m.b.H.: *See*—
Kreuschmer, Rudolf. 3,165,882.
Allmänna Svenska Elektriska Aktiebolaget: *See*—
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Lindström, Olle. 3,166,480.
Pucher, Walter. 3,166,659.
Widell, Björn. 3,166,479.
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Krug, Newton J., Graber, and Alvarez. 3,166,366.
Amberg, Stephen W., to Lily-Tulip Cup Corp. Plastic container with plait formed pull tab. 3,166,234, 1–19–65, Cl. 229—51.
Ambrosio, Biagio F.: *See*—
Rutland, David F., Ambrosio, and Turn. 3,166,636.
Amchem Products, Inc.: *See*—
Waldrum, John E. 3,165,859.
Amelung, Ernst D., H. Deuring, and J. Paffrath, to Goetzewerke Friedrich Goetze Aktiengesellschaft. Piston rod sealing device. 3,166,360, 1–19–65, Cl. 308—3.5.
American Can Co.: *See*—
Makowski, Alexander G. 3,166,488.
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Izzo, Patrick T., and Safir. 3,166,571.
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Gootherts, Jerome W. 3,166,683.
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Nolan, John E. 3,166,282.
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Sherwin, Richard N. 3,166,742.
American Zinc Institute, Inc.: *See*—
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Amour, Alessandro. Fluid actuated servo-control device. 3,165,981, 1–19–65, Cl. 91—402.
Amrein, Edward J., to Everett Piano Co. Piano teaching device. 3,165,967, 1–19–65, Cl. 84—470.
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Anderson, George B.: *See*—
Miller, William R., Anderson, and Bleck. 3,165,814.
Anderson, Kelvin G., and P. P. Spolsino, to W. R. Grace & Co. Dispensing apparatus for wax-impregnated material. 3,165,958, 1–19–65, Cl. 83—170.
Anderson Machine and Tool Works, Inc.: *See*—
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Ando, Saso, to Kowa Co., Ltd. Single-lens reflex camera. 3,165,992, 1–19–65, Cl. 95—42.
Andre, Claude: *See*—
Roc, Guy, and Andre. 3,165,903.
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Andrews, Raleigh C. Lock for sliding windows. 3,166,347, 1–19–65, Cl. 292—202.
Angelucci, Thomas L.: *See*—
Soffa, Albert, and Angelucci. 3,165,818.
Anritsu Dempa Kogyo Kabushiki Kaisha: *See*—
Nojima, Susumu. 3,166,717.
Ansell, Lacy C. Fish net. 3,165,853, 1–19–65, Cl. 43—7.
Anstett, Edgar P. Synthetic plastic nailing strip. 3,165,968, 1–19–65, Cl. 85—17.
Apparatebau Rothemuehle Dr. Brandt & Co.: *See*—
Brandt, Herbert. 3,166,705.
Appliance Plating Co., Inc.: *See*—
Vachon, Roy R., and Reppert. 3,166,357.
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Williams, Herald J., Jr. 3,166,666.
Araujo, Armando, to Oxford Filing Supply Co., Inc. Dispensing container. 3,166,187, 1–19–65, Cl. 206—58.
Arburg-Feingeratefabrik oHG, Hehl & Sohne: *See*—
Hehl, Karl. 3,165,785.
Archer, Fred C., and T. H. Lohr, to Barber-Greene Co. Jaw crusher. 3,166,259, 1–19–65, Cl. 241—219.
Aristocrat Leather Products, Inc.: *See*—
Markus, George. 3,166,111.
Armantrout, Kenneth M., and D. W. Kelbel, to Borg-Warner Corp. Drive unit for boats. 3,166,040, 1–19–65, Cl. 115—41.
Armour and Co.: *See*—
Hull, Maurice E. 3,166,486.
Sleeth, Rhule B., and Campbell. 3,166,423.
Armstrong Cork Co.: *See*—
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Arneberg, Don J., to Square D Co. Switch operating device. 3,165,944, 1–19–65, Cl. 74—527.
Arnold, Alanson J., to American Radiator & Standard Sanitary Corp. Tank lifting mechanism. 3,166,202, 1–19–65, Cl. 214—1.
Arnold, Orlan M., and D. M. Evans, to Ajem Laboratories, Inc. Industrial parts washer. 3,166,082, 1–19–65, Cl. 134—78.
Aron, Kurt. Lighting fixtures. 3,166,253, 1–19–65, Cl. 240—46.09.
Arshal, George: *See*—
Heath, William H., Nubar, Arshal, Reiner, Hughes, and White. 3,165,927.
Associated Electrical Industries Ltd.: *See*—
Gardner, Thomas L. 3,165,935.
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Peltier, Henry C. 3,166,306.
Automatic Poultry Feeder Co.: *See*—
Kurtz, John S., and Graves. 3,166,175.
Van Huis, Robert L., and Essink. 3,166,048.
Avco Corp.: *See*—
Fleshman, Ward S., Jr., and Bradmiller. 3,166,678.
Tomaszek, Edward P. 3,165,937.

Avtron Mfg., Inc.: *See*—
Ryerson, Herbert R., and Csala. 3,166,753.
Axelson Fishing Tackle Mfg. Co.: *See*—
Gourley, James W., Jr. 3,165,856.
Babb, James W. C., deceased (by T. E. Garrard, executor). Noise eliminating circuits. 3,166,639, 1–19–65, Cl. 179—1.
Backus, Alfred J.: *See*—
Pratt, Robert H., and Backus. 3,165,790.
Bahm, George C. Apparatus for teeming of molten metals. 3,165,795, 1–19–65, Cl. 22—84.
Bailey, Frederick E., Jr., and W. J. Toussaint, to Union Carbide Corp. Lubricating oils containing alkyl acrylate-vinylpyridine N-oxide copolymers. 3,166,507, 1–19–65, Cl. 252—51.5.
Baker Brush Co., Inc.: *See*—
McGinley, James J. 3,165,772.
Baker, Donald C., R. L. Smith, and A. L. Baumgart, to R. L. Smith, assor. to California General, Inc. Rectilinear potentiometer. 3,166,729, 1–19–65, Cl. 338—183.
Baker Oil Tools, Inc.: *See*—
Myers, William D. 3,166,128.
Wentz, Kenneth F., and Libal. 3,166,126.
Baldwin, Philip S., 50% to Fiat Societa per Azioni. Hydraulic brake. 3,165,896, 1–19–65, Cl. 60—54.6.
Baldwin-Gegenheimer Corp.: *See*—
Gegenheimer, Harold W., Stad, and Tobias. 3,166,095.
Ball, Eldon W., to Raytheon Co. Antenna intersecting-orthogonal-axes gimbal mount utilizing rotary bearings for two axes and push-pull linkage for third axis. 3,166,750, 1–19–65, Cl. 343—705.
Balluff, Helmut, to Siebelwerke-ATG G.m.b.H. Method and apparatus for propulsion and directional control of winged aircraft. 3,166,273, 1–19–65, Cl. 244—52.
Bannister, Brian, to The Upjohn Co. Process for 14a-methyl-11-ketoprogesterone and intermediates therefor. 3,166,550, 1–19–65, Cl. 260—239.55.
Barba, William G., to U.S. Divers Co., Inc. Portable vacuum apparatus for rapid collection and disposal of debris-laden liquid. 3,165,774, 1–19–65, Cl. 15—323.
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Barnard, Earl H., to Schlumberger Well Surveying Corp. Electrically conductive concrete. 3,166,518, 1–19–65, Cl. 252—503.
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Barnes, Llewellyn T. 3,166,695.
Barnes, Llewellyn T., ⅛ to C. T. Barnes, and ⅛ to J. F. Woog. Trimmer capacitor. 3,166,695, 1–19–65, Cl. 317—249.
Barnett, Eugene R. and W. L. Power unit. 3,166,055, 1–19–65, Cl. 123—71.
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Barnett, Eugene R. and W. L. 3,166,055.
Barney, Greenlief H., to Leach & Garner Co. Method for producing jewelers' stock. 3,165,824, 1–19–65, Cl. 29—411.
Barney, Greenlief H., to Leach & Garner Co. Jeweler's patterned wire. 3,165,825, 1–19–65, Cl. 29—411.
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Baudrillard, Jean F. M. Device for actuating a drop-hammer or the like. 3,166,351, 1–19–65, Cl. 294—96.
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Steiniger, Herman W., and Irvine. 3,166,260.
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Bayard, Gaston, to Technopatent. Arrangement for preventing any recycling of gases into the starting turbine of aircrafts carrying the jet engine inside the fuselage. 3,165,890, 1–19–65, Cl. 60—39.14.
Beal, Philip F., to The Upjohn Co. Process for the preparation of 14a-methyl 11-keto-progesterone and intermediates produced therefrom. 3,166,528, 1–19–65, Cl. 260—239.55.
Bean, Edward C., and C. J. Creveling, to United States of America, Navy. Binary switch key. 3,166,647, 1–19–65, Cl. 200—46.
Becker, Anthony F. Cap forming device. 3,165,784, 1–19–65, Cl. 18—24.
Beeghly, Robert T., to Metal Carbides Corp. Tungsten carbide tool manufacture. 3,165,822, 1–19–65, Cl. 29—182.7.
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Bellows, Richard W., to Combustion Engineering, Inc. Radial seal for rotary regenerative heat exchanger. 3,166,119, 1–19–65, Cl. 165—9.
Beltoise, Maurice, to Societe en nom collectil dite Beltoise Marguet & Cie. Process for the manufacture of deformable self-locking units. 3,165,767, 1–19–65, Cl. 10—86.
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Bentov, Itzhak E. Method of explosively forming fibers. 3,165,826, 1–19–65, Cl. 29—419.
Benveniste, Jacques: *See*—
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Berndt, Arthur A. Composite strand connectors. 3,166,373, 1–19–65, Cl. 339—248.
Bernstein, Jack, and K. A. Losee, to Olin Mathieson Chemical Corp. Alkanoyl, hydroxy-ureas. 3,166,587, 1–19–65, Cl. 260—553.
Berson, Jerome A., and A. T. Cape, to Powder Melting Corp. Brazing compositions having polyvinyl butyral as a binder. 3,166,402, 1–19–65, Cl. 75—.5.
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Bessette, Georges H. Constant angle adjustable yoke for stall divisions. 3,166,045, 1–19–65, Cl. 119—27.
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Blonder, Isaac S., to Blonder Tongue Electronics. Mast-mounting clip-and-bracket. 3,166,284, 1–19–65, Cl. 248—230.
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Boberg, Friedrich: *See*—
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Bohrmann, Kurt, to Henschel-Werke A.G. Manner of mounting heavy arms in vehicles. 3,165,973, 1–19–65, Cl. 89—40.
Bonnet, Georges, and A. Salvi, to Commissariat a l'Energie Atomique. Magnetic resonance device for measuring magnetic field intensity. 3,166,706, 1–19–65, Cl. 324—.5.
Bonnet, Georges and A. Salvi, to Commissariat a l'Energie Atomique. Nuclear magnetometers of the type making use of a high frequency pumping on an electronic transition. 3,166,707, 1–19–65, Cl. 324—.5.
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Boyd, Alexander. Belt conveyor roller strands. 3,166,184, 1–19–65, Cl. 198—192.
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Brandtjen, Henry A., Jr. Squeeze impact press for leaf stamping, embossing and the like. 3,166,009, 1–19–65, Cl. 101—10.
Branneman, Leonard. Toy satellite system. 3,166,322, 1–19–65, Cl. 273—95.
Braun, Howard E., to General Electric Co. Heterogeneous nuclear power reactor core structure. 3,166,481, 1–19–65, Cl. 176—50.
Brdr. Ludvigsen A/S: *See*—
Ludvigsen, Niels P. 3,166,030.
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Brette, Yves-Jean Francois, to Machines Bull (Societe Anonyme), Campagnie des. Multiple magnetic heads. 3,166,740, 1–19–65, Cl. 340—174.1.
Brilhart, Arnold R., to Brilhart Musical Instrument Corp. Tubular laminated golf club shaft and method of forming same. 3,166,319, 1–19–65, Cl. 273—80.
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Brittain, Thomas P., and R. N. Roley. Apparatus for anchoring, mooring, towing or otherwise securing or attaching a line to a boat. 3,166,038, 1–19–65, Cl. 114—230.
Bronstert, Frans, H. Bode, H. Haebler, and H.-G. Lindenberg, to VARTA Aktiengesellschaft. Apparatus for forming, charging and discharging the electrode plates of a storage battery with an acid electrolyte. 3,166,447, 1–19–65, Cl. 136—82.
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Brown, John A., to Esso Research and Engineering Co. Process for making hydrazine diborane. 3,166,376, 1–19–65, Cl. 23—14.
Brown, John A., to Esso Research and Engineering Co. Preparation of hydrazine boranes. 3,166,377, 1–19–65, Cl. 23—14.
Brown, Robert R., and L. E. Daum, to Elastic Stop Nut Corp. of America. Waterproof electrical connector. 3,166,371, 1–19–65, Cl. 339—60.
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Browne, Godfrey H., W. W. Cloer, G. Manning, J. A. McCoig, Sr., and T. F. Suggs, to Cocker Machine & Foundry Co. Warper. 3,165,808, 1–19–65, Cl. 28—32.
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Burn, Derek, and V. Petrow, to The British Drug Houses Ltd. Process for the preparation of 3-oxo-Δ⁴-6-methyl steroids. 3,166,551, 1–19–65, Cl. 260—239.55.
Burnett, Richard T., to The Bendix Corp. Spot type brake. 3,166,157, 1–19–65, Cl. 188—73.
Burnett, Richard T., to The Bendix Corp. Spot type disc brake. 3,166,159, 1–19–65, Cl. 188—73.
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Burnett, Richard T., and J. J. Powlas, to The Bendix Corp. Spot type disc brake. 3,166,158, 1–19–65, Cl. 188—73.
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Butterfield, Peter, and M. C. Gill, to Acme Industries, Inc. Heating or cooling control system for heat exchangers. 3,166,120, 1–19–65, Cl. 165—26.
Butzler, George J., G. B. Sterling, and R. E. Lee, to The Dow Chemical Co. Vinylidene chloride polymer compositions having improved low temperature properties. 3,166,526, 1–19–65, Cl. 260—31.8.
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Orzechowski, Adam, and MacKenzie. 3,166,544.
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Carboni, Rudolph A., to E. I. du Pont de Nemours and Co. 2,3 :4,5-dibenzo-1,3a,6,6a-tetraazapentalenes. 3,166,567, 1–19–65, Cl. 260—308.
Carboni, Rudolph A., and J. R. Roland, to E. I. du Pont de Nemours and Co. 3-amino-2,4 bis sulfonyl-crotononitriles and production thereof. 3,166,582, 1–19–65, Cl. 260—465.
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Carmack, Cleo F. Means forming radial holes by a vertically traveling punch. 3,165,787, 1–19–65, Cl. 18—42.
Carmichael, George N., and V. Rylka, to Triangle Conduit & Cable Co., Inc. Apparatus for coating elongated bodies. 3,166,440, 1–19–65, Cl. 118—109.
Carrara, Piero M. O-acetyl thymotic acid anhydride and preparation thereof. 3,166,586, 1–19–64, Cl. 260—479.
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Champion, Robert S. Arrow-shaped frame with adjustable foot and golf-ball position indicators. 3,166,327, 1–19–65, Cl. 273—187.

Chang, Kern K. N., and H. J. Prager, to Radio Corp. of America. Tunnel diode converter with forward bias of the diode by rectification of signal wave. 3,166,713, 1–19–65, Cl. 325—449.

Chapin, Jack R. Berry picking apparatus. 3,165,879, 1–19–65, Cl. 56—330.

Chaplin, Charles J., to Diamond National Corp. Molded pulp package. 3,166,191, 1–19–65, Cl. 206—65.

Chapman, Burton B. Power-driven mixing apparatus. 3,166,308, 1–19–65, Cl. 259—135.

Chausson, Andre, to Societe Anonyme des Usines Chausson. Box cutting machine. 3,165,955, 1–19–65, Cl. 83—151.

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Clark, Henry B. Motor operated fire doors with automatic door release. 3,166,155, 1–19–65, Cl. 189—47.

Clark, Joseph C., to L & S Bait Co. of Florida, Inc. Manually controlled brake and clutch for a fishing reel. 3,166,268, 1–19–65, Cl. 242—84.44.

Clark, Richard U. Unitary controlled memory hermetic terminals. 3,166,634, 1–19–65, Cl. 174—153.

Clark, Robert C., to General Electric Co. Code selectors for selective calling systems. 3,166,735, 1–19–65, Cl. 340—164.

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Clerk, Robert C. Driving and control mechanisms for power-operated machine tools. 3,165,979, 1–19–65, Cl. 91—321.

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Clute, Francis H., & Son, Inc.: *See*—
Clute, Francis H. 3,166,384.

Co-5 Co., Inc.: *See*—
First, Harry W. 3,166,325.

Coats, Robert, and M. L. Ryall, to Pametrada. Steam turbine machinery. 3,165,897, 1–19–65, Cl. 60—102.

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Cocker Machine & Foundry Co.: *See*—
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Coffman, Raphael T., to United States of America, Atomic Energy Commission Apparatus for weighing material in a sealed enclosure. 3,166,136, 1–19–65, Cl. 177—262.

Cogar, George, to Sperry Rand Corp. Asynchronous self controlled shift register. 3,166,715, 1–19–65, Cl. 328—37.

Cole, James D., to Myers K. Parson. Evaporative coolers. 3,166,610, 1–19–65, Cl. 261—29.

Cole, Norman G., Jr. Screen for motor vehicles. 3,166,116, 1–19–65, Cl. 160—40.

Cole, Ralph C., Phillips Petroleum Co. Mercaptans production. 3,166,598, 1–19–65, Cl. 260—609.

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Commercial Solvents Corp.: *See*—
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Bonnet, Georges, and Salvi. 3,166,707.

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Communaute Europeenne de l'Energie Atomique International Organization: *See*—
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Compco Corp.: *See*—
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Conant, Louis A., to Union Carbide Corp. Magnesium-based alloys. 3,166,415, 1–19–65, Cl. 75—202.

Conant, Robert L., and M. L. McNeely. Carburetor. 3,166,811, 1–19–65, Cl. 261—41.

Conlin, Patrick J. Muffler device. 3,166,152, 1–19–65, Cl. 181—58.

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Coyle, Forrest E., to United States of America, Navy. Method for making a transducer. 3,166,619, 1–19–65, Cl. 264—272.

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Daniels, Walter. Door frame and brace therefor. 3,166,164, 1–19–65, Cl. 189—46.

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Davis, Belford L. Acceleration control system for a vehicle. 3,166,090, 1–19–65, Cl. 137—353.

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Deckel, Hans: *See*—
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Deere & Co.: *See*—
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De Maire, Joseph H.: *See*—
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Disston, Hamilton S., to C. R. Bard, Inc. Catheterization package. 3,166,189, 1–19–65, Cl. 206—63.2.

Di Stefano, Peter. Fluid operated motor vehicle lifting jack. 3,166,298, 1–19–65, Cl. 254—86.

Diveley, William R., to Hercules Powder Co. Dithiazolium salts. 3,166,564, 1–19–65, Cl. 260—306.8.

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Re, Frank M. 3,166,353.

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Duncan, Richard D., to United States of America, Atomic Energy Commission. Apparatus for checking the alignment of vertical channels. 3,165,835, 1–19–65, Cl. 33—46.

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Mizuno, William G., and Oberle. 3,166,513.

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Engledew, John E., and R. E. Ford, to Elliott Bros. (London) Ltd. Radar tracking. 3,166,745, 1–19–65, Cl. 343—7.4.

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Engstrom, Oscar L. Flush valves. 3,166,289, 1–19–65, Cl. 251—35.

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Brown, John A. 3,166,377.
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Farmen, Bernard. Machine tool with an angularly adjustable spindle head. 3,165,977, 1–19–65, Cl. 90—17.

Farnsworth, Vaun E. Quick-detachable rear view mirror. 3,166,283, 1–19–65, Cl. 248—226.

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Fehling, Hans R., and E. H. Harvey, to I.R.C. Ltd. Ball-tip writing instrument and ball therefor. 3,166,050, 1–19–65, Cl. 120—42.4.

Fehling, Hans R., and E. H. Harvey, to I.R.C. Ltd. Method of making a nib for a ball point writing instrument. 3,166,618, 1–19–65, Cl. 264—242.

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Fielden, John E., to Fielden Electronics Ltd. Control of temperature on multiple processes. 3,166,246, 1–19–65, Cl. 236—1.

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Finn, George B., Jr., and R. C. Parsons, to Sarkes Tarzian, Inc. Method of manufacturing semiconductor devices. 3,166,449, 1–19–65, Cl. 148—177.

Flordalisi, Fernanda M. Anti-convulsants pyrasolodes. 3,166,470, 1–19–65, Cl. 167—65.

First, Harry W., to Co-5 Co., Inc. Game apparatus having playing board with marble receiving holes and dice receiving openings. 3,166,325, 1–19–65, Cl. 273—134.

Fischer, Hans, S. Meurer, and J. Liebel, to Maschinenfabrik Augsburg-Nürnberg AG. Monobloc air-cooled internal combustion engine cylinder. 3,166,053, 1–19–65, Cl. 123—41.69.

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Harris, John F., and Lane. 3,166,594.

Fleer, Thomas P., to White-Rodgers Co. Burner control system. 3,166,248, 1–19–65, Cl. 236—68.

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Fleshman, Ward S., Jr., and R. W. Bradmiller, to Avco Corp. Signal-sensitive gatiag circuit controlled by a signal-operated switch having different threshold levels for turn off and turn on. 3,166,678, 1–19–65, Cl. 307—88.5.

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Floreen, Stephen, and R. F. Decker, to The International Nickel Co., Inc. Alloy for elevated temperatures. 3,166,406, 1–19–65, Cl. 75—124.

Flowers, Francis W. Tandem running gear assembly. 3,166,341, 1–19–65, Cl. 280—104.5.

Flowers, Henry F. Side door construction for dump vehicles. 3,166,022, 1–19–65, Cl. 105—261.

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Forrester, Robert E., and A. H. Cornish, to Aero-Flow Dynamics, Inc. Alternating current solenoid. 3,166,692, 1–19–65, Cl. 317—186.

Forster, David J., and D. Norman, to S. Smith & Sons (England) Ltd. Torque controlled clutch mechanism for power transmissions. 3,166,170, 1–19–65, Cl. 192—48.

Forster, Emil, to Emil Forster, AG, Firma. Shuttle body and clamping spring construction. 3,166,101, 1–19–65, Cl. 139—207.

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France, Leonard L., L. S. Richardson, and D. H. Feisel, to Westinghouse Electric Corp. Tantalum base alloys. 3,166,414, 1–19–65, Cl. 75—174.

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Fraser, Jack W., to United States of America, Atomic Energy Commission. N,N-difluoroalkylamines. 3,166,595, 1–19–65, Cl. 260—583.

Frasier, Van L., to The Dayton Steel Foundry Co. Suspension system for tandem axles interconnected by power transmission means. 3,166,142, 1–19–65, Cl. 180—22.

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Gardner, Charles B. System for transmitting messages by means of colored beams of light. 3,166,672, 1–19–65, Cl. 250—199.

Gardner, Henry F., to United States of America, Army. Apparatus for casting leg stumps. 3,165,782, 1–19–65, Cl. 18—5.1.

Gardner, Thomas L., to Associated Electrical Industries Ltd. Overspeed trip devices for turbines. 3,165,935, 1–19–65, Cl. 73—548.

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Garvey, James. Apparatus and method for inserting indicia in soap. 3,166,329, 1–19–65, Cl. 264—171.

Gatsis, John G., and W. K. T. Gleim, to Universal Oil Products Co. Hydrorefining of petroleum crude oil and catalyst therefor. 3,166,494, 1–19–65, Cl. 208—264.

Gauger, Edward A., Jr., to De Soto Chemical Coatings, Inc. Process of coating porous substrates with polyester resin comprising fumaric acid, polyoxyalkylene glycol and dicyclopentadiene. 3,166,434, 1–19–65, Cl. 117—57.

Gaylord, John A., to H. Koch & Sons. Safety locking device for the inflating means in aerial survival kits. 3,165,763, 1–19–65, Cl. 9—11.

Gaylord, John A., to H. Koch & Sons. Quick engaging buckle for safety belts. 3,165,803, 1–19–65, Cl. 24—225.

Gazzaniga, Pasquale A. Stocking and sock checking machine. 3,166,223, 1–19–65, Cl. 223—41.

Gegenheimer, Harold W., A. N. Stad, and P. E. Tobias, to Baldwin-Gegenheimer Corp. Printing press water solution mixing and distributing mechanism. 3,166,095, 1–19–65, Cl. 137—563.

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Goettl, Adam D. and J., to McGraw-Edison Co. Evaporative cooler and pad frame latch means therefor. 3,166,162, 1–19–65, Cl. 189—36.

Goettl, John: *See*—
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English, William D., and Goldsmith. 3,166,520.

Golten, Sigurd. Crankshaft main journal regrinding process. 3,165,866, 1–19–65, Cl. 51—289.

Gonter, Edwin, Jr., and R. A. Elliott, to The Bendix Corp. Power steering means. 3,166,143, 1–19–65, Cl. 180—79.1.

Goodman, Howard. Lamp harp assembly. 3,166,254, 1–19–65, Cl. 240—81.

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Goodrum, Richard B., to The Cushman Chuck Co. Adjustable jaw keyway. 3,166,336, 1–19–65, Cl. 279—123.

Gooley, Clarence A., R. C., J. E. and W. H. Magnetic attachment for socket wrenches. 3,165,950, 1–19–65, Cl. 81—125.

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Gordon, William E., to Arthur D. Little, Inc. Explosive compositions containing ammonium nitrate-hexamethylenetetramine, complexes. 3,166,452, 1–19–65, Cl. 149—46.

Gordon, William E., to Arthur D. Little, Inc. Ammonium nitrate-hexamethylenetetramine adduct. 3,166,555, 1–19–65, Cl. 260—248.5.

Gotz, Hans, to Mildt Mellor Bromley Ltd. Knotter for fisherman's knots in the textile industry. 3,166,346, 1–19–65, Cl. 289—2.

Gourley, James W., Jr., to Axelson Fishing Tackle Mfg. Co. Roller guide for fishing rods. 3,165,856, 1–19–65, Cl. 43—24.

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Graham, Lawrence H., to Martin-Marietta Corp. Balanced output demodulator for pulse position modulation. 3,166,712, 1–19–65, Cl. 325—321.

Gramlich, Charles, to American Zinc Institute, Inc. Method and composition for developing lithographic plates. 3,166,421, 1–19–65, Cl. 96—49.

Granger, Charles C. Tobacco curing apparatus. 3,166,348, 1–19–65, Cl. 294—5.5.

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Green, George A. and R. H. 3,165,909.

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Greenfield, Anthony F., ½ to H. M. Gittleman. Tamper proof meter. 3,166,374, 1–19–65, Cl. 346—104.

Greenfield, Daniel K., ¼ to W. B. Udell. Loudspeaker system. 3,166,147, 1–19–65, Cl. 181—31.

Greenhalgh, Donald M. S., and R. J. Sherwood, to United Kingdom Atomic Energy Authority. Diaphragm pumps. 3,166,239, 1–19–65, Cl. 230—170.

Greenwald, Sidney, to Control Data Corp. Quantiser with binary output. 3,166,743, 1–19–65, Cl. 340—347.

Gregg, Robert Q., and J. N. Finch, to Phillips Petroleum Co. Chromium, tungsten or manganese oxide olefin polymerization catalyst activated with carbon monoxide and ultraviolet light and polymerization therewith. 3,166,537, 1–19–65, Cl. 260—88.2.

Gribble, Joseph J., to Square D Co. Contact construction with metallic contact members and auxiliary metallic arc suppressant conducting members. 3,166,660, 1–19–65, Cl. 200—166.

Grossmann, Günter, to Moenus A.G., Maschinenfabrik. Feeding device for band knife splitting machines. 3,165,912, 1–19–65, Cl. 69—10.

Grove, Marvin H., to M & J Engineering Co. Valve construction and method. 3,166,291, 1–19–65, Cl. 251—172.

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Guarr, Joseph S., ½ to Robert F. Kelley. Pill dispenser. 3,166,216, 1–19–65, Cl. 221—289.

Guest, Dorothy J., L. B. Morgan, and J. B. Owen, to Imperial Chemical Industries Ltd. Treatment of fibrous materials. 3,166,436, 1–19–65, Cl. 117—139.5.

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Gump, Joseph R. and L. D. McCowen, to Michigan Chemical Corp. Polyamine-quaternary nitrogen algicidal composition. 3,166,471, 1–19–65, Cl. 167—33.

Gunderson, Ralph R. Foldable support for a sign panel. 3,165,847, 1–19–65, Cl. 40—125.

Gundlach, Robert W., to Xerox Corp. Image development. 3,166,418, 1–19–65, Cl. 96—1.

Gundlach, Robert W., to Xerox Corp. Image projection. 3,166,419, 1–19–65, Cl. 96—1.

Gundlach, Robert W., to Xerox Corp. Image development. 3,166,432, 1–19–65, Cl. 117—17.5.

Gunn, Frank G., to Technicolor Corp. of America. Photographic production of anamorphous records. 3,165,969, 1–19–65, Cl. 88—24.

Gusan, Michael, Jr., T. E. Hoskins, and F. J. O'Reilly, to Wheatland Electric Products Co. Trench duct having an adjustable closure assembly. 3,166,633, 1–19–65, Cl. 174—101.

Gwinner, Hans E., and R. Moessner, to Bulova Watech Co., Inc. Watch band connector. 3,165,884, 1–19–65, Cl. 58—88.

Haddock, Louis A., Jr., to Clark Equipment Co. Forklift truck with forks that are pivoted about a vertical axis by lateral movement of the fork assembly carriages. 3,166,209, 1–19–65, Cl. 214—730.

Haebler, Herbert: *See*—
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Hage, Stanislas H., to Outboard Marine Corp. Sliding top. 3,165,762, 1–19–65, Cl. 9—1.

Hagler, Herbert L. Percolator basket and stem removing tool. 3,166,349, 1–19–65 Cl. 294—33.

Hall, Donald W., and B. D. Troyer, to United States of America, Atomic Energy Commission. Sealing means. 3,166,133, 1–19–65, Cl. 177—135.

Hall, George D., to Thornhill-Craver Co. Automatic high-low pressure cutoff. 3,166,092, 1–19–65, Cl. 137—458.

Hallberg, Irving H., to Borg-Warner Corp. Unthrottled internal combustion engine. 3,166,051, 1–19–65, Cl. 123—32.

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Halpern, Stanley and J. Golf game device. 3,165,930, 1–19–65, Cl. 73—379.

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Hampl, Jan, to Meopta, narodni podnik. Motion picture camera with rotatable and removable cassette. 3,166,756, 1–19–65, Cl. 352—78.

Handley, Harold E., to Textron Inc. Safety control system for fluid distribution and apparatus. 3,166,084, 1–19–65. Cl. 137—77.

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Hanson, Philip S., and R. E. Saxtan, to The Beryllium Corp. Forging brass alloy containing small amounts of beryllium. 3,166,410, 1–19–65. Cl. 75—103.

Hantscho, George, to George Hantscho Co., Inc. Coacting cylinders having skewed gaps to maintain balanced pressure contact. 3,166,012, 1–19–65, Cl. 101—220.

Hantscho, George, Co., Inc.: *See*—
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Harding, Joseph J. Article vending machine. 3,166,215, 1–19–65, Cl. 221—69.

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Hargreaves, William, to Weston Instruments, Inc. Dual encapsulated stators. 3,166,685, 1–19–65, Cl. 310—43.

Haring, Horace E., and R. L. Taylor, to Bell Telephone Laboratories Inc. Dry electrolytic device. 3,166,693, 1–19–65, Cl. 317—230.

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Haroldson, Ole and G. B. Sub-irrigating tool. 3,166,034, 1–19–65, Cl. 111—7.3.

Harper, Orville C. Combine header leveller. 3,165,878, 1–19–65, Cl. 56—209.

Harper, Rex S., and C. A. Gentry, to International Paper Co. Mulch paper. 3,165,862, 1–19–65, Cl. 47—9.

Harris, John F., and D. W. J. Lane, to Fisons Pest Control Ltd. Process for preparing tetrachloro-dinitrobenzene and tetrachloro-phenylene diamine. 3,166,593, 1–19–65, Cl. 260—580.

Harris, John F., and D. W. J. Lane, to Fisons Pest Control Ltd. Process for preparing tetrachloro-5,6-dinitrobenzene and tetrachloro-O-phenylene diamine. 3,166,594, 1–19–65, Cl. 260—580.

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Harvell, Robert, and J. L. May, to Rotary Disc File Corp. of America. Rotary file. 3,165,813, 1–19–65, Cl. 29—78.

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Fehling, Hans R., and Harvey. 3,166,618.

Harvey, Phillip D., to California Research Corp. Controlling nitrogen content of hydrocarbon oils. 3,166,493, 1–19–65, Cl. 208—254.

Harvey, Phillip D., J. A. Robbers, J. W. Scott, Jr, and H. F. Mason, to California Research Corp. In situ sulfiding of nickel- and cobalt-containing catalysts. 3,166,491, 1–19–65, Cl. 208—111.

Haspel, Karl W., to Wilhelm Grupp, K.G., Werkseug-und Maschinenfabrik, Firma. Template controlled machine tool. 3,165,976, 1–19–65, Cl. 90—13.2.

Hathaway, Claude M., to Western Electrodynamic, Inc. Oscillographic fault recorder. 3,166,375, 1–19–65, Cl. 346—109.

Hausman, Eugene A., to Engelhard Industries, Inc. Recovery of rhodium from fusion products. 3,166,404, 1–19–65, Cl. 75—83.

Hawkins, Alta F. and R. T. Attachment for tractors. 3,166,199, 1–19–65, Cl. 211—182.

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Hawley, Richard A., and H. B. Hanson, to Meat Packers Equipment Co. Food mold cover unit. 3,166,007, 1–19–65, Cl. 100—219.

Hayes, Charles T., to Parkersburg Rig and Reel Co. Hydrodynamic torque transmitting apparatus. 3,166,161, 1–19–65, Cl. 188—90.

Hayes, William L., to Quick Mfg., Inc. Power transmission unit 3,165,938, 1–19–65, Cl. 74—220.

Haynes, Munro K., to International Business Machines Corp. Parallel or serial memory device. 3,166,739, 1–19–65, Cl. 340—173.1.

Hearn, Robert T., to Symington Wayne Corp. Automatic shutoff device. 3,166,108, 1–19–65, Cl. 141—225.

Heath, William H., Y. Nubar, G. Arahal, S. Reiner, D. C. Hughes, and J. R. White, to United States of America, Navy. Vertical indicating and navigation system. 3,165,927, 1–19–65, Cl. 73—178.

Hebert, Omer H. Combination wheel stretcher and lifting apparatus. 3,165,758, 1–19–65, Cl. 5—83.

Hehl, Karl, to Arburg-Feingeratefabrik oHG, Hehl & Sohne. Reciprocable screw type injection molding unit. 3,165,785, 1–19–65, Cl. 18—30.

Heidrich, Robert C., to Sun Electric Corp. Switch adapter and connector for automobile electrical system testers. 3,166,650, 1–19–65, Cl. 200—52.

Helfrich, John H., to Bell Telephone Laboratories, Inc. Signal assembler comprising a delay line and shift register loop. 3,166,734, 1–19–65, Cl. 340—147.

Heminger, George L., to Western Electric Co., Inc. Data sensing apparatus including means for replacing incorrect or outmoded data. 3,166,736, 1–19–65, Cl. 340—172.5.

Hemmeter, George T., to Bishman Mfg. Co. Adapter for wheel balancer. 3,165,932, 1–19–65, Cl. 73—484.

Henley, John W., to The Eagle-Picher Co. Articulated seal. 3,166,333, 1–19–65, Cl. 277—199.

Hepschel-Werke A.G.: *See*—
Bohrmann, Kurt. 3,165,973.

Hentz, Howard J., to The Bendix Corp. Method and apparatus for determining current density. 3,166,484, 1–19–65, Cl. 204—1.

Herbkersman, Earle C., to The Pipe Machinery Co. Double collapse mechanism and combination thereof with pipe cutting and threading machines. 3,165,768, 1–19–65, Cl. 10—87.





Hercules Powder Co.: *See*—
Diveley, William R. 3,166,564.
Olson, Setha G., and Spurlin. 3,166,538.

Hereth, Ralph F., and R. L. Linkletter, to United States of America, Navy. Detachably stacked chock stowage apparatus. 3,166,196, 1–19–65, Cl. 211—60.

Herman Pneumatic Machine Co.: *See*—
Johnston, Loyal L. 3,165,794.

Herrmann, Willi A. Poultry processing method. 3,166,427, 1–19–65, Cl. 99—194.

Herter's Inc.: *See*—
Mittelsteadt, Glen L. 3,165,851.

Hessenthaler, Walter H.: *See*—
Chinn, Hyman G., and Hessenthaler. 3,166,458.

Hesser, Fr., Maschinenfabrik-Aktiengesellschaft, Firma: *See*—
Schoder, Eduard J. 3,166,462.

Heying, Theodore L.: *See*—
Ager, John W., Jr., and Heying. 3,166,597.

Heyn, Hilmar M.: *See*—
Miller, Carl F., and Heyn. 3,166,396.

Hickin, Robert J., and A. A. Olson, Jr., to Packaging Corp. of America. Seal end carton. 3,166,231, 1–19–65, Cl. 229—37.

Hicks, John W., Jr., to American Optical Co. Methods of making fiber optical devices. 3,166,395, 1–19–65, Cl. 65—4.

Hien, Vo D., to Radio Corp. of America. Manual tuning control system for FM radio receivers with AFC. 3,166,714, 1–19–65, Cl. 325—457.

Higgins, Edward C., and A. E. Pearson. Roller contact device for electrical coil. 3,166,368, 1–19–65, Cl. 339—9.

Hill, Charles C. Gas turbine power plant. 3,166,237, 1–19–65, Cl. 230—116.

Hill, John F., to Self-Adhesive Sign Co. Ltd. Information indicating devices. 3,166,042, 1–19–65, Cl. 116—135.

Hiller Aircraft Co., Inc.: *See*—
Brison, Robert L., and Jacobsen. 3,166,277.

Hiller Engineering Corp.: *See*—
Sherman, Roger M. 3,166,290.

Hills, Joseph A. Code sending key. 3,166,638, 1–19–65, Cl. 178—108.

Hinderer, Gottlob, and R. E. Thorp, to Price-Pfister Brass Mfg. Co. Shear seal valve. 3,166,097, 1–19–65, Cl. 137—625.17.

Hirst, Archie J., and K. Siwek, to Metalastik Ltd. Expansion joints. 3,165,986, 1–19–65, Cl. 94—18.

Hirst, Archie J., K. Siwek, and T. J. Potterton, to Metalastik Ltd. Expansion joints. 3,165,987, 1–19–65, Cl. 94—18.

Hoagland, Peter S. Drafting device. 3,165,839, 1–19–65, Cl. 33—109.

Hoe, R., & Co., Inc.: *See*—
Porter, Clive H., McDonald, and Woessner. 3,166,206.

Hoer, Kenneth G., to Muirhead and Co. Ltd. Drum loading. 3,166,460, 1–19–65, Cl. 156—446.

Hoffstrom, Bo N., to Douglas Aircraft Co., Inc. Fluid couplings. 3,165,893, 1–19–65, Cl. 60—54.

Hohmann, Frederick R., and H. E. Neely, to Pittsburgh Plate Glass Co. Apparatus for heat treating glass sheets. 3,166,397, 1–19–65, Cl. 65—268.

Hollmann, Fritz, and H. Emmerich, to Frits Driescher Spezialfabrik fur Elektrizitaetswerkbedarf. Cartridge fuse. 3,166,656, 1–19–65, Cl. 200—120.

Holloway, Thomas M., to Johnson Service Co. Pneumatic relays. 3,166,085, 1–19–65, Cl. 137—82.

Holmes, George S., to Continental Can Co., Inc. Bottle carrier with double high center cell. 3,166,213, 1–19–65, Cl. 220—115.

Holmes, Lambert, to Standard Machine & Mfg. Co. Fluid mixing device. 3,166,086. 1–19–65. Cl. 137—217.

Holopainen, Vaino J., to Wain-Roy Corp. Mechanism for attaching implements to vehicles. 3,165,842, 1–19–65. Cl. 37—42.

Honeywell Inc.: *See*—
Spence, Gary W. 3,166,741.

Hoover Ball and Bearing Co.: *See*—
Van Hartesveldt, Carroll H., and Wahl. 3,166,110.

Hopkins, G., & Sons Ltd.: *See*—
Reeve, John E., and Kingsman. 3,166,106.

Hopper, Arthur J. Check valve. 3,166,093, 1–19–65, Cl. 137—512.15.

Horn, Christian F., to Union Carbide Corp. Dyeable polyesters modified by a (metallosulfophenoxy) alkoxy-substituted aromatic monocarboxylic acid or ester. 3,166,531, 1–19–65, Cl. 260—49.

Hornschuch, Hanns, to Ingersoll-Rand Co. Impact tool torsion bar. 3,166,168, 1–19–65, Cl. 192—30.5.

Horsley, Edward A., to Provincial Engineering Ltd. Dual motor control system for cranes. 3,166,697, 1–19–65, Cl. 318—17.

Horsley, Edward A., to Provincial Engineering Ltd. Speed control for induction motor having variable resistance secondary. 3,166,702, 1–19–65, Cl. 318—240.

Hoskins, Thomas E.: *See*—
Guzan, Michael, Jr., Hoskins, and O'Reilly. 3,166,633.

Houdaille Industries, Inc.: *See*—
Magrum, Gervase M. 3,165,945.

Howard, Edward G., Jr., to E. I. du Pont de Nemours and Co. Polymers of aminopyrimidines and process therefor. 3,166,521, 1–19–65, Cl. 260—2.

Howard, Frederick S.: *See*—
Bock, Marvin J., and Howard. 3,166,723.

Howard, William L.: *See*—
Lorette, Nicholas B., and Howard. 3,166,600.

Howsmon, Wilfred B., Jr.: *See*—
Miller, Arthur F., and Howsmon. 3,166,596.

Hryniszak, Waldemar, to C. A. Parsons & Co., Ltd. Plate type heat exchangers with pairs of spaced plates and corrugated inserts. 3,166,122, 1–19–65, Cl. 165—139.

Hubbard, Roger T. J., to Imperial Metal Industries (Kynoch) Ltd. Silicon-niobium alloys. 3,166,409, 1–19–65, Cl. 75—134.

Hubby, Laurence M., to Texaco Inc. Adjustable casing head. 3,166,125, 1–19–65, Cl. 166—67.

Hubner, Kurt, to Clevite Corp. Method for producing rib transistor. 3,166,448, 1–19–65, Cl. 148—177.

Hucal, William. Banding tool. 3,166,105, 1–19–65, Cl. 140—93.2.

Huck, William F. Apparatus for trimming sheeted material. 3,165,954, 1–19–65, Cl. 83—139.

Hudson, Allan M.: *See*—
Panzer, Max L., Hudson, Lockwood, and Crane. 3,166,361.

Hughes Aircraft Co.: *See*—
Parham, O D. 3,166,682.

Hughes, David C.: *See*—
Heath, William H., Nubar, Arshal, Reiner, Hughes, and White. 3,165,927.

Hull, Maurice E., to Armour and Co. Recovery of lactose and protein from whey. 3,166,486, 1–19–65, Cl. 204—180.

Hulse, Bruce T., and M. W. Jeter, to The Boeing Co. Damped-resonator acoustical panels. 3,166,149, 1–19–65, Cl. 181—33.

Hulse, Thomas H. J., to The Quaker Oats Co. Automatic depositing machine for ice cream or the like. 3,166,025, 1–19–65, Cl. 107—8.

Huntington, Robert G., to Carrier Corp. Thermoelectric temperature and humidity control. 3,165,900. 1–19–65, Cl. 62—3.

Hupp Corp.: *See*—
Smith, Horace L., Jr., and Mueller. 3,166,263.

Hutchison, Williston E. Invertible deep-submergence power supply. 3,166,446, 1–19–65, Cl. 136—6.

Hydrabone Equipment Co.: *See*—
Kellersman, Robert, and Belknap. 3,165,780.

Hygrade Food Products Corp.: *See*—
Slotkin, Alan D. 3,165,781.

Hypro Engineering, Inc.: *See*—
Cook, Ernest E. 3,166,020.

I.R.C. Ltd.: *See*—
Fehling, Hans R., and Harvey. 3,166,050.
Fehling, Hans R., and Harvey. 3,166,618.

I-T-E Circuit Breaker Co.: *See*—
Bohn, Donald I. 3,166,701.

Imhof, Walter, deceased, by W. Imhof, administratrix, to Gebr. Migerle, AG., Firma. Device for welding plastics. 3,166,459, 1–19–65, Cl. 156—380.

Imhof, Waltraud: *See*—
Imhof, Walter. 3,166,459.

Imoto, Saburo: *See*—
Matsubayashi, Kanji, and Imoto. 3,166,497.

Imperial Chemical Industries Ltd.: *See*—
Bild, Frederick, and Robinson. 3,166,616.
Guest, Dorothy J., Morgan, and Owen. 3,166,436.
Perrins, Lyle E. 3,166,534.

Imperial Metal Industries (Kynoch) Ltd.: *See*—
Hubbard, Roger T. J. 3,166,409.

Independent Nail Corp., The: *See*—
Macdonald, Kenneth W., and Stone. 3,165,868.

Industrial Ovens, Inc.: *See*—
Alexeff, Alexander V. 3,166,304.

Ingersoll-Rand Co.: *See*—
Hornschuch, Hanns. 3,166,168.
Loss, Isidor R. 3,166,381.
White, Richard E., and Marsden. 3,166,238.
Worman, Martin. 3,166,131.

Inland Steel Co.: *See*—
Schwarz, Arthur M. 3,166,403.

Institut International Financier: *See*—
Berliner, Henry A., Lane, Greene, and Clements. 3,165,807.

Institute Elektrosvarki imeni Patona EO.: *See*—
Paton, Boris E., Lebedev, Ostapenko, Lashkevich, Sevbo, Sakharnov, Litvinchuk, and Gorbunov. 3,166,664.

International Business Machines Corp.: *See*—
Cochrane, Harry W. 3,166,669.
Dersch, William C. 3,166,40.
Haynes, Munro K. 3,166,739.
Marsh, Elliott R. 3,166,668.
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International Harvester Co.: *See*—
Iven, Wilhelm. 3,165,873.
Praca, Casimir. 3,165,872.

International Latex Corp.: *See*—
Rahmes, Donald W. 3,166,465.

International Nickel Co., Inc., The: *See*—
Bieber, Clarence G. 3,166,412.
Cook, Reginald M., and Gittus. 3,166,411.
Floreen, Stephen, and Decker. 3,166,406.
Gainsbury, Peter E. 3,166,417.
Knoth, Roy J., and Matthews. 3,166,407.
Shaw, Stuart W. K., and Cook. 3,166,413.
Worn, David K. 3,166,416.

International Paper Co.: *See*—
Harper, Rex S., and Gentry. 3,165,862.

Iuto, Henry A., to Olin Mathieson Chemical Corp. Magazine cutoffs. 3,165,849, 1–19–65, Cl. 42—17.

Into, Henry A., to Olin Mathieson Chemical Corp. Auxiliary spring for a tubular magazine. 3,165,852, 1–19–65, Cl. 42—49.

Irvin, Leslie L., to Irving Air Chute Co., Inc. Quickly releasable buckle for safety and harness strap. 3,165,802, 1–19–65, Cl. 24—197.

Irvine, James E.: *See*—
Steiniger, Herman W., and Irvine. 3,166,260.

Irving Air Chute Co., Inc.: *See*—
Irvin, Leslie L. 3,165,802.

Ishida, Tsuyoshi: *See*—
Mori, Leo, Nikura, and Ishida. 3,165,939.

Ishiguro, Yasunosuke. Time delay mercury switch with gas equalisation means. 3,166,657, 1–19–65, Cl. 200—122.

Iven, Wilhelm, to International Harvester Co. Hay conditioner supporting and operating means. 3,165,873, 1–19–65, Cl. 56—1.

Izzo, Patrick T., and S. R. Safir, to American Cyanamid Co. 1-phenyl-1,2-cyclopropane dicarboximides. 3,166,571, 1–19–65, Cl. 260—326.5.

Jackson, John T., to Mandrels, Inc. Mandrel for forming insulator casing. 3,165,789, 1–19–65, Cl. 18—45.

Jacobs, Robert B.: *See*—
Rhodes, Joseph C., and Jacobs. 3,165,921.

Jacobsen, Edward H.: *See*—
Brison, Robert L., and Jacobsen. 3,166,277.

Jacobson, Robert S., to Sperry Rand Corp. Target velocity-azimuth indicator. 3,166,746, 1–19–65, Cl. 343—9.

James, Thomas F.: *See*—
Stitt, William J., Sr., and William J. Stitt, Jr., and James. 3,166,251.

Jansons, Arnolds, to United States of America, Navy. Servo mechanism transient and velocity error compensation means. 3,166,704, 1–19–65, Cl. 320—1.

Janssen, Paul A. J., to Research Laboratorium Dr. C. Janssen N.V. 1-[2-(1,4-benzodioxanyl)-methyl] - 4 - phenyl - 4 - carbonyl-amino or 4-carbalkoxy amino piperidines. 3,166,561, 1–19–65, Cl. 260—294.

Jay Dee Products Co., Inc.: *See*—
Kaplan, Arnold W. 3,165,957.

Jenkins, Robert J.: *See*—
Parker, William J., Butler, Abbott, and Jenkins. 3,165,915.

Jennings, David C., to United Aircraft Corp. Ball valve. 3,166,098, 1–19–65, Cl. 137—625.43.

Jennings, Jo E., to Jennings Radio Mfg. Corp. Vacuum switch and envelope construction therefor. 3,166,658, 1–19–65, Cl. 200—144.

Jennings Radio Mfg. Corp.: *See*—
Jennings, Jo E. 3,166,658.

Jensen, Garold K., and J. E. McGeogh, to United States of America, Navy. Automatic sweep tuning circuit with means to change the range of reactance after each sweep through a sub-band. 3,166,726, 1–19–65, Cl. 334—19.

Jepson, Ivar, to Sunbeam Corp. Automatic egg cooker. 3,166,006, 1–19–65, Cl. 99—440.

Jeremiah, Earl E., to National Can Corp. Can palletising. 3,166,203, 1–19–65, Cl. 214—6.

Jeter, Milton W.: *See*—
Hulse, Bruce T., and Jeter. 3,166,149.

Jewett, Harold A. Floatable diving assembly. 3,166,315, 1–19–65, Cl. 272—66.

Johansson, Gustav A.: *See*—
Enemark, Arne F., Sorensen, and Johansson. 3,166,445.

Johnson, Glenn D., to Shell Oil Co. Wellhead closure plug. 3,166,124, 1–19–65, Cl. 166—66.5.

Johnson, Herbert E., to Union Carbide Corp. Process for the production of α-hydroxy amides. 3,166,588, 1–19–65, Cl. 260—559.

Johnson & Johnson: *See*—
Riegger, George C., and Smith. 3,166,388.

Johnson Service Co.: *See*—
Holloway, Thomas M. 3,166,085.

Johnston, Loyal L., to Herman Pneumatic Machine Co. Apparatus for forming foundry molds. 3,165,794, 1–19–65, Cl. 22—17.

Jones, Glen D. Apparatus for making crushed ice. 3,165,904, 1–19–65, Cl. 62—188.

Jost, Max, to Ciba Ltd. 5,5'-diamino-1,1'-dianthrimide carbasole-sulfonic acids and a process for their preparation. 3,166,569, 1–19–65, Cl. 260—316.

Joy, Ivan L., to Chemetron Corp. Ultrasonic testing device. 3,166,731, 1–19–65, Cl. 340—15.

Judd, Geoffrey R.: *See*—
White, Desmond D., Thwaites, and Judd. 3,166,456.

Just, Alex, to Malco Mfg. Co., Inc. Method and apparatus for connector orientation. 3,166,372, 1–19–65, Cl. 339—186.

Kabushiki Kaisha Hattori Tokeiten (also known as K. Hattori & Co. Ltd.): *See*—
Obara, Naoyuki. 3,165,995.

Kabushiki Kaisha Hirota: *See*—
Kihara, Yoshio. 3,165,908.

K. Hattori & Co., Ltd.: *See*—
Obara, Naoyuki. 3,165,995.

Kalenda, Zdeněk: *See*—
Kubáň, Robert, and Kalenda. 3,166,068.

Kamborian, Jacob S., R. B. Dunlap, and H. V. D. Benken; said Dunlap and said Benken assors. to said Kamborian, apparatus for lasting footwear. 3,165,771, 1–19–65, Cl. 12—10.5.

Kamyr, Aktiebolaget: *See*—
Richter, Johan C. F. C. 3,166,200.

Kane, Walter H.: *See*—
Bousquet, Donald G., and Kane. 3,165,865.

Kaplan, Arnold W., to Jay Dee Products Co., Inc. Plastic tube cutter and dispenser. 3,165,957, 1–19–65, Cl. 83—167.

Kappel, Henry C., to Uni-Valve, Inc. Aerosol valve assembly. 3,166,250, 1–19–65, Cl. 239—337.

Kappis, Friedrich, and J. Wiemer, to Metallgesellschaft Aktiengesellschaft. Hot gas electrofilter. 3,166,389, 1–19–65, Cl. 55—146.

Kaptur, Robert E.: *See*—
Anderson, Arnold E., and Kaptur. 3,166,165.

Karn, Andrew B. Pressure sensitive labels, label stocks, and methods for manufacturing the same. 3,166,186, 1–19–65, Cl. 206—56.

Karow, Kenton J.: *See*—
Schults, Henry O., and Karow. 3,166,192.

Kaufman, Charles W., to Commercial Solvents Corp. Ammonium nitrate-chromate salt explosive compositions. 3,166,450, 1–19–65, Cl. 149—46.

Kawamoto, Nobu: *See*—
Franta, Nicholas, and Kawamoto. 3,166,649.

Kay, Sydney, deceased (by S. P. Kay, executor), to Cooper Roller Bearings Co. Ltd. Split roller bearings. 3,166,363, 1–19–65, Cl. 308—207.

Kay, Sydney P.: *See*—
Kay, Sydney. 3,166,363.

Keaton, Lawrence C., to Phillips Petroleum Co. Stack condensate, tray in carbon black filter housing. 3,166,392, 1–19–65, Cl. 55—280.

Kebel, Arthur P. Surgical clamp for circumcision. 3,166,075, 1–19–65, Cl. 128—346.

Keefe, Robert L., Jr., to E. I. du Pont de Nemours and Co. Pneumatic tire. 3,166,113, 1–19–65, Cl. 152—361.

Keibel, Donald W.: *See*—
Armantrout, Kenneth M., and Keibel. 3,166,040.

Kellerman, Robert, and K. E. Belknap, to Hydrahone Equipment Co. Poultry neck cutter. 3,165,780, 1–19–65, Cl. 17—12.

Kelley, Donald E.: *See*—
Vaughan, Robert T., Kelley, and Scott. 3,166,182.

Kelley, Robert F.: *See*—
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Kellogg, Everett B.: *See*—
Wyllie, Donald R., and Kellogg. 3,166,013.

Kelly, Earl M., to The Elmco Corp. Sludge discharge means for sedimentation apparatus. 3,166,502, 1–19–65, Cl. 210—528.

Kelly, Vincent J.: *See*—
Stewart, Robert A., Kelly, and Duckworth. 3,166,424.

Kelsall, Denis F., to Commonwealth Scientific and Industrial Research Organization. Method and apparatus for the separation of solid particles into sized fractions. 3,166,496, 1–19–65, Cl. 209—211.

Kelsey, Winfield F., and A. L. Liberty, to United Elastic Corp. Monitoring ribbon thread thickness and stop device. 3,166,172, 1–19–65, Cl. 192—127.

Kennecott Copper Corp.: *See*—
Pick, Hans H., and Stanley. 3,166,257.

Kennedy, James M., to Revere Copper and Brass Inc. Method of roll-bonding copper to steel. 3,165,828, 1–19–65, Cl. 29—487.

Keon, Edward F., to United States of America, Navy. Exhaust nozzle for reaction engines and the like. 3,165,888, 1–19–65, Cl. 60—35.6.

Kern, Fred W., to Bethlehem Steel Co. Railway switch heel block. 3,166,279, 1–19–65, Cl. 246—441.

Kern, Hadley H. Wheeled irrigation pipe mover. 3,166,088, 1–19–65, Cl. 137—344.

Kershner, Richard B., and F. H. Swaim, to United States of America, Navy. Jet control by rotatable offset nozzle. 3,165,889, 1–19–65, Cl. 60—35.55.

Keser, Walter, to Lufttechnische Gesellschaft m.b.H. Filter cleaning device for air exhaust systems and the like. 3,166,391, 1–19–65, Cl. 55—273.

Kevane, Clement J., and R. J. Schulte, to Controls Co. of America. Time delay switch. 3,166,680, 1–19–65, Cl. 307—88.5.

Kihara, Yoshio, to Kabushiki Kaisha Hirota. Blow-out valve for gas of gas lighter. 3,165,908, 1–19–65, Cl. 67—7.1.

Kilmer, William A.: *See*—
Parsons, Hubert J., Kilmer, Peterson, and Conners. 3,165,769.

Kimberly-Clark Corp.: *See*—
Rutkus, Harold V., Van Iten, and Frick. 3,166,181.

Kingsman, Frank J.: *See*—
Reeve, John E., and Kingsman. 3,166,106.

Kinsman, Frank W. Fluid clutch-brake. 3,166,167, 1–19–65, Cl. 192—18.

Kiper, Gerd, to Agfa Aktiengesellschaft. Light controlled shutter. 3,165,969, 1–19–65, Cl. 95—10.

Kiper, Gerd, to Agfa Aktiengesellschaft. Shutter control structure for cameras. 3,165,994, 1–19–65, Cl. 95—63.

Kiper, Gerd, and R. Denk, to Agfa Aktiengesellschaft. Camera with means for automatically introducing into the same the factor of film speed. 3,165,990, 1–19–65, Cl. 95—10.

Kiper, Gerd, and R. Kremp, to Agfa Aktiengesellschaft. Combined shutter and diaphragm assembly for cameras. 3,165,996, 1–19–65, Cl. 95—64.

Kirby, Peter, to Shell Oil Co. Copolymers of dialkenyl phosphorus esters as lubricating oil additives. 3,166,505, 1–19–65, Cl. 252—49.8.

Kirkpatrick, Willard H., and V. L. Seale, to Nalco Chemical Co. Process for breaking petroleum emulsions. 3,166,516, 1–19–65, Cl. 252—344.

Kirkpatrick, Willard H., and V. L. Seale, to Nalco Chemical Co. Condensation products. 3,166,548, 1–19–65, Cl. 260—97.5.

Kishikawa, Kanichi, to Yawata Iron & Steel Co., Ltd. Method of rolling H-sectioned steel members and mill train for the same. 3,165,948, 1–19–65, Cl. 80—66.

Kitasaki, Kiyoshi, and G. W. Willcockson, to United States Borax & Chemical Corp. Organoboron polymers. 3,166,522, 1–19–65, Cl. 260—2.

Kittredge, Raymond E., to General Precision, Inc. Document transport apparatus. 3,166,310, 1–19–65, Cl. 271—5.

Kjerulf, Ronald T.: *See*—
Logan, Richard W., Kjerulf, and Williams. 3,165,833.

Kleimack, Joseph J., H. H. Loar, and H. C. Theuerer, to Bell Telephone Laboratories, Inc. Process of epitaxial vapor deposition with subsequent diffusion into the epitaxial layer. 3,165,811, 1–19–65, Cl. 29—25.3.

Klesper, Hugo, to Passavant-Werke. Sewage disposal by combustion. 3,166,032, 1–19–65, Cl. 110—10.

Klimstra, Paul D.: *See*—
Counsell, Raymond E., and Klimstra. 3,166,553.

Klimstra, Paul D., to G. D. Searle & Co. (Optionally 17-alkylated) 17-oxygenated 5α-androst-2-en-4-ones and intermediates thereto. 3,166,578, 1–19–65, Cl. 260—397.3.

Kline, Herbert J. Hot wire regulated mechanical movements. 3,166,655, 1–19–65, Cl. 200—113.





Klostermann, Heinz, to Rahdener Maschinenfabrik August Kolbus. Apparatus for sticking paper strips and head bands or backing gauze onto book-block spines. 3,166,463, 1–19–65, Cl. 156—477.

Kluepfel, Dieter, and C. Coronelli, to Lepetit S.p.A. Process for the manufacture of 16β-methylprednisone. 3,166,482, 1–19–65, Cl. 195—51.

Knoth, Roy J., and N. A. Matthews, to The International Nickel Co., Inc. Alloy steel and cast roll made therefrom. 3,166,407, 1–19–65, Cl. 75—128.

Knoth, Walter H., Jr., to E. I. du Pont de Nemours and Co. Boron hydride carbonyl compounds and processes for making them. 3,166,378, 1–19–65, Cl. 23—14.

Koch, H., & Sons: *See*—
Gaylord, John A. 3,165,763.
Gaylord, John A. 3,165,803.

Koch, Jakob. Rotor end sealing means for rotary regenerative heat exchangers. 3,166,118, 1–19–65, Cl. 165—9.

Koch, Stanley D., to Monsanto Research Corp. Method of operating a propulsion engine with polysubstituted methane fuel. 3,165,887, 1–19–65, Cl. 60—35.4.

Koester, Melvin C., to Libbey-Owens-Ford Glass Co. Packaging device. 3,166,188, 1–19–65, Cl. 206—62.

Kogan, Henry W.: *See*—
Noakes, Thomas E., and Kogan. 3,166,500.

Kohorst, Joseph. Submersible heater with heated fuel valve. 3,166,067, 1–19–65, Cl. 126—360.

Kolka, Alfred J.: *See*—
Ecke, George G., and Kolka. 3,166,509.

Komeno, Taichiro, to Shionogi & Co., Ltd. 3,4-Epithiosteroids. 3,166,549, 1–19–65, Cl. 260—239.5.

Komiya, Seiichiro: *See*—
Mochida, Ei, Ogawa, and Komiya. 3,166,473.

Konicki, Marion J.: *See*—
Stays, Harold R., and Konicki. 3,165,964.

Konrad, Jakob, and E. Mühlberg, to Maschinenfabrik Augsburg-Nürnberg AG. Method and apparatus of utilizing exhaust gases in the internal combustion engine cycle. 3,166,057, 1–19–65, Cl. 123—90.

Kopita, Robert: *See*—
Dunn, John, and Kopita. 3,166,066.

Kowa Co., Ltd.: *See*—
Ando, Saso. 3,165,992.

Kosiba, Walter J., ½ to William F. Cioffi. Fish lure. 3,165,857, 1–19–65, Cl. 43—42.15.

Kralicek, Jaroslav: *See*—
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Krapcho, John, to Olin Mathieson Chemical Corp. Benzothiazines. 3,166,554, 1–19–65, Cl. 260—243.

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Menn, Jacob J., F. B. Folckemer, and A. Miller, to Shell Oil Co. Anthelmintic compositions and method of employing same. 3,166,472, 1–19–65, Cl. 167—53.
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Morris, David J., to Ericsson Telephones Ltd. Electric signal detector. 3,166,677, 1–19–65, Cl. 307—88.

Morris, John M., to Rex Chainbelt, Inc. Method of treating fluidised particles while conveyed. 3,166,383, 1–19–65, Cl. 34—10.

Morrison, Willard L., to Liquefreeze Co., Inc. Method for freezing cooked foods. 3,166,425, 1–19–65, Cl. 99—192.

Morse, John F. Single lever control for a throttle and an electrically operated clutch. 3,165,941, 1–19–65, Cl. 74—472.

Moser, Joseph R., and H. R. Schatteiner, to Allen-Bradley Co. Backlash take-up system. 3,166,698, 1–19–65, Cl. 318—28.

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Munk, Edmund E., to Furnier- und Sperrholzwerk J. F. Werz Jr., K.G. Wersalit-Pressholzwerk Oberstenfeld. Method and apparatus for producing articles of molded particle board. 3,166,617, 1–19–65, Cl. 264—109.

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Murray, Ernest E. Finishing wheel. 3,165,867, 1–19–65, Cl. 51—334.

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Myers, William D., to Baker Oil Tools, Inc. Apparatus for operating subsurface sleeve valves and similar well bore devices. 3,166,128, 1–19–65, Cl. 166—214.

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Kirkpatrick, Willard H., and Seale. 3,166,548.

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Natta, Giulio, G. Crespi, and G. Borsini, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Elastic products consisting of hydrocarbon elastomers reinforced by fibers of a highly isotactic polymeric higher alpha-olefin and processes for obtaining the same. 3,166,608, 1–19–65, Cl. 260—878.

Naves, Yves R., and P. Tullen, to The Givaudan Corp. 2(2-methyl-1-propene)-yl-4-methyl-tetrahydro-pyrans and 2(2-methyl-2-propene)-yl-4-methyl-tetrahydro-pyrans. 3,166,575, 1–19–65, Cl. 260—345.1.

Neale, Michael R., to Raydyot Ltd. Vehicle accessories. 3,166,080, 1–19–65, Cl. 131—241.

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Nelden, Richard M., to American Radiator & Standard Sanitary Corp. Torque limiting ports-fluid drives. 3,165,894, 1–19–65, Cl. 60—54.

Nelson, Milton C. Screw anchor securing tool. 3,166,210, 1–19–65, Cl. 218—43.

Neukom, Alfred, R. Suter, and J. Widmer, to H. A. Schlatter, AG. Method of butt welding of metallic workpieces. 3,166,665, 1–19–65, Cl. 219—104.

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Neustadt, Herbert M. Breath controlled electronic musical instrument. 3,166,622, 1–19–65, Cl. 84—1.01.

Newland, Gordon C., and J. W. Tamblyn, to Eastman Kodak Co. Light stabilized, poly-a-olefin plastic composition. 3,166,529, 1–19–65, Cl. 260—45.8.

Nichols, Gordon E., to Winthrop-Atkins Co., Inc. Desk mount. 3,166,194, 1–19–65, Cl. 211—49.

Nichols, Robert G. Method of making bags. 3,166,457, 1–19–65, Cl. 156—269.

Nicolaus, Bruno J. R., and E. Testa, to Lepetit S.p.A. 4,4-disubstituted 3-pyrazolidinones and therapeutic compositions containing the same. 3,166,568, 1–19–65, Cl. 260—310.

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Nojd, John A.: *See*—
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Nojima, Susumu, to Anritsu Denpa Kogyo Kabushiki Kaisha. Area balanced waveform generator. 3,166,717, 1–19–65, Cl. 328—67.

Nolan, John E., to American Radiator & Standard Sanitary Corp. Bathlift device. 3,166,282, 1–19–65, Cl. 248—124.

Nolan, John T., Jr., and H. Chafetz, to Texaco Inc. Vapor phase process for the polymerisation of isobutylene. 3,166,546, 1–19–65, Cl. 260—94.8.

Noll, Frank P. Ventilating grille and temperature responsive damper actuating means. 3,165,999, 1–19–65, Cl. 98—37.

Noller, Hans G. Clinical thermometer. 3,165,929, 1–19–65, Cl. 73—362.

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O'Daniell, Oscar. Inflated amusement device for playpens. 3,165,759, 1–19–65, Cl. 5—93.

Odawara, Daisaku. Supercharger for an internal combustion engine. 3,166,056, 1–19–65, Cl. 123—79.

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Olson, Richard L. Pressure assembly comprising a sealing strip of elastomeric material having compressible gas cells. 3,166,332, 1–19–65, Cl. 277—171.





Olson, Betha G., and H. M. Spurlin, to Hercules Powder Co. Copolymerisation process. 3,166,538, 1–19–65, Cl. 260—88.2.

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Onions, John H. Golf club. 3,166,820, 1–19–65, Cl. 273—80.

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Orsechowski, Adam, and J. C. MacKenzie, to Cabot Corp. Surface treated carbon black as polymerisation catalyst and method of polymerisation therewith. 3,166,541, 1–19–65, Cl. 260—93.7.

Orsechowski, Adam, and J. C. MacKenzie, to Cabot Corp. Surface treated inorganic solid polymerisation catalyst and method of polymerisation therewith. 3,166,542, 1–19–65, Cl. 260—93.7.

Orsechowski, Adam, and J. C. MacKenzie, to Cabot Corp. Process for polymerising olefins. 3,166,543, 1–19–65, Cl. 260—93.7.

Orsechowski, Adam, and J. C. MacKenzie, to Cabot Corp. Process and catalyst for polymerising olefins. 3,166,544, 1–19–65, Cl. 260—93.7.

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Osteen, Emmett H. Blower for combines. 3,165,874, 1–19–65, Cl. 56—23.

Otis, Roger H. Flotation and structural units and building structures. 3,166,037, 1–19–65, Cl. 114—.5.

Otto, Herbert R., Jr. Oil filter with check valve. 3,166,498, 1–19–65, Cl. 210—130.

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Pahlavouni, Marcel, to Societe en Commandite Solvay & Cie. Sealed fluidisation chamber. 3,166,386, 1–19–65, Cl. 34—57.

Paintin, Claude R. Automatic grain feed control. 3,166,218, 1–19–65, Cl. 222—56.

Palpacelli, Elio. Electrically actuated, automatic suction door-mat. 3,165,773, 1–19–65, Cl. 15—310.

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Panis, Constantius J. W.: *See*—
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Panser, Marvin, to Thompson Ramo Wooldridge Inc. Vehicle suspension. 3,166,337, 1–19–65, Cl. 280—6.1.

Panser, Max L., A. M. Hudson, G. H. Lockwood, and S. C. Crane, to Del Monte Technical Associates. Measuring engine. 3,166,361, 1–19–65, Cl. 308—4.

Parham, O D, to Hughes Aircraft Co. Tunnel diode nor gate. 3,166,682, 1–19–65 Cl. 307—88.5.

Parker, Richard H. Electrical outlets. 3,166,370, 1–19–65, Cl. 339—21.

Parker, William J., C. P. Butler, G. L. Abbott, and R. J. Jenkins. Determination of thermal properties of materials. 3,165,915, 1–19–65, Cl. 73—15.

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Parks, Asbury S., to National Tank Co. Rate control apparatus for controlling liquid feeds. 3,166,495, 1–19–65, Cl. 208—340.

Parmele, Harris B., F. J. Schultz, C. W. Lassiter, and J. M. Bell, to P. Lorillard Co. Chewing tobacco product. 3,166,078, 1–19–65, Cl. 131—5.

Parshall, George W., to E. I. du Pont de Nemours and Co. Hydrogen generation by hydrolysis or alcoholysis of a polyhydropolyborate-group VIII metal mixture. 3,166,514, 1–19–65, Cl. 252—188.

Parson, Myers K.: *See*—
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Parsons, Charles G.: *See*—
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Parsons, John B. Thermo-shutter. 3,166,052, 1–19–65, Cl. 123—41.05.

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Paruskiewicz, Ervin J. License plate holder. 3,166,280, 1–19–65, Cl. 248—28.

Pass, Herbert A., M. S. H. Nurse, and B. J. Watt, to The Sherwin-Williams Co. of Canada Ltd. Pesticidal composition. 3,166,469, 1–19–65, Cl. 167—22.

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Paufve, Eldred H., to Link Division of General Precision, Inc. Self-regenerative, latching, semiconductor voltage selection circuit. 3,166,679, 1–19–65, Cl. 307—88.5.

Paugh, Fred E. Water tower. 3,165,902, 1–19–65, Cl. 62—171.

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Pearson, Albert E.: *See*—
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Pelletier, Gerard J. Photographic projection easel. 3,165,970, 1–19–65, Cl. 88—24.

Peltier, Henry C., to Astrotec, Inc. Garage door operator. 3,166,306, 1–19–65, Cl. 268—59.

Pentron Electronics Corp.: *See*—
Agler, Wave B. 3,165,810.

Peppler, William S., and L. F. Carkhuff, to Diamond National Corp. Carton set-up machine. 3,165,984, 1–19–65, Cl. 93—37.

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Peras, Lucien, to Regie Nationale des Usines Renault. Device for maintaining the doors of automobile vehicles in a given position of opening. 3,165,777, 1–19–65, Cl. 16—85.

Peras, Lucien, to Regie Nationale des Usines Renault. Control devices with coaxial throttle and pressure reducer for hydraulic braking systems of vehicles. 3,165,980, 1–19–65, Cl. 91—370.

Perfect Fit Industries, Inc.: *See*—
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Perls, Thomas A., E. Rule, J. R. Field, and F. J. Suellentrop, to Lockheed Aircraft Corp. Method and apparatus for field calibrating pressure and acceleration measuring instrumentation systems. 3,165,913, 1–19–65, Cl. 73—1.

Perret, Rene, and A. Trinkler, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Monitoring device for piloted vehicles. 3,166,275, 1–19–65, Cl. 244—76.

Perrins, Lyle E., to Imperial Chemical Industries Ltd. Process for production in aqueous medium of copolymers of vinyl chloride with monomers containing free carboxylic acid groups. 3,166,534, 1–19–65, Cl. 260—80.5.

Perry, William M., to General Aniline & Film Corp. Copolymers of N-vinyl-2-pyrrolidones and vinyl esters as emulsions or latices. 3,166,525, 1–19–65, Cl. 260—29.6.

Person, Ernest H., and W. J. Walsh, to Allied Thermal Corp. Air distribution unit. 3,166,001, 1–19–65, Cl. 98—40.

Peterson, Anders A.: *See*—
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Peterson, Seymour, to Storm Industries, Inc. Egg collection system. 3,166,046, 1–19–65, Cl. 119—48.

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Pezdirtz, George F., to Texaco Inc. Polymerisation of isobutylene with an aluminum-titanium dioxide-titanium tetrachloride catalyst. 3,166,545, 1–19–65, Cl. 260—94.8.

Pfaff, Homer C., to Up-Rite Hook Co. Drapery cornice dual rod and hanger assembly. 3,166,286, 1–19–65, Cl. 248—263.

Phelps, William H. Engine exhaust silencer. 3,166,150, 1–19–65, Cl. 181—46.

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Pick, Hans H., and N. Stanley, to Kennecott Copper Corp. Fleeting mechanism for crushing rolls. 3,166,257, 1–19–65, Cl. 241—205.

Pick, Louis. Structure for doors and the like. 3,165,792, 1–19–65, Cl. 20—15.

Pidgeon, Joseph A. Methods for making and distributing printed articles. 3,166,309, 1–19–65, Cl. 270—1.

Piller, Friedolin. Apparatus for displaying stackable articles. 3,165,846, 1–19–65, Cl. 40—104.

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Pinkard, Jerry L., to Rector Well Equipment Co., Inc. Metallic seal assembly. 3,166,345, 1–19–65, Cl. 285—332.3.

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Pittsburgh Plate Glass Co.: *See*—
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Plasser, Franz, and J. Theurer. Mobile track lifting apparatus. 3,165,837, 1–19–65, Cl. 33—60.
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Purse, Frank V., and C. G. Gerhold, to Universal Oil Products Co. Converter-mufller. 3,166,382, 1–19–65, Cl. 23—288.
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Re, Frank M., to Dual Mfg. and Engineering, Inc. Reclining chair. 3,166,353, 1–19–65, Cl. 297—75.
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Rehm, Karl, to Telefunken Patentverwertungs-G.m.b.H. Article handling device. 3,166,313, 1–19–65, Cl. 271—86.
Reick, Kenneth R. Photocopy machine with developer solution storage and supply means. 3,165,998, 1–19–65, Cl. 95—89.
Reid, Albert C., to Sinclair Research, Inc. Balanced amplitude modulator. 3,166,722, 1–19–65, Cl. 332—43.
Reifers, Richard F., and H. A. Lord, to Diamond National Corp. Method for producing molded pulp articles. 3,166,467, 1–19–65, Cl. 162—223.
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Richter, Johan C. F. C., to Kamyr, Aktiebolaget. Storage container for cellulosic pulp and method of operation thereof. 3,166,300, 1–19–65, Cl. 259—4.
Richter, Sidney B., to Velsicol Chemical Corp. Phenoxyacetamides for the control of pests. 3,166,589, 1–19–65, Cl. 260—559.
Richter, Sidney B., to Velsicol Chemical Corp. Phenoxyacetamides for the control of pests. 3,166,591, 1–19–65, Cl. 260—559.
Riedel, Herbert. Collapsible stand for a flexible projection screen. 3,166,115, 1–19–65, Cl. 160—24.
Riegger, George C., and R. M. Smith, to Johnson & Johnson. Sandpaper. 3,166,388, 1–19–65, Cl. 51—296.
Rigterink, Raymond H., to The Dow Chemical Co. O-(isoxazolyl) O-alkyl phosphoramidates and phosphoramidothioates. 3,166,565, 1–19–65, Cl. 260—307.
Riley, Trevor J. Hydraulically operated piston. 3,165,895, 1–19–65, Cl. 60—54.5.
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Roc, Guy, and C. Andre, to Societe Rateau et Cabinet Andre Faure. Gas desiccation apparatus. 3,165,903, 1–19–65, Cl. 62—173.
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Schoeneman, Robert E., to Potter Instrument Co., Inc. Perforated tape vaccum buffer. 3,166,265, 1–19–65, Cl. 242—55.12.
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Specht, Glenn E., to Powhatan Brass & Iron Works. Adjustable stop means. 3,166,293, 1-19-65, Cl. 251—285.
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Stevens, George R., and J. J. Stipo. Machine for automatically ejecting customers' cards when fuel delivery is due and for other purposes. 3,166,214, 1-19-65, Cl. 221—4.
Stewart, Robert A., V. J. Kelly, and L. J. Duckworth, to Gerber Products Co. Egg yolk process. 3,166,424. 1-19-65, Cl. 99—182.
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Stollman, Oscar S. Method of obtaining registration between releasably fastened members. 3,165,827, 1-19-65, Cl. 29—445.
Stoltz, Herbert C., to AMP Inc. Indenting type crimping tool. 3,166,114, 1-19-65, Cl. 153—1.
Stolz, Hermann, to C. Matthael. Conveyor-belt connection. 3,165,800, 1-19-65, Cl. 24—33.
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Strong, Willard J., to Ford Motor Co. Memory readout sensing circuit employing clipping-clamping network connected to strobed logic and gate. 3,166,681, 1-19-65, Cl. 307—88.5.
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Thumim, Carl, to Miehle-Goss-Dexter, Inc. Paper pile aligner for automatic cutter. 3,165,956, 1-19-65, Cl. 83—155.
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Sawa, Yoshiro, Maeda, and Tsuzi. 3,166,560.
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| 171— 63 | 3,166,130 | |
| 173—105 | 3,166,131 | |
| 174— 49 | 3,166,631 | |
| 51 | 3,166,632 | |
| 101 | 3,166,633 | |
| 153 | 3,166,634 | |
| 175—235 | 3,166,132 | |
| 176— 5 | 3,166,477 | |
| 37 | 3,166,478 | |
| | 3,166,479 | |
| 47 | 3,166,480 | |
| 50 | 3,166,481 | |
| 177—135 | 3,166,133 | |
| 209 | 3,166,134 | |
| 211 | 3,166,135 | |
| 262 | 3,166,136 | |
| 178— 7.3 | 3,166,635 | |
| 24 | 3,166,636 | |
| 26 | 3,166,637 | |
| 108 | 3,166,638 | |
| 179— 1 | 3,166,639 | |
| | 3,166,640 | |
| 5 | 3,166,641 | |
| 84 | 3,166,642 | |
| 100.1 | 3,166,643 | |
| 180— 7 | 3,166,137 | |
| 9.24 | 3,166,138 | |
| 13 | 3,166,139 | |
| 19 | 3,166,140 | |
| 21 | 3,166,141 | |
| 22 | 3,166,142 | |
| 79 | 3,166,143 | |
| 82 | 3,166,144 | |
| | 3,166,146 | |
| 82.1 | 3,166,145 | |
| 181— 31 | 3,166,147 | |
| 32 | 3,166,148 | |
| 33 | 3,166,149 | |
| 46 | 3,166,150 | |
| 54 | 3,166,151 | |
| 58 | 3,166,152 | |
| 182— 2 | 3,166,153 | |
| 128 | 3,166,154 | |
| 188— 73 | 3,166,156 | |
| | 3,166,157 | |
| | 3,166,158 | |
| | 3,166,159 | |
| 79.5 | 3,166,160 | |
| 90 | 3,166,161 | |
| 189— 36 | 3,166,162 | |
| 46 | 3,166,163 | |
| | 3,166,164 | |
| 47 | 3,166,155 | |
| 192— 3.5 | 3,166,165 | |
| 6 | 3,166,166 | |
| 18 | 3,166,167 | |
| 30.5 | 3,166,168 | |
| 45 | 3,166,169 | |
| 48 | 3,166,170 | |
| 64 | 3,166,171 | |
| 127 | 3,166,172 | |
| 193— 31 | 3,166,173 | |
| 194— 1 | 3,166,174 | |
| 195— 51 | 3,166,482 | |
| 198— 25 | 3,166,175 | |
| 33 | 3,166,176 | |
| | 3,166,177 | |
| 34 | 3,166,178 | |
| | 3,166,179 | |
| 85 | 3,166,180 | |
| 102 | 3,166,181 | |
| 103 | 3,166,182 | |
| 131 | 3,166,183 | |
| 192 | 3,166,184 | |
| 200— 5 | 3,166,644 | |
| 16 | 3,166,645 | |
| 31 | 3,166,646 | |
| 46 | 3,166,647 | |
| | 3,166,648 | |
| 51.1 | 3,166,649 | |
| 52 | 3,166,650 | |
| 61.13 | 3,166,651 | |
| 87 | 3,166,652 | |
| 93 | 3,166,653 | |
| 112 | 3,166,654 | |
| 113 | 3,166,655 | |
| 120 | 3,166,656 | |
| 122 | 3,166,657 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200–144 | 3,166,658 | 229–14 | 3,166,227 | 251–35 | 3,166,289 | 260–294 | 3,166,561 | 272–5 | 3,166,314 | 317–249 | 3,166,695 |
| 150 | 3,166,659 | 15 | 3,166,228 | 145 | 3,166,290 | 295.5 | 3,166,562 | 66 | 3,166,315 | 250 | 3,166,696 |
| 166 | 3,166,660 | 27 | 3,166,229 | 172 | 3,166,291 | 304 | 3,166,563 | 273–26 | 3,166,316 | 318–17 | 3,166,697 |
| | 3,166,661 | 36 | 3,166,230 | 215 | 3,166,292 | 306.8 | 3,166,564 | | 3,166,317 | 28 | 3,166,698 |
| | 3,166,662 | 37 | 3,166,231 | 285 | 3,166,293 | 307 | 3,166,565 | 54 | 3,166,318 | 30 | 3,166,699 |
| 202–25 | 3,166,483 | 51 | 3,166,232 | 287 | 3,166,294 | | 3,166,566 | 80 | 3,166,319 | 144 | 3,166,700 |
| 204–1 | 3,166,484 | | 3,166,233 | 252–46.6 | 3,166,504 | 308 | 3,166,567 | | 3,166,320 | 212 | 3,166,701 |
| | 3,166,485 | | 3,166,234 | 49.6 | 3,166,506 | 310 | 3,166,568 | 95 | 3,166,321 | 240 | 3,166,702 |
| 180 | 3,166,486 | 52 | 3,166,235 | 49.8 | 3,166,505 | 316 | 3,166,569 | | 3,166,322 | 327 | 3,166,703 |
| 196 | 3,166,487 | 230–30 | 3,166,236 | 51.5 | 3,166,507 | 319 | 3,166,570 | 119 | 3,166,323 | 320–1 | 3,166,704 |
| 312 | 3,166,488 | 116 | 3,166,237 | | 3,166,508 | 326.5 | 3,166,571 | 131 | 3,166,324 | 323–66 | 3,166,705 |
| 205–16 | 3,166,185 | 143 | 3,166,238 | 57 | 3,166,509 | 340.3 | 3,166,573 | 134 | 3,166,325 | 324–.5 | 3,166,706 |
| 206–56 | 3,166,186 | 170 | 3,166,239 | 62 | 3,166,511 | 340.5 | 3,166,572 | 186 | 3,166,326 | | 3,166,707 |
| 58 | 3,166,187 | 207 | 3,166,240 | 62.1 | 3,166,510 | 343.6 | 3,166,574 | 187 | 3,166,327 | 1 | 3,166,708 |
| 62 | 3,166,188 | 232–34 | 3,166,241 | 99 | 3,166,512 | 345.1 | 3,166,575 | 274–4 | 3,166,328 | 6 | 3,166,709 |
| 63.2 | 3,166,189 | 233–4 | 3,166,503 | | 3,166,513 | | 3,166,576 | 275–8 | Re.25,713 | 34 | 3,166,710 |
| 65 | 3,166,190 | 235–61 | 3,166,242 | 188 | 3,166,514 | 397.3 | 3,166,578 | 277–8 | 3,166,330 | 325–304 | 3,166,711 |
| | 3,166,191 | | 3,166,243 | 301.1 | 3,166,515 | 397.4 | 3,166,577 | 139 | 3,166,331 | 321 | 3,166,712 |
| 208–57 | 3,166,489 | | 3,166,244 | 344 | 3,166,516 | 440 | 3,166,579 | 171 | 3,166,332 | 449 | 3,166,713 |
| 66 | 3,166,490 | 95 | 3,166,245 | 429 | 3,166,517 | 455 | 3,166,580 | 199 | 3,166,333 | 457 | 3,166,714 |
| 111 | 3,166,491 | 157 | 3,166,668 | 503 | 3,166,518 | 456 | 3,166,581 | 208 | 3,166,334 | 328–37 | 3,166,715 |
| 237 | 3,166,492 | 175 | 3,166,669 | 253–78 | 3,166,295 | 465 | 3,166,582 | 279–2 | 3,166,335 | 64 | 3,166,716 |
| 254 | 3,166,493 | 236–1 | 3,166,246 | 254–28 | 3,166,296 | | 3,166,583 | 123 | 3,166,336 | 67 | 3,166,717 |
| 264 | 3,166,494 | 48 | 3,166,247 | 67 | 3,166,297 | 465.8 | 3,166,584 | 280–6.1 | 3,166,337 | 183 | 3,166,718 |
| 340 | 3,166,495 | 68 | 3,166,248 | 86 | 3,166,298 | 468 | 3,166,585 | 21 | 3,166,338 | 330–17 | 3,166,719 |
| 209–211 | 3,166,496 | 238–243 | 3,166,249 | 256–32 | 3,166,299 | 479 | 3,166,586 | 36 | 3,166,339 | 110 | 3,166,720 |
| 210–54 | 3,166,497 | 239–337 | 3,166,250 | 259–4 | 3,166,300 | 553 | 3,166,587 | 104 | 3,166,340 | 331–87 | 3,166,721 |
| 130 | 3,166,498 | 583 | 3,166,251 | 21 | 3,166,301 | 559 | 3,166,588 | 104.5 | 3,166,341 | 332–43 | 3,166,722 |
| 136 | 3,166,499 | 587 | 3,166,252 | 108 | 3,166,302 | | 3,166,589 | 281–33 | 3,166,342 | 333–10 | 3,166,723 |
| 137 | 3,166,500 | 240–46.09 | 3,166,253 | 135 | 3,166,303 | | 3,166,591 | 285–1 | 3,166,343 | 24.1 | 3,166,724 |
| 195 | 3,166,501 | 81 | 3,166,254 | 260–2 | 3,166,519 | 570.5 | 3,166,590 | 134 | 3,166,344 | 33 | 3,166,725 |
| 528 | 3,166,502 | 241–101 | 3,166,255 | | 3,166,520 | 580 | 3,166,592 | 332.3 | 3,166,345 | 334–19 | 3,166,726 |
| 211–4 | 3,166,192 | 190 | 3,166,256 | | 3,166,521 | | 3,166,593 | 289–2 | 3,166,346 | 336–57 | 3,166,727 |
| | 3,166,193 | 205 | 3,166,257 | | 3,166,522 | | 3,166,594 | 292–202 | 3,166,347 | 155 | Re.25,712 |
| 49 | 3,166,194 | 218 | 3,166,258 | 6 | 3,166,523 | 583 | 3,166,595 | 294–5.5 | 3,166,348 | 338–144 | 3,166,728 |
| | 3,166,195 | 219 | 3,166,259 | 23 | 3,166,524 | | 3,166,596 | 33 | 3,166,349 | 183 | 3,166,729 |
| 60 | 3,166,196 | 285 | 3,166,260 | 29.6 | 3,166,525 | 606.5 | 3,166,597 | 86.13 | 3,166,350 | 339–9 | 3,166,368 |
| 86 | 3,166,197 | 242–18 | 3,166,261 | 31.8 | 3,166,526 | 609 | 3,166,598 | 96 | 3,166,351 | 18 | 3,166,369 |
| 123 | 3,166,198 | 19 | 3,166,262 | 33.2 | 3,166,527 | 611 | 3,166,599 | 297–75 | 3,166,352 | 21 | 3,166,370 |
| 182 | 3,166,199 | 46.4 | 3,166,263 | 45.8 | 3,166,529 | | 3,166,600 | | 3,166,353 | 60 | 3,166,371 |
| 213–8 | 3,166,200 | 55.11 | 3,166,264 | 45.9 | 3,166,530 | 654 | 3,166,601 | 194 | 3,166,354 | 186 | 3,166,372 |
| 43 | 3,166,201 | 55.12 | 3,166,265 | 49 | 3,166,531 | 662 | 3,166,602 | 256 | 3,166,355 | 248 | 3,166,373 |
| 214–1 | 3,166,202 | 56 | 3,166,266 | 67 | 3,166,532 | 665 | 3,166,603 | 301–5 | 3,166,356 | 340–10 | 3,166,730 |
| 6 | 3,166,203 | 84.2 | 3,166,267 | 78 | 3,166,533 | 668 | 3,166,604 | 9 | 3,166,357 | 15 | 3,166,731 |
| 42 | 3,166,204 | 84.44 | 3,166,268 | 80.5 | 3,166,534 | 678 | 3,166,605 | 303–48 | 3,166,358 | 51 | 3,166,732 |
| 138 | 3,166,205 | 84.54 | 3,166,269 | 87.1 | 3,166,535 | 860 | 3,166,606 | 307–88 | 3,166,677 | 146.2 | 3,166,733 |
| 152 | 3,166,206 | 158 | 3,166,270 | 88.2 | 3,166,536 | 878 | 3,166,607 | 88.5 | 3,166,678 | 147 | 3,166,734 |
| 653 | 3,166,207 | 244–7 | 3,166,271 | | 3,166,537 | | 3,166,608 | | 3,166,679 | 164 | 3,166,735 |
| 701 | 3,166,208 | 42 | 3,166,272 | | 3,166,538 | 894 | 3,166,609 | | 3,166,680 | 172.5 | 3,166,736 |
| 730 | 3,166,209 | 52 | 3,166,273 | 89.5 | 3,166,539 | 261–29 | 3,166,610 | | 3,166,681 | | 3,166,737 |
| 218–43 | 3,166,210 | 75 | 3,166,274 | 89.7 | 3,166,540 | 41 | 3,166,611 | | 3,166,682 | 173.1 | 3,166,738 |
| 219–10.55 | 3,166,663 | 76 | 3,166,275 | 93.7 | 3,166,541 | 263–3 | 3,166,304 | 308–3 | 3,166,359 | | 3,166,739 |
| 101 | 3,166,664 | 77 | 3,166,276 | | 3,166,542 | 41 | 3,166,305 | 3.5 | 3,166,360 | 174.1 | 3,166,740 |
| 104 | 3,166,665 | 129 | 3,166,277 | | 3,166,543 | 264–3 | 3,166,612 | 4 | 3,166,361 | 213 | 3,166,741 |
| 341 | 3,166,666 | 246–182 | 3,166,278 | | 3,166,544 | 12 | 3,166,613 | 184 | 3,166,362 | 334 | 3,166,742 |
| 469 | 3,166,667 | 441 | 3,166,279 | 94.8 | 3,166,545 | 21 | 3,166,614 | 207 | 3,166,363 | 347 | 3,166,743 |
| 220–2.1 | 3,166,211 | 248–28 | 3,166,280 | | 3,166,546 | 23 | 3,166,615 | 187 | 3,166,683 | | 3,166,744 |
| 23.4 | 3,166,212 | 108 | 3,166,281 | 94.9 | 3,166,547 | 95 | 3,166,616 | 310–8.6 | 3,166,684 | 343–7.4 | 3,166,745 |
| 115 | 3,166,213 | 124 | 3,166,282 | 97.5 | 3,166,548 | 109 | 3,166,617 | 8.7 | 3,166,685 | 9 | 3,166,746 |
| 221–4 | 3,166,214 | 226 | 3,166,283 | 239.5 | 3,166,549 | 171 | 3,166,329 | 43 | 3,166,686 | 14 | 3,166,747 |
| 69 | 3,166,215 | 230 | 3,166,284 | 239.55 | 3,166,528 | 242 | 3,166,618 | 168 | 3,166,364 | 100 | 3,166,748 |
| 289 | 3,166,216 | 245 | 3,166,285 | | 3,166,550 | 272 | 3,166,619 | 312–204 | 3,166,365 | | 3,166,749 |
| 222–20 | 3,166,217 | 263 | 3,166,286 | | 3,166,551 | 266–23 | 3,166,620 | 208 | 3,166,366 | 705 | 3,166,750 |
| 56 | 3,166,218 | 370 | 3,166,287 | | 3,166,552 | 41 | 3,166,621 | 223 | 3,166,367 | 749 | 3,166,751 |
| 70 | 3,166,219 | 441 | 3,166,288 | | 3,166,553 | 268–59 | 3,166,306 | 329 | 3,166,687 | 346–74 | 3,166,752 |
| 107 | 3,166,220 | 250–43.5 | 3,166,676 | 243 | 3,166,554 | 269–155 | 3,166,307 | 313–108 | 3,166,688 | | 3,166,753 |
| 137 | 3,166,221 | 49.5 | 3,166,670 | 248.5 | 3,166,555 | 303 | 3,166,308 | 317–2 | 3,166,689 | 104 | 3,166,374 |
| 195 | 3,166,222 | 91 | 3,166,671 | 251 | 3,166,556 | 270–1 | 3,166,309 | 80 | 3,166,690 | 109 | 3,166,375 |
| 223–41 | 3,166,223 | 199 | 3,166,672 | 268 | 3,166,557 | 271–5 | 3,166,310 | 119 | 3,166,691 | 351–153 | 3,166,754 |
| 225–80 | 3,166,224 | | 3,166,673 | | 3,166,558 | 12 | 3,166,311 | 148.5 | 3,166,692 | 352–27 | 3,166,755 |
| 226–9 | 3,166,225 | 217 | 3,166,674 | 285 | 3,166,559 | 32 | 3,166,312 | 186 | 3,166,693 | 78 | 3,166,756 |
| 229–7 | 3,166,226 | 219 | 3,166,675 | | 3,166,560 | 86 | 3,166,313 | 230 | 3,166,694 | | |
| | | | | | | | | 235 | 3,166,694 | | |


## CLASSIFICATION OF DESIGNS


| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D 4–2 | 200,089 | D13–1 | 200,099 | D34–5 | 200,109 | D52–6 | 200,119 | D61–1 | 200,128 | D81–10 | 200,137 |
| 3 | 200,090 | | 200,100 | 15 | 200,110 | D58–5 | 200,120 | | 200,129 | D83–1 | 200,138 |
| D 7–5 | 200,091 | D14–3 | 200,101 | D36–8 | 200,111 | 17 | 200,121 | | 200,130 | D86–10 | 200,139 |
| D 9–2 | 200,092 | 30 | 200,102 | D41–1 | 200,112 | 25 | 200,122 | D62–4 | 200,131 | | 200,140 |
| | 200,093 | D22–2 | 200,103 | D42–7 | 200,113 | | 200,123 | | 200,132 | D87–5 | 200,141 |
| | 200,094 | D24–1 | 200,104 | | 200,114 | 26 | 200,124 | D67–3 | 200,133 | | 200,142 |
| D10–8 | 200,095 | D26–1 | 200,105 | D44–10 | 200,115 | | 200,125 | D71–1 | 200,134 | | 200,143 |
| | 200,096 | 14 | 200,106 | 21 | 200,116 | D61–1 | 200,126 | | 200,135 | D90–3 | 200,144 |
| | 200,098 | D33–1 | 200,107 | 29 | 200,117 | | 200,127 | D80–9 | 200,136 | 8 | 200,145 |
| 880 | 200,097 | D34–4 | 200,108 | D48–31 | 200,118 | | | | | | |


## CLASSIFICATION OF PLANTS


| | | | |
|---|---|---|---|
| P.–22 | 2,466 | P.–68 | 2,467 |



# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 19, 1965 Volume 810 Number 3


# TRADEMARKS

## NOTICES

### Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants, listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Peter Lewis, d.b.a. Jolly Roger Company, Portland, Oreg., Reg. No. 441,658, Canc. No. 8358.

General Solvents Sales Company, Inc., Rochester, N.Y., Reg. No. 423,274, Canc. No. 8382.

EDWIN L. REYNOLDS,

*First Assistant Commissioner of Patents.*

### United States Adopted Names

List No. 9

*July 1, 1964–October 31, 1964*

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

aletamine hydrochloride : sympathomimetic amine
benzindamine hydrochloride : analgesic; anti-inflammatory; antipyretic
cactinomycin : antineoplastic agent
carbamazepine : anticonvulsant
cephaloglycin : antibiotic
cephaloridine : antibiotic
coumermycin : antibiotic
deferoxamine : iron depleter
denatonium benzoate : denaturant
ethamsylate : hemostatic agent

### CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1964

| | |
|---|---|
| Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] | 15,498 |
| Date of oldest new application | Apr. 17, 1964 |
| Date of oldest amended application | Apr. 1, 1964 |

**J. H. MERCHANT, Director, Trademark Examining Operation**

| TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application: New | Oldest Application: Amended |
|---|---|---|
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44 | 5–25–64 | 5–13–64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 4–17–64 | 4–1–64 |
| Renewals (All Classes) | 11–2–64 | 11–17–64 |
| Sec. 12 (c) Publications (All Classes) | 11–5–64 | |

Applications filed during the month of November 1964—2026

Registrations Issued—371—No. 783,439 to No. 783,809
Renewals Issued—50


The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

follicle stimulating hormone, human : gonadotropin
furasolium chloride : antibacterial agent
hetacillin : antibiotic
hexedine : antibacterial
iogly camic acid : radiopaque (cholecystographic and cholangiographic)
methyl cysteine hydrochloride : mucolytic agent
nitrodan : anthelmintic agent
peliomycin : antineoplastic agent
porfiromycin : antibiotic
prednasate : anti-inflammatory (veterinary)
proadifen hydrochloride : drug potentiator
quinbolone : anabolic agent
quingestanol acetate : progestational agent
sancycline : antibiotic
sodium acetosulfone : leprostatic agent
thiamiprine : anti-leukemic
triamcinolone hexacetonide : injectable glucocorticoid

# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 170,224. Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany. Filed June 3, 1963.




The term "Wachs," which is German for "wax," is disclaimed apart from the mark as shown. Priority claimed under Sec. 44(d) on German application filed Dec. 15, 1962, Reg. No. 771,511, dated Mar. 15, 1963.

**Class 4—Abrasives and Polishing Materials**

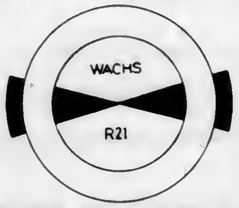
For Floor Polishing Waxes Produced of Petroleum Waxes.

**Class 15—Oils and Greases**

For Petroleum Waxes.

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SN 170,225. Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany. Filed June 3, 1963.




The term "Wachs," which is German for "wax," is disclaimed apart from the mark as shown. Priority claimed under Sec. 44(d) on German application filed Dec. 15, 1962, Reg. No. 771,512, dated Mar. 15, 1963.

**Class 4—Abrasives and Polishing Materials**

For Floor Polishing Waxes Produced of Petroleum Waxes.

**Class 15—Oils and Greases**

For Petroleum Waxes.

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SN 175,528. James Varley & Sons, Inc., St. Louis, Mo. Filed Aug. 21, 1963.

## HOUSE OF VARLEY

**Class 6—Chemicals and Chemical Compositions**

For Insecticides and Germicide-Deodorants.
First use Dec. 28, 1960.

**Class 52—Detergents and Soaps**

For Hand Cleaner.
First use Dec. 28, 1960.

SN 180,032. The Singer Company, New York, N.Y. Filed Oct. 29, 1963.



Owner of Reg. Nos. 74,186, 584,089, and others.

**Class 2—Receptacles**

For Dust Bags for Vacuum Cleaners and Oil Dispensing Cans.
First use 1905 on oil dispensing cans.

**Class 4—Abrasives and Polishing Materials**

For Steel Wool Pads; Floor and Furniture Wax and Polish; Grinding Wheels; and Emery Cord.
First use 1925 on emery cord.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Belt Hooks; Cabinet and Furniture Hardware—Namely Braces, Brackets, Handles and Hinges; and General Hardware—Namely, Bolts, Nuts, Pins, Screws and Studs.
First use 1870.

**Class 15—Oils and Greases**

For Lubricating Oil and Grease.
First use March 1905.

**Class 19—Vehicles**

For Dollies and Work Trucks for Handling and Transporting Work and Equipment in Sewing Mills and the Like.
First use 1952.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electric Household Appliances—Namely, Vacuum Cleaners, Floor Polishers and Rug Cleaners; Radios; Electric Motors and Transmitters; Motor Controllers and Starting Devices; Electro-Mechanical Drives; Electronic Bonding Machines; Electric Lighting Components—Namely, Lamps, Lighting Fixtures, Lamp Sockets and Bulbs; Components for Electric Circuits, Appliances and Machines—Namely, Capacitors, Conductors, Connectors, Receptacles, Resistances, Switches, Switch Boxes and Covers, Terminal Boxes, Plugs, Insulators, Rheostats, Solenoids, Transformers, Wiring Harnesses, Inductors, Transducers, and Power Supplies; Microwave Components; and Parts, Accessories and Attachments for the Above.
First use 1915 on electric motors.

**Class 22—Games, Toys, and Sporting Goods**

For Toy Sewing Machines, Toy Perforating Machines, Carrying Cases for Toy Sewing Machines, and Toy Traveling Cases.
First use 1910 on toy sewing machines.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Sewing Machines; Typewriters; Machines for Fastening Articles to Garments and the Like; Cutting Machines; Fulling Machines; Grinding Machines; Heel and Wedge Slitting Machines; Labeling Machines; Pleating Machines; Pressing Machines; Thread Drawing Machines; Winding Machines; Knitting Machines; Cutlery—Namely, Knives, Scissors, Shears, Seam Rippers and Stilettos; Hand Tools—Namely, Hole Punches, C-Clamps, Inspection Mirrors, Grease Guns, Magnetic Pick-Up Devices, Mallets, Screw Drivers, Tweesers and Wrenches; Machine Elements—Namely, Belt Tighteners, Pulleys, Shaft Hangers and Shafting; and Parts, Attachments and Accessories for the Above.
First use 1870 on sewing machines.

**Class 24—Laundry Appliances and Machines**

For Pressing Machines and Sleeve Board Covers and Pads.
First use 1903 on pressing machines.

**Class 25—Locks and Safes**

For Locks and Keys.
First use 1870.

**Class 26—Measuring and Scientific Appliances**

For Thermocouples and Patterns for Use in Making Garments.
First use June 1958 on garment patterns.

**Class 29—Brooms, Brushes, and Dusters**

For Buffing and Waxing Pads—Namely, Lamb's Wool Pads and Wool Felt Pads; Brushes and Wax Applicators.
First use September 1959 on brushes.

**Class 32—Furniture and Upholstery**

For Furniture—Namely, Cabinets, Card Tables, Chairs, Stands, Stools and Tables.
First use 1870 on cabinets.

**Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires**

For Power Transmission Belts and Belting and Rubber Rings.
First use 1870 on power transmission belting.

**Class 37—Paper and Stationery**

For Tracing Paper.
First use 1954.

**Class 38—Prints and Publications**

For Books and Pamphlets.
First use 1898.

**Class 40—Fancy Goods, Furnishings, and Notions**

For Sewing Aids—Namely, Needles, Darning and Embroidery Work Holding Devices, Needle Threaders, Sewing Boxes, Skirt Markers, Mending Kits, and Tracing Wheel; and Clothing Accessories—Namely, Buttons and Buckles.
First use 1880 on needles.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Textile Piece Goods Suitable for Wearing Apparel, Household Furnishings, Draperies and Other Uses.
First use April 1952.

**Class 43—Thread and Yarn**

For Thread.
First use 1880.

**Class 50—Merchandise Not Otherwise Classified**

For Dress Form.
First use 1940.

**Class 52—Detergents and Soaps**

For Rug Cleaner and Wax Remover.
First use September 1959 on rug cleaner.

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SN 180,858. De Haen-Carstanjen & Sohne, Dusseldorf, Germany. Filed Nov. 12, 1963.

## GRACIOSO

The English translation of the Spanish word "Gracioso" is "graceful, charming." Owner of German Reg. No. 643,833, dated Sept. 9, 1953.

**Class 47—Wines**

For Wines.

**Class 49—Distilled Alcoholic Liquors**

For Brandies, Whisky, Vodka, Gin, Alcoholic Bitters and Liqueurs.

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SN 183,708. Selta-Werke G.m.b.H., Bad Kreusnach, Germany. Filed Dec. 27, 1963.

## ORION

Owner of German Reg. No. 287,329, dated June 7, 1922.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Machines for Wineries—Namely, Machines for Cleaning, Filling, Closing, Sterilising and Labeling of Bottles and Other Vessels and Transport Installations Pertaining Thereto and Pumps.

**Class 31—Filters and Refrigerators**

For Filtering Apparatuses.

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SN 185,077. Rinn Corporation, Chicago, Ill. Filed Jan. 21, 1964.

## RINN

**Class 6—Chemicals and Chemical Compositions**

For X-Ray Chemicals.

**Class 26—Measuring and Scientific Appliances**

For X-Ray Films Unexposed to Light, Thermometers for Use in X-Ray Apparatus.

**Class 44—Dental, Medical, and Surgical Appliances**

For Receptacles for Developing X-Ray Films or X-Ray Plates, X-Ray Film Frames, X-Ray Holders, X-Ray Film Suspenders, Mouth Holders for X-Ray Films, for Dental Use.

First use February 1955.

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SN 188,731. Wilma Coty, d.b.a. Wilma Products, Kansas City, Mo. Filed Mar. 16, 1964.

## WILMA

**Class 51—Cosmetics and Toilet Preparations**

For Hair Set Conditioner-Dressing.

**Class 52—Detergents and Soaps**

For Hair Shampoo.

First use May 15, 1963.

# SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

## Class 1—Raw or Partly Prepared Materials

SN 149,100. Loft's Pedigreed Lawnseed Co., Inc., Bound Brook, N.J. Filed July 16, 1962.

## LAWN CARPET

For Mixed Grass Seed.
First use May 1962.

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SN 189,096. Henry T. Paiste, Jr., d.b.a. The Seedamatic Company, Bryn Mawr, Pa. Filed Mar. 19, 1964.

## SEEDAMATIC

For Tape With Seed Therein With Dispenser for Dispensing the Same.
First use Mar. 18, 1964.

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SN 191,018. The Atlantic Refining Company, Philadelphia, Pa. Filed Apr. 14, 1964.

## FON-DEL

For Identifying Expanded Plastic Material Sold in Rolls and Sheets for General Use in the Industrial Arts.
First use Nov. 22, 1963.

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SN 192,758. Rohm & Haas Company, Philadelphia, Pa. Filed May 5, 1964.

## OROSPAN

Owner of Reg. No. 766,933.
For Blends of Synthetic Fibers and Synthetic With Natural Fibers.
First use on or about Apr. 16, 1964.

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SN 193,231. Stribling's Nurseries, Inc., Merced, Calif. Filed May 11, 1964.

## S-60

Owner of Reg. No. 562,390.
For Disease Resistant Rootstock for Fruit and Nut Trees, or the Like.
First use Jan. 2, 1964.

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SN 193,440. Geo. J. Ball, Inc., West Chicago, Ill. Filed May 14, 1964.

BALL

The drawing is lined for the color yellow. Owner of Reg. Nos. 405,792 and 692,595.
For Flower and Vegetable Plant Seeds, Plants and Bulbs.
First use on or before Aug. 27, 1962; 1925 in a different form.

SN 193,865. Doughboy Industries, Inc., New Richmond, Wis. Filed May 20, 1964.

DURAFLEX

For Vinyl Plastic for Toys and Pool Liners, Plastic Sheeting and Plastic Film.
First use Oct. 14, 1963.

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SN 194,480. Fleming-Joffe, Ltd., New York, N.Y. Filed May 28, 1964.

## LEAP FROG

For Decorated Leather for Hand-Bags, Shoes, and the Like.
First use Apr. 15, 1964.

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SN 194,700. Brunner Bros. Co., North Bergen, N.J. Filed June 2, 1964.

## EASIFIL

For Nylon Batting.
First use May 21, 1964.

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SN 195,058. Blane Chemical Corp., Canton, Mass. Filed June 8, 1964.

## SHUVIN

For Polyvinyl Chloride Molding and Extrusion Compound Used in the Manufacture of Shoes.
First use May 5, 1964.

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SN 195,108. Walter E. Jordan, d.b.a. Jordan Manufacturing Co., Des Plaines, Ill. Filed June 8, 1964.

## JAYCO

For Extruded Plastic Tubing for Use in Electrical and Fluid Conduits and Plastic Molded Parts Pertaining Thereto.
First use on or before Mar. 4, 1955.

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SN 195,109. Walter E. Jordan, d.b.a. Jordan Manufacturing Co., Des Plaines, Ill. Filed June 8, 1964.

jayco

For Extruded Plastic Tubing for Use in Electrical and Fluid Conduits and Plastic Molded Parts Pertaining Thereto.
First use on or before Mar. 4, 1955.

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SN 195,141. Pfister & Vogel Tanning Company, Inc., Milwaukee, Wis. Filed June 8, 1964.

## ROWDY

For Leather.
First use June 8, 1959.

SN 195,160. Sinclair Refining Company, New York, N.Y. Filed June 8, 1964.

## DINOFIN

For Polymeric Molding Compounds.
First use Feb. 14, 1964.

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SN 195,299. International Minerals & Chemical Corporation, Skokie, Ill. Filed June 10, 1964.

## MOLDIKOL

For Foundry Sand Additive.
First use Feb. 21, 1964.

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SN 195,937. Jonathan Green & Sons, Kearny, N.J. Filed June 18, 1964.

## DUXBURY FARM

For Mixed Grass Seed.
First use Jan. 7, 1964.

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## Class 2 — Receptacles

SN 170,600. Bemis Bro. Bag Company, Minneapolis, Minn. Filed June 10, 1963.

BEMIS

Owner of Reg. Nos. 120,242, 743,955, and others.
For Receptacles Made of Pulp, Such as Flower Pots and Analogous Articles, and Protective Containers Made To Conform to the Contour of the Articles To Be Placed Therein.
First use Jan. 1, 1963; 1881 as to the mark "Bemis."

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## Class 4 — Abrasives and Polishing Materials

SN 181,866. Wood-Glow Products, Rogers, Ark. Filed Nov. 26, 1963.

## WOOD-GLOW XI

For Combined Cleaner, Conditioner and Polish for Use on Wood Surfaces.
First use Aug. 24, 1963.

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SN 194,591. Finish Kare Products, Inc., South El Monte, Calif. Filed June 1, 1964.

*Finish Kare*

The drawing is lined for the color brown but no claim is made for any particular color. The words "Finish Kare" are disclaimed apart from the mark as shown.
For Polishes, Waxes, and Glazes for Automotive Finishes.
First use on or about Mar. 25, 1964.

## Class 6 — Chemicals and Chemical Compositions

SN 155,516. Harry Miller Corp., Philadelphia, Pa. Filed Oct. 19, 1962.

## HAMIPURGE

For Additive, Constituting a Synthetic Emulsifying Agent to Soluble Oil Systems for Purposes of Emulsification as in Rolling of Steel, Copper, Brass, Aluminum; Also as an Additive to Machining and Grinding Coolants in Metalworking.
First use Sept. 26, 1962.

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SN 166,560. Industrial Filter & Pump Mfg. Co., Cicero, Ill. Filed Apr. 11, 1963.

## CHRO-KIL

For Chemicals for the Reduction of Chromium.
First use Jan. 9, 1963.

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SN 167,210. Champion Chemicals, Inc., Odessa, Tex. Filed Apr. 22, 1963.

## DRILTRON

For Emulsifier Used as an Additive in Well Drilling Fluids.
First use Mar. 28, 1963.

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SN 168,550. Vaughan's Seed Company, Chicago, Ill. Filed May 9, 1963.

## 4 WAY

For Beauty Treatment for the Lawn Comprising a Preparation To Control Crabgrass, Seed Germination, Herbicide, and Insecticide.
First use on or about Jan. 2, 1963.

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SN 175,871. Pilot Chemical Company, Santa Fe Springs, Calif. Filed Aug. 27, 1963.

## CALIMULSE

For Emulsifier of Synthetic Polymers and Rubber Components in Water.
First use Jan. 28, 1963.

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SN 175,872. Pilot Chemical Company, Santa Fe Springs, Calif. Filed Aug. 27, 1963.

## CALAMIDE

For Surface Active Agents of an Alkanolamide Type for the Purpose of Improving the Foaming Properties or Contributing Detergency to Cleaning Compositions.
First use Nov. 15, 1962.

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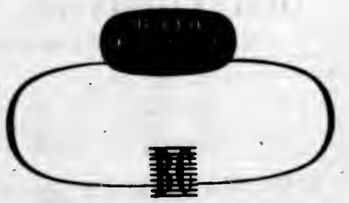
SN 176,471. Aldens Shoppers World, Inc., d.b.a. Shoppers World, Chicago, Ill. Filed Sept. 9, 1963.

SHOPPERS WORLD

Owner of Reg. Nos. 730,023 and 738,674.
For Aerosol Sprayed Chemical Products—Namely, Windshield De-Icer, Insecticides, Lighter Fluid, Air Freshener, Moth Proofing Compound.
First use Apr. 10, 1963.



SN 176,995. Birko Chemical Corporation, Denver, Colo. Filed Sept. 16, 1963.



For Industrial Chemicals—Namely, Bleaching Agents, Chelating and Sequestering Agents; Household Deodorants and Sanitizers; Enzyme Preparations for Liquefying Solids in Septic Tanks and Cesspools; and Rust and Corrosion Inhibitors.
First use on or about Feb. 1, 1957.

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SN 184,618. The Dow Chemical Company, Midland, Mich. Filed Jan. 15, 1964.

## TERBEC

For Chemical Compositions Useful as Soil Stabilizers.
First use Dec. 10, 1963.

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SN 188,390. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 10, 1964.

## SEROSCREEN

For Syphilis Test for Laboratory Use.
First use Feb. 11, 1964.

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SN 188,391. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 10, 1964.

## THROMBOSCREEN

For Cephalin Reagent for Laboratory Use for Testing Coagulation.
First use Feb. 12, 1964.

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SN 189,012. Pentex Incorporated, Kankakee, Ill. Filed Mar. 18, 1964.

## TASPRO

For Chemical Reagent for Laboratory Use.
First use Mar. 10, 1964.

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SN 189,270. Chemische Fabrik Grünau G.m.b.H., Illertissen, Bavaria, Germany. Filed Mar. 23, 1964.

## CONCRESAL

Owner of German Reg. No. 761,425, dated May 15, 1962.
For Products for Influencing Cement—Namely, Accelerating Agents, Retarding Agents, and Air Entraining Agents.

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SN 190,898. Cook Chemical Company, d.b.a. Real-Kill Products, Kansas City, Mo. Filed Apr. 13, 1964.

## GO!

For Insect Repellent.
First use July 6, 1962.

SN 193,090. Armour and Company, Chicago, Ill. Filed May 11, 1964.

## ARMOSOFT

For Chemicals and Chemical Compositions Used as Softening Agents for Fibers.
First use Feb. 12, 1964.

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SN 193,240. The Upjohn Company, Kalamazoo, Mich. Filed May 11, 1964.

## SOK

Owner of Reg. No. 714,588.
For Veterinary Insecticide Dusting Powder.
First use May 5, 1964.

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SN 193,988. Osborn Sherer, d.b.a. "Ole Time" Woodsman's Line, Holden, Mass. Filed May 21, 1964.

## OLE TIME WOODSMAN'S

For Insect Repellent.
First use April 1937.

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SN 194,511. Pan Britannica Industries Limited, Waltham Cross, England. Filed May 28, 1964.

## PANANT

Priority claimed under Sec. 44(d) on British Reg. No. 863,174, dated Apr. 22, 1964.
For Preparations for Killing Ants.

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SN 195,103. Holland-Rantos Company, Inc., New York, N.Y. Filed June 8, 1964.

HR *Wipe On*

Owner of Reg. Nos. 290,475, 757,438, and others.
For Insect Repellent Towelettes.
First use May 27, 1964.

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SN 195,686. Marchon Products Limited, London, England. Filed June 15, 1964.

## EMPIGEN

Owner of British Reg. No. 853,900, dated Sept. 10, 1963, and U.S. Reg. Nos. 696,247 and 703,083.
For Compositions—Namely, Tertiary Dimethyl Alkylamines, Amphoterics, Tertiary Alkyl Amine Oxides, Alkyl Quaternary and Analogous Fatty Nitrogen Derivatives and Compounds.
First use December 1963.

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SN 196,173. Mallinckrodt Chemical Works, St. Louis, Mo. Filed June 22, 1964.

## MALLCOSORB

Owner of Reg. Nos. 359,706, 503,784, and 533,844.
For Indicating Carbon Dioxide Absorbent.
First use Mar. 25, 1964.

SN 198,326. Rubber Corporation of America, Hicksville, N.Y. Filed July 20, 1964.

RC

For Plasticising Compounds for Use With Resins, and Fluid Dispersions of Vinyl Resins in Plasticizers to Which Stabilisers, Color and Filler Have Been Added.
First use June 30, 1964.

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SN 198,365. Merck & Co., Inc., Rahway, N.J. Filed July 22, 1964.

CALMAG

For Magnesium Oxide.
First use on or about August 1963.

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SN 198,367. Merck & Co., Inc., Rahway, N.J. Filed July 22, 1964.

NEOMAG

For Magnesium Oxide.
First use on or about Apr. 1, 1940.

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SN 198,523. Armour and Company, Chicago, Ill. Filed July 27, 1964.

AROMOX

For Amine Oxides and Chemical Compositions Containing Amine Oxides.
First use on or prior to July 13, 1964.

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SN 198,637. Colgate-Palmolive Company, New York, N.Y. Filed July 28, 1964.

PETAL

For Fabric Softener.
First use June 17, 1964.

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SN 198,870. Patent Chemicals, Incorporated, Paterson, N.J. Filed July 30, 1964.

AUTOMATE

For Liquid Dyes.
First use May 1, 1962.

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SN 199,535. Climax Chemical Company, Houston, Tex. Filed Aug. 10, 1964.



The mark consists of a letter "C" with a sphere and spokes disposed in the center thereof. The drawing is lined for the colors yellow, red, and blue.
For Sodium Sulphate.
First use Mar. 11, 1964.

SN 199,666. Givaudan-Delawanna, Inc., New York, N.Y. Filed Aug. 11, 1964.

OZMALDEHYDE

For Aromatic Chemical for Use in the Preparation of Perfume, Soaps and Cosmetics.
First use June 2, 1964.

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SN 199,667. Givaudan-Delawanna, Inc., New York, N.Y. Filed Aug. 11, 1964.

VERNALDEHYDE

For Aromatic Chemical for Use in the Preparation of Perfume, Soaps and Cosmetics.
First use June 2, 1964.

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SN 203,403. S. S. Kresge Company, Detroit, Mich. Filed Oct. 6, 1964.

K MART

Owner of Reg. Nos. 743,912 and 774,794.
For Propane Fuel.
First use Sept. 21, 1964.

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## Class 7 — Cordage

SN 198,450. American Chain & Cable Company, Inc., Bridgeport, Conn. Filed July 24, 1964.

AL-U-FLEX

For Wire Rope.
First use May 29, 1964.

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## Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 172,622. Union Carbide Corporation, New York, N.Y. Filed July 8, 1963.

HYBALINE

For Rocket Fuels.
First use on or about Apr. 17, 1963.

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SN 190,890. Commercial Solvents Corporation, New York, N.Y. Filed Apr. 13, 1964.

ANOIL

For Nitro-Carbo-Nitrate Blasting Agents.
First use July 9, 1957.

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SN 191,052. Hercules Powder Company, Wilmington, Del. Filed Apr. 14, 1964.

HERCULOK

For Specially Constructed Plastic Cartridges Used for High Explosives.
First use Dec. 4, 1963.

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SN 191,917. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Apr. 24, 1964.

CORDALON

For Detonating Cord.
First use Mar. 19, 1964.



## Class 12 — Construction Materials

SN 196,793. Locke Manufacturing Company, Lodi, Ohio. Filed June 30, 1964.

UNI·T

For Wrought Iron Railings and Columns.
First use June 8, 1964.

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## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 199,854. Safe-T-Lawn, Inc., Miami, Fla. Filed Aug. 13, 1964.

SAFE-T-LAWN

For Lawn Sprinkling Systems.
First use February 1963.

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SN 200,050. Water Treatment Corporation, Rockford, Ill. Filed Aug. 17, 1964.

MILADY

For Automatic Water Conditioners.
First use Apr. 8, 1964.

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SN 200,051. Water Treatment Corporation, Rockford, Ill. Filed Aug. 17, 1964.

HOMEMAKER

For Automatic Water Conditioners.
First use Apr. 8, 1964.

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## Class 18 — Medicines and Pharmaceutical Preparations

SN 147,979. Xttrium Laboratories, Inc., d.b.a. Blue Ridge Vitamin Co., Chicago, Ill. Filed June 28, 1962.

BLUE RIDGE
RENEVITE

For Vitamin-Mineral Preparation.
First use Dec. 11, 1961.

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SN 150,534. Delta Pharmaceuticals, Inc., Atlanta, Ga. Filed Aug. 6, 1962.

PRENATABS

For Dietary Supplement Containing Vitamins and Minerals in Tablet Form, Each Tablet Containing a Daily Dosage for the Prophylaxis or Treatment of Vitamin and Mineral Deficiencies Associated With Pregnant and Lactating Women.
First use July 5, 1962.



SN 165,483. Kyushin Seiyaku Company Limited, Chuo-ku, Tokyo, Japan. Filed Mar. 26, 1963.




The mark consists of the word "Kyushin" in Chinese characters and a frame or border enclosing the word. The word "Kyushin" in English means "lift heart." Owner of Japanese Reg. No. 540,966, dated Aug. 24, 1959.
For Pharmaceutical Preparation for the Treatment of Heart Ailments and Diseases.

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SN 168,543. Standex Laboratories, Inc., Columbus, Ohio. Filed May 9, 1963.

ALLOX

For Vaginal Douche and a Preparation To Alleviate Menstrual Pains.
First use Sept. 7, 1940, on applicant's douche product.

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SN 177,041. Hudson Vitamin Products, Inc., New York, N.Y. Filed Sept. 16, 1963.

HUDSON
ALKA-JET

For Antacid and Digestive Enzyme Preparation in Tablet Form.
First use Sept. 4, 1963.

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SN 182,006. Tasman Vaccine Laboratory Limited, Upper Hutt, New Zealand. Filed Nov. 27, 1963.

TVL

Priority claimed under Sec. 44(d) on New Zealand Reg. No. 73,951, dated Aug. 15, 1963.
For Veterinary Pharmaceutical Preparations.

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SN 188,117. Lever Brothers Company, New York, N.Y. Filed Mar. 6, 1964.

Clear/mist

For Preparation for the Hygenic Care of the Eyes.
First use Feb. 10, 1964.

SN 191,881. The Purdue Frederick Company, Yonkers, N.Y. Filed Apr. 23, 1964.

## KAOPLUS

For Preparation for the Relief of Diarrhea.
First use Apr. 17, 1964.
Subj. to Intf. with SN 196,746.

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SN 195,729. Societe d'Applications Chimiques d'Etudes et de Recherches "Sacer," Monte Carlo (Monaco). Filed June 15, 1964.

## CHYMOCYCLINE

Owner of Monaco Reg. No. 62.2304, dated Jan. 10, 1962.
For Pharmaceutical Preparation Consisting of Proteolytic Enzymes With Tetracycline.

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SN 196,678. Kasar Company, Chicago, Ill. Filed June 29, 1964.

## FUN-A-MINS

For Dietary Supplement—Namely, Vitamin Tablets.
First use Mar. 1, 1964.

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SN 196,746. Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. Filed June 29, 1964.

## KAOPLUS

For Pharmaceutical Preparation for Replacement of Potassium Losses Induced by Chronic Vomiting, Diarrhea and the Use of Diuretics and Steroids.
First use on or about June 1, 1963.
Subj. to Intf. with SN 191,881.

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SN 196,845. Chesebrough-Pond's Inc., New York, N.Y. Filed July 1, 1964.

## BRIGHT FOOT

For Antiseptic Foot Spray.
First use June 5, 1964.

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SN 197,473. Buffington's Incorporated, Worcester, Mass. Filed July 9, 1964.

## NONARCOL

For Non-Narcotic Preparation for the Treatment of Coughs and Colds.
First use Jan. 15, 1960.

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SN 190,128. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Aug. 3, 1964.

## NUCLON

Owner of Reg. No. 529,571.
For Laxative Preparation.
First use Jan. 31, 1964.

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SN 199,260. Boyle & Company, Bell Gardens, Calif. Filed Aug. 5, 1964.

## CODACHE

For Liquid Preparation for the Relief of Pain, Due to Headache, Neuralgia, and Neuritis.
First use Feb. 6, 1963.

SN 199,262. Boyle & Company, Bell Gardens, Calif. Filed Aug. 5, 1964.

## TIRE-GON

For Nonhabit-Forming Tablet for Fatigue Relief.
First use May 8, 1963.

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SN 199,562. Hoyt Pharmaceutical Corporation, Needham Heights, Mass. Filed Aug. 10, 1964.

## IPECHAR

For First Aid Poison Control Kit Containing an Emetic and Charcoal.
First use June 15, 1964.

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SN 199,618. Savage Laboratories, Inc., Houston, Tex. Filed Aug. 10, 1964.

## SPANESTRIN "P"

For Injectable Estrogenic Hormone for Use in Treating Estrogen Deficiencies in Women.
First use Aug. 3, 1956.

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### Class 19—Vehicles

SN 195,273. Berg Mfg. & Sales Co., Des Plaines, Ill. Filed June 10, 1964.

## FEATHER-TOUCH

For Air Brake Safety Equipment Including Valves, Brake Chambers, Switches, and Pumps.
First use Apr. 24, 1964.

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SN 197,682. Donnelly Mirrors, Inc., Holland, Mich. Filed July 13, 1964.

## TRAFFICSCOPE

For Rear Vision Mirrors and Components Thereof.
First use Aug. 20, 1962.

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SN 197,707. Guerdon Industries, Inc., Southfield, Mich. Filed July 13, 1964.

## EMBASSY

For Mobile Homes.
First use Mar. 30, 1963.
Subj. to Intf. with SN 199,550.

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SN 197,749. Motor Wheel Corporation, Lansing, Mich. Filed July 13, 1964.

## UNISTYLE

For Wheels for Automotive Vehicles.
First use Jan. 20, 1964.

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SN 199,550. Embassy Homes Corporation, Middlebury, Ind. Filed Aug. 10, 1964.

## EMBASSY

For Mobile Homes.
First use Apr. 6, 1964.
Subj. to Intf. with SN 197,707.



### Class 21—Electrical Apparatus, Machines, and Supplies

SN 188,571. Permali, Incorporated, Mt. Pleasant, Pa. Filed Mar. 12, 1964.

## PermaRez

For Finished Castings Composed of Thermosetting Resins, Hardening Agents, and With or Without Fillers—Namely, Stand Off Insulators, A.C. and D.C. Bushings, Oil Seals and Current Transformer Outlets.
First use July 10, 1963.

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SN 194,609. Hi-G Incorporated, Windsor Locks, Conn. Filed June 1, 1964.

## HIS

For Relays.
First use on or before May 15, 1964.

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SN 196,446. Holophane Company, Inc., New York, N.Y. Filed June 25, 1964.

## REFRACTOPACK

For Illumination Equipment—Namely, Lamp Panels, Screens, Globes, Reflectors, Refractors, and Fixtures.
First use June 11, 1964.

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### Class 22—Games, Toys, and Sporting Goods

SN 176,089. Gold Medal Folding Furniture Co., Racine, Wis. Filed Aug. 30, 1963.

## GOLD MEDAL

Owner of Reg. Nos. 101,939, 600,409, and others.
For Boat Hook-Type Dockers and Fishing Rod Holders.
First use Sept. 25, 1962.

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SN 188,552. The Lionel Toy Corporation, Wilmington, Del. Filed Mar. 12, 1964.

## TOUCH-A-MATIC

For Toy Automobile Speed Control Units.
First use Mar. 5, 1963.

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SN 188,553. The Lionel Toy Corporation, Wilmington, Del. Filed Mar. 12, 1964.

## PACESETTER

For Timers, for Toy Automobile Power Supplies.
First use Mar. 5, 1963.

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SN 190,284. Rawlings Sporting Goods Company, St. Louis, Mo. Filed Apr. 3, 1964.

BIG 8

For Baseball Gloves and Mitts.
First use Feb. 4, 1964.

SN 191,126. Capsie, Inc., Buffalo, N.Y. Filed Apr. 15, 1964.

## CAPSIE

For Game Components Comprising Paddles, Cardboard Clowns and Bottle Caps for Playing Various-Type Paddle Games.
First use on or about Sept. 10, 1963.

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SN 192,473. The Murray Ohio Manufacturing Co., Nashville, Tenn. Filed May 1, 1964.

## THUNDER ROD

For Motor Sound Simulator for Attachment to Velocipedes, Bicycles, and the Like.
First use Apr. 17, 1964.

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SN 192,641. Surf Skater Company, Incorporated, Norfolk, Va. Filed May 4, 1964.

## SURF SKATER

For Wheeled Vehicles—Namely, Surf Boards for Use on Land.
First use Mar. 5, 1964.
Subj. to Intf. with SN 197,327.

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SN 192,651. Wilbern Products, Inc., Los Angeles, Calif. Filed May 4, 1964.

## SNOWFLAKES

For Construction Toy.
First use on or before May 1, 1963.

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SN 192,759. Rosel Industries, Inc., Chicago, Ill. Filed May 5, 1964.

## GOLD CUP

For Billiard Tables, Pool Tables and Billiard Cue Racks.
First use Dec. 20, 1963.

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SN 193,239. United Football League, Columbus, Ohio. Filed May 11, 1964.

## THE COLT

For Regulation Pro Football.
First use Apr. 29, 1964.

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SN 193,269. Glen L. Evans, Inc., Caldwell, Idaho. Filed May 12, 1964.

## GAD-ABOUT

For Fishing Lures.
First use Aug. 11, 1963.

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SN 193,705. Roto-Grip, Inc., Port Chester, N.Y. Filed May 18, 1964.

ROTO-STAR

For Bowling Balls.
First use on or about June 1, 1963.

SN 197,827. Potential, Inc., Del Mar, Calif. Filed July 7, 1964.

Surf Skater

For Scooter.
First use Dec. 7, 1963.
Subj. to Intf. with SN 192,641.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 182,281. Little Giant Corporation, Oklahoma City, Okla. Filed Dec. 3, 1963.

BIG JOHN

For Motor Driven Centrifugal Pumps for Water and Other Fluids.
First use Oct. 28, 1963.

SN 182,691. Wilton Corporation, Schiller Park, Ill., by change of name from Wilton Tool Manufacturing Co., Inc., Schiller Park, Ill. Filed Dec. 9, 1963.

PowRjaws

For Hydraulically Actuated Work Holding Device.
First use Oct. 17, 1963.

SN 182,701. Automotive Associates, Inc., New York, N.Y. Filed Dec. 10, 1963.

TILL A MAGIC

Owner of Reg. No. 752,023.
For Power Tillers of the Garden Type.
First use September 1962.

SN 183,704. Seits-Werke G.m.b.H., Bad Kreusnach, Germany. Filed Dec. 27, 1963.

COMPAKTA

Owner of German Reg. No. 771,060, dated Mar. 19, 1963.
For Machines for Wineries—Namely, Cleaning Machines, Filling Machines, Closing Machines, Sterilising Machines and Labelling Machines for Bottles and Other Vessels and Containers, and Packing and Unpacking Machines and Transporting Devices Pertaining Thereto, and Pumps.

SN 183,705. Seits-Werke G.m.b.H., Bad Kreusnach, Germany. Filed Dec. 27, 1963.

NAVA

Owner of German Reg. No. 106,617, dated Apr. 8, 1908.
For Cleaning Machines for Bottles, Cans and Similar Vessels.

SN 185,794. Liberty Distributors, Philadelphia, Pa. Filed Jan. 31, 1964.

EZEE

For Can Openers, Electric Hair Clippers, and Electric Knife Sharpeners.
First use May 16, 1963.

SN 186,021. Paramount Industries, Paramount, Calif., by change of name from Pacific Tile and Porcelain Company, Paramount, Calif. Filed Feb. 4, 1964.

DRESDEN

For Tools for the Cement Trades, Plaster and Dry-Wall Industry, Brick Masons, and Home Owners.
First use May 8, 1948.

SN 186,023. Albeko Schuhmaschinen G.m.b.H., Frankfurt am Main, Germany. Filed Feb. 4, 1964.

LINHAM

Priority claimed under Sec. 44(d) on German application filed Aug. 27, 1963; Reg. No. 781,783, dated Dec. 19, 1963.
For Machines and Machine Parts—Namely, Pattern Grading and Cutting Machines for the Shoe Industry, Textile Industry, Sheet Metal Industry, Sheet Products Industry, Plastic Industry, Wood Industry, Rubber Industry, and Similar Industries.

SN 186,555. Oneida Ltd., Oneida, N.Y. Filed Feb. 12, 1964.

EBBTIDE

For Stainless Steel Flat Tableware.
First use Nov. 25, 1963.

SN 186,558. Oneida Ltd., Oneida, N.Y. Filed Feb. 12, 1964.

ROYAL YORK

Owner of Reg. No. 352,397.
For Stainless Steel Flat Tableware.
First use Aug. 16, 1963.

SN 188,527. Farmway Co., Inc., Manawa, Wis. Filed Mar. 12, 1964.

FARMWAY

Owner of Reg. Nos. 506,363 and 702,207.
For Barn Equipment—Namely, Gutter Cleaners, Lime Spreaders, Feed Carts, Bunk Feeders, Stanchions, Stalls, and Water Bowls.
First use on or about Sept. 7, 1948.



SN 191,763. Geon International Corporation, Great Neck, N.Y. Filed Apr. 22, 1964.

GEON

For Automobile Parts—Namely, Pistons and Pins, Valves, Water Pumps, Oil Pumps, Gaskets, Universal Joints, Timing Gears, Differential and Transmission Gears, Axle Shafts, Hydraulic Brake Parts, Automatic Transmission Repair Kits and Parts, Engine Bearings, Mechanical and Hydraulic Jacks.
First use Feb. 1, 1958.

SN 192,168. Fleet Tool Corporation, Schiller Park, Ill. Filed Apr. 28, 1964.

FLEET

Owner of Reg. No. 519,190.
For Wrenches, Socket Wrenches, Spark Plug Socket Wrenches, Adjustable Wrenches, Pipe Wrenches, Open End Wrenches, Box Wrenches, Combination Wrenches; Reversible Ratchets; Spinners; Adapters; Extensions; Flex Handles; Slide Bars; Cross-Bars; Speeders; Universal Joints; Universal Sockets; Ell Handles; Punches; Chisels; Rip Hammers, Ball Pein Hammers, Carpenters' Hammers; Screwdrivers, Screwdriver Sockets; Pliers, Cutting Pliers, Multi-Groove Pliers, Thin Nose Pliers, Water Pump Pliers, Leverage Pliers, Slip Joint Pliers, Universal Pliers, Wrench Type Pliers; Ring Compressors and Brake Tools.
First use Aug. 1, 1947, on socket wrenches.

SN 194,274. Buck Bros., Inc., Millbury, Mass. Filed May 26, 1964.

BUCK

Owner of Reg. No. 540,300.
For Wood Chisels, Gouges, Plane Irons, Draw-Knives, Countersinks, Punches, Wood Turners' Cutting, Parting, Paring and Slaing Tools, Wood Carving Tools, Screwdriver Bits, Awls, Nail Sets, Reamers, and Handles for Wood Cutting and Turning Tools, and Hammers.
First use during May 1875.

SN 199,953. A. W. Banister Co., Inc., Cambridge, Mass. Filed Aug. 17, 1964.

SEGREDYNE

For Centrifugal Solids Separator.
First use 1954.

SN 199,960. Binks Manufacturing Company, Chicago, Ill. Filed Aug. 17, 1964.

MOE AIR

For Air Compressors.
First use June 30, 1964.

SN 199,961. Binks Manufacturing Company, Chicago, Ill. Filed Aug. 17, 1964.

LARK

For Air Operated Fluid Handling Pumps.
First use July 29, 1964.

SN 199,971. Construction Machinery Company, Waterloo, Iowa. Filed Aug. 17, 1964.

HOE-BOY

For Plaster and Mortar Mixers.
First use during November 1950.

## Class 26 — Measuring and Scientific Appliances

SN 178,618. King Radio Corporation, Inc., Olathe, Kans. Filed Oct. 9, 1963.

KING

For Radio Navigation Equipment for Aircraft—Namely, Airborne Equipment for Measuring Ground Speed and/or Distance, Omni-Range Converter-Indicators, and Instrument Landing Systems, Particularly Localizer Converter-Indicators, Glide Slope Converter-Indicators, and Marker Beacon Converter-Indicators.
First use Sept. 30, 1963.

## Class 27 — Horological Instruments

SN 204,044. Bulova Watch Company, Inc., Flushing, N.Y. Filed Oct. 15, 1964.

TRAVELECTRIC

For Watches and Parts Thereof.
First use Sept. 21, 1964.

SN 204,045. Bulova Watch Company, Inc., Flushing, N.Y. Filed Oct. 15, 1964.

TRAVELECTRONIC

For Watches and Parts Thereof.
First use Sept. 21, 1964.

SN 204,373. Elgin National Watch Company, Elgin, Ill. Filed Oct. 20, 1964.

COMMANDO

For Horological Instruments—Namely, Watches and Clocks.
First use on or about Oct. 2, 1964.

## Class 29 — Brooms, Brushes, and Dusters

SN 204,039. Amerace Corporation, New York, N.Y. Filed Oct. 15, 1964.

ACE

For Hair Brushes.
First use Aug. 14, 1964.

## Class 31 — Filters and Refrigerators

SN 183,503. General Motors Corporation, Detroit, Mich. Filed Dec. 24, 1963.

INFINITE

For Refrigerators.
First use Dec. 2, 1963.

SN 197,056. Antar Industries, Inc., New York, N.Y. Filed July 6, 1964.

Antar

Owner of Reg. No. 639,371.
For Refrigerators.
First use June 30, 1964.

SN 200,047. Universal American Corporation, Detroit, Mich. Filed Aug. 17, 1964.

BOHNAMETIC

For Air Cooled Condenser for Refrigerating and Air Conditioning Systems.
First use June 1, 1964.

## Class 32 — Furniture and Upholstery

SN 127,275. Scipione Roger Mansardo, Lusern, Switzerland. Filed Sept. 5, 1961.

COLORCAP

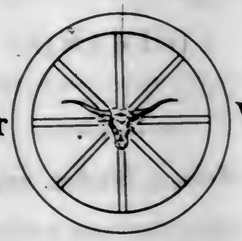
For Key Identifying and Control Media Comprising, Cabinets, Racks, and Boards for Housing Said Keys.
First use April 1960.

SN 194,877. The General Fireproofing Company, Youngstown, Ohio. Filed June 4, 1964.

40/4

For Chairs.
First use May 1, 1964.

SN 196,479. Slumber Wagon, Inc., Largo, Fla. Filed June 25, 1964.

Slumber  Wagon

For Combined Child's Wagon and Bed.
First use May 1, 1964.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 203,404. S. S. Kresge Company, Detroit, Mich. Filed Oct. 6, 1964.

K MART

Owner of Reg. No. 743,912.
For Propane Torch Kit Containing a Flame Spreader, Burner Assembly, Soldering Tips, Lighter and Fuel Tank for General Use.
First use Sept. 21, 1964.

SN 203,592. Keen Ideas, Inc., Cincinnati, Ohio. Filed Oct. 8, 1964.

Chef King

For Range Hoods, and Ventilating Systems.
First use Feb. 19, 1964.

## Class 36 — Musical Instruments and Supplies

SN 186,235. Chamberlin Instrument Company, Inc., Ontario, Calif. Filed Feb. 7, 1964.

RHYTHMATE

For Controllable Musical Instrument for the Reproduction of Prerecorded Sound Tapes.
First use Dec. 4, 1963.

## Class 37 — Paper and Stationery

SN 183,993. Santa Claus Industries, d.b.a. Mr. Pleasure Company, Philadelphia, Pa. Filed Jan. 3, 1964.

Mr. Pleasure



For Gift Certificates to Which Are Attached a List of Available Gifts.
First use Dec. 6, 1963.

SN 198,970. The Mead Corporation, Dayton, Ohio. Filed July 31, 1964.

TELSTAR

For Paper—Namely, Printing Paper.
First use Feb. 1, 1963.

## Class 38 — Prints and Publications

SN 126,206. Chartcraft, Inc., Larchmont, N.Y. Filed Aug. 18, 1961.

CHARTCRAFT

For Printed Technical Stock Analysis and Investment Advisory Publications.
First use Jan. 28, 1948.



SN 156,790. American Aviation Publications, Inc., Washington, D.C. Filed Nov. 7, 1962.

WORLD SPACE DIRECTORY

For Semi-Annual Directory of Missile/Space Manufacturers and Suppliers.
First use Oct. 22, 1962.

SN 165,583. Educational Resources Corporation, New York, N.Y. Filed Mar. 28, 1963.

LINGUA LATINA VIVA

For Series of Published Courses Dealing With the Latin Language and Culture.
First use on or about Mar. 8, 1963.

SN 167,100. Around the World Club, Kansas City, Mo. Filed Apr. 19, 1963.

THE MAGELLAN




Owner of Reg. No. 741,101.
For Periodical Publication for Members of Applicant Association.
First use September 1959.

SN 174,261. Continental News, Inc., Los Angeles, Calif. Filed Aug. 2, 1963.

Nudism's
GOLDEN DAYS

For Magazine.
First use October 1962.

SN 174,265. Continental News, Inc., Los Angeles, Calif. Filed Aug. 2, 1963.

BRIGHT

For Magazine.
First use June 1963.

SN 174,266. Continental News, Inc., Los Angeles, Calif. Filed Aug. 2, 1963.

SUNTRAILS

For Magazine.
First use July 1962.

SN 179,930. The Register and Tribune Syndicate, Inc., Des Moines, Iowa. Filed Oct. 28, 1963.

INTERPRETIVE REPORT

For Newspaper and Magazine Feature.
First use Feb. 3, 1963.

SN 182,917. American Aviation Publications, Inc., Washington, D.C. Filed Dec. 13, 1963.

WORLD AVIATION DIRECTORY

For Semi-Annual Directory of Carriers, Companies and Persons Engaged in Aviation.
First use June 1959.

SN 188,948. Atlantic Microfilm Corporation, Spring Valley, N.Y. Filed Mar. 18, 1964.

MICRO-SPEC

For Microfilm Photographic Prints Carrying Images of Documents, Particularly of Engineering Specifications and Related Documents, Such as Revisions of Specifications.
First use on or about Jan. 6, 1964.

SN 189,275. Robert A. Damers, d.b.a. Lynch Transcription Service, Commack, N.Y. Filed Mar. 23, 1964.

VIDEOGRAM

For Photographic Storyboards.
First use July 1, 1959.

SN 191,935. International Textbook Company, Scranton, Pa. Filed Apr. 24, 1964.

INTERNATIONAL TEXTBOOK COMPANY

For Textbooks.
First use Sept. 24, 1901.

SN 192,332. Robert D. Sloane, West Hartford, Conn. Filed Apr. 29, 1964.




For Periodic Bulletin to Travel Agencies Reviewing Hotel Facilities and Accommodations in the United States and Abroad.
First use on or before Jan. 1, 1961.

SN 192,770. Leon M. Timms, d.b.a. The Eltee Company, Burbank, Calif. Filed May 5, 1964.

PACKO LABEL

The term "Label" is disclaimed apart from the mark as a whole.
For Printed Shipping Labels.
First use Sept. 12, 1963.

SN 193,031. National Retail Furniture Association, Chicago, Ill. Filed May 8, 1964.

## TRENDICATORS

For Monthly Bulletin Relating to Matters Concerning the Furniture Business.
First use Jan. 18, 1956.

SN 193,368. Gustaf R. Hillstrom, d.b.a. Agnost, Santa Monica, Calif. Filed May 13, 1964.



For Booklets.
First use on or before Apr. 23, 1964.

SN 193,419. George D. Stribley, Muskegon, Mich. Filed May 13, 1964.

## DIGIT CARD

For Printed Personal Identification Cards.
First use on or about Apr. 11, 1964.

SN 193,537. Consultants Bureau Enterprises, Inc., New York, N.Y. Filed May 15, 1964.

DA CAPO PRESS

For Books on Musical Subjects.
First use Mar. 10, 1963.

SN 194,882. W. R. Grace & Co., New York, N.Y. Filed June 4, 1964.

## ADSORB-O-GRAM

For Newsletter Announcing News and Developments in the Silica Gel Field.
First use May 4, 1964.

SN 195,860. Greenpages, Inc., Birmingham, Ala. Filed June 17, 1964.

## GREEN PAGES

For Business Directory Which Constitutes a Supplement for Attachment to a Directory Such as a Telephone Directory, City Directory or the Like.
First use July 15, 1962.

SN 196,512. Electro-Optical Instruments, Inc., Monrovia, Calif. Filed June 26, 1964.

## EO ITEMS

For Company Newsletter.
First use Jan. 15, 1964.

SN 197,388. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed July 8, 1964.

## "Sociables"

For Greeting Cards.
First use June 1, 1964.

SN 197,736. McInerney Spring & Wire Company, Grand Rapids, Mich. Filed July 13, 1964.

## SPRINGBOARD

Owner of Reg. No. 417,556.
For Monthly House Organ.
First use February 1945.

SN 198,072. Norcross, Inc., New York, N.Y. Filed July 17, 1964.

## STUDIO ELEGANCE

For Greeting Cards.
First use Apr. 29, 1964.

SN 198,443. Triple Crown Publishing Company, Bayside, N.Y. Filed July 23, 1964.

## TRIPLE CROWN

For Magazine.
First use June 16, 1964.

SN 198,865. Norcross, Inc., New York, N.Y. Filed July 30, 1964.

## EMBOSSED ROSE

For Greeting Cards.
First use June 10, 1964.

SN 198,866. Norcross, Inc., New York, N.Y. Filed July 30, 1964.

## FRIAR FREDDIE

For Greeting Cards.
First use Nov. 6, 1963.

SN 198,867. Norcross, Inc., New York, N.Y. Filed July 30, 1964.

## FELICIA

For Greeting Cards.
First use Apr. 15, 1964.

SN 198,868. Norcross, Inc., New York, N.Y. Filed July 30, 1964.

## CINNAMON

For Greeting Cards.
First use Aug. 7, 1963.



SN 198,936. Ceramic Scope, Los Angeles, Calif. Filed July 31, 1964.

## CERAMIC SCOPE

For Magazine for the Ceramic Trade Primarily.
First use July 1, 1964.

SN 202,704. Norcross, Inc., New York, N.Y. Filed Sept. 25, 1964.

## ROSE ELEGANCE

For Greeting Cards.
First use July 22, 1964.

SN 204,696. Norcross, Inc., New York, N.Y. Filed Oct. 23, 1964.

## REFLECTIONS OF ELEGANCE

For Greeting Cards.
First use July 22, 1964.

SN 205,443. Norcross, Inc., New York, N.Y. Filed Nov. 3, 1964.

## ETHEREAL ELEGANCE

For Greeting Cards.
First use Sept. 25, 1963.

### Class 39 — Clothing

SN 146,931. Cyrus W. Scott Manufacturing Co., Wichita Falls, Tex. Filed June 14, 1962.




The drawing is lined for red and black, with red and black plaid on certain portions of the figure. The representation of the Scot lass is fanciful. The word "Scotties" is disclaimed apart from the mark as shown. Owner of Reg. No. 261,751.
For Jeans, Shorts, Pedal Pushers, Slacks, and Capri Pants of Cotton Fabric for Women and Girls.
First use Apr. 15, 1952.

SN 175,976. Coat Craft Company, Inc., Philadelphia, Pa. Filed Aug. 29, 1963.




For Girls' Coats.
First use Nov. 1, 1962.

SN 190,731. Izod, Ltd., New York, N.Y. Filed Apr. 9, 1964.

## IZOD

THE CHOICE OF CHAMPIONS

Owner of Reg. Nos. 667,890 and 702,412.
For Men's Shirts.
First use Aug. 22, 1956.

SN 196,816. Sewell Manufacturing Company, Bremen, Ga. Filed June 30, 1964.

## MOGORA

For Men's Suits and Sport Coats.
First use June 9, 1964.

### Class 40 — Fancy Goods, Furnishings, and Notions

SN 198,196. Joseph S. Mongeau, d.b.a. Applicote Company, Holyoke, Mass. Filed July 20, 1964.

## APPLICOTE

For Appliques for Trimming Garments.
First use July 19, 1963.

### Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 188,330. Burlington Industries, Inc., New York, N.Y. Filed Mar. 10, 1964.

## EASY LIVING

Owner of Reg. No. 737,220.
For Fabrics in the Piece Composed of Cotton and Synthetic Fibers and Blends Thereof.
First use Nov. 17, 1953.

SN 196,946. Chatham Manufacturing Company, Elkin, N.C. Filed July 2, 1964.

## ACRISPHERE

For Blankets.
First use June 12, 1964.

SN 196,947. Chatham Manufacturing Company, Elkin, N.C. Filed July 2, 1964.

GALAXY

For Blankets.
First use June 12, 1964.

SN 196,948. Chatham Manufacturing Company, Elkin, N.C. Filed July 2, 1964.

METEOR 100

For Blankets.
First use June 12, 1964.

## Class 44—Dental, Medical, and Surgical Appliances

SN 146,101. Barnetts, Incorporated, Durham, N.C., assignee, by mesne assignments, of O. K. France, d.b.a. O.K. Distributing Company, Jacksonville, Fla. Filed June 4, 1962.

CARE

For Prophylactics.
First use May 31, 1962.

SN 199,154. Zenith Radio Corporation, Chicago, Ill. Filed Aug. 3, 1964.

For Electronic Hearing Aids.
First use at least as early as Mar. 26, 1964.

SN 199,459. Du-Kane Supply Co., Pittsburgh, Pa. Filed Aug. 7, 1964.

NORMANDY ns SAUNETTE

For Saunas or Dry Heat Baths.
First use June 1, 1964.

## Class 45—Soft Drinks and Carbonated Waters

SN 172,936. J. Sarto Perreault, St. Hippolyte, Quebec, Canada. Filed July 12, 1963.

SNOW WHITE

Owner of Canadian Reg. No. 55, dated Aug. 12, 1940.
For Carbonated Water, Soft Drinks, and Syrups Used in the Preparation of Soft Drinks.

SN 185,227. Schenley Distillers, Inc., d.b.a. Tropic Tom's Trading Co., New York, N.Y., assignee of Merit House, Inc., New York, N.Y. Filed Jan. 23, 1964.

Tropic Tom's
ISLAND MIX

Applicant disclaims the right to the exclusive use of the words "Island Mix" except that it retains all common law rights with respect thereto.
For Non-Alcoholic Mix for Use in Making Alcoholic Cocktails and Other Mixed Drinks.
First use Jan. 10, 1964.

## Class 46—Foods and Ingredients of Foods

SN 155,069. Guest Quality Foods, Inc., Waterloo, Iowa. Filed Oct. 12, 1962.

The word "Quality" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 661,719, 698,706, and 725,125.
For Sundae Topping of a Flavored Syrup Nature.
First use January 1961.

SN 155,447. The Big A System, Inc., St. Louis, Mo., assignee of Samuel J. Temperato, d.b.a. The Big A System, St. Louis, Mo. Filed Oct. 18, 1962.

CHEDD-A-BURGER

Owner of Reg. No. 738,763.
For Sandwiches.
First use July 14, 1962.

SN 155,448. The Big A System, Inc., St. Louis, Mo., assignee of Samuel J. Temperato, d.b.a. The Big A System, St. Louis, Mo. Filed Oct. 18, 1962.

ROK-A-BURGER

Owner of Reg. No. 738,763.
For Sandwiches.
First use July 14, 1962.

SN 156,184. The Big A System, Inc., St. Louis, Mo., assignee of Samuel J. Temperato, d.b.a. The Big A System, St. Louis, Mo. Filed Oct. 29, 1962.

A BURGER

Applicant disclaims the word "Burger" apart from the mark as shown. Owner of Reg. No. 738,764.
For Sandwiches.
First use July 14, 1962.



SN 165,703. Pizzarena Drive-Inns, Inc., d.b.a. Pizzarena, New York, N.Y. Filed Mar. 29, 1963.

PIZZARENA

For Pizza Cheese Sold for Use in Restaurants.
First use June 1, 1962.
Subj. to Intf. with SN 174,821.

SN 166,876. Mitsui & Co., Ltd., Minato-ku, Tokyo, Japan. Filed Apr. 16, 1963.

BOTAN

The word "Botan" is the Japanese word for "peony."
Owner of Reg. No. 662,826.
For Canned Fish and Dried Mushrooms.
First use January 1952; in commerce January 1952.

SN 167,021. Mayfair Packing Company, San Jose, Calif. Filed Apr. 18, 1963.

Sugaripe

Owner of Reg. Nos. 536,359 and 722,309.
For Dried Fruits, Canned and Bottled Fruit Juices, Shelled and Unshelled Nuts, Canned Fruits, and Canned Vegetables.
First use Apr. 7, 1931, on dried fruits.

SN 174,320. Armour and Company, Chicago, Ill. Filed Aug. 5, 1963.

GRILL DOGS

The word "Dogs" is disclaimed apart from the mark as shown.
For Frankfurters.
First use July 9, 1963.

SN 174,620. Supreme Wine Co., Inc., South Boston, Mass. Filed Aug. 7, 1963.

Di Sabato's
CACCIATORE MARINADE
BY SUPREME

The letters "S" and "W" appear within the crest design. The drawing is lined for the colors red and green. No claim is made to the words "Cacciatore Marinade" apart from the mark as shown. Owner of Reg. Nos. 352,820, 719,399, and others.
For Marinade for Use in Cooking.
First use Feb. 19, 1963.

SN 177,997. Heritage House Products, Inc., Pittsburgh, Pa. Filed Sept. 30, 1963.

BONNIE GREEN

Owner of Reg. No. 590,477.
For Bird Food.
First use Sept. 26, 1958.

SN 178,669. Paul F. Dickey & Associates, Inc., Cleveland, Ohio, assignee of Bio-Zyme Products, Inc., Cleveland, Ohio. Filed Oct. 10, 1963.

TIPP

For Fresh Meat and Meat Products, Consisting of Primal Cuts, Meat Carcasses, Quarters, and Liver.
First use July 15, 1963.

SN 183,357. Amana Society, Amana, Iowa. Filed Dec. 23, 1963.

For Bread.
First use May 1963.

SN 189,337. Mead Johnson & Company, Evansville, Ind. Filed Mar. 23, 1964.

Owner of Reg. Nos. 649,428, 737,031, and others.
For Precooked Cereals and Infant Formula Preparations Specially Prepared for Infants and Children.
First use on or prior to August 1958.

SN 189,912. The Mensh Corporation, d.b.a. Midas Products Co., Washington, D.C. Filed Mar. 30, 1964.

CAVERNS TAFFY

No claim of exclusive right is made to "Taffy," said word being the name of the goods.
For Candy.
First use May 1, 1963.

SN 190,000. Fragone & Preve S.p.A., Genoa, Italy. Filed Mar. 31, 1964.

Gallo

The English translation of the word "Gallo" is "cock."
Owner of Italian Reg. No. 117,061, dated Apr. 24, 1954, and U.S. Reg. No. 279,235.
For Rice.

SN 190,177. Hermes Sweeteners Ltd., Zurich, Switzerland. Filed Apr. 2, 1964.

ASSUGRIN

Owner of Swiss Reg. No. 150,773, dated Apr. 29, 1954.
For Artificial Food Sweetener.

SN 191,093. Ziel & Co., Inc., San Francisco, Calif. Filed Apr. 14, 1964.

FIDELITY

Owner of Reg. No. 770,032.
For Canned Fruits and Canned Vegetables.
First use 1958.

SN 191,169. Good Humor Corporation, Englewood Cliffs, N.J. Filed Apr. 15, 1964.

FROSTEE HUMOR

Owner of Reg. Nos. 190,701 and 553,085.
For Ice Milk.
First use Mar. 27, 1964.

SN 191,463. Washington Creamery New York Corp., d.b.a. Washington Creamery, New York, N.Y. Filed Apr. 17, 1964.




For Frozen Poultry.
First use Jan. 18, 1963.

SN 191,716. Ralston Purina Company, St. Louis, Mo. Filed Apr. 21, 1964.



Owner of Reg. Nos. 35,569, 686,958, and others.
For Fresh Canned Fish.
First use Mar. 28, 1964.

SN 192,401. Jay-Zee Products, d.b.a. Perky Pie Company, Oakland, Calif. Filed Apr. 30, 1964.

PERKY

For Pastry—Namely, Pies.
First use June 21, 1962.

SN 192,806. Dolly Madison Foods, Inc., Philadelphia, Pa. Filed May 6, 1964.

COLONIAL

For Ice Cream.
First use Mar. 20, 1964.

SN 192,830. Jac-Pac Food Sales Corporation, Watertown, Mass. Filed May 6, 1964.

Jac Pac

For Frozen Portion-Control Meats.
First use January 1956.

SN 192,871. Adams and Brooks, Inc., Los Angeles, Calif. Filed May 7, 1964.

NUTTLES

For Nut Candies.
First use Apr. 25, 1964.

SN 193,200. The Nestlé Company, Inc., White Plains, N.Y. Filed May 11, 1964.

ZEBRA

For Milk Chocolate Bar.
First use Feb. 20, 1964.

SN 193,454. Corn Products Company, New York, N.Y. Filed May 14, 1964.

ULTRA-CAL

For Dairy Feeds.
First use at least as early as July 1961.

SN 194,065. National Biscuit Company, New York, N.Y. Filed May 22, 1964.

RINGOS

For Biscuits and Crackers.
First use May 4, 1964.

SN 194,525. William H. Singer, Cheltenham, Pa. Filed May 28, 1964.

Marie Antoinette

Owner of Reg. No. 772,442.
For Canned Fish, Canned Oranges, and Canned Oysters.
First use Oct. 16, 1961, on canned fish.



SN 195,148. Polar Chilled Products Co., Inc., d.b.a. Polar Chilled Products Co., Brea, Calif. Filed June 8, 1964.

POLAR

For Fluid Orange Juice Contained in Glass.
First use Apr. 1, 1963.

SN 195,203. Burger Family, Inc., Boise, Idaho. Filed June 9, 1964.

TEEN burger

The word "Burger" is disclaimed apart from the complete mark shown in the drawing.
For Hamburger Type Sandwiches.
First use on or before Mar. 2, 1963.

SN 195,221. General Foods Corporation, White Plains, N.Y. Filed June 9, 1964.

BIRDS EYE

Owner of Reg. Nos. 284,641, 683,364, and others.
For Instant Ice Cream Soda Mix.
First use Apr. 1, 1964; June 11, 1963, as to the words "Birds Eye."

SN 195,434. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

CHOCOLATEY WONDERFILLS

Applicant disclaims the word "Chocolatey" apart from the mark as shown.
For Candy.
First use June 1, 1964.

SN 195,438. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

CUTS O' FRUIT

For Candy.
First use June 1, 1964.

SN 195,440. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

ROCK KARMELS

Applicant disclaims the word "Karamels" apart from the mark as shown.
For Candy.
First use June 1, 1964.

SN 195,441. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

WILD CHERRY LANTERNS

Applicant disclaims the descriptive wording "Wild Cherry" apart from the mark as shown.
For Candy.
First use June 1, 1964.

SN 195,442. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

CUTS O' LEMON

For Candy.
First use June 1, 1964.

SN 195,443. Orchard Hill Farms Candy Company, Chicago, Ill. Filed June 11, 1964.

STICKS 'N STONES

The word "Sticks" is disclaimed apart from the mark as shown.
For Candy.
First use June 1, 1964.

SN 195,543. National Biscuit Company, New York, N.Y. Filed June 12, 1964.




The portrait in the drawing is that of a fanciful figure. The word "Gitana" is common to several romance languages and is translated into English to mean "gypsy."
For Biscuits and Crackers.
First use May 12, 1964.

SN 196,771. Dorgan Packing Corporation, Biloxi, Miss. Filed June 30, 1964.

ALLIGATOR

For Canned Oysters and Canned Shrimp.
First use 1883.

SN 197,600. McCormick & Company, Incorporated, Baltimore, Md. Filed July 10, 1964.

McCORMICK

Owner of Reg. Nos. 362,407, 767,948, and others.
For Spices; Flavoring Extracts; Blends and Mixes of Spices and Flavorings for Gravies, Sauces and Seasonings; Onion Juice; Garlic Juice; Food Colors; and Anti-Oxidant Material Adapted To Be Used To Keep Fresh Fruit From Turning Brown.
First use Dec. 18, 1963.

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SN 197,906. L. N. Renault & Sons. Inc., Egg Harbor City, N.J. Filed July 15, 1964.

## PINK GLOW

For Grape Juices.
First use Apr. 24, 1964.

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SN 199,950. Atlas Biscuit Corp., New York, N.Y. Filed Aug. 17, 1964.

## QUAKER HILL FARMS

For Cookies.
First use June 23, 1964.

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## Class 48 — Malt Beverages and Liquors

SN 186,077. G. Heileman Brewing Company, Inc., La Crosse, Wis. Filed Feb. 5, 1964.

Kingsbury

Owner of Reg. Nos. 277,977, 521,998, and others.
For Beer.
First use Oct. 8, 1963.

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SN 195,407. G. Heileman Brewing Company, Inc., La Crosse, Wis. Filed June 11, 1964.

## BRAUMEISTER

Owner of Reg. Nos. 519,714 and 519,715.
For Beer.
First use May 26, 1964.

## Class 49 — Distilled Alcoholic Liquors

SN 148,150. Continental Beverages, Inc., Winter Haven, Fla. Filed July 2, 1962.

Surf Side

For Vodka Cocktails.
First use June 14, 1962.

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SN 160,668. Sazerac Company, Inc., New Orleans, La. Filed Jan. 14, 1963.

Mims DELUXE

The word "Deluxe" is disclaimed apart from the mark as shown. Owner of Reg. No. 671,642.
For Gin.
First use Mar. 19, 1962.

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SN 178,993. Thrifty Drug Stores Co., Inc., Los Angeles, Calif. Filed Oct. 14, 1963.

## DUNCAN SINCLAIR

The name "Duncan Sinclair" is not the name of a living individual.
For Scotch Whisky.
First use Aug. 4, 1958.

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SN 180,180. Carlos y Javier de Terry, Sociedad Limitada, Puerto de Santa Maria, Cadiz, Spain. Filed Oct. 31, 1963.

## 501

Owner of Spanish Reg. No. 386,525, dated Sept. 22, 1962.
For Whiskey, Rum, Brandy, and Liqueurs.

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SN 181,487. L. J. McGuinness and Co. Limited, Mimico, Ontario, Canada. Filed Nov. 19, 1963.

## ACADIAN 400

For Whisky.
First use Sept. 26, 1963; in commerce Sept. 26, 1963.

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SN 182,634. Mar-Salle Chicago Company, Chicago, Ill. Filed Dec. 9, 1963.

## GRANDTULLY

Owner of Reg. No. 769,268.
For Liqueur.
First use Sept. 23, 1963.



## Class 50 — Merchandise Not Otherwise Classified

SN 183,208. Glass-O-Lite Corporation, Warsaw, Ind. Filed Dec. 18, 1963.

## GLASS-O-LITE

For Stock Feeders, i.e., Apparatus for Feeding Farm Animals and the Like.
First use Aug. 30, 1963.

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SN 188,261. National Soda Straw Company, Chicago, Ill. Filed Mar. 9, 1964.



Applicant claims use for the area comprising: Colorado, Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Iowa, Missouri, Arkansas, Louisiana, Mississippi, Alabama, Tennessee, Kentucky, Illinois, Indiana, Wisconsin, Michigan, Ohio, New York, Pennsylvania, West Virginia, Virginia, South Carolina, North Carolina, Georgia, Florida, Maryland, Delaware, New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine.
For Drinking Straws.
First use at least as early as May 1, 1956.
Subj. to concurrent use proceeding with Reg. No. 686,443.

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SN 190,727. Hasenfeld Bros., Inc., Pawtucket, R.I. Filed Apr. 9, 1964.

## DRIFTWOOD SERIES

The word "Series" is disclaimed separate and apart from the mark as shown.
For Paint-By–Number Sets.
First use on or about Feb. 28, 1964.

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SN 192,977. Art Award Co., Inc., Brooklyn, N.Y. Filed May 8, 1964.

## GOLD AWARD

For Paint-By-The-Numbers Painting Kits, Containing Painting Panels, Liquid Paints, Ink, Brushes, Drawing Pens and Pen Holder.
First use on or about Mar. 10, 1964.

SN 193,676. I Made It Company, Holyoke, Mass. Filed May 18, 1964.

I Made IT!

For Party Pack Sold to Persons Desiring To Announce a Promotion or Advancement in Their Line of Work and Including a Variety of Items Useful in Making Such Announcement and in Aiding in the Observance of the Event Including Cigar Wrappers, Match Books, Boxes of Matches, Greeting Cards, Napkins, Coasters, Party Favors and the Like.
First use Apr. 3, 1964.

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SN 197,284. Gingher Manufacturing Company, Inc., Scranton, Pa. Filed July 7, 1964.

## BUSINESS GUEST HANGER

The word "Hanger" is disclaimed except as a part of the mark as shown.
For Clothes Hangers.
First use on or about May 25, 1964.

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SN 197,286. Gingher Manufacturing Company, Inc., Scranton, Pa. Filed July 7, 1964.

## GUEST HANGER

The word "Hanger" is disclaimed except as part of the mark as shown.
For Clothes Hangers.
First use on or about Nov. 20, 1963.

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SN 199,558. Grafco Roller Co., Inc., New York, N.Y. Filed Aug. 10, 1964.

## POLYFINE

For Coverings for Rollers Used in Graphic Arts Industries.
First use Mar. 14, 1964.

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## Class 51 — Cosmetics and Toilet Preparations

SN 114,916. Beauty-Rama Corporation, Chicago, Ill. Filed Mar. 6, 1961.

## LUSTRE SHEEN

For Hair Spray and Brilliantine.
First use on or about May 25, 1956.

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SN 168,970. Xttrium Laboratories, Inc., Chicago, Ill. Filed May 15, 1963.

## LAN-OLE EMOLLIENT

All rights in the word "Emollient" are disclaimed apart from the mark as shown.
For Dry Skin Cream.
First use Sept. 1, 1961.

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SN 169,388. Prof. Sauerbruch-Präparate Böttger Kommanditgesellschaft, Berlin, Germany. Filed May 21, 1963.

## ALGEMARIN

For Cosmetic Additives for Bath Water, Cosmetic Skin Cream and Face Packs.
First use Nov. 1, 1960; in commerce July 1, 1962.

SN 176,729. "42" Products, Ltd., Inc., d.b.a. Executive Toiletries Ltd., Santa Monica, Calif. Filed Sept. 11, 1963.

## VERY TRULY YOURS

Owner of Reg. No. 694,347.
For Men's Toiletries Comprising After Shave Lotion and Cologne.
First use June 28, 1963.

SN 178,110. Countess Laboratories, Inc., Long Beach, Calif. Filed Oct. 1, 1963.

## VITA-SEAL

For Rebonding Lotion for Bleached and Tinted Hair.
First use May 25, 1961.

SN 190,975. Rimmel, Inc., New York, N.Y. Filed Apr. 13, 1964.

## Attaché

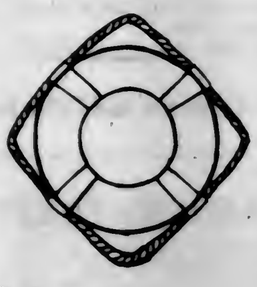
For Men's Cologne.
First use Apr. 3, 1964.

SN 192,452. Adams-Barclay Co., Chicago, Ill. Filed May 1, 1964.

## MR. MARTINI

For Men's After Shave Lotion.
First use Apr. 15, 1958.

SN 193,074. John R. Virus, d.b.a. Brandy Harvest, Woodside, N.Y. Filed May 7, 1964.



For Colognes.
First use June 17, 1963.

SN 195,201. Daniel Borison, d.b.a. Dan's 'Snip 'N Curl', Beverly Hills, Calif. Filed June 9, 1964.

## SUZI Q

For Hairdressing.
First use on or before Jan. 1, 1959.

SN 195,202. Daniel Borison, d.b.a. Dan's 'Snip 'N Curl', Beverly Hills, Calif. Filed June 9, 1964.

## DAPPER DAN

For Hairdressing.
First use on or before Jan. 1, 1959.

SN 195,565. J. Strickland & Co., Memphis, Tenn. Filed June 12, 1964.

## Golden Girl

For Hair Dressing.
First use Nov. 26, 1962.

SN 195,572. Yanagiya Honten Co., Ltd., Kanagawa, Japan. Filed June 12, 1964.

## YANAGIYA

The English translation of "Yanagiya" is "willow house."
For Perfumes, Hair Pomade, Hair Tonic, Hair Oil, Hair Cream.
First use Dec. 3, 1921; in commerce Nov. 25, 1959.

SN 195,714. Revlon, Inc., New York, N.Y. Filed June 15, 1964.

## FLEX

For Conditioning Preparation for the Hair.
First use October 1958.

SN 195,924. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed June 18, 1964.

## LE CURL

For Cold Permanent Wave.
First use June 15, 1964.

SN 196,041. Hans Schwarzkopf, Hamburg-Altona, Germany. Filed June 19, 1964.

## JARL

Owner of German Reg. No. 728,458, dated Aug. 31, 1959.
For Hair Tonic.

SN 196,349. Carter Products, Inc., New York, N.Y. Filed June 24, 1964.

## DIAPER-TIME

For Medicated Baby Skin Cleanser.
First use Apr. 7, 1964.

SN 196,350. Carter Products, Inc., New York, N.Y. Filed June 24, 1964.

## MEDI-WASH

For Medicated Baby Skin Cleanser.
First use May 11, 1964.

SN 196,605. Leon Barron, d.b.a. Rheill Barron, Back Bay Annex, Boston, Mass. Filed June 29, 1964.

## ROBANA

For Bath Oil.
First use Apr. 7, 1964.



## Class 52—Detergents and Soaps

SN 177,455. The Sinclair Manufacturing Company, Toledo, Ohio, assignee, by mesne assignments, of H. M. Sinclair, Jr., trustee for The Sinclair Manufacturing Company, d.b.a. Carol Manufacturing Company, Toledo, Ohio. Filed Sept. 20, 1963.

## CAROL

For Liquid Detergent for General Household Use.
First use July 31, 1963.

SN 179,721. Manhattan Kreole Industries, Inc., Brooklyn, N.Y. Filed Oct. 24, 1963.

## KREOLE

Owner of Reg. Nos. 301,524 and 404,373.
For Shoe and Leather Cleaning Compounds.
First use March 1917.

SN 181,184. Signal Oil and Gas Company, Houston, Tex. Filed Nov. 14, 1963.

## DRIREX

For Cleaning Solvents.
First use May 6, 1963.

SN 181,939. Willis Chemical Products Corporation, Park Ridge, N.J. Filed Nov. 26, 1963.




The drawing is lined for the colors blue and red.
For Multi-Purpose Cleaner Having Germicidal and Sanitising Properties.
First use Oct. 21, 1963.

SN 192,101. Todd Chemical Company, Inc., Great Neck, N.Y. Filed Apr. 27, 1964.

## CHLOR-A-KILL

For Liquid Cleaner and Disinfectant Concentrate.
First use Mar. 27, 1964.

SN 198,169. Huntington Laboratories, Inc., Huntington, Ind. Filed May 11, 1964.




Owner of Reg. No. 178,157.
For Liquid Hand Soap.
First use 1952.

SN 195,078. Economics Laboratory, Inc., St. Paul, Minn. Filed June 8, 1964.

## SOILAX

Owner of Reg. Nos. 186,368, 634,189, and others.
For Rug Shampoo.
First use Feb. 2, 1961.

SN 195,585. Avon Products, Inc., New York, N.Y. Filed June 15, 1964.

## PEACH PUFF

For Toilet Soap.
First use May 8, 1964.

SN 195,764. Colgate-Palmolive Company, New York, N.Y. Filed June 16, 1964.

## AJAX

Owner of Reg. Nos. 309,496 and 427,106.
For All-Purpose Cleaner and Detergent.
First use Oct. 6, 1961.

SN 196,477. Schaffner Industries of Butler, Butler, Pa. Filed June 25, 1964.

## SAV-A-PLATE

For Cleaner and Renewer for Metal Printing Plates.
First use Sept. 1, 1963.

SN 198,287. The Thermocor Company, Incorporated, Erlanger, Ky. Filed July 20, 1964.

## ORGANISOL

For Detergent and Blood Solvent Containing a Protein Digesting Enzyme for Hospital and Laboratory Ware.
First use May 6, 1960.

SN 203,381. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Oct. 6, 1964.

## CLEVE-TEK

For Electrical Parts Cleaners.
First use Sept. 10, 1963.

# SERVICE MARKS

## Class 100 — Miscellaneous

SN 142,021. Ding Dong Cart, Inc., Chicopee Falls, Mass. Filed Apr. 11, 1962.

DING DONG CART

For Mobile Confectionery Fountain Service.
First use June 1, 1958.

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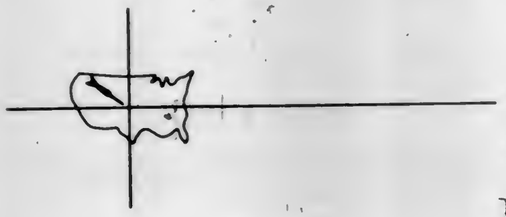
SN 149,411. Safe Drivers Club, Inc., Newark, N.J. Filed July 19, 1962.

SAFE DRIVERS CLUB

Applicant disclaims the term "Safe Drivers Club" apart from the mark as shown.
For Contract Service for Emergency Repairs; Towing of Motor Vehicles; Motor Vehicle Tire Repairs; Recommendations of Claim Attorneys Who Will Render Legal Services at a Preferential Rate; Reimbursement for Legal Expenses Incidental to Defense of Traffic Violations; Reimbursement for Criminal Defense for Automobile Manslaughter; Bail Bond Service; Reimbursement for Bail Bond Service; Security Responsibility Accident Report Service; Unsatisfied Judgment Claim Accident Report Service; Substitute Automobile Service.
First use in or about August 1961.

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SN 159,644. Eri A. Dart, d.b.a. Dart Medical Laboratories, Englewood, Colo. Filed Dec. 24, 1962.



The map is disclaimed apart from its use in the mark.
For Medical Laboratory Services in the Nature of Medical Analyses, Blood Tests, Pregnancy Tests, Urinalysis, and the Like.
First use on or about Nov. 21, 1962.

SN 191,429. National Independent Dairies Association, Washington, D.C. Filed Apr. 17, 1964.

NATIONAL INDEPENDENT DAIRIES ASSOCIATION — NIDA

For Trade Association Services—Namely, the Promotion of the Interests of Independent Dairy Processors and Ice Cream Manufacturers Throughout the United States.
First use Apr. 12, 1958.

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## Class 101 — Advertising and Business

SN 126,652. Greetings Unlimited Inc., St. Paul, Minn. Filed Aug. 25, 1961.

Adriano FUND RAISING Projects

Exclusive use of the words "Fund Raising Projects" is disclaimed apart from the mark.
For Aiding Organizations To Operate Fund Raising Projects.
First use July 13, 1961.

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SN 162,329. The Appraisal Company, d.b.a. Automotive Testing Company, Youngstown, Ohio. Filed Feb. 8, 1963.




The words "Auto Test" are disclaimed apart from the mark as shown, common-law rights, however, being reserved. Owner of Reg. No. 715,567.
For Services Comprising the Testing of Motor Vehicles Including Motorcars, Motor Trucks, Motor Boats and Stationary Engines and Rendering Reports Thereon.
First use May 31, 1961.

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SN 163,361. Hechinger Co., Washington, D.C. Filed Feb. 25, 1963.

HARRY HOMEOWNER

For Retail Hardware, Lumber and Millwork Store Services.
First use at least as early as July 1948.





SN 165,588. Farwell, Ozmun, Kirk & Co., St. Paul, Minn. Filed Mar. 28, 1963.

OK

The drawing is lined for red.
For Hardware Retailing Services.
First use on or about Aug. 3, 1961.

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SN 175,927. Marshall S. Lachner Associates, Inc., New York, N.Y. Filed Aug. 28, 1963.

CREATIVE SERVICES TO MANAGEMENT

Applicant hereby disclaims any exclusive right to the wording "Creative Service to Management" except as part of the entire service mark.
For Creative Services to Management on a Consultation or Retainer Basis, in the General Fields of Marketing, Merchandising, Public Relations, Advertising and Sales Promotion, Financial Planning and Controls, Corporate Operation Problems, Mergers, and Acquisitions, New Product Development, Personnel Administration, and Executive Searches.
First use Sept. 12, 1962.

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SN 178,038. Radio KBUY, Inc., Amarillo, Tex. Filed Sept. 30, 1963.

HORN HONKER

For Advertising Promotional Service Particularly in Selling Advertising Time on Its Radio Broadcasting Station to Others.
First use Nov. 21, 1962.

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SN 178,126. Kelly Imaginads Inc., Dania, Fla. Filed Oct. 1, 1963.

Imaginads

For Advertising Services—Namely, Advising Clients as to Programs for Advertising Their Products, Providing Advertising Copy for Clients, and Suggesting and Furnishing Advertising Specialties to Clients.
First use July 17, 1963.

SN 185,530. Planetary Sciences Incorporated, Santa Clara, Calif. Filed Jan. 28, 1964.

For Data Processing Services—Namely, the Interpretation of Analog and Digital Time Series.
First use Aug. 1, 1963.

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SN 187,070. Bradfute Corporation, Eastchester, N.Y. Filed Feb. 20, 1964.

LUCKY "LINE-UP"

For Promoting the Sale of Goods and Services by Others by Means of a Bingo-Like Contest Based on Numbers Appearing in Advertisements of Participating Merchants.
First use Sept. 4, 1963.

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SN 193,349. Gardner, Stein & Frank, Inc., Chicago, Ill. Filed May 13, 1964.

COMPASS 4

For Publicity and Public Relations.
First use Jan. 13, 1964.

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SN 193,785. Guest Pac Corporation, Mount Vernon, N.Y. Filed May 19, 1964.

PREP PAC

Owner of Reg. Nos. 649,451 and 759,374.
For Advertising and Promotion of Goods of Others Through the Packaging, Imprinting and Distribution of Various Manufacturers' Samples Enclosed in a Single Package.
First use Apr. 29, 1963.

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## Class 102 — Insurance and Financial

SN 175,402. The Greater Iowa Corporation, Des Moines, Iowa. Filed Aug. 20, 1963.

For Underwriting of Life Insurance.
First use during February 1962.

## Class 103 — Construction and Repair

SN 152,683. Duraclean Company, Deerfield, Ill. Filed Sept. 7, 1963.

**Duraclean**

For Cleaning, Preserving, and General Overall Maintenance of Floor Coverings, Upholstery, Furnishings and Other Household and Institutional Surfaces.
First use July 24, 1943.

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SN 192,582. D. B. Frampton & Company, Columbus, Ohio. Filed May 4, 1964.

**INFIN-AC**

For Design, Engineering and Installation of Flooring Systems, Such as Infinite Access Elevated Floor Systems, Including Removable Panels and Supporting Pedestal and Underframe Construction for Computer Equipment and the Like.
First use fall 1963.

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## Class 104 — Communication

SN 192,778. Almardon, Incorporated of Florida, Pompano Beach, Fla. Filed May 6, 1964.




The word "Radio" is disclaimed by applicant apart from the mark as shown.
For Radio Broadcasting Services.
First use Sept. 29, 1963.

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## Class 105 — Transportation and Storage

SN 128,336. Candygram, Inc., Beverly Hills, Calif. Filed Sept. 21, 1961.

**TeleGift**

For Providing and Delivering Gifts Which Have Been Ordered by Telegram.
First use July 24, 1961.

SN 191,068. North American Van Lines, Inc., Fort Wayne, Ind. Filed Apr. 14, 1964.

NAVPAC

The drawing is lined for red and blue, but color is not claimed as a part of the mark. Owner of Reg. Nos. 726,615 and 726,820.
For Transportation Services—Namely, Freight Forwarding of Used Household Goods Between the United States and Foreign Countries.
First use Jan. 20, 1964.

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## Class 106 — Material Treatment

SN 184,408. Vertron Corporation, Orange, Calif. Filed Jan. 10, 1964.

**VERTRONIZED**

For Applying Coatings, Sealants, and Adhesives to the Goods and Wood and Concrete Structures of Others.
First use Dec. 9, 1963.

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## Class 107 — Education and Entertainment

SN 113,289. National Police Officers Association of America, Chicago, Ill. Filed Feb. 8, 1961.

National Police Hall of Fame

For Honoring the Heroism of Police Officers Killed in the Line of Duty by Maintaining a Plaque Listing the Names of Such Officers and a Museum Containing Displays Relating to Police Work and Obtaining Such Displays and Contributions Toward the Support and Maintenance of the Museum.
First use Mar. 1, 1960.

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SN 152,275. Bible Town, USA, Boca Raton, Fla. Filed Aug. 31, 1962.

**BIBLE TOWN, U.S.A.**

For Staging an Exhibition of Bible-Related Items, Such as Replicas of Clothing, Culinary Items and the Like Which Were Used at the Beginning of the Christian Era.
First use June 23, 1962.

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SN 177,188. Ringling Bros.-Barnum & Bailey Combined Shows, Inc., Venice, Fla. Filed Sept. 17, 1963.

**THE GREATEST SHOW ON EARTH**

Owner of Reg. Nos. 724,946 and 724,947.
For Entertainment Services in the Nature of a Series of Television Programs.
First use on or about Feb. 20, 1963.



SN 188,748. Theodore Granik, Washington, D.C. Filed Mar. 16, 1964.

**WOMEN ON THE MOVE**

For Title of a Television and Radio Program—Namely, a Panel Discussion Wherein a Distinguished Individual Is Interviewed by a Panel of Knowledgeable Women.
First use Mar. 1, 1962.

SN 192,483. Independent Television Corporation, New York, N.Y. Filed May 1, 1964.

**RAMAR OF THE JUNGLE**

For Title of a Television Adventure Show.
First use Jan. 8, 1952.

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# CERTIFICATION MARKS

## Class A — Goods

SN 165,279. American Indoor Archery Association, Chicago, Ill. Filed Mar. 25, 1963.

AMERICAN INDOOR ARCHERY ASSOCIATION

The drawing is lined for the colors blue, red, and yellow. The mark certifies that the targets which bear the mark meet requirements set by applicant as to accuracy of dimensions, colorization and overall quality, inclusive of the paper or type of board.
For Targets.
First use Aug. 28, 1962.

# TRADEMARK REGISTRATIONS ISSUED
## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

783,439. RAPID-PAK. Johnson & Johnson. SN 146,826. Pub. 11–3–64. Filed 6–13–62.

783,440. PERMALAM. Laminators Incorporated. SN 154,827. Pub. 11–19–63. Filed 10–9–62.

783,441. ARMTEX. Plastus, S.A. SN 173,500. Pub. 7–7–64. Filed 7–22–63.

783,442. WHISKEY. McCormick Distilling Co. SN 174,411. Pub. 11–3–64. Filed 8–5–63.

783,443. CORNELI. Corneli Seed Company. SN 174,751. Pub. 11–3–64. Filed 8–9–63.

783,444. FLEMING-JOFFE "TENDERLOIN." Fleming-Joffe Limited. SN 181,877. Pub. 11–3–64. Filed 11–26–63.

783,445. AMA. Associated Minerals Consolidated Limited. SN 183,824. Pub. 11–3–64. Filed 12–27–63.

783,446. SUPREME DIXIE. Jewell Bridges Haga, d.b.a. Delta Turtle Farm. SN 189,698. Pub. 11–3–64. Filed 3–26–64.

### Class 2 — Receptacles

783,447. ALUMI-LINED. National Can Corporation. SN 196,056. Pub. 11–3–64. Filed 6–19–64.

783,448. CASUALTONE. Bopp-Decker Incorporated. SN 197,872. Pub. 11–3–64. Filed 7–15–64.

783,449. PACER. Hamilton-Skotch Corporation. SN 198,352. Pub. 11–3–64. Filed 7–22–64.

783,450. CORRU H FRAME. Hoerner Boxes, Inc. SN 198,355. Pub. 11–3–64. Filed 7–22–64.

783,451. SPACE-SHOTS. Joe Lowe Corporation. SN 198,483. Pub. 11–3–64. Filed 7–24–64.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

783,452. BUXTON. Buxton, Incorporated. MULTIPLE CLASS (Classes 3 and 8). SN 193,931. Pub. 11–3–64. Filed 5–21–64.

### Class 4 — Abrasives and Polishing Materials

783,453. SQUARE SAUCER S/S. Cardinal Engineering Corporation. SN 166,973. Pub. 11–3–64. Filed 4–18–63.

783,454. CUTRITE. Electro Refractories & Abrasives Corporation. SN 184,045. Pub. 11–3–64. Filed 1–6–64.

783,455. OSO-BRITE. Oso Brite Mfg. Co., Inc. SN 188,569. Pub. 11–3–64. Filed 3–12–64.

### Class 5 — Adhesives

783,456. PERFECTION AND DESIGN. National Starch and Chemical Corporation. SN 171,475. Pub. 11–3–64. Filed 6–20–63.



783,457. WASCOFLEX. American Cyanamid Company. MULTIPLE CLASS (Classes 5 and 12). SN 185,006. Pub. 11–3–64. Filed 1–21–64.

783,458. BROSE LIFE LONG AND DESIGN. Horace B Brose, d.b.a. Heide Babe Products. MULTIPLE CLASS (Classes 5 and 35). SN 187,469. Pub. 11–3–64. Filed 2–26–64.

### Class 6 — Chemicals and Chemical Compositions

783,459. TRIFUME B. Stauffer Chemical Company. SN 164,913. Pub. 11–3–64. Filed 3–18–63.

783,460. IODOSENE. Guardian Chemical Corporation. SN 165,920. Pub. 11–3–64. Filed 4–2–63.

783,461. BIO-GUARD AND DESIGN. Bio-Lab, Inc. SN 167,115. Pub. 11–3–64. Filed 4–19–63.

783,462. REBUFF. Animal Repellents, Inc. SN 177,220. Pub. 11–3–64. Filed 9–18–63.

783,463. TOPCO. Topco Associates, Inc. SN 177,927. Pub. 11–3–64. Filed 9–27–63.

783,464. DEKOPAN. Dexter Chemical Corporation. SN 177,974. Pub. 11–3–64. Filed 9–30–63.

783,465. WOODKILL. Wood Chemical Co., Inc. SN 181,089. Pub. 11–3–64. Filed 11–13–63.

783,466. SCORE. Philadelphia Quartz Company. SN 182,499. Pub. 11–3–64. Filed 12–6–63.

783,467. IIG ANASORB. Illinois Instrument Group Incorporated. SN 184,069. Pub. 11–3–64. Filed 1–6–64.

783,468. AM-FOL. W. R. Grace & Co. SN 186,074. Pub. 11–3–64. Filed 2–5–64.

783,469. CALCHEM. California Chemical Company. SN 189,765. Pub. 11–3–64. Filed 3–27–64.

783,470. BUCKET OF STEAM. Warren L. Crawford. SN 190,600. Pub. 11–3–64. Filed 4–8–64.

783,471. CLEER-O'-DISC. Gross-Padow Corp. SN 191,688. Pub. 11–3–64. Filed 4–21–64.

783,472. CIRCLE. Philadelphia Quartz Company. SN 191,711. Pub. 11–3–64. Filed 4–21–64.

783,473. 5 AND DESIGN. Universal Oil Products Company. SN 191,813. Pub. 11–3–64. Filed 4–22–64.

783,474. INSURED LIFE. Parke-Hill Chemical Corporation. SN 191,876. Pub. 11–3–64. Filed 4–23–64.

783,475. SUMITHION. Sumitomo Chemical Company, Ltd. SN 191,893. Pub. 11–3–64. Filed 4–23–64.

783,476. UNIPALM. Union Bag-Camp Paper Corporation. SN 192,104. Pub. 11–3–64. Filed 4–27–64.

783,477. TRAFFIC. Adams-Barclay Co. SN 192,457. Pub. 11–3–64. Filed 5–1–64.

783,478. CWS. Monsanto Company. SN 192,497. Pub. 11–3–64. Filed 5–1–64.

783,479. NORTHWOODS CHARACTER (DESIGN). Union Carbide Corporation. SN 192,534. Pub. 11–3–64. Filed 5–1–64.

783,480. ULTRAFENE. The Atlantic Refining Company. SN 192,547. Pub. 11–3–64. Filed 5–4–64.

783,481. THREE PARALLELOGRAMS IN TRIANGULAR RELATIONSHIP (DESIGN). Rousel-Uclaf. MULTIPLE CLASS (Classes 6 and 18). SN 195,445. Pub. 11–3–64. Filed 3–25–64.

783,482. ZODYS AND DESIGN. Hartfield Stores, Incorporated. SN 198,796. Pub. 11–3–64. Filed 7–27–64.



### Class 8 — Smokers' Articles, Not Including Tobacco Products

783,452. (See Class 3 for this trademark.)

783,483. MELLO ROOT. P. Lorillard Company. SN 192,665. Pub. 11–3–64. Filed 5–4–64.

783,484. BEWLAY. Peterson's Ltd. SN 194,068. Pub. 11–3–64. Filed 5–22–64.

### Class 9 — Explosives, Firearms, Equipments, and Projectiles

783,485. AMERICAN EAGLE AND DESIGN. Federal Cartridge Corporation. SN 182,717. Pub. 11–3–64. Filed 12–10–63.

### Class 10 — Fertilizers

783,486. ZODYS. Hartfield Stores, Incorporated. SN 198,841. Pub. 11–3–64. Filed 7–30–64.

### Class 11 — Inks and Inking Materials

784,487. ASTRALON. The Buckeye Ribbon & Carbon Co. SN 176,882. Pub. 11–3–64. Filed 9–13–63.

783,488. FARBIANCA. N.V. Drukinktfabriek Farbianca. SN 182,253. Pub. 11–3–64. Filed 12–3–63.

783,489. TRIANGLE T IT MUST BE RIGHT AND DESIGN. Triangle Conduit & Cable Co., Inc. SN 192,531. Pub. 11–3–64. Filed 5–1–64.

### Class 12 — Construction Materials

783,457. (See Class 5 for this trademark.)

783,490. INFRATHERMALFOAM. Thermalon Insulation, Inc. SN 166,320. Pub. 11–3–64. Filed 4–8–63.

783,491. AFCO. Afco Corporation. SN 177,744. Pub. 11–3–64. Filed 9–26–63.

783,492. G.I.M. PROCESS. Gero Metallurgical Corporation. SN 178,346. Pub. 11–3–64. Filed 10–4–63.

783,493. NILES. Kaiser Aluminum & Chemical Corporation. SN 183,414. Pub. 11–3–64. Filed 12–23–63.

783,494. ULTRA LINER AND DESIGN. Gustin-Bacon Manufacturing Company. SN 187,280. Pub. 11–3–64. Filed 2–24–64.

783,495. REGAL. General Dynamics Corporation. SN 190,915. Pub. 11–3–64. Filed 4–13–64.

783,496. CAL-IDA. J. R. Simplot Company, d.b.a. Cal-Ida Lumber Co. SN 190,982. Pub. 11–3–64. Filed 4–13–64.

783,497. SILVERADO. Simpson Timber Company. SN 190,983. Pub. 11–3–64. Filed 4–13–64.

### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

783,498. JEWELER'S BRASS. Duchin Gifts, Inc. SN 176,720. Pub. 11–3–64. Filed 9–11–63.

783,499. ULTRA-SAN. Maes Incorporated, by change of name from Maes Milkers, Inc. SN 182,339. Pub. 11–3–64. Filed 12–4–63.

783,500. WEDJNUT. The B. F. Goodrich Company. SN 187,170. Pub. 11–3–64. Filed 2–21–64.

783,501. CON-DUCT. International Protected Metals, Inc. SN 190,180. Pub. 11–3–64. Filed 4–2–64.

### Class 14 — Metals and Metal Castings and Forgings

783,502. MS METAL SPINNERS AND DESIGN. Metal Spinners, Inc. SN 185,698. Pub. 11–3–64. Filed 1–30–64.

783,503. MAX HARD. Grede Foundries, Inc. SN 188,749. Pub. 11–3–64. Filed 3–16–64.

783,504. TRIANGLE T "IT MUST BE RIGHT" AND DESIGN. Triangle Conduit & Cable Co., Inc. SN 192,532. Pub. 11–3–64. Filed 5–1–64.

### Class 15 — Oils and Greases

783,505. MARAFLUID "45." Marathon Oil Company. SN 193,561. Pub. 11–3–64. Filed 5–15–64.

783,506. MARAFLUID "55." Marathon Oil Company. SN 193,562. Pub. 11–3–64. Filed 5–15–64.

783,507. SUPER CHEK AND DESIGN. Power Petroleum Products. SN 194,235. Pub. 11–3–64. Filed 5–25–64.

783,508. QUASTRALIA. Quaker Chemical Corporation. SN 195,327. Pub. 11–3–64. Filed 6–10–64.

783,509. FREE UP. The Barcolene Company. SN 196,600. Pub. 11–3–64. Filed 6–29–64.

### Class 16 — Protective and Decorative Coatings

783,510. SOUTHERN COATINGS. Southern Coatings & Chemical Company. SN 168,542. Pub. 11–3–64. Filed 5–9–63.

783,511. NO-FO. The W. H. Fales Company. SN 169,026. Pub. 11–3–64. Filed 5–16–63.

783,512. NULEX. Carolina Coatings, Inc. SN 182,861. Pub. 11–3–64. Filed 12–12–63.

783,513. DORAY. Douglas R. Allen Corporation, d.b.a. Douglas R. Allen Corp. SN 189,244. Pub. 11–3–64. Filed 3–23–64.

### Class 17 — Tobacco Products

783,514. PURITAN. Philip Morris Incorporated. SN 189,093. Pub. 11–3–64. Filed 3–19–64.

783,515. ULTRA. General Cigar Co., Inc. SN 190,714. Pub. 11–3–64. Filed 4–9–64.

783,516. A CARGO OF CONTENTMENT IN A FILTER CIGARETTE AND DESIGN. The American Tobacco Company. SN 191,651. Pub. 11–3–64. Filed 4–21–64.

783,517. THE HAGUE. The Bloch Brothers Tobacco Co. SN 193,620. Pub. 11–3–64. Filed 5–18–64.

### Class 18 — Medicines and Pharmaceutical Preparations

783,481. (See Class 6 for this trademark.)

783,518. INTESTOL. First Texas Pharmaceuticals, Inc. SN 142,805. Pub. 11–3–64. Filed 4–23–62.

783,519. RUMINON AND DESIGN. Takeda Chemical Industries, Ltd. SN 157,264. Pub. 11–3–64. Filed 7–2–63.

783,520. PENGUIN FEET-TREET CREAM. E. C. De Witt & Co. Inc. SN 169,231. Pub. 11–3–64. Filed 5–20–63.

783,521. HISTALET. Scott-Lee Laboratories, Inc. SN 172,946. Pub. 11–3–64. Filed 7–12–63.

783,522. SCOVITE. Scott-Lee Laboratories, Inc. SN 172,951. Pub. 11–3–64. Filed 7–12–63.

783,523. THE ALL-AMERICAN AND DESIGN. J. P. Brown, Jr., d.b.a. Dixi Chem Company. SN 178,252. Pub. 11–3–64. Filed 10–3–63.

783,524. TRIMIZOLIN. Boehringer Ingelheim, G.m.b.H., assignee of C. H. Boehringer Sohn, Limited. SN 179,598. Pub. 11–3–64. Filed 10–23–63.

783,525. BIO-BASE. Colgate-Palmolive Company. SN 185,109. Pub. 11–3–64. Filed 1–22–64.

783,526. ENTEROLAX. The Purdue Frederick Company. SN 191,210. Pub. 11–3–64. Filed 4–15–64.

783,527. AURALYSIN. American Home Products Corporation. SN 192,252. Pub. 11–3–64. Filed 4–29–64.

783,528. FRESHELLE. Merck & Co., Inc. SN 193,390. Pub. 11–3–64. Filed 5–13–64.

783,529. T. D. LAMBERT. The Reducine Company Limited. SN 193,578. Pub. 11–3–64. Filed 5–15–64.

783,530. ORACON. Mead Johnson & Company. SN 193,685. Pub. 11–3–64. Filed 5–18–64.

783,531. ZNLIN. Herald Pharmacal, Inc. SN 193,786. Pub. 11–3–64. Filed 5–19–64.

783,532. SPIRAVET. Societe des Usines Chimiques Rhone-Poulenc. SN 194,324. Pub. 11–3–64. Filed 5–26–64.

783,533. RUSCAPS. Pharmaceutical Specialties, Inc., d.b.a. Dermatological Prescription Laboratories. SN 195,143. Pub. 11–3–64. Filed 6–8–64.

783,534. VITAGERAL. Boehringer Ingelheim G.m.b.H. SN 197,539. Pub. 11–3–64. Filed 7–10–64.

## Class 19—Vehicles

783,535. HENSCHEL. Henschel-Werke Aktiengesellschaft. SN 169,373. Pub. 11–3–64. Filed 5–21–63.

783,536. INSTANTOR. Rockwell-Standard Corporation. SN 180,125. Pub. 11–3–64. Filed 10–30–63.

783,537. TYLASTIC. Lord Manufacturing Company. SN 186,462. Pub. 11–3–64. Filed 2–11–64.

783,538. HILLCREST. Skyline Homes, Inc. SN 192,851. Pub. 11–3–64. Filed 5–6–64.

783,539. CRESTWOOD. Skyline Homes, Inc. SN 192,853. Pub. 11–3–64. Filed 5–6–64.

783,540. A-LINE. Institutional Industries, Inc. SN 193,378. Pub. 11–3–64. Filed 5–13–64.

783,541. SPRITE. Institutional Industries, Inc. SN 193,379. Pub. 11–3–64. Filed 5–13–64.

783,542. MILK BOSSY AND DESIGN. Oliver H. Thompson. SN 193,506. Pub. 11–3–64. Filed 5–14–64.

783,543. KEY. Goerlich's, Inc. SN 193,661. Pub. 11–3–64. Filed 5–18–64.

783,544. CREST. Goerlich's, Inc. SN 193,662. Pub. 11–3–64. Filed 5–18–64.

783,545. KAR-GARD. Goerlich's, Inc. SN 193,663. Pub. 11–3–64. Filed 5–18–64.

## Class 21—Electrical Apparatus, Machines, and Supplies

783,546. REED-PAK. Essex Wire Corporation. SN 151,031. Pub. 11–3–64. Filed 8–13–62.

783,547. BLINK-OFF. Burson Electronics, Inc., assignee, by mesne assignment, of Nucleonics Research & Development Corporation. SN 156,899. Pub. 11–3–64. Filed 11–8–62.

783,548. VARI-FEB. Signetics Corporation. SN 163,587. Pub. 11–3–64. Filed 2–27–63.

783,549. BLUESTAR. Channel Master Corporation. SN 176,627. Pub. 11–3–64. Filed 9–10–63.

783,550. DYNA-MAG. Radiation Dynamics, Inc. SN 176,748. Pub. 11–3–64. Filed 9–11–63.

783,551. MIL-ENE. W. L. Gore & Associates, Inc. SN 176,902. Pub. 11–3–64. Filed 9–13–63.

783,552. KELVINATOR. American Motors Corporation. CONSOLIDATED CERTIFICATE. SN 177,475, pub. 4–21–64, filed 9–23–63, Cl. 21; SN 179,388, pub. 3–24–64, filed 10–21–63, Cl. 21; SN 179,988, pub. 11–3–64, filed 10–29–63, Cl. 21; SN 177,943, pub. 10–6–64, filed 9–30–63, Cl. 24; SN 177,944, pub. 10–13–64, filed 9–30–63, Cl. 24; SN 180,167, pub. 10–6–64, filed 10–31–63, Cl. 24; SN 178,316, pub. 3–31–64, filed 10–4–63, Cl. 31; SN 181,947, pub. 10–6–64, filed 11–27–63, Cl. 31; SN 179,389, pub. 3–24–64, filed 10–21–63, Cl. 34; SN 180,168, pub. 10–6–64, filed 10–31–63, Cl. 34; SN 180,169, pub. 10–6–64, filed 10–31–63, Cl. 34.

783,553. D AND DESIGN. Square D Company. SN 178,141. Pub. 11–3–64. Filed 10–1–63.

783,554. MISCELLANEOUS DESIGN. International Electronic Research Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 179,902. Pub. 11–3–64. Filed 10–28–63.

783,555. EXACTALENS. Tiger Plastics Corp. SN 181,810. Pub. 11–3–64. Filed 11–22–63.

783,556. JAPANESE SYMBOL (DESIGN). Foster Electric Co., Ltd. SN 182,610. Pub. 11–3–64. Filed 12–9–63.

783,557. HIPOLON. Microwave Electronics Corporation. SN 183,435. Pub. 11–3–64. Filed 12–23–63.

783,558. MITEK. Microwave Electronics Corporation. SN 184,945. Pub. 11–3–64. Filed 1–20–64.

783,559. STAYZ-LIT. Raylite Electric Corp. SN 184,960. Pub. 11–3–64. Filed 1–20–64.

783,560. POWERVOLT. California Magnetic Control Corporation. SN 189,982. Pub. 11–3–64. Filed 3–31–64.

783,561. CALMAG AND DESIGN. California Magnetic Control Corporation. SN 189,983. Pub. 11–3–64. Filed 3–31–64.

783,562. VALLEN. Automatic Devices Company. SN 194,343. Pub. 11–3–64. Filed 5–27–64.

783,563. SEFAC AND DESIGN. Baker Fidelity Corporation, d.b.a. Baker Audio Associates. SN 194,945. Pub. 11–3–64. Filed 6–5–64.

783,564. BEACONBULB. Charles Adler, Jr. SN 195,040. Pub. 11–3–64. Filed 6–8–64.

783,565. MILE-PAK. Atlas Supply Company. SN 196,836. Pub. 11–3–64. Filed 7–1–64.

## Class 22—Games, Toys, and Sporting Goods

783,566. FOLLOWS YOU . . . EASY AS YOUR SHADOW! AND DESIGN. Allis-Chalmers Sports Products, Inc., by change of name from Chamberlin Metal Products Co. SN 126,416. Pub. 11–3–64. Filed 8–21–61.

783,567. ISO-BAR. Lou Vargo Enterprises, Inc. SN 146,340. Pub. 11–3–64. Filed 6–6–62.

783,568. TINY BROTHER. Mattel, Inc. SN 164,985. Pub. 11–3–64. Filed 3–19–63.

783,569. AERIAL TENNIS AND DESIGN. Kenneth A. Sells, d.b.a. Sells Aerial Tennis Company. SN 166,415. Pub. 11–3–64. Filed 4–9–63.

783,570. YOUNG LIFE. Sifo Company. SN 176,578. Pub. 11–3–64. Filed 9–9–63.

783,571. SEW-FREE. Mattel, Inc. SN 176,819. Pub. 11–3–64. Filed 9–12–63.

783,572. CRAFT BUILT. Wilson Sporting Goods Co. SN 177,931. Pub. 11–3–64. Filed 9–27–63.

783,573. EGG COLORING UNLIMITED. Sylvia Nelson Schlesinger. SN 179,269. Pub. 11–3–64. Filed 10–17–63.

783,574. ROCKY MOUSE. Items Incorporated. SN 180,406. Pub. 11–3–64. Filed 11–4–63.

783,575. TRABANT. Chance Manufacturing Company, Inc. SN 182,140. Pub. 11–3–64. Filed 11–20–63.



783,576. BOOBY-TRAP. Guild Toys, Inc. SN 186,076. Pub. 11–3–64. Filed 2–5–64.

783,577. STAR AND DESIGN. Star Manufacturing Company. SN 186,481. Pub. 11–3–64. Filed 2–11–64.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

783,578. FRESH-UP AND DESIGN. Kammco. SN 173,112. Pub. 11–3–64. Filed 7–16–63.

783,579. CUT AND TILL ETC. AND DESIGN. E. L. Caldwell & Sons, Inc. SN 173,895. Pub. 11–3–64. Filed 7–29–63.

783,580. EXPANDO-GRIP. Adjustable Bushing Corp. SN 176,987. Pub. 11–3–64. Filed 9–16–63.

783,581. PAVAN. Pavan. SN 179,852. Pub. 11–3–64. Filed 10–18–63.

783,582. TOOLMATIC. Toolmatic Corp. SN 182,981. Pub. 11–3–64. Filed 12–13–63.

783,583. P AND M. The Portage Machine Company. SN 187,795. Pub. 11–3–64. Filed 3–2–64.

783,584. WONDERLAWNER. Garfield Williamson, Inc. SN 188,743. Pub. 11–3–64. Filed 3–16–64.

783,585. MULTIMATIC AND DESIGN. Multi-Attachments, Inc. SN 188,899. Pub. 11–3–64. Filed 3–17–64.

783,586. TY-LEVEL. The W. S. Tyler Company. SN 190,214. Pub. 11–3–64. Filed 4–2–64.

783,587. BPP AND DESIGN. Beaver Precision Products, Inc. SN 190,235. Pub. 11–3–64. Filed 4–3–64.

783,588. MODERN AND DESIGN. Modern Equipment Company. SN 191,199. Pub. 11–3–64. Filed 4–15–64.

783,589. MURRAY HILL. Fraser's, Inc. SN 191,344. Pub. 11–3–64. Filed 4–15–64.

783,590. CHEESEMASTER. Eisenberg-Losano, Incorporated. SN 191,372. Pub. 11–3–64. Filed 4–17–64.

783,591. MARTELL. Laray Cosmetics, Inc. SN 191,862. Pub. 11–3–64. Filed 4–23–64.

783,592. PAN-O-MATIC. Pan-O-Matic Corporation. SN 192,742. Pub. 11–3–64. Filed 5–5–64.

783,593. MISCELLANEOUS (DESIGN). Duncan Products, Inc. SN 192,808. Pub. 11–3–64. Filed 5–6–64.

783,594. ROL-MOR. Wylie Manufacturing Company. SN 192,865. Pub. 11–3–64. Filed 5–6–64.

783,595. VENTA NIP AND DESIGN. Beloit Corporation. SN 192,888. Pub. 11–3–64. Filed 5–7–64.

783,596. CPC AND DESIGN. Control Print Machinery Manufacturers Corporation. SN 192,896. Pub. 11–3–64. Filed 5–7–64.

783,597. KOLBENSCHMIDT. Karl Schmidt G.m.b.H. SN 192,915. Pub. 11–3–64. Filed 5–7–64.

783,598. M AND DESIGN. Melnor Industries, Inc. SN 192,923. Pub. 11–3–64. Filed 5–7–64.

783,599. STAGEMASTER AND DESIGN. Tiffin Scenic Studios, Inc. SN 193,079. Pub. 11–3–64. Filed 4–21–64.

783,600. BERGER. Smith-Berger Manufacturing Corporation. SN 193,586. Pub. 11–3–64. Filed 5–15–64.

783,601. AJUSTA-BUCKETS. Electrowold Manufacturing Corporation. SN 193,769. Pub. 11–3–64. Filed 5–19–64.

783,602. NORDBERG AND DESIGN. Nordberg Manufacturing Company. SN 194,413. Pub. 11–3–64. Filed 5–27–64.

783,603. HEATRON. Heatron, Incorporated. SN 195,100. Pub. 11–3–64. Filed 6–8–64.

783,604. CLIMAX. Waukesha Motor Company. SN 196,322. Pub. 11–3–64. Filed 6–23–64.

783,605. YAUN. Yaun Manufacturing Company, Inc. SN 196,331. Pub. 11–3–64. Filed 6–23–64.

783,606. HYDROILIC. American Brake Shoe Company. SN 196,415. Pub. 11–3–64. Filed 6–25–64.

783,607. HYDROILICS. American Brake Shoe Company. SN 196,416. Pub. 11–3–64. Filed 6–25–64.

783,608. MULTIPRESS MIDGET. American Brake Shoe Company. SN 196,417. Pub. 11–3–64. Filed 6–25–64.

783,609. VAC-U-LIFT. Mojonnier Bros. Co. SN 196,462. Pub. 11–3–64. Filed 6–25–64.

783,610. LITTLE CHIPPER. Futurmill, Inc. SN 196,518. Pub. 11–3–64. Filed 6–26–64.

783,611. TIGER. McDonough Co., d.b.a. O. Ames Co. SN 196,539. Pub. 11–3–64. Filed 6–26–64.

783,612. PEPSAL. Brisco Mountain Woodcrafters, Inc. SN 196,609. Pub. 11–3–64. Filed 6–29–64.

783,613. BLAKESLEE. G. S. Blakeslee & Co. SN 196,761. Pub. 11–3–64. Filed 6–30–64.

## Class 25—Locks and Safes

783,614. FRECHEK. Sentinel Frechek Locks, Incorporated. SN 193,710. Pub. 11–3–64. Filed 5–18–64.

783,615. LOCKTRONIC. Yale & Towne, Inc. SN 194,010. Pub. 11–3–64. Filed 5–21–64.

## Class 26—Measuring and Scientific Appliances

783,554. (See Class 21 for this trademark.)

783,616. ND NUCLEAR DIODES AND DESIGN. Nuclear Diodes, Inc. SN 181,057. Pub. 11–3–64. Filed 11–13–63.

783,617. FIRE-LITE. Fire-Lite Alarms, Inc. SN 189,159. Pub. 11–3–64. Filed 3–20–64.

783,618. MELLAMETER. Sandoz, Inc. SN 191,443. Pub. 11–3–64. Filed 4–17–64.

## Class 27—Horological Instruments

783,619. ADVERTIME. Advertime, Inc. SN 160,254. Pub. 11–3–64. Filed 1–7–63.

## Class 28—Jewelry and Precious-Metal Ware

783,620. CONCRA. Concord Craftsman, Inc. SN 175,392. Pub. 11–3–64. Filed 8–20–63.

783,621. CWC. The World Charm Corporation. SN 184,120. Pub. 11–3–64. Filed 1–6–64.

783,622. ALABASTER ORIGINALS. Samuel Alabaster, d.b.a. The Empire Company. SN 192,242. Pub. 11–3–64. Filed 4–29–64.

783,623. MARVELLORA. Marvella, Inc. SN 196,878. Pub. 11–3–64. Filed 7–1–64.

783,624. COLOSSUS. Textron Inc. SN 197,200. Pub. 11–3–64. Filed 7–6–64.

783,625. SPARTACUS. Textron Inc. SN 197,204. Pub. 11–3–64. Filed 7–6–64.

783,626. CHARMANTE. B. B. Greenberg Co. SN 198,041. Pub. 11–3–64. Filed 7–17–64.

783,627. KORLI. Kordes & Lichtenfels. SN 198,279. Pub. 11–3–64. Filed 7–21–64.

783,628. MR. Merle Reed. SN 199,496. Pub. 11–3–64. Filed 8–7–64.

## Class 29—Brooms, Brushes, and Dusters

783,629. FORE-SIGHT BY THE BLIND AND DESIGN. California Industries for the Blind. SN 177,858. Pub. 11–3–64. Filed 8–27–63.

783,630. FLOOR TENDER. Bissell Inc. SN 192,001. Pub. 11–3–64. Filed 4–27–64.

783,631. JAYTAN. Edgar Joseph, d.b.a. Jaytan Leather Company. SN 196,281. Pub. 11–3–64. Filed 6–23–64.

## Class 31 — Filters and Refrigerators

783,632. SILVER MAGIC. Martin J. Berardi. SN 157,595. Pub. 11–3–64. Filed 11–20–62.

783,633. FIL-COR. Henry Valve Company. SN 166,898. Pub. 11–3–64. Filed 4–17–63.

783,634. POWER-CEL. Dole Refrigerating Company. SN 172,571. Pub. 11–3–64. Filed 7–8–63.

783,635. CHEMI-PURE. C. Richard Boyd, d.b.a. Dick Boyd. SN 193,103. Pub. 11–3–64. Filed 5–11–64.

783,636. FOGEL AND DESIGN. Fogel Refrigerator Company. SN 193,778. Pub. 11–3–64. Filed 5–19–64.

## Class 32 — Furniture and Upholstery

783,637. LIFT-O-MAT. Stabilus Industrie- und Handelsgesellschaft m.b.H. SN 175,519. Pub. 11–3–64. Filed 8–21–63.

783,638. RAC-ME AND DESIGN. Acme Iron Works, Inc. SN 185,748. Pub. 11–3–64. Filed 1–31–64.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

783,639. TENASTIC. Precision Multiple Controls, Inc. SN 173,863. Pub. 11–3–64. Filed 7–26–63.

783,640. SUN FLO AND DESIGN. Metals Engineering & Manufacturing Co., Inc. SN 174,975. Pub. 11–3–64. Filed 8–13–63.

783,641. DEBUTANTE. Hardwick Stove Company. SN 178,193. Pub. 11–3–64. Filed 10–2–63.

783,642. PORTLAND FIRESCREENS CO. AND DESIGNS. Portland Firescreens Co. SN 183,454. Pub. 11–3–64. Filed 12–23–63.

783,643. CARBELL. Bickley Furnaces Incorporated. SN 184,430. Pub. 11–3–64. Filed 1–13–64.

783,644. SILL TRIM. The Vulcan Radiator Company. SN 192,109. Pub. 11–3–64. Filed 4–27–64.

783,645. JET SERVER. The Frymaster Corporation. SN 194,796. Pub. 11–3–64. Filed 6–3–64.

783,646. RONSON. Ronson Corporation. SN 195,015. Pub. 11–3–64. Filed 6–4–64.

783,647. VAPOR-VANE. Vapor-Vane, Inc. SN 195,344. Pub. 11–3–64. Filed 6–10–64.

783,648. PIGGY QUE. Piggy Que Inc. SN 195,708. Pub. 11–3–64. Filed 6–15–64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

783,458. (See Class 5 for this trademark.)

783,649. G GROSS ETC. AND DESIGN. Gross Manufacturing Company, Inc. SN 166,707. Pub. 11–3–64. Filed 4–15–63.

783,650. BALL AND SEAL DESIGN. Federal-Mogul-Bower Bearings, Inc. SN 189,694. Pub. 11–3–64. Filed 3–26–64.

783,651. B AND DESIGN. Market Tire Company of Maryland, Inc. SN 192,054. Pub. 11–3–64. Filed 4–27–64.

783,652. K-G. Universal Fluid Dynamics Co. SN 193,068. Pub. 11–3–64. Filed 5–8–64.

## Class 36 — Musical Instruments and Supplies

783,653. SOLOCASTER. The Solocast Company. SN 187,530. Pub. 11–3–64. Filed 2–26–64.

## Class 37 — Paper and Stationery

783,654. INVITATION TEXT. The Sorg Paper Company. SN 164,665. Pub. 11–3–64. Filed 3–14–63.

783,655. YOUNG SET. Eberhard Faber, Inc. SN 175,647. Pub. 11–3–64. Filed 8–23–63.

783,656. GRIP-TITE. Continental Bank-Supply Company. SN 176,713. Pub. 11–3–64. Filed 9–11–63.

783,657. MD AND DESIGN. Georgia-Pacific Corporation. SN 179,412. Pub. 11–3–64. Filed 10–21–63.

783,658. SCRATCH-ART AND DESIGN. Nathan Polsky. SN 181,064. Pub. 11–3–64. Filed 11–13–63.

783,659. MARS-DURAGRAPH. J. S. Staedtler. SN 187,352. Pub. 11–3–64. Filed 2–24–64.

## Class 38 — Prints and Publications

783,660. SACRED EXPRESSION. Augsburg Publishing House. SN 154,680. Pub. 11–3–64. Filed 10–8–62.

783,661. NUDE WORLD. Outdoor American Corporation. SN 156,023. Pub. 11–3–64. Filed 10–26–62.

783,662. CM AND DESIGN. Conover-Mast Publications, Inc. SN 160,365. Pub. 11–3–64. Filed 1–8–63.

783,663. "INVESTOR'S YEAR BOOK." Frank C. Hutchison. SN 167,910. Pub. 11–3–64. Filed 5–1–63.

783,664. BPC TECH REPORTS AND DESIGN. James L. Breese, d.b.a. Breese Publishing Company. SN 172,634. Pub. 11–3–64. Filed 7–9–63.

783,665. DOUBLE WISH. Norcross, Inc. SN 172,933. Pub. 11–3–64. Filed 7–12–63.

783,666. BLARNEY THE LEPRECHAUN. Norcross, Inc. SN 174,222. Pub. 11–3–64. Filed 8–1–63.

783,667. AUGSBURG PUBLISHING HOUSE AND DESIGN. Augsburg Publishing House. SN 180,822. Pub. 11–3–64. Filed 11–12–63.

783,668. PAGING AND DESIGN. United Missionary Church, Inc., d.b.a. Bethel Publishing Company. SN 181,194. Pub. 11–3–64. Filed 11–14–63.

783,669. EL TODAY AND DESIGN. Economics Laboratory, Inc. SN 182,255. Pub. 11–3–64. Filed 12–3–63.

783,670. CPC AND DESIGN. The College Placement Council, Inc. SN 185,272. Pub. 11–3–64. Filed 1–24–64.

783,671. TEK TOPICS. Tek Rep, Inc. SN 186,905. Pub. 11–3–64. Filed 2–17–64.

783,672. WASHINGTON AFRO-AMERICAN ETC. AND DESIGN. The Afro-American Company of Baltimore City. SN 193,314. Pub. 11–3–64. Filed 5–13–64.

783,673. RICHMOND AFRO-AMERICAN ETC. AND DESIGN. The Afro-American Company of Baltimore City. SN 193,315. Pub. 11–3–64. Filed 5–13–64.

783,674. THE BLADE. The Toledo Blade Company. SN 193,590. Pub. 10–6–64. Filed 5–15–64.

## Class 39 — Clothing

783,675. PUSSY FOOTS AND DESIGN. National Shoes, Inc. SN 95,844. Pub. 1–10–61. Filed 4–26–60.

783,676. JAMIE. Samuel Bernstein Hair Company. MULTIPLE CLASS (Classes 39, 40, 51 and 52). SN 129,722. Pub. 11–3–64. Filed 10–12–61.

783,677. COACH HOUSE AND DESIGN. Richard B. Mindlin, d.b.a. Coach House. SN 130,715. Pub. 8–20–63. Filed 10–26–61.



783,678. LADY DIANE OF CALIFORNIA AND DESIGN. Regal Uniform Company. SN 134,347. Pub. 11–3–64. Filed 12–19–61.

783,679. WOODY WOODPECKER. Walter Lantz Productions, Inc. SN 135,015. Pub. 11–3–64. Filed 1–2–62.

783,680. SAN' SEAM. Youthcraft Creations, Inc. SN 136,616. Pub. 11–3–64. Filed 1–25–62.

783,681. DE MILANO. Johnson, Stephens and Shinkle Shoe Company. SN 160,304. Pub. 11–3–64. Filed 1–7–63.

783,682. DANCING GIRLS. Lambert Hosiery Mills, Inc. SN 164,979. Pub. 9–24–63. Filed 3–19–63.

783,683. RUTH WALTER. Puritan Fashions Corporation. SN 165,531. Pub. 11–3–64. Filed 3–27–63.

783,684. HAPPY HANDS. The Oak Rubber Company. SN 166,922. Pub. 11–3–64. Filed 4–17–63.

783,685. CENTEX BRAND ETC. AND DESIGN. Centreville Mills, Inc. SN 172,046. Pub. 11–3–64. Filed 6–28–63.

783,686. THE '360'. Phillips-Van Heusen Corporation. SN 174,907. Pub. 11–3–64. Filed 8–12–63.

783,687. TEAK. Cisco, Inc. SN 175,248. Pub. 11–3–64. Filed 8–19–63.

783,688. ANTHONY SQUIRES. Anthony Squires Pty. Limited. SN 175,445. Pub. 11–3–64. Filed 8–20–63.

783,689. ANTHONY SQUIRES INTERNATIONAL. Anthony Squires Pty. Limited. SN 175,446. Pub. 11–3–64. Filed 8–20–63.

783,690. STRONGWEAR AND DESIGN. Martin Orlovitz, d.b.a. Eastern Trouser Company, d.b.a. Eastern Trouser Co. SN 178,026. Pub. 11–3–64. Filed 9–30–63.

783,691. LOCKRIM. Endicott Johnson Corporation. SN 178,690. Pub. 11–3–64. Filed 10–10–63.

783,692. STRAWSTACK AND DESIGN. Serbin, Inc. SN 179,272. Pub. 11–3–64. Filed 10–17–63.

783,693. WEAR ME AND DESIGN. Best Products, Inc. SN 181,306. Pub. 11–3–64. Filed 11–18–63.

783,694. TRI-CUSHION SUSPENSION. Industrial Products Company. SN 183,760. Pub. 11–3–64. Filed 12–30–63.

783,695. BOOTMAKER GUILD. Freeman Shoe Corporation, d.b.a. Freeman Shoe Corp. SN 184,287. Pub. 11–3–64. Filed 1–9–64.

783,696. RED HAWK. The Williamson-Dickie Manufacturing Company. SN 185,176. Pub. 11–3–64. Filed 1–22–64.

783,697. DIRECTOR GROUP. Bond Stores, Inc. SN 185,191. Pub. 11–3–64. Filed 1–23–64.

783,698. CREAZIONI DI EGOZI AND DESIGN. Oriental Trading Inc. SN 187,318. Pub. 11–3–64. Filed 2–24–64.

783,699. POUPETTE. Suzy Brooks, Inc. SN 187,358. Pub. 11–3–64. Filed 2–24–64.

783,700. BANCORA. Joseph Bancroft & Sons Co. SN 187,386. Pub. 11–3–64. Filed 2–25–64.

783,701. TOP-SHOT AND DESIGN. Robert E. Allen. SN 187,461. Pub. 11–3–64. Filed 2–26–64.

783,702. PHILIPPE BOTTIER. Caressa, Inc. SN 187,472. Pub. 11–3–64. Filed 2–26–64.

783,703. DYMOCURL. Russel Taylor, Inc. SN 187,898. Pub. 11–3–64. Filed 3–3–64.

783,704. ZERLINA. Zerlina Imports, Inc. SN 188,170. Pub. 11–3–64. Filed 3–6–64.

783,705. ST.LO. H. S. Gale Incorporated of St. Louis. SN 188,228. Pub. 11–3–64. Filed 3–9–64.

783,706. TOURING PRO. Gilison Knitwear Co., Inc. SN 188,629. Pub. 11–3–64. Filed 3–13–64.

783,707. COUNTRY NOOK AND DESIGN. Belk Stores Services, Inc. SN 190,325. Pub. 11–3–64. Filed 4–6–64.

783,708. DREW ARCH REST SCULPTURED TO THE FOOT. The Irving Drew Corporation. SN 190,349. Pub. 11–3–64. Filed 4–6–64.

783,709. ALUMNI. Boyd-Richardson Company. SN 190,569. Pub. 11–3–64. Filed 4–6–64.

783,710. ANVIL. Anvil Braud, Incorporated. SN 190,854. Pub. 11–3–64. Filed 4–13–64.

783,711. DESIGN OF AN ANVIL. Anvil Brand, Incorporated. SN 190,855. Pub. 11–3–64. Filed 4–13–64.

783,712. STRETCHISSIMO. Lancedale Knitting Company, Inc. SN 191,184. Pub. 11–3–64. Filed 4–15–64.

783,713. ANCHORS-A-WAIST. The Lovable Company. SN 191,419. Pub. 11–3–64. Filed 4–17–64.

## Class 40 — Fancy Goods, Furnishings, and Notions

783,676. (See Class 39 for this trademark.)

783,714. AVANTI AND DESIGN. Avanti Ltd. SN 196,340. Pub. 11–3–64. Filed 6–24–64.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

783,715. ARMOR. Angelica Uniform Company. SN 158,766. Pub. 11–3–64. Filed 12–10–62.

783,716. COACH CLOTH. Casa Grande Textiles. SN 164,426. Pub. 10–20–64. Filed 3–12–63.

783,717. PENN OLEEN. J. C. Penney Co. Inc., assignee of Thomson Company. SN 172,530. Pub. 11–3–64. Filed 7–5–63.

783,718. FLOQUETTE. Societe a Responsabilite Limitee Dite: Textile du Vermandois. SN 173,787. Pub. 11–3–64. Filed 7–25–63.

783,719. COLORWAYS. Stevcoknit Textile Co. SN 173,877. Pub. 11–3–64. Filed 7–26–63.

783,720. ANITA LEWIS ETC. AND DESIGN. Neisner Brothers, Inc. SN 184,100. Pub. 11–3–64. Filed 1–6–64.

783,721. BOOMERANG. A. Steinam Company, Inc. SN 186,405. Pub. 11–3–64. Filed 2–10–64.

783,722. WHIPLASH. A. Steinam Company, Inc. SN 186,406. Pub. 11–3–64. Filed 2–10–64.

783,723. BACKLASH. A. Steinam Company, Inc. SN 186,407. Pub. 11–3–64. Filed 2–10–64.

783,724. CORE-SPAN. Burlington Industries, Inc. SN 186,812. Pub. 11–3–64. Filed 2–17–64.

783,725. WAVELOCK AND DESIGN. Bruno Romanin. SN 191,079. Pub. 11–3–64. Filed 4–14–64.

783,726. DABRETTA. Davoe Corporation. SN 191,259. Pub. 11–3–64. Filed 4–16–64.

783,727. WONDER BOND. J. P. Stevens & Co., Inc. SN 191,328. Pub. 11–3–64. Filed 4–16–64.

783,728. SUPER-CREASE. J. P. Stevens & Co., Inc. SN 191,624. Pub. 11–3–64. Filed 4–20–64.

783,729. SALEMENCA. Tanbro Fabrics Corporation. SN 191,626. Pub. 11–3–64. Filed 4–20–64.

783,730. FASHION WEAVERS. Fieldcrest Mills, Inc. SN 191,822. Pub. 11–3–64. Filed 4–3–64.

783,731. TLC. Gutman-Lann Glove Company, Inc. SN 191,928. Pub. 11–3–64. Filed 4–24–64.

783,732. MILLICOR. Deering Milliken, Inc. SN 192,057. Pub. 11–3–64. Filed 4–27–64.

783,733. MILLIPREME. Deering Milliken, Inc. SN 192,058. Pub. 11–3–64. Filed 4–27–64.

783,734. DELICIA. Deering Milliken, Inc. SN 192,059. Pub. 11–3–64. Filed 4–27–64.

783,735. FLANBOYANT. Deering Milliken, Inc. SN 192,060. Pub. 11–3–64. Filed 4–27–64.

783,736. JERSEYLEEN. J. P. Stevens & Co., Inc. SN 192,226. Pub. 11–3–64. Filed 4–28–64.

## Class 43 — Thread and Yarn

783,737. MOHAIR PLUS. Emile Bernat & Sons Co. SN 182,858. Pub. 11–3–64. Filed 12–12–63.

783,738. ALDON. The Aldon Spinning Mills Corporation. SN 191,740. Pub. 11–3–64. Filed 4–22–64.

## Class 44 — Dental, Medical, and Surgical

783,739. LUSTER CAST. Kerr Manufacturing Company, by assignment and change of name from Kerr Manufacturing Company. SN 186,856. Pub. 11–3–64. Filed 2–17–64.

783,740. FLEX-O-BLADE. Procon Pump & Engineering Company. SN 187,147. Pub. 11–3–64. Filed 2–20–64.

783,741. SANIVAC. Saipac Company. SN 190,978. Pub. 11–3–64. Filed 4–13–64.

783,742. JS. J. Sklar Manufacturing Co. SN 192,086. Pub. 11–3–64. Filed 4–27–64.

783,743. LECTRA-CARE. American Seating Company. SN 193,916. Pub. 11–3–64. Filed 5–21–64.

783,744. WELDORAMIC. Scott Aviation Corporation. SN 193,990. Pub. 11–3–64. Filed 5–21–64.

783,745. A AND DESIGN. Utah-American Corporation. SN 198,104. Pub. 11–3–64. Filed 7–17–64.

## Class 46 — Foods and Ingredients of Foods

783,746. WHAT A PICKLE! The Borden Company, assignee of Aunt Jane's Foods, Incorporated. SN 120,686. Pub. 11–3–64. Filed 5–24–61.

783,747. SUKINOMOTO. Takara Shoyu Kabushiki Kaisha. SN 125,110. Pub. 11–3–64. Filed 7–31–61.

783,748. FISCHER'S. Astor Products, Inc. SN 147,683. Pub. 11–3–64. Filed 6–26–62.

783,749. JOY. Best Feeds & Farm Supplies, Inc. SN 159,683. Pub. 11–3–64. Filed 12–26–62.

783,750. COATED CONFECTION WITH SMILING FACE (DESIGN). Komberec and Fiedler Enterprises, Inc. SN 164,634. Pub. 11–3–64. Filed 3–14–63.

783,751. THE HOUSE OF RAEFORD AND DESIGN. Raeford Turkey Farms, Inc. SN 168,957. Pub. 11–3–64. Filed 5–15–63.

783,752. W WATSON'S CHICKEN ETC. AND DESIGN. Watson Seafood and Poultry Co., Inc. SN 176,131. Pub. 11–3–64. Filed 8–30–63.

783,753. BIG SQUEAL. S. R. Smith, Inc. SN 177,378. Pub. 11–3–64. Filed 9–19–63.

783,754. GROTESQUE HUMAN HEAD. Hot Shoppes, Inc. SN 178,549. Pub. 11–3–64. Filed 10–8–63.

783,755. PEGGY GRAY. Peggy Gray Holliday, d.b.a. Peggy Gray Candies. SN 183,060. Pub. 11–3–64. Filed 12–16–63.

783,756. COFFEE GOLD. Foremost Dairies, Inc. SN 183,574. Pub. 11–3–64. Filed 12–26–63.

783,757. HEATH ETC. AND DESIGN. L. S. Heath & Sons, Inc. SN 183,839. Pub. 11–3–64. Filed 12–31–63.

783,758. TRIM-TEND. The Sugardale Provision Company. SN 190,032. Pub. 11–3–64. Filed 3–31–64.

783,759. MOR-TEND. The Sugardale Provision Company. SN 190,034. Pub. 11–3–64. Filed 3–31–64.

783,760. AUNT EM'S. Orchard Hill Farms, Inc. SN 190,744. Pub. 11–3–64. Filed 4–9–64.

783,761. MICHIGAN BRAND. Michigan Frosted Foods Co., d.b.a. Beutel Canning Co. SN 192,192. Pub. 11–3–64. Filed 4–28–64.

783,762. PGA. Adam Bossuto, d.b.a. P.G.A. Food Stores. SN 195,760. Pub. 11–3–64. Filed 6–16–64.

783,763. OLD VIRGINIA. Old Virginia Packing Company, Inc. SN 195,801. Pub. 11–3–64. Filed 6–16–64.

783,764. GOLDEN FANCY. Pet Milk Company. SN 195,803. Pub. 11–3–64. Filed 6–16–64.

783,765. PORTRAIT OF A LITTLE GIRL. McKee Baking Company. SN 195,877. Pub. 11–3–64. Filed 6–17–64.

## Class 47 — Wines

783,766. BON-CORE. Vincent Buonocore & Sons, Inc. SN 176,067. Pub. 11–3–64. Filed 8–30–63.

783,767. WINEDALE. Biaceglia Brothers Wine Co., d.b.a. Winedale Vineyards Co. SN 190,147. Pub. 11–3–64. Filed 4–2–64.

## Class 49 — Distilled Alcoholic Liquors

783,768. LARCHMONT. The Alfred Hart Company. SN 185,036. Pub. 11–3–64. Filed 1–21–64.

783,769. WHYTE & MACKAYS. Whyte & Mackay Limited. SN 187,166. Pub. 11–3–64. Filed 2–20–64.

## Class 50 — Merchandise Not Otherwise Classified

783,770. DISPLAY-O-RAMA. Baron Displays, Inc. SN 128,244. Pub. 11–3–64. Filed 9–20–61.

783,771. FIESTA'S AND DESIGN. Fiesta-Car Company. SN 154,870. Pub. 11–3–64. Filed 10–9–62.

783,772. ROYAL PORK HOUSE. Paul H. McMurray, d.b.a. McMurray Mfg. Co. SN 159,510. Pub. 11–3–64. Filed 12–20–62.

783,773. SCULPT-A-FORM. Renwal Products, Inc. SN 186,971. Pub. 11–3–64. Filed 2–18–64.

783,774. BULLDOG. Dettra Flag Company, Inc. SN 193,638. Pub. 11–3–64. Filed 5–18–64.

783,775. AD-O-MATIC. Stabil Manufacturing Co. SN 198,232. Pub. 11–3–64. Filed 7–20–64.

783,776. PALLETAINER JUNIOR. Union Steel Products Company. SN 199,141. Pub. 11–3–64. Filed 8–3–64.

## Class 51 — Cosmetics and Toilet Preparations

783,676. (See Class 39 for this trademark.)

783,777. ROYAL-AID AND DESIGN. Electric Razors, Incorporated. SN 148,880. Pub. 11–3–64. Filed 7–12–62.

783,778. JUSDIP. Hartford Cosmetics Company, Inc. SN 152,580. Pub. 11–3–64. Filed 9–6–62.

783,779. ANDREW LEWIS ETC. AND DESIGN. Neisner Brothers, Inc. SN 184,097. Pub. 11–3–64. Filed 1–6–64.

783,780. LACAN'S. House of Lacan N.V., Netherlands Antilles Limted Liability Co. SN 185,414. Pub. 11–3–64. Filed 1–27–64.

783,781. SOFF. Johnson & Johnson. SN 190,089. Pub. 11–3–64. Filed 4–1–64.

783,782. CALGON. Calgon Corporation. SN 191,034. Pub. 11–3–64. Filed 4–14–64.

## Class 52 — Detergents and Soaps

783,676. (See Class 39 for this trademark.)

783,783. SÅ PRISE. Så Prise Chemicals, Inc. SN 153,822. Pub. 11–3–64. Filed 9–24–62.

783,784. SYNCAL. Lester H. Roth. SN 176,115. Pub. 11–3–64. Filed 8–30–63.

783,785. TURCODINE. Purex Corporation, Ltd., d.b.a. Turco Products, Inc. SN 177,088. Pub. 11–3–64. Filed 9–16–63.

783,786. ROPREPP. R. O. Hull & Company, Inc. SN 188,107. Pub. 11–3–64. Filed 3–6–64.



783,787. ROSTRIP. R. O. Hull & Company, Inc. SN 188,108. Pub. 11–3–64. Filed 3–6–64.

783,788. DISHQUICK. Leo R. Ladouceur, d.b.a. L. & G. Chemical Company. SN 189,783. Pub. 11–3–64. Filed 3–27–64.

783,789. CHAR-MAID. General Parts & Supply Company, Inc. SN 189,892. Pub. 11–3–64. Filed 3–30–64.

# Service Marks

## Class 100 — Miscellaneous

783,790. A-BURGER AND DESIGN. The Big A System, Inc., assignee of Samuel J. Temperato d.b.a. The Big A System. SN 156,185. Pub. 11–3–64. Filed 10–29–62.

783,791. MISCELLANEOUS DESIGN. The Thomas A. Dooley Foundation. SN 166,264. Pub. 11–3–64. Filed 4–8–63.

783,792. BETTER BOOKS MAKE BETTER SCHOOLS AND DESIGN. Institutional Book Service, d.b.a. Childrens Press, Inc. SN 168,004. Pub. 11–3–64. Filed 5–2–63.

783,793. RENT-O-MAT. Glamorene, Incorporated. SN 178,543. Pub. 11–3–64. Filed 10–8–63.

783,794. GOLD SHIELD. Rock Island Corporation, d.b.a. Rock Island Lumber Company. SN 184,966. Pub. 11–3–64. Filed 1–20–64.

## Class 101 — Advertising and Business

783,795. BMOC. Marshall S. Lachner Associates, Inc. SN 158,255. Pub. 11–3–64. Filed 11–30–62.

## Class 102 — Insurance and Financial

783,976. DESIGN SCENERY. National Aviation Underwriters, Inc., d.b.a. National Insurance Underwriters. SN 185,704. Pub. 11–3–64. Filed 1–30–64.

783,797. CRESTLINER AND DESIGN. Indiana Lumbermens Mutual Insurance Company. SN 186,522. Pub. 11–3–64. Filed 2–10–64.

## Class 106 — Material Treatment

783,798. WESTMETAL PRODUCTS CO. Associated Spring Corporation. SN 164,590. Pub. 11–3–64. Filed 3–14–63.

## Class 107 — Education and Entertainment

783,799. O-VATION MUSIC. Wrather Corporation, assignee of Muzak Corporation. SN 153,192. Pub. 11–3–64. Filed 9–14–62.

783,800. OVATION MUSIC AND DESIGN. Wrather Corporation, assignee of Muzak Corporation. SN 153,194. Pub. 11–3–64. Filed 9–14–62.

783,801. THE POTOMAC HUNT. The Potomac Hunt. SN 153,809. Pub. 11–3–64. Filed 9–24–62.

783,802. FAMOUS PHOTOGRAPHERS COURSE. Famous Artists Schools, Inc. SN 165,508. Pub. 11–3–64. Filed 3–27–63.

# Collective Membership Marks

## Class 200

783,803. AMERICAN ASSOCIATION RW AND DESIGN. American Right of Way Association. SN 163,698. Pub. 11–3–64. Filed 3–1–63.

783,804. PPA AND DESIGN. Permanent Peace Association, Inc. SN 177,185. Pub. 11–3–64. Filed 9–17–63.

783,805. DESIGN FLAME. International Association of Fire Chiefs. SN 186,427. Pub. 11–3–64. Filed 1–20–64.

# Certification Mark

## Class A — Goods

783,806. FULL SPECTRUM AND DESIGN. John Ott. SN 84,086. Pub. 11–3–64. Filed 10–27–59.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 19 — Vehicles

783,807. Blue Bird Body Company, Fort Valley, Ga. SN 158,682. Filed P.R. 12–7–62; Am. S.R. 11–16–64.

**YOUR CHILDREN'S SAFETY IS OUR BUSINESS**

For School Transit Vehicles and Parts Thereof.
First use Dec. 3, 1962.

## Class 31 — Filters and Refrigerators

783,808. Culligan, Inc., Northbrook, Ill. SN 138,589. Filed P.R. 2–26–62; Am. S.R. 11–16–64.

**HYDRO-CLEER**

For Filters for Swimming Pools.
First use Feb. 1, 1962.

## Class 37 — Paper and Stationery

783,809. Lakeside Central Company, Chicago, Ill. SN 169,279. Filed P.R. 5–20–63; Am. S.R. 11–19–64.




For Paper Rolls for Use in Adding Machines.
First use February 1963.

# TRADEMARK REGISTRATIONS RENEWED

191,979. TRIM. Cl. 52. 11–25–24.
192,747. SOCONY. Cl. 46. 12–9–24.
192,921. AM FORGE AND DESIGN. Cl. 14. 12–16–24.
193,420. TUFTEX AND DESIGN. Cl. 14. 12–30–24.
193,534. ARROWHEAD AND DESIGN. Cl. 42. 12–30–24.
193,949. STIMPSON. Cl. 23. 1–13–25.
194,450. DIVING GIRL. Cl. 39. 1–27–25.
194,451. RED DIVING GIRL. Cl. 39. 1–27–25.
194,682. XLO AND DESIGN. Cl. 23. 2–3–25.
195,848. STONE MOUNTAIN. Cl. 39. 3–3–25.
196,186. BAKERS' WEDNESDAY SPECIAL RAISINS. Cl. 46. 3–10–25.
196,623. LOOKOUT AND DESIGN. Cl. 34. 3–24–25.
197,438. RODEO. Cl. 46. 4–14–25.
197,551. RED STREAK AND DESIGN. Cl. 23.
197,893. REPRESENTATION OF LABEL ETC. AND DESIGN. Cl. 42. 4–28–25.
198,770. RED-GLO. Cl. 46. 5–26–25.
408,389. VENUS. Cl. 44. 8–8–44.
408,637. MUF-KIN. Cl. 46. 8–22–44.
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Caressa, Inc., Miami, Fla. 783,702, pub. 11–3–64. Cl. 39.

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Famous Artists Schools, Inc., New York, N.Y. 783,802, pub. 11–3–64. Cl. 107.
Federal Cartridge Corp., Minneapolis, Minn. 783,485, pub. 11–3–64. Cl. 9.
Federal Electric Co., Inc., Chicago, Ill., to Federal Sign and Signal Corp., Blue Island, Ill. 412,286, ren. 1–19–65. Cl. 21.
Federal Sign and Signal Corp.: *See*—
Federal Electric Co., Inc.
Federal-Mogul-Bower Bearings, Inc., Detroit, Mich. 783,650, pub. 11–3–64. Cl. 35.
Fieldcrest Mills, Inc., Spray, N.C. 783,730, pub. 11–3–64. Cl. 42.
Fiesta-Car Co., Roselle, Ill. 783,771, pub. 11–3–64. Cl. 50.
Fin 'n Feather Farm, Inc., Dundee, Ill. 670,700, canc. Cl. 46.
Fire-Lite Alarms, Inc., New Haven, Conn. 783,617, pub. 11–3–64. Cl. 26.
Firestone Tire & Rubber Co., The, Akron, Ohio. 670,623, canc. Cl. 35.
First Texas Pharmaceuticals, Inc., Dallas, Tex. 783,518, pub. 11–3–64. Cl. 18.
Fleming-Joffe Ltd., New York, N.Y. 783,444, pub. 11–3–64. Cl. 1.
Fluorocarbon Co., Fullerton, Calif. 670,625, canc. Cl. 35.
Fogel Refrigerator Co., Philadelphia, Pa. 783,636, pub. 11–3–64. Cl. 31.
Foremost Dairies, Inc., San Francisco, Calif. 783,756, pub. 11–3–64. Cl. 46.
Foster Electric Co., Ltd., Mitaka-shi, Tokyo, Japan. 783,556, pub. 11–3–64. Cl. 21.
France Neckwear Co., Inc., New York, N.Y. 670,635, canc. Cl. 39.
Fraser Hair Fashions, St. Paul, Minn. 420,501, canc. Cl. 44.
Fraser Hair Fashions, St. Paul, Minn. 429,261, canc. Cl. 51.
Fraser's Inc., New York, N.Y. 783,589, pub. 11–3–64. Cl. 23.
Freeman Shoe Corp., Beloit, Wis. 783,695, pub. 11–3–64. Cl. 39.
Frymaster Corp., The, Shreveport, La. 783,645, pub. 11–3–64. Cl. 34.
Fur Sculpture Corp., from David Grossman Fur Corp., New York, N.Y. 670,640, canc. Cl. 39.
Futurmill, Inc., Southfield, Mich. 783,610, pub. 11–3–64. Cl. 23.
Gale, H. S., Inc. of St. Louis, St. Louis, Mo. 783,705, pub. 11–3–64. Cl. 39.
General Cigar Co., Inc., New York, N.Y. 783,515, pub. 11–3–64. Cl. 17.
General Dynamics Corp., Chicago, Ill. 783,495, pub. 11–3–64. Cl. 12.
General Engineering Co. Aktiebolag, Stocksund, Sweden. 670,603, canc. Cl. 31.
General Parts & Supply Co., Inc., St. Paul, Minn. 783,789, pub. 11–3–64. Cl. 52.
Genesco Inc.: *See*—
Orr, J. K., Shoe Co.
Georgia-Pacific Corp., Portland, Oreg. 783,657, pub. 11–3–64. Cl. 37.
Gero Metallurgical Corp., Boston, Mass. 783,492, pub. 11–3–64. Cl. 12.
Gilson Knitwear Co., Inc., Hicksville, N.Y. 783,706, pub. 11–3–64. Cl. 39.
Glamorene, Inc., Clifton, N.J. 783,793, pub. 11–3–64. Cl. 100.
Goerlich's, Inc., Toledo, Ohio. 783,643–5, pub. 11–3–64. Cl. 19.
Goodrich, B. F., Co., The, Akron, Ohio. 783,500, pub. 11–3–64. Cl. 13.
Gore, W. L., & Associates, Inc., Newark, Del. 783,551, pub. 11–3–64. Cl. 21.
Grace, W. R., & Co., New York, N.Y. 783,468, pub. 11–3–64. Cl. 6.
Gray, Peggy, Holliday, d.b.a. Peggy Gray Candies, North Springfield, Pa. 783,755, pub. 11–3–64. Cl. 46.
Grede Foundries, Inc., Milwaukee, Wis. 783,503, pub. 11–3–64. Cl. 14.
Greenberg, B. B., Co., Cranston, R.I. 783,626, pub. 11–3–64. Cl. 28.
Gross Mfg. Co., Inc., Monrovia, Calif. 783,649, pub. 11–3–64. Cl. 35.
Grossman, David, Fur Corp.: *See*—
Fur Sculpture Corp.
Gross-Padow Corp., Brooklyn, N.Y. 783,471, pub. 11–3–64. Cl. 6.
Guardian Chemical Corp., Long Island City, N.Y. 783,460, pub. 11–3–64. Cl. 6.
Guerlain Perfumery Corp., Wilmington, Del., and New York, N.Y., to Guerlain, Inc., New York, N.Y. 411,428, ren. 1–19–65. Cl. 51.
Guerlain, Inc.: *See*—
Guerlain Perfumery Corp.
Guerlain Perfumery Corp., Wilmington, Del., and New York, N.Y., to Guerlain, Inc., New York, N.Y. 412,388–9, ren. 1–19–65. Cl. 51.





Guest Products Corp., New York, N.Y. 670,571, canc. Cl. 26.
Guild Toys, Inc., Paterson, N.J. 783,576, pub. 11–3–64. Cl. 22.
Gustin-Bacon Mfg. Co., Kansas City, Mo. 783,494, pub. 11–3–64. Cl. 12.
Gutman-Lann Glove Co., Inc., New York, N.Y. 783,731, pub. 11–3–64. Cl. 42.
Hamilton-Skotch Corp., Hamilton, Ohio. 783,449 pub. 11–3–64. Cl. 2.
Hardwick Stove Co., Cleveland, Tenn. 783,641, pub. 11–3–64. Cl. 34.
Harkins, Robert H., d.b.a. Nott Mfg. Co., to Nott Mfg. Co., Inc., Mount Vernon, N.Y. 411,339, ren. 1–19–65. Cl. 6.
Hart, Alfred, Co., The, Los Angeles, Calif. 783,768, pub. 11–3–64. Cl. 49.
Hartfield Stores, Inc., Los Angeles, Calif. 783,482, pub. 11–3–64. Cl. 6.
Hartfield Stores, Inc., Los Angeles, Calif. 783,486, pub. 11–3–64. Cl. 10.
Hartford Cosmetics Co., Inc., Newington, Conn. 783,778, pub. 11–3–64. Cl. 51.
Harvey Features Syndicate, New York, N.Y. 670,628, canc. Cl. 38.
Hawthorne, Herb J., Houston, Tex. 670,553, canc. Cl. 23.
Hayden's Hollandaise, Inc., College Point, N.Y. 670,707, canc. Cl. 46.
Hearst Corp., The, New York, N.Y. 412,113, ren. 1–19–65. Cl. 38.
Heath, L. S., & Sons, Inc., Robinson, Ill. 783,757, pub. 11–3–64. Cl. 46.
Heatron, Inc., York, Pa. 783,603, pub. 11–3–64. Cl. 23.
Henry Valve Co., Melrose Park, Ill. 783,633, pub. 11–3–64. Cl. 31.
Henschel-Werke Aktiengesellschaft, Kassel, Germany. 783,535, pub. 11–3–64. Cl. 19.
Herald Pharmacal, Inc., Bedford, Va. 783,531, pub. 11–3–64. Cl. 18.
Hercules Powder Co., Wilmington, Del. 670,470–1, canc. Cl. 9.
Hiawatha Wood Products, Winona, Minn. 670,551, canc. Cl. 22.
Hill, J. E., Fort Worth, Tex. 670,554, canc. Cl. 23.
Hoerner Boxes, Inc., Keokuk, Iowa. 783,450, pub. 11–3–64. Cl. 2.
Hollins, William, & Co. Ltd., Nottingham, Nottinghamshire, England. 670,665, canc. Cl. 43.
Hood, H. P., & Sons, Inc., Boston, Mass. 670,696, canc. Cl. 46.
Horace Babe Products: *See*—
Brose, B. Horace.
Hospital Specialty Co., The, Cleveland, Ohio. 670,671, canc. Cl. 44.
Hot Shoppes, Inc., Washington, D.C. 783,754, pub. 11–3–64. Cl. 46.
Hotel and Restaurant Employees and Bartenders International Union: *See*—
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America.
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America, to Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. 412,498–9, ren. 1–19–65. Cl. 38.
House of Lacan N.V., Willemstad, Curacao, Netherlands Antilles. 783,780, pub. 11–3–64. Cl. 51.
Hull, R. O., & Co., Inc., Cleveland, Ohio. 783,786–7, pub. 11–3–64. Cl. 52.
Humble Oil & Refining Co.: *See*—
Scientific Products, Inc.
Hutchison, Frank C., Greenfield, N.H. 783,663, pub. 11–3–64. Cl. 38.
Illinois Instrument Group Inc., Des Plaines, Ill. 783,467, pub. 11–3–64. Cl. 6.
Indiana Lumbermens Mutual Insurance Co., Indianapolis, Ind. 783,797, pub. 11–3–64. Cl. 102.
Industrial Products Co., Philadelphia, Pa. 783,694, pub. 11–3–64. Cl. 39.
Instant Made Tomato Products Co., Inc., Stockton, Calif. 670,695, canc. Cl. 46.
Institutional Book Service, d.b.a. Childrens Press, Inc., Chicago, Ill. 783,792, pub. 11–3–64. Cl. 100.
Institutional Industries, Inc., Cincinnati, Ohio. 783,540–1, pub. 11–3–64. Cl. 19.
International Association of Fire Chiefs, New York, N.Y. 783,805, pub. 11–3–64. Cl. 200.
International Electronic Research Corp., Burbank, Calif. 783,554, pub. 11–3–64. Multiple Class (Class 21 and 26).
International Latex Corp., Dover, Del. 670,519, canc. Cl. 18.
International Latex Corp., Playtex Park, Dover, Del. 670,638, canc. Cl. 39.
International Protected Metals, Inc., South Plainfield, N.J. 783,501, pub. 11–3–64. Cl. 13.
Irving Drew Corp., The, Lancaster, Ohio. 783,708, pub. 11–3–64. Cl. 39.
Items Inc., St. Louis, Mo. 783,574, pub. 11–3–64. Cl. 22.
Jackson-Wheeler Metals Service, to Jackson-Wheeler Metals Service, Inc., Brooklyn, N.Y. 193,420, ren. 1–19–65. Cl. 14.
Jackson-Wheeler Metals Service, Inc.: *See*—
Jackson-Wheeler Metals Service.
Jantzen Inc.: *See*—
Jantzen Knitting Mills.
Jantzen Knitting Mills, to Jantzen Inc., Portland, Oreg. 194,450–1, ren. 1–19–65. Cl. 39.
Jewell Bridges Haga, d.b.a. Delta Turtle Farm, Belzoni, Miss. 783,446, pub. 11–3–64. Cl. 1.
Johnson & Johnson, New Brunswick, N.J. 670,513, canc. Cl. 18.
Johnson & Johnson, New Brunswick, N.J. 783,439, pub. 11–3–64. Cl. 1.
Johnson, Stephens, and Shinkle Shoe Co., St. Louis, Mo. 783,681, pub. 11–3–64. Cl. 39.
Johnson & Johnson, New Brunswick, N.J. 783,781, pub. 11–3–64. Cl. 51.
Joseph, Edgar: *See*—
Jaytan Leather Co.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 783,493, pub. 11–3–64. Cl. 12.
Kammco, Greenbrook Township, N.J. 783,578, pub. 11–3–64. Cl. 23.
Kay Electric Co., Pine Brook, N.J. 670,596, canc. Cl. 26.
Kelsey Textile Corp., to Cluett, Peabody & Co., Inc., New York, N.Y. 193,534, ren. 1–19–65. Cl. 42.
Kendall Co., The, Boston, Mass. 413,420, ren. 1–19–65. Cl. 44.
Kerr Mfg. Co., from Kerr Mfg. Co., Detroit, Mich. 783,739, pub. 11–3–64. Cl. 44.
Kewalram, Kishin, d.b.a. LeKhraj & Sons, Singapore. 670,663, canc. Cl. 42.
Keystone Ferrule & Nut Co., Burlington, Wis. 670,437, canc. Cl. 2.
Komberec and Fiedler Enterprises, Inc., Spokane, Wash. 783,750, pub. 11–3–64. Cl. 46.
Kordes & Lichtenfels, Pforsheim, Germany. 783,627, pub. 11–3–64. Cl. 28.
Kurty, Bill: *See*—
Kurty, William M.
Kurty, William M., d.b.a. Bill Kurty, Roebling, N.J. 670,632, canc. Cl. 38.
L. & G. Chemical Co.: *See*—
Ladouceur, Leo R.
Lachner, Marshall S., Associates, Inc., New York, N.Y. 783,795, pub. 11–3–64. Cl. 101.
Lacquer, Davis Products Proprietary Ltd., Abbotsford Victoria, Australia. 670,434–5, canc. Cl. 2.
Ladouceur, Leo R., d.b.a. L. & G. Chemical Co., Anoka, Minn. 783,788, pub. 11–3–64. Cl. 52.
Lady Esther, Ltd., Chicago, Ill., to Chemway Corp., Wayne, N.J. 412,428, ren. 1–19–65. Cl. 51.
Lakeside Central Co., Chicago, Ill. 783,809. Cl. 37.
Lakeside Mfg., Inc., d.b.a. Jardier Co., Milwaukee, Wis. 670,548, canc. Cl. 22.
Lambert Hosiery Mills, Inc., New York, N.Y. 783,682, pub. 9–24–63. Cl. 39.
Laminators Inc., Cleveland, Ohio. 783,440, pub. 11–19–63. Cl. 1.
Lancedale Knitting Co., Inc., New York, N.Y. 783,712, pub. 11–3–64. Cl. 39.
Lantz, Walter, Productions, Inc., Hollywood, Calif. 783,679, pub. 11–3–64. Cl. 39.
Laray Cosmetics, Inc., Elizabeth, N.J. 783,591, pub. 11–3–64. Cl. 23.
Le Feburo Corp., Cedar Rapids, Iowa. 670,611, canc. Cl. 32.
Lekhraj & Sons: *See*—
Kewalram, Kishin.
Libby, McNeill & Libby, Chicago, Ill. 408,637, ren. 1–19–65. Cl. 46.
Listener, Otarion, Corp., Ossining, N.Y. 670,670, canc. Cl. 44.
Lookout Boiler and Mfg. Co., Chattanooga, Tenn. 196,623, ren. 1–19–65. Cl. 34.
Lord Mfg. Co., Erie, Pa. 783,537, pub. 11–3–64. Cl. 19.
Lorillard, P., Co., New York, N.Y. 783,483, pub. 11–3–64. Cl. 8.
Lovable Co., The, Atlanta, Ga. 783,713, pub. 11–3–64. Cl. 39.
Lowe, Joe, Corp., Englewood, N.J. 783,451, pub. 11–3–64. Cl. 2.
Mackintosh-Hemphill Co., Pittsburgh, Pa. 356,149, canc. Cl. 14.
Maes Inc., from Maes Milkers, Inc., Holland, Mich. 783,499, pub. 11–3–64. Cl. 13.
Maes Milkers, Inc.: *See*—
Maes Inc.
Marathon Oil Co., Findlay, Ohio. 783,505–6, pub. 11–3–64. Cl. 15.
Market Tire Co. of Maryland, Inc., Rockville, Md. 783,651, pub. 11–3–64. Cl. 35.
Marvella, Inc., New York, N.Y. 783,623, pub. 11–3–64. Cl. 28.
Mattel, Inc., Hawthorne, Calif. 783,568, pub. 11–3–64. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 783,571, pub. 11–3–64. Cl. 22.
McCormick Distilling Co., Weston, Mo. 783,442, pub. 11–3–64. Cl. 1.
McDonough Co., d.b.a. O. Ames Co., Parkersburg, W. Va. 783,611, pub. 11–3–64. Cl. 23.
McKee Baking Co., Collegedale, Tenn. 783,765, pub. 11–3–64. Cl. 46.
McKesson & Robbins, Inc., New York, N.Y. 410,332–3, ren. 1–19–65. Cl. 18.
McMurray Mfg. Co.: *See*—
McMurray, Paul H.
McMurray, Paul H., d.b.a. McMurray Mfg. Co., Delphi, Ind. 783,772, pub. 11–3–64. Cl. 50.
Mead Johnson & Co., Evansville, Ind. 783,530, pub. 11–3–64. Cl. 18.
Medicated Products Co., to Medicated Products Co., Chicago, Ill. 408,389, ren. 1–19–65. Cl. 44.
Medicated Products Co., to Medicated Products Co., Chicago, Ill. 410,200, ren. 1–19–65. Cl. 44.
Melnor Industries, Inc., Moonachie, N.J. 783,598, pub. 11–3–64. Cl. 23.
Meopta, Narodni Podnik, Prerov, Czechoslovakia. 670,579–80, canc. Cl. 26.
Mercer, Walter R., Danville, Ill. 670,478, canc. Cl. 12.
Merck & Co., Inc., Rahway, N.J. 783,528, pub. 11–3–64. Cl. 18.
Metal Spinners, Inc., Milwaukee, Wis. 783,502, pub. 11–3–64. Cl. 14.

Metals Engineering & Mfg. Co., Inc., Detroit, Mich. 783,640, pub. 11–3–64. Cl. 34.
Michigan Frosted Foods Co., d.b.a. Beutel Canning Co., Bay City, Mich. 783,761, pub. 11–3–64. Cl. 46.
Microwave Electronics Corp., Palo Alto, Calif. 783,557–8, pub. 11–3–64. Cl. 21.
Midwest Hanger Co., Kansas City, Mo. 670,731, canc. Cl. 50.
Mindlin, Richard B., d.b.a. Coach House, Kansas City, Mo. 783,677, pub. 8–20–63. Cl. 39.
Modern Equipment Co., Port Washington, Wis. 783,588, pub. 11–3–64. Cl. 23.
Mojonnier Bros. Co., Chicago, Ill. 783,609, pub. 11–3–64. Cl. 23.
Molecular Dielectrics, Inc.: *See*—
Electronic Mechanics, Inc.
Monsanto Co., St. Louis, Mo. 783,478, pub. 11–3–64. Cl. 6.
Morris, Philip, Inc., New York, N.Y. 783,514, pub. 11–3–64. Cl. 17.
Morris, Sewall & Co., Inc., Houston, Tex. 670,744, canc. Cl. 52.
Morton Mfg. Corp., d.b.a. Blair of Virginia, to Morton Mfg. Corp., Lynchburg, Va. 410,606, ren. 1–19–65. Cl. 18.
Motold Co., Inc., The, Chicago, Ill. 412,438, ren. 1–19–65. Cl. 44.
Multi-Attachments, Inc., New York, N.Y. 783,585, pub. 11–3–64. Cl. 23.
Muzak Corp.: *See*—
Wrather Corp.
N.V. Drukinktfabriek Farbianca, Amsterdam, Netherlands. 783,488, pub. 11–3–64. Cl. 11.
National Association of Broadcasters, Washington, D.C. 670,765, canc. Cl. B.
National Aviation Underwriters, Inc., d.b.a. National Insurance Underwriters, Clayton, Mo. 783,796, pub. 11–3–64. Cl. 102.
National Can Corp., Chicago, Ill. 783,447, pub. 11–3–64. Cl. 2.
National Kaolin Products Co., Aiken, S.C. 670,452, canc. Cl. 6.
National Shoes, Inc., New York, N.Y. 783,675, pub. 1–10–61. Cl. 39.
National Starch and Chemical Corp., New York, N.Y. 783,456, pub. 11–3–64. Cl. 5.
Neal, William M., Los Angeles, Calif. 670,651, canc. Cl. 39.
Neisner Bros., Inc., Rochester, N.Y. 783,720, pub. 11–3–64. Cl. 42.
Neisner Bros., Inc., Rochester, N.Y. 783,779, pub. 11–3–64. Cl. 51.
Norcross, Inc., New York, N.Y. 783,665–6, pub. 11–3–64. Cl. 38.
Nordberg Mfg. Co., Milwaukee, Wis. 783,602, pub. 11–3–64. Cl. 23.
Nott Mfg. Co.: *See*—
Harkins, Robert H.
Nuclear Diodes, Inc., Highland Park, Ill. 783,616, pub. 11–3–64. Cl. 26.
Nucleonics Research & Development Corp.: *See*—
Bursod Electronics, Inc.
Oak Rubber Co., The, Ravenna, Ohio. 783,684, pub. 11–3–64. Cl. 39.
Officine Viberti Societa Per Azioni, Turin, Italy. 670,537, canc. Cl. 19.
Old Virginia Packing Co., Inc., Front Royal, Va. 783,763, pub. 11–3–64. Cl. 46.
Orchard Hill Farms, Inc., Red Hook, N.Y. 783,760, pub. 11–3–64. Cl. 46.
Organon Inc., Orange, N.J. 670,531, canc. Cl. 18.
Oriental Trading Inc., Hialeah, Fla. 783,698, pub. 11–3–64. Cl. 39.
Orlovitz, Martin, d.b.a. Eastern Trouser Co., Philadelphia, Pa. 783,690, pub. 11–3–64. Cl. 39.
Orr, J. K., Shoe Co., Atlanta, Ga., to Genesco Inc., Nashville, Tenn. 195,848, ren. 1–19–65. Cl. 39.
Oso Brite Mfg. Co., Inc., Smith Center, Kans. 783,455, pub. 11–3–64. Cl. 4.
Ott, John, Winnetka, Ill. 783,806, pub. 11–3–64. Cl. A.
Outdoor American Corp., Spokane, Wash. 783,661, pub. 11–3–64. Cl. 38.
P.H.B. Sales Corp., Boston, Mass. 670,766, canc. Cl. 1.
Pacific Northwest Canning Co., Puyallup, Wash. 229,548, canc. Cl. 46.
Palm Beach Co., Portland, Maine. 670,655, canc. Cl. 42.
Palm Beach Co., Portland, Maine. 670,657, canc. Cl. 42.
Pan-O-Matic Corp., Portland, Oreg. 783,592, pub. 11–3–64. Cl. 23.
Parke-Hill Chemical Corp., Mount Vernon, N.Y. 783,474, pub. 11–3–64. Cl. 6.
Pavan, Galliera V., Padova, Italy. 783,581, pub. 11–3–64. Cl. 23.
Peerless Mfg. Division of Dover Corp., Louisville, Ky. 670,786, canc. Cl. 34.
Penney, J. C., New York, N.Y., from Thomson Co., Thomson, Ga. 783,717, pub. 11–3–64. Cl. 42.
Permanent Peace Association, Inc., New York, N.Y. 783,804, pub. 11–3–64. Cl. 200.
Pet Milk Co., St. Louis, Mo. 783,764, pub. 11–3–64. Cl. 46.
Peterson's Ltd., New York, N.Y. 783,484, pub. 11–3–64. Cl. 8.
Pfizer, Chas., & Co., Inc., Brooklyn, N.Y. 670,525, canc. Cl. 18.
Pharmaceutical Specialties, Inc., d.b.a. Dermatological Prescription Laboratories, Monterey, Calif. 783,533, pub. 11–3–64. Cl. 18.
Philadelphia Quartz Co., Philadelphia, Pa. 783,466, pub. 11–3–64. Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 783,472, pub. 11–3–64. Cl. 6.
Phillips-Van Heusen Corp., New York, N.Y. 783,686, pub. 11–3–64. Cl. 39.
Piggy Que Inc., Vinton, Iowa. 783,648, pub. 11–3–64. Cl. 34.
Pikle-Rite Co. Not Inc.: *See*—
Wood, John A.
Plant Products Co., Baltimore, Md. 202,300, canc. Cl. 10.
Plastus, S.A., Geneva, Switzerland. 783,441, pub. 7–7–64. Cl. 1.
Polsky, Nathan, Rockville Centre, N.Y. 783,658, pub. 11–3–64. Cl. 37.
Portage Machine Co., The, Akron, Ohio. 783,583, pub. 11–3–64. Cl. 23.
Porter-Cable Machine Co., The, Syracuse, N.Y. 670,560, canc. Cl. 23.
Portland Firescreens Co., Portland, Oreg. 783,642, pub. 11–3–64. Cl. 34.
Potomac Hunt, The, Travilah, Md. 783,801, pub. 11–3–64. Cl. 107.
Power Petroleum Products, Dallas, Tex. 783,507, pub. 11–3–64. Cl. 15.
Powermaster Corp., Portland, Oreg. 670,536, canc. Cl. 19.
Precision Multiple Controls, Inc., Ridgewood, N.J. 783,639, pub. 11–3–64. Cl. 34.
Process Co. of America, Inc., Cincinnati, Ohio. 670,770, canc. Cl. 8.
Procon Pump & Engineering Co., Oak Park, Mich. 783,740, pub. 11–3–64. Cl. 44.
Purdue Frederick Co., The, Yonkers, N.Y. 783,526, pub. 11–3–64. Cl. 18.
Purex Corp., Ltd., d.b.a. Turco Products, Inc., Wilmington, Calif. 783,785, pub. 11–3–64. Cl. 52.
Puritan Fashions Corp., New York, N.Y. 783,683, pub. 11–3–64. Cl. 39.
Q-Panel Corp., Providence, R.I. 670,477, canc. Cl. 12.
Quaker Chemical Corp., Conshohocken, Pa. 783,508, pub. 11–3–64. Cl. 15.
Racine, Jules, & Co.: *See*—
Wallace, George N.
Radiation Dynamics, Inc., Westbury, N.Y. 783,550, pub. 11–3–64. Cl. 21.
Raeford Turkey Farms, Inc., Raeford, N.C. 783,751, pub. 11–3–64. Cl. 46.
Raylite Electric Corp., Bronx, N.Y. 670,780, canc. Cl. 21.
Raylite Electric Corp., New York, N.Y. 783,559, pub. 11–3–64. Cl. 21.
Ray-o-Vac Co., Madison, Wis. 670,544, canc. Cl. 21.
Reducine Co. Ltd., The, Dublin, Ireland. 783,529, pub. 11–3–64. Cl. 18.
Reed, Merle, Moose Pass, Alaska. 783,628, pub. 11–3–64. Cl. 28.
Regal Uniform Co., Los Angeles, Calif. 783,678, pub. 11–3–64. Cl. 39.
Renwal Products, Inc., New York, N.Y. 783,773, pub. 11–3–64. Cl. 50.
Rock Island Corp., d.b.a. Rock Island Lumber Co., St. Paul, Minn. 783,794, pub. 11–3–64. Cl. 100.
Rockwell-Standard Corp., Coraopolis, Pa. 783,536, pub. 11–3–64. Cl. 19.
Roebken, Howard F., West Bend, Wis. 670,781, canc. Cl. 22.
Romanin, Bruno, Milan, Italy. 783,725, pub. 11–3–64. Cl. 42.
Ronson Corp., Woodbridge, N.J. 783,464, pub. 11–3–64. Cl. 34.
Roth, Lester H., Pittsburgh, Pa. 783,784, pub. 11–3–64. Cl. 52.
Roussel-Uclaf, Paris, France. 783,481, pub. 11–3–64. Multiple Class (Classes 6 and 18).
Ruth's Oven: *See*—
Wickersham, Sumner R.
Ruth's Oven Food Products: *See*—
Wickersham, Sumner R.
Salpac Co., Collingswood, N.J. 783,741, pub. 11–3–64. Cl. 44.
Sandoz, Inc., Hanover, N.J. 783,618, pub. 11–3–64. Cl. 26.
Sa Prise Chemicals, Inc., Greer, S.C. 783,783, pub. 11–3–64. Cl. 52.
Sardinha do Algarve, Lda, Olhao, Portugal. 670,676, canc. Cl. 46.
Scheele, Wm., & Sons Co., Inc., Fort Wayne, Ind. 358,381, canc. Cl. 45.
Schering Corp., Bloomfield, N.J. 670,526–9, canc. Cl. 18.
Schlesinger, Sylvia N., Albany, N.Y. 783,573, pub. 11–3–64. Cl. 22.
Schmidt, Karl, GmbH, Neckarsulm, Germany. 783,597, pub. 11–3–64. Cl. 23.
Schwartz, B., & Co.: *See*—
Schwartz, William B.
Schwartz, William B., d.b.a. B. Schwartz & Co., to Chips 'N Twigs, Inc., Philadelphia, Pa. 412,572, ren. 1–19–65. Cl. 39.
Schientific Products, Inc., Chicago, Ill., to Humble Oil & Refining Co., Houston, Tex. 191,979, ren. 1–19–65. Cl. 52.
Scott Aviation Corp., Lancaster, N.Y. 783,744, pub. 11–3–64. Cl. 44.
Scott-Lee Laboratories, Inc., New Orleans, La. 783,521–2, pub. 11–3–64. Cl. 18.
Scrubby Bobby: *See*—
Wark, Marian E.
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Sells, Kenneth A.
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Sentinel Frechek Locks, Inc., Wheeling, Ill. 783,614, pub. 11–3–64. Cl. 25.
Serbin, Inc., Miami, Fla. 783,692, pub. 11–3–64. Cl. 39.





Seymour Mfg. Co., The, Seymour, Conn. 670,492, canc. Cl. 14.
Sifo Co., St. Paul, Minn. 783,570, pub. 11–3–64. Cl. 22.
Signetics Corp., Sunnyvale, Calif. 783,548, pub. 11–3–64. Cl. 21.
Simonds Saw and Steel Co., Fitchburg, Mass. 197,551, ren. 1–19–65. Cl. 23.
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Simpson Timber Co., Seattle, Wash. 783,497, pub. 11–3–64. Cl. 12.
Sisco-Hamilton Co., to Sisco-Hamilton Co., Chicago, Ill., 413,400, ren. 1–19–65. Cl. 46.
Sisk, Albert W., & Son, to Albert W. Sisk & Son (1941), Preston, Md., 198,770, ren. 1–19–65. Cl. 46.
Sisk, Albert W., & Son (1941): *See*—
Sisk, Albert W., & Son.
Skamperettes Co., Inc., The, New York, N.Y. 670,639, canc. Cl. 39.
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Smith, S. R., Inc., Nashville, Tenn. 783,753, pub. 11–3–64. Cl. 46.
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Socony Mobil Oil Co., Inc.: *See*—
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Southern Nitrogen Co., Inc., Savannah, Ga. 670,472, canc. Cl. 10.
Square D Co., Park Ridge, Ill. 783,553, pub. 11–3–64. Cl. 21.
Stabil Mfg. Co., Minneapolis, Minn. 783,775, pub. 11–3–64. Cl. 50.
Stabilus Industrie- und Handelsgesellschaft m.b.H., Koblenz-Neuendorf, Germany. 783,637, pub. 11–3–64. Cl. 32.
Staedtler, J. S., Nuernberg, Germany. 783,659, pub. 11–3–64. Cl. 37.
Standard Oil Co. of New York, to Socony Mobil Oil Co., Inc., New York, N.Y. 192,747, ren. 1–19–65. Cl. 46.
Star Mfg. Co., Leominster, Mass. 783,577, pub. 11–3–64. Cl. 22.
Stauffer Chemical Co., New York, N.Y. 783,459, pub. 11–3–64. Cl. 6.
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Stevens, J. P., & Co., Inc.: *See*—
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Stimpson, Edwin B., Co., to Edwin B. Stimpson Co., Inc., Brooklyn, N.Y. 193,949, ren. 1–19–65. Cl. 23.
Stimpson, Edwin B., Co., Inc.: *See*—
Stimpson, Edwin B., Co.
Sugardale Provision Co., The, Canton, Ohio. 783,758–9, pub. 11–3–64. Cl. 46.
Sumitomo Chemical Co., Ltd., Osaka, Japan. 783,475, pub. 11–3–64. Cl. 6.
Sun Oil Co., Philadelphia, Pa. 670,496, canc. Cl. 15.
Sun-Maid Raisin Growers of California, Kingsburg, Calif. 196,186, ren. 1–19–65. Cl. 46.
Surplus Merchandise Corp., Boston, Mass. 670,645, canc. Cl. 39.
Sutherland Paper Co., Kalamazoo, Mich. 670,441, canc. Cl. 2.
Sweet Candy Co., Salt Lake City, Utah. 197,438, ren. 1–19–65. Cl. 46.
Takara Shoyu Kabushiki Kaisha, Chuo-ku, Tokyo-to, Japan. 783,747, pub. 11–3–64. Cl. 46.
Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. 783,519, pub. 11–3–64. Cl. 18.
Tanbro Fabrics Corp., New York, N.Y. 783,729, pub. 11–3–64. Cl. 42.
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Tek Rep, Inc., Rockville, Md. 783,671, pub. 11–3–64. Cl. 38.
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Temperato, Samuel J.: *See*—
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Thermalon Insulation, Inc., Staten Island, N.Y. 783,490, pub. 11–3–64. Cl. 12.
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Tiffin Scenic Studios, Inc., Tiffin, Ohio. 783,599, pub. 11–3–64. Cl. 23.
Tiger Plastics Corp., Brooklyn, N.Y. 783,555, pub. 11–3–64. Cl. 21.
Toledo Blade Co., The, Toledo, Ohio. 783,674, pub. 10–6–64. Cl. 38.
Toolmatic Corp., New York, N.Y. 783,582, pub. 11–3–64. Cl. 23.
Topco Associates, Inc., Skokie, Ill. 783,463, pub. 11–3–64. Cl. 6.
Triangle Conduit & Cable Co., Inc., New Brunswick, N.J. 783,489, pub. 11–3–64. Cl. 11.
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Turco Products, Inc.: *See*—
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Tyler, W. S., Co., The, Cleveland, Ohio. 783,586, pub. 11–3–64. Cl. 23.
Union Bag-Camp Paper Corp., New York, N.Y. 783,476, pub. 11–3–64. Cl. 6.
Union Carbide Corp., New York, N.Y. 783,479, pub. 11–3–64. Cl. 6.
Union Steel Products Co., Albion, Mich. 783,776, pub. 11–3–64. Cl. 50.
United Lacquer Mfg. Corp., Linden, N.J. 670,505, canc. Cl. 16.
United Missionary Church, Inc., d.b.a. Bethel Publishing Co., Elkhart, Ind. 783,668, pub. 11–3–64. Cl. 38.
United States Gypsum Co., Chicago, Ill. 410,551, ren. 1–19–65. Cl. 10.
United States Gypsum Co., Chicago, Ill. 410,589, ren. 1–19–65. Cl. 12.
United States Time Corp., The, Middlebury, Conn. 410,074, ren. 1–19–65. Cl. 27.
United States Time Corp., The, Middlebury, Conn. 410,634, ren. 1–19–65. Cl. 27.
Universal Fluid Dynamics Co., Alpena, Mich. 783,652, pub. 11–3–64. Cl. 35.
Universal Oil Products Co., Des Plaines, Ill. 783,473, pub. 11–3–64. Cl. 6.
Upjohn Co., The, Kalamazoo, Mich. 670,530, canc. Cl. 18.
Utah-American Corp., Huntington, Ind. 783,745, pub. 11–3–64. Cl. 44.
Van Arsdale Laboratories, Inc., Minneapolis, Minn. 670,746, canc. Cl. 52.
Vapor-Vane, Inc., Peekskill, N.Y. 783,647, pub. 11–3–64. Cl. 34.
Vargo, Lou, Enterprises, Inc., Baton Rouge, La. 783,567, pub. 11–3–64. Cl. 22.
Vinyl Plastics Inc., Sheboygan, Wis. 670,541, canc. Cl. 20.
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Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 670,514, canc. Cl. 18.
Watson Seafood and Poultry Co., Inc., Raleigh, N.C. 783,752, pub. 11–3–64. Cl. 46.
Waukesha Motor Co., Waukesha, Wis. 783,604, pub. 11–3–64. Cl. 23.
Weldon Farm Products, Inc., New York, N.Y. 670,693, canc. Cl. 46.
Whyte & Mackay Ltd., Glasgow, Scotland. 783,769, pub. 11–3–64. Cl. 49.
Wickersham, Sumner R., d.b.a. Ruth's Oven Food Products, and Ruth's Oven, Colorado Springs, Colo. 670,688, canc. Cl. 46.
Williamson, Garfield, Inc., Jersey City, N.J. 783,584, pub. 11–3–64. Cl. 23.
Williamson-Dickie Mfg. Co., The, Fort Worth, Tex. 783,696, pub. 11–3–64. Cl. 39.
Wilson Sporting Goods Co., River Grove, Ill. 783,572, pub. 11–3–64. Cl. 22.
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Bisceglia Brothers Wine Co.
Wood Chemical Co., Inc., Lubbock, Tex. 783,465, pub. 11–3–64. Cl. 6.
Wood, John A., d.b.a. Pikle-Rite Co. Not Inc., Pulaski, Wis., and Chicago, Ill., to Pikle-Rite Co., Inc., Pulaski, Wis. 410,792, ren. 1–19–65. Cl. 46.
Workman For Workmen, Inc., Chicago, Ill. 670,753, canc. Cl. 101.
World Charm Corp., The, New York, N.Y. 783,621, pub. 11–3–64. Cl. 28.
Worumbo Mfg. Co., Bath, Maine, to J. P. Stevens & Co., Inc., New York, N.Y. 197,893, ren. 1–19–65. Cl. 42.
Wrather Corp., Beverly Hills, Calif., from Muzak Corp., New York, N.Y. 783,799–800, pub. 11–3–64. Cl. 107.
Wyandotte Chemicals Corp., Wyandotte, Mich. 670,463, canc. Cl. 6.
Wylie Mfg. Co., Oklahoma City, Okla. 783,594, pub. 11–3–64. Cl. 23.
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Youthcraft Creations, Inc., New York, N.Y. 783,680, pub. 11–3–64. Cl. 39.
Zerlina Imports, Inc., New York, N.Y. 783,704, pub. 11–3–64. Cl. 39.


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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
January 26, 1965 Volume 810 Number 4

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of December 1964

| | |
|---|---|
| Examiner affirmed | 308 |
| Examiner affirmed in part | 49 |
| Examiner reversed | 77 |
| Total | 434 |

### Notice of Automatic Ordering of Cited References

In the OFFICIAL GAZETTE of December 1, 1964, the Patent Office announced a new service permitting applicants to receive copies of cited references automatically with the cost of the references being charged to applicant's deposit account. This new service was instituted on January 4, 1965, for those applicants who requested this service prior to this date.

Owing to delays in typing and mailing Office actions, some actions mailed after January 4, 1965, for which authorization to send cited references has been received will not have references supplied automatically. All Office actions for which references are being supplied automatically will bear the applicant's deposit account number below the address block on the letterhead. Office actions in which the applicant's deposit account number does not appear below the address block on the letterhead are actions in cases where either the automatic mailing of cited references has not been authorized, or where the action was prepared before processing for this new service was initiated.

C. A. KALK,
*Director of Administration.*

Dec. 18, 1964.

### Negotiation Authority Indicated on Office Actions

For some time, the full surname of the Examiner who prepared the Office action has been typed below the action on the left side; thus,

JHSmith : abc

One purpose was to facilitate making arrangements for an interview at a time when the Examiner would be conveniently available. However, if this Examiner did not have "negotiation authority," that is, could not definitely state at the interview that a proposed amendment would make a claim allowable, it was necessary that a more experienced Examiner also be present.

Effective immediately, therefore, the full surname will be typed only for those examiners with negotiation authority. Examiners without such authority will be identified by initials only; thus,

FDR : rbm

The Examiner responsible for releasing the action (whose signature is on the ribbon copy), will be identified by means of a rubber stamp applied to all carbon copies.

If the full surname of the Examiner appears at the *lower left*, the interview should be arranged with this Examiner, otherwise, with the Examiner whose name is stamped at the *lower right*.

RICHARD A. WAHL,
*Acting Superintendent, Patent Examining Corps.*

Dec. 16, 1964.

### Disclaimer

3,005,696.—*Travis P. Hignett*, Sheffield, and *Milton R. Siegel, Robert S. Meline*, and *Glenn M. Blouin*, Florence, Ala. PROCESS FOR PRODUCTION OF AMMONIUM PHOSPHATE FERTILIZERS. Patent dated Oct. 24, 1961. Disclaimer filed Oct. 13, 1964, by the assignee, *Tennessee Valley Authority*.

Hereby enters this disclaimer to claims 1 through 5 of said patent.

### Classification Order No. 367

The following transfers are hereby ordered to take effect on Monday, December 21, 1964:

From Group 160 to Group 470
Class 118, COATING APPARATUS
From Group 230 to Group 210
Class 307, ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS
Subclasses 1 thru 8

RICHARD A. WAHL,
*Acting Superintendent, Examining Corps.*

### Classification Order No. 368

The following transfer is hereby ordered to take effect on Monday, December 28, 1964:

From Group 180 to Group 360
Class 233, CENTRIFUGAL-BOWL SEPARATORS

RICHARD A. WAHL,
*Acting Superintendent, Examining Corps.*

### New Applications Received During November 1964

| | |
|---|---|
| Patents | 6,975 |
| Designs | 436 |
| Plant Patents | 8 |
| Reissues | 9 |
| Total | 7,428 |

### Issue—January 26, 1965

| | | | |
|---|---|---|---|
| Patents | 1021 | No. 3,166,757 to No. | 3,167,777, incl. |
| Designs | 43 | No. 200,146 to No. | 200,188, incl. |
| Reissues | 8 | No. 25,715 to No. | 25,722, incl. |
| Total | 1072 | | |

# TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

## Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

PART 3—FORMS FOR PATENT CASES

*Forms and Rules of Practice*

The following amended rules of practice and illustrative forms are adopted pursuant to Public Law 88-292, March 26, 1964, 78 Stat. 171, thus prescribing the documents presently required to be filed in the Patent Office under oath which may be subscribed to by a written declaration in the indicated form in lieu of the oath otherwise required.

In the Federal Register of June 24, 1964, proposed amended § 1.65 and a proposed § 1.68 as well as an illustrative form (3.11(a)) for this purpose were published and intention was stated to conform other affected rules and forms to effect the purpose of Public Law 88-292.

Interested persons were invited to submit their comments or suggestions on the proposals, and full and careful consideration has been given to all the material submitted.

Use of the declaration in the prescribed instances may be by any applicant, foreign or domestic. The provisions of § 1.66 of the rules relating to oaths remain in effect with respect to oaths when oaths are used, but this rule is not applicable to a declaration when used as an alternative to an oath. When a declaration is used, the ribboning procedure is not necessary, nor is it necessary to appear before an official in connection with the making of a declaration.

Suggestions were made that the rules allow the declaration to be made separately, apart from the other parts of the application. Except in the case of the declaration not accompanying an already accepted application (form 3.13(a)), and in the case of the supplemental declaration for amendment presenting claims for material disclosed but not originally claimed (form 3.14(a)), the declaration, like the oath, is an integral part of the application in accordance with section III of Title 35 of the United States Code, and 37 CFR 1.51 and shall be maintained together therewith.

Further suggestions were made that the use of the declaration be extended even further than was proposed. Amendments herein adopted would allow the declaration to be used as part of the original application for a patent involving designs, plants, and other patentable inventions; for reissue patents; when claiming matter originally shown or described but not originally claimed; or when filing a divisional or continuing application. Experience in these areas may very well provide a basis for more extended use of declarations in the future but, as an initial matter, the use will be limited to these listed instances.

These amended rules shall take effect on the date of this publication. Declarations, executed on and after that date, in proper form, will be accepted in the prescribed instances in lieu of the oath heretofore required.

The text of the new rule, amendments to existing rules, and illustrative forms follow:

Sections 1.41, 1.42, 1.43, 1.45, 1.47, 1.51, 1.52, 1.57, 1.61, 1.67, 1.76, 1.153, 1.162, and 1.175 are amended by inserting the words "or declaration" after the word "oath" wherever it occurs, including occurrences in the title of a section.

Paragraph (c) of § 1.52 is amended by inserting the phrase ", or declaration made," after the phrase "signed and sworn to".

Paragraph (a) of § 1.172 is amended by inserting the phrase ", or declaration made," after the phrase "sworn to" in the two occurrences of this latter phrase.

The caption "THE OATH", preceding § 1.65 is amended to read "STATEMENT; OATH OR DECLARATION".

Section 1.65 is amended to read as follows:

§ 1.65 *Statement of applicant.*

(a)(1) The applicant, if the inventor, must state that he verily believes himself to be the original and first inventor or discoverer of the process, machine, manufacture composition of matter, or improvement thereof, for which he solicits a patent; that he does not know and does not believe that the same was ever known or used before his invention or discovery thereof, and shall state of what country he is a citizen and where he resides and whether he is a sole or joint inventor of the invention claimed in his application. In every original application the applicant must distinctly state that to the best of his knowledge and belief the invention has not been in public use or on sale in the United States more than one year prior to his application or patented or described in any printed publication in any country before his invention or more than one year prior to his application, or patented in any foreign country prior to the date of his application on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application in this country. He shall state whether or not any application for patent on the same invention has been filed in any foreign country, either by himself, or by his legal representatives or assigns. If any such application has been filed, the applicant shall name the country in which the earliest such application was filed, and shall give the day, month, and year of its filing; he shall also identify by country and by day, month, and year of filing, every such foreign application filed more than twelve months before the filing of the application in this country. (2) This statement (i) must be subscribed to by the applicant, and (ii) must either (a) be sworn to (or affirmed) as provided in § 1.66, or (b) include the personal declaration of the applicant as prescribed in § 1.68. See § 1.153 for design cases and § 1.162 for plant cases.

(b) If the application is made as provided in §§ 1.42, 1.43, or 1.47, the applicant shall state his relationship to the inventor and, upon information and belief, the facts which the inventor is required by this section to state.

(c) An additional statement may be required if the application has not been filed in the Patent Office within a reasonable time after execution of the original statement.

A new § 1.68 is included to read as follows:

§ 1.68 *Declaration in lieu of application oath.*

(a) The applicant may, in lieu of making an oath or affirmation in the manner provided by § 1.66, set forth in the body of the statement required from him by § 1.65 his written declaration that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true, if, and only if, the applicant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardise the validity of the application or any patent issuing thereon.

(b) A written declaration by the applicant satisfying the foregoing conditions, may also be used in lieu of an oath when presenting a claim for matter not originally claimed (§ 1.67), when applying for a reissue patent (§§ 1.171 and 1.172), when applying for a patent for a design (§§ 1.151 and 1.153), and when applying for a patent for a plant (§§ 1.161 and 1.162).

Form 3.11a, an alternative to form 3.11, *Oath to accompany application for patent*, follows:

3.11a *Declaration to accompany application for patent.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances. The petition and specification precede the declaration.)

(1) _____, the above-named petitioner-- declare-- that _____ resident-- of (3) _____ citizen-- of the United States (2) and believe-- (4) _____ that _____ verily (5) _____ to be the original, first, and inventor-- of the improvement in (6) _____ described and claimed in the annexed specification; that (7) _____ do-- not know and do-- not believe that the same was ever known or used before (8) _____ invention thereof, or patented or described in any printed publication in any country before (8) _____ invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States or an application filed by (9) _____ or (8) _____ legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said invention has been filed by (9) _____ or (8) _____ representatives or assigns in any country foreign to the United States, except as follows: (10) _____

The undersigned petitioner-- declare-- further that all statements made herein of (8) _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.

Inventor's full name or names (11) _____

_____
(Signature)

Date _____

Notes: See §§ 1.65 and 1.68.

(1) Name of inventor; if the invention is joint, the names of all the joint inventors.



(2) If the applicant be an alien, state of what foreign country he is a citizen or subject.

(3) Give city and State, or if a foreign resident, city and country, of residence. If more than one inventor give residence of each inventor if different. Street address need not be given here as it appears elsewhere.

(4) "Himself" in the case of a sole inventor; "themselves" in the case of joint inventors.

(5) "Sole" in the case of a sole inventor; "joint" in the case of joint inventors.

(6) Title of the invention.

(7) "He" in the case of a sole inventor; "they" in the case of joint inventors.

(8) "His" in the case of a sole inventor; "their" in the case of joint inventors.

(9) "Him" in the case of a sole inventor; "them" in the case of joint inventors.

(10) If no application has been filed in a foreign country strike out the words "except as follows:". If one or more applications have been filed in foreign countries, the first application and each application more than twelve months old (six months in design cases) must be recited. The country and date of filing the foreign application must be given and the number of the application or other identifying data may also be stated. The claim for priority under 35 U.S.C. 119 (see § 1.55) may be made here. The following examples illustrate various situations.

(a) Only one prior foreign application filed: state "in (country) on (date)." If the right of priority is also claimed add "the right of priority of which application is claimed."

(b) More than one prior foreign application: state "in (country) on (date) and in other countries on subsequent dates." The country and date do not need to be recited except for the first filed application and each application more than twelve months old (six months in design cases).

(11) All petitioners are to sign (see section 1.41).

Form 3.12a, an alternative to form 3.12, *Oath to accompany application for patent, by an administrator (or executor)*, follows:

3.12a *Declaration to accompany application for patent by an administrator (or executor).*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, the above-named petitioner, declares that he is a citizen of the United States of America and a resident of _____, that he is the administrator of the estate (or executor of the last will and testament) of C _____ D _____, deceased, late a citizen of the United States and resident of _____, that he verily believes the said C _____ D _____ to be the original, first and sole inventor of the improvement in _____ described and claimed in the foregoing specification; that he does not know and does not believe that the same was ever known or used before the invention thereof by the said C _____ D _____, or patented or described in any printed publication in any country before the said invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by the said C _____ D _____ or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said invention has been filed by the said C _____ D _____ or his representatives or assigns in any country foreign to the United States except as follows: _____

The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon. Inventor's full name or names _____

_____
(Signature)

Date _____

Form 3.13a, an alternative to form 3.13, *Oath not accompanying application*, follows:

3.13a *Declaration not accompanying application.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, declares that he is a citizen of the United States of America and resident of _____, that on _____, 19____, he filed application for patent Serial No. _____ in the United States Patent Office, that he verily believes himself to be the original, first and sole inventor of the improvement in _____ described and claimed in the specification of said application for patent; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to the date of said application, or in public use or on sale in the United States more than one year prior to the date of said application; that said invention has not been patented before the date of said application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to the date of said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon. Inventor's full name or names _____

_____
(Signature)

Date _____

Form 3.14a, an alternative to form 3.14, *Supplemental oath for amendment presenting claims for matter disclosed but not originally claimed*, follows:

3.14a *Supplemental declaration for amendment presenting claims for matter disclosed but not originally claimed.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

_____, whose application for Letters Patent for an improvement in _____, Serial No. _____, was filed in the United States Patent Office on or about the _____ day of _____, 19--, declares that the subject matter of the foregoing (1) amendment was part of his invention, was invented before he filed his original application, above identified, for such invention; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year before his application, or in public use or on sale in the United States more than one year before the date of his application, that said invention has not been patented in any foreign country before the date of his application on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application in the United States, and has not been abandoned.

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Inventor's full name or names _____

_____
(Signature)

Date _____

NOTE: (1) If the supplemental declaration does not accompany the amendment, the amendment should be identified. See § 1.67.

Form 3.16a, an alternative to form 3.16, *Combined petition, oath, and specification (single signature form); sole inventor*, follows:

3.16a *Combined petition, declaration and specification (single signature form); sole inventor.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

[TITLE OF INVENTION]

[SPECIFICATION]

I, _____, declare that I am a citizen of _____, residing at _____; that I have read the foregoing specification and claims and I verily believe I am the original, first, and sole inventor of the invention in _____ described and claimed therein; that I do not know and do not believe that this invention was ever known or used before my invention thereof, or patented or described in any printed publication in any country before my invention thereof, or more than one year prior to this application; or in public use or on sale in the United States more than one year prior to this application; that this invention has not been patented in any country foreign to the United States on an application filed by me or my legal representatives or assigns more than twelve months before this application; and that no application for patent on this invention has been filed by me or my representatives or assigns in any country foreign to the United States, except as follows:

And I hereby appoint _____, Registration No. _____, my attorney (or agent) to prosecute this application and to transact all business to the Patent Office connected therewith.

Wherefore I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specification and claims, declaration, power of attorney, and this petition.

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise

the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address: _____

NOTE: This form may be executed only when attached to a complete application as the last page thereof.

Form 3.17a, an alternative to form 3.17, *Oath in division or continuing application*, follows:

3.17a *Declaration in division or continuing application.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
[This form of declaration may be used with an application disclosing and claiming only subject matter disclosed in a prior copending application of the same inventor.]
_____; the above-named petitioner declares that he is a citizen of the United States and resident of _____ that he verily believes himself to be the original, first, and sole inventor of the improvements in _____ described and claimed in the foregoing specification, that this application discloses and claims only subject matter disclosed in his pending application, Serial No. _____, filed _____ that he does not know and does not believe that the said invention was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to said application, or in public use or on sale in the United States more than one year prior to said application; that said invention has not been patented before the date of said application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows: _____

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____

The title to form 3.18 is amended to read: "*Oath in copending application containing additional subject matter*, and a form 3.18a, alternative to form 3.18 follows:

3.18a *Declaration in copending application containing additional subject matter.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
[This form of declaration may be used with an application disclosing and claiming subject matter disclosed in a prior copending application of the same inventor and also disclosing additional subject matter.]
_____, the above-named petitioner, declares that he is a citizen of the United States and resident of _____ that he verily believes him self to be the original, first and sole inventor of the improvement in _____ described and claimed in the foregoing specification; that this application in part discloses and claims subject matter disclosed in his earlier filed pending application, Serial No. _____, filed _____; that, as to the subject matter of this application which is common to said earlier application, he does not know and does not believe that the same was ever known or used before his invention thereof or patented or described in any printed publication in any country before his invention thereof or more than one year prior to said earlier application, or in public use or on sale in the United States more than one year prior to said earlier application; that said common subject matter has not been patented before the date of said earlier application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows _____; that, as to the subject matter of this application which is not common to said earlier application, he does not know and does not believe that the same was ever known or used before his invention thereof or patented or described in any printed publication in any country before his invention thereof or more than one year prior to the date of this application, or in public use or on sale in the United States more than one year prior to the date of this application, and that said subject matter has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to the date of this application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows: _____

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____

The parenthetical material reading "(The specification and oath follow the petition.)" following form 3.21 is amended to read: "(The specification and oath, or declaration, follow the petition.)"

Form 3.23a, an alternative to form 3.23, *Design patent application, oath*, follows:

3.23a *Design patent application; declaration.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
_____, the above-named petitioner--, declare-- that _____, citizen-- of _____, and resident-- of _____, that _____ verily believe-- to be the original, first and _____ inventor-- of the design for _____ described and claimed in the foregoing specification; that _____ do-- not know and do-- not believe that the same was ever known or used before _____ invention thereof, or patented or described in any printed publication in any country before _____ invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said design has not been patented in any country foreign to the United States on an application filed by _____ or _____ legal representatives or assigns more than six months prior to this application; and that no application for patent on said design has been filed by _____ or _____ representatives or assigns in any country foreign to the United States, except as follows: _____

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post Office address _____

NOTE: See applicable notes under form 3.11(a).

The parenthetical material reading "(The specification and oath follow the petition.)" following form 3.25 is amended to read: "(The specification and oath, or declaration, follow the petition)".

Form 3.26a, an alternative to form 3.26, *Plant patent application, oath*, follows:

3.26a *Plant patent application, declaration.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
A _____ B _____, the above-named petitioner declares that he is a citizen of the United States of America and resident of _____ that he verily believes himself to be the original, first and sole inventor of the new and distinct variety of _____ described and claimed in the foregoing specification; that he has asexually reproduced the said new and distinct variety; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said new and distinct variety of plant has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address _____

Form 3.31a, an alternative to form 3.31, *Reissue application, oath; by the inventor*, follows:

3.31a *Reissue application, declaration; by the inventor.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
_____, the above-named petitioner, declares that he is a citizen of the United States of America, and a resident of _____ in the State of _____; that he verily



believes him self to be the original, first, and sole inventor of the invention described and claimed in Letters Patent No. _____ and in the foregoing specification and for which improvement he solicits a patent; that he does not know and does not believe that said improvement was ever known or used before his invention thereof, that (continue with the allegations and facts required by § 1.175) _____

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address _____

Form 3.32a, an alternative to form 3.32, *Reissue application, oath; by assignee*, follows:

3.32a *Reissue application, declaration; by assignee.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
A _____ B _____, the above-named petitioner, says that he is a citizen of the United States and resident of _____ in the State of _____; that the entire title of Letters Patent No. _____, for _____, granted on _____ to C _____ D _____, is vested in him; that he verily believes the said C _____ D _____ to be the original, first and sole inventor of the invention described and claimed in the aforesaid Letters Patent and in the foregoing specification; that he does not know and does not believe that said invention was ever known or used before the invention thereof by the said C _____ D _____; that (continue with the allegations and facts required by §1.175) _____

The undersigned petitioner-- declare-- further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address _____

NOTE: May be used only when the reissue application does not seek to enlarge the claims of the original patent.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6; P.L. 88-292, 78 Stat. 171)

EDWARD J. BRENNER,
*Commissioner of Patents.*

Approved:
J. HERBERT HOLLOMON,
*Assistant Secretary for Science and Technology.*

[F.R. Doc. 64-13368; Filed, Dec. 28, 1964; 8:51 a.m.]

*Published in 29 F.R. 18502-18506, Dec. 29, 1964*

# PATENT EXAMINING CORPS

## H. B. WHITMORE, Superintendent

## CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 1, 1964

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 5-20-62 | 1-28-57 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—L. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 12- 3-62 | 7- 9-56 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 9-23-58 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 8- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—L. H. GASTON, Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 10- 1-62 | 3-11-57 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-17-62 | 11- 7-55 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 12-29-55 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 10-5 -62 | 1-30-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 9- 3-59 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-10-62 | 12-22-53 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 4- 5-56 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 5-18-55 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-12-62 | 6-20-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 12-26-59 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 208,209 |
| Total number of Design applications pending | 5,762 |
| Total number of applications awaiting action (excluding Designs) | 138,972 |
| Total number of Design applications awaiting action | 2,593 |
| Date of oldest new application awaiting action | May 19, 1959 |
| Date of oldest amended application awaiting action | Dec. 22, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during January 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,433,824 to 2,435,186, inclusive

Plant Patents ..... Numbers 774 to 782, inclusive



| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner. Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids. | 10- 2-62 | 10-31-60 |
| METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner. Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 12-12-58 |
| MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner. Special Article Making; Assembling, Tool and Implement Making; and Metal Working. | 11- 2-62 | 6-29-55 |
| MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders. | 1-22-63 | 8-13-59 |
| HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner. Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling. | 1-17-63 | 10- 3-58 |
| FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner. Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing. | 2- 1-63 | 9-22-59 |
| POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner. Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3- 4-63 | 5-25-59 |
| HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner. Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination. | 5-19-59 | 6-21-63 |
| **GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner. Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working. | 7- 8-63 | 2- 2-60 |
| CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner. Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 1-20-58 |
| PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12- 6-62 | 7-23-57 |
| TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner. Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-19-63 | 12-10-59 |
| TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner. Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 2-26-63 | 12-26-58 |
| FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner. Furniture; Supports; Cabinet Structures; Receptacles; Baggage. | 3- 4-63 | 4-17-63 |
| PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner. Printing; Typewriters; Stationery; Material Treatment. | 6-11-62 | 1-28-57 |
| PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—L. R. PRINCE, Supervisory Examiner. Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner. Industrial Arts; Household, Personal and Fine Arts. | 10-16-61 | 2-21-64 |

# DECISIONS IN PATENT AND TRADEMARK CASES

## In the United States Patent Office
## Before the Board of Interference Examiners

PEZZILLO *v.* LITZENBERG AND WHITE

*Patent Interference No. 84,405. Decided August 29, 1952*

1. INTERFERENCE—CONCEPTION—SKETCH NEED NOT SHOW DETAILS REPRESENTING THE TECHNICAL MINUTAE ASSOCIATED WITH SKILL IN THE ART.

"Pezzillo's counsel in his questioning of White subjected White Exhibit 4 to a severe attack as an insufficiently detailed showing (pp. 45–51 White Rec.). The attack seems based upon a premise that details for conception must be shown to an extent usually encountered in production drawings for manufacture. Not even patent application drawings are apt to show such detail. The real question is whether or not the sketch and accompanying explanation discloses completely the invention idea to a person skilled in the art. Details which represent the technical minutae associated with skill in the art do not have to be shown for the act of conception of the invention. Litzenberg was then a person skilled in the art and the disclosure to him constitutes evidence of conception."

2. SAME—EVIDENCE.

"* * * failure to conclusively prove fraud does not mean that the attacked exhibits must be held to be sound evidence establishing an inventive act if they or the circumstances as a whole or both invite skepticism."

3. SAME—SAME—PHOTOCOPY OF DRAWING WITH NOTARIAL INSCRIPTION IN SEALED ENVELOPE MAILED, RETURNED TO AND KEPT IN POSSESSION OF INVENTOR.

Upon considering, as evidence of conception a photocopy of a drawing with a notarial inscription (Exh. 1A) in a sealed envelope (Exh. 1) mailed by, returned to, and kept in the possession of the party Pezzillo, *Held* that "In our opinion Pezzillo's Exhs. 1 and 1A constitute proof of too weak a nature in themselves to establish conception in 1939 or of a definitely ascertainable later time"; that "The burden of proof is upon Pezzillo and the discharge of that burden requires the submission of proof not readily open to suspicion as being possibly spurious"; and that "In order for Pezzillo Exhs. 1 and 1A to have been above suspicion and thus worthy of weight, Exhibit 1A should have been the original drawing and Exh. 1 should have been in neutral custody throughout the period in question."

4. SAME—SAME—SAME.

"Pezzillo Exhibit 1A is a photostat and a photostat in the absence of agreement is not primary evidence entitled to due weight. An original drawing is primary evidence and accordingly entitled to due weight depending on the circumstances if it be unaltered or if altered there is full and satisfactory explanation. Whereas fraud or alteration is difficult to commit and relatively easy to detect on an original drawing, it is quite the opposite with respect to a photostat. Parts can be pasted on an original document and a second or third photostat will fail to show the synthetic nature of the composition. Such compositions were part of the basis of the proceeding against Mas which culminated in the cases *Mas* v. *U.S.* 579 O.G. 151, 1945 C.D. 25, 66 USPQ 350, 151 F.2d 32; *Mas* v. *Coca Cola Co.* (Parker, 4th Cir.) 74 USPQ 275, 163 F.2d 505; *Mas et al.* v. *Coca Cola* (4th Cir.) 94 USPQ 156. The same lesson that a photostat is poor evidence as of its alleged date is taught by the lack of clear evidence of a seal on Pezzillo Exh. 1A. M'Cool showed that it may have been present on the original drawing but lost on reproduction. Even if this were the case it fortifies the rule of caution against taking a photostat at face value unless the parties so agree."

5. SAME—SAME—SAME.

"As to the sealed envelope Pezzillo Exh. 1 having been produced in an apparently intact condition at the taking of testimony, the same rule of legal caution is held to apply. * * * The sealed condition of an envelope held in the personal custody of an inventor for a number of years where manipulation at leisure is possible is flimsy circumstantial evidence at best compared to the corroboration of a reliable neutral custodian."





6. SAME—SAME—CONCEPTION.

"Marino in effect merely stated that Pezzillo showed him Pezzillo Exh. 2 in 1939 * * *. Pezzillo Exh. 2 is another photostat like Pezzillo Exhibit 1A. This statement coming eleven years after the event constitutes a remarkable feat of recollection and we are not prone to give it weight without supporting circumstances of which there are none of significance. Marino admitted he was not a pump man * * * and he failed to show that there was imparted to him in 1939 an intelligible explanation of the structure and *modus operandi* of the pump. The pump is an unusual type and such intelligent communication is a necessary element of disclosure to establish conception (*Eastman* v. *Houston* 18 App. D.C. 135, 1901 C.D. 386, 95 O.G. 2064) unless the testimony as a whole is non-controversial and convincing which is not the case here (*Levy* v. *Gould & Rice* 24 CCPA 910, 1937 C.D. 304, 481 O.G. 679, 87 F.2d 524)."

7. SAME—SAME—CREDIBILITY OF WITNESS.

"Paul Pessillo a brother of the junior party testified that the latter showed him * * * a later drawing Pezzillo Exh. 3 in 1949 in the presence of a third person, a contractor in Brigantine * * *. When pressed on cross-examination for the name of the contractor in Brigantine, Paul Pessillo refused to give it unless he consulted with the contractor first. * * * it is clear that Paul Pessillo's deposition is not entitled to weight for White had a legal right to check with the alleged contractor the truth of Paul Pessillo's statements before Paul Pessillo had an opportunity to bring any possible pressure to bear through prior consultation. At the same time if the contractor existed the episode reveals a motivation in Paul Pessillo to place personal loyalties above a full and frank deposition, likewise affecting his credibility. The deposition of Paul Pessillo is accorded no weight."

Before HEYMAN, ISAACS, and LEVIN, *Examiners of Interferences*

HEYMAN, *Examiner of Interferences.*

The invention herein involved is directed to a combined impeller pump and electric motor of a flattened variety wherein the stator and rotor are mounted adjacent each other, the stator being embedded and sealed in a stationary housing and the rotor being affixed to the impeller. This type of motor is referred to in the art and record as an axial air gap motor from the fact that the air gap dimension is measured parallel to the axis of the shaft as compared to measurement in a radial direction in the conventional motor. The count in interference is as follows:

*Count:* In a motor pump unit, a stationary housing, an alternating current motor in said housing, said housing having an intake and a discharge, an annular chamber in said housing, the stator of said motor being mounted in said chamber, means to insulate said stator from the fluid being impelled, a centrifugal impeller mounted to rotate within the housing at one side of the stator and having passages leading from the intake through the impeller towards its outer periphery and to said discharge, and the rotor of the motor being mounted on a side wall of the impeller concentrically thereof in alignment with the stator and spaced axially therefrom to form between said rotor and said stator an axial fluid gap.

The senior party is involved on a joint application Serial No. 111,106 in the names of Litzenberg and White, filed August 19, 1949. Pezzillo, the junior party, filed his application Serial No. 119,288 on October 3, 1949 and has the burden of proof by a preponderance of the evidence.

Both parties filed preliminary statements, took extensive testimony, filed briefs and argued at final hearing.

In addition to the priority question there is presented for disposition a motion for leave to convert the Litzenberg and White application to a sole White application. Also, discussion is required of testimony relating to a possible commission of fraud by Pezzillo in connection with his Exhibits 1, 1–A and 2 and an intimation of derivation by White from Pezzillo. The latter two matters will be

taken up at a later appropriate point in the opinion, but it may be noted at this time that the fraud matter became largely inconclusive because of conflicting opinions of the respective parties' experts and the intimation of derivation proved unfounded. The motion for leave to convert is considered first.

The motion for leave to convert was filed February 17, 1951, before the close of Litzenberg and White's time for taking testimony, in due conformance to the provisions of Rule 45. It was accompanied by a sole preliminary statement by White alleging the same dates as the joint preliminary statement on file, a sole oath by White, a disclaimer by Litzenberg and a joint affidavit by Litzenberg and White setting forth adequate reasons for not having discovered the error sooner. Pezzillo at the time strenuously opposed granting of the motion and consideration of it was postponed to final hearing. The testimony developed no reason for not granting the motion but on the contrary supported it. At final hearing it was apparent that Pezzillo in recognition of the fact that the motion and showing fulfilled requirements no longer opposed the granting thereof. In fact on page 1 of his brief Pezzillo admits that the parties are Pezzillo and White. Accordingly the motion is granted and the senior party hereto is recognized as the sole applicant Howard T. White. The formal act of converting the application, however, may be undertaken by the Primary Examiner at the conclusion of the inter partes proceeding.

Hereinafter the Litzenberg and White record and exhibits will be referred to as the White record and exhibits.

The respective dates alleged by the parties in their preliminary statements are as follows:

| | Pezzillo | White |
|---|---|---|
| First drawing | 11- 7-39 | 10- -47 |
| First written description | 11- 7-39 | 8-16-49 |
| First disclosure | 11-14-39 | 10- -47 |
| Actual reduction to practice | [1] 11-10-49 | [1] 1-11-50 |
| Active diligence began | 4-17-48 | 7-20-48 |
| Filing date | 10- 3-49 | 8-19-49 |

[1] After filing.

It is noted from the preliminary statement allegations that neither party alleges actual reduction to practice prior to filing. Hence the senior party White on the basis of the filing of his application has the earliest reduction to practice date as of August 19, 1949. Pezzillo as the last to reduce to practice must in order to prevail establish prior conception and reasonable diligence from a time just before White entered the field to his own filing date. Referring again to the above alignment of preliminary statement dates, Pezzillo does not allege commencement of active diligence in reducing the invention to practice until April 17, 1948 and if White is enabled to establish conception of the invention prior to that date Pezzillo could not prevail for lack of reasonable diligence in the critical period. The act of White's entry into the field thus first requires fixation in point of time.

White in his preliminary statement alleges October 1947 for disclosure of the invention to others and the record does show disclosure to three witnesses in the latter part of 1947. The witnesses are David Litzenberg, Carl Dieterle and Richard Carpenter.

At that time White worked for an enterprise, the Pezzillo Pump Company, largely owned and managed by Albert Pezzillo, White's opponent in the case. In fact most of the witnesses for both parties were associated with the company in one capacity or another and well acquainted with each other.



As above noted whereas White considered that Pezzillo committed fraud by fabricating early conception evidence, Pezzillo seeks to have it inferred that White derived the invention from Pezzillo (page 7, Pezzillo brief). As is usual in a case of this type the record poses problems of degree of credence to be accorded certain witnesses. The various factors it is considered require at this point a delineation of background with deferment of discussion of White's corroboration to a subsequent point.

Pezzillo after release from the Navy in June 1945 rented a building at Broad and Cumberland Streets in Philadelphia for the purpose of producing a water circulating combined motor and pump. The type of assemblage Pezzillo had in mind for production was not that of the count but one employing a conventional type motor with the rotor hollowed out and incorporating an impeller therein. To prevent the circulating fluid from reaching and ruining the field coils it was contemplated to seal off the stator with an inner cylindrical sleeve but finding a suitable material therefor and devising a suitable method for sealing it to the stator proved major stumbling blocks to actual production for a period of several years. This type of pump Pezzillo termed the "Magnaflow" and in the years 1939 to 1948 beginning with the date September 29, 1939 Pezzillo filed several applications on various modifications thereof, which applications issued into patents (pp. 50, 56, 58 Pezzillo Rec.).

Pezzillo called his organization the Pezzillo Pump Company but it was not incorporated until about a year later according to Pezzillo (p. 52, Pezzillo Rec.) or two years later on June 30, 1947 according to the witness Coonan (p. 465 White Rec.). Prior to that time it was a private enterprise or partnership (p. 464 White Rec.).

Initially the key men in the organization were Albert Pezzillo, Frank J. Coonan as general manager; White in charge of the coil or motor winding department with added duties on production and in the laboratory; Anthony Pezzillo, a brother of the junior party, given executive and other duties; and two others Rinaldo Pezzillo and Harry Jockers who didn't testify (pp. 421, 465, 483, 258 White Rec.; p. 52 Pezzillo Rec.).

Pezzillo testified he sold a twenty-five percent share in his patents to his brother Anthony and "gave" interests in the company to Coonan and White (pp. 50, 52 Pezzillo Rec.). White explains this alleged gift as an issuance of some non-voting preferred stock to him in payment for work done (p. 38, White Rec.). White's version is presumably correct for Pezzillo admittedly started the company partly on the basis of borrowed funds (p. 57, Pezzillo Rec.) and aside from its business improbability he could not legally be a dispenser of largess stemming from funds advanced by others. The item in itself is of no direct bearing on the question of priority but bears upon credibility in the evaluation of Pezzillo's testimony. The item is an unimportant one but one of a number. The strength of an urge on the part of an inventor to slant his case may be gauged to the extent it penetrates into the items of lesser importance. *Rudolph* v. *Gawiler* 24 CCPA 1121, 484, O.G. 493, 1937 C.D. 515, 88 F.2d 993. This

matter will be adverted to again later but at this point it is desired to amplify the organizational picture.

The Pezzillo Pump Company to maintain itself pending development of the Magnaflow pump manufactured small motors and a conventional shaft driven circulating pump. According to Anthony Pezzillo the company did well financially in 1947 but suffered a decline thereafter (p. 273 Pezzillo Rec.). By 1947 it had a number of employees and worked several shifts. Paul Pessillo another brother of the party Pezzillo came with the firm in 1946 as an inspector and his testimony is submitted in behalf of Pezzillo.

DiLeo a former brother-in-law of Pezzillo worked in the plant at first as general handy man and later as truck driver. His name figures prominently in White's record as the recipient of White's first disclosure but his testimony was not taken. Both White and Litzenberg explained that DiLeo, although personally friendly, when asked to testify explained to them in effect that family loyalty prevented him from testifying in White's behalf even under subpoena (pp. 88, 107, 108 White Rec.).

Whether or not the explanation given by White and Litzenberg is correct it should be noted that the record does not show that Pezzillo exerted any pressure in the matter. At the same time it should be further noted that Pezzillo did not seek to eradicate any possible inference from the episode by calling DiLeo in rebuttal.

Litzenberg was hired by the Pezzillo Pump Company in June 1947 as consulting engineer for the express purpose of eliminating the difficulties with the Magnaflow pump and upon his assumption of duties White was placed under his direction. In other words White no longer reported directly to Pezzillo but to Litzenberg.

Litzenberg was instrumental in bringing into the company his brother-in-law Richard Carpenter. Carpenter in 1947 was a student studying engineering at Illinois Institute of Technology. In the Christmas season of 1947 Carpenter visited Litzenberg at the Broadwood Hotel in Philadelphia in connection with obtaining a job at the Pezzillo Pump Company and he did in fact work for the company from February 1948 to April 1948 when changes as regards the company took place. Carpenter as well as Litzenberg testified for White. Carpenter testifies to a disclosure by White in the Christmas season of 1947.

One other witness need be mentioned at this time; namely, Carl Dieterle. Dieterle was not an employee of the Pezzillo Company. He is a graduate chemist whose main interest was as an industrial agent or as he put it an "intermediary" (pp. 149, 162 White Rec.). Dieterle had a client that needed fractional horsepower motors for motion picture projectors in the early fall of 1947 and since the Pezzillo Pump Company was listed in the telephone directory as a manufacturer of motors he phoned the company and Litzenberg happened to answer (p. 150, White Rec.). The phone call did not produce the requisite motors but resulted in an acquaintanceship which led to meetings involving Dieterle, Litzenberg and White. In the first of these meetings about the early or middle part of November 1947, at dinner at the Broadwood Hotel, it is alleged that in a discussion of mutual interests there was a disclosure of White's conception of the axial air gap motor pump (p. 153 White Rec.).



*Dieterle testifies for White*

Other witnesses will be brought into the discussion as necessary.

About May or June 1948 Pezzillo left the Pezzillo Pump Company and a realignment took place. In 1947 Pezzillo had organized Republic Industries, Inc. which functioned as a holding company for the Pezzillo patents, but remained inactive. When Pezzillo severed his connection with the Pezzillo Pump Company, Republic was activated and an exchange of equities took place. Pezzillo relinquished his interest in the Pezzillo Pump Company and that company relinquished its interest in his patents. Pezzillo took Litzenberg and White with him and the three of them and Vincent Panati, Pezzillo's general counsel constituted the shareholders of Republic (pp. 54 Pezzillo Rec.; p. 96 White Rec.). In October or November 1948 Litzenberg and White resigned from Republic and started Alliance Industries, Inc. to produce the Magnaflow type pump under license from Republic. As of January 1951 still another organization, the Atlantic Pump Corporation handled the axial air gap pump (Pezzillo Exhibit 7) but this is a mere matter of passing interest as we are concerned with the earlier period.

To return to White's evidence of conception, White introduced in evidence an original sketch, White Exhibit 4, illustrating an axial air gap motor pump responsive to the requirements of the count. The sketch is dated "10–27–47" and bears the signatures of White and Litzenberg.

Litzenberg recognized the sketch, stated he witnessed it on October 27, 1947 and described in detail the elements depicted therein (pp. 98, 99, 114 White Rec.).

According to White the idea occurred to him about a month earlier when DiLeo brought to the plant an article or advertisement illustrating what may have been a pancake type motor. The existence of a motor of this type occasioned surprise to those present and evoked considerable speculation as to its nature. The *res gestae* of this event is of considerable interest and Coonan describes it as follows:

**XQ101. Now, did you know that James DiLeo in September of 1945 disclosed to—'47, rather—disclosed to Mr. White an article describing an axial air gap motor?**

**A. I can't say that he disclosed an article divulging the identity of an axial air gap motor but I am completely familiar with what you are talking about and I would be happy to give you my version of what happened. That actually started in my office.**

**Jimmie used to have a habit of coming into my office and saying, "How, Chief," every morning, and saying a few words with me. And he happened to ask me if I had seen an ad in the Sunday supplement of the paper and I remarked that I had seen the ad and intended to tear it out and bring it over into the plant.**

**XQ102. Now, could you fix the date?**

**A. No, I can't do that.**

**XQ103. Well, what is your closest recollection as to the date?**

**A. I would say that the statement that you made is about as accurate as I could place it, September. I don't really know. I think that you people could easily substantiate that because I am positive that it was in the Sunday supplement of the Bulletin and it was an ad by General Mills, I remember that specifically, because I asked Mr. Pezzillo, Mr. Albert Pezzillo, at that time what the dickens they would show such a gadget for, and it was his recollection that they were going to go into the appliance field.**

**Now, continuing that still further, we did show it around the place. My recollection of it was that no one could properly identify it. Some of us thought**

that it was some adaptation of those flat motors that they used to use with those ceiling fans in bakeries and ice cream parlors.

* * * * * * *

RDQ141. Now, Mr. Coonan, I want to take you back to this picture or illustration of a motor that was brought forward by Mr. DiLeo. I believe you made the statement "that none of us could identify the motor."

A. As to the best of my recollection, that is correct because we were guessing all over creation. As I started to say before, some thought it was a pancake motor, others thought it was a permanent magnet type of a motor and I don't really believe that at that specific moment anyone in the company knew what it was. It was a gadget!

RXQ142. Are you including Mr. Albert R. Pezzillo?

A. I am including everyone because I had a general discussion with the fellows that were there and I know we were all guessing what it was.

White had been troubled for a long time with the problem of welding a cylindrical liner in the Magnaflow type of pump (Q. 22, p. 33; Q. 18, p. 97, p. 117 White Rec.) and the type motor shown by DiLeo offered a release from that problem since the stator could be sealed with a disc instead of a cylinder. He states he immediately made sketches in the presence of DiLeo and also showed them to Litzenberg (pp. 33, 34 White Rec.). As previously noted we do not have DiLeo's testimony but Litzenberg confirms White's account of the disclosure prior to October 27, 1947 to him (pp. 97–102, 132, 133 White Rec.).

In his preliminary statement White does not claim evidence of conception earlier than October 1947 and it is considered the disclosure in connection with Exhibit 4 constitutes White's earliest satisfactory evidence of conception of the invention of the count.

Further disclosures by White are corroborated by Dieterle as of the first half of November 1947 (pp. 153, 168 to 172 White Rec.) and by Carpenter as of the Christmas season of 1947 (pp. 316, 318, 319 White Rec.). The testimony of these witnesses lend validity to Litzenberg's testimony and Litzenberg's corroboration is held to establish conception for White as of no later than October 27, 1947.

[1] Pezzillo's counsel in his questioning of White subjected White Exhibit 4 to a severe attack as an insufficiently detailed showing (pp. 45–51 White Rec.). The attack seems based upon a premise that details for conception must be shown to an extent usually encountered in production drawings for manufacture. Not even patent application drawings are apt to show such detail. The real question is whether or not the sketch and accompanying explanation discloses completely the invention idea to a person skilled in the art. Details which represent the technical minutae associated with skill in the art do not have to be shown for the act of conception of the invention. Litzenberg was then a person skilled in the art and the disclosure to him constitutes evidence of conception.

Since Pezzillo in his preliminary statement does not claim to have commenced reasonable diligence in reducing the invention to practice until April 17, 1948, some five and a half months after White entered the field, this decision could end here were it not for the question of opportunity for derivation raised by Pezzillo and the evidence of possible fraud presented by White. The latter charge in view of Pezzillo's rebuttal has been modified in White's final hearing brief to one that Pezzillo is untruthful and [un]reliable but the question whether modified or not nevertheless must be discussed. *Precision Instrument et al.* v. *Automotive Co.*, 324 U.S. 806, 576 O.G. 369, 1945 C.D. 582, 65 USPQ 133.



The two questions are intermingled since the imputation of derivation presupposes an earlier conception by Pezzillo and it is Pezzillo's proof of early conception which was alleged to be fraudulent.

Pezzillo in the taking of his testimony produced a sealed envelope, Pezzillo Exh. 1, which had been sent by him on November 25, 1939 to Frank Marino of Philadelphia. Pezzillo's arrangement with Marino was that the latter was to return the envelope intact to him which Marino states he did (p. 110 Pezzillo Rec.). Except for the period from April 1942 to June 1945 when he was in the Navy Pezzillo testified the letter was in his personal possession (pp. 6, 60 Pezzillo Rec.).

Inside the envelope which was opened during the taking of testimony (p. 147, Pezzillo Rec.) was, not an original drawing, but a photostat showing a combined axial air gap motor and pump with legends, explanation, and notarial inscription. On it there were items which roused White's suspicion that the envelope had been unsealed and the photostat inserted at a later date.

Among these was the usage of the term "axil air gap," "axil" obviously being a misspelling of *axial*. According to Charles Libby, manager of the electrical department of Fairbanks Morse in New York City, the term "axial air gap" was first used by Fairbanks Morse and that occurred in a publication released in May 1941 (pp. 415 to 420 White Rec.; White Exhibit 28).

Another item is that the expiration year of the commission of the notary public Joseph W. Klingel is given as 1944 whereas the record shows that Klingel was a most meticulous person and the expiration year of his commission was 1943 (pp. 341, 345 White Rec.; White Exhibit 19). Klingel retired to Florida in December 1943 (White Exhibit 19) and was disinclined to testify (Pezzillo Exh. 30*a*). He was, however, visited by Pezzillo in 1947 (p. 455 Pezzillo Rec.). The significance of the erroneous year lies in an implication that it may have been typed in much later when recollection of the correct year had grown dim. Pezzillo in attempted rebuttal introduced evidence, Pezzillo Exh. 26, to show that Klingel was accorded a renewal of his commission for four additional years from April 1943. How this renewal applied for in March 1943 (Pezzillo Exh. 26) can explain or rectify an error allegedly committed years before the renewal was contemplated is not apparent.

Another item is that clear evidence of the notary's seal is lacking. Melcher, White's expert on questioned documents could find no evidence of a seal and M'Cool, Pezzillo's expert, thought there were indications of it.

Melcher analyzed Klingel's signature on Pezzillo Exh. 1A and on the basis thereof considered it a forgery. M'Cool also analyzed it and was equally positive that it was genuine.

Another item on which the experts differed in their opinions is the significance of a slight displacement of part of one of the post office rubber stamp impressions astride the flap of the envelope Pezzillo Exh. 1 indicating reopening thereof. M'Cool stated that based on a transmitted light photograph the fibers of the paper and the glue lines appeared intact indicating that the envelope had not been subsequently opened either forcibly or by steaming or wetting.

Many other items were analyzed by the experts but in the final analysis their opinions flatly differed and the proof of alleged fraud based on their testimony became inconclusive.

[2] However, failure to conclusively prove fraud does not mean that the attach[k]ed exhibits must be held to be sound evidence establishing an inventive act if they or the circumstances as a whole or both invite skepticism (*Rudolph* v. *Gawiler*, supra).

[3] In our opinion Pezzillo's Exhs. 1 and 1A constitute proof of too weak a nature in themselves to establish conception in 1939 or of a definitely ascertainable later time. The burden of proof is upon Pezzillo and the discharge of that burden requires the submission of proof not readily open to suspicion as being possibly spurious. In order for Pezzillo Exhs. 1 and 1A to have been above suspicion and thus worthy of weight, Exhibit 1A should have been the original drawing and Exh. 1 should have been in neutral custody throughout the period in question.

[4] Pezzillo Exhibit 1A is a photostat and a photostat in the absence of agreement is not primary evidence entitled to due weight. An original drawing is primary evidence and accordingly entitled to due weight depending on the circumstances if it be unaltered or if altered there is full and satisfactory explanation. Whereas fraud or alteration is difficult to commit and relatively easy to detect on an original drawing, it is quite the opposite with respect to a photostat. Parts can be pasted on an original document and a second or third photostat will fail to show the synthetic nature of the composition. Such compositions were part of the basis of the proceeding against Mas which culminated in the cases *Mas* v. *U.S.* 579 O.G. 151, 1945 C.D. 25, 66 USPQ 350, 151 F.2d 32; *Mas* v. *Coca Cola Co.* (Parker, 4th Cir.) 74 USPQ 275, 163 F.2d 505; *Mas et al.* v. *Coca Cola* (4th Cir.) 94 USPQ 156. The same lesson that a photostat is poor evidence as of its alleged date is taught by the lack of clear evidence of a seal on Pezzillo Exh. 1A. M'Cool showed that it may have been present on the original drawing but lost on reproduction. Even if this were the case it fortifies the rule of caution against taking a photostat at face value unless the parties so agree.

[5] As to the sealed envelope Pezzillo Exh. 1 having been produced in an apparently intact condition at the taking of testimony, the same rule of legal caution is held to apply. Pezzillo on page 3 of his reply brief ridicules an expression of such caution by his opponent. We do not agree that an attitude of legal caution should be dispensed with so lightly. The sealed condition of an envelope held in the personal custody of an inventor for a number of years where manipulation at leisure is possible is flimsy circumstantial evidence at best compared to the corroboration of a reliable neutral custodian. It is self evident that inventors are individuals of consummate ingenuity. It is their mark of distinction that they conceive of things and arts not apparent to others. In spite of M'Cool's opinion as to the glue line condition of Pezzillo Exh. 1 (p. 23 M'Cool's testimony) we do not consider it beyond an inventor's ability by patient manipulation utilizing steam appropriately or other agent to skilfully unseal an envelope without any greater loss of glue line than is apparent in the top flap as shown in Pezzillo Exh. 24. M'Cool states that such procedure would result in loss of glue requiring the application of additional mucilage and this would leave brush marks or stabs of some kind not apparent in the transmitted light photograph (Pezzillo Exh. 24). This may be so but a transmitted light photograph does not show too much too clearly and it may be possible to add mucilage utilizing a single skilful stroke with a swab or a smoothing stroke with a rubber squeegee. It may also be possible since the advent of rubber paper cement to send a registered letter through the post office without utilizing the original mucilage on the flap at all. Subsequently pulling the flap open and removing the cement by friction presumably could leave the original mucilage intact for use at a later time. We do not suggest nor is there any evidence suggesting that any of these expedients were used by Pezzillo in connection with Pezzillo Exhibit 1. They are cited as examples of possibilities which justify application of a rule of legal caution as regards accepting circumstantial evidence of this particular character.



Added to these possibilities is the anomaly in the case of illogically preserving the durable photostat Pezzillo Exh. 1A in a sealed envelope and placing the fragile original drawing in a desk drawer where it would be subject to repeated handling and possible pilfering the latter of which in fact Pezzillo ascribes to White. The careful preservation of the secondary evidence on which fraud is difficult to detect and the careless disposition of the primary evidence, on which fraud if committed would be hard to hide, permitting convenient explanation as to its disappearance is too illogical as regards sound planning not to inspire caution.

Pezzillo Exhibit 1 and its enclosure Pezzillo Exh. 1A as evidence are held insufficient in weight to establish an early conception in behalf of Pezzillo.

Pezzillo does not rely alone on Exhs. 1 and 1A but has also submitted the testimony of Marino, Bliwise and Paul Pessillo in support of an early date of conception.

[6] Marino in effect merely stated that Pezzillo showed him Pezzillo Exh. 2 in 1939 (Q. 11, p. 111 Pezzillo Rec.). Pezzillo Exh. 2 is another photostat like Pezzillo Exhibit 1A. This statement coming eleven years after the event constitutes a remarkable feat of recollection and we are not prone to give it weight without supporting circumstances of which there are none of significance. Marino admitted he was not a pump man (p. 112 Pezzillo Rec.) and he failed to show that there was imparted to him in 1939 an intelligible explanation of the structure and *modus operandi* of the pump. The pump is an unusual type and such intelligent communication is a necessary element of disclosure to establish conception (*Eastman* v. *Houston*, 18 App. D.C. 135, 1901 C.D. 386, 95 O.G. 2064) unless the testimony as a whole is non-controversial and convincing which is not the case here (*Levy* v. *Gould & Rice*, 24 CCPA 910, 1937 C.D. 304, 481 O.G. 679, 87 F.2d 524).

Bliwise testified in such an offhand indefinite manner concerning a possible disclosure by Pezzillo to him prior to October 1947 that it is difficult to accord the testimony thereon material weight. He offered merely loose assertions "about 1947, I'd say" (Q. 5, 126 Pezzillo Rec.) or "In May" (1947) (p. 135 Pezzillo Rec.). These could be mere guesses. Without definite description of the occurrence and means to fix his recollection there is no proof when the event occurred, if at all. Further, the likelihood that this event occurred in May or at any time prior to the latter part of 1947 is exceedingly remote for Pezzillo would hardly have had such awareness of the type motor involved in May 1947 and lack of such awareness in September 1947 as pointed out by Coonan in regard to the DiLeo episode (p. 499 White Rec.).

Bliwise testifies to disclosures by Pezzillo later than the end of October 1947 but with these we are not concerned since their alleged occurrences are after October 27, 1947, the date accorded White for conception.

[7] Paul Pessillo a brother of the junior party testified that the latter showed him Pezzillo Exh. 2 in 1946 (p. 120 Pezzillo Rec.) and a later drawing Pezzillo Exh. 3 in 1949 in the presence of a third person, a contractor in Brigantine (p. 121 Pezzillo Rec.). He admitted he had practically no understanding of the alleged disclosure prior to the 1949 episode (Q. 15, p. 121 Pezzillo Rec.). Although the second related event is after October 1947, it is important because it bears upon Paul Pessillo's credibility. When pressed on cross-examination for the name of the contractor in Brigantine, Paul Pessillo refused to give it unless he consulted with the contractor first. Counsel for White then properly moved to strike the entire deposition. It is not clear that this motion was persisted in to final hearing but it is clear that Paul Pessillo's deposition is not entitled to weight for White had a legal right to check with the alleged contractor the truth of Paul Pessillo's statements before Paul Pessillo had an opportunity to bring any possible pressure to bear through prior consultation. At the same time if the contractor existed the episode reveals a motivation in Paul Pessillo to place personal loyalties above a full and frank deposition, likewise affecting his credibility. The deposition of Paul Pessillo is accorded no weight.

These were all the witnesses testifying to an early conception by Pezzillo and their testimony is obviously insufficient to discharge the burden resting upon Pezzillo to demonstrate a conception prior to White. It may be added Litzenberg testifies positively he personally disclosed to Pezzillo White's idea in October 1947 and that Pezzillo's response was that the plant could not afford any deviation from the work then projected (pp. 99, 100, 101 White Rec.). Pezzillo denies that the disclosure took place but all his provable activities took place later than October 1947. Of further significance is the fact that Coonan who was with Pezzillo from the beginning (Q. 17 p. 465 White Rec.) who held high office with the company, who enjoyed Pezzillo's confidence to a high degree and was given access from time to time to Pezzillo's confidential files (pp. 472, 478 White Rec.) never saw or was shown the original drawing or a photostat corresponding to Pezzillo Exh. 1A (Q. 49, p. 473 White Rec.). The same is true with respect to Anthony Pezzillo who was given his brother's complete confidence (Q. 28, pp. 261, 262; Q. 33, p. 263; Q. 80, 81, p. 274 White Rec.).

It is held that Pezzillo has not established conception of the invention prior to White's conception date and additionally it is held he has not established he was in possession of such invention for White to derive from him.

However, assuming *arguendo* that Pezzillo established conception prior to White there is still no adequate proof that White derived the invention from Pezzillo. The charge itself is weak and inadequate. It is worded on page 7 of Pezzillo's brief as follows:

> It is not denied that Pezzillo's desk was broken into and confidential papers taken; and the original drawing of Ex. 1A disappeared at that time. White admits of being accused of this breaking into of Pezzillo's desk. However, shortly after Pezzillo's desk was rifled White claims he conceived the invention here in issue and made a sketch of it. Hence, he had opportunity and his alleged conception is about the same time.



Pezzillo's desk was broken into but Pezzillo is the only person that links White with the incident and he has no proof whatever of the linkage or that confidential papers were taken. The record does not in any manner support the charge by Pezzillo. Litzenberg testified the incident occurred in the early months of 1948, as he recollected, shortly before he left the company in April 1948 (pp. 130, 131 White Rec.). Thus it was after White's proven date of conception which sequence at once removes motivation and derivation on the part of White. Furthermore, Anthony Pezzillo freely admitted that it was he who in the presence of others broke into the desk to settle an argument relating to a paper determining ownership of the building. His testimony appears on pp. 262 and 263 of White's record as follows:

> Q29. Did you ever have any occasion to break into his desk?
>
> A. Whether I had occasion or not, I did break into his desk.
>
> Q30. For what purpose?
>
> A. There was some friction or arguments, or whatever, I don't remember exactly what started it, but I believe it was something pertaining to the mortgage or the ownership of the building that we were in. There was a rumor that the building was in his wife's name and it was supposed to belong to the company, or something, I don't remember exactly, but I wanted to be certain that this was so and I know that Al wasn't in the building at the time. I don't think he was in the city at the time. There was other people present when I did this.
>
> I don't remember who was present, but I know there was someone else present. I believe it was Frank Coonan and I am not sure who else was there. I think Bill McAdams was there, and I reached under, I got underneath the desk, and I unlocked one of the levers that held the drawers open and I opened the desk and I couldn't find anything that I was looking for.
>
> Q31. Did you at that time take any papers from Mr. Albert R. Pezzillo's files?
>
> A. No, I didn't take anything out. I looked through everything. I was looking for an agreement, the agreement on this building, and I didn't find it there and that was the only time I did break into his desk.
>
> Q32. Did you ever take any drawings or sketches from Mr. Albert R. Pezzillo's files or desk?
>
> A. No, I had no reason to. Why should I? I owned twenty-five percent of everything he had, why should I?

In an effort to lay groundwork for his charge Pezzillo stated White shared his office and desk (p. 10 Pezzillo Rec.). This statement is not only denied by White but disproven by Coonan (pp. 469 to 471 White Rec.) and Anthony Pezzillo (pp. 260, 261 White Rec.). In fact White after Litzenberg came into the company had less contact with Pezzillo since he reported to Litzenberg and not to Pezzillo.

As pointed out in *Rider* v. *Griffith* (33 CCPA 884, 1946 C.D. 222, 588 O.G. 674, 154 F.2d 193, 69 USPQ 112) proof of motive and opportunity alone ordinarily is insufficient to sustain a charge of derivation. Pezzillo does not even have these; he has mere suspicion and as pointed out in *Fersing* v. *Fast* (28 CCPA 1318, 121 F.2d 531, 50 USPQ 112, 1941 C.D. 702, 532 O.G. 3) "suspicions cannot supply the requirements of the law."

Pezzillo's charge of derivation is not proven and this discussion in detail to indicate its flimsy unfounded nature would be unnecessary except that it brings in additional surrounding circumstances showing the unreasonableness of Pezzillo's story. As stated by the court in *Rudolph* v. *Gawiler*, supra:

> The reasonableness or unreasonableness of the story told by the appellant must be taken into account. Small facts and circumstances oftentimes throw greater light on the true situation than can be afforded in any other way.

One other item is of sufficient importance to be mentioned and that is in connection with Pezzillo Exhibit 8. That exhibit is a copy of an

agreement entered into April 11, 1950, before the declaration of the interference, between Pezzillo and Panati on the one hand and Litzenberg and Feldman on the other and approved by White. A paragraph therein is referred to on page 9 of Pezzillo's main brief and page 6 of his reply brief and in the latter it is urged that in effect the paragraph constitutes a disclaimer by White and Litzenberg of the involved invention. It is unnecessary to repeat the paragraph. It is in no sense the equivalent of the simple unequivocal disclaimer required by Rule 262 of the Rules of Practice. It simply represents that Pezzillo's patent rights in his axial air gap motor pump are his personally and are excepted from the agreement which passes other rights. It does not dispose of White's rights or inventorship and is held not to have the effect of a disclaimer.

Accordingly White is entitled to prevail as the first to conceive and reduce the invention to practice or, assuming Pezzillo to be the first to conceive the invention, for failure of Pezzillo to exercise reasonable diligence just before and for a prolonged period after White's entry into the field.

The motion to convert the Litzenberg and White application to a sole application of White is granted.

Priority of invention of the subject matter in issue is hereby awarded to Howard T. White, the senior party.

# REISSUES

## JANUARY 26, 1965

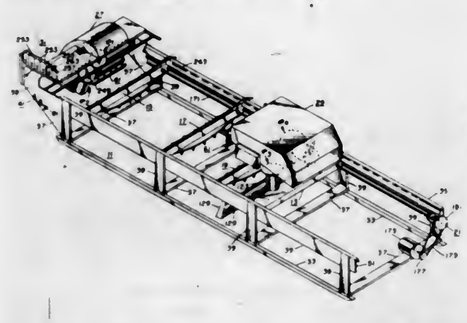
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

### 25,715
### WOOD COMPONENT MEMBER CUTTING APPARATUS

**George L. Mayo, Fort Worth, Tex., assignor to Clary Corporation, Fort Worth, Tex.**

**Original No. 3,080,895, dated Mar. 12, 1963, Ser. No. 143,794, Oct. 9, 1961. Application for reissue July 9, 1964, Ser. No. 393,799.**

**26 Claims. (Cl. 143—38)**



1. A building component member cutting machine comprising a main frame, first and second pivot arm structures pivotally fixed to said main frame about a first common horizontal pivot axis extending transversely of said main frame, first and second electric motor driven circular saws mounted on said respective pivot arm structure such that a chord of their respective blades is coincident with said common pivot axis, a carriage mounted on said main frame for traverse longitudinally of said main frame, third and fourth pivot arm structures pivotally fixed to said carriage about a second common horizontal pivot axis extending parallel to said first common pivot axis and at the same level thereof, third and fourth motor driven circular saws mounted on said respective third and fourth pivot arm structures such that a chord of their respective blades is coincident with said second common pivot axis, a linear tape extending longitudinally of said main frame for indicating the distance between said common pivot axes, a material conveyer traversing said main frame between said saw pairs and at a predetermined level relative to said common pivot axes, and means for fixing said saws in a plurality of predetermined relative angular positions.

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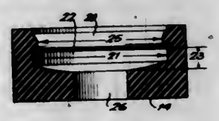
### 25,716
### FABRIC-COVERED GARMENT-BUTTON ASSEMBLING DEVICE

**William H. Decker, Roy J. Rieck, and Leslie H. Bennett, Cook County, Ill., assignors to Maxant Button and Supply Co., Chicago, Ill., a corporation of Illinois**

**Original No. 2,943,520, dated July 5, 1960, Ser. No. 769,689, Oct. 27, 1958. Application for reissue July 19, 1963, Ser. No. 301,229**

**1 Claim. (Cl. 79—5)**

*4. A device for assembling an outer and inner pair of flanged discs in permanently interlocked nested relationship by the interposed marginal portion of a piece of fabric overlying the outer face of the outer disc to form a fabric-covered garment button, the device comprising a one-piece elastic element having an upwardly-open cavity therein with a base portion sufficiently closed to support thereon the outer disc with the fabric tautened thereover and also prevent the fabric-covered disc from passing beyond the base portion of the cavity, and rib means spaced above the base portion of the cavity a distance substantially equal to the height of the outer disc flange and serving to maintain the outer disc, with the tautened fabric thereon, on the base portion of the cavity, the rib means also serving to bias the fabric inwardly over the outer-disc flange to facilitate folding the fabric into the outer disc preparatory to depressing the inner disc into the outer disc over the folded-in fabric to complete the formation of the fabric-covered button within the cavity subject to the removal of the button from the element.*



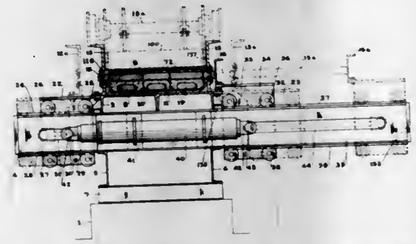
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### 25,717
### MACHINE FOR MAKING SLABS

**Morris Lapidus, 9031 Fort Hamilton Parkway, Brooklyn 9, N.Y.**

**Original No. 3,060,540, dated Oct. 30, 1962, Ser. No. 792,667, Feb. 11, 1959. Application for reissue Aug. 26, 1963, Ser. No. 304,708**

**8 Claims. (Cl. 25—99)**



1. In a machine of the type described for molding concrete slabs or the like, an open-topped mold having a horizontal mold bottom pallet and oppositely spaced mold end members movable to operative positions thereof on top of the pallet and to inoperative positions thereof beyond the ends of the pallet, each of the mold end members provided with a horizontally located [cut-off member] *closure plate* permanently attached thereto level at the top thereof with the top of the mold end member, coplanar at the side edges thereof with the side edges of the mold end member and extending in a direction away from the other of the mold end members, the mold also having oppositely spaced mold side members, each as long as the pallet, movable to operative positions thereof adjacent the side edges of the mold end members and the side edges of the *closure plates*, [cut-off members] in operative positions of the mold end members, and to inoperative positions thereof beyond the sides of the pallet, the mold side members, in operative positions thereof, extending from one end of the pallet to the other, means for moving the mold end members and other means for moving the mold side members to said operative and inopera-

tive positions thereof, an open-bottomed cementitious material depositing mechanism adapted for operative movement thereof in either direction lengthwise over the open top of the mold and to be moved to inoperative positions thereof over either of the *closure plates,* [cut-off members] oppositely spaced longitudinally extending stationary side members positioned beyond each end of the pallet on supporting means provided therefor and permanently attached thereto, the tops of the mold side members and stationary side members being above the level of the tops of the mold end members, the mold side members and stationary side members being end-adjacent one another and coplanar at the inside faces thereof in operative positions of the mold side members, the sides of the material depositing mechanism extending downward to a level closely adjacent the level of the tops of the mold end members and the tops of the *closure plates,* [cut-off members] the material depositing mechanism having a width such as to extend transversely from one mold side member to the other, in operative positions of the mold side members, and from one stationary side member to the other, the sides of the mechanism being closely adjacent the inside faces of the mold side members, in operative positions thereof, and the inside faces of the stationary side members, in said movements of the mechanism the sides thereof sliding against the inside faces of the mold side members, in operative positions thereof, and against the inside faces of the stationary side members.

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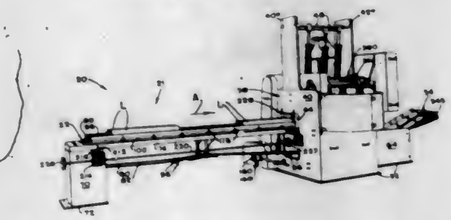
**25,718**

## APPARATUS FOR CUTTING ARTICLES

**Norval S. Barlament and Samuel J. Campbell, Green Bay, Wis., assignors to FMC Corporation, a corporation of Delaware**

**Original No. 3,049,954, dated Aug. 21, 1962, Ser. No. 663,119, June 3, 1957. Application for reissue May 6, 1963, Ser. No. 278,813**

**11 Claims. (Cl. 83—201)**



*7. In an apparatus for transversely cutting a log of material, said apparatus including a main support, means on said main support for holding a log in a cutting position, and a cutting member having a cutting edge; an auxiliary support, first means mounting said cutting member on said auxiliary support for circuitous travel of the cutting edge relative to said auxiliary support, second means mounting said auxiliary support on said main support so that said cutting member and holding means are vertically related to each other and so that said cutting edge lies in a plane extending transversely of said log, said second means mounting said auxiliary support for movement in an orbit about an axis extending transversely of said edge thereby to move said edge toward and away from said holding means into and out of engagement with a log held thereby, powered means for imparting said travel to the cutting edge, and powered means for moving said auxiliary support and thus said cutting member in said orbit with substantially constant angular speed so that as said cutting edge cuts into a log, the vertical component of said speed is greater than the horizontal component thereof, so that as said edge progresses through the log, said vertical and horizontal components respectively decrease and increase, and so that as said edge approaches the end of its cut and completes the same, said vertical component decreases to a value that is substantially less than at the beginning of the cut.*

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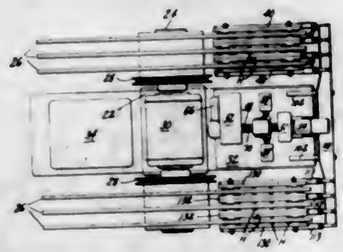
**25,719**

## POSITIONER FOR MAGNETIC DATA STORAGE DEVICE

**Forrest A. Johnson, Springfield, Vt., and Herbert E. Miller, West Acton, Mass., assignors, by mesne assignments, to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan**

**Original No. 3,009,759, dated Nov. 21, 1961, Ser. No. 773,585, Nov. 13, 1958. Application for reissue Mar. 23, 1964, Ser. No. 378,479**

**8 Claims. (Cl. 346—74)**



3. In a magnetic storage apparatus including a plurality of rotatable discs with a magnetizable surface layer thereon having a plurality of record tracks, a plurality of magnetic transducer heads associated with each surface layer, each transducer head being movable over a plurality of tracks on the magnetizable surface layer in accordance with a command signal, and a positioning apparatus for positioning said heads at the commanded track in accordance with said command signal, said positioning apparatus comprising: a carrier supporting said transducer heads adjacent said magnetizable surface layer, an axially movable bar attached to said carrier for moving said carrier to move the heads carried thereby over a group of record tracks, a servo motor operatively connected to said bar through a lost motion connection for axially moving said bar, signal translating means for supplying a signal to said servo motor to cause said servo motor to move said bar and said carrier to position the heads in the vicinity of the selected track, and a detent mechanism cooperating with said axially movable bar to superimpose a fine adjustment thereon after the head is in the vicinity of the selected track to accurately align the head with the selected track and to lock the head in its accurately aligned position.

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**25,720**

## PRECISION FEED MECHANISM

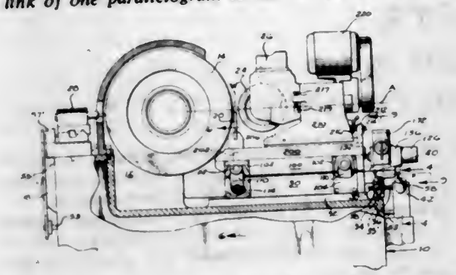
**Earl A. Thompson, 1300 Hilton Road, Ferndale, Mich.**

**Original No. 3,043,059, dated July 10, 1962, Ser. No. 22,720, Apr. 18, 1960. Application for reissue July 6, 1964, Ser. No. 391,823**

**23 Claims. (Cl. 51—103)**

*22. A machine tool comprising a base including an element for supporting a member; a member to be shifted to-and-fro relative to the base; two supports each including an element which is movable to-and-fro in the same direction relative to the base, a first of said supports being carried by the element of the base and the second of the supports being carried by the element of the first support and carrying the member; and an anti-friction mounting between one of the supports and one of said elements, said mounting being characterized by absence of stick-slip and including a first and a second parallelogram linkage, one at each side of such one support, and including links connecting such one support and said one of said elements; and a pair of torsionally rigid connectors each connecting a link of one parallelogram to the corresponding link of the other parallelogram whereby the member can partake of limited translatory motion in an arcuate path.*





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**25,721**

## SWINE ERYSIPELAS VACCINE

**Dennis George Howell, Rickmansworth, Robert Parr, South Ealing, London, and Kathleen Rosemary Heath, Northolt, Greenford, England, assignors to Glaxo Group Limited, a British corporation**

**No Drawing. Original No. 3,083,142, dated Mar. 26, 1963, Ser. No. 795,322, Feb. 25, 1959. Application for reissue Mar. 16, 1964, Ser. No. 362,544**

**Claims priority, application Great Britain, Feb. 27, 1958, 6,396/58; Aug. 14, 1958, 26,186/58**

**9 Claims. (Cl. 167—78)**

*8. An injectible vaccine preparation in the form of an oil-in-water emulsion comprising a preformed emulsion base which is stable in the presence of body fluids upon intramuscular injection and is an oil-in-water emulsion containing an aqueous phase substantially isotonic to the blood and an oil phase consisting essentially of from 30% to 65% of mineral oil, from 0.5% to 1.5% of a water-soluble nonionic emulsifying agent and from 0.5% to 2.0% of an oil-soluble nonionic stabilising agent; and an antigenic material consisting of dead Erysipelothrix rhusiopathae.*

*9. An injectible vaccine preparation in the form of an oil-in-water emulsion comprising a preformed emulsion base which is stable in the presence of body fluids upon intramuscular injection and is an oil-in-water emulsion containing an aqueous phase substantially isotonic to the blood and an oil phase consisting essentially of from 30% to 65% of mineral oil, from 0.5% to 1.5% of a water-soluble nonionic emulsifying agent and from 0.9% to 2.0% of an oil-soluble nonionic stabilising agent; and an antigenic material consisting of dead Erysipelothrix rhusiopathae.*

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**25,722**

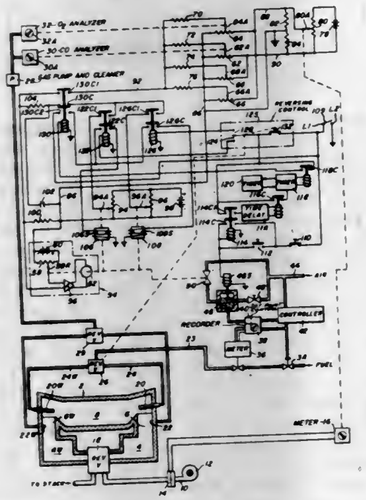
## APPARATUS FOR CONTROLLING THE OPERATION OF MULTIPLE COMBUSTION ZONES

**George Dykeman, Dormont, and Thomas R. Schuerger, Pitcairn, Pa., assignors to United States Steel Corporation, a corporation of New Jersey**

**Original No. 3,132,802, dated May 12, 1964, Ser. No. 116,444, June 12, 1961. Application for reissue July 16, 1964, Ser. No. 395,972**

**11 Claims. (Cl. 236—15)**

*9. Apparatus comprising means forming at least two combustion zones, a burner for each combustion zone, means for controlling flow of combustion component air to said burners, means for controlling flow of combustion component fuel to said burners, means for controlling the rate of flow of one of said combustion components, a flue gas analyzer, means for selectively delivering samples of flue gases to said analyzer from each of said combustion zones having an operating burner, means for obtaining a force proportional to a preselected component of said flue gas, said component varying with the ratio of fuel and air flow, means for obtaining a force proportional to a preset desired percentage of said preselected component in said flue gas, means for connecting said forces in opposition to one another so as to obtain a force difference, means for obtaining a force proportional to the flow of one of said combustion components to said operating burner, means for multiplying said last named*



*force and said force difference to obtain a first signal, means for obtaining a force proportional to the flow of the other of said combustion components to said operating burner to obtain a second signal, means for comparing said signals, means operable by said comparing means for changing the ratio between fuel and air flow to bring the preselected component of said flue gas to the desired percentage, means for obtaining a force proportional to the flow of the said other of said combustion components to a burner in a second combustion zone to obtain a third signal, and means for disconnecting the comparing means from said second signal and preventing resetting thereof and connecting the comparing means to said third signal when the flue gas delivering means is actuated to deliver flue gas from said second combustion zone to said analyzer.*

# PATENTS

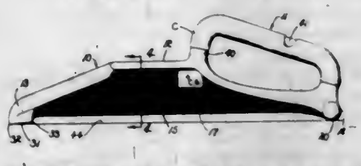
## GRANTED JANUARY 26, 1965

## GENERAL AND MECHANICAL

### 3,166,757
### OFFSET DRIVING TOOL

Samuel Downs, Jr., Fresno, Calif., assignor of twenty-seven percent each to Harold Zinkin, Gilbert H. Bragg, and Wiley Y. Thompson, and nineteen percent to Dr. Charles H. Glass, all of Fresno, Calif.

Filed Jan. 8, 1962, Ser. No. 164,793
8 Claims. (Cl. 1—47)

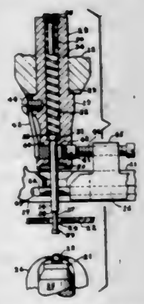


1. An offset driving tool comprising an elongated body member of generally triangular configuration viewed in side elevation and having oppositely extended driving and fulcrum end portions, a driving head downwardly extended from the driving end portion and having a downwardly presented face, a fulcrum downwardly extended from the fulcrum end portion, an upwardly presented anvil portion intermediate the driving and fulcrum ends, and a web downwardly extended from the anvil portion to a base edge and extended toward the opposite end portions in a triangular configuration in side elevation, the web also being triangular in cross-section in a transverse vertical plane passing through the anvil portion, the triangular cross-section being of inverted form and tapering toward the base edge, and an upwardly presented closed handle portion integrally joined with the body member at a point adjacent to the fulcrum end, the distribution of mass of the tool being such to locate the center of gravity thereof within the web at a point intermediate the anvil portion and the fulcrum end portion.

### 3,166,758
### MACHINE FOR REGISTERING WORK

Philip B. Jensen, Naugatuck, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Nov. 14, 1963, Ser. No. 323,738
3 Claims. (Cl. 1—318)



1. In a machine for setting fasteners to a flexible work piece having pre-pierced holes therein, with a fastener element on one side of the work piece and having a projection extending through one of such pre-pierced holes and secured by an apertured attaching element on the opposite side of said work piece, the combination comprising

(*a*) one die set for holding the fastener member;

(*b*) a second die set for holding the attaching element;

(*c*) means including a reciprocating feeding finger for moving the attaching element into position in said second die set;

(*d*) a locating pin arranged axially of said second die set and adapted to be resiliently projected a substantial distance beyond said second die set into position for receiving a pre-pierced hole in the work piece for locating said work piece, said locating pin being adapted to engage the fastener element when said die sets are moved toward each other and to retract away from such projected position;

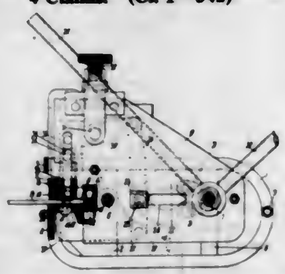
(*e*) a catch for automatically engaging said locating pin to retain it in such retracted position; and

(*f*) means carried by said feed finger to release said catch upon completion of the feeding movement of such finger.

### 3,166,759
### BELT-FASTENING MACHINES

Leslie A. Neale, Sheffield, England, assignor to Hayden-Niles Limited

Filed May 27, 1963, Ser. No. 283,356
Claims priority, application Great Britain, Dec. 15, 1962, 47,404/62
4 Claims. (Cl. 1—342)



1. A belt-fastening machine comprising side frames, a comb-bar extending transversely between the side frames and having a front face, said front face of the comb-bar being slotted to receive and locate the bases of U-shaped fastener elements having pairs of holes disposed lengthwise in their limbs, and the comb-bar being hollow and there being provided a securing rod to secure the said U-shaped fastener elements inside the comb-bar, a rack bar extending transversely between the side frames, a jaw unit movable along the comb-bar and the rack-bar, a pivot bar extending transversely through the jaw unit behind the comb-bar, a lower jaw mounted on the pivot and passing below the comb-bar to the front of the comb-bar, an upper jaw, vertical guide means for the upper jaw in front of the comb-bar, a staple guide extending transversely between the side frames in front of the comb-bar, the staple guide being slotted lengthwise from top to bottom to receive staples with pointed legs to be pressed through the pairs of holes in the U-shaped fastener elements, the upper jaw being movable along said guide means into the slot to effect the pressing, common operating means on the jaw unit for moving



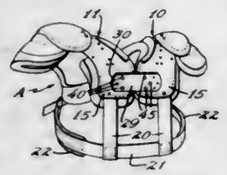


the upper jaw and the front of the lower jaw first towards each other and then away from each other, the lower jaw having recesses to turn the points of the staples pressed by the upper jaw, and a pawl carried by a part of said operating means to engage the rack bar for progressive movement of the jaw unit by each movement of said means to move the upper jaw and the lower jaw away from each other.

### 3,166,760
### SHOULDER PAD CONSTRUCTION

Roy M. Rasmussen, 1561 Lincoln Ave., St. Paul, Minn.

Filed Nov. 7, 1962, Ser. No. 236,032
1 Claim. (Cl. 2—2)



A shoulder pad construction including:

a pair of opposed similar body portions, each including a pad of generally U-shaped form adapted to fit over a shoulder,

detachable fastening means connecting one side of each body portion to the corresponding side of the other and adapted to overlie the chest, and

rigid fastening means rigidly connecting the other sides of the body portions and adapted to overlie the back of a wearer,

said rigid fastening means comprising a generally rectangular elongated substantially rigid plate having at one end a pair of transversely spaced apertures adjacent the opposed longitudinal edges thereof, and a plurality of longitudinally spaced pairs of transversely spaced apertures near the opposite end thereof,

said plate also including a third aperture arranged on a longitudinal line intermediate the apertures of each pair and offset longitudinally a similar distance from a transverse line connecting the apertures of each pair, thereby providing a group of three staggered apertures at said one end and a plurality of groups of three staggered apertures near said other end of said plate,

said similar body portions each having a pair of substantially vertically spaced apertures and an intermediate aperture offset from a line connecting the apertures of said pairs, the three apertures of each similar body portion corresponding in spacing to the three staggered apertures of each group in said plate,

all of said apertures being of substantially uniform diameter, and

six threaded fastening means securing said plate overlying the outer surfaces of said similar body portions,

said threaded fastening means being of proper diameter to snugly fit through said apertures and to hold said plate from movement relative to said similar body portions,

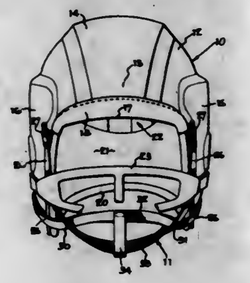
three of said threaded fastening means extending through the apertures of said group at said one end of said plate and through the apertures in one of said similar body portions, and

another three of said threaded fastening means extending through one of said longitudinally spaced groups of apertures near the other end of said plate and through the apertures in the other of said similar body portions.

### 3,166,761
### CHIN STRAP CONSTRUCTION FOR FOOTBALL HELMETS

Elwood Strohm, Southgate, Ky., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 27, 1961, Ser. No. 141,043
2 Claims. (Cl. 2—3)

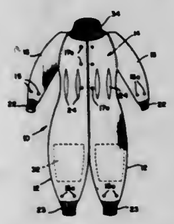


1. A football helmet comprising a rigid shell having a crown, depending ear protectors at each side thereof, a chin strap assembly for holding said helmet upon a wearer's head, said chin strap assembly comprising a first strap and a second strap, each of said straps being formed of relatively inelastic material, means securing the ends of said first strap to said helmet adjacent to the front edge of said ear protectors adjacent to the crown, and means securing the ends of said second strap to the exterior of said rigid shell adjacent to the lower rear edge of said ear protectors, said first strap and said second strap crossing each other at two spaced points, means securing said first and second straps together at their points of crossing, a portion of said second strap extending forwardly beyond said points of crossing, and a portion of said first strap extending below said points of crossing to form loops positioned to engage the front portion and undersurface of the wearer's chin.

### 3,166,762
### DUAL PURPOSE WINTER GARMENTS FOR SMALL CHILDREN

Mary R. Winkworth, 4 Mapleton Ave., Staten Island, N.Y.

Filed May 23, 1962, Ser. No. 197,002
1 Claim. (Cl. 2—80)

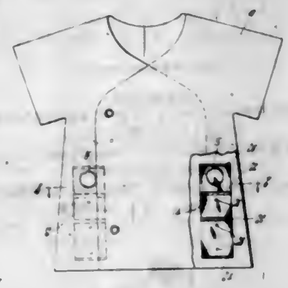


A dual purpose snow suit composed of two unitary mutually complementary garments including an outer garment of weather resisting material and an inner garment of relatively soft material, each of said garments consisting of a torso portion having arm portions and leg portions integral therewith, the inner garment normally registering entirely within the outer garment, the front and back portions of the torso portion of said inner garment having thereon spaced from the vertical median

lines thereof vertical rows of snap button members, the front and back portions of the torso of said outer garment having thereon similarly spaced from the vertical median lines thereof vertical rows of snap button members complementary to said first-named snap button members for interengagement therewith to secure said torso portions to each other, the back portions of both of said garments having slits along the vertical median lines thereof and means for releasably interlocking the opposed edges of the slits the wrist portions of said arm portions of the inner garment and the ankle portions of said leg portions of the inner garment each having a plurality of circumferentially spaced snap button members thereon arranged in a circle around the wrist and ankle portions of the inner garment, the wrist portions of the arm portions of the outer garment each having a plurality of circumferentially spaced snap button members thereon arranged in a circle around the wrist portions of the outer garment and complementarily to the snap button members on said first-named wrist portions, the ankle portions of the leg portions of the outer garment each having circumferentially spaced snap button members thereon arranged in a circle around the ankle portions of the outer garment complementarily to the snap button members on said first-named ankle portions, said snap button members on said wrist portions and said ankle portions of said garments serving to secure the wrist portions and the ankle portions of the outer garment to respectively the wrist portions and the ankle portions of the inner garment in close mutual contact throughout the circumferences of the portions.

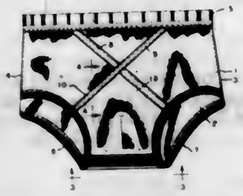
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**3,166,763**
**DIAPER TABS FOR INFANTS' SHIRTS**
**Richard D. Wells, Westwood, Mass., assignor to The William Carter Company, Needham Heights, Mass., a corporation of Massachusetts**
**Filed Sept. 4, 1962, Ser. No. 221,191**
**3 Claims. (Cl. 2—112)**



1. In an infant's shirt, a diaper tab attached at its upper end to said shirt, said tab comprising textile fibers assembled to form a one piece unitary sturdy inextensible tape, a dense waterproofing agent impregnating said tape through-and-through at a plurality of narrow transverse longitudinally spaced areas between the ends of said tape, forming dense barriers to capillary passage of moisture along fibers lying in said narrow areas, and longer unimpregnated areas lying between said dense barriers presenting less dense areas for readily pinnable attachment of diapers to said tabs with diaper pins, said narrow transverse longitudinal areas being of substantially the same thickness as said unimpregnated areas, said dense barriers preventing capillary transmission of moisture, absorbed in any of said pinnable areas, along the fibers lying in an adjacent barrier upwardly through said adjacent barrier towards the point of attachment of said tab to said shirt.

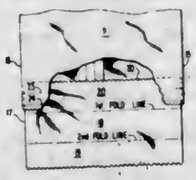
**3,166,764**
**MEN'S UNDERSHORTS**
**Sarah W. Stedman and Luther W. Self, Asheboro, N.C., assignors to Stedman Manufacturing Company, Asheboro, N.C., a corporation of North Carolina**
**Filed Mar. 21, 1961, Ser. No. 97,986**
**1 Claim. (Cl. 2—224)**



A man's undergarment comprising a front part and a back part, a pouch part of rubberized, expansible fabric having a V-shaped notch at its lower portion joined together along the edges of said notch to give a pre-formed bowed shape, an elastic waistband joined to the top edges of said front and back parts to form a waist opening, two leg bindings secured to the edges of said front and back parts and lower side edges of said pouch part to form two leg openings, a first non-elastic tape joined onto said front part and along an upper edge of said pouch part extending diagonally from said waistband to a leg opening, a second non-elastic tape extending diagonally from said waistband to the other of said leg openings and crossing with said first non-elastic tape substantially in the center of said front part, said second non-elastic tape being joined along a portion of its length to said front part and along the remaining portion of its length to an upper edge of said pouch part with the portion joined to said pouch part forming a fly opening with said front part, an expansion gusset secured at one edge to the bottom edge of said back part, and a non-elastic tape connecting the other edge of said expansion gusset to the bottom of said pouch part and extending from one leg to the other leg binding.

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**3,166,765**
**DURABLY CREASED TROUSERS AND METHOD OF CUFFING SAME**
**Nelson F. Getchell, Great Falls, Va., assignor to Cotton Producers Institute of The National Cotton Council of America, Memphis, Tenn., a corporation of Tennessee**
**Filed Aug. 26, 1964, Ser. No. 392,267**
**7 Claims. (Cl. 2—227)**



1. In combination with a pair of trousers of cellulose fiber-containing material wherein said trousers have been treated with a chemical creaseproofing agent and, prior to curing said agent on said trousers, longitudinal creases are formed along the front and rear of each trouser leg, said longitudinal creases being durable after curing of said chemical agent thereon, said treated trousers having wrinkle-resistant, crease-recovery and wash/wear properties imparted thereto by said chemical creaseproofing agent, a separately formed cuff detachably secured at the bottom of each trouser leg, each cuff comprising an outer face surface and an inwardly and downwardly folded upper portion and an inwardly and upwardly folded bottom portion, said folded bottom portion being secured about its circumference to the bottom portion of said trouser leg, said folded bottom portion and said face surface being substantially parallel to said bottom portion of said trouser leg, said cuff being of the same material as the trouser leg, said cuff, prior to being secured to said trouser leg, having been treated with a chemical creaseproofing agent which was cured thereon after said cuff was formed to impart durable creases to said folded portions, said cuff having the same wrinkle-resistant, crease-recovery and wash/wear properties as said trousers.



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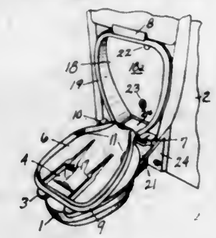
**3,166,766**
**WATERPROOF COVERING FOR VISORED CAPS**
**Raymond J. Banello, Jr., 1503 Woodman Ave., Silver Spring, Md.**
**Filed Jan. 30, 1964, Ser. No. 341,266**
**2 Claims. (Cl. 2—187)**



1. A waterproof cover for a cap having visor and crown portions, said cover being formed of a flexible synthetic plastic waterproof material and including unitary crown, visor and neck protecting portions, said crown and visor portions of said cover being adapted to be fitted over the crown and visor portions of said cap, respectively, said cover visor portion carrying beneath its forward end a first pocket portion adapted to receive the forward end of the visor of the cap, and continuous elastic band means secured to the lower edge of said cover crown portion for frictionally connecting the lower periphery of the crown portion of the cover with that of the cap, said neck protecting portion depending freely downwardly from the rear portion of said crown portion below said elastic band means, the inner surface of the lower extremity of said neck protecting portion carrying a second pocket portion spaced from said elastic band means and adapted to receive the visor, crown, elastic band and neck protecting portions of said cover when the cover is removed from the cap and is rolled up into said second pocket portion.

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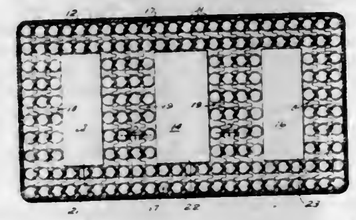
**3,166,767**
**COMBINATION TOILET AND BEDPAN WASHER**
**Raymond L. Jewell and Alvin Lodge, Erie, Pa., assignors to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania**
**Filed Oct. 31, 1960, Ser. No. 66,292**
**11 Claims. (Cl. 4—10)**



1. In a combined toilet and bedpan washer, a toilet bowl having a rim with a U section at the rear and a seat section at the front, said bowl having side walls and a sloped bottom wall below said U section defining a channel draining toward the front of the bowl, a trap leading from the bowl to an outlet, said trap having said bottom wall as its front wall, a washing cabinet having back and side walls with lower ends sealed to said U section, a cover for the front of the cabinet, means for supporting a bedpan between the cover and the back wall of the cabinet, a seat for the bowl, said cover and seat bridging the front end of said channel, and hinge blocks for the cover and seat on each side of the front end of said U section, the cover and back and side walls of the cabinet defining in the closed position of the cover a discharge throat at the bottom of the cabinet registering with said U section.

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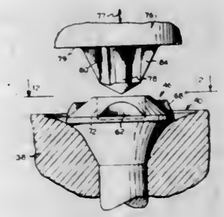
**3,166,768**
**INNERSPRING MATTRESS CONSTRUCTION**
**Cecil C. Cunningham, 18652 Madison Ave., Castro Valley, Calif.**
**Filed June 11, 1962, Ser. No. 201,392**
**3 Claims. (Cl. 5—351)**



3. An innerspring mattress construction comprising a generally elongated innerspring frame having a central yieldable support section formed of resilient foam material and a pair of yieldable support sections equally longitudinally spaced from said central section, said frame having relatively firm side and transverse sections formed of coil springs circumscribing said yieldable sections, said yieldable sections being positioned to correspond to the protrusions of the contour of a reclining body and having a greater resiliency than said coil spring sections.

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**3,166,769**
**METHOD AND APPARATUS FOR HEADING A FASTENER**
**George L. Wieber, Mount Prospect, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware**
**Filed Feb. 28, 1962, Ser. No. 176,332**
**4 Claims. (Cl. 10—10)**



1. The method of cold heading wire stock to provide a flat headed fastener having a deep cross-recess in the head, said head having a substantially circular periphery

in excess of two and one-half times the diameter of said wire stock comprising the stages of:

(*a*) Placing the wire stock into female die means in a manner so that the end portion of the wire stock protrudes beyond the wall surface of said female die means;

(*b*) Moving first stage upsetting die means to a closed position relative to said female die means with said upsetting die means having a relatively movable central portion relative to said female die means, said first stage upsetting die means having a bore for receipt of the end of said wire stock which also serves as a slide for the relatively movable portion thereof;

(*c*) Moving said relatively movable portion of said first stage upsetting die means into engagement with the end of said wire stock to upset same in a manner to cause the flow of metal outwardly and upwardly in a controlled fashion into the cavity formed by the female die means and the first stage upsetting complementary die means, whereby symmetrical lug portions are formed on the fastener head which extend axially beyond the plane of the ultimate terminal portion of the screw head to be formed with a recess provided in the center of said head and surrounded by said symmetrical lug portions;

(*d*) Aligning of finished die punch means having wing portions thereon with said female die means containing said wire stock with said first stage upset head in a manner such that the wings of said punch die means are oriented relative to and aligned with the lugs in said first stage of upset head and the center of said punch aligned with the aperture in said first stage upset head to facilitate the guiding of the punch die means;

(*e*) Moving the punch die means into engagement with said upset first stage head so that the wings of the punch die means simultaneously pulls material from the lugs of said first stage upset into the recess formed thereby and simultaneously extrudes the first stage upset head in a manner to fill out the circular periphery of the female die means to provide a flat headed fastener having a deep cross-recess therein and a substantially circular periphery which exceeds two and one-half times the diameter of the wire stock with an outer head configuration that presents in cross-section a flaring configuration relative to the axis from the vicinity of the shank portion of the fastener in a direction toward the flat head of the fastener and ultimately presents in the vicinity of the outer circular periphery of the screw head a substantially horizontal surface.

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**3,166,770**
**PLATFORM COVER TURNING MACHINE**
**Thomas W. Snow, Melrose, and Lawrence A. Severy, Rockport, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey**
**Filed June 25, 1962, Ser. No. 204,836**
**10 Claims. (Cl. 12—1)**

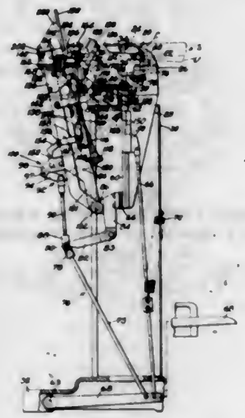
1. In a machine for turning a cover over a platform sole of a partially completed shoe, the combination which comprises:

a form for supporting a shoe while a platform sole is attached to the sock lining of the shoe,

means engageable with the platform cover at an end of the shoe to grip the cover,

cover turning means engageable with the shoe upper at the sides of the shoe, and

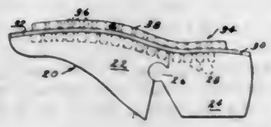
means effective to operate the cover gripping means and the cover turning means first to move the shoe away from the form after attachment of the platform sole and thereafter to cause the cover turning means to move relative to the shoe while the cover is clamped by the gripping means to turn the cover away from



the upper and into a plane substantially normal to the plane of the platform sole.

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**3,166,771**
**MEANS FOR MAGNETICALLY RETAINING AN INSOLE AND LAST IN ASSEMBLED ALIGNMENT**
**Richard G. Kline, Springfield, Md., and John B. Reid, Brighton, and Robert A. Spence, South Lincoln, Mass., assignors to Bain Corporation, Cambridge, Mass., a corporation of Massachusetts**
**Original application May 23, 1962, Ser. No. 197,131, now Patent No. 3,097,381, dated July 16, 1963. Divided and this application Aug. 13, 1962, Ser. No. 224,266**
**13 Claims. (Cl. 12—141)**



2. An insole retaining assembly comprising an insole supporting last member, an insole holding member, one member including an element of magnetizable material and the other member including a permanent magnetic element, said elements being arranged to magnetically interact with each other and establish a magnetic circuit for retaining said members in assembled relation by magnetic attraction.

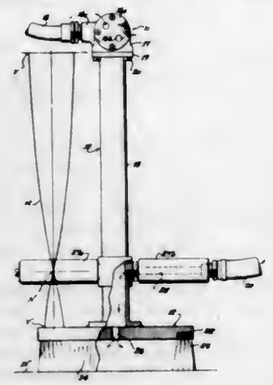
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**3,166,772**
**SONIC APPLICATOR FOR SURFACE CLEANING**
**Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif.)**
**Filed June 13, 1963, Ser. No. 287,576**
**16 Claims. (Cl. 15—22)**

1. Apparatus of the character described, comprising: an applicator adapted for frictional rubbing contact with a work surface, a sonic oscillator having a vibratory output means, and an elastically vibratory resonator, said applicator, said oscillator and said resonator being acoustically intercoupled to one another, whereby said applicator and said resonator are vibrated by said oscillator, and



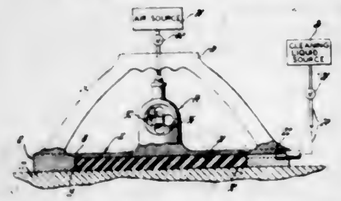
means for driving said oscillator at a resonant frequency at which the elasticity reactance of said resonator substan-



tially counteracts the mass reactance of the oscillator, applicator and resonator.

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**3,166,773**
**SONIC SURFACE CLEANER**
**Floyd A. Wyczalek, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 2, 1962, Ser. No. 234,939**
**5 Claims. (Cl. 15—97)**

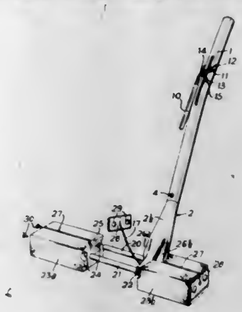


1. A portable sonic apparatus for cleaning the surface of an article, comprising a rim having a surface-engaging portion, a planar diaphragm supported by the rim and defining a cavity with the latter so that the normal distance between the inner surface of the diaphragm and the surface-engaging portion is less than one-half the width of the diaphragm, means for supplying liquid at a controlled rate to the cavity, and a vibrator coupled to the diaphragm in vibration-transmitting relationship, said vibrator comprising a freely movable mass, means constraining said mass for movement in an orbital path perpendicular to said diaphragm, means for driving said mass in said orbital path at a frequency which causes the diaphragm to resonate in a mode that produces a plurality of nodal circles on the diaphragm with resultant liquid cavitation in an area proximate the surface to be cleaned.

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**3,166,774**
**SPONGE MOP**
**Josef Blum, 33 Vereinstrasse, Solingen, Germany**
**Filed June 26, 1963, Ser. No. 290,772**
**4 Claims. (Cl. 15—119)**

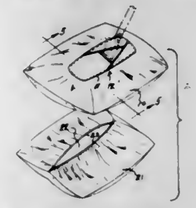
1. A sponge mop assembly comprising a carrier, two spaced guides secured to the carrier and projecting at each side thereof, an elongated sponge block extending wholly outwardly of said carrier and acting as a cushion, having two separate parts disposed one at each side of the carrier and slidably mounted on the two guides and substantially encasing the same in the mopping position, two compressing plates disposed one at each outer end of a respective sponge part, a respective cable coupled at one end to each compressing plate, and connected



through the sponge blocks to a common pulling device coupled to the other end of each cable and mounted on a shaft attached to the carrier.

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**3,166,775**
**CUSHION TYPE MOP WITH DISPOSABLE COVER**
**Wilhela Cushman, 55 Park Ave., New York, N.Y.**
**Filed Jan. 24, 1963, Ser. No. 253,705**
**1 Claim. (Cl. 15—228)**



A device of the character described comprising a cushion, said cushion including an envelope and a filler of yieldable material, a handle base receiving pocket affixed to the upper side of said cushion, said pocket comprising a flap affixed to the top of said cushion along its sides and one of its ends, a pair of triangular members each affixed to said cushion along two of its sides, one partially overlapping the other and both partially overlapping the flap, and the underlying portion of said cushion, said flap and triangular members all having their free edges provided with elastic edging material, said free edges cooperating to form an opening, and a cover removably mounted on said cushion, said cover being formed of non-woven fabric material, having a centrally disposed opening in the top thereof for the reception of the cushion, said last mentioned opening having an elastic edging material affixed to the edge portions thereof.

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**3,166,776**
**TROWEL WITH INTERCHANGEABLE BLADES**
**Walter E. Selck, Northfield, Ill., assignor to Walter E. Selck and Co., Chicago, Ill., a corporation of Delaware**
**Filed Apr. 16, 1962, Ser. No. 187,688**
**2 Claims. (Cl. 15—235.6)**

2. A trowel for spreading an adhesive on a wall or floor surface which comprises a blade, a grip forming member and a dovtail mounting for retachably and slidably connecting the blade and the grip forming member, said blade having parallel side edges and parallel end edges with the end edges extending at an acute angle to one of the side edges, said blade having its side and end edges notched throughout the length thereof and said mounting comprising interengaging tongue and groove members of equal length on the handle and blade whereby

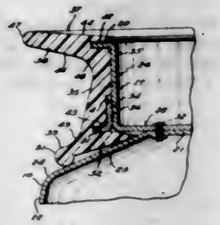
the handle may be connected to the blade by sliding it onto either end of the blade thereby to provide for inter-



changing the edges of the blade and for right and left hand use.

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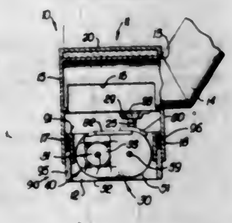
**3,166,777**
**VACUUM CLEANER WITH CORD RING**
**Clarence G. Frantz, Cleveland Heights, Ohio, assignor to Frantz Electric Industries Inc., Cleveland, Ohio, a corporation of Florida**
**Filed Apr. 1, 1963, Ser. No. 269,602**
**4 Claims. (Cl. 15—323)**



1. A vacuum cleaner comprising a housing, having a generally horizontal upper surface, a metallic rim mounted on said upper surface formed with an upstanding portion and radially extending spaced flanges at each end of said portion, and a ring of molded plastic fitting around said rim and formed with grooves into which said flanges extend, said ring having spaced radially extending flanges and an upwardly extending section therebetween, the inner portion of said ring above the upper one of said flanges of said rim extending into substantial alignment with the inner surface of said upstanding portion whereby the upper edge of said metallic rim is substantially covered by said plastic ring.

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**3,166,778**
**VACUUM CLEANER HEAD**
**Edward G. White, 137 E. 47th St., Los Angeles, Calif., assignor of fifteen percent to Mark L. Hurley**
**Filed Apr. 17, 1963, Ser. No. 273,605**
**14 Claims. (Cl. 15—356)**



1. A compact vacuum cleaner head having the capability of cleaning rug portions adjoining obstructions and having a cleaning mechanism adapted to comb out the pile of the rug, comprising:

(*a*) an elongated housing having an elongated bottom opening and a port connected to a vacuum source;

(*b*) a cleaning mechanism mounted in said housing, said cleaning mechanism including

(I) a rotatably mounted agitator having longitudinal rows of teeth spaced around its circumference, said teeth being positioned to penetrate into and set up the rug pile when said agitator is rotated,

(II) gear means operatively connected to said agitator for rotating said agitator, and

(III) a traction wheel operatively connected to said gear means, said traction wheel being adapted to engage said rug and to drive said gear means by movement of said vacuum cleaner head over the rug; and

(*c*) said cleaning mechanism being mounted in said housing by a connection which is adapted to permit vertical and angular adjustment of said cleaning mechanism with respect to said housing and to permit easy removal of said cleaning mechanism from said housing, said connection comprising

(I) an aperture in the top wall of said housing adjacent each end of said housing;

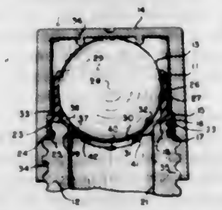
(II) a band curved over each of said apertures and attached to the outer surface of said housing, each of said bands having a slot therein aligned with said apertures and extending perpendicular to the cleaning mechanism agitator;

(III) an upright post mounted on each end of said cleaning mechanism and extending through a corresponding aperture in the top wall of said housing and its aligned band slot; and

(IV) fastening means mounted on each of said posts and adapted to determine the vertical and angular positions of said posts in said aperture and slot independently of each other.

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**3,166,779**
**BALL TYPE APPLICATOR DISPENSER**
**Gilbert D. Miles, Ossining, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware**
**Filed Sept. 26, 1960, Ser. No. 58,397**
**2 Claims. (Cl. 15—572)**

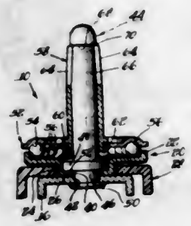


2. A dispenser comprising a container having an open end portion, means for attaching a cover to said container end portion, and an integral annular ball mounting and sealing fitting of molded plastic material mounted on said container end portion within but independently of said cover comprising an upper ball retaining portion, a ball in said ball retaining portion, means within the lower internal portion of said fitting defining a flexible annular seat having an annular sealing surface against which the ball is adapted to be forced by the attached cover, means extending around said fitting radially outwardly of said seat for mounting the fitting on the container, and a substantially radial inwardly projecting tab integral with said lower portion of the fitting and below said seat and out of contact with said ball when the ball is forcibly seated, said tab being located at a weld line of the molded fitting and projecting away from said sealing surface to locally reenforce the fitting against rupture at said weld line when the ball is seated.

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**3,166,780**
**CASTER CONSTRUCTION**
**Edward H. Schultz, Jr., Chicago, Ill., assignor to Nagel-Chase Manufacturing Company, Chicago, Ill., a corporation of Illinois**
**Filed June 2, 1961, Ser. No. 114,484**
**3 Claims. (Cl. 16—21)**



2. A caster comprising: a roller-supporting frame; a roller journaled on said frame; a first plate-like member fixed to said frame to define a lower, ball race; a stem rigidly upstanding from said frame and from said member; a second plate-like member rotatably overlying said first member and having a downwardly opening annular groove defining an upper, ball race; ball bearings between said races, a part of each of said bearings residing in said groove to be restrained against movement radially thereof; a sleeve securable to a furniture structure and fixed to said second plate-like member in upstanding relationship rotatably to receive said stem; and an annular shoulder on said stem spaced apart from said first member and confronting the top edge of said sleeve to cooperate in establishing the spacing between said first and second members whereby to retain said ball bearings in operative engagement with said groove.

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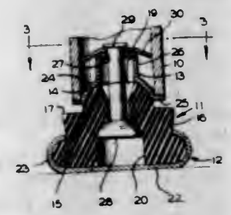
**3,166,781**
**SOCKET DEVICE**
**Edward H. Schultz, Jr., Chicago, Ill., assignor to Nagel-Chase Manufacturing Company, Chicago, Ill., a corporation of Illinois**
**Filed Feb. 5, 1962, Ser. No. 171,071**
**5 Claims. (Cl. 16—39)**



1. A rollable support arrangement comprising: a caster unit including a yoke structure, a floor-engaging roller journaled to said yoke structure, a pintle upstandingly fixed to said yoke structure, said pintle having a cylindrical body and a head, a sleeve surrounding a portion of said pintle beneath the head thereof, and means interconnecting said sleeve with said pintle to prevent relative axial movement therebetween while permitting rotation of the sleeve relative to the pintle and the yoke; and a socket unit for assembling said caster unit in supporting relation to a structure having a bore, including housing means having a wall portion adapted to enter said bore, a cup member at one end of said wall portion adapted fittingly to receive said head, means at the other end of said wall portion defining a central aperture aligned with said cup member and defining an annular pocket surrounding said aperture, and a radially expansible member of resilient material rotatably disposed in said pocket resiliently to pass said head and grippingly to receive said sleeve for releasably retaining said caster unit in axially assembled condition relative to said socket unit and independently of any direct attachment between the caster unit and the structure being supported.

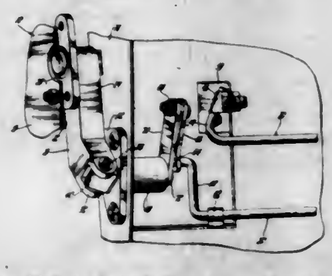
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**3,166,782**
**FURNITURE GLIDE**
**Robert Ellis Miller, 100 Ellison Ave., Bronxville, N.Y.**
**Filed Sept. 30, 1963, Ser. No. 312,417**
**1 Claim. (Cl. 16—42)**



A furniture glide comprising a block of resilient, form-sustaining rubber-like material having a substantially flat bottom surface area, a parti-spherical dome-like convex top portion, an outwardly extending shoulder portion at the base of said top portion, and an undercut, outwardly flaring bulge portion between said shoulder portion and said bottom surface area, a hard, wear-resistant shell covering said bottom surface area and having marginal edges inturned over said bulge portion and thereby securing said shell in place on said block, a metallic high mount having a parti-spherical dome-like lower portion presenting an under surface of concave curvature complementing the convex curvature of the top portion of the block but being shorter in length from top to bottom and terminating at its bottom in a peripheral outwardly extending flange, a furniture penetrating washer surmounting the high mount and having a sharp edge adapted to bite into holding relation in the bore of a chair leg or the like when the bottom of said leg is seated on said flange, and a connecting element penetrating registering holes in the washer, the high mount and the block clamping said washer, high mount and block together with the flange of the high mount normally spaced above the shoulder portion of the block and in a plane parallel to the plane of said shoulder portion, whereby the high mount, washer and connecting element are adapted to settle down toward contacting relation of the flange, and shoulder portion upon compression of the material of the convex top portion of the block responsive to a load, being imposed on the chair leg or the like and are adapted to swivel relatively to the shell consequent upon tilting movement of the leg or the like, thereby producing sliding movement of the high mount on one side of the top portion of the block and compression of the block material below the shoulder portion at the diametrically opposite side of the block.

**3,166,783**
**DOOR HINGE MECHANISM**
**Harry A. Mackie, Birmingham, and William J. Streetman, Madison Heights, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 5, 1962, Ser. No. 185,436**
**6 Claims. (Cl. 16—163)**



1. In a vehicle body including a door swingable to close a substantially vertical opening therein, a concealed hinge mechanism comprising

a first pair of hinge members pivotally mounted on the vehicle body at one side of the door opening for swinging movement about vertically spaced and substantially horizontal parallel axes,

a second pair of hinge members journaled in said door for rotation about substantially horizontal parallel axes vertically spaced below the pivotal axes of said first hinge members,

said first pair of hinge members in their door closed positions normally extending downwardly of the door opening between their respective pivotal mounting axes and the adjacent door journaled hinge member,

stop means engageable by at least one of said first pair of hinge members to limit the upward and outward swinging movement thereof,

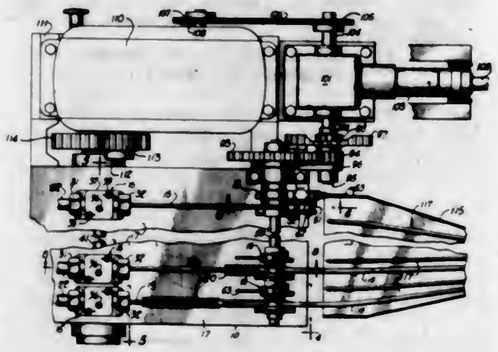
means pivotally connecting the lower end of each of said first hinge members to the adjacent door journaled hinge member to permit initial upward swinging movement of the door from its closed position to an intermediate door opened position wherein said one hinge member engages said stop means and subsequent horizontal swinging of the door to a fully opened position,

and torsional spring means mounted within said door and connected to rotate at least one of said journaled hinge members relative to said door and acting through the pivotal connection of said one journaled member to apply a door swinging torque to the adjacent one of said first hinge member thereby counterbalancing the door during initial movement between its closed and intermediate opened positions and during subsequent swinging movement to its fully opened position.

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**3,166,784**
**SAUSAGE STUFFING AND LINKING APPARATUS**
**Richard J. Millenaar, Charlottesville, Va., and Edmund G. Blair, deceased, late of Madison, Wis., by Minnie T. Blair, executrix, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois**
**Filed Apr. 4, 1962, Ser. No. 185,167**
**12 Claims. (Cl. 17—33)**

12. A sausage stuffing apparatus comprising means for supplying a sausage batter, a nozzle feeding conduit, means for feeding the batter in a continuous stream and under uniform pressure to the nozzle feeding conduit, a series of stuffing nozzles mounted adjacent the nozzle feeding conduit, means including individual flow metering devices connecting the nozzles with the nozzle feeding conduit, said flow metering devices having continuously rotating elements for delivering equal quantities of the batter to the nozzles and providing a continuously moving stream thereof at the stuffing ends of the nozzles, and a



common power drive means connected to the rotating elements of said metering devices whereby the batter is forced through each of the nozzles with a constant uniform flow and delivered in a continuously moving stream at the end thereof for stuffing.

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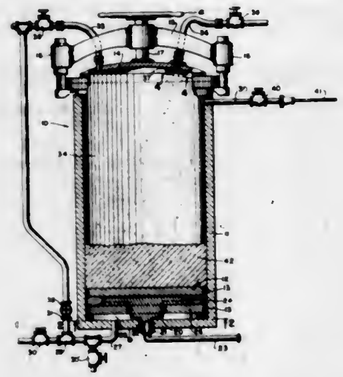
**3,166,785**
**AUTOMATIC POULTRY DROP SHACKLE**
**Everett C. Lemmond, Rte. 3, Somerville, Ala.**
**Filed Oct. 17, 1962, Ser. No. 231,241**
**8 Claims. (Cl. 17—44.1)**



1. A poultry shackle comprising a frame of substantially U-shaped construction and a second smaller contained frame of generally similar construction, said frames being connected and having a reduced extension at each end thereof, means for raising the intermediate portions of the U-shaped frames, the intermediate portion of the larger of said U-shaped members intermediate the top and ceive the neck of a fowl, laterally extending supporting and locking portions carried on the remote sides of the larger of said U-shaped members intermediate the top and bottom of the same, a supporting yoke having a central upper portion for suspension from a conveyor and having a lower portion of a configuration to receive the supporting portions of the first frame, said supporting portions having flat portions and the side portions of the second frame having complementary portions in which said flat portions may be received and held against rotation and with an adjacent larger area in which said flat portions can move up to be rotatable.



**3,166,786**
**SAUSAGE STUFFER**
**John E. Thompson, P.O. Box 2023, Chicago, Ill.**
**Filed Feb. 21, 1963, Ser. No. 260,955**
**3 Claims. (Cl. 17—45)**



1. A process for operating a large capacity batch type sausage stuffer, which comprises:

(*a*) evacuating a meat cylinder at the top thereof to create a vacuum of 20 to 29¾ inches of mercury within the cylinder,

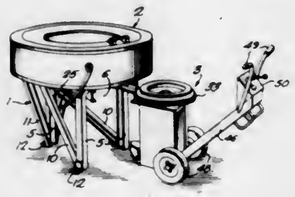
(*b*) admitting comminuted meat in small streams near the top of said cylinder, but below the point of evacuation,

(*c*) discontinuing the admission of meat and sealing the vacuum line when the cylinder is partially full, and

(*d*) expelling the de-aerated meat under pressure from said cylinder through an exhaust conduit into sausage casings.

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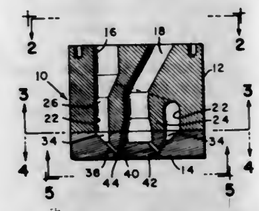
**3,166,787**
**APPARATUS FOR SUPPORTING, LOADING AND UNLOADING TIRE RETREADING MATRICES**
**Clement O. Dennis and William C. Shaver, P.O. Box 1153, Macon, Ga.**
**Filed Nov. 8, 1962, Ser. No. 236,323**
**14 Claims. (Cl. 18—2)**



1. Apparatus for supporting, loading and unloading tire retreading matrices comprising, a stand having a matrix supporting bed thereon, guide tracks on the stand parallel to the supporting bed and having inclined entrance ends, a wheeled portable matrix loader having operating means to engage and move the beads of a tire axially of the tire to reduce the tire diameter and to move a tire into and eject it from a matrix seated on the matrix supporting bed of the stand, guide means on the loader movable into and along the guide tracks on the stand to raise the loader from the floor and suspend it from the stand, and cooperating means on the stand and loader to hold the loader against movement relative to the stand.



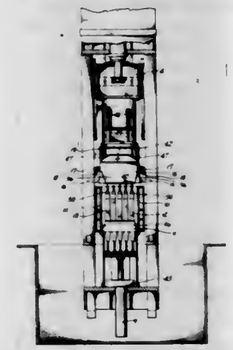
**3,166,788**
**SPINNING FOR CONJUGATE SPINNING**
**Louis A. Kiser, Jr., Raleigh, N.C., assignor to Monsanto Company, a corporation of Delaware**
**Filed Oct. 24, 1962, Ser. No. 232,794**
**3 Claims. (Cl. 18—8)**



1. In an apparatus for use in spinning a plurality of conjugated filaments, which apparatus includes means for supplying a plurality of discrete spinnable mediums, a disc-shaped spinneret means having a pair of spaced, substantially parallel surfaces, one of said surfaces having formed therein a central depression, an annular groove surrounding said central depression, a plurality of circumferentially spaced, substantially Y-shaped feeder passages interconnecting said depression and said groove with the obverse surface of said spinneret means.

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**3,166,789**
**APPARATUS FOR PRODUCING BOXLIKE CONTAINERS**
**Kurt Bernhard Schönenberger, Esslingen (Neckar), Germany, assignor to Furnier- und Sperrholzwerk J. F. Werz, Jr., K.G., Werzalit-Pressholzwerk, Oberstenfeld, Oberstenfeld, Kreis Ludwigsburg, Germany**
**Filed Mar. 5, 1962, Ser. No. 177,315**
**16 Claims. (Cl. 18—16)**

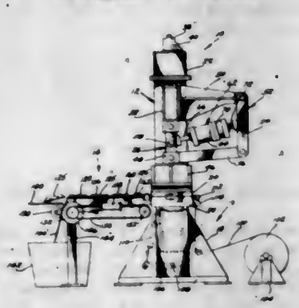


1. A machine for producing boxlike containers each having a bottom, side walls, an open side opposite to said bottom, and partitions lower than said side walls and forming a plurality of compartments above said bottom, comprising two presses having a common axis and movable relatively to each other, a stationary mold intermediate said presses having side walls and a bottom and having one open side opposite to said bottom adapted to receive loose but non-flowing molding materials comprising at least one mixture of a finely divided fibrous materials and a binder of a heat-setting plastic, said bottom forming a stationary core of a size and shape in accordance with those of the area of said container between its side walls above said partitions, said stationary core having apertures, a plurality of cores connected to and movable by one of said presses and extending through said apertures into said mold and parallel to the axis of said presses, each of said movable cores having a cross-sectional size and shape in accordance with those of said

compartments and being spaced from each other in accordance with the thickness of said partitions, said first press being adapted to elevate said movable cores to a certain higher level in said mold to permit the proper amount of material to be filled into said mold and between said movable cores, and a die mounted on the second press and means for reciprocating said die and for moving said die into the open side of said mold to compress said materials therein by a single compression stroke to the final size and shape of said container and during said compression for depressing said movable cores in said mold to a certain lower level equal to the height of said partitions.

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**3,166,790**
**FORMING PRESS**
**Raymond S. Keyes, Kalamazoo, Mich., assignor to Kirkhof Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan**
**Filed Dec. 18, 1961, Ser. No. 160,057**
**10 Claims. (Cl. 18—19)**

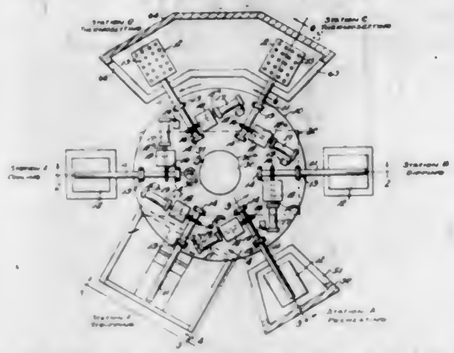


1. Apparatus capable of high speed formation of individual articles from a plastic sheet, comprising: upper and lower platens movable toward each other into operative relationship; one of said platens including forming die means; a peripheral projection blade extending between said platens and capable of sealing said portion of said sheet between said platens; pressure means capable of forcing said sealed plastic sheet portion against said forming die means to form at least one article in said sheet; said projection blade also comprising sheet scoring means around the periphery of said article with further movement of said platens toward each other; controlled power means for bringing said platens toward each other, including two stage operational means causing relative movement of said platens in two sequential stages for first sealingly pressing said projection blade against said sheet in a first movement to seal said sheet, and second to force said projection means into said sheet in a second movement to score said sheet; transfer means operative on said sheet and article to remove them from between said platens while simultaneously moving a fresh sheet portion between said platens.

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**3,166,791**
**APPARATUS FOR MAKING DIPPED ARTICLES FROM THERMOSETTING MATERIAL**
**Theodore A. Miller, 861 Chestnut Blvd., Cuyahoga Falls, Ohio, and Herbert L. Fowler, Mogadore, Ohio; said Fowler assignor to said Miller**
**Continuation of application Ser. No. 19,928, Apr. 4, 1960. This application Feb. 12, 1963, Ser. No. 261,932**
**4 Claims. (Cl. 18—24)**

1. Apparatus for making dipped articles from thermoset plastic liquid, said apparatus comprising a rotatable turntable, means for indexing the turntable, a multiplicity of hollow arms radiating therefrom, plates supporting forms on the outer ends of said arms, certain of the plates supporting forms of different length, said plates and forms having passages therethrough for conducting fluid under pressure for removing articles therefrom, means for rotating said arms relative to said turntable to present said forms in dependent or erect positions at different stations, a tank of said liquid at one of said stations, means for raising and lowering said tank to immerse dependent forms in said liquid during a dwell at said station, timing means adjustable during the operation



of the apparatus for controlling the dwell of a form at said stations, a second timing means adjustable during the operation of the apparatus means for controlling the time of immersion of a form in said liquid at said one of said stations, and means automatically set by the indexing of the conveyor for controlling the withdrawal of each plate of forms from immersion at the immersion station to provide for the withdrawal of forms of different length.

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**3,166,792**
**MEANS FOR MOLDING WAX CRAYONS AND THE LIKE**
**Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif.**
**Filed Mar. 3, 1961, Ser. No. 93,080**
**7 Claims. (Cl. 18—28)**

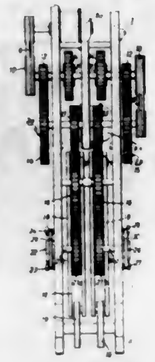


1. A mold for wax crayons and the like, comprising a cylindrical body of elastomeric material, said body having a relatively rigid intermediate portion of predetermined configuration and adapted to form an object when molten material is poured therein, a relatively-pliant, outwardly-flared, open end defining a filling spout and adapted to form an enlarged conical extension on the formed object, and a reduced open end; and removable closure means in said reduced open end for selectively closing and opening said reduced open end, said flared end being peelable back over said intermediate portion for exposing the conical extension after hardening of the molten material for manual gripping thereof to remove the formed object from said body, and said closure means being removable from said reduced end for breaking the vacuum inside said body during removal of said object.

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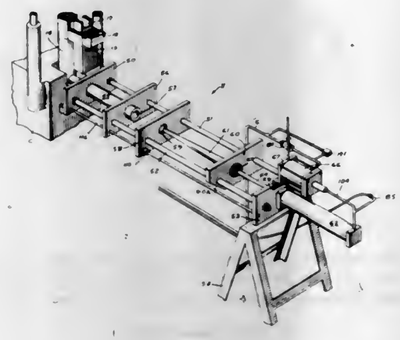
**3,166,793**
**ACTUATING DEVICE FOR INJECTION PLUNGERS**
**Ramon Rocafort Montpeat, Avenida General Mitre 140, Barcelona, Spain**
**Filed Apr. 3, 1963, Ser. No. 270,308**
**Claims priority, application Spain, Feb. 13, 1961, 264,849; Mar. 25, 1963, 286,381**
**5 Claims. (Cl. 18—30)**



1. In two-plunger apparatus for the manufacture of articles in plastic material by double injection, an actuating device having in combination: an independent reversible electric motor for each injection plunger; a reduction toothed wheel transmission adapted to be set in motion by each electric motor, each transmission comprising a plurality of wheels; a multiple lever device constituting a kinematic chain for each plunger, one of the ends of said multiple lever device being articulated to the corresponding plunger, said device being adapted to cause the displacement of the plunger, the other end being eccentrically articulated to one wheel of the transmission, said one wheel being adapted to rotate alternatingly on being actuated by the reversible electric motor; a first end wheel meshing with said eccentrically articulated wheel of the transmission of one of the plungers, said first end wheel carrying an arm, said arm being adapted to actuate three switches by contact, said three switches being a switch for stopping the electric motor actuating the transmission of said one plunger, and, therefore, said plunger, at the end of the injection stroke thereof, a switch for stopping the electric motor actuating the transmission of said one plunger, and, therefore, said plunger, at the end of the feed stroke thereof, and a switch for setting in motion the electric motor actuating the transmission of the other plunger, and, therefore, said other plunger; and a second end wheel meshing with the eccentrically articulated wheel of the transmission of said other plunger, said second end wheel carrying an arm, said arm being adapted to actuate two switches by contact, said two switches being a switch for stopping the electric motor actuating the transmission of said other plunger, and, therefore, said other plunger, at the end of the injection stroke thereof, and a switch for stopping the electric motor actuating the transmission of said other plunger, and, therefore, said other plunger, at the end of the feed stroke thereof, each of said two sets of switches being in the path of the corresponding actuating arm.

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**3,166,794**
**PLASTIC MOLDING MACHINE**
**Edward C. Scanlon, 13 Richmond Ave., West Barrington, R.I.**
**Filed Feb. 7, 1964, Ser. No. 343,248**
**7 Claims. (Cl. 18—30)**



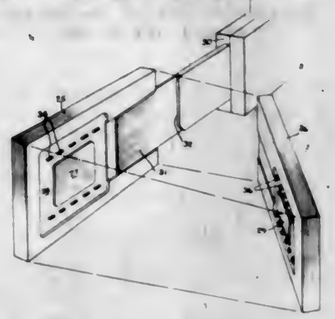
1. A plastic molding machine consisting of a base, a heating cylinder secured to said base, a feeding elevator, means securing said feeding elevator to said heating cylinder, a hopper attached to said feeding elevator, a feed rod operable in said feeding elevator, hydraulic means actuating said feed rod whereby a preselected amount of dry material is transferred from said hopper to said heating cylinder by means of said feeding elevator, a gate, secured in said base, a port in said heating cylinder leading to said gate, whereby dry material converted into a fluid condition in said heating cylinder flows through said port into said gate, a long stroke mold attached to said gate in fluid tight relationship, a bracket secured to said base, a stand remotely located from said base, an end plate provided with an axial clearance orifice, means securing said end plate to said stand, a support plate, a stripper plate, a core holding platen and two horizontally and oppositely located tie rods, means securing one end of each of said tie rods to said bracket, and means securing the opposite ends of said tie rods to said end plate, means slidably mounting said stripper platen and said core holding platen upon said tie rods, said long stroke mold being secured in both said bracket and in said support plate, a hydraulic cylinder having a hydraulically operated piston reciprocatively mounted therein, means securing said hydraulic cylinder to said end plate, a core element secured to said hydraulically operated piston, means securing said core element to said core holding platen, an axial orifice in said stripper platen, said core element reciprocatingly passing through said axial orifice to enter said long stroke mold whereby the molding operation is performed.

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**3,166,795**
**APPARATUS FOR MANUFACTURING A FILM MOUNT**
**Edward J. Joffe, Summit, N.J., assignor to Park Plastics Co., Inc., Linden, N.J., a corporation of New Jersey**
**Filed Sept. 9, 1960, Ser. No. 54,870**
**4 Claims. (Cl. 18—42)**

2. A die structure for forming a thin one piece plastic film mount having a pocket for the insertion of a film, comprising a movable thin blade, outer members for said die defining therebetween an opening in which the mount is cast by the flow of plastic material into said opening, said blade moving into a medial position in said opening and forming the pocket in said mount when plastic material is injected into said die opening while said blade

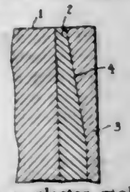
is in said die opening, and a series of thin fingers projecting from said outer members of the die to impinge against opposed surfaces of edges of the blade to hold



the thin blade edges firmly within said opening during the injection of the plastic molding material into said die whereby said pocket is accurately formed.

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**3,166,796**
**CHROMIUM-PLATED BOX WALL FOR MOLDING BOXES**
**Robert Wehinger, Hard, Austria (Achergasse, Industriegelande Ost, Vienna-Neustadt, Austria)**
**Filed Jan. 21, 1963, Ser. No. 252,986**
**Claims priority, application Austria, Jan. 27, 1962, A 693/62**
**4 Claims. (Cl. 18—47)**



1. A box wall for a plaster molding machine, said wall comprising: a relatively thick iron plate providing structural strength for the wall, a steel plate on the iron plate having a chamfered edge and a chrome layer on the steel plate.

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**3,166,797**
**FIBER BALE OPENER AND BLENDER**
**Mayer Mayer, Jr., New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture**
**Filed Sept. 18, 1962, Ser. No. 224,905**
**3 Claims. (Cl. 19—81)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. A machine for opening and blending baled fiber comprising:

(*a*) a plurality of support members forming a framework;

(*b*) a conveyor mounted on said framework for moving a bale of fiber in a unidirectional straight linear path;

(*c*) conveyor driving means connected to said conveyor;

(*d*) a first pair of elongated, rigid support members longitudinally disposed in the path of movement of the bale, a first end of each rigid support member being proximal to the forward end of the bale and a second end of each rigid support member being distal to said bale;

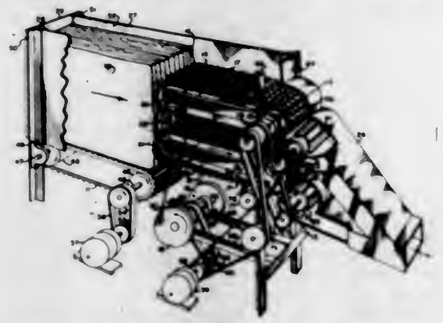
(*e*) a second pair of elongated, rigid support members, parallel to said first pair, and disposed above said first pair;

(*f*) a roller at each end of each pair of rigid support members rotatably mounted thereon transverse to the path of movement of the bale;

(*g*) an endless belt supported for continuous movement over the rollers mounted at the ends of each of said pair of rigid support members, thereby forming a pair of stacked endless belts longitudinally disposed in the path of movement of the bale, the end of each belt proximal to the face of the bale being in contact with and opposing the forward movement thereof;

(*h*) a plurality of spikes secured to the surface of each belt adapted to pluck portions of fiber from the face of the bale;

(*i*) means for pivotally and rotatably mounting each



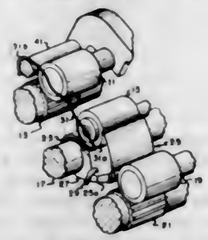
distal roller to the framework transverse to the direction of movement of the bale;

(*j*) means connected to each proximal roller for imparting an arcuate oscillatory motion to each proximal end of said belts about the pivotally mounted ends as centers, whereby each proximal end traverses the forward face of the bale in an oscillatory arcuate path transverse to the path of movement of the bale, the amplitude of oscillation being at least sufficient to cause the proximal ends of the belts to traverse different halves of the face of the bale; and

(*k*) belt driving means connected the distal rollers for continuously moving each belt and the spikes mounted thereon across the face of the bale simultaneously with the oscillatory motion.

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**3,166,798**
**TEXTILE DRAFTING ARRANGEMENT**
**William P. Warthen and Bobby L. Pitts, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware**
**Filed Feb. 14, 1962, Ser. No. 173,212**
**15 Claims. (Cl. 19—245)**



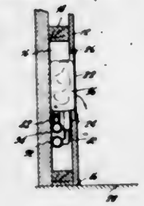
1. A drafting arrangement comprising a pair of closely adjacent draft rolls forming a nip zone therebetween and a single fiber-guiding apron passing over one roll of said pair of rolls and being of materially larger circumference than said one roll of said pair of rolls, a combination roll-and-apron-clearing and apron-supporting-and-guiding



element engaging the apron-carrying periphery of said one roll of said pair of rolls and the interior surface of said apron, and a second roll-engaging element engaging a portion of the periphery of said other roll of said pair of rolls, said two elements each having a fiber-guiding surface facing one another and extending away from the nip zone of said rolls, said apron being carried about said roll-and-apron-clearing and apron-supporting-and-guiding element and said one roll of said pair of rolls and between the respective two said fiber-guiding surfaces on said two elements, said apron being engageable with and guided by each of said two fiber-guiding surfaces for guiding and controlling the passage of a fiber mass passing between and in engagement with said apron on the one hand and the other roll of said pair of rolls and said fiber-engaging surface formed on said second roll-engaging element on the other hand, said second roll-engaging element being spaced from said roll periphery at the entry zone of the fiber mass between said second element and said apron along at least the central fiber-flow-path portion of said second element, for aid in passage of fibers between said second element and said apron through minimizing of lap up on said other roll of said pair of rolls.

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**3,166,799**
**INFLATABLE FURNITURE ARRANGEMENTS**
**Milton Birnkrant, 711 West End Ave., New York, N.Y.**
**Filed Feb. 2, 1961, Ser. No. 86,819**
**15 Claims. (Cl. 20—1.11)**

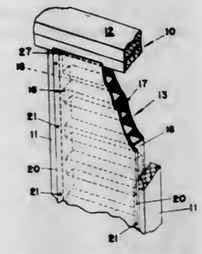


6. In combination: a wall defining an interior cavity and having an exterior recess communicating with said cavity, an inflatable article of furniture arranged for storage within said interior cavity when in deflated condition, inflating means for inflating said article of furniture, pipe means connecting said inflating means with said article of furniture, said pipe means at least partly extending through and being mounted within said cavity and including a flexible portion adjacent said article of furniture and extensible through said recess, said article of furniture being manually pullable through said recess and assuming the shape of an inflated article of furniture adjacent said wall upon inflation by said inflating means.

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**3,166,800**
**HEAT REFLECTIVE INSULATION**
**Steve W. Zoldok, 1425 E. 4th, Spokane, Wash.**
**Filed Sept. 19, 1960, Ser. No. 58,594**
**5 Claims. (Cl. 20—4)**

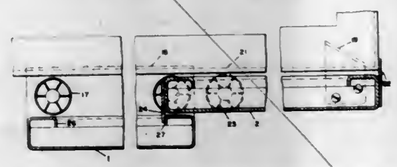
1. A foldable reflective insulation, comprising in expanded form, an elongated flat face sheet adapted for its vertical marginal edge portions to overlie adjacent structural members in a building; a flat back sheet in spaced parallel relation to said face sheet and adapted to enter between the said adjacent structural members in a building; at least one of said sheets being reflective; vertical end posts having their bases hingedly connected to said back sheet at its vertical marginal edges and extending the full length thereof substantially perpendicular to said face and back sheets; there being a right angle fin on each post superimposed upon the longitudinal marginal edge portions of said face sheet and together therewith constituting reinforced stapling flanges; and plural parallel spacing members hingedly secured at their side edges to said face and back sheets and extending from one said end post to the other perpendicular thereto, and forming plural enclosed single cavity air spaces extending laterally of said



insulation, whereby relative longitudinal movements of said face and back sheets will cause said spacing members to rotate and effect movement of said sheets between a folded position wherein said sheets and spacing members are substantially parallel and the expanded position.

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**3,166,801**
**SLIDING DOOR ASSEMBLY**
**Nicholas B. Provenzo, Snyder, N.Y., assignor to Morrison-International Corporation, Buffalo, N.Y., a corporation of New York**
**Filed May 9, 1963, Ser. No. 279,264**
**9 Claims. (Cl. 20—19)**



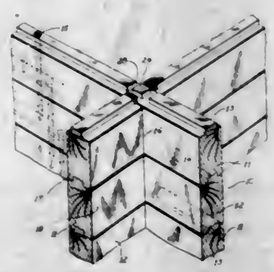
1. A sliding door assembly comprising: a front door panel; a rear door panel; means supporting said front door panel adjacent to but in front of said rear door panel and supporting both of said door panels for relative translational movement in parallel adjacent planes; a downwardly disposed lip member adapted to be attached to an enclosure on which the doors are to be mounted, said lip member extending substantially horizontally in a straight line over the combined length of the door panels when in extended position; front door lower support means extending from the lower portion of said front door and engaging said lip member so as to prevent movement of said front door transversely away from said lip member; rear door lower support means extending from the outer lower edge of said rear door for engaging said lip member when said rear door is in substantially closed position so as to prevent movement of said rear door transversely away from said lip member; and means for preventing translational movement of said rear door relative to said front door when said front door is held in closed position and for preventing said front door from moving completely clear of said rear door; whereby said doors may be overlapped to open position and be held rigidly when in closed position.

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**3,166,802**
**JOINT CONSTRUCTION AND SEAL THEREFOR**
**Carl H. Schmidgall, % Schmidgall Mfg. Co., Inc., 307 Cass St., Peoria, Ill.**
**Filed June 27, 1962, Ser. No. 205,598**
**2 Claims. (Cl. 20—92)**

1. An intersecting wall corner joint construction comprising a plurality of superimposed elongated rectangular

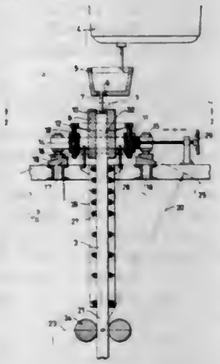
shaped timbers, each of said timbers having a notch disposed transversely thereof and extending from one longitudinal edge of the timber inwardly toward the other longitudinal edge thereof for approximately one-half the width of the timber, the solid portion of the other one half of the width of the timber opposite the notch having a semi-spherical socket portion communicating with the inner end of said notch, the depth of the notch being such



that when adjacent timbers are assembled at a right angle to each other with said notches coinciding, the socket portions will coincide to form a complete socket opening common to both of the adjacent timbers, and a compressible plastic ball fitted in the complete socket opening for sealing the joints between the adjacent timbers, the diameter of the ball being greater than the diameter of the complete spherical socket.

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**3,166,803**
**DEVICE FOR CENTERING THE STREAM OF METAL TO THE MIDDLE OF THE MOULD DURING VERTICAL CONTINUOUS CASTING**
**Franz Ruckstuhl, Uster, Zurich, Switzerland, assignor to Erik Allan Olsson, Kusnacht, Zurich, Switzerland**
**Filed Aug. 16, 1962, Ser. No. 217,329**
**4 Claims. (Cl. 22—57.2)**



3. In a vertical continuous casting machine, a device for centering a stream of molten metal from a tundish, casting ladle, or the like, comprising a substantially horizontal support frame having an opening therethrough, a vertical mold, a plurality of pedestal supports on said support frame each having a spherical surface with radii whose centers are located on an extension of the center line of the mold, and means movably supporting the mold over said opening and on the spherical surfaces of the pedestal supports for adjustment relative to said tundish.

**3,166,804**
**DUCT SPACER WITH CLIPS FOR A SQUIRREL-CAGE ROTOR**
**William J. Satola, Shaker Heights, Ohio, assignor to The Reliance Electric & Engineering Co., a corporation of Ohio**
**Filed Jan. 29, 1962, Ser. No. 169,500**
**11 Claims. (Cl. 22—116)**



1. A spacer assembly for forming a radial ventilating duct between adjacent laminations in a laminated squirrel cage rotor to be provided with conductor bars cast in aligned slots in annular laminations,

said spacer assembly comprising, in combination, a plurality of removable die means disposed between said adjacent laminations and disposed peripherally between said slots in said laminations,

a plurality of separate metal clips disposed between said adjacent laminations and disposed inboard of said slots in said laminations and in contact with the sides of adjacent die means,

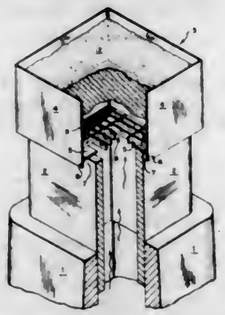
said removable die means and said clips alternating around the periphery of said laminations,

clamp means to clamp said removable die means and said clips in a circle as a unitary spacer assembly,

and mold means including said two sides of said removable die means and said clips to restrict flow of diecasting material at said slots.

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**3,166,805**
**LEADED STEEL FUME CONTROL**
**James D. Fritz, Tonawanda, and Kurt K. Klein, Buffalo, N.Y., assignors to The Colorado Fuel and Iron Corporation, Denver, Colo., a corporation of Colorado**
**Filed Jan. 15, 1963, Ser. No. 251,538**
**6 Claims. (Cl. 22—139)**

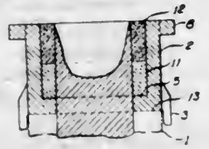


1. The process for preventing the release of toxic lead oxide fumes into the working area from an ingot mold in the production of leaded steel which comprises introducing molten leaded steel into an ingot mold from which lead oxide fumes are released, placing over the ingot mold containing the molten leaded steel a bed of sand supported over and closing the opening of the mold, said sand containing silica into which the fumes enter, and absorbing the lead oxide fumes in the bed of silica.



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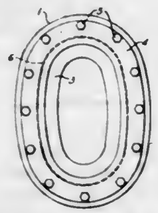
**3,166,806**
**METHOD OF AND APPARATUS FOR POURING INGOTS**
**Robert E. Daley, 8355 Remington Drive, Pittsburgh, Pa.**
**Filed Mar. 20, 1962, Ser. No. 181,015**
**3 Claims. (Cl. 22—147)**



3. A hot top for feeding molten metal to ingot molds and the like comprising a permanent casting having a bottom flange for seating on the top of the mold extending radially inward to the inner wall of the mold to constitute a shoulder for a renewable lining material, said flange being of substantial thickness to provide a high chill zone for the poured metal at the junction of the mold and hot top, a refractory liner supported on said flange extending the full length of said casting to constitute a heat insulating wall for the feed metal above the mold and a second liner of exothermic metal extending from substantially the vertical mid-section of said first-named liner to the top thereof.

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**3,166,807**
**REUSEABLE HOT TOP**
**Robert E. Daley, 8355 Remington Drive, Pittsburgh, Pa.**
**Filed Sept. 28, 1962, Ser. No. 226,896**
**2 Claims. (Cl. 22—147)**



1. An ingot mold hot top comprising a hollow metal casing open at top and bottom and provided at its bottom with an inwardly projecting ledge, the inner surface of the casing from the ledge to the top of the casing diverging upwardly and a refractory lining tapered from top to bottom and substantially engaging said surface and ledge.

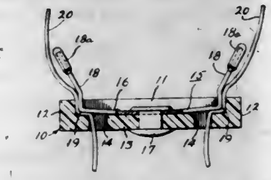
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**3,166,808**
**CORE REINFORCEMENT MEANS**
**Francis C. Moore, Indianapolis, Ind., assignor to Pittsburgh Plate Glass Company, a corporation of Pennsylvania**
**Filed Aug. 18, 1958, Ser. No. 755,700**
**2 Claims. (Cl. 22—200)**

1. In the method of casting metal comprising pouring molten metal into a mold and around a rigid sand core, cooling the metal in the mold to form a casting having a hollow portion in its corresponding to the shape of the sand core and shaking the casting to disintegrate the core and permit it to be readily removed from within the hollow portion of the casting, the improvement which comprises using a core having straight glass fibers distributed in it to reinforce it and maintain its shape during the casting, said glass fibers being capable of breaking up into small portions along with the core during the shaking step.

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**3,166,809**
**STRING FASTENING DEVICE**
**Luther P. Manship, Collingdale, Pa., assignor to The Proctor-Silex Corporation, Philadelphia, Pa., a corporation of Connecticut**
**Filed Sept. 17, 1962, Ser. No. 224,029**
**10 Claims. (Cl. 24—121)**



1. In a string fastening device, the combination comprising a casing having string receiving means at opposite portions thereof, said casing including horizontal and vertical surfaces adjacent each end, a leaf spring overlying said horizontal surfaces including a 90 degree bend forming vertically extending portions positioned closely adjacent said vertical surfaces, and means for biasing said spring toward said horizontal surfaces whereby a string interposed between said spring and said surfaces at either end portion of said casing will be clamped by said leaf spring at two places at 90° to each other.

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**3,166,810**
**CABLE GRIP**
**Glover C. Ensley, 525 N. Woodland Drive, Kansas City North, Mo.**
**Filed July 10, 1963, Ser. No. 294,122**
**3 Claims. (Cl. 24—125)**

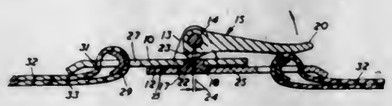


1. A cable grip for drawing multiple wire strand cable through conduit comprising: a body of generally cylindrical shape and having a length not less than the diameter, said body having end surfaces and anchoring means operatively associated with one end surface, pulling means secured to said anchoring means, a plurality of wire-receiving bores extending longitudinally from the other end surface into said body generally axially thereof and spaced radially outwardly of the axis of said body, said body having an outer side surface, said body having threaded bores for each wire-receiving bore, said threaded bores having openings in the outer side surface of the body spaced circumferentially therearound and extending therefrom into the body and intersecting the respective wire-receiving bore, said threaded bores each being in a plane that extends parallel to and spaced from the body axis and longitudinally through the axis of the respective wire-receiving bore, and set screws in said threaded bores and projecting into the respective wire-receiving bores with outer ends of each screw being inwardly from the

outer side surface of the body whereby separate strands of a cable are inserted into the respective wire-receiving bores from said other end surface and engaged by said respective set screws to secure the cable with respect to said body for pulling the cable through conduit by said pulling means.

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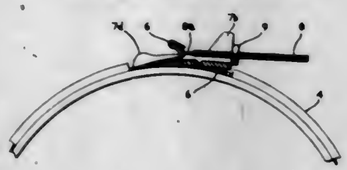
**3,166,811**
**RELEASABLE CONNECTORS**
**Frank Bernard Harley, 46 Northcroft Road, Englefield Green, Egham, Surrey, England**
**Filed Mar. 26, 1962, Ser. No. 182,367**
**Claims priority, application Great Britain, Apr. 6, 1961, 12,485**
**8 Claims. (Cl. 24—230)**



1. A releasable connector comprising first and second parts each having a latching shoulder, the latching shoulders being adapted, when brought into engagement with each other, to transmit a load between the parts in a linear direction, said latching shoulders being separable by movement of said first and second parts away from one another in a release direction generally at right angles to the said linear direction, one of said parts carrying a spring positioned to contact the under side of the other part when said latching shoulders are being brought into engagement with each other and remain between the parts during such engagement, a locking lever pivotally mounted on the first part, said lever having a finger piece by which it may be manually rotated between a locking position and a release position and a thrust portion integral with said locking lever, the said thrust portion having a bearing surface positioned to bear on the second part during rotation of the lever and move the latching shoulders into engagement with one another, while stressing the spring, and then swing on into an over-center position past the point at which said thrust portion first bears on said second part as said lever passes from its release to its locking position, said bearing surface being further from the pivotal axis of said lever than the adjacent surfaces of said thrust portion, and the said spring being positioned between the parts to cause separation of the parts in the release direction when said thrust portion is moved clear of the second part, and to bias the second part against the thrust portion to yieldingly retain said thrust portion in its over-center position whenever said thrust portion occupies that position.

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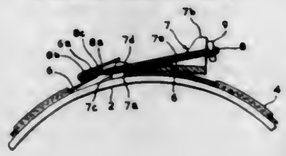
**3,166,812**
**PIPE COUPLING**
**Bernard Rickart Hepburn, Oakville, Ontario, Canada, assignor to National Sewer Pipe Limited, Oakville, Ontario, Canada, a corporation**
**Filed May 28, 1962, Ser. No. 198,260**
**1 Claim. (Cl. 24—279)**



Clamping means for a pipe coupling comprising a band adapted to encircle the coupling, a connector including a bracket connected to one end of the band and a threaded bolt connected to the other end of the band, said bracket having a recess therein adapted to receive the bolt, and a nut for the bolt adapted to engage the bracket and tighten the band when the nut is rotated on the bolt, said bolt having a head adapted to bend under a predetermined pressure and provided with inner and outer parallel transverse slots, the band extending under the head, up through the inner slots, over the head, down through the outer slot, around the outer end of the head and back over the head, so that the head will deform in a predetermined manner without breaking to indicate when sufficient tightening force has been applied to the band.

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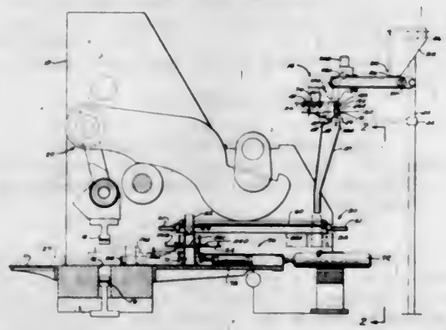
**3,166,813**
**PIPE COUPLING**
**Bernard R. Hepburn, Oakville, Ontario, Canada, assignor to National Sewer Pipe Limited, Oakville, Ontario, Canada**
**Filed Oct. 17, 1963, Ser. No. 316,831**
**Claims priority, application Great Britain, Oct. 23, 1962, 40,166/62**
**1 Claim. (Cl. 24—280)**



A clamping means for a pipe coupling comprising a resilient band adapted to encircle the coupling and a connector for connecting the ends of the band and applying tightening force to the band, the connector including a bolt having a head with an inner transverse slot adjacent the inner end of the bolt head and an outer parallel transverse slot adjacent the outer end of the bolt head, the band passing under the head, up through the inner slot, over the head, down through the outer slot, and around and in contact with the outer end of the bolt head, the band being of such resilience that when so threaded through the bolt head the free end of the band will deflect in a predetermined manner when sufficient tightening force has been applied to the band.

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**3,166,814**
**BRICKMAKING**
**John M. O'Donnell, Pittsburgh, Richard O. Platt, Bethel Park, and Charles D. Gabor, Verona, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 28, 1963, Ser. No. 283,831**
**4 Claims. (Cl. 25—103)**



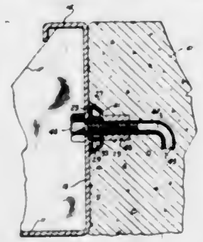
3. The combination with brick forming apparatus which includes means defining a brick forming mold cavity, of upper and lower charge boxes which are reciprocally movable, said boxes having inlets and outlets.



said lower charge box being movable between a position over said mold cavity and a filling station spaced from said mold cavity, said upper charge box being movable between a position adjacent weigher means and a position above said lower charge box at its filling station, first means associated with the upper and the lower charge boxes normally closing the respective outlets thereof, said first means arranged to open the outlet of the upper charge box when it is at its position above the lower charge box at its filling station and to open the outlet of the lower charge box when it is in position above the mold cavity. weigher means constructed and arranged to deliver a plurality of predetermined weight charges through the inlet of the upper charge box to a position of repose therein when said upper charge box is thereadjacent.

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**3,166,815**
**KEYWAY STRIP FOR CONCRETE PAVEMENT FORMS**
**James A. Rappas, 202 Thornton Road, Rochester, N.Y.**
**Filed Jan. 29, 1963, Ser. No. 254,724**
**5 Claims. (Cl. 25—118)**



1. The combination with an upright form for defining the lateral edge of a concrete pavement to be laid, of a keyway strip attached to a face of said form and extending longitudinally along the form in position to cause a keyway groove in the edge of such concrete pavement, said keyway strip being characterized by the fact that it is formed of plastic material of generally trapezoidal external cross section, and that it is hollow, having a plurality of longitudinally extending cavities separated from each other by a strengthening web, said keyway strip being further characterized by the fact that the external face thereof which is engaged with said upright form is slightly concave in cross section, so that the upper and lower edges thereof will tightly engage said upright form to prevent freshly poured concrete from seeping between the keyway strip and the upright form.

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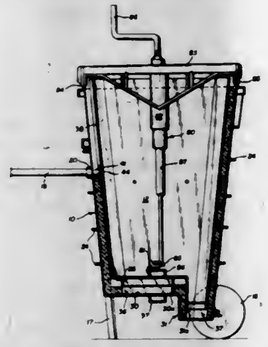
**3,166,816**
**MOLD MEMBER FOR FORMING A CONTROL JOINT**
**Edward T. Berg, 275 Santa Clara Ave., San Francisco, Calif.**
**Filed Sept. 12, 1963, Ser. No. 308,573**
**2 Claims. (Cl. 25—128)**



1. For forming control joints in the construction of concrete structures, a mold member in the form of an elongated hollow bar having converging side surfaces possessing outwardly flaring end areas at their divergent ends, a narrow end edge portion at the convergent ends of said side surfaces, said end edge portion possessing a shallow longitudinal groove, opposite said narrow end edge portion a flat base surface arranged to form sharp edges with said outwardly flaring end areas of said side surfaces, and a pair of relatively spaced longitudinal partitions extending from points near the bottom of the groove in said narrow edge portion to points near said base surface to form a centrally located, longitudinally extending channel in the interior of said bar for the guidance of nails driven through the mold member from said groove.

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**3,166,817**
**APPARATUS FOR INTEGRAL MOLDING OF IRREGULARLY SHAPED HOLLOW ARTICLES**
**Elmer R. Cordova, 5805 S. Santa Fe Drive, Littleton, Colo.**
**Filed Feb. 23, 1961, Ser. No. 91,251**
**3 Claims. (Cl. 25—130)**

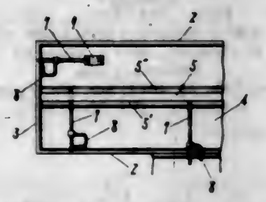


1. Apparatus for integrally casting an outdoor incinerator body comprising: an upwardly diverging annular outer mold and an upwardly diverging, hollow, inner mold which cooperate, when assembled, to spatially define a volume the confines of which form the shaping of a generally rectangular relatively thin substantially upright wall of a said incinerator body, a stepped two-section bottom in both said inner and outer molds having an open bottom and a partially open top wall, a volume-enclosing lip integral with each section of the outside bottom surface of the inner mold supporting it on the interior surface of the stepped bottom surface of the outer mold in a substantially leak-proof relationship therewith and one cooperatively forming an incinerator chimney with an opening therethrough and the other cooperatively forming an upper wall of an incinerator body with a trash opening therethrough, another lip integral with an upper portion of an outer side wall of the inner mold having a width less than the distance between the assembled inner and outer molds, an auxiliary mold form adapted to be mounted in engagement with said another lip and span the distance between the interior surface of the outer mold and the exterior surface of the inner mold when assembled to form a trash removal opening in the lower part of a wall in a said incinerator body, releasable means connecting the bottom surfaces of each of the inner and outer molds releasably locking each other in rigid engagement when the apparatus is assembled, there being a plurality of aligned openings in opposed side walls of both the inner and outer molds, an elongated rod mounted in each aligned opening forming apertures through opposed walls of a said incinerator body for the later reception of a grate structure, there being at least two other aligned openings in the bottom surfaces of each of the inner and outer molds, and a rod mounted in each said other aligned opening forming

apertures through the upper surface of said incinerator body adjacent the opening in said upper surface of a said incinerator body for the later attachment of an incinerator lid.

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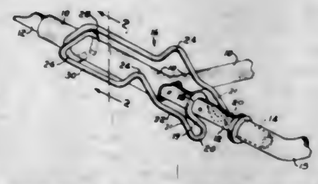
**3,166,818**
**STEEL FORM FOR PLACING CONCRETE**
**Tomoharu Sakai, Toyonaka, and Tetsuto Osato, Nishinomiya, Japan, assignors to Sumitomo Metal Industries Limited, Osaka, Japan, a corporation of Japan**
**Filed Dec. 26, 1963, Ser. No. 333,320**
**Claims priority, application Japan, Dec. 29, 1962, 37/59,985**
**9 Claims. (Cl. 25—131)**



1. An assembly of concrete placing steel forms, each said form comprising a face plate, external frame of a W-shape in cross section, each having a concave part and flanges, a center frame fixed on said face plate in spaced relation to said external frames, said center frame and external frames of each form being provided with relatively aligned bores therein, a rectilinear connecting rod slidably disposed through the bores in said center frame and external frame of one form for reception in an adjoining exterior frame of another form, a supporting arm projecting normally from each said rod at a location spaced from both of its ends and adapted for movement about the axis of the said rod, a U-shaped clamp carried by said arm in a plane spaced from and parallel to the rod, the open end of said U-shaped clamp being directed tangentially to the rotational path described by the free end of said supporting arm in its movement about the axis of said rod, the opening defined by said free ends being disposed wholly on one axial side of said supporting arm for reception of adjacent external frames.

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**3,166,819**
**CLIP FOR EMBALMING OPERATIONS**
**Carl B. Robbins, W. Main St., Searsport, Maine**
**Filed Sept. 7, 1961, Ser. No. 136,531**
**3 Claims. (Cl. 27—21)**



1. An elongated embalming clip for securing a blood vessel to a fluid-transfer tube or the like, comprising a single length of spring wire or the like bent to form at one end of the clip an open arc of over 180° with converging tangential extensions, transversely outwardly extending bent loops at the ends of said extensions, an arm forming an extension of each loop, elongated legs into which said arms merge, said legs extending to the opposite end of the clip and lying on opposite sides of the longitudinal center of the clip, said arc, said extensions, said arms and said loops lying in a plane transversely of the length of the clip, the ends of said legs remote from said plane each being provided with lateral portions extending oppositely across the longitudinal center of the clip and terminating in a semicircular hook, each hook fitting and being engageable with the side of the blood vessel opposite the leg to which it is connected, said hooks lying in closely adjacent planes parallel to said first-named plane, the resiliency of said legs biasing said remote ends apart whereby said hooks will move into clamping engagement with the blood vessel.

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**3,166,820**
**PROCESS AND APPARATUS FOR DRYING AND FIXING BANDS OF CRIMPED SYNTHETIC THREADS**
**Horst Taul, Obernburg (Main), and Albert Neeff, Erlenbach (Main), Germany, assignors to Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany**
**Filed Mar. 2, 1961, Ser. No. 92,892**
**Claims priority, application Germany, Mar. 4, 1960, V 18,212**
**4 Claims. (Cl. 28—1)**

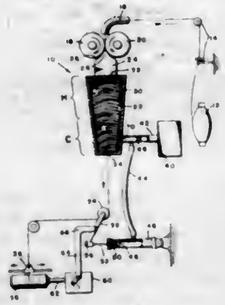


1. A process for continuously drying and fixing crimped bands of endless synthetic threads which comprises passing the crimped threads emerging from a crimping chamber under transverse motion into a rectangular, hollow shaft located beneath the opening of said crimping chamber, whereby said threads substantially fill a given cross-section of said shaft; allowing the packed threads to be moved through the shaft under the urging of the weight of the packed threads; directing a current of heated fluid on said threads within an area of said shaft, said current passing in a direction perpendicular to the direction of movement of said packed threads through said shaft; and thereafter contacting said packed threads with a current of cold air in a separtae area of said shaft, said current of cold air passing through said packing in a direction perpendicular to the direction of movement of said packing through said shaft.

4. An improved device for treating crimped bands of synthetic threads which comprises: a rectangular, hollow shaft positioned directly beneath a crimping chamber, means for controlling the rate at which said crimped threads move through said shaft, thread distributing means associated with said shaft, said distributing means being capable of transverse movement above said shaft and across the opening of said shaft whereby said crimped bands are placed in said shaft and substantially fill said shaft, said shaft including two separate treatment zones having openings in opposite sides of said shaft, jackets surrounding said treatment zones, and means for passing treating fluid through said hollow shaft in a direction perpendicular to the movement of said crimped threads through said shaft and for withdrawing said treating fluids from said shaft.



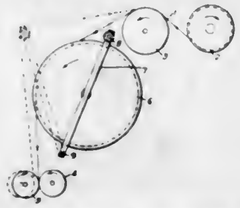
**3,166,821**
**CRIMPING APPARATUS**
**Thomas F. Furlong, Greenville, S.C., assignor to Monsanto Company, a corporation of Delaware**
**Filed Nov. 26, 1962, Ser. No. 240,001**
**4 Claims. (Cl. 28—1)**



1. In a crimping apparatus of the type having a stuffer box, means for feeding filamentary material into said stuffer box and variable speed withdrawing means operative to remove material from said stuffer box, an improved regulating apparatus for regulating the rate of withdrawal so as to maintain constant the quantity of material within said stuffer box, said regulating apparatus comprising a source of gas under constant pressure, conduit means fluidly interconnecting said gas source with the interior of said stuffer box, spring-biased piston means in fluid communication with said conduit means, and a mechanical linkage interconnecting said piston with said variable speed withdrawing means whereby, upon an incipient change in the degree of compaction of material within said stuffer box, the gas pressure within said conduit changes to move said piston, thereby actuating said linkage-controlled variable speed withdrawing means to vary the rate of withdrawal.

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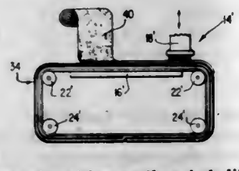
**3,166,822**
**METHOD AND APPARATUS FOR PRODUCTION OF BULKED YARN**
**David Starkie, Mapperley Park, Nottingham, England, assignor to English Rose Limited**
**Filed Apr. 11, 1961, Ser. No. 102,314**
**Claims priority, application Great Britain, Apr. 26, 1960, 14,507/60**
**19 Claims. (Cl. 28—1)**



3. Apparatus for bulking a previously treated plural-filament thermoplastic yarn in which the tendency to crimp is developed by the establishment of a heat gradient across the yarn, which comprises means for feeding the yarn under sufficient tension to suppress the crimps and at a predetermined input speed into a treating zone including means for forwarding said yarn at an increased speed into said treating zone, means for decreasing the speed of said yarn to such an extent that said yarn is in the substantially completely untensioned condition and for treating substantially uniformly said yarn with heat within said zone so that a predetermined amount of lengthwise contraction occurs on the part of said yarn while in the substantially completely untensioned condition thereof whereby a bulking effect is achieved by producing a shrinkage in the yarn along the side exposed to the relatively cooler temperature while leaving substantially unaffected the side exposed to the relatively hotter temperatures of the gradient, and means for withdrawing said contracted yarn substantially at the same decreased speed.

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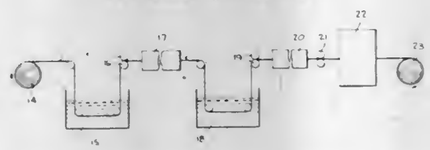
**3,166,823**
**METHOD OF MAKING FELT-LIKE STRUCTURE**
**John J. Bernard, Appleton, Wis., assignor to Appleton Mills, Appleton, Wis., a corporation of Wisconsin**
**Filed Aug. 29, 1963, Ser. No. 305,379**
**3 Claims. (Cl. 28—72.2)**



1. A method of making endless belt-like fabrics comprising needling a batt of fibers to at least one surface of a web-like base material to provide a stock fabric, needling said stock fabric into an endless belt consisting of at least two convoluted layers of said stock fabric, and needling a final batt of fibers to at least one surface of said endless belt.

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**3,166,824**
**PROCESS OF SHRINK-PROOFING FABRICS**
**Herbert William Fuhr, Charlotte, N.C., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware**
**Filed July 5, 1960, Ser. No. 40,659**
**10 Claims. (Cl. 28—76)**



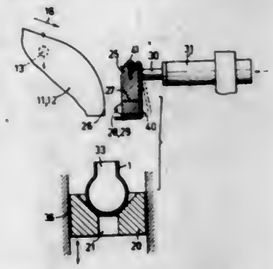
1. The process which comprises subjecting a fabric, woven of a warp yarn comprising cellulose acetate and a filling yarn comprising cellulose, to a chemical treatment for shrink-proofing cellulose and to a mechanical longitudinal compaction, whereby said fabric is rendered substantially shrink-proof, said chemical treatment comprising applying shrink-proofing agent from an aqueous medium containing a concentration of said agent of about 15 to 25% by weight.

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**3,166,825**
**DEVICE FOR SUPPLYING A SET OF BEADS TO A LAMP BULB**
**Willem Cornelus Tazelaar, Dordrecht, and Reinder Westra, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed Apr. 8, 1963, Ser. No. 271,156**
**Claims priority, application Netherlands, Apr. 10, 1962, 277,051**
**3 Claims. (Cl. 29—25.1)**

1. A device for supplying a bead assembly to a lamp bulb, said bead assembly including a filament, a glass bead, two lead-in wires which extend approximately in parallel through the glass bead and are bent outward in the manner of a hook at a position remote from the glass bead, said device comprising a holder for holding a bulb

with its open neck portion facing upward, and an inclined guide on which a bead assembly slides downward and falls into the neck-shaped part of the bulb; said device being characterized in that the lower part of the inclined guide is vertically disposed, a member movable with respect to said lower part of the guide, said member in its



position adjacent the guide constitutes a stop against which the hook-shaped parts of the bead assembly engage after sliding across the guide, said member being moved away from the guide after a bead assembly has been arrested in its position determined by the stop member directly above the neck opening of the bulb.

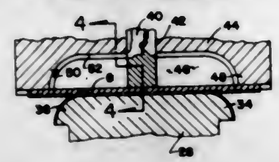
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**3,166,826**
**METHOD OF MAKING AGRICULTURAL DEVICES**
**Gustav Zettl, Friedrichstal, Germany, assignor to Schwabische Huttenwerke G.m.b.H., Wasseralfingen, Wurttemberg, Germany**
**Filed May 1, 1963, Ser. No. 277,343**
**Claims priority, application Germany, May 3, 1962, Sch 31,399**
**4 Claims. (Cl. 29—148.3)**



1. A method of making agricultural devices, which includes the steps of: stamping out a plurality of substantially identical blanks from a relatively long and narrow blank strip, each blank having a substantially rectangular blade section of approximately the width of the final blade to be made and having a housing section of approximately square-shaped cross section for receiving the handle, heating the stamped out blanks, deep drawing the housing section of a respective stamped out heated blank to form a cup-shaped portion, removing the bottom of said cup shaped portion to transform the latter into a sleeve for receiving a handle, hot rolling the blade section of the respective blank in longitudinal direction of the blank by segmented rolls utilizing the residual heat in the blank to form a tapered blank, trimming the blank into approximately final shape, curving the blank while utilizing the residual heat therein, and grinding and polishing the blank.

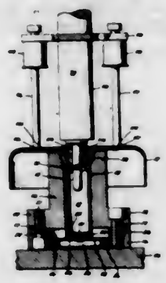
**3,166,827**
**METHOD OF MAKING A SPLIT RING**
**Michael Bushi, 3268 W. 33rd St., Cleveland, Ohio**
**Filed Mar. 21, 1963, Ser. No. 266,969**
**5 Claims. (Cl. 29—148.4)**



1. The method of forming a split ring from an elongated straight metal blank comprising the steps of placing and retaining said blank on a lower die member having an intermediate straight section corresponding in length to one-half the desired circumference of said ring and opposed curved end sections each having a radius of curvature corresponding to the desired radius of said ring, bending said blank on said lower die member by a vertically reciprocable upper die member, the blank thus comprising curved end sections each having a radius of curvature corresponding to the desired radius of said ring and an intermediate straight section corresponding to one-half the desired circumference of said ring, trimming the opposite ends of said partially formed blank to square the same, positioning said partially formed blank on a cylindrical forming mandrel having a radius corresponding to the desired inside radius of said ring and retaining said blank thereon at a point midway on said intermediate straight section, and wrapping said curved end sections and said intermediate section about said cylindrical mandrel by horizontally reciprocating die members to closely conform said blank to the cylindrical surface of said mandrel.

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**3,166,828**
**METHOD FOR MOUNTING BEARINGS IN A DYNAMOELECTRIC MACHINE**
**Myron D. Tupper, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York**
**Filed Sept. 28, 1961, Ser. No. 142,455**
**10 Claims. (Cl. 29—149.5)**



1. The method of forming and assembling a bearing onto an end shield for use in a dynamoelectric machine, said bearing being formed from a blank having a reduced outer surface portion at one end and an inner surface defining a bore, said end shield having an aperture for receiving said reduced portion, said method comprising positioning said bearing blank loosely in an assembly fixture with the reduced portion of said blank extending beyond said fixture and through said end shield aperture; aligning said blank and said end shield while inserting a bearing bore sizing pin into said bore; turning down the end of said reduced portion to stake said bearing blank firmly to said end shield while compressing the portion



of said bearing blank in said fixture radially inwardly between said fixture and said sizing pin to form a finished bearing having an accurately dimensioned bearing bore surface; and withdrawing said sizing pin from said bearing bore and discontinuing said compression of the formed bearing in said assembly fixture to facilitate the release of the bearing from said fixture.

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**3,166,829**
**DUCTED SHEETING CONSTRUCTION**
**Jerome H. Lemelson, 289 High St., Perth Amboy, N.J.**
**Filed May 28, 1956, Ser. No. 589,848**
**8 Claims. (Cl. 29—155)**



1. A method of fabricating a stiffened hollow metal panel in the form of a single sheet of homogeneous metal having an unjoined interior portion defined and contained between portions of solid metal, said sheet provided with an inlet for fluid pressure to said unjoined portion with said unjoined portion being adapted to contain a fluid under pressure, said method comprising attaching an injection tool to said sheet in sealing engagement with said inlet, injecting a fluent filler material through said tool under sufficient pressure to outwardly expand said unjoined portion, permanently entrapping a predetermined quanity of said filler material within the expanded, unjoined portion of the sheet by collapsing part of the outwardly expanded portion of the sheet and sealing the collapsed part, and thereafter solidifying said fluent material to provide a core member within said expanded unjoined portion, said solidified core member being of sufficient rigidity to provide substantial support for the walls of the unjoined portion of the sheet and to prevent it from becoming inwardly deformed when normal forces are applied to said walls on the exterior of said duct.

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**3,166,830**
**METHOD OF MAKING PRESTRESSED GIRDER**
**Gerald Gregory Greulich, 3018 NE. 20th Court, Fort Lauderdale, Fla.**
**Filed May 2, 1962, Ser. No. 191,966**
**5 Claims. (Cl. 29—155)**



1. The method of making a girder, comprising prestressing a separate concrete top chord to place it under permanent material compression, rigidly securing a metal web to a metal bottom chord, stretching the bottom chord lengthwise until it is under material tension and then rigidly securing the web to the top chord while maintaining the bottom chord stretched.

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**3,166,831**
**METHOD OF MAKING COMPOSITE ELEMENTS**
**Norval A. Keith, East Alton, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia**
**Filed Sept. 4, 1962, Ser. No. 221,118**
**8 Claims. (Cl. 29—155)**

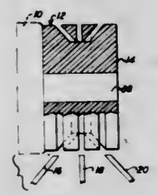
1. A method of making a composite structure comprising providing a sheet of ductile metal having parallel upper and lower surfaces and an unjoined interior portion contained within said sheet with said unjoined portion being defined between complementary portions of said sheet coextending parallel to said surfaces, injecting into interior portion a foamable plastic forming reaction mixture which forms a solid foamed plastic with said mixture being injected in an amount sufficient



to deform said complementary portions away from each other in a spaced first amount, said mixture being further provided in a quantity generating sufficient foamed plastic product to additionally deform said complementary portions further away from each other into a second spaced relationship, and reacting said mixture to form said foamed plastic product and to deform said complementary portions into said second spaced relationship.

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**3,166,832**
**METHOD OF FORMING A PISTON AND LIKE COMPONENTS**
**John B. Scannell, Drexel Hill, Pa., assignor to Greene, Tweed & Co., North Wales, Pa.**
**Filed Nov. 2, 1960, Ser. No. 66,778**
**14 Claims. (Cl. 29—156.62)**



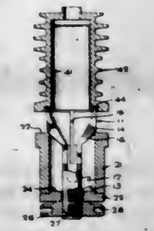
1. In method of manufacturing a piston adapted for accommodating a piston ring, the steps comprising forming a piston body, cutting into the surface of said body first and second peripheral annular grooves inclined towards each other to form in said body an annular rib of trapezoidal cross-section connected to the body, and cutting said rib into two separate parts and severing the same from said body to form two rings each of which are completely disconnected from said body and are adapted to constitute backup rings for the piston ring.

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**3,166,833**
**PRODUCTION OF HEAVY METAL OBJECTS BY POWDER METALLURGY**
**Alfred R. Globus, New York, N.Y., assignor to Consolidated Astronautics Inc., Long Island City, N.Y., a corporation of Delaware**
**No Drawing. Filed May 2, 1962, Ser. No. 191,746**
**10 Claims. (Cl. 29—182.5)**

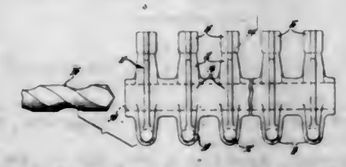
1. In the process for producing metal objects by powder metallurgy, in which a powder of a metal selected from the group consisting of titanium, zirconium, tantalum, tungsten, molybdenum and chromium, is compacted into shape and thereafter sintered, the improvement which comprises admixing an alkali metal borohydride with the powder in an amount of about 1–5% by weight boron prior to said compacting.

3,166,834
## CATALYST BED REMOVING TOOL
James B. Newman, Lancaster, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 8, 1963, Ser. No. 257,346
1 Claim. (Cl. 29—234)
(Granted under Title 35, U.S. Code (1952), sec. 266)



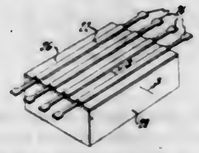
A removing tool comprising:
(*a*) a collet having an elongated threaded shank extending axially from a tapered segmented head having an inwardly facing lip about an open end thereof for fitting over a flanged element to be removed;
(*b*) a cylinder disposed about said collet shank with a flat leading surface facing said head and an inner diameter slightly less than the normal exterior diameter of said head;
(*c*) a nut threaded upon said shank and bearing upon said cylinder for moving the cylinder onto said head to compress the segments thereof and grip a flanged element, further threading of the nut onto the shank slipping the cylinder over the compressed head to engage a unit from which the flanged element is to be removed, whereby additional rotation of the nut exerts an axial force on the collet to draw it into the cylinder and remove a flanged element while gripping such element; and
(*d*) an annular alignment spacer disposed about said shank between said cylinder and threaded nut, said spacer having a boss thereon of a diameter substantially equal to the inner diameter of said cylinder and a central opening therethrough substantially equal to the diameter of said shank, whereby said spacer seats in said cylinder to coaxially align the cylinder and shank upon tightening of the nut.

3,166,835
## METHOD OF MANUFACTURE OF CAST VALVE ROCKER ARMS
Adelbert E. Kolbe, Berkley, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 6, 1962, Ser. No. 221,834
1 Claim. (Cl. 29—414)



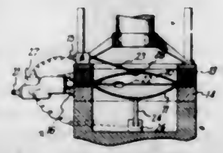
A method of manufacturing internal combustion engine rocker arms of the type having a bore for a shaft bearing, a push rod engaging surface offset from said bore, and a valve engaging surface offset from said bore and from said push rod engaging surface comprising the steps of:
casting a work piece in the shape of a plurality of connected rocker arms aligned with respect to the axis of said bore and with said surfaces aligned from end to end of said work piece;
simultaneously coining the push rod engaging and the valve engaging surfaces of the plurality of rocker arms;
forming and finishing the shaft bearing bore of said rocker arms by drilling and reaming along said axis;
and subsequently severing each individual rocker arm from the remainder of said rocker arms constituting said work piece.

3,166,836
## MANUFACTURE OF ELECTRON TUBE CATHODES
John M. Bigler, Landisville, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 667,240, June 21, 1957. This application May 24, 1962, Ser. No. 198,698
6 Claims. (Cl. 29—420.5)



1. The method of making an electron tube cathode comprising a metal base member having a porous surface layer of sintered metal powder bonded thereto, comprising the steps of:
(*a*) preforming a thick layer of compacted metal powder having a sintering temperature below the melting point temperature of said base member, and partially sintering said layer into a coherent porous sheet;
(*b*) coating a surface of said metal base member with a thin layer of metal powder having a sintering temperature below the melting point temperature of said base member, and at least partially sintering said coating; and
(*c*) then pressing said preformed sheet against said coating, and firing, while continuing said pressing, to complete the sintering of said coating and sheet and form said bonded porous surface layer on said base member.

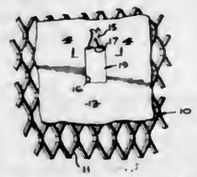
3,166,837
## METHOD AND APPARATUS FOR MAKING DOME-LIKE HOLLOW METAL STRUCTURE
Robert P. Frick, Mount Healthy, and Marvin W. Maschke, Cincinnati, Ohio, assignors to The Metal Specialty Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 10, 1961, Ser. No. 130,533
7 Claims. (Cl. 29—421)



1. The method of making a hollow metal article which includes the steps of providing a foundation of two sheets of metal with an intermediate bonding layer of a metal of lower melting point than that of said two sheets, providing a pair of annular clamping members, the inner peripheries of which coincide substantially with the desired medial outer periphery of said hollow metal article, clamping said sandwich tightly between said clamping members, heating said clamping members to a temperature above the melting point of the metal of said bonding layer but below the melting point of said two sheets, and injecting a gas under pressure between said two sheets and between said clamping members into the area within said annular clamping members whereby to force said two sheets apart into opposed dome-like configuration within said annular clamping members, removing the hollow metal article thus formed from between said clamping members and immediately permitting said hollow metal article to cool.

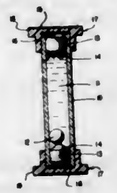


3,166,838
## METHOD OF SECURING EXPANDED METAL TO THIN PLIABLE MATERIAL
William Brandt Goldsworthy, Palos Verdes Estates, Calif., assignor to Western Metal Lath Co., Monterey Park, Calif., a corporation of California
Filed Apr. 2, 1962, Ser. No. 184,111
4 Claims. (Cl. 29—432)



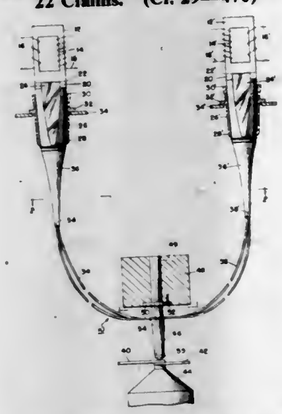
1. A method of forming a layer of expanded metal material and a layer of relatively thin pliable material into a composite sheet of material for attachment to a support for application of plastic material in mortar-like condition comprising laying said respective layers of expanded metal material and pliable material one upon the other, passing said layers of material in a continuous line of travel in a selected direction toward a final destination, puncturing said layer of expanded metal material during movement thereof in said selected direction at each of a plurality of points to produce a tongue of said expanded metal material at each point, driving said tongue of expanded metal material at each point through said layer of pliable material whereby to puncture said layer of pliable material severing a tab of said pliable material at the side of a hole toward said final destination, then bending each respective tongue of expanded metal material in a direction counter to said selected direction to a location over an adjacent unpunctured area of said layer of pliable material and an adjacent unpunctured area of expanded metal material during travel of said layers in said selected direction, and forcing said unpunctured area of said pliable material into engagement with said expanded metal material.

3,166,839
## METHOD OF MAKING A TIMER
Mortimer Russell Dock, 7 Lexington Ave., New York, N.Y., and George C. Sweeney, Jr., and Lewis H. Chaloux, both of 1224 5th Ave., Watervliet, N.Y.
Filed June 22, 1962, Ser. No. 204,392
3 Claims. (Cl. 29—422)



1. A method of assembling and closing a fluid filled timer comprising the steps of supporting one end of an open-ended cylindrical transparent thermoplastic tube, inserting a one-piece rubber-like elastically deformable cylindrical plug into the open unsupported end of said tube to close such end in a fluid tight manner, applying heat and axial pressure to said unsupported end axially outwardly of said plug therein and in an annular area on said end between the bore and periphery of the tube to upset the tube and form thereon an integral internal annular shoulder abutting the outer end of said plug around a peripheral portion thereof and axially inwardly of said end of the tube, inverting said tube and supporting the closed end thereof and introducing a movable timer object into the then unsupported open end of the tube and substantially filling the tube through said open end with a liquid having a specific gravity different from the specific gravity of said object, inserting a second one-piece rubber-like elastically deformable cylindrical plug into the then unsupported open end of the tube in axial compressive relation to said liquid and elastically deforming the second plug radially inwardly to allow the escape of all air from said tube, applying axial pressure to the second plug tending to compress said liquid, and substantially simultaneously applying heat and axial pressure to said then unsupported end of the tube axially outwardly of the second plug in an annular area on said end between the bore and periphery of the tube to upset the tube and form thereon an integral internal annular shoulder abutting the outer end of the second plug around a peripheral portion thereof and axially inwardly of said end of the tube.

3,166,840
## APPARATUS AND METHOD FOR INTRODUCING HIGH LEVELS OF VIBRATORY ENERGY TO A WORK AREA
Dennison Bancroft, Waterville, Maine, and William C. Elmore, Swarthmore, and James Byron Jones and Nicholas Maropis, West Chester, Pa., assignors to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania
Filed June 28, 1961, Ser. No. 120,233
22 Claims. (Cl. 29—470)



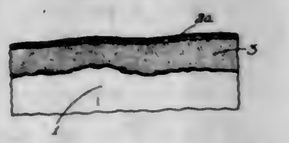
4. In an apparatus comprising means for generating vibratory energy, an acoustically resonant terminal member adapted to perform useful work, at least two flexible resonant ribbons having antinodes at their ends, one end of each ribbon being axially coupled to said means so that said ribbons vibrate in a longitudinal mode of vibration, means connecting the other end of each ribbon to said member at spaced antinode regions on said member, whereby high levels of vibratory energy may be transmitted from said means through said ribbons to said member.

17. A method of providing maximum transfer of high levels of vibratory energy through an angle without attenuation comprising the steps of providing a vibration-

generating means and a resonant work performing element so that their longitudinal axes are not aligned, providing at least two resonant flexible members having antinode regions at their ends which ends are coupled to one of said means and element with a good impedance match therebetween, providing at least a portion of said members extended through an arcuate path so that the bend radius of each portion is at least equal to $\lambda/4$ wherein $\lambda$ is the wavelength of sound in the material of said members at the operating frequency, and using said flexible members to transmit vibratory energy from said means to said element.

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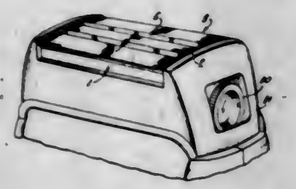
**3,166,841**
**DESCALING**
Kurt Otto Reinhold Gebhard and Thomas Barry Beetge, Pretoria, Transvaal, Republic of South Africa, assignors to South African Iron and Steel Industrial Corporation, Limited, Pretoria, Transvaal, Republic of South Africa, a corporation of the Republic of South Africa
Filed Nov. 13, 1961, Ser. No. 151,971
Claims priority, application Republic of South Africa, Nov. 24, 1960, 60/4,778
11 Claims. (Cl. 29—529)




1. A method of removing magnetite scale from an iron or steel product, including the steps of converting at least a major portion of the magnetite to wustite by heating under inert conditions in a gaseous atmosphere, and removing the wustite scale.

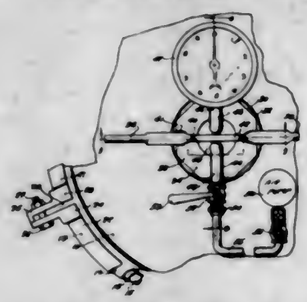
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**3,166,842**
**ADJUSTABLE SPACER BAR FOR MULTIPLE-HEAD ELECTRIC SHAVER**
James Christensen and David Hartmann, Lancaster, Pa., assignors to Schick Electric Inc., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,721
3 Claims. (Cl. 30—43.1)



1. In a multiple-head electric shaver, the combination of a vertically movable spacer bar, a slide bar disposed adjacent the spacer bar with freedom to move longitudinally with respect to the spacer bar, cam means carried by one of said bars and engaging the other and adapted to raise the spacer bar in response to longitudinal movement of the slide bar, a shaver case wall overlying one end of the sliide bar, a spacer control member rotatably mounted in the said case wall and accessible for manual manipulation from the exterior thereof, and a stem projecting from the rear of said member through the said case wall and having a threaded connection with the said end of the slide bar, whereby the latter is moved longitudinally and the spacer bar thereby raised in response to rotation of the control member.

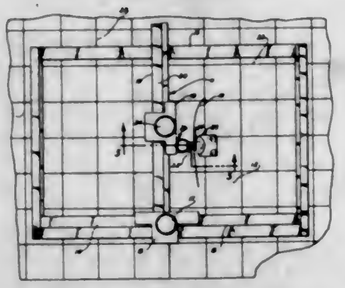
**3,166,843**
**METHOD OF CURING CHEESE IN AN INSPECTION TYPE CONTAINER**
Homer Herlache, Green Bay, Wis., assignor to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed May 24, 1962, Ser. No. 197,356
1 Claim. (Cl. 31—46)



Method for determining the presence of and correcting a leak in a drum containing cheese curd which is to be cured under anaerobic conditions, which method includes draining and initially knitting the curd in a drum having one end closed and its other end unsealed, applying to the said unsealed end a lid to be used in sealing the drum during the remainder of the knitting process, providing the said lid with a temporary removable apertured bung and with a removable pressure gauge communicating with the interior of the drum, pumping gas through said bung to create a difference in fluid pressure between the interior and exterior of the drum, taking a gauge reading in the initial knitting period to determine whether there has been any unscheduled change in said pressure differential, if no leak be found, promptly replacing the temporary bung with a permanent bung and removing the gauge, whereby, after the completion of the knitting in the drum, and the removal of the lid, the consolidated mass of curd may be removed from the drum.

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**3,166,844**
**APPARATUS FOR PLOTTING TWO DIMENSIONAL DATA**
George Pascoe and Carl S. Cseke, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 3, 1961, Ser. No. 93,146
9 Claims. (Cl. 33—1)

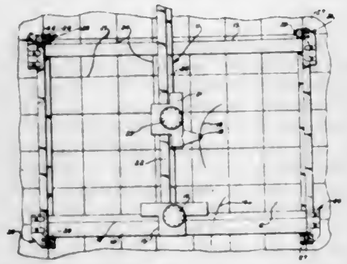


2. A coordinate measuring device comprising a carriage adapted to move in two dimensions over a surface of a draft plate having a contour line scribed thereon, a first contoured locating device on said carriage, and an independent and freely movable probe assembly, said freely movable probe assembly comprising a base plate provided with a probe, said probe constructed and arranged to be confinable in said scribed line, said base having a locating surface, said locating surface and said first locating device having mating surfaces, said base plate having a conveying means, said conveying means adapted to convey said freely movable probe assembly in two dimensions over the surface of a draft plate when manually translated, said coordinate measuring device accurately establishing the coordinate value of said probe with respect to a known abscissa axis and a known ordinate axis when said probe is confined in said scribed line and said first locating device is mated with said locating surface.



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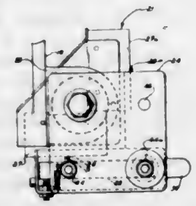
**3,166,845**
**APPARATUS FOR PLOTTING TWO DIMENSIONAL DATA**
George Pascoe and Norman W. Hopwood, Jr., Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 29, 1961, Ser. No. 99,160
9 Claims. (Cl. 33—1)



1. A coordinate measuring apparatus adapted to move a plotting carriage in two dimensions over the surface of a draft plate having a first recessed grid line and a second recessed grid line normal to said first grid line and a contour line scribed thereon, said coordinate measuring apparatus comprising a frame, a plurality of mounting blocks attached to said frame, at least two of said mounting blocks adapted to lie over said first grid line, a guide wheel rotatably mounted in each of said two mounting blocks, said guide wheels engaging said first grid line, a support roller rotatably mounted in each of said other mounting blocks, said mounting blocks adapted to support said frame on the surface of said draft plate, and an anchoring means capable of anchoring said coordinate measuring apparatus on said second grid line, thereby positioning said measuring apparatus with respect to the contour line on the surface of said draft plate.

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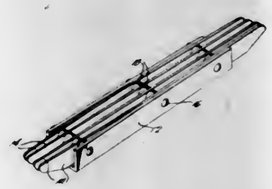
**3,166,846**
**APPARATUS FOR PLOTTING TWO DIMENSIONAL DATA**
George Pascoe and Carl S. Cseke, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 29, 1961, Ser. No. 99,254
9 Claims. (Cl. 33—1)



4. A coordinate measuring apparatus comprising a probe assembly and a carriage means movable in two dimensions over a surface of a draft plate having a recessed line scribed thereon, said carriage means including a locating device and means for determining the position of said locating device, said probe assembly having a locating surface and a probe, and means for mounting said probe assembly on said carriage means to allow for movement of said probe assembly with respect to said carriage means to a position of contact between the locating surface of said probe assembly and said locating device on said carriage means, said mounting means also urging said probe into said recessed line when said carriage means is moved over the surface of said draft plate, said probe assembly being moved into a contact position after said probe is in said recessed line, said coordinate measuring apparatus establishing the coordinate value of said probe in said line when said probe assembly is in contact position with said locating device.

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**3,166,847**
**LETTERING GUIDE LINE INSTRUMENT**
Salvatore Marino, 231 Autumn Ave., Brooklyn, N.Y.
Filed Apr. 29, 1963, Ser. No. 276,284
3 Claims. (Cl. 33—41)



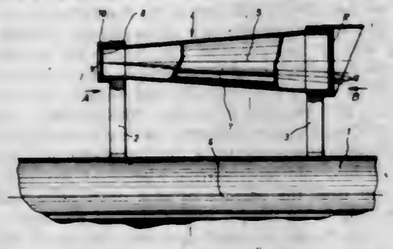
1. A device for marking parallel lines on paper comprising a holder, a plurality of separate blades supported by said holder so that portions of said blades at an end thereof project beyond an end of said holder, fastening means extending through all of said blades in a direction transverse of the longitudinal axis of said blades and of said holder to secure said blades to said holder, said fastening means being positioned in longitudinally spaced relation to said end of said blades, means on said device for holding said blades in laterally spaced relation to each other, each of said blades being capable of independent flexing movement in a plane perpendicular to the axis of said fastener which lies transverse of the longitudinal axis of said blades, means on said device limiting the flexing movement of each of said blades, each of said blades being fabricated of a material which when drawn across a sheet of paper will mark the paper without substantial wear of the material and a second fastening means connected to said holder extending through all of said blades in a direction parallel to the axis of said fastening means, said blades being provided with oversized bearing passages to receive said second fastening means whereby permitting limited flexing movement of said blades about the axis of said fastening means.

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**3,166,848**
**SIGHTING MECHANISM**
Lothar Petzsch, Neuss (Rhine), Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Oct. 17, 1960, Ser. No. 62,942
Claims priority, application Germany, Oct. 17, 1959 R 26,563
4 Claims. (Cl. 33—47)

1. A sighting device particularly for rocket launching weapons having its zero axis parallel to the center axis of the weapon, comprising a sighting tube, a diopter disc with a central hole therein secured on the back end of

the tube, a ring with a diametrical rib in which a number of perforations are provided and mounted in the front



end of the tube, and means to mount the tube on the weapon rotatable around its zero axis of the tube.

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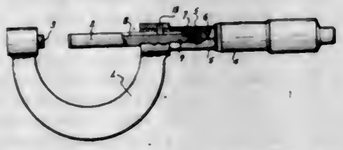
**3,166,849**
**LIQUID LEVEL GAUGE**
**Matthew C. C. Chisholm, Wynnewood, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware**
**Filed June 9, 1961, Ser. No. 115,954**
**7 Claims. (Cl. 33—126.7)**



1. A liquid level gauge comprising a narrow elongated member having a longitudinal axis, said member being periodically and symmetrically distended along and transversely of said axis to provide a plurality of longitudinally spaced capillary openings.

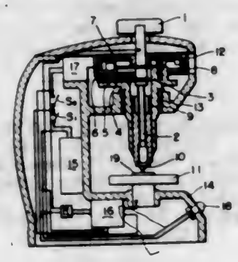
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**3,166,850**
**MICROMETERS**
**Tokumi Yamazawa, Tokyo, Japan, assignor to Yehan Numata, Yokohama, Japan**
**Filed May 3, 1963, Ser. No. 277,742**
**Claims priority, application Japan, Nov. 16, 1962, 37/68,680; Nov. 22, 1962, 37/69,883**
**1 Claim. (Cl. 33—164)**



In a micrometer comprising a frame, a fixed jaw carried by said frame and a spindle non-rotatably mounted in said frame for sliding movement toward and away from said fixed jaw, said spindle defining at one end a movable jaw cooperating with said fixed jaw and at its other end a neck, the improvement which comprises a movable member including a thimble and a rod coaxially fixed to the inside of said thimble, said member being threaded onto said frame for helical movement about an axis approximately the same as that of the spindle, said rod being provided with a recess encircling said neck, and a collar fixed to the inner wall of said recess, said collar fitting loosely and rotatably around said spindle neck so that said spindle moves axially with said rod and thimble.

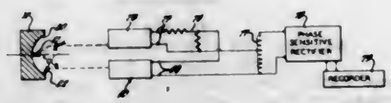
**3,166,851**
**ELECTRIC-CONTROLLED MICROMETER**
**Shiro Shirakura, Shinagawaku, Tokyo, Hiroshi Shimano, Setagayaku, Tokyo, and Masaroku Ueno, Sakato, Kawasaki, Japan, assignors to Yehan Numata, Yokohama, Japan**
**Filed Apr. 9, 1962, Ser. No. 186,231**
**4 Claims. (Cl. 33—166)**



1. In an electrically controlled micrometer comprising a frame, an elongated test member mounted in said frame for longitudinal displacement with respect thereto, rotatable indicating means, rotatable actuating means, positively intermeshing drive means connecting said actuating means and test member for simultaneously rotating said indicating means and longitudinally displacing said test member, an anvil in longitudinal alignment with but normally spaced from one end of said test member, and an electrical circuit including said anvil and test member which is closed whenever the space between said anvil and test member is bridged by electrically conductive material, the improvement which comprises a stationary electromagnet carried by said frame and connected to be energized upon closure of said circuit, at least one of said rotatable means being made of magnetic metal and said electromagnet being positioned to attract and immobilize, when energized, said at least one rotatable means, thereby simultaneously immobilizing said indicating means, actuating means, and test member.

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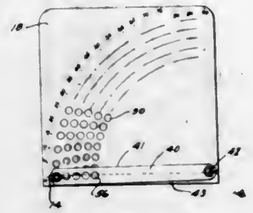
**3,166,852**
**MULTIPLE ROUNDNESS GAGE**
**Donald R. Whitney, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 16, 1960, Ser. No. 69,637**
**5 Claims. (Cl. 33—174)**




1. Testing apparatus comprising drive means adapted to receive a race ring of a ball bearing for rotating said ring about its center, first and second displacement pickups positioned to bear upon a pair of spaced points on the ball race of said ring, said points lying in a plane passing through the axis of the ring and being axially spaced with respect to said ring, said pickups being adapted to generate first and second signals in accordance with displacement of said points, a translating circuit connected to said first and second pickups and adapted to produce an output related to the magnitude of said first and second signals by a function of the spacing of said pickups, and indicating means connected to said translating circuit to receive said output.



**3,166,853**
**MACHINIST'S ANGLE GAUGE AND SUPPORT**
**James W. Marcus, 1423 Slayton St., Grand Haven, Mich.**
**Filed Apr. 26, 1962, Ser. No. 190,436**
**1 Claim. (Cl. 33—174)**



A machinist's angle gauge comprising: a support base adapted to be mounted on the bed of a machine; a rigid, upright, workpiece-supporting portion including a guide surface; an elongated member having one end pivotally mounted to said upright portion, and said member adapted to move in approximately a 90° arc over said guide surface; a plurality of spaced accurately machined internally threaded, circular openings over the range of said arc; angular indicia means on said upright portion adjacent said openings; said elongated member having at least one opening and indicia means at its second end, and having an upper workpiece supporting surface immediately adjacent said upright portion to support a workpiece in an exact vertical and angular position; said upper surface being accurately machined with respect to the centerline between its pivotal mount and said end indicia means for accurate workpiece orientation; connecting and alignment means between said second end and said openings, including a bolt adapted to fit through said end opening with close tolerance and into tightenable engagement inside said surface openings, whereby said upper surface of said elongated member can be angularly varied to provide a desired angular setting for positioning said workpiece; and said elongated member including a lower surface at a fractional acute angle with respect to the centerline between said pivotal mount and said end indicia means whereby said member can be inverted to enable gauging of fractional angles for said workpiece.

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**3,166,854**
**PLEAT-MARKING DEVICE**
**Albert Packer, Los Angeles, and John Benedetto, Reseda, Calif., assignors to Speed Pleat Co., Los Angeles, Calif., a partnership**
**Filed Nov. 13, 1962, Ser. No. 237,043**
**3 Claims. (Cl. 33—192)**



1. Pleat-marking apparatus comprising, in combination:

(*a*) pleat-marking means including a plurality of slides each provided with adjustable pleat and pleat-spacing markers and an expansible means connecting the slides for uniform spaced adjustment relatively to each other,

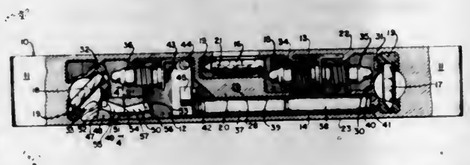
(*b*) a code color provided for each said marker and carried by said slides,

(*c*) a color code device including a color code band related to the code colors of the markers and provided with means for manually selectively adjusting said band, and with a housing having a slot through which the code colors of the band are exposed according to the adjustment of the band, and

(*d*) an elongated housing carrying both the pleat-marking means and the color code device with the slides and expansible means of the pleat-marking means within the housing and the code colors thereof exposed at the front of the housing, and the color code device mounted with its slotted housing on top of the elongated housing and in the line of vision of the operator during the marking by the apparatus of the pleat folds and spacing thereof on a flat lay-out of a drapery.

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**3,166,855**
**SPIRIT LEVEL**
**Joseph Erritt, Kalamazoo, Mich., assignor, by mesne assignments, to Mrs. Joseph Erritt (Ellen Belle Erritt), Kalamazoo, Mich.**
**Filed Oct. 21, 1960, Ser. No. 64,002**
**9 Claims. (Cl. 33—211)**



8. A spirit level comprising a body having parallel top and bottom surfaces and a lateral side surface normal to said top and bottom surfaces, a plurality of elongated spirit level tubes disposed in cavities in said body and at an angle to each other, each of said tubes having its longitudinal axis in a plane parallel to said side surface, a plurality of electric light bulbs mounted in said body for illuminating said plurality of tubes, each of said bulbs associated with one of said tubes, a battery disposed in said body for energizing said bulbs, a mercury switch mounted in said body and provided with a closed channel, a plurality of pairs of contacts disposed in said channel, each of said pairs of contacts connected in a series circuit with one of said bulbs and with said battery, and a pool of mercury displaceable in said channel, said pairs of contacts being so positioned and the mercury being present in such amount as to envelop only one of said pairs of contacts and complete the circuit when one of said tubes is substantially horizontal and said lateral side surface is substantially vertical, and to open said circuit when said tube is positioned so that it is not substantially horizontal, each of said pairs of contacts being so arranged in said channel that said pool of mercury envelops no more than one contact of the pair when said lateral surface is substantially horizontal.

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**3,166,856**
**EDUCATIONAL DEVICE**
**William R. Uttal, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Feb. 9, 1962, Ser. No. 172,275**
**13 Claims. (Cl. 35—6)**

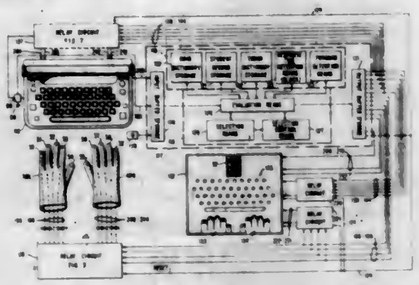
1. An apparatus for teaching manual dexterity comprising in combination:

keyboard means including a plurality of separate keys adapted to be manually displaced in position,

inhibit means coupled to said keyboard means to prevent said position displacement of each of said keys,

a plurality of separate electrical contacts, means for mounting said contacts on a separate finger of a keyboard operator, and means to disengage said inhibit

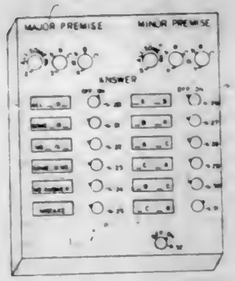
means from said keys when predetermined ones of said electrical contacts are manually brought into



physical contact with predetermined ones of said keys.

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**3,166,857**
**EDUCATIONAL DEVICE**
**Marion Loren Wood, Jr., 220 Hunter Ave., North Tarrytown, N.Y.**
**Filed Mar. 7, 1962, Ser. No. 178,037**
**7 Claims. (Cl. 35—9)**

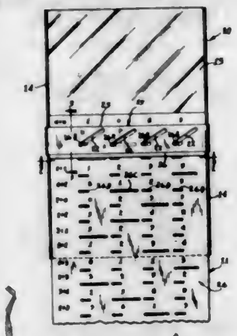



1. An educational device for solving problems in syllogistic logic involving a major premise and a minor premise, comprising first means for setting up the condition of the major premise, second means for setting up the first term of the major premise, third means for setting up the second term of the major premise, fourth means connected to said first means for setting up the condition of the minor premise, fifth means connected to both said second and third means for setting up the first term of the minor premise, sixth means connected to both said second and third means for setting up the second term of the minor premise, circuit means connected to said second, third, fifth and sixth means, and plural indicator means controlled by all said set up means and said circuit means to indicate the exact relationship between the two premises.

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**3,166,858**
**EDUCATIONAL DEVICE**
**Clarence Huetten, 511 N. Bolton, Indianapolis 19, Ind.**
**Continuation of application Ser. No. 24,377, Apr. 25, 1960. This application May 3, 1962, Ser. No. 192,175**
**6 Claims. (Cl. 35—9)**

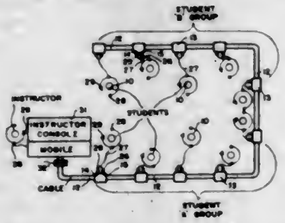
3. An educational device comprising a housing having spaced front and back walls, a card slidable in a direction upwardly and downwardly between said walls, said front wall having a plurality of slots arranged transversely thereacross and extending diagonally of said direction upwardly and rightwardly, said card having a plurality of slots arranged transversely thereacross, some of the slots of said card extending the same distance transversely of the device as the slots of said front wall and the rest of said slots of said card extending a relatively shorter distance transversely of the device, each of the slots of



said card being capable of being aligned at its leftward end with the lower end of a respective one of the slots of said front walls.

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**3,166,859**
**ELECTRONIC TEACHING SYSTEM**
**Solomon Alter, Hartsdale, N.Y., assignor to Edu-Tronics, Inc., Hicksville, N.Y., a corporation of New York**
**Filed June 21, 1962, Ser. No. 204,156**
**7 Claims. (Cl. 35—35)**




1. An electronic teaching system comprising a mobile console assembly adapted to be removably connected to an audio cable, said console comprising a plurality of audio amplifiers each mounted on a separate circuit board having plug terminals at one end, a plurality of volume controls each connected to but separated from one of the circuit boards, a first chassis member, a second subchassis member mounted underneath the first chassis member and having a well, said volume controls being mounted on the second subchassis member within the well, a plurality of circuit board connectors mounted on the second subchassis within the well, said circuit boards each being plugged into one of the connectors and extending downward beneath the second subchassis, and a shielding member mounted on and beneath the second subchassis and comprising plural shielding elements providing with the second subchassis member plural shielded compartments each accommodating and surrounding a circuit board and substantially isolating each of the audio amplifiers mounted thereon from one another.

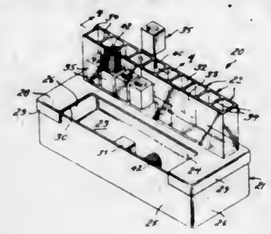
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**3,166,860**
**EDUCATIONAL TESTING DEVICE**
**Lawrence J. Delaney, Jr., 5160 Garfield Ave., Pennsauken, N.J.**
**Filed July 5, 1963, Ser. No. 292,875**
**11 Claims. (Cl. 35—48)**

1. An educational testing device comprising at least one upwardly opening receiver having visual access through at least one side, an answer element configured



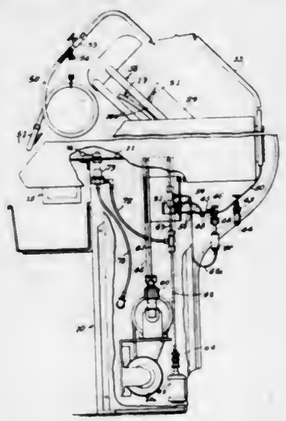
for selective insertion in said receiver in a plurality of predetermined orientations relative to said receiver, said answer element being marked to indicate the relative orientation thereof, and a correct choice element insertable into said receiver in position for viewing through



said one side, said correct-choice element being configured to expose the answer-element marking when inserted in said receiver, whereby the answer to a test question may be indicated by the orientation of said answer element and the correctness of the answer indicated by the appearance of the correct choice element.

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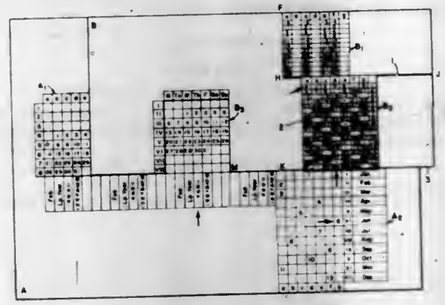
**3,166,861**
**COIN-OPERATED PRESS**
**Calvin E. Pillola, Salt Lake City, Utah, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware**
**Filed Apr. 27, 1962, Ser. No. 190,578**
**12 Claims. (Cl. 38—15)**



1. A coin-operated pressing machine comprising, in combination,
(*a*) a buck provided with a heater,
(*b*) a press head provided with a plurality of heaters and movable relatively to the buck,
(*c*) a safety bar assembly encircling and guarding at least the front and ends of said buck and press head when the same are in pressing engagement,
(*d*) a water system including a plurality of spray nozzles carried by said bar assembly and directed toward the press head and with a normally-closed valve controlling flow to all the nozzles, and an electrically-controlled valve controlling flow to some of said nozzles, and
(*e*) air-operated means connected to open both said valves and controlled by manual movement of the safety bar assembly from a retracted position to the mentioned guarding position.

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**3,166,862**
**PERPETUAL MOVABLE CALENDAR**
**Enrique Fassler Jaickles, Santo Domingo 2582, Santiago, Chile**
**Filed Nov. 30, 1961, Ser. No. 156,022**
**1 Claim. (Cl. 40—109)**

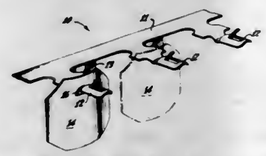


A device for use as a perpetual calendar which comprises, in combination, the following parts:
a fixed field which has depicted thereon
- a first table containing divers combinations of the number of days in a month of 31 days, as well as indications of the days in each respective month, and
- a second table on said fixed field with the indication of the month and also indicated by their ordinal numbers,

a second field separate from the first field and movable thereupon relative thereto, which contains
- a fixed table containing the first or first two digits of the years, in other words, the century designation of the years and, below the same,
- a slide horizontally movable relative to the fixed table with the indication of the third and fourth digits of the years and leap-years; and likewise
- a cut-out window horizontally movable relative to the first table of the fixed field; the tables and slide having indicia thereon cooperating to set the window for use for a certain month in a certain year and the window having thereon indicia cooperating with indicia on the first table on the fixed field to show the days of the week of said month.

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**3,166,863**
**REFLECTING DEVICE FOR DISPLAYS**
**Landon R. Gray, San Pedro, Calif., assignor, by mesne assignments, to Solaray Industries, Inc., Torrance, Calif., a corporation of California**
**Filed Dec. 26, 1961, Ser. No. 161,980**
**5 Claims. (Cl. 40—138)**

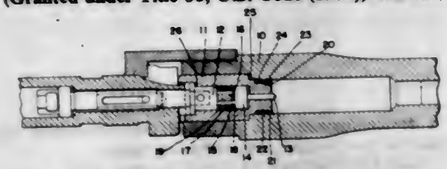


1. An attraction display device comprising a finger comprising a depressed saddle intermediate forward and rearward ends, said saddle having a curved upwardly convex supporting surface and lower downwardly facing lateral edges on respective opposite sides of said supporting surface and upwardly and rearwardly sloping edges extending rearwardly of said saddle to define a low portion of said saddle, and a disclike element having a slot therethrough located between the geometric center of said ele-

ment and one side thereof, said slot having a curvilinear upper edge substantially complementary to said upwardly convex supporting surface whereby the disclike element is supported at the low portion of said saddle, said slot having shoulders located respectively adjacent and below said lateral edges whereby to limit pivotal movement of the disclike element when rotated in a plane substantially normal to the support finger.

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**3,166,864**
**OBTURATOR FOR SMALL ARMS**
**John J. Scanlon, Jr., Levittown, N.J., assignor to the United States of America as represented by the Secretary of the Army**
**Filed Aug. 1, 1963, Ser. No. 299,437**
**3 Claims. (Cl. 42—16)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

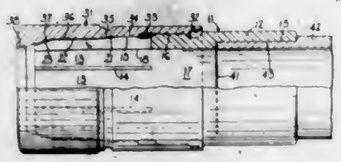


1. In a small arms weapon having a barrel with a metal firing chamber in a rear portion thereof for receiving a consumable round including a projectile secured to molded propellant enabling the round to be loaded as a unit, a metal bolt closing the breech of said chamber and having a metal firing pin slidable within said bolt for firing a caseless primer within said propellant, the combination therewith of the improvement for reducing leakage of propellant gas rearwardly around bolt and between the bolt and firing pin on firing said round, said improvement including each of said bolt and pin having a portion of reduced diameter, gas sealing means within and forward of said portion of reduced diameter on both the bolt and firing pin, and a heat absorptive guide flange on a forward side of said portion of reduced diameter on both the bolt and firing pin and having no more than a few thousandths of an inch clearance whereby any hot gas under pressure is reduced to a thin sheet from which heat is absorbed by metal radially within and outside said sheet, the gas sealing means on each of said bolt and firing pin comprising a deformable plastic O ring contiguous the radially inner and outside walls of space around said portion of reduced diameter, and an expansible metal split ring having overlapping tapered end portions and contiguous a high pressure side of each O ring, with an expansible ring on the lower pressure side of each O ring substantially similar to that on the high pressure side of the same O ring, whereby any clearance radially each side of each expansible ring may be reduced to substantially less than .0005 of an inch and the life of the O ring is prolonged when it is not caused to flow into a clearance space of more than such an amount.

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**3,166,865**
**GUN CHOKE**
**Arne Y. Grahn, Granby, Conn., assignor to The Poly Choke Company, Incorporated, Hartford, Conn., a corporation of Connecticut**
**Filed Sept. 30, 1963, Ser. No. 312,645**
**7 Claims. (Cl. 42—79)**

1. An adjustable choke for a gun barrel comprising:
(*a*) a tubular cylindrical shell element adapted to be secured at its rear end to the muzzle end of a gun barrel,
(i) said shell element having a plurality of longitudinal slots opening through its forward end to divide its forward portion into spaced segments resiliently displaceable inwardly,
(ii) said segments having an annular series of tapering shoulders spaced from the forward ends of said segments, said annular shoulders being inclined rearwardly, and
(*b*) a sleeve embracing said shell element and threadedly connected thereto for movement longitudinally thereof,



(i) said sleeve having a complementary tapering annular shoulder thereon to engage the shoulders of said segments and displace said segments inwardly to constrict the effective size of the tubular opening therethrough.
(ii) said sleeve having an annular portion spaced from the exterior surfaces of said segments forward of the tapering shoulders whereby contact of said segments with said sleeve forward of the tapering shoulders is prevented.

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**3,166,866**
**HOLDER FOR ARTIFICIAL FLIES**
**Desmond H. Norton, 1122 Patterson St., Ogden, Utah, and Martin A. Hardin, Ogden, Utah (1790 South 50 West, Bountiful, Utah)**
**Filed June 24, 1963, Ser. No. 290,031**
**3 Claims. (Cl. 43—57.5)**

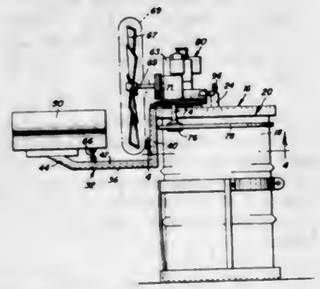


1. A holder for artificial flies used in fishing, including an elongated cylindrical receptacle open at one end and provided with a closure at the other end, a hollow tubular guide secured to the end closure of said cylindrical receptacle, said guide extending axially through the length of said receptacle, a fly-holding entity fitted in said cylindrical receptacle, the entity comprising a core tube provided with an axial bore slightly larger in cross sectional area than said guide, to permit sliding engagement to said entity with respect to said guide to remove the former from the latter, the outer periphery of said core tube being covered with material receptive to fly hooks, the inner periphery of said core tube being in contiguous, sliding relation with the outer periphery of said hollow tubular guide throughout its length, whereby the axis of said core tube will not pivot with respect to the axis of the hollow tubular guide, an end closure fixed to the outer terminal of said core tube, and an elastic cord within said hollow tubular guide, one terminal of said core being fixed to the end closure of said cylindrical receptacle, and the opposite terminal of said cord being fixed to the end closure of said core tube.



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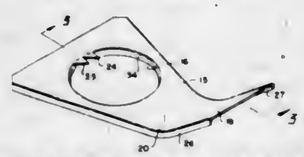
**3,166,867**
**ROTARY ORCHARD HEATER**
**Grant Van Cleave, Rte. 3, Wapato, Wash.**
**Filed Oct. 4, 1962, Ser. No. 228,351**
**10 Claims. (Cl. 47—2)**



1. An orchard heater comprising a vertically extending fuel drum, a horizontally extending carriage projecting laterally beyond said drum, means journaling said carriage at the upper end of said drum and thereabove for rotation about a vertical axis extending through the drum, a fuel burner mounted upon said carriage and laterally offset from said drum, a fan mounted upon said carriage and positioned for directing a stream of air to said fuel burner and an unobstructed commingled stream of combustion products from said fuel burner outwardly from said axis, means including a vertical conduit supplying fuel from said drum to said burner, a source of power mounted on said carriage and connected to said fan, driving means connected to said source of power and establishing a positive connection to said drum at the opposite side of said fan from said burner for causing rotation of said carriage and effecting discharge of commingled combustion products and air in a circle and outwardly from said axis.

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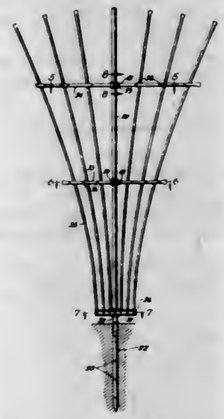
**3,166,868**
**ADJUSTABLE TREE BRANCH SUPPORT**
**John B. Prozeller, 2520 Hammond St., Prince George, British Columbia, Canada**
**Filed Apr. 24, 1961, Ser. No. 105,009**
**1 Claim. (Cl. 47—43)**



An adjustable support for tree branches and the like, comprising a gripping plate having a hole therein through which a prop extends when the support is in use, an annular flange formed on the plate around said hole and projecting downwardly from said plate, a supporting arm extending outwardly and curving upwardly from an end of the plate and adapted to be positioned under a tree branch to cradle said branch against the prop, said gripping plate and supporting arm having common sides bent downwardly to form reinforcing flanges therealong and along opposite sides of the plate hole, and a pair of prongs located side by side on the plate and projecting into said hole at the side thereof remote from the supporting arm and adapted to stick into the prop, the side of the hole and said annular flange opposite said prongs being clear so as to be slidable along the prop, said plate being movable along the prop and the plate hole being large enough relative to the prop to allow the plate to tip on the prop when a branch bears on the supporting arm, whereby the plate binds on the prop to support the branch with the prongs sticking into the prop to prevent lateral tipping of the plate, said plate when free of the branch being slidable up the prop to withdraw the prongs therefrom.

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**3,166,869**
**TRELLIS**
**Forrest E. Luper, Avon, Ill., assignor to Forrest E. Luper and John R. Sundberg, doing business as Luper & Sundberg, a partnership of Avon, Ill.**
**Filed July 25, 1960, Ser. No. 44,908**
**5 Claims. (Cl. 47—47)**



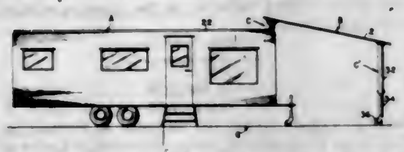
1. A trellis construction comprising a first horizontal supporting member adjacent the bottom of the trellis, a central vertical member secured to said horizontal supporting member and extending upwardly therefrom, a plurality of flexible vertically extending members also secured in spaced relation to said horizontal supporting member, a second horizontal member spaced above said first horizontal member, means rotatably connecting the second horizontal member to the central vertical member, means associated with the second horizontal member for readily securing or detaching said flexible members with respect thereto, a third horizontal member spaced above said second horizontal member, means rotatably connecting the third horizontal member to the central vertical member, and means associated with said third horizontal member for readily securing or detaching said flexible members with respect thereto, the securing means associated with the second and third horizontal members comprising spring clips, each spring clip cooperating with an associated horizontal member to define an opening, said clips having their openings facing in opposite directions on opposite sides of said central vertical member and facing in opposite directions on said second and third horizontal members.

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**3,166,870**
**AUXILIARY MOVABLE SHELTER**
**Gordon G. La Porte, Tupper Lake, N.Y. (9842 N. 35th St., Phoenix, Ariz.)**
**Filed May 31, 1960, Ser. No. 33,613**
**8 Claims. (Cl. 50—48)**

4. The combination with a housing structure having vertically extending sides forming its periphery and a

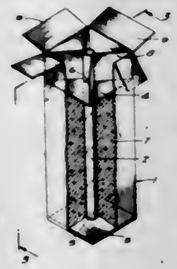
fixed roof fixed to and supported on said sides of an auxiliary movable roof member extending laterally from said structure, and means supporting said auxiliary roof member including cooperating relatively movable bearing means formed to provide relative linear movement and relative angular movement about vertically and horizontally extending axes, said cooperating bearing means being connected to said auxiliary roof member and said



structure along adjacent sides thereof and supporting said auxiliary roof member for translatory movement along adjacent sides of said structure and for angular movement relative to said structure about vertically and horizontally extending axes, and adjustable support means spaced from said structure supporting said movable roof member during translatory and angular movement and adjustable to vary the inclination of said auxiliary roof member about said horizontal axis.

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**3,166,871**
**APPARATUS FOR SETTING A FENCE POST IN CONCRETE**
**Jack H. Simison, 4828 Tacaloma Lane, La Canada, Calif., assignor of fifty percent to P. L. Montemurro, La Canada, Calif.**
**Filed Feb. 23, 1962, Ser. No. 174,953**
**3 Claims. (Cl. 50—103)**

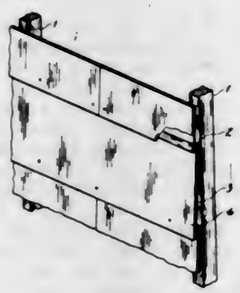


1. A unit for positioning a post in concrete comprising a box having a bottom, sides and an open end, a first insert in said box adjacent to said bottom, said first insert having an opening therein, an open-ended post-receiving tubular sleeve removably positioned in said box and having one end positioned in said opening in said first insert, a dry mixture comprising cement and aggregate in said box surrounding said sleeve, a second insert having an opening therein in said box remote from said bottom and adjacent said mixture with said sleeve extending through said opening in said second insert, means for closing the open end of said box, and a spacer between said means and said second insert to hold said second insert against said mixture, and to define a water-receiving space within the box and above said mixture.

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**3,166,872**
**OUTER WALL CONSTRUCTION**
**Frank G. Cacossa, Livingston, N.J., assignor, by mesne assignments, to The Flintkote Company, a corporation of Massachusetts**
**Filed Oct. 30, 1961, Ser. No. 148,536**
**1 Claim. (Cl. 50—214)**

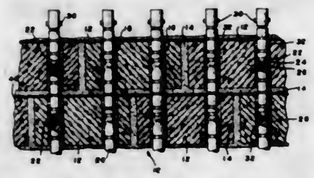
An outer wall construction comprising in combination:
(1) a plurality of spaced vertically disposed studs;
(2) a plurality of backer boards;
(3) a plurality of facing shingles having a vertical dimension greater than the vertical dimension of said backer boards;
(4) a plurality of spaced horizontally disposed support members extending between said studs and being attached thereto for engaging and locating said backer boards and facing shingles in position; each of said support members including
(*a*) a horizontally disposed upper ledge member overlying the upper edge of a lower row of facing shingles and related backer boards and having a width approximately the same as the combined thickness of a backer board and a facing shingle
(*b*) a continuous downwardly directed flange extending from the rear edge of said upper ledge member and engaging with its forward face the upper portion of the back surface of said lower row of backer boards, its rear face engaging the front face of said studs to thereby act as a support for said backer boards over their entire length,



(*c*) a horizontally disposed lower ledge member located below said upper ledge member and having its rear edge in substantially the same vertical plane as the forward edge of said upper ledge member, said lower ledge member receiving the lower edge of an upper row of backer boards and having a width approximately the same as the thickness of a backer board,
(*d*) a vertically disposed web portion connecting the forward edge of said upper ledge member to the rear edge of said lower ledge member, the rear surface of said web portion engaging the upper portion of the front face of said lower row of shingles and the front surface of said web portion engaging the lower portion of the rear face of said upper row of backer boards, and
(*e*) an upwardly directed flange extending from the front edge of said lower ledge portion with its rear surface engaging the lower portion of the front face of said upper row of backer boards, and its front surface engaging a portion of the rear face of an upper row of shingles which correspond to said upper row of backer boards to thereby increase the shadow line produced, said upper row of shingles having their lower edge disposed below the bottom of said support member to hide it when the wall construction is viewed from the front;
(5) means securing the shingles to the corresponding backer boards; and
(6) means securing the support members to the studs.



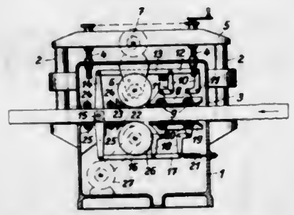
**3,166,873**
**REINFORCED WALL STRUCTURE**
**Morton M. Rosenfeld, Mount Vernon, N.Y. (271 Madison Ave., New York, N.Y.)**
**Filed Nov. 21, 1961, Ser. No. 153,848**
**4 Claims. (Cl. 50—373)**



1. A reinforced wall comprising blocks disposed in overlapping relation in successive vertical courses, a layer of mortar between adjacent successive courses and juxtaposed end faces of blocks in the same course, each block having at least one hole extending between top and bottom faces thereof, said holes being disposed in aligned relationship, a plurality of reinforcement rods, each rod being disposed within aligned holes in said blocks, each rod having a length so that its ends terminate at a point substantially equidistant from the top and bottom faces of said blocks, juxaposed ends of said rods being interconnected with a male and female coupling, said coupling comprising a male conical portion adjacent the lower end of each rod and a female conical recess adjacent the upper end of each rod, means for assuring alignment between the juxtaposed ends of said rods, said last-mentioned means including spaced guide projections on the outer peripheral surface of said rods for making contact with the surface defining the holes in said blocks, the length of said projections being substantially less than the length of said rods, passages extending between said female conical recesses and the outer periphery of said rods, and a plurality of space coaxial peripheral grooves on the outer surface of said rods.

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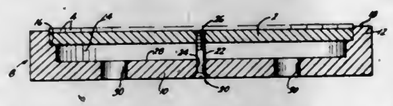
**3,166,874**
**THICKNESS GRINDING MACHINE**
**Paul Böttcher, Grottenstr. 15A, Hamburg-Grossflottbek, Germany**
**Filed Dec. 11, 1962, Ser. No. 243,908**
**Claims priority, application Germany, Sept. 5, 1962, B 68,717**
**10 Claims. (Cl. 51—87)**



6. A lamina surface processing machine comprising a stationary lower machine frame member including guide means for an upper movable machine frame member, adjustment means for adjusting said upper frame member relative to said lower frame member, said lower and said upper frame members forming a passageway with an inlet and an outlet for a workpiece therebetween, a lower surface processing tool unit rotatably supported by said lower frame member, an upper surface processing tool unit rotatably supported by and adjustable with said upper frame member, said lower and said upper tool units having parallel axes and being spaced according to the thickness of said workpiece, a feeding device for said workpiece arranged between the inlet of said passageway and said tool units, said feeding device comprising a lower feed roll arrangement rotatably supported by crank means pivoted to said lower frame member so as to move towards and away from said passageway and an upper feed roll arrangement rotatably supported by crank means pivoted to and adjustable with said upper frame member so as to move towards and away from said passageway, linkage means connecting the crank means of said lower and upper feed roll arrangements whereby the movement direction of one of said feed roll arrangements relative to said passageway is transformed into an opposite movement direction of the other feed roll arrangement, and spring means acting upon said linkage means so as to urge said lower and upper feed roll arrangements toward each other.

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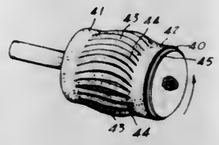
**3,166,875**
**SUPPORT FOR LAPPING TRANSISTOR WAFERS OR THE LIKE**
**Roger A. Litman, Needham, Mass., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey**
**Filed May 24, 1962, Ser. No. 197,416**
**6 Claims. (Cl. 51—216)**



4. A support for elements to be lapped or the like, said support comprising a substantially rigid, substantially flat plate on which said elements are adapted to be placed, a base comprising a bottom wall, and an upstanding flange on said bottom wall, a recess being formed by said wall and said upstanding flange, said flange having an internal step spaced upwardly from said bottom wall, said plate being received in said recess and inside said flange and resting on said step, the height of said flange above said step being greater than the thickness of said plate, a substantial portion of the outer perimeter of said plate substantially conforming to the corresponding inner surface of said flange, and adjustable securing means operatively connected between said plate and said base and effective selectively to hold said plate on said base firmly or loosely in accordance with the adjustment of said means.

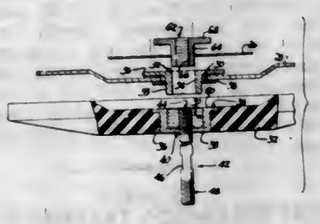
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**3,166,876**
**COATED ABRASIVE IMPLEMENT**
**Randall S. Manchester, North Troy, N.Y., assignor to Norton Company, Troy, N.Y., a corporation of Massachusetts**
**Filed Mar. 29, 1963, Ser. No. 269,035**
**7 Claims. (Cl. 51—375)**



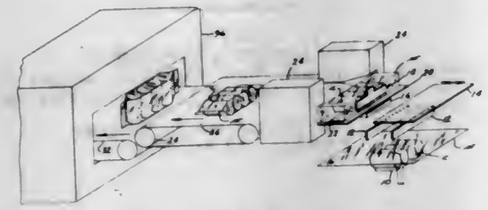
7. A coated abrasive implement comprising a cylinder of coated abrasive material having an unbroken edge section extending along each end thereof; and a plurality of arcuate segments integrally formed from said coated abrasive material, said segments projecting from the surface of said cylinder at an angle and increasing the diameter of said cylinder towards the center thereof.

3,166,877
**ABRASIVE SHEET SUPPORT SYSTEM**
Leonard W. Reames, Howell, Mich., assignor to Edward J. Sopcak, Howell, Mich., and Thomas L. Draper, Birmingham, Mich.
Filed Feb. 18, 1963, Ser. No. 259,276
3 Claims. (Cl. 51—378)



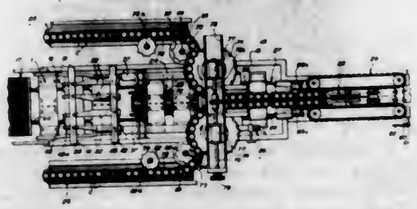
1. A support system for securing a circular abrasive sheet to a threaded shaft comprising an annular drive washer of resilient material, an interiorly threaded insert fixed to said washer at the center thereof, disc holding means including a pair of telescopically assembled axially bored elements having concentric axially spaced flanges defining therebetween an outwardly opening channel, one of said elements being exteriorly threaded for threaded assembly into said insert, a backing disc having a central aperture through which one only of said elements projects to entrap said disc between said flanges with said disc overlying said drive washer, and an abrasive sheet retainer having a radially enlarged flange for confining a central portion of said abrasive sheet against said disc holding means and an axial projection extending through said disc holding means for threaded engagement with said threaded shaft.

3,166,878
**APPARATUS AND METHOD FOR PACKAGING GROUPS OF ARTICLES**
Vincent Pepitone, Brooklyn, N.Y., and Kenneth L. Robinson, Springfield, Mass., assignors to Package Machinery Company, East Longmeadow, Mass., a corporation of Massachusetts
Filed July 10, 1962, Ser. No. 208,697
4 Claims. (Cl. 53—30)



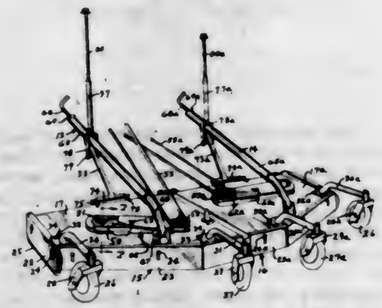
1. The method of forming packages which comprise a group of like cylindrical articles having beaded flanges at their opposite ends, which method comprises the steps of wrapping a group of such articles in heat-shrinkable film, conveying the articles along a belt conveyor with the articles lying on their sides and in generally parallel relationship, and then passing the articles over the end of the belt conveyor and tipping them to an upright position on a second conveyor spaced therebeneath to align the articles in a transverse and heightwise sense and then advancing the articles on the second conveyor to a source of heat for shrinking the plastic film to lock the articles of each group in their thus aligned positions.

3,166,879
**WRAP-AROUND CARTON LOADER**
Francis A. Chidsey, Jr., Wayne, Pa., and Biagio J. Nigrelli, Northbrook, Wendell E. Standley, Lake Forest, and Louis R. Budzynski, Harwood Heights, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,360
10 Claims. (Cl. 53—48)



1. Mechanism for enclosing a group of chimed cans within an elongated paperboard blank of the type having a central panel, side wall panels on opposite sides of the central panel and top panels on each of the side wall panels at the ends of the blank, the central panel having hinged, chime engaging, retaining tabs formed within the contour of such panel adjacent its free edges, conveying means for advancing a flat, unfolded blank of the type defined at a fixed speed in a direction transverse to its length with the retaining tabs displaced upwardly of the blank, means for supporting and conveying chimed cans successively in upright position at a speed timed with the blank travel and in an oblique path relative to the direction of travel of the blanks, said supporting means delivering the cans with their lower ends moving in a plane slightly above the plane of travel of the unfolded blanks to deposit cans upright upon the central panel of the blank, and opposed guide means disposed in fixed position over the path of the advancing blank and engaging laterally upon opposite surfaces of the cans to direct the leading portions of individual cans in their oblique movement against individual, upwardly displaced tabs to fold an engaged tab through the remainder of 180 degrees of movement as the can is transferred from the supporting means onto the blank and into position over its tab with the inner surface of the can chime in engaging relation to its tab.

3,166,880
**MOWER**
Maurice E. Robinson, Livonia, Mich., assignor to Clemar Company, Avon, Ohio, a corporation of Ohio
Filed Apr. 1, 1963, Ser. No. 269,632
11 Claims. (Cl. 56—6)



1. A mower comprising, in combination, a main frame; supporting wheels mounted to said main frame; auxiliary frame means pivotally attached to said main frame; a cutter housing hingedly connected to said auxiliary frame; said cutter housing being provided with ground engaging means; said auxiliary frame means including at least a front lift arm assembly and a rear arm assembly; cutter means rotatably mounted on said cutter housing; a power drive means on said main frame; a belt drive means connected between said power drive means and said cutter means for driving the cutter means; said front lift arm assembly including a pair of telescopically connected arm members; and, means for adjusting said telescopically connected arm members to adjust said auxiliary frame means relative to the main frame for tightening said belt drive means.



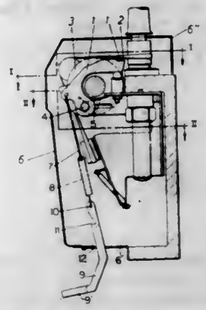
3,166,881
**APPARATUS AND PROCESS FOR THE MANUFACTURE OF HIGHLY CRIMPED YARNS BY FALSE TWIST**
Henri Servage, Cremieu, Isere, France, assignor to Moulinage et Retorderie de Chavanoz, Chavanoz, Isere, France, a French body corporate
Filed July 22, 1963, Ser. No. 296,542
4 Claims. (Cl. 57—34)



3. In false twist apparatus for the crimping of a continuous textured thermoplastic textile yarn wherein is included delivery means for advancing the yarn from supply to take-up, and between which delivery means the yarn is tensioned, and also between which yarn delivery means is located twisting means and heat setting means for application of false twist and for heat setting the twist within the yarn, respectively, the improvement comprising yarn impeding means located between the twisting means and heat setting means whereby only a portion of the false twist applied by the twisting means is transmitted to the heat setting means.

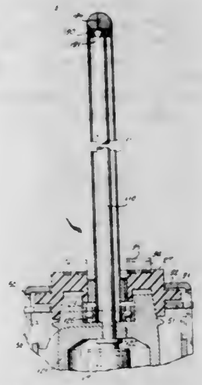
3,166,882
**DEVICE FOR STOPPING SPINDLES**
Hans Stahlecker, Haldenstrasse 20, Sussen, Baden-Wurttemberg, Germany
Filed Aug. 9, 1962, Ser. No. 215,980
Claims priority, application Germany Aug. 12, 1961
11 Claims. (Cl. 57—88)

1. In a spinning or twisting machine having a frame, a plurality of parallel spindles rotatably mounted on said frame, a common drive shaft extending transversely to said spindles, a plurality of drive pulleys on said shaft, a plurality of idler pulleys each associated with one of said drive pulleys and one of said spindles, an individual driving belt connecting each of said spindles with one each of said idler pulleys and engaging with one of said drive pulleys to rotate a respective spindle, movable means for lifting said drive belt from said drive pulley and exerting through said belt a brake action on said spindle to stop the rotation thereof, spring means for normally maintaining said movable means in a position out of engagement with said belt, a spindle housing mounted on said frame and enclosing a part of said spindle and of said drive shaft and at least said drive and idler pulleys and said driving belt associated with said spindle, and selectively actuated means connected



with said movable means within said spindle housing and guided by said housing and projecting therefrom for moving said movable means against the reaction of said spring means from said position into a further position in which said movable means is effective to lift said drive belt from said drive pulley and to exert said brake action on said spindle, and further spring means between said movable means and said selectively actuated means.

3,166,883
**SPINDLE CONTROL MECHANISM**
Ernest D. Meadows, Atlanta, Ga., assignor to Meadows Manufacturing Company, Atlanta, Ga., a corporation of Georgia
Original application Nov. 19, 1962, Ser. No. 240,194, now Patent No. 3,116,590, dated Jan. 7, 1964. Divided and this application Apr. 4, 1963, Ser. No. 273,258
6 Claims. (Cl. 57—88)



1. A spindle mechanism comprising
a spindle blade,
means rotatably supporting said spindle blade,
a whorl secured to said blade,
a spindle sleeve surrounding said blade,
a first ball bearing between said blade and sleeve,
a second ball bearing between said sleeve and said whorl,
clutch disc means secured to said spindle sleeve and mounted for axial movement to engage and disengage said whorl,
braking means, and

means to move said disc means into engagement with said whorl, or out of engagement with said whorl and into engagement with said braking means.

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**3,166,884**
**NON-ELASTIC EXTENSIBLE YARN**
**Max Steiner, Lincoln, and Carl F. Jackson, Cumberland, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware**
**Filed Aug. 5, 1960, Ser. No. 47,810**
**4 Claims. (Cl. 57—140)**




1. A non-elastic yarn for producing a fabric for reinforcing molded plastic products and which is manually non-extensible but extensible under the high pressure of a die molding operation, said yarn including generally parallel short courses of forty or more fibrous glass strands in adjacent relation crosswise of the yarn, said short courses terminating in loops, and said courses progressively overlapping each other longitudinally of the yarn and being relatively and easily displaceable under a stretching force longitudinally of the yarn, and non-extensible, non-looped continuous fibrous glass strands extending in close array, unentangled, unvaryingly and uninterruptedly along the axis of the yarn, said continuous strands having individually a tensile strength of at least two pounds and thus providing the yarn and the fabric produced therefrom with resistance to tensile forces to which the yarn and the fabric may be submitted before the fabric is used as a reinforcement for plastic in a die molding operation, but said continuous strands of the fabric being fracturable under the pressure of such molding operation.

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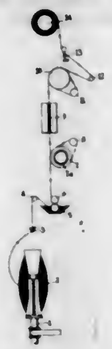
**3,166,885**
**PRODUCTION OF COMPOSITE STRETCH YARNS**
**Hagood Chapman Bridgeman, Marietta, and Fulton M. Lampley, Greenville, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware**
**Filed June 20, 1963, Ser. No. 289,199**
**4 Claims. (Cl. 57—152)**



1. A method of producing a balanced composite elastic yarn comprising continuously supplying a running length of a polyurethane strand stretched under tension, continuously helically wrapping the stretched polyurethane strand in one direction with a first synthetic inextensible continuous filament textured textile yarn having an S torque therein, and then helically wrapping about the first inextensible yarn from the opposite direction a second synthetic inextensible continuous filament textured textile yarn having a Z torque therein to produce a doubly covered composite yarn, and then reducing the tension upon the composite yarn and contracting the same and feeding the contracted yarn to a yarn take-up.

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**3,166,886**
**PROCESS FOR WORKING UP STRETCHED AROMATIC POLYESTER FILAMENTS**
**Rosl Kretsch, Bobingen, near Augsburg, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Jan. 12, 1961, Ser. No. 82,273**
**Claims priority, application Germany, Jan. 12, 1960, F 30,270**
**8 Claims. (Cl. 57—157)**

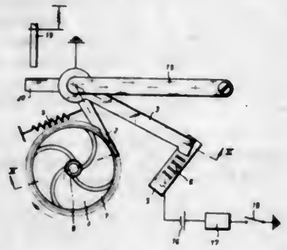


1. A process for the working up of stretched filaments of aromatic polyesters of high molecular weight which comprises twisting the stretched filaments to produce a yarn, passing the yarn through a bath consisting of a member selected from the group consisting of a solution, dispersion and an emulsion of at least one substance boiling at a temperature within the range of 120° and 350° C., feeding the yarn to two rotatable means serving as fixed points and rotating at different speeds and around each of which the yarn is wrapped several times, the first rotatable means being electrically heated, heating the yarn between the rotatable means on all sides and uniformly to a temperature within the range of 220° to 350° C. for 0.1 to 5 seconds, simultaneously allowing an adjustable shrinkage of the yarn of 5 to 35% and finally winding up the yarn, all these operations being carried out in one continuous working process.

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**3,166,887**
**ELECTRIC ALARM CLOCK**
**René-Philippe Jaccard, Petit-Lancy, Geneva, Switzerland, assignor to Samuel Jack Kaufmann, New York, N.Y.**
**Filed Nov. 1, 1963, Ser. No. 320,729**
**Claims priority, application Switzerland, Nov. 2, 1962, 12,883/62**
**10 Claims. (Cl. 58—18)**

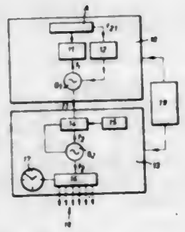
1. In an alarm clock, the combination of a motion work, a timing mechanism adapted to be driven by the latter, a control rod adapted to rock round its axis, an arm radially rigid with said rod, a cam driven by the timing mechanism and adapted to angularly shift the control rod between two angular positions, a series of contact-pieces over which said arm is adapted to sweep in succession upon angular shifting of the rod between said positions, an alarm system, an electric alarm circuit feeding said alarm system in parallel over said contact-pieces, an alarm time-setting mechanism and means whereby the clockwork operatively interengages the cam with the control rod to angularly shift the rod between said positions and thereby



make the arm sweep over said contact-pieces and produce at the time defined by the alarm time-setting mechanism, a succession of signals the number of which is equal to that of the contact-pieces.

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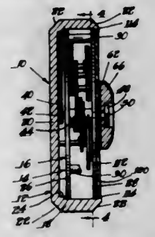
**3,166,888**
**MEANS FOR ADJUSTING A TIME-MEASURING SYSTEM BY MEANS OF A TIME-STANDARD**
**Pierre Kartaschoff, Neuchatel, Switzerland, assignor to Laboratoire Suisse de Recherches Horlogeres, Neuchatel, Switzerland**
**Filed July 2, 1963, Ser. No. 292,428**
**Claims priority, application Switzerland, July 28, 1962, 9,077/62**
**9 Claims. (Cl. 58—23)**



1. In time-keeping apparatus, the combination of an atomic frequency standard producing a selected stabilized frequency $f_1$, a variable frequency oscillator producing a frequency $f_2$ which is lower than $f_1$, mixing means for comparing a function of the output frequency $f_1$ of said atomic frequency standard and a function of the output frequency $f_2$ of said oscillator to produce a beat frequency $f_b$, a digital comparator comprising a digital counter and gate means controlled by said beat frequency $f_b$ to feed said frequency $f_2$ of said oscillator to said counter for a period $T_b$ equal to a function of the period between successive impulses of said beat frequency $f_b$, preselecting whereby the impulses of said frequency $f_2$ are counted during the period $T_b$, preselecting means for supplying to said comparator a selected reference value, said comparator comprising means for comparing the number of impulses of the frequency $f_2$ counted during the period $T_b$ with said reference value, means for producing a first signal when said number of impulses of $f_2$ counted during the period $T_b$ is less than said reference value and a second signal of opposite sign when said number of impulses of $f_2$ counted during said period $T_b$ is more than said reference value and means responsive to said first signal for increasing the frequency of said oscillator and responsive to said second signal for decreasing the frequency of said oscillator.



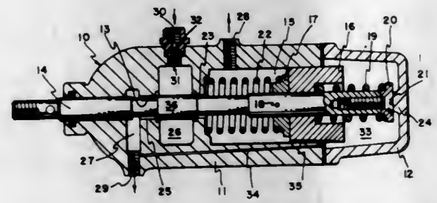
**3,166,889**
**TIMEPIECE**
**George H. Adamson, Douglas, Ariz., assignor to Kenneth J. Kohanzo, Deerfield, Ill.**
**Filed Feb. 27, 1961, Ser. No. 91,912**
**4 Claims. (Cl. 58—57)**



1. A timepiece comprising: a molded case including an integral transparent crystal element; support means in said case; a dialface on said support means behind said crystal element, said dialface having a center and a plurality of hour-indicating indicia thereon spaced radially from said center at equal, angular intervals, said dialface further having quarter-hour-indicating indicia between each adjacent pair of said hour-indicating indicia; a pin extending rotatably through said support means and through said dialface at said center; a single, time-indicating arm on one end of said pin in cooperative relationship with said indicia; a slotted setting knob on the other end of said pin exposed for resituating said arm; energy storing means including a mainspring; a winding knob concentric with said pin and exposed for winding said mainspring; and gear means and an escapement mechanism transmitting energy from said storing means to said pin for rotating said pin at a precise, incremental rate.

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**3,166,890**
**COMBINATION CONTROL VALVE AND MASTER CYLINDER**
**Robert D. Krehbiel, Hutchinson, Kans., assignor to The Cessna Aircraft Company, Wichita, Kans., a corporation of Kansas**
**Filed Aug. 26, 1963, Ser. No. 304,387**
**8 Claims. (Cl. 60—10.5)**

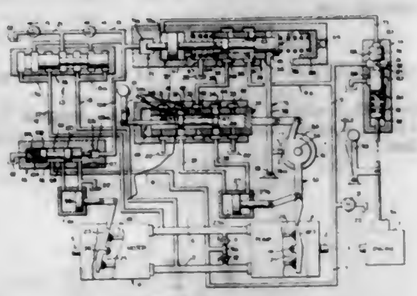



1. A control valve for selectively dispensing fluid under pressure to a brake actuating fluid motor, said valve comprising:
a housing defining a fluid displacement chamber, and having
(*a*) a fluid inlet port for connection to a source of fluid under pressure,
(*b*) a fluid outlet port for connection to a fluid return line, and
(*c*) a motor port in communication with said fluid displacement chamber, for connection to a device to be fluid actuated;
a cannelured valve spool bore in the housing axially aligned with said chamber, their respective inner ends being in communication;

a cannelured valve spool reciprocable in said bore, and having its outer end extending outside the housing for forcible reciprocation, and its inner end extending into the displacement chamber;
means carried by the inner end of said valve spool for displacing fluid from said chamber outward through said motor port when said valve spool is moved from a neutral position;
a supply passage in the housing adjacent the displacement chamber, communicating with the valve spool bore and with said inlet port;
a fluid return passage in the housing communicating with said bore, and through a portion of the bore, with said supply passage, and also communicating with said outlet port;
said spool in its neutral position blocking communication between the supply passage and the displacement chamber, and affording communication between the supply passage and the return passage;
said spool, when moved away from its neutral position, blocking communication between the supply passage and the return passage, and affording communication between said supply passage and said displacement chamber;
whereby movement of the valve spool from its neutral position, with accompanying movement of the fluid displacing means carried by the valve spool, dispenses fluid under pressure from the displacement chamber outwardly through said motor port.

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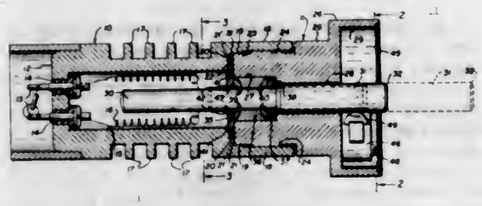
**3,166,891**
**HYDROSTATIC TRANSMISSION**
**Charles O. Weisenbach, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey**
**Filed July 8, 1963, Ser. No. 293,538**
**9 Claims. (Cl. 60—19)**



1. A hydrostatic transmission comprising
(*a*) a variable displacement pump having a displacement control element movable between minimum and maximum displacement positions and biased toward the minimum displacement position;
(*b*) a hydraulic motor;
(*c*) a pair of main conduits connecting the pump and motor in a closed circuit;
(*d*) a fluid pressure control motor for moving the displacement control element toward maximum displacement position;
(*e*) a control valve having an outlet passage connected with the control motor, a supply passage, an exhaust passage, and a pair of movable valve members, each of the valve members being movable in reverse directions from a first relative position in which the outlet passage communicates with both the inlet and exhaust passages, relative movement of the members in one direction with respect to the first position serving to isolate the outlet passage from the supply passage and relative movement of the members in the opposite direction with respect to the first position serving to isolate the outlet passage from the exhaust passage;
(*f*) means for shifting one of the members of the control valve;
(*g*) a follow-up connection between the other member of the control valve and the displacement control element arranged to shift that member toward the first relative position with respect to the said one valve member;
(*h*) a source of control fluid under pressure and a reservoir;
(*i*) an override valve for selectively connecting the supply passage with the source and the reservoir, the override valve including a pair of valve members each of which is movable in reverse directions from a first position in which the supply passage is isolated from both the source and the reservoir, relative movement of the members in one direction with respect to the first position serving to connect the supply passage with the source and relative movement of the members in the opposite direction with respect to the first position serving to connect the supply passage with the reservoir;
(*j*) pressure responsive motor means for shifting one of the valve members of the override valve in said opposite relative direction; and
(*k*) follow-up means interconnecting the other of the movable members of the override valve and the displacement control element and arranged to move said other member in said one and said opposite relative directions, respectively, as the displacement control element moves toward and away from the minimum displacement position,
(*l*) said follow-up means including a cam and follower linkage, whereby the relationship between valve member movement and displacement control element movement is dependent upon the shape of the cam.

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**3,166,892**
**ACTUATOR AND SEAL WITH SHAFT-LUBRICATING MEANS THEREFOR**
**John F. Sherwood, 7801 W. 39th Ave., Wheat Ridge, Colo.**
**Filed July 15, 1963, Ser. No. 295,003**
**12 Claims. (Cl. 60—23)**



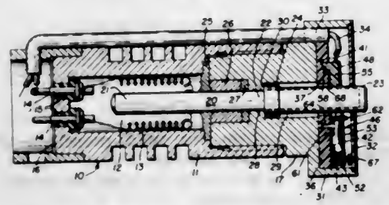
1. In an actuator comprising a housing, a pressure chamber in the housing, power producing material in the pressure chamber, and a piston shaft mounted in the housing for reciprocable movement therein, the improvement which comprises sealing and shaft-lubricating means comprising
(*a*) a centrally apertured piston sealing disc extending transversely of the housing and located adjacent one end of the pressure chamber,
(*b*) a centrally apertured transversely extending lubricant sealing disc spaced from the piston sealing disc,
(*c*) a porous metal lubricant-saturated bearing located between and concentric with said discs,
(*d*) said shaft extending through said bearing and the disc apertures in close contact with the discs,



(*e*) means on the interior surfaces of the actuator housing exerting pressure against the sealing discs and thereby forcing said discs in axial directions against opposite ends of said bearing, and
(*f*) concentric surfaces on the interior of the housing confining the peripheral surfaces of said sealing discs, whereby said piston sealing disc exerts wiping action on the shaft, said bearing lubricates the shaft, and said lubricant sealing disc prevents loss of power-producing material from the pressure chamber and loss of lubricant from the bearing.

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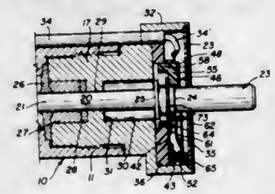
**3,166,893**
**ELECTROTHERMAL ACTUATOR**
**John F. Sherwood, 7801 W. 39th Ave., Wheat Ridge, Colo.**
**Filed Oct. 7, 1963, Ser. No. 314,143**
**9 Claims. (Cl. 60—23)**



1. An electrothermal actuator for imparting motion to mechanism located externally of the actuator comprising
(*a*) a housing,
(*b*) a shaft reciprocably mounted in the housing having a work-actuating free end portion adapted to project beyond the housing,
(*c*) means in the housing moving the shaft in axial direction to project beyond the housing into work-actuating position,
(*d*) electrical switch mechanism mounted in the housing having an opening between its sides axially aligned with and adapted for passage of the shaft therethrough, and
(*e*) means located circumferentially on the shaft between the shaft ends for engaging and actuating said switch mechanism when the work-actuating end portion of the shaft has passed through the switch mechanism beyond the housing into contact with the work.

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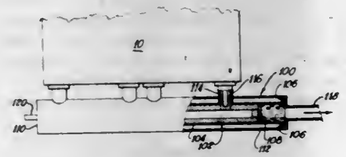
**3,166,894**
**ELECTROTHERMAL ACTUATOR AND SAFETY DEVICES THEREFOR**
**Andrew W. Zmuda, Denver, and Stanley Richards and Marvin A. Staschke, Thornton, Colo., assignors to Thermal Hydraulics, Inc., Denver, Colo., a corporation of Colorado**
**Filed Dec. 9, 1963, Ser. No. 328,978**
**2 Claims. (Cl. 60—23)**



1. In an electrothermal actuator comprising a high pressure casing, a shaft reciprocably mounted in the casing having a work-actuating end portion adapted to project beyond the casing, the inner end of the shaft being a piston portion, expansible and contractible material in the casing moving the shaft in axial direction into work-actuating position, electrical switch mechanism mounted in the casing having an opening axially aligned with and adapted for passage of the shaft therethrough, and a first flange located circumferentially on the shaft between the shaft ends, the improvement which consists of a safety device providing for variable-length power stroke of the shaft, said device comprising
(*a*) a stop flange located circumferentially on the shaft between the piston portion and said first flange,
(*b*) a flat radially extending spring mounted on the shaft adjacent the first flange for actuating the switch mechanism when the work-actuating end portion of the shaft has passed through the switch mechanism,
(*b*-1) said spring being slidable across said first flange and on the shaft between the stop flange and said first flange when the shaft has moved in axial direction beyond its predetermined power stroke.

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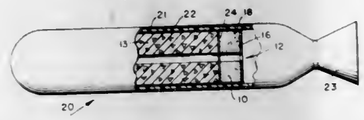
**3,166,895**
**CATALYTIC MUFFLING SYSTEM FOR REDUCING CONTAMINANTS IN EXHAUST GASES**
**Games Slayter and Willard L. Morgan, Newark, Robert G. Russell, Granville, and Lewis F. Scheffler, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware**
**Filed June 10, 1960, Ser. No. 35,348**
**6 Claims. (Cl. 60—29)**



1. In an exhaust system through which flow exhaust gases from an internal combustion engine, a catalyst consisting of crystalline fibers of titania in the order of at least ¼" in length, and means for directing exhaust gases for contact with the titania fibers.

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**3,166,896**
**METHOD FOR SUPPRESSING ROCKET MOTOR EXHAUST FLAME**
**Richard A. Breitengross, Jr., and William E. Donaldson, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Jan. 5, 1962, Ser. No. 165,067**
**8 Claims. (Cl. 60—35.6)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



4. A jet actuated device comprising in combination, a rocket motor having at least one exit nozzle, a propellant grain within said motor, and a flame suppressing segment molded in the form of a thin perforated disk and secured to the nozzle end of said grain, said segment consisting essentially of 55 percent by weight potassium sulfate and 45 percent by weight binder composed essentially of 38

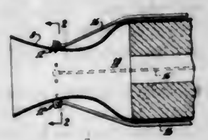
percent nitrocellulose, 39 percent pentaerythritol trinitrate, 20 percent dibutyl phthalate, 1 percent adiponitrile and 2 percent diethyldiphenylurea.

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3,166,897
## ROLL CONTROL AND THRUST VECTOR CONTROL

Herbert R. Lawrence and Barnet R. Adelman, both of Atherton, Calif., assignors to United Aircraft Corporation, a corporation of Delaware

Filed Aug. 21, 1961, Ser. No. 132,714
1 Claim. (Cl. 60—35.54)



In a rocket engine having a nozzle, means for effecting roll control and thrust vector control of said rocket engine comprising in combination:

(*a*) a plurality of pairs of injection ports opening into the nozzle;

(*b*) each pair of injection ports having one port facing in one circumferential direction and the other port facing in the opposite circumferential direction;

(*c*) at least three such pairs of ports being provided;

(*d*) the pairs of ports being equally spaced around the periphery of the nozzle;

(*e*) supply means and valve means for selectively supplying fluid under pressure to at least one port to obtain thrust vector control and roll control and for supplying fluid under pressure to a pair of ports to obtain thrust vector control only; and,

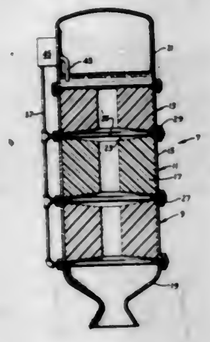
(*f*) said supply means and valve means lying entirely outside of the nozzle.

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3,166,898
## LIQUID INJECTION SYSTEM

Herbert W. Hoeptner, San Jose, Calif., assignor to United Aircraft Corporation, a corporation of Delaware

Filed Jan. 16, 1962, Ser. No. 166,642
2 Claims. (Cl. 60—35.6)

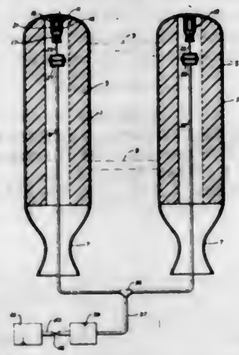


1. A hybrid rocket motor having a liquid propellant and a solid propellant wherein said solid propellant is in the form of transverse segments within a casing with a space between adjacent segments, and a plurality of injectors located in the space between adjacent, solid segments and directed against the respective ends of the adjacent, soild segments whereby a liquid propellant can be injected between the grain segments.

3,166,899
## IGNITION SYSTEM FOR SOLID ROCKET BOOSTER CLUSTER

Anthony C. Keathley, Sunnyvale, Calif., assignor to United Aircraft Corporation, a corporation of Delaware

Filed June 7, 1962, Ser. No. 200,697
2 Claims. (Cl. 60—35.6)



1. An ignition system for solid propellant rocket motors comprising in combination:

(*a*) a plurality of solid propellant rocket motors held in clustered relationship;

(*b*) each of said motors having a case with a closed forward end and a propellant grain with a central burning port and a nozzle at one end of the case;

(*c*) each of said motors having a rocket-type igniter attached to the inside of the closed forward end of the casing at the end of the central burning port opposite the nozzle;

(*d*) each of said rocket-type igniters having a solid propellant grain therein;

(*e*) lines for conducting a fluid, one of said lines extending through the throat and burning port of each of the rocket motors and terminating within the rocket-type igniters;

(*f*) a pressure relief valve in each of said lines;

(*g*) means for supplying a fluid under pressure through said lines, said fluid being hypergolic with the solid propellant grain of the rocket-type igniter;

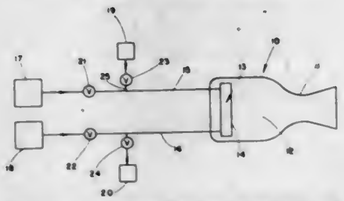
(*h*) whereby when said fluid is introduced under pressure into said lines, said pressure relief valves will release the fluid substantially simultaneously into each of the rocket-type igniters, firing all of the solid propellant motors at once.

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3,166,900
## METHOD AND APPARATUS FOR FLUID FLOW CONTROL IN TWO PHASE AERATION SYSTEMS

Gilbert R. Stegen, Mountain View, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 1, 1963, Ser. No. 255,503
1 Claim. (Cl. 60—35.6)



In a method for modulating the thrust level of a thrust generator which method comprises injecting a gas into a propellant to reduce the bulk density of said propellant and subsequently using said propellant of modified bulk density to power said thrust generator, the improvement comprising injecting the gas at at least sonic velocity into the propellant whereby the homogeneity of the propellant of modified bulk density is substantially improved and dynamic instability of the thrust generator substantially abated.

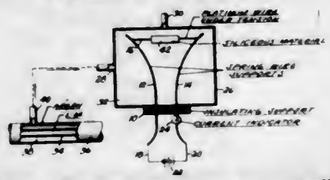


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3,166,901
## DETECTOR FOR ALKALI-METAL VAPORS

Philip Bliss, Newington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 13, 1962, Ser. No. 173,091
10 Claims. (Cl. 60—39.09)



1. A device for detecting the presence of alkali-metal fluids comprising a platinum wire, means for normally heating said wire to a temperature below the melting point of platinum, means for forming a platinum-silicon alloy of said platinum wire in the presence of an alkali metal including a siliceous material maintained in contact with said wire, said alloy having a melting point below that temperature to which said wire is normally heated, said siliceous material characterized by having silicon liberated by the reaction therewith of alkali metals and their vapors, and indicating means responsive to the melting of said wire.

4. In a gas-turbine engine having a radiator for the circulation of an alkali metal, a detector for the presence of alkali metals or their vapors located downstream of the air passing through said radiator, said detector including a platinum wire supported in the hot gases discharged from said engine, said discharge gases having a temperature below the melting point of said wire, means for forming a platinum-silicon alloy of said wire in the presence of an alkali metal including a siliceous material adjacent said wire characterized by having silicon liberated by the reaction therewith of alkali metals and their vapors, said alloy having a melting point below the temperature of said gases, and means responsive to the melting of said wire for indicating a leak in said radiator.

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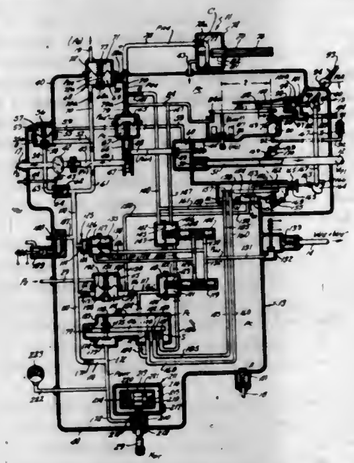
3,166,902
## FUEL CONTROL FOR A REGENERATIVE GAS TURBINE ENGINE

John M. Maljanian, Newington, and Gene A. Meyer, Simsbury, Conn., assignors to Chandler Evans Corporation, Hartford, Conn., a corporation of Delaware

Filed Nov. 15, 1962, Ser. No. 237,914
31 Claims. (Cl. 60—39.16)

1. In operative association with a gas turbine engine, having a compressor supplying compressed air through a heat recuperator to a fuel combustion chamber, a fuel control comprising: means supplying fuel to said combustion chamber, at a rate varying in accordance with the mass rate of air flow thereto, and means for automatically modifying the rate of said fuel supply, in accordance with a function of the product of the compressor discharge pressure and the temperature of the air leaving said recuperator, so that the temperature of the gases leaving said combustion chamber never exceeds a preselected maximum limit.

14. In operative association with a gas turbine engine, comprising: a first, low-pressure air compressor, driven by a first gas turbine; a second, high-pressure air compressor, driven by a second gas turbine; for supplying compressed air through a heat recuperator to a first fuel combustion chamber; and a second fuel combustion chamber, interposed in gas flow series relation between said first and second turbines; a single-unit fuel control, comprising: a manual power control lever, means for coordinately regulating fuel flow from a common supply source to said first and second combustion chambers, so as to maintain



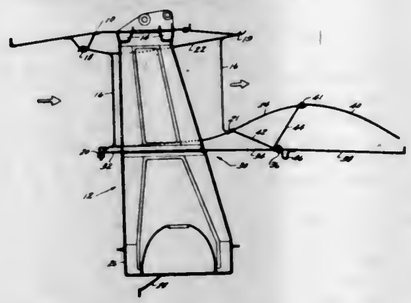
the ratio between the corrected speeds of said first and second compressor rotors at a selected definite value, for each particular position of said lever, so that for each lever position a selected value of second compressor rotor speed, and a corresponding steady-state discharge pressure of said first compressor, is obtained, under varying operating conditions; the corrected speed of each of said rotors being defined as its actual speed (N), divided by the square root of the temperature ($T_1$) of the air entering its compressor.

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3,166,903
## JET ENGINE STRUCTURE

Harlan V. White, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 4, 1962, Ser. No. 185,778
1 Claim. (Cl. 60—39.31)



In a fluid flow engine a lightweight supporting structure including a frame, said frame having:

inner and outer motive fluid flow-defining wall portions;

a plurality of circumferentially-arranged, radially extending struts joining said inner and outer wall portions and providing support thereto;

a substantially cylindrical sheet metal support member located generally within said inner wall portion, said support member being intersected by said struts adjacent one end of said support member;

and a flow guiding member connected to said support member at the other end thereof, said motive fluid acting on said flow guiding member so as to impose a substantially uniformly distributed axial load about said other end of said substantially cylindrical support member;

said support member having a plurality of discrete, generally triangular-shaped, wall portions, said triangular-shaped wall portions extending longitudinally of the support member from the upstream extremity of the strut to said other end of said support member, and laterally of the strut along the support member from a minimum distance at said upstream strut extremity to a maximum distance at the other end of said support member so that the bases of said triangular-shaped wall portions join at said other end,

each of said triangular-shaped wall portions being comprised of the traces of a family of skewed planes passing through said support member wall, each plane being intersected by the axis of said support member but not containing said axis with the exception of a single plane central to each of said wall portions located at the downstream extremity of said strut,

said traces representing straight line elements of said support member wall extending from the strut intersection therewith to said other end of said member, said elements substantially uniformly reacting to said distributed axial load in a manner such as to transmit said load to said struts with the avoidance of curved load paths in said support member.

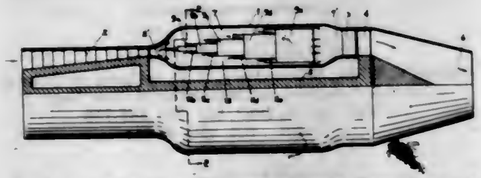
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**3,166,904**

## COMBUSTION CHAMBER FOR GAS TURBINE ENGINES

**John Alden Melcaric, 409 East Lane, Wichita, Kans.**

**Filed May 18, 1960, Ser. No. 32,068**
**2 Claims. (Cl. 60—39.69)**



1. A gas turbine engine comprising a compressor, a turbine adapted to drive the compressor, said turbine being spaced from and located aft of said compressor, an exhaust passage from the turbine, a combustion chamber located between the compressor and the turbine, a plurality of sets of burners in the combustion chamber axially aligned about the longitudinal axis of the engine, each set of burners comprising a plurality of progressively larger burners in linear alignment from front to rear of the combustion chamber, each burner in each set of burners being provided with an open end to form an air intake orifice, a discharge orifice from each burner, fuel injection means in each burner intermediate the air intake orifice and the discharge orifice, fuel ignition starting means in each of the first burners of each set of burners, air from the compressor passing simultaneously through the combustion chamber and to each air intake orifice of each burner in the sets of burners, the air discharging from the combustion chamber and mixing with the products of combustion from the last burner in each set of burners to drive the turbine and provide thrust as the mixture leaves the exhaust passage, and a flared element forming an air diffuser at the end of each air intake passage where said air intake passage discharges into the following burner.

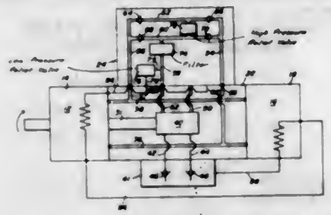
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**3,166,905**

## FLUID DISTRIBUTING AND CIRCULATING SYSTEM

**Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio, and Arnold Pitt, 5 Hillgarden Road, Weston, Ontario, Canada**

**Filed Oct. 15, 1962, Ser. No. 230,762**
**11 Claims. (Cl. 60—53)**



1. In a hydrostatic transmission having a fluid power pump and a fluid motor, the improvement which comprises a fluid distributing and circulating system interposed between said power pump and said motor, said distributing and circulating system including a connecting section and a control section, said connecting section having high pressure fluid conducting means and low pressure fluid conducting means arranged to connect said power pump and said motor in a closed circuit, a supercharging pump, first and second passage means arranged to supply fluid from said supercharging pump to said control section, said supercharging pump being connected to deliver fluid to said first passage upon rotation in one direction and to said second passage upon rotation in the opposite direction, said control section being selectively positionable and having means arranged to introduce fluid from either of said passages to said low pressure fluid conducting means.

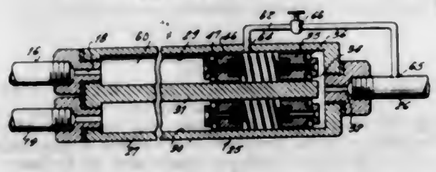
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**3,166,906**

## SAFETY DEVICE FOR HYDRAULIC SYSTEMS

**Ernst Zaia, Vienna, Austria, assignor to Eisenberg & Company/U.S.A. Agency, Inc., New York, N.Y., a corporation of New York**

**Filed June 20, 1963, Ser. No. 289,366**
**6 Claims. (Cl. 60—54.5)**



1. In a fluid control system, a chamber disposed in the system and adapted to be connected to a source of intermittent fluid pressure at a first end thereof and to a delivery conduit at the second end thereof, a first free piston slidably disposed in sealing relation in the first end of the chamber, a second free piston slidingly disposed in sealing relation in the second end of the cylinder, resilient means disposed between and abutting the pistons to maintain the pistons at a variable distance from each other, the chamber and first piston defining a first space, the chamber and two pistons defining a second space, and the chamber and second piston defining a third space, passages through the two pistons affording direct series communication between the three spaces, a first valve selectively opening and closing the passage through the first piston, a second valve selectively opening and closing the passage through the second piston, means closing the first valve when the first space is subjected to a pressure which substantially exceeds the pressure in the second space and opening the second valve when the pressure in the second space substantially exceeds the pressure in the third space, said last named means being so constructed and arranged that both valves are open when the pressures in the three spaces are high and approximately equal during the application of pressure to the first end of the chamber from the pressure source.



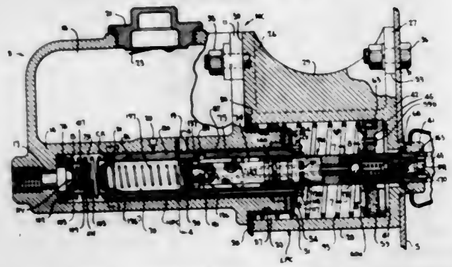
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**3,166,907**

## COMPOUND MASTER CYLINDER FOR HYDRAULIC BRAKE SYSTEMS

**Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn, Mountain Lake Park, Md.**

**Filed June 16, 1961, Ser. No. 126,404**
**9 Claims. (Cl. 60—54.6)**



9. In multi-stage master brake cylinders having a chamber-defining body provided with a fluid supply reservoir, a high-pressure chambered bore and a low-pressure chambered counterbore, said bores having a smaller piston and a larger piston with a working side, respectively, and reciprocably mounted therein to move as a unit, a discharge passage associated with said high-pressure bore, a compensating port in said chamber-defining body normally interconnecting said supply reservoir and high-pressure bore when said smaller piston is fully retracted, and closable thereby in response to initial pressurizing movement thereof for high-pressure operation, the combination with check-valve means having a spring-loaded element interposed in a passage in said chamber-defining body, and which communicates with the working side of said larger piston and said discharge passage, to control said passage whereby fluid flow from the discharge passage is prevented; compensating-valve means having a valve-forming element operatively associated with a different passage in said chamber-defining body, and which communicates with said supply reservoir and the working side of said larger piston, said valve-forming element being movable relatively to said different passage to block and to unblock the same for the larger piston to be operative to displace fluid through said first-named passage and check-valve means at low pressure, and for negating the operativeness of said larger piston in favor of said smaller piston to displace fluid directly through said discharge passage at high pressure; frictional means connecting said valve-forming element for operation by said pistons when initially moved as a unit in opposite directions at closely spaced stations along their full operating stroke, to selectively move said valve-forming element to block and to unblock said different passage; and staging valve means having an element interposed in a passage in said larger piston and which communicates with the working and the non-working opposite side of the latter piston, said staging valve element having a normal position under spring-actuation to block said last-named passage, and thereby isolate working and non-working sides of said larger piston to enable the working side of the latter to be effective to displace fluid at low pressure through said first-named passages and check-valve means when said valve-forming element is blocking fluid flow through said different passage, and to another position under fluid-pressure actuation developed at said discharge passage ahead of said smaller piston, to unblock said passage in the larger piston, and thereby place the working and non-working sides of said larger piston in communication with each other to negate low-pressure operation by said larger piston.

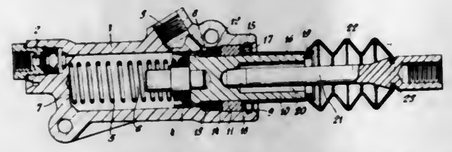
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**3,166,908**

## FLUID PRESSURE MASTER CYLINDERS

**Leslie C. Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, Warwickshire, England**

**Filed Oct. 15, 1962, Ser. No. 230,510**
**Claims priority, application Great Britain, Oct. 17, 1961, 37,211**
**1 Claim. (Cl. 60—54.6)**

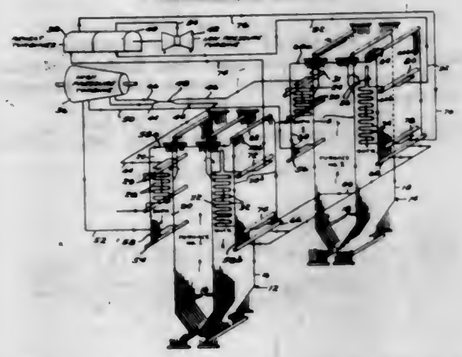


A master cylinder comprising a tubular body forming a cylindrical piston space having a length sufficient to permit a predetermined piston stroke, a piston slidably disposed in said space, said piston having a front peripheral portion and a rear peripheral portion, said front portion being of substantially larger diameter than said rear portion, said space having a front circumferential surface and a rear circumferential surface, said front surface being of substantially larger diameter than said rear surface, said piston front portion being slidably disposed in said front surface, and said rear piston portion being slidably disposed adjacent said rear surface, biasing means in said space adjacent said front surface normally urging said piston to a retracted position adjacent said rear surface of said space, said piston having a cylindrical extension adjacent the rearward portion of said rear portion forming an elongated axial bore centrally of said rear portion, said extension projecting outwardly beyond the rear end of the cylinder when said piston is in a retracted position and having the same diameter as said rear portion, a push rod disposed in said axial bore and being of substantially smaller diameter than the bore diameter and projecting outwardly of said axial bore, a reduced shoulder formed in said rear surface, said shoulder being formed in spaced relationship with said front surface and the rear end of said cylinder, an annular ring bush member disposed in said rear surface positioned with its front end abutting said shoulder to prevent forward axial movement of the bush member, said ring bush member forming a bearing surface for said extension during axial movement, first sealing member disposed around said extension and adjacent the front end of said ring bush member, a second sealing member disposed in said rear surface adjacent the rear side of said bush member, a sleeve surrounding said extension and secured at one end against said second sealing member, said sleeve sealing off and enclosing the portion of said extension projecting out of said cylinder, the inner front end of said sleeve having an annular outwardly flared portion abutting said second sealing member and the rear side of said ring member, a retainer ring disposed in a circumferential recess in said rear surface, said ring abutting said flared portion to prevent rearward axial movement of said bush member, an annular inwardly extending rim forming a stop for the extension disposed in the

rear end of said sleeve beyond the rear end of said cylinder, and a flexible bellows member secured to said stop and push rod and enclosing a portion of said push rod.

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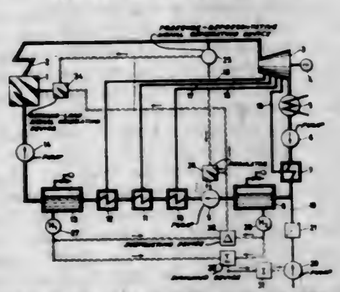
3,166,909
VAPOR GENERATOR
Theodore R. Best, Jr., Westwood, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Nov. 15, 1962, Ser. No. 237,982
7 Claims. (Cl. 60—73)



1. A vapor generating and superheating unit of the once-through supercritical type comprising a plurality of vapor generating tubes defining first and second upright furnace sections, wall means forming first and second gas passes leading from said first furnace section and first and second gas passes leading from said second furnace section, superheater means in said first gas passes of both said first and second sections and reheater means in said second gas passes of said first and second sections, means to control the gas flow from both said furnace sections through said gas passes, and means to control the firing to both said furnace sections.

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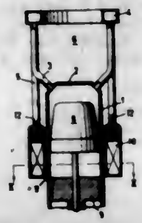
3,166,910
APPARATUS FOR CONTROL OF A STEAM POWER PLANT
Alfred Brunner, Winterthur, Switzerland, assignor to Sulzer Freres, Societe Anonyme, Winterthur, Switzerland, a Swiss company
Filed Feb. 1, 1963, Ser. No. 255,546
Claims priority, application Switzerland Feb. 6, 1962
8 Claims. (Cl. 60—107)



1. Apparatus for control of a steam power plant including a once-through forced-circulation steam generator, a steam consuming device and a preheater coupled respectively to the output and input of said generator, and means to withdraw steam from said device for heating said preheater, said apparatus comprising separate liquid working substance storage vessels upstream and downstream of said preheater, means to measure the liquid level in each of said vessels, means to generate a signal responsive to said levels, means to generate a signal representative of the condition of equilibrium of the plant, and means to adjust the rate of flow of liquid working substance through said preheater in response to said signals.

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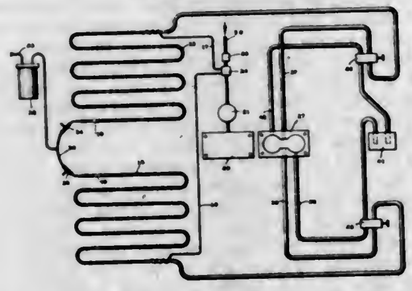
3,166,911
HOT-GAS RECIPROCATING APPARATUS
Roelf Jan Meijer, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,113
Claims priority, application Netherlands, Mar. 11, 1963, 290,075
6 Claims. (Cl. 62—6)



1. A hot-gas reciprocating apparatus comprising at least one cylinder having a compression space and an expansion space, a displacer and a piston adapted to reciprocate in said cylinder with a relative phase difference and to vary the volumes of said compression and expansion spaces, said spaces being at different mean temperatures during operation of said apparatus, means connecting said spaces and including a heater, a cooler and a regenerator, said regenerator being subdivided into a plurality of substantially parallel-arranged regenerator elements, resiliently compressible in the axial direction, said cooler also being subdivided into a plurality of substantially parallel-arranged axially rigid elements equal in number to the number of said regenerator elements, a main housing, each element of said cooler being accommodated together with a regenerator element in said housing, the axial inner dimension of the housing containing said rigid cooler elements and compressible regenerator elements being smaller than the sum of the axial dimensions of any of said cooler elements and corresponding regenerator elements in their demounted state.

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3,166,912
COMBINED REFRIGERATOR AND AIR CONDITIONER
Earnest H. Patrick, 831-B N. Federal Highway, Fort Lauderdale, Fla.
Filed Jan. 17, 1964, Ser. No. 338,423
6 Claims. (Cl. 62—7)



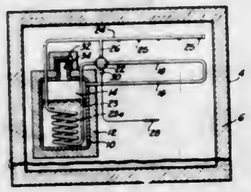
1. A combined air conditioner and refrigerator comprising, a pair of cooling coils, a chamber encircled by



the coils, one of said coils having convolutions contacting the surface of the chamber and the second coil being finned and spaced from the chamber, each coil having an outer tube and an inner tube within it, the inner tube being spaced from the outer tube whereby a vapor passage is formed between the tubes, a source of gasoline connected to the inner tube to cause a flow of the gasoline therethrough in one direction, means for vaporizing the gasoline at points within the coils, and means for causing a flow of the vapor thus produced through the vapor passage in the coils, the latter flow being suctionally caused by vacuum created by engine operation, the convolutions of one of the coils being located between the convolutions of the second coil.

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3,166,913
METHOD FOR REFRIGERATING
James M. Carter, Pasadena, Calif., assignor to Elmwood Liquid Products, Inc., New York, N.Y., a corporation of New York
Filed July 30, 1962, Ser. No. 213,525
2 Claims. (Cl. 62—56)

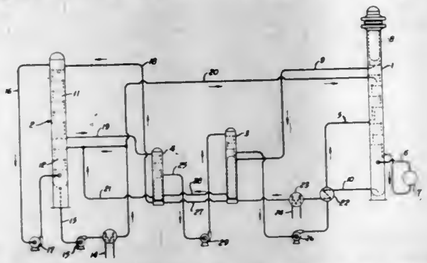


1. A refrigeration method for an enclosed space comprising:
providing a pool of liquefied gas contained in an insulated vessel located in said enclosed space;
continuously discharging evaporated gas from the pool of liquefied gas contained in said insulated vessel into the enclosed space, limiting the heat passing from the atmosphere of the enclosed space through the insulated container into the liquefied gas to a value generally insufficient to provide the needed refrigeration;
passing said gas into heat exchange relation with the atmosphere in said space before discharging said gas into said atmosphere;
continuously sensing the temperature of said enclosed space;
selectively directing at least a portion of the heated gas through said vessel to indirectly heat the liquefied gas pool, in response to sensing a rise in temperature in the space above a selected value thereby accelerating evaporation of the liquefied gas and providing the needed refrigeration to lower the temperature of the space to the selected value; and
again discharging said gas directly into the space without recirculation of any significant portion thereof to the vessel, in response to sensing a temperature of said space at the selected value.

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3,166,914
PROCESS OF REFRIGERATION
Robert J. Hallatt, Tulsa, Okla.; Charles A. Whitebook, executor of said Robert J. Hallatt, deceased, assignor to Robert L. Rorschach, Tulsa, Okla.
Filed Dec. 1, 1960, Ser. No. 72,955
4 Claims. (Cl. 62—101)

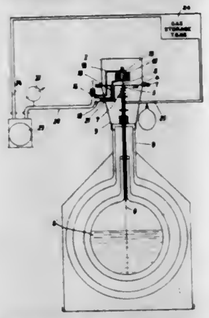
1. An absorption process comprising the steps of thermally decomposing a refrigerant-enriched absorbent at the hot end of the system to form a pure absorbent and a refrigerant gas, condensing the refrigerant gas to a liquid, passing the refrigerant liquid in thermal contact with the pure absorbent in a heat exchanger to thereby cool the absorbent and evaporate a portion of the refrigerant liquid, absorbing the refrigerant vapor formed in the last-named step in partially enriched absorbent passing from the cold end of the system to the hot end to further enrich the absorbent, introducing the refrigerant liquid into an evaporator to evaporate a portion of the liquid refrigerant and thereby cool the remaining liquid refrigerant, contacting said remaining liquid refrigerant



with a medium to be chilled to thereby warm said remaining liquid refrigerant and chill said medium, passing the refrigerant vapor from the evaporator into contact with pure absorbent to absorb the refrigerant vapor in said pure absorbent to provide said partially enriched absorbent, returning the partially enriched absorbent to the hot end, returning the warmed liquid refrigerant to said hot end, and returning a second portion of the warmed liquid refrigerant to said evaporator.

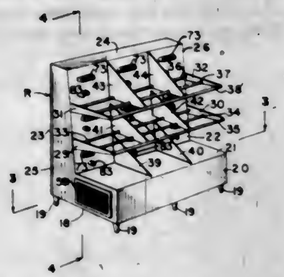
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3,166,915
COOLING ARRANGEMENT
Gustav Klipping, Berlin-Grunewald, Germany, assignor to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V., Gottingen, Germany
Filed Feb. 9, 1962, Ser. No. 173,088
Claims priority, application Germany Mar. 1, 1961
7 Claims. (Cl. 62—217)



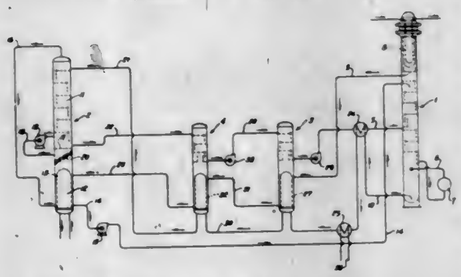
1. A continuous evaporating device for the evaporation of liquids having boiling points below 30° K. comprising an evaporator chamber, a liquid reservoir, a feed pipe extending into said liquid reservoir and in communication with the interior of said evaporator, a vacuum pump, an evacuation line in communication with the low pressure side of said vacuum pump and the interior of said evaporator chamber, a throttle valve means interposed in said evacuation line, and a pressure responsive control means for said throttle valve means including a vapor pressure thermometer filled partly with a liquid having a boiling point below 30° K. and partly with vapor in equilibrium with the condensed phase and connected to sense the temperature at a selected detection point in the vicinity of said evaporator chamber so as to control the flow through said evacuation line in functional dependence upon the detected temperature.

**3,166,916**
**REFRIGERATED CARTONS AND REFRIGERATING MEANS FOR USE THEREWITH**
Sumner Barrows, 2400 Army St., San Francisco, Calif.
Filed Dec. 5, 1963, Ser. No. 328,240
9 Claims. (Cl. 62—237)



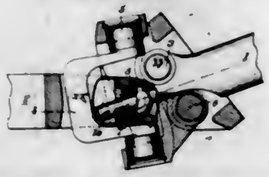
1. Means for refrigerating containers of products for human consumption such as bottled beverages and the like; said means comprising in combination a shipping carton containing a plurality of such containers, said carton having openings to permit circulation of air through the carton, a support having a back wall provided with outwardly projecting shelf-like means upon which the carton is removably mounted, said back wall being also provided with duct-forming members sized for operative connection with said openings in the cartons, and means for circulating chilled air through said duct-forming means into and out of the cartons.

**3,166,917**
**ABSORBER-EVAPORATOR UNIT FOR AN ABSORPTION-REFRIGERATION SYSTEM**
Robert J. Hallatt, Tulsa, Okla.; Charles A. Whitebook, executor of said Robert J. Hallatt, deceased, assignor to Robert L. Rorschach, Tulsa, Okla.
Filed May 16, 1962, Ser. No. 195,188
2 Claims. (Cl. 62—496)



1. In an absorption-refrigeration system,
(*a*) a casing with the upper portion of the casing defining an absorber and the lower portion of the casing defining an evaporator,
(*b*) means disposed within the casing for closing off the absorber from the evaporator,
(*c*) first conduit means interconnecting the upper end of the absorber with the lower portion of the evaporator,
(*d*) second conduit means located on the exterior of the casing and connecting the upper end of the evaporator with the lower end of the absorber, said absorber, first conduit means, evaporator and second conduit means comprising a closed system with said closed system containing an inert gas,
(*e*) means located within said second conduit means for circulating the inert gas through the system and for circulating refrigerant vapor from the evaporator to the absorber, said last-named means developing a small pressure head which adds to the pressure in the absorber to improve the efficiency of the absorbing operation while maintaining the pressure in the evaporator at a minimum level to thereby maintain a minimum working temperature,
(*f*) third conduit means for introducing liquid refrigerant to the evaporator, and
(*g*) a perforated member disposed within the upper portion of the evaporator beneath the connection of the second conduit means with the evaporator and above the connection of the third conduit means with the evaporator for preventing entrained particles of liquid refrigerant from passing within said second conduit means.

**3,166,918**
**UNIVERSAL JOINTS, ESPECIALLY FOR AUTOMOBILE VEHICLES**
Gaston Robert Bouchard, 3 Rue Henri Barbusse, Bougival, France
Filed Apr. 4, 1963, Ser. No. 270,713
Claims priority, application France, Apr. 13, 1962, 894,474
6 Claims. (Cl. 64—17)

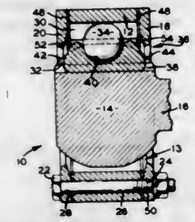


1. For use in a system including two shafts, a first one and a second one, a universal joint device for coupling said shafts together which comprises, in combination, two pivot members carried by said respective shafts, practically without axial play, about respective pivot axes at right angles to said shafts, one of said axes, called first pivot axis, intersecting the axis of the first shaft, by which it is carried, the other of said pivot axes being called the second pivot axis, and intermediate connecting means between said shafts, said connecting means comprising two parts pivoted to each other, practically without axial play, about a third pivot axis, said parts being pivotally connected with said shafts, respectively, about said two first mentioned pivot axes, said third pivot axis being orthogonal to said two first mentioned pivot axes, said connecting means further comprising on the one hand a male element at least a portion of the external surface of which is of revolution about an axis, said male element being carried by one of said shafts and so disposed that said last mentioned axis of revolution intersects the axis of the last mentioned shaft at right angles thereto, and on the other hand a female element carried by the other of said shafts and arranged to have its inner wall constantly in contact, along at least one line, with the external surface of revolution of said male element, said male and female elements being movable with respect to each other in a direction parallel to one of the two first mentioned pivot axes, and said male element being slidable with respect to one of said shafts parallelly to the axis thereof.

**3,166,919**
**CONSTANT VELOCITY UNIVERSAL JOINT**
John A. Kayser, Oregon, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed May 14, 1962, Ser. No. 194,368
10 Claims. (Cl. 64—21)

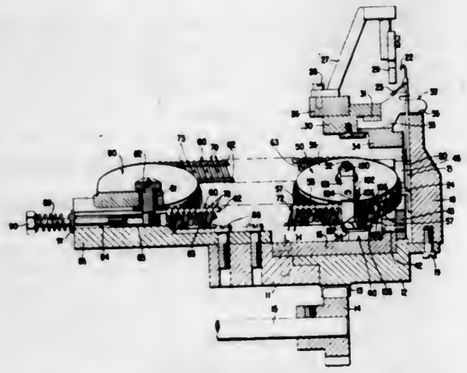
1. A constant velocity universal joint comprising in combination an outer member having an axially extending opening, an inner member received in said opening, a plurality of separate and independent torque transmitting means drivingly connecting said members, a plurality of positioning means carried by at least one of said members with each of said positioning means positionably engaging a different one of said torque transmitting means and including a plurality of resilient means for individually





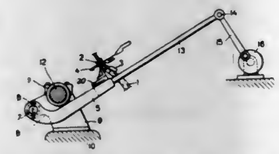
biasing said torque transmitting means to a uniplanar relationship bisecting the angle defined by said members, said positioning means being independently movable relative to each other whereby variations in dimensional tolerances and coupling loads can be accommodated thereby.

**3,166,920**
**PATTERNING MECHANISM FOR KNITTING MACHINES**
Lester Mishcon, Miami Beach, Fla., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 26, 1962, Ser. No. 212,504
12 Claims. (Cl. 66—50)



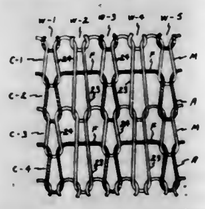
1. In a knitting machine having a frame, a bed in which a multiplicity of knitting elements are independently constrained for relative movement, said frame and said bed being movable one relatively to the other, a patterning mechanism carried by said frame for influencing in seriatim the relative movement of said knitting elements, said patterning mechanism comprising a plurality of jack elements articulated in an endless chain, means driven by direct engagement with said knitting elements upon movement of said frame relatively to said bed for advancing said jack elements in said endless chain each into registry with a respective knitting element in said bed, guide means on said frame for constraining that portion of said endless chain of jack elements in registry with said knitting elements to move in a path inclined to the path in which said knitting elements are constrained to move, cam means formed on selected individual jack elements in said endless chain of jack elements, said cam means disposed for direct engagement with the respective knitting elements into registry with which said selected jack elements are advanced, and each cam means being disposed in any selected one of a plurality of positions laterally of said path of motion of said chain of jack elements defined by said guide means.

**3,166,921**
**WEB HOLDER FOR HIGH SPEED QUILTING AND KNITTING MACHINE**
Vladimír Svoboda, Vaclav Opatřil, and Alois Kubelka, all of Brno, Czechoslovakia, assignors to Sdruzeni podniku textilniho strojirenstvi, Liberec, Czechoslovakia
Filed Apr. 23, 1962, Ser. No. 189,580
Claims priority, application Czechoslovakia, Apr. 28, 1961, 2,622/61
7 Claims. (Cl. 66—84)



1. A web holder arrangement for a quilting and knitting machine, comprising, in combination, an elongated web holder; a plurality of arm means secured to said web holder spaced along the length of the same and transversely projecting from the same; support means for supporting said arm means for angular movement about an axis parallel to said web holder; and drive means located spaced from said axis and operable for angularly reciprocating said arm means and said web holder.

**3,166,922**
**KNITTED SEAMLESS HOSIERY AND PROCESS OF MAKING SAME**
Orin R. York and Joe G. Walser, Jr., High Point, N.C., assignors to Morpul Research, Inc., a corporation of North Carolina
Filed May 14, 1962, Ser. No. 194,531
1 Claim. (Cl. 66—172)

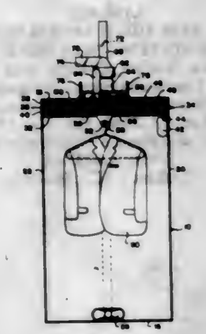


A self supporting, knitted seamless sock having a foot portion and a leg portion,
(*a*) said leg portion having a plurality of courses of multi-filament, synthetic, thermoplastic, stretchable yarn knitted at every wale and a plurality of courses of preshrunk multifilament, synthetic, thermoplastic stretchable yarn knitted at selected wales and floating across intervening wales whereby a mock rib portion is obtained which retains its inherent stretchability after the sock is subjected to finishing operations.

**3,166,923**
**DRY CLEANING APPARATUS**
Louis Zacks, Vancouver, British Columbia, Canada, assignor to Zacks Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Sept. 12, 1963, Ser. No. 309,371
16 Claims. (Cl. 68—5)

1. Apparatus for dry cleaning articles in residences comprising a vapor-proof pliable cabinet, means for supporting articles within said cabinet, means for injecting atomized cleaning fluid into said cabinet, means con-

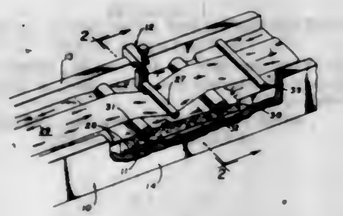
nected to said cabinet operable to impart a vibratory motion thereto, means adapted to circulate said cleaning fluid under pressure and in vapor form throughout the



cabinet and articles therein, and exhaust means for selectively evacuating spent cleaning fluid from said cabinet.

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**3,166,924**
**THREE-SECTION CASCADE**
**Bernard D. Marcello, Decatur, Ala., assignor to Monsanto Company, a corporation of Delaware**
**Filed Jan. 20, 1964, Ser. No. 338,758**
**1 Claim. (Cl. 68—19)**



An apparatus for continuously stripping and wringing a filamentary tow comprising:

(*a*) a cascade containing a washing fluid, said cascade being provided with a well,

(*b*) a first stripper bar stationarily mounted in said well, said stripper bar being adapted to engage and raise said tow from said washing fluid,

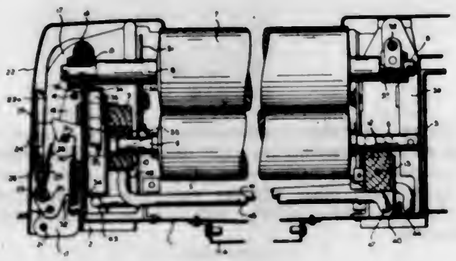
(*c*) a second stripper bar stationarily residing in said well in contact with said tow thereby wringing and stripping the same,

(*d*) a third stripper bar adjustably mounted on said cascade between and above said first stripper bar and said second stripper bar and being adapted to be lowered into contact with said tow for stripping and wringing the same, said third stripper bar including a set of clamps rigidly clutching the walls of said cascade, said clamps each having an arm extending over said cascade, the said arm having therein a threaded hole, an adjusting screw being provided for and being received by each threaded hole, said adjusting screw having a handle mounted at one end and a ball at the other, a linkage for each of said adjusting screws having a socket therein for receiving said ball of said adjusting screw in a pivoting engagement, said linkage also having a hole therein for rigidly receiving an extension of said stripper bar, said stripper bar connecting the linkages thereby forming a single interconnecting element, and

(*e*) an aligning bar rigidly mounted in said cascade for lowering said tow into contact with said washing fluid.

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**3,166,925**
**WRINGER**
**Cleo B. Olsen, Waterloo, Iowa, assignor to Chamberlain Corporation, Waterloo, Iowa, a corporation of Iowa**
**Filed Oct. 26, 1962, Ser. No. 233,298**
**7 Claims. (Cl. 68—256)**



7. In a wringer,

a frame,

upper and lower rolls in said frame,

pressure setting means to force said upper roll downwardly against said lower roll,

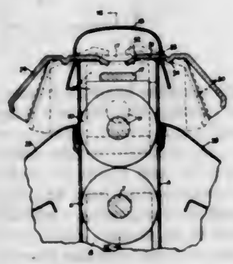
a torsion bar beneath said lower roll having an upwardly angled end portion,

means anchoring the other end of said bar against movement, and

means associated with the lower roll and forced downwardly against said end portion to twist said bar when the upper roll is forced against the lower roll and apply pressure on said rolls.

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**3,166,926**
**EXCESS ROLL SEPARATION PRESSURE RELEASE MEANS FOR WRINGERS**
**Cleo B. Olsen, Waterloo, Iowa, assignor to Chamberlain Corporation, Waterloo, Iowa, a corporation of Iowa**
**Filed Nov. 20, 1962, Ser. No. 238,855**
**7 Claims. (Cl. 68—259)**



6. In a wringer,

(*a*) a frame,

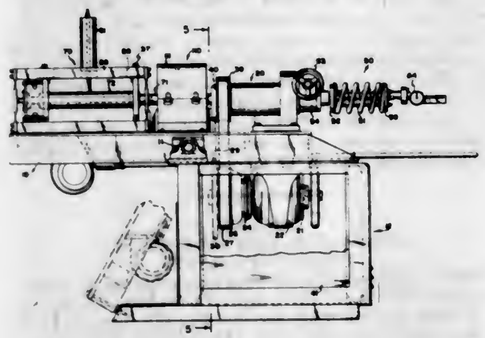
(*b*) upper and lower rolls in said frame,

(*c*) means to apply pressure in a first direction on said rolls, said means being forced in an opposite direction upon separation of the rolls, and

(*d*) a manually engageable and operable pressure release bar having a part thereof in the path of said opposite movement of said pressure applying means and operable both manually and, upon excess roll separation, by said pressure applying means.



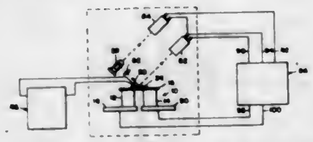
**3,166,927**
**LUBRICANT TESTING MACHINE**
**Alfred Sonntag, Greenwich, and Albert E. Bowen, Jr., Old Greenwich, Conn., assignors to The Alpha Molykote Corporation, Stamford, Conn.**
**Filed May 17, 1961, Ser. No. 110,700**
**11 Claims. (Cl. 73—10)**



1. A machine for measuring resistance to relative motion between first and second annular test specimens which comprises a first hollow shaft angularly movable about its longitudinal axis, an inner end thereof being fixedly engageable with the first of said test specimens; a second hollow shaft in axial alignment with the first shaft having an end for receiving the second of said test specimens and provided with means for preventing relative rotation of said second specimen and said second shaft; means for maintaining said first and second test specimens in mating contact with one another; a flexible elongated tension member within and extending beyond the outer end of the first shaft for applying a preselected load to the second test specimen to exert pressure on the first test specimen; and means secured to the second shaft for sensing the torque transmitted from the first specimen to the second specimen upon angular movement of the first shaft.

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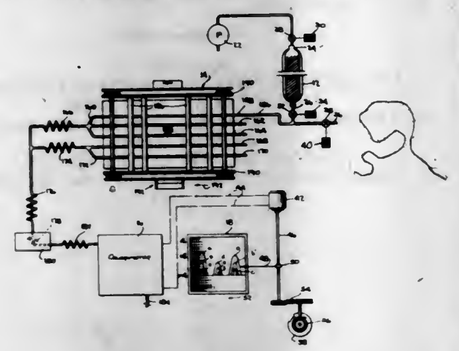
**3,166,928**
**ELECTRICAL AUTOMATIC DEW POINT HYGROMETER**
**Justin M. Jackson and Kazuyuki R. Ono, Bridgeton, William J. Superior, Seabrook, and Charles W. Thornthwaite, Elmer, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed June 28, 1961, Ser. No. 120,448**
**11 Claims. (Cl. 73—17)**



1. In an apparatus for obtaining a substantially synchronous running index of the dewpoint of successive portions of a gas sample, a photocell, a light-reflector, a light source, light beams of equal intensity continuously directed from the source toward the photocell and reflector, a photocell receiving light reflected from the reflector, a sample of the gas in contact with the reflector, means including a thermoelectric heat pump affixed to said reflector responsive to any appreciable difference between the ratio of the intensities of light received by the respective photocells and a given ratio which obtains when the reflector is coated to a predetermined depth for bringing the reflector to a temperature at which the reflector is coated to said depth by condensation of moisture from the sample, and means for reading out an index of the temperature of the reflector when said ratios are equal.

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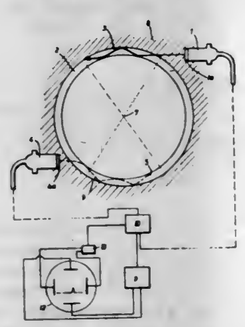
**3,166,929**
**CHROMATOGRAPHY ANALYSIS APPARATUS WITH STANDARDIZATION PROVISION**
**Milton H. Pelavin, Greenburgh, N.Y., assignor to Technicon Chromatography Corporation, Chauncey, N.Y., a corporation of New York**
**Filed July 13, 1961, Ser. No. 123,721**
**7 Claims. (Cl. 73—53)**



1. Chromatography analysis apparatus, comprising a chromatography column, analyzing means, means for controlling the flow of eluate from said column to said analyzing means for the eluate analyzing operation of said analyzing means, means for controlling the flow of a standard liquid having a known constituent of known concentration to said analyzing means in lieu of said eluate for standarization operation of said analyzing means, and means responsive to the operation of said analyzing means for controlling the operation of each of said controlling means to permit the flow of said standard liquid to said analyzing means in lieu of said eluate for standardization operation of said analyzing means.

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**3,166,930**
**ULTRASONIC TESTING**
**Gunther Zollmer, Saalfelderstrasse 6, Cologne-Hohenberg, Germany**
**Filed Jan. 23, 1961, Ser. No. 83,963**
**Claims priority, application Germany, Jan. 28, 1960, K 39,753**
**3 Claims. (Cl. 73—67.7)**

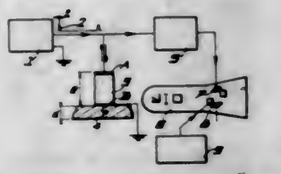


2. Apparatus for testing longitudinally extending tubes and like test pieces for faults by measurement of the time interval between an ultrasonic pulse and its echo, comprising separate transmitting and receiving probes each

having ultrasonic transducer means, said probes spaced adjacent the periphery of the test piece in a plane substantially at right angles to the longitudinal axis of the test piece and at an angle with respect to the surface of the test piece, said transmitting probe being faced at a slant to the surface of the test piece to propagate ultrasonic pulses about the circumference of the test piece, and said receiving probe being faced at a similar slant to the surface of the test piece substantially 180° about the circumference from the transmitting probe to extend in the direction of propagation of the pulses thereby to minimize pickup of transmitted pulses and receive echos reflected by defects in the test piece.

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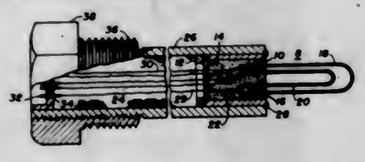
**3,166,931**
**ULTRASONIC INSPECTION APPARATUS USING SHORT ELASTIC PULSES**
**Paul Renaut and Jacques Dory, both of 9 Ave. des Sapins, Saint-Maur, France**
**Filed Nov. 15, 1956, Ser. No. 622,415**
**Claims priority, application France, Nov. 26, 1955, 703,378**
**12 Claims. (Cl. 73—67.8)**



1. A device for testing an object comprising means for transmitting into the test object recurrent elastic pulses; means for receiving the echoes resulting from back reflection of said pulses from said object; said transmitting means comprising a pulse generator producing recurrent mono-oscillation pulses each having a duration *t*, and a piezo-electric transducer having a transmitting face mounted in vibration transmitting relation to the test object and at least two conducting surfaces connected to said generator and at least one of which is substantially parallel to said transmitting face, the "thickness" of said transducer being substantially greater than the distance *d* from the transmitting side of said transducer to any reflecting surface within the test object.

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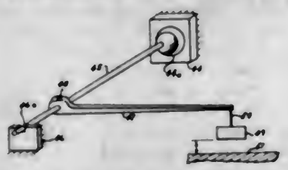
**3,166,932**
**CORROSION-TEST PROBE WITH REPLACEABLE TEST SPECIMENS**
**Lynn E. Ellison, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio**
**Filed Dec. 22, 1961, Ser. No. 161,720**
**6 Claims. (Cl. 73—86)**



1. A corrosion-test probe comprising an elongated, hollow, metallic supporting member, an insulating plug, containing electric connector elements, mounted at one end of said supporting member for connecting the probe to an electric measuring circuit, a detachable assembly slidably mounted in and soldered to the tip of the opposite end of said supporting member, said detachable assembly comprising (1) a hollow metallic member, relatively short as compared with said supporting member and shaped to conform to the adjacent bore of said supporting member (2) a reference specimen tightly sealed to said short hollow member and (3) a test specimen tightly sealed to said short hollow member and carried in exposed relation beyond said supporting member, flexible electrical conductors, extending through said elongated hollow, metallic supporting member and connecting said test specimen and said reference specimen to said electric connector elements, said conductors being freely extendable and of sufficient length within said supporting member to permit detachment of said detachable assembly after removal of the soldered connection with the tip by slidably removing it from said opposite end of the supporting member, without disturbing the electrical connections at said electrical connector elements, and to permit replacement of another detachable assembly in the supporting member.

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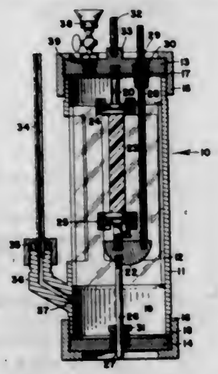
**3,166,933**
**APPARATUS FOR MEASURING CORROSION RATES**
**Carl W. Gerhardt, 2945 Dryden Road, Dayton 39, Ohio**
**Application Sept. 7, 1960, Ser. No. 54,553, which is a division of application Ser. No. 514,408, June 9, 1955, now Patent No. 2,972,248. Divided and this application June 25, 1963, Ser. No. 290,567**
**2 Claims. (Cl. 73—86)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



2. A corrosion rate measuring apparatus comprising a frame, a corrodible resilient rod rigidly attached to said frame, said rod being made of such material that it will lose measurable resistance to bending with time when placed in a corrosive environment, and a weight attached to said rod at a point spaced from said frame, said weight being spaced from a fixed reference point, from which distance measurements may be taken between the reference point and the weight.

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**3,166,934**
**LIQUID DISPLACEMENT STRAIN INDICATOR**
**Robert B. Kruse, Huntsville, Ala., and John B. Baldwin, San Jose, Calif., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**
**Filed June 22, 1962, Ser. No. 204,402**
**14 Claims. (Cl. 73—94)**

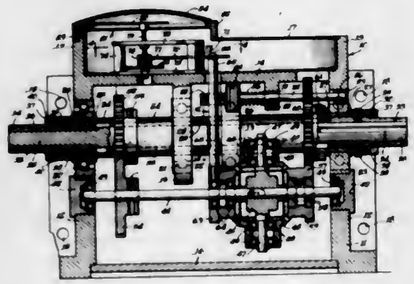


3. A liquid-displacement strain indicator for measuring the change in volume of an elastomeric material being strained, comprising a hollow, liquid-filled container having axially aligned therein a fixed and a movable means for applying a deforming force to the elastomeric material, and a compensating means cooperating with said movable means to maintain a constant volume of said movable and said compensating means within said container.



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**3,166,935**
**CONTINUOUS READING TORQUE METER**
**Edward V. Sundt, 1865 Miner St., Des Plaines, Ill.**
**Filed Mar. 21, 1961, Ser. No. 97,294**
**10 Claims. (Cl. 73—136)**

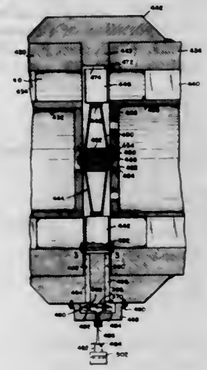


1. A continuous reading torque meter comprising, a rotatably mounted elongated torque member which twists in accordance with the torque transmitted therethrough, a pair of aligned sleeves connected respectively to the torque member at spaced apart points near the ends thereof and having spaced apart interlocking stop projections on their inner ends for limiting the amount of twisting of the torque member between said spaced apart points, differential means connected to the torque member at said spaced apart points near the ends thereof and operated in accordance with the twisting of the torque member between said spaced apart points, and an indicator operated by the differential means for indicating the amount of twisting of the torque member between said spaced apart points and hence the torque being transmitted therethrough.

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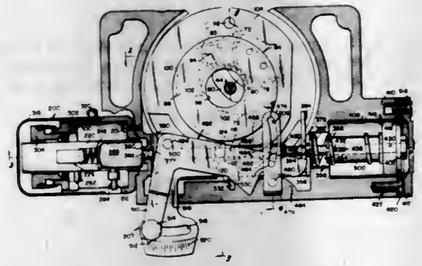
**3,166,936**
**TURBINE FLOW METER**
**Harry W. Fisher, Richard L. Crumley, and Henry E. Lehman, Pittsburgh, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Apr. 27, 1960, Ser. No. 24,942**
**4 Claims. (Cl. 73—231)**

1. In a turbine meter having a hollow housing defining a fluid flow passage therethrough, a turbine rotor having a plurality of peripherally spaced blades mounted in said housing for rotation in response to fluid flow through said passage and having at least one permanent bar magnet carried by one of said blades for rotation therewith, a magnetically actuatable switch disposed exteriorly of said housing adjacent to the path of rotation of said magnet for actuation once during each revolution of said magnet and having at least one contact strip of non-permanent magnetizable material disposed radially outwardly of said magnet substantially in parallel relation to the longitudinal axis of said magnet, means connecting said switch to an electrical circuit, and a pair of members of non-permanent magnetizable material disposed at least partially in said housing radially between said contact strip and the rotational path of said magnet, said members being axially spaced apart relative to the rotational axis of said rotor and being operable to establish a closed magnetic flux path passing through said strip and said magnet whenever said magnet is rotated into the range of said strip.



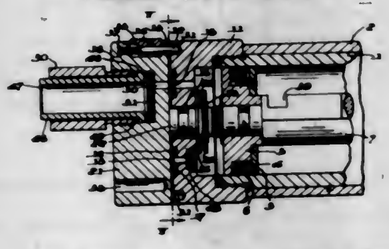
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**3,166,937**
**COMPENSATING APPARATUS FOR FLUID METER**
**Thomas C. Farrell, Glenshaw, Pa., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Dec. 15, 1960, Ser. No. 76,049**
**24 Claims. (Cl. 73—233)**



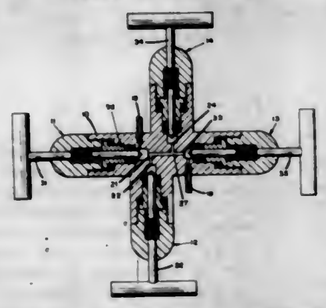
1. In a fluid meter having a metering element fluid driven member and a register drive member, a driving connection coupling said driven and drive members and comprising a variable speed transmission mechanism having an input connected to said metering element driven member and an output connected to said register drive member; and means for controlling the driving ratio of said mechanism in response to the temperature of the fluid being metered including a linearly-movable member mounted for predetermined movement in response to variations in the temperature of the fluid being metered, a link mounted for unitary movement with said member and being pivotally adjustable to a fixed angular position with respect to said linearly movable member, a pivotally mounted lever member operably connected to said mechanism and operable upon pivotal movement thereof to vary said driving ratio, and motion transmitting means interconnecting said link and said lever member for transmitting movement of said linearly-movable member to swing said lever member about its axis, said motion transmitting means being operable by adjustment of the angular position of said link to vary the angular distance through which said lever member is pivoted in response to movement of said linearly-movable member.

3,166,938
FLUID SAMPLING DEVICE
John A. Weyrauch, Pittsburgh, Alexander Crawford McInnes, Export, and Robert Stanley Kush, Jeannette, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 21, 1962, Ser. No. 196,292
7 Claims. (Cl. 73—421.5)



1. A fluid sampling device comprising a barrel, a head closing the front end of the barrel, a piston in the barrel normally near said head, a piston rod extending from the piston back through the barrel and out of its rear end, a handle on the outer end of the rod, said head being provided with a plurality of circumferentially spaced orifices therethrough of different sizes, a control plate in front of said head covering said orifices, and means rotatably connecting the plate to the head, the plate being provided with a passage therethrough adapted to be selectively aligned with any of said orifices by turning the plate, whereby when the handle is pulled back a fluid will be drawn into the barrel through said passage and the orifice aligned with it.

3,166,939
SAMPLE VALVE
Raymond C. Koeller, Tulsa, Okla., and William C. Ziegenhain, Baytown, Tex., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Sept. 25, 1961, Ser. No. 140,576
1 Claim. (Cl. 73—422)



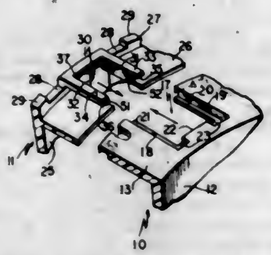
A high-pressure fluid sampling valve comprising a composite valve body, four needle valves extending into said body with their stems lying in a plane and oriented 90° apart, the chambers and seats of two opposite ones of said four valves being at the two respective ends of a central passage through said body forming a sample-holding chamber therein, and the chamber and seat of each of the other two opposite ones of said four valves being at the end of a short passage extending perpendicularly from said central passage near a corresponding one of its ends, four passages each extending from a chamber of a corresponding one of said four valves outwardly through said body perpendicular to said plane, two of said four passages extending in the opposite direction from the remaining two of said passages, each two of said passages having the same direction extending from the chambers of two adjacent valves having their seats farthest apart within said body, and a high-pressure by-pass passage including a tubing external to said body connecting the chambers of two opposite ones of said valves.

3,166,940
PIPETTE
Marjorie M. Allisbaugh and John H. Allisbaugh, both of 6308 Breamore Road, Indianapolis, Ind.
Filed Mar. 23, 1961, Ser. No. 97,922
4 Claims. (Cl. 73—425.4)



1. A pipette comprising a tube composed of a thin flexible strip of a transparent cellulose plastic material helically wrapped to a uniform diameter, said tube having one end integral with the tube and formed of said material, said material being deformed at said one end to provide a reduced diameter opening therethrough.

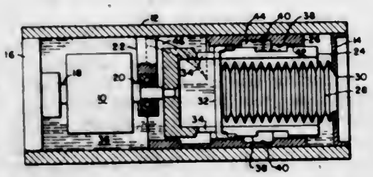
3,166,941
GAUGE COVER CASE AND BACK PLATE
Ralph D. Waite, Sellersville, and Earl Donald Zack, Quakertown, Pa., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,726
10 Claims. (Cl. 73—431)



1. In a gauge casing, a cover comprising a circular face portion surrounded by a cylindrical wall, said wall having an opening with track means along parallel spaced edges of said opening; a back plate for said casing; an integral cylindrical wall surrounding said back plate, said back plate wall having an opening therein; track means along spaced parallel edges of the opening in the back plate wall, the construction and arrangement of the parts being such that the back plate is received within the face wall and the track means along the parallel edges of both openings interfit; and means on the face wall and back plate providing a snap fit when the face portion and back plate are forced together.

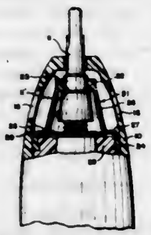


3,166,942
DAMPING DEVICE
Joseph F. Huff, Hyde Park, Mass., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Jan. 7, 1964, Ser. No. 336,228
12 Claims. (Cl. 74—5.5)



1. A device for damping rotation of a first element relative to a second element comprising a first and a second cylindrical member concentric with one another, one of the cylindrical members being disposed at least partially within the other cylindrical member to provide facing cylindrical surfaces, the first cylindrical member being attached to the first element and the second cylindrical member being attached to the second element whereby the cylindrical members are rotated relative to one another by the elements, the facing surfaces of the cylindrical members each including at least one land and one groove providing overlapping lands and grooves in said concentric cylindrical members, means for moving one cylindrical member longitudinally relative to the other cylindrical member, and a damping liquid between the facing surfaces of the cylindrical members whereby the damping liquid between the overlapping lands exerts a damping force restricting relative rotational movement of the cylindrical members and whereby the damping force is varied by longitudinal movement of one cylindrical member relative to the other cylindrical member to vary the overlapping area of the lands.

3,166,943
WATERTIGHT SEALING MEANS FOR ELECTRIC TOOTHBRUSHES AND THE LIKE
Robert Simmen, Geneva, Switzerland, assignor to Etablissement Aesup, Vaduz, Liechtenstein, a firm of Liechtenstein
Filed Sept. 4, 1962, Ser. No. 221,258
4 Claims. (Cl. 74—18)



1. In an electrically-operated hand appliance for personal care including a substantially watertight casing forming a handle, a shaft accessible from the outside of said casing and adapted for the attachment of an appliance head thereto, and an electric motor in said casing for producing rotational oscillation of said shaft and thereby of said appliance head, means for producing a watertight seal between said rotationally oscillating shaft and said casing which comprises

(*a*) a hollow non-reentrant sleeve of thin flexible water-impermeable material encircling said shaft inside said casing and extending therealong a substantial distance,

(*b*) said sleeve having a smaller diameter end thereof affixed in substantially watertight relationship around said shaft and a larger diameter end engaging an inner annular surface of the casing which extends generally in the direction of said shaft,

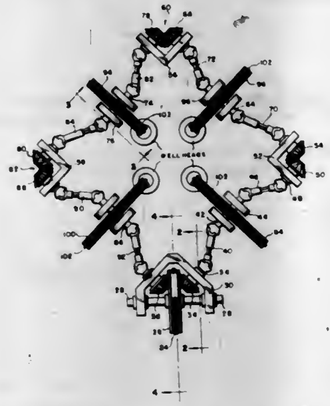
(*c*) and a clamping ring inside the larger diameter end of the sleeve for firmly clamping the end to said inner annular surface of the casing,

(*d*) said sleeve having a flaring section extending from the smaller diameter end thereof and a laterally-extending annular section joining the flaring section with the larger diameter end thereof,

(*e*) said laterally-extending annular section making a substantial bend with the flaring section at the junction thereof and a substantial bend with the adjacent clamped portion of the sleeve and spaced therefrom,

(*f*) said flaring section being substantially spaced from the shaft and casing and the laterally-extending section being substantially spaced from the clamping ring and casing to avoid rubbing contact therewith during operation.

3,166,944
WELL-PUMPING SYSTEM
Charles B. Corley, Jr., Houston, and Peter R. McStravick, Tomball, Tex., assignors, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,616
2 Claims. (Cl. 74—95)

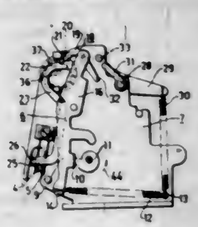


1. A well-pumping system for simultaneously pumping a multiple completion well comprising: a pumping unit; a main drive shaft; a single main drive pulley rigidly mounted on the main drive shaft; a cable connected to the pumping unit and the main drive pulley so that the main drive pulley is moved in back-and-forth rotative movement; a plurality of pulley drive shafts operated by the main drive pulley; supporting means for supporting the plurality of pulley drive shafts; at least one pulley mounted on each pulley drive shaft; and means connected to each pulley and leading to a corresponding completion for operating a subsurface pump.

3,166,945
IMPULSE GENERATOR
Sven Hakan Wallqvist, Halmstad, and Bengt Anders Björk, Getinge, Sweden, assignors to Haldex Aktiebolag, Knaredagaten, Sweden, a corporation of Sweden
Filed July 3, 1961, Ser. No. 121,676
4 Claims. (Cl. 74—142)

1. In an impulse generator for electric counters and the like having a frame, a first pivot on said frame, a

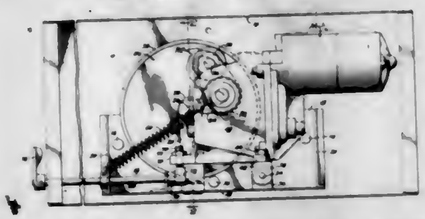
primary lever pivotally mounted on said first pivot, a pawl element pivotally mounted on said primary lever at a point remote from said first pivot, a rotatable cam disk mounted on said frame positioned to contact said primary lever to cause pivotal movement of said primary lever whereby said pawl element is oscillated, biasing means holding said primary lever against said cam disc, means to rotate said cam disc, a switch operating member mounted to be operatively engaged by said pawl element to be moved thereby as said primary lever moves in



one direction, an electric switch means, said switch operating member including means to actuate said switch means when moved by said pawl element, a second pivot on said frame, an arm pivotally mounted on said second pivot operatively connected to said means to rotate said cam disc to periodically move said arm, said arm being positioned to contact said pawl element upon movement of said arm whereby said arm is pivoted on said second pivot to disengage said pawl element from said switch operating member.

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**3,166,946**
**DUAL SPEED DRIVE**
**Hoyt K. Veber, Kellogg, Iowa, assignor to Midwest Metal Stamping Company, Kellogg, Iowa, a corporation of Iowa**
**Filed May 14, 1962, Ser. No. 194,490**
**4 Claims. (Cl. 74—207)**

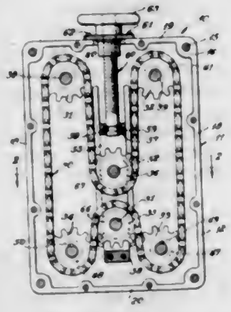


2. A dual speed drive comprising a housing adapted to be secured to a device having a driven shaft, a drum rotatable in said housing and having means of operative connection with the driven shaft, said drum having a hub and a rim, a step-down gearing housing, a pair of friction rollers carried thereby, frictionally engaging each other and one thereof being driven from the output shaft of step-down gearing in said step-down gearing housing, a motor for driving the input shaft of said step-down gearing, said step-down gearing housing being pivotally mounted in said first housing, and means for selectively pivoting said step-down gearing housing to engage one of said friction rollers with said hub or the other of said friction rollers with the internal surface of said rim.

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**3,166,947**
**PHASE VARIATOR**
**Robert V. Hendershot, 1408 Main St., Evanston, Ill.**
**Filed Apr. 17, 1963, Ser. No. 273,715**
**2 Claims. (Cl. 74—216.5)**

1. In a device for shifting the operational position of a control member in a mechanism relative to its drive means, the combination comprising a fluid tight housing for containing a body of lubricating fluid, six coplanar sprocket wheels mounted within said housing for rotation on parallel spaced axes, four of said sprocket wheels being arrayed at the four corners of a substantially rectangular pattern and the remaining two sprocket wheels being disposed on parallel spaced axes located wholly between said four sprocket wheels and within the boundaries of said pattern, rectilinearly shiftable adjusting means having operating means therefor accessible exteriorly of said housing for reciprocating the same, said adjusting means supporting said remaining two sprocket wheels for simultaneous rectilinear shifting movement in like directions along a linear path constantly parallel to and between the rotational axes of said four sprocket wheels and within the boundaries of said pattern, a first one of said four sprocket wheels having positive driving connection with a drive means, a second one of said four sprocket wheels having driving connection with a con-



trol member whose operational position is to be regulated and the remaining two of said four wheels constituting idler wheels, and endless chain means trained about all six of said sprocket wheels to effect simultaneous rotation thereof in response to the rotational driving of said one sprocket wheel, said chain means passing along two opposite boundaries of said pattern, about the outer peripheries of said four wheels and in between said remaining two sprocket wheels, the rectilinear shifting of said two sprocket wheels causing an effective movement of said chain means about the axes of all of said sprocket wheels except the said first one thereof which is connected with the drive means so as to produce rotational movement of said second sprocket wheel relative to said first one sprocket wheel and correspondingly move the control member connected to the latter independently of the operating motion imparted thereto by the normal driving movement of said chain means effected with the rotation of said first one sprocket wheel.

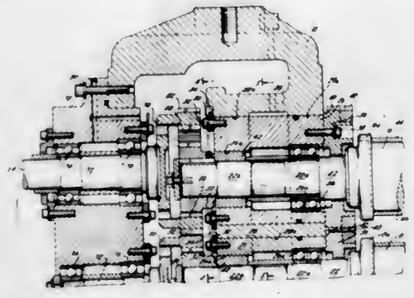
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**3,166,948**
**DRIVING MECHANISM FOR ORBITALLY ADJUSTABLE ROTARY SHEAR CUTTER MANDRELS**
**Thomas J. Crowe, Mount Fern, N.J., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York**
**Filed Apr. 10, 1963, Ser. No. 271,945**
**2 Claims. (Cl. 74—397)**

1. A driving mechanism for a pair of parallel, cutter-carrying mandrels, comprising a first journal integral with one of said mandrels and orbitally adjustable to vary the relative positions of the axes of the two mandrels, a toothed pinion rigidly fixed to said journal, a dish gear mounted for rotation about a fixed axis and having an internal ring of teeth concentric with the orbital path of adjustment of said journal and meshing continuously with



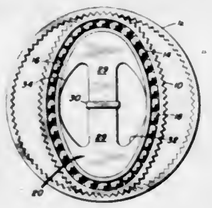
the teeth of said pinion, irrespective of the latter's adjusted orbital position, for driving said pinion and said one of the mandrels, a second journal integral with the other of said mandrels, an external ring of teeth on said dish gear, gear means coacting between said external ring of teeth



and said second journal for driving the latter and said other of the mandrels, and driving means for rotating said dish gear about its said axis to effect driving of both said journals and their related mandrels through said dish gear.

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**3,166,949**
**HARMONIC DRIVE ADJUSTING MEANS**
**Roger H. Lapp, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 9, 1964, Ser. No. 358,674**
**6 Claims. (Cl. 74—433)**



1. In combination with a harmonic drive unit having an internal gear, a flexible, elliptical gear within the internal gear, and a ball bearing raceway within the elliptical gear; an expansible, elliptical disk comprising,
two generally semi-elliptical disk segments, each segment having recesses therein forming tapered fingers,
flexible means for holding said segments in spaced elliptical relation, and
adjustable means for separating said segments a minute distance along the major axis of the ellipse to eliminate any looseness between the various parts of the unit.

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**3,166,950**
**SPEED WARNING DEVICE**
**Herbert Pomeranz, 21 Clifton Ave., Yonkers, N.Y.**
**Filed Feb. 19, 1962, Ser. No. 174,163**
**3 Claims. (Cl. 74—526)**

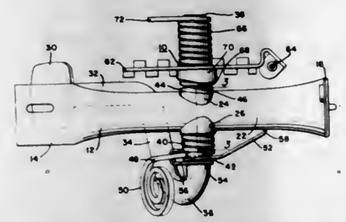
1. An apparatus for attachment to the accelerator of a motor vehicle which comprises, in combination, a base plate secured to the floorboard of said motor vehicle at a point on a line with the arc of travel of said accelerator pedal; and concentric helical springs secured at one end to the said base plate, one of the said concentric helical springs being of greater length than the other, and the shorter concentric helical spring having attached to the other end thereof an adjustably mounted sleevelike keeper ring to control the point where con-



tact is made with the underside of the accelerator pedal when said pedal is depressed towards the floorboard.

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**3,166,951**
**BRAKE CONTROL MECHANISM**
**Jack P. Castellana, Churchville, and Russell R. Roberts, West Webster, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed July 9, 1962, Ser. No. 208,425**
**14 Claims. (Cl. 74—531)**



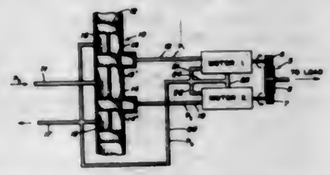
1. In a vehicle parking brake control mechanism, a mounting bracket, a pedal arm having a shaft attached thereto and rotatably mounted on said mounting bracket, a lock and release coil spring having one end fixed to said mounting bracket and the body thereof wrapped about said shaft and normally gripping said shaft in locking relation and the other end thereof being free, said shaft and said coil spring having a tapered relation between the diameters of the adjacent surfaces thereof, an output member, means adjustably securing said output member to said shaft and including a coiled adjusting spring having one end fixed to said output member and a body portion coiled about said shaft in normal gripping relation thereto and a free end movable to uncoil said adjusting spring sufficiently to permit adjustment of said output member relative to said shaft, and means for connecting said output member to a vehicle parking brake system.

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**3,166,952**
**DRIVE SYSTEMS**
**Richard E. Lang, Lincoln, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Oct. 19, 1961, Ser. No. 146,385**
**1 Claim. (Cl. 74—665)**

A drive system for gearing comprising a pair of hydraulically driven motors in opposing torque relationship; a drive gear connected to each motor; a driven gear connected to a load and meshed with both of the drive gears; a hydraulic power supply for said motors, means controlling the admission of the hydraulic fluid to either of said motors and controlling the discharge of said fluid

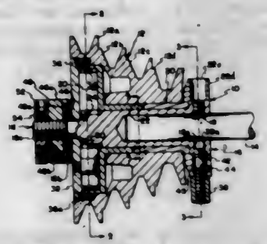
from said motors, whereby one of said motors drives the driven gear in one direction while the other of said motors resists the turning of said driven gear to the extent of



maintaining a torque relationship in opposite directions on said driven gear, while permitting rotation of the driven gear in a selected direction.

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**3,166,953**
**POWER TRANSMISSION MECHANISM**
Henry W. Lange, 15 S. Irving St., Ridgewood, N.J.
Filed Aug. 3, 1962, Ser. No. 214,717
11 Claims. (Cl. 74—785)

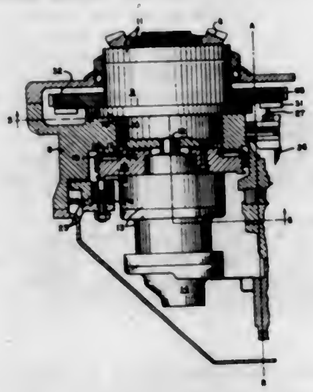


1. A power transmission device comprising a pulley set having a plurality of pulleys of varying diameter with a larger pulley at one end ranging to a smaller one at an opposite end, the interior of said pulley being hollow, a shaft member centered within the interior of said pulley set, a gear affixed to said shaft member for rotation therewith, having external teeth, a plate member closing the end of said pulley set adjacent the largest diameter pulley and surrounding said shaft, means connecting said plate member to said pulley, a planetary gear rotatably mounted on said plate member and having teeth in meshing engagement with the teeth of said pinion gear, an internal annular gear member disposed within said hollow pulley set, including gear teeth in meshing engagement with said planetary gear teeth and further including a hub portion freely rotatable on said shaft located within said pulley set, said hub portion extending to the opposite smaller pulley end of said pulley set, and means at the smaller diameter end of said pulley set extending radially outwardly from said shaft for anchoring said internal annular gear against rotation to permit driving from said shaft to said pulley set.

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**3,166,954**
**INDEX MECHANISM**
Norman W. Fowler and Herman A. Male, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Feb. 6, 1961, Ser. No. 87,314
12 Claims. (Cl. 74—822)

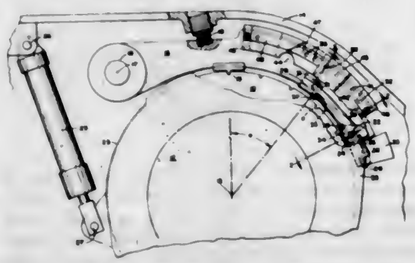
1. An index mechanism comprising a housing, a driven member rotatable in the housing, a drive member rotatable in the housing and having a drive pin for engagement in radial slots in the driven member, the drive member being movable forwardly and rearwardly along its rotation axis to bring the pin respectively into and out of the plane of the slots, a first fluid motor to effect forward and return rotary motions of the drive member through a predetermined angle, respectively to rotatably advance the driven member and to return, a second fluid motor to



effect said axial reciprocation, and valve means for controlling said motors to cause an axial stroke of the drive member to precede each rotary motion thereof, and a rotary motion thereof to precede each axial stroke thereof.

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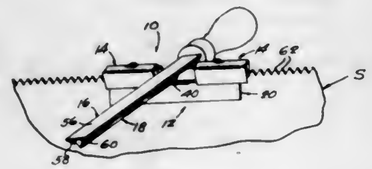
**3,166,955**
**INDEX MECHANISM**
Edwin A. Hediger, Rochester, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Mar. 19, 1962, Ser. No. 180,737
16 Claims. (Cl. 74—822)



1. An index mechanism comprising a support, a notched index plate rotatable on the support, a locking pawl movable on the support between notch-engaging and notch-disengaging positions relative to the index plate, means for urging the locking pawl to such notch-engaging position, a carrier mounted on the support for forward and return motions about the axis of rotation of the index plate, an indexing pawl movable on the carrier between notch-engaging and notch-disengaging positions relative to the index plate, a pivotal interconnection between said pawls for positively moving the indexing pawl respectively to notch-engaging position and to notch disengaging position upon movement of the locking pawl respectively to notch-disengaging position and to notch-engaging position, a locking pawl actuator movable on the carrier, said actuator being engageable with a cam surface on the locking pawl for moving the latter to and holding it in notch-disengaging position during forward motion of the carrier and allowing it to remain in notch-engaging position during return motion of the carrier.



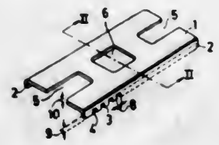
**3,166,956**
**SAW FILING GAUGE**
Peter Watro, 156 Muir Ave., Hazleton, Pa.
Filed July 5, 1963, Ser. No. 292,950
5 Claims. (Cl. 76—36)



1. A saw filing gauge comprising an inverted channel gauge unit adapted to be positioned over the teeth of a saw, said gauge unit comprising coextensive clamps engaged with the opposite sides of a saw below its teeth, channel extensions engaged over the ends of the clamps and adapted to compress the clamps against the saw, said extensions being longitudinally spaced from each other, said extensions having pendant tabs adapted to supportably engage in gullets between adjacent teeth of a saw, the upper edges of the clamps being formed with transversely aligned V-shaped notches, between the extensions, inwardly and downwardly angled shoulders on the clamps leading to opposite sides of the notches, and a file holder for a triangular file having angled side walls adapted to slidably bear upon said shoulders, said clamps being resilient and comprising normally perpendicular lower portions spaced from each other at a distance less than the thickness of a saw to be filed, laterally outwardly and upwardly angled upper portions on the upper edges of the lower portions, and laterally inwardly extending flanges along the upper edges of the upper portions.

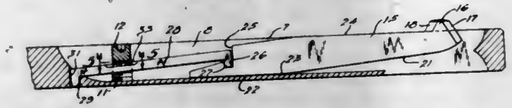
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**3,166,957**
**METHOD OF MANUFACTURING CUTTING PLATES**
Louw Arjen Biesma, Drachten, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1962, Ser. No. 239,240
Claims priority, application Netherlands, Nov. 27, 1961, 271,866
4 Claims. (Cl. 76—104)



1. A method of manufacturing a cutting plate in which the cutting plate is shaped in the form of a trough and teeth are provided in the edges of the trough, comprising cutting off the longitudinal sides of a flat piece of sheet metal of even thickness along the plane in which the cutting sides of the teeth of the cutting plate are located, cutting teeth in the said longitudinal edges and folding over the edges with respect to the main plane of the cutting plate until the longitudinal sides are located in the desired cutting plane at substantially right angles to said cutting plate, and grinding flat the end faces of said bent-over cutting teeth in one plane.

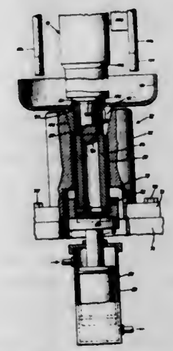
**3,166,958**
**DEBURRING TOOL**
Stuart A. Cogsdill, Orchard Lake, Mich., assignor to Cogsdill Tool Products, Inc., Detroit, Mich., a corporation of Michigan
Filed Aug. 10, 1961, Ser. No. 130,583
4 Claims. (Cl. 77—73.5)



1. In a deburring tool, a cylindrical body having a diametrical slot closed at the bottom extending inwardly from one side thereof, a blade within said slot having a cutting edge extending outwardly at one end and having mating sloping surfaces at the opposite edge forming a fulcrum point which engages the bottom of the slot to rock thereon, a spring within said slot having one end in engagement with the rear end of the blade and the opposite end in engagement with the body, said engagement being such as to lock the spring with the body and the blade against longitudinal separation, said body having a threaded aperture therein in the area of said spring, and a threaded screw within said slot engaging the spring, the forward cutting end of said tool being of less diameter than the diameter of the rearward driven end thereof.

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**3,166,959**
**APPARATUS FOR MOUNTING BEARINGS IN A DYNAMOELECTRIC MACHINE**
Myron D. Tupper, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Original application Nov. 30, 1960, Ser. No. 72,822. Divided and this application Sept. 28, 1961, Ser. No. 141,517
5 Claims. (Cl. 78—1)

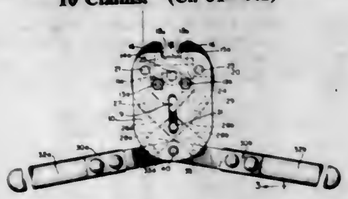


1. Apparatus for forming and assembling a sleeve type bearing onto a bearing support having an aperture for receiving one end of the bearing in an unfinished state, comprising a holding assembly including a housing member having a bore with inclined walls, said walls being dimensionally greatest at the entrance of the bore; a collet member having a plurality of spaced apart sections arranged in sliding engagement with and movable relative to said inclined walls, said sections together forming a recess therein for accommodating the other end of the unfinished bearing; said cooperating collet and housing members including an upper extended position, an intermediate bearing holding position, and a lower bearing bore reducing position, the diameter of said collet recess being greater than the outer diameter of the other end of the unfinished bearing when said collet member is in said upper extended position; a shaft including an elongated pin accurately formed to a predetermined diameter;

said shaft having a raised position with said pin arranged beyond the confines of said recess, a pressure applying position, and an intermediate pressure relieving position, with said pin arranged in and extending the entire length of the collet recess surrounding the other bearing end in the latter two positions; said shaft being movable between said positions thereof; actuating means operatively connected to one of said members for providing relative movement therebetween first to said intermediate holding position and then to said lower bore reducing position; said shaft having a pressure applying surface for attaching the one end of the bearing to the bearing support while said collet member holds the other bearing end when in said holding position, said collet recess having a predetermined inner diameter when in said lower position to compress the bearing radially around said pin with a selected force to size the bearing bore; means causing said collet member and shaft to be moved independently to said upper extended and raised positions respectively for releasing the formed bearing attached to the support from said collet recess; and means preventing upward movement of the support and attached bearing as the shaft is moved into said upper extended position to remove the pin from the bearing bore.

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**3,166,960**
**MECHANICAL APPARATUS**
**Charles C. Roessler, Warminster, Pa., assignor to American Manufacturing Company, Inc., Brooklyn, N.Y., a corporation of Delaware**
**Filed Jan. 8, 1962, Ser. No. 164,884**
**10 Claims. (Cl. 81—9.1)**



1. Apparatus for fastening a seal about strapping material comprising:

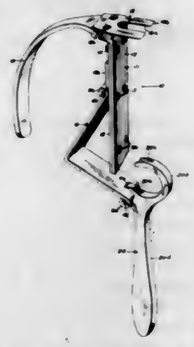
first means including a first plurality of pivoting jaw members having spaces between them for folding the sides of said seal toward one another over said strapping material until they are substantially parallel to the back of said seal, said first means also including movable linkage means coupled to said jaws for transmitting motion thereto, and

second means including a second plurality of jaw members which are slidably positioned between the jaw members of the first plurality of pivoting jaw members for engagement by said linkage means and movable responsive to the movement of said linkage means beyond a predetermined point and constructed and arranged to exert pressure at predetermined points on the back of said seal to force said seal and its contents in the region of said points into the spaces between said first jaw members thereby to produce a plurality of corrugations in said seal and its contents.

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**3,166,961**
**SHEET METAL ROOFING FASTENER BENDER**
**Joseph Edward Chaplin, Sr., 10 Lawton Ave., Savannah, Ga.**
**Filed Sept. 13, 1963, Ser. No. 308,815**
**3 Claims. (Cl. 81—15)**

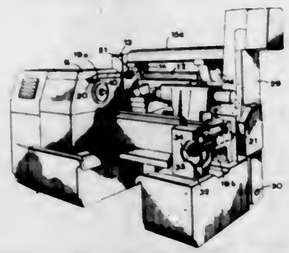
1. A portable tool for bending an elongated sheet metal roofing fastener extending down through the roof adjacent a roof support member comprising, in combination, an elongated main body member having a relatively thin tongue secured to its upper end and extending forwardly generally transversely therefrom for slidable insertion and removal between the sheet metal roofing and its support, said tongue having a slot extending thereinto for receiving said elongated fastener as said tongue is inserted, a handle member attached to said top portion of said main body member for inserting and removing said tool, a generally right angle fastener bending member pivotally attached at one end to the rear side of said main body intermediate its ends with its other end portion adapted to move in an arcuate path below the lower end



of said body member to engage and bend an intermediate portion of said elongated fastener against the adjacent portion of the support member and a clamping lever member pivoted intermediate its ends to said other end of the fastener bending member, said clamping lever member having one end positioned for clamping engagement with the lower end portion of said elongated fastener and the other end portion serving as a handle to pivot the clamping lever and bend the lower end of the elongated fastener around an edge portion of the support member and secure the elongated fastener member to the support member.

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**3,166,962**
**COPYING MACHINE TOOLS**
**Armand Marcel Le Lan, Vanves, France, assignor to H. Ernault-Batignolles, Paris, France, a company of France**
**Filed May 6, 1960, Ser. No. 27,417**
**Claims priority, application France May 11, 1959**
**5 Claims. (Cl. 82—14)**



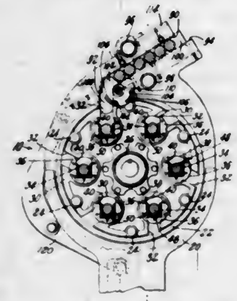
1. In a copying lathe having a headstock and a tailstock means for centering a workpiece in the headstock and the tailstock, a horizontal shaft, means for supporting said shaft parallel to the said workpiece, a rotatable sleeve member on said shaft, a pair of parallel arms projecting from said sleeve member and adapted to support a pattern therebetween for pendulous swinging motion about said shaft, said means for supporting said shaft including a vertical structural element having a substantial portion which is thermally insulated from said headstock, means attaching said element to said headstock for



restricted displacement relative thereto, and connecting means connecting said thermally insulated portion of the element to said headstock and adapted to move said portion about the attaching means upon thermal expansion of said headstock so as to maintain the parallel relation between the shaft and the workpiece.

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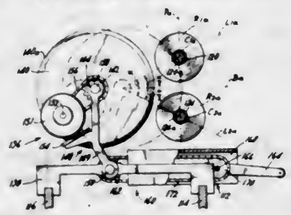
**3,166,963**
**STOCK REEL**
**Roger W. Brown, Windsor, Vt., assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware**
**Filed Sept. 11, 1961, Ser. No. 137,212**
**7 Claims. (Cl. 82—38)**



1. A stock reel comprising a reel base, a stock carrier rotatably mounted upon said reel base, a plurality of generally U-shaped upright stock supporting members rotatably mounted on the stock carrier for movement about axes lying parallel to the axis of rotation of the stock carrier, first torque transmitting means fixed to the stock supporting members, and means connected to said first torque transmitting means maintaining the stock supporting members upright during rotation of the stock carrier whereby the stock is maintained by its own weight in engagement with the stock supporting members during a complete revolution of the stock carrier.

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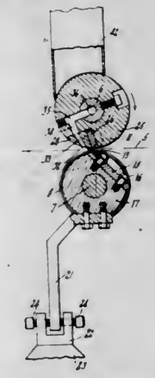
**3,166,964**
**ROTARY KNIFE MACHINE FOR CUTTING MULTIPLE ROLLS**
**David N. Judelson, New York, N.Y., assignor to Oscar I. Judelshon, Inc., Jersey City, N.J., a corporation of New York**
**Filed Aug. 13, 1963, Ser. No. 301,706**
**6 Claims. (Cl. 82—78)**



1. In a rotary knife cutting machine, a frame, a stationary main shaft adapted to receive a first roll of material and mounted on said frame, a chuck adapted to engage said first roll for rotating the same about said main shaft, an auxiliary shaft adapted to receive a second roll of material and mounted on said frame, the longitudinal axes of said main and auxiliary shafts being disposed in a common plane, a second chuck adapted to engage said second roll for rotating the same about said auxiliary shaft, a knife carrier, a rotary knife having a peripheral cutting edge, means operatively connected to and mounting said rotary knife on said knife carrier for rotary movement about a horizontal knife axis, a drive on said knife carrier for rotating said rotary knife about said knife axis, and means mounting said knife carrier on said frame for pivotal movement toward and away from said common plane such that said horizontal knife axis bisects the angle subtended by the lines passing through the longitudinal knife axis and the respective longitudinal axes of said main and auxiliary shafts when said rotary knife is in a limit position wherein said peripheral cutting edge is adjacent said main and auxiliary shafts.

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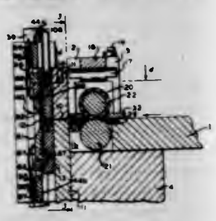
**3,166,965**
**BOTTOM FLAP TRIMMER WITH ADJUSTABLE FIXED BLADE**
**Kurt Stemmler, Dedham, Mass., assignor, by mesne assignments, to Winkler & Dunnebier Maschinenfabrik und Eisengiesserei, Neuwied am Rhine, Germany, a kommanditgesellschaft of Germany**
**Filed Sept. 20, 1961, Ser. No. 139,453**
**5 Claims. (Cl. 83—175)**



1. In a paper cutter, a rotary knife, a rotating driven shaft, a stationary member pivotally mounted on said rotating shaft with a cutting edge positioned adjacent and opposite the arc of rotation of said knife for cooperation therewith in cutting paper fed therebetween, and means for adjusting said cutting edge about the rotating shaft pivot of said stationary member in an arc substantially outwardly tangent to said arc of rotation of said knife.

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**3,166,966**
**OPERATING UPON SHEETS OF FOIL**
**Henry F. Ruschmann, Mine Brook Road, Bernardsville, N.J.**
**Original application Feb. 14, 1961, Ser. No. 100,775. Divided and this application July 18, 1962, Ser. No. 210,715**
**12 Claims. (Cl. 83—262)**

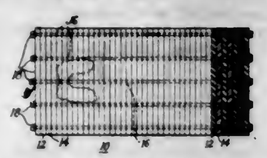


1. Apparatus for operating upon a sheet of foil, comprising a surface provided with a thin orifice of length accommodating the width of a sheet of foil to be fed through

the orifice, a pair of knives on respectively opposite sides of the orifice, each knife having a respective cutting edge directed toward but permanently out of cutting relationship to the other-knife cutting edge and in contact with said surface, reciprocating means to which the knives are coupled for effecting intermittent and alternate to-and-fro excursions of said cutting edges across the orifice, and continuous-feed means effective on the sheet of foil in advance of the orifice to cause the progressive emergence of the sheet from the orifice throughout the time intervals between the successive said cutting-edge excursions.

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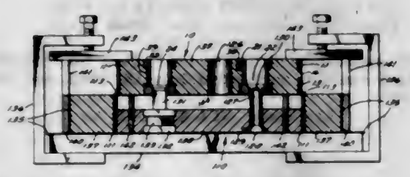
**3,166,967**
**CUTTING BLOCKS**
**Robert Hall Garritt, Jr., Dover, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey**
**Filed Aug. 18, 1960, Ser. No. 50,383**
**1 Claim. (Cl. 83—658)**



A cutting block for use with a die cutting machine of the type that utilizes the completion of an electric current between the die and the block to limit the downward movement of the die, said block being formed of a plurality of separate sections of non-conductive material suitable for use as a cutting surface with a machine of the type described, said material being selected from the group consisting of natural and synthetic rubber, synthetic organic plastics and combinations thereof, a layer of conductive material disposed between adjacent non-conductive sections and extending to the cutting surface thereof, and a plurality of retaining rods extending transversely through the sections, means on the ends of the rods compressing the sections tightly together, each of said layers of conductive material being in electrical contact with the same one of said rods.

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**3,166,968**
**STEEL RULE LINED BLANK AND PIERCE DIE AND METHOD OF MAKING SAME**
**Richard M. Krouskop, Grand Rapids, Mich., assignor, by mesne assignments, to Kro-Die, Inc., Grand Rapids, Mich., a corporation of Michigan**
**Filed Sept. 1, 1961, Ser. No. 135,519**
**11 Claims. (Cl. 83—681)**



1. A matching punch and die set comprising a punch unit; the outer periphery of which is defined by at least one piece of steel blanking rule, the ends of which are secured to each other to provide a continuous cutting edge for said punch unit, the outer periphery of said punch unit defining the outer periphery of the part to be produced, a pierced member located within the confines of said steel blanking rule and having an opening therein of an area corresponding to the area of an opening desired in the part to be produced, a cast material disposed outside and within the entire area bounded by the confines of said steel rule integrally bonding the several reaches of the periphery of said steel rule to each other and to said pierce member located within the confines of said steel rule and within said rule being of a depth generally corresponding to the height of said steel rule, and tying means in said rule for bonding said cast material to said rule, a die unit comprising at least one piece of steel blanking rule, the ends of which are secured to each other to provide a continuous cutting edge for said die unit, the inner periphery of said steel rule of said die unit corresponding to the outer periphery of said punch unit and to the outer periphery of the part to be produced, cast material surrounding the outer periphery of said steel rule of said die unit and being integrally bonded to the outer periphery of said steel rule and of a depth generally corresponding to the height of said steel rule, tying means in said rule for bonding said cast material to said rule, a punch member located within the confines of said steel rule of said die unit and having outer dimensions corresponding to the area of an opening desired in the part to be produced and also corresponding to the area of the opening in the pierce member of said punch unit, and being located within the confines of said steel rule so as to be in complementary relation to the opening of said pierce member of said punch unit when said punch unit is positioned within the confines of said steel rule of said die unit, and the cast material within the entire area bounded by the confines of said steel rule of said die unit integrally bonding the several reaches of the inner periphery of said steel rule to each other and to said punch member located within the confines of said steel rule, said cast material within the inner periphery of said steel rule of said die unit having a depth corresponding generally to the height of said steel rule minus a depth of any stripper pad to be disposed within the confines of said steel rule of said die unit and minus any further depth required to permit penetration of said punch unit into said die unit in operation of the punch and die units as the complementary parts of a matched die set.

7. A method of making a die unit suitable for use with a complementary punch unit for blanking out a part from sheet material comprising the steps of forming a steel blanking rule for the die unit having a continuous cutting edge corresponding to the contour of the part to be blanked, providing tying means in said rule, inserting the complementary punch unit at least partially into said rule, disposing a casting material into an area around the outside of said rule to a depth generally corresponding to the height of said rule throughout all reaches thereof to provide a substantial area of cast material outside of said rule, and disposing additional casting material into the space enclosed by said rule to a depth less than the height of said rule throughout the entire area bounded by said rule, and allowing the cast material to solidify both inside and outside of said rule, thereby to produce the die unit.

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**3,166,969**
**WIND MUSICAL INSTRUMENT**
**Roy Jackson Linton, Elkhart, Ind., assignor to Linton Mfg. Co., Inc., Elkhart, Ind.**
**Filed Mar. 27, 1963, Ser. No. 268,222**
**11 Claims. (Cl. 84—380)**

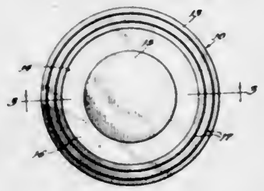


1. A musical instrument of the class described comprising an elongated tubular first body member provided with a mouthpiece, an elongated tubular second body member of a length substantially exceeding and projecting inwardly beyond the mouthpiece of said first body member, said first and second body members when in assembled relation being in side by side substantially parallel relation to each other, a third body member having two passages therein connected at their outer ends, there being annular sockets at the inner ends of said passages of a diameter exceeding that of the passages, said first and second body members having integral coupling members at their outer ends fittingly and slidably engaged in said sockets in the inner end of said third body member, said body members all being of molded thermoplastic material, a reinforcing sleeve fittingly embracing the inner end portion of the third body member having said sockets therein, said sleeve being countersunk into said third body member so that its outer surface is flush with the outer surface thereof, and coacting snap fastener members of the socket and stud type fixedly secured on opposed sides of said first and second body members in substantially spaced relation to the end portions thereof engaged in said sockets in said third body member, said body members being provided with tone controlling keys which are exposed for manipulation when the body members are in their assembled relation.



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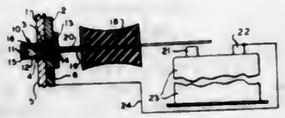
**3,166,970**
**DRUM PRACTICE PAD**
**Gilbert M. Ellman, Chicago, Ill., assignor to Pep Products, Inc., a corporation of Illinois**
**Filed May 2, 1963, Ser. No. 277,570**
**6 Claims. (Cl. 84—411)**



1. A drum practice pad comprising, a generally cylindrical body of resilient material having a first playing surface normal to the axis of said cylindrical body and a second surface inclined with respect to the axis of said cylindrical body, said inclined surface having an annular recess defining a second playing surface at the central portion thereof of smaller diameter than said first playing surface.

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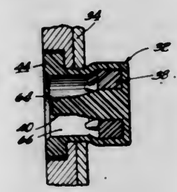
**3,166,971**
**RIVETING BY ELECTRIC DISCHARGE**
**Robert L. Stoecker, Florham Park, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Nov. 23, 1960, Ser. No. 71,324**
**2 Claims. (Cl. 85—65)**



1. A rivet seatable in an aperture in work to be riveted and adapted to be blindly deformed in any deposition of said rivet into binding relationship to that work by the abrupt discharge of a quantity of electricity, comprising a generally cup-like electrically conductive member having a shoulder means at one end and having an elongated cavity opening at the shouldered end and extending substantially beyond the inner face of the work and at least substantially closed at the inner end thereof, and a material of limited dielectric strength in said cavity which is self-retaining therein in inverted positions of said rivet, said material being inert as to chemical explosion but susceptible of electric disruption by an abrupt electrical discharge and comprising a highly viscous substance of a relatively high dielectric strength and a substance of relatively low dielectric strength dispersed throughout said viscous substance, the respective proportions of said substances being such as to render said material of a dielectric strength such that an abrupt electrical discharge through the material results in transmission of an expansive force to said cup-like member, and the outward extent of said material within the cavity being to a distance from the inner end of the cavity substantially greater than the cavity diameter whereby the rivet extremity of an electric discharge through the material to the rivet from an electrode inserted into contact with the material will be caused to be a point on the side surface of the cavity.

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**3,166,972**
**EXPANDABLE FASTENER**
**George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware**
**Filed June 5, 1961, Ser. No. 115,017**
**10 Claims. (Cl. 85—73)**

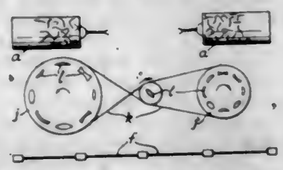


1. A device of the type described for application to a work structure having an aperture therethrough comprising a resilient plastic member including a head portion for overlying one side of a work structure and a hollow expandable shank portion extending axially from said head portion for insertion through the work structure aperture, said member having an axial opening through said head portion and into said shank portion, an axially extending expander pin element centrally located within said hollow shank portion and spaced from inner surfaces of side walls of said shank portion, means connecting an entering end of said pin element with an entering end of said shank portion, said pin element including a free end extending adjacent to said head portion, and a resilient expander element insertable through said opening in said head portion and having a generally centrally located opening therein for receiving said pin element, one of said elements being tapered for causing expansion of said expander element and said shank portion upon application of the expander element telescopically over said pin element, said side wall of said shank portion including generally axially extending flute means for facilitating expansion of the shank portion, said shank portion including a generally dish-shaped transverse wall at an entering extremity thereof, and said flute means extending partially into said transverse wall.

3,166,973
## ABSTRACT COLOR DISPLAY APPARATUS AND METHOD

Colin John Healey, West Malling, Kent, England, assignor to The Willesden Paper and Canvas Works Limited, London, England, a corporation of England

Filed Apr. 6, 1961, Ser. No. 101,177
Claims priority, application Great Britain, Apr. 12, 1960, 13,101/60
5 Claims. (Cl. 88—24)

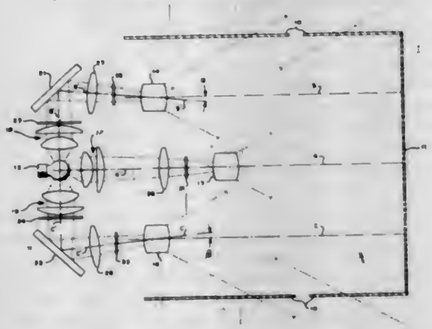


1. Apparatus for producing a rich variety of abstract artistic colour displays composed of variegated configurations of light moving against a generally dark background on a semi-opaque translucent viewing screen without betraying to the observer the mode of movement of working parts therein, which apparatus comprises a plurality of distinct differently coloured areas of clear transparent material confining at least one undiffused incandescent light source, a semi-opaque translucent stationary sheet viewing screen spaced sufficiently apart from said areas and said source to prevent identifiable impressions thereof being observed on said screen, and a plurality of light deviating elements inherently capable of focussing circumferentially spaced apart on at least one motor driven turntable to rotate with respect to said screen and with respect to said source about at least one turntable axis in loci such that the relative positions of said elements, screen and source constantly change in a smoothly continuous manner, and such that light from more than one said area is simultaneously transmitted by more than one said element to the screen, said elements being substantially always out of focus in relation to said screen, areas and source, when transmitting light to said screen, and said source being external to all said loci.

3,166,974
## OPTICAL DISPLAY APPARATUS

Alphonse C. Coté, Centereach, N.Y., and Daniel F. Stanfill III, Springdale, Conn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 5, 1962, Ser. No. 200,292
9 Claims. (Cl. 88—24)

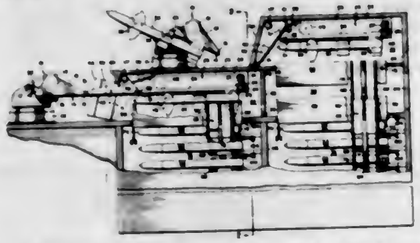


1. An optical display apparatus comprising: a planar screen, projector means having the optical axis normal to said screen and having a field of view including the area of said screen, a source of light, condenser means next to said source directing a light beam into said projector means on an axis angularly displaced from the optical axis, and a reticle means interpositioned between said condenser means and said projector means to form an illuminated object for projection, said reticle means adapted to be translatable in a plane normal to the optical axis in accordance with an input parameter, and said reticle means being positioned with the center of translation on the light beam axis and from said projector means along the optical axis to form an illuminated symbol on a focal plane at said screen.

3,166,975
## MISSILE LAUNCHING SYSTEM

Sven Landstrom, Stockholm, Sweden, and Robert E. Carlberg, Falls Church, Va., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 22, 1958, Ser. No. 769,044
3 Claims. (Cl. 89—1.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A guided missile launching and handling system, said system positively securing the missiles against damaging movement thereof comprising a magazine for storing the missiles in a horizontal attitude in vertical tiers, said magazine including a plurality of cantilevered shelves and a hoist vertically movable in said magazine for raising and lowering the missiles, said shelves having a fixed portion including a first releasable locking means for securing the missiles against movement and a movable transfer portion adjacent said fixed portion for moving a selected one of the missiles to said hoist, said transfer portion including a second releasable locking means for securing the missiles against relative movement with respect to said transfer portion, means for shifting the missiles between said first releasable locking means on said fixed portion and said second releasable locking means on said transfer portion, a third releasable locking means included in said hoist for securing the selected missile against relative movement therewith, means for shifting said selected missile between said second releasable locking means on said transfer portion and said third releasable locking means on said hoist when said transfer portion has moved the selected missile from said shelves to said hoist, a launching device, ramming means aligned with said launching device and vertically aligned with said hoist for moving the selected missile from said hoist to said launching device and means for unlocking said third releasable locking means to allow said rammer to move the selected missile from said hoist to said launching device.

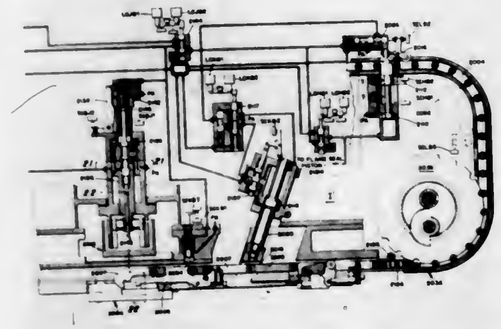
3,166,976
## LOADER MECHANISM FOR GUIDED MISSILE LAUNCHING SYSTEM

Myron J. Bauer, St. Paul, Minn., Robert E. Carlberg, McLean, Va., and Richard C. Wilson, Champlin, Minn., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed July 6, 1960, Ser. No. 41,219
7 Claims. (Cl. 89—1.7)

1. In a missile launching system, the combination of a missile launcher having a plurality of launching guide arms with a loader for transferring the missile from a ready service area to a floating track adapted to be connected to launcher guide arms comprising a link chain, track means extending from the floating track to a ready service area and beyond said area a distance equal to the distance from the ready service area to the floating track, said track means housing the link chain during its loading operation and its retracting operation, means engaging the chain links for driving the chain in either the loading operation or the retracting operation, means attached to the link chain to engage the missile, a feeder





mechanism moving the missile from ready service area to a position to be engaged by the means attached to the chain to engage the missile, a hydraulically operated piston mounted adjacent the link chain and having a wedge-shaped head portion adapted to enter one link of the link chain to exactly position the loader longitudinally and to hold the loader stationary during the ramming operation, and a ramming means contacting the missile and moving the missile longitudinally from the feeder mechanism to engagement with the missile engaging means.

3,166,977
## STABILIZED WATER-LAUNCHED ROCKET VEHICLE

Robert Byron Pickett, Stanford, and John Emery Draim, Oxnard, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 30, 1960, Ser. No. 79,930
2 Claims. (Cl. 89—1.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)

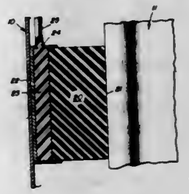


2. A floatable apparatus comprising: an elongate rocket powered missile having a nose end, a base end and a specific gravity greater than one with respect to a body of water, an elongate tube having a watertight upper end and an open bottom end, said upper end being rigidly attached directly to the missile entirely below said base end with the missile and tube longitudinally aligned with respect to one another, a buoyant member mounted within a portion thereof above the tube's center of gravity of a sufficient buoyancy to float the entire apparatus in the water with the missile positioned substantially upright in the water and means for separating the tube from the missile upon firing said missile, whereby the effect of any wave motion of said body of water on the stability of the apparatus prior to launch is minimized and upon launch the exhaust from the missile is impinged directly into the water.

3,166,978
## STOWAGE ADAPTER

Wilson T. Price, San Jose, and Shiro Aisawa, Sunnyvale, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 20, 1962, Ser. No. 189,215
2 Claims. (Cl. 89—1.7)



1. A stowage adapter system comprising:
a launch tube of substantially cylindrical shape;
a missile located substantially concentrically with said tube;
a source of supply for an age hardening material;
supply lines connected to said source of the age hardening material and terminating at different locations in said tube;
a plurality of stowage adapters between said missile and said tube, said adapters being arranged in groups in spaced circles along the length of said tube, each of said adapters comprising;
an arcuate housing engaging the inside surface of the tube;
an arcuate resilient member partially housed in the inside section of the arcuate housing and contacting the outer surface of the missile, said resilient member closing the housing and forming a closed recess in the housing adjacent said tube;
means connecting each of the closed recesses in each of the adapters with one of said supply lines, whereby said age hardening material is forced, under pressure, into said closed recess to compress said resilient member against said missile to provide equal and balanced forces exerted by said adapter against said missile;
and an age hardened material permanently in said recess after an aging time has elapsed.

3,166,979
## ROCKET IGNITER AND DAMPING PLATE ASSEMBLY

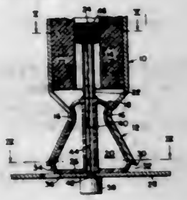
John Emery Draim, % Heavy Attack Squadron 5, Fleet Post Office, New York, N.Y.

Filed Feb. 8, 1963, Ser. No. 257,345
6 Claims. (Cl. 89—1.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)

2. In an elongate rocket engine launchable from a floating position in a body of water with its nozzle submerged below the surface of the water so as to exhaust in a substantially downward direction, said nozzle having an inlet and an outlet, an apparatus comprising:
(*a*) an impervious inflated bag disposed within said nozzle and engaging an interior surface of the nozzle so as to make a seal between said inlet and said outlet and resist longitudinal movement with respect to said engine, said bag having a valve for use in

inflating and deflating said bag from an exterior position of said nozzle; and

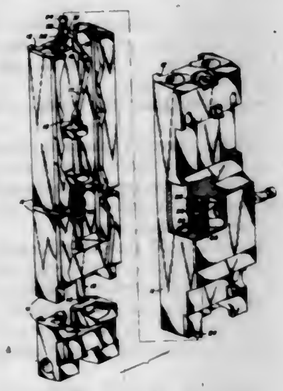
(*b*) a plate mounted at a bottom end of the bag and extending laterally beyond outer sides of the engine, said bag being made of a material destructible by



exhaust gases generated upon firing of said engine; whereby upon disposing the engine with said apparatus in the water the plate dampens the tendency of the engine to move up and down in the water when there is wave action.

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**3,166,980**
**ARMING TOOL MECHANISM**
**Robert M. Harris, Minneapolis, and Roger H. Wiethoff, Wayzata, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Aug. 27, 1963, Ser. No. 305,012**
**2 Claims. (Cl. 89—1.7)**



1. An arming mechanism for a missile launching system having a rail for receiving a missile from a magazine, comprising:

a rod carried by the rail for movement lengthwise of the rail;

a second rod carried by the rail and out of vertical alignment with said first mentioned rod, said second rod being movable lengthwise of the rail by movement of said first rod;

a link mounted on a splined shaft supported by the rail, said link being engaged by said second rod and moved through a limited arc by lengthwise motion of said second rod;

a hub carried on the splined shaft supporting said link, and rotatable with said link;

projections carried by said hub adapted to receive and engage a crank mounted arming pin on the missile and rotate the pin to armed position.

**3,166,981**
**FORWARD MOTION LATCH AND LOCK**
**Robert M. Harris, Minneapolis, and Richard C. Wilson, Champlin, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Sept. 4, 1963, Ser. No. 306,664**
**3 Claims. (Cl. 89—1.7)**



1. In a missile launching system having a missile supporting rail on a launcher arm, a forward motion latch comprising:

a latch splined to a shaft for pivotal movement and formed with a nose portion normally located in the path of movement of the missile on the launcher arm rail;

a crank splined on the splined shaft of the latch and movable in a limited arc with movement of the latch;

a pair of levers connected to said crank and movable upon movement of said crank to a straight line position and beyond said straight line position;

a spring biased lever connected to one of said pair of levers and movable by movement of said pair of levers when sufficient force is applied to overcome the resistance of said spring, whereby the latch may be swung from missile arresting engagement with said missile to a position removed from the path of the missile upon sufficient force being applied to said latch;

a locking means engaging said latch while in missile arresting position and preventing movement of said latch;

hydraulically actuated means connected to said locking means to control the movement of said locking means from a locking position to a released position;

means connected to said locking means and engaging said pair of levers to reset said pair of levers upon said locking means being reset to locked position.

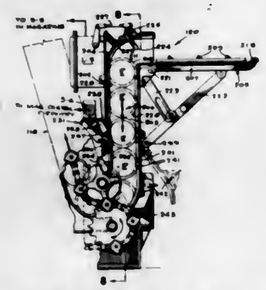
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**3,166,982**
**LOADER MECHANISM**
**Arthur J. Stanton, Bethesda, Md., David F. Anderson, McLean, Va., and Richard E. Taylor, Hyattsville, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed June 3, 1957, Ser. No. 663,324**
**11 Claims. (Cl. 89—33)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. A gravity feed loading mechanism for loading rounds into an ammunition magazine and comprising a housing having a plurality of round guiding walls, said walls defining a vertical chute having horizontally disposed round entry and exit stations, gate means at said entry station for preventing rounds from entering said chute when the magazine has been filled, and control



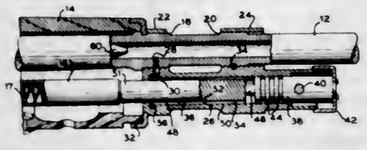
means for actuating round moving means in the magazine when rounds in the chute are contiguous with one an-



other and to stop the operation of the round moving means when rounds in the chute become spaced from one another.

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**3,166,983**
**DIFFERENTIAL GAS SYSTEM FOR GAS-OPERATED FIREARMS**
**Albert J. Lizza, North Wilbraham, Mass., assignor to the United States of America as represented by the Secretary of the Army**
**Filed Sept. 18, 1963, Ser. No. 309,902**
**3 Claims. (Cl. 89—191)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

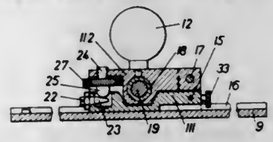


1. In a gas-operated firearm having a barrel and a reciprocal operating rod, a gas system comprising a cylinder secured to the barrel, a piston having a head portion slidably disposed in said cylinder and a trailing rod portion of reduced diameter projecting from said cylinder into abutment with the operating rod, closure means positioned in the front end of said cylinder to contact the front end of said piston head portion and form an annular area adjacent thereto for accumulating discharge gases therein, gas port means in said cylinder for admitting discharge gases from the barrel against the rear end of said piston head portion to initially retain said piston against rearward movement out of contact with said closure means, and a plurality of gas passages circumferentially spaced about said piston head portion to admit discharge gases into said accumulation area whereby recoil movement of said piston is initiated as soon as the force on the front end of said piston head portion exceeds the force on the rear end thereof.

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**3,166,984**
**APPARATUS FOR THE REMOVAL OF MATERIAL IN A BOTTOM DIE PLATE FOR USE IN THE PREPARATION OF BOX BLANKS OF PAPER BOARD OR SIMILAR MATERIAL**
**Gunnar Ruud, Tunevelen 46, Sarpsborg, Norway**
**Filed Sept. 26, 1962, Ser. No. 226,252**
**Claims priority, application Norway, Sept. 30, 1961, 141,640**
**3 Claims. (Cl. 90—12)**

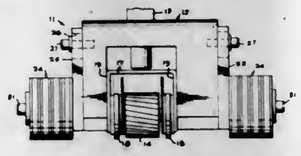
1. An apparatus for the removal of material from the bottom plate of a box blank press, to form grooves and depressions used in the formation of score lines and the trimming of contours of box blanks, said apparatus comprising an elongated guide strip adapted to be disposed upon a bottom plate, a trough provided in said guide strip and a slide member disposed for straight line sliding movement along the guide strip, said slide member comprising two superposed substantially conterminous plate members, the lower plate member confined for movements within said trough, a pintle extending at right angles with the direction of length of the guide strip and pivotally interconnecting the upper and lower plate members along one edge of said slide member, a rotary shaft carried by the upper plate member at a point spaced horizontally from said pintle and a rotary cutting tool mounted on



a projecting end of said shaft, resilient means adjacent the edge of said slide member opposite to the pivot edge urging the plate members apart and thus the upper plate member upwardly away from the guide member and the press plate to be cut, a rotatable settable screw device threaded through the upper plate member, and an abutment member carried by said lower plate against which the lower end of said screw device presses, whereby the depression of the upper plate member and thus of the tool into the press plate against the urging of the resilient means is determined by the setting of the screw device.

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**3,166,985**
**MAGNETIC HOLDDOWN MEANS FOR PORTABLE TOOL**
**Cyril William Stanley, Manhattan Beach, Calif., assignor to Zephyr Manufacturing Co., Inglewood, Calif., a copartnership**
**Filed May 24, 1963, Ser. No. 282,912**
**3 Claims. (Cl. 90—12)**



1. In a portable milling tool having a housing and a motor-driven rotary cutter, holddown means for use in retaining the tool against the face of a magnetic workpiece, comprising a plate of non-magnetic material adjustably mounted on each side of said housing beyond the cutter, a cap screw mounted in each plate and projecting outwardly thereof and normal thereto, a non-magnetic bushing on each said screw, and a set of annular magnet disks mounted on each said bushing to form a composite roller.

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**3,166,986**
**MACHINE TOOL FIXTURE SUPPORT**
**Archibald B. Smith, 261 Elm St., Elmhurst, Ill.**
**Original application Sept. 10, 1957, Ser. No. 683,179, now Patent No. 3,038,385, dated June 12, 1962. Divided and this application June 11, 1962, Ser. No. 201,474**
**2 Claims. (Cl. 90—58)**

1. In an index table support for a machine tool structure having an upright rigid stand provided with a vertically movable worktable adapted to removably position the index table thereon, the index table having intersecting T-shaped slots therein, said support comprising an arm pivoted at one end to said stand for movement in a horizontal plane to position the other end thereof away from the worktable and to a position over said

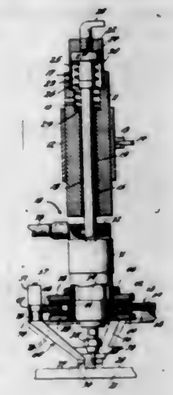
worktable; the improvement residing in a holder for said index table and including a plate connected to said other end of said arm and having at least three edge slots and adapted to be aligned with slots in the index table; a plurality of I-shaped blocks disposed within the slots in said plate and the aligned T-shaped slots in the index



table with the bases of the blocks in the horizontal portions of the T-shaped slots and the heads of the blocks engaging the upper surface of the plate to connect the plate to the index table, said blocks being removable from the plate and index table by movement outwardly of said slots.

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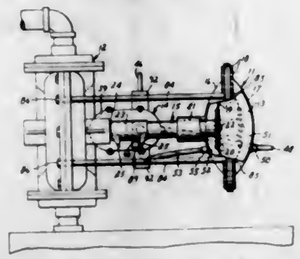
**3,166,987**
**DEVICE FOR CONTROLLING THE CUTTING DEPTH OF A TOOL**
**William R. Ramsey, Graham, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed June 14, 1962, Ser. No. 202,632**
**6 Claims. (Cl. 90—62)**



1. In an engraving apparatus,
a spindle for receiving a cutting tool,
an annulus surrounding the spindle,
a plurality of circumferentially spaced legs mounted on and depending from the annulus, and
resilieat means interposed between the annulus and the spindle for centering the tool within the circumferentially spaced legs.

2. In an engraving apparatus,
a spindle for receiving a cutting tool,
a plate having a plurality of circumferentially spaced legs depending therefrom,
resilient means for supporting the plate on the spindle so that the tool projects beyond the depending extremities of the legs, and
means for applying a force to the spindle to overcome the resilient means to advance the tool a further distance beyond the extremities of the legs.

**3,166,988**
**VACUUM POWER UNIT**
**William J. Kohler, 1254 1st St. N., Fargo, N. Dak.**
**Filed Feb. 20, 1963, Ser. No. 259,905**
**1 Claim. (Cl. 91—347)**



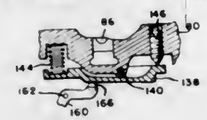
A fluid operated motor having a reciprocating drive shaft, and further comprising:
(*a*) a diaphragm unit including a casing and a flexible diaphragm dividing said casing into two chambers,
(*b*) rod means journalled for axial reciprocation in said casing and operatively interconnecting said diaphragm with said drive shaft whereby said diaphragm and said drive shaft are adapted to reciprocate in unison,
(*c*) a reversing valve including a housing and a valve element mounted therein for limited rotary reciprocatory movements alternatively in opposite directions, said housing defining a chamber for said valve element, an inlet port, exhaust port means, and a pair of outlet ports, and with all of said ports and port means communicating with said chamber,
(*d*) said valve element being disposed within said housing whereby upon rotary reciprocation, said valve element is moved between a first position wherein one of said outlet ports is connected with said inlet port and the other is connected with said exhaust port means and a second position wherein the other of said outlet ports is connected with said inlet port and said one thereof is connected with said exhaust port means,
(*e*) said outlet ports each communicating with a different one of said diaphragm chambers for driving said diaphragm and said shaft upon the introduction of fluid alternately into said diaphragm chambers, and
(*f*) a valve actuating assembly including a connection operatively associated with said valve element imparting said reversing movements to said valve element responsive to axial reciprocatory movements of said rod means, said valve actuating assembly further comprises:
(1) a shaft extending from said valve element in an axial direction with respect to the axis of rotary reciprocation of said valve element,
(2) a crank arm secured to said shaft and having a crank pin operatively connected with said rod means whereby rotary reciprocatory movement is imparted to said shaft upon reciprocation of said rod means,
(3) a toggle joint having a pair of pivotally connected link elements one of which is secured on said shaft and the other of which is telescopically extensible and retractable and is also pivotally connected to said valve housing, said toggle joint including means biasing said other link element toward an extended condition and also biasing said one link element to one or the other of two angularly spaced positions about said shaft and on opposite sides of a longitudinal alignment of said link elements, and



(4) means connecting said shaft to said valve element so as to impart said rotary reciprocation to said valve element between its first and second positions upon rotation of said shaft by said crank arm and upon the biasing of said one link element of said toggle joint into one or the other of its said angularly spaced positions.

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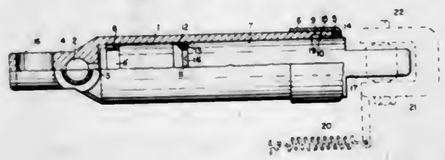
**3,166,989**
**COMPRESSOR BLEED ACTUATOR**
**Warren H. Cowles and Raymond L. Ensinger, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan**
**Filed Jan. 23, 1961, Ser. No. 84,418**
**5 Claims. (Cl. 91—359)**




1. A control mechanism of the type described, comprising means providing a fluid pressure chamber, a pressure-responsive member movable in two axial directions in said chamber and having a part providing a control output action in response to the movement of said member, a movable valve to control the admission of pressure fluid to said chamber to selectively act on said member in said opposite directions as determined by the position of said control valve, and linkage means operatively connected to said pressure-responsive member for automatically and variably positioning said control valve in response to a varying control parameter, said linkage means comprising an inclined cam connected to said member for movement with the latter, means to adjust said cam relative to said member between positions at which, in reference to a given one of said directions of axial movement of the member, the cam has respectively divergent and convergent inclinations to the axis of movement, a follower engaging said cam and variably positioned by the latter in relation to said axis in accordance with the axial position of the member and cam, a link operatively connected to said follower and to said valve, said link being movable in response to said varying control parameter, and in response to movement of said member, through the agency of said cam and follower, to move said valve and vary the movement of said member and control output part under fluid pressure admitted to the chamber.

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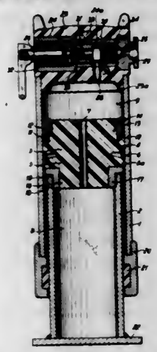
**3,166,990**
**ASSEMBLY WITH RELATIVELY DISPLACEABLE MEMBERS**
**Helmuth Hoffmann, Bad Homburg vor der Hohe, Germany, assignor to Alfred Teves, KG., Frankfurt am main, Germany, a corporation of Germany**
**Filed Jan. 11, 1963, Ser. No. 250,905**
**Claims priority, application Germany Mar. 2, 1962**
**6 Claims. (Cl. 92—30)**



1. An assembly comprising two telescoped cylindrical members contacting each other over an extended surface defined by their respective peripheries, said members being relatively axially displaceable along said surface; one of said members being provided with a relatively deep annular peripheral recess, the other of said members being provided with a relatively shallow annular peripheral recess, said recesses being alignable with each other in a predetermined relative axial position of said members, and a resilient coupling ring in said relatively deep recess fully retractable into same but elastically biased in radial direction toward said relatively shallow recess, said ring being only partly receivable in the latter recess; said recesses having two pairs of mutually opposite flanks bearing on said ring upon relative axial displacement of said members in a first and a second direction, respectively, with a resultant camming force which with said first direction of displacement has a radial component directed toward the member having said relatively deep recess but lacks such component with said second direction of displacement whereby said ring locks said members against further axial displacement in said second direction beyond said predetermined relative position thereof.

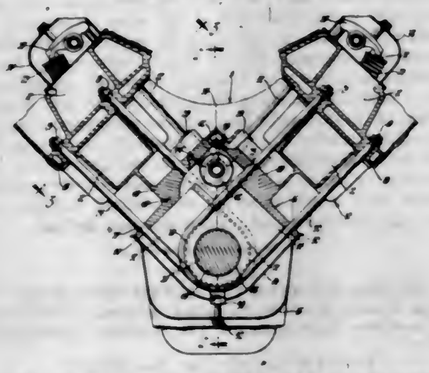
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**3,166,991**
**HYDRAULICALLY OPERATED MINE PROP**
**Erwin Blenkle, Bochum, Germany, assignor to Bochumer Eisenhütte Heintzmann & Co., Bochum, Germany, a firm**
**Filed Apr. 12, 1962, Ser. No. 187,127**
**Claims priority, application Germany, Apr. 20, 1961, B 62,205**
**16 Claims. (Cl. 92—109)**



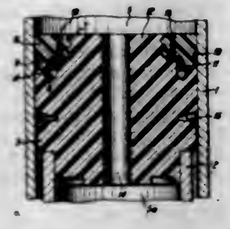
5. A hydraulic mine prop comprising, in combination, an external tubular prop member closed at one end; an internal prop member projecting with clearance into said external prop member and having an inner end movable toward and away from said closed end; a prop piston secured to said inner end of said internal prop member, said prop piston including a sealing portion slidably guided in said external prop member and sealingly engaging the inner surface thereof to form therewith between said closed end and said sealing portion a pressure chamber, and a connecting portion connecting said sealing portion to said inner end of said internal prop member for movement therewith and in a manner resistant to tension and compression, said connecting portion being at least in part formed from elastically deformable material and said part having such an elastic deformability so as to permit limited universal tilting movement of said sealing portion of said piston relative to said internal prop member as well as limited movement of said sealing portion in direction transverse to the axis of said internal prop member, whereby slight misalignment of the prop members will result in elastic deformation of said part of the connecting portion of said piston without affecting uniform sealing engagement of said sealing portion with the inner surface of the external prop member, said prop piston being formed with a central bore extending coaxially with said piston through the whole length thereof; and means for feeding pressure fluid into and out of said pressure chamber.

3,166,992
ENGINE BLOCK
Philip L. Francis, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 2, 1962, Ser. No. 234,980
7 Claims. (Cl. 92—149)



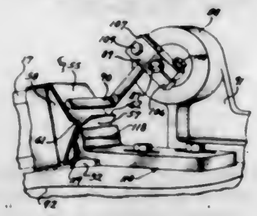
1. In a V-type engine, a block having parallel rows of inclined cylinders opening downwardly into a common crankcase, aligned bearing portions formed in the block, a crankshaft journaled in the bearing portions and having crank arms lying in the paths of the cylinders, and cylinder heads connectable to the top of the block closing the cylinders, the improvement comprising;
a plurality of high tensile strength U-bolts having their closed ends looping behind each bearing portion and their free ends inclining upwardly in planes parallel with the rows of cylinders and terminating beyond the top of the block, said U-bolts adapted to adjustably secure the cylinder heads to the block whereby the U-bolts are placed in tension and absorb oppositely directed firing stresses acting on said cylinder heads and bearing portions thus relieving the cylinder block of such stress.

3,166,993
PISTON WITH SEALING MEANS
Erwin Blenkle, Bochum, Germany, assignor to Bochumer Eisenhutte Heintzmann & Co., Bochum, Germany, a firm
Filed Apr. 12, 1962, Ser. No. 187,128
Claims priority, application Germany, May 10, 1961, B 62,443
23 Claims. (Cl. 92—181)



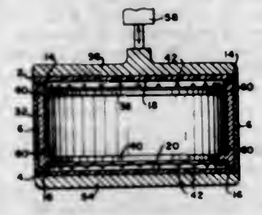
1. A piston for hydraulic or like cylinders comprising, in combination, a piston body having at least a peripheral portion formed from elastically deformable material; a sealing lip integrally formed with said elastically deformable portion of said piston and having an outer annular surface adapted to engage the inner surface of the cylinder and an inner annular surface facing away from the inner surface of the cylinder; and a straining ring threadedly attached to said piston body on the pressure side thereof adjustably in direction of the piston axis and being formed with an annular projection means having an outer annular surface engaging said inner annular surface of said sealing lip for elastically deforming said lip in radially outward direction so as to press the outer surface thereof tightly against the inner surface of said cylinder.

3,166,994
ROTATING CARTON TUCKER APPARATUS
Harry B. Egleston, Livonia, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 3, 1961, Ser. No. 149,925
6 Claims. (Cl. 93—44.1)



1. A trucking and bonding station for a high-speed carton fabricating machine and adapted to operate on the end closure panels of each carton produced in said machine, said apparatus comprising:
two side support members,
a rotatable mandrel assembly with more than one mandrel supported by said side supports,
a bridge member supported by said side supports,
a power source driving a power transmitting system,
said power transmitting system connected to said bridge member,
a tucker arm driven and supported by said power transmitting system,
a tucker shoe having a camming edge and a camming surface and being supported by said bridge member,
said mandrel rotates in such a manner that when a container is mounted on it the tucker arm will act on one end closure panel and said tucker shoe camming edge will act on a second end closure panel, and
said tucker shoe camming surface will act on both panels bringing them together to form a closed end.

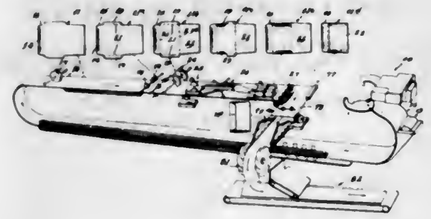
3,166,995
CONTAINER FABRICATION
Julius Afsanick, 1044 E. 100th St., Brooklyn, N.Y.
Filed Apr. 16, 1963, Ser. No. 273,428
2 Claims. (Cl. 93—55.1)



1. An apparatus for the assembly of hat boxes or the like, comprising in combination, a hollow cylinder having top and bottom edges, a first ring disposed internally of said cylinder and adjacently of said top edge, a second ring disposed internally of said cylinder and adjacently of said bottom edge, said first and second rings each having a plurality of pins projecting therefrom, said pins being concentrically arranged with respect to said top and bottom edges, respectively; a lower stationary die and an upper movable die, said hollow cylinder being removably seatable within said lower stationary die, said upper movable die being adapted to pressingly engage said top edge of said hollow cylinder whereby pressure will be effectuated between said lower stationary die and said bottom edge of said hollow cylinder.

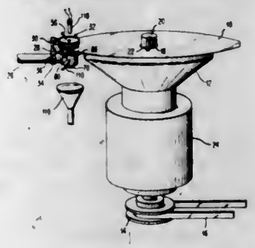


3,166,996
ENVELOPE MAKING MACHINE
Ernst C. Sauerman, Chicago, Ill., assignor, by mesne assignments, to F. L. Smithe Machine Co., Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 54,942, Sept. 9, 1960. This application Mar. 5, 1963, Ser. No. 263,679
1 Claim. (Cl. 93—62)



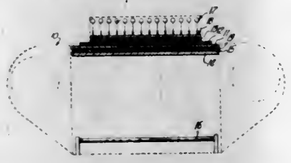
An envelope making machine comprising means for conveying horizontally disposed envelope blanks in a first substantially horizontal path, first rotary means located above the conveying means for longitudinally scoring said blanks to form a pair of transverse side flap portions and a body portion therebetween, a rotating blade located above the conveyor means for transversely scoring said blank into a leading bottom flap portion and a trailing seal flap portion separated by said body portion, a pair of transversely separated gum applicators located underneath the conveying means for applying adhesive to the undersides of each of said side flap portions, plowshare folding means adjacent said conveying means and gum applicators for folding said side flap portions upwardly and inwardly over said body portion, buckle plate means for folding said bottom flap portion over the body portion and folded side flap portions, said buckle plate means including; a flat plate member projecting upwardly above said conveying means, means for adjustably positioning said plate member relative to said conveying means, a plurality of rod-like fingers disposed in substantially parallel spaced relation to said plate member, means securing an upper portion of said fingers to the top of said plate member, an adjustable stop slidably positionable upon said fingers for contacting the forward edge of the bottom flap portion of each envelope blank, and rotary suction means having a radial port for lifting the leading bottom flap portion from the level of the conveying means and directing it into the space between the fingers and the plate member to thereby fold it back upon the body portion as the body and seal flap portions of the blank continue to advance upon said conveying means, stop means for abutting the just folded leading edge of the blanks and terminating its conveyance in said first path, means for conveying the partially folded blank in a second path at substantially right angles to and co-planar with said first path, plowshare folding means for folding the seal flap portion over said body portion, and endless belt means arranged substantially parallel to the direction of the conveying means of said first path for receiving and accumulating the folded envelopes.

3,166,997
HYDROSTATIC FILM DISC STABILIZER AND SPACER
Casper L. Barcia, Briarcliff Manor, and Henri A. Khoury, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1961, Ser. No. 120,394
8 Claims. (Cl. 95—44)



1. Apparatus for stabilizing a flexible disc at at least one radial point comprising, in combination, a plane circular record disc of flexible material, means for rotating said disc, a pair of elements having opposing air bearing surfaces positioned at said radial point adjacent to opposite side of said disc, each said element having an external air supply and a plurality of orifices directing air from said opposed surfaces against said disc and each said element having a central aperture associated with record transducer means.

3,166,998
PHOTOGRAPHIC DODGING METHOD AND APPARATUS
Alfred J. Watson, Arlington, Va., assignor to Watson Electronics & Engineering Co., Inc., Arlington, Va., a corporation of Virginia
Filed Nov. 19, 1959, Ser. No. 854,200
15 Claims. (Cl. 95—73)



1. A photographic printing method comprising exciting a fluorescent surface to produce actinic light, directing infrared light uniformly through a transparency upon said surface to quench said surface selectively to form a luminous image, and simultaneously directing unquenched actinic light from said fluorescent surface through said transparency and forming an image of said surface on a photosensitive emulsion surface to expose the same.

3,166,999
APPARATUS FOR TREATING PHOTOGRAPHIC FILM
Gridley Dement, 1733 Milwaukee Ave., Chicago, Ill.
Filed Mar. 28, 1962, Ser. No. 184,003
9 Claims. (Cl. 95—95)

1. A photographic developing device comprising, in combination, a housing, a shallow tray having a light transmitting bottom panel mounted in said housing, means for mounting said housing and thereby said tray in a vertically inclined position, means for mounting a sheet of film against said bottom panel, a trough in said housing adjacent the lower edge of the tray for containing a developer liquid, a panel hinged to the back of said housing, a plurality of lights mounted on said panel behind said tray for

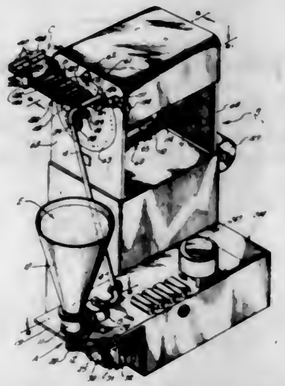
illuminating said bottom panel and thereby the film mounted thereon, and means communicating with said trough for directing developer liquid from said trough onto said



film, said liquid developer directing means including a pump connected to said trough and at least one nozzle for directing liquid onto the film so that said liquid is recycled from said trough onto the film.

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**3,167,000**
**APPARATUS FOR MANUFACTURE OF COOKED MEAT PRODUCTS**
**Bernard Sassen, George D. Mylchreest, and Alfred J. Kargl, Hartford, Conn., assignors to Emhart Corporation, a corporation of Connecticut**
**Original application Apr. 16, 1959, Ser. No. 806,936. Divided and this application Mar. 22, 1962, Ser. No. 188,597**
**10 Claims. (Cl. 99—358)**

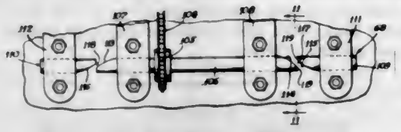


1. Apparatus for rapid recurrent production of cooked meat products such as sausages comprising a tubular mold, recurrently operative means for feeding raw material whose conductivity increases with temperature into said mold, electric potential means for heating the mold contents to a cooking temperature by direct electrical conduction longitudinally therethrough, means for ejecting the cooked material from said mold, and means operative immediately prior to the subsequent operation of the first recited means to refill the said mold to cool the entire mold cavity with a cooling liquid.

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**3,167,001**
**WIRE HOLDER AND RELEASE FOR WIRE TWISTER FOR BALERS**
**John R. Timberlake, Downers Grove, and Harvey O. Halstensgard and Arlie J. Thayer, Brookfield, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey**
**Filed Dec. 4, 1961, Ser. No. 156,842**
**6 Claims. (Cl. 100—21)**

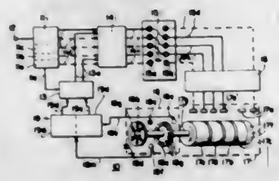
3. A device for holding a loop end of wire and releasing the looped end of wire comprising substantially abutting shafts, both of said shafts having bevels at their abutting ends, means mounting said abutting shafts in cooperative relationship with each other, means rotating one of said shafts relative to the other whereby when the



beveled ends are in alignment the looped end of wire is held and when the beveled ends are disposed opposite one another the looped end of wire is released.

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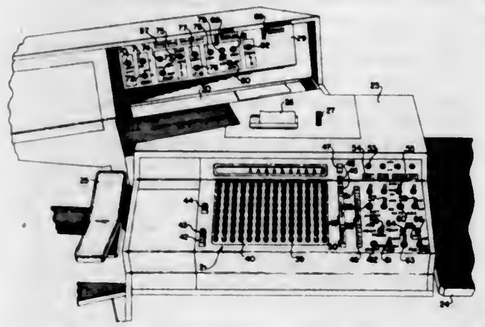
**3,167,002**
**HIGH-SPEED PRINTING APPARATUS IN COMPUTER SYSTEMS**
**Hiromu Kaneda and Kaoru Segawa, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan**
**Filed June 6, 1962, Ser. No. 200,394**
**5 Claims. (Cl. 101—93)**



1. Printing means for use in computer systems and the like, comprising register means for receiving first binary coded data representations from the computer output; coincidence checking means having first and second input means; a rotatable printing drum having a plurality of generatrices around its periphery; cooperating drive hammer means positioned adjacent the drum surface associated with each generatrix; each generatrix being comprised of a plurality of different characters; said drive hammer means being aligned transverse to the rotational direction of said drum; signal pulse generating means under control of and synchronized by the rotation of said printing drum for generating a series of pulses; counter means connected to said signal pulse generating means for generating at its output a second binary coded representation under control of said series pulses, said second binary coded representation being indicative of a predetermined angular position of said rotatable drum; signal pulse generating means comprising first means for dividing a single revolution of said rotatable drum into a plurality of discrete portions; sensing means for generating an output signal upon the initiation of each of said discrete portions; coincidence means for enabling the operation of said hammer means upon receipt of the first output signal of said sensing means to permit initiation of the printing operation at the beginning of any one of said discrete portions, the first and second binary coded representation from the computer and the counter means output respectively being impressed upon said coincidence circuit first and second input means respectively, said coincidence check means being adapted to generate a driving pulse at its output upon coincidence between said first and second encoded data representations impressed upon its first and second input means, said coincidence circuit output being connected to said drive hammer means for printing the desired alphameric character upon occurrence of coincidence.



**3,167,003**
**MULTIPLE FIELD PRINTING MECHANISM**
**Richard P. Taylor, Xenia, and William C. Preston, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Filed Jan. 30, 1964, Ser. No. 341,348**
**9 Claims. (Cl. 101—93)**



1. An encoding apparatus comprising
(*a*) an encoding mechanism settable in accordance with information to be recorded;
(*b*) first means for transporting a record media through a predetermined path towards said encoding mechanism;
(*c*) second means for transporting, when actuated, said record media through a predetermined path from said encoding mechanism to an exit in said apparatus;
(*d*) means for driving said apparatus through cycles of operation;
(*e*) a plurality of stop mechanisms mounted adjacent said predetermined path, each of said stop mechanisms including
(*f*) a stop member rotatably mounted on a support and normally positioned in a first position out of said predetermined path;
(*g*) electromagnetic means for rotating said stop member, when energized, to a blocking position in said predetermined path for intercepting and positioning said record media for encoding of information by said encoding mechanism in a predetermined field thereon;
(*h*) first switch means mounted adjacent said stop member and actuated by movement of said stop member to a blocking position;
(*i*) second switch means mounted adjacent said stop member and conditioned to be actuated upon movement of said stop member to a blocking position, said second switch means being actuated upon engagement of said stop member by said record media;
(*j*) a plurality of presettable control means, one for each stop mechanism, said control means energizing, when operated, the electromagnetic means whereby the associated stop member moves to its blocking position, thus actuating its first switch means;
(*k*) first cam means for de-energizing, when operated, the electromagnetic means of the stop mechanism engaged by the record media, whereby the associated stop member is moved to its first position;
(*l*) second cam means for disabling, when operated, said first transporting means and actuating said second transporting means;
(*m*) means controlled by the actuation of said first switch means of any of the stop mechanisms for disabling the control of said second cam means on the transporting means;
(*n*) and other means controlled by the actuation of said second switch means by the record media for operating said first and second cam means whereby the record media will be transported into engagement with each stop mechanism actuated by its associated control means for the encoding of information in a number of predetermined areas.

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**3,167,004**
**STENCIL SCREEN FRAME**
**Henry L. Miller, Pittsburgh, and Thomas R. Ramsden, Mars, Pa., assignors to West Penn Screen Service, Inc., Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 28, 1963, Ser. No. 283,792**
**11 Claims. (Cl. 101—127.1)**



1. A generally rectangular stencil screen frame comprising a plurality of generally flattened, resilient wall members defining an opening in said frame, one opposed pair of said wall members being substantially rigid, the remaining opposed pair of side wall members being normally outwardly bowed, means integral with said frame for securing a stencil screen to said wall members in overlying relation with said opening, said wall members being substantially perpendicular to the plane of said stencil screen and cooperating therewith to define a well for receiving a printing medium, said remaining opposed pair of said wall members being adapted to be flexed inwardly while said stencil screen is secured to said frame, said remaining opposed pair of said wall members when released serving to maintain said stencil screen in a taut condition.

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**ERRATUM**

For Class 101—144 see:
Patent No. 3,167,025

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**3,167,005**
**METHOD FOR PLANOGRAPHIC PRINTING**
**Paul W. Greubel, Great Neck, N.Y., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio**
**Filed Sept. 28, 1961, Ser. No. 141,540**
**11 Claims. (Cl. 101—149.2)**

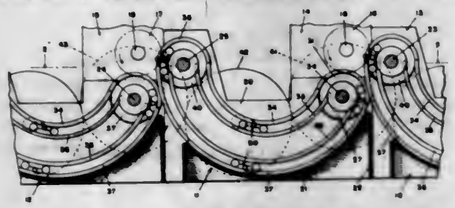
1. A method of planographic printing comprising applying a voltaile aliphatic hydrocarbon fountain solution to a lithographic printing plate comprising a metal surface, the non-image areas of which surface are covered with a cured coating comprising a thermosetting silicone resin, said surface being exposed in the image areas to act as the ink bearing portion of the plate, applying to the plate an ink having a solvent selected from the group consisting of alkandiols having from 2 to 5 carbon atoms, diethylene glycol, dipropylene glycol, triethylene glycol and glycerin, said ink being immiscible with said volatile aliphatic hydrocarbon fountain solution, printing successive copies of the image with said ink and reapplying said fountain solution and said ink between successive printings.

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**3,167,006**
**SHEET TRANSFER UNIT FOR PRINTING PRESSES**
**Henri E. Peyrebrune, River Forest, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware**
**Filed June 18, 1963, Ser. No. 288,709**
**8 Claims. (Cl. 101—183)**

1. In a sheet transfer unit having a sheet receiving end and a transfer end, a receiver shaft at the receiving end,

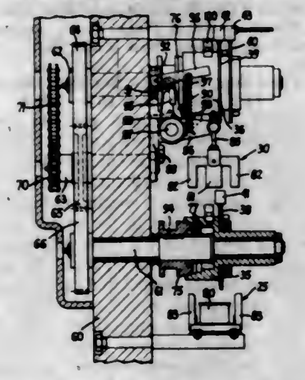
a transfer shaft at the transfer end, a pair of spaced sprockets on each shaft, a pair of endless chains passing over said sprockets and operatively connecting the shafts, a sheet carrier assembly extending transversely of said chains, means normally connecting the sheet carrier to said chains, said connecting means including a yoke member at each end of the carrier assembly and a chain yoke roller fixed to and extending transversely of the chains respectively, means associated with each pair of sprockets and having such operation on the endless chains and on the carrier assembly as to displace the chain yoke roll-



ers from the yoke members thereby disconnecting the carrier assembly from the chains, said disconnection taking place as the carrier assembly travels through the transfer zone comprising part of its path around the sprockets, a pair of spaced register blocks fixed to the carrier assembly at each end, and drive arms rotating with the sprockets of each pair, said drive arms being operative to enter between the spaced register blocks at the respective ends of the carrier assembly for engaging with and driving the carrier assembly through the transfer zone when the chain yoke rollers are disconnected from the yoke members.

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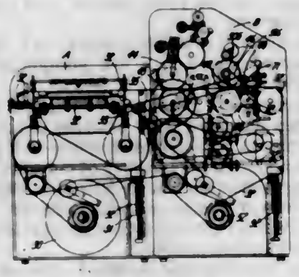
**3,167,007**
**THROW-IN AND THROW-OFF CONTROL DEVICE FOR MULTICOLOR PRINTING PRESSES**
**Erwin Klaus, Augsburg, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg, A.G., Augsburg, Germany, a corporation of Germany**
**Filed July 2, 1963, Ser. No. 292,367**
**Claims priority, application Germany, July 6, 1962, M 53,467**
**11 Claims. (Cl. 101—184)**



1. In automatic control apparatus for instigating and timing the sequential operation of throw-in mechanisms in multicolor rotary sheet-fed printing presses of the character described having a plurality of sequentially disposed printing stations through which are fed sheets being printed, the combination which comprises a timing shaft, means for rotatably driving said timing shaft in timed relation to the speed of operation of said printing stations and at a substantially reduced speed whereby one rotation of said timing shaft requires substantially the full extent of time during which said sequential operation of all said throw-in mechanisms is desired, an idle rotatable control member having a plurality of cam surfaces thereon, clutch means for selectively and intermittently engaging said control member with said timing shaft for a single rotation therewith, a plurality of electric switch means disposed adjacent said control member for actuation by said cam surfaces thereon upon rotation thereof, there being a separate said cam surface and electric switch means for each said printing station and said cam surfaces being angularly disposed around said control member with respect to said electric switch means effecting sequential operation of each said electric switch means in the sequence and time relation desired for said sequential operation of said throw-in mechanisms upon said single rotation of said control member, means for selectively operating said clutch means for engaging said control member for said single revolution thereof, means for disengaging said clutch means after said single rotation of said control member, and electric circuit means incorporating said electric switch means for instigating the operation of said throw-in mechanisms individually at each said printing station in response to operation of each said electric switch means by its respective said cam surface during rotation of said control member.

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**3,167,008**
**WEB-PRINTING MECHANISMS WITH INTERMITTENTLY ROTATABLE FEED MEANS**
**Brian William Edgeley and John Basil Cousins, London, England, assignors, by mesne assignments, to Form Master Limited, Peterborough, England**
**Filed Mar. 19, 1962, Ser. No. 180,512**
**Claims priority, application Great Britain, Mar. 24, 1961, 10,906/61**
**9 Claims. (Cl. 101—228)**



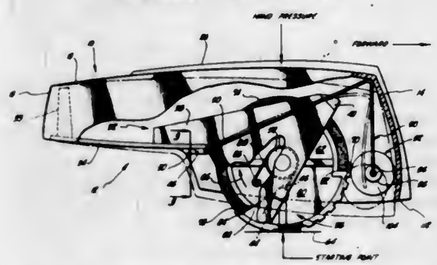
1. A machine for printing continuous webs comprising a continuously driven printing couple, web-feeding rolls in continuous contact with the web to be printed, a roll driving shaft, and means for driving the said roll driving shaft intermittently, said means for driving the roll driving shaft intermittently comprising a drive shaft, a mechanical drive connection between said drive shaft and said driving shaft, said drive connection comprising a sun wheel in constant driven relation with said drive shaft, an internally gear-toothed annulus and means for transmitting rotation from said annulus to said roll driving shaft, a planet carrier rotatable about the axis of said sun wheel, a planet wheel rotatably supported by said carrier in meshing relation both with said sun wheel and with internally gear-toothed annulus, an electrically operated means for alternately arresting the rotation of said planet carrier and said internally gear-toothed annulus whereby alternately to cause said planet wheel to transmit rotation from said sun wheel to the internal gear-toothed annulus when the rotation of said planet carrier is arrested, and to cause said carrier and planet wheel to free wheel when the rotation of the internally gear-toothed annulus is arrested, and an adjustable endless



programme member synchronously driven with said drive shaft controlling the operation of said electrically operated means.

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**3,167,009**
**HAND-OPERATED PRINTING DEVICE FOR GENERAL USE**
**Peppy M. Sloane, 9426 Santa Monica Blvd., Beverly Hills, Calif.**
**Filed Nov. 27, 1961, Ser. No. 155,034**
**15 Claims. (Cl. 101—329)**

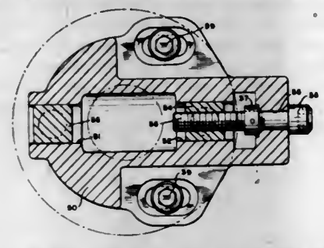


1. A hand-operated printing device comprising:
a hand-held case having an open bottom;
a frame member positionable within the case;
means for cantilever spring mounting the frame member within the case to extend an end portion of the frame over the open bottom of the case;
a type drum; means for coupling the type drum to the end portion of the frame member for rotation within the case such that a portion of the circumference of the drum extends beyond the open bottom of the case and such that the drum is cantilever spring mounted for limited movement substantially normal to the top of the case;
means for urging the drum to a reference rotational position within the case and for returning the drum to the reference position after it has been rotated from the reference position;
means for exerting a spring force on the frame to urge the drum toward the open bottom of the case including a bent spring coupled to the frame to extend at an angle from one side of the drum upward to contact a top of the case on an opposite side of the drum and then downward to extend a free end between the drum and an end member of the case;
an ink roller;
and means for coupling the ink roller to the free end of the bent spring to make pressure contact with the drum such that as the drum moves toward the top of the case the ink roller presses more tightly against the drum.

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**3,167,010**
**ADJUSTABLE PRESS ROLLER SOCKETS**
**Emory W. Worthington, Ridgewood, and Grover J. Wilson, Gillette, N.J., assignors to Wood Newspaper Machinery Corporation, Plainfield, N.J., a corporation of Virginia**
**Filed June 13, 1962, Ser. No. 204,660**
**8 Claims. (Cl. 101—349)**

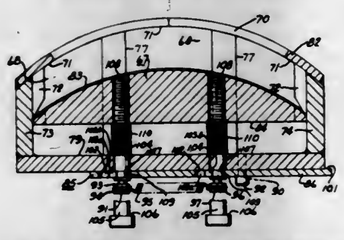
1. An adjustable press roller socket for an ink roller of a printing press having a frame, said socket comprising a socket body having mounting means therein for receiving an end of the shaft of said ink roller, a cutout in said body with one side of said cutout forming a track, a plurality of rectangularly-shaped lugs mounted on said frame with at least one of said lugs slidably engaging said track, clamping means positioned on opposite sides of said mounting means for locking said body to said frame to prevent movement of said body with respect to said frame, and adjustment means separate from said clamping means for moving said body with respect to said frame; said adjustment means including a screw positioned between said clamping means threadingly engaging



one of said lugs and passing into a bore in said body with a portion of said screw operatively engaging said body so that as said screw is rotated, the body will be caused to move with respect to said frame.

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**3,167,011**
**EXCHANGEABLE PRINTING DRUM DIE HOLDER MEANS**
**Roger H. Gartside, Shaler Township, Allegheny County, and Donald F. Panno, McKees Rocks, Pa., assignors to The Pannier Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Dec. 9, 1963, Ser. No. 329,032**
**5 Claims. (Cl. 101—378)**



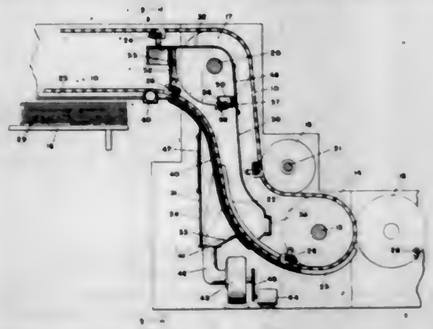
1. A printing die holder comprising an annular printing drum, a die receiving chamber in said drum having an outwardly open mouth, a printing die for mounting in said chamber, stops in the perimeter of said mouth to hold said die in printing position in the perimeter of said drum, a shoe slidably mounted within said chamber, studs extending through the bottom of said chamber engaging the bottom of said shoe, notches in said studs in the same plane in the stem of said studs, compression springs mounted upon said studs to continually press said shoe against said stops, a shoe latch slidably secured to the bottom of said chamber, bayonet slots in said shoe latch through which said studs extend, shoe latch springs to slide said latch so that said bayonet slots will engage said notches upon retraction of said shoe.

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**3,167,012**
**SHEET CONTROL AND SPRAY COLLECTION CHAMBER**
**Carlton C. Claybourn, Northbrook, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware**
**Filed Dec. 1, 1961, Ser. No. 156,445**
**2 Claims. (Cl. 101—416)**

1. In sheet delivery mechanism, the combination comprising an endless conveyor having a delivery run and a return run, gripper elements on said conveyor for conveying sheets by their leading edge along the path of the delivery run from a sheet carrying cylinder to a delivery pile, a chamber encompassing the delivery run intermediate the sheet carrying cylinder and the delivery pile, a series of sheet supporting members mounted within said

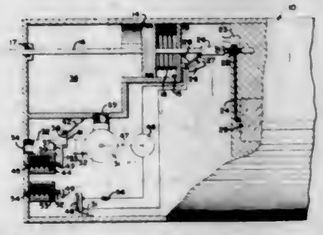
chamber for maintaining the free floating trailing portion of each sheet in the path of said grippers, said chamber having an entrance and an exit opening to accommodate the endless conveyor, an offset spray device located within said chamber and above the delivery run of the conveyor for spraying anti-offset material upon the printed side of the sheets as they pass through said chamber, an exhaust port in said chamber, said exhaust port being located on the side of the delivery run opposite to the spray device, suction means connected to said exhaust port for evacu-



ating said chamber whereby air is drawn inwardly through said entrance and exit openings at a rate sufficient to substantially preclude the escape of excess spray material through said entrance and exit openings, adjustable gate means associated with one of said openings, and means for adjusting said gate means to vary the area of said opening whereby the velocity of the air entering the chamber through said entrance opening is controlled with direct relation to the lineal speed of the conveyor to preclude fluttering of the trailing portion of the sheets as they enter said chamber.

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**3,167,013**
**DEVICE FOR ARMING AN UNDERWATER WEAPON AT SHALLOW DEPTHS**
**Robert M. Schmiech, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Jan. 18, 1963, Ser. No. 252,533**
**10 Claims. (Cl. 102—13)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

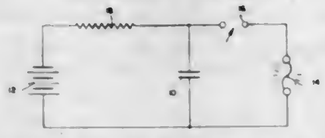


5. A shallow water mine arming mechanism comprising,

a spring biased arming piston movable within a cylinder disposed within the mine from an initial safe position to an armed position by water pressure applied thereto, and

a power driven water pump disposed within the mine and having the outlet thereof connected to said cylinder and having the inlet thereof in communication with the ambient water within which the mine is planted for increasing the hydrostatic pressure of the water sufficiently to overcome the bias of said spring and move said piston to the armed position.

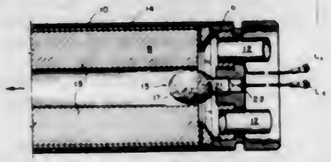
**3,167,014**
**BRIDGE WIRE FOR PRODUCING HIGH TEMPERATURE EXPLOSION**
**Louis Koplto, Brookline, Mass., assignor to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts**
**Filed Oct. 5, 1961, Ser. No. 143,221**
**6 Claims. (Cl. 102—28)**



6. A circuit for producing an explosion of very short duration and characterized by an intense flash of light, high temperature and high velocity shock waves, comprising a graphite element formed from a number of fine graphite fibers, condenser means for storing an electrical charge of high potential and rapid rise switching means for closing the circuit whereby a pulse of high electrical energy is applied to said element.

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**3,167,015**
**FLASH LAMP IGNITED ROCKET**
**Bernard Smith, 214B Groves, and Clarence E. Weinland, 4B Wasp Circle, both of Inyokern, China Lake, Calif.**
**Filed May 7, 1952, Ser. No. 286,594**
**4 Claims. (Cl. 102—49)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. Apparatus comprising; a rocket grain of a material adapted to chemically react and decompose after being ignited, and a photoflash bulb disposed adjacent the grain adapted to ignite the latter, the bulb being provided with a restricted zone through which substantially all of its energy must radiate.

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**3,167,016**
**ROCKET PROPELLED MISSILE**
**Waclaw Czerwinski, James Arthur Chamberlin, and Frank Arthur Woodward, all of Toronto, Ontario, Canada, assignors, by mesne assignments, to The De Havilland Aircraft of Canada Limited, Downsview, Ontario, Canada, a corporation**
**Filed July 30, 1956, Ser. No. 600,859**
**8 Claims. (Cl. 102—49)**



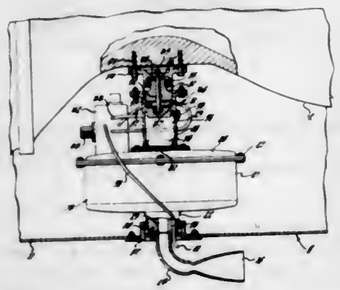
1. A rocket propelled missile comprising a first stage rocket motor including a cylindrical shell, a second stage rocket motor including a cylindrical shell coaxially disposed within and substantially encased by the first stage motor, the cylindrical shell of the second stage motor being spaced from the cylindrical shell of the first stage motor to define therewith an annular chamber, a solid propellant in the annular chamber and bonded to the inner face of the cylindrical shell of the first stage motor, igniting means for the propellant, the solid propellant being of annular cross-section and its internal diameter being



greater than the external diameter of the shell of the second stage motor so that an annular passage for products of combustion is provided between the propellant and the second stage motor, and an annular nozzle at the aft end of the shells to discharge to atmosphere the products of combustion emanating from the passage.

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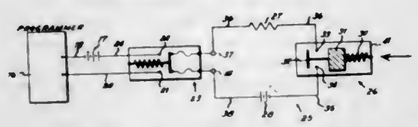
**3,167,017**
**ATTITUDE CONTROL**
**Albert J. Sobey, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 7, 1960, Ser. No. 67,848**
**5 Claims. (Cl. 102—50)**



1. Attitude control means for a vehicle comprising, in combination, a reaction engine, means mounting the engine on the vehicle for rotation about an axis, and means for rotating the engine; the engine comprising a gas generator and a jet nozzle, the nozzle being inclined to the said axis; the rotating means comprising a hydraulic motor coupled between the vehicle and the engine including parts relatively rotatable about the said axis, a remotely controllable reversing valve coupled to and controlling the motor, a reservoir for supplying hydraulic fluid to the valve, and means for bleeding motive fluid under pressure from the engine to the reservoir to pressurize the hydraulic fluid, the valve and reservoir being mounted on the engine for rotation therewith.

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**3,167,018**
**MISSILE SAFETY AND ARMING CIRCUIT**
**John E. Brunner, Middletown, Ohio, assignor to Aeronca Manufacturing Corporation, Middletown, Ohio, a corporation of Ohio**
**Filed Mar. 19, 1962, Ser. No. 180,533**
**5 Claims. (Cl. 102—70.2)**



1. A missile safety and arming circuit for a missile including a programmer, said circuit comprising an acceleration responsive switch of the mass-spring type having normally open contacts and including means for closing said contacts when said switch is subjected to a predetermined acceleration and reopening said contacts in the event said switch is closed in response to said predetermined acceleration and is subsequently subjected to an acceleration less than said predetermined acceleration, an electrical current-sensitive thermal relay having a fuse element, a first source of potential, a resistor means interconnecting said first source of potential, said resistor, said acceleration switch contacts, and said fuse element of said relay in series electrical connection, said relay having a pair of normally open contacts, a power source in series electrical connection with said relay contacts, and means interconnecting said power source and said relay contacts with said programmer, whereby said fuse element melts to energize said programmer only after said acceleration responsive switch is closed for a predetermined time.

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**3,167,019**
**DUAL ZONE PUMPING APPARATUS**
**Jacob W. Harris, Anaheim, Calif., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware**
**Filed Mar. 20, 1961, Ser. No. 96,750**
**13 Claims. (Cl. 103—4)**



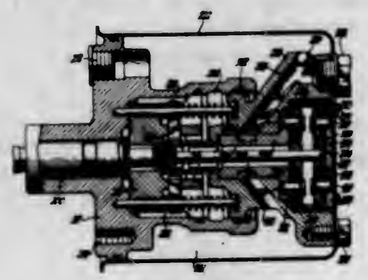
1. Dual zone pumping apparatus for installation within casings of oil wells, comprising: a landing head having a smaller external diameter than the internal diameter of said well casing, said landing head comprising a crossover body having a pair of longitudinally extending parallel passages therethrough, one of said passages being of larger diameter than the other; a primary string secured to the crossover body in alignment with the larger passage through said body; a tubular member secured to the lower end of the body in alignment with said larger passage and having an annular internal flange adjacent the upper end and an internal annular flange in downwardly spaced relation therewith, said tubular member extending downwardly to the lower zone; a packer in said casing separating the upper and lower zones and having an opening through which said tubular member extends; an upper pump cylinder having a depending tubular extension with a wall at the lower end thereof, said wall having an axial bore therethrough; a plurality of annularly spaced releasable latching fingers secured to the lower end of said extension, the free ends of said fingers releasably engaging the lower internal edge of the upper flange of said tubular member; a lower pump piston having a depending tubular piston rod; an annular external flange at the lower end of said rod, having a plurality of annularly spaced depending latching fingers releasably engaging the lower internal annular flange in said tubular member, said piston rod and piston having a longitudinally extending passage therethrough; a standing valve at the upper end of said bore of the piston, said valve permitting upward flow of fluid but preventing reverse flow through the passage in the piston; an upper pump piston in said upper pump cylinder, said upper pump piston having a longitudinal passage therethrough; a check valve controlling said passage permitting upward flow of fluid through said passage and preventing reverse flow therethrough; a pump rod connected to the upper end of said upper pump piston and adapted to be operably connected to pumping mechanism at the surface; a pump rod connected to the lower end of said piston and extending downwardly through said extension and bore through the lower wall thereof; a lower pump

cylinder operably receiving the lower pump piston, the upper end of said cylinder being connected to the lower end of the second mentioned pump rod, said cylinder having a wall closing the upper end thereof and having an outlet port therein; a valve controlling said outlet port permitting upward flow of fluid therethrough but preventing reverse flow; a cylindrical flange carried by the second mentioned pump rod in downwardly spaced relation to the latch means at the lower end of the extension of the upper pump cylinder and adapted to disengage the fingers thereof from the flange at the upper end of the tubular member when the pump rod is moved upwardly to a predetermined point to effect release of said fingers; a landing spear disposed in the smaller passage through the landing head, said spear having a flange at the upper end seating on the upper end of said landing head and a strainer at the lower end below the landing head and having an external annular groove at the upper end of said strainer; a locking sleeve secured to the crossover body in alignment with the smaller passage therethrough; flexible latching fingers at the lower end of said sleeve, said latching fingers being annularly spaced apart and releasably received in the annular groove at the upper end of the strainer to thereby releasably lock the landing spear in said smaller passage; said landing spear having a passage extending upwardly therein and closed at the upper end; check valves controlling the flow of fluid through the upwardly extending passage of said landing spear to permit upward flow of fluid therein but preventing reverse flow, there being crossover passageway means between the upwardly extending passage in said landing spear and the interior of said extension of the upper pump cylinder for the flow of fluid therethrough, into the passage through the upper pump piston and upwardly into the primary string, there also being a passage extending downwardly in the upper end of said landing spear and closed at its lower end, said crossover body having crossover passage means for the flow of oil from the upper end of the tubular member to the upper end portion of the landing spear which has means providing a connection for the flow of oil into the upper passage in said landing spear; and a secondary parallel string extending upwardly from the upper end of the landing spear, said secondary string having a passage therethrough connected with the passage in the upper end of said landing spear whereby oil pumped by the lower zone pump will be transmitted to the surface independently of the oil pumped to the surface by the upper zone pump.

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**3,167,020**
**PULSATING POWER UNIT DEVICES**
**Robert P. Rohde, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Sept. 27, 1963, Ser. No. 312,130**
**13 Claims. (Cl. 103—41)**

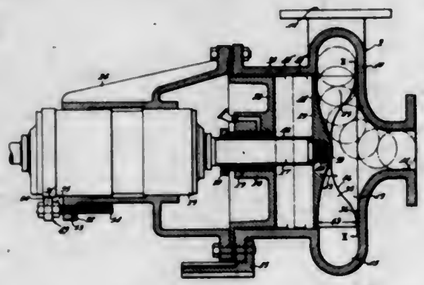
1. A pulsating power unit including a pump body defining an interior chamber closed at one end by a valve body, a drive shaft extending into said chamber from the other end of said pump body and journaled in the latter, an outer casing cooperating with the pump body in defining a low pressure reservoir chamber, two ported pressure plates in said interior chamber, a pump ring clamped between said pessure plates, a vaned pump rotor within said pump ring and fixed to said drive shaft to be driven by the latter, said pressure plates and pump ring cooperating in forming a main low pressure chamber within said interior chamber, one of said pressure plates and said valve body determining a high pressure chamber between them, at least one thru-port in said one pressure plate and leading to said high pressure chamber, said pump body being ported to connect said low pressure reservoir chamber and said main low pressure chamber, a bypass in said pump body connecting said high pressure chamber to said main low pressure chamber, a pressure relief valve controlling said bypass, an outlet leading from said high pressure chamber, an inlet passage leading through said



valve body and connected to said high pressure chamber, and rotary valve means controlling said inlet passage and operatively connected to said drive shaft.

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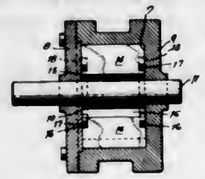
**3,167,021**
**NONCLOGGING CENTRIFUGAL PUMP**
**Leonard H. Sence, Milford, Ohio, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Apr. 15, 1963, Ser. No. 273,164**
**2 Claims. (Cl. 103—103)**



1. A centrifugal pump comprising: a casing having walls defining an impeller chamber and a cylindrical neck portion extending therefrom, said chamber having an axial inlet and a radially spaced discharge opening, an impeller mounted for rotation in said chamber, said impeller having a rear shroud plate and a plurality of arcuately spaced vanes mounted thereon, said vanes extending from the periphery of said plate radially inward to near the center of said impeller, the depth of said vanes being smaller near the center of said impeller than near its outer periphery, the depth of the radially outer portion of said vanes being substantially equal to the width of said chamber, said vanes being arranged on said impeller so as to define with said shroud plate and the opposing wall of said impeller chamber a plurality of passages continuous from the inlet of said chamber to said outlet, adjusting means for moving said impeller axially between a position adjacent said oposing wall and a position substantially within said neck portion and outside of said chamber, the minimum size of said passages for any position of said impeller being at least equal to a sphere of the same diameter as the width of said inlet, whereby any solid body entering said chamber through said inlet can be passed through said impeller to said discharge for any position of said impeller.



**3,167,022**
**ROTARY MACHINE WITH BLADE CENTERING RINGS**
**Frank Scognamillo, 118 Walnut St., Ridgewood, N.J.**
**Filed July 18, 1963, Ser. No. 296,019**
**1 Claim. (Cl. 103—136)**



A rotary machine having radially sliding blades confined in both outward and inward movement by freely rotatable centering rings, comprising

a casing having a cylindrical peripheral wall and flat, single plane spaced parallel end walls cooperatively forming a cylindrical chamber,

a shaft journalled eccentrically in said cylindrical chamber,

a cylindrical rotor on said shaft in tangential relation with the surrounding cylindrical wall of the chamber and having flat, single plane, parallel end walls in running engagement with said end walls of the cylindrical chamber,

said peripheral wall having inlet and outlet passages located at opposite sides of the point of tangency of the rotor,

said end walls of the rotor each having an annular substantially U-shaped cross section groove therein closed by the opposing end wall of the chamber,

said rotor having radial slots therein extending from the periphery of the rotor inwardly past the inner edges of the annular grooves in the ends of the rotor,

blades slidingly confined in said slots with their ends flush with the ends of the rotor and in running engagement with the end walls of the chamber,

said blades having substantially U-shaped notches in the end edges of the same in register with said annular grooves in the ends of the rotor,

blade centering rings substantially conforming in cross section to the notches in the ends of the blades,

said rings having free running engagement in said notches in the blades and in said grooves in the ends of the rotor, and

said annular grooves in the rotor having a depth equal to the depth of the rings and a width equal to the width of the rings plus the extent of eccentricity of the rotor in the cylindrical chamber and said grooves having spaced outer and inner circular confining walls limiting the outward and inward radial travel of the rings in respect to the rotor and thereby limiting radial movement of the blades in both directions and holding the blades in centered running relation in the chamber.

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**3,167,023**
**ROTARY MACHINE WITH RINGS HOLDING BLADES CENTERED LONGITUDINALLY AND RADIALLY IN THE OPERATING CHAMBER**
**Frank Scognamillo, 118 Walnut St., Ridgewood, N.J.**
**Filed Aug. 15, 1963, Ser. No. 302,378**
**1 Claim. (Cl. 103—136)**

A rotary machine with free running rings controlling both longitudinal and radial movement of operating blades and comprising in combination,

a housing having a cylindrical body portion and end walls cooperatively forming a cylindrical chamber,

a shaft journaled eccentrically in said cylindrical chamber,

a rotor on said shaft in tangential relation with the surrounding cylindrical wall of the chamber,

said cylindrical body portion having inlet and outlet ports at opposite sides of the tangency of the rotor,

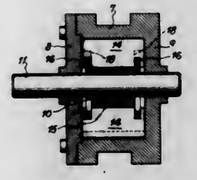
said rotor having radial slots therein,

blades slidingly confined in said slots and dimensioned for cooperative relation with the cylindrical and end walls of said chamber,

said rotor having concentric annular cavities in the ends of the same about the shaft,

blade centering rings of substantially square cross-section seated in said annular cavities in engagement with the inner walls of said cavities,

said blades having radially extending parallel-sided notches in the inner edges of the same lined up with said inner walls of the cavities in the ends of the rotor,



said rings closely fitting in and substantially filling said notches and thereby holding said blades outwardly in respect to the surrounding cylindrical wall and longitudinally in both directions in respect to the end walls of the housing, the end walls of the housing being each in a single flat plane,

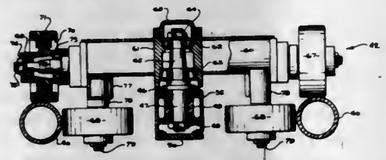
the ends of the rotor being in single flat planes in running engagement with the flat ends of the housing,

the ends of the blades being flush with the ends of the rotor and in free running relation with the end walls of the housing, and

said rings by engagement with the inner walls of said annular cavities in the ends of the rotor and by engagement in the notches in the blades, holding the blades in longitudinal alignment in the rotor and the blades and rotor in free running relation with the end walls of the housing.

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**3,167,024**
**BOBSLED AMUSEMENT RIDE**
**Karl W. Bacon, Mountain View, and Edgar O. Morgan, Palo Alto, Calif., assignors to Walt Disney Productions, Burbank, Calif., a corporation of California**
**Original application May 16, 1960, Ser. No. 29,366, now Patent No. 3,114,332, dated Dec. 17, 1963. Divided and this application Jan. 25, 1963, Ser. No. 254,557**
**1 Claim. (Cl. 104—63)**



In a bobsled amusement ride, the combination comprising:

a banked track having a pair of rails of circular cross-sectional configuration and including a descending portion;

and a car that descends said track rapidly under the influence of gravity, said car having first wheel means that rotate about a horizontal axis and ride upon the upper portion of said track and second wheel means that rotate about a vertical axis of rotation that engage the inner surfaces of said track, said first

wheel means having normally cylindrical peripheral surfaces of a material deformable concavely into conformity with said rails in proportion to the load imposed on said first wheel means by said car to thereby inhibit any tendency of said car to run faster when carrying a heavy load than when carrying a lighter load.

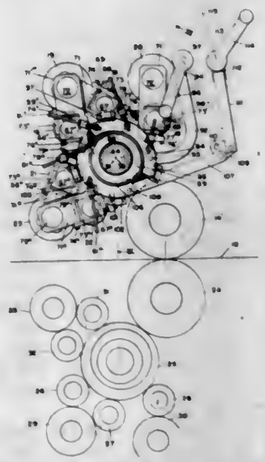
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3,167,025

## CYLINDER COCKING AND FORM ROLLER ADJUSTING MECHANISM

Gerhard A. Nothmann, Wilmette, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

Filed Feb. 16, 1962, Ser. No. 173,626
4 Claims. (Cl. 101—144)



1. In a rotary printing press, a pair of spaced side frames, a plate cylinder and a coacting cylinder journalled for rotation in the side frames, journalling means for the plate cylinder including an adjustable bearing housing in the side frame at one end of the plate cylinder, a bore in the bearing housing to receive the plate cylinder bearing, the axis of said bore being eccentric with respect to the axis of the housing whereby rotation of the bearing housing will shift the adjacent end of the plate cylinder relative to the coacting cylinder in a direction substantially normal to a plane through the axes of the plate and the coacting cylinder, a series of form rollers located at spaced intervals about and normally adapted to have rolling contact with the plate cylinder, supporting means for each roller including a bracket pivotally mounted for swinging movement of the roller toward and away from the plate cylinder, a control segment movably mounted on the side frame, a link pivotally connected between predetermined hinge points on each bracket and on the control segment, said links being adapted to maintain each roller at a selected center distance with respect to the plate cylinder, means for adjusting the bearing housing to thereby shift the adjacent end of the plate cylinder relative to the coacting cylinder, and means for imparting movement to the respective rollers in directions related to the movement of the plate cylinder, said means comprising a control surface formed integral with the bearing housing for controlling the position of the control segment, and said surface being so oriented with respect to the links, the hinge points and the axes of the bore and the bearing housing as to provide the necessary instant centers whereby upon movement of the bearing housing said surface will impart the requisite relative radial shifting motion directly to the control segment and thereby to the respective rollers to maintain the center distances between the respective rollers and the plate cylinders substantially constant.

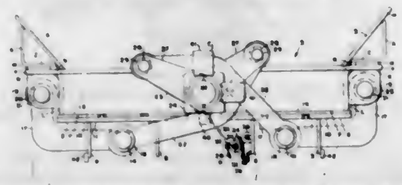
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3,167,026

## HOPPER DOOR OPERATING MECHANISM

Willard E. Kemp, Bridgeton, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed May 1, 1963. Ser. No. 277,335
6 Claims. (Cl. 105—250)



1. In a railway car for the transport of bulk lading, the combination of a hopper having a plurality of opposed slope sheets converging downwardly to define a discharge opening at their lower edges, a frame surrounding the discharge opening formed by said slope sheets, hinge arms connected at their outer ends to opposite side of said frame for swinging movement about spaced apart first pivotal axes, spaced apart doors closing the discharge opening and connected substantially at their longitudinal centers for rocking movement about spaced apart second pivotal axes, said second pivotal axes being carried by the inner ends of said hinge arms, a shaft extending longitudinally across said frame intermediate said first pivotal axes and providing a third pivotal axis, the distance between said first pivotal axes and the adjacent second pivotal axes being substantially equal to the distance between said third pivotal axis and said second pivotal axes, door operating means including links connecting said shaft to each door substantially at said second pivotal axes and forming a toggle lock holding each door in closed position, and separate lock means carried by one of the doors and engageable with said shaft to prevent inadvertent rotation of said shaft.

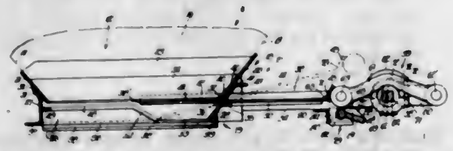
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3,167,027

## HOPPER DISCHARGE OUTLET CLOSURE ACTUATING MECHANISM

George B. Dorey, Westmount, Quebec, Canada, assignor to Enterprise Railway Equipment Company, Chicago, Ill., a corporation of Illinois

Original application Mar. 10, 1959, Ser. No. 798,435, now Patent No. 3,082,704, dated Mar. 26, 1963. Divided and this application Sept. 26, 1962, Ser. No. 226,354
4 Claims. (Cl. 105—282)



1. A discharge outlet assembly comprising, in combination:

(*a*) a four sided upper section having downwardly and inwardly sloping sides with the lower margins thereof in horizontal coplanar relation,

(*b*) a pair of lower side wall members secured to the respective undersides of a pair of sides of said upper section and extending beyond a third side thereof,

(*c*) runways extending inwardly from said lower side wall members having upwardly facing runway surfaces in horizontal coplanar relation,



(*d*) a gate having a horizontal body portion and slidable on said runway surfaces and projecting beyond said third side in closed position,

(*e*) said gate in closed position underlying said lower margins of the four sides of said upper section and having vertical flanges of uniform height at the sides extending upwardly underneath the respective sloping sides of said upper section and an inclined flange on the projecting end of said gate extending upwardly underneath said third side of said upper section, upper surface portions of said body portion of said gate in closed position being in sealing engagement with said lower margins of said four sides of said upper section and top portions of said vertical flanges and the upper side portion of said inclined flange being in sealing engagement with the under surfaces of the respective sloping sides and third side of said upper section, and

(*f*) means for moving said gate along said runways between closed and open position.

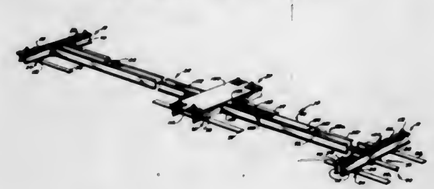
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3,167,028

## LONG TRAVEL CUSHIONING ARRANGEMENT FOR CRANE LIFT FREIGHT CONTAINERS

Jack E. Gutridge, Dyer, Ind., and Jack W. Borger, Calumet City, and Carl Adler, Chicago, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 21,056, Apr. 8, 1960, which is a continuation of application Ser. No. 795,706, Feb. 26, 1959. This application Sept. 6, 1963, Ser. No. 308,616
10 Claims. (Cl. 105—366)



1. In a railroad vehicle including a wheeled railroad flatcar bed having couplers at opposite ends thereof, a freight container support rack positioned on and carried by said bed, means for mounting said rack on said bed for movement longitudinally of said bed, and dissipative energy system type cushioning means operatively interposed between said rack and said bed for cushioning impacts applied to the car through the couplers and having a cushion travel of about twenty or more inches,

the improvement wherein:

said rack comprises a pair of spaced sill members extending longitudinally of the car bed,

a pair of spaced cross members rigidly joined to the sill members at longitudinally spaced points,

glide means interposed between the rack and the bed for transferring the load carried by the rack to the flatcar bed,

and securing means for mounting a freight container on the rack to provide at one end of the container a rigid anchorage to the rack and at the other end of the container a lost motion connection therewith,

said securing means including at least two indexing devices secured to said rack and spaced apart longitudinally of said rack with each of said indexing devices being constructed and arranged to cooperate with a complemental indexing device on the under side of the freight container,

one of said rack indexing devices having a relatively tight fit with respect to its complemental indexing device on the container and the other rack indexing device having a relatively loose fit with respect to its complemental indexing device on the container,

said glide means including an antifriction device for each of said spaced indexing devices with each such antifriction device being located adjacent to its associated indexing device,

whereby said spaced sills, being relieved by said securing means of longitudinal stress due to the weight of the container when mounted on said rack, may be relatively light weight.

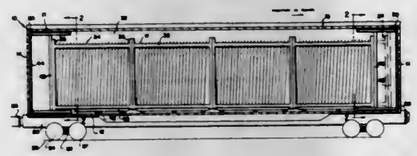
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3,167,029

## SHOCK-CUSHIONING DEVICE

Jerry Kirsch, 3946 Bishop Road, Detroit, Mich.

Filed Sept. 26, 1961, Ser. No. 140,761
7 Claims. (Cl. 105—374)



1. A shock-cushioning device for attachment to a cargo vehicle load-receiving body, said device comprising

a fixed frame structure adapted to be relatively stationarily mounted in the vehicle load-receiving body adjacent one end thereof and having a longitudinally-extending guideway connected thereto,

a movable frame structure mounted in relatively movable spaced relationship to said fixed frame structure, said movable frame structure being movably mounted in said guideway for travel toward and away from said fixed frame structure,

and a hydropneumatic cushioning motor disposed between said structures and having a cylinder element connected to one of said structures and a main piston element with a main piston head reciprocable in said cylinder and with a hollow piston rod connected to the other of said structures,

said cylinder element containing a cylinder bore constituting a main hydraulic fluid chamber and said hollow piston rod containing a rod bore with an auxiliary free piston reciprocable therein subdividing said rod bore into an intermediate hydraulic fluid chamber and a compressed pneumatic fluid chamber,

said main piston element including valve means responsive to the attainment of a predetermined pressure within said motor for controlledly releasing hydraulic pressure fluid from said main hydraulic fluid chamber into said intermediate hydraulic fluid chamber.

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3,167,030

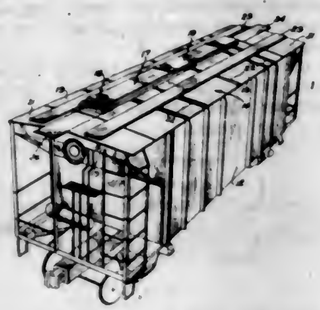
## TROUGH TYPE CENTER HATCH ARRANGEMENT

Franklin P. Adler, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Jan. 29, 1963, Ser. No. 254,759
13 Claims. (Cl. 105—377)

1. In a covered hopper car having a roof and plurality of hoppers covered by said roof, a hatch arrangement on said roof comprising a hatch opening defined by frame members including a continuous rim formed in said roof and extending continuously over each of said hoppers, continuous hatch cover means for covering said opening and sealingly engageable with said rim, and hatch cover operating means including means for raising said hatch

cover means out of sealing engagement with said rim and a covering position over said opening, and means support-



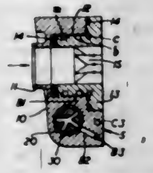
ing said raising means for shifting said cover means in a horizontal plane to one side of said hatch opening.

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3,167,031
## MANUFACTURE OF ICE-CREAM

Victor John Taylor, Ruislip Manor, Middlesex, England, assignor to Mister Softee Limited, London, England, a British company

Filed Nov. 14, 1962, Ser. No. 237,699
Claims priority, application Great Britain, Nov. 20, 1961, 41,403/61; Apr. 12, 1962, 14,154/62
2 Claims. (Cl. 107—1)



1. An attachment for an ice cream extruding apparatus, comprising a body member, said member having a generally straight bore extruding between opposite faces of said body member, means for attaching said body member against an extruding opening of said apparatus with one end of said bore in communication with said opening, said bore having an exit portion the walls of which are fluted in a frame substantially at right angles to the length of said bore, said body member having therein a plurality of sets of apertures admitting to the fluted exit portion of said bore, a plurality of inlets for ice cream additives under pressure, and settable valve means disposed within said body member for controlling selectively at will the communication of said inlets respectively to said set of openings and thereby the introduction of said ice cream additives into extruded ice cream passing through said bore, said settable valve means comprising a first member and a co-operating second, settable, member, said first member being movable from a first, off, position to a second position in which at least one of said inlets is in communication with its associated apertures, said second member preselecting which apertures are in communication with their associated inlets when said first member is in said second position.

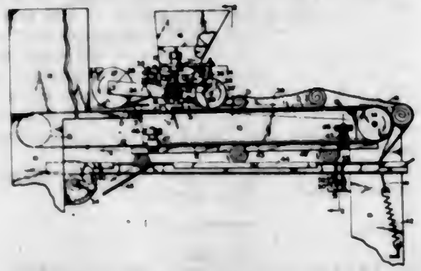
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3,167,032
## DEVICE FOR AUTOMATICALLY COATING AND ROLLING UP SHEETED DOUGH PIECES

Herbert C. Rhodes, 10106 SE. Stark St., Portland, Oreg.

Filed July 22, 1963, Ser. No. 296,687
9 Claims. (Cl. 107—4)

4. In a device for automatically coating and rolling up sheeted dough pieces, a main supporting frame, a top deck on said frame, an endless conveyor belt moving along over said top deck, a dough sheeting roll assembly delivering sheeted dough pieces separately consecutively onto said conveyor belt, a hopper, supports positioning said hopped spaced above said deck and conveyor belt, said hopper provided with a bottom slot, a rotatably dispersing roller discharge of material from said hopper slot when said roller is rotated, means operable upon contact with said belt for rotating said dispersing roller, means



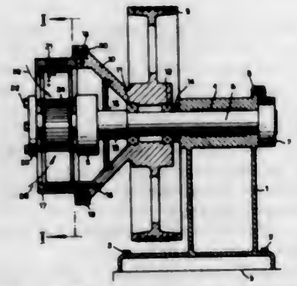
actuated by engagement with each dough piece on said belt for bringing said first mentioned means into operating contact with said belt during the passage of the dough piece through an area below said hopper, a dough-engaging strip having a main portion extending forwardly from said hopper over said belt, a short section of said strip extending freely from said hopped beneath said main portion, and tensioning means connected with the forward end of said main portion of said strip.

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3,167,033
## PELLET MILL

Reinhard Kuhn, Uzwil, Switzerland, assignor to Gebruder Buehler, Uzwil, Switzerland, a firm of Switzerland

Filed June 14, 1961, Ser. No. 117,178
Claims priority, application Switzerland, June 21, 1960, 7,019/60
2 Claims. (Cl. 107—14)



1. A pellet mill for extruding plastic masses used as cattle feed or the like, said mill comprising, in combination, a support base, a non-rotatably mounted roller carrier fixed to the base; at least a pair of similar rollers mounted on said carrier for rotation about axes at equal radial distances from the longitudinal center line of said carrier; a mold carrier including a relatively small diameter bearing portion mounted rotatably on said base, said mold carrier increasing in diameter outwardly from said bearing portion to a relatively large diameter substantially cylindrical mounting portion having an inner diameter substantially equal to that of a cylinder tangent to said rollers and a substantially cylindrical outer surface; a substantially cylindrical mold in embracing rolling contact with said rollers and having mold perforations therethrough, the outer surface of said mold forming a substantially cylindrical coaxial extension of the outer



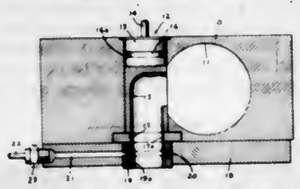
surface of the mounting portion of said mold carrier, axially extending clamping means securing said mold to said mold carrier; and a replaceable mold centering wear ring telescoped over the outer surface of said mold and the mounting portion of said mold carrier and axially overlapping the juncture of said mold and said mold carrier; and readily accessible and radially extending fastener means disengageably securing said ring to said mold carrier; said wear ring absorbing the varying and uneven radial stresses on said mold resulting, during rotation of said mold, from pressing the material between said mold and said rollers rolling on the inner surface thereof, through the mold perforations.

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3,167,034
## DISPENSING APPARATUS

Earle Thomas Oakes, Islip, Lewis Garth Doom, East Islip, Paul E. Sundheim, Bayport, and Paul Albert McElligott, Greenlawn, N.Y., assignors to The E. T. Oakes Corporation, Islip, N.Y., a corporation of New York

Filed Oct. 3, 1961, Ser. No. 142,575
3 Claims. (Cl. 107—27)



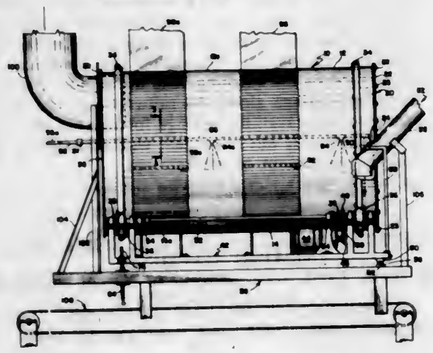
1. Dispensing apparatus for depositing a semi-liquid material on a receiving surface comprising, means defining a dispensing channel having an input end and an output end, said channel including a portion formed of porous substance, a source of said material under pressure connected to the input end of said channel, means to continuously supply gas under pressure through the porous substance of said portion of said channel to displace said material from the interior walls of said channel while the material is therein and passing therethrough, whereby the reduced adherence of said material to said channel enables more uniform and controllable deposition thereof, and means in said channel for controlling the amount of material to be deposited on said receiving surface.

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3,167,035
## CONTINUOUS ENROBING MACHINE

John O. Benson, Mayer, Minn., assignor to General Mills, Inc., a corporation of Delaware

Filed Sept. 1, 1960, Ser. No. 53,437
5 Claims. (Cl. 107—54)



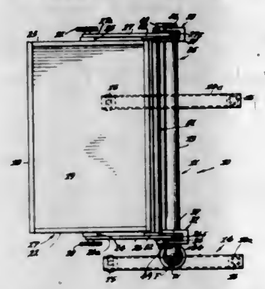
1. A method of enrobing cereal products comprising the steps of spraying an atomized sugar solution onto a cereal product as it passes through an imperforate longitudinal section of a rotating drum at a rate sufficient to only coat said product, and then directing a drying medium inwardly through a perforate longitudinal section of said rotating drum to remove moisture from said cereal product as it passes longitudinally through this latter section.

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3,167,036
## READING STAND

Frank I. Brossard, 3912 Martin Drive, San Mateo, Calif.

Filed Feb. 12, 1963, Ser. No. 257,959
2 Claims. (Cl. 108—4)



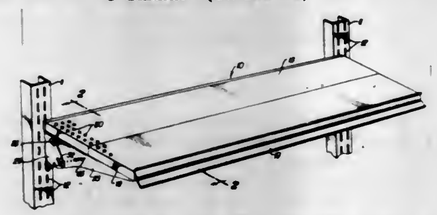
1. A tiltable reading stand of the class described, comprising, in combination, a tiltable table having a rectangular frame, a pair of tiltable arms upon which said frame is tiltably mounted, a pair of supporting brackets, said frame having two short sides and two long sides, hinging points at either one of the short sides of said table, tightening screws in said hinging points, said screws mounting each hinging point in said table to one end of said tiltable arms to permit said table to be adjustably secured around its transverse axis, the opposite ends of each tiltable arm having a swiveling point, each arm being supported by its swiveling point to one bracket in said pair, with one arm being supported to one bracket and the other arm being supported to the other bracket, each bracket in said pair being provided with an arcuate slot, an arcuate segmented section held to each bracket paralleling said slot, each arm having a tightening screw fitted in said slot and secured to a sliding block, said block having an arcuate section, the loosening of said latter tightening screw in said bracket permitting the sliding movement of said block upon said arcuate segment, and the tightening of said latter screw discontinuing said movement.

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3,167,037
## MERCHANDISE DISPLAY SHELF

Donald L. Mapson, La Habra Heights, Calif., assignor to M & D Store Fixtures, Inc., a corporation of California

Original application Aug. 23, 1961, Ser. No. 133,342, now Patent No. 3,125,042, dated Mar. 17, 1964. Divided and this application Sept. 6, 1963, Ser. No. 307,103
3 Claims. (Cl. 108—6)



1. A sheet metal shelf supported, when in use, on a pair of vertical posts having vertical rows of perforations, said shelf comprising a rectangular shelf body of sheet metal notched correspondingly at its opposite ends, de-

formed downwardly in alignment with said notches to form integral longitudinal reinforcing ribs and bent downwardly at its opposite ends to form bracket attaching flanges spaced laterally very short distances from opposite ends of said ribs; two sheet metal brackets extending upwardly to substantially fill the spaces between said flanges and ribs and spot welded to said flanges to unite said brackets with said shelf body; and lugs provided on rear ends of said brackets, said lugs fitting into perforations in said posts to support said shelf on said posts.

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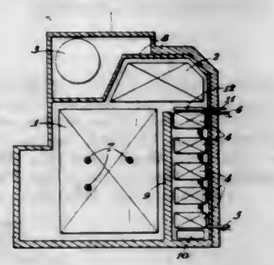
**3,167,038**
**COLLAPSIBLE PALLETS**
**Dwight C. Brown, 414 N. Granada St., Arlington, Va.**
**Filed Apr. 23, 1962, Ser. No. 189,649**
**7 Claims. (Cl. 108—56)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A pallet of the character described, comprising a pallet deck, a collapsible cellular supporting base and a collapsible carrier and reenforcing unit for the base, said unit having opposite ends hingedly attached to the underside of said deck and collapsible thereagainst, said base having one side attached to said unit—and collapsible thereagainst, said unit having reenforcement portions insertable into receptive cells of said base when set up, and said joined base and unit being collapsible together against the underside of said deck.

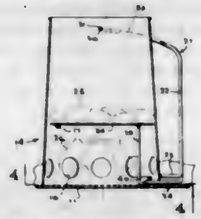
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**3,167,039**
**OPERATION OF FURNACES**
**Ronald Douglas Wilsdon and Laurence King Rendle, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock company**
**Filed July 9, 1956, Ser. No. 596,732**
**Claims priority, application Great Britain, July 26, 1955, 21,542/55; Mar. 13, 1956, 7,793/56**
**3 Claims. (Cl. 110—1)**



1. A method for reducing corrosion in furnaces when using a sulphur-containing carbonaceous or hydrocarbon fuel which comprises continuously injecting ammonia into said furnace in an amount constituting from 0.5% wt. to 9.0% wt. based on the total weight of sulphur in elemental and combined form in the fuel fed to said furnace, said ammonia being injected into a part of the combustion zone of said furnace beyond the flame zone at which the temperature is above the dew-point of untreated combustion gases and below 500° C.

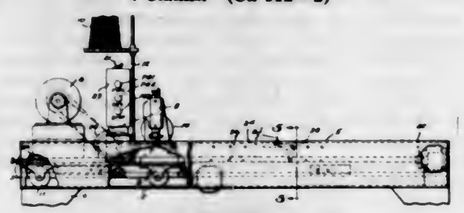
**3,167,040**
**AUTOMATIC DUMP TYPE CHARCOAL LIGHTER**
**Garner B. Byars, Sr., Lavaughn Johnson, and Hugh W. King, Corinth, Miss., assignors to Auto Fire Corporation, Corinth, Miss., a corporation of Mississippi**
**Filed July 6, 1962, Ser. No. 208,688**
**4 Claims. (Cl. 110—1)**



2. A charcoal starter comprising a tubular housing of substantial height, a grate pivoted in the housing, depending leg means secured to the grate and being of sufficient length to at times engage a subjacent supporting surface and retain the grate in a substantially horizontal position, a holding member pivoted to the housing, and means on said holding member supportingly engageable with said leg means to retain the grate in said substantially horizontal position, said holding member being rotatable sufficiently to disengage from the leg means and release the grate.

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**3,167,041**
**RAILWAY SEWING MACHINE IN COMBINATION WITH A PIN-TYPE WORK HOLDER**
**Richard Briggs, Reading, Mass., assignor to Birch Brothers, Inc., Somerville, Mass., a corporation of Massachusetts**
**Filed Dec. 28, 1962, Ser. No. 248,135**
**4 Claims. (Cl. 112—2)**



1. In the railway sewing machine of the class having a stand and a railway bed mounted thereon, the combination of retractable holding pins projecting upwardly from an upper surface of the railway bed to receive and hold fabric ends to be sewn, a traveling carriage movable along the railway bed, a power driven stitching head supported on the traveling carriage and constructed and arranged to apply stitches to said fabric ends received on the said holding pins, means for controlling the placement of stitches applied by the stitching head during movement of the traveling carriage along the railway bed and means responsive to the travelling carriage for moving the holding pins downwardly out of contact with the cloth at one point in the movement of the carriage.

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**3,167,042**
**DEVICE FOR ACTUATING THE KNIFE OF A SEWING MACHINE**
**Luigi Bono, Pavia, Italy, assignor to Necchi Societa per Azioni, Pavia, Italy**
**Filed July 27, 1961, Ser. No. 127,346**
**Claims priority, application Italy, Apr. 11, 1961, 646,339**
**6 Claims. (Cl. 112—123)**

1. A knife attachment for a sewing machine comprising a support adapted to be connected to an arm



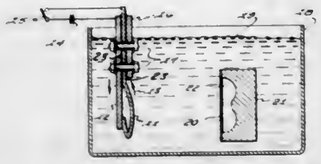
of a sewing machine, a hollow pivot pin carried by said support for oscillatory movement, arm means secured to said pivot pin for oscillation therewith, means connected to said support for mounting a knife for reciprocatory movement from said pivot pin, a lever having a notch disposed therein pivotally mounted on said pivot pin, drive means operatively connected to said lever for oscillating said lever, a rod disposed within said hollow pivot pin and movable axially with respect thereto, tooth means carried on said rod and being disposed toward said notch, a second arm means secured to said pivot pin and having an opening therethrough in which said tooth slidably passes, spring means disposed between said pivot pin and



said lever for pivoting said tooth out of alignment with said notch, biasing means engaging said rod to normally urge said tooth towards said lever, and means connected to said rod to move same axially against the action of said biasing means when said tooth is engaged in said notch so that said spring means pivots said tooth out of alignment with said notch to disengage said tooth therefrom and maintain said tooth out of engagement therewith, said first mentioned arm means being operated radially with respect to said last mentioned means against the action of said spring means so that said biasing means moves said rod axially to cause said tooth to engage said notch.

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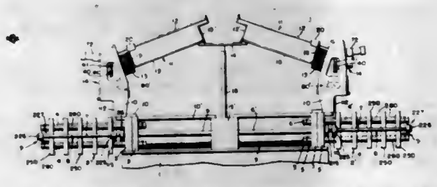
**3,167,043**
**METAL FORMING DEVICES AND METHOD USING MAGNETIC AND HYDRAULIC PRESSURE**
**Harold P. Furth, Berkeley, Calif., assignor to Advanced Kinetics, Inc., Costa Mesa, Calif., a corporation of California**
**Filed Apr. 11, 1962, Ser. No. 186,785**
**8 Claims. (Cl. 113—44)**



8. In a device for forming a metal work piece by hydraulic pressure,
a forming tank
a pressure transmitting fluid in said tank,
a die positioned in said tank adjacent to and in forming relation with said work piece,
means for producing pressure shock waves through said fluid to form said work piece against said die comprising,
a flexible electrically conductive metallic diaphragm in said tank parallel to and adjacent to said work piece,
and means for applying pressure on said diaphragm whereby said diaphragm is displaced within said fluid to produce said pressure shock waves, said pressure applying means comprising,
a transmission line responsively connected to a current source and having a portion shaped to provide a magnetic field of high strength,
said diaphragm positioned within said magnetic field at a predetermined distance from said transmission line,
and means for providing a flow of current in said diaphragm,
the current flowing in said transmission line generating said magnetic field and the current flowing in said diaphragm interacting with said magnetic field to provide magnetic pressure on said diaphragm.

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**3,167,044**
**FORMING APPARATUS**
**Henry G. Henrickson, Mount Prospect, Ill., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware**
**Filed Apr. 14, 1958, Ser. No. 728,149**
**26 Claims. (Cl. 113—46)**



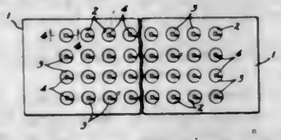
1. An apparatus for drawing cup-shaped bodies from initially flat metallic blanks comprising the combination of a first and second set of opposed forming dies, each set of forming dies also including a floating punch bottoming member, a common piston means disposed intermediate said sets of forming dies, means for reciprocating said piston means in a true linear path and between said dies, a punch connected to each of the opposed sides of said piston means and insertable in one of said sets of forming dies, a pressure pad associated with each punch and each set of forming dies for engaging and holding a flat blank against the first forming die in a set of forming dies during initial movement of the punch through the set of forming dies, a common rod means secured to both of the opposed punch bottoming members and the opposed pressure pads whereby movement of the punch connected to the one side of said piston means into engagement with the bottoming member on said one side will cause the pressure pad on the other side of said piston means to be moved away from the set of forming dies associated therewith so that flat blank can be inserted between said last-mentioned set of forming dies and said last-mentioned pressure pad and means actuated by the floating bottoming member on one side of the piston means during engagement of the die with a punch at the end of the operating stroke thereof for actuating said piston reciprocating means whereby said piston means and said last-mentioned punch will be moved away from the said bottoming member.

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**3,167,045**
**REFRACTORY FIXTURE**
**George F. Meyer, Jr., Benzinger Township, and Clarence J. Forster, St. Marys, Pa., assignors to Pure Carbon Company, Inc., St. Marys, Pa., a corporation of Pennsylvania**
**Filed May 17, 1961, Ser. No. 110,706**
**9 Claims. (Cl. 113—99)**

1. A refractory fixture for supporting a series of assemblies and for holding the parts of each assembly in

predetermined relative positions while they are being joined together as a unit by fusion of one or more of the parts thereof comprising a refractory body provided with a series of spaced holes, and a refractory insert accurately sized with respect to and press fitted in each of said holes, each insert having a hard abrasion resistant face shaped to engage parts of an assembly and to retain them in pre-



determined relative positions while they are being subjected to heat, each insert having a coefficient of thermal expansion between limits, one lower and the other higher than that of said refractory body, and such that, when said fixture is subjected to the heat required for joining said parts, it will not be loosened in its hole or subject the material of said body to harmful stresses.

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**3,167,046**
**METHOD OF FORMING A SHEET METAL FIN STRIP ELEMENT FOR HEAT EXCHANGE STRUCTURES**
**Arthur B. Modine, Racine, Wis., assignor to Modine Manufacturing Company, Racine, Wis., a corporation of Wisconsin**
**Original application Jan. 24, 1956, Ser. No. 560,997, now Patent No. 2,965,357, dated Dec. 20, 1960. Divided and this application Nov. 16, 1960, Ser. No. 69,697**
**4 Claims. (Cl. 113—118)**



1. The method of forming a sheet metal fin strip element for heat exchange structures from a sheet metal strip of substantially foil-like thickness, which comprises the steps: stretching the metal strip to substantially uniformly reduce the thickness and increase the area thereof, forming the longitudinally extending intermediate portion of the sheet metal strip out of the normal plane of the latter to increase the area in a transverse direction and to decrease the thickness of such portion, deforming the longitudinal portions on opposite sides of said intermediate portions at predetermined spaced points out of the plane of said sheet metal strip to increase the area in a longitudinal direction and to decrease the thickness of the metal at such points, and forming the sheet metal strip intermediate said longitudinally spaced points for engagement with elements of such a heat exchange structure so that the decreased thickness of the deformed longitudinal portions of the sheet metal fin strip element between said spaced points for engagement with elements of said heat exchange structure provides in addition to stiffening action, tapered fin portions whereby the heat exchange surface of said fin strip element has a high ratio of surface area to weight.

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**3,167,047**
**CONTROL CABLE CUTTER**
**Henry D. Eng, Pine Grove Mills, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Dec. 26, 1961, Ser. No. 162,301**
**3 Claims. (Cl. 114—20)**

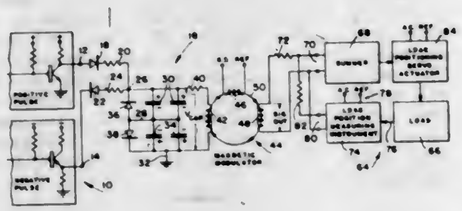
1. In a marine torpedo having an attached umbilical cable, a cutting device located within said torpedo and sealed from the water without, comprising in combination: a housing; a geared barrel rotatably assembled to said housing; a pressure actuated gear means to rotate said barrel; a free-floating disc-like knife adapted to be rotated by said geared barrel by means of fingers integral with said barrel which engage slots in said knife; a sharp-



ened sector-edge associated with said knife; a solenoid controlled valve connected to said gear means; a source of high pressure fluid connected to said valve whereby upon the actuation of said valve, said source of high pressure fluid actuates said gear means to rotate said knife causing said sector edge to sever said cable substantially flush with the surface of said torpedo.

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**3,167,048**
**TORPEDO AUTOPILOT SERVO**
**Clarence F. Ramstedt, Burlingame, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Feb. 14, 1963, Ser. No. 258,975**
**8 Claims. (Cl. 114—23)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A pulse integrator and D.C. to A.C. signal converter circuit, comprising;

(*a*) a charge circuit for applying periodic input pulses of either positive or negative polarities as charges of corresponding polarity to a capacitance,

(*b*) a magnetic modulator having a control winding and an output winding,

said modulator being operative to produce an A.C. phase-reversible signal in said output winding having a phase dependent on direction of current through the control winding and magnitude in accordance with magnitude of current through the control winding,

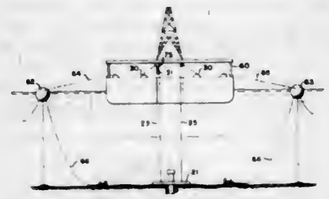
(*c*) a discharge circuit extending through said control winding and connected in shunt across said capacitance,

said discharge circuit being adapted to be independent of said charging circuit during the interval of time between pulses and to form a load across said capacitance of sufficient time constant that the charge decay time is long relative to said interval,

said capacitance being sufficient to produce in said output winding a stepped A.C. phase reversible signal having a level substantially in accordance with the summation of the pulses.



**3,167,049**
**POSITION LOCATING DEVICE**
**Kenneth W. Foster, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Dec. 28, 1962, Ser. No. 248,042**
**2 Claims. (Cl. 114—144)**



1. A system for mounting a tiltmeter used to determine the position of a floating vessel with respect to a known underwater location, said system comprising:

a cable, one end of said cable being anchored in a position bearing a known relation to the underwater location, the other end of said cable extending to the vessel;

a U-shaped bracket, the bight of said U-shaped bracket being pivotally mounted on said vessel, the axis of said pivotal mounting being at a known orientation with respect to said vessel;

a sheave, said sheave being rotatably mounted between the legs of said U-shaped bracket for rotation about a second axis at right angles to the axis of said pivotal mounting;

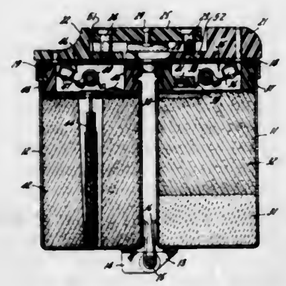
a tensioning means, said cable passing upwardly from said anchored end over said sheave and coupled to said tensioning means;

a tiltmeter assembly, said tiltmeter assembly being rotatably supported on said second axis and extending downwardly therefrom adjacent the portion of the cable between said anchored end and said sheave;

an attachment member, said attachment member extending from said tiltmeter assembly and engaging said cable whereby said tiltmeter follows the movement of said cable.

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**3,167,050**
**EMERGENCY SIGNALING DEVICE**
**Glenn C. Johnson, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed May 3, 1963, Ser. No. 277,963**
**3 Claims. (Cl. 116—124)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. An emergency signaling device comprising,

a first container having an open end and containing a smoke composition,

a second container having an open end and containing a flare composition, said first and second containers being pivotally connected together at the ends opposite said open ends,

a striker assembly mounted in each said container adjacent said open end,

first and second primers positioned one each near the open ends of said first and second containers, respectively, said first primer being adaptable to be ignited upon actuation of said striker assembly in said first container thereby igniting said smoke composition and said second primer being adaptable to be ignited upon actuation of said striker assembly in said second container thereby igniting said flare composition,

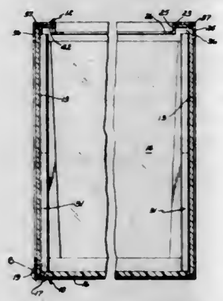
first and second covers slidably attached to said first and second containers, respectively, said covers closing said open end and retaining said striker assemblies in cocked position,

first and second locking pins attached, respectively, to said first and second covers,

a release button engageable with said first and second locking pins for locking said covers together, and spring means for biasing said first and second containers in an end-to-end relationship.

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**3,167,051**
**AQUARIUM CONSTRUCTION**
**Norman G. Hovlid, Long Beach, Calif., assignor to Norman G. Hovlid and Mary Z. Hovlid, as joint tenants**
**Filed Aug. 15, 1962, Ser. No. 217,078**
**7 Claims. (Cl. 119—5)**

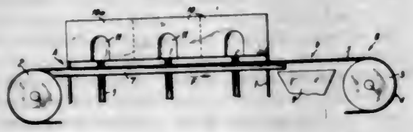


1. An aquarium, comprising: a top frame having a horizontal flange and a depending vertical flange; a bottom frame having a horizontal flange and an upstanding vertical flange, the upper portion of said last-mentioned horizontal flange being formed with an upstanding rib, the outer surface of which slopes downwardly and outwardly towards the adjacent surface of said last-mentioned vertical flange; a bottom on the horizontal flange of said bottom frame; vertical corner posts interconnecting said top and bottom frames and having vertical flanges aligned with the vertical flanges of said frames to define matching plane surfaces; side and end walls within said frames, the lower edges of each of said walls being disposed within the wedge-shaped space between said sloping surface of one of said ribs and the adjacent surfaces of the vertical flange of said bottom frame; a resilient, initially uncured sealant interposed between the outer edge portions of said side and end walls and the inner surfaces of the vertical flanges of said top and bottom frames and said corner posts; and an elongated retainer removably affixed to each of said corner posts to support said side and end walls against said frames and corner posts as said sealant cure.

### 3,167,052
### AUTOMATIC EGG AND LITTER COLLECTING DEVICE FOR POULTRY BATTERY CAGES

Josef Kühlmann, Alst 25, Horstmar, Kreis Steinfurt, Germany

Filed Oct. 2, 1962, Ser. No. 227,912
Claims priority, application Germany, Oct. 7, 1961, K 39,491; Feb. 6, 1962, K 45,833
4 Claims. (Cl. 119—45)



1. In combination with a horizontally arranged series of poultry enclosures, each including an entrance port for live poultry and an open bottom, means for automatically collecting eggs deposited by the poultry in the enclosures comprising: conveyor means, including an endless conveyor having a horizontal run arranged at a fixed distance below said series of enclosures and spaced from the open bottoms thereof for receiving a layer of litter for transport to a position beneath said enclosures to form bottoms for said enclosures; said endless conveyor including conveyor elements spaced apart sufficiently for falling of litter through said container but being close enough to prevent eggs from falling therethrough; means selectively operable to advance said container in a downstream direction to remove litter and deposited eggs from beneath said enclosures for transport of eggs to an egg removal location, and to transport a fresh layer of litter to a location beneath said enclosures; and a horizontally extending imperforate litter support positioned immediately beneath said horizontal endless conveyor run and extending from a point upstream of said enclosures to at least the downstream end thereof, to prevent that portion of the litter layer which is beneath said enclosures and upstream thereof falling through said conveyor; said litter support terminating upstream of said egg removal location to provide for falling of litter through said conveyor in advance of said egg removal location; said conveyor means being constructed and arranged to retain eggs on said endless conveyor against falling therethrough while providing for the removal of used litter.

### 3,167,053
### ANIMAL HOLDING PEN

John E. McDaniel, Box 66, Cimarron, N. Mex.

Filed July 8, 1963, Ser. No. 293,337
5 Claims. (Cl. 119—98)



1. An animal holding pen comprising a base adapted to rest upon a ground surface, said base having a forward end and a rearward end, a side wall rising from each of the longitudinal side edges of said base, an inwardly swinging door hingedly connected to each of said side walls adjacent the rearward end of said base and each door normally extending over a conformably sized opening in said side wall, said doors and openings extending substantially less than one-half the length of the side walls, and an animal restraining yoke having its ends pivotally mounted in said side walls for swinging movement from a raised position above an animal when standing between said side walls to a lowered position behind the rump of said animal when standing between said side walls forwardly of said doors, said doors each providing access to the space behind said animal when standing between said side walls with said yoke in the lowered position.

### 3,167,054
### BULL CONTROL

Leonard Pemberton, Rte. 5, Harrison, Ark.

Filed Nov. 13, 1963, Ser. No. 323,506
1 Claim. (Cl. 119—142)

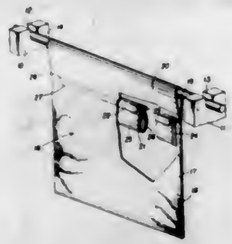


A bull control device comprising a rigid rod adapted to extend transversely across the head of a bull, pain-inflicting means fixed to said rod, and said pain-inflicting means being provided with pain-inflicting elements in engagement with the head of the bull and with further pain-inflicting elements directed outwardly and away from the bull's head, and said pain-inflicting means comprising circular elements having a continuous series of peripheral points extending circumferentially thereabout, and means for loosely connecting said bull control device to the head of a bull.

### 3,167,055
### ANIMAL ACTUATED INSECTICIDE APPLICATOR

James N. McLaughlin, Monticello, Iowa

Filed Feb. 7, 1963, Ser. No. 256,936
3 Claims. (Cl. 119—157)



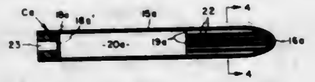
1. An animal oiler comprising a sheet of flexible material which is folded to form a loop and two downwardly extending portions, an elongated plastic insecticide tank attached between the sheet adjacent the loop and extending the length therealong, and a wick extending from inside the plastic tank and comprising a lining in contact therewith and secured to the two downwardly extending portions to feed insecticide to them by capillary action.



### 3,167,056
### CONTAINER FOR FLUIDS WITH RESERVE SPACE

Helmut Karl Bross, 40 Welchselgartenstr., Altenberg uber Nurnberg, Germany, assignor of fifty percent to Frank T. Johmann, Berkeley Heights, N.J.

Filed Apr. 17, 1962, Ser. No. 188,135
5 Claims. (Cl. 120—42.16)

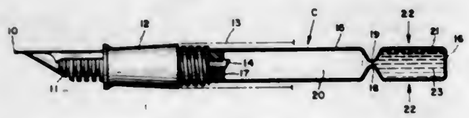


1. Liquid ink cartridge for fountain pens, having an ink reserve space and comprising: a resilient deformable tubular main body having a definite shape defining a longitudinal axis and a main ink reservoir and having a front closing end wall adapted for piercing by the feeder prong of a cartridge fountain pen and a rear closing end wall; and an inner wall integral with one of said end walls, said inner wall longitudinally projecting partly into said tubular main body to thereby define a capillary reserve ink reservoir between said tubular main body and said inner wall such that upon emptying said main ink reservoir by writing, reserve ink is still held in said reserve ink reservoir by capillary attraction, said reserve ink reservoir opening directly into said main ink reservoir whereby said reservoirs are always in direct communication with each other whereby reserve ink can be squeezed out of said reserve ink reservoir into said main ink reservoir by squeezing said tubular main body proximate said reserve ink reservoir to thereby reduce the space defining said reserve ink reservoir.

### 3,167,057
### CONTAINERS FOR FLUIDS WITH RESERVE SPACE

Helmut Karl Bross, 40 Welchselgartenstr., Altenberg uber Nurnberg, Germany, assignor of fifty percent to Frank T. Johmann, Berkeley Heights, N.J.

Filed Apr. 17, 1962, Ser. No. 188,136
1 Claim. (Cl. 120—42.16)

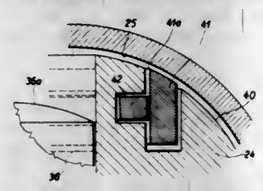


Ink cartridge for a fountain pen, said cartridge having a front main ink reservoir and a rear reserve ink reservoir whereby ink in said reserve ink reservoir can be fed to said fountain pen after said pen initially runs dry by exhaustion of ink in said main ink reservoir, said cartridge comprising: an elastic plastic tubular main body readily deformable by squeezing having a longitudinal axis, a rear closing end wall, and a front closing end wall, said front closing end wall being adapted for piercing by the feeder prong of said fountain pen to form the sole aperture in said cartridge communicating with the atmosphere; and a transversely extending partition within said main body dividing said main body into said front main ink reservoir and said rear reserve reservoir, said partition being defined by a necked-down portion of said main body, said partition defining a capillary discharge opening connecting said main ink reservoir and said reserve ink reservoir, said capillary discharge opening being sufficiently small to normally prevent passage of ink between said reservoirs, said capillary discharge opening becoming operative upon squeezing said deformable main body proximate said reserve ink reservoir whereby reserve ink under pressure can be passed through said capillary discharge opening into said main ink reservoir after said exhaustion of ink in said main reservoir.

### 3,167,058
### ROTARY FOUR-CYCLE INTERNAL COMBUSTION ENGINE

Sándor Czike and Gábor Czike, both of 7 Marvany U., Budapest II, Hungary

Filed June 27, 1962, Ser. No. 205,757
Claims priority, application Hungary, July 4, 1961, CI 378
1 Claim. (Cl. 123—44)

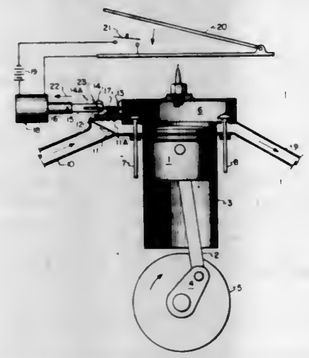


In a rotary internal combustion engine having a casing providing a spherical surface, a rotor having radially disposed cylinders mounted for rotation within said casing whereby the axes of said cylinders pass through a center portion of said surface, the improvement comprising the provision of sealing rings between said cylinders and said surface, one of said rings being unslit and having an annular surface engaging said spherical surface and another of said rings being slit and having an outer surface abutting and snugly engaging said unslit ring inwardly of its annular surface.

### 3,167,059
### AUXILIARY VALVES FOR INTERNAL COMBUSTION ENGINES

John Love, West Orange, N.J. (37 Boehm Ave., Mount Tabor, N.J.)

Filed Nov. 21, 1961, Ser. No. 153,881
1 Claim. (Cl. 123—75)

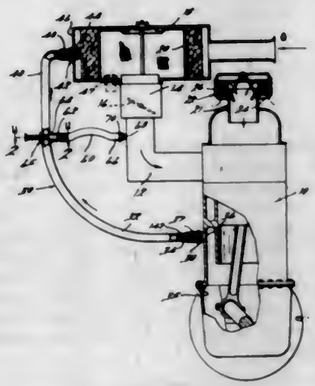


In an internal combustion engine, a combustion chamber having a fuel input manifold and an exhaust outlet manifold, a fuel intake valve at the entrance to the said combustion chamber and an exhaust outlet valve at the exit of the same said combustion chamber, said fuel intake valve being timed to open before upper dead center and the said exhaust outlet valve being timed to close after upper dead center, a closing valve in the said fuel input manifold to close the opening between the said exhaust outlet manifold and the said fuel input manifold, said closing valve opening substantially freely for the inward flow of fuel to the said combustion chamber but closes completely against exhaust blow back from the said exhaust outlet manifold, an accelerator lever, electromechanically connected to the said closing valve in such a manner that the total movement of the said accelerator lever must take place before the said closing valve snaps open, said closing valve being so designed that, when

open, it offers no opposition to the free flow of fuel to the said combustion chamber.

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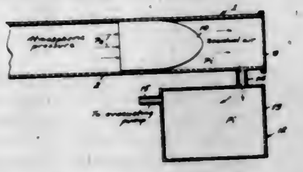
**3,167,060**
**EXHAUST SYSTEM**
**Charles P. Fowler, Jackson, Mich., and Walter H. Powers, Racine, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware**
**Filed Sept. 14, 1962, Ser. No. 223,654**
**36 Claims. (Cl. 123—119)**



1. In an engine ventilating system for an engine having an air-fuel intake system including a carburetor and a throttle valve, a main ventilating passage formed by a flexible hose, one end of said flexible hose communicating with the interior of said engine, the other end of said flexible hose communicating with the air intake system of said engine upstream of the throttle valve, a transverse bore formed in said flexible hose by opposite aligned openings in the side walls thereof, and branch passage means connected through said bore at one end to said main passage and connected at the other end to the air-fuel intake system of said engine downstream of the throttle valve.

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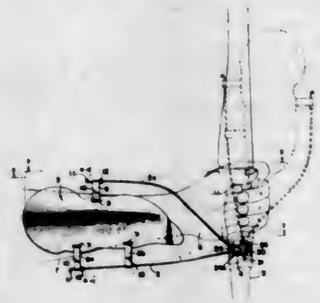
**3,167,061**
**GUN HAVING A LAUNCHING TUBE PROVIDED WITH A PARTIAL VACUUM SINK TANK**
**James J. Murray, 809 Hudson St., Durham, N.C.**
**Filed Apr. 9, 1963, Ser. No. 271,820**
**5 Claims. (Cl. 124—11)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A gun including in combination, a launching tube for launching a projectile therethrough; releasable retaining means mounted at the breech end of said tube for releasably retaining the projectile at the breech end of said tube; a first sealing means for sealing the muzzle end of said tube; a second means for sealing the breech end of said tube and a sink tank mounted adjacent the muzzle end of said tube, there being an evacuating port in communication with said tube and disposed in advance of the projectile when said projectile is in its retained position in said tube whereby when said tube and said tank are partially evacuated of air therein, and said releasable retaining means is operated to release said projectile, the projectile will be propelled forward in said tube by the atmospheric pressure outside said tube and shatter said first sealing means and follow a ballistic trajectory, the residual air in said tube, in advance of the projectile, being forced into said tank by said projectile.

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**3,167,062**
**ARM GUARD AND ATTACHING BRACKET**
**Clifford J. Zwickey, 107 12th Ave., NE., North St. Paul, Minn.**
**Filed Jan. 20, 1960, Ser. No. 3,658**
**4 Claims. (Cl. 124—23)**



2. An arm guard adapted for affixation to the central section of an archer's conventional longbow, said arm guard including a support adapted to extend rearwardly from said longbow toward the taut idle bowstring thereon, a thin elongated shield joined to said longbow by said support for movement in relation to said longbow whereby said shield may come into a position of interference with the bowstring of said longbow as an arrow is being shot therefrom.

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**3,167,063**
**ARCHERY BOW**
**Nick Kappas, 560 Rhode Island, Gary, Ind., assignor of one-half to Ola R. Knight and one-fourth to Lawrence Kappas, both of Lake County, Ind.**
**Filed Nov. 10, 1961, Ser. No. 151,533**
**9 Claims. (Cl. 124—23)**



1. In a laminated archery bow having a core formed of wood and laminations of plastic material adhered thereto: the improvement wherein said core comprises an elongated element having flat opposite sides, each of said sides defining a single elongated continuous surface, said element being formed of a plurality of wood segments joined end-to-end by joints respectively lying in planes defining an acute angle with said sides.

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**3,167,064**
**GRINDING WHEEL TRUING MECHANISM**
**Leon J. Barnard, Springfield, Vt., assignor to Bryant Chucking Grinder Company, Springfield, Vt., a corporation of Vermont**
**Filed May 23, 1962, Ser. No. 197,075**
**10 Claims. (Cl. 125—11)**

1. A dresser unit for a machine tool grinding wheel, said unit comprising,

(*a*) a base having support brackets, a tilt shaft, a tilt arm, a roll housing,

(*b*) the support brackets supporting the tilt shaft across the said base,



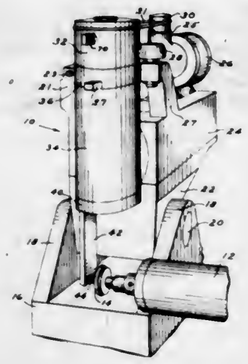
(*c*) the tilt arm being integral with the roll housing and supported by the tilt shaft so that it may rotate with respect to the base,

(*d*) a roll housing shaft, a turn housing, a driven drum, a turn disc, a dressing tool,

(*e*) the roll housing shaft is supported by the roll housing and is secured to the turn housing,

(*f*) the driven drum and the turn disc are attached to one end of the turn housing,

(*g*) the dressing tool is positioned at the other end of the turn housing and is connected to the turn disc and rotatable with it,



(*h*) a driver drum, an endless cable, a power source, a cam lobe, a cam follower,

(*i*) said driver drum connected to the power source and driven by it,

(*j*) the endless cable transmits power from the driver drum to the driven drum rotating with them,

(*k*) the cam lobe is integral with the driven drum,

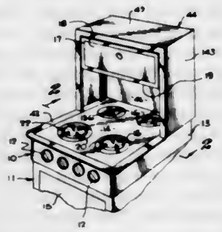
(*l*) the cam follower is connected to and supported by the said roll housing,

(*m*) the turn disc has means permitting only partial rotation with the driven drum, and

(*n*) the cam lobe contacts the cam follower when the turn disc's rotating is stopped and rotates the turn housing about the roll housing shaft's axis.

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**3,167,065**
**COMBINATION COOK STOVE AND RETRACTABLE OVEN**
**Joel A. Del Francia, Alhambra, Calif., assignor to Institutional Food Equipment Corp., Huntington Park, Calif., a corporation of California**
**Filed Sept. 17, 1962, Ser. No. 224,893**
**8 Claims. (Cl. 126—19)**



1. The combination of:

a cook stove having a rear portion and including an upwardly facing heating unit for producing heat beneath a cooking receptacle placed thereover;

an oven member movable between a lower baking position in which it is in overlying proximity with the heating unit and an upper warming position in which it is spaced above the heating unit,

said oven member having a food entrance accessible in both the baking position and the warming position;

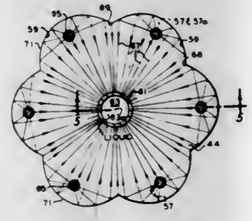
means mounting the oven member for movement between the baking position and the warming position; and

a baffle member positioned in close proximity with the rear portion of the cook stove and extending upwardly therefrom to the oven member when it is in the warming position to confine hot gas in a space formed between the heating unit and the underside of the oven member when the latter is in the warming position,

said baffle member providing unrestricted access to the food entrance of the oven member in both the warming and baking positions thereof.

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**3,167,066**
**RADIANT HEATING**
**James K. Hughes, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed July 12, 1962, Ser. No. 209,400**
**5 Claims. (Cl. 126—350)**



3. A method of heating a fluid stream which comprises the steps of:

(1) passing said fluid stream thru an enclosed heating zone;

(2) burning a combustible fuel-air mixture by flameless surface combustion in an enclosed annular bed of refractory aggregates adjacent said heating zone so as to heat said aggregates and cause same to emit at least a portion of said radiant heat radially into said heating zone;

(3) injecting said mixture radially outwardly from an axial distribution zone directly into said bed along its inner periphery; and

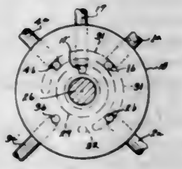
(4) withdrawing combustion gases from one end of said bed.

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**3,167,067**
**ROTARY DISTRIBUTOR FOR PRESSURE CUFF TOURNIQUETS**
**Henry J. Rand, Cleveland, Ohio, assignor to R. P. Scherer Corporation, Detroit, Mich., a corporation of Michigan**
**Filed July 24, 1962, Ser. No. 211,970**
**1 Claim. (Cl. 128—24)**

In the combination of a plurality of pressure cuff tourniquets and a rotary distributor for inflating said plurality of pressure cuff tourniquets and for progressively deflating each cuff tourniquet one at a time in a continuous cycle, the improvement in said distributor comprising a distributor plate having a plurality of air outlets with means for attachment one to each cuff, said outlets being of equal arcuate extent and evenly spaced arcuately about said plate, a rotary air valve having a face mating with said plate in a substantially air-tight manner, an arcuate air groove in said valve of a length to communicate at all

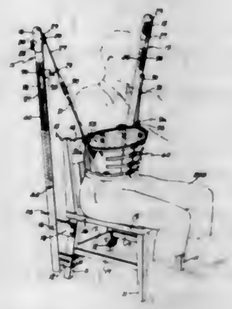
times with all but one of said air outlets, a compressed air source and conduit system at all times communicating with said arcuate air groove, means for continuously rotating said valve in one direction at a constant rate relative to said distributor plate, there being an air exhaust opening in said valve communicating from said mating face to atmosphere only, said opening being arcuately in line with said air groove and spaced from the trailing end of said arcuate air groove as it rotates by an amount less



than the arcuate extent of one of said air outlets to a cuff, there being an open bleeder valve of limited flow capacity communicating between said system and atmosphere between said source and said arcuate air groove, whereby each of said cuffs in turn is placed in communication with said exhaust opening for deflation and at such time the air groove is in communication briefly with atmosphere so as to temporarily reduce the pressure in all cuffs not in deflatable communication with the exhaust opening.

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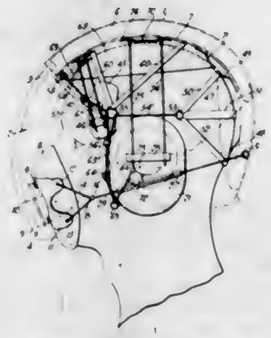
**3,167,068**
**UPRIGHT LUMBO-SACRAL TRACTION SYSTEM**
**John W. Carr, 168 Cronin Drive, Santa Clara, Calif.**
**Filed Feb. 27, 1961, Ser. No. 92,100**
**7 Claims. (Cl. 128—75)**



1. An upright lumbo-sacral traction system comprising a suspension belt adapted to be worn around the lower thoracic region of a patient, said suspension belt having an elastic insert adapted to lie over the central dorsal region of a patient and first and second traction engaging means adapted to lie respectively under the patient's right and left armpits when a patient is being acted upon by the system, said first and second traction engaging means operatively connected respectively to first and second traction adjusting means, first and second elastic members, each said elastic member having first and second opposite ends, said first and second traction adjusting means operatively connected to the first ends of said first and second elastic members, said second opposite ends of said first and second elastic members operatively connected to first and second supporting structural members, each of said first and second structural members operatively connected to a seating means to apply essentially vertically directed elastic traction forces to said first and second traction engaging means on said suspension belt worn by a patient when a patient is being acted upon by the system, first and second visual indicating means operatively connected to said first and second elastic members, said first and second visual indicating means cooperating with first and second scale means operatively connected to said first and second structural members to indicate the amount of said elastic traction forces applied respectively at said first and second traction engaging means on said suspension belt when a patient wearing the belt is acted upon by the system.

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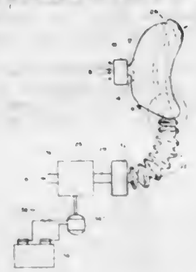
**3,167,069**
**EASILY DONNED FLYING HELMET**
**Marcel Jules Odilon Lobelle, Slough, England, assignor to M.L. Aviation Company Limited, Slough, Buckinghamshire, England, a British company**
**Filed Mar. 12, 1962, Ser. No. 178,812**
**Claims priority, application Great Britain, Mar. 14, 1961, 9,315/61**
**6 Claims. (Cl. 128—141)**



1. A flying helmet comprising: an outer rigid shell; an oxygen mask; resilient mounting means mounting said oxygen mask within said shell and biasing said oxygen mask outwardly from the center of said shell; two earbuns mounted one on each side of said shell; spring-arm means associated with each said earbun, each spring-arm means having a first end fixed in the top of said shell and a second end carrying said associated earbun, and each of said spring-arm means having a relaxed position in which said earbuns are a greater distance from said center of said shell than they are required to be when the helmet is worn; a first control means outside said shell; first connecting means connecting said oxygen mask and each said earbun to said first control means, said first control means being actuable to move said oxygen mask and each said earbun towards said center of said shell against said resilient mounting means and said spring-arm means respectively; two pads for fitting the temples of a wearer of said helmet, one pad on each side of said shell; leaf spring means associated with each of said pads, each leaf spring means having a first end fixed within said shell and a second end carrying said respective pad, said lead spring means biasing said pads outwardly from said center of said shell; a back pad for fitting the back of the head of a wearer of said helmet; resilient biasing means mounting said back pad within said shell and biasing said back pad away from the center of said shell; a second control means outside said shell; second connecting means connecting said pads and said back pad to said second control means, said second control means being actuable to move said pads and said back pad towards said center of said shell against said leaf spring means and said resilient biasing means respectively.



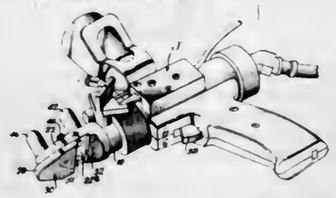
**3,167,070**
**RESPIRATOR WITH POSITIVE AIR SEAL**
**Leslie Silverman, Dover, Mass., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed June 14, 1961, Ser. No. 117,244**
**3 Claims. (Cl. 128—143)**



1. A respirator comprising a mask in peripheral contact with the face of a wearer including
(*a*) first means for inhaling in and exhaling out of said mask in response to the breathing of said wearer,
(*b*) second means forming with said face along the periphery of said mask a sealing chamber, and
(*c*) third means for pressurizing said chamber with air to prevent outside leakage into said mask through the peripheral contact of said mask with said face,
(*d*) said second means including (1) a closed-cell porous material separating said sealing chamber from the interior of said mask to limit the flow of said air under pressure into said interior to relatively small amounts and (2) an open-cell porous material lining the outer periphery of said chamber to permit limited uniform flow outwardly of said air under pressure.

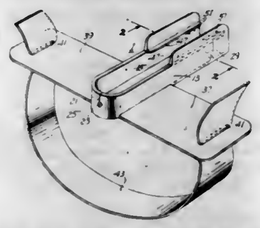
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**3,167,071**
**APPARATUS FOR ADMINISTERING INTRADERMAL INJECTIONS**
**Anthony Venditty, Detroit, Mich., assignor to R. P. Scherer Corporation, Detroit, Mich., a corporation of Michigan**
**Filed July 17, 1961, Ser. No. 124,586**
**6 Claims. (Cl. 128—173)**



2. Apparatus of the character disclosed comprising a body member affixed to a jet injection nozzle which has a jet bore and a discharge end, a skin engaging element movably supported by said body member beyond said discharge end and having a forward end facing said discharge end and a surface substantially parallel to the axis of said jet bore and spaced laterally therefrom, said surface being roughened to constitute a skin gripping face for moving the skin of a patient engaged by said skin gripping face laterally in a direction parallel to the surface of said face, and manually operable means for moving said skin engaging element relative to said body member and toward said nozzle whereby said forward end produces a wrinkle in the skin of said patient, a portion of said body member adjacent said nozzle being roughened to prevent slippage of the skin wrinkle across said discharge end.

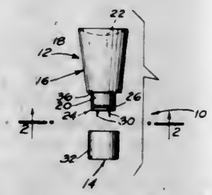
**3,167,072**
**INTRAVENOUS NEEDLE AND FLOW TUBE STABILIZING MEANS**
**Hester Ellen Stone, Grants Pass, Oreg. (1902 Foothill Blvd., Calistoga, Calif.), and Virginia Anderson, 1216 NW. Washington Blvd., Grants Pass, Oreg.**
**Filed Oct. 11, 1962, Ser. No. 229,931**
**4 Claims. (Cl. 128—214)**



1. A device for stably anchoring a hollow surgical needle and coupled flow tube at the point of application of such needle to a patient, said device comprising
a cradle of a length to receive the proximate ends of the components of an assembly including such needle, tube and any intermediate coupling which functionally connects such tube to such needle, said cradle including
a bottom,
side walls extending upwardly from said bottom in spaced relationship to each other, to form a trough, said spacing being such as to cause said walls to frictionally grip such assembly adjacent the tube end thereof when positioned in said trough with the needle extending from an end of said trough,
a wall joining said side walls at one end of said trough to provide an end wall,
said end wall having a needle receiving perforation therein and a slit from the upper edge of said end wall to said perforation to permit depressing of a needle down through the upper edge of said end wall to lodge the same in said perforation,
means for supporting such needle in said cradle at substantially the desired entrance angle to a vein of a patient,
means adjacent the open end of said trough for at least partially encircling such assembly and resiliently resisting dislocation of such assembly when installed in said trough,
and means for adjustably installing said cradle in position on a patient.

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**3,167,073**
**TRANSCUTANEOUS INJECTION DEVICE**
**Sol Roy Rosenthal, 230 E. Delaware Place, Chicago, Ill.**
**Filed Jan. 16, 1962, Ser. No. 166,582**
**4 Claims. (Cl. 128—253)**

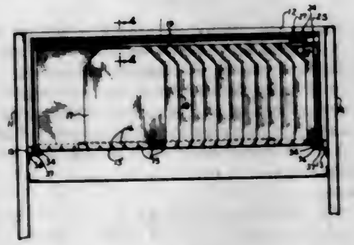



1. A transcutaneous injection device which comprises a thin metal disc having a plurality of needle-like projections punched therefrom and extending perpendicularly from one side thereof for a distance of 2 to 2.5 mm., a dried biological substance on said needle-like projections, and a knob secured to said disc and extending from the opposite

side thereof, for holding the knob with one hand to press the device against the skin, said projections being adapted to puncture the skin at a plurality of points for the purpose of introducing said biological substance into the body when the device is pressed against the skin, said one side of the disc providing at least a portion of an outermost surface on said device adjacent to said projections, for limiting the penetration depth of the projections, the periphery of said outermost surface surrounding said projections and lying transversely outwardly at a distance therefrom of 1.5 to 3.5 mm.

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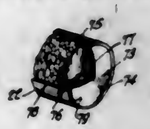
**3,167,074**
**FILING DEVICE**
Lloyd M. Toms, Crozet, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 133,929
2 Claims. (Cl. 129—16)



1. In a record filing device, a receptacle including a supporting base, a record divider comprising a panel and a pair of spaced parallel rigid cylindrical supporting pins projecting downwardly from the bottom edge thereof terminating in tapered end portions, and a pair of spaced parallel resilient upwardly opening channel members secured to said base and disposed transversely of said divider, the defining sides of said channel members being planar and diverging upwardly and outwardly and frictionally receiving said pins in yieldable wedged engagement at a selected position longitudinally of the channels and pivotally retaining them substantially at the widest opposed points of said taper.

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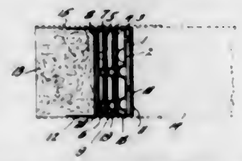
**3,167,075**
**SELF-LIGHTING CIGARETTES**
Winston B. Paley, New York, and Paul E. Spoerri, Brooklyn, N.Y., assignors to Eric M. Javits, New York, N.Y.
Filed May 23, 1961, Ser. No. 123,333
3 Claims. (Cl. 131—7)



1. A cigarette having a lighting aid disposed in one end thereof, the tip of said cigarette end having said lighting aid disposed therein being permeable, said lighting aid comprising an oxidizing agent reactive with a reducing agent so that after holding the cigarette with said lighting aid in contact with the reducing agent; reaction effective to light the cigarette can be obtained, and barrier means interposed between said oxidizing agent and the tobacco of the cigarette to prevent transfer of tobacco ingredients reactive with the oxidizing agent from the tobacco to the oxidizing agent, said lighting aid being enclosed in a combustible, cellulose-containing covering, the part of said covering exposed to the tobacco being lightly impregnated with pyroxylin to render it impervious, and the part thereof exposed for contacting to effect lighting being pervious to permit transmission of a polyol for the lighting reaction to the oxidizing agent.

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**3,167,076**
**FILTER TIPPED CIGARETTES**
Ernest Maré, Founders Bldg., 34 Ameshoff St., Braamfontein, Johannesburg, Transvaal, Republic of South Africa
Filed Nov. 22, 1960, Ser. No. 71,049
Claims priority, application Republic of South Africa, Dec. 9, 1959, 59/2,196
5 Claims. (Cl. 131—10)



2. A cigarette embodying a filter cartridge the latter consisting of a cylindrical structure comprising an assembly of metal orifice plates and interposed impingement plates with means to provide spaces between the adjacent orifice and impingement plates, the space on the outlet side of each orifice plate being narrower than the space on the inlet side thereof, and perforations through said plates with the perforations in adjacent plates staggered in relation to each other and the total areas of the perforations in the orifice plates generally decreasing from the inlet to the outlet end of the cylindrical structure.

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**3,167,077**
**SANITARY WASH COMPACT**
John Lawrence Bosko and John M. Bosko, both of 6691 Cleveland Road, Ravenna, Ohio
Filed Jan. 2, 1962, Ser. No. 163,638
2 Claims. (Cl. 132—79)

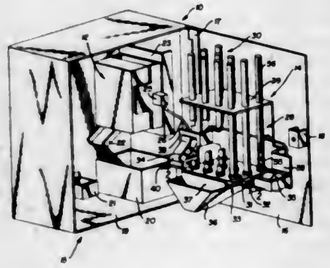


1. A toilet article especially adapted for use while traveling where water is not always available comprising an open top type bag and cleansing means therein, said bag having a front and rear wall with one sealed side wall edge portion with openings extending through the upper portion thereof, a sealed bottom edge portion, and one integral side wall edge portion, said side edge portions tapering inwardly and upwardly, the bottom edge portion being wider than the open top of the bag, said cleansing means consisting of towel fabric with an end thereof folded over and stitched together to form a cylindrical pocket for a sponge and a bar of soap, said sponge being saturated with a liquid and of U-shape in transverse cross-section providing a trough between the walls thereof, the said bar of soap being retained in said trough, the ends of said pocket being open to form a mouth therefore, said saturated sponge and bar of soap deposited within said pocket, said pocket being substantially the same length as the internal width of said bag, a flexible cord secured midway between its ends to said cylindrical pocket midway between its ends, the free ends of said flexible cord being knotted together by means of which the cleansing means may be held on one's wrist, a flexible cord attached to the upper end portion of said bag by extending through the openings in the upper sealed edge portion and adapted to extend horizontally around said article when said upper end of said bag is folded downwardly into contact with the lower end portion thereof and seal the towel with the saturated sponge and bar of soap against the bottom portion of the bag to maintain the saturated sponge in a moist condition.



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**3,167,078**
**COIN HANDLING APPARATUS**
Manuel J. Trautenberg, 7063 Eastlawn Drive, Cincinnati, Ohio
Filed June 6, 1961, Ser. No. 115,216
1 Claim. (Cl. 133—4)

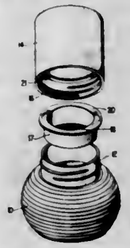


In a change maker discharging a number of different denomination coins, there being twice the number of loaded coin tubes as the number of coins discharged for each changer operation, the combination comprising, a stationary upper plate, an even plurality of substantially vertical sockets projecting above said upper plate, an even plurality of substantially vertical tubes supported by said vertical sockets for storing change coins in stack relation, longitudinal slots in the lower surface of said upper plate having a height slightly greater than the thickness of any coin in said tubes, a dispensing plate longitudinally movable in said longitudinal slots and having a thickness slightly less than the thickness of any coin in said tubes, a plurality of coin pockets in said dispensing plate each selectively registrable with two of said tubes, a stationary bottom plate mating with said upper plate and said dispensing plate, coin passages in said bottom plate longitudinally offset from said tubes, dual electrical solenoid means connected one to each of the longitudinal ends of said dispensing plate, means selectively energizing first one and then the other of said solenoid means for movement of said dispensing plate opposite directions, and relay means to momentarily energize the previously energized solenoid means before energization of the other of said solenoid means, whereby specific registry of said coin pockets with said tubes and said coin passages is ensured.

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**3,167,079**
**CONTAINERS FOR USE IN CLEANSING JEWELRY AND FOR LIKE USES**
Gabe B. Weil, Dallas, Tex., assignor to Vivid Products, Inc., Dallas, Tex., a corporation of Texas
Filed Aug. 22, 1963, Ser. No. 303,830
3 Claims. (Cl. 134—137)

1. A jewelry cleaning apparatus comprising a container body portion defining a first cleansing fluid chamber and having a wide tubular neck opening therefrom, a large closure cap for the container body portion mountable and demountable on said neck and defining a second cleansing fluid chamber substantially as large as the first chamber, a receptacle for jewelry within said neck and second chamber and including spaced perforated walls through which the cleansing fluid must pass when the apparatus is inverted so that said fluid may flow from the first to the second chamber and vice versa, and interengaging clamp means on said cap and jewelry receptacle



and engaging said neck to releasably lock the jewelry receptacle thereto.

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**3,167,080**
**FLUID DELIVERY ASSEMBLY**
Clarence A. Flarsheim, 6131 Mission Drive, Shawnee Mission, Kans.
Filed Dec. 10, 1962, Ser. No. 243,288
14 Claims. (Cl. 134—144)



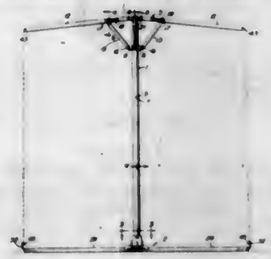
1. Apparatus for delivering fluid toward and against a member revolvable about a central axis spaced therefrom, said apparatus comprising:
an elongated support adapted to be disposed adjacent said central axis and within the region circumscribed by said member;
a tube adapted to be operably coupled with a source of fluid under pressure and having a number of spaced orifices therein along the length thereof providing fluid outlets therefor;
an element carried by said support for reciprocating movement along the length thereof and secured to said tube for mounting the latter on said support for reciprocating movement substantially longitudinally of said central axis whereby fluid issuing from said orifices will be directed across the path of revolution of said member and against coextensive portions of the member as the latter moves into alignment with the orifices; and
means coupled with said element for reciprocating the latter to thereby reciprocate said tube.

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**3,167,081**
**COLLAPSIBLE TENT FRAMES**
James R. Higgins, 8 Foxcroft Road, Alexandria, Va.
Filed May 1, 1963, Ser. No. 277,261
3 Claims. (Cl. 135—2)

1. A collapsible tent frame comprising a central tubular support, a canopy-support unit carried by the central support, said unit comprising a collapsible, truss-like struc-

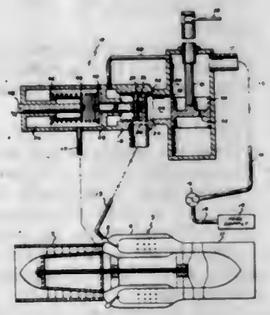
ture having a plurality of ribs pivotally connected to a collar member, said collar member being secured to the upper end portion of a housing of an actuating device adapted to automatically move the canopy-support unit into canopy-supporting position, a canopy support actuating device within the housing comprising a spring-biased piston, including a piston rod and associated piston head, the end portion of the piston rod extending outwardly through an opening in the base of the housing and being restrained against movement with respect to the central tubular support whereby, when the canopy-support unit is moved to collapsed position the actuator housing is



subjected to a retractive force, means carried by the housing, adapted for engagement with the central tubular support to prevent retraction of the housing, said housing being telescopically supported within the central tubular support, a spider member fixedly secured to the top portion of the central support, a plurality of struts pivotally connected to the spider member, the opposite ends of the struts being severally pivotally and slidably connected to the ribs, the canopy-support actuating device being constructed and arranged to normally urge its housing into retracted position with respect to the central tubular support, and thereby pivot the ribs about the collar into canopy-supporting position.

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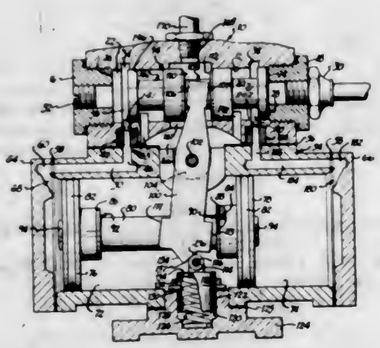
**3,167,082**
**PRESSURE REGULATING VALVE**
**William J. Oliphant, Wakefield, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force**
**Filed Dec. 27, 1962, Ser. No. 247,776**
**3 Claims. (Cl. 137—18)**



1. In a fuel supply system for a turbo jet engine; a pressure regulating valve interposed in the fuel system for regulating the fuel to said engine and comprising: a body member containing a first cylinder having an inlet for receiving liquid, a second cylinder, a passage extending from the sidewall of said first cylinder to an adjacent first end of said second cylinder, a discharge port for discharging the liquid flowing through said passage in the sidewall of said first cylinder to said engine, and a pressure chamber coaxial with and partitioned from a second end of said second cylinder, said pressure chamber having passage means for receiving a variable correction pressure from an external source; a metering valve element within said first cylinder and having a stem extending from said body for positioning said metering valve element, said metering valve element being axially slidable within said first cylinder for closing and for establishing a variable area to any degree of opening of said passage in the sidewall of said first cylinder to provide a metering orifice for the liquid flowing from said first cylinder into said passage; a pressure regulating valve element within said second cylinder and having a stem extending through the partitioned second end of said second cylinder into said pressure chamber, said pressure regulating valve element being axially slidable to vary the pressure drop across said metering orifice in said first cylinder throughout all operating conditions of the engine; a control passage connecting the inlet end of said first cylinder upstream from said metering orifice to said second cylinder to be between the partitioned second end thereof and the stem end of said pressure regulating valve element therein; and a compression spring within said pressure chamber operably acting on the stem of said pressure regulating valve element; said stem being of such cross-sectional area as will reduce the effective area of the stem side of said pressure regulating valve element to an effective area sufficiently less than the opposing free face area thereof in communication with the downstream pressure of said metering orifice in said first cylinder that during normal operation the force produced by the metered downstream pressure acting on the larger free face area of said pressure regulating valve element is greater than the force produced by the higher upstream pressure acting on the stem side thereof to thus move said pressure regulating valve element in the direction of said compression spring until a balance is established, said variable correction pressure acting within said pressure chamber at all times in supplementing the action of said compression spring.

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**3,167,083**
**SEQUENCE VALVE**
**Claude H. Nickell, 17809 Oakwood Blvd., Dearborn, Mich., assignor of fifty percent to Peninsular Distributing Company, Detroit, Mich.**
**Filed Sept. 5, 1961, Ser. No. 135,821**
**8 Claims. (Cl. 137—104)**



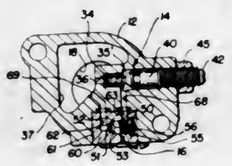
1. In a sequence valve, a valve casing, a cylinder housing, means joining said casing and said housing in fluid conducting relation, a valve bore in said casing, means for admitting fluid to said valve bore, a valve spool slidable in said bore, said spool having first and second ends with lands at each of said ends and grooves adjacent said lands



with second lands closing said grooves, first and second grooves in said bore adjacent the ends thereof, said end lands being alignable with said bore grooves and being movable from one side to the other of said bore grooves upon shifting of said valve spool, exhaust ports in said bore and spaced from said bore grooves, said spool grooves being adapted to bridge said bore grooves and said exhaust ports to exhaust fluid through said valve bore, first and second cylinder bores in said housing, a piston slidable in each of said cylinder bores and a connecting rod joining said pistons for simultaneous movement, first passages between said bore grooves and respective cylinders, a metering valve in each of said first passages to meter fluid from said bore into said respective cylinders, second passages between said grooves and respective cylinders, a check valve in each of said second passages to exhaust fluid from said cylinders at desired low back pressure for smooth operation of said piston and connecting rod assembly, and a lever pivoted in said housing and having its lower end engageable by said pistons and its upper end engageable with said second valve spool lands to move said spool, whereby movement of said spool to one extreme position moves a first land between a groove and outlet passage to meter fluid into a corresponding cylinder and move the opposite land to open the other cylinder and permit fluid to be exhausted from the other cylinder by reverse flow through its metering valve and by exhaust flow through its check valve.

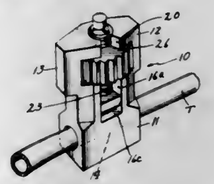
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**3,167,084**
**TIMING VALVE**
**Domenic A. Di Tirro, Silver Lake, and Paul Carr, Uniontown, Ohio, assignors to International Basic Economy Corporation, New York, N.Y., a corporation of New York**
**Filed Jan. 5, 1961, Ser. No. 80,772**
**10 Claims. (Cl. 137—269.5)**



1. A timing valve comprising a body, a first port for communicating said body with a fluid motor, a second port to which fluid pressure is alternately directed to and exhausted from said body, a flow-metering valve intercommunicating said ports for controlling the rate at which fluid passes from one port to the other port, a one-way check valve in said body having an inlet and outlet adapted for interchangeable communication respectively with said ports in parallel relation with said metering valve, and a member seated in said body for rotation within the body in sealed engagement therewith on a fixed axis of rotation, said member having passages therein terminating on the member on a common circle about the rotational axis of said member for effecting said communication of said inlet and outlet with said first and second ports, said passages cooperating when said member is rotated on said axis for selectively interchanging the respective order of communication of said inlet and outlet of the check valve with said first and second ports depending on the particular rotational position of said member relative to said body, whereby with either selected order of communication the check valve is open to fluid flow in one direction between said ports but closed to reverse flow.

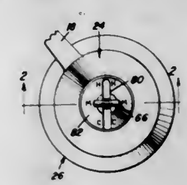
**3,167,085**
**FLOW REGULATING DEVICE**
**Wilbert W. Redmer, Barrington, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**
**Filed Feb. 12, 1962, Ser. No. 172,432**
**8 Claims. (Cl. 137—315)**



1. A tubing clamp for regulating flow through a length of flexible tubing, comprising: a clamp body having a generally T-shaped transverse opening therein, said T-shaped transverse opening comprising a longitudinal opening portion and an intersecting transverse opening portion, said clamp body having a neck defining an axial opening in said clamp body communicating with said transverse opening portion, said neck having an axially coextensive restricted side opening, means for clamping the tubing against a portion of said clamp body including a tubing engaging portion having a threaded shank portion integral therewith, said threaded shank portion being axially received in said T-shaped transverse opening and retained for sliding movement in said axial opening of said neck, said threaded shank portion having a greater width at its upper portion than the width of said restricted side opening, said neck being sufficiently resilient to enable said threaded shank portion to be pressed through said restricted side opening, a nut threadably received by said threaded shank portion and disposed in said transverse opening portion and consequently being locked against axial movement, and means for locking said clamping means against rotation.

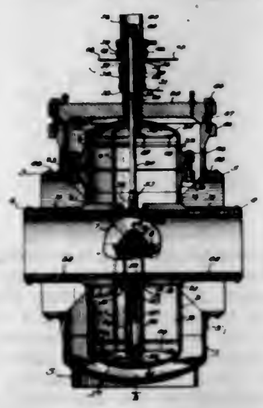
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**3,167,086**
**FLUID MIXING VALVE ASSEMBLY**
**Janusz Michalski, 2033 W. Le Moyne, Chicago, Ill.**
**Filed July 25, 1962, Ser. No. 212,373**
**9 Claims. (Cl. 137—315)**



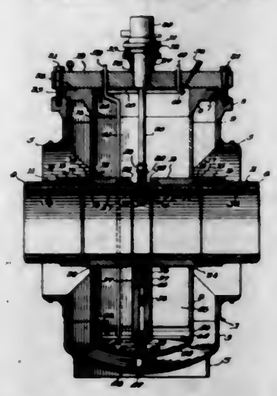
9. In a valve combination, a valve body having a cavity, a valve member removably received in said cavity by insertion in one direction, resilient seating means locked to the valve body within said cavity against movement in other directions, valve actuating means connected to said valve member for displacement thereof in said other directions, an outlet member movably mounted on said valve body, assembling means mounted on said valve body for exerting sealing pressure on the resilient seating means in said one direction to seal the cavity and passage means in said outlet member opened only when said assembling means is withdrawn from pressure sealing engagement with the resilient means to facilitate removal of the valve member and resilient seating means for repair purposes.

3,167,087
CONCENTRIC DUCT VALVE CONSTRUCTION
John A. McInerney, Evergreen Park, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 30, 1962, Ser. No. 191,126
6 Claims. (Cl. 137—375)



1. In a substantially concentric duct conduit gate valve; the combination including two hollow casings;
one of said casings enclosing the other casing in spaced apart relation thereto;
the inner one of said casings having oppositely disposed roller plates and trunnions with pads thereon for said trunnions;
transversely projecting support means comprising oppositely disposed shelves interposed in the space between said casings in slidable engagement with said roller plates for support of the inner one of said casings;
the said projecting support means permitting said inner casing to have limited rotative and transverse movements relative to the outer casing in a plurality of directions.

3,167,088
CONCENTRIC DUCT VALVE CONSTRUCTION
John A. McInerney, Evergreen Park, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed May 9, 1962, Ser. No. 193,421
3 Claims. (Cl. 137—375)



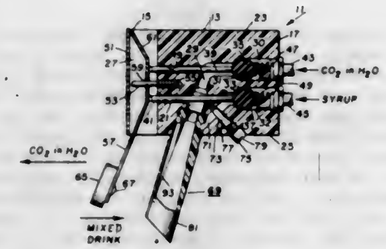
1. In a substantially concentric duct gate valve; the combination including two hollow casings;
one of said casings enclosing the other casing in spaced apart relation thereto;
annular shoulder means at an upper recessed portion of said outer casing for centering and supporting said inner casing fixedly within said recessed portion of said outer casing and bonnet means mounted on said outer casing engaging said outer casing in abutting relation at said recessed portion to effect said fixed positioning of said inner casing in the outer casing at said upper recessed portion.

3,167,089
ADJUSTABLE VACUUM VALVE
Mack Gordon, 12727 Buckeye Road, Cleveland, Ohio
Filed Sept. 26, 1962, Ser. No. 226,422
10 Claims. (Cl. 137—517)



1. In a valve having coacting flat resilient rubber-like lips positioned and arranged to engage each other and completely close the valve when subjected to at least a partial vacuum interiorly of the valve; and spring means having an operative connection with said lips to urge the same away from mutual engagement and to hold said lips adjacent a closed position when said valve is not subjected to a vacuum, whereby to help comminuted material of liquid held back by the valve to open said lips.

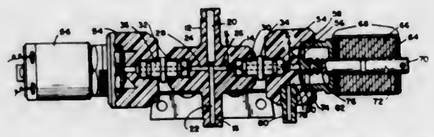
3,167,090
DISPENSING VALVE UNIT
Jack J. Booth and William C. Branch, both of P.O. Box 10872, Dallas, Tex.
Filed July 5, 1962, Ser. No. 207,500
6 Claims. (Cl. 137—604)




1. In a dispensing system where a syrup is mixed with a diluent during travel from storage to a receptacle the combination which comprises a spout having a first flow channel therein of substantially large cross section and extending from an input point to the mouth thereof, said spout having a separate flow channel extending through the side wall of said first flow channel at an angle such that the confluence of said first flow channel and said separate flow channel extends substantially the length of said spout.

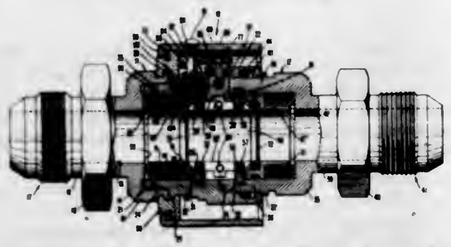


3,167,091
AUTOMATIC CHEMICAL FEEDER
Donald R. Holdren, West Liberty, Ohio, assignor to Holdren Brothers, Inc., West Liberty, Ohio, a corporation of Ohio
Filed Aug. 22, 1962, Ser. No. 218,749
2 Claims. (Cl. 137—604)



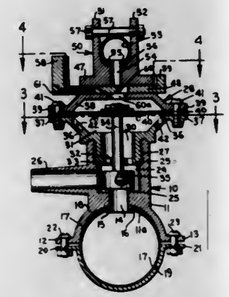
1. In a liquid mixing device; a main body part having a main flow passage therethrough, a reduced diameter portion in said main flow passage intermediate the ends thereof for creating a low pressure in the main flow passage in response to liquid flow therethrough, other passage means extending into said body part and communicating with said main flow passage immediately downstream of said reduced diameter portion, said other passage means being counterbored at their outer ends, readily changeable flow controlling members associated with said other passage means having cylindrical projections extending into said counterbores in sliding socket engagement, resilient annular sealing rings on said projections sealingly engaging said counterbores, said flow controlling members comprising orifice members having cylindrical projections at the ends thereof opposite said counterbores, valves for controlling liquid flow through said orifice members and including blocks having counterbores therein for slidably receiving the last mentioned cylindrical projections of said orifice members, said last mentioned projections also having resilient annular sealing rings thereon, a solenoid mounted on each said block for operating said valves, a flow passage extending through each said block, a liquid inlet on each said block connected to said flow passage, said valves being located in said flow passage, and a suction limiting valve connected to said main flow passage downstream of said reduced diameter portion, said suction limiting valve being normally closed and being operable in response to predetermined reduced pressure in said main flow passage for opening to permit air to be drawn into said main flow passage thereby limiting the degree of low pressure established in said main flow passage.

3,167,092
QUICK DISCONNECT COUPLING
Jack J. Kelly, Waldwick, and Robert Y. Abramson, Paterson, N.J., assignors to Tech-Quip, Midland Park, N.J., a corporation of New Jersey
Filed Oct. 20, 1960, Ser. No. 63,749
13 Claims. (Cl. 137—614.01)



1. A detachable coupling adapted for the flow of fluid therethrough, comprising an elongated housing formed of a pair of complementary housing parts having ports therein for fluid flow therethrough, a first one of said housing parts having an elongated hollow body and the second one of said housing parts having a hollow body with an end portion adapted to be sealed to the outer end of the body of the first housing part, the two interfitting housing parts forming at all times a fluid-tight conduit between the ports of the coupling, a two-piece valve element, the two pieces of the valve element fitting together to form a single body of revolution, said valve element being mounted in both of the housing parts for rotation about its axis generally at right angles to the longitudinal axis of the housing, the valve element having a central fluid conducting passage therethrough which is aligned with the ports when the valve element is turned into its open position, and means selectively detachably connecting the housing parts and retaining a piece of the valve element in each housing part for sealing the ports when the housing parts are disconnected, said last named means comprising guide means on the valve element and guiding means within the conduit formed by the interfitting housing parts selectively interlocking with the guide means, the guide means and guiding means lying in planes parallel to the longitudinal axis of the housing.

3,167,093
PULSATOR RELAY
Paul R. George, Sr., New Castle, Ind., assignor to Golay & Co., Inc., Cambridge City, Ind.
Filed May 18, 1962, Ser. No. 195,685
1 Claim. (Cl. 137—625.27)



A pulsator relay operated by pulsating pressures from a line to apply continuously, alternately, pressures from a substantially constant pressure line and atmospheric pressure, comprising
a body having a vertical bore;
means for connecting said bore to the constant pressure line;
a chamber in said body from which said bore leads;
a seat around said bore;
said body having a side outlet from said chamber;
a diaphragm carrier carried by said body and spaced above said chamber;
a flexible diaphragm fixed across said carrier and sealably dividing the carrier into an upper and a lower chamber;
said carrier lower chamber having at least one passageway leading therefrom and opening into said body chamber and at least one other passageway opening to the atmosphere;
a valve member in said body chamber;
a valve rod carrying said member on its lower end portion and extending upwardly to have its upper portion sealably fixed to said diaphragm;
a passageway leading from said carrier upper chamber to open for connection to said pulsating line;
a slide valve slidingly carried by said carrier intercepting said last passageway;
said slide valve having an opening therethrough selectively registering on each side with said last passageway;

said slide valve having an atmospheric passageway in communication with that portion of said last passageway below said slide valve when the slide valve opening is out of registry with that last passageway;

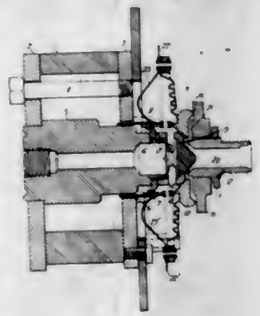
the registry of said slide valve opening with said last passageway submitting said carrier upper chamber only to the pulsating pressure;

said carrier lower chamber other passageway maintaining at all times substantially atmospheric pressure in that lower chamber below said diaphragm;

up and down flexing of said diaphragm under said pulsating pressure reciprocating said body chamber valve between alternate closing and opening of said body bore and of said one passageway of the carrier lower chamber.

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**3,167,094**
**ELECTRO-DYNAMIC MOTOR OPERATED VALVE**
**Henri Frans Castelijns, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 8, 1961, Ser. No. 136,936**
**Claims priority, application Belgium, Sept. 15, 1960, 595,059**
**3 Claims. (Cl. 137—625.33)**



1. A pneumatic valve comprising:

an electrodynamic motor including a central core, disposed coaxially about a central axis;

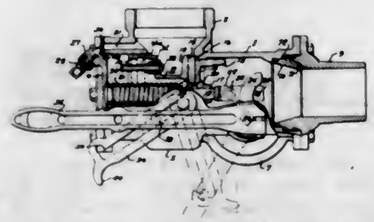
a movable coil disposed coaxially about said core, said coil moving axially in a first direction upon the application of a first pulse to said coil, and moving in a second direction opposite to said first direction upon the application of a second pulse of opposite polarity to said first pulse; and

valve operating means in said pneumatic valve including

a stationary member disposed coaxially about said central axis and fixed to one end of said core and extending therefrom axially;

a movable member disposed coaxially about said one end of said core and said stationary member fixed thereto, means coupling said movable member to said movable coil so that movement of said coil moves said movable member in an axial direction, said movable member having a first locked position in contact with one portion of said stationary member and a second locked position in contact with a second portion of said stationary member, said movable member coming unlocked and moving from said first position to said second position upon said application of said pulse to said coil, and coming unlocked and moving from said second position to said first position upon said application of said pulse of opposite polarity to said first pulse to said coil.

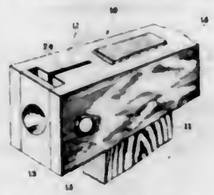
**3,167,095**
**AUTOMATIC SHUT-OFF LOADING VALVE**
**Arthur F. Briede, Cincinnati, Ohio, assignor to Dover Corporation, a corporation of Delaware**
**Filed Feb. 2, 1961, Ser. No. 86,789**
**7 Claims. (Cl. 137—630.15)**



1. In an automatic valve mechanism, a hollow body having entrance and exit portions for fluid, and a cover upon one end, a main valve in the form of a hollow piston slidable within said body and having a seat beyond said entrance portion, a supplementary valve having a head and stem located centrally of said main valve, a spring engaged between the head of said supplementary valve and said cover and means for operating said main and supplementary valves comprising a shaft, a finger rotatably mounted on said shaft, means for connecting said finger to said shaft whereby said finger will rotate with the said shaft, said finger having a lost motion connection with the stem of said supplementary valve, said stem having a shoulder, the parts being so arranged that rotation of said finger by said shaft will first open said supplementary valve and thereafter bring said shoulder against said main valve to move said main valve away from its seat, means for disconnecting said finger from said shaft, whereby to permit rotation of said finger on said shaft so that said main valve may close under the influence of said spring, irrespective of the rotative position of said shaft.

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**3,167,096**
**LOOM PICKER**
**Joseph M. Budzyna, East Douglas, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine**
**Filed Feb. 28, 1962, Ser. No. 176,242**
**9 Claims. (Cl. 139—159)**



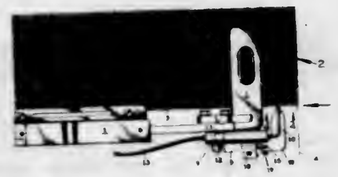
1. A picker for a loom picker stick having in combination a body portion and a detachable journaled, self-aligning, shuttle engaging member, said body portion having one end adapted for attachment to said picker stick and a means at its opposite end for attaching said journaled shuttle engaging member thereto.

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**3,167,097**
**ELECTRIC THREAD CUTTING APPARATUS**
**George M. Marks, 121 Cleveland St., Greenville, S.C.**
**Filed Apr. 22, 1963, Ser. No. 274,567**
**3 Claims. (Cl. 139—266)**

1. A thread cutter for severing weft threads projecting from cloth moving in a loom comprising a bracket member constructed and adapted to be adjustably secured to the temple assembly of a loom, an electric conductor carried by said bracket member, an insulator adjustably secured to said bracket member, an upper electrode member rigidly secured to said insulator with a portion of said upper electrode member extending from said insulator to a predetermined position above and in close proximity with the lateral path of travel of said weft threads, a lower electrode member adjustably secured to said bracket member with a portion of said lower electrode member extending from said bracket member to below said upper electrode member and in a predetermined coaxial spaced relationship with respect to said upper electrode member below the path of travel of said weft threads, a thread

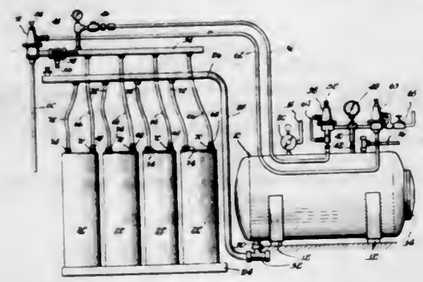




guide interconnected to said bracket member including a slot lying in a substantially horizontal plane extending between said electrodes, said slot sequentially guiding said weft threads between said electrodes and spaced a relatively small distance from each of said electrodes, a source of electricity selectively producing an electrical spark between said electrodes, switch means included in said loom responsive to the advance of each of said weft threads towards said electrodes by producing a continuous electrical spark between said electrodes severing said thread, and a delay switch limiting the duration of said electrical spark a predetermined length of time sufficient to complete the severance of said thread.

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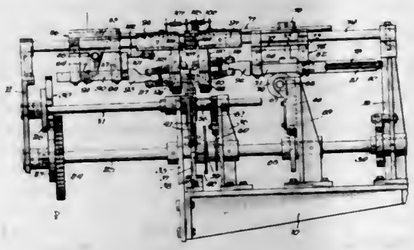
**3,167,098**
**DOUBLE FILLING MANIFOLD ARRANGEMENT**
**Eugene L. Hayden and Chester J. Witt, Chicago, Ill., assignors to Mojonnier Bros. Co., Chicago, Ill., a corporation of Illinois**
**Filed Aug. 28, 1961, Ser. No. 134,279**
**5 Claims. (Cl. 141—49)**



1. In apparatus for counterpressuring and filling containers with a liquid-gas mixture which apparatus includes a reservoir containing a gas phase and a liquid phase at a first pressure, the combination comprising: a first manifold connected to said reservoir in communication with said liquid phase; a second manifold connected to said reservoir in communication with said gas phase; first valve means, including a flow controlling gas valve selectively biased to maintain a predetermined minimum pressure on said second manifold, connected in fluid circuit between said reservoir and said second manifold for passing said gas to said second manifold at a second, lower pressure corresponding with said predetermined minimum pressure; second valve means connected in fluid circuit between said second manifold and the atmosphere for selectively venting said manifold at a third pressure intermediate said first and second pressures; a plurality of gas lines individually connected between a said container and said second manifold; and a plurality of liquid lines individually connected between a said container and said first manifold, a said container being initially connected to a said gas line and being subsequently connected into a said liquid line in continuation of the connection to the gas line whereby the gas initially charged into said container returns to said second manifold to be redirected into another container or to be vented upon filling of liquid.

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**3,167,099**
**LOOPING APPARATUS FOR FORMING LOOPS ON COIL SPRINGS**
**John A. Backman, Kenosha, Wis., assignor to Frank L. Wells Company, Kenosha, Wis., a corporation of Wisconsin**
**Filed Nov. 7, 1960, Ser. No. 67,802**
**12 Claims. (Cl. 140—103)**



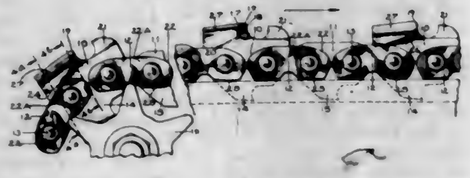
1. Looping apparatus of the character described for looping each end of a coil spring, in combination, supporting structure including a pair of spaced horizontally disposed rods, a pair of housings slidably mounted on said rods and depending from the same, stops fixed to the rods between the housings, resilient means for urging each housing against its respective stops whereby the housings are spaced a predetermined distance, a reciprocable rod mounted between the spaced rods and operative to effect movement of the housings in a separating direction away from their stops, a supporting plate releasably fixed to each housing and having an adjusted rotative position, a punch and die combination carried by each supporting plate and located on the side thereof adjacent the other plate, each punch and die combination when actuated being operative to produce a loop on one end of a coil spring, a cam for each punch and die combination and located on the side of its supporting plate opposite its punch and die combination, each cam being movable to and from its supporting plate for actuating its punch and die combination, means connecting with said reciprocable rod for producing said movement of the two cams simultaneously and to an equal extent, and a carrier having indexing movement and being operably located between the two spaced housings, said carrier having gripping fingers for gripping and holding a coil spring and for presenting the same to the punch and die combinations by reason of its indexing movement.

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**ERRATUM**

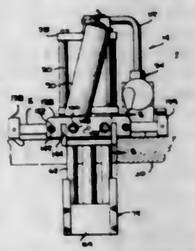
For Class 141—49 see:
Patent No. 3,167,098

3,167,100
SAW CHAIN
Paul C. Consoletti, Milford, Mass., assignor, by mesne assignments, to Omark Industries, Inc., a corporation of Oregon
Filed Oct. 11, 1962, Ser. No. 229,786
3 Claims. (Cl. 143—135)



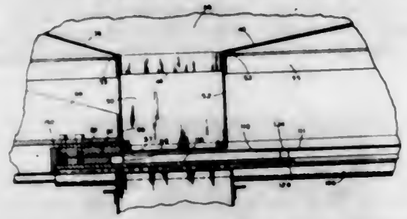
1. A saw chain comprising allochiral cutter links and connecting side links, said cutter links each having a body portion extending between and pivotally connected adjacent the rear of said body portion to a rearwardly extending pair of side links, each of said cutter links having a cutter element thereon including an outwardly and laterally extending support portion terminating in a tongue portion extending laterally in a direction opposite to the lateral extension of said support portion, said support portion for a minor part of its length adjacent its rearward end defining a contact surface extending angularly with respect to said body portion, said contact surface blending in a forward direction and for the remaining major part of the length of said support portion into a curved surface of gradually increasing radius, said contact surface engaging the outer edge surface of one link of said rearward pair of side connecting links before said one link is in full engagement with an associated guide bar for the chain.

3,167,101
CORNER SQUARE
Beaumont K. Anderson, 9210 S. Van Ness, Los Angeles, Calif.
Filed Oct. 31, 1962, Ser. No. 234,381
10 Claims. (Cl. 144—2)



1. A tool for cutting out irregular shaped corners of an opening in a frame to square said corners comprising a base for engagement with corner portions of the frame so that the weight of the tool is supported on the frame, power means carried by said base, movable cutting means below the base and carried thereby, said cutting means comprising a support connected to said power means and four rigid chisel cutting elements fixed to said support and arranged in a rectangular pattern so that the tool may cut a plurality of said corners without rotating the tool relative to said frame, at least one end portion of each chisel comprising a pair of plates extending at right angles to each other and relative to said base, the end of each plate adjacent the base being formed with a knife-like sharp cutting edge, connecting means operatively connecting the power means to the cutting means, and control means connected to the power means for causing the power means to move the cutting means upwardly towards the base so as to cut out one of said corners.

3,167,102
POTATO SLICER
Peter T. Vinette, 1719 Butternut St., Syracuse, N.Y.
Filed June 12, 1962, Ser. No. 202,008
5 Claims. (Cl. 146—78)



1. A potato slicer for forming potato sections for french fries comprising, an open bottom magazine, a reciprocating blade assembly adapted to travel across the open bottom thereof, said blade assembly comprising a slicing blade having a cutting edge at one end, a supporting plate disposed below said slicing blade in parallel relation thereto and spaced therefrom by a predetermined thickness of potato slice, and a plurality of uniformly spaced sectioning blades disposed perpendicular to said blade and plate and extending between the facing surfaces thereof and lying in planes parallel to the reciprocating motion of the assembly, said sectioning blades having cutting edges disposed behind the cutting edge of the slicing blade a distance at least as great as the spacing between the slicing blade and the supporting plate, and said support plate terminating substantially at the sectioning blades, and extending forward of the slicing blade by a length sufficient to cover the bottom of said magazine when said assembly is positioned to initiate a slicing stroke, and a blade block fixed in relation to said magazine having an abutment surface disposed flush with a wall of said magazine and of a height slightly less than the distance between the facing surfaces of said blade and plate, said block having slots of a depth to receive all of said blades, when the end of said plate at said sectioning blades is advanced beyond the abutment surface.

3,167,103
FLEXIBLE CONTAINERS
William Rede Hawthorne, Cambridge, Edward Olaf Shead, London, and Anthony Cyril John Appleyard, Ely, Cambridgeshire, England, assignors to Dracone Developments Limited, London, England
Filed Jan. 13, 1960, Ser. No. 2,175
Claims priority, application Great Britain, Jan. 19, 1959, 1,922/59
14 Claims. (Cl. 150—.5)



1. A flexible vessel comprising a flexible envelope and a rigid end piece, said envelope comprising a strength giving layer, an outer proofing layer and an inner proofing layer, a retaining ring mounted on said end piece, said strength giving layer being attached to said retaining ring by being turned over the retaining ring and stitched to itself, said end piece having an annular shoulder against which the retaining ring bears when the envelope is taut, at least one clamping ring around said end piece located to clamp the envelope to said end piece, said clamping ring overlying a channel provided in the end piece whereby to force the envelope into the channel, and a resilient peripheral fairing attached to the end piece to underlie part of the envelope, said envelope having a longitudinal seam, a first sealing strap disposed along said seam on the underside of said envelope, said first sealing strap disposed under said clamping ring and stopping short of said retaining ring, and a second sealing strap mounted along said seam on the outside of said envelope, said second sealing strap disposed over said clamping ring and continuing around and under said retaining ring.

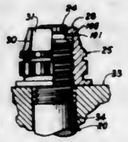


3,167,104
PLASTIC CIGARETTE CONTAINER
Fred E. Wiley, Longmeadow, Mass., and Clifford H. Goldsmith, Ridgefield, Conn., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed July 27, 1960, Ser. No. 45,725
13 Claims. (Cl. 150—.5)



1. A cup shaped container for a bundle of cigarettes of drawn seamless thermoplastic material, said container being generally rectangular in horizontal cross section with opposed generally flat straight vertical side walls having a height in excess of two inches, the height being in a ratio relative to the smallest transverse dimension of the rectangular shape of more than two and one-half to one, major areas of the side walls being embossed, said areas having an average thickness prior to embossing of less than .010 of an inch.

3,167,105
SELF-LOCKING NUT AND BOLT UNIT
Joseph Rosán, Newport Beach, Calif., assignor to Rosan Engineering Corporation, Newport Beach, Calif., a corporation of California
Filed Dec. 15, 1959, Ser. No. 859,604
9 Claims. (Cl. 151—11)



1. A nut and bolt unit, comprising: a bolt member having an externally threaded portion and an adjacent flange portion having adjacent, axial, saw-tooth like locking serrations thereon extending throughout its entire outer periphery, the diameter of the locking serrations being different from the diameter of the threaded portion, said flange being separated from the threaded portion by a circumferential groove; a nut member having threads in an interior portion thereof that mate with the threads on the bolt member, said nut member including an extension having an inwardly extending flange at one extremity with saw-tooth like locking serrations thereon extending throughout its entire inner periphery and adapted to engage the locking serrations on the bolt flange; one of said members having circumferentially spaced, axially directed slots extending from one end thereof to provide resilient fingers, said slots being spaced to include a multiplicity of said axial serrations therebetween, whereby each of said fingers carries a multiplicity of locking serrations on the inwardly extending flange portion there, said locking serrations on the fingers, in the unflexed condition of said fingers, forming a ring having a smaller diameter than the diameter of the locking serrations on said bolt member, whereby the fingers are spread when said locking serrations are interengaged.

3,167,106
FOLDING POCKETBOOKS
Edward Stiensa and Elizabeth Stiensa, both of 247 Webster Ave., Jersey City, N.J.
Filed Apr. 12, 1963, Ser. No. 272,725
1 Claim. (Cl. 150—33)



A device of the character described comprising a pair of panels joined to each other on lateral and lower edge portions and having upper edge portions that are disconnected from each other and said panels having upper corner portions extending from the half-way point of each upper edge portion to the lateral edge portions, a pair of guide members provided end to end on the upper edge portion of one of said panels, a first ring member slidably engaging said guide members being adapted for maintaining the upper corner portions of the panels in position after the corner portions have been folded upon one of said panels, fastening means attached to said first ring member and to one of said panels for holding said first ring member in position, a second ring member engaging said guide members, and a carrying strap attached to said second ring member.

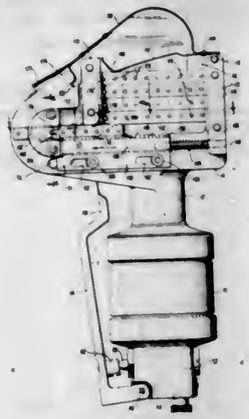
ERRATUM

For Class 151—11 see:
Patent No. 3,167,105

3,167,107
MAGAZINE TYPE CRIMPING TOOL
George Ustin, Verona, and Louis Netta, Elizabeth, N.J., assignors to Buchanan Electrical Products Corporation, Hillside, N.J., a corporation of New Jersey
Filed Mar. 20, 1961, Ser. No. 97,082
1 Claim. (Cl. 153—1)

In a crimping tool, the combination comprising:
(*a*) a dieholder having an axially disposed bore defining an operating location and a radially disposed transmission channel communicating therewith;
(*b*) a plurality of dies mounted in said dieholder;
(*c*) an operating member disposed in encircling engagement with said dieholder and rotatably displaceable relative thereto for effecting advance of crimping die members into said operating location;
(*d*) a magazine sized to contain a plurality of stacked electrical connector supporting clip members intermediate a loading and delivery end thereof;

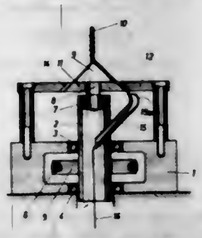
(*e*) a slide member disposed adjacent said delivery end of said magazine and adapted to reciprocate intermediate an advanced and a retracted position along a path parallel to said channel in said dieholder;
(*f*) means mounted on said slide member for engaging the lowermost clip member for effecting advance thereof in response to advance of said slide member;
(*g*) means normally biasing said slide member in the advanced position;



(*h*) means responsive to rotative displacement of said operating member for displacing said slide member and clip engaging means from its advanced position to its retracted position so that when a crimped contact is removed from the workpiece receiving location, said biasing means will advance said clip member so that another contact will be positioned in said workpiece receiving location; and
(*i*) means for forcing another clip member into engagement with said clip engaging means when said first clip member is spent.

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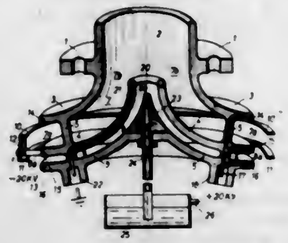
**3,167,108**
**DEVICE FOR WINDING HELICAL SPRINGS**
**Karl Friedrich Nägele, Ossmstrasse 1, Stuttgart-Hohenheim, Germany**
**Filed Apr. 13, 1962, Ser. No. 187,288**
**7 Claims. (Cl. 153—64)**



1. Wire coiling apparatus of the class described, comprising: a base structure; first feeding means defining a rectilinearly elongated wire feeding channel; first bearing means supporting said first feeding means for free rotation about the longitudinal axis of said channel; supporting means including second bearing means, said supporting means being mounted for free rotation about an axis aligned with said longitudinal axis; a cylindrical mandrel carried by said supporting means, one end of said mandrel being free for permitting coiled wire to be removed axially from said mandrel, the longitudinal axis of said mandrel being aligned with the longitudinal axis of said channel; second feeding means carried by said first feeding means and communicating with said channel, said second feeding means directing wire from the interior of said channel toward said mandrel to be coiled thereon; means defining an arcuate gap between said supporting means and said base structure concentric with the longitudinal axis of said channel, the wire being coiled passing freely throughout the entire length of said gap during its passage from said second feeding means to said mandrel during rotation of said first feeding means; means for driving said first feeding means to cause said second feeding means to coil wire around said mandrel; and means for causing magnetic flux to traverse said gap for restraining said supporting means and said mandrel against rotation.

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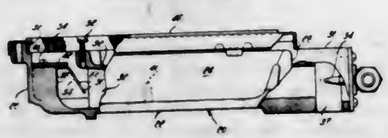
**3,167,109**
**BURNER FOR LIQUID AND GASEOUS FUELS**
**Alberto Wobig, Luneburg, Germany, assignor to Bodo Thyssen, Munich, Germany**
**Filed Apr. 13, 1961, Ser. No. 102,830**
**Claims priority, application Germany, Apr. 14, 1960, W 27,667**
**4 Claims. (Cl. 158—73)**



1. A burner for liquid and gaseous fuels comprising at least one spray electrode, at least one accelerating electrode mounted in spaced relationship to said spray electrode, a layer of insulating material on the surface of said accelerating electrode, an alternating current source, means connecting said spray electrode and said accelerating electrode to said alternating current source and providing a high potential between said electrodes and generating an airstream by the electric wind effect of the spray electrode and means to introduce fuel into said airstream.

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**3,167,110**
**RADIANT GAS BURNER WITH INTERNAL MIXTURE DISTRIBUTING MEANS**
**Charles Szell, Bedford Heights, Ohio, assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia**
**Continuation of abandoned application Ser. No. 597,185, July 11, 1956. This application July 14, 1959, Ser. No. 827,421**
**4 Claims. (Cl. 158—114)**



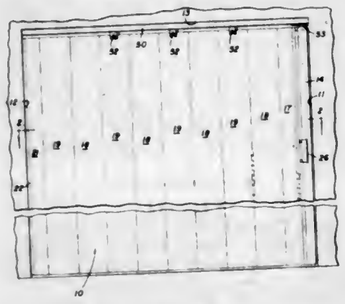
4. In a gas burner a dish-shaped body member forming a mixing chamber of generally rectangular form having a bottom wall portion and side wall portions projecting upwardly from said bottom wall portion and terminating in a flat rim, a mixing tube having one end in communication with an opening in said body member and extending centrally of said mixing chamber along said bottom wall portion, substantially flat perforated



burner means mounted on said rim and forming a substantially flat top wall of said burner, means for introducing fuel and air into said one end of said mixing tube, a projection extending upwardly from said bottom wall portion toward a portion of said burner means and positioned opposite the outlet end of said mixing tube, the top of said projection forming a shelf spaced from and substantially parallel to said flat burner means, smoothly curved wall portions connecting said projection to the opposite side wall portions of said mixing chamber operable to intercept a substantial portion of the fuel-air mixture issuing from the adjacent end of said mixing tube and to divide said mixture into separate streams which flow along the body member side wall portions and along the sides of said mixing tube, and flow directing means secured to said shelf, a portion of said flow directing means being substantially parallel with the inner surface of said burner means and extending over said shelf and said curved surfaces and a second portion of said flow directing means being positioned out of the path of said mixture as it flows from said mixing tube to said curved surfaces and in the path of portions of said mixture after they have left the region of said curved surfaces and being inclined to extend away from said burner means and said latter portion of said flow dividing means being perforated to provide a series of openings through which portions of said mixture flow and to provide a series of deflector surfaces for directing portions of said mixture toward the adjacent portions of said burner means, said flow directing means terminating at one edge in the region of the outlet end of said mixing tube, and spaces being provided between said flow directing means and the adjacent portions of said body member whereby other portions of said fuel-air mixture flow past said flow directing means and pass freely to the inner surface of said flat burner means, and said fuel-air mixture is distributed substantially uniformly to all portions of said flat burner means.

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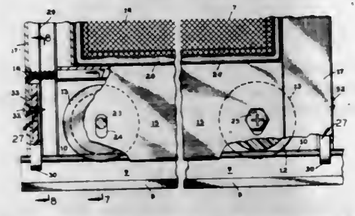
**3,167,111**
**FOLDING DOOR**
**Donald S. Harris, New Castle, Ind., assignor to New Castle Products, Inc., New Castle, Ind., a corporation of Indiana**
**Filed Dec. 11, 1962, Ser. No. 243,800**
**5 Claims. (Cl. 160—183)**



3. In a plurality of hingedly interconnected elongated sheet members, the construction comprising, adjoining longitudinal edges of adjacent first and second of said sheet members each having aligned alternating lugs and recesses spaced therealong, each of said lugs having a projection at one end thereof and a straight edge at the opposite end thereof, all of said projections on said first sheet member extending in one direction longitudinally of the members and all of said projections on said second sheet member extending in an opposite direction longitudinally of the members, the lugs of said first sheet member being received in the corresponding recesses in said second sheet member and the lugs of said second sheet member being received in the corresponding recesses in said first sheet member with the straight edges of the lugs of the first sheet member respectively abutting the straight edges of the lugs of the second sheet member and with the projections of the lugs of the first sheet member respectively interengaging the projections of the lugs of the second sheet member for forming a hinged interlock between said first and second sheet members to permit folding of the same.

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**3,167,112**
**TRACK RETAINING MEANS FOR SLIDABLE SCREEN PANELS**
**Morton Tucker, 1395 E. 11th Ave., Hialeah, Fla.**
**Filed June 24, 1963, Ser. No. 289,800**
**1 Claim. (Cl. 160—363)**



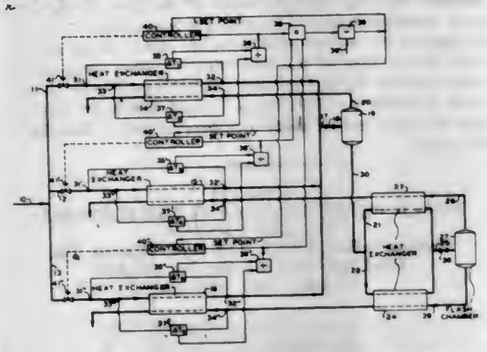
The combination of a shiftable screen door panel that embodies a sill rail and end jamb members, the jamb members being channeled and the sill member being channeled, rollers disposed within the channel of the sill and extending downwardly to engage a trackway, the trackway being fixed with respect to a rigid wall frame and with the trackway at its upper edge being laterally shouldered, each of the jamb members being provided with inwardly extending ribs upon opposite side walls, the ribs being spaced from an end wall of the jambs to form a vertical channel, plates at each end of the frame being vertically slidable in the last named channels, the plates adapted to be extended downwardly to a point below the head of the rail, the plates at their lower ends being shaped to form a hook that slidably engages the shoulder of the trackway, each plate being grooved upon its opposite faces whereby the plates may be used at either end of the frame, each end wall of the jambs being stamped inwardly to form a beveled slot and with the stamping of the slot provided with an inwardly extending rib that engages within an adjacent groove of the plates and a screw device extending through the slot to engage an opening formed in the plates and with the screw having a beveled head for seating engagement within the beveled slot, the said plates being adjustable downwardly to have hooked engagement beneath the shoulder of the trackway and whereby to prevent the lifting of either end of the screen panel to an extent that would disengage the rollers from the trackway.

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**3,167,113**
**EQUALIZATION OF LOADS ON HEAT EXCHANGERS**
**Louis D. Kleiss, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Sept. 13, 1962, Ser. No. 223,447**
**7 Claims. (Cl. 165—1)**

7. In a heat exchange process wherein a first fluid is passed through a plurality of heat exchangers in parallel and wherein a plurality of second fluids are passed through respective ones of said heat exchangers in heat exchange relationship with said first fluid; a method of control which comprises computing the performances of each of said heat exchangers, each of said performances being computed by measuring the temperature differential between first and second fluids in each heat exchanger; com-

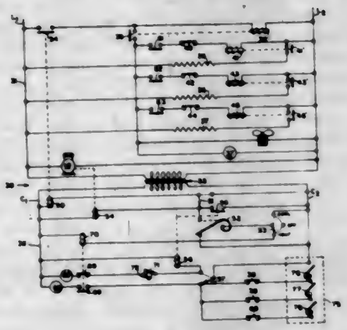
puting the average performance of said plurality of heat exchangers from the computed performances of each of



said heat exchangers; and regulating the relative flows of said first fluid through said plurality of heat exchangers to equalize the performances thereof.

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**3,167,114**
**HEAT PUMP CONTROL**
**Richard Houghton Swart, Jr., Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed Aug. 16, 1961, Ser. No. 131,826**
**15 Claims. (Cl. 165—2)**



4. A method for controlling the operation of a heat pump including a drive motor and auxiliary heater, said method comprising the steps of: energizing the heat pump drive motor in response to a first predetermined temperature condition in the area to be treated; energizing the auxiliary heater in response to a predetermined temperature condition of the outdoor ambient; and deenergizing the heater and the heat pump drive motor sequentially in response to both a second predetermined temperature condition in the area to be treated and a predetermined timed sequence, said deenergizing of the heater being performed before the deenergizing of the heat pump drive motor, whereby the heat pump drive motor will be maintained in operation at all times that the heater is in operation.

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**3,167,115**
**REGENERATOR RIM ATTACHMENT**
**Richard Cluste, Huntington Woods, Mich., assignor to Continental Motors Corporation, Muskegon, Mich., a corporation of Virginia**
**Filed Nov. 13, 1961, Ser. No. 151,944**
**7 Claims. (Cl. 165—7)**

1. In a rotary regenerative heat exchanger
(*a*) a housing,
(*b*) a matrix of a heat absorbent material rotatably mounted in said housing and comprising a substantially cylindrical member having a substantially annular exterior surface,
(*c*) a rim member encompassing said annular surface of said matrix and spaced therefrom and constructed of a material having a higher coefficient of thermal expansion than said heat absorbent material,
(*d*) means rotating said rim member, and
(*e*) means drivingly connecting said rim member with said annular surface of said matrix whereby rotation of said rim member produces rotation of said matrix,
(*f*) said connecting means comprising a plurality of spring elements positioned laterally across said annular surface intermediate said matrix and said rim member and spaced annularly about said surface,

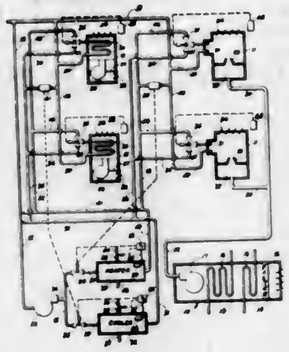


(*g*) said spring elements each comprising a base portion resiliently frictionally engaging said annular surface of said matrix and a pair of spaced extensions extending outwardly from said base portion,
(*h*) said rim member being provided with a plurality of annularly spaced slots and a radially extending annular surface spaced from said slots,
(*i*) one of said extensions of each of said spring elements being received by said slots and the other of said extensions frictionally engaging said annular surface of said rim member whereby relative expansions and distortions of said rim member and said matrix during high temperature operating conditions of said heat exchanger is absorbed by said spring elements to maintain a driving connection therebetween.

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**3,167,116**
**AIR CONDITIONING SYSTEMS**
**Charles W. Egbert, Springettsbury Township, York County, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Mar. 21, 1960, Ser. No. 16,207**
**8 Claims. (Cl. 165—22)**

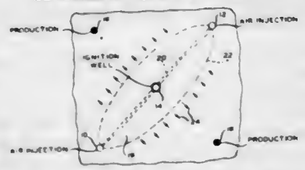
1. In an air conditioning system for multi-room buildings of the type comprising a plurality of heat-exchange coils in air communication with respective rooms, means for simultaneously supplying a heated liquid and a chilled liquid to said coils for individual flow therethrough, said means including a heated liquid supply line and a chilled liquid supply line, means for heating and cooling said heated and chilled liquids, and a common line communicating with said coils for returning said heated liquid and said chilled liquid flowing through said coils to said heating and cooling means, the improvement comprising means for maintaining a substantially constant pressure differential between said heated liquid supply line and said common return line and means for maintaining a substantially constant pressure differential between a chilled liquid supply line and said common return line.



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**3,167,117**
**PRODUCING OIL FROM AN OIL-BEARING STRATUM HAVING HIGH DIRECTIONAL PERMEABILITY**
**Melcon Santourian, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Feb. 8, 1963, Ser. No. 257,288**
**12 Claims. (Cl. 166—2)**



1. A process for producing oil from an oil-bearing stratum having high directional permeability, said stratum being penetrated by a central well and a surrounding ring of at least 4 wells which comprises the steps of
(1) selecting as injection wells a pair of ring wells substantially diametrically opposite each other and in line with said directional permeability;
(2) injecting air thru said injection wells and producing only thru said central well until air is being produced at a combustion-sustaining rate;
(3) thereafter, igniting said stratum adjacent said central well and continuing the injection of air thru said injection wells so as to move inverse burning combustion zones into said stratum toward each injection well;
(4) thereafter, closing said central well and opening at least one ring well on each side of the line of injection wells as production wells; and
(5) continuing injection of air thru said injection wells so as to continue combustion in said stratum and produce thru said production wells.

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**3,167,118**
**SECONDARY RECOVERY BY MISCIBLE FLUID DISPLACEMENT**
**Beazion Habermann, Montebello, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California**
**Filed July 6, 1959, Ser. No. 825,128**
**5 Claims. (Cl. 166—9)**

1. In the miscible fluid displacement of oil from a subterranean reservoir penetrated by at least one injection well and at least one withdrawal well wherein a body of hydrocarbon liquid which is miscible in said reservoir with said oil is injected into said reservoir through said injection well and forced to sweep through said reservoir by the subsequent injection of a drive gas through said injection well, thereby displacing said oil from said reservoir and forcing the displaced oil from said reservoir through said withdrawal well, the improved method of obtaining a high areal sweep efficiency while retaining miscibility



between said gas drive and said hydrocarbon liquid which comprises dissolving a long chain oil soluble polymer having a molecular weight of at least 10,000 in said hydrocarbon liquid and progressively decreasing the concentration of said polymer in said hydrocarbon liquid from the interface of said hydrocarbon liquid with said gas drive so as to provide a gradated viscosity of hydrocarbon-polymer solution from a maximum value at said oil interface to a minimum value at said gas drive interface.

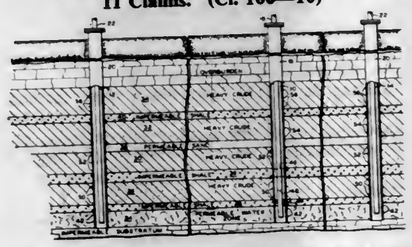
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**3,167,119**
**OIL RESERVOIR DEPLETION PROCESS**
**Victor G. Meadors, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware**
**No Drawing. Filed Apr. 4, 1961, Ser. No. 100,518**
**14 Claims. (Cl. 166—9)**

1. In an oil recovery process wherein a driving fluid is injected into a subterranean oil-bearing reservoir through an injection well to displace crude oil toward a production well and oil not displaced from sections of said reservoir through which said driving fluid passes remains behind as residual oil at the conclusion of said process, the improvement which comprises establishing a bank of a concentrated inorganic acid containing a sulfo group in said reservoir in the vicinity of said injection well, thereafter injecting said driving fluid into said reservoir through said injection well to propel said bank of acid and crude oil through said reservoir toward said production well, and recovering crude oil displaced by said bank of acid and said driving fluid through said production well.

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**3,167,120**
**RECOVERY OF CRUDE PETROLEUM FROM PLURAL STRATA BY HOT FLUID DRIVE**
**Robert C. Pryor, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed June 15, 1961, Ser. No. 117,347**
**11 Claims. (Cl. 166—10)**



1. A process for producing hydrocarbons from a first permeable oil-bearing stratum, containing a viscous crude difficult to produce by fluid drive, which lies adjacent a second permeable stratum free of hydrocarbon material but separated therefrom by an impermeable barrier, said

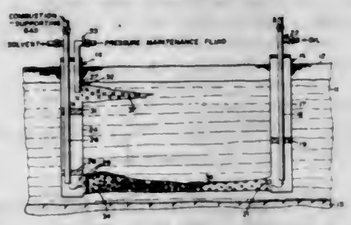
first and second permeable strata being penetrated by an injection well and by a production well, which comprises flooding said second permeable stratum with hot $H_2O$ by injecting same thru one of said side wells into said second stratum and producing said $H_2O$ thru the other of said wells, thereby preheating the adjacent first oil-bearing stratum; thereafter, while said first oil-bearing stratum is in preheated condition, injecting a hot fluid flushing agent under non-combustion conditions thru said injection well into the preheated stratum so as to drive oil therefrom into said production well, and recovering the produced oil from said production well.

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### 3,167,121
### METHOD FOR PRODUCING HIGH VISCOSITY OIL

Lorld G. Sharp, Irving, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Dec. 13, 1962, Ser. No. 244,389
7 Claims. (Cl. 166—11)



1. A process for producing viscous crude oil from a subterranean oil-containing formation by enhancing the natural formation forces sufficiently to produce the oil into a producing well comprising the steps of:

(*a*) providing an injection well and a production well in horizontally spaced relationship penetrating the oil-containing formation;

(*b*) treating the formation to create a communication zone of higher permeability than the remainder of the formation between the injection and production wells;

(*c*) injecting a batch of a liquid solvent through the injection well into the communication zone until the solvent breaks through at the production well;

(*d*) producing oil from the formation through the communication zone and into the production well until the oil production rate decreases below a desired rate as a result of viscous oil plugging the communication zone;

(*e*) injecting a fresh batch of the solvent into the communication zone until fresh solvent breaks through at the production well and repeating steps (*d*) and (*e*) until the natural formation forces at their initial level are insufficient in magnitude to produce the viscous oil into the production well at a desired rate of recovery;

(*f*) igniting the hydrocarbons in the communication zone adjacent to the injection well;

(*g*) passing an in situ combustion wave through the communication zone by supplying a combustion supporting gas to the ignited hydrocarbons to heat the surrounding formation whereby the level of the natural formation forces for producing oil is increased;

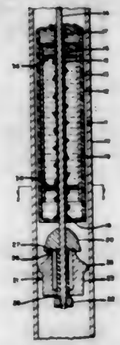
(*h*) producing the viscous oil from the formation through the heated communication zone into the production well at the increased level by repeating the preceding steps (*d*) and (*e*); and

(*i*) repeating the steps (*f*) through (*h*) until an increased level of natureal formation forces for producing oil is obtained which produces the desired recovery of the viscous oil from the formation.

### 3,167,122
### METHOD AND APPARATUS FOR REPAIRING CASING

Harold M. Lang, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed May 4, 1962, Ser. No. 192,492
13 Claims. (Cl. 166—14)



1. A method of expanding a metal liner in a substantially cylindrical hollow body comprising:

placing a rod having an expander tool near one end along the axis of said liner,

attaching said liner to said rod above said expander tool,

enclosing said liner with a liquid-tight sheath,

placing an elongated explosive charge in said liner,

filling said sheath with a liquid,

attaching a wire line to said rod above said liner,

positioning said rod and liner in said hollow body,

detonating said explosive charge to expand and anchor said liner in said hollow body, then

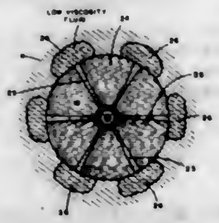
pulling said expander tool through said liner to complete the expansion thereof.

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### 3,167,123
### METHOD OF ACIDIZING AND INTRODUCING A CORROSION INHIBITOR INTO A HYDROCARBON PRODUCING FORMATION

John W. Graham, Bellaire, and John K. Kerver and Frank A. Morgan III, Houston, Tex., assignors, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware

Filed Sept. 7, 1961, Ser. No. 136,511
6 Claims. (Cl. 166—42)



1. A method for treating hydrocarbon-containing subsurface formations penetrated by a borehole comprising: injecting a highly viscous fluid into said formation to surround the well bore with a region of highly viscous fluid and then injecting a low viscosity fluid into the region of highly viscous fluid in said formation in a manner so as to provide radial fingers of low viscosity fluid extending from the borehole completely through the region contacted by the highly viscous fluid through which reservoir fluids may be produced.

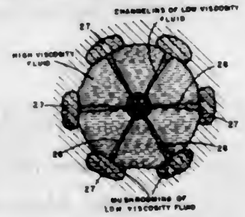


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### 3,167,124
### HYDRAULIC FRACTURING TECHNIQUE

John W. Graham, Bellaire, Tex., assignor, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware

Filed Sept. 7, 1961, Ser. No. 136,654
4 Claims. (Cl. 166—42)



1. A hydraulic fracture method for use in stimulating hydrocarbon-containing subsurface formations penetrated by a borehole comprising injecting into fractures, previously formed in a subsurface formation which contain a highly viscous fluid capable of being produced with production of formation fluids, a substantially lower viscosity fluid containing a propping agent so as to form highly conductive, radial fluid paths extending from the borehole completely through said higher viscosity fluid located in said fractures and then producing said formation fluids.

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### 3,167,125
### METHOD FOR IMPROVING WELL PRODUCTION AND SALT WATER DISPOSAL

Warren P. Bryan, 709 Lee St., Borger, Tex.

Filed Nov. 22, 1961, Ser. No. 154,166
2 Claims. (Cl. 166—45)

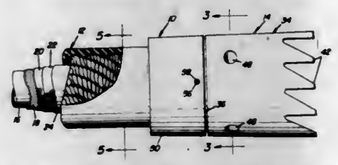


1. The method of increasing well bore productivity and disposing of salt water precipitate and the like comprising the following steps, forming a seal in a well bore between an upper productive stratum and a lower disposal stratum, allowing the heavier unwanted precipitates and the lighter desirable portions of the yield from the productive stratum to stratify in the portion of the well bore disposed immediately above said seal, and mechanically pumping substantially only the unwanted portion of the stratified yield from a point in said bore above said seal and spaced below the productive stratum into the portion of the well bore communicated with the disposal stratum.

### 3,167,126
### DESANDING HOSE AND CUTTING TOOL

Harry W. Reineke, Jr., 600 Dover Place, New Orleans, La., and Kenneth L. Odinet, 600 N. Robertson, Chalmette, La.

Filed Aug. 3, 1962, Ser. No. 214,656
2 Claims. (Cl. 166—104)



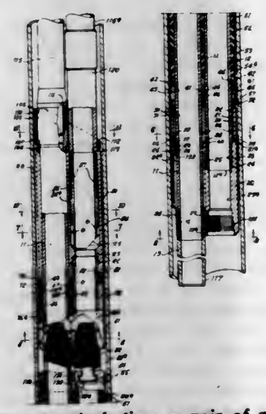
1. A hose adapted to have one end portion suspended and lowered into the tubing string of an oil well and having a rotary fluid actuated desanding and cutting tool on said one end, said cutting tool comprising a generally cylindrical member, means rotatably mounting one end of said cylindrical member on said one end of said hose for rotation about an axis extending longitudinally of said one end and of said cylindrical member with the interior of said cylindrical member communicated with said one end of said hose, the other end of said cylindrical member having a plurality of circumferentially spaced and axially projecting teeth thereon, said cylindrical member, between said teeth and said one end of said hose, having a plurality of circumferentially spaced outwardly opening passages formed therein and communicated with the interior of said cylindrical member, the outer ends of said passages each opening along a line disposed at an angle to a radius of the axis of rotation of said cylindrical member passing through said outer end of the corresponding passage, said hose comprising a plurality of concentric laminations, said laminations being encased in a cable-like shroud, said cable-like shroud being in turn encased in a generally cylindrical outer wear covering of resilient and flexible material.

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### 3,167,127
### DUAL WELL PACKER

Phillip S. Sizer, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed Apr. 4, 1961, Ser. No. 100,728
15 Claims. (Cl. 166—120)



1. A well packer including: a pair of mandrels, each having a passageway extending therethrough; upper and lower body members connecting the opposite ends of said mandrels to each other; anchoring means on said mandrels movable relative to said mandrels between a retracted position and an expanded operative position wherein said

anchoring means is engageable with the internal surface of a well casing to hold the mandrels against movement relative to said casing; means on said mandrels operable in response to fluid pressure in one of said passageways for moving said anchoring means to said operative position; first conduit means on said mandrels for communicating fluid pressure from said one of said passageways with said means for moving said anchoring means for moving said anchoring means to operative position; first lock means on said mandrels for locking said anchoring means in said operative position; seal means on said mandrels; operating means on said mandrels operable in response to fluid pressure in one of said passageways for moving said seal means to a position of sealing engagement with the internal surfaces of a well; second conduit means on said mandrels communicating one of said mandrel passageways with said operating means for moving said seal means for conducting fluid pressure to said operating means from said passageway for operating said operating means; and second lock means on said mandrels for locking said sealing means in said sealing position.

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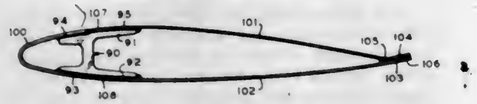
**3,167,128**
**SELECTIVE FORMATION ZONE ANCHOR**
**Wayne N. Sutliff, 2931 Pierce Road, Bakersfield, Calif.**
**Filed Apr. 24, 1962, Ser. No. 190,206**
**9 Claims. (Cl. 166—216)**



1. In a selective formation zone anchor, the combination of: a head sub having a pair of diametrically opposed lugs extending downwardly from the lower end of said sub; a mandrel tube provided axially on and extending downwardly from said sub; a pair of detent jaws which are pivotally connected respectively at their upper ends with said lugs and are adapted to have both retracted and expanded positions, said jaws when in retracted positions enclosing said tube to form a cylinder having approximately the same outside diameter as said head sub and being internally beveled at their lower ends; a locking spike provided in each of said jaws, said spikes extending downward in parallel relation from said jaws when the latter are in their retracted positions; expansive spring cage means slidably and rotatably mounted on said tube beneath said jaws, said means normally expanding into engagement with the bore of a well into which said anchor is introduced so as to frictionally resist longitudinal movement in or rotation in said bore; a member rotatably mounted on the upper end of said spring cage means and having very limited axial movement relative thereto, said member having an upwardly disposed conical face provided with parallel holes which are adapted to receive said jaw retaining spikes to retain said jaws in their retracted positions when said spring cage means is held shifted upwardly on said tube; and pin-and-J-slot means provided on said tube and said spring cage means for holding said conical member upwardly in jaw retaining relation with said jaw spikes when introducing said anchor into a well bore, but manipulatable by rotation of said head sub from the ground level to disconnect said pin-and-J-slot means after which said head sub may be pulled upwardly to withdraw said spikes from said holes in said conical member and then rotate said jaws to misalign said spikes with said holes and then lower said jaws to cause said spikes to engage said conical face thereby expanding said jaws outwardly into engagement with the wall of said well bore and set said anchor against downward movement in said bore.

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**3,167,129**
**CONSTRUCTION OF AIRFOILS HAVING ELASTICALLY-BENT AFTERBODIES**
**Paul L. Shultz, Menominee, Mich., assignor to R. J. Enstrom Corporation, Menominee, Mich., a corporation of Michigan**
**Filed May 16, 1962, Ser. No. 195,076**
**4 Claims. (Cl. 170—159)**



1. An airfoil of the type having upper and lower aft skins unsupported between a spar and a trailing edge juncture of said skins, comprising

a spar having convex airfoil-contour-conforming faces recessed within the outer contour of the airfoil adjacent and extending to the spar edge and terminating in spreader ends,

together with upper and lower aft skins having forward margins adhered to said recessed faces and, by such adherence, constrained elastically stressed from flat to contour-conforming alignment with said faces, whereby convexity of curvature is imposed on the forward skin margins,

said aft skins having adhered-together rear margins demarked forwardly by a permanently-set angular bend and demarked rearwardly by the trailing edge line, said angular bend being at such angle as to so space the forward margins that the spreader ends impose upon them outward thrust, whereby such convexity of curvature is reduced progressively aft,

whereby a cusp-like trailing edge juncture is formed across which elastic stresses in each of the upper and lower skins are transmitted to the other of said skins and resisted by it,

the margin constraints thus imposed on said upper and lower skins holding them elastically in the conformation of an airfoil afterbody characterized by convexity of curvature decreasing from the spar to the trailing edge juncture.

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**3,167,130**
**RECIPROCATING PROPELLER**
**Fred M. Day, 2903 W. Palm Lane, Phoenix, Ariz.**
**Filed Dec. 23, 1963, Ser. No. 332,729**
**7 Claims. (Cl. 170—160.1)**

1. A reciprocating propeller for helicopter type aircraft comprising in combination:

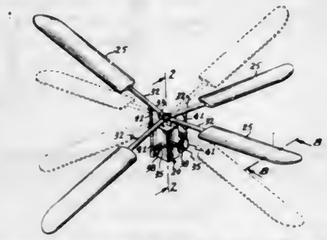
(*a*) a gear box rotatable about a vertical axis and restrained against vertical axial movement on a fuselage of the aircraft,

(*b*) a plurality of radially disposed and circumferentially spaced rotor blades pivotally mounted on said gear box to swing in vertical planes relative to said fuselage,



(*c*) means for rotating said gear box from a source of power on said fuselage,

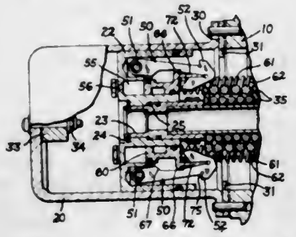
(*d*) and means carried by said gear box and interconnected between said fuselage and said rotor blades operable by the rotation of said gear box on said fuselage to reciprocate said rotor blades in vertical



swinging movement so as to cause diametrically opposite rotor blades to move up and down in the same direction while other circumferentially spaced pairs of diametrically opposite blades move in the same direction but in opposite up and down movements from said first mentioned diametrically opposite rotor blades.

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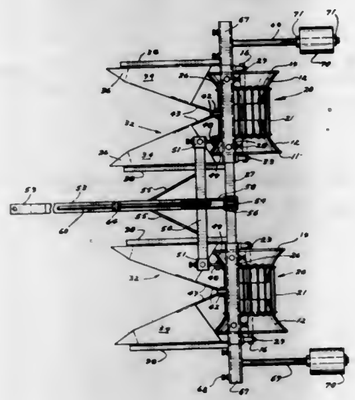
**3,167,131**
**CONTROLLABLE PITCH PROPELLER HAVING LOW PITCH STOP**
**Walter Bryan Voisard, Dayton, Ohio, assignor to The Cessna Aircraft Company, Wichita, Kans., a corporation of Kansas**
**Filed Sept. 3, 1963, Ser. No. 305,963**
**6 Claims. (Cl. 170—160.31)**



1. In a control system for the blades of an adjustable pitch propeller having a drive engine and a rotary hub structure including adjustable supporting means for said blades, a hydraulic motor within said hub structure including a cylinder and piston, means connecting said piston with said supporting means to increase and decrease the pitch of said blades in response to movement of said piston inwardly and outwardly of said cylinder respectively, means defining the minimum pitch limit position for said outward movement of said piston, control spring means arranged to bias said piston inwardly of said cylinder, means for supplying hydraulic pressure fluid to said cylinder to move said piston against said control spring means, and selectively operable valve means for relieving said pressure fluid supply, the combination of a stop mechanism for selectively blocking increase in the pitch of said blades beyond a predetermined low pitch, comprising latching means supported on said hub structure for movement relative thereto between a release position offering no resistance to the movement of said piston and a latching position blocking said piston from movement inwardly of said cylinder beyond an intermediate position corresponding to said predetermined low blade pitch, and differential pressure means responsive to the pressure within said cylinder and calibrated to effect movement of said latching means to said release position when the pressure within said cylinder is above a predetermined value which is greater by a predetermined amount than the pressure equivalent of said control spring means to effect movement of said latching means to said latching position when the pressure within said cylinder is between said predetermined value and said pressure equivalent of said control spring means.

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**3,167,132**
**VINE PULLING APPARATUS**
**Foster L. Bucher, Cambridge, Minn., assignor to Dahlman Manufacturing & Sales, Inc., Braham, Minn., a corporation of Minnesota**
**Filed Feb. 8, 1962, Ser. No. 171,974**
**1 Claim. (Cl. 171—27)**



A potato vine jerking device having in combination,

a pair of spaced frusto conical drums having adjacent tapered portions and remote ground engaging portions relative to one another,

said drums having interior recessed hub portions,

a shaft disposed through said hub portions, and

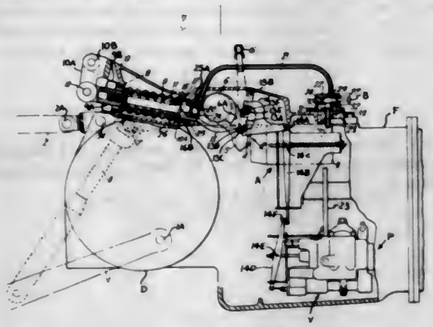
an endless chain of parallel elongated links disposed between said drums and frictionally engaged therewith, said chain being axially aligned with said drums and having a diameter less than the diameters of said ground engaging portions of said drums.

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**3,167,133**
**POWER OPERATED HITCH PROVIDING CONSTANT WEIGHT TRANSFER**
**Robert B. Annat, Kenilworth, England, assignor to Massey-Ferguson (United Kingdom) Limited, London, England, a British company**
**Filed Aug. 28, 1963, Ser. No. 305,167**
**Claims priority, application Great Britain, Aug. 31, 1962, 33,439/62**
**1 Claim. (Cl. 172—7)**

In a tractor having a frame with trailingly pivoted hitch links, a hydraulic actuator for raising said links upon receiving fluid under pressure, and a control system for the actuator including a valve for controlling fluid flow to and from the actuator and a valve positioning control spring assembly with a rear hitch connection for sensing draft loads and moving the valve in response to spring deflection, the improvement comprising, in combination, a cylinder interposed between the forward end of said spring assembly and said frame, said cylinder being recessed in said frame and opening toward said control spring assembly, a piston fitted into said cylinder, a fluid conduit opening into said cylinder behind said piston so

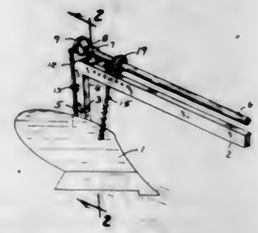
that fluid under pressure delivered by said conduit urges said piston against said spring assembly to cause spring deflection, and a manually operable valve for selectively



connecting said conduit to said actuator so that operating the manual valve conditions the control system for either draft load control or weight load control.

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**3,167,134**
**POWERED MOLDBOARD PLOW**
**Ivan Andrew Lee, Yale, Iowa**
**Filed Jan. 23, 1963, Ser. No. 253,316**
**2 Claims. (Cl. 172—40)**

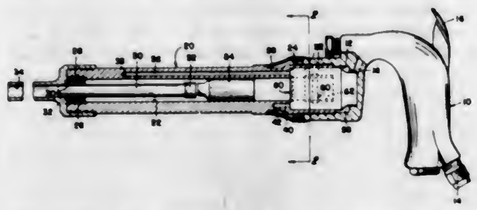


1. In a powered moldboard plow,
a frame having a horizontal portion and a vertical portion extending downwardly from one end thereof,
an elongated bar member pivotally secured to the lower end of said vertical portion,
said elongated bar pivoting in a transverse plane to the longitudinal axis of said horizontal portion,
a moldboard rigidly secured to the lower end of said elongated bar member,
a drive shaft rotatably mounted on said horizontal portion and connected at one end to a power means,
a rocker arm pivotally connected at the lower end to said moldboard,
said rocker arm pivotally mounted on said vertical portion intermediate its length,
a race pivotally connected to the upper end of said rocker arm,
and an eccentric disk mounted on the other end of said drive shaft which is rotatably mounted in said race.

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**3,167,135**
**ANVIL IMPACT TOOL**
**Richard Keith Wilmer, Mohegan Lake, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Continuation of application Ser. No. 51,998, Aug. 25, 1960. This application Nov. 16, 1961, Ser. No. 152,850**
**9 Claims. (Cl. 173—31)**

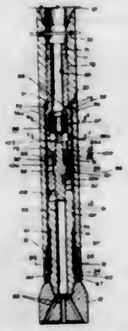
1. An impact tool that is held stationary relative to a workpiece during its operating cycle, comprising a barrel, a sleeve connected to the barrel to be placed in contact with the workpiece, an anvil movable in the barrel, a piston reciprocated in the barrel for repeatedly striking the anvil to drive the anvil progressively into the sleeve



and toward the workpiece, and valve means in the barrel to provide pressure fluid for reciprocally moving the piston.

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**3,167,136**
**FLUID-ACTUATED DRILLING TOOL**
**Evin L. Cook, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York**
**Filed Dec. 31, 1959, Ser. No. 863,147**
**10 Claims. (Cl. 173—73)**



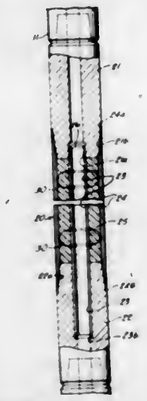
1. In a fluid-actuated percussion drilling tool which includes in combination an outer casing, an anvil slidably secured within the lower end of said casing and adapted to support a drill bit, said anvil having a flow passage to conduct drilling fluid to said bit, and a hammer element slidably positioned within said outer casing above said anvil and adapted to deliver percussive blows to the upper end of said anvil, said hammer element having at least one fluid flow passage to conduct fluid through said element to the lower end thereof and a chamber opening through the lower end of and interconnecting with said flow passage in said element, the improvement which comprises a unitary valve structure slidably positioned within said chamber in said hammer element, said valve structure having an upper solid portion and fluid flow ports adapted to coact at alternate slidable positions with said fluid flow passage within said hammer element to control the flow of drilling fluid through said hammer element, said valve structure being further provided with a lower solid portion extendable below said hammer element at one position of said valve structure to coact with said flow passage in said anvil to control the flow of drilling fluid through said anvil.

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**3,167,137**
**WEIGHTED DRILL COLLAR**
**Howard C. Humphrey, Liberty, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 19, 1961, Ser. No. 160,508**
**3 Claims. (Cl. 175—320)**

1. In combination, in a drill collar of composite construction subject to rotation, end sections and inner and outer pipe members joined thereto in concentrically spaced relationship to each other thereby defining an annular chamber therewith, said drill collar being adapted to be attached to a rotatable drill pipe string having the same outer diametral dimension, each of said end sections having the same outer diametral dimension as the outer pipe member and having a passageway in coaxial communication with and with a diameter equal to the inner diameter of the inner pipe member, a metallic material completely occupying said annular chamber and having a higher specific gravity than said pipe members and said end sections to provide a drill collar of substantially the

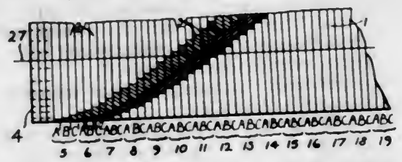




same or greater weight and of lesser outer diametral dimension in comparison with a conventional integral drill collar, said metallic material being selected from the group consisting of lead and an alloy of lead having a specific gravity ranging from 9.4 to 11.3, and a plurality of resilient metallic members fixedly fastened to and spaced along the length of one of said pipe members within said annular chamber, said metallic members projecting equidistantly from said one of said pipe members into contact with the other of said pipe members for concentric positioning of said pipe members with respect to each other, said metallic members being imbedded in said metallic material to serve as anchors therefor.

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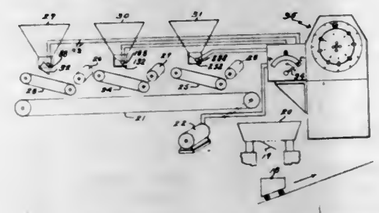
**3,167,138**
**METHOD FOR THE GRADING OF BANANAS**
**Henri Ignatius Humphries Slabbert, "Calais," District Letaba, Transvaal, Republic of South Africa (P.O. Box 1, Ofcolaco, Transvaal, Republic of South Africa)**
**Filed Apr. 12, 1962, Ser. No. 186,971**
**2 Claims. (Cl. 177—1)**




1. A method of grading a hand of bananas, comprising, placing a hand containing a fixed number of bananas upon a weighing unit having a drum rotatable to an extent proportional to the weight of a hand, said drum having a scale carrying discrete linearly-arranged sets of graduations corresponding to established grade qualities of bananas for a given number thereof in a hand, said unit also having a linearly-arranged series of viewing areas superimposed over said scale for viewing said graduations therethrough, each of said areas carrying an indicator co-acting with said scale and also carrying a reference to a hand holding a fixed but different number of bananas,
taking a reading at a viewing area assigned to the specific number of bananas in said hand weighed, said reading consisting of the relative position of said indicator of said latter area with respect to the co-acting graduation on said scale, the reading being indicative of the grade quality of the banana hand weighed, and
allocating said hand to an area assigned to such designated grade.

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**3,167,139**
**SCALE DIALS**
**Eugene W. Schellentrager, Shaker Heights, Ohio, assignor to The Atlas Bolt & Screw Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Jan. 22, 1962, Ser. No. 167,832**
**6 Claims. (Cl. 177—70)**



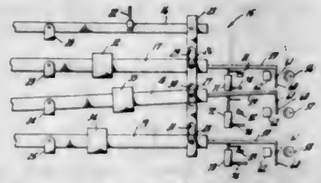
1. In a weighing system wherein a plurality of charging containers are disposed to supply a respective plurality of different ingredients and wherein each container is provided with flow control means for initiating and terminating discharge of an ingredient from its container and wherein means is provided for delivering discharged material to a receptacle for ultimate use, weight indicating and controlling means including, in combination,
(1) a rotatable dial,
(2) dial rotating drive means responsive to the weight of a material added to said receptacle and effective on said dial for producing a rotation of said dial proportional to the weight of said material thus added,
(3) a plurality of electric circuits, each effective on a respective flow control means to cause initiation or termination of material flow from a respective container,
(4) a respective normally control switch in each circuit,
(5) a plurality of trip means adjustably positioned in angularly spaced positions on said dial representing desired weights of respective ingredients,
(6) said control switches being disposed in fixed position adjacent said dial but at respectively different distances therefrom,
(7) said trip means having operating fingers extending in respectively different distances from said dial but disposed so that each finger can operatively contact only one control switch whereby upon contact of a finger with its respective control switch one aforesaid circuit is broken to thereby terminate flow of material from a container.

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**3,167,140**
**BEAM SCALE CONTROL SYSTEM**
**Charles J. Hagerman, Ludington, Mich., assignor to Jackson Vibrators, Inc., Ludington, Mich., a corporation of Illinois**
**Filed June 27, 1962, Ser. No. 205,782**
**3 Claims. (Cl. 177—70)**

1. In an apparatus having a scale with a plurality of beams that can be selectively moved from disabled

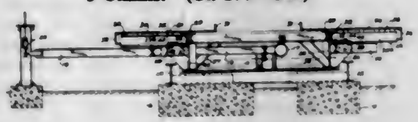
positions into counterbalancing connection with a weigh box and a plurality of controls for adding different materials to the box, the combination comprising, a plurality of pneumatic actuators each mounted adjacent a respective one of said beams, each actuator being effective to engage and support its respective beam in disabled position when activated, means including a sole-



noid valve and an electric circuit coupled to each actuator for holding that actuator in active position when the associated control is not operated and the actuator has been moved to active position, whereby operation of each control deactivates the associated actuator to add the beam held thereby into counterbalancing connection with the weigh box.

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**3,167,141**
**TRANSPORTABLE SCALE WITH EXTENDIBLE WIDTH**
**Leslie R. Murphy, Sacramehto, Calif., assignor to L. R. Murphy Scale Company, Sacramento, Calif., a corporation of California**
**Filed July 23, 1963, Ser. No. 297,122**
**5 Claims. (Cl. 177—126)**



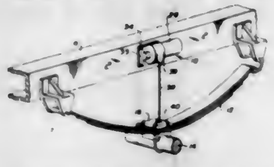
1. In a transportable scale with an extensible deck, having a base frame, a weighbridge supported on said base frame by a lever system, said weighbridge having a rigid frame, including longitudinal side members with outer flanges and with extension members projecting laterally out therefrom, and a pair of platforms releasably supported on said weighbridge, the combination therewith of:

outrigger members each about four times as long as and pivotally supported by said extension members and having an upper beam resting on said extension member and having a lower surface and an upper surface, portion bearing against said flanges and upper surface portions substantially coplanar with the upper surface of said longitudinal side members and adapted to extend the effective width of said weighbridge frame or to fold into a position in which they extend out no further than said extension members, each said outrigger member also having a lower beam secured to the lower surface of said upper beam and positioned to engage the outer end of said extension member when said outrigger is in its extended position.

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**3,167,142**
**SELF-COMPENSATING LOAD INDICATOR APPARATUS**
**Allan C. Meneely, West Vancouver, British Columbia, Canada, assignor to Pacific Coast Research & Development Ltd., Vancouver, British Columbia, Canada, a corporation of Canada**
**Filed Aug. 23, 1963, Ser. No. 304,150**
**25 Claims. (Cl. 177—137)**

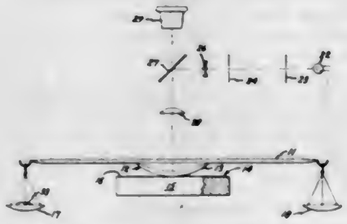
1. Self-compensating load indicator apparatus to be used with first and second members retained apart by resilient means and relatively movable under the influence of a load, said resilient means being such that the relative movement of the members towards each other becomes less per unit of load as the load increases, said apparatus comprising an elongated resistance strip associated and movable with the first member, a contact strip associated and movable with the second member, said contact strip extending angularly across and longitudinally of and contacting the resistance strip, said contact and resistance strips being positioned so that one strip moves



throughout substantially the length thereof in a direction substantially normal to one of the strips when there is relative movement between the first and second members, an electrical measuring circuit, and means for connecting said contact and resistance strips in series in the measuring circuit, the amount of movement of the contact between the contact and resistance strips along said resistance strip during relative movement therebetween under a given load depending upon the angle between said strips.

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**3,167,143**
**ANALYTICAL BALANCE**
**Robert H. Savage, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Aug. 22, 1963, Ser. No. 303,908**
**13 Claims. (Cl. 177—190)**



1. An instrument for weighing comprising in combination:

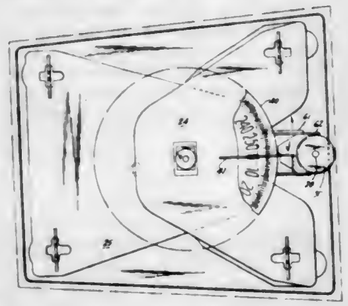
(*a*) a base having a flat surface formed thereon,
  (1) said surface having a high degree of reflectivity,
(*b*) a transparent body with the outer surface thereof formed at least in part in a convexly curved arc,
  (1) said body resting with the curved portion thereof on said surface whereby said body may rocked relative to said surface,
(*c*) a longitudinally extending member supported on and connected to said body,
  (1) said member extending at right angles to an axis about which said body may be rocked,
(*d*) means attached to at least one end of said member for receiving material to be weighed,
(*e*) means mounted over said body and said surface for viewing a magnified field from a direction perpendicular to said surface,
(*f*) a light source,
(*g*) means for directing light from said source to illuminate said field,
  (1) said illuminated field including the dark contact area between said curved portion of said body and said surface,



  (2) said contact area having regularly spaced therefrom the image lines of a fringe system,
  (3) said fringe lines being spaced a calculable distance apart, and
(*h*) datum image means superimposed on said field against which to observe and refer the extent of displacement of said contact area and fringe system upon tilting of said body as the result of depositing material to be weighed on said receiving means.

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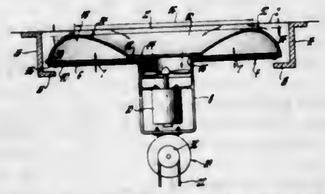
**3,167,144**
**SCALE**
**Maxwell E. Jacobs and Charles Anselmo, Brooklyn, N.Y., assignors to Detecto Scales, Inc., Brooklyn, N.Y., a corporation of New York**
**Filed Sept. 11, 1963, Ser. No. 308,232**
**14 Claims. (Cl. 177—225)**



1. In a scale of the type having a base, a platform supported above the base, a spring yieldingly urging said platform away from said base, the exhausted length of said spring determining the maximum distance between said base and said platform, a measuring mechanism including relatively movable parts operatively connected to said base and said platform to measure the distance said platform is from said base, a registering means providing an indication of the distance said platform is spaced from said base, that improvement in combination therewith consisting of arresting means to arrest movement of said measuring mechanism prior to said spring attaining its exhausted length after application of stress and said registering means providing a predetermined indication during actuation of said arresting means independently of said measuring mechanism.

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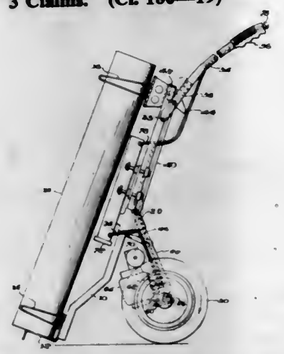
**3,167,145**
**PENDANT AIR BEARING LOAD SUPPORTING DEVICE**
**Harry A. Mackie, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 21, 1961, Ser. No. 161,048**
**8 Claims. (Cl. 180—7)**



1. A surface proximate air bearing comprising a rigid annulus and a flexible annulus having their respective circumferential boundaries secured together to form an annular cavity of variable cross section, aperture means venting said cavity to atmosphere, and air flow generating means mounted on said rigid annulus so as to induct air from the flexible annulus side of said bearing and discharge said air on the rigid annulus side.

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**3,167,146**
**POWER DRIVEN GOLF CART**
**Rome R. Rudolph, 3258 Antler Drive, Gibsonia, Pa.**
**Filed May 8, 1963, Ser. No. 279,686**
**3 Claims. (Cl. 180—19)**



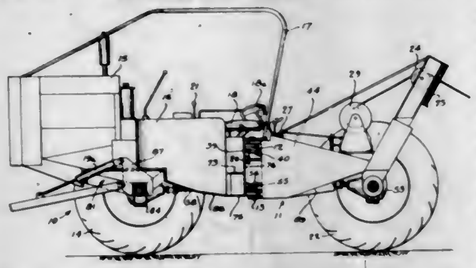
1. In a golf cart of the collapsible type having a central golf bag supporting member, strut means extending laterally from each side of said central member, a pair of generally horizontal axles on said strut means, cart wheels each of which is rotatably mounted on an associated one of said axles for movement over ground surfaces, each said strut means being pivotally secured at one of its ends to said central member and pivotally secured at the other of its ends to one of said axles whereby said cart wheels are movable toward and away from said central member, means connected to said strut means for moving said cart wheels toward and away from said central member and releasable latch means carried on said central member and engageable with the last-mentioned means for locking said cart wheels in an extended, ground engaging position: the improvement comprising pivot means non-rotatably secured to one of said axles and having a pivot axis closely adjacent to and extending substantially parallel to one of said axles; motor means pivotally mounted on said pivot means and positioned adjacent to the inboard face of the wheel which is to be driven and forward of said strut means; a friction wheel engaged with the periphery of one of said wheels and operatively connected to said motor means; spring means urging said motor means to rotate in one direction about said pivot axis whereby said friction wheel is continuously engaged with said one of the cart wheels; and means for starting and stopping said motor means when desired; said pivot means, said motor means and said friction wheel being movable with said one axle toward and away from said central member; said pivot means, said motor means, said friction wheel and said spring means residing within the space bounded by the outboard faces of said cart wheels.

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**3,167,147**
**DRIVE AND SUSPENSION ARRANGEMENT FOR ARTICULATED VEHICLE**
**Robert C. Symons, Robert J. Orpana, and Jan Wagter, all of Woodstock, Ontario, Canada, assignors to Timberland-Ellicott Limited, Woodstock, Ontario, Canada**
**Filed Jan. 18, 1962, Ser. No. 167,134**
**4 Claims. (Cl. 180—51)**

1. An articulated vehicle comprising a pair of frames pivotally connected together about a generally vertical axis, a beam pivotally mounted on a first of said frames

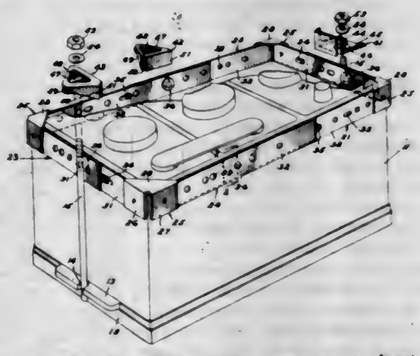
about a horizontal axis located along the central longitudinal plane of said frame, a first axle assembly and associated road wheels mounted on said beam beneath the same whereby said first axle assembly determines the road clearance in the vicinity of said assembly, a second axle assembly and associated road wheels rigidly mounted on the second of said frames, a transfer mechanism mounted on one of said frames in a generally central position along the longitudinal direction of the vehicle, a motor connected to supply rotary power to said transfer



mechanism, a pair of generally oppositely extending lower drive means extending downwardly and longitudinally from said transfer mechanism to each of said axles, each of said drive means including universal joints, the lower drive means connecting said second axle assembly and transfer mechanism including a shaft assembly extending downwardly with respect to the output shaft of said transfer mechanism and an input shaft on said second axle assembly extending downwardly with respect to said shaft assembly.

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**3,167,148**
**BATTERY HOLD DOWN CLAMP**
**William J. Hinch, Huntington Woods, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Continuation of application Ser. No. 861,901, Dec. 24, 1959. This application June 17, 1963, Ser. No. 289,167**
**2 Claims. (Cl. 180—68.5)**



1. In combination, a vehicle structure, at least one pair of bolts, each bolt having one end secured to said vehicle structure, a storage battery positioned on a portion of said vehicle structure, and a rectangular adjustable battery hold down clamp for securing said storage battery to said vehicle structure, said battery hold down clamp comprising four rigid angle sections, each of said angle sections having one relatively long leg and one relatively short leg and having a cleat positioned over the corner thereof, said cleat having a pair of flanges affixed to the legs of the angle section, said angle sections being arranged so that the relatively long legs overlap each other and so that the relatively short legs overlap each other, each of said legs having a plurality of spaced apertures positioned therein, a first tongue extending from each end of the relatively long legs of one pair of oppositely disposed angle sections, a second tongue extending from each end of the relatively short legs of the other pair of oppositely disposed angle sections, the first tongues extending from the relatively long legs of the one pair of oppositely disposed angle sections fitting through selected apertures in the overlapping relatively long legs of the other pair of oppositely disposed angle sections, the second tongues extending from the ends of the relatively short legs of the other pair of oppositely disposed angle sections fitting into selected apertures in the overlapping relatively short legs of said one pair of oppositely disposed angle sections, snap-in fastening means extending through aligned apertures in adjacent overlapping legs and spaced inwardly from each of said first tongues and second tongues respectively to clamp said overlapping legs together, and at least two lugs, each lug having a horizontally extending flange with an opening therein, said flange integrally formed with an inverted U-shaped portion to fit said overlapping angle sections, the U-shaped portions being positioned over overlapping angle sections so as to axially align the openings in said flanges with said pair of bolts, said openings securely receiving the other ends of said pair of bolts to attach said storage battery to said vehicle structure.

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**3,167,149**
**TORQUE TUBE HAVING A VARYING SECTION MODULUS**
**Carl J. Miller, Warren, Fred F. Timpner, Orchard Lake, and Haik Aldikacti, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 31, 1961, Ser. No. 135,331**
**5 Claims. (Cl. 180—70)**



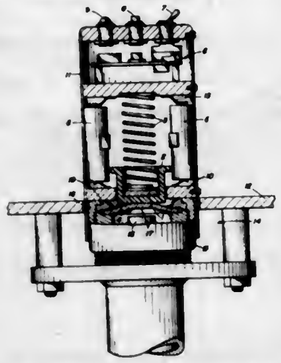
4. A torque tube for a vehicle having an engine and a rear axle, comprising:

a tubular member rigidly connecting said engine and said rear axle, the cross-sectional area of said member increasing from front to rear thereof and along substantially the entire length thereof to control bending stiffness and the resonant frequency of vibration of said torque tube.

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**3,167,150**
**RADIATION LEVEL INDICATOR FOR SONAR PROJECTORS**
**Ronald A. Darby, Annapolis, and Frank P. Hodges and William L. Letsch, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Sept. 22, 1961, Ser. No. 140,146**
**5 Claims. (Cl. 181—.5)**

1. In an acoustic projector testing device of the type which needs no special test environment, the combination comprising an acoustic projector, mounting means supporting said projector, locating means connected to said mounting means, a test housing having a test end and a read-out end, said test end having positioning means arranged to cooperate with said locating means to locate the housing in a test position and having transducer means disposed within said housing so as to assume a position along a test-axis normal to said projector when said positioning means assumes its test position and further having spring means resiliently mounting said transducer so as to allow it to be compressively urged against said projector for a test reading, electrical signal transferring means operatively connected to said transducer and said read-out end, and signal indicating means



operatively connected to said signal transferring means for indicating when said acoustic projector is operating satisfactorily.

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**3,167,151**
**ACOUSTICAL PANEL**
**William A. Jack, Hampton, and George W. Constantin, Lebanon, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York**
**Filed June 7, 1962, Ser. No. 200,786**
**1 Claim. (Cl. 181—33)**



A method of opening up the surface and body of a fibrous acoustical panel of the water-laid type, said surface being fibrous and relatively planar, comprising the steps of pressing a stepped punch, having a pilot blunt portion and at least one shoulder along the length thereof, into said surface to a depth sufficient to create a delaminated area within the body portion of the panel, and continuing pressure on the punch until the larger diametered portion thereof, including the shoulder, enters the surface of the panel.

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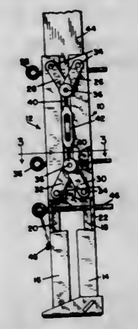
**3,167,152**
**SOUND ATTENUATING GAS CONDUIT AND RESONATORS THEREFOR**
**Edmund Ludlow and Benjamin H. Irwin, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana**
**Original application Aug. 17, 1961, Ser. No. 132,117, now Patent No. 3,128,841, dated Apr. 14, 1964. Divided and this application Jan. 16, 1964, Ser. No. 338,129**
**4 Claims. (Cl. 181—48)**



1. A sheet-metal sound attenuating resonator, comprising a sheet-metal member formed from a unitary piece of sheet-metal having first wall areas disposed in spaced relationship to each other to form a resonator volume, second wall areas bordering said first wall areas and enclosing said volume, elongated third wall areas extending within the extent of said second wall areas and disposed in spaced relationship to each other to form an elongated resonator throat, said throat being open within and without the extent of said volume for operatively interconnecting said volume to a sound energy source for attenuating the noise level thereof, said volume being completely enclosed except for its communication with said throat.

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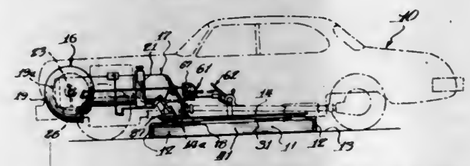
**3,167,153**
**SEPARATE ADJUSTABLE LEG FOR A LADDER**
**Lewis E. Trumpolt and Franklin J. Trumpolt, both of 8 Marjorie St., Hudson, Mass.**
**Filed Apr. 22, 1963, Ser. No. 274,663**
**1 Claim. (Cl. 182—204)**



A separate detachable unit providing an extensible safety leg for a ladder, said unit comprising a pair of channel members, means holding the channel members in facing relationship to grip the side rail of a ladder therebetween, said means comprising two spaced pairs of interpivoted links, each link of each pair being individually pivoted to a part of its respective channel member, said links extending toward each other, a right-hand elongated threaded member pivotally associated with one pair of links adjacent the point where they are interpivoted, a left-hand similar member pivoted to the other of the pair of links, and means forming an elongated nut threadedly receiving said screw-threaded members whereby rotation of said nut will longitudinally move the threaded members to spread or selectively contract said links and thereby said channel members.

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**3,167,154**
**SURFACE ENGAGING BRAKING SYSTEM**
**Adriano Salvetti, Via Barozzi 2, Milan, Italy**
**Filed Jan. 21, 1963, Ser. No. 252,837**
**Claims priority, application Italy, Feb. 2, 1962, 20,201, Patent 663,013**
**7 Claims. (Cl. 188—5)**

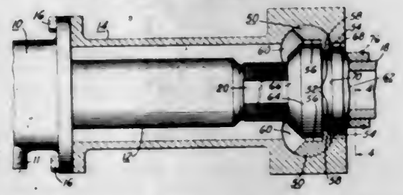


1. A vacuum braking system for a vehicle which comprises a suction producing apparatus mounted on the vehicle, a plurality of hollow flexible wall members secured to the underside of the vehicle for selective pivotal movement into and out of chamber forming communication with the surface beneath the vehicle, a leaf spring contained within each of said hollow wall members and extending generally parallel to the surface-engaging edge thereof, ducting means connecting said suction producing apparatus in communication with the chamber when formed by said wall members whereby a vacuum is cre-

ated in the chamber upon the actuation of said suction producing apparatus, and means connected to said suction producing apparatus and said flexible wall members to effect the pivoting of said wall members into chamber forming communication with the surface beneath the vehicle and the simultaneous actuation of said suction producing apparatus.

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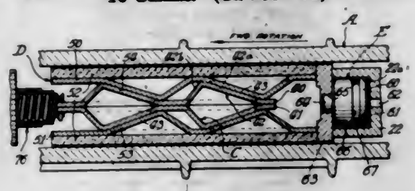
3,167,155
STROKE POSITIONING MEANS FOR AN ACTUATOR ASSEMBLY
Howard M. Geyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,285
9 Claims. (Cl. 188—67)



1. In a linear actuator of the piston and cylinder type, a reciprocable rod extending outside of said cylinder and movable between predetermined stroke end positions, an abutment attached to said rod between its ends, a pair of coacting rotatable abutments supported by said cylinder and extending transversely thereof on opposite sides of said rod, resilient means normally operable to maintain said rotatable abutments in a first position wherein said rotatable abutments are engageable with said rod abutment at an intermediate stroke position of said rod so as to preclude further movement thereof in at least one direction, and means operable in opposition to said resilient means for rotating said rotatable abutments to a second position wherein said rotatable abutments do not engage said rod abutment and thus permit full movement of said rod between its predetermined stroke end positions.

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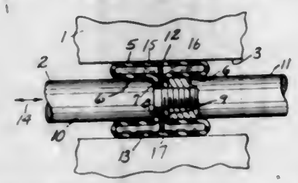
3,167,156
DISC BRAKE
Ernest G. Davis and Elbert E. Wiseman, Chicago, Ill., assignors to Borg-Warner Corporation, a corporation of Illinois
Filed Dec. 26, 1963, Ser. No. 333,606
16 Claims. (Cl. 188—72)



1. A brake of the disc type, comprising: a rotary member rotatable in at least one direction, and having at least one pair of annular friction surfaces generally aligned about the axis of said rotary member; reaction means fixed against rotary movement having segmental arcuate ramps provided with surfaces inclined toward said friction surfaces in said one direction of rotation of the rotary member; segmental friction elements disposed between each of said friction surfaces and adjacent ramp surface, each having a ramp follower surface adapted to be cammed toward said friction surfaces upon limited pivotal movement of said friction elements; and actuator means effective to impart a thrust directly upon said friction elements for promoting limited pivotal movement thereof, said thrust being directed along a chord of a circle inscribing said brake.

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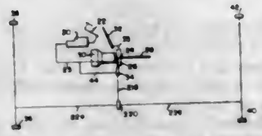
3,167,157
SEALED VISCOUS FLUID DAMPER
Richard P. Thorn, Erie, Pa., assignor to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Feb. 19, 1963, Ser. No. 259,689
1 Claim. (Cl. 188—98)



A damper comprising a force transmitting member, a force receiving member, a radially outwardly presented surface on one of said members, a radially inwardly presented surface on the other of said members surrounding and spaced radially outward of said outwardly presented surface, said surfaces being in telescoping relation to each other and defining an annular space therebetween, a tubular member of flexible material having its outer surface engaging said inwardly presented surface and having inwardly dished ends overlying said outwardly presented surface and sealed to said one member, a viscous liquid filling the tubular member, and a washer fixed to said one member between said ends of the tubular member and having its outer peripheral edge projecting close to the inner surface of the portion of the tube that contacts the radially inwardly presented surface of the other member for defining an annular passageway between the peripheral edge of the washer and the inner adjacent portion of the tubular member wherein a resistance to the passage of liquid is effected.

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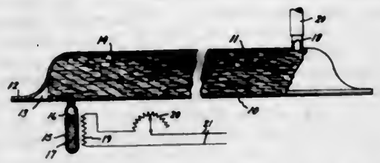
3,167,158
AUTOMATIC BRAKE SYSTEM
Nelson R. Brownyer, Birmingham, Mich., assignor to Rockwell-Standard Corporation, Coraopolis, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1961, Ser. No. 133,348
15 Claims. (Cl. 188—141)



1. In a braking system for a vehicle having a drive line mounted brake assembly and a set of hydraulic wheel brakes, an operator controlled master cylinder connected to actuate said wheel brakes and said drive line mounted brake assembly, said drive line mounted brake assembly comprising a member mounted for limited rotation, a brake shoe movably mounted on said member and adapted for engagement with a brake drum on said drive line, said master cylinder when operated advancing said shoe into frictional contact with the drum, said member being rotated by the torque reaction force developed when said shoe engages the drum, a hydraulic cylinder containing a piston, means connecting said hydraulic cylinder to actuate said wheel brakes independently of said master cylinder, and a motion transmitting connection between said rotating member and said piston for displacing said piston in a constant direction regardless of the direction of rotation of said member.



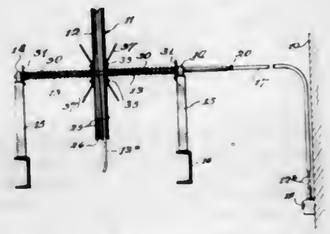
3,167,159
INSULATING STRUCTURES WITH VARIABLE THERMAL CONDUCTIVITY AND METHOD OF EVACUATION
Harold P. Bovenkerk, Royal Oak, Mich., assignor to General Electric Company, a corporation of New York
Filed July 30, 1959, Ser. No. 830,510
9 Claims. (Cl. 189—34)



4. An insulating structure including a pair of walls defining a narrow space therebetween, the space between said walls being evacuated, a filler material in said space, said filler material comprising a body of fiber glass strands positioned in planes generally parallel to the said walls of said structure and a hydride in communication with said space adapted to release hydrogen upon a predetermined temperature rise to vary the conductivity through said panel.

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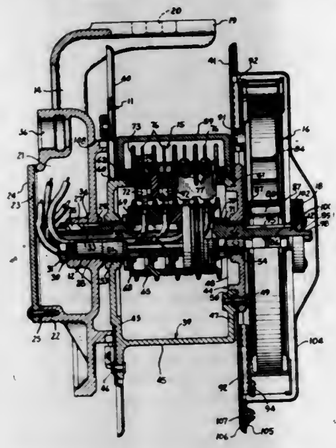
3,167,160
INSULATED ELECTRIC CABLE AND REEL ASSEMBLY
Richard H. Vickers, Mason City, Iowa, assignor to Allied Mills, Inc., Chicago, Ill., a corporation of Indiana
Filed June 27, 1961, Ser. No. 120,044
6 Claims. (Cl. 191—12.2)



1. In combination:
a flexible, insulated electric cable for conducting electric power to an apparatus movable between a plurality of work locations;
a reel for said cable;
a hollow axle;
means mounting said axle for rotation;
means mounting said reel on said axle for rotation therewith;
means normally urging said reel in a first rotative sense toward a rest condition;
a conduit in communication with said hollow axle;
said cable being wound around the circumference of said reel and having one end extending from said reel for connection to the electric-powered apparatus and another end extending through said axle and said conduit for connection to a power source;
said cable including a portion in said axle and a portion in said conduit;
means between the axle and the conduit for locking the cable portion in the conduit against rotation while permitting rotation of the cable portion in the axle;
said axle mounting means including means mounting the axle and reel for movement in a second rotative sense, opposite said first rotative sense, in response to an unwinding pull on said cable;
said flexible cable being capable of twisting a predetermined twist without being damaged;
said cable portion in the axle normally being twisted, relative to the cable portion in the conduit, said predetermined twist in said first rotative sense when the reel is in said rest condition;
the circumference of the reel being at least about $d/2f$ where $d$ equals the distance between the reel and the work location farthest from the reel, and $f$ equals said predetermined twist;
whereby said cable portion in the axle ends up twisted no more than said predetermined twist in said second rotative sense, when the cable is unwound.

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3,167,161
WEATHERPROOF TAKE-UP REEL
Arthur I. Appleton, Northbrook, Ill. (1713 Wellington Ave., Chicago, Ill.)
Filed Nov. 24, 1961, Ser. No. 154,697
3 Claims. (Cl. 191—12.2)



1. A weatherproof take-up reel carrying a cable embodying a plurality of conductors, said reel comprising, in combination, a frame including spaced walls defining a closed casing, one of said walls having a flange defining an opening therethrough, a shaft having one end extending through said opening and fixed to said flange, said shaft having a bore extending at least partially therethrough and communicating at said one end with the interior of the casing, a cable reel having spaced walls joined by a generally cylindrical wall defining with said spaced walls a central hollow drum, said spaced walls having alined axial openings therethrough for receiving said shaft, a flanged bearing in each of said wall openings journaling said reel on the extending portion of said shaft, said cylindrical wall being formed in two parts so as to be separable, means for releasably securing said parts together, each of said spaced walls and one part of said cylindrical wall having a flange defining a first surface, a corresponding flange defining a surface on the other part of said cylindrical wall corresponding in shape to said first surface, a gasket corresponding in shape to said surfaces for sealing the joint formed when said cylinder wall parts are secured together, a series of contact rings fixed on said shaft within said drum, a plurality of brushes for engaging said rings, means mounting said brushes on said first surface of said drum for rotation therewith, said cable being wound on said reel with the conductors thereof extending into the interior portion of said drum and electrically connected to said brushes, and means fixed

between said drum and the other end of said shaft for providing a driving connection between said reel and said shaft.

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**3,167,162**
**CLUTCH DEVICE**
**Leo W. Cook, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Jan. 2, 1962, Ser. No. 163,454**
**6 Claims. (Cl. 192—68)**

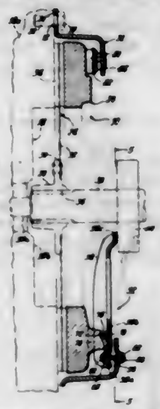


1. A friction device, comprising: rotatable drive means; driven means; a pressure plate adapted to be urged toward said drive means for clamping said rotatable driven means therebetween to provide conjoint rotation thereof; a cover plate adjacent said pressure plate and fastened to said rotatable drive means for rotation therewith; resilient means normally urging said pressure plate toward said drive means for providing said conjoint rotation; and release means adapted to overcome the effect of said resilient means, said cover plate having a plurality of openings provided therein with at least one side of each of said opening comprising a straight knife-edge fulcrum, said release means comprising a plurality of levers, each having one end adapted for reception of a force to interrupt conjoint rotation and another end adapted to interengage said pressure plate in a manner for moving said pressure plate away from said drive means, said clutch device being particularly characterized by each of said levers having an intermediate portion provided with a recess having a cylindrical surface adapted to engage said knife-edge fulcrum and about which each of said levers may pivot, each said lever recess further having a shoulder adapted to engage said cover plate for restraining said levers against outward movement due to centrifugal forces during operation, said shoulder and cylindrical surface carried by each of said recesses being further characterized in that they extend across the entire transverse extent of each of said levers whereby stresses due to interengagement with said cover plate may be more uniformly distributed for reducing wear.

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**3,167,163**
**AXIALLY ENGAGING CLUTCH WITH STRUT, SHEET METAL LEVERS, AND COVER PLATE**
**Richard L. Smirl, La Grange Park, and Leo W. Cook, Chicago, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Jan. 2, 1962, Ser. No. 163,629**
**3 Claims. (Cl. 192—68)**

1. A clutch device, comprising in combination: rotatable driving and driven means, rotatable pressure plate means adapted to urge said driving and driven means together for conjoint rotation and having at least one flat surface parallel to the plane of rotation and at least one surface generally transverse to the plane of rotation; a cover plate drivingly connected with said driving means; means comprising a plurality of resilient straps interconnecting said pressure plate means and said cover plate, each strap being disposed chordally with respect to a circumference inscribing said clutch device, each strap having a preformed condition such that opposed ends thereof are offset relative to the plane of rotation of said pressure plate means, said straps being assembled in said device tending to urge said pressure plate means out of engagement with said driven means and toward said offset condition; stop means adapted to limit movement of said pressure plate means during disengagement so that said straps will be flexed from their pre-formed condition even during the fully disengaged condition of the pressure plate means; a plurality of levers mounted adjacent said cover plate and adjacent said cover plate means adapted for urging said pressure plate means towards said driven means, each of said levers having one end adapted to receive an engaging force sufficient to overcome the effect of said



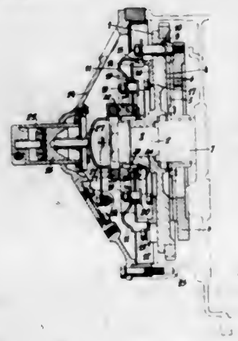
resilient strap means and an intermediate portion adapted to serve as a working portion which engages said pressure plate means in a clutch engaging direction; and a plurality of flat struts each adapted to serve as a fulcrum for one of said levers, and said intermediate portion of each lever having a sector of a circular cylindrical surface adapted to roll against said pressure element flat surface which is within the plane of rotation, each lever having a lip adapted to engage said pressure element transverse surface *only* during the disengaged condition of the device as urged by centrifugal forces, said lever cylindrical surface being arranged so that a tangent at the point of contact of said cylindrical surface with the pressure element flat surface will be generally perpendicular to the plane of the associated strut during the disengaged condition of the device whereby swivel movement of each strut will be reduced during lever movement, said cylindrical surface being adapted to roll on said contacting pressure element surface in a direction away from said transverse surface so that friction is reduced between the lever and the pressure element during the engaged condition of the device.

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**3,167,164**
**CLUTCHES**
**Albert N. Bland and John Downs, Leamington Spa, England, assignors to Automotive Products Company Limited, Leamington Spa, England**
**Filed July 30, 1962, Ser. No. 213,534**
**Claims priority, application Great Britain, Sept. 1, 1961, 31,561/61**
**4 Claims. (Cl. 192—89)**

1. A diaphragm spring clutch device comprising a rotatable driving member, a drive pressure clutch plate disposed on one side of said driving member, and a driven clutch plate disposed between said pressure clutch plate and driving member, an annular thrust plate disposed on the opposite side of said driving member, means connecting said thrust plate to said rotatable driving member for rotation therewith and to said pressure clutch plate for axial movement therewith, means for securing a diaphragm spring to said annular thrust plate, an annular diaphragm spring secured to said thrust plate, said spring





having its inner peripheral edge fixedly secured to said securing means and its outer peripheral edge freely disposed, and lug means fixed on said driving member for engaging the outer peripheral edge only of said spring for moving said thrust plate and clutch drive plate in one direction to engage said clutch pressure plate with said driven clutch plate, and cylinder and piston means for moving said thrust plate in the opposite direction to disengage said driven and drive clutch plates.

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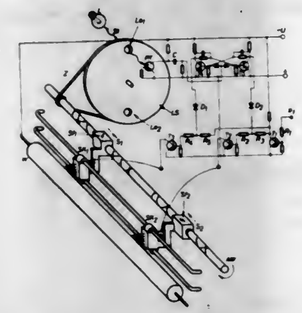
**3,167,165**
**AUTOMATIC COIN SELECTOR**
**Ellsworth H. Danielson, Overland Park, Kans., and Wilbur C. McNeely, Kansas City, Mo., assignors to Selectivend Corporation, a corporation of Missouri**
**Filed Nov. 22, 1963, Ser. No. 325,618**
**4 Claims. (Cl. 194—9)**



1. In a coin distributor mechanism for separating coins deposited in a vending machine according to a predetermined established percentage, the combination with
a primary coin chute,
secondary coin chutes joined to the primary chute,
separate coin collection boxes connected to each of the secondary chutes,
a diverter in the primary chute above the juncture of the primary and secondary chutes operable to direct the passage of coins from the primary chute to either of the secondary chutes and their respective coin boxes,
a vend switch in the primary chute above the diverter actuated by the passage of coins through said chute,
an electromechanical stepper and diverter assembly including
a single electromagnet pulsed by the vend switch,
an arm actuated by the electromagnet,
a ratchet wheel and cam mounted on a common shaft intermittently rotated through an arc of its cycle by engagement of the arm with successive teeth of the ratchet wheel,
a mechanical means riding the cam contour and operatively connected to the diverter
whereby coins fed to the primary chute are automatically distributed to the respective boxes according to the predetermined established percentage.

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**3,167,166**
**PRINTING ARRANGEMENT FOR HIGH-SPEED TELEPRINTERS**
**Werner Schlebeler, Eutingen, Baden, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Apr. 4, 1961, Ser. No. 100,680**
**Claims priority, application Germany, Apr. 7, 1960, St 16,328**
**6 Claims. (Cl. 197—1)**



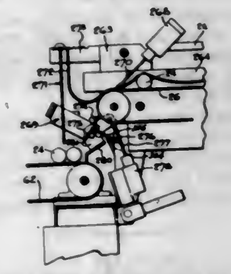
1. A printing arrangement for high-speed teleprinters comprising means for holding a record blank against linewise movement, two printing heads mounted for reciprocal linewise movement with respect to said record blank and respectively within two adjoining sections which together form one line length, means for simultaneously and reciprocally moving said heads within said sections in opposite directions, and control means for causing said heads to print on said record blank only when said heads are moving in the printing direction.

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**3,167,167**
**DOUGH-TWISTING APPARATUS**
**Roy R. Key, 755 Mayberry St., Hemet, Calif.**
**Original application Jan. 3, 1961, Ser. No. 80,487, now Patent No. 3,027,852, dated Apr. 3, 1962. Divided and this application Dec. 6, 1961, Ser. No. 157,598**
**8 Claims. (Cl. 198—26)**

1. In a dough-twisting machine the improvement which comprises: an accumulator, said accumulator comprising means defining a dough receiving chute having an open upper end, a lower wall member normally closing the bottom of said chute, said wall member being shiftable to an open position spaced from said chute, a power operator interconnected to said door for shifting said door to said open position, first switch means responsive to a dough piece entering said chute in controlling relationship with said power means, second switch means in series circuit connection with said first switch means, said second switch means being responsive to a dough piece disposed

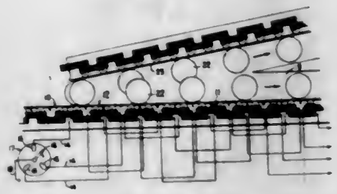
in the lowermost portions of said chute, whereby actuation of said first switch means is effective to cause opening of said lower wall member only when a first dough



piece is disposed within said chute closing said second switch means, and a second dough piece enters said chute closing said first switch means.

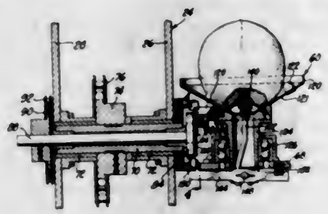
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**3,167,168**
**ELECTROMAGNETIC CONVEYOR**
**Chester P. Park, 424 King George Road, Cherry Hill, N.J.**
**Filed Aug. 15, 1963, Ser. No. 302,260**
**1 Claim. (Cl. 198—31)**



An electromagnetic conveyor of the character described, comprising a flat surface of any desired length on which objects made of magnetic attracting material are placed for transportation from one place to another and a vertically mounted stator, mounted on one side of the said flat surface, the said stator embodying a plurality of equally spaced O-shaped coils of electric wire mounted in a core of laminated iron members that is provided with a plurality of vertically disposed recesses therein in equally spaced relation to each other, the portion between each two of the recesses being the poles of the said stator, and the said stator being of the same length as that of the said flat surface, and wires connecting the said stator to any desired source of direct current, thereby activating the said stator through a rotated distributor embodying a separate contact point connected to one of the said coils of electric wire and a rotating arm having its outer end in contact with each one of the said contact points as it rotates and the center of the said rotating arm being connected to the positive connection of a source of direct electric current while the negative connection of the said electric current is connected to the other wire of each said coil of electric wire in a way that will produce longitudinal travel of the said objects and a closed, sided compartment of non-magnetic material encompassing the conveyor in a way that will permit the said stator being located outside the said compartment while the said objects pass through the said compartment, and a second section of the said electromagnetic conveyor being mounted at an angle from the first mentioned electromagnetic conveyor to which one end is adapted, thereby providing a different path for the said objects to be moved according to one's needs.

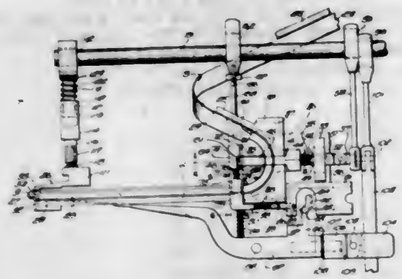
**3,167,169**
**FRUIT ORIENTER**
**Belmont Leroy Haller, Long Beach, and Lawrence W. Waters, Fullerton, Calif., assignors to Hunt Foods and Industries, Inc., Fullerton, Calif., a corporation of Delaware**
**Filed Sept. 18, 1961, Ser. No. 138,848**
**12 Claims. (Cl. 198—33)**



1. In a device for orienting the stem indent and suture plane of a peach, or the like, the combination of: a support; an upwardly facing cup carried by said support and oscillatable relative thereto about an upright axis; means connected to said cup for oscillating it about said axis; a stem indent finder carried by said support and located within said cup adjacent the bottom thereof, said cup being oscillatable relative to said indent finder; and means for oscillating said indent finder laterally within said cup.

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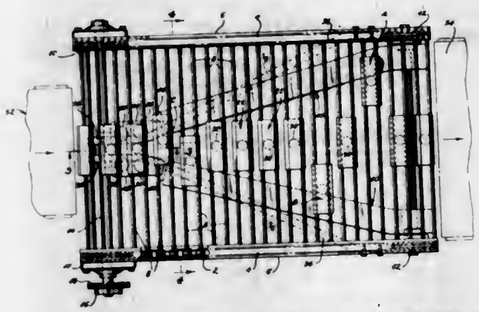
**3,167,170**
**FASTENER DISPENSING APPARATUS**
**Thomas J. Flaa, Needham, Mass. (592 E. 1st St., South Boston 27, Mass.)**
**Filed Aug. 17, 1962, Ser. No. 217,668**
**10 Claims. (Cl. 198—33)**



1. In a fastener dispensing apparatus, means for inverting generally U-shaped articles such as staples comprising: a stationary upstanding acutely bowed body adapted to receive and support generally U-shaped articles arranged astride the rim thereof; feed means for sequentially and continuously supplying general U-shaped articles in a points down condition to the rim of said body; delivery means for sequentially and continuously removing said articles in a points up condition from the rim of said body, said feed means and said delivery means contacting said body at separated points on the rim thereof, said points being in different quadrants of said body; and means for urging each of said articles from the vicinity of the feed means to the vicinity of the delivery means, said means applying a propelling force to said articles individually and simultaneously while maintaining said articles in sliding engagement with and astride said body.



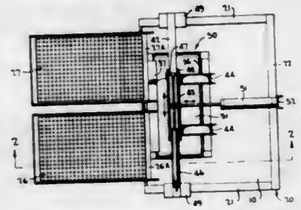
**3,167,171**
**CHECKWEIGHER REJECT MECHANISM**
**Albert D. Harmon and Claude E. Monsees, Durham, N.C., assignors to Sperry Rand Corporation, Wilmington, Del., a corporation of Delaware**
**Filed Sept. 3, 1963, Ser. No. 306,251**
**14 Claims. (Cl. 198—41)**



1. A reject mechanism comprising: a conveyor movable along a predetermined path; a plurality of article carriers supported by said conveyor for independent movement thereon transversely of said path; each carrier having a ferro-magnetic portion; a permanent magnet device fixed adjacent said conveyor and having at least one elongated pole face arranged to extend from a central region of said conveyor in outwardly diverging relation in the direction of movement of said conveyor; said pole face being arranged to be engageable by said ferro-magnetic portions of said article carriers; and selectively operable means for deflecting selected ones of said carriers laterally on said conveyor to engage their ferro-magnetic portions with said pole face.

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**3,167,172**
**BALLAST DISTRIBUTOR**
**Martin J. Speno, Syracuse, and Anthony T. Bruno, East Syracuse, N.Y., assignors to Frank Speno Railroad Ballast Cleaning Co. Incorporated, Ithaca, N.Y., a corporation of New York**
**Filed July 5, 1962, Ser. No. 207,689**
**8 Claims. (Cl. 198—46)**



1. A ballast distributing mechanism comprising a pair of laterally adjoining discharge chutes, a pair of simultaneously operative infeed conveyors having relatively laterally aligned delivery ends positioned above the respective chutes for normally simultaneous delivery by gravity of the material from each infeed conveyor directly into its respective chute, a laterally acting transfer beneath said infeed conveyors, said transfer conveyor having material receiving and discharging ends respectively over different said chutes to thus receive a portion of the material delivered by one infeed conveyor and transfer it to the discharge chute normally served by the other infeed conveyor, reversible drive means for said transfer conveyor for relatively interchanging the functions of its receiving and discharging ends respectively, and means supporting said transfer conveyor for bodily lateral adjustment whereby its receiving end may be selectively positioned for reception of varying proportions of the material delivered by one of said infeed conveyors, the distance between said receiving and discharging ends being substantially less than the lateral distance between the relatively remote sides of the infeed conveyors to permit a wide range of adjustment of the transfer conveyor while nevertheless retaining its discharging end in position above and for delivery of the material from said one infeed conveyor into the chute normally served by the other said infeed conveyor.

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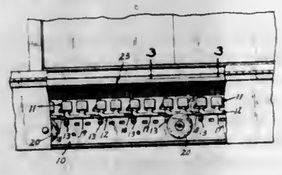
**3,167,173**
**BULK UNLOADER**
**Walter J. Sackett, Baltimore, Md., assignor to The A. J. Sackett & Sons Company, Baltimore, Md., a corporation of Maryland**
**Filed Oct. 16, 1962, Ser. No. 230,869**
**4 Claims. (Cl. 198—53)**



1. A bulk material unloader comprising an angled housing having a substantially V shaped bottom cross-section, and having a lower horizontal portion to extend beneath a material carrier and a sloping portion angularly connected to the horizontal portion and with a discharge on the sloping portion to extend above a receiver therefrom, a vertically extending guide having upper and lower rails thereon supported by and extending centrally within the housing, sprockets at each end of the guides mounted in the housing, an endless conveyor with flights extending around said sprockets and guided by the upper and lower rails of said guide, the flights substantially conforming to the configuration of the bottom of the housing to move material therealong, an upwardly opening hopper above the horizontal portion of the conveyor, a shield supported by and extending centrally of the hopper, above the conveyor in the housing, spaced from the housing sides and vertically terminating short of the flights of the conveyor on the lower rail, to pass material from the hopper to the housing bottom between the last named conveyor flights, to be propelled thereby from the housing horizontal portion to the discharge of the sloping portion.

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**3,167,174**
**EGG TRAY**
**Seymour Peterson, Dassel, Minn., assignor to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota**
**Filed Sept. 17, 1963, Ser. No. 309,492**
**6 Claims. (Cl. 198—131)**



1. Egg collection trays for use on an upright flexible conveyor belt and adapted to be secured in end-to-end re-

lationship along the upper edge thereof, each of said trays comprising:

(*a*) an elongated generally rectangular frame-like base,

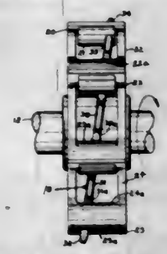
(*b*) means associated with said base for securing same to the upper edge portion of such a belt with the longitudinal axis thereof substantially in alignment with the path of travel of such a belt,

(*c*) opposite side portions of said base defining longitudinally spaced generally aligned rail elements on opposite sides of such a belt,

(*d*) each of said bases at one end being formed to define laterally spaced longitudinally extended feet which slidably underlie and engage the base of the adjacent tray and form a substantially unbroken undersurface between the rail elements thereof.

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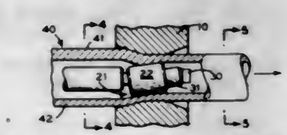
**3,167,175**
**SELF-CLEANING CONVEYOR MECHANISM**
**Edward V. Kools, Appleton, Wis., assignor to Kools Brothers, Inc., Menasha, Wis., a corporation of Wisconsin**
**Filed Aug. 14, 1961, Ser. No. 131,305**
**4 Claims. (Cl. 198—229)**



1. In a self-cleaning conveyor mechanism, a shaft, a sprocket wheel mounted on said shaft to rotate about the longitudinal axis thereof, said sprocket wheel having its axis at a substantial angle relative to the longitudinal axis of said shaft, and a conveyor chain having links engaged by said sprocket wheel, said conveyor chain links having openings for receiving the sprocket teeth of said sprocket wheel, said openings being substantially wider than the width of said sprocket teeth, and said conveyor chain being restrained against substantial lateral movement so that the sprocket teeth move back and forth within the link openings to clear debris therefrom.

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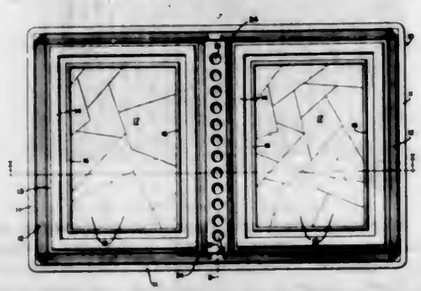
**3,167,176**
**METHOD OF AND APPARATUS FOR CORRECTING TUBE ECCENTRICITY**
**John R. Hill and Joseph A. Sawester, Beaver Falls, Pa., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey**
**Filed Dec. 4, 1961, Ser. No. 156,801**
**6 Claims. (Cl. 205—7)**



1. A method of decreasing the wall thickness of a metal tube of circular cross-section through a selected arc of the tube circumference, comprising the steps of drawing said tube through a die having a die orifice smaller than the diameter of the entering tube portion to reduce the outside diameter of the tube by effecting flow of the tube metal substantially longitudinally of the tube; and mechanically subjecting the interior of the tube portion as it passes through said die orifice to an outward unit pressure on an arc centered relative to the zone of maximum wall thickness different from the radial unit pressure exerted on the remaining portion of the tube circumference to effect a flow of tube metal longitudinally and circumferentially of the tube to thereby decrease the maximum tube wall thickness within the selected arc.

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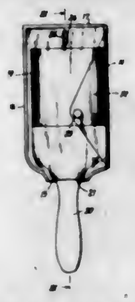
**3,167,177**
**PAINTING KIT**
**William F. Lewis, 110 Franklin Place, Rockford, Ill.**
**Filed Mar. 6, 1963, Ser. No. 263,245**
**2 Claims. (Cl. 206—1.7)**



1. A painting kit comprising a single flexible sheet having raised portions defining a frame and a depressed planar area enclosed by said frame, said sheet having marginal areas beyond said raised portions readily severable therefrom to delineate said frame and planar area from the remainder of said sheet, a portion of said marginal areas being provided with depressions providing receptacles for paints.

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**3,167,178**
**PAINT BRUSH WRAPPER**
**Cye E. Saunders, 50—45 230th St., Bayside, N.Y.**
**Filed Oct. 30, 1962, Ser. No. 234,165**
**11 Claims. (Cl. 206—15.1)**



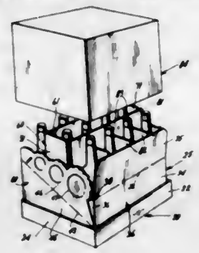
1. A wrapper for the bristles of a brush having a handle and bristles extending in the longitudinal direction of said handle, comprising an envelope having two sides and a plurality of edges, a first opening formed in said envelope along a first one of said edges adapted to admit the bristles of said brush and a second opening integrally formed in said envelope along a second one of said edges and smaller than said brush width and adapted to admit the handle of said brush; a flap integrally formed with said envelopes extending from a first one of the sides thereof along said first one of said edges to close said first opening; an aperture formed through the sides of said envelope in proximity with an edge of said envelope opposite said second edge of said envelope and at a point beyond the extending bristles of said brush for supportingly



hanging said envelope; and fastening means having first and second cooperating parts, the first part of said fastening means being affixed to said flap and the second part of said fastening means being affixed to the second one of the sides of said envelope.

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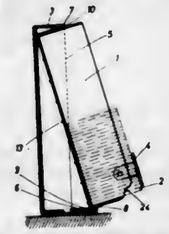
**3,167,179**
**MERCHANDISING AND SHIPPING DEVICE**
**Daniel Goldstein, New York, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware**
**Filed Sept. 29, 1960, Ser. No. 59,210**
**12 Claims. (Cl. 206—44)**



1. A merchandising and shipping device comprising a polygonal receptacle having a bottom wall and rear, front and side walls and receiving packaged goods supported on said bottom wall, said rear, front and side walls surrounding said goods with the top edges of said rear, front and side walls considerably below the top level of said packaged goods, a liner in said receptacle supported on said bottom wall and extending against and about the interior of said rear, front and side walls and surrounding said goods, said liner extending upward considerably above said side and front walls and to near the top level of said goods, and a cover removably engaged over said receptacle and liner and closing said receptacle for shipping, said liner being cut downwardly from its upper edge to points vertically aligned with the side corners of said receptacle and thereby defining liner flaps coextensive in width with the sides and front of said receptacle, said liner flaps being scored along the entire width above said side and front wall top edges, the portions of said liner flaps above said score liner being foldable outwardly on their score lines, upon removal of said cover, to expose the sides of said goods in situ for merchandising.

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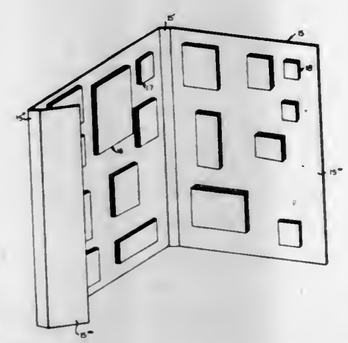
**3,167,180**
**TRANSPARENCY HOLDER**
**Rudolf Kremp, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany**
**Filed Mar. 22, 1960, Ser. No. 16,774**
**Claims priority, application Germany Mar. 25, 1959**
**6 Claims. (Cl. 206—45.20)**



1. A transparency holder comprising, in combination, an inner container member having an open top, an elongated bottom wall, a pair of opposed elongated side walls extending from said bottom wall, and a pair of opposed end walls connected to said side walls and also extending from said bottom wall, said inner container member being adapted to hold a row of transparencies which are removable from said inner container member through said open top thereof; an outer cover member having a pair of opposed elongated side walls and a pair of opposed end walls connected to said side walls, said outer cover member also having an elongated top wall connected to said side and end walls thereof and said outer cover member having a covering position closing said open top of said inner container member with said side and end walls of said outer cover member located outside of and overlapping said side and end walls of said inner container member, respectively; and support means carried by and cooperating with said inner container member and outer cover member for supporting said inner container member in a position inclined with respect to said outer cover member with said bottom wall of said inner container member extending at least in part into said outer cover member, said support means including a projection fixed to one of said members and a plurality of stop portions carried by and distributed along an elongated wall of the other of said members, one of said stop portions being selectively engaged by said projection to prevent sliding of the latter in at least one direction beyond said selected stop portion so that said projection and selected stop portion cooperate to maintain said inner container member at a selected inclined position relative to said outer cover member, said projection being formed by at least one pin fixed to and extending laterally from a side wall of said inner container member and said stop portions being formed by a part of a side wall of said outer cover member which is formed with a plurality of cutouts which selectively receive said pin.

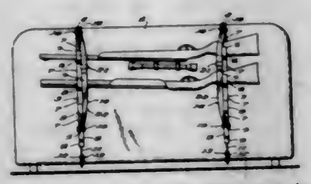
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**3,167,181**
**PACKAGING AND STORING OF DEALER-AID ADVERTISING NEWSPAPER MATS**
**Eugene S. Goodman, Tenafly, N.J., assignor to Matmakers, Inc., New York, N.Y., a corporation of New York**
**Filed June 10, 1963, Ser. No. 286,654**
**2 Claims. (Cl. 206—56)**



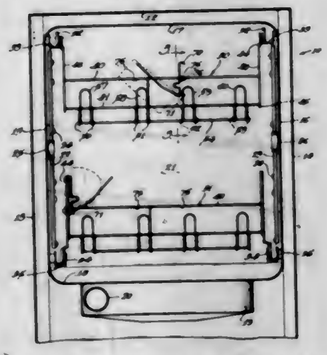
1. In an article of the character described, independent pluralities of dealer-aid advertising newspaper mats; each such plurality of mats being assembled as a pad from which said mats can be torn off separately respectively; the back of each pad carrying a pressure-sensitive adhesive and a releasable protective slip covering said adhesive respectively and a stiff sheet member; said pads being adheringly mounted in spaced relation on said sheet member.

3,167,182
**GUN RACK AND METHOD OF MANUFACTURE THEREOF**
Charles A. Calvin, 9919 Provo Ave., Tujunga, Calif.
Filed Mar. 14, 1963, Ser. No. 265,147
5 Claims. (Cl. 211—64)



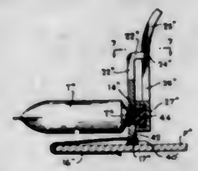
1. A gun rack means comprising a pair of identical, vertically disposed, elongated components mounted in laterally spaced, parallel relation; each of said components comprising a metal bar having longitudinally spaced portions thereof bent into closely doubled relation and said doubled portions being bent laterally outwardly and upwardly both to form gun receiving and supporting hooks and to impart capacity for longitudinal resilience to the components, means at the ends of said components in resiliently extended condition for mounting said components on a generally vertically extending surface, and gun retaining means comprising a pair of flexible straps associated one each with each of said components and having one end portion fixed to a lower portion of the component with which it is associated and having another portion detachably engageable with means carried by the associated component and disposed above said hook forming portions thereof.

3,167,183
**DISH BASKET AND CUP RACK STRUCTURE FOR A DISHWASHER**
Jack W. Claywell and Stanley O. Peterson, Wisconsin Rapids, Wis., assignors to Preway Inc., a corporation of Wisconsin
Filed July 6, 1962, Ser. No. 207,904
2 Claims. (Cl. 211—71)



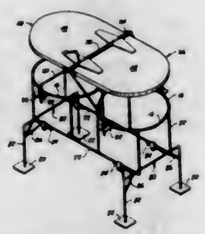
2. A dishwasher basket and cup rack combination, comprising, a basket formed of elongate material with lengths thereof extending along the front, rear and sides thereof, a cup rack including an elongate base member, a pair of hooks adjacent the ends of the base member to engage a side of the basket, a plurality of holders secured in spaced relation on said base member, each holder being integrally formed with a generally vertically extending section secured to the base member and an outwardly extending rod portion with an inner section at an angle to the vertical section and an outer portion of the rod being at an angle to the inner section to engage within a glass, and a protrusion formed on the vertical section above the inner section of the rod to engage within a cup resting on end on said inner section.

3,167,184
**RACK FOR HOLDING PAINT TUBES**
Benjamin Borax, 32 Voorhis Ave., Rockville Centre, N.Y.
Filed Nov. 28, 1962, Ser. No. 240,526
1 Claim. (Cl. 211—84)



A device for holding a plurality of collapsible tubes of paint having threaded necks on a palette or the like, comprising an elongated flat plate having a plurality of threaded holes spaced apart longitudinally thereof, receiving and securing the threaded necks of the tubes in perpendicular relation to the plane of the plate, a plurality of posts extending upwardly from the top edge of the plate in alignment with each threaded opening and having right angular bifurcated end portions extending beyond the plane of the plate in a direction opposite the direction of extension of the tubes, an elongated arm pivotally mounted between the bifurcations of the end portions of each post, an enlarged disc on the lower end of each arm, a cup on the face of each disc adjacent the plate, a resilient plug secured in each cup and having a projection insertible in the mouth of its associated tube, spring means connected between said arm and said post normally biasing said projection to tube closing position, the bottom of said plate having slots therein, and U-shaped spring clips having reverted ends engaging in said slots and extending parallel to and beneath said tubes, said clips engaging over the edge of a palette to support said plate in perpendicular relation thereto and hence said tubes in spaced parallel relation to the palette.

3,167,185
**GARBAGE RECEPTACLE RACK**
Selmar A. Reed, 716 Arlington Ave., Lawton, Okla.
Filed May 16, 1963, Ser. No. 282,195
4 Claims. (Cl. 211—84)

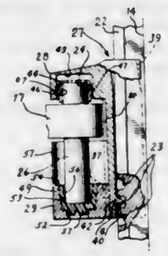


1. A rack for supporting a plurality of generally cylindrical refuse receptacles comprising:
(*a*) a plurality of horizontal supporting rods for supporting said receptacles in vertically spaced relation from the ground;
(*b*) a plurality of annular members spaced vertically from said horizontal supporting rods and having a diameter substantially equal to the outside diameter of said receptacles;
(*c*) generally vertical rods connecting said annular members to said horizontal supporting rods;



(*d*) lid supporting means positioned vertically above said annular members;
(*e*) a plurality of lids corresponding in number to said annular members and each pivotally connected to said lid supporting means for individual pivoting movement between a horizontal position over one of said annular members and substantially parallel thereto, and a raised position facilitating the positioning of one of said receptacles in each of said annular members; and
(*f*) at least one pair of generally V-shaped, elongated rods supporting said lid supporting means at their vertices and each having generally diverging legs adjustably secured to two adjacent annular members at points on the opposite sides of said plurality of annular members from the points of adjustable securement of the legs on the other of said V-shaped members in the respective pair.

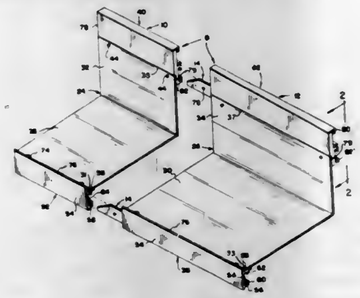
3,167,186
**ROTARY SHELF MOUNTING**
Herbert D. Squire, Galesburg, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed June 13, 1960, Ser. No. 35,621
11 Claims. (Cl. 211—150)



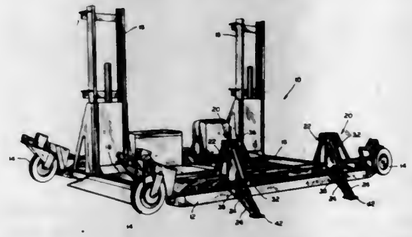
1. In a refrigerator cabinet having a storage cavity defined partly by a vertical wall and an access opening adjacent an edge of said wall, a normally horizontal shelf pivotally movable through said access opening, a pintle on each of the upper and lower sides of said shelf, said pintles being disposed on a common axis, a bracket supported from said wall adjacent said access opening, a pair of vertically spaced arms on said bracket, a pintle bearing in each of said arms, each of said pintle bearings having one of the pintles journaled therein for said shelf to swing about said common axis through said access opening, said shelf having a tendency to sag under load, and means for laterally adjusting one of said bearings whereby said common axis may be shifted from the vertical to compensate for said sag.

3,167,187
**SECTIONAL DISPLAY SHELF STRUCTURE**
Robert S. Sarkisian, Oak Park, Mich., assignor to Arlington Aluminum Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 25, 1963, Ser. No. 311,593
15 Claims. (Cl. 211—153)

1. A coupling shelf component for a sectional shelf structure comprising
an elongated angle plate shelf member including an elongated bottom plate portion and an elongated back portion integral therewith substantially at right angles thereto,
said angle plate member having a lower front edge and an upper rear edge,
an elongated internal edge-to-edge coupling member secured to said bottom plate portion adjacent said front edge and extending therealong,
and an elongated external edge-to-edge coupling member secured to said back plate portion adjacent said rear edge and extending therealong,
said external coupling member having a coupling channel therein with a configuration corresponding to the configuration of said internal coupling member for matingly receiving a duplicate thereof in interfitting coupling relationship.



3,167,188
**RETRACTABLE OUTRIGGER AND THE LIKE**
Glen W. Burgess, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Nov. 23, 1962, Ser. No. 239,497
11 Claims. (Cl. 212—145)

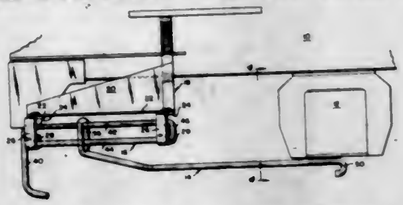


1. For use with vehicles and the like, a retractable outrigger comprising first and second arms pivotally connected to each other, said first arm also being pivotally connected to the vehicle, motor means connected to the vehicle and to said second arm, and separate means responsive to the actuation of said motor means for pivoting one of said arms in one direction and simultaneously pivoting the other of said arms in the opposite direction, said separate means including a first sprocket fixed to the vehicle, a second sprocket fixed to the said second arm and a sprocket chain connecting said sprockets.

3,167,189
**COUPLER OPERATING DEVICE**
Edward S. Cisco, Highland, Ind., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,977
10 Claims. (Cl. 213—166)

8. The combination with a railway car having a sliding center sill and cushioned underframe with a wide swing and long travel coupler mounted therein for longitudinal movements of up to 48" and lateral movements up to 15°, of a device for operating said coupler from the side of the car, said device comprising a handle section and a coupler operating section, means rotatably supporting said handle section on the end of said car adjacent one side thereof, a handle depending from said handle section outboard of said means, said coupler operating sec-

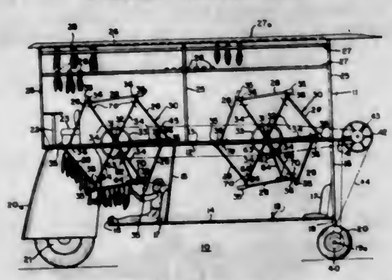
tion having a hook at one end for attachment to the coupler for operation thereof upon rotation of said device, the handle section including a pair of elongated spaced parallel rods one of which is mounted in said means and the other of said sections overlapping and provided with



offset means for sliding non-rotative engagement with said parallel rods, the combined lengths of said sections being such that they may contract to about 38" and extend to about 72" to accommodate said relative movements between the car coupler and car body.

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**3,167,190**
**TOBACCO HARVESTER WITH ROTATING STICK-HOLDER CONVEYOR**
**Francis R. Floyd and Ralph M. Floyd, both % Floyd Brothers, Fairmont, N.C.**
**Filed Sept. 12, 1962, Ser. No. 223,084**
**5 Claims. (Cl. 214—5.5)**



1. Tobacco harvesting apparatus for use in harvesting tobacco leaves and securing same on tobacco leaf supporting means comprising frame means, means permitting the propelling of the frame means along at least one row of tobacco, at least one support means on said frame means for accommodating a worker, said worker accommodating support means located on said frame means to permit the worker positioned thereon to strip tobacco leaves from the tobacco plant as the apparatus moves therealong, hub means mounted on said frame means above the support means accommodating the worker, a plurality of spaced, radial arm means extending outwardly from said hub means and adapted for movement in a vertical plane past the worker accommodating support means, means adjacent the outer free end of each of said arm means for detachably receiving tobacco leaf supporting means between each of said arms said means including socket members having their open ends facing in opposite directions for receiving the respective ends of tobacco leaf supporting means, and means for driving said hub means.

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**3,167,191**
**GLASS BATCH FEEDING APPARATUS AND METHOD**
**James T. Zellers, Jr., Charleston, W. Va., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio**
**Filed Nov. 13, 1962, Ser. No. 237,191**
**15 Claims. (Cl. 214—18)**

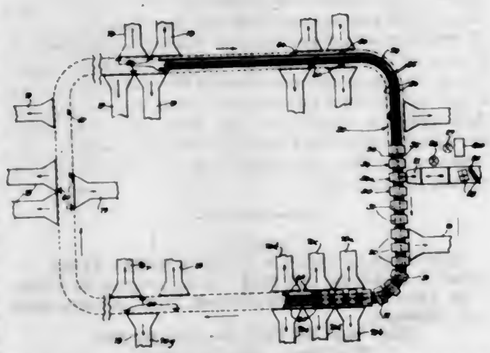
1. Apparatus for feeding and mixing measured quantities of different granular or finely divided materials such as raw glass making materials and cullet to the charging end of a melting furnace, comprising, in combination, an elongated rotatable feed roll provided with a series of compartments arranged longitudinally and circumferentially of said roll, means for rotating said roll about its longitudinal axis, means for feeding raw glass making materials into the individual compartments of the roll as said roll rotates, means for separately feeding cullet upon the raw glass making materials in said compartments, and means for compacting the cullet against the raw glass making materials as the said feed roll rotates to cause a mixing thereof during the feeding of the materials into the furnace.



15. In a method of feeding measured quantities of raw glass making materials and cullet onto the molten glass in the charging end of a glass melting furnace, the steps of rotating a compartmented cylindrical surface about its longitudinal axis and depositing raw glass making materials into the compartments from a stationary source past which the compartments move, separately depositing glass cullet upon the raw glass making materials in said compartments, compacting the cullet into the raw glass making materials upon continued rotation of the cylindrical surface to cause the mixing thereof, and depositing the raw glass making materials and cullet on the molten glass in a continuous layer.

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**3,167,192**
**AUTOMATIC SORTATION SYSTEM**
**Walter G. Harrison, Westchester, and John Harrison, Lincolnwood, Ill., assignors, by mesne assignments, to Prospect Manufacturing Co. Inc., Chicago, Ill., a corporation of Illinois**
**Filed Jan. 10, 1961, Ser. No. 81,754**
**1 Claim. (Cl. 214—62)**



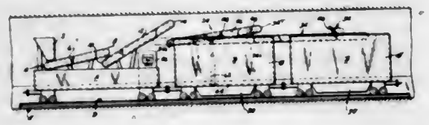
In a conveyor apparatus which includes parallel tracks for supporting mechanisms to be conveyed, the improvement comprising carriage means for riding on said tracks, said carriage means including a standard means, wheels rotatably supported on said standard means and adapted to ride on said tracks, carriage trays, a pivotal bar extending vertically between each carriage tray and its associated standard means and providing a connection therebetween, a pivotal connection between said standard means and said pivotal bar whereby each tray is pivotally mounted on a standard means in a manner such that it



is adapted to tilt about an axis parallel to said tracks to discharge goods on either side thereof, biasing means associated with each pivotal bar at the point of its connection with a carriage tray, a recess formed in each standard means, a rotatable member on each pivotal bar adapted to be received in said recesses, said biasing means normally urging said rotatable member in the direction of said recess whereby each pivotal bar and the carriage tray supported thereon can be locked against tilting movement when the associated rotatable member is received in said recess, a plurality of tilting means for said carriage trays positioned in the path of said trays at a plurality of stations along the conveyor path, said tilting means comprising cam surfaces, means for rotating said tilting means whereby the cam surfaces slope upwardly in the direction of movement of said carriage trays along said track, rotatably mounted members fixed on each pivotal bar for engaging said tilting means when they are rotated into the path of movement of said carriage trays, engagement of said rotatably mounted members with said tilting means resulting in movement of the rotatable member on said pivotal bar out of said recess whereby the associated carriage tray is released for tilted movement and whereby said carriage trays are adapted to be tilted by discharging goods therefrom, and tray restoring means situated adjacent at least some of said tilting means, said restoring means comprising cam surfaces substantially corresponding to said first mentoned cam surfaces and being situated at a lower level with respect to said tracks than said first mentioned cam surfaces, whereby the rotatably mounted members of a tilted tray are adapted to engage said restoring means and ride up said restoring means to return the carriage tray to an untilted position.

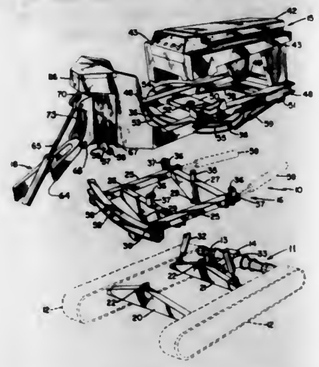
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**3,167,193**
**LOADING CAR WITH CONVEYOR**
**Lawrence Klosk, 120 Gale Place, Bronx, N.Y.**
**Filed May 14, 1962, Ser. No. 194,242**
**4 Claims. (Cl. 214—83.26)**



1. A loading unit comprising a car having a material-receiving body with an open top, a pair of spaced longitudinally extending mounting members on said body, a conveyor assembly between said mounting members and having forward and rear supporting elements extending laterally therefrom and received in and longitudinally movable along said mounting members, said conveyor assembly being adjustably positionable longitudinally of said car between a first position and a second position longitudinally spaced from said first position, said mounting members being upwardly open at points registering with said rear supporting elements and upwardly closed at points registering with said forward supporting elements when said conveyor assembly is in its first position, and conveyor assembly lifting means mounted on said body, engageable with a rear portion of said conveyor assembly, and active to lift said conveyor assembly at said rear supporting elements thereof when said conveyor assembly is in its first position, said forward supporting elements of said conveyor assembly being constrained by said mounting members to substantially retain their vertical position, said conveyor assembly thereby being raised to an upwardly and rearwardly inclined position.

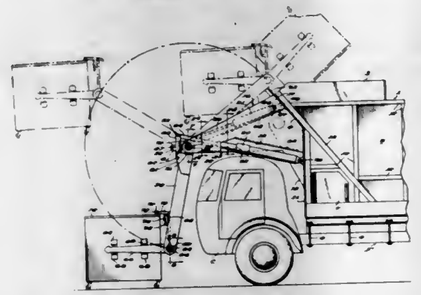
**3,167,194**
**SELF-PROPELLED EXCAVATING MACHINE**
**Charles J. Davis, 22 Colonial, Wichita, Kans., and Roland N. Nissen, Valley Center, Kans.; said Nissen assignor to said Davis**
**Filed Dec. 24, 1962, Ser. No. 246,727**
**9 Claims. (Cl. 214—138)**



1. An excavator comprising:
a self-propelled ground supported chassis including a rigid weight supporting frame;
an intermediate body supporting frame;
means pivotally mounting said intermediate frame on said chassis for lateral tilting movement with respect thereto about a central fore and aft horizontal axis;
a body;
means pivotally mounting the body on said intermediate frame for swinging movement about an axis normal to the pivot axis of the intermediate frame; and
a work performing assembly including an elongated boom mounted on one end of the body for independent swinging movement about an axis spaced from and parallel to the body swinging axis.

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**3,167,195**
**FRONT LOADING MEANS FOR TRUCKS**
**Raymond W. Jensen, Los Angeles, Calif., and Joseph E. McDonald, 1703 Alamo Drive, Glendale, Calif.; said Jensen assignor to said McDonald, Glendale, Calif.**
**Filed June 6, 1960, Ser. No. 34,307**
**9 Claims. (Cl. 214—302)**

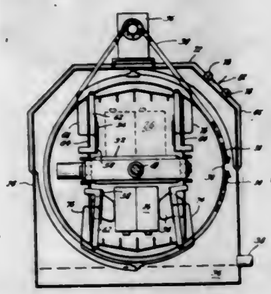


1. A rubbish loading and transporting unit comprising a body structure adapted to be mounted on a truck chassis for the reception of collected rubbish; said body structure including a portion extending above and forwardly beyond the truck cab, and a loading means carried by said portion of said body structure comprising a rubbish container lifting means mounted on said body structure portion for pivotal movement about a horizontal axial line

extending transversely of the truck and disposed in a vertical plane disposed not farther rearward than the forward edge of the access door of the truck cab.

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**3,167,196**
**BATTERY AQUALIZING APPARATUS**
**William J. Eberle, Dallas, Tex., assignor to Vitalic Battery Company, Inc., Dallas, Tex., a corporation of Delaware**
**Filed Apr. 17, 1963, Ser. No. 273,732**
**5 Claims. (Cl. 214—308)**



1. In a battery aqualizing apparatus, the improvement in an assembly for emptying water from batteries comprising,

rotatable support means,

conveyor means for moving said batteries into and out of the assembly, said conveyor means connected to and supported by said support means,

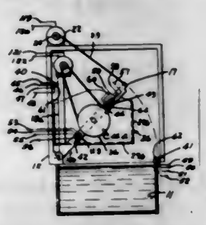
an elongate inflatable battery gripping member positioned and supported from the rotatable support member along each edge of both the top and bottom of said conveyor means for gripping and resiliently supporting different sized batteries positioned on the conveyor means for shaking movement upon inversion of the rotatable support means,

a wall adjacent each inflatable gripping member on the side remote from the conveyor means whereby when the members are inflated the walls cause the members to move inwardly thereby gripping and holding any batteries positioned on the conveyor,

means for inverting said rotatable support, conveyor means, and inflatable members whereby the batteries are drained by the shaking action of the inflatable members.

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**3,167,197**
**BIN DUMPER**
**Winfred A. Lee, La Habra, Calif., assignor to Fruit Equipment Service, Redlands, Calif., a corporation of California**
**Filed Dec. 28, 1962, Ser. No. 247,943**
**6 Claims. (Cl. 214—313)**



1. A bin dumper comprising: a flume; a frame above the flume; a lift boom hinged to the frame about a first axis so as tiltingly to move toward and away from the flume; first power means for moving the boom; a bin holder carried by the lift boom; tilt means for tilting the bin holder journaled to the boom, about a second axis which is parallel to the first axis; and second power means mounted to the boom for tilting the tilt means relative to the boom; the frame and bin holder having ports for admitting a bin to be dumped, whereby a full bin may be passed through the ports and placed in the bin holder, the lift boom lowered by the first power means toward the flume, the tilt means tilted by the second power means to dump the bin contents into the flume, and the lift boom and the tilt means lifted and tilted by their respective power means to restore the empty bin into its original position wherein the bin may be removed through the ports, and replaced with a full bin to be dumped.

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**3,167,198**
**EXTENSIBLE TRAILER**
**Albert Echler, 703 S. Indian River Road, and Daniel C. Scott, 505 Beach Court, both of Fort Pierce, Fla.**
**Filed Aug. 20, 1962, Ser. No. 217,995**
**11 Claims. (Cl. 214—505)**



1. A longitudinally extensible trailer comprising:

(*a*) a main frame,

(*b*) wheels connected to said main frame,

(*c*) a tow pole,

(*d*) a sub-frame underlying said main frame including,

(1) a pair of longitudinally extending members,

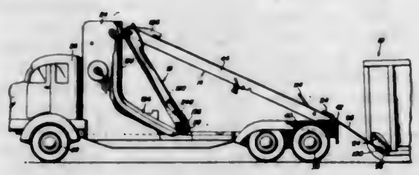
(2) means for connecting said members to said tow pole,

(3) roller means depending from said main frame and engaging said longitudinal members on which said main frame is movably supported with respect to said longitudinal members, and

(*e*) winch means between said tow pole and the front end of said main frame for moving said main frame along said longitudinal members in both directions to extend or retract said trailer.

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**3,167,199**
**SELF-UNLOADING TRUCK BODY**
**Oliver Pivert, Sr., 5101 Elysian Fields Ave., New Orleans, La.**
**Filed Dec. 22, 1961, Ser. No. 161,513**
**20 Claims. (Cl. 214—517)**

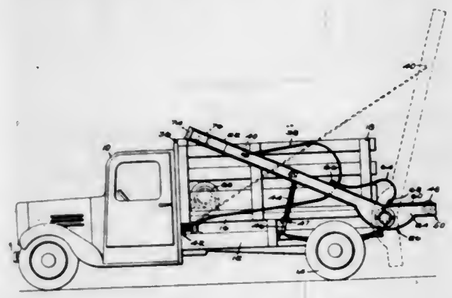


1. A truck body assembly comprising a mobile vehicle frame, an elongated subframe overlying the vehicle frame, means pivotally connecting the rear end portion of the subframe to the rear end portion of the vehicle frame whereby the subframe may swing in a vertical plane about substantially a transverse horizontal axis, a lift frame, means pivotally connecting one end of the lift frame to the forward end of the subframe, a trackway mounted on said vehicle frame at the forward end thereof, means on the other end of the lift frame guidingly engaging said trackway whereby the lift frame may swing in a vertical plane and move between a position underlying the subframe and overlying the vehicle frame to a positon generally perpendicular to the subframe for lifting the subframe to an elevated position, a truck body, means removably mounting the truck body on the subframe for swinging movement therewith and for discharge of the truck body from the truck frame, a lift cable attached to the truck body, extending longitudinally of the subframe, longitudinally of the lift frame and around the end of the lift frame engaging the trackway, and winch means for winding the cable or paying out the cable thereby enabling the subframe to be pivoted in a vertical plane and enabling the truck body to be discharged from the subframe or pulled onto the subframe by actuating the winch means.



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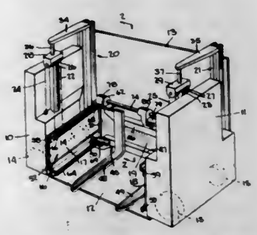
**3,167,200**
**PORTABLE CRANE**
**Bernard A. Booker, Meader St., North Berwick, Maine**
**Filed June 26, 1961, Ser. No. 119,658**
**5 Claims. (Cl. 214—523)**



1. A wheeled vehicle comprising a horizontal bed, a hoisting frame having two substantially parallel legs each pivoted at the sides of said vehicle rearward of the rear wheels thereof respectively and at the rear end of said bed, a cross member connecting said legs remote from the pivot axis of said legs, said hoisting frame being swingable from a forward down position to a rearward up hoisting position, an extension on each said leg integral therewith and commencing at the pivot axis and of less length than the distance from said pivot axis to the ground, a platform substantially in the plane of said extensions and extending therebetween, said extensions and platform movable from a horizontal position in alignment with said bed when said frame is in forward down position to a substantially vertical position downward from said pivot axis when said frame is in said up hoisting position, means for controlling the position of said frame, a pulley on said cross member, and means on said wheeled vehicle for applying a pulling force to a cable over said pulley to apply a lifting force to an object to the rear of said wheeled vehicle when said frame is in rearward up hoisting position and for thereafter rotating said frame forwardly while said lifted object is in suspended condition adjacent said platform, whereby as said platform is moved toward horizontal position the weight of said object will be progressively transferred from said cable to said platform and after said platform is horizontal said object may be moved forward by said cable to said bed to a position between said legs.

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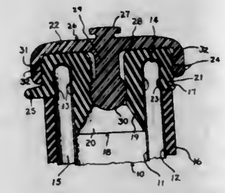
**3,167,201**
**LIFT TRUCK WITH LATERALLY MOVABLE LOAD SUPPORT MEMBERS THAT IS MOUNTED FOR VERTICAL MOVEMENT IN GUIDE MEANS WHICH SERVES AS A COUNTER-WEIGHT FOR THE LOAD**
**George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio**
**Filed Oct. 11, 1960, Ser. No. 61,924**
**3 Claims. (Cl. 214—730)**



3. In a side lift truck, a frame, front and rear wheels supported by said frame, said frame providing a space between said front and rear wheels open to one side of said truck, a load carriage mounted for vertical movement in said space, a pair of longitudinally spaced upright assemblies, means secured to said load carriage and engaging said upright assemblies for guiding said load carriage during vertical movement thereof, said pair of upright assemblies being secured to said frame on the side thereof opposite said one side of said truck, a pair of lifting rams for lifting said load carriage, said upright assemblies and said lifting rams being positioned on each side of said load carriage so as to provide no obstruction to said load carriage transversely of the truck whereby said load carriage may be of substantially the width of said truck, said lifting rams being further positioned centrally of said frame transversely of the truck whereby to provide lifting of said carriage from points centrally of each side thereof, a load supporting member, means mounting said load supporting member on said load carriage for vertical movement with said load carriage and for extending movement relatively to said load carriage beyond said one side of the truck, and means for extending said load supporting member relatively to said load carriage.

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**3,167,202**
**CLOSURE ASSEMBLY FOR CONTAINER NECK**
**Joseph Tolciss, Bayside, N.Y., assignor to the United States of America as represented by the Secretary of the Army**
**Filed Jan. 15, 1964, Ser. No. 337,964**
**2 Claims. (Cl. 215—47)**

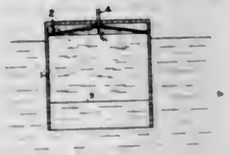


1. A closure assembly for the neck of a container, said neck including inner and outer surfaces as well as a free outer end, the outer surface of said neck being formed with at least one recess therein, a guard member of resilient material comprising inner and outer tubular portions, said guard member being shaped and sized to have a close sliding fit over said neck with said inner and

outer tubular portions embracing the inner and outer surfaces of said neck therebetween, said inner tubular portion providing a reduced tubular passage through said neck, said outer tubular portion having an inner surface formed with at least one radially inwardly directed boss being complementary to said recess and resiliently seated therein to provide therewith means resisting withdrawal of said guard from said neck; a closure assembly comprising a plug having a diameter substantially smaller than that of the reduced passage and insertable in said reduced passage, said plug having a ball portion integral with the lower end thereof, said ball portion having a diameter greater than that of said passage to compress corresponding portions of said inner tubular portion of the guard to provide a seal, an annular web extending radially outwardly of said plug and disposed thereabove, said web including a depending cylindrical skirt adapted to encircle the outer tubular portion of said guard and having an inner surface formed with screw threads, the outer surface of the outer tubular portion of the guard being formed with screw threads complementary to those of said skirt, the threads of said skirt being sized to compressively engage the threads of said outer tubular portion to provide a seal.

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**3,167,203**
**TANK FOR THE STORAGE OF OIL, GASOLINE AND SIMILAR LIQUIDS ON A WATER BED**
**John Arne Ingemund Ekstrand, Stockholm, Sweden, assignor to Ekstrand & Co. Patentaktiebolag, Stockholm, Sweden, a Swedish company**
**Filed Dec. 20, 1962, Ser. No. 246,155**
**Claims priority, application Sweden Dec. 21, 1961**
**5 Claims. (Cl. 220—1)**



1. A tank for storing oil, gasoline and other liquids which are lighter than and non-miscible with water, of the type which floats in water and which through an opening in its bottom stands in contact with the surrounding water, the roof of the tank being constructed with at least one open exhaust pipe to lead away gases which may enter the tank, the roof of the tank having such a slant that the height difference in centimeters between the highest and the lowest points of the roof is at most

$$\frac{V}{Y \cdot 6}$$

where V is the tank's weight in kilograms and Y is the area of the horizontal cross section of the tank in square meters.

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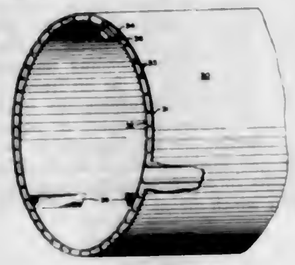
**3,167,204**
**PRESSURE VESSELS**
**Thomas P. M. Rouse, Jr., 17 Glenview Drive, Bristol, R. I.**
**Filed May 26, 1961, Ser. No. 113,591**
**2 Claims. (Cl. 220—5)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. In an underwater vehicle of the character disclosed, an external pressure hull comprising an inner metallic shell having at least one circular and planar opening therein,

an outer metallic shell substantially concentric with the inner shell and spaced therefrom by a plurality of individual, flat and mutually parallel metallic strengthening ribs integrally formed with and positioned entirely between said inner and outer shells in parallel relationship with the axis of concentricity of said shells,

at least one joint ring attached to said inner and outer shells at said opening sealedly closing the space between said inner and outer shells and adapted to be used for joining said hull to another metal section,

said strengthening ribs thereby forming a plurality of chambers in said space between said inner and outer shells,



a fluid delivery fitting connected to said joint ring and providing a fluid passage means between the interior of the inner shell and at least one of said plurality of chambers,

and an annular groove in asid joint ring on a surface thereof exposed to all of said chambers for providing fluid communication between the mutually adjacent chambers.

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**3,167,205**
**COMBINATION REFUSE RECEIVING RECEPTACLE AND SUPPORTING RACK**
**Clarence Smith, 318 N. C St., Wellington, Kans.**
**Filed Oct. 3, 1963, Ser. No. 313,512**
**5 Claims. (Cl. 220—18)**



1. Apparatus for temporarily containing refuse to be subsequently transferred to a portable container comprising:

an elongated refuse receptacle having an open, refuse receiving end;

retractable, refuse-guiding sleeve means movably mounted in said receptacle and movable between a retracted position at least partially within said receptacle and an extended position in which a portion of said sleeve projects outwardly from the refuse receiving end of said receptacle;

a first stop member carried by the interior of said receptacle at a position to engage the lower portion of said sleeve to maintain the upper portion of said sleeve substantially flush with the open end of said receptacle;

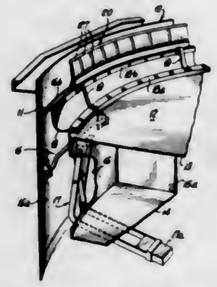
a second stop member carried by the lower portion of said sleeve;

a third stop member carried by the interior of said receptacle and positioned to engage said second stop member when said sleeve is in said extended position; and

a rack pivotally supporting said receptacle and dimensioned to support said receptacle above the ground.



**3,167,206**
**SECONDARY SEAL FOR FLOATING TANK ROOF**
**William R. Nelson, Houston, Tex., assignor to The Texas Pipe Line Company, Houston, Tex., a corporation of Texas**
**Filed Sept. 17, 1962, Ser. No. 224,028**
**1 Claim. (Cl. 220—26)**

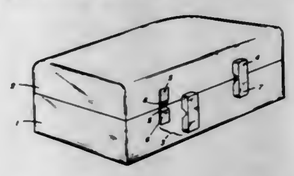


In combination with an open end cylindrical container for holding fluid, a cover therefor adapted to move upwardly and downwardly in said container corresponding to changes in the volume of the fluid held in said container comprising a floating roof, a primary seal having a plurality of shoes supported in contact position with the inside wall surface of said container by said floating roof and being spaced annularly therefrom, each of said plurality of shoes having its top edge projecting angulary away from said inside wall surface, flexible interconnecting means for closing the annular opening between said primary seal and said floating roof, and a secondary seal affixed on the top edges of said plurality of shoes of said primary seal and contacting said inside wall surface on its inner protected face with respect thereto, comprising a flexible, angular member having an inside tank wall surface contact portion at one end thereof and an offset support portion at the other end thereof with a recess therein, and an intermediate portion interconnecting said contact portion with said support portion, the axis of said recess in said offet portion and the axis of said intermediate portion intersecting at an obtuse angle facing said inside wall surface, said recess in said support portion having dimensions for a tight fit on said top edges of said shoes, deep enough for adequate engagement with said top edges of said shoes and shallow enough to prevent contact of said support portion with said inside wall surface, said intermediate portion having tongue-like members projecting toward each other thereby defining a pair of grooves facing each other on the outer exposed face thereof with respect to said inside wall surface, said tongue-like members extending longitudinally of said secondary seal adjacent the support and contact portions thereof, and a plurality of resilient metallic inserts seated in closely spaced circumferential relationship in said pair of grooves, said inserts having a transverse dimension greater than the distance between the bottoms of said pair of grooves whereby a spring action of the inserts in a radial direction is provided around said offset support portion to maintain said contact portion of said secondary seal in positive contact with said inside tank wall surface.

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**3,167,207**
**PLASTIC CONTAINER WITH FLEXIBLE HINGE**
**James B. Kruger and Paul A. Braginetz, Staunton, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia**
**Filed May 23, 1962, Ser. No. 196,953**
**5 Claims. (Cl. 220—31)**

1. A container having a base section and a cover section and hinge means therefor comprising a separate hinge section of flexible plastic material of high resistance to fatigue failure under repeated flexing, said base section and said cover section being preformed with integral loops, each of said integral loops comprising a pair of substantially parallel side walls and a connecting wall, the lower edges of a first pair of said side walls abutting said base section and the opposite edges of said first pair of side walls abutting a first connecting wall to define a first passage which is substantially rectangular in cross-section, the lower edges of a second pair of said side walls abutting said cover section and the opposite edges of said



second pair of side walls abutting a second connecting wall to define a second passage which is substantially rectangular in cross-section, said first passage and said second passage being substantially aligned, said hinge section comprising a strap portion and a plurality of complemental integral enlarged heads, one of which is adapted to be interengaged and self-locking with the loop of said base section and another of which is adapted to be interengaged and self-locking with the loop of said cover section without the aid of auxiliary fastening means, whereby said base section and said cover section are connected together by said hinge section.

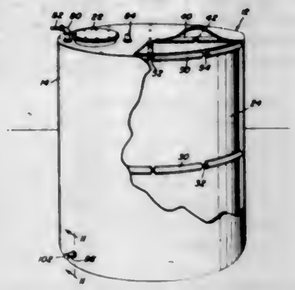
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**3,167,208**
**CONTAINER CLOSURE**
**Ralph H. Proctor, San Fernando, Calif., assignor to Royal Industries, Inc., Pasadena, Calif., a corporation of California**
**Filed July 23, 1962, Ser. No. 211,579**
**12 Claims. (Cl. 220—46)**



1. A container having a hollow receptacle part and a closure part, each part having a peripheral edge which is substantially aligned with the edge of the other part when the parts are engaged in container closure relation, a rim member connected circumferentially to each part adjacent the edge of said part, the edge of each part being spaced apart from its respective rim member, a recess in one rim member adjacent the entire extent of the corresponding edge and opening toward the said edge, a resilient gasket member disposed in the recess and having an extension overlying and disposed in contact with the said corresponding edge along the entire extent of said edge, and means for connecting together the container parts in closure relation whereby the gasket extension is engaged in compression over its entire extent between the container part edges to airtightly seal the interior of the container from the exterior of the container.

**3,167,209**
**FLEXIBLE TANK LINER**
Wayne W. Jones, 546 Arboleda Drive, Arcadia, Calif.
Original application Nov. 20, 1957, Ser. No. 698,023, now Patent No. 3,068,561. Divided and this application June 11, 1962, Ser. No. 201,657
15 Claims. (Cl. 220—63)



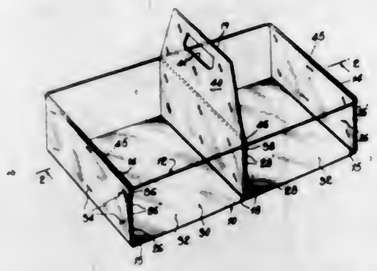
2. An article of manufacture comprising a collapsible flexible-walled closed bulk storage container having thin walls of pliant plastic-like material immune to attack by the liquid intended to be stored therewithin, said container having a relatively small bore fluid passage forming means detachably secured in an opening through its wall, said passage means including a pair of flange rings disposed in registry with said opening and in direct surface contact with the opposite sides of said plastic-like container material and having gasket means adapted to seal against at least one face of said material concentrically of the opening, and means for clamping said rings and gasket sealed about the opposite faces of the container material, the outer end of said passage means being adapted to extend freely and loosely through an opening in the wall of an enclosing and supporting tank for said container.

**3,167,210**
**DEVICE FOR SECURING THE FILLER NECK OF A CONTAINER LINER TO THE CONTAINER**
William M. Carney, Jr., Rosemont, Pa., assignor, by mesne assignments, to The Greig Bros. Cooperage Corporation, Delaware, Ohio
Filed Apr. 30, 1963, Ser. No. 276,807
8 Claims. (Cl. 220—63)



1. A device for securing the filler neck of a container liner to the periphery of an opening in the container through which the filler neck protrudes comprising a first means circumferentially engaging said filler neck and a second means integrally radially extending outwardly from said first means, said second means having a radial extent substantially greater than the diameter of said container opening and said second means engaging the outer surface of said container adjacent the periphery of said opening, wherein said first means comprises an interiorly threaded annulus threadably engaging said filler neck and extending coaxially with said filler neck; and said second means comprises a plurality of ears secured to said annulus adjacent the end thereof most closely adjacent the juncture between said filler neck and said container.

**3,167,211**
**COLLAPSIBLE TRAY**
Robert W. McCormick, Rochester, Mich., assignor to Union Bag-Camp Paper Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 17, 1962, Ser. No. 245,158
10 Claims. (Cl. 220—110)



4. A collapsible bottle carrier comprising a one-piece paperboard body including a pair of transverse, parallel folded end panels, a folded divider panel parallel to and between said end panels, and a bottom section joining said end and divider panels along carrier collapsing fold lines, each of said end and divider panels comprising double layers of body material fastened together by suitable mechanical fastener means; and continuous wire rim means pivotally attached to and forming a rigid interconnection between said end and divider panels of said body in a plane parallel to but spaced apart from said bottom section, said rim means including transverse portions extending between the said body material layers comprising each of said end and divider panels to form each rim-to-panel attachment, said rim portions being restrained by suitable means from non-rotational movement relative to and in the plane of each of said end and divider panels, whereby the carrier may be erected or collapsed relative to the said bottom section by rotating the end and divider panels about their collapsing fold lines, the said wire rim means maintaining the said end and divider panels in parallel relationship.

**3,167,212**
**CARRIER WITH HANDLE**
Floyd L. Phillips, Jr., Lynchburg, Va., assignor to Old Dominion Box Company, Inc., Lynchburg, Va., a corporation of Virginia
Filed June 16, 1961, Ser. No. 117,697
14 Claims. (Cl. 220—112)

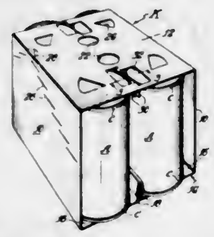


1. A carrier made from paper board material or the like for holding a generally rectangular shaped parallelepiped article or group of articles comprising similar



opposed spaced top and bottom walls, a side wall, said top and bottom walls being pivotally joined to and free to pivot relative to said side wall, said top and bottom walls each having flanges extending from the peripheries thereof except where the top and bottom walls are joined to said side wall, said flanges of the respective top and bottom walls each having a height substantially less than the height of said side wall for encompassing opposite end portions of the article or group of articles while leaving a major portion of the article or group of articles exposed, and a handle extending upwardly above the top wall and in generally the same plane as said side wall whereby when said carrier is lifted, weight of the article or articles carried thereby causes the flanges of said top and bottom wall to bear against the article or articles and maintain the top and bottom walls parallel to each other and in contiguous relationship with the opposite ends of the article or articles.

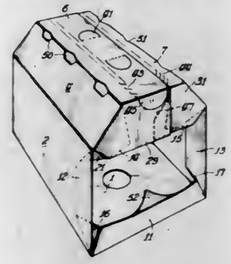
**3,167,213**
**CAN CARRIER CARTON WITH CHIME ENGAGING RETAINING TABS**
Richard E. De Paul, Norristown, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,449
6 Claims. (Cl. 220—112)



1. A sleeve-type, carrier carton formed from a unitary blank of foldable paperboard, for enclosing two opposed rows of chimed cans arranged in adjacent, parallel, side-by-side relation, comprising:
(*a*) a pair of parallel, vertically disposed, transversely spaced side wall panels;
(*b*) a pair of parallel, vertically spaced top and bottom walls extending transversely between and connected to respective side wall panels to define a tubular structure;
(*c*) one of said walls having cut therefrom and hinged thereto a pair of cooperating retaining tabs having portions thereof extending into the carton to be confined between end portions of a pair of adjacent cans of opposed rows;
(*d*) said portions of the tabs having aligned openings therein disposed adjacent said one wall for receiving portions of the chimes of said pair of cans;
(*e*) at least one of said tabs having the portion of the material cut therefrom to form the tab opening hinged to the tab at the side of the opening opposite from said one wall and projecting into the carton between said pair of tabs.

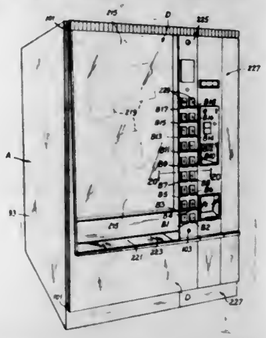
**3,167,214**
**BOTTLE CARRIER WITH CONTOUR END GUSSET**
John V. Mahon, Norristown, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,664
7 Claims. (Cl. 220—116)

1. A carrier for a group of bottles and similar articles, formed from foldable paperboard and comprising elongated, rectangular, interconnected bottom and side wall panels of similar lengths, a flat top panel parallel to and narrower than the bottom panel and arranged to rest against the tops of bottles when contained within the carrier, inclined panels connecting the respective edges of the top panel and the upper edges of the respective side panels, the ends of the inclined panels each having an extended section or flap hinged thereto swingable to operative positions aligned with the ends of the side panels



to lie in a plane normal to the planes of the inclined panels and side panels, means for limiting the movement of said extended sections to prevent them from swinging inward of the carrier beyond such plane, and a flap hinged at each end of the top panel, such end flaps respectively being arranged to overlap at least one of the extended sections on the inclined panels when in operative position.

**3,167,215**
**VENDING MACHINE**
Alvin W. Holstein, Lemay, Clifford B. Adams, Bellefontaine Neighbors, and Charles D. Visos, St. Louis, Mo., assignors, by mesne assignments, to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware
Filed June 6, 1960, Ser. No. 34,112
10 Claims. (Cl. 221—6)

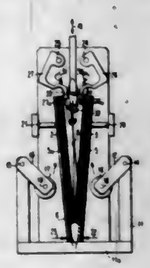


1. A vending machine comprising a series of electrically actuated dispensers, a series of purchaser-operable switches one for each dispenser, a series of empty switches one for each dispenser and each operable in response to emptying of the respective dispenser, a series of transfer switches one for each two successive dispensers and each adapted to be set in a first position or a second position, and interconnections between said switches and dispensers adapted when the transfer switches are in their first position to complete a circuit for each dispenser through the respective empty switch only on operation of the respective purchaser-operable switch and until the dispenser is empty, and adapted when the transfer switches are in their second position to complete a circuit for the first dispenser through its empty switch each time any purchaser-operable switch is actuated and until the first empty switch is actuated in

response to emptying of the first dispenser, then to complete a circuit for the second dispenser through the first empty switch, the first transfer switch and the second empty switch each time any purchaser-operable switch is actuated and until the second empty switch is actuated in response to emptying of the second dispenser, and so on throughout the series.

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**3,167,216**
**CHIP CELL AND ACCESS MECHANISM**
**John M. Harker, Palo Alto, Donald D. Laine, Redondo Beach, and John J. Lynott, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Oct. 28, 1963, Ser. No. 319,395**
**9 Claims. (Cl. 221—88)**



1. In a data storage and retrieval system wherein information is stored on data chips which are contained in a plurality of cells which may be selectively transported to an input/output terminal such that a desired data chip may be positioned on a fixed access plane, the combination comprising:

a cell including two side members pivotally associated at one extremity thereof,

a deck containing a plurality of data chips separated by tabbed spacers in said cell,

means for biasing said side members of said cell such that said data chips and tabbed spacers are fixedly held thereby,

means for spreading said side members such that said data chips and tabbed spacers are released;

means operable to hold said data chips and tabbed spacers after said members are spread,

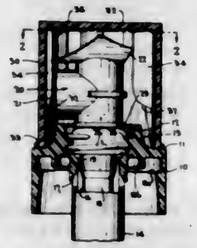
means operable on said tabbed spacers to isolate a selected data chip, and

means for positioning one extremity of said selected data chip on said access plane.

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**3,167,217**
**PROTECTIVE CAP FOR A LIQUID DISPENSER**
**Douglas F. Corsette, Los Angeles, and Rex C. Cooprider, Downey, Calif., assignors to The Drackett Company, Cincinnati, Ohio, a corporation of Ohio**
**Continuation of application Ser. No. 170,543, Feb. 2, 1962. This application Dec. 24, 1963, Ser. No. 333,800**
**7 Claims. (Cl. 222—182)**

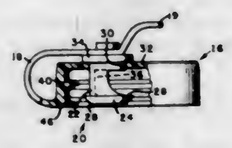
1. A liquid dispensing pump for a container comprising a container closure formed with a circular opening, a pump barrel defining a cylindrical pump chamber supported from said closure with said chamber communicating with said opening, a hollow plunger reciprocable in said chamber and through said opening and rotatable about the cylindrical axis of the chamber, a dispensing head fixed on the external end of said plunger and formed to provide an axially presented finger piece for receiving intermittent finger pressure to operate the plunger, said finger piece being laterally bounded by a plurality of relatively angularly disposed side edges, certain of the intersections of said edges defining radial projections radially outwardly of the rest of said head, said projections being disposed on a surface of revolution coaxial with said chamber, said plunger and said barrel respectively being provided with mating threads concentric to said axis and positioned for engagement in the inwardly depressed position of the plunger, said threads being engageable and disengageable by relative rotary movement between the plunger and barrel, in combination with a protective cap comprising a tubular skirt encircling said



head and closed at its upper end, a series of axially extending radially inwardly projecting ribs integral with said skirt and reinforcing said skirt against axial compressive forces, the inner ends of said ribs normally lying on the surface of an imaginary cylinder of smaller diameter than said surface of revolution, the said projections of the head being received between relatively adjoining ribs and thereby interlocking the head and cap together for rotary motion about said axis.

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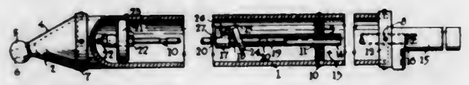
**3,167,218**
**SAFETY DISPENSING CAP**
**Dean M. Graham, % Graham Laboratories, North Bleubeim, N.Y.**
**Filed Feb. 19, 1963, Ser. No. 259,712**
**4 Claims. (Cl. 222—361)**



1. A dispenser cap for a container having means for securing the cap to the container, said cap comprising a top portion adapted to extend transversely across the top of the container when in assembled position, said top portion having an opening therein initially receiving a selector plug which extends inwardly below the top portion, said plug having an apertured tubular wall providing a pocket adapted to receive a portion of the contents of the container, said plug having an enlarged head portion below the pocket of greater diameter than the opening and tapered downwardly and inwardly at its lower surface to permit it to initially pass through the opening in said top portion, but having a substantially flat upper surface engageable with the under surface of the top portion surrounding said opening therein to prevent subsequent removal of the plug from the cap, and having an upper stop member above the pocket and above the top portion of the cap to prevent the plug from completely passing downwardly through the cap.



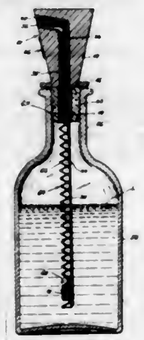
**3,167,219**
**MASTIC CONTAINING AND DISCHARGING DEVICE**
**Julian Cleon Hoveland, Edmonton, Alberta, Canada, assignor to Merrill D. Muttart, Edmonton, Alberta, Canada**
**Filed Jan. 18, 1963, Ser. No. 252,527**
**1 Claim. (Cl. 222—391)**



A mastic containing and discharging device comprising a hollow cylinder having a nozzle at one end thereof, a piston slidably mounted in said cylinder, a piston rod in said cylinder fixed to said piston, said piston rod having a series of teeth in longitudinal alignment thereon, a tube axially arranged in said cylinder and having one end extending outwardly from the other end of said cylinder, the other end of said tube being open, said piston rod extending through said open end of said tube and being telescopically disposed in said tube, a stop fixed to said tube adjacent said open end thereof, a pawl pivotally mounted on said stop and being swingable into engagement with one of said teeth, said pawl having an angularly extending arm, a spring fixed to said stop and engaging said arm to urge said pawl into engagement with one of said teeth, said pawl having locking engagement with one of said teeth in response to movement of said tube in a direction towards said nozzle to move said piston rod and piston therewith and having releasing engagement with said teeth in response to movement of said tube in the opposite direction, and means permitting axial movement of said piston and piston rod in a direction away from said nozzle comprising a plate fixed to said cylinder and disposed therein between said stop and said other end of said cylinder, said plate being engageable by said pawl arm to swing said pawl out of tooth-engaging position.

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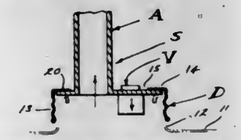
**3,167,220**
**SLIDE SEALING LIQUID DISPENSER**
**Louis Koukal, 402 E. 78th St., New York, N.Y.**
**Filed Oct. 24, 1963, Ser. No. 318,713**
**3 Claims. (Cl. 222—477)**



1. A dispenser of the kind described, comprising a spout having a flat triangular-shaped body, a round extension at one end of the body, a pair of parallel disposed closely spaced passages extending through the body and extension, one end of said passages terminating at one end of the extension, the other end of said passages terminating at one side of the body, one of said passages constituting a liquid discharge means, the other of said passages constituting an air inlet, said body having opposed elongated grooves in the surfaces of the front and back thereof, a channel-shaped metal valve member having opposed flanges slidably mounted in said grooves, said valve member being sufficiently long to span the passage terminals at said one side of the body for controlling the opening and closing of said discharge means and said air inlet, a cork sleeve around the round extension of the body, and a pipe forming an extension of the terminal of the air inlet passage at the end of the body extension, said pipe having an air vent therein outwardly of the body extension.

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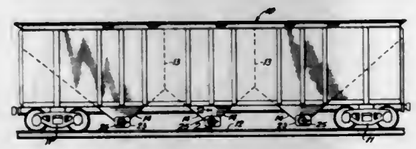
**3,167,221**
**REVERSIBLE AND VENTED SPOUT UNIT AND CAN**
**Ben Feinstein, 4427 Don Felipe Drive, Los Angeles, Calif., and Leonard Wirth, 4854 Dempsey St., Encino, Calif.**
**Filed Apr. 10, 1961, Ser. No. 101,725**
**5 Claims. (Cl. 222—481)**




1. In combination with a can having a closed chamber therein and with a single opening to the said chamber; a reversible spout unit comprising a pouring tube permanently fixed to and extending from one side of a mounting plate and a vent opening displaced laterally of the pouring tube and through and open at said mounting plate, said plate being co-extensive with the said single opening and with an opening therethrough passing the tube and exposing the vent opening, the spout unit having a first mounted position with the pouring tube projected through the opening and into the chamber and a second mounted position with the pouring tube projected from the opening at the exterior of the chamber, a coupler engaging the plate to secure it to the can, and a closure to overlie and seal the first mentioned opening when the spout unit is in said first position.

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**3,167,222**
**HOPPER CAR**
**Clarence J. Koranda, Western Springs, Ill., assignor to North American Car Corporation, Chicago, Ill., a corporation of Illinois**
**Filed May 7, 1962, Ser. No. 192,710**
**8 Claims. (Cl. 222—512)**

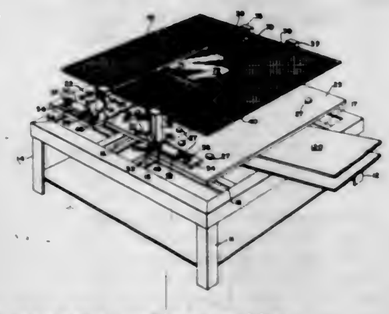


4. For use with a hopper car comprising a compartment tapering inwardly and downwardly at its opposite sides to an elongated rectangular discharge opening and a trough member secured to the compartment under the opening having inwardly and downwardly tapering sides defining smooth continuations of the opposite sides of the compartment and merging into an arcuate section bottom, a circular discharge tube at at least one end of the trough whose bottom portion forms an elongation of the bottom portion of the trough, a cover for the discharge tube hinged to the tube at one side thereof for swinging from an open position beside the tube to a closed position overlying the end of the tube, an arm pivoted at one end on an axis parallel to and at one side of the tube with its other end free for swinging centrally over the outer face

of the cover when the cover is in its closed position, a cam surface on the outer face of the cover engageable with the free end of the arm, a spring acting on the arm urging its free end toward the discharge tube thereby to press the cover resiliently toward its closed position, and a rotatable latch member connected to the arm to be turned thereby into latching engagement with the cover when the arm is moved over the cover for engagement with the cam surface.

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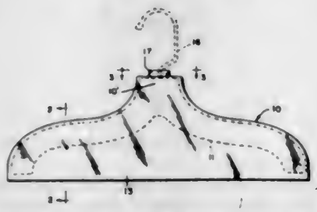
**3,167,223**
**RAPID GARMENT FOLDER**
**Samuel Jerome Weiss, P.O. Box 421, Castile, N.Y.**
**Filed Aug. 18, 1964, Ser. No. 390,299**
**9 Claims. (Cl. 223—37)**



1. A shirt folding machine comprising:
(1) a main rectangular frame;
(2) legs supporting each corner of the main frame;
(3) a platform secured between the legs at an intermediate position thereof;
(4) machine operating mechanism secured to said platform;
(5) track means extending transversely and longitudinally in cruciform relation at the top of the said rectangular frame;
(6) said track means each having elongated slots;
(7) horizontal support plates in vertically spaced relation above the top of said frame in a horizontal plane above said track means;
(8) vertical and horizontally adjustable studs secured to said track means and to each respective horizontal support plates;
(9) said studs being threaded and secured in any desired vertical or horizontal adjusted position by vertically spaced fasteners threadable on the said studs engageable with upper and lower sides of each track means;
(10) horizontally spaced pairs of standards supported on opposite corners of each of said spaced horizontal support plates;
(11) first and second side and first and second end foraminous shirt supporting and folding means pivotally journalled between the upper ends of each spaced pair of standards above each of said support plates;
(12) a pivoted rectangular centrally located folded shirt support and discharge plate bounded on each side by one of said respective horizontally spaced foraminous folding means;
(13) a hinge shaft carried by each end of said folding means journalled in said standards with the end projecting laterally therefrom;
(14) a pinion gear keyed to the projected journalled end of each hinge shaft;
(15) said central support plate being pivotally mounted to swing downwardly into the interior of the main rectangular frame;
(16) said machine operating mechanism including a driven cam shaft;
(17) a gang of predeterminedly arranged valve operating cam members secured thereon;
(18) a drive for rotating said cam shaft;
(19) double-acting valve means selectively controlled by each cam member operable to fluid supply positions from a suitable source of fluid supply;
(20) said respective double-acting valves each having a valve actuator means engaged by each of said respective valve operating cam members;
(21) a fluid operated double-acting power cylinder mounted adjacent each standard on each horizontal support plate;
(22) a vertical bell-crank lever intermediately pivoted to each respective standard;
(23) each bell-crank lever including a sector gear at one end in mesh with one of said pinion gears;
(24) a bifurcated piston rod connected at the other end;
(25) said bifurcated end being connected to a piston rod from said double-acting power cylinder;
(26) conduit means from each double-acting valve to each of the respective double-acting power cylinders;
(27) conduit means from a suitable source of fluid to said respective double-acting valves;
(28) said cam members programming the timed operation of each of said double-acting valves by said cam means to pivot said first side foraminous shirt support folding means to first fold one side and sleeve of a shirt from a flat spread out unfolded starting position on said foraminous side onto said central discharge plate, said second of said cam members further programming a second double-acting valve to said second side foraminous folding means to secondly fold the opposite side and sleeve of said shirt over and onto said central discharge plate, a third of said cam members next programming a third double-acting valve to said first end formaninous folding means to fold the neck and shoulder portion of said shirt over and onto said central discharge plate, a fourth of said cam members next programming a fourth double-acting valve to the second end foraminous folding means to fold the tail portion of said shirt garment over and onto said central discharge plate, and a fifth of said cam members next programming a fifth double-acting valve to finally downwardly pivot said central discharge panel with the folded shirt thereon for discharge of the folded shirt from the machine to a location exterior of the said rectangular frame.

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**3,167,224**
**GARMENT PROTECTOR**
**William D. Landers, P.O. Box 595, Granbury, Tex.**
**Filed Feb. 1, 1962, Ser. No. 170,407**
**1 Claim. (Cl. 223—98)**

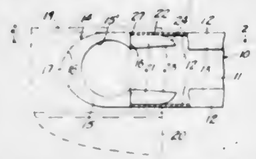


A protecting cover for garments suspended by a garment hanger having a suspension hook and shank depending therefrom, said protecting cover comprising an elongated cover member formed from thin transparent plastic material and having an inverted substantially U-shaped vertical cross-section with an open bottom, a pair of flat and transversely spaced side walls and a top wall coextensive with and connecting together upper edges of said side walls in transversely spaced relation along their entire length, said cover member conforming closely to the configuration of a garment suspended by the hanger, said top wall of the cover member including a horizontally flat center portion provided with an oval shaped opening for passage of a hanger hook therethrough, and an upstanding oval flange provided on said top wall center portion contiguously with the edge of said opening, said flange projecting above the upper surface of said top wall center portion to surround the garment hanger hook shank in closely spaced relation above the top wall center portion and to afford a finger-piece for handling the cover, the opposite side portions of said flange being parallel with and spaced inwardly from the planes of said side walls of the cover member, whereby regions of the top wall center portion between said side walls and said opposite side portions of said flange may act to reinforce the same.



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**3,167,225**
**CURTAIN GUIDE DEVICE FOR CURTAIN RODS**
**Frederick J. Ruschman, Jr., 1522 N. Gibson Ave., Indianapolis, Ind.**
**Filed Jan. 26, 1962, Ser. No. 169,004**
**1 Claim. (Cl. 223—105)**

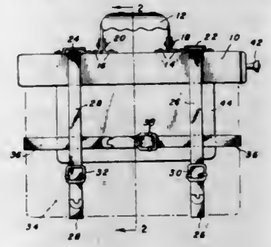


A guide device for curtain rods, said device comprising a generally horseshoe-shaped body of flexible material, said body having a rounded inner surface and a central outwardly contracted nose portion, ends of said body being enlarged and terminating in projecting gripper fingers having rounded cam ends extending outwardly from said body, said fingers having outwardly contracted sides and inner and outer surfaces, said enlarged ends of the flexible body having shoulders at the juncture of the gripper fingers therewith, the flexible body normally supporting said fingers including said inner surfaces thereof in diverging relationship to each other when the device is not in use, ends of said body being flexed toward each other in attachment of the gripper fingers of said device with a curtain rod, and the cross-sectional contour of the enlarged ends of the body adjacent said shoulders being such as to lie flush with the outside surface of the curtain rod to provide free passage of a curtain over the guide device onto a curtain rod, in connection with which the device is adapted to be mounted.

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**3,167,226**
**BOOK CARRIER**
**Joe Whetstone, 129 Abercorn St., Savannah, Ga.**
**Filed June 22, 1961, Ser. No. 118,814**
**1 Claim. (Cl. 224—45)**

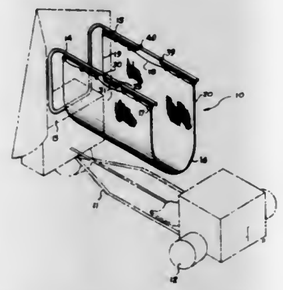
A book carrier for a plurality of books comprising, an elongated hollow base member being of rectangular form in cross-section, the hollow base having at least one open end, adapted to accommodate a pencil drawer, a handle having its ends hingedly attached centrally of and to the upper surface of the hollow base member and adapted to extend upwardly therefrom for carrying the same, a relatively thin rigid stabilizing member for the books of thin gauge material affixed to and extending along the elongated center line and downwardly in a plane perpendicular to the bottom surface of the base portion for keeping the books in a plane parallel with a vertical plane passing through the attached end of the handle, means secured to the upper surface of the base equidistant from the center of the handle for slidably retaining a pair of vertical straps adapted to encircle the books, whereby the upper edges of the books are held in contact with the bottom



surface of the base, and adjacent the vertical stabilizing member for keeping the books in a compact position and in a vertical plane parallel with a plane passing through the attached ends of the carrying handle.

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**3,167,227**
**CARRIER FOR USE IN HANDLING TOBACCO LEAVES OR THE LIKE**
**William Julian Walden, Sr., Midway, Ky.**
**Filed Sept. 17, 1962, Ser. No. 224,093**
**2 Claims. (Cl. 224—49)**



1. A self-positioning carrier for use in handling tobacco leaves or the like and comprising, a flexible generally rectangular sheet, a first elongated rod attached to said sheet along one edge thereof, a second elongated rod attached to said sheet along a second edge thereof opposite said first edge, each of said rods having ring-receiving means at the extreme ends thereof and located to one side of the axes of said rods thereby to provide lever arms through which the weight supported by said sheet may act in order to reposition said carrier in response to addition to weight thereto, a plurality of rings swivelly attaching said sheet to the respective ring-receiving means, first and second carrier-supporting sections integrally formed on said respective rods adjacent the midlengths thereof; said second section having a length greater than the length of the said first section, each of said sections having a pair of generally U-shaped hook members, said members extending outwardly from the axis of the respective rods and spaced from each other sufficiently far to provide longitudinal stability to said carrier and with each of said hook members of each pair being joined to its companion member by a longitudinally extending connecting portion, whereby said carrier may be detachably supported for loading upon parallel generally horizontal cylindrical posts by means of said hook members and may be carried in loaded condition after detachment from said posts and following engagement of said first section within said second section with the connecting portion of said

first rod serving as a handle for the carrier, said repositioning of said carrier serving to enhance the gripping action of said hook members upon said posts when said carrier is being supported upon said posts.

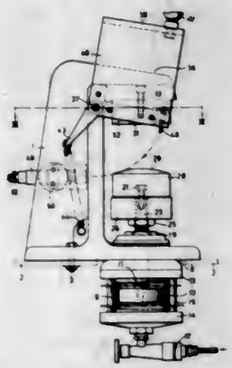
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**3,167,228**

## APPARATUS FOR SEPARATING INTO PIECES THIN WAFER SHAPED PLATES OF BRITTLE MATERIAL

**Eric Russell Moran and Gordon Ross Jefferies, Southampton, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**

**Filed Nov. 21, 1962, Ser. No. 239,237**
**Claims priority, application Great Britain, Nov. 28, 1961, 42,480/61**
**4 Claims. (Cl. 225—103)**



1. Apparatus for separating a plate of brittle material such as germanium, silicon and the like having score lines on a major surface thereof; said apparatus comprising a support member, a first and second means including a die and counter-support mounted on said support member for relative axial movement, the coacting surfaces of said die and counter-support between which said plate is positioned defining substantially complementary generally concave and convex shapes, and means for moving said first and second means together and apart.

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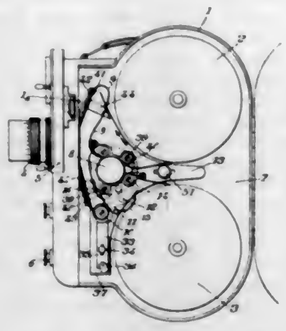
**3,167,229**

## METHODS OF HANDLING FILMS IN MOTION PICTURE APPARATUS

**Jules Hourdiaux, 96 Ave. de Versailles, Paris, France**

**Original application Oct. 24, 1957, Ser. No. 692,102, now Patent No. 3,063,611, dated Nov. 13, 1962. Divided and this application Apr. 3, 1962, Ser. No. 184,898**
**Claims priority, application France, Mar. 7, 1949, 568,813; June 12, 1952, Ser. No. 630,321**
**2 Claims. (Cl. 226—8)**

1. A film handling method for use in motion picture apparatus having a guide associated with an opening and for passing said film in fixed increments along said guide and in predetermined direction along a determinable path past said opening, said method comprising feeding and taking up said film at corresponding rates to maintain a loop of substantially constant length adjacent said guide, loosely engaging said film up-stream and downstream of said opening and bowing the loop against said guide with a force sufficient to restrict movement of the film due to friction between the film and said guide, imparting sequential impulses to said film to move said film in said direction along said path, said impulses being positively imparted to the film with sufficient force that the inertia of each impulse causes the latter to tend to exceed a determinable amplitude, and limiting said impulses to said amplitude by intercepting the impulses at a position spaced from the film.



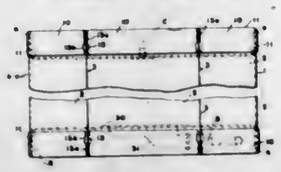
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**3,167,230**

## CONTAINER AND BLANK

**Frank Raymond Linda, Norwalk, Conn., assignor to International Paper Company, New York, N.Y., a corporation of New York**

**Filed Aug. 23, 1961, Ser. No. 133,522**
**12 Claims. (Cl. 229—4.5)**



1. A fiberboard blank structure for a liquid container, said structure comprising, in combination, a body part having at least five wall panels defined by longitudinal scores, top and bottom parts each having radially arranged flaps corresponding to the wall panels of the body part, the flaps being defined by first scores arranged as chords of a circle, second scores arranged on radii of said circle which pass through the intersections of said scores, and cutouts between the flaps arranged symmetrically on said radii, said flaps being divided into inner and outer portions by third scores parallel to said first scores, said body part being capable of erection into a symmetrical form, said top and bottom parts being capable of insertion into the ends of the erected body part with the inner and outer portions of their said flaps straddling the end edges of the said wall panels and with the portions at the intersections of said first and second scores forming web areas providing sealed joints in the corners of the top and bottom parts.

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**3,167,231**

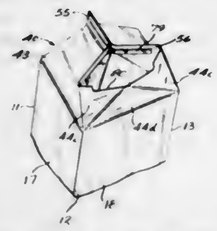
## CONTAINER

**Leonard E. Bray, Fort Worth, Tex., assignor, by mesne assignments, to Champion Papers Inc., Hamilton, Ohio**

**Filed June 14, 1961, Ser. No. 117,129**
**11 Claims. (Cl. 229—17)**

11. In a paperboard container having a tubular body closed at one end, a gable-type closure on the opposite end of said body comprising a pair of side panels connectable with opposed sides of said body, each of said side panels having a sealing flap formed along its one end, a pair of end panels each having converging score lines defining a plurality of subpanels, said subpanels on one of said end panels connecting with a surmounting subpanel, said end panels being connectable to the sides of said body adjoining said opposed sides thereof, said end panels being foldable along said converging score lines so as to project over said body and define a gable cavity at each end of said closure, said side panels projecting over said end panels and said sealing flaps being sealed to each other in face contacting outwardly projecting relation to thereby define a gable-type closure in its closed position, one of said end panels being perforated longitudinally along its surmounting subpanel, said perforated portion of said end panel being sealed to and clamped





between the lower portion of the sealing flaps, each of said side panels being scored adjacent said one end panel to define a hinge line thereon, said side panels being swingable about said hinge lines away from each other, effective to partially unfold said one end panel and to separate said perforated portion from said surmounting subpanel and thereby define a pour spout in the latter having a lip part corresponding to the configuration of said separated portion.

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**3,167,232**

## CONTAINERS

**Robert Dennis Partridge, Hove, England, assignor to The Metal Box Company Limited, London, England, a British company**

**Filed Mar. 11, 1963, Ser. No. 264,170**
**Claims priority, application Great Britain Mar. 28, 1962**
**14 Claims. (Cl. 229—17)**



1. A carton made of cardboard or similar material comprising a body the interior of which is lined by a bag made of heat-sealable liquid-impervious organic thermoplastic material, said bag extending outwards from the top of the carton body and having the mouth thereof closed by a seam formed by the juxtaposition and heat-sealing of two opposite side portions of the bag, cover flaps connected one to each of two opposite sides of the body at the top thereof, said cover flaps sloping towards each other and covering the side portions of the bag which extend between said seam and the top of the carton body, and seam-engaging flaps extending one from each of the cover flaps and engaging said seam, said seam-engaging flaps including tearing edges located between the longitudinal edges of the seam-engaging flaps and extending from positions adjacent to like ends of the flaps towards the opposite ends thereof and lines of weakening which extend from the free longitudinal edges of the flaps towards the tearing edges at positions intermediate the opposite ends of the flaps, said tearing edges being spaced by like distances from the free longitudinal edges of the seam-engaging flaps and the seam-engaging flaps being secured to said juxtaposed opposite side portions of the bag except in regions thereof located between said tearing edges and the free longitudinal edges of the seam-engaging flaps thereby to facilitate tearing of the bag along said tearing edges following tearing thereof along a path defined by said lines of weakening while gripped between the seam-engaging flap portions located on opposite sides of the lines of weakening.

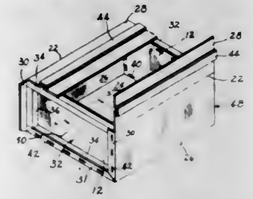
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**3,167,233**

## CONTAINER

**Paul D. Northway, Palos Verdes, Calif., assignor to International Paper Company, New York, N.Y., a corporation of New York**

**Filed June 13, 1961, Ser. No. 116,738**
**6 Claims. (Cl. 229—23)**



1. A box comprising a bottom panel, side panels and attaching flanges connected to each other, end members perpendicular to said bottom panel and said side panels, said side panels being perpendicular to said bottom panel, said attaching flanges being perpendicular to said bottom panel and said side panels and secured to the outer surface of said end members and each of said end members consisting of a substantially rectangular wood frame having an end pad affixed thereto.

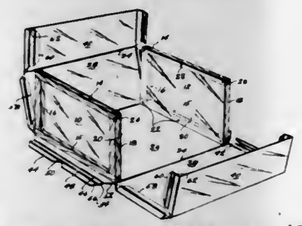
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**3,167,234**

## WOOD REINFORCED SHIPPING CARTON

**Thomas Munroe, Dayton, Ohio, assignor to Moraine Box Company, Dayton, Ohio, a corporation of Ohio**

**Filed Apr. 1, 1963, Ser. No. 269,822**
**6 Claims. (Cl. 229—23)**

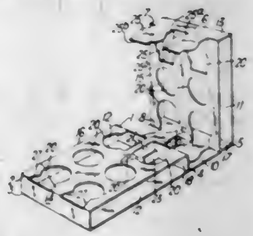


1. In a carton blank; comprising bottom, side and top panel means hingedly interconnected and forming a substantially rectangular blank, end members for the carton comprising end panels and rigid rails extending along the edges of said panels on the outside each end member having a width corresponding to the width of the bottom panel means and a height corresponding to the height of said side panel means, each said panel means of the blank having flap means hingedly connected thereto and scored along lines parallel to the ends of the panel means and spaced apart to divide the flap means into hingedly interconnected portions, each said flap means being arranged for being formed about the adjacent wood rail of the adjacent end member and the terminal portion of each said flap means remote from the connection of the flap means to the panel being receivable in the region between the said end panel and the rail about which the flap means is formed. the said portion of each flap means adjacent the connection of the flap means with its respective panel

means being beveled inwardly toward the center of the respective flap means so said flap means will be in edge to edge engagement when formed about said rails, said flap means having the ends of said terminal portions beveled to facilitate insertion thereof between the rails and the pertaining end panel, means connecting said end panels to said rails comprising connector elements in the corners of the panels which also extend through the rails so as to interconnect the rails at the corners of the panels, and additional connectors intermediate the ends of the top and bottom rails, and the flap means pertaining to the top and bottom panel means being notched intermediate their ends to prevent interference with said last mentioned connectors.

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**3,167,235**
**CARTONS**
**Howard T. Hailey and Hilda E. Hailey, both of 77 Brayfield Road, Littleover, Derby, England**
**Filed Feb. 4, 1963, Ser. No. 255,789**
**Claims priority, application Great Britain, Feb. 20, 1962, 6,437/62; May 1, 1962, 16,533**
**3 Claims. (Cl. 229—29)**

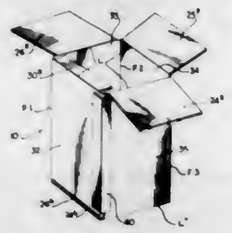


1. A carton comprising a vertical back wall, a top wall and a bottom wall each connected to the back wall and extending horizontally forward therefrom, a downwardly turned portion at the front of the top wall, and an upwardly turned portion at the front of the bottom wall, at least one of these front portions having thereon extended formations engaging with the other front portion to hold them in position, two apertured intermediate walls extending horizontally in spaced parallel relation one from each of the said front portions, and further extended formations on each intermediate wall at the rear end thereof adjoining the back wall, by which said intermediate horizontal walls are located in position, the apertured intermediate walls serving to receive and locate eggs and like articles firmly in position between the top and bottom walls, the carton also having downwardly turned feet on the lower intermediate wall, and upwardly turned tabs on the bottom wall, the feet engaging in between the tabs, extensions on the downwardly turned portion at the front of the top wall, the front end of the lower intermediate wall having slots, the extensions engaging in the slots, downward extensions on the rear end of the upper intermediate wall, said extensions fitting flush between the back wall and the downwardly extended formation at the rear of the lower intermediate wall, the tabs, the feet, and all the extensions being formed by punched out portions connected with the several walls and all formed out of a single blank, by suitable creasing and folding.

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**3,167,236**
**CORRUGATED SHIPPING CONTAINER**
**Arnold Scheinman, 64 Spier Drive, South Orange, N.J.**
**Filed July 15, 1963, Ser. No. 294,865**
**2 Claims. (Cl. 229—38)**

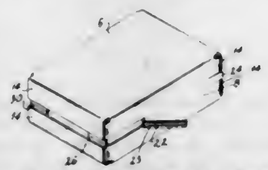
1. A corrugated container, comprising a rectangular casing having a first pair of opposing rectangular panels and a second pair of opposing rectangular panels defining a rectangular tubular structure, a first pair of rectangular flaps at opposite ends of one panel of said first pair, said flaps being substantially equal in area to the cross-sectional area of said casing to form outer end covering layers, a second pair of rectangular flaps at opposite ends of the other panel of said first pair for juxtaposition to the first pair of flaps respectively to provide second covering layers at each end of the casing, a third pair of flaps equal in width to widths of the first and second pairs of flaps and shorter than the first and second pairs of flaps for extending part way across the casing at opposite ends inside of and juxtaposed to the second pair of flaps respectively to provide third layers at opposite ends of the casing, and a fourth pair of narrow flaps at opposite



ends of the other panel of said second pair of panels to provide stiffening members for the casing and disposable in coplanar disposition with the third pair of flaps respectively to provide third covering layers, and to leave the casing substantially unobstructed at either end when the flaps of the first, second and third pair of flaps thereat are opened while the flaps of the fourth pair of flaps are folded inwardly of the casing, the flaps of the fourth pair being folded longitudinally inwardly of the casing to define narrow flanges, and reinforcement boards having slots engaged with said flanges at opposite ends of the casing to provide fourth covering layers at opposite ends of the casing.

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**3,167,237**
**EASY OPENING CONTAINER**
**Frederick W. Negus, Fond du Lac, and Oscar H. Williamson, Neenah, Wis., assignors to International Paper Company, New York, N.Y., a corporation of New York**
**Filed Oct. 21, 1959, Ser. No. 847,813**
**1 Claim. (Cl. 229—51)**



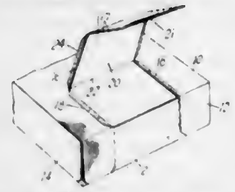
A paper board container having top, bottom and side portions defined by longitudinal and transverse score lines, said portions having separate end flaps, one said portion having severing means to sever it longitudinally including a tear tab formed at a said transverse score line and tear means extending from said tear tab longitudinally substantially to an opposite said transverse score line, the end flaps of said portion having lines of weakness extending substantially from said severing means to the edges of said end flaps, the end flaps of the adjacent portions being secured to said end flaps on opposite sides of said lines of weakness, said end flaps being severable under light force to open said container when said portion is severed, said tear tab intersecting a said transverse score line and a said line of weakness, said severing means being disposed along a side portion and the opposite side portion having a longitudinal fold score extending between transverse score lines and its end flaps



having lines of weakness extending substantially from said longitudinal fold score to the edges of said end flaps, the said end flaps of the adjacent portions also being secured to said last mentioned flaps on opposite sides of their said lines of weakness, said end flaps having said lines of weakness being severable under light force to open said container and said longitudinal fold score providing a hinge when said side portion is severed, said tear tab being cut in the material of said portion, a second tear tab cut in the material of said portion and formed at said opposite transverse score line, said tear means including a tear tape attached underneath to the material of said portion and extending from under both said tear tabs to the edges of the end flaps of said portion and said lines of weakness of the end flap of said portion being parallelly offset from said tear tape.

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**3,167,238**
**RECLOSABLE CARTON**
**Kenneth R. Smith, Kalamazoo, Mich., assignor to KVP Sutherland Paper Company, Kalamazoo, Mich.**
**Filed May 20, 1963, Ser. No. 281,607**
**12 Claims. (Cl. 229—51)**

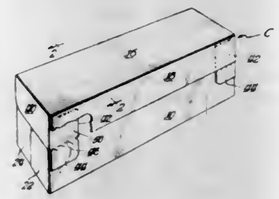


1. A carton formed of fiberboard cut and scored to provide a body member including a bottom and front and rear and end walls of substantially the same height, the rear and front walls having end flaps disposed on the outer sides of the end walls and supportedly connected thereto when the carton is erected, and a top member including a top wall hingedly connected to the upper edge of the rear wall and having outer front and end wall members of substantially the height of the front and end walls of the body member and overlying and adhesively secured thereto when the carton is erected, the top wall and its front wall member having parallel laterally spaced fracturing foraminations therein, there being a hinging score in the top wall at the inner ends of said fracturing foraminations providing a hinge connection for the portion between said fracturing foraminations, such portion constituting a closure member, the adhesive for securing the top member front wall to the front wall of the body member being at the outer sides of said fracturing foraminations therein, said tear foraminations being spaced and of such length as to provide a contents access opening in the top wall.

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**3,167,239**
**EASY-OPENING RECLOSABLE CARTON WITH HINGED COVER**
**Peter C. Collura, Waltham, Mass., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware**
**Filed June 18, 1963, Ser. No. 288,775**
**9 Claims. (Cl. 229—51)**

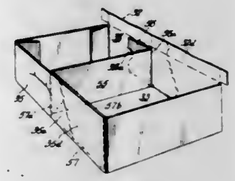
1. An easy-opening, reclosable carton formed from a unitary blank of foldable paperboard, comprising;
(*a*) a bottom wall;
(*b*) a pair of front and rear side walls hinged to and upstanding from the bottom wall;
(*c*) a pair of end walls each including:
(i) an inner end closure flap hinged to and upstanding from an end edge of the bottom wall; and
(ii) a pair of outer end closure flaps hinged to end edges of the side walls and secured to each other in overlying relation with the inner end closure flap;
(*d*) a cover including:
(i) a top wall hinged to and extending forwardly from the upper edge of the rear side wall;
(ii) a front closure panel hinged to and depending from the forward edge of the top wall in overlying relation with an upper portion of the front wall;



(iii) a pair of end closure panels hinged to and depending from the end edges of the top wall in overlying relation with upper portions of the end walls; and
(iiii) glue flaps hinged to the forward edges of the end closure panels and disposed between the front wall and the front closure panel and adhesively secured to the latter; and
(*e*) a readily removable tear strip detachably connected to the lower edge of one of said glue flaps along a weakened line of tear and adhesively secured to said front wall.

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**3,167,240**
**REDUCEABLE CARTON WITH RECLOSURE FEATURE**
**Peter C. Collura, Waltham, Mass., and John D. Desmond, Philadelphia, Pa., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware**
**Filed Nov. 5, 1963, Ser. No. 321,461**
**8 Claims. (Cl. 229—51)**



4. A reduceable size carton formed of a single blank of foldable paperboard, comprising:
(*a*) first and second pairs of generally rectangular side walls hinged together to form a tubular structure open at the ends;
(*b*) said tubular structure having an uninterrupted, circumferential line of severence extending across each of said side walls operable upon severing the same to define two carton sections;
(*c*) first closure flaps hinged to opposite end edges of the side walls for closing the remote ends of the carton sections;
(*d*) one of the carton sections having an uninterrupted, circumferential fold line extending across each of the side walls at an angle substantially normal to the

longitudinal axis of the tubular structure, the circumferential fold line being spaced longitudinally inwardly from the line of severence to define therebetween second closure flaps for closing the end of the one carton section adjacent the other carton section;

(*e*) locking means for maintaining the second closure flaps closed;

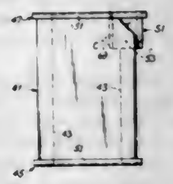
(*f*) a partition section hinged on a longitudinal fold line to one of the side walls of the other carton section for closing the adjacent end of the other carton section and for dividing the tubular structure into separate carrying compartments.

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**3,167,241**
**BAG**

**Eldon H. Woerner, Peoria, Ill., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri**

**Original application Oct. 5, 1961, Ser. No. 143,246, now Patent No. 3,092,303, dated June 4, 1963. Divided and this application Feb. 25, 1963, Ser. No. 260,694**
**1 Claim. (Cl. 229—62.5)**

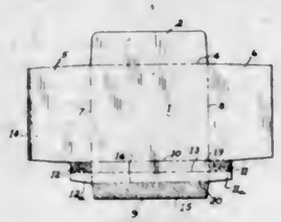


A bag having a sewn closure at one end thereof, said closure including an inwardly directed valve flap at one corner of the bag at said one end, stitching extending along said one end of the bag, a valve sleeve secured to said valve flap, said sleeve being constituted by a generally rectangular blank of sleeve material having a stripe of pressure-sensitive adhesive extending generally parallel to and adjacent one end of the blank and a protective strip overlying the stripe of adhesive, said stripe of adhesive extending from one side edge of the blank across the blank more than half the width of the blank but terminating short of the opposite side edge of the blank, said protective strip extending from said one side edge of the blank across the blank and having an end portion which extends beyond and lies free of the adhesive for grasping purposes, but which also terminates short of said opposite side edge of the blank, said blank together with the protective strip being folded in half on a central fold line extending generally perpendicular to one end of the blank to form the sleeve with the stripe of adhesive and the protective strip on the inside of the sleeve extending crosswise of the sleeve adjacent said one end of the sleeve, said sleeve having its side margins caught in the stitching, said strip, adjacent its end at said one side edge of the blank, being caught in the stitching along with the side margins of the sleeve, said end portion of the strip which extends beyond and lies free of the adhesive terminating short of said stitching for grasping purposes, said sleeve being secured to the valve flap with said one end of the sleeve constituting the outer end of the sleeve, said strip preventing sticking of the sleeve and protecting the adhesive from becoming fouled by material with which the bag is filled through the sleeve, said free end portion of said strip lying against one side of the sleeve so as not to interfere with entry of a spout in the sleeve, and said strip being adapted to be removed after the bag has been filled by grasping its said free end portion and pulling it to permit the sleeve to be sealed by the adhesive, said strip being adapted to be torn off at the stitching.

**3,167,242**
**EXPANSION SIZE ENVELOPE**

**Frank Joseph Meyer, Smokerise, Kinnelon, N.J., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**

**Filed Jan. 31, 1963, Ser. No. 255,320**
**3 Claims. (Cl. 229—68)**



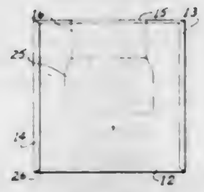
1. An expansion type envelope comprising a main body portion and flaps at the upper, lower and side edges thereof, said flaps adapted for folding inwardly on said body, the upper and side flaps being of substantially the same length as said body at the respective fold lines, the lower flap having an inner portion of greater length than said body at the common fold line therewith and extending along both side flaps beyond the lateral fold lines of said side flaps and an outer portion of substantially the same length as said body, said lower flap being transversely folded first inwardly on said body and on said side flaps and then folded outwardly medially of said inner portion with said outer portion extending beyond said first inward fold, the inwardly folded portions of said lower flap which overlie said side flaps being adhered to said side flaps only in the area of common contact, said side flaps and said attached portions of said lower flap being inwardly folded over said body and over the folded inner portion of said lower flap, said side flaps being adhered in overlapping engagement, the outwardly extending outer portion of said lower flap being folded inwardly over said folded side flaps and adhered thereto.

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**3,167,243**
**RETURN ENVELOPE**

**Casey Wiley, Teaneck, N.J., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**

**Filed Mar. 19, 1963, Ser. No. 266,346**
**6 Claims. (Cl. 229—73)**



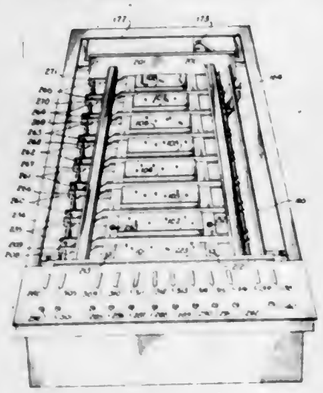
1. A dual envelope of unitary construction comprising a primary envelope closed on three sides and open on a fourth side, an extension member attached to said open side by a line of weakness, said member being substantially shorter in dimension than said open side at the common line of attachment and being positioned medially of said open side, said extension member having a further extension element comprising a secondary envelope of a size substantially smaller than said primary envelope, said secondary envelope being closed on three sides and open on a fourth side, said fourth side being provided with a sealing flap, said sealing flap being attached to said member by a second line of weakness.



**3,167,244**
**AUTOMATIC OR MANUAL MULTIPLE PROGRAMMER**

**Anthony A. Berlinsky, Silver Spring, and Martin J. Brennan, Maryland Park, Md., assignors to the United States of America as represented by the Secretary of Commerce**

**Filed July 3, 1961, Ser. No. 127,429**
**25 Claims. (Cl. 234—15)**



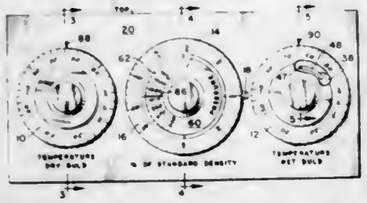
1. In a programmer, means for selecting one of a plurality of program connectors, each having a male and female member, comprising: an emitter including a plurality of first terminals, means for applying a potential sequentially to each of said first terminals, a plurality of second terminals, stepping means for applying a potential sequentially to said second terminals, means connected to at least one of said first terminals and responsive to a potential for advancing said stepping means, and means connected to each of said second terminals and responsive to a potential for effecting the engagement of the female and male member of a respective one of said program connectors.

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**3,167,245**
**AIR DENSITY COMPUTER**

**Eugene B. Osuch, 2182 N. Grand Oaks, Altadena, Calif., and Frederic N. Eaton, 1271 E. Howard St., Pasadena, Calif.**

**Filed Aug. 8, 1961, Ser. No. 130,200**
**8 Claims. (Cl. 235—61)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



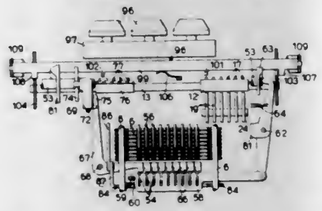
1. Apparatus for determining air density from known data consisting of the wet and dry bulb temperatures and pressure of air, which comprises a first movable member graduated to represent dry bulb temperature, a second movable graduated to represent wet bulb temperature, a third movable member graduated to represent air pressure, indices for each of said members to which a graduation on a movable member may be set, a fourth movable member graduated to represent the air density, means mechanically connecting said movable members constructed and arranged to integrate the data which is set on the movable members and produce a reading of air density corresponding thereto on said fourth movable member, and means for preventing the setting of a temperature value on the second movable member which is in excess of that set on the first movable member.

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**3,167,246**
**PARTIAL PRODUCT MULTIPLYING MACHINE**

**Wilhelm K. Edelböck, Rotenfels, Baden, Germany, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy**

**Filed Apr. 16, 1963, Ser. No. 273,435**
**Claims priority, application Austria, Apr. 24, 1962, A 3,333/62**
**9 Claims. (Cl. 235—61)**



1. In a multiplying machine having a transversely stationary multiorder register, and a set of movable partial product plates corresponding to the various multiplicand digits, the combination of:

(*a*) a multiorder multiplicand indexing device transversely shiftable step by step and provided in each order with a connecting member differentially settable according to the corresponding multiplicand digit and adapted to connect the corresponding partial product plate to the register order corresponding to the order of said connecting members.

(*b*) a plurality of moving members individually selectable according to the digit of each multiplier order for simultaneously moving said partial product plates to differentially actuate the register orders connected thereto by the intermediary of said connecting members,

(*c*) a multiorder multiplier indexing device transversely shiftable step by step and provided in each order with an element settable according to the corresponding multiplier digit,

(*d*) a single ten key keyboard for setting said connecting members and said elements,

(*e*) means sequentially conditionable by said elements for individually selecting said moving members,

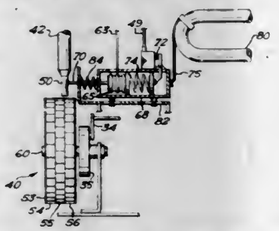
(*f*) and means operable during multiplication for stepwise shifting said indexing devices.

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**3,167,247**
**AIR CONDITIONING CONTROL APPARATUS**

**Richard C. Mott, Harwood Heights, Ill., assignor to Honeywell Inc., a corporation of Delaware**

**Filed Apr. 20, 1962, Ser. No. 189,023**
**5 Claims. (Cl. 236—1)**



1. Air conditioning control apparatus comprising, an air distribution unit including air circulation means and

a coil type heat exchanger adapted to have a temperature changing medium flowing therein, said air distribution unit being adapted to be positioned in a space to be air conditioned and having a discharge outlet therefrom and an inlet air passage therein to provide for circulation of air through said distribution unit, a turbine including a gear reducer and an operating means driven by said gear reducer, means for providing a source of air for driving said turbine from the air circulation means in said distribution unit, nozzle means disposed adjacent said turbine and connected to said air source, a plurality of rows of direction producing blades positioned in said turbine, means for shifting said nozzle means relative to said rows of blades such that the air discharged from said nozzle means is proportioned with respect to adjacent pairs of rows of blades to control the direction and speed of rotation of said turbine, a thermal system including a sensing element and an expansion element associated with said nozzle shifting means, said sensing element being responsive to the temperature of the space to be air conditioned and operative through said expansion element to operate said shifting means to shift said nozzle means and control the direction and speed of rotation of said turbine and hence said operating means of said surbine in accordance with the temperature sensed by said sensing means, and means operated by said operating means of said turbine for varying the flow of circulated air over said heat exchanger coil.

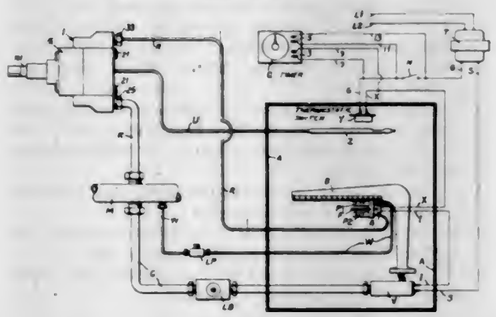
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**3,167,248**

## AUTOMATIC CONTROL OF GAS FOR HIGH AND LOW TEMPERATURE IN SEQUENCE

**Bradley C. Douglas, Kirkwood, Mo., assignor, by mesne assignments, to Micro Controls, Inc., St. Louis, Mo., a corporation of Missouri**

**Filed Aug. 16, 1962, Ser. No. 217,375**
**14 Claims. (Cl. 236—15)**



1. A gas regulating system comprising means forming a chamber, means for controlling the heating of the chamber throughout low- and high-temperature ranges comprising constantly burning pilot burner means having a low intensity flame normally issuing therefrom, a main burner located in said chamber adapted to be ignited from said pilot burner means, a main-flow control valve controlling gas flow to the main burner, an electrical control circuit comprising a source of electrical energy, electrically operated means adapted to control the operation of said valve, a first thermostatically operated switch movable between first and second positions and adapted to move to the second position in response to the temperature produced by a pilot flame of a greater intensity than the temperature produced by the low-intensity pilot flame, a second thermostatic switch located in heat-exchange relationship with said main burner and movable between first and second positions, said second thermostatic switch being in its second position when the temperature within said chamber produced by a flame emitted from the main burner is in said low range, said second switch being movable to its first position when the temperature produced by a flame emitted from the main burner rises above a predetermined value toward said high-temperature range, and a third switch movable between first and second positions, said third switch normally being in its first position, said main-flow control valve being opened by said electrically operated means when said first switch is in its second position and at least one of the remaining switches is in its second position.

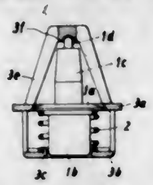
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**3,167,249**

## THERMOSTATICALLY CONTROLLED VALVES

**Alex Moosmayer and Ulrich Ebert, Heidelberg, Pfaffengrund, Germany, assignors to Mecano-Bundy G.m.b.H., Heidelberg (Neckar), Germany, a joint-stock company**

**Filed Mar. 14, 1963, Ser. No. 265,139**
**Claims priority, application Germany, Mar. 17, 1962, M 52,164**
**2 Claims. (Cl. 236—34)**



1. A thermostatically controlled valve comprising a thermostatic element having a disc-like valve member and a plunger whereby the disc-like valve member is forcibly moved away from said plunger at a predetermined temperature, a housing enclosing said element, said housing having a ring-like valve seat for closure by said disc-like valve member, a frame on one side of said seat against which said plunger bears to displace said valve member from said seat at said predetermined temperature, said frame bridging said seat and having a recess for receiving said plunger, and bridge-like support means on the other side of said valve seat, said support means defining a U-shaped slot into which a lower end of said thermostatic element can be slid, said valve seat, frame and support means being integrally formed with one another as parts of said housing; and a compression spring removably mounted on said support means and bearing at one end on said support means and at its other end bearing on said disc-like valve member for urging said disc-like valve member against said seat.

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**3,167,250**

## VALVE TILTING MEANS FOR A BURNER FUEL CONTROL SYSTEM OR THE LIKE

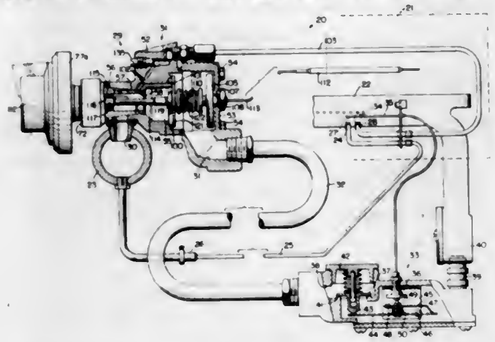
**Clarence Wantz, Charles D. Branson, and Roy C. Demi, all of Greensburg, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware**

**Filed Nov. 17, 1961, Ser. No. 152,998**
**14 Claims. (Cl. 236—68)**

1. In combination, a main burner, a source of fuel, main passage means interconnecting said source of fuel to said main burner, a pilot burner, ignition means for said burners, a first valve means in said main passage means for controlling the flow of fuel to said main burner, means responsive to a flame at said pilot burner to open said first valve means, a valve construction in said main passage means upstream from said first valve means, said valve construction having a first valve seat for interconnecting said source of fuel to said first valve means and having a second valve seat inside said first valve seat for interconnecting said source of fuel to passage means leading to said pilot burner, a valve member carried by said housing for opening and closing said valve seats,



spring means carried by said housing and extending beyond said valve seats to engage said valve member before said valve member seats against said valve seats, said spring means being offset relative to the center of said valve member to cause said valve member to cock



as it nears said second valve seat and to initially engage only a portion of said second valve seat before it completely closes said valve seats so that sufficient fuel is adapted to be supplied to said main burner to have full ignition thereof before a flame appears at said pilot burner.

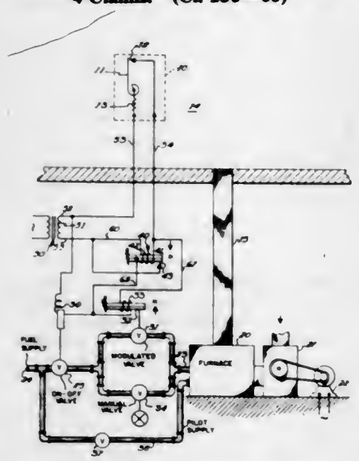
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**3,167,251**

## TEMPERATURE CONTROL APPARATUS

**John P. Kriechbaum, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware**

**Filed Sept. 26, 1962, Ser. No. 226,388**
**4 Claims. (Cl. 236—68)**



2. In a control system for delivering fuel to a burner, first valve means having a first energization winding for providing on-off control of fuel flow, second valve means having a second energization winding for providing modulating control of the flow of the fuel, a thermostat in a space to be heated, heating means to artificially heat said thermostat for cycling said thermostat in response to heating load, an integrating relay means, a source of power, means including said thermostat connecting an energization winding of said relay means to said source, said relay means being adapted to control the energization of said first and second energization windings from said source, and means including said heating means responsive to the energization of one of said energization windings for resetting a control point of said thermostat.



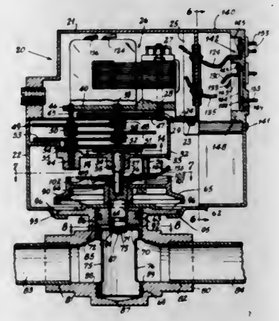
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**3,167,252**

## THERMOSTATICALLY CONTROLLED MOTORIZED HOT WATER VALVE SEALED BY FLUID PRESSURE

**Carl A. Smith, Lemay, Mo., assignor, by mesne assignments, to White-Rodgers Company, a corporation of Missouri**

**Filed May 8, 1961, Ser. No. 108,485**
**2 Claims. (Cl. 236—74)**



1. In a valve having a housing including a valve chamber, an inlet port and an outlet port in the valve chamber, a valve member for opening and closing the valve chamber, and a thermostatically controlled non-reversible motor for intermittently rotating the valve member through ninety degree turns, the improvement wherein the valve chamber has a cylindrical side wall, a rotatable valve shaft projecting into the valve chamber, the outlet port having a smaller diameter than that of the cylindrical side wall, the valve member having a thin cylindrical wall within and generally coaxial with the cylindrical wall of the valve chamber, a pair of diametrically opposed openings through the cylindrical wall of the valve member, the valve member having solid walls between the openings, the external diameter of the valve member being less than the internal diameter of the valve chamber, the valve member having a top by which it is slidably suspended from the valve shaft, whereby rotation of the valve shaft rotates the valve member to alternately establish communication between the inlet and outlet ports through the openings in the valve member and to block such communication by positioning a solid wall opposite the outlet port and a solid wall opposite the inlet port, the slidable support of the valve member permitting the valve member to slide toward the outlet port in response to inlet pressure against a solid wall, the valve member being sufficiently thin to be deformable by the inlet pressure to increase the seating area around the outlet port, the inlet pressure thereby seating a solid wall against the outlet port, the valve member being symmetrical in having diametrically opposed solid walls and diametrically opposed holes so that consecutive opening and closing of the valve can be accomplished by rotating the valve member in a single direction.

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**3,167,253**

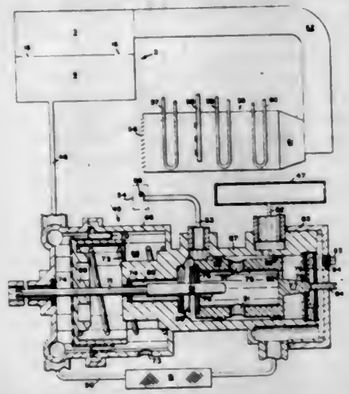
## CONTROL ARRANGEMENT FOR AIR DISTRIBUTING UNITS

**Richard A. Church, North Syracuse, and Boris W. Haritonoff, Kirkville, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**

**Filed July 27, 1961, Ser. No. 127,243**
**12 Claims. (Cl. 236—80)**

1. In combination with an air distributing unit for discharging conditioned air into an area to be treated including a plenum chamber, said plenum chamber being adapted to be placed in communication with the source of air at a desired pressure, means defining an outlet from said plenum chamber into an area to be treated, and a

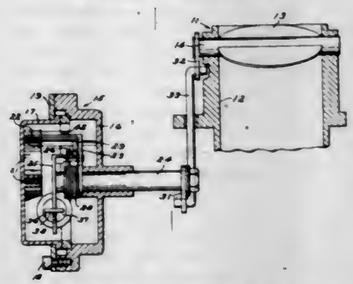
variable volume control chamber for regulating the quantity of conditioned air supplied to the area to be treated through the outlet, a control arrangement for controlling the volume of the control chamber including a valve having two chambers therein, one chamber connected to the plenum chamber and the other chamber connected to the variable volume control chamber, means forming a first



orifice disposed between the two valve chambers, means for varying the effective area of the first orifice means adapted to be responsive to the temperature of an area to be treated for bleeding air from said other valve chamber, means forming a second orifice disposed between the primary orifice and the air bleeding means, means for varying the effective area of the second orifice, and means for simultaneously adjusting the separate orifice means.

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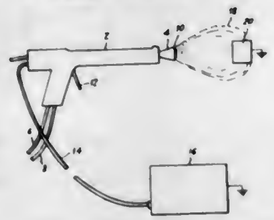
**3,167,254**
**CHOKE MECHANISM**
**Charles R. Goodyear, Franklin, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Aug. 31, 1962, Ser. No. 220,729**
**1 Claim. (Cl. 236—92)**



A charge forming device for an internal combustion engine comprising an induction passage, a choke valve positioned in said induction passage for controlling the flow of air therethrough, an automatic choke actuating mechanism comprising a housing, a choke valve actuating shaft journaled within said housing, linkage means operatively connecting said choke valve actuating shaft with said choke valve, a first lever supported within said housing and fixed to said choke valve actuating shaft, a second lever supported within said housing and journaled upon said choke valve actuating shaft, means providing a lost motion connection between said levers, spring means operatively connected to said levers for resisting relative rotation between said levers, a suction motor operatively connected to said first lever, and thermally responsive means having one end thereof operatively connected to said second lever to rotate said second lever in response to temperature variations, said spring means being yieldable upon actuation of said suction motor for relative rotation between said levers to operate said choke valve without affecting the position of said second lever and said thermally responsive means.

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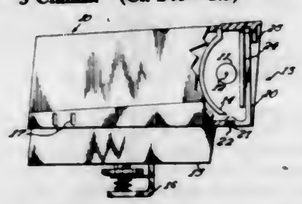
**3,167,255**
**ELECTROSTATIC SPRAYER SYSTEM HAVING A SEPARATE HIGH RESISTIVITY CONDUCTOR**
**Marcel Auguste Roger Point and Roger Claudius Morel, Grenoble, France, assignors to Societe Anonyme de Machines Electrostatiques, Grenoble, France, a corporation of France**
**Filed May 7, 1962, Ser. No. 192,720**
**Claims priority, application France May 8, 1961**
**3 Claims. (Cl. 239—15)**



1. An electrostatic spray-coating system comprising in combination, a sprayer unit having rear and forward ends, an external source of high voltage direct current, and an external supply means for supplying a sprayable composition, said sprayer unit having nozzle means including a body portion, a charging electrode at the forward end thereof, conduit means connecting the external supply means to said nozzle means in a location to discharge a spray of sprayable composition past said electrode during operation of said sprayer unit, a separate high resistivity conductor having high stationary equally distributed resistance throughout the entire length thereof connected between said external source of high voltage direct current, and said electrode for bringing said electrode to a high direct current ionizing potential, said supply means and said conductor separately connected to said nozzle means at the rear end thereof.

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**3,167,256**
**PHOTOGRAPHIC FLASH APPARATUS**
**Franklin P. Elliott, Denver, Colo., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Nov. 29, 1962, Ser. No. 240,998**
**3 Claims. (Cl. 240—1.3)**



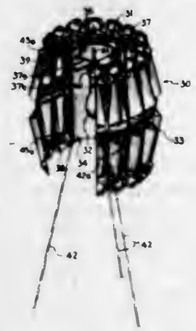
3. A photographic flash unit comprising
a housing having an open end,
a reflector mounted within said housing and facing said open end,
means to support a photographic light source in cooperative relation with said reflector,
a removable lens having a shape to conform to that of said open end, and
means to mount said lens in said housing to close said open end, said means including



a pair of spaced positioning ridges formed on the interior surface of said housing in the vicinity of said open end,
a first locking tab formed as a portion of said housing in the vicinity of said open end and in a position generally opposite to said ridges, and
a mating locking tab formed as a portion of said lens, said lens being removably mounted within said open end by the positioning of said lens between said ridges, and by the interengagement of said locking tabs.

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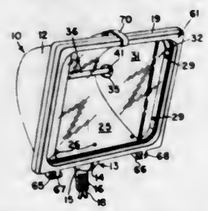
**3,167,257**
**LANTERN TYPE LIGHTING FIXTURE**
**Irving Harper, Rye, N.Y., assignor to Howard Miller Clock Company, Zeeland, Mich., a corporation of Michigan**
**Filed July 18, 1962, Ser. No. 210,730**
**2 Claims. (Cl. 240—10)**



1. In a lantern type lighting fixture for use with a source of light comprising in combination, a supporting structure including an upper frame member, a lower frame member, strut members interposed between said frame members for maintaining them in spaced relation, a light diffuser mounted on said supporting structure and surrounding the light source, and a series of independent elongated translucent light diffusing elements, each element being of substantially uniform thickness throughout and fashioned with angularly disposed surfaces to vary the translucence of elements as viewed against the light source background, each of said elements having at least one tab adjacent each of the opposite ends thereof, and each of said tabs having a slotted aperture therein for gripping engagement with one of said members.

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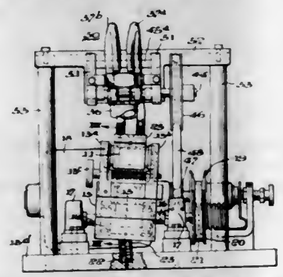
**3,167,258**
**LIGHT FIXTURE**
**Earl G. Wilde, 2518 29½ St., Rock Island, Ill.**
**Filed May 23, 1961, Ser. No. 112,052**
**9 Claims. (Cl. 240—41.3)**



6. A casing having a U-shaped back wall opening forwardly and end walls and internal ribs extending inwardly from the internal face of the casing; internal reflector means bearing against the ribs and including a forwardly opening parabolic shaped reflector with opposite ends adjacent the end walls, and a pair of end reflectors adjacent to but spaced from the end walls; a pair of bulb connectors disposed at least partially in the respective spaces between the end reflectors and the respective end walls; an elongated bulb positioned substantially on the focus axis of the parabolic reflector with opposite ends thereof supported by and connected to the respective bulb connectors, there being openings in the end reflectors sufficiently large to permit movement of the bulb and bulb connectors; means in the spacing between the end reflectors and end walls mounting each bulb connector on the casing for movement fore and aft and in respect to the forwardly opening parabolic reflector including a pair of adjusting elements extending through the casing wall and operatively connected to the respective adjusting means for effecting movement of the respective ends of the bulb, said elements having portions external of the casing for effecting the movement.

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**3,167,259**
**METHOD AND APPARATUS FOR GRINDING AND/OR BLENDING**
**Arthur H. Pitchford, 501 Castle Shannon Blvd., Pittsburgh, Pa.**
**Filed Mar. 8, 1961, Ser. No. 94,308**
**16 Claims. (Cl. 241—19)**



1. An apparatus for selective grinding comprising a grinding chamber, grinding means in the chamber, means for moving the grinding means within the chamber, spaced screen means at opposite ends of said chamber adapted to pass particles of a predetermined size, fluid inlet and outlet means at each of said screens, means acting on said inlet and outlet means to alternately open the inlet means and close the outlet means at one screen while opening the outlet means and closing the inlet means at the other screen whereby fluid may be pulsed in alternate directions through the screen means and grinding chamber, a source of fluid under pressure connected to said inlet means, and collecting means connected to said outlet means and adapted to receive material therefrom.

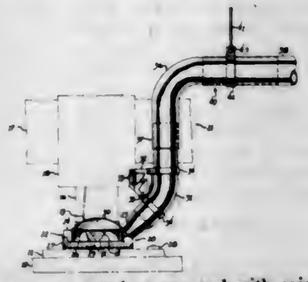
16. A method for separating particles below a predetermined size from particles above said predetermined size comprising the steps of introducing the particles into an enclosed chamber, carrying the particles in a reversing single fluid media alternately to one and then the other of a pair of spaced particle separating means at opposite ends of the chamber through which the fluid media passes, and collecting the particles passing through said particle separating means.

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**3,167,260**
**CHIP COLLECTION AND DISPOSAL APPARATUS**
**Gregory D. Gibbons and James C. Starnes, Fort Worth, Tex., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware**
**Filed Dec. 23, 1960, Ser. No. 78,080**
**2 Claims. (Cl. 241—56)**

1. Apparatus for removing chips from about the cutter of a machine tool comprising a nozzle for attachment

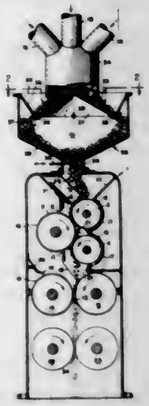
about said cutter, said nozzle including a tubular portion and a conduit portion connected with said tubular portion, said tubular portion having an internal, medial groove thereabout and substantially axial grooves below said medial groove, an impeller having radial vanes affixed to the shaft of the milling machine motor above said cutter, said impeller vanes extending outwardly into said medial groove for breaking up long ribbonlike chips,



duct means connected at one end with said conduit and at the opposite end with a storage container, said duct means including means for compensating for movement of said cutter, said impeller creating a high velocity airflow into said nozzle and through said duct means whereby said chips produced by said cutter are drawn into said nozzle through said axial grooves, broken into relatively small segments by said impeller and transported through said duct means to said storage container.

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**3,167,261**
**COFFEE GRANULIZING APPARATUS**
**William P. Woaneberger, Glen Ellyn, Ill., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware**
**Filed Dec. 4, 1961, Ser. No. 156,657**
**5 Claims. (Cl. 241—159)**



1. A coffee granulizer comprising a coffee granulizing section containing a vertical series of sets of rotatably driven granulizer rolls, coffee bean inlet means at the top of said section, coffee bean supply apparatus mounted on said granulizer, said apparatus having a downwardly sloping surface with a coffee bean outlet at the lower end of said surface, and means for feeding coffee beans to said apparatus by gravity flow of a compact mass of coffee beans directed against an area of said surface, which area is laterally displaced with respect to said outlet in said surface, said feeding means further comprising means spaced from said surface to restrict said flow to a layer of predetermined depth.

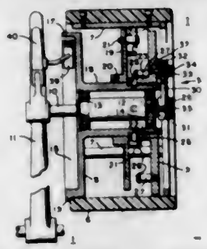
**3,167,262**
**VIBRATION-SUPPRESSED BOBBIN ASSEMBLIES**
**Samuel F. Adams, Greenville, S.C., and Robert J. Guerin, Providence, R.I., assignors to American Paper Tube Company, Woonsocket, R.I., a corporation of Rhode Island**
**Filed Apr. 13, 1962, Ser. No. 187,403**
**3 Claims. (Cl. 242—46.21)**



1. A high-speed vibration-suppressed tubular bobbin structure for mounting in combination with an elongated rotatable upright spindle of predetermined dimensions and substantially inflexible construction and having a rounded tip and an acorn portion at the base about which windings of filamentary materials are started, comprising an elongated thin-walled tubular barrel fitting loosely about the spindle, a tubular seat insert member fixed concentrically within said barrel near the upper end thereof and shaped to mate with the rounded tip of the spindle in a ball-and-socket-type connection, and a generally cylindrical tubular stabilizer insert member of laminated paper tubing concentrically within said thin-walled barrel below and spaced from said seat insert member and above the level of said acorn portion of the spindle, said tubular stabilizer insert member having a dimensioned central opening the surfaces of which form a radial clearance of about 2–3 thousandths of an inch with the spindle, whereby non-linear vibrations of the thin-walled barrel pivotally about said connection are dampened by impacting of the stabilizer insert member against the substantially inflexible spindle.

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**3,167,263**
**FILAMENT WINDING APPARATUS**
**Douglas J. Lamb, Gulf Breeze, and Euell K. McIntosh, Pensacola, Fla., assignors to Monsanto Company, a corporation of Delaware**
**Filed June 3, 1963, Ser. No. 284,865**
**11 Claims. (Cl. 242—46.21)**



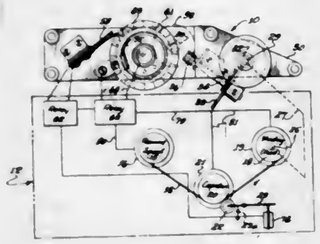
1. Filament winding apparatus comprising in combination:
(*a*) shaft means,



(*b*) a pair of cam members coaxially and rotatably mounted in spaced relation on said shaft means, each of said pair of cam members having a plurality of spaced camming surfaces formed peripherally thereof,
(*c*) retainer means for retaining said pair of cam members on said shaft means,
(*d*) a plurality of bias means operatively connected to and arranged for counterrotating said pair of cam members relative to each other,
(*e*) a hollow filament holder for building filament packages thereon having a plurality of spaced rib means extending inwardly from the wall defining the inner bore thereof mounted coaxially about said pair of spaced cam members with said plurality of rib means positioned in contact with said camming surfaces of said pair of cam members for applying a vise grip thereto to lock said hollow filament holder to said pair of cam members,
(*f*) traverse means positioned near said hollow filament holder for traversingly delivering a filament thereto from a source thereof, and
(*g*) drive means positioned in surface contact with said hollow filament holder for surfacely driving the latter and said pair of cam members rotatably about shaft means.

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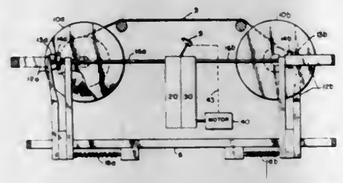
**3,167,264**
**AUTOMATIC CONTROL FOR TAPE RECORDERS**
**Koichi Ohtsu, Tokyo, Japan, assignor, by mesne assignments, of one-half to Akai Electric Co., Ltd., Tokyo, Japan, a corporation of Japan, and one-half to Rheem Manufacturing Company, New York, N.Y., a corporation of California**
**Filed Aug. 24, 1961, Ser. No. 133,744**
**10 Claims. (Cl. 242—55.12)**



1. In a tape recorder and reproducer having a pair of tape holding reels, the combination comprising:
a low speed forward drive means for driving one of said reels in a direction to advance the tape and to wind it on said one reel;
a high speed reverse drive means for driving the other of said reels in a direction to rewind the tape on said other reel;
a capstan and drive means therefor to advance the tape at a constant low speed;
circuit means connected to all of said drives and normally energizing the capstan and the forward drives;
a movable control member driven over a predetermined path by the forward drive means in a fixed relation to tape travel and always occupying a known position within its range of travel for a given tape position;
a first switch means in the circuit means actuated by first means carried on the control member when at a first predetermined position, the first switch means when actuated de-energizing the capstan and the forward drives and energizing the rewind drive;
and a second switch means in the circuit means actuated by second means carried by the control member when at a second predetermined position in the travel of the control member spaced from the first predetermined position, said second switch means when actuated restoring the circuit means to said condition normally energizing the forward capstan drives;
each of said switch actuating means carried by the control member being individually and manually adjustable relative to the control member to locate the point of actuation of the respective switch means in the range of travel of the control member.

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**3,167,265**
**FILM REEL DRIVE**
**Seymour L. Thau, Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army**
**Filed Nov. 8, 1962, Ser. No. 236,462**
**3 Claims. (Cl. 242—55.12)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



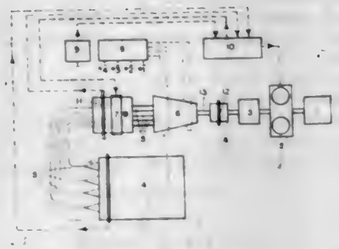
1. An apparatus for winding elongated film from a feed reel to a take-up reel comprising a first reel having a flange whose external surface forms a plane perpendicular to the axis of rotation of said first reel;
a second reel having a flange whose external surface forms a plane perpendicular to the axis of rotation of said second reel;
a first, friction-drive wheel engaging said external surface of said first reel;
a second, friction-drive wheel engaging said external surface of said second reel;
a first mechanism for maintaining the radial position of said first friction-drive wheel in alignment with the outer layer of said elongated film on said first reel;
a second mechanism for maintaining the radial position of said second friction-drive wheel in alignment with the outer layer of said elongated film on said second reel; and means for rotating said first, friction-drive wheel at a first speed to drive said first reel as a feed reel and said second, friction-drive wheel at a second speed, greater than said first speed, to drive said second reel as a take-up reel.

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**3,167,266**
**OBJECT RETRIEVAL SYSTEM**
**George R. Stibitz, Underhill, Vt. (R.F.D., Potter Place, N.H.)**
**Filed Sept. 20, 1961, Ser. No. 140,168**
**2 Claims. (Cl. 242—55.13)**

1. Means for withdrawing and replacing any desired tape in a magazine containing a multiplicity of tapes, said means comprising a flexible retriever tape, tracks constructed to constrain said retriever tape and said desired tape to move longitudinally along predetermined paths, means constructed to drive said retriever through said tracks, switch means settable in response to received signals to clear or block certain paths and to coact with said drive means to deflect said retriever tape through selected tracks to said desired tape, and coupling means

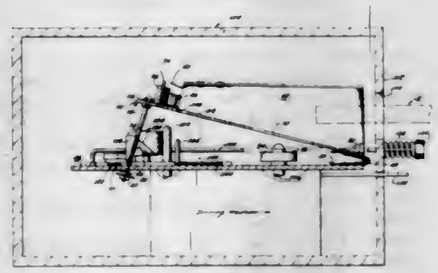
comprising a first hook pivoted at one end of said retriever tape, a second hook rigidly attached to the end



of said desired tape, means for causing the engagement of said first and second hooks, and means for causing the disengagement of said first and second hooks.

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**3,167,267**
**TAPE RECORDER**
**George R. Crane, Santa Monica, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.**
**Filed Oct. 24, 1961, Ser. No. 147,302**
**10 Claims. (Cl. 242—55.13)**

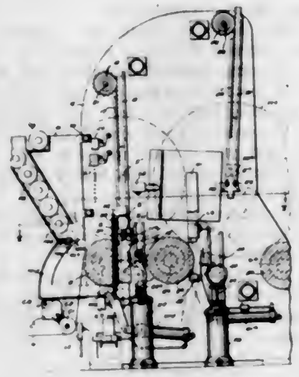


1. A dual tape deck for recording machines using tape cartridges, comprising a first tape deck assembly including a transducer head for receiving a cartridge and maintaining it in a predetermined position with respect to said transducer head, a second tape deck assembly including at least one tape driving mechanism, and means for shifting the position of one of the tape deck assemblies with respect to the other tape deck assembly to selectively engage the tape with the driving mechanism and to disengage the tape from it.

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**3,167,268**
**AUTOMATIC CUT-OFF WEB WINDER APPARATUS**
**Clifford W. Birch, Lexington, and Richard Briggs, Reading, Mass., assignors to Birch Brothers, Inc., Somerville, Mass., a corporation of Massachusetts**
**Filed Jan. 22, 1962, Ser. No. 167,771**
**16 Claims. (Cl. 242—56)**

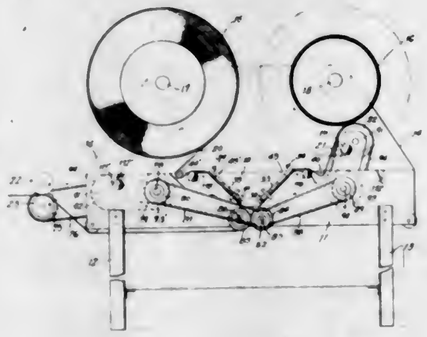
1. In a machine for winding a roll of cloth, said machine having a plurality of cloth winding rolls, shell means supported above the rolls, lapping means for engaging a cut end of cloth around the shell means, pressure controlled jaws for positioning said shell means relative to the widing rolls, knife means for cutting the web when a roll of cloth is completely wound, means for doffing the roll after cutting takes place, shell feedihg mechanism for periodically delivering a fresh shell means to the said jaws, power means for operating said parts, counter means actuated by movement of the cloth through said machine, means operated by said counter means for operating said power means, and second counter means for automatically operating the said pressure controlled



jaws, knife means, doffing means and shell means to form a series of cloth rolls of a predetermined size from a continuous web of cloth.

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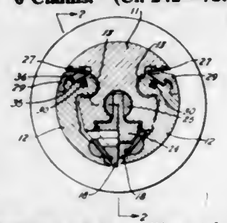
**3,167,269**
**SPLICING MACHINES**
**William H. Giles, Brooklyn, N.Y., assignor to Nu Roll Corp., Mineola, N.Y., a corporation of New York**
**Filed Sept. 14, 1962, Ser. No. 223,714**
**3 Claims. (Cl. 242—58.4)**



1. In a splicing machine, a pair of web supply rolls, web feeding rolls for feeding a web from the splicing machine, web feeding means in the splicing machine for feeding a web from each supply roll, selective driving connections between said web feeding rolls and each of said web feeding means in the splicing machine, detector means for actuating the driving connections for the web from one supply roll when the web from the other supply roll is exhausted, independent driving means for each supply roll operatively driven by said web feeding rolls, and means controlled by said detector means for moving said independent roll driving means into operative roll driving position.



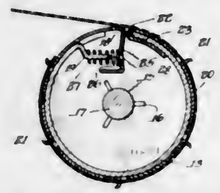
**3,167,270**
**REEL FOR COILING STRIP MATERIAL**
**Harry J. Jones, Sutton, Quebec, Canada, assignor to Dominion Engineering Works, Ltd., Montreal, Quebec, Canada, a corporation of Canada**
**Filed Apr. 29, 1963, Ser. No. 276,368**
**Claims priority, application Canada, Nov. 5, 1962, 861,728**
**6 Claims. (Cl. 242—72.1)**



1. An expansible reel for coiling strip material of various thicknesses including, a reel shaft forming a portion of the periphery of the reel, segment means pivotally mounted on said shaft forming a portion of the periphery of the reel, axially slidable operating means in operative engagement with said shaft and said segment means, said operating means arranged to place said segment means in the reel expanded position when moved axially in one direction and to place said segment means in the reel collapsed position when moved axially in the other direction, a slot formed at the periphery of the reel between said segment means and a portion of said shaft, means for securing the end of strip material to be coiled on said reel, said securing means comprising fixed gripper jaw means secured to said shaft and received in said slot and extending inwardly relative to the periphery of said reel, movable gripper jaw means pivotally mounted on said segment means and received in said slot having a portion that extends between said shaft and said segment means that serves as a continuation of the periphery of the reel, and yieldable means interposed between said movable gripper jaw means and said segment means for urging said movable jaw means towards said stationary jaw means, said movable jaw means being so formed and arranged relative to said segment means and the periphery of said reel so that it pivots inwardly by an amount directly proportional to the thickness of the strip material between the fixed and movable gripper jaw means.

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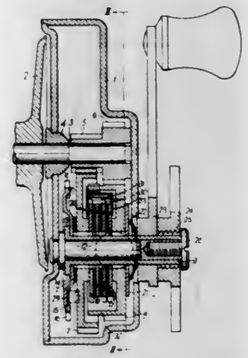
**3,167,271**
**FILM REEL**
**Norman B. Jacob, Morton Grove, Ill., assignor to Keystone Ferrule & Nut Corp., Burlington, Wis., a corporation of Wisconsin**
**Filed Sept. 18, 1961, Ser. No. 138,659**
**12 Claims. (Cl. 242—74)**



5. A motion picture film reel comprising a power driven reel including spaced flanges and a connecting hub, the hub being provided with a spring retaining member, a spring adapted to be received by the spring retaining member of the hub, and means movably carried by the hub having projections for engaging with the sprocket-receiving openings of film to be wound on the reel, said means including a member thereon abutting and cooperating with the spring to normally bias said means substantially in the direction of the rotational movement of the reel and to resiliently permit relative movement of said means with respect to said hub in the opposite direction when the sprocket-receiving openings in the film engage with the projections on the hub.

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**3,167,272**
**AUTOMATICALLY VARIABLE DRIVE GEARING FOR A FISHING REEL**
**Per Enar Lennart Frode, Svangsta, Sweden, assignor to AB Urfabriken, Svangsta, Sweden, a Swedish corporation**
**Filed Sept. 11, 1961, Ser. No. 137,109**
**Claims priority, application Sweden, Sept. 30, 1960, 9,364/60**
**11 Claims. (Cl. 242—84.54)**



10. An automatic variable drive suitable for a fishing reel comprising a shaft having at least two gears rotatably mounted thereon, the first of said gears being part of a gear train of a first transmission ratio, the second of said gears being part of a gear train of a second relatively lower transmission ratio, frictional driving means of a predetermined sliding torque between said first gear and said shaft, a member mounted on said shaft in one way driving connection with said second gear, a friction drive means of sliding torque greater than said predetermined sliding torque frictionally connecting said shaft to said member whereby said gear of lower ratio rotates with said shaft when said predetermined sliding torque is exceeded, mechanism secured to said shaft and engaging means driven by said first gear to produce sound in relative rotary movement between said gear and said shaft.

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**3,167,273**
**STABILITY AND CONTROL SYSTEM AND APPARATUS FOR DUCTED FAN AIRCRAFT**
**Alberto Alvarez Calderon, Palo Alto, Calif. (Av. Salaverry 3465, Orrantia Mar, Lima, Peru)**
**Filed Apr. 20, 1962, Ser. No. 189,062**
**13 Claims. (Cl. 244—12)**



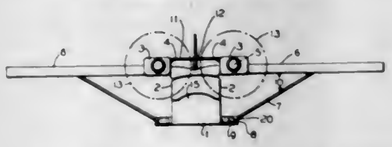
13. A vertical flight apparatus utilizing a tilting ducted fluid transporting impeller and having greatly reduced aerodynamic pitching moment variations due to variations of tilt angle of said ducted fluid transporting impeller comprising a central body portion with a longitudinal axis parallel to a high speed direction of movement of said apparatus and a tilting ducted fluid transporting impeller

mounted on a side of said central body and having an impeller axis and a duct with a fluid intake mouth with lip portions on said mouth and a mouth's diameter; connecting means mounting said tilting ducted fluid transporting impeller on said central body portion for movement between a high speed duct position in which said impeller axis is approximately parallel to said longitudinal axis and a vertical flight position in which said impeller axis is in a vertical direction approximately perpendicular to said longitudinal axis, comprising a connection having a pivotal tilt axis approximately perpendicular to said longitudinal axis and to said impeller axis, said ducted fluid transporting impeller being further characterized in that said pivotal tilt axis is located relative to said duct in a region between a first plane passing through said lip portion of said intake mouth and a second plane parallel to said first plane and located upstream of said first plane at a distance no greater than the diameter of said intake mouth.

### 3,167,274
### AERODYNAMIC SYSTEM AND APPARATUS

**Alberto Alvarez Calderon, Palo Alto, Calif.**
**(Av. Salaverry 3465, Orrantia Mar, Lima, Peru)**

**Filed Aug. 21, 1963, Ser. No. 303,616**
**14 Claims. (Cl. 244—13)**

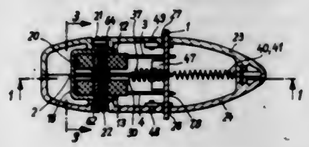


1. An aircraft having a fuselage with said fuselage having side surfaces; a pair of wings each having a leading edge, and top and bottom surfaces extending laterally from a joint with said side surfaces; a pair of engine nacelles each having a top surface with an inboard edge portion, said inboard edge portion being generally contiguous with said joint in plan view, said nacelle top surface having a rearward edge portion, said rearward edge portion joining one of said wing surfaces, said nacelle top surface having a forward edge located forwardly of said leading edges of said wings.

### 3,167,275
### SPOILER DEVICE

**Joachim Hermann, Munich, Wilhelm Kirsch, Ottobrunn, near Munich, and Heinz Donat, Munich, Germany, assignors to Bölkow-Entwicklungen Kommanditgesellschaft, Ottobrunn, near Munich, Germany**

**Filed Mar. 31, 1961, Ser. No. 99,776**
**Claims priority, application Germany, Apr. 5, 1960, B 57,352**
**7 Claims. (Cl. 244—14)**

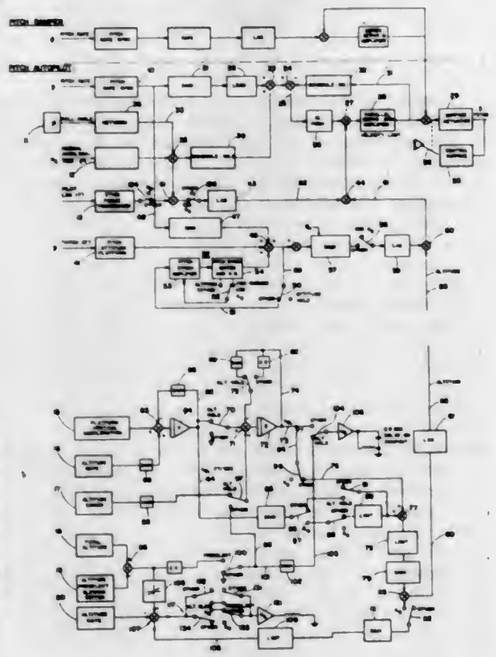


1. A spoiler assembly, arranged within a housing having a receiving slot, comprising a mounting plate, electromagnets disposed in opposition on said plate, an armature disposed between said electromagnets for actuation thereby, a spoiler plate arranged in the housings receiving slot and extending at a substantially right angle relationship to said armature plate and having a central slot into which said armature plate extends, strap members connected to said spoiler plate at four symmetrical corner locations in respect to said central slot and slidably coupled with said mounting plate, said strap members being slidably movable relative to said mounting plate, and spring means situated on two opposing sides of said spoiler plate for biasing said spoiler plate and said armature into said right angle relationship.

### 3,167,276
### CONTROL APPARATUS

**Charles A. Moosbrugger, Columbia Heights, and Knut M. Wefald, St. Louis Park, Minn., assignors to Honeywell Inc., a corporation of Delaware**

**Filed Sept. 29, 1961, Ser. No. 141,911**
**10 Claims. (Cl. 244—77)**



4. In control apparatus for an aircraft having pitch attitude changing means, in combination: operable means controlling said attitude changing means to alter attitude and thus change altitude; means providing a first signal in accordance with the error between the total altitude of an aircraft and a preselected altitude; means providing a second signal in accordance with the altitude rate of the craft; further means combining said first and second signals in opposition; and additional means controlled by said further means when said two signals are equal and opposite rendering the operable means ineffective and controlling operation of the attitude changing means by said two signals thereby effecting a roundout or leveling off of the flight path of the aircraft.

### 3,167,277
### ARREST CABLE SUPPORT

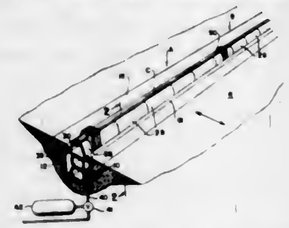
**Robert B. Cotton, Media, Pa., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware**

**Filed June 12, 1963, Ser. No. 287,417**
**13 Claims. (Cl. 244—110)**

1. An arresting cable support comprising a trench in a landing surface, a trough with an open mouth in said trench, retainer means flush with the landing surface projecting over the side edges of the mouth of the trough,



inflatable and deflatable means in the trough along the length thereof, a valve connected to a source of fluid pressure, an elognated carrier plate having an upper side and an underside in the trough below said flush landing surface retainer means, said inflatable and deflatable



means being between the bottom of the trough and the underside of said plate, arresting cable cradle sections contiguous with the upper side of said plate movable by said inflatable and deflatable means above and below the landing surface, and cable holding means intermittently aligned with said cradle sections.

### 3,167,278
### ORDNANCE AERIAL TRANSFER SYSTEM

**Francis D. Roberge, London Bridge, Va.**
**(14045 Vista Drive, P.O. Box 332, Armona, Calif.)**

**Filed Oct. 4, 1962, Ser. No. 228,427**
**10 Claims. (Cl. 244—137)**

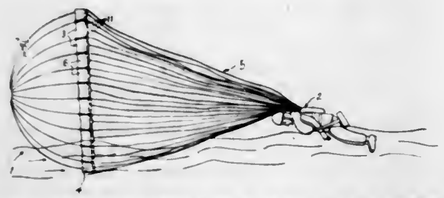


1. An ordnance carrier assembly for aerial transfer to a receiving aircraft comprising, tubular carrier means, cable connecting means mounted on the tubular means for actuation means, ordnance mounting means releasably securing said ordnance means on the tubular means, control means conditioned in response to said actuation of the cable connecting means for discharge of the ordnance means from the tubular means, and separating means rendered operative in response to said discharge of the ordnance means for propelling said tubular means away from the receiving aircraft.

### 3,167,279
### PARACHUTE

**Brian Richard Arnold Reffell, Southall, England, assignor to The Walter Kidde Company Limited, Greenford, England, a British company**

**Filed July 12, 1963, Ser. No. 294,719**
**2 Claims. (Cl. 244—145)**

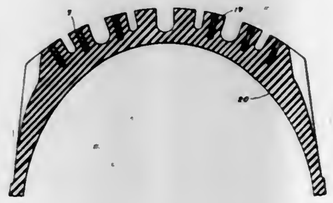


1. A parachute comprising a canopy, and a series of circumferentially arranged pockets closely adjacent the peripheral edge of said canopy on the exterior thereof, each of said pockets consisting solely of a patch which is freely foldable when the parachute is unfolded and has side edges secured to said canopy, a lower end secured to said canopy closely adjacent the peripheral edge thereof and a detached upper edge, said side edges being secured to said canopy so that the top edge between the points of securement of said side edges is slightly greater in length than the distance between such points of securement of said side edges as measured on the surface of said canopy to render the upper edge slack to enable the pocket to fully open and to be filled with water only when an area of said canopy in which said pockets are located is dragged across a body of water.

### 3,167,280
### STUDDED TRACTION STRAND ADAPTED TO BE EMBEDDED IN A TIRE TREAD

**William H. Stokes, Lakewood, Ohio, assignor to United States Steel Corporation, a corporation of New Jersey**

**Filed June 11, 1963, Ser. No. 287,068**
**2 Claims. (Cl. 245—1)**

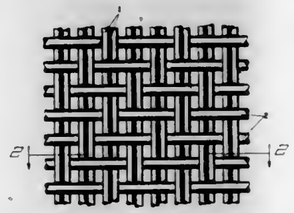


1. A traction-increasing wire structure adapted to be embedded in a tire tread comprising a base strand of at least two wires twisted together and studs spaced therealong extending outwardly from the strand, each stud being formed of a separate length of wire the midportion of the length being bent around one wire of said strand, at least one of the portions adjacent said midportion being bent around both strand wires, the end portions of said length being substantially straight, substantially parallel and in side-by-side relation.

### 3,167,281
### FOURDRINIER WIRE CLOTH

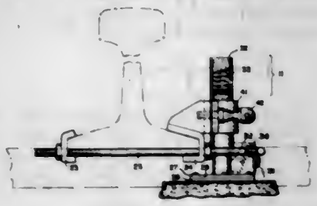
**Herbert S. Hill, Westfield, Mass., assignor, by mesne assignments, to Cheney Bigelow Wire Works Inc., Springfield, Mass., a corporation of Delaware**

**Filed June 13, 1962, Ser. No. 202,208**
**3 Claims. (Cl. 245—8)**



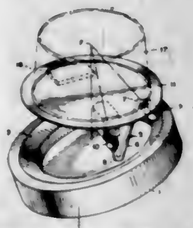
1. Three-leaf twill-weave metal cloth for paper machines characterized by the fact that in the longitudinal direction it consists of two stainless steel warp threads of circular cross-section extending in the same direction parallel to each other per mesh while in the transverse direction it consists of a single non-ferrous weft thread of circular cross-section per mesh, the metal strands of the pairs of warp threads being in contact with each other in the plane of the wire cloth, the warp threads being of smaller diameter than the diameter of the weft threads and the warp threads being located within the upper and lower outer horizontal planes of the wire cloth.

3,167,282
**RAILROAD WARNING DEVICE**
Samuel R. Hursh, 423 Bryn Mawr Ave., Bala-Cynwyd, Pa., and Clarence J. Reigh, Altoona, Pa.; said Reigh assignor to said Hursh; Frances I. Hursh, John R. Hursh, and Provident Tradesmens Bank and Trust Company, executors of said Samuel R. Hursh, deceased
Filed Feb. 3, 1964, Ser. No. 343,184
3 Claims. (Cl. 246—124)



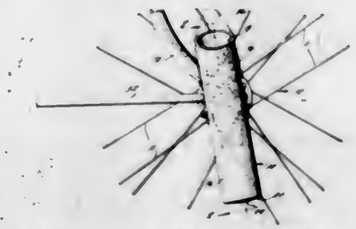
1. A rail detector physically connected to a rail for detecting movement of a train or other rail vehicle along the track by detecting vertical motion of the rail at the point of connection of the detector, said detector including a normally-closed electrical circuit having a fixed and a movable contact for opening momentarily and then closing said electrical circuit during movement of the rail downward from its normal position and for opening momentarily and then closing said electrical circuit during return movement of the rail upward to its normal position, said fixed contact having a horizontal upper stop portion, a vertical lower portion spaced therebelow, and in the intermediate region an offset portion electrically connecting said upper and lower portions and offset laterally from said vertical lower portion, said movable contact being movable vertically between said upper horizontal stop portion and said vertical lower portion without engaging said intermediate portion, said detector including spring means normally holding said movable contact in contact with said horizontal upper stop portion when said rail is in its normal underpressed position, said movable contact being physically coupled to said rail and movable downward and upward through said intermediate region and into and out of contact with the vertical lower portion as the rail is moved downward and upward.

3,167,283
**ARTICLE SUPPORTING APPARATUS**
Walter E. Soehrman and Charles T. Masterson, Lombard, Ill., assignors to American Concepts of Progress, Inc., Hinsdale, Ill., a corporation of Illinois
Filed Apr. 27, 1962, Ser. No. 190,707
7 Claims. (Cl. 248—1)



1. An article-supporting apparatus supporting a mass in a level position on a self-leveling mass-supporting platform member which is movable relative to a base member attached thereto when said base member is moving to either level or non-level positions, said apparatus comprising a movable base member and a mass-supporting platform member which is movable relative to the said movable base member, a connecting link system connecting said mass-supporting platform member and said movable base member and including at least one arm with at least two pivots, said connecting link system being pivotally connected at one end thereof to said movable base member and being pivotally connected at another portion thereof to said mass-supporting platform member, said movable base member, said mass-supporting platform member, and said connecting link system being so constructed and arranged that the point of attachment of said connecting link system to said movable base member is located at a base pivot point disposed in a position offset from a vertical line through the apparent center of gravity of said mass-supporting platform member and the mass supported thereon, the axis of said base pivot is inclined from the vertical, all of the said pivots in said connecting link system are pivotable about only one axis for each of said pivots, and upward extensions of all of said pivot axes substantially intersect to form a virtual support point located substantially on said vertical center of gravity line and sufficiently above said mass-supporting platform member so that said virtual support point is located above the combined center of gravity of the said mass-supporting platform member and a mass normally supportable thereon.

3,167,284
**FISHING ROD CARRIER FOR A BICYCLE**
James Lynch, 79 Wallace Ave., Fairview, Mass.
Filed Aug. 24, 1962, Ser. No. 219,178
1 Claim. (Cl. 248—40)



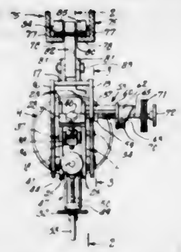
A holder for a fishing rod handle adapted to be mounted on a bicycle wheel and comprising an upright tube having the upper end thereof open and the lower end at least partially closed, a U-shaped bracket having its ends disposed intermediate said tube ends and having the free ends of its legs bent outwardly to form feet, means securing said feet to said tube, said bight of said bracket including aperture means for receiving therein the projecting end portion of a bicycle wheel axle, the upper end of said tube being tapered downwardly in a direction away from said bracket transversely of said tube and away from the bicycle wheel to define a support surface for a fishing reel carried by the fishing rod handle.

3,167,285
**COMBINED CONSTANT-VARIABLE SPRING SUPPORT DEVICE**
Leonard S. Suozzo, 366 Maple Hill Road, Hackensack, N.J.
Filed July 27, 1962, Ser. No. 212,781
1 Claim. (Cl. 248—54)

A device of the character described comprising a support, spring means carried by the support, a rod operatively associated with the spring means, a lever connected to the support and movable relative thereto about a first pivotal axis, said lever being connected to the rod and movable with respect thereto about a second pivotal axis, means for varying the distance between the first and second pivotal axes, a load-carrying unit connected to the lever and movable with respect thereto about a third pivotal

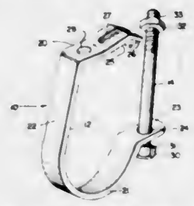


axis, means for varying the distance between the second and third pivotal axes, said pivotal axes being spaced apart, generally horizontal and parallel, the lever being provided with a first opening and the support being provided with a series of second openings which are equidistant from the first pivotal axis, and latching means including a bracket secured to and movable with the lever about the first pivotal axis, a member carried by the bracket, said member being slidable and rotatable relative to the



bracket and being movable into and out of registry with the first opening and a selected second opening, resilient means for normally and yieldingly urging the member in one direction relative to the bracket, and means responsive to rotary movement of the member in one direction to effect corresponding sliding movement thereof in a corresponding direction, said last-mentioned means comprising a cam carried by the bracket and an element carried by the member and engaging the cam.

3,167,286
**PIPE HANGER**
Philip C. Sherburne, East Providence, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,339
2 Claims. (Cl. 248—62)



1. A pipe hanger comprising a single resilient strap-like member shaped to provide a relatively flat top portion with a hole therethrough for the reception of a supporting hanger rod, a side portion depending from one end of the top portion, a curved bottom portion to support a pipe, said bottom portion having an upwardly extending end, a lug extending outwardly from said upwardly extending end and forming an angle therewith, said lug having a perforation therethrough spaced from said end, a first bent portion joined to the end of the flat top portion, said first bent portion extending outwardly away from said flat top portion and said lug, whereby the first bent portion and said lug form a small acute angle between them extending toward said side portion, a second bent portion joined to said first bent portion and extending toward said lug to form an angle between said first and second bent portions within a range extending substantially between 120° and 135°, a slot extending from the outermost end of said second bent portion and having a terminating end at a point intermediate the ends of said first bent portion, a bolt extending through said perforation and said slot adjacent said terminating end, lug engaging means proximate one end of said bolt and spaced from said upwardly extending end to permit rotation of said lug engaging means, means on said bolt spaced from said lug engaging means for engaging the top of said first bent portion and for imposing flexure therein, said last-mentioned means being slidable along the top of said second bent portion during positioning into engagement with the top of said first bent portion.

3,167,287
**HOLDER FOR COLLAPSIBLE TUBES AND THE LIKE**
William F. Collins, Jr., 1266 Singing Trees Drive, Memphis, Tenn.
Filed June 19, 1963, Ser. No. 289,027
4 Claims. (Cl. 248—108)

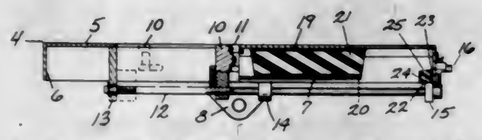


1. Means for supporting contents such as a collapsible tube and the like comprising a pair of elongated, vertical, upstanding U-shaped brackets, each said bracket having a front leg and a rear leg, the legs of each bracket being interconnected at their lower ends by a U-shaped bight underlying the open interior of the support means, a plurality of horizontal loops vertically spaced apart, rigidly connected to said brackets and extending laterally outward therefrom surrounding the open interior of the support means while permitting access to the contents thereof and retaining such contents against lateral separation from the support means, the lowermost of said loops being above said bracket bights, the uppermost of said loops connected to said brackets at the upper extremity of said front legs, a retainer terminating at and connected to the opposite extremities of said lowermost loop extending convergingly downwardly therefrom and transversely across said bights, said retainer being fixed to said bights to interconnect said bights and effect an enclosure of the lower end of said support means against accidental downward discharge of said contents, the upper ends of the rear legs of the brackets extending above said uppermost loop and the remainder of the support means and being interconnected above the uppermost said loop by a transverse brace, a depending resilient hook fixed to each said rear leg and spaced rearwardly therefrom, each said hook being resiliently urged toward its related said leg and having a flared guide end for assisting entry into the aperture of a fixture, said hooks being laterally adjustable for variation of spacing between said guide ends.

3,167,288
**RAIL CAR SUPPORT FOR SEMI-TRAILERS**
Bernard A. Farabaugh, Jr., Erie, Pa., assignor to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed May 22, 1962, Ser. No. 196,663
1 Claim. (Cl. 248—119)

In combination with a semi-trailer having a fifth wheel and kingpin, a supporting structure, a lower horizontal plate mounted in load carrying relation to the supporting structure, an upper horizontal plate spaced above the

lower plate in load receiving relation to the fifth wheel, means for locking the king pin to the upper plate, and a body of elastomer in load carrying relation between



the plates and having horizontal upper and lower surfaces respectively united to the upper and lower plates, said body sustaining vertical load in compression and horizontal load in shear.

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**3,167,289**
**COUNTER-BALANCED TELESCOPIC SUPPORT**
**Aldo Nasjleti, 1540 Aguero St., Buenos Aires, Argentina**
**Filed June 21, 1963, Ser. No. 289,615**
**12 Claims. (Cl. 248—162)**



1. A counter-balanced telescopic supporting arrangement for tables and the like, comprising a first pair of telescopic tubular members and a second pair of telescopic tubular members, said first pair including preloaded resilient means urging said first pair of telescopic members apart, said second pair of telescopic tubular members including load compensating means adapted to substantially counter-balance said preloaded resilient means, said first and second pair of telescopic members being interrelated and one of said pair of telescopic members including blocking means.

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**3,167,290**
**COLLAPSIBLE SELF-LEVELING SUPPORT STRUCTURE**
**George F. Beckwell, R.R. 1, Sugar Grove, Ill.**
**Filed July 24, 1963, Ser. No. 297,365**
**6 Claims. (Cl. 248—163)**



1. A support structure comprising, in combination, a ridge bar, a pair of legs pivotally connected to said ridge bar, a tie bar loosely connected to and bridging the legs of each pair of legs, a collar slidable on each tie bar, an annular recess in said tie bar over which the collar rests, means in said collar engageable in the annular recess, and brace rods one connected to each collar and to the ridge bar.

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**3,167,291**
**PEDESTAL FOR POLE DISPLAY**
**Frederick A. Maguire, Pompton Plains, N.J., assignor to Interstate Boochever Corp., Fair Lawn, N.J., a corporation of New Jersey**
**Filed Nov. 6, 1963, Ser. No. 321,736**
**5 Claims. (Cl. 248—188.1)**



1. A knock-down pedestal for supporting the pole of an advertising display in erect condition, comprising a central tubular portion having a longitudinal bore for accommodating the lower end of the pole, said tubular portion including upper and lower separable sections adapted to be arranged in vertical alignment, a pair of legs fastened to said lower section and extending laterally from it in opposite directions, the lower surfaces of said legs being no higher than the lower end of said lower section, and another pair of legs fastened to said upper section and extending laterally from it in opposite directions, said other pair of legs depending from said upper section and being spaced apart in the region below said upper section a distance sufficient to snugly accommodate said lower section between them, whereby said sections may be arranged in vertical alignment with said pairs of legs in crosswise relationship, the lower surfaces of said other pair of legs being so spaced below said upper section that when said sections are arranged in vertical alignment the lower surfaces of said pairs of legs will be located in the same plane to provide a stable cross-shaped supporting area.

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**3,167,292**
**BRACKET**
**Nathan L. Meyerowitz, 5000 N. Drake Ave., Chicago, Ill.**
**Filed Dec. 12, 1963, Ser. No. 330,188**
**4 Claims. (Cl. 248—230)**



1. A bracket for supporting a part adjustably on a cylindrical pole extending through the part, said bracket comprising a one-piece plastic molded part having a plate portion complementary in shape to and adapted to lie against a portion of said part encircling said pole and



facing axially of the pole, a hollow tubular member projecting laterally from one side of said plate portion to encircle said pole and having a radial projection with an aperture extending radially of the member and threaded to receive a screw, a curved flap extending circumferentially in cantilever fashion from the interior of said tubular member adjacent said radial projection and having a free end portion extending across said aperture for engagement by the inner end of a screw in the aperture and movable radially and into clamping engagement with a pole extending through the tubular member, and two ribs extending axially of said tubular portion and projecting radially and inwardly from the inner side of the portion at points spaced angularly from said flap portion so as to engage a pole in the tubular portion and concentrate on the pole the clamping force exerted by the flap portion on the pole due to turning a screw against the outer side of the flap.

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**3,167,293**
**ATTACHMENT FOR USE WITH A RECIPROCATING COMPRESSOR**
**Harvey G. Stenger, Skaneateles, and Tadek M. Kropiwnicki, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed June 26, 1962, Ser. No. 205,342**
**5 Claims. (Cl. 248—309)**

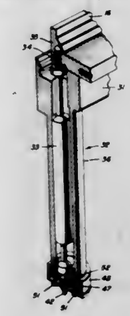


2. In a reciprocating compressor having a housing with compression means including a drive motor therein, and switch means for connecting the drive motor to a source of electric power, the combination of a member adapted to be fixedly attached to said housing having spaced mounting elements extending in an outward direction, a portion of said member between said elements being formed to extend in an outward direction, and an enclosure for said switch means having a resilient wall adapted to abut said member outwardly formed portion, said enclosure having mounting openings therein for receiving said member mounting elements so that bending of said member mounting elements into contact with said enclosure forces said enclosure in an inward direction to attach said enclosure to the compressor housing, engagement of said enclosure resilient wall with said member outwardly formed portion causing said resilient wall to arc.

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**3,167,294**
**MISSILE LAUNCHER SHOCK ABSORBER**
**Zenas B. Andrews, Los Altos, Charles R. Brown, Sunnyvale, and Wilson T. Price, Santa Clara, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Original application Jan. 9, 1961, Ser. No. 81,636, now Patent No. 3,089,389, dated May 14, 1963. Divided and this application July 27, 1962, Ser. No. 220,113**
**1 Claim. (Cl. 248—358)**

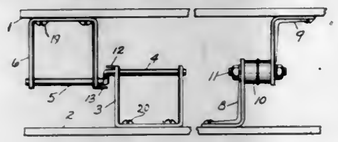
A resilient vibration absorbing device comprising a flexure rod, a tubular shaped flexure rod housing disposed about said rod, a flange mounted on the first end of said rod, a shoulder provided on said flange, a cup member attached to said rod housing, said cup member being disposed for mating relationship with said flange thereby permitting abutment thereof against said shoulder, a plurality of bolts slidably disposed through said flange and secured to said rod housing, vibration absorbing material interposed between said cup member and said flange in a manner to absorb vibrations and whereby said shoulder



limits the movement of said flange toward said housing by abutting said cup member, and said bolts function to limit the movement of said flange away from said housing and whereby said vibration absorbing material dampens vibrations being transmitted between said rod and said rod housing.

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**3,167,295**
**SEAT SUSPENSION**
**Victor J. Grumblatt, Erie, Pa., assignor to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania**
**Filed Mar. 8, 1961, Ser. No. 94,320**
**3 Claims. (Cl. 248—399)**



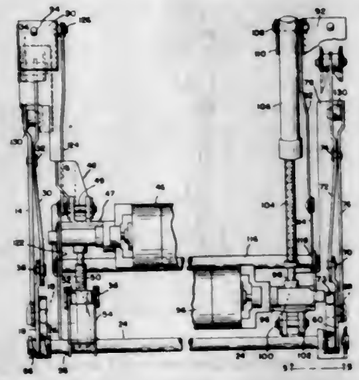
1. In combination, a seat adapted to extend crosswise of a boat or the like, a supporting structure beneath the seat, a spring and means for connecting the same in load carrying relation between the seat and the supporting structure, an independent parallelogram linkage at each end of the seat connected in load carrying relation between the seat and the supporting structure and having links pivoted on horizontal axes to the seat and to the supporting structure, the links of the linkage being slightly below horizontal in the no load position of the seat, stop means limiting upward movement of the links above said position slightly below horizontal and said links swinging downward toward the vertical as the seat is loaded to thereby carry a progressively increasing share of the seat load.

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**3,167,296**
**SEAT ADJUSTING MECHANISM**
**Joseph Pickles, Dearborn, Mich., assignor to Ferro Stamping Company, Detroit, Mich., a corporation of Michigan**
**Filed May 28, 1962, Ser. No. 198,167**
**11 Claims. (Cl. 248—419)**

1. Seat adjusting mechanism comprising a base, a seat frame above said base, a front height adjusting lever having pivot means intermediate its ends mounting said lever to said base, said front height adjusting lever extending in a fore and aft direction, pivot means connecting the front end of said front height adjusting lever to

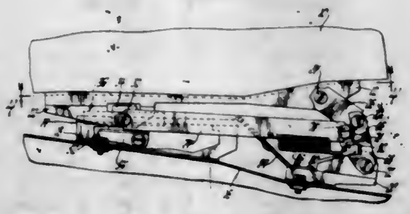
said seat frame, a rear height adjusting lever having pivot means intermediate its ends mounting said rear height adjusting lever to said base, said rear height adjusting lever extending in a fore and aft direction, pivot means connecting the rear end of said rear height adjusting



lever to said seat frame, the front end of said rear height adjusting lever and the rear end of said front height adjusting lever being in laterally overlapping relation, and a mechanical connection directly between said overlapping ends to produce simultaneous swinging movement of said levers.

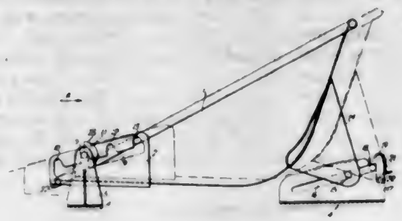
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**3,167,297**
**COMPOUND MOTION SEAT ADJUSTER**
**Thomas E. Lohr, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed June 8, 1962, Ser. No. 201,008**
**7 Claims. (Cl. 248—419)**



1. A vehicle seat adjuster having a seat frame adapted to support a vehicle seat, a front lower support member, a rear lower support member, said lower support members being adapted to be secured to a vehicle floor, an upper support member supporting one end of said seat frame, a horizontal adjusting means comprising a first track member secured to said front lower support member and a second track member slidably engaging said first track member for supporting said upper support member for movement of said upper support member substantially horizontally fore and aft relative to said lower support members, a linkage means adjustably supporting the other end of said seat frame on said rear lower support member, said linkage means being operatively connected to said horizontal adjusting means for simultaneously raising the other end of said seat frame as said seat frame is moved forward by said horizontal adjusting means and for simultaneously lowering the other end of said seat frame as said seat frame is moved aft by said horizontal adjusting means, and power means operatively associated with said seat adjusted for actuating said horizontal adjusting means.

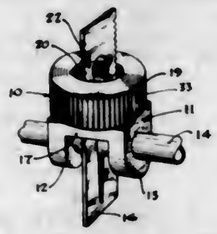
**3,167,298**
**TRACTOR SEATS**
**Alexander Senkowski, Coventry, and Bruce Lionel Cosh, Kenilworth, England, assignors to Tractor Research Limited, Stow-on-the-Wold, England, a British company**
**Filed Dec. 19, 1962, Ser. No. 245,916**
**Claims priority, application Great Britain, Jan. 9, 1962, 842/62**
**4 Claims. (Cl. 248—420)**



1. A tractor seat comprising front and rear seat supports rigidly attachable in spaced relation to the frame of a tractor, a seat, connecting elements movable respectively with the seat and integral with said supports and co-operating to permit free movement of the seat relative to the supports in horizontal and vertical planes and location of the seat in any one of a number of predetermined positions thereof relative to the supports, said connecting elements at one end of the seat being separable to permit turning of the seat about the connecting elements at the opposite end of the seat at least partly to effect inverting of the seat, and at said opposite end of the seat a locking pin and a cam one of which is movable with the seat and the other stationary, said locking pin and cam being engageable one with the other during turning of the seat to maintain engagement between the connecting elements at said opposite end of the seat.

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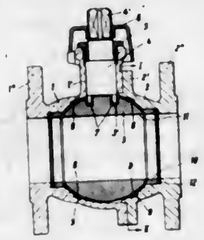
**3,167,299**
**FLOW REGULATING DEVICE**
**Wilfred C. Ling, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**
**Filed Jan. 5, 1961, Ser. No. 80,832**
**3 Claims. (Cl. 251—8)**



1. A tubing clamp for regulating flow through a length of flexible tubing, comprising: a clamp body having a pair of axially extending arm portions, a constricting bar mounted in said clamp body for axial movement between said axially extending arm portions, said constricting bar having an axially extending gradually tapering tubing constricting slot, a passageway in each arm portion disposed in general transverse alignment with each other and disposed in general transverse alignment with said gradually tapering tubing constricting slot, said aligned passageways and gradually tapering tubing constricting slot being adapted to receive a length of flexible tubing, said arm portions each being spaced a sufficient distance from said constricting bar to substantially prevent constriction of the tubing in said passageways and means engageable with said clamp body and said constricting bar for actuating said constricting bar axially.

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**3,167,300**
**SHUT-OFF COCK WITH SPHERICAL PLUG HAVING CENTERING BEARING MEANS**
**Rudolf Kaiser, Rohrerweg 18, Ettlingen, Baden, Germany**
**Filed June 20, 1961, Ser. No. 118,289**
**Claims priority, application Germany, July 11, 1960, N 18,604**
**2 Claims. (Cl. 251—315)**



1. A shut-off cock comprising a cock housing, a spherical plug valve, a throughflow passage defined in said spherical plug valve, said spherical plug valve being turnable along an axis of rotation disposed perpendicularly to the axis of said throughflow passage, and bearings of heat-resistant and chemically-resistant synthetic plastic material by which the spherical plug valve is centered within the said housing, said bearings being constructed as relatively thin segments disposed in pairs and adjacent each end of said throughflow passage and in planes substantially perpendicular to said axis of rotation, said bearings including studs arranged at the rear sides of said bearings by which said bearings are fixed in the housing and being of an extent without contacting the edges of the spherical plug valve during use, and piston-type packing rings arranged between each pair of said segments and the end of the throughflow passage of the spherical plug valve which bear on the plug valve surface and are mounted for axial displacement in recesses in the cock housing.

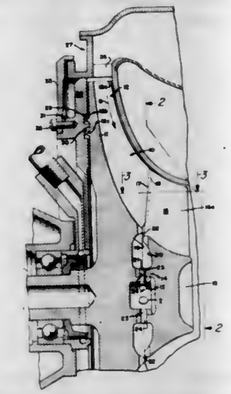
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**3,167,301**
**TURBINE WHEEL EXDUCER STRUCTURE**
**William D. Whitaker, Azusa, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California**
**Application Apr. 21, 1958, Ser. No. 729,734, now Patent No. 3,065,954, dated Nov. 27, 1962, which is a division of application Ser. No. 379,561, Sept. 11, 1953, now Patent No. 2,859,933, dated Nov. 11, 1958. Divided and this application Mar. 16, 1962, Ser. No. 180,239**
**7 Claims. (Cl. 253—39.1)**

1. A centripetal turbine wheel for operation with hot fluids having:
(*a*) a back disk, the thickness of said back disk increasing from the outer extremities to the middle thereof;
(*b*) blades on one side of said back disk;
(*c*) nozzle means outwardly of said wheel;
(*d*) a casing for said wheel and said nozzle means; and
(*e*) a heat absorbing and storing ring in close proximity to said back disk at the opposite side thereof from



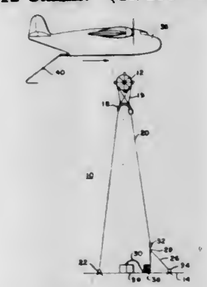
said blades, the said ring having an outer peripheral portion the mass of which is greater than the corre-



sponding annular outer peripheral portion of said back disk.

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**3,167,302**
**AERIAL PICK-UP SYSTEM**
**Robert L. Caufman, Wilmington, Del., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware**
**Filed Jan. 28, 1963, Ser. No. 254,251**
**12 Claims. (Cl. 258—1.2)**



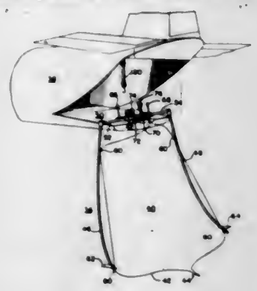
1. In an aerial pick-up system including an aircraft, pick-up means on said aircraft, a surface station, an airborne target means tethered to said surface station, a cargo at said surface station to be picked up by said aircraft, a pick-up line connected to said cargo and a pilot line interconnecting said pick-up line and said airborne target means and being tethered to said surface station to constrain said target means thereabove, the method of picking up said cargo with said aircraft comprising the steps of interconnecting said pilot line with said pick-up means, accelerating said pick-up line toward said aircraft with said pilot line by the kinetic energy of said aircraft, securing said pick-up line to said pick-up means, rupturing said pilot line and subsequently accelerating said cargo toward said aircraft by said pick-up line.

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**3,167,303**
**AERIAL PICK-UP SYSTEM**
**Robert B. Cotton, Media, Pa., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware**
**Filed Mar. 12, 1963, Ser. No. 264,611**
**39 Claims. (Cl. 258—1.2)**

1. An aerial pick-up system comprising an aircraft, a surface station, first pick-up means on said aircraft, a cargo at said surface station to be delivered to said aircraft via

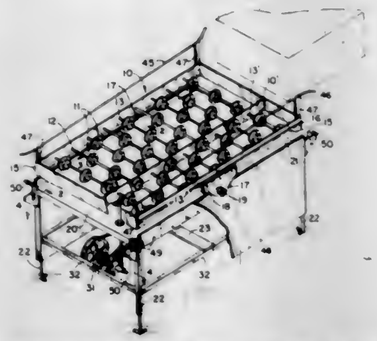
said first pick-up means while said aircraft is maintaining normal altitude and airspeed and second pick-up means at said surface station engageable by said first pick-up means, including a pick-up line connected at one end to said cargo,



a pilot line connected at one end to the other end of said pick-up line, an airborne target means and a drag parachute, said airborne target means being tethered to the other end of said pilot line by means of said drag parachute.

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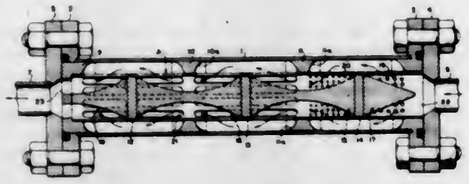
**3,167,304**
**PACKAGE AGITATOR FOR INCREASING ICE CAPACITY**
**Everett C. Lemmond, Rte. 3, Somerville, Ala.**
**Filed Oct. 17, 1962, Ser. No. 231,251**
**2 Claims. (Cl. 259—1)**



1. A food container agitator machine adapted for use in a package conveyor system for guidingly receiving containers of poultry or the like and of a construction by which a shaking action of adjustable intensity may be imparted to the containers for effecting increased ice chip container volume through compaction effected by such shaking action, said machine comprising a supporting table structure having means thereon for correlating it within a conveyor system, an elongated generally rectangular load-bearing platform mounted on and above said supporting table structure in vertically spaced relation thereto for pivotal movement of the platform about a horizontal axis approximately midway of the length thereof, said axis extending transversely of said table and parallelly spaced below said platform, a motor mounted below said platform and on said table for oscillating said platform, motor-driven linkage means of adjustably variable length connected to one end of said pivoted platform to effect controlled oscillatory shaking thereof, said platform comprising an open structure having a peripheral frame, series of relatively widely spaced rollers rotatively mounted within said peripheral frame and in the plane of said platform throughout the area thereof on transversely extending parallel axes thereby forming a platform spacial-roller load-bearing surface, platform guide rail members mounted on said platform in vertically spaced relation thereto and along the parallel opposite sides of said platform and adapted to prevent lateral displacement of containers on said platform while being subject to said controlled oscillatory shaking, said supporting table structure including a shielding impervious top surface member thereon extending substantially the length and width thereof beneath said platform, said impervious top surface shielding member being inclined downwardly in opposite oblique planes to adjacent the opposite ends of said table from an elevation located above the pivotal mounting of said platform whereby when said platform is pivotally agitated any ice chips or the like spilled onto said platform will fall freely between said spaced platform rollers onto said oppositely inclined table top member so as to be enabled to slide therefrom under the action of gravity to effectively prevent such spillage damaging and interfering with the operation of the machine.

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**3,167,305**
**HOMOGENIZING METHOD AND APPARATUS**
**Raymond Carolus Backx, Merksem, and Josephus Henricus de Vlam, 's-Gravenwezel, Belgium, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine**
**Filed July 24, 1961, Ser. No. 126,041**
**Claims priority, application Great Britain, July 26, 1960, 25,907/60**
**13 Claims. (Cl. 259—4)**

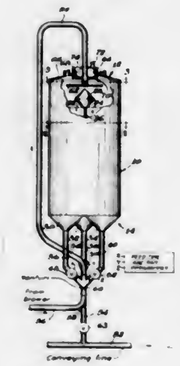


1. A homogenizing device comprising a conduit member for receiving a fluid substance, a screen member contained within the conduit member, and means for deflecting the fluid substance to flow in a continually changing direction back and forth through the screen member without abrupt directional changes.

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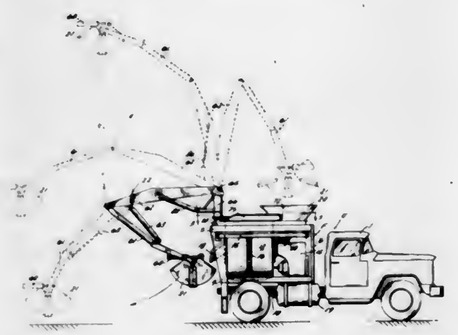
**3,167,306**
**BLENDER**
**Claude A. Clark, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Mar. 14, 1963, Ser. No. 265,245**
**18 Claims. (Cl. 259—4)**

1. Blending apparatus comprising a hollow chamber having side walls, an upper end, a lower end, a longitudinal axis, and a plurality of compartments therein, said compartments being separated one from another by a plurality of partitions, said partitions being generally parallel with the longitudinal axis of said chamber, the partitions extending from the lower end of said chamber a substantial part of the way to said upper end, each of said compartments having a hopper communicating with the lower part, a hollow member having an upper end and a lower end, said hollow member extending from below the lower end of said hoppers upwardly along said chamber and then downwardly along the longitudinal axis of the chamber and through the top of said chamber and terminating above said partitions, a plurality of discharge lines, one of said discharge lines being coupled between each of said hoppers and the part of said hollow member which is below said hoppers, each of said discharge lines having flow control means coupled thereto, valved conduit means coupled to the lower end of said hollow member part for sequentially applying gas under pressure upwardly through said hollow member in one direction and for withdrawing material from said chamber through said lower end of said hollow member in another direction, means for feeding particulated materials into said compartments from the upper end of said chamber, and means for randomly dispersing into said compartments particulated materials which are blown from said hollow member as gas is applied under pressure to the lower end of said hollow member.



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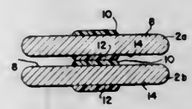
**3,167,307**
**SELF-BATCHING MIXER**
**Edwin O. Martinson, Milwaukee, Wis., assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Apr. 23, 1963, Ser. No. 274,978**
**6 Claims. (Cl. 259—154)**



1. A mobile, self batching mixer comprising, a main frame, a mixer drum rotatably mounted on said main frame, a weigh frame shiftably mounted on said main frame, an articulated boom and bucket swingably mounted on said weigh frame, a hopper mounted on said weigh frame and communicable with said drum, and scale means connected with said weigh frame for weighing the contents of said bucket and hopper.



**3,167,308**
**SPRINGS AND STRIP STEEL**
**Axel Vilhelm Bernstein, Sandviken, Sweden, and Oscar Evald Johansson, Fair Lawn, N.J., assignors to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden**
**Filed May 28, 1962, Ser. No. 198,062**
**Claims priority, application Sweden, July 21, 1961, 7,520/61**
**7 Claims. (Cl. 267—1)**



1. A spiral metal spring which has contacting surfaces tending to contact each other and produce friction, and a Teflon coating strip of lesser width than the spring and positioned substantially concentrically with respect to the longitudinal center line of one of said contacting surfaces and providing an anti-friction surface which extends throughout the longitudinal extent of said contacting surface, said coating strip having a thickness of the order of .00005 to .00016 inch.

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**3,167,309**
**HYDROPNEUMATIC SHOCK ABSORBER FOR AUTOMOTIVE VEHICLES**
**Felix Wössner, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany**
**Filed Feb. 8, 1961, Ser. No. 87,848**
**Claims priority, application Germany, Feb. 9, 1960, F 30,494**
**1 Claim. (Cl. 267—64)**



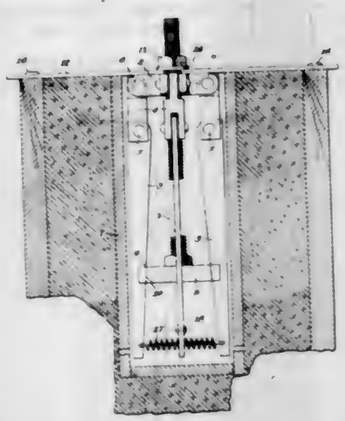
A hydropneumatic shock absorber comprising a hollow cylinder closed at both ends;
- a quantity of a liquid disposed in the lower portion of said cylinder and
- a quantity of a gas disposed within said cylinder and above said liquid, said liquid and said gas together substantially completely filling said cylinder;
- a cylindrical piston axially movable in said cylinder and immersed in said liquid;
- a reciprocable piston rod coaxial with said cylinder and connected to said piston, said piston rod extending axially outwardly of said cylinder in a liquid-tight manner through the lower end thereof, said piston having at least one axially extending hole formed

therein which permits the flow of said liquid therethrough during axial reciprocation of said piston within said cylinder; and

an impact member at least partially immersed in said liquid and peripherally connected to said cylinder, said impact member being formed of sheet material having apertures formed therein defining elongated passages the axes of which are radially spaced from the longitudinal axis of said cylinder and which extend directly through said sheet material perpendicularly with respect to the surfaces thereof, the central portion of said impact member being frusto-conically dished whereby the axes of said apertures are obliquely inclined with respect to the longitudinal axis of said cylinder, all of said apertures being positioned out of alignment with said hole in said piston, said impact member permitting free passage of said liquid therethrough at low velocity while obstructing the passage through said impact member of any high velocity jet of liquid produced by high velocity downward movement of said piston which jet would, if not obstructed, cause the formation of foam on the upper surface of said liquid.

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**3,167,310**
**PIPE SLEEVE HOLDER**
**Alvie Rosekrans, 71 Ohio Ave., Elmira, N.Y.**
**Filed Aug. 28, 1962, Ser. No. 220,090**
**5 Claims. (Cl. 269—52)**



1. In a device for holding a pipe sleeve or the like in a predetermined position and attitude within an enclosure for receiving cementitious material,

a spindle,

a yoke member slidably mounted thereon,

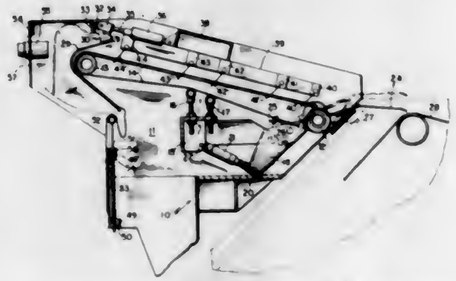
a plurality of link members pivotally connected to said yoke, a plurality of blade members pivotally connected at one end to said link members for radial movement into gripping engagement with the interior surface of said pipe sleeve, said blade members being tapered toward their free ends substantially throughout their length,

means on said spindle for expanding said blade members radially by movement toward said yoke member,

means on said spindle for actuating the expanding means, and

means clamped between said last-mentioned means and said yoke member for positioning and orienting the assembly of said device and the pipe sleeve with respect to said enclosure.

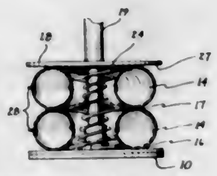
**3,167,311**
**LAUNDRY MACHINES**
**Harvey L. Windmiller, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware**
**Filed Nov. 9, 1962, Ser. No. 236,573**
**3 Claims. (Cl. 271—68)**



1. In a flatware article stacking apparatus, a base frame having end walls; parallel spaced rolls journaled in bearings in said end walls; endless conveyor belt means encircling said rolls, providing a receiving and a delivery end thereof; an article supporting rack means beneath the delivery end of said conveyor belt means; a way along said conveyor belt means; a first switch in said way adjacent the delivery end of said belt means; a plurality of distance switches mounted in said way, spaced various distances from said first switch toward said receiving end; means for selecting one of said distance switches; circuit means including said first switch and a selected one of said distance switches; diverting means at the delivery end of said conveyor belt means, normally in a position to divert the path of travel of an article being delivered from said conveyor belt means; means responsive to the operation of said first switch and the selected one of said distance switches by the leading end of an article on said conveyor belt means as it reaches said first switch for actuating said circuit to move said diverting means to an ineffective position, and subsequently to an effective position when the trailing end of said article again actuates said distance switch for causing said article to be draped over said rack means with substantially half the length of said article on each side thereof.

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**3,167,312**
**TRAMPOLINE TYPE BOUNCER TOY**
**Roger M. Blanchard, 4819 E. Waverly, Tucson, Ariz.**
**Filed Aug. 2, 1962, Ser. No. 214,263**
**1 Claim. (Cl. 272—57)**



A bouncer toy comprising:

(*a*) a base adapted for support on a plane surface;

(*b*) a generally tubular upright secured to the base centrally thereof;

(*c*) a sleeve surrounding said upright intermediate its ends;

(*d*) friction reducing means between the sleeve and upright permitting free relative longitudinal movement while still snugly supporting the sleeve against wobbling and tipping action;



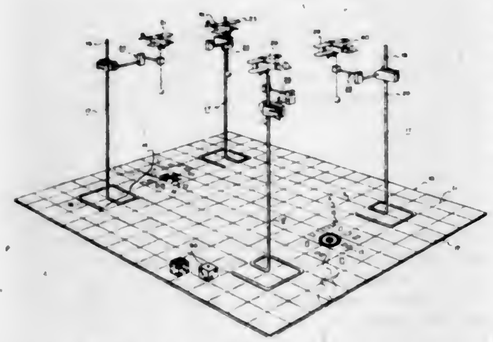
(*e*) a movable standing platform carried by the sleeve at a lower end thereof;

(*f*) two superposed resilient toroidally shaped pneumatic tubes of relatively large circular cross-section, said tubes being adhesively secured respectively to said base, to the platform and to each other along a line of mutual contact; and

(*g*) compression spring means comprising a single helically wound spring in relatively close contact with said pneumatic tubes, the helices of said spring being of relatively small diameter at the maximum tube diameter, and relatively large diameter above and below said tubes.

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**3,167,313**
**GAME BOARD WITH ALTITUDE STANDARDS AND SIMULATED AIRCRAFT MOUNTED THEREON WITH MEANS FOR VARYING ALTITUDE AND ATTITUDE**
**Kent J. Davenport, 2490 South 6th East, Salt Lake City, Utah, and John S. McEwan, 191 South 4th West, Provo, Utah**
**Filed June 21, 1963, Ser. No. 289,591**
**6 Claims. (Cl. 273—134)**

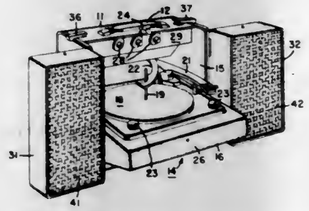


1. A game for simulating aerial combat, said game including a game board marked off in squares on its upper surface and simulating terrain over which aerial combat is to take place; movable, altitude standards movably disposed and resting upon said game board; plural aircraft models; and plural, universal coupling means mounting respective ones of said aircraft models to respective ones of said altitude standards for enabling the altitudes of respective ones of said aircraft above said game board to be manually varied and, further, for permitting selected, manual variation of attitude and orientation of respective ones of said aircraft.

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**3,167,314**
**PORTABLE PHONOGRAPH**
**Arthur R. Bentsen, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed June 1, 1962, Ser. No. 199,343**
**7 Claims. (Cl. 274—2)**

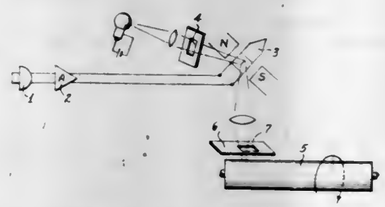
1. A portable phonograph comprising a normally upright housing resembling a suitcase, said housing including a case having front and rear sides and an opening in the front side thereof, a record player tiltably mounted in said case on pivots spaced inwardly from the front side of said case, said record player being pivotable about a horizontal axis between a substantially vertical storage position in said case and a horizontal open position for use, said pivots located inwardly from the front side of the case and in a lower half of said case so that the record player pivots downwardly for movement from its vertical storage position to its horizontal open position, said record player being located to close said opening and form part of said housing when in said vertical position and being located partially within said casing and partially extending outwardly from the opening in the front side of said casing when the record player is in the horizontal open position, and a pair of loudspeaker enclosures respectively hinged to said case at opposite ends thereof, said enclosures being each arranged to pivot about an associated vertical axis disposed adjacent the front side of said case, each of said



loudspeaker enclosures being pivotally movable about its axis between an operative position facing forwardly and a closed position contiguous to an associated end of said case, said loudspeaker enclosures being arranged in flanking relationship to said record player when said record player is in the open position and said enclosures are in their operative positions, whereby the pivoted arrangement of said record player and said loudspeaker enclosures with respect to said case provides a portable phonograph of extremely compact construction.

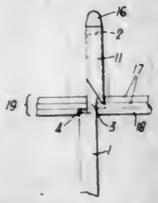
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**3,167,315**
**MUSICAL INSTRUMENT**
**Minoru Ikeda, 526 Oishi-machi, Kurume, Fukuoka Prefecture, Japan**
**Filed Oct. 18, 1961, Ser. No. 145,809**
**Claims priority, application Japan, Dec. 20, 1960, 35/50,539**
**3 Claims. (Cl. 274—3)**



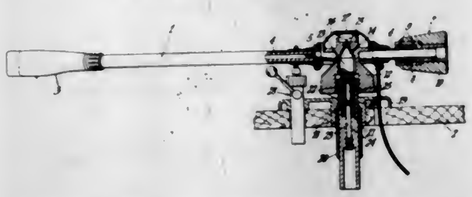
3. The method of producing a cylinder suitable for use in a musical device which comprises the steps of reflecting a beam of light onto an annular portion of the peripheral surface of a rotating cylinder having a photosensitive peripheral surface, varying at a predetermined frequency the effective width of said beam as it falls on said surface to form thereon an exposed band of regularly varying width, projecting light beams in like manner against other spaced annular portions of the periphery of said cyinder to form similar exposed bands axially spaced from each other along the cylinder, the frequencies at which the effective width of said light beams is varied bearing the same proportions to each other as the frequencies of the notes of a musical scale, and forming on a non-magnetic cylindrical surface bands comprising magnetic metal having the configuration of said exposed bands.

**3,167,316**
**PHONOGRAPHS**
**Edward Thomas Humby, Emarson Park, Hornchurch, Essex, England, assignor to The Magnavox Electronics Company Limited**
**Filed Feb. 23, 1962, Ser. No. 175,142**
**Claims priority, application Great Britain Mar. 1, 1961**
**4 Claims. (Cl. 274—10)**



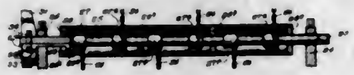
1. In an automatic record-changing phonograph having a mechanism which brings about a record change cycle the improvement which comprises a magazine spindle having a lower cylindrical portion, an upper cylindrical portion laterally offset above said lower cylindrical portion, a horizontal step formed on top of said lower cylindrical portion, a transition section between said step and the bottom of said upper cylindrical portion, a tapering surface on said transition section whereby, in use, records may be caused to ride smoothly between said lower and upper cylindrical portions, and a sleeve embracing said upper cylindrical portion, said sleeve being slidable axially along said cylindrical portion between two positions, in the lower of which positions said sleeve projects downwards towards said step over said transition section and, by engagement in their central holes, prevents all except the lowermost in a stack of records on said step from being moved laterally, and in the upper of which said sleeve is entirely above said transition section and allows a stack of records to be simultaneously withdrawn from the spindle over said transition section and said upper cylindrical portion.

**3,167,317**
**CARRYING ARMS FOR SOUND REPRODUCTION PICK-UPS**
**Percy Wilson, 56 Staunton Road, Headington, Oxford, England**
**Filed Dec. 12, 1960, Ser. No. 75,245**
**Claims priority, application Great Britain, Dec. 15, 1959, 42,569/59**
**2 Claims. (Cl. 274—23)**



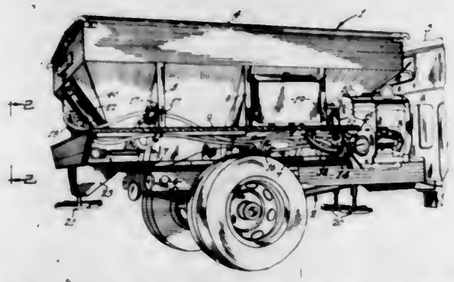
1. A phonograph pick-up arm assembly comprising, in combination, a relatively massive balance member; means pivotally supporting said balance member for universal lateral swinging movement with its center of gravity normally substantially directly below its pivotal support; a relatively elongated pick-up arm; means connecting said pick-up arm in balancing relation to said balance member for pivotal movement relative thereto about an axis which is disposed normally horizontal in use and which is substantially directly below such pivotal support; said supporting means comprising a generally upright post having a pivot for said balance member at its upper end; said balance member extending downwardly from its pivotal support and surrounding, and being spaced laterally from, said post; a sleeve telescopically receiving said post and having a closed inner end spaced from the inner end of said post; and fluid within said sleeve between the closed inner end thereof and the inner end of said post and spacing the closed inner end of said sleeve from the inner end of said post; the closed inner end of said sleeve being formed with an aperture closed by a removable plug to permit the removal and insertion of said post in said sleeve.

**3,167,318**
**MATERIAL UNLOADER AND SPREADER WITH BODILY SHIFTABLE SPREADER SHAFT**
**Howard J. Ferris, Gulfport, Fla., assignor to Starline, Inc., a corporation of Illinois**
**Filed Oct. 15, 1962, Ser. No. 230,396**
**16 Claims. (Cl. 275—3)**



12. A material spreader comprising, in combination: a wheeled material container having two end walls and an arcuate wall secured to said end walls to provide the bottom and sides of the container; rotatable unloader shaft means extending longitudinally of the container; drive means for rotating said shaft means; sleeve means mounted for rotation on said shaft means; a plurality of flexible flail members secured to one of said means and adapted to wind around said one of said means, said flail members having flail plates which may abut the sleeve means when said members are so wound; and means for selectively clutching the sleeve means to the shaft means for rotation therewith or releasing said sleeve means for rotation about the shaft, whereby said flail members may unwind from said one of said means in response to operation of said clutch means during rotation of the unloader assembly by said drive means.

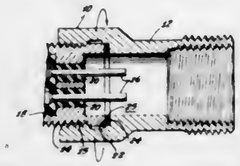
**3,167,319**
**SAND SPREADING MECHANISM WITH REVERSIBLE CONVEYOR**
**Donald R. Kerr, Bucyrus, Ohio, assignor to Anthony J. Torrey, Framingham, Mass.**
**Filed May 16, 1961, Ser. No. 110,473**
**3 Claims. (Cl. 275—8)**



1. In a sand spreader for a vehicle, comprising an open bottom hopper for storing a supply of sand, a prime mover independent of the engine means for propelling the said vehicle mounted adjacent the said sand spreader, a reversible conveyor mounted longitudinally beneath said hopper, rotary spinner means mounted at the front of said spreader and disposed below the front end of said conveyor to dispense sand conveyed thereto by said conveyor, rotary spinner means mounted at the rear of said spreader to dispense sand conveyed thereto by said conveyor, said prime mover driving a first hydraulic motor associated therewith, said first hydraulic motor driving the said conveyor in a rearward direction, a second hydraulic motor associated with said rear mounted spinner means, valve means being selectively positioned whereby power delivered from said prime mover to said first hydraulic motor is delivered to said second hydraulic motor rotating said rear mounted spinner means when the conveyor is driven in the rearmost direction, said valve means also being selectively positioned to render the rear mounted spinners inoperable when the conveyor is driven in a forward direction and the spinner means mounted at the front of said spreader are rotated by said first hydraulic motor driven by said prime mover.



**3,167,320**
**MOLECULAR SEAL**
**James C. Kyle, Glendora, Calif., assignor to Physical Sciences Corporation, Pasadena, Calif., a corporation of California**
**Filed Jan. 23, 1961, Ser. No. 84,228**
**2 Claims. (Cl. 277—1)**



1. A method of forming a static fluid-tight seal at a joint surface formed from metals of a particular malleability characterized by the steps of:

abutting against the joint surface a sealing ring formed from a material having a greater malleability than the particular malleability and formed with at least one narrow rib to reduce the areas of contact with the joint surface to an area substantially less than the cross-sectional area of the rib in the plane of the rib;

placing the ring under sufficient pressure relative to the joint surface to produce a plastic flow of the material of the rib against said joint surface for a widening of the rib and a transfer of the material of the rib to the joint surface without any deformation of the joint surface and for the creation of a molecular bond between the rib and the joint surface and the fusing of the material of the rib with the metal of the joint surface; and

causing relative concentric rotation between the rib and the joint surface for a wiping action to promote the transfer of metal from the rib to the joint surface.

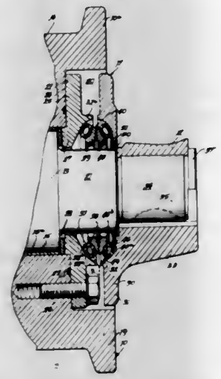
**3,167,321**
**SEAL BETWEEN RELATIVELY ROTATING PARTS**
**Harry Albert Land, Algonquin, and Paul F. Plomb, Elmhurst, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey**
**Filed May 21, 1962, Ser. No. 196,305**
**4 Claims. (Cl. 277—92)**

1. Face sealing structure between rotor and stator parts comprising, in combination with said parts:

a free-floating pair of symmetrical seal ring parts of hard material having relatively rotatable, radially extending end surfaces which engage in the plane of the surfaces in face seal contact with one another, and having concave backing faces;

each of said rotor and stator parts having a concave face opposing a respective backing face and together presenting generally longitudinally acting, longitudinally opposing, concave pressure surfaces; and

a pair of symmetrical, hollow, pressure O-rings of elastomeric material sealed between and compressed by the opposing concave pressure surfaces of said parts to float the pair of seal ring parts, said O-rings nesting in the concave backing faces and being compressed into an elliptical, hollow shape wherein, as



viewed in cross section, the respective O-rings include major axes, which axes when extended intersecting approximately in the plane of said seal-ring-part surfaces at a point radially outwardly of said surfaces, and which axes at their intersection forming an acute, inwardly facing angle.

**3,167,322**
**SEAL**
**Richard W. Aichroth, 12 Rose St., Islip, N.Y.**
**Filed Nov. 27, 1961, Ser. No. 155,040**
**2 Claims. (Cl. 277—180)**

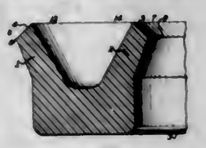



1. A seal comprising a retainer having substantially plane parallel radial walls defining its thickness and a peripheral wall containing a radially convergent groove defining a seat, and a continuous resilient deformable molded body engaging said seat, said body in its undeformed condition having a substantially circular cross section and a diameter exceeding the thickness of said retainer whereby in its undeformed condition a portion of said body extends axially beyond said retainer, said groove having a volume exceeding half the volume of said portion, one of said radial walls providing an annular recess containing a relatively soft annulus of sealing material projecting axially beyond said radial wall.

**3,167,323**
**SEAL CONSTRUCTION**
**Bernard S. Appleton, Woodmere, and Heinz Valentin Walter, New Rochelle, N.Y., assignors to Disogrin Industries, a division of Pellon Corporation, Mount Vernon, N.Y., a corporation of New York**
**Filed Apr. 13, 1962, Ser. No. 187,292**
**10 Claims. (Cl. 277—205)**

1. In a seal for fluids having a flexible side wall with a sealing lip adapted to be pressed by fluid pressure in sealing engagement with a surface, the improvement which comprises said sealing lip being beveled at an obtuse angle with respect to said side wall, forming a sealing edge at the apex of said obtuse angle, said side wall being formed of polyurethane having a tensile strength of at

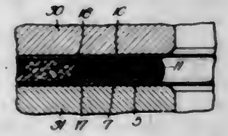
least 4500 lbs. per square inch, an elongation at break of at least 400%, a modulus of elasticity between about 1000 and 2000 lbs. per square inch at 100%, and 2000–3500



lbs. per square inch at 300%, a tear strength between 600–700 lbs. per inch, a compression modulus at 10% deflection between about 475 and 800 lbs. per square inch and a hardness between about 85 and 95.

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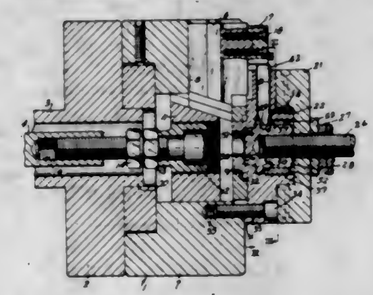
3,167,324
GROMMET UNIT
John J. Kratochvil, Berwyn, Ill., assignor to Victor Manufacturing & Gasket Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1963, Ser. No. 264,888
11 Claims. (Cl. 277—235)



7. A compressible gasket containing a perforation, a grommet unit fixed in the perforation; a deformable washer secured in said unit and having an exposed portion extending above the unit and upper surface of the gasket in uncompressed state, said unit confining the washer when the gasket and grommet unit are compressed to insure seal forming engagement of the exposed portion of the washer with a machine part engaged thereby.

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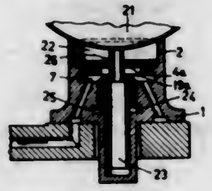
3,167,325
ADAPTER FOR MOUNTING EXPANDING MANDREL ON A CHUCK
Russell E. Buck, Scotts, Mich., assignor to Buck Tool Company, Kalamazoo, Mich., a corporation of Michigan
Filed Oct. 31, 1963, Ser. No. 320,283
6 Claims. (Cl. 279—1)



1. A mounting device for mounting a workholding mandrel having a drawbar onto a jaw chuck having several chuck jaws, comprising:
a body member adapted for mounting rigidly onto the face of a chuck;
a central opening within said body member and a drawbar actuating device slidably arranged therewithin and adapted for effecting actuation of said drawbar;
a plurality of radially movable means engageable with said chuck jaws;
translating means responsive to radial movement of said radially movable means for effecting axial movement of said actuating device whereby normal operation of said chuck may be utilized to effect work engaging or releasing operation of said mandrel.

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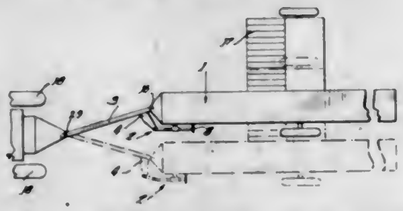
3,167,326
HOLDER
Johannes Hendrikus Heessels, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 19, 1961, Ser. No. 118,042
Claims priority, application Netherlands, July 12, 1960, 253,716
3 Claims. (Cl. 279—3)



1. Apparatus for holding an object by the use of differential pressure comprising a holder body member having means for engaging an object to be held thereby and defining a recess in said body member, an aperture in a wall of said body member communicating said recess with a source of subatmospheric pressure, a valve member reciprocal within a bore of said body member for opening and closing said aperture, said valve member having a stem portion freely movable within said aperture and in spaced relation with said wall, said stem portion projecting into said recess for engagement with an object positioned on said means, and an enlarged head portion slidable in said bore connected with said stem on the side of said wall remote from said recess, a valve seat on said wall adjacent said head portion, a central aperture through said valve member for admitting ambient atmospheric pressure to the interior of said bore for forcing said head portion against said valve seat when said central aperture is opened to the atmosphere.

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3,167,327
STEERING AND SUPPORT DEVICE
Doyle A. Bumpious, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 24, 1963, Ser. No. 318,584
4 Claims. (Cl. 280—464)



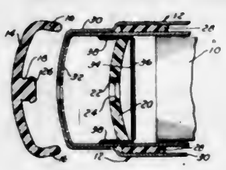
1. For an agricultural machine having a supporting structure and a draft tongue pivotally attached thereto, a steering and supporting device comprising: a jack assembly including a base portion and an extensible and retractable standard carried by said base portion, said base portion including means for mounting said base portion on one of said supporting structure and said tongue for movement from a first position where said standard is horizontally disposed to a second position where said



standard is vertically disposed, said jack assembly including holding means for securing said base portion in at least one of said first and said second positions, said standard including a rest for supporting said machine when said standard is in said vertically disposed position, and connecting means on said standard for connecting said standard to one of said tongue and said supporting structure when said standard is in said horizontally-disposed position.

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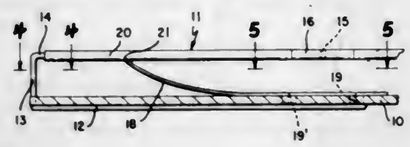
3,167,328
PLASTIC SPINE CONSTRUCTION FOR BOOKS
Sydney H. Dengle and William McKowen, Des Moines, Iowa, assignors to Meredith Publishing Company, Des Moines, Iowa, a corporation of Iowa
Filed Aug. 6, 1962, Ser. No. 215,127
6 Claims. (Cl. 281—29)



1. In a spine construction for books, a curved outer spine member, a curved inner spine member, a fabric element inside said inner spine member and at least partially around the outside thereof, book pages adhesively secured to that portion of said fabric element on the inside of said inner spine member, that portion of said fabric element on the outside of said inner spine member being adhesively secured to said outside thereof, page covers having a back member interposed between said spine members, and means for holding said spine members assembled on opposite sides of said back member.

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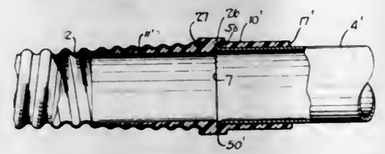
3,167,329
CLIP BOARD
Clifford F. Ernst, 301 Cedarbrook Lane, Sandusky, Ohio
Filed Feb. 4, 1963, Ser. No. 256,084
2 Claims. (Cl. 281—44)



2. A clip board comprising:
a flat panel;
a strap loop having a pair of relatively long arms, one first arm extending across the front surface of said panel and the other arm extending across the back surface of said panel, there being relatively short arms connecting the long arms and disposed along the side edges respectively of the panel, the said other arm and the said short arms of said loop being substantially rigid with respect to one another;
notches in opposite side edges of said panel respectively to receive the short arms of said loop; and
a leaf spring of bowed form having the intermediate portion thereof secured to the back surface of said panel and the opposite end portions thereof engaging the said other arm of said loop for urging such arm away from the back surface of said panel to cause the said first arm yieldingly to grip the front surface of said panel.

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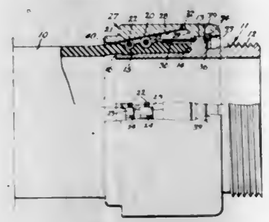
3,167,330
COUPLING
Herbert T. Draudt, North Olmsted, Ohio (3612 Clague Road, Cleveland 26, Ohio), assignor of one-half to Donald A. Draudt, North Olmsted, Ohio
Filed Apr. 26, 1957, Ser. No. 655,381
9 Claims. (Cl. 285—7)



1. In combination a thin-walled flexible tubular member having a wire reinforcement therein forming a corrugated surface, a rigid tubular member and coupling means for joining said tubular member in end to end relationship, said coupling means comprising an elongated hollow sleeve member having one end portion extending longitudinally and concentrically with said flexible member and another end portion extending longitudinally and concentrically with said rigid member, said one end portion being disposed in said flexible member, being flexible but of greater rigidity than said flexible member and being of increasing flexibility in a direction away from said another end portion and having an exterior surface corrugated complementarily to said flexible member, said sleeve having an arcuate rearwardly opening groove with an arcuate axially parallel flange intermediate the ends thereof and said flexible member overlapping said one end portion of said sleeve and having an end disposed within said groove and engaged between said flange and the adjacent corrugation on said surface of said one end portion of said sleeve.

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3,167,331
HOSE COUPLING CONNECTION
Don J. Marshall, Edgewater, Md., assignor to Dixon Valve & Coupling Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 1, 1962, Ser. No. 199,304
9 Claims. (Cl. 285—27)

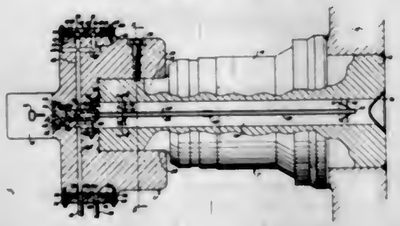


1. A hose coupling connection, comprising in combination, a nipple on which the end portion of a hose is telescoped in assembly, said nipple having a radial surface engageable by the end surface of the hose, an annular circumferentially resilient gripper ring surrounding the hose on said nipple, a plurality of segmental generally cylindrical rigid roller elements equally spaced around said ring, circumferentially resilient spacer elements disposed between said segmental roller elements, an annular sleeve embracing said nipple, hose and gripper ring, said sleeve having a frusto-conical tapered surface engageable with the segmental roller elements of said gripper ring to roll them along on the hose and squeeze it upon the nipple, and means for holding the sleeve and nipple together against axial separation in final assembly position.

### 3,167,332
### ROTATING JOINT FOR WATER COOLED TRUNNION

Charles F. Simmers, Canfield, Ohio, assignor to The Morgan Engineering Co., Alliance, Ohio, a corporation of Ohio

Filed Dec. 12, 1962, Ser. No. 244,061
8 Claims. (Cl. 285—41)



1. A cooling system for a tiltable converter trunnion member having a central bore with an outward end remote from the said converter and having a coupling member in driving engagement with said trunnion and overlying the outward end of said bore and overlying the end of said trunnion member remote from the converter, the coupling member having an interior opening adjacent the outward end of said bore; said system comprising

ring means with inlet and outlet channels for cooling fluid and slidably mounted on the outside of said coupling member,

annular seals coacting with said ring means and coupling member and segregating said channels,

a closure for said bore proximate the outward end of said bore and having inlet and outlet fluid passages communicating with said bore,

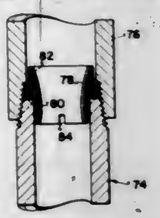
fluid conducting means connecting said inlet and outlet channels with said inlet and outlet passages respectively, and

inlet and outlet pipes connected to said ring means for conducting fluid to and from said inlet and outlet channels respectively.

### 3,167,333
### SEALED PIPE JOINT

Alvin C. Hall, Woodbury, and Arendt R. Koos, Clark, N.J., assignors to Richard L. Cannaday, New York, N.Y.

Filed Nov. 13, 1959, Ser. No. 852,644
1 Claim. (Cl. 285—140)

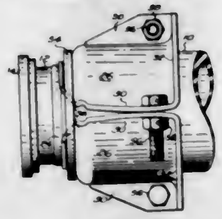



A sealed pipe joint, said joint comprising (1) a first pipe member having an interior surface of which at least a portion is threaded on a taper, (2) a second pipe member having an end region and further having an exterior surface of which at least a portion adjacent said end region is threaded on a taper, said second pipe member being in threaded engagement with said first pipe member, (3) a ring element of deformable material relatively soft with respect to the materials of said first and second pipe members and having inner and outer circumferential surfaces, said ring element being held in compression on at least a part of its outer circumferential surface against at least a part of the threaded portion of said interior surface of said first pipe member, and further being held in compression against said end region of said second pipe member and extending into the bore of said second pipe member, and (4) a hollow support piece having inner and outer circumferential surfaces and being disposed within said ring element with the inner circumferential surface of said ring element and the outer circumferential surface of said support piece in essentially full area contact from surface to surface, said support piece being relatively stiff diametrally with respect to said ring element.

### 3,167,334
### SEGMENTAL HOSE FITTING

William M. Cline, Rives Junction, and William G. Clemons, Jackson, Mich., assignors to Aeroquip Corporation, Jackson, Mich., a corporation of Michigan

Filed Sept. 24, 1958, Ser. No. 763,020
1 Claim. (Cl. 285—243)



A detachable, reusable flexible hose end fitting characterized by its ease of assembly, adaptability to large size hose and ability to compensate for hose material flow comprising a nipple having a cylindrical portion insertable into the bore of the hose, a radial abutment annularly formed on the exterior of said nipple axially spaced from said cylindrical portion and engageable with the end of the hose, a segmented socket for embracing and compressing a hose mounted on said nipple, said socket comprising segments having generally cylindrical inner and outer surfaces and first and second means at opposite ends to support said segments assembled on said nipple in a contracted position, resilient deflectable members mounted on said segments and comprising radially extending ear portions formed from the material of the segments, an arcuate hook portion defined on each of said segments adapted to engage said first means as a fulcrum end wherein said first means holds said hook portions against radially outward movement, bolt means extending through openings defined in said deflectable members and interconnecting the deflectable members of adjacent segments, said bolt means comprising said second means whereby tightening of said bolt means contracts said segments compressing the hose on said nipple and said deflectable members are deflected under the tension of said bolts such that said members maintain tension in said bolts upon flowing of the hose material between said segments and said nipple, said segments when applied and before said compression being spaced from each other, and a reinforcing web interconnecting said deflectable members at one end thereof.

### 3,167,335
### INTERNAL TUBE SEAL AND CONNECTOR

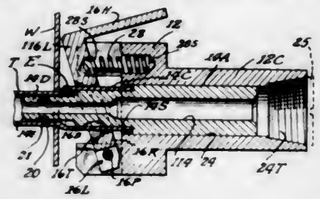
Oliver Maisch, Chicago, Ill., assignor to Tuthill Pump Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 18, 1961, Ser. No. 138,727
2 Claims. (Cl. 285—317)

1. In a high pressure tube seal and connector for association with a relatively short projecting end of a metal tube, an elongated body having a longitudinal opening therethrough with a counterbore at one end of the body substantially larger than the tube end with which the



connector is to be associated and into which counterbore such a tube end may extend, said body having an annularly continuous wall defining a portion of said opening located adjacent said counterbore, an anchoring ring disposed in said counterbore and pivoted at one edge on the body for shifting movement from a mounting position perpendicular to the counterbore axis to an angular clamping position, spring means reacting between said body and said ring normally to urge said ring toward its clamping position, an elongated pilot structure having a lengthwise throughbore, said pilot structure being disposed within said opening in an axially fixed and peripherally sealed relationship with said body by means of a permanent force fit between said pilot structure and said continuous annular wall, said pilot structure having a filler portion projecting outwardly through said counterbore and said ring and extending beyond said body, said filler portion having outwardly

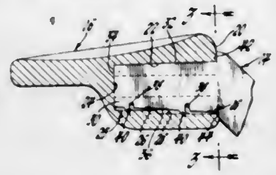


facing peripheral shoulder corresponding in size to said tube end, said filler portion terminating in a reduced end portion equipped with an O ring seal such that when said pilot structure is inserted into an end portion of such a tube, said shoulder engages an end edge of the tube, said anchoring ring encircles said end portion, said filler portion fills the end portion of the tube to react radially against the anchoring ring and prevent distortion of such end portion by the anchoring ring, and said reduced end portion extends inwardly in peripheral clearance relation within the tube with the O ring seal on said reduced end portion having sealing cooperation internally with the tube, with said connector upon being supplied internally with fluid under pressure developing unitary endwise movement of said body and said pilot structure in a direction away from said tube to re-inforce engagement of said anchoring ring on said tube end portion.

### 3,167,336
### FASTENING MEANS

Edward F. Lewis, Newfane, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 18, 1962, Ser. No. 203,297
3 Claims. (Cl. 287—53)



1. Means for securing a knob to an actuating lever and comprising:

a knob having a stepped slot formed therein opening at one end thereof, said stepped slot having two portions of different size, the larger portion of said two portions of said slot being adjacent the opening thereof;

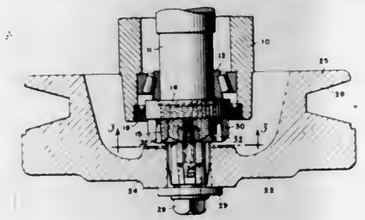
a lever having a tapered extension formed on one end thereof, said extension being received in said slot in said knob, and said extension having spaced recesses formed therein, one of said recesses overlying each of said portions of said stepped slot;

and barbs formed on said extension adjacent each of said recesses, said barbs extending beyond the edge of said extension to interfere with the wall of said slot in said knob, said barbs being bendable in a direction opposite to the direction of insertion of said lever extension into said slot and adapted to bend partially into said recesses when excessive interference exists between said extension and the wall of said slot.

### 3,167,337
### RETAINER

Warren H. Brackbill, Paradise, and Larimer J. Knepper and John K. Hale, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Feb. 26, 1963, Ser. No. 261,124
1 Claim. (Cl. 287—53)

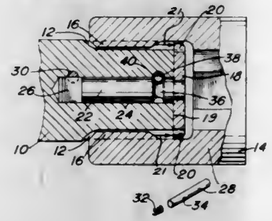


A drive structure comprising a fixed sleeve, a shaft inside said sleeve and rotatable relative thereto, said shaft having seven splines at an end projecting outwardly of said sleeve, a tapered roller bearing interposed between said shaft and sleeve, an adjustable hex nut threaded onto said shaft axially inwardly of the end thereof and retaining said bearing in position, a drive wheel mounted on said shaft and having splines meshing with the shaft splines, a lock pin carried on said drive wheel at the side thereof toward said nut, said pin being radially spaced from said shaft and having an axis parallel to the shaft axis, each of the six sides of said nut having an axial slot open toward said wheel and into which said pin is projectable to lock the nut in adjusted position, the particular slot engaged being determined by the rotatable position of the nut and the particular angular position of said drive wheel on said shaft, the seven splines and six nut sides providing a range of locking positions for said nut, and screw means holding said drive wheel on said shaft.

### 3,167,338
### SOCKET RETAINER MECHANISM

Paul E. Trolke, Hamilton, Ind., assignor to The Aro Corporation, Bryan, Ohio, a corporation of Ohio

Filed Oct. 18, 1963, Ser. No. 317,248
8 Claims. (Cl. 287—119)

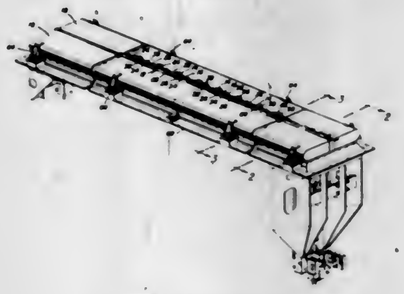


1. A socket retainer mechanism for a shank and socket having a splined connection with each other when the shank is received in the socket comprising a retainer

element across the outer end of said shank, a rock shaft on which said retainer element is mounted, said shank having a bore receiving said rock shaft, said retainer element having teeth at its outer ends aligned with the teeth of said splined connection in one position of said rock shaft and out of alignment therewith in another position thereof, and means operable to rock said rock shaft.

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3,167,339
**MAGAZINE DOOR ASSEMBLY**
William M. Magers, Coon Rapids, and Palmer G. Wermager, Minneapolis, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 30, 1961, Ser. No. 136,691
1 Claim. (Cl. 292—144)

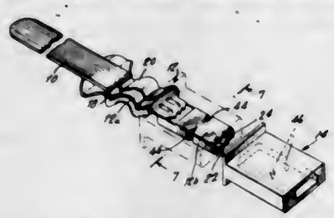


A latching mechanism for a pair of hinged doors meeting along their inner edges in sealing relationship comprising: an elongated bar mounted for relative reciprocal linear movement on the surface of one door and adjacent to its meeting edge, said bar being alternately formed with raised portions and slotted portions, said raised portions forming a slot with the door surface; a plurality of latching hooks adjustably mounted in the slot formed of the bar and the door surface; semi-cylindrical inserts mounted on each of said latching hooks; insert receiving blocks mounted on the other of said doors and in such a relation as to receive the insert of the latching hooks in tight engagement; hydraulically operated means engaging the elongated bar to move it longitudinally into or out of locking position; said hydraulically operating means being in actuating position when the doors are closed and completely free of the latching mechanism when the doors are open; and a safety means engaging the latching mechanism when said latching mechanism is in open position to retain the latching mechanism in open position, said safety means being released by the hydraulically operated means prior to the latching operation.

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3,167,340
**SHACKLE SEALS**
Winfred M. Brooks, West Orange, and Sigurd M. Moberg, East Orange, N.J., assignors to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey
Filed Aug. 30, 1963, Ser. No. 305,680
3 Claims. (Cl. 292—311)

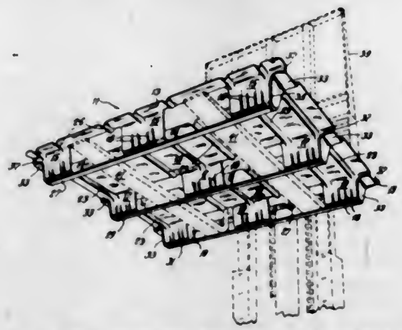
1. A shackle seal comprising an elongate shackle member, a sheet metal clinching element to which one end of said shackle member is secured, said element having a tubular, deformable sealing clinching portion adapted to receive an opposite end portion of said shackle member therewithin, and a tubular, deformable sealing block extending intimately about said sealing clinching portion and adapted to be deformed to deform said sealing clinching portion to clinch said shackle member firmly within said sealing, clinching portion; the latter portion being



formed with a pair of transversely aligned, tapered indentations in opposite sides thereof for localizing transverse bending of said sealing, clinching portion at said indentations.

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3,167,341
**NESTABLE SHIPPING PALLETS**
William J. Higgins, 12 Capp St., Carteret, N.J.
Filed Aug. 16, 1961, Ser. No. 131,941
8 Claims. (Cl. 294—67)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A pallet comprising a plurality of coplanar transversely spaced elongated deck members, said deck members having a load-supporting face and an opposed nether face, a plurality of depending elongated leg members each connected between adjacent deck members, each deck member and each leg member having a plurality of transverse corrugations, each leg member being tapered for nesting engagement with the like leg member of a similar pallet, each leg member having a recess cut in the ends thereof, said recess being adapted to receive an engaging sling member, and means to receive the forks of a lift truck under the nether faces of said deck members.

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3,167,342
**QUICK-ACTION INTERLOCKING SUSPENSION FASTENER**
Ned L. Broyles, San Mateo, Calif. (% Staff Commandant, 12th Naval District, Federal Office Bldg., San Francisco 2, Calif.)
Filed Dec. 12, 1962, Ser. No. 244,225
6 Claims. (Cl. 294—67)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A fastener comprising
a pair of interlocking quick detachable fixtures,
a first one of said fixtures having a flat portion with an eye formed therein for connection to a support,
means connecting a bridle cable to said first fixture,
said cable connecting means having a pair of oppositely disposed shoulders formed thereon,
a second fixture having a keyway therein for receiving said flat portion of said first fixture,



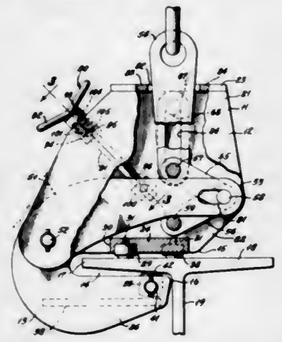
means on said second fixture engageable by said shoulders when said flat portion has been inserted into said keyway and rotated 90° with respect thereto locking the second fixture to the first fixture for suspension thereby,



and means on said second fixture connecting a second bridle cable thereto in a manner to support a load suspended from said bridle cables when the first fixture is connected to the support.

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3,167,343
**ERECTION CLAMP**
Raymond L. Renfroe, 1926 Spearing St., Jacksonville, Fla.
Filed Sept. 6, 1963, Ser. No. 307,415
12 Claims. (Cl. 294—67)

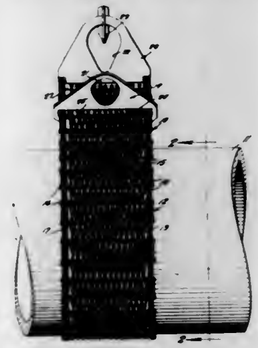


1. A clamp for lifting structural articles which comprises a clamp body including a pair of opposed jaws defining a slot between the jaws to receive the structural article to be lifted, one of said jaws being movable with respect to the other jaw, linkage means connected to said clamp body to bring said jaws inwardly toward an initial gripping relation relative to the article as a lifting force is applied to the clamp, said linkage means including a shackle to which said lifting force may be applied, adjustable lock means to positively prevent the retraction of said jaws outwardly away from said initial gripping relation, and resilient means biasing said jaws inwardly beyond said iniital gripping relation to compensate for any slack in said adjustable lock means resulting from any further inward movement of said jaws.

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3,167,344
**REINFORCED GRIPPER SLING**
John C. Applegarth, P.O. Box 143, Cambridge, Md.
Filed Dec. 27, 1961, Ser. No. 162,465
3 Claims. (Cl. 294—74)

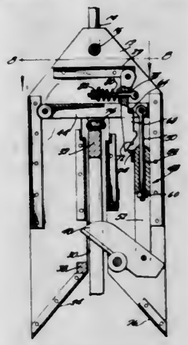
1. A gripper sling comprising a flexible elongated interwoven body portion comprising a series of smooth intermediate spiral wires and end wires having intermeshing strands, a plurality of spaced parallel rods extending through said intermeshing strands and said rods having outer end portions extending outwardly beyond the side edges of the body portion, a plurality of interfitting side bars positioned adjacent to and along the outer side edges of the body portion, said side bars having a plurality of apertures therein for the projection therethrough of the outer end portions of said rods, with the spacing between adjacent side bars in-line with the longitudinal axes of said rods being the thickness of the side bar fit therebetween; first and second end fittings



having hook engaging openings therein, said first end fitting being provided with an elongated slot therein, each of said end fittings including a portion of reduced thickness which defines a shoulder that has a plurality of spaced apart openings therein for engaging the end wires of said body portion, each of said end fittings having spaced apart groups of spaced parallel slots which define in the corner portions of the end fittings sets of spaced parallel fingers for interfitting with adjacent side bars there being aligned apertures in said fingers and side bars, and pins extending through said aligned apertures.

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3,167,345
**HOIST HOOK**
Perry L. Dukes, Coulee Dam, Wash., assignor to Bacon-Dukes, Inc., Ephrata, Wash., a corporation of Washington
Filed June 27, 1962, Ser. No. 205,624
4 Claims. (Cl. 294—83)

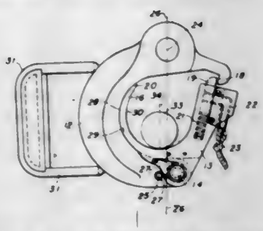


1. A hook for a hoist comprising a pair of vertically disposed plates arranged in face to face spaced relation, there being a vertically disposed slot in each plate extending from the lower end thereof and terminating at a point spaced from the upper end of said plate, said slots being in registry with each other and together providing a throat to receive therein the bail of an article to be hoisted,

a support bar extending between and connected to said plates adjacent to and on one side of said throat and inwardly of the lower end of said throat, a latch disposed on the other side of said throat opposite to said support bar and normally having the portion adjacent one end spaced above said support bar and in non-bridging relation with respect to said throat, said latch having its mid-portion connected to said plates for pivotal movement from the normal position to a position with said one end portion resting upon said support bar and bridging said throat, said latch being movable by the force of gravity from the bridging position to the normal position, means operatively connected to said latch and engageable with a bail when said bail is wholly received in said throat to shift said latch from the normal position to the bridging position for supporting said bail on said latch, and means operatively connected to said latch for releasably holding said latch in the bridging position.

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**3,167,346**
**QUICK ACTING HOOK**
**Marvin O. Miller, El Cerrito, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 24, 1963, Ser. No. 275,468**
**3 Claims. (Cl. 294—84)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. Hook apparatus adapted to be suspended from aboye and comprising:

a U-shaped body portion having upper and lower legs and an interconnecting arcuate web,

suspension-receiving means provided on said upper leg in position for causing said suspension to dispose the body portion with the U-opening facing substantially laterally outwardly,

handle means carried by said web and extending laterally outwardly of the web in a direction opposite to said U-opening,

a U-shaped latch and catch assembly integrally formed of a catch arm, an arcuate latch arm and an interconnecting arcuate web,

means carried by said lower leg of the body portion for pivotally carrying said latch and catch assembly on a horizontal axis,

said axis extending through said assembly web and being offset outwardly of said assembly web center toward said U opening,

said assembly being mounted in position for swinging outwardly from a closed position, wherein said arcuate latch arm abuts said arcuate body portion web and said catch arm traverses said U-opening of the body portion, into an open position wherein said U-opening is exposed,

hook detent means carried at the outer end of the upper leg of the body portion for engaging the latch arm in said open position whereby said outward swinging movement of the latch arm is limited,

resilient means normally urging said latch and catch assembly into said open position,

retractable plunger means carried at the outer end of said catch arm for engaging said hook detent means when said catch arm is in said closed position,

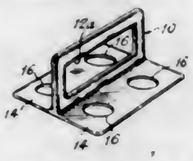
means resiliently urging said plunger means outwardly of said catch arm, and

means operable from a remote position for manually retracting said plunger,

said plunger having a cam surface adapted to engage the outer end of said upper leg during a closing movement of said latch and catch assembly, said engagement depressing said plunger for permitting the plunger to move past said outer end into a resiliently-held engagement with said detent means, whereby said catch arm automatically closes and interlocks.

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**3,167,347**
**BOTTLE OR CAN CARRYING DEVICE**
**Winston G. Hewlings, 11778 St. Germain Blvd., Montreal, Quebec, Canada**
**Filed May 21, 1962, Ser. No. 196,178**
**2 Claims. (Cl. 294—87.2)**



1. A molded bottle carrier handle and at least one fully loaded "six-pack" beverage container of the type having a cover portion through which the necks of crown capped bottles protrude, said carrier handle comprising a one-piece body of semi-rigid pliable plastic material having an upright rigid handle portion with a handle opening and at least one web portion extendng at substantally right angles from the lower edge of said handle portion and being held in substantially fixed relationship therewith, said web portion being provided with a pair of bottle neck engaging openings equally spaced apart relative to the center of said handle portion, said web portion in alignment with said handle center portion being imperforate, each of said bottle neck engaging openings having a diameter slightly less than the diameter of said bottle crown caps, said web portion openings deformably engaging about two bottle necks extending through said container cover portion, the web portions surrounding said openings being deformed sufficiently to pass over said crown caps, said container being readily lifted by said handle, the unobstructed central portion of said web portion permitting free access and movement of one's fingers through the handle opening of the carrier.

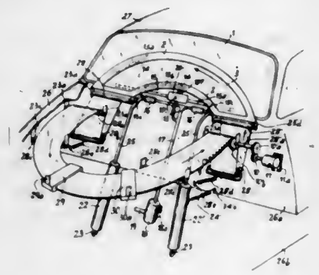
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**3,167,348**
**WINDSHIELD GUARD**
**Jean A. Hufenus, 6 Rue Hershel, Paris, France, and Paul F. Hufenus, 90 Rue Montmorency, Sete, Herault, France**
**Filed Aug. 1, 1961, Ser. No. 129,209**
**Claims priority, application France, Aug. 3, 1960, 834,923, Patent 1,272,958**
**16 Claims. (Cl. 296—84)**

8. A device for improving visibility through a window of a vehicle, which comprises in combination: a frame, adjacent the window, said frame formed of two parallel arcuate sections having a longitudinal groove extending parallel to the plane in which lay the sections, the open side of the groove of each section directed towards the other section, a longitudinal backing extending along each of the sections behind said groove; two transverse bottom members limiting respectively the pairs of ends of the sections; one single run of an endless, transparent and flexible band each edge of which is slidably engaged with the groove of one of said sections; at least two rotative rolls mounted each in one of the end regions of the frame and adapted to bear the band, the rolls being positioned



obliquely with respect to the path of the band at the end of the frame; means for cleaning the band, situated below said transverse bottom members and means for imparting to the band a continuous movement; said frame defining



an inner area; an air compressor situated below said transverse bottom members, the outlet of which compressor is connected with said inner area of the frame by means of at least one pipe the end of which is situated close to a surface of said band which faces said longitudinal backing.

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**3,167,349**
**CONVERTIBLE VEHICLE TOP CONSTRUCTION**
**Ralph C. Young and Richard T. Bingman, Colorado Springs, Colo., assignors, by mesne assignments, to White Automotive Corporation**
**Filed Dec. 6, 1961, Ser. No. 157,356**
**9 Claims. (Cl. 296—137)**



1. In combination with a vehicle front windshield frame;

a fabric vehicle top having a front depending flap;

channel forming means horizontally disposed along the top edge portion of the said windshield frame, said channel forming means being substantially rectangular in its transverse cross section and having a downwardly exposed opening;

a flat retainer strip;

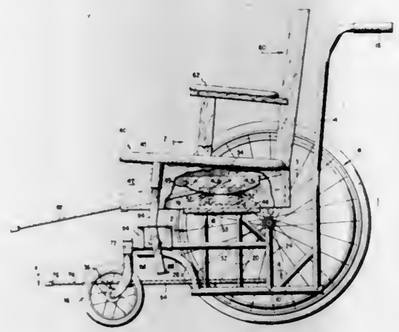
means forming a welt inwrapping said retainer strip and sized to fit snugly within the channel forming means, the welt forming means being a leading edge of the said depending flap and of a thickness less than the width of the exposed opening of the channel forming means;

and means exerting a rearward force on the fabric top, whereby the inwrapped holding strip is held fast within the channel forming means.

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**3,167,350**
**ROCKING WHEEL CHAIR**
**Louise A. Kiel, 815 S. 5th Ave. W., Newton, Iowa**
**Filed Nov. 2, 1962, Ser. No. 234,988**
**1 Claim. (Cl. 297—267)**

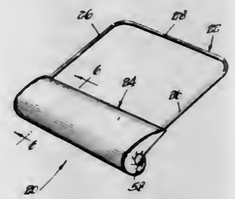
An invalid wheel chair comprising a base, ground engaging wheel means rotatably mounted on said base, body supporting means including a seat portion and a back portion, spring centering rocking mechanism interconnecting the seat portion of said body supporting means and said base, said rocking mechanism including at least a pair of cooperating curved surface elements, one of said elements connected to said base and the other of said elements connected to said body supporting means permitting said base to rock to and fro relative to said base, locking means for selectively locking and unlocking said body supporting



means to said base, a footrest slidably carried by the seat portion and movable between a concealed position within the seat portion and a projecting active position, and a further footrest slidably carried by the base portion and movable between a concealed position within the base portion and a projecting active position.

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**3,167,351**
**POPLITEAL SUPPORT**
**James A. Butler, % Butler Rotary Pad Co., Box 71, Glencoe, Ill.**
**Filed Feb. 19, 1963, Ser. No. 259,600**
**2 Claims. (Cl. 297—423)**



1. A popliteal support arrangement comprising: seat means including a substantially horizontal seating surface having a front edge and further including a backrest upstanding from the rear edge of said seating surface and defining a crevice at its juncture with said seating surface; popliteal support means including an elongated rigid member of sufficient width in a direction generally perpendicular to and in a plane generally parallel with said seating surface to define a projection extending beyond said front edge, said popliteal support means further including resilient padding encompassing at least the projected portion of said elongated member to contact and support comfortably the popliteal regions of the legs of a person seated on said surface; and means positioning said popliteal support means relative to said seat means in overlying relationship therewith, including rigid anchoring means connected to said popliteal support means and wedgedly disposed in said crevice for locating said popliteal support means.

3,167,352
CHAIR WITH A UNITARY SUSPENDED SEAT AND BACKREST
Jerry L. Johnson, Malibu, Calif., assignor to Charlton Company, Inc., Fitchburg, Mass., a corporation of Massachusetts
Filed Jan. 27, 1964, Ser. No. 340,181
7 Claims. (Cl. 297—445)

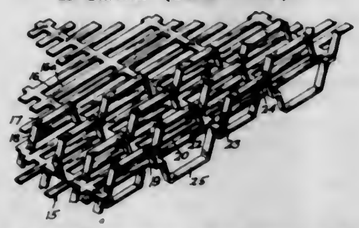


1. A seat construction comprising supporting legs, an arm and back frame comprising a pair of rearwardly extending arm portions which extend at their rear ends upwardly and inwardly toward each other, and a back member connecting the same in elevated position relative to the arm portions, the back member being at the rear of the arm portions,

a combined flexible seat and backrest unit mounted on the arm portions and on the back member, the backrest having an upper edge and a lower edge, the seat extending between the arm portions and having end edge portions and connecting side edge portions, one of the side edge portions being free and forming the front edge of the seat and the other side edge portion thereof being connected to the lower edge of the backrest,

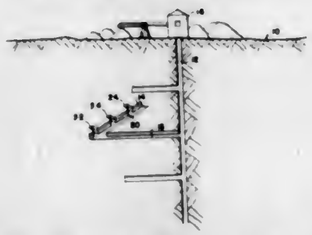
and means suspending the seat and backrest unit from the frame, said means including interengaging means between the backrest adjacent the upper edge thereof and the back member of the frame and a pair of interengaging means located at the end edge portions of the seat and connecting the same to the arm portions of said frame, so that said combined flexible seat and backrest unit is mounted in free suspended condition from the back member and the two arm portions of the frame, the combined flexible seat and backrest unit being completely flexible throughout except for the interconnecting means on the back of the frame and at the arm portions thereof.

3,167,353
EXPANDED FORAMINOUS PLASTIC ARTICLE
Samuel P. Crane, 23 Pine Drive, Great Neck, N.Y.
Filed Aug. 16, 1962, Ser. No. 217,344
19 Claims. (Cl. 297—453)



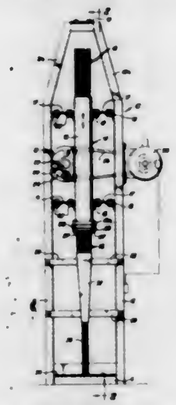
1. In a fabricated expanded plastic member of greater overall height than the thickness of the material thereof, a foraminous generally planar one piece portion having integral sets of intersecting stiffening strips surrounding and defining rows of longitudinally and transversely spaced apart openings in said portion, and outstanding generally arch-shaped elements integral with said portion and each bridging one of the openings and having a top of substantial area, the elements being sufficiently rigid and closely spaced enough to support a load, there being spaces in the elements communicating with the openings and of sufficient volume for the circulation of air through the member.

3,167,354
DRILLING METHOD FOR MINING THIN ORE BODIES
Robert T. Macsai, New York County, N.Y., and Daniel J. Donovan, Clifton, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 136,491, Sept. 7, 1961. This application Aug. 24, 1962, Ser. No. 219,333
6 Claims. (Cl. 299—11)



1. A method of mining a thin vein of ore comprising sinking a shaft to the level of said vein, excavating a cross drift along said vein, excavating drifts at intervals transverse to the cross drift, drilling a series of overlapping parallel holes of diameter slightly in excess of the vein thickness and crosswise thereof between an adjacent pair of transverse drifts to include substantially all of the vein material therebetween, and collecting the material cut therefrom.

3,167,355
BROOM BRISTLE SEGREGATING MACHINE
Edward L. Aldrich, Bakersfield, Calif., assignor to David F. Demarest, East Orange, N.J.
Filed Jan. 7, 1963, Ser. No. 249,681
5 Claims. (Cl. 300—18)



1. Apparatus for segregating elongated bristles comprising,

(A) a frame structure,

(B) a vertically positioned bulk bristle receptacle supported by said frame for vertical reciprocation,

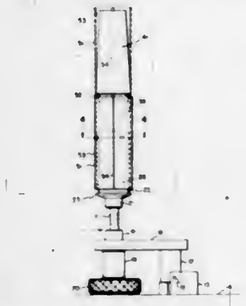
(C) means for vertically reciprocating said receptacle and its contained bristles,



(D) means forming apertures in predetermined number and arrangement which receive and pass the bristles being reciprocated, and

(E) means including a downwardly tapered guide positioned below said receptacles for receiving and gathering together the bristles passed through said apertures, said guide being adapted to pass the lower extents of the bristles in gathered condition.

3,167,356
METHOD FOR MAKING FUR-COVERED BRUSHES
Floyd Silas Adams, Rochester, N.Y., assignor to Crosby-Frisian Fur Company, Rochester, N.Y., a corporation of New York
Filed Jan. 25, 1962, Ser. No. 168,640
2 Claims. (Cl. 300—21)



1. The method of making a fur covered brush by securing to a tubular core, a fur sleeve having an inside diameter slightly less than the outside diameter of said core, comprising

(*a*) rotating the core about its axis

(*b*) while simultaneously applying glue to the exterior of said core,

(*c*) mounting said core in a stationary position with its axis disposed vertically,

(*d*) inserting the bottom of a fixture into the upper end of said vertically disposed tubular core,

(*e*) inserting a fur sleeve over said fixture with the fur side of said sleeve inside,

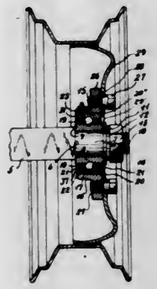
(*f*) causing the lower end of said sleeve to be gripped in a stationary position between the bottom of said fixture and the top of said core,

(*g*) pulling on the upper end of said sleeve to turn said sleeve inside out and to simultaneously draw the sleeve over said core, so that said upper end of said sleeve passes over said gripped sleeve end and onto said core, and

(*h*) thereafter removing said fixture.

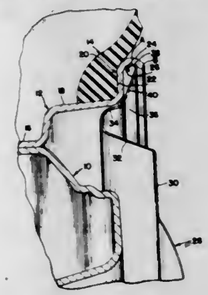
3,167,357
HUB AND BEARING ASSEMBLY FOR TRAILERS
Allen G. Savin, 3714 Riedham Road, Shaker Heights, Cleveland, Ohio
Filed Oct. 3, 1963, Ser. No. 313,637
5 Claims. (Cl. 301—1)

3. In combination with an axle having a shoulder inwardly of its wheel supporting end, a trailer wheel having an axially apertured bearing and hub assembly consisting essentially of a ball bearing and a ball bearing housing member formed with an intermediate cylindrical portion, an outwardly extending radially disposed mounting flange, and an inwardly radially disposed annular wall, said flange and wall being integral with the cylindrical portion, said flange and said wheel hub having axially aligned openings, means in said openings for securing the wheel hub and flange together, said wall overlying the ball bearing outer race but spaced annularly from the bearing inner race, said wheel hub portion adjacent its axial aperture overlying said flange and bearing outer race to support the said race in the bearing



hub to resist radial, axial and angular forces resulting from traction of the wheel over rough or uneven road surfaces, and mounting means engageable with the bearing inner race to bind the said race against said axle shoulder whereby to secure the bearing on the axle.

3,167,358
WHEEL COVER
Carl J. Demrick, Birmingham, Mich., assignor to Avis Industrial Corporation, Adrian, Mich., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,386
25 Claims. (Cl. 301—37)

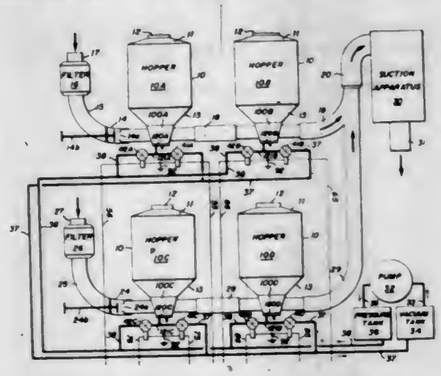


2. In a wheel structure including a tire rim having a terminal flange defining at its terminus a radially inwardly opening circumferential groove, a cover member for disposition over the outer side of said wheel structure having a generally frusto-conical annular portion inclined radially and axially inwardly with the base of said portion seated in said groove, at least one slot in said frusto-conical annular portion extending from the base thereof toward the apex thereof and with the circumferential extent of the slotted area such that when closed the diameter of said base is approximately equal to the inner diameter of the terminus of said flange.

3,167,359
APPARATUS FOR STORING GRANULAR MATERIAL
Edmund R. Aller, Gary, Ind., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed May 14, 1962, Ser. No. 194,593
5 Claims. (Cl. 302—27)

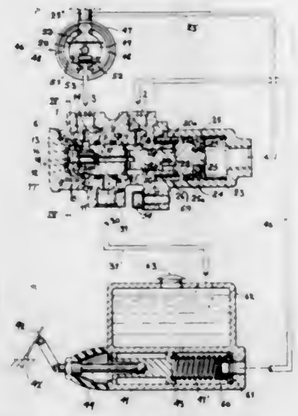
1. In apparatus for storing granular material, structure defining a plurality of storage hoppers respectively provided with a plurality of bottom discharge outlets, a plurality of outlet nozzles respectively carried by said

storage hoppers, each of said outlet nozzles including a casing disposed below the bottom outlet in the associated one of said storage hoppers and communicating therewith, each of said outlet nozzles also including a suction tube extending through the lower portion of the associated casing for unloading the granular material from the associated one of said storage hoppers, the intermediate section of each of said tubes being disposed within the associated casing and having a valve port provided in the bottom thereof and communicating with the lower portion of the associated casing, each of said outlet nozzles further including a valve element arranged in the bottom of the associated casing and disposed below the valve port in the associated tube and cooperating therewith, whereby the interior of each of said tubes is in communication with the lower portion of the associated casing when the associated valve element occupies its open position with respect to the associated valve port and the interior of each of said tubes is cut-off from communication with the lower portion of the associated casing when the associated valve element occupies its closed position with respect to the associated valve port, each of said outlet nozzles further including actuating mechanism for selectively actuating the associated valve element between its open and closed positions with respect to the associated valve port, an outlet pipe, a conduit system commonly connecting said tubes to said outlet pipe, means for producing suction in said outlet pipe, whereby conveying air is supplied through said conduit system and via said tubes into said outlet pipe with the result that the granular material in said plurality of storage hoppers is selectively unloaded therefrom through said respective casings into said respective tubes depending upon the respective positions of the respective valve elements in the corresponding ones of said outlet nozzles, each of said actuating mechanisms being normally responsive to the passage of conveying air through the associated tube concurrently with the presence of granular material in the associated casing for actuating the associated valve element into its open position with respect to the associated valve port and normally responsive to the passage of conveying air through the associated tube concurrently with the absence of granular material in the associated casing for actuating the associated valve element into its closed position with respect to the associated valve port, a control station remote from said outlet nozzles and provided with a plurality of control devices respectively corresponding thereto, each of said control devices including normal and open and closed control positions, means controlled by operation of any one of said control devices from its normal position into its open position for overriding the normal response of the actuating mechanism in the corresponding one of said outlet nozzles and for positively operating the same to actuate the associated valve element into its open position with respect to the associated valve port, and means controlled by operation of any one of said control devices from its normal position into its closed position for overriding the normal response of the actuating mechanism in the corresponding one of said outlet nozzles and for positively operating the same to actuate the associated valve element into its closed position with respect to the associated valve port.



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**3,167,360**
**BRAKE REGULATOR AND SYSTEM INCORPORATING SAME**
**Heinrich Oberthür, Offenbach (Main), Germany, assignor to Alfred Teves KG., Frankfurt am Main, Germany**
**Filed Apr. 17, 1963, Ser. No. 273,751**
**Claims priority, application Germany Apr. 19, 1962**
**8 Claims. (Cl. 303—22)**

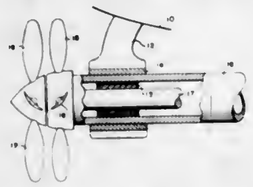


2. A brake system comprising:
a source of pressure fluid;
a brake cylinder energizable by said fluid;
a master cylinder connected with said source and actuable to supply said fluid to said brake cylinder;
a braking-force regulator interposed between said cylinders for reducing the pressure applied to said brake cylinder upon the attainment of an optimum braking force, said regulator comprising a body having a longitudinally extending bore, a differential piston reciprocable within said bore and subdividing the latter into a first chamber and a second chamber, said piston being formed with a passage interconnecting said chambers, valve means in said passage for selectively opening and blocking same, abutment means engageable with said valve means in one extreme position of said piston means for retaining the valve means in an open condition and restoring means yieldably urging said piston into said extreme position;
first conduit means connecting said master cylinder with said first chamber;
second conduit means connecting said second chamber with said brake cylinder, said piston having a first effective surface exposed to fluid pressure in said first chamber for applying a force to said piston in aiding relationship with the force of said restoring means and a second effective surface having an area greater than that of said first surface exposed to fluid pressure in said second chamber, said body being provided with an aperture cooperating with said piston and selectively blocked and unblocked thereby for conducting fluid away from said second chamber upon shifting of said piston under the force of fluid within said second chamber; and third conduit means connecting said aperture with said source for returning thereto fluid conducted away from said second chamber, said body being provided with at least one inner circumferential groove in the wall of said bore and an annular sealing member of resiliently deformable material seated in said bore and engageable with said piston for closing communication between said chambers and said aperture in a blocking position of said piston.



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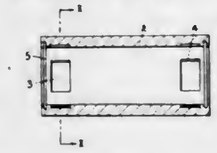
**3,167,361**
**ROTATING BEARING**
**Ralph B. Snapp and Watt V. Smith, Severna Park, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed May 28, 1963, Ser. No. 284,299**
**1 Claim. (Cl. 308—8)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



A fluid lubricated bearing for counter rotating shafts comprising:
a support;
a first hollow shaft rotatably mounted in said support;
a second shaft coaxially mounted within said first shaft;
a fluid lubricated bearing interposed between said first and second shafts, said bearing being secured to and rotatable with said first shaft;
said bearing consisting of a sleeve like member and an elastometric material;
said member having a plurality of load bearing lands separated from each other by grooves;
the inner suporting machined surface of each of said supporting lands being constructed to conform to the outer surface of said second shaft;
flat ramp surfaces leading from the sides of each groove to each of the adjacent lands, said flat ramp having a slope such that the unabsorbed portion of the ramp forms an obtuse angle with the land and being such that the deformation of the land under load produces in the ramp insufficient deformation to form a wiping lip at the edge between the land and the groove, thereby to prevent restriction of the flow of lubricating fluid onto the bearing surfaces.

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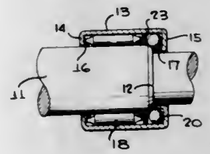
**3,167,362**
**GAS-LUBRICATED JOURNAL BEARING**
**Yuan-Heng Dschen, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company**
**Filed July 9, 1962, Ser. No. 208,260**
**Claims priority, application Switzerland July 10, 1961**
**5 Claims. (Cl. 308—121)**



1. In a hydro-dynamic gas-lubricated journal bearing especially for shafts operating at high rotational speeds, the combination which comprises a cylindrical bearing bushing within which the shaft is located, the interior surface of said bushing including a group of recesses situated in the vicinity of each end of said bushing, the recesses in each said group having a segmental configuration and being distributed around the internal periphery of the bushing and each said recess being provided with an axially extending groove spaced inwardly from the end face of said bushing, each said groove being located at the entrance edge to the recess as viewed in the direction of rotation of a point on the shaft and extending for substantially the complete axial dimension of said recess and being in communication with the atmospheric environment exteriorly of said bushing only through such running clearance as exists between the shaft and bearing surfaces of said bushing, the remaining interior portion of said bushing between said groups of recesses being a smooth bearing surface without any irregularities.

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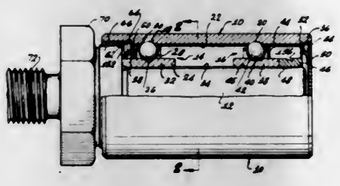
**3,167,363**
**COMBINED RADIAL AND THRUST BEARING**
**William W. Murphy, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine**
**Filed Dec. 17, 1962, Ser. No. 245,099**
**15 Claims. (Cl. 308—174)**



1. A drawn metal outer race having inwardly directed ends, one of said ends being turned inwardly parallel to the body of the race to form a flange, a series of bearing rollers confined in the race within the flange and a series of bearing balls confined within the race by the opposite end.

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**3,167,364**
**DOUBLE ROW BALL BEARING ASSEMBLY**
**William M. Dunn, West Covina, Calif., assignor to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan**
**Filed Jan. 9, 1962, Ser. No. 165,169**
**8 Claims. (Cl. 308—189)**



1. In a miniature ball bearing assembly, apparatus comprising:
a shaft;
a sleeve coaxially surrounding said shaft;
a pair of inwardly facing, axially fixedly spaced apart bearing ball raceways in said sleeve;
a pair of inner, axially spaced apart, annular race members axially slidably supported on said shaft;
an outwardly facing bearing ball raceway formed around each of said inner race members, said inner race members being normally axially positioned on

said shaft such that each such outwardly facing raceway thereof is substantially concentric with one of said inwardly facing raceways;

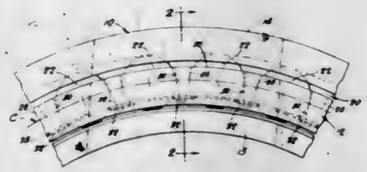
a complement of bearing balls retained between each concentric pair of said inwardly facing and outwardly facing concentric raceways, said shaft and said sleeve being thereby supported for coaxial rotation relative to one another;

means on said shaft fixing the axial position of a first one of said inner race members with respect to axial sliding displacement thereof on said shaft in a direction away from the second one of said inner race members;

and a ring member interference press fitted on said shaft to a precise position thereon fixing the axial position of the said second one of said inner race members with respect to axial sliding displacement thereof on said shaft in a direction away from said first one of said race members, said ring member being adjusted to such position under said interference press fitted conditions on said shaft and retained at such position solely by the resultant interference press fit, thereby enabling adjustment of the bearing, without preloading thereof, to have a minute, predetermined amount of end play of the shaft and sleeve relative to one another.

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**3,167,365**
**CAGE FOR ROLLING BEARINGS**
**John F. Helms, Warminster, Pa., assignor to SKF Industries, Inc., Philadelphia, Pa., a corporation of Delaware**
**Filed Apr. 26, 1963, Ser. No. 275,864**
**18 Claims. (Cl. 308—217)**

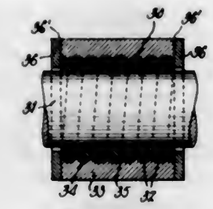


1. A cage for the rolling elements of a rolling bearing, comprising a pair of annular members, a plurality of axial cross pieces connecting the annular members which are spaced apart circumferentially to define pockets for the rolling elements, a clip element between the annular members in a predetermined position radially to one side of each of said cross pieces, means detachably securing said clip elements between the annular members, means defining an opening in each of said clip elements, a tang projecting radially from each of said cross pieces engageable in said opening in the clip element to locate each of said clip elements in a predetermined position, adjacent clip elements being circumferentially spaced apart to provide a space therebetween which is less than the maximum diameter of one of the rolling elements to limit displacement of the rolling elements in one radial direction.

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**3,167,366**
**RESINOUS FACED BEARING**
**Richard Freund, 273 Lawton Ave., Cliffside Park, N.J.**
**Filed Mar. 7, 1961, Ser. No. 93,918**
**14 Claims. (Cl. 308—238)**

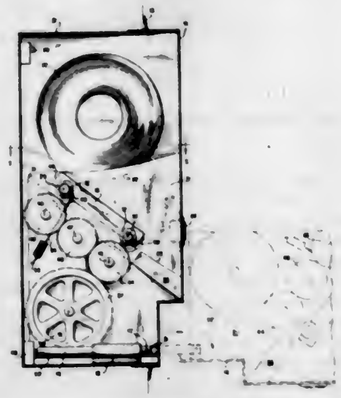
1. A bearing for a shaft comprising a plurality of coaxial, circular turns of a very thin fibrous, plastic material; and a metal sleeve provided with as many inner circumferential grooves as there are turns, said turns being



embedded in said grooves, respectively, with their outermost portions and on their sides at least throughout a substantial portion of the turn cross-section.

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**3,167,367**
**SHEET MATERIAL DISPENSER**
**Matt Rozlog, 406 Cleveland Ave. SE., Brewster, Ohio, and James L. Williams, 11782 Bonnie Brae Drive SW., Massillon, Ohio**
**Filed May 17, 1962, Ser. No. 195,465**
**9 Claims. (Cl. 312—39)**



1. A dispenser for sheet material comprising a housing having an open side, a cover normally closing said open side of said housing, said cover having a discharge opening therein, means to support a roll of sheet material within said housing, a discharge opening in said cover, a guide chute to guide said material from said roll to said discharge opening, a drive roll extending within said chute and rotatably mounted below said chute within said housing, a pressure roll rotatably mounted within said housing above said guide chute and extending therewithin and in contact with said drive roll, resilient means biasing said pressure roll against said drive roll, and motor means mounted within said housing and in driving engagement with said drive roll.

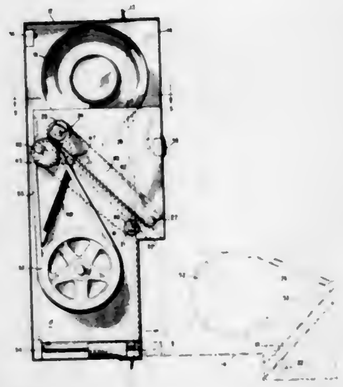
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**3,167,368**
**SHEET MATERIAL DISPENSER**
**Matt Rozlog, 406 Cleveland Ave. SE., Brewster, Ohio, and James L. Williams, 11782 Bonnie Brae Drive SW., Massillon, Ohio**
**Filed July 24, 1962, Ser. No. 212,091**
**2 Claims. (Cl. 312—39)**

1. A dispenser for sheet material comprising a housing having an open side, a cover normally closing said open side of said housing, means mounted on said cover to support a roll of sheet material, a discharge opening in said cover, a guide chute mounted on said cover to guide said material from said roll to said discharge opening, a pair of upper parallel belt rolls rotatably mounted



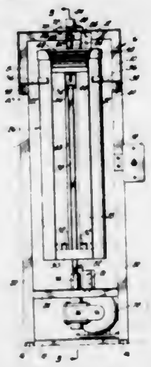
on said cover above said chute and extending partially into said chute, a pair of lower parallel belt rolls rotatably mounted on said cover below said chute and extending partially into said chute, two endless feed belts, each belt passing through said chute and over one of said belt roll pairs, pressure bar means pivoted adjacent one end to said cover and having the free end thereof in contact



with said upper belt roll nearest said roll of sheet material, and resilient means urging said free end of the pressure bar and said upper roll toward one of said lower belt rolls, and motor means mounted on said cover in driving engagement with said last mentioned lower roll, whereby opening of said cover withdraws all of the mechanical components of said dispenser from said housing.

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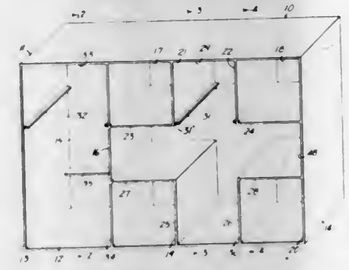
**3,167,369**
**AUTOMATIC ARTICLE DISPENSER**
**William T. Haag, 734 Silverlake Blvd., Los Angeles, Calif.**
**Filed Oct. 21, 1963, Ser. No. 317,684**
**6 Claims. (Cl. 312—71)**



1. In an automatic article dispenser a vertically disposed magazine having an open upper end, an article follower in said magazine and movable vertically therein, a follower actuator including an elevator having a vertically disposed trackway, a reversible electric motor connected to said elevator to operate the same, a first limit switch adjacent the lower end of said trackway in the path of movement of said elevator and connected to said electric motor to stop the motor and elevator at the downward limit of movement of the elevator, a second limit switch supported at the upper portion of said trackway and connected to said electric motor, a sensing member having a portion thereof disposed at the upper part of said magazine in the path of movement of a vertical stack of articles moving upwardly in said magazine, said sensing member being movable by the uppermost of said articles into engagement with said second limit switch, said second switch being connected to said electric motor to stop said motor and elevator when the switch is actuated, and a manual switch in circuit with said electric motor to energize and deenergize the same.

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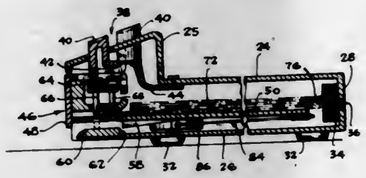
**3,167,370**
**FIRST AID CABINET**
**Louis P. Mancini, 129 Braidburn Road, Florham Park, N.J.**
**Filed Mar. 2, 1962, Ser. No. 177,094**
**3 Claims. (Cl. 312—209)**



1. In a first aid cabinet of the character described, a cabinet body defined by integrally joined top, bottom, side and back walls, means integral with top, bottom, side and back walls forming four spaced corner rectangular drawer receiving compartments within the cabinet body, said means including spaced vertical and horizontal walls forming, in combination with the first named walls, four boundary walls for each of said four compartments, said four corner compartments forming within said cabinet body a compartment cross-shaped in cross-sectional form extending the full depth of said cabinet body, and the vertical walls of the upper corner compartments having on the lower adjacent surfaces inwardly projecting drawer supporting cleats.

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**3,167,371**
**SELECTOR INDEX**
**James H. Parcher, Newtown Square, Pa., and Jack W. Worsham, Greensboro, N.C., assignors to Southern Plastics Engineering Corporation, Greensboro, N.C., a corporation of North Carolina**
**Filed Oct. 15, 1963, Ser. No. 316,276**
**9 Claims. (Cl. 312—319)**



1. A selector index apparatus carrying a plurality of information sheets each sheet having index means thereon, said selector index comprising: a base having a deflectable latch member defining a cam surface thereon; a drawer mounted for shuttle movement in said base between open and closed positions, said drawer having lock means adapted to engage the latch means of the base to releasably lock the drawer in closed position; selector means on said apparatus adapted for movement between

neutral and selective positions, said selector means including a first member to engage and to deflect said latch member away from engagement with the lock means of the drawer when said selector means is in selective position and a second member adapted to engage the index means of the selected information sheet when said selector means is in selective position, the cam surface of said latch means adapted cammingly to engage one of said members of the selector means to reset the selector means from selective to neutral position upon movement of said drawer from open to closed position.

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**3,167,372**
**INTERCHANGEABLE WIRING DEVICES**
**Gustaf R. Lawson, West Warwick, R.I., assignor to General Electric Company, a corporation of New York**
**Filed May 2, 1962, Ser. No. 191,935**
**3 Claims. (Cl. 339—14)**

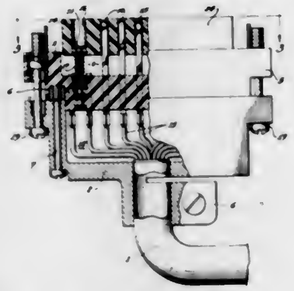


1. A grounding interchangeable outlet comprising a molded housing integrally partitioned on the interior to divide said housing into two line contact compartments and one grounding contact compartment, contacts positioned in said line contact compartments, means for making line connections to said line contacts, a grounding contact positioned in said grounding contact compartment, a conducting strap connected to said grounding contact and extending exteriorly of the housing, an aperture in said strap positioned to be in alignment with a mounting bracket mounting aperture when said outlet is mounted on said bracket, a lug on said strap for extending through a bracket mounting aperture, and a molded cover for said housing, said cover defining apertures for passage of contact prongs.

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**3,167,373**
**MULTI-PIN CONNECTOR WITH PROTECTIVE SHIELD**
**John P. Kostich, deceased, late of Ontario, Calif., by Helen S. Kostich, administratrix, Ontario, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California**
**Filed May 14, 1962, Ser. No. 194,734**
**1 Claim. (Cl. 339—42)**

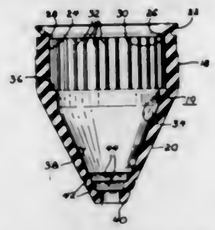
An electrical connector comprising a base, means defining a recess in the external connection end of said base, a plurality of contact pins mounted in said base and extending outwardly beyond the end of said base, a shield member comprising a block having apertures therethrough corresponding to the locations of said pins, said shield being slidably mounted over said pins and fitting into said recess, elastic means between said base and said shield normally urging said shield outwardly to cover the extent of said pins, shield retaining means limiting the extended position of said shield, said recess being deep enough to allow operative engagement of said pins in a corresponding receptacle when connected therewith, a cover over the end of said base opposite the connection end, attachment means between said cover and said base, fastening apertures through said base at opposite sides thereof, fastening means in said apertures adapted to engage a structure to which said connector connects, said pins being in two rows, each said pin including stop means thereon limiting the inserted position



thereof in said base, a resilient barb on the side of each pin normally spreading outwardly therefrom, a barb retaining inner wall in said base at each pin, and a side opening in said base at each pin giving access to said barb at said retaining wall for pressure on said barb to release said pin, said side openings being normally covered by said cover, and said pins being thus removable from the wire connection end of said connector.

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**3,167,374**
**PROTECTIVE COVER WITH CORD SEALING MEANS FOR ELECTRICAL WIRING DEVICES**
**Joseph F. Healy, Westport, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut**
**Filed Sept. 20, 1961, Ser. No. 139,406**
**5 Claims. (Cl. 339—60)**

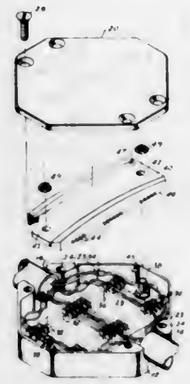


1. A protective cover adapted to be mounted on an electrical connector component having an electrical cord wired to it comprising a resilient unitary body having: a portion for surrounding and gripping the connector component; sealing means at one end of the body arranged to be disposed where the front face of the connector component on which it is adapted to be mounted is disposed when it is mounted on the connector component; and a cord-engaging portion at the other end of the body for receiving and snugly embracing the electrical cord in sealing contact comprising a generally uniformly tapered cylindrical portion terminating in a reduced rearward open end and having a plurality of transverse radially inwardly extending ribs formed on its interior adjacent the open end, an annular valley formed between each pair of adjacent ribs, and marks formed on the exterior of said tapered portion which are substantially radially aligned with said valleys, whereby one or more ribs may be removed from said cover by selectively cutting off the rearward portion of the body at said marks.



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**3,167,375**
**MULTI-TAP CONNECTOR**
**John C. Sarazen, White Plains, N.Y., assignor to Burndy Corporation, a corporation of New York**
**Filed Sept. 17, 1962, Ser. No. 224,172**
**1 Claim. (Cl. 339—99)**



A tap connector for a cable having a plurality of pairs of insulated conductors, comprising: a housing having an entrance and an exit port for said cable; a contact block of insulating material extending across the path of said cable within said housing; a first plurality of substantially parallel spaced apart ribs on said contact block forming a plurality of parallel channels for receiving individual pairs of said conductors and extending across the path of said cable; a second plurality of substantially parallel spaced apart ribs on said contact block axially spaced from said first plurality of ribs and likewise forming a plurality of parallel channels for receiving individual pairs of said conductors; each of said channels being dimensioned to receive and support the individual conductors in each pair in one-above-the-other relationship, only; a plurality of sharpened contacts disposed within said channels for penetrating the insulation of and engaging one of the conductors of each pair of conductors disposed in each of said channels; said first plurality of ribs being axially spaced from said second plurality of ribs a distance sufficient to permit transposition of the vertical position of the conductors in a given pair between a channel formed by said first ribs and a channel formed by said second ribs, whereby one of the conductors in a pair may be engaged by the contact in a first channel and the other conductor in that pair may be engaged by the contact in a second channel.

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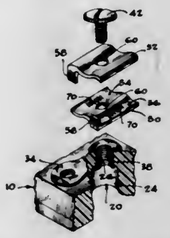
**3,167,376**
**ELECTRICAL CONNECTOR**
**Frank H. Edwards, Ancaster, Ontario, Canada, assignor to United-Carr Fastener Corporation, Boston, Mass., a corporation of Delaware**
**Filed Dec. 15, 1961, Ser. No. 159,719**
**1 Claim. (Cl. 339—198)**

An improved electrical connector adapted to receive electrical conductors comprising:

an insulating base having a pair of spaced openings therein;

an electrically conductive member extending continuously between said pair of openings to define an electrical path therebetween, said member having a pair of spaced depending portions adapted to be received in said openings, said depending portions having conformations adapted to affix said portions within said openings thereby to rigidly attach said member to the insulating base, each of said depending portions being internally threaded;

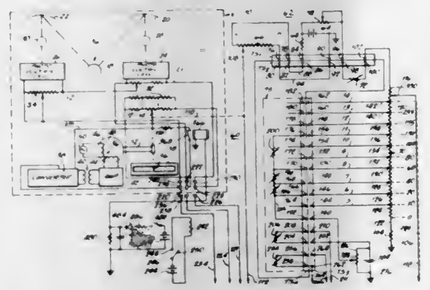
a threaded terminal post adapted to be threadedly received with each of the internally threaded depending portions; and



a pair of identical electrically conductive clamp plates adapted to be received on said member in face to face electrically conductive relation by one of said threaded terminal posts, said plates having mating sinuous facing contours defining, in use, a pair of elongated conductor-receiving spaces straddling the terminal post and each having an ear protruding from said facing contour at an end thereof and extending to juxtaposed relation with the other plate, when in use.

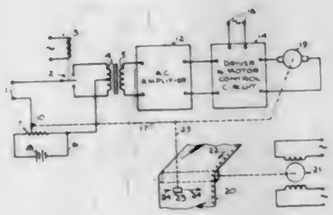
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**3,167,377**
**DIGITAL READ-OUT APPARATUS**
**Milton H. Pelavin, Greenburgh, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York**
**Filed July 5, 1962, Ser. No. 207,653**
**20 Claims. (Cl. 346—14)**



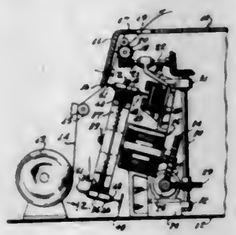
1. In colorimetric analysis apparatus which include holding means for liquid samples under analysis, means to transmit light through said samples, and means to measure the intensity of the thusly transmitted light and provide an output indicative thereof in accordance with the concentration of a predetermined constituent of the samples; analysis-result recording means comprising, a first comparison balancing circuit operable to an unbalanced condition thereof in response to said output, means operable to balance said first circuit, a second balancing circuit operable to an unbalanced condition thereof in response to the operation of said first circuit balancing means, means to balance said second circuit, counter means operable in response to said second circuit balancing means to provide a numerical count representative of the concentration of a predetermined constituent of said sample, and means operable in response to the operation of said second circuit balancing means to provide a print of the count substantially at the maximum concentration of said constituent.

3,167,378
**SERVO MOTOR TRANSISTOR CONTROL CIRCUIT**
Otto S. Talle, Jr., Beverly Hills, Calif., assignor to F. L. Moseley Company, Pasadena, Calif.
Filed Sept. 24, 1962, Ser. No. 225,798
13 Claims. (Cl. 346—32)



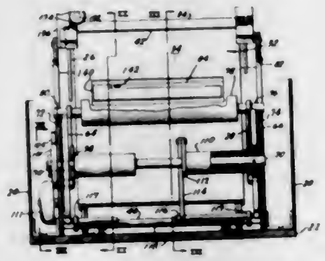
1. A circuit for controlling the direction of rotation of an electric motor comprising a reversible direct-current motor, an inductive winding adapted to be energized by alternating current, a rectifier bridge having four terminals, two of said terminals being connected in series with said winding and said motor, an electronic switch connected between the other two terminals of said bridge, and an error signal source coupled to said switch for rendering said switch conductive during selected half cycles of the alternating current to permit current to flow through said winding, motor, switch and two arms of said bridge to energize said motor to rotate in a predetermined direction.

3,167,379
**CONTINUOUS FACSIMILE RECORDERS**
Paul L. Grafstein, Brooklyn, N.Y., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed June 19, 1961, Ser. No. 117,913
2 Claims. (Cl. 346—79)



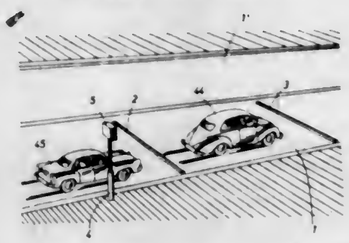
1. Apparatus for recording electric signals comprising means for supporting and feeding a recording blank in the form of a continuous web, a movable carrier band having a span adjacent the recording area on said recording blank, a plurality of impact styli carried by said movable band to traverse said recording area in succession across the web and signal-responsive means for actuating said styli to apply pressure in localized areas and thereby record on said recording blank, said last-mentioned means comprising a magnetizable armature attached to each stylus and stationary electromagnetic means for moving said armatures to actuate said styli into marking contact with said blank in response to applied signals, said stationary electromagnetic means comprising a rectilinear magnetizable core member provided with opposed salient pole pieces between which said impact styli move in traversing said recording area, the opposed faces of said pole pieces extending parallel to and closely spaced from the rectilinear path of movement of said armatures.

3,167,380
**TIME CLOCK**
La Vergne H. Williams, Columbia, Conn., assignor to Gunver Manufacturing Company, Manchester, Conn., a corporation of Connecticut
Filed Dec. 12, 1963, Ser. No. 331,086
20 Claims. (Cl. 346—82)



1. A time clock for printing two different times on a time card, said time clock comprising a printing member bearing a single line of time indicating printing elements, said printing elements comprising at least two successive groups of numerals with each group indicating the hours in a given period, clock mechanism for advancing said printing member along a given path, means for positioning the card in predetermined widthwise relation along the path of travel of said printing member and facing said printing elements, and pressing the card and printing member together and printing thereon an impression of a portion of said time indicating printing elements and for thereafter pressing the card and printing member together, with the card in the same widthwise relation along the path of travel of said printing member and with said line of printing elements offset in a lengthwise sense of the card from the first impression to print on the card a second impression of a portion of said time indicating printing elements.

3,167,381
**VEHICLE SPEED DETECTION SYSTEM**
Richard Wick, Grunwald, near Munich, Josef Pfeifer, Unterhaching, near Munich, and Heinrich Neumann, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 5, 1962, Ser. No. 177,520
Claims priority, application Germany, Mar. 8, 1961, A 36,911
22 Claims. (Cl. 346—107)

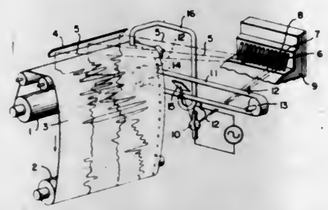


1. In a vehicle speed detection system installed along a road, in combination, vehicle reporting means adapted to report a vehicle passing a predetermined point on the road; actuating means including actuator relay switch means movable from open to closed position for actuating said vehicle reporting means; first vehicle detector means installed at a point of the road a predetermined distance from said predetermined point in direction opposite to the direction of traffic and including first normally open switch means movable to closed position by a vehicle passing said first detector means; second vehicle detector means installed at said predetermined point of the road and including second normally open switch means changeable to closed position by a vehicle passing said second detector means, said second detector means causing, when said second switch means are in closed position, said actuator relay switch means to move to closed position; actuator means changeable from inoperative to operative position by said first switch means being moved to closed position and remaining non-responsive to repeated closing of said first switch means unless said actuator means are returned to inoperative position; first timer means controlled by said actuator means so as to be started to operate when the latter are changed to operative position and returning said actuator means to inoperative reference time period, said predetermined reference time period being the time required by a vehicle travelling from said first to said second vehicle detector means at maximum permissible speed; and second timer means controlled by said first timer means so as to be started to operate at the end of said predetermined time period and blocking said actuator means from being changed to operative position for a predetermined additional time period.



3,167,382
**RECORDING APPARATUS**
John A. Baring, Golden, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed May 16, 1962, Ser. No. 195,186
7 Claims. (Cl. 346—109)

1. In an oscillograph for recording the time-variations of phenomena under observation, said oscillograph having a recording plane past which a recording medium is adapted to be advanced, and means including a source of radiant energy for forming said radiant energy into a plurality of beams and moving each of said beams along said recording medium at said recording plane so that its position and the trace thereby produced is indicative of the value of one of the related phenomena under observation, means for identifying the traces formed on the recording medium including at least one rod arranged to traverse a forward path in a substantially straight line transversely of said source and each of the means for forming the radiant energy into a plurality of beams and adapted to interrupt in succession the radiant energy from said source to each of the radiation beam forming means, so as successively to cause an interruption in each of said beams and to traverse a reverse path not transversely of



said source and the radiation beam forming means and connected to the ends of said forward path, an endless belt carrying said rod and having trace identifying indicia spaced therealong, means spaced apart from each other to support and to advance said endless belt in synchronism with the advancement of the recording medium past the recording plane, and means operative in cooperation with the source of radiation, said endless belt and said identifying indicia to produce and conduct to the recording medium at the recording plane of said oscillograph an image of the associated identifying indicia upon each interruption of a radiation beam by said rod.

# CHEMICAL

3,167,383
**CRIMPING OF POLYVINYL ALCOHOL YARNS BY MEANS OF ALKALINE SOLUTIONS**
Jean Claude Chezaud, St.-Rambert l'Ile Barbe, and Henri Lachaussee, Lyon, France, assignors to Societe Rhodiaceta, Paris, France, a French body corporate
No Drawing. Filed Oct. 19, 1960, Ser. No. 63,483
Claims priority, application France Oct. 26, 1959
6 Claims. (Cl. 8—115.5)

1. Process for the production of a crimped yarn, which comprises immersing a yarn of polyvinyl alcohol in at least two solutions of increasing alkalinity until a crimp has developed in the yarn.

3. Process for the production of a crimped yarn, which comprises immersing a yarn of polyvinyl alcohol successively in two aqueous sodium hydroxide solutions at a temperature of 15°–25° C., the concentration of the first solution being essentially 20% and that of the second between 35% and saturation.

3,167,384
**PROCESS OF RENDERING CELLULOSIC TEXTILES WRINKLE RESISTANT BY REACTING WITH BIS(N-METHYLOL CARBAMOYLETHYL)METHYLAMINE**
Bethlehem K. Andrews, Metairie, and John G. Frick, Jr., New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed June 6, 1961, Ser. No. 115,269
1 Claim. (Cl. 8—116.3)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A process comprising wetting a cellulosic textile with an aqueous solution containing, by weight, about from 0.5% to 3.0% of an acid catalyst and about from 1 to 20% of bis(N-methylol carbamoylethyl)methylamine to a wet pickup of about from 60 to 100%, drying the wetted textile, curing the dried textile at a temperature of about from 120° to 160° C. for about from 0.5 to 10 minutes, the lower temperature being employed with the longer time intervals, to react said compound with the textile, and removing unreacted materials from the cured textile, thereby to produce a modified textile characterized in that it is wrinkle resistant, will withstand hypochlorite bleaching without damage to the textile, and is durable to laundering in which acidic or alkaline conditions are encountered.

3,167,385
**METHOD OF IMPROVING THE SAFE IRONING TEMPERATURE AND CRYSTALLINITY OF CELLULOSE TRIACETATE TEXTILE FIBRES WITH SPECIFIC ORGANIC MEDIA**
Ralph James Mann, Maitland Walton Alford, and Boleslaw Krzesinski, all of Spondon, near Derby, England, assignors to British Celanese Limited, a corporation of Great Britain
No Drawing. Filed Nov. 29, 1957, Ser. No. 699,515
Claims priority, application Great Britain, Dec. 7, 1956, 37,476/56
3 Claims. (Cl. 8—131)

1. The method of improving textile fibres of cellulose triacetate having an acetyl value above about 59%, calculated as acetic acid and initially having a safe ironing temperature below 190° C., which comprises contacting said fibres with at least about 150% their weight of vinyl acetate for about 1 to 30 minutes at a temperature of about 40 to 20° C.

2. The method of improving textile fibres of cellulose triacetate having an acetyl value above about 59%, cal-

culated as acetic acid and initially having a safe ironing temperature below 190° C., which comprises contacting said fibres with at least about 150% their weight of an aqueous solution of acetamide of about 50% concentration for about 30 minutes at about 80° C.

3. The method of improving textile fibres of cellulose triacetate having an acetyl value above about 59%, calculated as acetic acid and initially having a safe ironing temperature below 190° C., which comprises contacting said fibres with at least about 150% their weight of an aqueous solution of about 20–30% by volume of gamma-butyrolactone at about 90 to 98° C. for a time sufficient to raise the safe ironing temperature by at least 10° C.

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3,167,386

## COMPLEX PERCHLORATE COMPOUND AND ITS PRODUCTION

Albert D. McElroy, Mars, Joseph S. Hashman, Evans City, and Jack C. Renforth, Valencia, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 10, 1961, Ser. No. 88,577
13 Claims. (Cl. 23—14)

1. Tris(nitronium)aluminum hexaperchlorate,

$$(NO_2)_3Al(ClO_4)_6$$

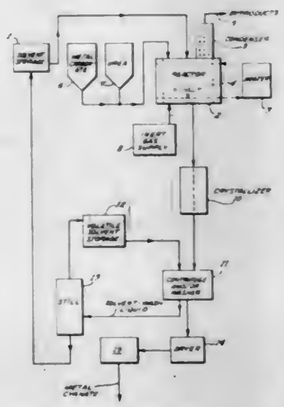
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3,167,387

## PROCESS FOR THE PRODUCTION OF ALKALINE CYANATES IN SULFOXIDE AND SULFONE SOLVENTS

William E. Erner, Brandywine Hundred, Del., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed Aug. 29, 1963, Ser. No. 305,333
4 Claims. (Cl. 23—75)



1. The method of synthesizing a metal cyanate selected from the group consisting of lithium, sodium, potassium, rubidium, caesium, beryllium, magnesium, calcium and strontium cyanate from the corresponding metal carbonates and urea which comprises:

(*a*) reacting at a temperature in the range from about 80° C. to about 250° C. a solution of the metal carbonate and urea dissolved in a solvent selected from the group consisting of dimethyl sulfoxide, methyl ethyl sulfoxide, and dimethyl sulfone;

(*b*) removing volatile byproducts formed during the approximately fifteen minutes of such reaction; and

(*c*) cooling, crystallizing and recovering the resulting metal cyanate.

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3,167,388

## MASSIVE CRYSTALS OF $U_3O_8$

Donald E. Rhodes, Joplin, Mo., assignor, by mesne assignments, to Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla., a corporation of Delaware

No Drawing. Filed Apr. 26, 1961, Ser. No. 105,574
12 Claims. (Cl. 23—14.5)

1. The process of producing massive crystals of $U_3O_8$ comprising melting a compound of uranium to form a molten mass, maintaining said molten mass at a temperature and for a period of time whereby it is substantially all converted to stoichiometric $UO_2$, cooling to a temperature in the range of about 950° to about 1150° C. under conditions such that the composition of said stoichiometric $UO_2$ is retained, and oxidizing the said stoichiometric $UO_2$ while maintaining said temperature range until the said stoichiometric $UO_2$ oxidizes to $U_3O_8$, said $U_3O_8$ being in a massive crystalline form.

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3,167,389

## ION EXCHANGE PROCESS FOR SEPARATING THE RARE EARTHS

Mark M. Woyski, West Chicago, Ill., assignor to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

Filed May 15, 1962, Ser. No. 198,394
7 Claims. (Cl. 23—19)

1. In an ion exchange system for separating and purifying rare earth and yttrium product ions from mixtures thereof, said system including a plurality of operatively interconnecting zones arranged for selective isolation successively of at least one of said zones from the others without interruption of ion exchange and separation in said other zones and in which each of the zones contains a bed of solid cation exchange medium, the improvement which comprises:

(1) establishing a number of successive separation zones by loading the solid beds in said zones with quantities of a solution containing a mixture of the ions which are to be separated and purified, said ions being selected from the group consisting of rare earth and yttrium ions,

(2) establishing the next successive zone as a retainer zone by loading the solid bed therein with quantities of a solution containing a mixture of retainer ions selected from the group consisting of rare earth and yttrium ions, the retainer ions having an effective atomic number at least as high as the highest effective atomic number of the ions in the mixture loaded in said separation zones,

(3) establishing ion exchange eluting solution sequestering agent comprising an aqueous solution containing a rare earth complex of ethylenediamine tetraacetate anions, the ions in said ion exchange eluting solution having an effective atomic number no higher than the lowest effective atomic number of the ions in the mixture loaded in said separation zones and the solution having a pH ranging from about 2.5 to 4.5,

(4) passing said eluting solution successively through said separation zones whereby the eluting solution absorbs the ions originally loaded into the separation zones with a consequent displacement of the rare earth ion content of the eluting solution into the solid beds in the separation zones,

(5) passing the resultant modified eluting solution through the retainer zone to effect therein an ion exchange in which the retainer ions displace the ions previously absorbed by the eluting solution with the latter ions becoming associated with the solid bed in the retainer zone, and

(6) continuously acidifying the liquid medium effluent exiting from the retainer zone to separate an aqueous solution of the retainer ions from the sequestering agent,

(7) passing the separated sequestering agent to an eluting solution preparation and supply zone for recycle through said separation zone, and

(8) separating the desired separated and purified rare earth and yttrium product ions from association with the solid bed and recovering the same by ion exchange with eluting solution from said preparation and supply zone.

6. In the method of separating and concentrating rare earths and yttrium from mixtures thereof which comprises: loading a solution cation exchange medium with a solution containing a mixture to be separated and concentrated, passing a liquid ion exchange medium sequestering agent comprising an aqueous solution containing a rare earth complex of ethylene diamine tetraacetate anions through said solution medium, said liquid medium including therein selected ions having an effective atomic number no higher than the lowest effective atomic number of the rare earth and yttrium ions to be separated and concentrated for preferential ion exchange with said ion-loaded solid medium, separating the resulting effluent into sequestering agent and liquid fractions of concentrated ion containing portions thereof, and separating the ion concentrates therefrom, the imrpovement which comprises continuously regenerating said ion exchange liquid medium by passing the complex-free sequestering agent recovered from said effluent in reverse flow through said solid medium.

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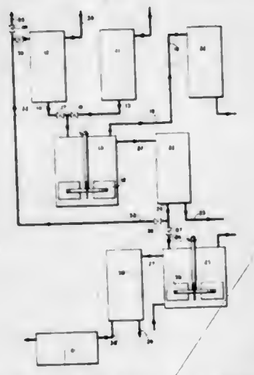


3,167,390

## TREATMENT OF WASTE ACID LIQUOR

Peter Simpson, Stockport, George F. G. Clough, Adlington, and Kenneth H. Todhunter, Northenden, England, assignors to Simon-Carves Limited, Stockport, England, a corporation of Great Britain and Northern Ireland

Filed May 17, 1961, Ser. No. 110,792
11 Claims. (Cl. 23—100)



1. A method of treating waste acid liquor containing ferrous salts with ammonia liquor containing ammonium hydroxide to form ferrous hydrate and an ammonium salt which comprises, supplying a stream of said waste acid liquor and a stream of said ammonia liquor to a body of mixed acid liquor and ammonia liquor, admixing said stream of acid liquor and said stream of ammonia liquor immediately at their entrance to said body of mixed acid liquor and ammonia liquor, maintaining said body of mixed acid liquor and ammonia liquor at a temperature in excess of 50° C. while agitating said body of liquor to mix said streams promptly into said body to form a filtrable precipitate of ferrous hydroxide and a solution of ammonium salt, removing said precipitate from said solution of ammonium salt, treating the reacted liquor with an oxygen containing gas until the ferrous salt remaining therein is oxidized to an insoluble ferric compound, removing the resulting ferric compound from said liquor and evaporating the liquor after removal of said ferric compound to form iron-free ammonium salt crystals.

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3,167,391

## PURIFICATION OF ANHYDROUS HYDROGEN FLUORIDE

Carl F. Swinehart, University Heights, Ohio, assignor to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed July 18, 1963, Ser. No. 296,120
8 Claims. (Cl. 23—153)

1. In a process for the purification of anhydrous hydrogen fluoride from the reaction between sulfuric acid and fluorspar comprising effecting said reaction to produce free gaseous hydrogen fluoride, absorbing said hydrogen fluoride gas in an aqueous acid solution, heating said solution containing the absorbed hydrogen fluoride gas to distill said gaseous hydrogen fluoride containing impurities comprising water vapor, pentavalent phosphorus compounds and hexavalent sulfur compounds and contacting said hydrogen fluoride gas with a scrubbing liquid consisting essentially of liquid hydrogen fluoride, the improvement comprising continually adding liquid water to said scrubbing liquid to maintain the water concentration between 1 part by weight water to 9 parts by weight hydrogen fluoride and 1 part by weight water to 500 parts by weight hydrogen fluoride whereby to retain said phosphorus and said sulfur in said scrubbing liquid and to reduce the phosphorus content and the sulfur content of said gaseous hydrogen fluoride and to recover substantially pure anhydrous hydrogen fluoride.

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3,167,392

## PREPARATION OF DECABORANE

Lawrence J. Edwards, Zellenople, Pa., and Joseph P. Nigon, Washington, D.C., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 14, 1956, Ser. No. 566,066
8 Claims. (Cl. 23—204)

1. A method of preparing decaborane which comprises pyrolyzing diborane under pressures from about 280 p.s.i.g. to 570 p.s.i.g. in the presence of a solvent for decaborane which is inert to both diborane and decaborane and separating the decaborane from the reaction products thus formed.

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3,167,393

## METHOD OF PRODUCING PURE SINGLE CRYSTALS OF GRAPHITE

Armando A. Giardini, New Shrewsbury, and John E. Tydings, Keyport, N.J., assignors to the United States of America as represented by the Secretary of the Army

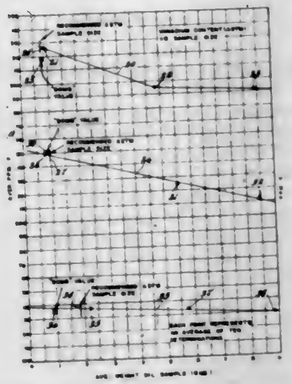
No Drawing. Filed Apr. 5, 1962, Ser. No. 185,483
16 Claims. (Cl. 23—209.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The process of preparing graphite crystals comprising: charging a container of carbon with a solvent for carbon from the group consisting of ammonium chloride, ammonium iodide, ammonium bromide, ammonium lithium chloride, ammonium di-hydrogen phosphate, dehydrated sodium borate, nickel chloride hexamine and cobalt chloride diamine; subjecting said container to about 60,000 atmospheres of pressure; heating said container to approximately 1600° C.; cooling said container to room temperature while maintaining said pressure; and reducing said pressure to normal.

### 3,167,394
### METHOD OF DETERMINING VANADIUM

Daniel J. Brogan, 1649 N. 59th St., Philadelphia, Pa.

Filed Nov. 8, 1961, Ser. No. 151,003
3 Claims. (Cl. 23—230)

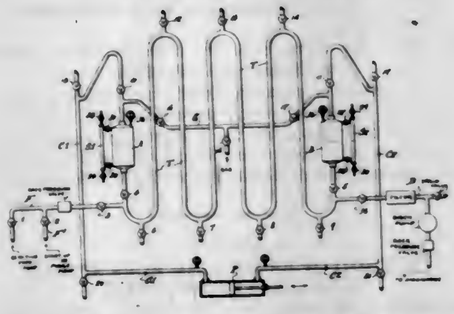


2. The method of converting all of the vanadium in a sample of fuel oil to a valence of 5, which comprises placing a sample of fuel oil containing vanadium in a combustion bomb, introducing oxygen under superatmospheric pressure to the bomb, igniting the content of the bomb, burning said fuel oil in the bomb, and determining the vanadium in the content colorimetrically.

### 3,167,395
### RESONATING PULSE REACTOR

Sydney P. Spence, Caldwell, Walter R. Marshall, Bloomfield, and Harvey W. Steen, South Plainfield, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Aug. 26, 1958, Ser. No. 757,236
6 Claims. (Cl. 23—252)

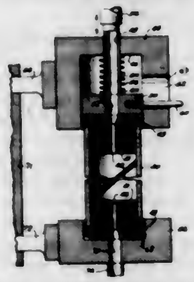


1. A reactor system comprising a tube through which a reaction liquid may be caused to pass in continuous progressive flow from feed to discharge ends thereof, a branch at the feed end of said tube through which said liquid may be supplied to said tube, a branch at the discharge end of said tube through which the reacted liquid may be withdrawn, another branch at said feed end, a first potential energy storing device connected to said other feed end branch, another branch at said discharge end, a second potential energy storing device connected to said other discharge end branch, and pulse generating means connected to at least one of said storing devices, whereby an oscillatory flow component larger than the pulses from said generating means, may be produced within the tube at approximately the natural resonant frequency of the system formed by the energy storing devices and reaction liquid.

### 3,167,396
### ANALYTICAL COMBUSTION TRAIN

John J. J. Staunton, Oak Park, Lewis Malter, Niles, William J. Gleason, Villa Park, and Rame W. Bull, Mount Prospect, Ill., assignors, by mesne assignments, to Coleman Instruments Corporation, Maywood, Ill., a corporation of Delaware

Filed Feb. 27, 1961, Ser. No. 91,713
7 Claims. (Cl. 23—253)

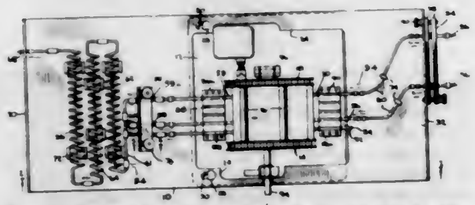


1. In an analytical combustion train comprising a plurality of tubes interconnected by conduits including a vertical absorption tube containing solid particulate material, said particulate material serving to remove specific constituents from gases flowing through the train, which tube must be removed from the train for weighing, means for detachably incorporating said absorption tube in said train between the ends of adjacent conduits comprising a fitting fixed to a stationary base member and having a recess therein for receiving one end of said tube, a bore extending through said fitting to the recess, a conduit connected to said fitting in communication with said bore, a gasket member interposed between said one end of said tube and the bottom of said recess, a second fitting mounted on said stationary base member for receiving the other end of said tube, said second fitting having a recess fitted with a slidable plug, resilient means for urging said plug toward said other end of said tube, a bore extending through said second fitting to said recess, a gasket member interposed between said other end and said plug, and a conduit connected to said second fitting in communication with said bore.

### 3,167,397
### PANEL MOUNTING FOR TUBING AND ACCESSORIES FOR ANALYSIS APPARATUS

Leonard T. Skeggs, Cleveland, Ohio, and Blanche R. Stuart, Rutherford, N.J., assignors to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York

Filed May 24, 1962, Ser. No. 197,421
14 Claims. (Cl. 23—253)



1. Apparatus for an analysis system, comprising a pump, an accessory panel removably mounted on said pump, said pump having tube compressing means for compressing resiliently flexible pump tubes for pumping fluids through said tubes, respectively, said panel comprising:

(*a*) a plate carrying a series of accessories through which a sample stream and various fluid streams flow for processing said sample for analysis by said fluids,



(*b*) said accessories being in fluid flow communication with each other in accordance with a predetermined arrangement so that said sample is processed by said fluids according to a pre-established procedure,

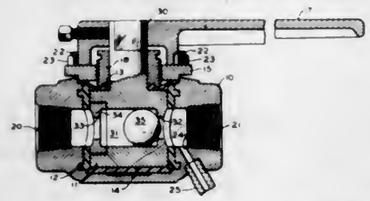
(*c*) said plate having an opening therein through which said tube compressing means of said pump extends in the mounted condition of said panel on said pump, and

(*d*) said plate carrying a series of resiliently flexible pump tubes for said fluids and for the sample connected to said accessories in fluid flow communication therewith in accordance with said predetermined arrangement and positioned above and extending across said opening for engagement by said tube compressing means for the pumping operation in said mounted condition of the panel.

### 3,167,398
### METERING APPARATUS

William H. Whittington, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 23, 1961, Ser. No. 119,123
11 Claims. (Cl. 23—285)



1. A metering apparatus comprising a body and a member rotatable therein, a chamber in said member having two openings, a piston in said chamber, a seat in said member for said piston adjacent each of said two openings, each of said seats serving to maintain said piston entirely within said chamber and to close the space between said piston and said member, at least one inlet in said body, at least one outlet in said body, and means for rotating said member to connect each of said openings alternately with an inlet and an outlet.

### 3,167,399
### RADIAL FLOW REACTOR

Andrew C. Hansen, Jr., Surrey, England, assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 8, 1962, Ser. No. 193,285
3 Claims. (Cl. 23—288)

1. A reactor comprising:

(1) a pressure-tight vessel having a cylindrical vertical wall;

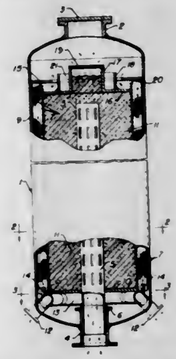
(2) a perforate centerpipe within the vessel extending upwardly from the lower portion of the vessel and terminating below the upper end thereof;

(3) a vertically extending perforate particle retaining means within the vessel proximately spaced from said vertical wall to form with the latter a longitudinal fluid passageway, said particle retaining means being substantially coextensive with the perforated length of said centerpipe but extending above the upper end of the centerpipe and forming therewith an annular particle retaining space;

(4) horizontal peripheral fluid distribution means disposed in the lower portion of the vessel and having a number of circumferentially spaced ports in the distribution means communicating directly with said longitudinal passageway;

(5) an annular baffle member extending inwardly from said vertical wall across the top of said perforate particle retaining means and sealing off the upper end of said longitudinal passageway;

(6) a second baffle member spaced below the first-mentioned annular baffle member and extending inwardly from said particle retaining means across said particle retaining space, said second baffle member comprising an imperforate horizontal annular plate having an axially positioned open-ended vertical cas-



ing extending upwardly from the plate to a point above the upper end of said centerpipe with a perforated closure member being disposed across the casing above the centerpipe;

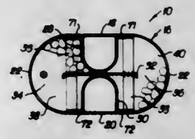
(7) a vertical annular baffle extending upwardly from said horizontal annular plate through the opening of said first-mentioned annular baffle member and spaced from said vertical casing; and

(8) conduit means separately connecting said centerpipe and said fluid distribution means with the exterior of said vessel.

### 3,167,400
### CATALYTIC CONVERTER

Charles E. Fisher, La Mirada, Calif., assignor to Norris-Thermador Corporation, Los Angeles, Calif., a corporation of California

Filed July 30, 1962, Ser. No. 213,211
4 Claims. (Cl. 23—288)



1. A catalytic converter for treating exhaust ingredients produced by an internal combustion engine, comprising: a case defining a chamber having opposed ends; an inlet plenum tube having an elongated perforated portion in said chamber extending substantially from end to end thereof; an outlet plenum tube having an elongated perforated portion in said chamber and extending substantially from end to end thereof in parallel and overlapping relation to said elongated perforated portion of said inlet plenum tube and in close proximity thereto; a heat conductive baffle plate between and parallel to said portions and extending substantially the entire length of said portions, said baffle extending laterally a substantial distance beyond the sides of said portions and terminating in opposed edges spaced inwardly from opposite sides of said chamber; and a bed of particulate catalyst material substantially filling said chamber and encompassing substantially all surfaces of said portions exposed within said

chamber and said baffle plate whereby to define an extended flow path for exhaust gases from said inlet portion to said outlet portion, through said material and around said baffle while providing a short heat conductive path from the region adjacent one portion to the region adjacent the other portion through said baffle plate.

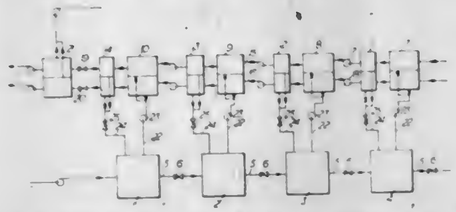
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3,167,401

## INCREMENTAL HEAT TRANSFER INCLUDING DIRECT CONTACT OF VOLATILE LIQUIDS

Elkan Ronald Herman, Ahuza, Haifa, Israel, assignor to Chemicals & Phosphates Limited, a company of Israel

Filed Apr. 14, 1961, Ser. No. 102,971
Claims priority, application Israel, Apr. 26, 1960, 13,796
11 Claims. (Cl. 23—302)



1. A heat exchange process for the cooling of a first aqueous liquid in at least two cooling stages and for the heating of a second aqueous liquid in at least two heating stages, the overall cooling and heating being over ranges of at least five centigrade degrees and between substantially equal temperature levels, comprising the steps of placing a volatile water-immiscible refrigerant fluid into intimate thermal contact with said first aqueous liquid, evaporating volatile fluid from the first liquid in a first cooling stage thereby cooling the first liquid to a first lower temperature level, passing the first liquid from the first cooling stage to a second cooling stage, evaporating further volatile fluid from the first liquid in the second cooling stage thereby cooling the first liquid to a second lower temperature level, condensing the volatile fluid from one of said cooling stages on the second liquid in a first heating stage thereby heating the second liquid to a first higher temperature level, passing the second liquid from the first heating stage to a second heating stage, condensing the evaporated volatile fluid from the other of said cooling stages on the second liquid in the second heating stage thereby heating the second liquid to a second higher temperature level, separating the condensed fluid from the second liquid and returning the separated fluid to the cooling stages.

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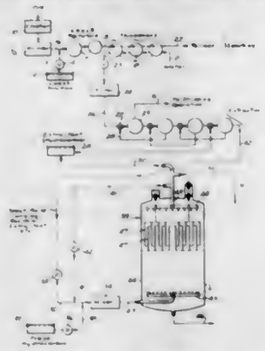
3,167,402

## PROCESSING OF ORES

Gilbert J. Samuelson, Webster Groves, and Albert D. Franse, Crestwood, Mo., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

Filed Jan. 4, 1960, Ser. No. 104
6 Claims. (Cl. 23—309)

1. A method of purifying metal-bearing materials by solvent extraction, comprising: mixing an aqueous solution containing metal values and impurities with an organic solvent comprising a first-added hydrocarbon containing therein an extractant capable of selectively extracting the metal values from the aqueous solution, thereby producing an organic extract phase and an aqueous raffinate phase; separating said phases by difference in specific gravity to produce a separated organic phase and a separated aqueous phase containing small amounts of residual metal values, residual first-added hydrocarbon and residual extractant as residual impurities; recovering metal values from the separated organic extract phase; mixing with the separated aqueous phase while containing said small amounts of residual metal values, first-added hydrocarbon and extractant as residual impurities a sufficient amount of a second-added hydrocarbon having selective solubility toward said residual impurities to form a hydrocarbon-continuous mixture in which the hydrocarbon phase contains substantially all said residual extractant and a substantial portion of said residual metal values and residual first-added hydrocarbon present as impurities in said separated aqueous phase, said hydrocarbon-continuous mixture containing a dispersed aqueous phase comprising droplets of said separated aqueous phase correspondingly depleted in content of said residual extractant, metal values and first-added hydrocarbon; establishing between spaced electrodes a high-voltage electrostatic field of sufficient intensity to coalesce the dispersed droplets of such dispersed aqueous phase into aqueous masses of sufficient size to gravitate from said hydrocarbon phase; bridging across such electrodes such mixture while still hydrocarbon-continuous to coalesce such dispersed aqueous phase droplets into such aqueous masses; and separating such aqueous masses to produce two separated bodies comprising, first, a separated hydrocarbon body now containing substantially all said residual extractant and a substantial portion of said residual metal values and, second, a separated aqueous body comprising the material of said aqueous masses and correspondingly depleted in the residual extractant and residual metal values now in said separated hydrocarbon body.



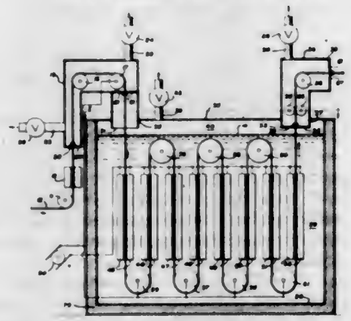
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3,167,403

## BASE MATERIALS COATED WITH AN ALLOY OF ALUMINUM AND MANGANESE

Edwin J. Smith, Steubenville, Ohio, and Michael G. Vucich and Lowell W. Austin, Weirton, W. Va., assignors to National Steel Corporation, a corporation of Delaware

Filed June 9, 1960, Ser. No. 34,923
8 Claims. (Cl. 29—196.2)



7. A ferrous metal base coated on at least a portion of its surface with an alloy consisting essentially of about 10–70% manganese and the remainder aluminum together with incidental impurities.

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3,167,404

## FLANGED BIMETALLIC BEARING

Wilbert H. Morrison and Donald W. Williams, Euclid, Ohio, assignors to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio

Original application Dec. 28, 1959, Ser. No. 862,399, now Patent No. 3,093,885, dated June 18, 1963. Divided and this application Sept. 10, 1962, Ser. No. 222,998
3 Claims. (Cl. 29—196.2)



1. An automotive bearing comprising: a steel backing layer and a layer of aluminum alloy metallurgically bonded to said layer face to face; said aluminum alloy layer consisting essentially of 10–25% tin constituents and the balance substantially aluminum.

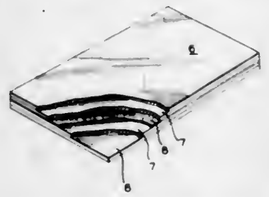
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3,167,405

## LAMINATED ALUMINUM ARTICLE

Pieter Muije, William R. Mohondro, and Maurice C. Fetzer, Spokane, Wash., assignors to Kaiser Aluminum and Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed May 8, 1957, Ser. No. 657,959
4 Claims. (Cl. 29—197)



1. An integrally bonded laminated sheet comprising a zinc-aluminum alloy core layer interposed midway between four layers of aluminum alloys, the two layers of aluminum alloy contacting said core layer being of commercial purity aluminum, while the outer two layers are of an aluminum alloy of higher strength than commercial purity aluminum, said core layer consisting essentially of zinc and from about 0.1 to 30% aluminum and constituting not over 2% of the total thickness of the laminated sheet.

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3,167,406

## PREPARATION OF BRAZING ALLOYS AND PRODUCTS FORMED THEREBY

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,203
8 Claims. (Cl. 29—198)

5. A composite brazing composition consisting of a metal strip consisting of from about 70% to about 80% manganese, and from about 20% to about 30% nickel, said strip having a coating of metallic cobalt thereon, in an amount such that when the coated strip is melted, a brazing alloy is formed, consisting of from about 55% to about 78% manganese, from about 14% to about 30% nickel, and from about 2% to about 20% cobalt.

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3,167,407

## HOT GAS DISTRIBUTION FOR DRYING OBJECTS OF VARYING CROSS-SECTION

Hollis H. Bascom, Livermore, Calif., assignor to Coast Manufacturing and Supply Co., Livermore, Calif.

Filed Nov. 12, 1959, Ser. No. 852,372
2 Claims. (Cl. 34—103)



1. In a drying enclosure, apparatus for filtering and distributing hot gas, over the surface of an object of varying cross section, proportionally to the varying cross-sectional area of the object with respect to a central axis thereof comprising a bag formed by a plurality of variably spaced apart glass fibers so that said bag has a capacity to pass hot gas between adjacent fibers, said bag being formed with respect to a second axis centrally thereof so that the air passing capacity therethrough is substantially proportional to the varying cross-sectional area of the object, means for mounting said bag in the enclosure adjacent the object with the object axis and said second axis in substantially parallel relationship, and means for supplying hot gas interiorly of said bag so that the hot gas passes between said fibers to said object in amounts substantially proportional to the varying cross-sectional area of the object, the proportionality existing between each point of air emission from the bag and its corresponding point of impingement on the object.

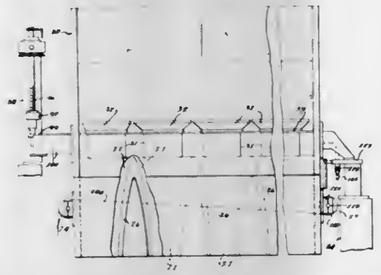
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3,167,408

## DRYER HOOD CONSTRUCTION FOR WEB MATERIAL

Edgar J. Justus and Lawrence A. Moore, Beloit, Wis., assignors to Beloit Corporation, a corporation of Wisconsin

Filed Nov. 16, 1961, Ser. No. 152,836
7 Claims. (Cl. 34—122)



1. In an apparatus particularly adapted for drying a traveling fibrous web in the making of paper;

(*a*) a hood,
(*b*) a pressure zone within said hood,
(*c*) a vacuum zone within said hood,
(*d*) at least one air fan in said hood establishing said pressure and vacuum zones,
(*e*) an air heater in said pressure zone,
(*f*) a plenum in communication with said pressure zone having a plurality of air impingement nozzles leading therefrom,

(*g*) exhaust passageways leading from the traveling web and passing through said plenum and having communication with said vacuum zone,

(*h*) and spaced helical baffles extending along said plenum and dividing said plenum into a plurality of plenum chambers having helical side walls blending the air passing through adjacent plenum chambers onto the traveling web.

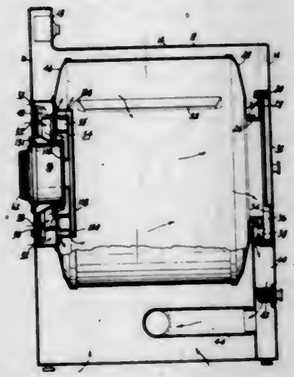
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**3,167,409**

## ROTARY CLOTHES DRYER WITH DIRECT DRIVE MOTOR AND SPEED REDUCER ASSEMBLY

**Byron L. Brucken, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Dec. 21, 1961, Ser. No. 161,139**
**3 Claims. (Cl. 34—133)**



1. A prime moving system adapted to rotate a tumbling drum for tumbling clothes and an impeller for initiating a flow of air through said tumbling drum and comprising means forming a housing, partition means in said housing dividing said housing into first and second compartments, a speed reducer in said first compartment, said speed reducer including driven internal gear means having an attachment face adapted for rotating said tumbling drum, bearing means including a wall of said first compartment and a wall of said internal gear means, external gear means smaller than said internal gear means and drivably engaged at one point with said internal gear means, said external gear means having a plurality of ports, means affixed to said partition means and extending into loosely fitting relationship with each of said ports to prevent the rotation of said external gear means, and eccentric driving means relatively rotatably supporting said external gear means and having an attachment portion coplanar with said attachment face of said internal gear means adapted for rotating said impeller, and a motor in said second compartment having a powershaft journaled in said partition in axial alignment with said internal gear means and connected to said eccentric driving means for rotating said eccentric driving means at one speed, thereby to cause said external gear means to gyrate and change the point of engagement with said internal gear means for rotating said internal gear means at another speed.

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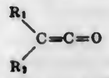
**3,167,410**

## COMBINATION ADDITIVE FOR GASOLINE

**Robert W. Malone, Rahway, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**

**No Drawing. Filed July 16, 1962, Ser. No. 210,232**
**5 Claims. (Cl. 44—69)**

1. A leaded gasoline containing a minor amount sufficient to enhance the octane quality of the gasoline of the reaction products obtained by reacting with an organic ketene which has the structural formula:



wherein $R_1$ and $R_2$ are organic radicals selected from the group consisting of hydrogen and alkyl radicals of from 1 to 6 carbon atoms.

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**3,167,411**

## ANTI-ICING JET FUEL COMPOSITION CONTAINING A HEXAALKYL PHOSPHORIC TRIAMIDE

**Jerzy J. Bialy, Beacon, and George W. Eckert, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**

**Filed Feb. 28, 1962, Ser. No. 176,237**
**5 Claims. (Cl. 44—72)**

1. A jet fuel composition consisting essentially of (1) gasoline and kerosene hydrocarbon fractions boiling from about 100–600 degrees F., said hydrocarbon fractions being free of alkyl lead anti-knock compounds, and (2) an anti-icing amount of a hexaalkyl phosphoric triamide in which said alkyl radicals have from 1 to 4 carbon atoms.

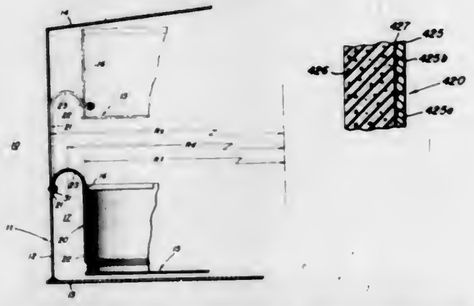
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**3,167,412**

## DRY-SEAL PRESSURE-TYPE GASHOLDERS

**Frank Walter Horner, Jr., Park Ridge, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York**

**Filed Feb. 16, 1962, Ser. No. 173,690**
**14 Claims. (Cl. 48—174)**



5. In a dry-seal pressure-type gasholder, a container including an upstanding substantially cylindrical shell, a substantially cylindrical piston arranged in said container and movable in the vertical direction, said piston being spaced radially inwardly with respect to said shell to provide an annular space therebetween, and an annular curtain-like gas-impervious flexible diaphragm arranged in an upwardly directed annular loop in said annular space, said diaphragm including an annular outer wall sealed adjacent to the bottom thereof to an annular portion of said shell and an annular inner wall sealed adjacent to the bottom thereof to an annular portion of said piston and an annular connecting wall extending between the top of said outer wall and the top of said inner wall, whereby vertical movement of said piston in said shell effects the feed of the material in said diaphragm between said outer and inner walls via said connecting wall and the consequent reversal of the circumferential strains in the material thus fed, said diaphragm being formed of elastomeric material and having a thickness of at least about ¼", the circumferential length of said diaphragm being both stretchable and compressible by about 0.6% to about 2% of the unstrained circumferential length thereof without inducing wrinkles in the material therein.

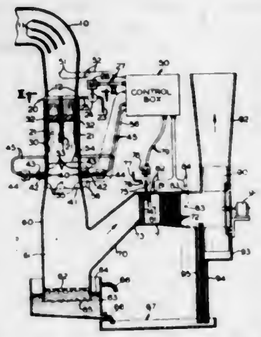


**3,167,413**

## APPARATUS FOR REMOVING CONTAMINATING PARTICLES FROM A GAS STREAM

**Gerrit Kiekens, Laren, Alfred Sher, Amsterdam, Arend Hubregt de Haas van Dorsser, The Hague, Johannes Gerardus Adrianus de Graaf, Rijswijk, and Dick Zaalberg, The Hague, Netherlands, assignors to Machinefabriek Kiekens N.V. Landsmeer, Netherlands, and Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands**

**Filed Apr. 7, 1960, Ser. No. 20,706**
**Claims priority, application Germany Apr. 14, 1959**
**11 Claims. (Cl. 55—225)**




1. An apparatus for removing suspended particles contaminating a gas moving through a duct, said apparatus comprising:

(A) a spraying frame from which a free falling continuous curtain of liquid extends to form a tubular channel of between about four inches and eight inches across,

(B) duct means for guiding said contaminated gas without turbulence downwardly into the upper end of said channel, whereby the velocity of said gas in said tubular channel of liquid causes said liquid to break up into droplets and mingle with said particles,

(C) means for sensing the pressure drop of said gas along its path between a point before and a point after the region in which said droplets are formed and mingle with said particles,

(D) means to regulate the amount of liquid introduced into said spraying frame in accordance with said sensing means for aiding in maintaining said pressure drop relatively constant and at at least about ⅜ inch, water gauge, and

(E) means below said droplet and particle mingling region to separate said gas from said liquid mingled with said particles.

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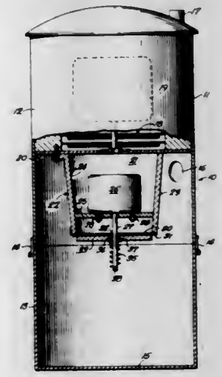
**3,167,414**

## CENTRAL VACUUM CLEANING APPARATUS

**Arvell A. Carpenter, Tulsa, Okla., and Harold A. Wright, 216 W. 2nd St., Tulsa, Okla.; said Carpenter assignor to said Wright**

**Filed Oct. 29, 1962, Ser. No. 233,830**
**6 Claims. (Cl. 55—296)**

1. Suction cleaner apparatus for central built-in cleaning systems comprising a casing having a lower portion for collecting dirt and foreign matter from dirty air drawn into the casing, said casing having an air inlet opening and an air exhaust opening therein, motor driven impeller means within said casing for drawing air through said inlet opening and discharging the same through said exhaust opening, vertically arranged duct means within said casing extending downwardly below said impeller means in vertical alignment therewith forming an inner air uptake chamber and having a lower inlet end spaced above the bottom of said lower casing portion, a horizontal, perforated dust separating disc extending entirely over the inlet end of the duct means, an outer annular downtake duct for dirty air extending in concentric relation with at least the lower portion of the inner duct means to direct air from said inlet opening downwardly about the inner duct means and into said lower casing portion and thence upwardly through said duct means and said impeller means, an elongated scraper blade rotatably supported immediately below said perforated dust separating disc for engaging and sweeping the area of the lower surface of said disc to scrape dust and foreign matter therefrom upon rotation of said scraper blade, and an electric motor supported in concentric relation with said duct means spaced from the sides thereof having a depending shaft extending through said disc and coupled to said scraper blade to rotate the latter about the center axis of said disc, said scraper blade having a central opening therein of greater diameter than said motor shaft, said motor shaft extending freely through said central opening and terminating at a position spaced below said scraper blade, and the coupling between said motor shaft and said scraper blade including an elongated coil spring surrounding the portion of said motor shaft projecting below said scraper blade coupled at its lower end with said shaft to be rotated about its axis upon rotation of said shaft and coupled at its upper end to said scraper blade to rotate the scraper blade and resiliently bias the same upwardly into scraping engagement with said disc.



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**3,167,415**

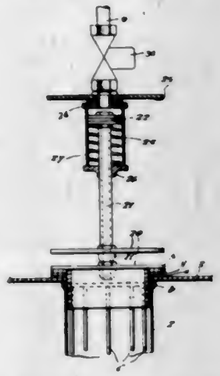
## CLEANING DEVICES FOR GAS FILTERING APPARATUS

**Harold Anthony Edwards, Clevedon, England, assignor to Nailsea Engineering Company Limited, Nailsea, England, a company of Great Britain and Northern Ireland**

**Filed Oct. 31, 1960, Ser. No. 66,161**
**Claims priority, application Great Britain, Nov. 2, 1959, 37,153/59**
**6 Claims. (Cl. 55—302)**

1. A cleaning device for air filtering apparatus including a filter chamber defined by side and bottom walls joined to form an enclosure having an opening at the top, said device comprising a high pressure reverse flow air inlet pipe, means connected thereto for controlling passage of air, a cylinder communicating with said high pressure air inlet pipe, a piston disposed within said cylinder and movable therein in response to air pressure, an air passage pipe extending downwardly from within said cylinder and the upper end of which is connected to and extends through said piston for receiving high pressure air entering said cylinder above said piston, a nozzle affixed to the distal end of said air passage pipe and filter

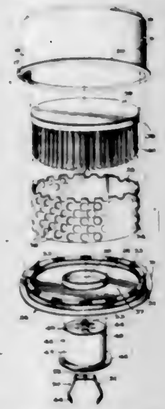
chamber closing means for temporarily closing the opening at the top of said filter chamber, on the downstream



cleaned air side of said chamber, the said closing means being attached to said nozzle so that said nozzle protrudes therethrough.

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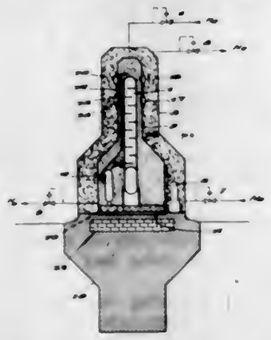
3,167,416
**DISPOSABLE FILTER BREATHER CAP**
Kingsley E. Humbert, Jr., and Theodore Kafitz, Gastonia, N.C., assignors to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed Mar. 17, 1961, Ser. No. 96,407
6 Claims. (Cl. 55—498)



1. A fully disposable air filter cap for attachment to the open top end of a breather pipe, said cap comprising an open bottom outer shell having a top wall and a skirt wall integral with and depending from the periphery of the top wall, a lid embodying a flat, circular floor portion having a central opening defined by an upstanding collar flange, an annular wall forming means comprising an upstanding portion of said lid radially remote from said collar flange, a central mounting insert in the form of a deep, inverted cup for receiving said end of a breather pipe and having a bottom wall and a cylindrical side wall, the side wall terminating in an outwardly projecting flange, the insert extending upwardly through said central opening of said floor portion and being tightly encircled by said collar flange and having said floor portion resting on and secured to said outwardly projecting flange, a cylindrical filter unit consisting of a relatively long annular body of filter material and an encasing foraminous sleeve therearound, said filter unit resting on and being sealed to said flat circular floor portion of the lid and said sleeve having a bottom end fitting snugly in and secured to said annular upstanding wall forming means of said lid, the top end of said filter unit being connected with the top wall of said shell, the foraminous sleeve being spaced from said shell skirt whereby is formed an air admission space around the filter and the filter unit being interiorly spaced from and encircling said mounting insert and the mounting insert having an air opening through a wall thereof, and said filter cap having all of the elements thereof inseparably connected together for complete unitary disposal.

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3,167,417
**LOW TEMPERATURE GAS DECOMPOSITION PLANT**
Alfons Sellmaier, Munich, Germany, assignor to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Hollriegelskreuth, near Munich, Germany, a German company
Original application Aug. 4, 1959, Ser. No. 831,679, now Patent No. 3,107,992, dated Oct. 22, 1963. Divided and this application Oct. 25, 1960, Ser. No. 64,840
Claims priority, application Germany, Aug. 6, 1958, G 25,052
5 Claims. (Cl. 62—42)



1. Means for the thermal insulation of plants consisting of several apparatus parts operating at different temperatures including temperatures below the condensation temperature of nitrogen, which comprises at least two spaced insulating casings disposed one over the other, the casings being packed with insulating material, both casings together enclosing the apparatus parts operating at the lowest temperature in the plant, the outer casing alone enclosing other apparatus parts operating at higher temperatures though still below 0° C., the inner casing containing a gaseous medium having a boiling point at least no higher than that of the gas operating in the apparatus, the outer casing containing a gaseous medium with a poor heat conduction and a higher boiling point than that of the gas being contained in the inner casing.

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3,167,418
**METHOD FOR FORMING A GLASS-TO-METAL SEAL**
Ethan C. Hopkins and Clifford W. Ask, South Woodstock, Conn., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Apr. 5, 1961, Ser. No. 101,021
2 Claims. (Cl. 65—43)

1. A method for hermetically sealing a relatively thin window of dielectric material having relatively broad window surfaces within a peripheral metallic frame by means of a fusing medium, said method comprising the steps of providing a rod of dielectric material having a cross-sectional configuration corresponding to the configuration of said window surfaces, heating said fusing medium to a predetermined temperature, said temperature being sufficiently high so that the medium is adapted to fuse to said



rod material and has a maximum viscosity of $10^4$ poises, said temperature being sufficiently low for preventing substantial volatilization of the medium and so that the rod can be immersed therein for fusing a coating of the medium thereon while permitting portions of the rod to remain below the Littleton softening temperature of the rod material in supporting relation to other portions of the rod, immersing said rod in said fusing medium for fusing a coating of the medium thereon, removing the coated rod from said medium before deformation of the rod occurs, substantially cooling the rod, cutting the rod transversely of its longitudinal axis for forming a relatively thin window element having a peripheral coating of said fusing medium thereon, disposing the coated window element within said metallic frame with said peripheral coating approximately engaging the frame, and heating that portion of the frame for heating said coating approximately engaging the frame to a predetermined fusing temperature by heat transfer from the frame for fusing the frame to said coating before the window element is heated to a deforming temperature.

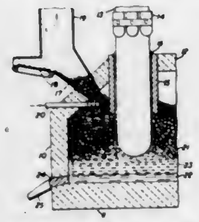
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3,167,419
**PROCESS FOR THE STAGEWISE FLUIDIZED BED ROASTING OF SULFIDIC IRON MINERALS**
Georg Wittmann, Joseph Hille, and Herbert Wolf, all of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Oct. 19, 1961, Ser. No. 146,331
Claims priority, application Germany, Oct. 22, 1960, B 59,824
2 Claims. (Cl. 75—9)

1. In a process for the recovery of coarse-grained roasted ore by the stage-wise roasting of sulfidic iron minerals selected from the group consisting of pyrites and pyrrhotites, in fluidized beds with separate and independent supply of fresh gas containing free oxygen to the individual fluidized beds and separate and independent withdrawal of the roaster gases formed from said individual fluidized beds the improvement which comprises introducing the sulfidic iron mineral with a grain size up to 8 to 10 mm. whilst maintaining the height of each of the individual fluidized beds at 20 to 35 cm., and supplying free oxygen containing gas to the fluidized bed for the preroasting in an amount of 5,700 to 20,000 $m.^3$ (S.T.P.) per $m.^2$ roasting surface per hour and to the subsequent at least one fluidized bed for further roasting in an amount of 2,000 to 2,700 $m.^3$ (S.T.P.) per $m.^2$ roasting surface per hour.

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3,167,420
**PRODUCTION OF METALS OR ALLOYS FROM ORES**
Alfred Gordon Evans Robiette, Bury Farm, Bovingdon, Hertfordshire, England
Filed Jan. 22, 1963, Ser. No. 253,139
Claims priority, application Great Britain, Jan. 24, 1962, 2,647/62; Apr. 6, 1962, 13,332/62; June 18, 1962, 23,406/62
12 Claims. (Cl. 75—11)



1. A process for the production of a metal from ore in an electric arc furnace having an upper part and a lower part, which comprises mixing finely divided ore with finely divided coal having an ASTM designation D720–57 Free Swelling Index of from 2 to 9, forming said mixture into pellets, subjecting said pellets to heat treatment to carbonize said coal and produce in said pellets a cellular network of coke which contains and holds together said ore, introducing said pellets into at least one chamber in open communication with said lower part of said electric arc furnace, preheating said pellets in said chamber to partially reduce said ore therein in the solid state, passing said preheated pellets containing partially reduced ore into said lower part of said furnace, finally reducing said ore in said pellets to molten metal in said lower part of said furnace with release of furnace gas therefrom, and burning at least part of said furnace gas in said chamber to provide heat for said preheating and partial reduction of said pellets therein.

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3,167,421
**POWDERED SOLIDS INJECTION PROCESS**
Robert W. Pfeiffer, Bronxville, and Robert A. Blinckmann, South Ozone Park, N.Y., assignors to Pullman Incorporated, a corporation of Delaware
Filed June 15, 1962, Ser. No. 202,720
20 Claims. (Cl. 75—42)

1. A method of injecting fluidizable solid material into a reaction zone of fluctuating pressure which comprises: preparing solid material to a fluidizable particle size, passing thus-prepared solid material through a series of pressure developing zones of increasing pressure in the direction of flow to a distributor zone, maintaining in said distributor zone a fluidized bed of solid material, the pressure in said distributor zone being maintained at a pressure greater than the pressure at the point of introduction of such material into a reaction zone, flowing a stream of fluidized solid material from said distributor zone to an injection zone discharging into the reaction zone, and controlling the flow of fluidized solid material in said stream at a predetermined substantially constant rate irrespective of the pressure fluctuations of said reaction zone.

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3,167,422
**METHOD OF PRODUCING GALLIUM FROM THE RESIDUES FROM CHEMICAL PRODUCTION OF ALUMINUM ALKYLS AND ALUMINUM-ALKYL DERIVATIVES**
Georg Iwantscheff and Richard Dötzer, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
No Drawing. Filed Apr. 12, 1961, Ser. No. 102,386
Claims priority, application Germany Apr. 16, 1960
1 Claim. (Cl. 75—84.5)

The method of producing gallium, which comprises separating gallium from the elements in the residues resulting from the production of aluminum alkyls and aluminum alkyl derivatives by heating said residue in an HCl current to convert the elements in said residue to the respective chlorides, dissolving said chlorides in a hydrocarbon selected from the group consisting of pentane, hexane, heptane, cychohexane and methylcyclohexane and mixtures thereof, whereby the gallium chloride is concentrated, distilling off the solvent, and recovering gallium from the solution.

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3,167,423
**HIGH TEMPERATURE WEAR RESISTING STEELS**
Birger L. Johnson, Jr., Ligonier, Pa., assignor to Latrobe Steel Company, a corporation of Pennsylvania
Filed Apr. 14, 1964, Ser. No. 360,484
9 Claims. (Cl. 75—126)

1. A wear resisting steel having desirable properties of hot hardness and resistance to corrosion comprising car-

bon about 0.95% to about 1.5%, silicon about 0.95% maximum, manganese about 1% maximum, chromium about 13% to about 19%, vanadium about 0.5% to about 2.5%, molybdenum about 3.5% to about 4.5%, sulphur about 0.025% maximum, phosphorus about 0.025% maximum, and the balance iron with residual impurities in ordinary amounts.

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3,167,424

## ALLOY FOR VALVE SEAT INSERT CASTINGS

William C. Wick, Chicago, Ill., assignor to Wells Manufacturing Company, Skokie, Ill., a corporation of Illinois

No Drawing. Filed Dec. 21, 1961, Ser. No. 161,300
6 Claims. (Cl. 75—134)

6. A valve seat insert casting comprising an alloy consisting essentially of from about .85% to about 3.50% total carbon, from about 1.50% to about 3.50% silicon, from about .50% to about 3.00% manganese, from about 5.00% to about 20.00% chromium, from about 4.00% to about 12.00% molybdenum, from about 4.00% to about 12.00% cobalt, from about 4.00% to about 12.00% tungsten, from about .20% to about 6.00% copper, from about .20 to about 4.00% aluminum, from about 5.00% to about 35.00% iron, and substantially the remainder nickel.

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3,167,425

## METHOD OF PRODUCING A MAGNESIUM BASE ALLOY

James H. T. Petch and Philip Andrew Fisher, Manchester, England, assignors to Magnesium Elektron Limited, Swinton, England

No Drawing. Filed Apr. 17, 1961, Ser. No. 103,220
Claims priority, application Great Britain Apr. 29, 1960
11 Claims. (Cl. 75—135)

1. A method of producing a casting of a magnesium base alloy containing 0.4 to 1.0 percent by weight zirconium which comprises puddling the alloy at a temperature above the liquidus and not exceeding 700° C., in the presence of a zirconium master alloy capable of introducing zirconium into the magnesium at this temperature, bringing the temperature of the alloy to a casting temperature at least equal to the puddling temperature, and thereupon casting the alloy at said casting temperature.

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3,167,426

## NICKEL-BASE ALLOY

John C. Freche, Parma, Ohio, Thomas J. Riley, Lexington, Ky., and William J. Waters, Cleveland, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed May 4, 1961, Ser. No. 107,866
4 Claims. (Cl. 75—171)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The nickel-base alloy consisting essentially of 60 to 75% nickel, molybdenum and tungsten in combination such that the total amount of both elements present in the alloy is from 6 to 10%, 4 to 8% aluminum, 4 to 8% chromium, 0.5 to 3% zirconium, 1 to 7% vanadium, 0.05 to 1.0% carbon, and 3 to 12% tantalum.

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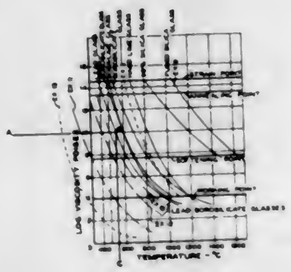
3,167,427

## POLYPHASE MATERIALS

Games Slayter, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Original application Dec. 27, 1955, Ser. No. 555,528, now Patent No. 3,047,383, dated July 31, 1962. Divided and this application Dec. 28, 1961, Ser. No. 162,745
7 Claims. (Cl. 75—201)

1. A method for producing a product formed of a substantially continuous phase of metal and a discontinuous phase of glass fibers uniformly distributed throughout the substantially continuous phase of metal, in which the metal phase is formed of one metal having a sintering temperature higher than the softening point temperature for the glass composition of which the glass fibers are formed and another metal in combination having a sintering temperature below the softening point temperature for the glass composition of which the glass fibers are formed, comprising the steps of mixing the glass fibers with the metals while the latter are in a finely divided form, and in amounts wherein the metal component comprises 20–95 percent by weight of the mixture and where-



in the other metal comprises 5–25 percent by weight of the metallic system, compressing the mixture of metal particles and glass fibers, and heating the compressed mass to a temperature above the sintering temperature for the metal having the lower sintering temperature but below the softening point temperature of the glass composition of which the glass fibers are formed to form the metal into a substantially continuous phase having the glass fibers uniformly distributed therein as a discontinuous phase.

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3,167,428

## TITANIUM POWDER METALLURGY

Alfred R. Globus, Forest Hills, N.Y., assignor to Consolidated Astronautics Inc., Long Island City, N.Y., a corporation of Delaware

Filed Dec. 13, 1961, Ser. No. 158,986
7 Claims. (Cl. 75—204)



1. In the method of producing articles by powder metallurgy, the improvement which comprises compacting and sintering titanium powder of a particle size between about 20–200 mesh having about 5–12% by weight of graphite intimately dispersed upon its surface and penetrating its pores.

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3,167,429

## MONOBATHS CONTAINING SODIUM POLYACRYLATE AND POLYVINYL-PYRROLIDONE

Marilyn Levy, Red Bank, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed May 26, 1961, Ser. No. 113,041
3 Claims. (Cl. 96—61)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A one step processing bath for exposed silver halide photosensitive materials comprising developing elements including 1-phenyl-3-pyrazolidone and fixing agents in proportion to provide simultaneous complete development and fixing of the image and 400 to 1000 cc. of 12.5% solution sodium polyacrylate and 3 to 15 grams of polyvinylpyrrolidone per liter of solution.



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3,167,430

## PRODUCTION OF PHOTOGRAPHIC SILVER HALIDE EMULSIONS

Karl Lohmer, Leverkusen, and Gunter Kolb, Cologne-Stammheim, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 26, 1960, Ser. No. 4,625
Claims priority, application Germany, Jan. 27, 1959, A 31,211
2 Claims. (Cl. 96—114)

1. In a process for the production of photographic silver halide emulsions by precipitating a silver halide in an aqueous medium containing a protective colloid, coagulating said emulsion to obtain a coagulate containing said protective colloid and said precipitated silver halide and redispersing said coagulate, the improvement according to which the silver halide is precipitated in an aqueous medium containing as the only protective colloid a film-forming copolymer consisting essentially of (1) 65 to 90% by weight of a member of the group consisting of methacrylamide, acrylamide and mixture thereof, (2) 5 to 34% by weight of a monomer of the group consisting of vinyl esters of a saturated aliphatic monocarboxylic acids containing from 1 to 20 carbon atoms, esters of acids of the group consisting of acrylic acid and methacrylic acid with monohydric saturated alcohols containing from 1 to 20 carbon atoms and (3) 1 to 15% by weight of an olefinically unsaturated organic compound containing acid groups selected from the group consisting of acrylic acid, methacrylic acid, sorbic acid, maleic acid, fumaric acid, itaconic acid, citraconic acid, vinyl sulfonic acid, styrene sulfonic acid and vinyl phosphonic acid.

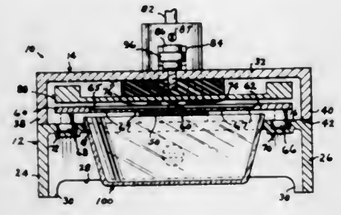
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3,167,431

## METHOD AND APPARATUS FOR RESISTANCE COOKING

Maurice W. Lee, Sr., and Maurice W. Lee, Jr., both of Box 188, Boley, Okla.

Filed Feb. 2, 1961, Ser. No. 86,664
4 Claims. (Cl. 99—1)



1. An electrical resistance cooker, comprising: a base member having a horizontal upper surface; a cover member hingedly connected to said base member and forming a cooking compartment on the upper surface of said base member; a pair of plate-like electrodes overlying the upper surface of said base member in side by side spaced-apart relation; electrical insulating lugs interposed between said base member and said pair of plate-like electrodes and supporting the latter in a horizontal plane spaced above the upper surface of said base member; a third plate-like planar surfaced electrode coextensive with respect to the area encompassed by said pair of electrodes secured within said cover in parallel spaced relation above said pair of electrodes; and means connected with a source of electrical energy and each respective one of said pair of plate-like electrodes, said pair of plate-like electrodes and said third plate-like electrode being adapted to complete a circuit by contiguously contacting opposite surfaces of an article of electrical conducting food placed therebetween, whereby the current voltage is reduced to a desired maximum by the resistance of the food in passing from one of said pair of electrodes through the food to said third electrode and back through the food to the other one of said pair of electrodes.

3. A method of cooking food, comprising: providing a pair of conjunctively positioned electrode plates insulated from each other and connected to opposite poles of a source of alternating current; positioning a third electrical conducting plate in spaced overlying relaton with respect to said pair of plates; completing a series circuit by placing electrical conducting food between said pair of plates and said third plate, whereby the electromotive force is reduced to a desired food cooking value by the current passing through two separate portions of the food.

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3,167,432

## SLURRY TREATMENT OF FLOUR WITH PROTEOLYTIC ENZYMES AND DRY MIXES UTILIZING THE RESULTING FLOUR

Edward E. Colby, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed May 7, 1962, Ser. No. 192,794
6 Claims. (Cl. 99—93)

1. A proteolytic enzyme-treated hard wheat flour containing at least about 10.5% protein by weight and adapted for use in producing chemically leavened bread-type bakery products, said flour being characterized when tested in a farinograph in admixture with sufficient water to produce at a peak development of 500 Brabender units by a mixing time to achieve such development of about 1.5–4 minutes and a maximum mixing tolerance of about 5 minutes.

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3,167,433

## PLASTICIZED YEAST

Ira A. MacDonald and Alan S. Geisler, Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 11, 1962, Ser. No. 209,259
4 Claims. (Cl. 99—96)

1. A yeast composition which contains from about 0.1 to about 0.5 weight percent of lactated lauric acid mono- and diglycerides which contain from about 0.3 to about 1.25 lactate groups per glyceryl radical.

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3,167,434

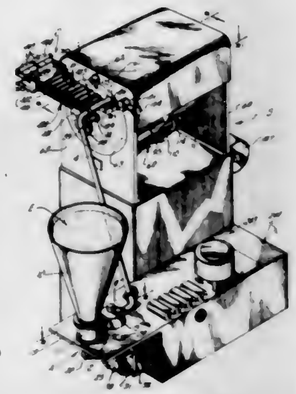
## MANUFACTURE OF COOKED SAUSAGE PRODUCTS

Bernard Sassen, Los Gatos, Calif., and George D. Mylchreest, Simsbury, and Alfred J. Kargl, Manchester, Conn., assignors to Emhart Corporation, a corporation of Connecticut

Continuation of application Ser. No. 806,936, Apr. 16, 1959. This application Dec. 7, 1962, Ser. No. 244,854
16 Claims. (Cl. 99—109)

1. A method of producing cooked sausage products comprising the steps of feeding a predetermined charge of comminuted meat in water emulsion into a mold, applying electric current to flow through the emulsion charge for a period not greater than ½ second to impart the total heat input required to cook the emulsion by quickly and uniformly heating the emulsion charge while retained within the mold under a pressure of at least 50 p.s.i. to a temperature in the range of 150° F. to 200° F., retaining the charge in the mold for a period of

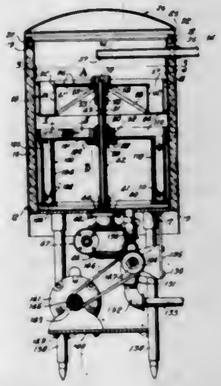
at least 10 seconds under a pressure of at least 50 p.s.i. until an equilibrium temperature and permanent form are



attained by the product, and thereafter ejecting the product from the mold.

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3,167,435
**FILTERING SYSTEMS**
William R. Hall, 2416 Colcord, Waco, Tex.
Filed June 16, 1959, Ser. No. 820,791
5 Claims. (Cl. 99—118)



1. A method for separating extraneous fluids from cooking liquids including: heating cooking liquids containing extraneous fluids to a temperature of between 350 and 400 degrees Fahrenheit; continuously delivering the fluids and liquids into an upper compartment of a closed chamber provided with a screen means having a plurality of perforations and dividing the chamber into an upper compartment and a lower compartment; maintaining the pressure in the upper compartment at twenty-five to twenty-seven inches of mercury; reducing the pressure in the lower compartment to a predetermined value of between fifteen to twenty-five inches of mercury and lower than the pressure in the upper compartment to cause the fluids and liquids to be drawn from the upper compartment into the lower compartment in an atomized condition, said predetermined value being below the value of pressure at which said extraneous fluids pass from their liquid state to their gaseous state and above the value at which said cooking liquids pass from their liquid state to said gaseous state whereby the cooking liquids remain liquid while said extraneous fluids pass to their gaseous state; and drawing off said cooking liquids from said lower compartment while retaining said extraneous fluids in their gaseous state in said lower compartment.

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3,167,436
**FERMENTATION SUSPENDING PROCESS**
William M. Shanner, Carmel, Calif., assignor of forty-three and three-fourths percent to William M. Shanner and Harriet S. Shanner, jointly, Carmel, Calif., forty-three and three-fourths percent to Rudolph J. Hilgers and Eleanor M. Hilgers, jointly, Monterey, Calif., and twelve and one-half percent to Allan P. Murphy, Monterey, Calif.
No Drawing. Filed Apr. 23, 1962, Ser. No. 189,306
7 Claims. (Cl. 99—154)

1. A process for preserving cantelopes having a seed cavity and a skin which is impervious to gas flow that includes inserting needle means into said seed cavity to connect said seed cavity with a source of vacuum and concurrently with a source of inert gas whereby the oxygen originally disposed within said seed cavity is substantially replaced with said inert gas.

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3,167,437
**PROCESS FOR PREPARING STERILIZED CONCENTRATED MILK PRODUCTS**
Abraham Leviton, Washington, D.C., and Michael J. Pallansch, Vienna, Va., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Apr. 23, 1962, Ser. No. 189,647
21 Claims. (Cl. 99—212)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A high temperature-short time sterilized concentrated milk product of improved storage stability comprising a high temperature-short time sterilized concentrated milk having incorporated therein about from 0.003 to 0.015 mole per kilogram of milk solids-not-fat of a water soluble, non-toxic, divalent salt of a metal selected from the group consisting of zinc and iron.

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3,167,438
**CERAMIC ARTICLES AND METHODS OF MAKING**
Robert H. Bristow, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 13, 1962, Ser. No. 216,345
7 Claims. (Cl. 106—46)

1. A ceramic body consisting of a reaction product of about 94 to 99 weight percent $Al_2O_3$ and the remainder about equal weight percentages of ingredients selected from the group consisting of $SiO_2$, CaO and MgO and wherein at least $SiO_2$, and CaO are essential ingredients in addition to said $Al_2O_3$, said $Al_2O_3$ being in crystalline form and bonded by a partially devitrified glass phase consisting of a reaction product of $Al_2O_3$ and the remaining ingredients, and said body being characterized by a power factor of less than 0.00005 measured at a frequency of 10 kmc.

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3,167,439
**COATING COMPOSITION**
Mark S. Vukasovich, Wickliffe, and Herbert L. Johns and Eugene Wainer, Cleveland, Ohio, assignors to Horizons Incorporated, a corporation of New Jersey
No Drawing. Filed Aug. 24, 1961, Ser. No. 133,581
3 Claims. (Cl. 106—85)

1. A shelf-stable paint consisting essentially of an acidic aluminum phosphate solution containing between 2% and 8% by weight of wollastonite therein.



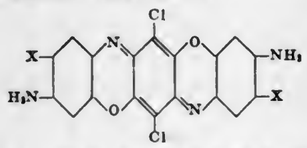
3,167,440
**PLASTIC MODELING COMPOSITION OF A SOFT, PLIABLE WORKING CONSISTENCY**
Noah W. McVicker and Joseph S. McVicker, Cincinnati, Ohio, assignors to Rainbow Crafts, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed May 17, 1960, Ser. No. 29,573
16 Claims. (Cl. 106—150)

1. A smooth and velvety composition of matter which is soft, pliable, non-sticky, non-toxic substantially lump-free, re-workable and re-moldable consisting essentially of a mixture formed from about 450 to 550 pounds of grain flour, about 450 to 550 pounds of water, about 1 to 3 gallons of kerosene and about 75 to 200 pounds of a water soluble substantially non-toxic inorganic chlorine salt.

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3,167,441
**COMPOSITIONS CONTAINING PIGMENTS**
André Pugin, Rieben, near Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland
No Drawing. Filed Feb. 17, 1961, Ser. No. 89,931
Claims priority, application Switzerland, Feb. 19, 1960, 1,909/60
15 Claims. (Cl. 106—168)

1. A composition comprising (1) member selected from the group consisting of natural rubbers, natural resin drying oils, linseed oil varnish, waxes, paraffins, cellulose ethers, cellulose esters, papers, regenerated cellulose, polyethylene, polypropylene, polystyrene, polyvinyl chloride, polyvinylidene chloride, polyvinylacetate, polyacrylonitrile, polyethyl acrylate, polymethyl methacrylate, vinyl chloride-vinyl acetate copolymers, acrylonitrile-vinyl chloride copolymers, polybutadiene rubber, styrene-butadiene copolymer rubber, graft copolymer of ethylenically unsaturated monomer and polymer of an ethylenically unsaturated monomer, melamine-formaldehyde resin, urea-formaldehyde resin, dialkyl maleate resin, polymeric condensation product of polyamine and polycarboxylic acid, polyurethane, polyallyl-2,3-epoxypropyl ether, and reaction product of 2,3-bis-(4-hydroxyphenyl)-propane with excess epichlorohydrin, and (2) dioxazine compound of the formula

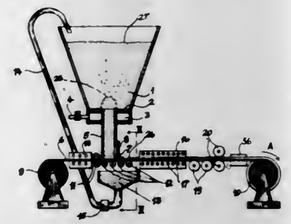



wherein X is a member selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and lower alkyl sulphonyl, said dioxazine compound acting as a pigment for and imparting to said member a fast red-blue to blue shade.

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3,167,442
**METHOD OF FORMING A RESIN COATING ON METAL**
Donald Herbert Brooks, Northdene, Transvaal, Republic of South Africa, assignor, by mesne assignments, to International Protected Metals, Inc., a corporation of New Jersey
Filed May 24, 1961, Ser. No. 112,372
Claims priority, application Republic of South Africa, May 27, 1960, 60/2,169; Nov. 11, 1960, 60/4,593; Nov. 28, 1960, 60/4,846
3 Claims. (Cl. 117—21)

1. A method of feeding a fine particulate material in the form of a thin uniform layer on a moving heated metal base comprising producing a dense-phase aerated bed of discrete, dry, non-tacky thermoplastic resin particles by passing an areating gas upwardly therethrough, producing a confined column of said dense-phase aerated particles from said areated bed below the bed with its upper end in communication with the bottom of said aerated bed, supporting the lower end of said column on the moving metal base, maintaining the supported column in an areated condition such that its degree of aeration is less than that of the aerated bed and diminishes beginning from its upper end in the direction



of its lower end under sufficient aeration to render the particles of the column in a free-flowing condition, and depositing particles from the bottom of said column in the form of a uniform thin coating layer on the base by means of the movement of the base away from the column and the pressure head exerted by the confined particulate material.

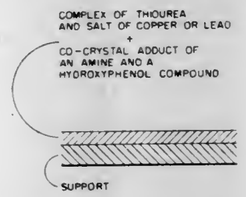
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3,167,443
**PRESSURE SENSITIVE COPYING SHEET**
John F. McHugh, Brooklyn, N.Y., and Donald J. Lazzarini, North Bergen, N.J., assignors to Interchemical Corporation, a corporation of Ohio
No Drawing. Filed July 7, 1961, Ser. No. 122,393
2 Claims. (Cl. 117—36.7)

1. A pressure-sensitive copying sheet comprising a non-metallic supporting base and having coated thereon a visibly opaque, pressure-sensitive blushed film of contrasting color, the film comprising (*a*) cellulose acetate having a softening point of 230° to 250° C. and an acetyl content of about 40% and a viscosity of 6.8–14.8 poises as determined by A.S.T.M. method D–1343–56 in the solution described as Formula A in the A.S.T.M. method D–871–56 and (*a*) a plasticizer selected from the group consisting of n-butyl stearate, tricresyl phosphate, and alkyl phthalates, the alkyl group having 1–4 carbon atoms, the weight of plasticizer present being equal to form about one-half to about two and one-half times the weight of the cellulose acetate, said blushed coating being insensitive to temperatures below 100° C.

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3,167,444
**HEAT RESPONSIVE MARKING SHEETS**
Michael F. Baumann, Hudson, and William R. Lawton and Harry A. Smith, Nashua, N.H., assignors to Nashua Corporation, Nashua, N.H., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,709
5 Claims. (Cl. 117—36.8)

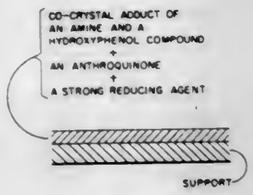



1. A heat-responsive copy sheet adapted to change visibly to a contrasting color wherever subjected to localized heating to temperature of about between 50 and 150° C. comprising, in combination,

(1) a supporting sheet carrying a coating comprising
(2) a normally stable thermally decomposible complex formed of a thiourea and a salt of a metal selected from the class consisting of copper and lead, and
(3) a solid, normally stable, co-crystalline adduct formed of an amine and an hydroxyphenol compound selected from the class consisting of bisphenols and hydroxyphenol substituted chromans, which is heat dissociable and reactive with said complex to produce a contrasting color in the temperature range of 50° C. to 150° C.,
(4) the complex and the adduct being in intimate contact and uniformly distributed on the surface of the supporting sheet.

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**3,167,445**
**HEAT RESPONSIVE MARKING SHEETS**
**Michael F. Baumann, Hudson, and William R. Lawton, Nashua, N.H., assignors to Nashua Corporation, Nashua, N.H., a corporation of Delaware**
**Filed Nov. 19, 1962, Ser. No. 238,713**
**4 Claims. (Cl. 117—36.9)**

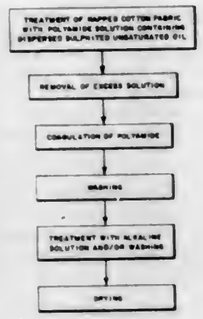



1. A heat-responsive sheet adapted to change visibly to a contrasting color wherever subjected to localized heating to a temperature of between 50° and 150° C. comprising in combination
(*a*) a supporting sheet carrying on a surface thereof a coating comprising a uniformly distributed intimate association of finely divided particles of
(*b*) a solid normally stable, co-crystal adduct comprising the reaction product of an amine and an hydroxyphenol compound selected from the class consisting of bisphenols and hydroxyphenol substituted chromans, and which is heat dissociable in the temperature range of 50° C.–150° C.,
(*c*) a strong reducing agent selected from the group consisting of zinc hydrosulfite, sodium sulfoxalate formaldehyde and zinc sulfoxalate formaldehyde, and
(*d*) an anthraquinone.

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**3,167,446**
**COATED TEXTILE MATERIALS AND PROCESS**
**Petrus Johannes de Nijs, Kaatsheuvel, Netherlands, assignor to N.V. Lederfabriek L. Mombers, Waalwijk, Netherlands, a corporation of the Netherlands**
**Filed Feb. 20, 1962, Ser. No. 174,407**
**Claims priority, application Netherlands, Mar. 8, 1961, 262,139**
**10 Claims. (Cl. 117—42)**

1. In a process for the manufacture of a textile material coated with a polyamide in which a cotton fabric is treated with a solution of a polyamide in formic acid and the polyamide is precipitated from the solution on to the fabric with the aid of an aqueous liquid, after which the textile product is washed; the improvement characterized in that a napped cotton fabric is treated with a solution of from 5% to 20% by weight of polyamide containing a dispersed, sulphited unsaturated oil in an amount which is larger than that of the polyamide in the solution, the sulphited oil being at least partially removed by washing, after the coagulation of the polyamide.




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**3,167,447**
**CARBON BODY TREATMENT**
**Geoffrey R. Tully, Jr., Poway, Byron F. Disselhorst, Solana Beach, and Dwight E. Davis, Escondido, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission**
**No Drawing. Filed Aug. 18, 1961, Ser. No. 132,510**
**9 Claims. (Cl. 117—46)**

1. A method of making an improved carbon body, which method comprises the steps of selectively filling some, but not all, of the pores throughout said carbon body by impregnating to fill the pores thereof with an impregnant comprising a polymerizable substance, applying a differential gas pressure across said body to clear said impregnant from an intercommunicating proportion of the pores of said carbon body, whereby gases evolving from said impregnant during subsequent curing and carbonizing thereof can readily pass from said carbon body through said cleared pores so that cracking of said carbon body is avoided, curing said impregnant in said carbon body, carbonizing said cured impregnant, and repeating said impregnating, pore-clearing, curing and carbonizing steps, whereby the permeability of said carbon body to fission products is lowered to provide an improved crack-free carbon body.

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**3,167,448**
**PROCESS OF TREATING FABRICS WITH ETHYLENE CARBONATE AND ARTICLE PRODUCED THEREFROM**
**Julian J. Hirshfeld, Decatur, Ala., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware**
**Filed Aug. 23, 1961, Ser. No. 133,299**
**16 Claims. (Cl. 117—138.8)**

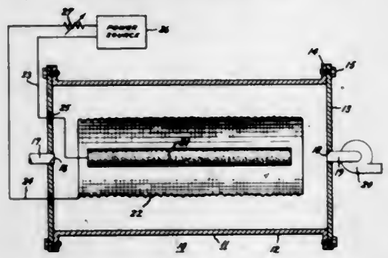



6. A method of stabilizing the nap of fabrics composed of fibers of synthetic linear polymers of acrylonitrile, comprising impregnating the napped fabric with an aqueous solution of ethylene carbonate and a silicone resin in which the ethylene carbonate as a bonding agent is used in an amount of from 0.05 percent to 50 percent by weight of the solution, drying said fabric and curing the silicone resin by heating said fabric at a temperature of from 240° F. to 300° F. for 5 to 60 minutes.



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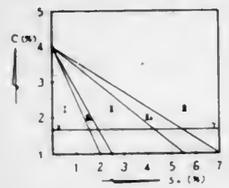
**3,167,449**
**METHOD OF FORMING CARBON COATING**
**Henry S. Specil, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Apr. 26, 1961, Ser. No. 105,702**
**8 Claims. (Cl. 117—200)**



1. A method of depositing an adherent carbonaceous coating on a member which comprises providing a chamber, positioning an electrically conductive member within said chamber, said member having a similar coefficient of expansion to said coating, positioning an anode within said chamber surrounding and spaced from said member, evacuating said chamber, supplying a mixture of hydrocarbon gas and a gas selected from the group consisting of argon, helium, hydrogen, argon and hydrogen, and helium and hydrogen to said chamber, and applying a discharge within said chamber whereby a carbonaceous coating is deposited on said member, said discharge having a current density of 15 milliamperes per square centimeter to 500 milliamperes per square centimeter.

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**3,167,450**
**COATED ARC WELDING ELECTRODE**
**Masao Koibuchi, 1013–5 Inazukecho, Kitaku, and Takashi Katsoka, 1011–5 Higashi, Komatsugawa, Edogawaku, both of Tokyo, Japan**
**Filed June 26, 1961, Ser. No. 131,036**
**Claims priority, application Japan, July 5, 1960, 35/30,036/60**
**9 Claims. (Cl. 117—206)**

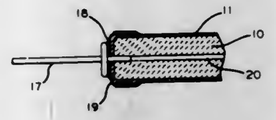



1. An electrode for arc-welding cast iron, comprising a carbon steel core coated with a material consisting essentially of the following constituents:

| | Parts by weight |
|---|---|
| Silicon carbide | 10–65 |
| Ferro-silicon | 5–65 |
| Carbon | 5–40 |
| At least one fluoride | 5–20 |
| Conventional stability improving electrode coating materials and binder | 2–20 |

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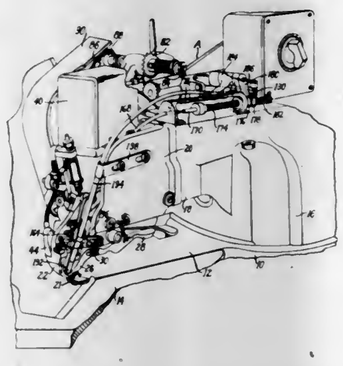
**3,167,451**
**METHOD OF RESISTOR PRODUCTION**
**Melvin Tierman, North Adams, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts**
**Filed Aug. 26, 1959, Ser. No. 836,243**
**4 Claims. (Cl. 117—227)**




1. A process for making a metal film resistor which comprises the steps of depositing metals on a filament, positioning said filament and an inert non-conductive base in a vacuum system, and evaporating the entire metal deposits from said filament to exhaustion, so that a known quantity and quality of said metal deposits is vapor deposited on said base.

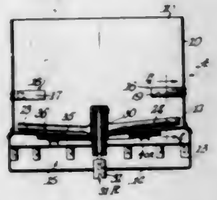
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**3,167,452**
**UNITED THERMOSETTING AND FOLDING MACHINES**
**Oliver C. Lineback, Nelsonville, Ohio, assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey**
**Filed June 6, 1962, Ser. No. 200,581**
**3 Claims. (Cl. 118—1)**



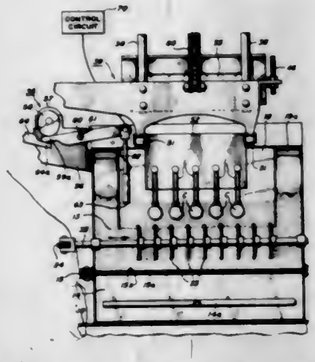
1. In a folding machine having a work supporting surface and operative instrumentalities common to folding machines, a cement handling apparatus comprising a heated hollow receptacle, means providing a passageway through which cement may be extruded upon a work piece, pump means for forcing molten cement out of said receptacle and into said passageway, valve means located within said passageway to control the introduction of cement to the work, a solenoid for controlling said pump means and valve means, and actuating means for controlling said solenoid, said actuating means comprising a light responsive solar cell embedded in said work supporting surface in position to be completely covered by a work piece when such is introduced to said operative instrumentalities, a light source located above said solar cell, and electrical circuitry which ensures instantaneous activation of said solenoid in response to the presence of a work piece.

3,167,453
APPARATUS FOR PRODUCING CANDY COATED POPPED CORN AND THE LIKE
Charles J. Cretors, Highland Park, Ill., assignor to C. Cretors & Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 21, 1960, Ser. No. 70,547
6 Claims. (Cl. 118—19)



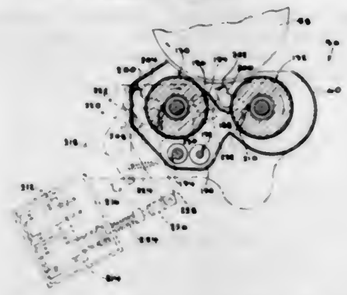
1. In a machine for producing candy coated popped corn and the like, the combination of a receptacle for holding a quantity of popped corn and having a bottom portion for sustaining a quantity of coating material, baffle means secured to and extending inwardly of the receptacle, means for moving a lower strata of popped corn toward said baffle means whereby portions of the product to be coated are converted into an adherent conglomerate said baffle means being shaped to separate said adherent conglomerate from said lower strata whereby said conglomerate is forced upwardly to cause popped corn at a higher elevation to move downwardly and produce a rolling movement.

3,167,454
FLUIDIZED-BED TYPE OF COATING APPARATUS
Clement R. Tompson, Melrose Park, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed Dec. 24, 1959, Ser. No. 861,826
8 Claims. (Cl. 118—425)




1. A fluidized-bed type of coating apparatus comprising: a chamber for containing a coating material in pulverulent form; means for admitting a gas under pressure into said chamber directed vertically upwardly to establish said coating material in a fluidized condition; means for presenting an article to be coated vertically downwardly into a preselected area of said fluidized material; and means, in addition to said gas admitting means, positioned within said chamber beneath said preselected area of said fluidized material to physically displace particles of said coating material and establish for said gas localized low-resistance paths through said fluidized material directed upwardly but away from said preselected area thereof.

3,167,455
DEVELOPER FOR FACSIMILE PRINTING MACHINE
Wallace J. Laben, Chicago, Carl G. Robbins, Des Plaines, and John C. Schmidt, Elmwood Park, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 31, 1963, Ser. No. 255,381
7 Claims. (Cl. 118—637)



1. In a developer utilizing a powdered developer composition having a component made of magnetic material, the combination comprising first and second applicator rollers having magnetic means therein for attracting the powdered developer composition, means for rotating said first and second rollers in the same direction,
a transfer scraper disposed in an inclined position between said rollers and having a first edge adjacent said first roller and a second edge adjacent said second roller for transferring the developer composition between said first and second rollers,
a receptacle under said rollers for receiving the developer composition,
first and second control scrapers movable toward and away from said first and second rollers for removing the developer composition from said rollers to stop and start the operation of the developer,
said transfer scraper being connected to said second control scraper and being movable away from said first and second rollers when said second control scraper is moved toward said second roller,
and means for selectively moving said first and second control scrapers toward and away from said first and second rollers for controlling the operation of the developer.

3,167,456
BATTERY
Warren R. Schilke, Anderson, and Richard D. Watson, Chesterfield, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 1, 1961, Ser. No. 114,141
5 Claims. (Cl. 136—10)



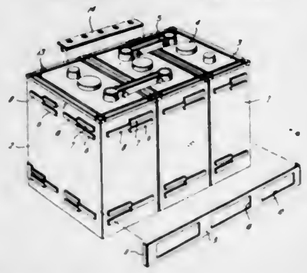

1. A battery comprising a plurality of bipolar electrodes, each of said electrodes including a conductive support, a portion of the surface on said support having an electropositive material thereon and a noncontiguous portion of said surface having an electronegative material thereon, the electronegative portion of a first plate being spaced from and overlapping the electropositive portion of the second plate, the electronegative portion of the second plate being spaced from and overlapping the electropositive portion of the third plate, the first and third plates being in substantially nonoverlapping disposition, and an electrolyte providing ion communication between said overlapping plate portions.



3,167,457
METHOD OF FORMING A NICKEL FUEL CELL ELECTRODE
Francis Thomas Bacon, Little Shelford, England, and Paul William Jones, Glens Falls, N.Y., assignors to National Research Development Corporation
No Drawing. Filed Feb. 21, 1962, Ser. No. 174,715
Claims priority, application Great Britain, Feb. 28, 1961, 7,315/61
7 Claims. (Cl. 136—120)

7. A method of forming porous nickel electrodes for use in fuel cells of the hydrogen-oxygen type which comprises:
(*a*) providing an electrode having a porous surface formed of sintered nickel powder,
(*b*) impregnating the porous surface of said electrode with a solution consisting essentially of lithium nitrate and nickel nitrate dissolved in water,
(*c*) drying the solution impregnated electrode,
(*d*) cooling the dried electrode,
(*e*) oxidizing the impregnated electrode surface by heating the electrode in air for about one hour at about 500 to 700° C.,
(*f*) cooling the resulting oxidized electrode,
(*g*) impregnating the cooled electrode with a solution consisting essentially of lithium nitrate and nickel nitrate containing about one-half the salt concentration of the solution of step (*b*),
(*h*) drying the impregnated electrode, and
(*i*) oxidizing the dried electrode by heating in air at about 350 to 450° C. for about one-half hour to produce an electrode of improved activity as compared to an electrode not subjected to steps (*g*) through (*i*).

3,167,458
STORAGE BATTERY CASE
William Allen Brazell, 3839 Aberdeen Way, Houston 25, Tex.
Filed Oct. 20, 1961, Ser. No. 146,472
11 Claims. (Cl. 136—166)



1. A storage battery assembly comprising a number of individually preformed cell boxes adapted for interconnected grouping in any selected combination of adjoining boxes, each box having four vertical walls in rectangular relation, like sets of three narrow elongate external bosses carried by and projected laterally from said walls, two bosses of each set being paired in superposed vertically spaced apart relation and being provided with flat bearing faces at the bottom of the uppermost of the two bosses and at the top of the lowermost of the two bosses and the remaining one boss being positioned in end to end succession with and vertically offset from said two bosses and in horizontal alignment with and of a vertical width corresponding to the vertical space between said flat bearing faces and said one boss having flat top and bottom bearing faces to mate with the upper and lower flat bearing faces of a like set of bosses on another cell box, all of such sets of bosses being of similar pattern and in complemental location as viewed in elevation on the vertical walls for internested fitment of the formations on any wall with mating formations of a wall of another box by relative movement of a pair of boxes toward one another in a direction at right angles to the vertical walls.

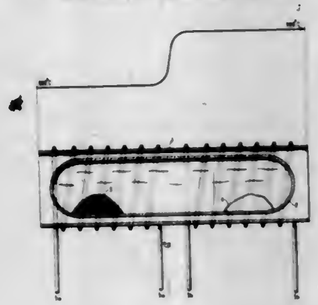
3,167,459
HEAT-TREATMENT PROCESS FOR METALLIC AND OTHER PRODUCTS
Maurice Daguler, 10 Rue Lasson, Paris, France
No Drawing. Filed June 12, 1962, Ser. No. 201,780
Claims priority, application France, June 13, 1961, 864,725, Patent 1,301,292
1 Claim. (Cl. 148—13.1)

A method of heat-treating metallic products in a furnace to eliminate any trace of any oils, greases or other impurities coating the product to be treated, consisting in disposing the products to be treated in the furnace, introducing a controlled atmosphere into said furnace, heating said furnace while ventilating said controlled atmosphere to accelerate the heat transfer between said controlled atmosphere and the products to be treated, applying vacuum to said furnace when the temperature of the whole of the products to be treated exceeds the temperature of vaporization in vacuo of the oils and greases to be removed therefrom and is below their cracking temperature, discontinuing the application of vacuum to said furnace after the oils and greases which had distilled off as a consequence of the temperature, without cracking, have been eliminated by the vacuum action, and completing the heat treatment by restoring in said furnace a controlled atmosphere by heating said furnace to a relatively high temperature while strongly ventilating said controlled atmosphere until the products to be treated have attained the desired treatment temperature, and keeping said products at said treatment temperature during the time necessary for carrying out said treatment.

3,167,460
METHOD OF SURFACE-HARDENING STEEL WORKPIECES IN THE FORM OF BODIES OF REVOLUTION
Gerhard Seulen, Remscheid, Germany, assignor to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany
No Drawing. Filed Aug. 6, 1962, Ser. No. 214,846
Claims priority, application Germany, Aug. 18, 1961, D 36,838
4 Claims. (Cl. 148—143)

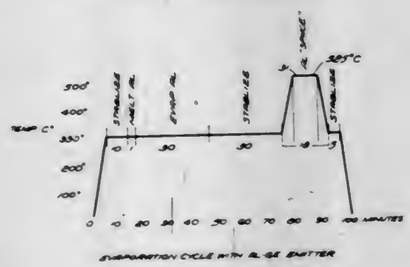
1. A method of surface-hardening a steel workpiece having the form of a body of revolution which can be hardened by heating to at least its critical temperature and then quenching, comprising the steps of: subjecting said workpiece to the heating influence of induction heating means having an inductive heating influence over only a portion of the workpiece section to be hardened; effecting relative rotation between said workpiece and said induction heating means to thereby subject the entire periphery of the workpiece section to be hardened to induction heating, said relative rotation being at a speed and for a time sufficient to heat substantially only the surface portion of said workpiece section to be hardened to at least said critical transformation temperature; thereafter increasing the speed of relative rotation between said workpiece and said induction heating means to thereby maintain the temperature of said surface portion substantially constant while increasing the depth of heating of said workpiece until said heated depth is at least at said critical temperature; then quenching said workpiece to thereby form the desired surface hardened layer.

3,167,461
**PROCESS OF PREPARING DEGENERATELY DOPED SEMICONDUCTOR SOURCE MATERIAL**
Dinsdale M. J. Compton, Solana Beach, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,897
2 Claims. (Cl. 148—175)



1. A method of forming Esaki diodes by vapor growth, which comprises the reaction of a transport element with a source of semiconductor material and the decomposition of the products of the reaction to form an epitaxial crystalline growth on a substrate, wherein such method it is required that the source material be homogeneously and degenerately doped on the order of at least $1\times10^{19}$ a./cc., further comprising the preparation of said source material by the steps of dividing a quantity of said semiconductor material into a fine powder and diffusing an impurity agent into said fine powder whereby homogeneous, degenerate, doping of the source material is obtained.

3,167,462
**METHOD OF FORMING ALLOYED REGIONS IN SEMICONDUCTOR BODIES**
John L. Winkelmann, Reading, Pa., assignor to Western Electric Company, Incorporated, a corporation of New York
Filed June 8, 1961, Ser. No. 115,663
5 Claims. (Cl. 148—180)

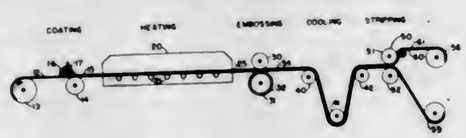


1. Method of forming an alloyed contact region, which serves as an electrode, in an extremely thin surface layer of a semiconductor body which comprises vapor depositing on a layer of the body semiconductor material of the same elemental form as the material of the body together with at least 50 percent metal contact material, raising the temperature of the body above the melting point of the semiconductor metal conact eutectic temperature and below the melting point of the body, maintaining the body at a temperature plateau substantially at the raised temperature for at least several minutes, and then lowering the temperature below the said melting point.

3,167,463
**METHOD OF BURNING IN PHOTORESISTS AND THEN ETCHING**
Robert J. Patsko, Merion, Pa., assignor to Master Etching Machine Company, Wyncote, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 22, 1961, Ser. No. 154,328
2 Claims. (Cl. 156—13)

2. The method of etching metallic work coated with a photoresist of the class consisting of bichromated shellac and bichromated polyvinyl alcohol, which comprises immersing the metallic work coated with a photoresist of the class consisting of bichromated shellac and bichromated polyvinyl alcohol in a molten salt bath consisting of from 30 to 60% of a nitrate of a class consisting of sodium nitrate and potassium nitrate and from 40% to 70% of sodium nitrite, maintained at a temperature between 300 and 450° F. to burn in the photoresist, and subsequently etching the metallic work while it is protected by said photoresist.

3,167,464
**DECORATIVE SURFACE COVERING AND PROCESS FOR PREPARING SAME**
Frederick H. Cook, Summit, N.J., assignor to Congoleum-Nairn Inc., Kearny, N.J., a corporation of New York
Filed Dec. 12, 1960, Ser. No. 75,354
15 Claims. (Cl. 156—254)



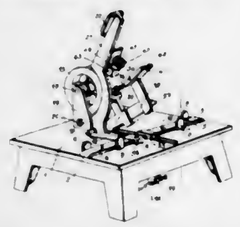

1. A process for producing a flexible decorative surface covering having a thin resinous composition wear layer and a thin fibrous backing which comprises coating one surface of a unitary fibrous felt sheet with a resinous composition, heating said coating to fuse the composition and bind it to said one surface of the felt sheet, embossing a design into the coating on said felt sheet, cooling the embossed coating and thereafter removing substantially all of the felt sheet from the coating leaving only a thin, uniform layer of fibrous material adhering to one surface of said coating, the resistance to delamination of said coating from said felt sheet being substantially greater than the resistance of said unitary felt sheet to split apart adjacent to said coating, said felt sheet being split by separating the coating layer sheet from the split felt sheet layer while continuously maintaining an angle of about 90° to about 180° between each parting layer.

3,167,465
**PROCESS FOR LAMINATING LAYERS OF FABRIC WITH TERPOLYMERS OF ACETYL TRIALLYL CITRATE, MALEIC ANHYDRIDE AND STYRENE**
John H. Jaspers, Cincinnati, Ohio, assignor to Miles Laboratories Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Oct. 24, 1960, Ser. No. 64,286
1 Claim. (Cl. 156—332)

A process for the preparation of a low pressure laminate which comprises applying to a plurality of layers of laminating fabric a mixture comprising acetyl triallyl citrate, from about 40% to 100% of maleic anhydride, from about 10% to 50% of styrene, and from about 1% to 10% of a peroxide catalyst, said percentages being based upon the weight of acetyl triallyl citrate, and pressing the layers of coated laminating fabric together at a pressure of from about 20 p.s.i. to 70 p.s.i. at a temperature of from about 250° F. to 400° F. for a period of time of from about 5 minutes to 30 minutes, to interpolymerize the mixture of acetyl triallyl citrate, maleic anhydride and styrene.



3,167,466
**AUTOMATIC APPARATUS FOR GLUING AND CUTTING KINEMATOGRAPHIC FILMS**
Gaston Henry Lapersonne, 30 Ave. de Montmirail, Nogentel par Chateau-Thierry, Aisne, France
Filed Mar. 28, 1962, Ser. No. 183,070
Claims priority, application France, Mar. 31, 1961, 857,530, Patent 1,294,169; July 18, 1961, 868,191, Patent 1,294,169
4 Claims. (Cl. 156—505)



1. An automatic film splicer comprising two alined film guiding members separated by a transverse gap and adapted to carry the ends of corresponding films projecting in superposed relationship over the gap to be spliced thereon, a lateral support carrying the two guiding members and extending outside the gap, a control lever carried by said support to pivot between an upper position and a lower position through an intermediate position round an axis parallel with the alined guiding members and spaced with reference thereto, a single knife extending in a plane perpendicular to the alined guiding members and adapted to be shifted into the gap to cut through both film ends, a carrier for said knife adapted to be shifted in a plane perpendicular to the pivotal axis of the control lever by the depression of said control lever between its upper and intermediate positions, out of an upper gap-releasing position through a position for which the knife cuts the film ends in the gap into a lowermost position for which the knife lies underneath the film ends, a spring blade carried by said knife carrier and adapted to extend transversely over the abutting cut film ends across the gap when the control lever is in said intermediate position and the carrier is in its lowermost position, a spool of an adhesive strip carried by the lateral support, revolvable round an axis parallel with the axis of the control lever and adapted to feed the strip in a direction perpendicular to the film-guiding members onto the knife carrier immediately underneath the spring blade between the latter and the film ends, means controlled by the depression of the control lever into its intermediate position to hold the lower surfaces of the cut ends of the film against the underside of the blade spring with the interposition of the free end of the adhesive strip, a slideway perpendicular to the film guiding members adapted to guide the knife carrier out of its lowermost position in a transverse direction with reference to the guiding members, means whereby the depression of the control lever between its intermediate and lower positions shifts said knife carrier with the end of the adhesive strip along the slideway to constrain said end of the adhesive strip to fold and slip along the underside of the abutting film ends on their guiding members, a resilient pad rigid with the underside of the control lever and urging a section of the adhesive strip adjacent the film ends against the knife carrier upon entrance of said control lever into its lower position, and means carried by the underside of said control lever and adapted to cut through the adhesive strip alongside the edges of the abutting film ends upon entrance of the control lever into said lower position.

3,167,467
**ARTIFICIAL CHRISTMAS TREE BRANCH CONSTRUCTION**
Abraham Abramson, New York, N.Y., assignor to Raylite Electric Corp., Bronx, N.Y., a corporation of New York
Filed May 18, 1961, Ser. No. 110,943
7 Claims. (Cl. 161—24)



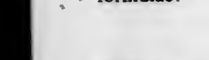
1. A simulated evergreen branch construction comprising an elongated rod having mounted therealong a plurality of short stems extending laterally therefrom and terminating in a projection of reduced diameter, a plurality of needle members each having a central portion with a plurality of needles extending laterally and forwardly about the periphery thereof, said needle members being mounted in nested relation on said projection to form a tuft.

3,167,468
**METHOD OF APPLYING AN AQUEOUS SIZE TO STRANDS FORMED OF GLASS FILAMENTS AND PRODUCT PRODUCED THEREBY**
Joe B. Lovelace, Ellenboro, and William E. Patterson, Kings Mountain, N.C., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 25, 1961, Ser. No. 112,631
10 Claims. (Cl. 161—175)



1. A method of forming glass fibers which comprises drawing glass filaments from a molten supply of glass at a high rate of speed, gathering the filaments and combining them into a strand, applying an aqueous size to the filaments as they are being drawn, said size being at an elevated temperature at the time of application and

consisting essentially of an aqueous dispersion containing about 4 to 7 percent by weight of a starch-amine reaction product selected from the class consisting of starch-amine reaction products having the following structural formulae:



wherein X is starch, R is a radical selected from the group consisting of substituted alkyl, hydroxyalkyl, acyl, and aroyl radicals, and each of $R_1$ and $R_2$ is a radical selected from the group consisting of hydrogen, alkyl, and aralkyl radicals, and



wherein X is starch, R is a radical selected from the group consisting of substituted alkyl, hydroxyl alkyl, acyl and aroyl radicals, and each of $R_1$ and $R_2$ is a radical selected from the group consisting of hydrogen, alkyl and aralkyl radicals and where $R_3$ is a radical selected from the group consisting of hydrogen and alkyl radicals, and Y is a radical selected from the group consisting of chloride, bromide and iodide radicals, about 25 to 70 percent by weight of a lubricant based upon the weight of the starch-amine reaction product and an effective amount of a fungicide, said size having a viscosity of about 1 to 20 centipoises at 20° C., winding the sized strand on a rapidly rotating forming tube and conditioning the strand wound on the forming tube to reduce the moisture content of the strand to that amount which is acceptable for twisting the strand into yarn on conventional textile twisting apparatus.

6. A strand produced according to the method of claim 1.

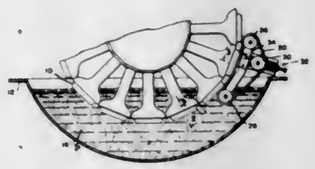
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**3,167,469**

**METHOD AND APPARATUS FOR PRESSING MOLDED PULP ARTICLES ON THE MOLD**

**Roger Wells, Stamford, Conn., assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware**

**Filed May 31, 1962, Ser. No. 198,971**
**8 Claims. (Cl. 162—227)**



1. In the method of suction molding pulp articles wherein a series of suction dies is passed in an endless path of travel through a vat containing a slurry of pulp lying along a portion of said endless path and vacuum is applied to the dies to cause pulp to be deposited thereon, the improvement comprising applying pressure to the pulp deposited on a die while said dies pass along a segment of said path of travel and while said pulp is still in the gelatinous stage and before said die leaves said slurry to compact the pulp deposit and provide a pressed outer surface on the pulp article.

4. In suction molding pulp apparatus including a pulp slurry vat, a series of suction dies adapted to pass through said vat and a vacuum means for applying suction through said dies, the improvement comprising means for applying pressure to the pulp deposited on a die while said pulp is still in the gelatinous stage, said pressure applying means comprising a continuous stiff surface adapted to continuously move during operation.

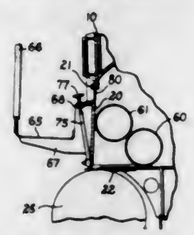
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**3,167,470**

**PAPER MACHINE HEADBOX WITH ADJUSTABLE SLICE**

**Lawrence A. Moore, Beloit, Wis., assignor to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio**

**Filed Mar. 17, 1961, Ser. No. 96,503**
**4 Claims. (Cl. 162—347)**




1. A head box for a paper making machine comprising a pair of side walls cooperating with bottom and back walls and with front wall means to define a flow chamber, said front wall means including a front wall member secured in rigid relation with said top wall and an upper slice lip of rigid construction carried by said front wall member in depending relation therewith and cooperating with said bottom wall to define a slice outlet from said chamber, said front wall means also including a thin section extending horizontally thereacross and of substantially less thickness than said slice lip to provide for forward and backward swinging movement of said slice lip while maintaining said lip in sealed relation with said front wall member, means forming an inlet for stock at the back of said chamber to provide for generally horizontal flow of the stock toward said slice lip for discharge through said outlet, a pair of rectifier rolls located adjacent said outlet in non-uniformly spaced relation therewith and in closely spaced relation with each other and with said bottom wall and slice lip respectively, said thin wall section being located at a higher level than said rectifier rolls, means connected between said slice lip and said side walls for moving said slice lip forward and backward about said thin section, and means mounting said rectifier rolls on said side walls for adjustment substantially parallel with said bottom wall to maintain said spaced relation thereof to each other and to said bottom wall and said slice lip in accordance with the moved position of said slice lip.

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**3,167,471**

**SYNERGISTIC FUNGICIDAL COMPOSITIONS**

**Andrea Kovacs and Renato Righi, Bologna, Italy, assignors to S.I.A.P.A. (Societa Italo Americana Prodotti Antiparassitari, S.p.A.), Rome, Italy, a corporation of Italy**

**No Drawing. Filed July 12, 1961, Ser. No. 123,434**
**Claims priority, application Italy, July 19, 1960, 12,664/60**
**12 Claims. (Cl. 167—22)**

1. A fungicide composition comprising as fungicidally active components thereof the combination of a metal salt of carbamic acid derivatives selected from the group consisting of ethylenebisdithiocarbamic acid and dimethyldithiocarbamic acid and mixtures of said acids, and a barium compound selected from the group consisting of barium sulfide and barium polysulfide, the weight ratio of said carbamic acid derivative salt to said barium compound being in the range of from about 10:90 to about 90:10.



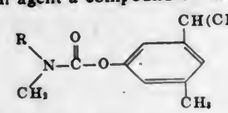
**3,167,472**

**PESTICIDAL 3-METHYL-5-ISOPROPYL PHENOL ESTERS OF N-MONO- AND N-DIMETHYLCARBAMIC ACID**

**Alfred Czyzewski, Berlin-Tempelhof, and Albert Jager, Berlin-Hermsdorf, Germany, assignors to Schering, A.G., Berlin, Germany**

**No Drawing. Filed May 2, 1961, Ser. No. 107,019**
**Claims priority, application Germany, May 7, 1960, Sch 27,928**
**12 Claims. (Cl. 167—30)**

1. A pesticidal composition containing as an insecticidal and acaricidal agent a compound of the formula



wherein R is selected from the group of radicals consisting of hydrogen and methyl, and an inert carrier.

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**3,167,473**

**COMPOSITIONS CONTAINING BIOLOGICALLY ACTIVE POLYMERS OF ORGANOTIN ACID ESTER COMPOUNDS**

**John R. Leebrick, Roselle Park, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 3, 1963, Ser. No. 249,117**
**23 Claims. (Cl. 167—38.6)**

1. The process for protecting materials against growth of pestiferous organisms which comprises treating said material with a biologically active polymer of a compound $R_3SnOOCR'$ wherein R is a radical selected from the group consisting of lower alkyl and phenyl, and R' is a polymerizable group selected from the group consisting of the vinyl, α-methylvinyl, and vinylphenyl radicals.

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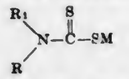
**3,167,474**

**COMPOSITION FOR COMBATTING COCCIDIOSIS AND METHOD OF USING SAME**

**Guy Hagemann, Nogent-sur-Marne (Seine), France, assignor to Roussel-UCLAF, S.A., Paris, France, a corporation of France**

**No Drawing. Filed May 28, 1963, Ser. No. 283,688**
**Claims priority, application Great Britain, June 8, 1962, 22,300/62**
**4 Claims. (Cl. 167—53)**

1. Compositions for reducing the incidence of coccidiosis in animals subject to coccidiosis infection comprising 0.005 to 0.08% of a dithiocarbamate of the formula



wherein R and $R_1$ are alkyl of 1 to 6 carbon atoms and M is an alkali metal and a food substance for the said animals.

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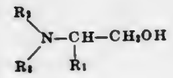
**3,167,475**

**ANTI-ANAPHYLACTIC COMPOSITIONS**

**Siegfried Gottfried, Ilford, and Lily Baxendale, London, England, assignors to Biorex Laboratories Limited, London, England, a corporation of the United Kingdom**

**No Drawing. Filed Dec. 19, 1960, Ser. No. 76,504**
**Claims priority, application Great Britain, Dec. 31, 1959, 44,460/59**
**2 Claims. (Cl. 167—65)**

2. Anti-anaphylactic composition of matter consisting essentially of 2–5 parts by weight of a member selected from the group consisting of alkanolamines of the formula



and the pharmaceutically acceptable quaternary ammonium salts and pharmaceutically acceptable bases thereof, in which $R_1$ is a member selected from the group consisting of hydrogen, methyl and ethyl, $R_2$ is a member selected from the group consisting of hydrogen, methyl and ethyl, and $R_3$ is a member selected from the group consisting of hydrogen, methyl and ethyl and one part by weight of 2-[(2-dimethylamino-ethyl)(p-methoxybenzyl)-amino]-pyridine maleate, in admixture with a pharmaceutical carrier.

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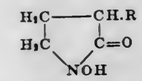
**3,167,476**

**PREPARATIONS ACTING ON THE CENTRAL NERVOUS SYSTEM AND THE MANUFACTURE THEREOF**

**Iván László Bonta, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey**

**Filed Feb. 26, 1963, Ser. No. 261,181**
**Claims priority, application Netherlands, Mar. 14, 1962, 275,964**
**3 Claims. (Cl. 167—65)**

1. A composition having a depressory action on the central nervous system containing as active ingredient from about 40 to about 400 mg. of a compound of the formula:



wherein R is selected from the group consisting of amino, dimethylamino, acetylamino, benzoylamino, glycylamino, and morpholino, which ingredient is dispersed in a pharmaceutically acceptable carrier.

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**3,167,477**

**2,4-DIMETHYL-6-ACETOXY-M-DIOXANE AND 2,4-DIMETHYL-6-PROPIONYLOXY-M-DIOXANE PROCESS AND COMPOSITIONS FOR PRESERVING AQUEOUS COMPOSITIONS AGAINST SPOILAGE BY BACTERIA AND FUNGI**

**William S. Gump, Upper Montclair, and George R. Walter, Ho-Ho-Kus, N.J., assignors to The Givaudan Corporation, New York, N.Y., a corporation of New Jersey**

**No Drawing. Filed Dec. 5, 1962, Ser. No. 242,364**
**16 Claims. (Cl. 167—85)**

1. The process for combatting bacterial and fungal-caused spoilage of an aqueous composition normally subject to such spoilage, which comprises incorporating in such composition a minor amount of a member selected from the group consisting of 2,4-dimethyl-6-acetoxy-m-dioxane and 2,4-dimethyl-6-propionyloxy-m-dioxane.

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**3,167,478**

**COLOR STABILIZED HAIR DYE COMPOSITION OF AMMONIA AND TRIHYDROXYBENZENE**

**Roger Charle, Soisy-sous-Montmorency, and Robert Lantz, Paris, France, assignors to L'Oreal**

**No Drawing. Filed Mar. 21, 1963, Ser. No. 266,822**
**Claims priority, application France, Jan. 8, 1958, 755,455**
**4 Claims. (Cl. 167—88)**

1. In a process for the production of a composition for dyeing living hair which comprises:

(*a*) preparing a solution containing a substance selected from the group consisting of 1,2,4-trihydroxybenzene and 1-methyl-2,4,5-trihydroxybenzene,

(*b*) adding ammonia in excess of that necessary for the reaction, the improvement of

(*c*) allowing the solution to react for a time of at least one hour to 50 days out of contact with the air, and

(*d*) thereafter eliminating the uncombined ammonia by neutralizing with an acid whereby said solution, stored out of contact with the air, keeps at all times, its dyeing properties unchanged.

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3,167,479
## METHOD OF MAKING ENRICHED RADIOISOTOPES BY CATION FIXATION

Paul Y. Feng, Skokie, Ill., assignor to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

No Drawing. Filed Nov. 5, 1963, Ser. No. 321,435
9 Claims. (Cl. 176—16)

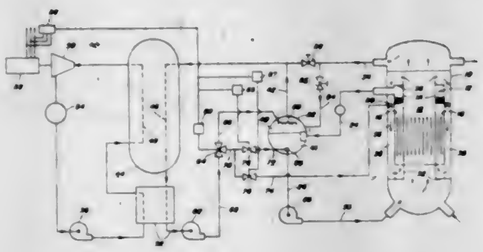
1. The method of making radioisotopes which comprises the steps of: introducing cations to be made radioactive to an inorganic cation exchange material which is resistant to neutrons and other ionizing radiation and which is further characterized by the ability to fix such cations within its lattice structure; fixing said cations in said cation exchange material; removing not-fixed cations; irradiating said ion exchange material-fixed cation composite with neutrons to produce radioactive product nuclei of said cations and concurrently defixing such radioactive product nuclei; and separating such radioactive nuclei from the ion exchange mass.

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3,167,480
## BOILING WATER REACTOR AND CONTROL THEREOF

John M. West, Dunedin, Fla., and Walter H. Zinn, West Hartford, Conn., assignors, by mesne assignments, to Combustion Engineering, Inc., a corporation of Delaware

Filed Aug. 26, 1960, Ser. No. 52,278
10 Claims. (Cl. 176—20)

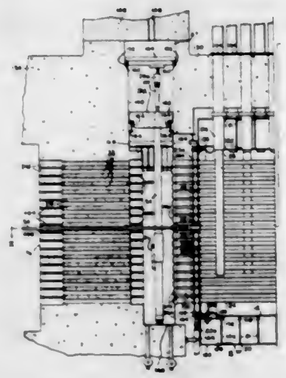


1. A boiling water reactor system supplying steam to a variable load and including a reactor pressure vessel having a boiling water nuclear reactor therein, a circulation system for circulating the water through the reactor and including a steam and water drum receiving a steam and water mixture from the reactor vessel and wherein a separation of the steam and water takes place and which drum has an upper steam space and a lower water space with the steam space communicating with said load, said drum being relatively restrictedly connected with said vessel to provide a substantial damping effect of pressure changes in the drum relative to the reactor vessel, means conveying subcooled feedwater to said system with this last named means including means to spray said water into a location in the steam space of the drum to thereby heat the water and means to introduce said feedwater at a location in the system where it enters the reactor subcooled, means operative to controllably proportion the introduction of feedwater between these two locations to regulate at least in part the reactor power output.

3,167,481
## NUCLEAR REACTOR REFUELING SYSTEM

Peter J. Collins, Ancaster, Ontario, Canada, and Stephen N. Tower, Murrysville, Pa., assignors to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada

Filed Aug. 31, 1959, Ser. No. 837,091
Claims priority, application Canada, Aug. 30, 1958, Patent 757,767
7 Claims. (Cl. 176—30)



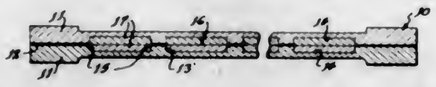
1. In a neutronic reactor the combination comprising an elongated vessel, a plurality of pressure tubes extending through said vessel in a relatively closely spaced array, at least one end of each of said tubes protruding through a wall portion of said vessel, shielding means spacedly disposed adjacent said protruding ends and defining a fueling cavity communicable with said pressure tube ends, said shielding means in addition having a plurality of manipulator openings communicating with said cavity through an adjacent wall surface thereof, said openings extending longitudinally of said pressure tubes and being aligned respectively therewith, fuel element and closure holder mounted for movement within said cavity, a closure for each of the protruding ends of the pressure tubes, and manipulator means insertable through each of said openings for removing the closure means from any one of said pressure tubes and for removing a fuel element from said holder to said one pressure tube.

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3,167,482
## FUEL ELEMENT

Kurt Katz, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed May 11, 1962, Ser. No. 194,206
2 Claims. (Cl. 176—68)



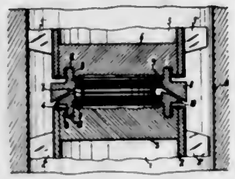
1. A fuel element for a nuclear reactor comprising a pair of elongated, flat, metal plates separated by an electrically insulating sheet of mica, said fuel element containing a regular array of compartments, each compartment consisting of aligned pockets on the inside of the metal plates and an opening in the mica sheet therein, and thermoelectric junctions consisting of a pair of contacting wafers of uranium oxides of different oxygen content, disposed in said compartments with each of the wafers contacting only one plate, the uranium oxide of one wafer being an n-type semiconductor and the uranium oxide of the other wafer being a p-type semiconductor.



3,167,483
## DEVICE FOR ALIGNING FUEL CARTRIDGES IN A CHANNEL OF A NUCLEAR REACTOR

Jean Liermann, Paris, France, assignor to Commissariat a l'Energie Atomique, Paris, France

Filed Mar. 27, 1963, Ser. No. 268,395
Claims priority, application France, Apr. 6, 1962, 893,592
2 Claims. (Cl. 176—77)



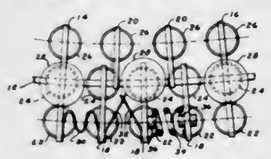
1. A plurality of nuclear reactor fuel cartridges stacked end-to-end in a nuclear reactor channel the ends of the cartridges being closed by plugs, including means for aligning the fuel cartridges comprising an annular ring surrounding each of said plugs, a semi-torodial outer surface for one of said rings of an adjacent pair of said rings, a frustro-conical external surface on the other of said rings of said adjacent pair of rings, said frustro-conical surface mating with said semi-torodial surface and aligning the adjacent cartridges, said surfaces having clearance when the adjacent cartridges are aligned whereby the adjacent plugs are in engagement.

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3,167,484
## FLEXIBLE FUEL BUNDLE FOR CONTINUOUSLY REFUELED NUCLEAR REACTORS

William F. Bentel, Baltimore, Md., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Dec. 12, 1961, Ser. No. 158,696
9 Claims. (Cl. 176—87)



1. In a fuel bundle for a continuously refueled nuclear reactor having a variable contour feed track along which said fuel bundle is progressed, the improvement comprising:

(*a*) a plurality of fuel tubes;

(*b*) flexible means connecting said fuel tubes in a spaced-apart parallel arrangement perpendicular to the path of said contour feed track; and

(*c*) bearing means mounted on said flexible means to engageably follow said feed track and to cause said flexible means and said parallel arrangement of said fuel tubes supported therefrom to conform to the variable contour of said feed track as said fuel bundle progresses therealong.

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3,167,485
## WATER INSOLUBLE MODIFIED ENZYMES

Efraim Katchalski, Neve Weizmann, Rehovoth, and Estelle (Atara) Bar-Eli, 13 Wilson St., Tel-Aviv, Israel

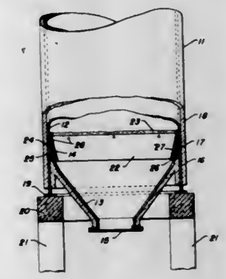
No Drawing. Filed May 23, 1961, Ser. No. 125,277
Claims priority, application Israel May 27, 1960
4 Claims. (Cl. 195—63)

1. An enzymatically active, water-insoluble substance, comprising papain bonded covalently to a water-insoluble copolymer of L-leucine and p-amino phenyl-DL-alanine.

3,167,486
## RETARDING SKIRT WELD CRACKING IN COKING VESSELS

Donald J. Bergman, Kenilworth, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 15, 1961, Ser. No. 159,713
10 Claims. (Cl. 196—133)



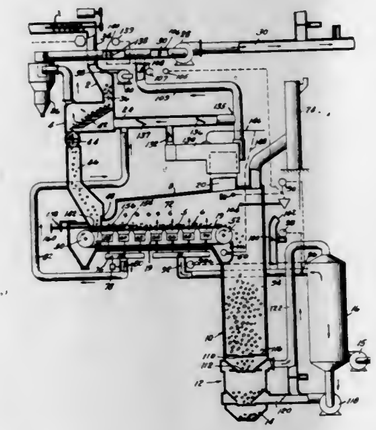
1. In combination with a pressure vessel utilized as a coking chamber and having an exteriorly extended vessel-supporting metal member welded in a relatively long narrow section to a relatively thin metal wall of said vessel, means for reducing thermal deformation of the welded juncture between said wall and said supporting member which comprises an internally disposed baffle member connected to and proximately spaced from the interior surface of said wall and opposite said welded juncture, so as to form a coke depositing and retention zone, said baffle member being substantially coextensive with the length of the welded juncture and extending beyond each longitudinal edge thereof and having a width of 6 to 60 times that of the metal wall thickness, and an insulating layer of coke in said coke retention zone.

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3,167,487
## METHOD FOR PRODUCING COKE AND GAS FROM CARBONIZABLE MATERIAL

Vaughn Mansfield, 301 Olive St., St. Louis, Mo.

Filed Aug. 28, 1961, Ser. No. 134,173
6 Claims. (Cl. 202—22)

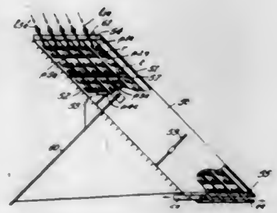


1. In a method for producing coke and gas from coal which contains low temperature volatiles capable of being liberated at temperatures ranging from about 300° F. to

about 950° F. and high temperature volatiles capable of being liberated at temperatures ranging from between about 950° F. to about 1,800° F., at least some of said volatiles being tars which condense at temperatures at about 320° F. and below 320° F. the steps which comprise: passing initially cool coal of the order of 90° F. and below through a preheater-dryer; forming a bed of the dry preheated coal and horizontally passing the bed through a hot carbonizer furnace from an input end to an output end thereof so as to form a first bed portion contiguous to the input end of the furnace and an adjacent second bed portion which lies contiguous to the output end of the furnace; feeding air upwardly through the second bed portion in limited quantities sufficient only to oxidize part of the volatiles in the coal and raise the second bed portion temperature toe about 1,800° F. so as to create a mixture of hot substantially oxygen-free by-products of oxidation and unburned high-temperature volatiles at about 1,800° F. above the bed, downdrafting at least part of said mixture through the first bed portion in sufficient quantities to raise the first bed portion temperature to about 950° F. while liberating and sweeping off at least most of the low-temperature volatiles and partially cooling said part of the mixture to about 950° F.; sweeping the downdrafted part of the mixture and low temperature volatiles through the coal passing through the dryer, and condensing said tars on the coal in the dryer, the air fed upwardly through the second bed portion being substantially the only air fed through the coal while the latter passes through the furnace.

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**3,167,488**
**SOLAR EVAPORATOR**
**Jan Michal Malek, 15 Allee Brimborion, Bellevue-Meudon, Seine-et-Oise, France**
**Filed Aug. 4, 1960, Ser. No. 47,513**
**Claims priority, application France, Nov. 12, 1959, 809,949; Feb. 22, 1960, 819,161; May 3, 1960, 826,100**
**2 Claims. (Cl. 202—174)**



1. In an apparatus for multiple-effect heat and vapor transfer usable for the distillation and the concentration of liquids and for the drying of various materials, and of the type comprising a container which contains a gaseous fluid under a given pressure and a tiered arrangement of stationary parallel angular heat transfer walls having the same relatively large area and one face of which is wettable, said heat transfer walls being disposed with their wettable faces upwardly directed while on at least one portion of their other faces the liquid to be treated is supplied in the form of a relatively thin layer, means to heat the uppermost heat transfer wall to a temperature below the boiling temperature of the liquid layer carried by said uppermost wall at said given pressure as well as to cool the lowermost heat transfer wall of said arrangement, whereby is defined in said container a tiered arrangement of separate elongated simultaneous evaporating and condensing compartments each of which is limited by two successive heat transfer walls, the facing wettable face and other face of which respectively act as a condensing surface and an evaporating surface, and means for respectively collecting from said compartments condensates draining down by gravity from their condensing surfaces; the improvement according to which each heat transfer wall is provided, on its other face carrying the liquid to be evaporated, with at least one series of substantially horizontal superposed drains inside which the liquid is placed in a thin layer, overflow tubes connecting each drain to the drain below for each series and being arranged at alternating ends of successive drains, passageways conducting the liquid to be treated to the top drain of each series, the waste liquid being collected in the bottom drain of each series, and a gutter being arranged at the lowermost portion of the wettable face of said wall to collect the condensate obtained in the compartment for which said wettable face acts as a condensing surface.

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**3,167,489**
**MANUFACTURE OF FINELY PERFORATED PLATES**
**Lèvon Hadjian, 96 Rue Montesquieu, Lyon, France, assignor of one-half to Antranig Aubozian, Villeurbanne, Rhone, France**
**Filed Feb. 7, 1962, Ser. No. 171,629**
**Claims priority, application France, Feb. 15, 1961, 41,233**
**5 Claims. (Cl. 204—11)**

1. A method for the production of perforated metallic plates having fine calibrated holes, which consists in forming a supporting plate having an electrically conducting side; in perforating in said supporting plate fine holes in accordance with the pattern of the calibrated holes to be obtained; in passing through the holes of said supporting plate filaments made of an elastically deformable plastic substance; in disposing said supporting plate as a cathode in an electrolytic cell with said filaments extending substantially perpendicularly from said conducting side; in forming on said conducting side a metallic layer with said filaments embedded in said layer; and in separating said metallic layer from said supporting plate while stretching said filaments to cause same to contract and to become disengaged from said layer.

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**3,167,490**
**PRINTED CIRCUIT**
**Abraham Friedman, 66 Court St., Brooklyn, N.Y.**
**Filed July 17, 1957, Ser. No. 672,493**
**3 Claims. (Cl. 204—15)**

1. The method of forming a printed circuit which comprises depositing a preliminary coating of electro-conductive material about the mesh portions only of a foraminous insulating base material in accordance with a desired printed circuit pattern, retaining said base material against the surface of the cathode electrode of an electro-plating arrangement so that at least some portion of each of the conductive areas of said printed circuit pattern contacts said electrode and electrolytically depositing a metal upon the preliminarily coated portions of said mesh and interconnecting said metal portions with electrical circuit elements.

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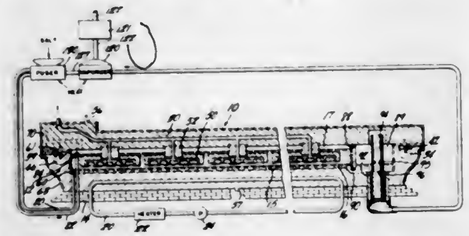
**3,167,491**
**POLYFLUORINATED ETHYLENE POLYMER-METAL ARTICLE AND METHOD**
**Harvey M. Harrison, New Rochelle, and George F. Herrmann, Brooklyn, N.Y., assignors to Plastron Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed July 29, 1960, Ser. No. 46,099**
**6 Claims. (Cl. 204—30)**

1. A process for bonding a massive layer of metal to the surface of a polytetrafluoroethylene article, which comprises contacting the polymer surface to be metallized with liquid ammonia having dissolved therein at least about 10% by weight sodium metal, maintaining said contact for a time sufficient to change the normal white polymer surface to a dense brownish black, then raising the temperature of the thus treated surface to about room temperature in the presence of air, contacting the surface with a strong mineral acid also containing active fluoride ions for a time sufficient to change the surface color to a dark nut brown, sensitizing the surface, seeding a metal onto the surface, depositing a conductive metal coating onto the seeded surface in amount sufficient to impart a uniform conductive metal color to the surface, electrodepositing a metal onto the conductive metal surface, first at a temperature below about 80° F. to a thickness of deposited metal sufficient to withstand expansion of the polymer at about 165° F., and then at a temperature above about 110° F. to the desired thickness.

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**3,167,492**
**FUSED BATH ELECTROLYTIC PROCESS OF PRODUCING ALKALI METAL VAPOR**
**Joshua Szechtman, Byram, Conn., assignor to Chlormetals Incorporated, New York, N.Y., a corporation of Delaware**
**Filed Mar. 8, 1961, Ser. No. 94,373**
**5 Claims. (Cl. 204—68)**



1. The process of producing a vapor of metallic alkali metal which comprises melting alkali metal salt in a salt-fusing zone to provide a body of fused alkali metal salt, introducing a stream of said fused alkali metal salt and a stream of fused lead into one end of a horizontal air-free and air-tight electrolysis zone, said stream of fused lead being introduced along the bottom of said electrolysis zone and said stream of fused alkali metal being introduced at a level spaced upwardly from said bottom to maintain a pool of said fused salt in said electrolysis zone at said level, said stream of salt and said stream of lead being introduced under air-free and moisture-free conditions, electrolyzing said fused alkali metal salt in the presence of said fused lead by causing said fused salt and fused lead to flow through said horizontal electrolysis zone from said end of said electrolysis zone while said lead is electrically connected with the negative side of an electrolytic current, the heavy fused lead flowing along the bottom of the electrolysis chamber and serving as the cathode, with the lighter fused alkali metal salt floating on top of the lead and serving as the electrolyte, whereby to form a molten alkali metal-lead alloy from said fused lead, withdrawing the molten alloy from the other end of said electrolysis zone and introducing said molten alloy into a vaporization zone, evaporating the alkali metal from the lead alloy as a vapor of metallic alkali metal in said vaporization zone to remove at most about 50% of the alkali metal from said alloy, recovering the portion of the molten alloy remaining after vaporization of said alkali metal while in heated condition, passing said portion of molten alloy through said salt-fusing zone to utilize the heat thereof to fuse said salt, and returning said portion to said one end of said electrolysis zone along the bottom thereof to form said cathode.



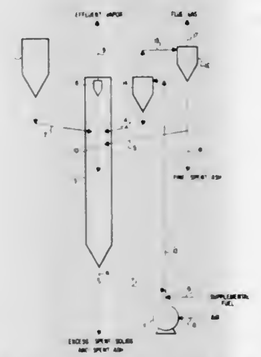
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**3,167,493**
**MANUFACTURE OF HIGH-STRENGTH STEEL PARTS FOR USE IN AIRCRAFT AND THE LIKE**
**Paul A. Oelgoetz, Columbus, Ohio, assignor to North American Aviation, Inc.**
**Filed Mar. 15, 1961, Ser. No. 96,042**
**4 Claims. (Cl. 204—145)**

1. In a method of fabricating a configured component part, the steps of: working a billet of heat-treatable alloy steel having at least 0.3% carbon at an elevated temperature and in an oxidizing atmosphere to form a workpiece having a configuration similar to the configuration of said component part and having a generally-exterior layer comprised of decarburized alloy steel in excess of 0.003 inch in depth, suspending said workpiece as an anode in an electrolyte solution which consists of from 20% to 30% sulphuric acid by weight and water, flowing electrical current to said workpiece uniformly throughout the extent of said generally-exterior decarburized alloy steel layer at a current density which is in the approximate range of 3 amperes per square inch to 10 amperes per square inch, and withdrawing said workpiece from said electrolyte solution after said electrical current has been flowed a sufficient time to completely remove said generally-exterior decarburized alloy steel layer and thereby form said configured component part.

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**3,167,494**
**METHOD FOR PYROLIZING SOLID CARBONACEOUS MATERIALS**
**Clarence L. Crawford, Sierra Madre, Calif., assignor to The Oil Shale Corporation, New York, N.Y., a corporation of Nevada**
**Filed Dec. 6, 1961, Ser. No. 157,485**
**12 Claims. (Cl. 208—8)**



1. A method for continuously producing an effluent vapor from a solid carbonaceous material, which material upon pyrolysis leaves a solid residue, which comprises introducing crushed solid carbonaceous material and hotter solid heat-carrying bodies into the upper region of a vertical pyrolysis zone wherein said heat-carrying bodies contact said carbonaceous material and impart their heat to said carbonaceous material in a non-combustion supporting atmosphere to effect the pyrolysis of said carbonaceous material and produce an effluent vapor, causing said solids to pass downwardly through said pyrolysis zone with the production of a lessening amount of effluent vapor from said carbonaceous material, said effluent vapor produced rising upwardly through said pyrolysis zone and attaining a velocity in the upper region of said pyrolysis zone such that solids in the upper region of said pyrolysis zone are thoroughly agitated thereby, causing said solids to continue passing downwardly through said pyrolysis zone until a point is reached in the lower region of said pyrolysis zone wherein essentially no gaseous substances

are produced or are present, removing said effluent vapor from the top of said pyrolysis zone free from extraneous gases, removing solid residue produced by the pyrolysis of said carbonaceous material from the bottom of said pyrolysis zone, recovering said heat-carrying bodies from the bottom of said pyrolysis zone, reheating said heat-carrying bodies and recycling only heated heat-carrying bodies to the upper region of said pyrolysis zone to contact and effect the pyrolysis of solid carbonaceous material continuously added thereto.

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3,167,495

## REFORMATE YIELDS BY REFORMING A BLEND

**Amilcare Ramella, Woodbury, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York**

**No Drawing. Filed May 28, 1962, Ser. No. 197,912**
**12 Claims. (Cl. 208—139)**

1. A method of reforming hydrocarbon mixtures having an "R–S" ratio outside the range of 1.35 to 1.60 which comprises mixing at least two hydrocarbon mixtures boiling in the range of about 180° F. to about 550° F. at least one of which has an "R–S" ratio outside the range of 1.35 to 1.60 in proportions to produce a blend having an "R–S" ratio in the range of 1.35 to 1.60, reforming said blend in the presence of hydrogen and particle-form solid reforming catalyst at reforming conditions of temperature, pressure, and space velocity to maximize conversion of naphthenes and paraffins to aromatics and to minimize hydrocracking of naphthenes and paraffins, obtaining a reformer effluent comprising hydrogen and $C_1$ and heavier hydrocarbons, and recovering $C_4+$ reformate therefrom.

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3,167,496

## HYDROGENATION CATALYST AND PROCESS

**Ernest Solomon, Montclair, N.J., assignor, by mesne assignments, to Pullman Incorporated, a corporation of Delaware**

**No Drawing. Filed Aug. 11, 1959, Ser. No. 832,891**
**9 Claims. (Cl. 208—143)**

1. A process which comprises hydrogenating an unsaturated hydrocarbon by contacting said hydrocarbon with a catalyst consisting of silica, between about 6 and about 15 weight percent of a compound of molybdenum selected from the group consisting of an oxide and sulfide thereof, and between about 0.5 and about 1.6 weight percent of a compound of nickel selected from the group consisting of an oxide and sulfide thereof, the atom ratio of molybdenum to nickel being between about 5 and about 6, at a temperature between about 200° F. and about 800° F. in the presence of added hydrogen.

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3,167,497

## HYDROGENATION CATALYST AND PROCESS

**Ernest Solomon, Montclair, N.J., assignor, by mesne assignments, to Pullman Incorporated, a corporation of Delaware**

**No Drawing. Filed Aug. 11, 1959, Ser. No. 832,892**
**14 Claims. (Cl. 208—143)**

1. A process which comprises contacting an unsaturated hydrocarbon with a catalyst consisting of silica, a compound of molybdenum selected from the group consisting of an oxide and sulfide thereof in an amount between about 12 and about 35 weight percent and a compound of nickel selected from the group consisting of an oxide and sulfide thereof in an amount to provide an atom ratio of molybdenum to nickel of between about 2 and about 3, in the presence of added hydrogen under conversion conditions such that hydrogen is consumed.

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3,167,498

## PROCESS FOR THE HYDROGENATION OF HYDROCARBONS IN THE GASOLINE BOILING RANGE

**Walter Krönig, Leverkusen, Joachim Beier, Dormagen, and Hans-Joachim Müller, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed Dec. 6, 1962, Ser. No. 242,589**
**Claims priority, application Germany Dec. 8, 1961**
**8 Claims. (Cl. 208—143)**

1. In a process for the selective hydrogenation of mono- and diolefins in a gasoline boiling range hydrocarbon containing the same and aromatic hydrocarbons, the improvement which comprises, in a first hydrogenation stage trickling the hydrocarbon in the liquid phase through a fixed bed of solid hydrogenation catalyst at a temperature below 100° C., said hydrogenation catalyst comprising a noble metal catalyst on a macro-porous support having an internal surface of less than 100 $m.^2/g.$ and a water absorption capacity of at least 10%, and thereafter in a second hydrogenation stage trickling the hydrocarbon in the liquid phase through a fixed bed of solid noble metal hydrogenation catalyst at a temperature between about 125 and 250° C.

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3,167,499

## HYDROCATALYTIC DESULFURIZATION OF HYDROCARBONS

**John Norman Haresnape and Peter Thomas White, both of Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation**

**No Drawing. Filed Oct. 24, 1961, Ser. No. 147,184**
**Claims priority, application Great Britain Oct. 28, 1960**
**10 Claims. (Cl. 208—216)**

1. A process for the hydrocatalytic desulphurization of hydrocarbon feedstocks comprising bringing the feedstock into contact at elevated temperature and pressure with a fixed bed of catalyst formed of a layer of catalyst material supported on a porous matrix, the material of which is substantially devoid of pores with diameters below 1 micron, the ratio of the weight of catalyst material to weight of total catalyst being from 0.005 to 0.5, and the porosity of the bed being from 30 to 90% measured as the volume of voids greater than 1 micron diameter to the total volume of the reactor, said ratio and said porosity being related so that said ratio is less than

$$\frac{\theta}{9(1-\theta)}$$

where theta is said porosity, said catalyst material being a film 1 to 300 microns thick and comprising an active refractory oxide and at least one element having hydrogenating/dehydrogenating activity selected from Groups VI*a* and VIII of the Periodic Table.

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3,167,500

## REMOVAL OF METAL COMPRISING CONTAMINANTS FROM PETROLEUM OILS

**Grady L. Payne, Mickleton, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York**

**No Drawing. Filed Aug. 31, 1962, Ser. No. 220,880**
**3 Claims. (Cl. 208—251)**

1. The method of upgrading an asphaltic residual oil containing metal contaminants, said method comprising contacting said asphaltic residual oil with a treating agent comprising essentially condensed polynuclear aromatic compound having an atomic C/H ratio between about 1/1 and about 2.5/1 and an average molecular weight within the range of from about 200 to about 600, said contacting being effected while said oil and said treating agent are in liquid state; and segregating an asphaltic oil of reduced metal contaminants.

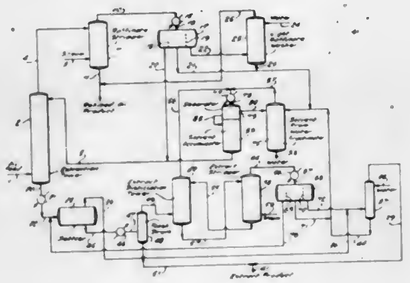


3,167,501

## PROCESS FOR SOLVENT REFINING HYDROCARBON OILS

**Robert A. Woodie, Nederland, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware**

**Filed July 18, 1961, Ser. No. 124,839**
**7 Claims. (Cl. 208—313)**



1. In the solvent refining of a feed hydrocarbon oil containing at least a small portion of constituents co-boiling with a liquid solvent wherein said feed hydrocarbon is contacted with said solvent in a solvent refining step forming separate extract and raffinate phases, said solvent being at least partially miscible with water at 100° F. and capable of forming an azeotrope with water, the improvement which comprises distilling at least a portion of said extract phase in contact with a relatively high boiling hydrocarbon oil consisting of hydrocarbons having true boiling points at least 100° F. above the boiling range of said solvent in an extractive distillation zone, withdrawing solvent free of co-boiling hydrocarbons as distillate from said extractive distillation zone for recycle to said solvent refining step, passing bottoms from said extractive distillation zone comprising said relatively high boiling hydrocarbon oil, constituents of said feed co-boiling with said solvent, and solvent to an azeotropic distillation zone, passing steam to said azeotropic distillation zone, withdrawing said relatively high boiling hydrocarbon oil as bottoms from said azeotropic distillation zone for recycle to said extractive distillation zone, withdrawing ternary azeotrope comprising co-boiling oil, water, and solvent as distillate from said azeotropic distillation zone, condensing said ternary azeotrope forming separate oil, water, and solvent phases, said separate oil phase comprising hydrocarbons co-boiling with said solvent, withdrawing said separate oil phase, withdrawing said separate water phase, recycling said separate solvent phase to said extractive distillation zone, and recovering refined hydrocarbon oil from said raffinate.

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3,167,502

## PROCESS FOR RECOVERING CASSITERITE FROM ORES

**James B. Duke, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland**

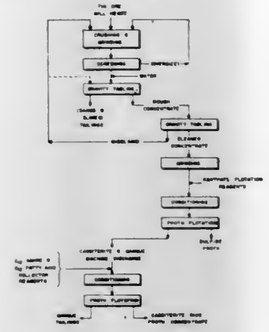
**Filed Mar. 20, 1962, Ser. No. 181,108**
**7 Claims. (Cl. 209—12)**

1. In a method for concentrating cassiterite from oxidized gangue, the steps which comprise:

forming an aqueous pulp containing cassiterite and oxidized gangue minerals,

conditioning said pulp for froth flotation with

a water-soluble salt of laurylamine as a collector reagent and lauric acid as a cooperative collector reagent,



and subjecting the pulp thus conditioned to froth flotation in an acid circuit, thereby forming a froth product which is a concentrate of cassiterite in the pulp.

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3,167,503

## PARTICLE SEPARATING APPARATUS

**Arthur H. Pitchford, 501 Castle Shannon Blvd., Pittsburgh, Pa.**

**Filed Apr. 28, 1961, Ser. No. 106,325**
**7 Claims. (Cl. 209—242)**



1. Particle separating means comprising a closed particle-receiving chamber, first means for conveying particles into said chamber, second means for conveying particles out of the chamber, check valve means in the second means adapted to open in response to a pressure above a predetermined pressure in the chamber to discharge particles therefrom, spaced openings in the chamber walls, particle separating means covering said openings in the chamber walls and adapted to pass particles of a predetermined size, means for alternately causing fluid to flow into said chamber through one and then the other of said particle separating means at a pressure below said predetermined pressure to alternatively carry particles in the chamber to one and then the other of said particle separating means, collecting means for receiving material passing through the particle separating means, and means for forcing fluid at a pressure above said predetermined pressure into the chamber after particles of a size to pass through the particle separating means have passed to the collecting means whereby particles larger than said predetermined size will be blown out of the chamber through said check valve means.

### 3,167,504
### METHOD FOR PURIFYING RADIOACTIVE WASTE LIQUID

**Walter L. Hayden, Jr., Metuchen, and Frank J. Dzierzanowski, Somerset, N.J., assignors to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland**

**No Drawing. Filed Oct. 4, 1961, Ser. No. 142,764**
**7 Claims. (Cl. 210—24)**

1. A method for purifying liquid radioactive waste material which comprises contacting an aqueous waste liquid containing radiocesium in solution with a solid synthetic amorphous hydrous zeolite for a time sufficient to adsorb radiocesium in said liquid on particles of said zeolite, and separating waste liquid thus contacted from said zeolite, said zeolite containing 4 to 14 mols of $SiO_2$ per mol of $Na_2O$ and from about 1 to 2 mols of $Al_2O_3$ per mol of $Na_2O$ and being obtained by precipitating oxides of sodium, aluminum and silicon in intimate association with finely divided particles of pre-precipitated silica.

### 3,167,505
### PROCESS FOR DESCALING SEA WATER

**Maria G. Dunseth, Arlington, Va., and Murrell L. Salutsky, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Filed Sept. 7, 1962, Ser. No. 222,192**
**1 Claim. (Cl. 210—28)**

A method for the descaling of sea water comprising the steps of:

(*a*) separating from the total volume of seawater to be descaled a smaller quantity of sea water comprising no more than 40% of the total volume;

(*b*) leaching a superphosphate fertilizer from the group comprising normal superphosphate and triple superphosphate with said smaller quantity of sea water, forming thereby a sea water solution which is saturated with respect to calcium phosphate;

(*c*) passing said sea water solution through an ion exchange bed comprising a strongly acidic cation exchange resin in the sodium form at a rate such that no calcium ion is detectable in the effluent;

(*d*) recovering said effluent;

(*e*) returning said effluent to the bulk of the sea water from which it had initially been separated along with a suitable quantity of ammonia;

(*f*) precipitating out scale forming metallic cations from said sea water as metal phosphates;

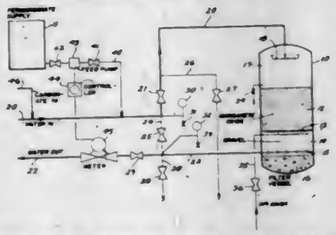
(*g*) recovering the resulting descaled sea water; and

(*h*) regenerating said cation exchange resin with an aqueous solution containing at least 6% sodium chloride, thereby rendering it suitable for re-use in step (*c*) above.

### 3,167,506
### METHOD OF TREATING WATER TO REMOVE IRON AND MANGANESE

**Richard B. Fackler, Drexel Hill, Pa., and Raymond R. Davis, Pitman, N.J., assignors to Hungerford & Terry, Inc., Clayton, N.J., a corporation of Delaware**

**Filed Mar. 22, 1961, Ser. No. 97,671**
**3 Claims. (Cl. 210—50)**

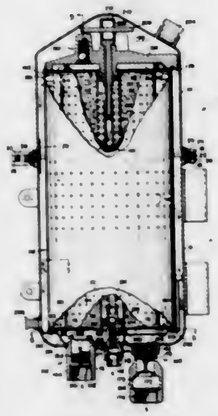


1. In the art of treating water containing ions from the class consisting of iron and manganese by adjusting the pH to at least about 6.0, adding permanganate to said water as it is being fed to a manganese oxide filter bed and passing it through said manganese oxide filter bed, the improvement which comprises adjusting the quantity of permanganate which is added to the water being fed to said filter so that the water is distinctly pink upstream from the filter but not more than sufficient to produce a faintly pink color at the entrance to the bed.

### 3,167,507
### FILTER

**William G. Burhans, Kingston, and Wendell H. Gray, Barclay Heights, Saugerties, N.Y., assignors to W.G.B. Oil Clairifier, Inc., Kingston, N.Y., a corporation of New York**

**Filed June 20, 1963, Ser. No. 289,267**
**11 Claims. (Cl. 210—117)**



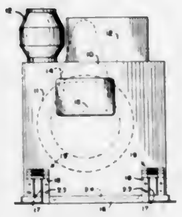
1. In a filter for liquids, the combination comprising a housing, a filter cartridge including a pair of tubular filter elements, one of said filter elements being positioned within the other, said filter elements defining an annular space therebetween, means mounting said filter cartridge within said housing and sealing the opposite ends thereof to define a pair of chambers each of which encloses one end of said cartridge, said annular space extending between said chambers to place the same in communication with each other, inlet means for directing liquid flow from the exterior of said housing into one of said chambers, said inlet means including a check valve for controlling the flow through said inlet means such that liquid may flow into the filter but may not flow out of the filter, said filter elements being constructed to direct liquid to flow from said annular space outwardly through the outside filter element and inwardly through the inside filter element, first outlet means for directing liquid flow from a chamber externally of said outside filter element to the exterior of said housing, said first outlet means including a check valve for controlling flow therethrough such that liquid may flow out of the filter but may not flow into the filter, and second outlet means for directing liquid flow from a chamber within said inner filter element to the exterior of said housing, said second outlet means including a check valve for controlling flow therethrough such that liquid may flow out of the filter but may not flow into the filter.



### 3,167,508
### LAUNDRY MACHINES

**Frederick R. Gruner, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware**

**Filed Dec. 22, 1961, Ser. No. 161,663**
**3 Claims. (Cl. 210—250)**

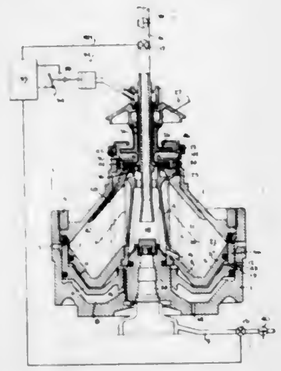


1. In a washer extractor, a housing; a basket mounted in said housing for rotation about a horizontal axis; a supporting base plate for said housing of substantially rectangular form; mounting plates at each corner of said supporting base plate having mounting faces that lie in planes along parallel edges of said base plate that are transverse to the axis of rotation of said basket; and a plurality of series arranged shear-type rubber mountings, each comprising parallel, misaligned metal plates having a body of rubber therebetween and integrally joined thereto, mounted between said mounting faces and said housing such that the shear planes of said rubber mountings are parallel to the plane of rotation of said basket.

### 3,167,509
### CENTRIFUGAL SEPARATOR

**Peter Steinacker, Oelde, Westphalia, Germany, assignor to Westfalia Separator AG., Oelde, Westphalia, Germany, a corporation of Germany**

**Filed June 12, 1962, Ser. No. 201,922**
**Claims priority, application Germany, June 13, 1961, W 30,161 III 82b**
**5 Claims. (Cl. 233—20)**



1. An automatic, self-cleaning centrifugal separator, comprising a rotatable bowl having an axis and a periphery, conical disc means mounted concentrically about the bowl axis and having an outer edge spaced from the bowl periphery, the outer edge of the disc means and the bowl periphery defining a sludge space, a stationary feed means coaxially arranged in said bowl, a centripetal pump means arranged in said bowl concentrically about said feed means, said centripetal pump means having an intake and an output, said output having an outlet port means, a conduit means connecting said sludge space and said centripetal pump means intake, an inlet end of the conduit means being adjacent the outer edge of the disc means, sludge discharge port means in the bowl periphery for intermittently discharging sludge from said sludge space, means for intermittently opening the sludge discharge port means, a pressure sensitive device in the output of the centripetal pump means and operated by the pressure in the output, control means for actuating the means for opening the sludge discharge port means intermittently, and means operatively connecting the pressure sensitive device to the control means.

### 3,167,510
### FLUID AND PROCESS FOR TREATING WELLS

**Emil N. Alter, Bayside, N.Y., assignor to Stein, Hall & Co., Inc., New York, N.Y., a corporation of New York**

**Filed Nov. 25, 1960, Ser. No. 71,566**
**19 Claims. (Cl. 252—8.55)**

1. An aqueous well-treating fluid comprising water; a particulate solid propping material; guar gum in an amount sufficient to increase the viscosity of the fluid to a certain initial value; and a persulfate selected from the group consisting of ammonium persulfate and an alkali metal persulfate in an amount sufficient to break rapidly the viscosity of the fluid to a value below the initial viscosity at the relatively high temperature inside the well after the propping material is placed without reducing previously the viscosity of the fluid at the relatively low temperature at the surface of the well.

### 3,167,511
### METAL WORKING LUBRICANT

**William Crawford, Leigh-on-Sea, and James Arthur Herbert Wood, Fobbing, Essex, England, assignors, by mesne assignments, to Socony Mobil Oil Company, Inc., New York, N.Y., a corporation of New York**

**No Drawing. Filed Apr. 13, 1961, Ser. No. 102,675**
**1 Claim. (Cl. 252—48.8)**

A lubricating composition comprising (1) a major proportion of a petroleum lubricating oil having a viscosity in the range of 50–350 S.U.V. at 100° F., (2) a minor proportion of a sulphurized mineral oil, (3) about 2–15% by weight of a chlorinated petroleum wax having a chlorine content of at least 40% by weight, and (4) about 2–15% by weight of a chlorinated polypropylene, the polypropylene having a molecular weight of about 126–210 and being chlorinated to a chlorine content of about 30–50% by weight, said composition being further characterized in that the ratio of the chlorinated polypropylene to the chlorinated petroleum wax is at least 2:1.

### 3,167,512
### METHOD OF CONTROLLING THE DISTRIBUTION OF DOPING SUBSTANCE IN CRUCIBLE-FREE ZONE-MELTING OPERATIONS

**Günther Ziegler, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Munich, Germany, a corporation of Germany**

**Filed May 20, 1959, Ser. No. 814,634**
**Claims priority, application Germany May 21, 1958**
**8 Claims. (Cl. 252—62.3)**

1. A method for producing a rod-shaped semiconductor body of high purity having a desired constant course of the lattice-defection conductance and of the conductance type over a substantial portion of the length of the body, comprising subjecting a semiconductor rod-shaped body which is overdoped over a substantial portion of its length to zone-melting, the floating zone-melting being a crucible-free zone-melting, in which the rod is vertical and the floating molten zone is caused to be relatively displaced lengthwise of the rod, and being carried out in a chamber, continuously evacuating the chamber and thereby keeping

the body under a partial vapor pressure of the doping substance which is below the vapor pressure of said substance from said body, so that evaporation of said substance from the body can take place, the percentile evaporating quantity of the lattice-defection points per unit length of the body being varied during the passage of the melting zone through the body to obtain a substantially constant defection distribution along the body, said varying being accomplished by varying at least one of the following: the speed of passage of the melting zone, the length of said zone, and the temperature of said zone, so that the value of

$$k+\frac{\alpha L}{v}$$

is substantially one, $k$ being the distribution coefficient, L the length of the melting zone, $v$ the velocity with which the melting zone is passed along the rod, and $\alpha$ the evaporation constant, being the proportionality factor in the linear differential equation:

$$\frac{dC_s}{dt}=-\alpha C_s$$

$C_s$ being the concentration of impurities in the melting zone.

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3,167,513

## BLEACHING COMPOSITIONS

Jan Cirksena Meerkamp van Embden and Jan Boldingh, Vlaardingen, Netherlands, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 4, 1959, Ser. No. 797,053
Claims priority, application Great Britain Mar. 7, 1958
7 Claims. (Cl. 252—102)

1. A bleaching composition which contains an inclusion compound of urea and a per-derivative of a straight-chain aliphatic alpha-monocarboxylic acid containing 4 to 20 carbon atoms in an amount sufficient to impart effective bleaching properties to the composition.

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3,167,514

## COMPOSITIONS FOR CLEANING MACHINERY AND ELECTRICAL EQUIPMENT

Hayward R. Baker, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 7, 1962, Ser. No. 178,210
3 Claims. (Cl. 252—170)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An organic composition which forms an aqueous cleaning emulsion, said composition consisting essentially of 89.5 to 96.5 percent by weight of an aliphatic hydrocarbon having a minimum flash point of about 140° F., of 3 to 10 percent by weight of a penetrant oil from the group of oils consisting of diesel oil and light lubricating oil, said oils having a surface tension of between about 27 to 30 dynes/cm. @ 25° C. and of 0.5 to 1 percent by weight of polyethylene glycol monooleate having an average polyethylene molecular weight of about 300 to 600.

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3,167,515

## PREPARATION OF ALKALI METAL HYDROSULFITES

Alfred A. Hinckley, Beverly, and Robert C. Wade, Ipswich, Mass., assignors to Metal Hydrides Incorporated, Beverly, Mass., a corporation of Massachusetts

No Drawing. Filed July 31, 1961, Ser. No. 127,899
8 Claims. (Cl. 252—188)

1. A composition consisting essentially of a mixture of an alkali metal borohydride and an alkali metal metabisulfite in the proportions of between about 1.3 to 2 moles of said borohydride to each 4 moles of said metabisulfite.

3,167,516

## PROCESS FOR THE PRODUCTION OF HEAT-RESISTANT PIGMENTS AND PAINTS CONTAINING SAID PIGMENTS

Paul R. Brayton, 1123 Stratford Ave., South Pasadena, Calif.

No Drawing. Filed Dec. 13, 1962, Ser. No. 244,299
9 Claims. (Cl. 252—301.1)

1. A pigment produced by a process comprising the steps of heating ground zircon rock, sodium silicate, calcium sulphate, mineral oil, glycerine, calcium chloride, sodium hypochlorite, sodium fluoride, and a mineral acid with enough water to form a flowable slurry, boiling until fluorine gas is evolved, stopping said evolution of fluorine gas by adding zircon rock and glycerine, washing the residue with a mineral acid and water and drying said residue.

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3,167,517

## DYEING ASSISTANT AND LEVELING COMPOSITIONS

Henry E. Millson, Plainfield, and James Dammicci, Raritan, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,857
6 Claims. (Cl. 252—353)

1. A liquid dyeing-assistant composition having a pH of from about six to about eight and consisting essentially of:

(*a*) at least about 23 weight percent of water;

(*b*) as a first nonionic agent, from about 2.7 to about 40 weight percent of at least one alkyl aryl polyether alcohol surface-active agent, said alkyl aryl polyether alcohol being derived from an alkyl phenol and ethylene oxide in mol ratio of from about 1:6 to about 1:10;

(*c*) as a second nonionic agent, from about 2.7 to about 40 weight percent of at least one polyoxylalkylene surface-active agent having an apparent molecular weight of from about 8,000 to about 9,000 and being a condensation product derived from polyoxypropylene and polyoxyethylene in which the weight ratio of polyoxypropylene to polyoxyethylene is from about 1:2 to about 1:5; and

(*d*) as an anionic agent, from about 0.8 to about 20 weight percent of at least one sulfonated alkylnaphthalene surface-active agent, the alkyl substituent having from about four to about eight carbon atoms;

the ratio of the total weight of said nonionic agents to said anionic agent ranging from about 1:5 to 1 to about 10 to 1, the total content of nonionic surface-active agents comprising from about eight to about sixty weight percent of the composition.

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3,167,518

## ALKYL DIAZABICYCLO-OCTANE CATALYSTS

Adalbert Farkas, Media, Joseph M. Hersh, Newtown Square, and Rocco L. Mascioli, Media, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

No Drawing. Original application Sept. 8, 1961, Ser. No. 136,750. Divided and this application Jan. 31, 1964, Ser. No. 347,329
3 Claims. (Cl. 252—426)

3. An active catalytic composition comprising at least two compounds of the group consisting of 1,4-diazabicyclo-(2,2,2)-octane, 2-methyl-1,4-diazabicyclo-(2,2,2)-octane and 2,5-dimethyl-1,4-diazabicyclo-(2,2,2)-octane said composition being liquid at ambient temperatures and having a freezing point below 0° C.



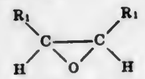
3,167,519

## POLYMERIZATION OF EPOXIDES

Fred N. Hill, South Charleston, and Frederick E. Bailey, Jr., and John T. Fitzpatrick, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 29, 1958, Ser. No. 783,185
13 Claims. (Cl. 260—2)

1. A process which comprises contacting an olefin oxide having the following formula:



wherein each $R_1$, individually, is selected from the group consisting of hydrogen, haloaryl, a hydrocarbon radical free from ethylenic and acetylenic unsaturation, and a portion of a saturated cycloaliphatic hydrocarbon nucleus which nucleus contains from 4 to 10 carbon atoms including both epoxy carbon atoms shown in the above formula; with from about 0.02 to 10 weight percent, based on the weight of olefin oxide, of divalent metal diamide of the formula $H_2N—M—NH_2$, wherein M is a divalent metal which has an atomic number greater than 11 and less than 57 of Group II of the Periodic Table of the Elements, as the sole catalyst therefor; at a temperature in the range of from −30° to +150° C.; and for a period of time sufficient to produce a polymer.

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3,167,520

## METHOD OF FOAMING WITH AN ALKALI METAL BOROHYDRIDE BLOWING AGENT

Robert C. Wade, Ipswich, Mass., assignor to Metal Hydrides Incorporated, Beverly, Mass., a corporation of Massachusetts

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,390
12 Claims. (Cl. 260—2.5)

1. A thermoplastic composition adapted to form a cellular article when heated to a temperature not substantially greater than the temperature required to render the composition permanently deformed by the application of pressure, said composition consisting of a high impact polystyrene and from about 0.01 to 0.10 part by weight of an alkali metal borohydride for each 100 parts by weight of the high impact polystyrene, said high impact polystyrene being a blended thermoplastic mixture consisting of (1) a copolymer of styrene and acrylonitrile and (2) a butadiene-acrylonitrile rubber, said mixture containing not more than 40 percent by weight of said butadiene-acrylonitrile rubber, said temperature being below the normal decomposition temperature of the alkali metal borohydride.

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3,167,521

## PROCESS OF GELLING FOAMED PLASTICIZED POLYVINYL CHLORIDE BY GRADUALLY HEATING WITH A HIGH FREQUENCY ELECTRIC FIELD

Joseph Heckmaier and Karl-Heinz Michl, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany, a firm of Germany

No Drawing. Filed July 2, 1962, Ser. No. 207,051
Claims priority, application Germany, July 6, 1961, W 30,310
4 Claims. (Cl. 260—2.5)

1. Process for the production of polyvinyl chloride foamed structures, which comprises introducing into a confined space of the desired shape a polyvinyl chloride plastisol containing only the gas absorbed therein under atmospheric pressure while forming the plastisol, reducing the pressure in said confined space to subatmospheric pressure whereby the contained gas absorbed in said plastisol expands and converts the plastisol into a foamed structure conforming to the shape of the confined space, and then causing the foamed structure to undergo gelation by heating the latter with an applied high-frequency electric field with the voltage drop across said high-frequency field being gradually increased as said gelation proceeds but maintained below arcing voltage.

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3,167,522

## FILM-FORMING COMPOSITION

Harold D. Shulman, Philadelphia, Pa., assignor to Allegheny Steel Corporation, Upper Darby, Pa., a corporation of Delaware

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,065
6 Claims. (Cl. 260—17.4)

1. A process for forming a film-forming composition comprising:

(*a*) heating a glycol to about 160° F.,

(*b*) adding a monohydric aromatic compound to said heated glycol of (*a*) at about 160° F., and mixing the same,

(*c*) adding to the solution of (*b*) a water insoluble partially hydrolyzed polyvinyl acetate,

(*d*) adding to the product formed in (*c*) an aqueous dispersion containing a dextrin and an inorganic, fibrous filler.

2. The composition formed by the process of claim 1.

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3,167,523

## METHOD OF PREPARING RUBBER-MODIFIED LIGNIN BLENDS

Mitchell S. Dimitri, Charleston, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Nov. 14, 1960, Ser. No. 68,790
14 Claims. (Cl. 260—17.5)

1. The method which comprises coprecipitating at a temperature between 120 and 150° F. lignin with rubber latex to produce a slurry of lignin-rubber particles wherein the lignin is a modified lignin selected from the group consisting of oxidized lignin, formaldehyde treated lignin, resole treated lignin, and polyvalent metallic salts of lignin and heating said slurry prior to removal of supernatant liquid therefrom to a temperature of at least 175° F. which is sufficient to cause dehydration of the lignin and agglomeration of the lignin-rubber particles.

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3,167,524

## PLASTICIZED HALOGEN-CONTAINING RESINS

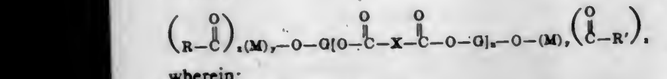
Albert J. Lauck, Webster Groves, and Norman W. Touchette, Crestwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 22, 1961, Ser. No. 161,443
19 Claims. (Cl. 260—31.6)

1. A composition comprising a vinyl halide polymer selected from the group consisting of polymerized vinyl halide monomers and the copolymers of such monomers with an ethylenically unsaturated monomer, at least 50% of the monomer units of said copolymers being vinyl halide units, and a terminated, saturated polyester consisting essentially of the residues of a dihydroxydicyclohexyl-alkane of from 13 to 29 carbon atoms, a dihydroxy aliphatic compound of from 2 to 6 carbon atoms, a saturated aliphatic dicarboxylic acid of from 4 to 10 carbon atoms, said polyester being terminated with a residue selected from the group consisting of the residues of monocarboxylic saturated and unsaturated aliphatic acids of from 6 to 20 carbon atoms, benzoic acid, naphthoic acid, saturated aliphatic alcohols of from 4 to 20 carbon atoms and phenyl alkyl and phenoxyalkyl alcohols of from 7 to 10 carbon atoms, the ratio of dihydroxy-dicyclohexyl alkane to dihydroxy aliphatic compound residues being from 1:10 to 1:4.

3. A composition comprising a vinyl halide polymer selected from the group consisting of polymerized vinyl

halide monomer and the copolymer of such monomers with an ethylenically unsaturated monomer, at least 50% of the monomer units of said copolymers being vinyl halide units, and a terminated, saturated polyester of the formula



wherein:

*n* is an integer from 2 to 20;
X is a saturated aliphatic hydrocarbon of from 4 to 10 carbon atoms;
each G is selected from the group consisting of saturated aliphatic dicyclohexyl hydrocarbons of from 13 to 29 carbon atoms and alkylene and oxyalkylene of from 2 to 6 carbon atoms, the ratio of saturated aliphatic dicyclohexyl hydrocarbon to alkylene and oxyalkylene represented by G being from 1:10 to 1:4;
R and R' are each selected from the group consisting of alkyl and alkenyl of from 5 to 19 carbon atoms, phenyl and naphthyl;
M is selected from alkyl of from 4 to 20 carbon atoms, and phenyl-alkyl and phenoxyalkyl of from 7 to 10 carbon atoms; and
*x* and *y* are unlike integers selected from 0 and 1.

### 3,167,525
### METAL DISPERSIONS IN POLYMERS

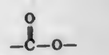
**John R. Thomas, Lafayette, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware**
**No Drawing. Filed Mar. 31, 1960, Ser. No. 18,855**
**14 Claims. (Cl. 260—41)**

1. A method of preparing a composition of a stable dispersion of metal particles of less than 400 millimicrons in diameter, wherein the metal is a member of the group consisting of magnesium, aluminum, beryllium, titanium, manganese, zinc, chromium, cadmium, molybdenum, and lead and is present in an amount of from 5 to 99% by weight of said composition; the remainder of the composition being polymer in at least an amount sufficient to suspend the metal particles and prevent them from coagulating, and selected from the group consisting of:

homopolymers of polymerizable monoethylenic unsaturated esters of from 4 to 30 carbons, wherein said esters are of the following formula:

$$CH_2{=}CH(G)R_2$$

wherein G is



and $R_2$ is hydrocarbyl;

copolymers of said polymerizable monoethylenic unsaturated esters and a polar monomer selected from the group consisting of polyalkylene glycol esters of from 400 to 2000 molecular weight of unsaturated aliphatic carboxylic acids of from 3 to 6 carbons, N-vinyl pyrrolidones, amino alkyl esters of aliphatic unsaturated carboxylic acids of from 3 to 6 carbons, hydroxy alkyl esters of unsaturated aliphatic carboxylic acids of from 3 to 6 carbons and amides of unsaturated aliphatic monocarboxylic acids of 3 to 6 carbons; wherein said polymer is of molecular weight of from 2,000 to 1,000,000; and a nonpolar solvent selected from the group consisting of hydrocarbons and ethers;

which comprises photochemically decomposing in the absence of oxygen an organo-metallic compound of said metal selected from the group consisting of metal carbonyls, complex metal hydrocarbon carbonyls and metal hydrocarbyls in which all bonds of said metal are to carbon, in a solution of said polymer and said solvent to yield a stable dispersion.

### 3,167,526
### POLYPROPYLENE STABILIZED WITH A NICKEL PHENOLATE OF BIS-(p-ALKYL PHENOL) MONOSULFIDE AND AN ORGANIC PHOSPHITE

**Albright M. Nicholson, Warrensville Heights, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio**
**No Drawing. Filed Nov. 25, 1959, Ser. No. 855,266**
**12 Claims. (Cl. 260—45.75)**

1. A crystalline polypropylene composition comprising about 100 parts by weight of polypropylene, about 0.05 to about 5 parts by weight of a nickel phenolate of a bis-(p-alkyl phenol) monosulphide in which the alkyl group contains about 2 to 12 carbon atoms, and about 0.05 to 5 parts by weight of an organic phosphite having a boiling point at atmospheric pressure of at least about 500° F. and having the general formula:



where $R_1$ and $R_2$ are organic radicals having about 5 to 18 carbon atoms and are each selected from the group consisting of aryl, alkyl, cycloalkyl having about six to seven carbon atoms, alkaryl, alkoxy aryl having about 7 carbon atoms, alkoxy alkyl having about 6 carbon atoms, cycloalkaryl having about 12 carbon atoms, aralkyl, bis-(alkyl phenol) monosulfide in which the alkyl group has about 8 carbon atoms, and alkylidene bis-(phenol) in which the alkylidene group has about 3 carbon atoms and R is selected from hydrogen, $R_1$ radicals and $R_2$ radicals.

### 3,167,527
### HALOGEN-CONTAINING RESINS STABILIZED WITH A TIN COMPOUND AND A LIQUID POLYTHIOPOLYMERCAPTAN

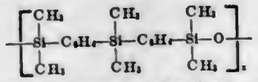
**Ingenuin Hechenbleikner, Cincinnati, and Robert E. Bresser, Sharonville, Ohio, assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio**
**No Drawing. Filed Jan. 26, 1961, Ser. No. 84,998**
**14 Claims. (Cl. 260—45.75)**

1. A composition of matter comprising a halogen containing resin selected from the group consisting of vinyl and vinylidene resins in which the halogen is attached directly to the carbon atoms in the polymer chain and a mixture of 0.01 to 10% of an organo tin stabilizer for said resin and 0.01 to 10% of a liquid polythiopolymercaptan.

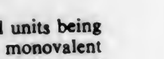
### 3,167,528
### SILYLARYLENE COMPOSITIONS

**James Marsden, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**No Drawing. Filed July 3, 1961, Ser. No. 121,313**
**6 Claims. (Cl. 260—46.5)**

2. An organopolysiloxane composition composed of from 10 to 95 mol percent of recurring structural units of the formula



and from 5 to 90 mol percent of at least one unit of the formula



the total molar concentration of the aforesaid units being equal to 100 mol percent, where R is a monovalent organic radical selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, *x* is an integer equal to at least 10, *m* is a number between 1 and 3 inclusive, and the $-C_6H_4-$ group is a paraphenylene radical.



### 3,167,529
### PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT POLYMERS OF UNSATURATED ALDEHYDES AND RESULTING PRODUCTS

**Alva T. Stewart, Berkeley, and Rudolph F. Fischer, Oakland, Calif., assignors to Shell Oil Company, a corporation of Delaware**
**No Drawing. Filed Dec. 14, 1959, Ser. No. 859,154**
**12 Claims. (Cl. 260—67)**

1. A process for preparing polymers having an intrinsic viscosity between 1.8 and 5.0 dl./g. and containing at least 75% by weight of polymerized alpha,beta-ethylenically unsaturated monoaldehyde containing from 3 to 12 carbon atoms, which comprises contacting the unsaturated monoaldehyde containing from 3 to 12 carbon atoms in an aqueous medium with (1) a free radical yielding catalyst in an amount varying from about $1\times10^{-6}$ to $2\times10^{-3}$ mols per mole of unsaturated aldehyde and (2) a salt of a metal which can change its valence state reversibly and in an amount sufficient to furnish from .5 to 1 gram ion of metal per mole of the free radical yielding catalyst, in the presence of a chelating agent at a temperature varying from the freezing point of the reaction mixture to 50° C., the amount of the chelating agent employed being sufficient to furnish from 1 to 1.5 mols of agent per gram ion of the metal in the aforementioned salt.

### 3,167,530
### METHOD OF REACTING FORMALDEHYDE WITH AN AROMATIC HYDROCARBON

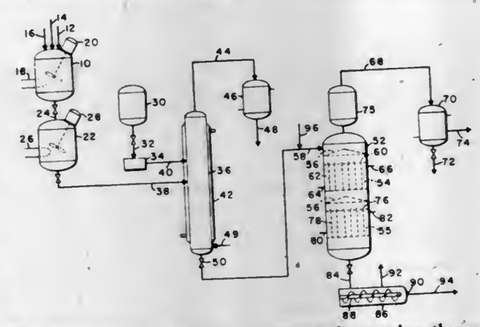
**Judson E. Goodrich, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware**
**No Drawing. Filed Feb. 10, 1961, Ser. No. 88,275**
**8 Claims. (Cl. 260—67)**

1. A low temperature process for producing finely divided infusible resins having the characteristics of thickening agents for organic liquids, comprising adding, at temperatures less than 90° F., formaldehyde to a reaction mixture consisting of benzene having up to and including 2 alkyl radicals of up to and including 6 carbon atoms each, an oil soluble dispersant selected from the group consisting of methacrylate copolymers and metal petroleum sulfonates, a chlorinated hydrocarbon of up to and including 7 carbons which is a solvent for said aromatic hydrocarbon, and sulfuric acid, wherein the particle size of said resin is less than 0.1 micron.

### 3,167,531
### CONTINUOUS PROCESS FOR THE MANUFACTURE OF BIS(2-HYDROXYETHYL) TEREPHTHALATE AND LOW MOLECULAR WEIGHT POLYMERS THEREOF

**Wesley A. Parker, Knoxville, Tenn., and John E. Tate, Pensacola, Fla., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware**
**Filed Jan. 24, 1962, Ser. No. 168,496**
**8 Claims. (Cl. 260—75)**

1. A continuous process for the manufacture of low molecular weight polyethylene terephthalate comprising flowing molten dimethyl terephthalate and ethylene glycol as reactants into an ester-interchange zone containing small solid inert bodies that interfere with the liquid flow therein, the molar ratio of ethylene glycol to dimethyl terephthalate being about 2.0:1 to 4.0:1, continuously moving said reactants in a tortuous path through the ester-interchange zone in the presence of a catalytic amount of an ester-interchange catalyst, heating said reactants moving through said ester-interchange zone at a temperature of about 170 to 195° C. to form bis(2-hydroxyethyl) terephthalate and methanol, said bodies providing a large surface area sufficient to maintain a static holdup of about 40 to 80 percent of the reactants in said ester-interchange zone, continuously removing the methanol so-formed from

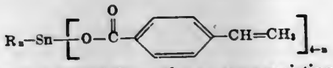


said ester-interchange zone, continuously moving the reaction product of said ester-interchange zone through a prepolymerization zone in the form of a thin film, heating the film at about 180 to 280° C. at a pressure of about 90 to 760 mm. of Hg absolute until polyethylene terephthalate of about 8–16 degrees of polymerization is formed.

### 3,167,532
### TIN SALTS OF P-VINYLBENZOIC ACID, POLYMERS THEREOF AND PROCESS FOR PREPARING SAID SALTS

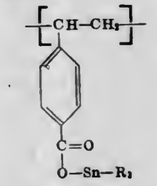
**John R. Leebrick, Roselle Park, N.J., assignor, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed June 6, 1960, Ser. No. 33,943**
**20 Claims. (Cl. 260—86.1)**

1. A tin salt of p-vinylbenzoic acid having the general formula



wherein R is selected from the group consisting of alkyl and alkenyl groups of up to 18 carbon atoms and monocarbocyclic aryl groups, and *n* is an integer from 1 to 3.

13. A polymeric composition having as at least one unit in the polymeric structure a tin ester moiety of the following general formula



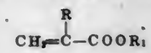
wherein R is a member selected from the group consisting of alkyl and alkenyl groups of up to 18 carbon atoms, and monocarbocyclic aryl groups.

### 3,167,533
### EASILY PROCESSED POLYVINYL CHLORIDE RESINS

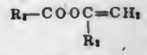
**Frank J. Donat, Cleveland, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**
**No Drawing. Filed June 22, 1961, Ser. No. 118,770**
**17 Claims. (Cl. 260—86.3)**

1. The method for preparing a heat stable, easily processable polyvinyl chloride resin comprising polymeriz-

ing a mixture of from 70 to 100% by weight of vinyl chloride and from 0 to 30% by weight of at least one monomer selected from the group consisting of



and



wherein R is a member of the class consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms, $R_1$ is a hydrocarbon group having from 1 to 12 carbon atoms, $R_2$ is a member selected from the class consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms and $R_3$ is a hydrocarbon group having from 1 to 12 carbon atoms, in water in admixture with from 0.01 part to 1.0 part per 100 parts of the monomers of a free-radical catalyst and, as the sole emulsifier, from 0.075 to 3 parts per 100 parts of the monomers of at least one insoluble soap having the structure $(X—COO)_nM$ wherein X represents an alkyl group having from 7 to 21 carbon atoms, *n* is a whole number equal to the valence of M, and M is a member selected from the group consisting of lithium, barium, calcium, magnesium, cadmium, zinc, lead, tin and aluminum, with agitation in the substantial absence of oxygen at a temperature below about 100° C., said resin characterized by being composed of spherical, uniform size particles residing within the range of from about 0.05 to 10 microns.

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**3,167,534**

**PROCESS FOR THE POLYMERIZATION OF VINYLCHLORIDE WITH A CATALYST MIXTURE OF TRIALKYL ALUMINUM AND BORIC ACID-TRIALKYL ESTER**

**Robert Büning, Troisdorf, Bezirk Cologne, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany**

**No Drawing. Filed Sept. 25, 1961, Ser. No. 140,208**
**Claims priority, application Germany Oct. 14, 1960**
**21 Claims. (Cl. 260—92.8)**

1. Process for the polymerization of vinylchloride which comprises effecting the polymerization of vinylchloride in the presence of a catalyst mixture of an aluminum-trialkyl compound and a boric acid-trialkyl ester, and recovering the polymerizate formed from the reaction product.

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**3,167,535**

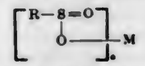
**PROCESS FOR HALOGENATION OF SYNTHETIC RESINS**

**George Gateff, Lakewood, and Harold H. Bowerman, Cleveland, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**

**No Drawing. Filed Apr. 2, 1962, Ser. No. 184,535**
**18 Claims. (Cl. 260—92.8)**

1. In the process for chlorinating a polyvinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with a copolymerizable monomer selected from the group consisting of vinylidene chloride, vinyl acetate, isopropenyl acetate, methyl acrylate, ethyl acrylate, 2-ethyl hexyl acrylate, methyl methacrylate, ethyl methacrylate, acrylonitrile, ethylene and propylene, wherein at least 75% by weight of the copolymer is polymerized vinyl chloride units, comprising the steps of preparing a suspension of the polyvinyl chloride resin composed of macro-granular particles within the range of from about 0.5 micron to about 200 microns in a liquid aqueous medium containing, as a swelling agent for the polyvinyl chloride resin, a saturated chlorohydrocarbon having from 1 to 4 carbon atoms and containing at least one chlorine and at least one hydrogen substituent, substantially saturating the liquid aqueous medium of the suspension with gaseous chlorine, inducing the chlorination reaction between the chlorine and the polyvinyl chloride resin in said suspension by photo-illumination, maintaining the reaction at a temperature no greater than about 65° C. and maintaining an excess of dissolved chlorine in said suspension over that momentarily reacting with the suspended resin, terminating the reaction when the desired amount of chlorination of the resin has been achieved by extinguishing the photo-illumination, separating the chlorohydrocarbon-swollen chlorinated polyvinyl chloride resin product from the aqueous medium, neutralizing said product, and separating the chlorohydrocarbon from said product; the improvement which comprises carrying out said chlorination in the presence of a catalytic amount of at least one reducing agent selected from the group consisting of

(*a*) alkali metal sulfides, alkali metal metabisulfites, alkali metal bisulfites, alkali metal hydrosulfites and
(*b*) a compound having the structure



wherein R is a hydrocarbon group having from 1 to 8 carbon atoms, *n* is an integer of from 1 to 2 and M is a metal and
(*c*) an aldehyde having the structure $R'—(CHO)_x$ wherein R' is a member of the group consisting of hydrogen and a hydrocarbon group having from 1 to 10 carbon atoms and
(*d*) a reducing sugar.

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**3,167,536**

**PROCESS FOR THE REMOVAL OF ATACTIC FRACTIONS FROM POLYPROPYLENE**

**Ljuba Žampachová and František Žampach, both of 38 Alesova, Brno, Czechoslovakia**

**No Drawing. Filed Oct. 6, 1961, Ser. No. 143,306**
**Claims priority, application Czechoslovakia, Oct. 12, 1960, 6,126/60**
**7 Claims. (Cl. 260—93.7)**

1. A process for the removal of atactic fractions from polypropylene produced by polymerization in a medium consisting of at least one substance selected from the group consisting of propane and propene, comprising the steps of subjecting said polymer at a temperature of between +10° C. and −25° C. to extraction with a solvent for said atactic fractions, said solvent consisting of at least one member of the group consisting of propane and propene.

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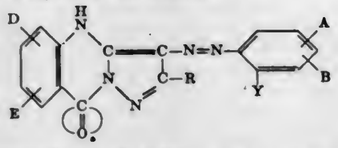
**3,167,537**

**AZO DYESTUFFS AND THEIR METAL COMPLEX COMPOUNDS**

**Karl-Heinz Menzel, Cologne-Mulheim, Rolf Pütter, Dusseldorf, and Gerhard Wolfrum, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed Sept. 2, 1960, Ser. No. 53,611**
**Claims priority, application Germany Sept. 5, 1959**
**8 Claims. (Cl. 260—146)**

1. A dyestuff selected from the class consisting of a monoazo dyestuff of the formula



class consisting of hydrogen, $—NO_2$, —Cl, $—SO_3H$, $—SO_2NH_2$, $—NH_2$, —COOH, dichlorotriazinylamino, lower alkoxy and lower alkyl sulfone, and A and B forming together the group $—O—CH_2—SO_2—$ being attached



with —O— to the p-position and with $—SO_2—$ to the m-position relative to the position of the azo bridge in the benzene nucleus, R is a radical selected from the class consisting of hydrogen, carbo-lower-alkoxy methylene, lower alkyl, —COOH, $—C_6H_5$, n is an integer ranging from 0 to 1, Y is a group selected from the class consisting of H, Cl, —OH, lower alkoxy and —COOH; and the metal complex compounds of said azo dyestuffs selected from the class consisting of the copper, chromium and cobalt metal complex compounds.

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**3,167,538**

**PROCESS FOR ALKOXYLATING A MIXTURE OF METHYL GLUCOSIDE AND A HYDROXY COMPOUND, AND THE PRODUCT OF THAT PROCESS**

**Donald W. Kaiser and Stephen Fuzesi, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia**

**No Drawing. Filed May 24, 1962, Ser. No. 197,245**
**9 Claims. (Cl. 260—210)**

1. A process for the alkoxylation of a mixture of methyl glucoside and a hydroxy compound which comprises admixing methyl glucoside with a hydroxy compound in a molar ratio of methyl glucoside to said hydroxy compound of between 1:0.1 and 1:10, said hydroxy compound being selected from the group consisting of glycerol, pentaerythritol, polypentaerythritol, sorbitol, hexanetriol, trimethylol propane, anhydroenneaheptitol, pyrogallol, monoethanolamine, diethanolamine, and triethanolamine, in the presence of a basic catalyst, maintaining the mixture at a temperature of from 100 to 165° C., and introducing into said mixture an alkylene oxide having between 2 and about 6 carbon atoms.

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**3,167,539**

**HYDROXOCOBALAMIN**

**Ernest Lester Smith, North Harrow, England, assignor to Glaxo Laboratories Limited, Greenford, England, a British company**

**No Drawing. Filed May 24, 1962, Ser. No. 197,230**
**Claims priority, application Great Britain, June 16, 1961, 21,904/61**
**15 Claims. (Cl. 260—211.5)**

1. A process for converting cyanocobalamin to hydroxocobalamin, which comprises reacting cyanocobalamin in aqueous media with a source of sulphite ions selected from the group consisting of a water soluble sulphite and sulfur dioxide to form sulphitocobalamin, thereafter reacting sulphitocobalamin with a source of nitrite ions selected from the group consisting of a water soluble nitrite and nitrous oxide to form nitritocobalamin and then reacting nitritocobalamin with a substance decomposing nitrous acid selected from the group consisting of urea and sulfamic acid to form hydroxocobalamin.

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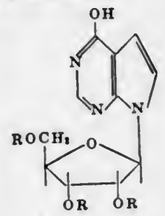
**3,167,540**

**DERIVATIVES OF 7-D-RIBOFURANOSYL-PYRROLOPYRIMIDINES**

**John Edward Pike, Kalamazoo, Paul Fears Wiley, Texas Township, Kalamazoo County, and Libor Slechta, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Filed July 12, 1963, Ser. No. 294,751**
**6 Claims. (Cl. 260—211.5)**

1. A compound of the formula:



wherein R is selected from the group consisting of hydrogen, hydrocarbon carboxylic acid acyl of from two to twelve carbon atoms, inclusive; halo-, nitro-, hydroxy-, amino-, cyano-, thiocyano-, and lower-alkoxy substituted hydrocarbon carboxylic acid acyl of from two to twelve carbon atoms, inclusive; and lower-alkoxycarbonyl.

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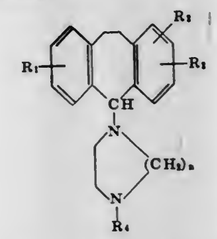
**3,167,541**

**5-(DIAZACYCLOALKYL)-10,11-DIHYDRODIBENZOCYCLOHEPTENES**

**Cornelis van der Stelt, Haarlem, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades Stheeman en Pharmacia, Amsterdam, Netherlands, a Dutch corporation**

**No Drawing. Filed Apr. 18, 1962, Ser. No. 188,560**
**Claims priority, application Great Britain, Apr. 27, 1961, 15,354/61**
**6 Claims. (Cl. 260—239)**

1. A compound selected from the group consisting of bases of the formula



wherein $R_1$, $R_2$ and $R_3$ are each selected from the group consisting of hydrogen, halogen and lower alkyl, *n* is a positive integer less than 4, and $R_4$ is selected from the group consisting of lower alkyl, monocyclic hydrocarbon aryl, monocyclic hydrocarbon aryl lower alkyl, monohydroxy-lower alkyl, and di-hydroxy-lower alkyl, and non-toxic acid addition salts thereof.

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**3,167,542**

**PRODUCTION OF CAPRYLIC LACTAM**

**Guenther Rapp, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Apr. 25, 1961, Ser. No. 105,268**
**Claims priority, application Germany, Apr. 30, 1960, B 57,675**
**2 Claims. (Cl. 260—239.3)**

1. In a process for the production of caprylic lactam by rearrangement of cyclooctanone oxime with sulfuric acid at temperatures of between 108° and 120° C., the improvement which comprises using cyclooctanone oxime which contains less than 1% of water and sulfuric acid which contains from 80 to 81.7% of sulfur trioxide.

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**3,167,543**

**METHOD FOR THE CONTINUOUS PRODUCTION OF CAPROLACTAM**

**Werner Muench, Cesano Maderno, and Teresa Argenziano and Mario Taverna, Milan, Italy, and Luigi Notarbartolo, deceased, late of Milan, Italy, by Enza Pascalino, administratrix, and Paola Notarbartolo, heiress, both of Milan, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy**

**Filed Nov. 2, 1962, Ser. No. 235,161**
**Claims priority, application Italy, Nov. 22, 1961, 21,025/61**
**16 Claims. (Cl. 260—239.3)**

1. In a process for the preparation of caprolactam by nitrosation, in the presence of sulfuric acid and free sulfur trioxide, of a cyclohexyl compound having a tertiary carbon atom and selected from the group consisting of hexa-

hydrobenzoic acid and its functional derivatives, the improvement consisting in effecting the nitrosation continuously and substantially in the temperature range between 90 and 100° C., with time of residence of the reaction mixture in the nitrosation zone between 1 and 15 minutes.

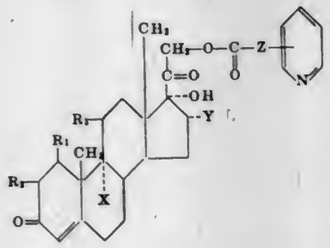
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### 3,167,544
### PROCESS FOR THE PREPARATION OF NICOTINIC ACID ESTERS OF STEROID COMPOUNDS

**Joachim Helder and Dietrich Jerchel, Biberach (Riss), Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany**

**No Drawing. Filed Dec. 17, 1963, Ser. No. 331,124**
**3 Claims. (Cl. 260—239.5)**

1. The method of preparing a steroid ester of the formula



wherein

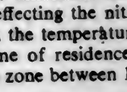
$R_1$ and $R_2$ are selected from the group consisting of hydrogen and, together with each other, a double bond,

$R_3$ is selected from the group consisting of =O and



X is selected from the group consisting of hydrogen and fluorine,

Y is selected from the group consisting of hydrogen, hydroxyl, methyl and, together with the 17α-OH,

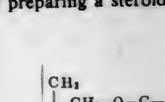


and

Z is selected from the group consisting of carbon-to-carbon bond, $-CH_2-$ and



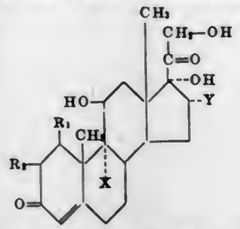
which comprises reacting N,N'-thionyl-di-imidazole with a piperidyl-carboxylic acid of the formula



wherein Z has the meanings defined above, to form an imidazolide of the formula



wherein Z has the meanings defined above, and reacting said imidazolide with a steroid alcohol of the formula



wherein $R_1$, $R_2$, $R_3$, X and Y have the meanings defined above, and recovering the reaction product.

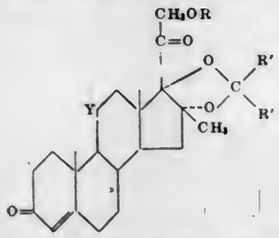
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### 3,167,545
### 16β-METHYL - 16α,17α - DIHYDROXY PREGNENES AND THE 16α,17α-CYCLIC KETALS AND ACETALS THEREOF

**George Rosenkranz and Mercedes Velasco, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama**

**No Drawing. Filed Feb. 5, 1960, Ser. No. 6,851**
**Claims priority, application Mexico Feb. 7, 1959**
**24 Claims. (Cl. 260—239.55)**

15. A compound of the following formula:



wherein Y is selected from the group consisting of keto and β-hydroxy; R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; and R' is selected from the group consisting of hydrogen and a hydrocarbon radical containing 1 to 8 carbon atoms.

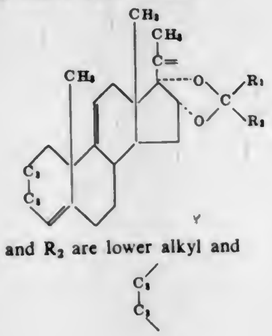
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### 3,167,546
### 2-SUBSTITUTED 16α,17α(LOWER ALKYLIDENEDIOXY)PREGNADIENES

**Seymour Bernstein, New City, N.Y., and George Rodger Allen, Jr., Old Tappan, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**

**No Drawing. Filed Apr. 4, 1963, Ser. No. 270,535**
**5 Claims. (Cl. 260—239.55)**

1. A compound of the formula:

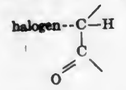


wherein $R_1$ and $R_2$ are lower alkyl and

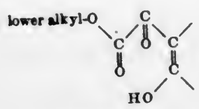




is selected from the group consisting of:



and



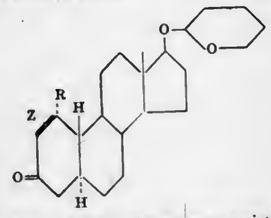
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### 3,167,547
### 17-TETRAHYDROPYRANYL ETHERS OF 19-NOR, 3-KETO ANDROSTANES

**Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama**

**No Drawing. Filed Nov. 18, 1963, Ser. No. 324,236**
**10 Claims. (Cl. 260—239.55)**

1. A compound represented by the formula:



wherein R is selected from the group consisting of hydrogen and methyl and Z is selected from the group consisting of a saturated linkage and a double bond.

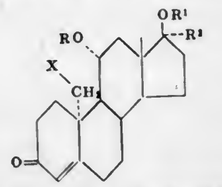
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### 3,167,548
### 10α - STEROID - 19 - OIC ACID (19,11)-LACTONES, 19 - CARBOXYLIC ACID (19α,11)-LACTONES AND 11α,19 - DIHYDROXY- AND 11α - HYDROXY - 19-HYDROXYMETHYL - 10α - ANDROSTENES

**Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama**

**No Drawing. Filed Jan. 10, 1963, Ser. No. 250,481**
**18 Claims. (Cl. 260—239.57)**

1. A compound of the following formula:



wherein X is selected from the group consisting of —OR and —$CH_2$—OR; R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; $R^1$ is a member of the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; and $R^2$ is selected from the group consisting of hydrogen, a lower alkyl group, a lower alkenyl group and a lower alkinyl group.

12. A process for the preparation of a steroid selected from the group consisting of 10α-Δ⁴-11α-ol-3-one-19-oic acid (19,11)-lactones of the androstene and pregnene series which comprises treating the corresponding 11α-hydroxy-Δ⁴-3-keto-19-nor-steroid with ethyl chloroformate in the presence of pyridine to form the corresponding 11α-hydroxy-Δ⁴-3-keto - 19 - nor-steroid 11-cathylate, and treating said cathylate with an alkali metal hydride under anhydrous conditions to form said lactone.

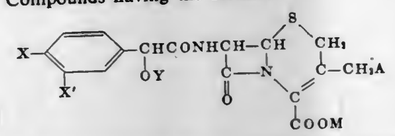
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### 3,167,549
### DERIVATIVES OF 7-AMINOCEPHALOSPORANIC ACID

**John R. E. Hoover, Glenside, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed May 18, 1961, Ser. No. 110,869**
**9 Claims. (Cl. 260—243)**

1. Compounds having the formula:



wherein A is a member selected from the group consisting of hydrogen, lower alkanoyloxy, benzoyloxy, hydroxy, pyridinium and when taken together with M a monovalent carbon-oxygen bond; M is a member selected from the group consisting of hydrogen, and the cation form of a member selected from the group consisting of an alkali metal, lower alkyl amine, procaine, N-ethylpiperidine, N,N'-dibenzylethylenediamine, and N,N'-bis-(dehydroabietyl)-ethylenediamine, an anionic charge when A is pyridinium and when taken together with A a monovalent carbon-oxygen bond; Y is a member selected from the group consisting of hydrogen and methyl; and X and X' are members selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro and trifluoromethyl.

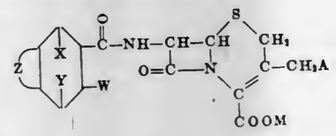
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### 3,167,550
### DERIVATIVES OF 7-AMINOCEPHALOSPORANIC ACID

**Alfred W. Chow, Merchantville, N.J., and John R. E. Hoover, Glenside, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Nov. 13, 1962, Ser. No. 237,384**
**10 Claims. (Cl. 260—243)**

1. Compounds of the formula:



wherein

A is a member selected from the group consisting of hydrogen, hydroxyl, lower alkanoyloxy, benzoyloxy, N-pyridinium, and when taken together with M, a monovalent carbon-oxygen bond;

M is selected from the group consisting of hydrogen, a cation selected from the group consisting of sodium, potassium, calcium, aluminum, lower alkyl amines, procaine, chloroprocaine, N,N'-dibenzylethylenediamine, N,N' - bis-(dehydroabietyl)-ethylenediamine, and N-methyl-1,2-diphenyl-2-hydroxyethylamine, an anionic charge when A is pyridinium and when taken together with A, a monovalent carbon-oxygen bond;

W is selected from the group consisting of hydrogen and phenyl;

X is selected from the group consisting of hydrogen, phenyl and when taken together with Y, a member selected from the group consisting of methylene and 2-propylidene;

Y is selected from the group consisting of hydrogen and when taken together with X, a member selected from the group consisting of methylene and 2-propylidene; and

Z is a member of the group consisting of (H, H) and a carbon-carbon bond.

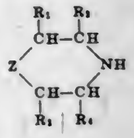
3,167,551

## METHYLATION OF NITROGEN HETEROCYCLES

Eugene A. Weipert, Taylor, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed June 21, 1961, Ser. No. 118,500
11 Claims. (Cl. 260—247)

1. In a process for preparing N-methylated heterocycles by contacting formaldehyde with a saturated nitrogen heterocycle corresponding to the formula:



wherein $R_1$, $R_2$, $R_3$ and $R_4$ are members selected from the group consisting of hydrogen, methyl and ethyl radicals and wherein Z is a member selected from the group consisting of O and NH, the improvement which comprises contacting said reactants in the proportion of about 2 to 4 mols of formaldehyde per nitrogen atom in said heterocycle at a temperature of about 85 to 100° C. and at about atmospheric pressure.

3,167,552

## PROCESS FOR THE PREPARATION OF 3-PHENYL-4-HYDROXYCINNOLINES

Harman S. Lowrie, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 28, 1963, Ser. No. 291,250
4 Claims. (Cl. 260—250)

1. The method of preparing 4-hydroxy-3-phenylcinnolines which comprises heating a suspension of

(*a*) the potassium salt of a 3-phenylcinnoline-4-carboxylic acid in which any substituents are substantially inert to the action of hot potassium hydroxide,

(*b*) potassium hydroxide,

(*c*) a promoter selected from the group consisting of copper bronze, copper oxide, and mixtures of copper bronze and copper oxide, and

(*d*) an inert diluent having a boiling point of at least 300° C.

to a temperature of at least 300° C. and isolating the 4-hydroxy-3-phenylcinnoline from the reaction mixture.

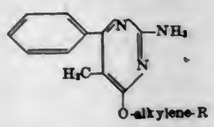
3,167,553

## 2-AMINO-4-ETHEREAL-5-METHYL-6-PHENYLPYRIMIDINES

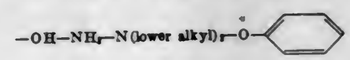
Hans A. Wagner, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 8, 1963, Ser. No. 279,024
7 Claims. (Cl. 260—256.4

1. A compound of the formula



wherein the alkylene radical called for contains fewer than 3 carbon atoms and R designates a member of the group consisting of radicals of the formulas



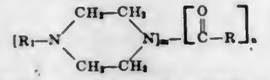
3,167,554

## PIPERAZINO ALKYLAMIDES OF POLYBASIC CARBOXYLIC ACIDS

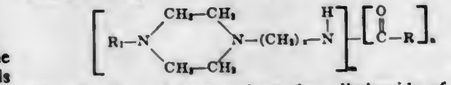
Robert Ernst, Los Angeles, Calif., assignor to Textilana Corporation, Hawthorne, Calif., a corporation of California

No Drawing. Filed Dec. 7, 1959, Ser. No. 857,500
25 Claims. (Cl. 260—268)

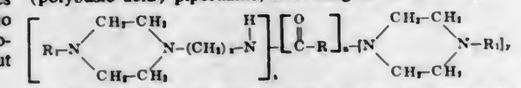
5. An amino amide compound chosen from the group consisting of N-acyl (polybasic acid) piperazine of the formula



and salts thereof, a piperazino alkylamide of a polybasic acid according to the formula:



and salts thereof, and a piperazino alkylamide of N-acyl (polybasic acid) piperazine, according to the formula:



and salts thereof, in which, in each formula, there is at least one amino nitrogen for each amide nitrogen and in which *m*, *n*, *y*+*z* are each equal to at least 2, *y* and *z* are each at least 1, and *x* is at least 2 and not more than 4, and in which R contains from 17 to 21 carbon atoms and $R_1$ is chosen from the group consisting of hydrogen, alkyl, amino alkyl and hydroxyalkyl group in which the above alkyl radical in the above alkyl and substituted alkyl groups are each of not more than 4 carbon atoms.

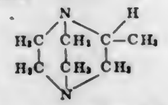
3,167,555

## METHYL SUBSTITUTED 1,4-DIAZABICYCLO-(2,2,2)-OCTANE AND PROCESS

Adalbert Farkas, Media, Joseph M. Hersh, Newtown Square, and Rocco L. Maccioli, Media, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Sept. 8, 1961, Ser. No. 136,750
16 Claims. (Cl. 260—268)

1. The compound 2-methyl-1,4-diazabicyclo-(2,2,2)-octane of the formula:



13. The method of preparing 2,5-dimethyl-1,4-diazabicyclo-(2,2,2)-octane which comprises reacting 2,5-dimethyl piperazine with a molar excess of ethylene oxide in an inert mutual solvent, passing the mixture in vapor phase over a solid cracking catalyst at 350 to 375° C., recovering a liquid product on cooling, and distilling said liquid product to obtain a cut consisting essentially of 2,5-dimethyl-1,4-diazabicyclo-(2,2,2)-octane.

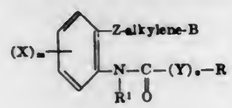
3,167,556

## BASIC DERIVATIVES OF ANILIDES

John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

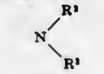
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,864
10 Claims. (Cl. 260—268)

1. A compound of the group consisting of bases of the formula

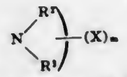




wherein R is a member of the group consisting of hydrogen, lower alkyl, $(X)_m$-phenyl, furyl, thienyl, pyridyl and piperonyl, $R^1$ is a member of the group consisting of hydrogen, lower alkyl and phenyl-lower alkyl, Y is a member of the group consisting of lower alkenylene and lower alkynylene, Z is a member of the group consisting of carbonyl and sulfonyl, B is a basic, nitrogen containing radical of the group consisting of



and



wherein each $R^2$ is a member of the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, phenyl-lower alkyl and N-(lower alkyl)phenyl-lower alkyl and together are a member of the group consisting of tetramethylene, pentamethylene, hexamethylene, oxytetramethylene, oxypentamethylene, azatetramethylene, azapentamethylene, azahexamethylene, thiatetramethylene and thiapentamethylene, X is a member of the group consisting of hydrogen, halo, lower alkyl, lower alkoxy, hydroxy, hydroxy-lower alkyl, lower alkanoyl, trihalomethyl, nitro, amino and di(lower alkyl)amino, *m* represents an integer from 1 to 3, and *n* represents an integer from 1 to 2, and acid addition salts and quaternary ammonium salts of said bases.

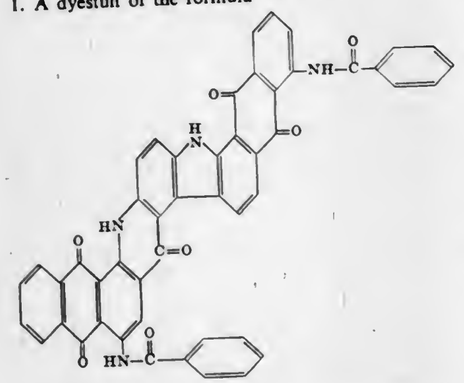
3,167,557

## PROCESS FOR THE PRODUCTION OF VAT DYESTUFFS

Kurt Klemm, Leverkusen, Fritz Baumann, Opladen, and Hans-Samuel Bien, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,758
Claims priority, application Germany Mar. 7, 1961
4 Claims. (Cl. 260—276)

1. A dyestuff of the formula



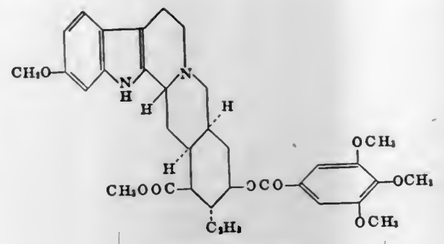
3,167,558

## 17-DESMETHOXY-17α-ETHYL RESERPINE

Ivan Ernest and Miroslav Protiva, Prague, Czechoslovakia, assignors to SPOFA, Sdružení podniků pro zdravotnickou výrobu, Prague, Czechoslovakia

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,800
Claims priority, application Czechoslovakia, Nov. 20, 1961, 6,849/61
1 Claim. (Cl. 260—287)

The compound 17-desmethoxy-17α-ethyl reserpine of the formula:



3,167,559

## PREPARATION OF TETRABORANE(6) ADDUCTS

William V. Hough, Gibsonia, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 7,278, Feb. 8, 1960. This application Mar. 1, 1963, Ser. No. 263,675
4 Claims. (Cl. 260—290)

1. A method of preparing $X \cdot B_4H_8$ adducts that comprises the steps of contacting at a temperature below about 80° C. pentaborane(9) and a strong Lewis base, X, selected from the group consisting of lower alkyl tertiary amines, pyridine, lutidine, and lower alkyl phosphines, the amount of said base not exceeding about 2 mols for each mol of pentaborane(9), maintaining the reaction product at about room temperature for at least about 1 hour, and recovering $X \cdot B_4H_8$ from the reaction mixture produced thereby.

2. A compound $X \cdot B_4H_8$ where X is a strong Lewis base selected from the group consisting of lower alkyl tertiary amines, pyridine, lutidine and lower alkyl phosphines.

3,167,560

## 8-SUBSTITUTED-α-NORECGONINE ESTERS AND PREPARATION THEREOF

Sydney Archer, Bethlehem, and Malcolm R. Bell, North Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Apr. 30, 1958, Ser. No. 731,857, now Patent No. 3,120,537, dated Feb. 4, 1964. Divided and this application Nov. 23, 1959, Ser. No. 860,057
2 Claims. (Cl. 260—292)

1. 8-cinnamyl-α-norecgonine methyl ester.

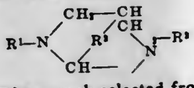
3,167,561

## 2,5-DIAZABICYCLO-[2,2,1]HEPTANES AND [2,2,2]OCTANES

Lewis H. Sarett, Princeton, Alexander R. Matzuk, Colonia, and Tsung-Ying Shen, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

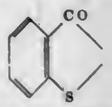
No Drawing. Filed Feb. 5, 1963, Ser. No. 256,240
9 Claims. (Cl. 260—293)

1. A compound of the formula



in which $R^1$ and $R^2$ are each selected from the group consisting of hydrogen; carbocyclic aroyl in which the carbocyclic radical has less than three fused six-membered rings; substituted carbocyclic aroyl in which the carbocyclic radical has less than three fused six-membered rings and in which the substituents are selected from the group consisting of lower alkoxy and lower alkanoyloxy; lower alkanoyl; substituted lower alkanoyl in which the substituent is selected from the group consisting of halogen and phenyl; cinnamoyl; monocyclic heteroaroyl in which the heterocyclic ring has less than 7 and more than 4 atoms, there being no more than two heteroatoms in

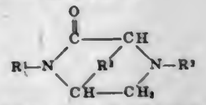
said ring, the said heteroatoms being selected from the group consisting of nitrogen, oxygen and sulfur; nitro substituted monocyclic heteroaroyl in which the heterocyclic ring has less than 7 and more than 4 atoms, there being no more than two heteroatoms in said ring, the said heteroatoms being selected from the group consisting of nitrogen and sulfur; carboxy; substituted carboxy of the formula —COM in which M is selected from the group consisting of phenoxy, nitrophenoxy, lower alkoxy, di-(lower alkyl) amino and diphenylamino; lower alkyl; substituted lower alkyl in which the substituent is selected from the group consisting of carb-lower alkoxy, cyano, hydroxy, amino, lower alkanoylamino di(lower alkyl) amino, benzodioxanyl, phenyl, halophenyl, halobenzoyl, chlorophenothiazinoyl; phenyl; substituted phenyl in which the substituent is selected from the group consisting of hydroxy, lower alkanoylamino, amino, di(lower alkyl)amino, lower alkoxy, lower alkyl, lower alkyl mercapto and the group



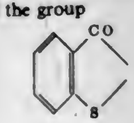
di(lower alkyl) aminophenylsulfonyl; N-morpholinylsulfonyl; N-pyrrolidinyl sulfonyl; phenylthio; lower alkyl substituted phenylthio; nitroso; amino; substituted amino in which the substituent is selected from the group consisting of benzoyl, lower alkyl and benzyl; pyranyl; thiazolyl; and nitrothiazolyl; and $R^3$ is an alkylene bridge of less than three carbons.

2. 2,5-diazabicyclo-[2,2,2]octane.

7. A compound of the formula



in which $R^1$ and $R^2$ are each selected from the group consisting of hydrogen; carbocylic aroyl in which the carbocyclic radical has less than three fused six-membered rings; substituted carbocyclic aroyl in which the carbocyclic radical has less than three fused six-membered rings and in which the substituents are selected from the group consisting of lower alkoxy and lower alkanoyloxy; lower alkanoyl; substituted lower alkanoyl in which the substituent is selected from the group consisting of halogen and phenyl; cinnamoyl; monocyclic heteroaroyl in which the heterocyclic ring has less than 7 and more than 4 atoms, there being no more than two heteroatoms in said ring, the said heteroatoms being selected from the group consisting of nitrogen, oxygen and sulfur; nitro substituted monocyclic heteroaroyl in which the heterocyclic ring has less than 7 and more than 4 atoms, there being no more than two heteroatoms in said ring, the said heteroatoms being selected from the group consisting of nitrogen and sulfur; carboxy; substituted carboxy of the formula —COM in which M is selected from the group consisting of phenoxy, nitrophenoxy, lower alkoxy, di(lower alkyl) amino and diphenylamino; lower alkyl; substituted lower alkyl in which the substituent is selected from the group consisting of carb-lower alkoxy, cyano, hydroxy, amino, lower alkanoylamino di(lower alkyl) amino, benzodioxanyl, phenyl, halophenyl, halobenzoyl, chlorophenothiazinoyl; phenyl; substituted phenyl in which the substituent is selected from the group consisting of hydroxy, lower alkanoylamino, amino, di-(lower alkyl) amino, lower alkoxy, lower alkyl, lower alkyl mercapto and the group



di(lower alkyl) aminophenylsulfonyl; N-morpholinylsulfonyl; N-pyrrolidinyl sulfonyl; phenylthio; lower alkyl substituted phenythio; nitroso; amino; substituted amino in which the substituent is selected from the group consisting of benzoyl, lower alkyl and benzyl; pyranyl; thiazolyl; and nitrothiazolyl; and $R^3$ is an alkylene bridge of less than three carbons.

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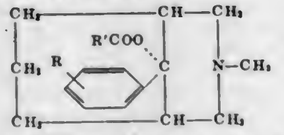
**3,167,562**

## NEW 3-AZABICYCLO[3.3.1]NONANE COMPOUNDS AND A PROCESS FOR PREPARING THESE COMPOUNDS

**Issei Iwai and Bunji Shimizu, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan**

**No Drawing. Filed Mar. 12, 1962, Ser. No. 179,223**
**Claims priority, application Japan, Mar. 14, 1961, 36/8,257, 36/8,258, 36/8,259**
**8 Claims. (Cl. 260—294.3)**

1. A compound of the class consisting of a free base and its hydrochloric acid and hydrobromic acid addition salts, the free base having the formula:



(I)

in which R is a member of the group consisting of hydrogen, alkyl of 1 to 2 carbon atoms and alkoxy of 1 to 2 carbon atoms and R′ is alkyl of 1 to 2 carbon atoms.

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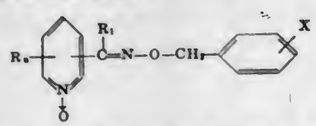
**3,167,563**

## O-(RING-SUBSTITUTED) BENZYL ETHERS OF ACYL-PYRIDINEOXIME 1-OXIDES

**Edward L. Schumann, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Filed Mar. 5, 1962, Ser. No. 177,227**
**8 Claims. (Cl. 260—296)**

1. A compound selected from the group consisting of compounds of the formula



wherein R is alkyl of from 1 to 6 carbon atoms, inclusive; *n* is an integer from zero to 3, inclusive; $R_1$ is selected from the group consisting of the hydrogen atom, alkyl of from 1 to 6 carbon atoms, inclusive, phenyl, and alkylphenyl of from 7 to 9 carbon atoms, inclusive; and X is selected from the group consisting of halogen and alkoxy of from 1 to 6 carbon atoms, inclusive, and pharmacologically acceptable acid addition salts thereof.

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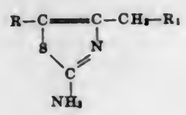
**3,167,564**

## NEW PROCESS FOR THE PREPARATION OF THIAZOLE COMPOUNDS

**Yasuo Yura, Shinagawa-ku, Tokyo, Japan, assignor to Sankyo Company, Limited, Tokyo, Japan**

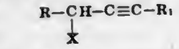
**No Drawing. Filed May 2, 1962, Ser. No. 191,745**
**Claims priority, application Japan, May 13, 1961, 16,406/61, 16,408/61**
**4 Claims. (Cl. 260—302)**

1. A process for the preparation of a compound having the formula





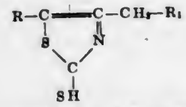
wherein R is a member selected from the group consisting of hydrogen, unsubstituted phenyl, phenyl substituted with a member selected from the group consisting of halogen, nitro and alkoxy of 1 to 3 carbon atoms, and naphthyl and $R_1$ is a member selected from the group consisting of hydrogen, lower alkyl of from 1 to 8 carbon atoms, unsubstituted phenyl, phenyl substituted with a member selected from the group consisting of halogen, nitro and alkoxy of 1 to 3 carbon atoms, and naphthyl, which comprises heating under reflux and in an inert organic solvent a compound having the formula



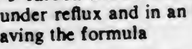
(A)

wherein R and $R_1$ have the same meaning as described above and X is halogen with thiourea and recovering the resulting compound from the reaction mixture.

2. A process for the preparation of a compound having the formula



wherein R is a member selected from the group consisting of hydrogen, unsubstituted phenyl, phenyl substituted with a member selected from the group consisting of halogen, nitro and alkoxy of 1 to 3 carbon atoms, and naphthyl and $R_1$ is a member selected from the group consisting of hydrogen, lower alkyl of from 1 to 8 carbon atoms, unsubstituted phenyl, phenyl substituted with a member selected from the group consisting of halogen, nitro and alkoxy of 1 to 3 carbon atoms, and naphthyl which comprises heating under reflux and in an inert organic solvent a compound having the formula



(A)

wherein R and $R_1$ have the same meaning as described above and X is halogen atom with ammonium dithiocarbamate and recovering the resulting compound from the reaction mixture.

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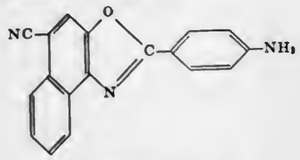
**3,167,565**

## 5-CYANO-2-(p-AMINOPHENYL)NAPHTH [1,2-d]-OXAZOLE

**Bennett George Buell, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine**

**No Drawing. Original application July 17, 1963, Ser. No. 295,831. Divided and this application Apr. 24, 1964, Ser. No. 362,471**
**1 Claim. (Cl. 260—307)**

The compound of the formula:



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**3,167,566**

## RESOLUTION OF DL-TRYPTOPHANE AND dl-α-PHENYLETHYLAMINE

**Lacy R. Overby, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**

**Filed Oct. 18, 1961, Ser. No. 147,131**
**5 Claims. (Cl. 260—319)**

1. In the resolution process wherein an optically active form of amine resolving agent and N-lower-alkanoyl-DL-tryptophane are reacted to obtain a diastereoisomeric salt of said tryptophane and amine agent which is then decomposed with a strong base to liberate the dextro tryptophane form from the diastereoisomeric salt the improvement comprising complementing the amine resolving agent by combining one equivalent of an optically inactive base with about two equivalents of N-lower alkanoyl-DL-tryptophane and about one equivalent of L-α-phenylethylamine to obtain diastereoisomeric salt which is capable of decomposition to yield the dextro tryptophane form.

3. In the process of resolving DL-α-phenylethylamine wherein N-acetyl-L-tryptophane is used as a resolving agent the improvement comprising combining two equivalents of said amine with about one equivalent of said L-tryptophane and about one equivalent of optically inactive acid to form diastereoisomeric salt of N-acetyl-L-tryptophane and L-α-phenylethylamine, adding alkali to the formed salt to cause decomposition thereof to yield L-α-phenylethylamine and alkali salt of N-acetyl-L-tryptophane.

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**3,167,567**

## PRODUCTION OF PHTHALIC ANHYDRIDE BY CATALYTIC OXIDATION OF o-XYLENE

**Helmut Nonnenmacher, Max Appl, Konstantin Andrussow, and Juergen Haug, all of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Apr. 24, 1962, Ser. No. 189,704**
**Claims priority, application Germany, Sept. 27, 1961, B 64,151**
**5 Claims. (Cl. 260—346.4)**

1. A process for the vapor-phase catalytic oxidation of o-xylene to phthalic anhydride which comprises bringing a gas selected from the group consisting of oxygen and molecular oxygen containing gases inert under the conditions of the reaction, said gas containing 150 to 900 g. o-xylene per cubic meter S.T.P. oxygen and further containing 0.2 to 50% by weight, with reference to o-xylene, of a member selected from the group consisting of chlorine and chlorine-containing compounds being gaseous at the reaction temperature, into contact with a catalyst maintained in a fluidized condition in the approximate temperature range of 250 to 380° C., for a residence period of from 5 to 50 seconds, said catalyst being a solution applied to a porous inert carrier of 5 to 30% by weight of vanadium pentoxide with reference to the solution in a salt of pyrosulfuric acid selected from the group consisting of potassium pyrosulfate and mixtures of potassium pyrosulfate and sodium pyrosulfate in a ratio by weight of up to 1:1.

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**3,167,568**

## PROCESS FOR PRODUCING $\Delta^4$-PREGNEN-11α, 17α-DIOL-3,20-DIONE AND INTERMEDIATES THEREIN

**Carl Djerassi, Birmingham, Mich., and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama**

**No Drawing. Filed Sept. 5, 1956, Ser. No. 607,985**
**Claims priority, application Mexico Mar. 7, 1952**
**9 Claims. (Cl. 260—397.45)**

1. A process for the production of a compound selected from the class consisting of $\Delta^4$-pregnen-11α,17α-diol-3,20-dione and esters thereof which comprises treating a compound selected from the class consisting of 16α,17α - oxido - allopregnan-11α-ol-3,20-dione 11-lower fatty acid esters thereof and the 11-benzoic acid ester thereof with approximately 2 molar equivalents of bromine and with hydrobromic acid to form a compound selected from the class consisting of 2,4,16-tribromo-allopregnan-11α,17α-diol-3,20-dione 11-lower fatty acid esters thereof and the 11-benzoic acid ester thereof, treating said tribromo compound with an alkali metal iodide in the presence of a lower aliphatic ketone to form the corresponding 2-iodo-16-bromo-$\Delta^4$-compound and treating said

2-iodo-16-bromo-$\Delta^4$-compound with a dehalogenating agent.

6. $\Delta^{1,4}$-pregnadien-11α,17α-diol-3,20-dione.

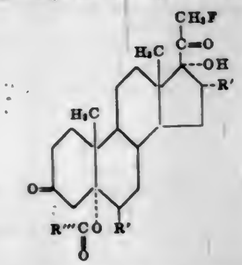
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### 3,167,569
### 6,16-DIALKYL-21-FLUORO PREGNANES AND THE PROCESS FOR THE PRODUCTION THEREOF

**Robert P. Graber, Minneapolis, Minn., and Martin B. Meyers, Glasgow, Scotland, assignors to General Mills, Inc., a corporation of Delaware**

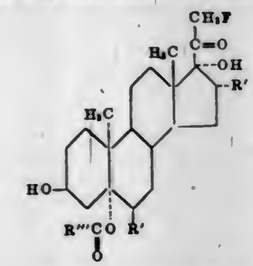
No Drawing. Filed Mar. 1, 1962, Ser. No. 176,780
10 Claims. (Cl. 260—397.47)

1. A steroid compound having the formula



where R' is an alkyl group having from 1 to 8 carbon atoms and R''' is an alkyl group having from 1 to 12 carbon atoms.

3. A steroid compound having the formula



where R' is an alkyl group having from 1 to 8 carbon atoms and R''' is an alkyl group having from 1 to 12 carbon atoms.

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### 3,167,570
### PROCESS FOR THE MANUFACTURE OF ESTERS OF HYDROXY-ALKANE-SULFO-ACIDS

**Johann Bohunek, Burgkirchen (Alz), Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany**

No Drawing. Filed Dec. 7, 1961, Ser. No. 157,857
Claims priority, application Germany, Dec. 15, 1960, F 32,765
5 Claims. (Cl. 260—400)

1. A process for the manufacture of metal salts of an ester of hydroxy-alkane-sulfo-acids with carboxylic acids comprising mixing a carboxylic acid with a metal salt of a hydroxy-alkane-sulfo-acid, said metal being selected from the group consisting of alkali and alkaline earth metals, passing gaseous hydrogen chloride through the mixture, heating the carboxylic acid and the metal salt of the hydroxy-alkane-sulfo-acid to a reactive temperature range of 150 to 200° C. while the stream of gaseous hydrogen chloride is passed through the mixture until substantially the total stoichiometric amount of water formed by ester condensation has distilled off in the form of dilute aqueous hydrochloric acid, the amount of gaseous hydrogen chloride introduced being calculated substantially to replace the amount of hydrogen chloride carried off in the distillate, and the carboxylic acid ester salt of the hydroxy-alkane-sulfo-acid is collected as the electrolyte-free distillation residue.

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### 3,167,571
### MANUFACTURE OF THIOLCARBAMATES

**John J. D'Amico, Charleston, and Marion W. Harman, Nitro, W. Va., assignors to Monsanto Company, a corporation of Delaware**

No Drawing. Filed July 13, 1959, Ser. No. 826,410
10 Claims. (Cl. 260—455)

1. In the process of making thiolcarbamates by reacting COS with primary and secondary amines the improvements which comprise absorbing, at not more than about 20° C. COS in aqueous alkaline medium containing a member of the group consisting of primary and secondary amines, confining the amount of COS to less than one mole per mole equivalent of combining amine, the alkalinity of the said medium being sufficient to neutralize thiolcarbamic acid formed, which alkalinity is due to a member selected from the group consisting of alkali metal hydroxide, ammonium hydroxide, alkali metal carbonate, trimethylamine, triethylamine, pyridine, quinoline, the same amine which is converted to thiolcarbamate and mixtures of said members thereby producing n-substituted thiolcarbamate in the aqueous medium.

5. The process of claim 1 in which the reaction mixture with which the COS is absorbed contains lower (2-alkenyl) chloride and the corresponding ester of the thiolcarbamic acid is isolated.

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### 3,167,572
### PROCESS FOR PREPARING β-HYDROCARBYLOXY ACID SULFATES

**Donald L. Klass, Barrington, and John E. King, Evanston, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio**

No Drawing. Filed June 14, 1961, Ser. No. 116,965
17 Claims. (Cl. 260—457)

1. A method of producing β-hydrocarbyloxy acid sulfates which comprises reacting at a temperature of about −20° to +200° C. a compound selected from the group consisting of ethylene sulfate and alkyl, cycloalkyl and mono-nuclear aryl derivatives thereof, with a compound selected from the group consisting of alcohols, glycols, and phenols.

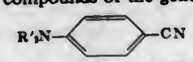
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### 3,167,573
### CYANOETHYLATION OF ORGANOSILANES

**Siegfried Nitzsche and Paul Buchheit, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany**

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,202
Claims priority, application Germany, Nov. 14, 1960, W 28,906
11 Claims. (Cl. 260—448.2)

1. The method of preparing cyanoethyl substituted silanes consisting essentially of reacting acrylonitrile with silanes of the general formula $R_nHSiX_{3-n}$ wherein each R is a monovalent hydrocarbon radical free of aliphatic unsaturation, $n$ has a value from 1 to 2 inclusive, and each X is a hydrolyzable substituent selected from the group consisting of halogen atoms, alkoxy, aryloxy, halogenoalkoxy and halogenoaryloxy radicals in the presence of a catalyst system consisting essentially of (1) platinum and a co-catalyst (2) a compound selected from the group consisting of (*a*) compounds of the general formula



wherein each R' is a monovalent substituent selected from the group consisting of hydrogen atoms, alkyl radicals of less than 7 carbon atoms and cyanoalkyl radicals of less than 7 carbon atoms, (*b*) a cyanoethylated amine of the formula $CH_3N(CH_2CH_2CN)_2$ (*c*) cyanoethylated acid amide of the formula $O{=}CHN(CH_2CH_2CN)_2$, and (*d*) quinoidal pigments, at a temperature in the range 40°–350° C.

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### 3,167,574
### PROCESS FOR PRODUCING ALKYL ALKYL-PHOSPHONOCHLORIDATES

**Bernard B. Brown, Leland J. Lutz, Charles J. Smith, Jr., and Earl A. Weilmuenster, Niagara Falls, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia**

No Drawing. Filed Jan. 15, 1954, Ser. No. 404,373
1 Claim. (Cl. 260—461)

A method for the preparation of a compound of the formula:

$$(Cl)(R'O)P(O)(R'')$$

which comprises reacting a compound of the formula:

$$(RO)(R'O)P(O)(R'')$$

with from 1.0 to 1.3 molar amounts of phosgene at a temperature within the range 55–85° C. and a pressure within the range 50–500 p.s.i.g., R and R' being isopropyl radicals and R'' being a methyl radical.

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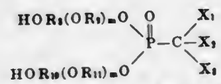
### 3,167,575
### POLYALKYLENE GLYCOL ESTERS OF POLY-HALO-METHANEPHOSPHONIC ACIDS AND PROCESS FOR MAKING SAME

**Lester Friedman, Beachwood, Ohio, assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York**

No Drawing. Filed Dec. 8, 1961, Ser. No. 158,168
9 Claims. (Cl. 260—461)

1. A polyalkylene glycol polyol polychloromethanephosphonate compound having two phosphorus atoms and 2 to 3 hydroxyl groups, one of said phosphorus atoms being a part of a phosphite group when said compound has three hydroxyl groups and both of said phosphorus atoms being part of a phosphonate group in which the phosphorus is attached to a polychloromethane group when said compound has two hydroxyl groups.

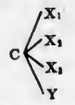
7. A process of preparing a phosphonate having the formula



comprising reacting a phosphite having the formula

$$(HOR_8(OR_9)_mO)_3P$$

with a compound having the formula



where $R_8$ and $R_9$ are alkylene groups, $m$ is an integer of at least one, $X_1$, $X_2$ and $X_3$ are halogens of atomic weight 35 to 80, and Y is selected from the group consisting of hydrogen and $X_1$.

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### 3,167,576
### PROCESS FOR THE PREPARATION OF 3,9-DIHYDROXY - 2,4,8,10 - TETRAOXA - 3,9 - DIPHOSPHASPIRO[5.5]UNDECANE-3,9-DIOXIDE

**Rudi F. W. Rätz, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia**

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,335
5 Claims. (Cl. 260—461)

1. In the preparation of 3,9-dihydroxy-2,4,8,10-tetraoxa - 3,9 - diphosphaspiro[5.5]undecane - 3,9 - dioxide, the process which comprises dissolving 3,9-dichloro-2,4,8,10 - tetraoxa - 3,9 - diphosphaspiro[5.5]undecane-3,9-dioxide in dimethylformamide, reacting said dichloride with a substantially equivalent amount of an unsubstituted aliphatic alcohol at a reaction temperature of about 80–160° C., filtering the resulting 3,9-dihydroxy-2,4,8,10 - tetraoxa - 3,9 - diphosphaspiro[5.5]undecane-3,9-dioxide-mono-dimethylammonium salt from the reaction mixture, acidifying said salt and isolating the resulting di-acid.

4. A process for preparing a bifunctional spiro-phosphoric acid which comprises reacting 3,9-dichloro-2,4,8,10 - tetraoxa - 3,9 - diphosphaspiro[5.5]undecane - 3,9-dioxide with a substantially equivalent amount of an unsubstituted aliphatic alcohol at a reaction temperature of about 80–160° C.

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### 3,167,577
### METHOD OF PREPARING AND EMPLOYING PHOSPHORUS OXIDE SMOKES TO MAKE PHOSPHATE ESTERS

**Robert W. Malone, Rahway, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**

Filed May 21, 1962, Ser. No. 196,373
10 Claims. (Cl. 260—461)

1. A process for treating alkanols with phosphorus oxide, which process comprises:

dissolving elemental phosphorus having a melting point of less than about 115° F. in an organic solvent,

blowing the solvent-phosphorus solution with air while maintaining the temperature of the solution below 150 F.,

contacting the alkanol with the phosphorus oxide particles and recovering the phosphorus ester product.

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### 3,167,578
### PROCESS FOR THE MANUFACTURE OF CARBOXYLIC ACID-TERTIARY ALKYL ESTERS

**Hans Fernholz, Bad Soden, Taunus, and Eberhard Mundlos, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany**

No Drawing. Filed July 29, 1960, Ser. No. 46,086
Claims priority, application Germany, Aug. 8, 1959, F 29,133
9 Claims. (Cl. 260—465.4)

1. A process for the preparation of a tertiary alkyl ester of a carboxylic acid which comprises reacting a carboxylic acid with an olefinic hydrocarbon having a tertiary carbon atom at the double bond substituted by two saturated alkyl groups in the presence of a solution of diphosphorus pentoxide in orthophosphoric acid containing 20 to 90% diphosphorus pentoxide at a temperature within the range of between −20° C. and +15° C.

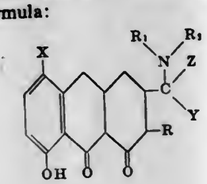
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### 3,167,579
### SUBSTITUTED 4,10-DIOXO-5-HYDROXY-1,2,3,4,4a,9,9a,10-OCTAHYDROANTHRACENES

**Thomas Lynn Fields, Pearl River, N.Y., Raymond George Wilkinson, Montvale, N.J., and Andrew Steven Kende, Hartsdale, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,307
7 Claims. (Cl. 260—465)

1. A compound selected from the group consisting of those of the formula:



wherein X is selected from the group consisting of hydrogen, chlorine and bromine, R is selected from the group consisting of hydrogen, carboxy, lower carbalkoxy and phenyl lower carbalkoxy, $R_1$ is selected from the group consisting of hydrogen and methyl, $R_2$ is selected from the group consisting of hydrogen, methyl and formyl, Z is selected from the group consisting of cyano, carboxy, and lower carbalkoxy and Y is selected from the group consisting of hydrogen and cyano.

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3,167,580

## PROCESS FOR THE PREPARATION OF IMINODIACETONITRILE

Kenneth Worden Saunders, Darien, William Herbert Montgomery, Springdale, and James Charles French, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 12, 1962, Ser. No. 186,859
3 Claims. (Cl. 260—465.5)

1. A continuous process for preparing iminodiacetonitrile which comprises bringing into reactive contact for a period of less than about ten minutes acid stabilized formaldehyde, hydrogen cyanide and ammonia, maintaining during said contact period

(*a*) the mol ratio of $CH_2O/HCN$ at between about 0.6/1 and about 1/1;
(*b*) the mol ratio of $NH_3/HCN$ at between about 2.2/1 and about 4/1;
(*c*) the temperature at between about 35° and about 60° C.;
(*d*) the pH at greater than 7;

continuously withdrawing product solution at a rate effective to maintain said contact period, and isolating iminodiacetonitrile from said product solution.

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3,167,581

## PROCESS FOR THE PREPARATION OF N-METHYLENE GLYCINONITRILE

Kenneth Worden Saunders, Darien, William Herbert Montgomery, Springdale, and James Charles French, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 12, 1962, Ser. No. 186,860
3 Claims. (Cl. 260—465.5)

1. A continuous process for preparing N-methylene glycinonitrile which comprises bringing into reactive contact for a period of less than about ten minutes acid stabilized formaldehyde, hydrogen cyanide and ammonia and maintaining during said contact period

(*a*) the mol ratio of $CH_2O/HCN$ at between about 1.6/1 and 3/1;
(*b*) the mol ratio of $NH_3/HCN$ at between about 1/1 and about 4/1;
(*c*) the temperature at between about 40 and about 100° C.
(*d*) the pH at greater than 7

and subsequently isolating N-methylene glycinonitrile from the reaction mixture.

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3,167,582

## PROCESS FOR THE PREPARATION OF GLYCINONITRILE

Kenneth Worden Saunders, Darien, William Herbert Montgomery, Springdale, and James Charles French, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 12, 1962, Ser. No. 186,876
3 Claims. (Cl. 260—465.5)

1. A continuous process for preparing glycinonitrile which comprises bringing into reactive contact for a period of less than about ten minutes acid stabilized formaldehyde, hydrogen cyanide and ammonia and maintaining during said contact period

(*a*) the mol ratio of $CH_2O/HCN$ at about 1/1;
(*b*) the mol ratio of $NH_3/HCN$ at between about 3.5/1 and about 10/1;
(*c* the temperature at between about 100 and about 110° C.
(*d*) the pH at greater than 7

and subsequently recovering glycinonitrile from the reaction mixture.

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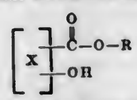
3,167,583

## ETHYLENICALLY UNSATURATED DERIVATIVES OF ORTHO-HYDROXY AROMATIC ACIDS

Albert I. Goldberg, Berkeley Heights, N.J., and Martin Skoultchi and Joseph Fertig, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 24, 1962, Ser. No. 219,112
9 Claims. (Cl. 260—473)

1. The ethylenically unsaturated derivatives of ortho-hydroxy aromatic acids which correspond to the formula:



wherein X is a radical of the benzene series selected from the group consisting of phenyl and naphthyl radicals carrying said hydroxy and carboxy ester groups thereon in positions which are ortho with respect to one another, and wherein R is an ethylenically unsaturated radical selected from the class consisting of beta-hydroxypropyl acrylate and beta-hydroxypropyl methacrylate radicals.

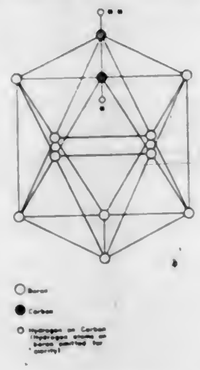
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3,167,584

## ORGANOBORON MONO AND DICARBOXYLIC ACIDS AND THEIR PREPARATION

John W. Ager, Jr., Buffalo, Roy P. Alexander, Lewiston, and Theodore L. Heying, Tonawanda, N.Y., assignors to Olin Mathieson Chemical Corporation

Filed Apr. 28, 1959, Ser. No. 809,569
11 Claims. (Cl. 260—526)



1. A method for the preparation of an organoboron carboxylic acid useful as a fuel which includes reacting successively with an alkali metal lower alkyl, carbon dioxide, and an aqueous solution of a mineral acid, a compound of the class $RR'B_{10}H_8(CR''CR''')$ wherein R and R′ are each selected from the class consisting of hydrogen and an alkyl radical containing from one to five carbon atoms, wherein R″ and R‴ are each selected from the class consisting of hydrogen and a lower alkyl radical, not exceeding eight carbon atoms, at least one of R″ and R‴ being hydrogen, the molar ratio of said material to said compound being within the range from 0.1 to 10.1.



9. $RR'B_{10}H_8(CR''CR''')$ wherein R and R′ are each selected from the class consisting of hydrogen and an alkyl radical containing from 1 to 5 carbon atoms and wherein R″ and R‴ are each selected from the class consisting of hydrogen and a carboxyl radical, at least one of R″ and R‴ being a carboxyl radical, having the structural formula of the type shown in the accompanying drawing.

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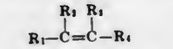
3,167,585

## PROCESS FOR CARBOXYLATION OF ISO-OLEFINS

John E. Anderson, Glenshaw, and Norman W. Franke, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Aug. 25, 1960, Ser. No. 51,787
6 Claims. (Cl. 260—533)

1. A process for producing organic carboxylic acids which comprises adding an olefin which gives tertiary carbonium ions upon proton addition, said olefin being defined by the following structural formula:



wherein $R_1$ and $R_2$ are alkyl radicals $R_3$ and $R_4$ are selected from the group consisting of alkyl radicals and hydrogen, the total number of carbon atoms in said olefin being from four to 16 carbon atoms, to a reaction zone containing carbon monoxide and sulfuric acid having a concentration of 82 to 88 percent and thereafter adding water to the reaction product so produced to obtain an organic acid.

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3,167,586

## PREPARATION OF CIS-1,2-DIAMINOCYCLOHEXANE

Andrew I. Smith, Raleigh, N.C., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,188
6 Claims. (Cl. 260—563)

1. A process for the manufacture of pure cis 1,2-diaminocyclohexane comprising refluxing a solution of urea and o-phenylene diamine in a mutual solvent selected from the group consisting of alkanols containing from 4 to 9 carbon atoms, mono- and dialkyl ethers of alkylene glycols and water, separating and hydrogenating the resulting product at a pressure of 1500 to 3500 p.s.i.g. at a temperature of 110° to 180° C. in the presence of a ruthenium oxide catalyst, separating and hydrolyzing the resulting N,N′-cyclohexylene urea with a strong mineral acid and neutralizing the resulting solution to recover cis 1,2-diaminocyclohexane.

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3,167,587

## PREPARATION OF TRANS 1,2-DIAMINOCYCLOHEXANE

Andrew I. Smith, Raleigh, N.C., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,949
5 Claims. (Cl. 260—563)

1. A process for preparing pure trans 1,2-diaminocyclohexane from a mixture comprising trans 1,2-diaminocyclohexane and cis 1,2-diaminocyclohexane, comprising reacting phosgene with an aqueous solution of said mixture at a temperature below 35° C. to form a crystalline precipitate of N,N′-cyclohexylene urea, derived from the trans form, separating said crystalline precipitate from the solution, hydrolyzing said precipitate in mineral acid to form the acid salt of trans 1,2-diaminocyclohexane and recovering free trans 1,2-diaminocyclohexane by addition of an alkali hydroxide thereto.

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3,167,588

## CATALYTIC HYDROGENATION OF NITROSODIALKYLAMINES TO PRODUCE UNSYMMETRICAL DIALKYLHYDRAZINES

William P. Moore, Jr., Chester, and William C. Sierichs, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Dec. 1, 1959, Ser. No. 856,592
8 Claims. (Cl. 260—583)

1. The process of hydrogenating nitrosodialkylamines to produce unsymmetrical-dialkylhydrazines in which the alkyl groups each contain from 1 to 3 carbon atoms, which process comprises feeding a slurry of the nitrosodialkylamine, supported particles of catalyst from the group consisting of platinum and palladium supported on a carrier from the group consisting of carbon, titania and alumina having a specific surface area greater than 10 square meters per gram, and hydrogen through a reaction zone maintained at a temperature of 25° to 125° C. and under a pressure of from 10 to 1000 p.s.i.g., introducing the resultant reaction mixture containing the catalyst particles into an evaporating zone maintained at a pressure of from 20 to 1000 mm. of mercury absolute and at a temperature of from 70° to 120° C. to flash evaporate and thus remove quickly the reaction products and by-products from the catalyst particles, and utilizing the supported catalyst particles thus separated to catalyze the hydrogenation of additional nitrosodialkylamine.

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3,167,589

## SOLID REACTION PRODUCTS OF AMINES AND NON-VOLATILE REACTION PRODUCTS OF DIBORANE AND CONJUGATED DIOLEFIN HYDROCARBONS

Eugene J. De Lorenzo, Bronx, N.Y., and Robert V. Wright, North Highland, Calif., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Apr. 20, 1961, Ser. No. 104,470
12 Claims. (Cl. 260—583)

1. A process for the preparation of solid reaction products of amines and non-volatile reaction products of diborane and conjugated diolefin hydrocarbons which comprises reacting a polyamine selected from the group consisting of a saturated aliphatic primary polyamine containing from 2 to 8 carbon atoms and a saturated aliphatic secondary polyamine containing from two to eight carbon atoms with a non-volatile product of the reaction of diborane and a conjugated diolefin hydrocarbon, said non-volatile reaction product being the product of the reaction of 2 to 4 moles of diborane per mole of a conjugated diolefin hydrocarbon containing from four to five carbon atoms at a temperature of from about −10° C. to about +200° C. in the presence of an organic solvent selected from the group consisting of hydrocarbon solvents and lower dialkyl ethers.

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3,167,590

## ORGANOBORON DIOLS AND METHOD FOR THEIR PREPARATION

Theodore L. Heying, Tonawanda, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Nov. 6, 1959, Ser. No. 851,475
8 Claims. (Cl. 260—606.5)

1. A method for the preparation of organoboron diols which includes reacting successively with a material selected from the class consisting of alkali metal alkyls and alkali metal aryls, a 1,2-alkylene oxide, and water, a compound of the class $RR'B_{10}H_8(CR''CR''')$ wherein R and R′ are each selected from the class consisting of hydrogen and an alkyl radical containing from 1 to 5 car-

bon atoms and wherein one of R'' and R''' is hydrogen and one of R'' and R''' is a radical of the class



wherein $R_1$ is a bivalent saturated hydrocarbon radical containing 2 to 8 carbon atoms and $R_2$ is a radical selected from the class consisting of a benzyl radical and an alkyl radical containing 1 to 6 carbon atoms, separating aqueous and organic phases of the resulting mixture, and hydrolyzing the organic phase by reaction with a lower alkanol solution of an alkali metal hydroxide.

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3,167,591

## ORGANIC PEROXIDE PREPARATION

Newton G. Leveskis, Richmond, Calif., assignor to U.S. Peroxygen Corporation, Richmond, Calif.

No Drawing. Filed May 1, 1961, Ser. No. 106,454
5 Claims. (Cl. 260—610)

1. A method for preparing a tertiary alkyl peroxide which comprises reacting an excess of a tertiary alkyl alcohol with an inorganic acid in liquid phase to produce a soluton containing a tertiary mono-alkyl salt, then reacting said tertiary mono-alkyl salt solution with hydrogen peroxide while maintaining the reaction mixture at about 35° C.–60° C. and substantially continuously stirring the mixture throughout the course of the reaction, and then recovering a tertiary alkyl peroxide.

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3,167,592

## PREPARATION OF PERFLUOROALKANES

Murray Hauptschein, Glenside, and Arnold H. Fainberg, Elkins Park, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 15, 1961, Ser. No. 131,500
10 Claims. (Cl. 260—653)

1. A method for converting a perfluoroolefin of the formula $R_fCF{=}CF_2$ to a corresponding perfluoroalkane of the formula $R_fCF_2CF_3$, where $R_f$ is a perfluoroalkyl radical having from 1 to 4 carbon atoms, which comprises contacting said perfluoroolefin with an aluminum fluoride catalyst at a temperature of 400° C. to 900° C., collecting the effluent from said contacting operation and separating said corresponding perfluoroalkane from said effluent as the major product of the reaction.

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3,167,593

## PRODUCTION OF OLIGOMERS OF 1,3-DIENES

Herbert Mueller, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 22, 1959, Ser. No. 861,170
Claims priority, application Germany, Dec. 27, 1958, B 51,585
2 Claims. (Cl. 260—666)

1. A process for the production of oligomers of 1,3-dienes which comprises treating said dienes at −50° C. to 150° C. with a catalyst formed from (A) chromium (VI) oxide, (B) an organic acid anhydride, and (C) an aluminum organyl selected from the group consisting of dialkyl aluminum hydrides, aluminum trialkyls and aluminum triphenyl to produce oligomers of said dienes.

2. A process for the production of oligomers of 1,3-dienes which comprises treating said dienes at −50° C. to 150° C. with a catalyst formed from (A) chromium (VI) oxide, (B) an organic acid amide, and (C) an aluminum organyl selected from the group consisting of dialkyl aluminum hydrides, aluminum trialkyls and aluminum triphenyl to produce oligomers of said dienes.

3,167,594

## PROCESS FOR THE PRODUCTION OF CYCLOPROPANE HYDROCARBONS

Roland Köster and Paul Binger, Mulheim (Ruhr), Germany, assignors to Studiengesellschaft Kohle m.b.H., a German corporation

No Drawing. Filed Apr. 5, 1961, Ser. No. 100,819
Claims priority, application Germany Apr. 11, 1960
23 Claims. (Cl. 260—666)

1. A process for the production of a cyclopropane hydrocarbon, which comprises reacting a boron compound of the formula:

$$R'_{3-n}(BCR_2{-}CR_2{-}CR_2X)_n$$

wherein X is selected from the group consisting of chlorine, bromine, and iodine, R is a member selected from the group consisting of hydrogen, alkyl, and cycloalkyl, R' is alkyl, and $n$ is an integer of from 1–3, with a compound selected from the group consisting of alkali metal and alkaline earth metal hydrides, alkali metal and alkaline earth metal alkyls, and complex compounds thereof with compounds of the formula

$$MeY_3$$

where Me is a member selected from the group consisting of aluminum and boron and Y is a member selected from the group consisting of hydrogen, hydrocarbon radicals, alkoxy and aryloxy radicals with the exclusion of air and moisture.

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3,167,595

## PREPARATION OF EXO-DICYCLOPENTADIENE

Donald L. Heywood and Benjamin Phillips, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 18, 1961, Ser. No. 124,784
11 Claims. (Cl. 260—666)

1. A process which comprises dehydrating exo-dicyclopentadiene hydrate, in a reaction zone, in the presence of a dehydration catalyst, at a temperature in the range of from about 100° C. to about 500° C., under a pressure sufficient to maintain the resulting exo-dicyclopentadiene product predominantly in the gaseous state, collecting a liquid effluent from said reaction zone, and recovering organic material comprising exo-dicyclopentadiene from said effluent.

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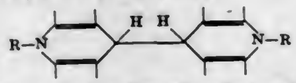
3,167,596

## STABILIZATION OF A POLYMERIZABLE SYSTEM

Louis A. Joo, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Oct. 25, 1961, Ser. No. 147,474
13 Claims. (Cl. 260—666.5)

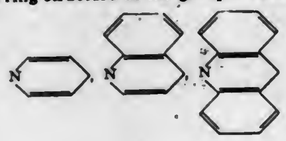
1. A composition consisting essentially of a major portion of a polymerizable system containing at least one compound having ethylenic unsaturation and a minor portion of a compound of the formula,



wherein R is a $C_2$–$C_{20}$ alkenyl radical and



represents a ring structure of the group consisting of





and derivatives thereof which are inert toward alkali metals, said compound being present in an amount sufficient to inhibit polymerization of said system but insufficient to prevent complex curing thereof.

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3,167,597

## PROCESS FOR THE CATALYTIC SPLITTING OF ISOBUTENE OLIGOMERS

Walter Krönig, Wulf Schwerdtel, and Karl-Heinz Vöpel, all of Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 23, 1962, Ser. No. 168,236
Claims priority, application Germany Jan. 25, 1961
9 Claims. (Cl. 260—683)

1. A process for the catalytic splitting of isobutene oligomers, which comprises contacting said isobutene oligomer at a temperature of 220–320° C. with a catalyst comprising a phosphate of a member selected from the group consisting of boron, aluminum and mixtures thereof.

2. Process according to claim 1 wherein said catalyst additionally contains 0.03 to 1% by weight of a nickel salt (calculated as metal) based on the final catalyst.

4. Process according to claim 1 wherein said catalyst comprises a phosphate of a member selected from the group consisting of boron and aluminum maintained on a solid support.

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3,167,598

## CHLORINATED VINYL CHLORIDE POLYMERS ADMIXED WITH GRAFT COPOLYMERS

John Michael Heaps and John Edward Bramfitt, Colchester, Essex, England, assignors to B.X. Plastics Limited, London, England

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,312
8 Claims. (Cl. 260—876)

1. A polymer blend comprising a homogeneous mixture of (1) a chlorinated polymer selected from the group consisting of chlorinated polyvinyl chloride, and chlorinated copolymers of vinyl chloride with vinyl acetate, the vinyl chloride constituting at least 95% by weight of the monomer mixture, and (2) a graft copolymer obtained by graft copolymerising a conjugated diolefine and at least one monomer selected from the group consisting of ethyl acrylate, methyl methacrylate, styrene and acrylonitrile onto a polymer selected from the group consisting of polyvinyl chloride and copolymers of vinyl chloride with vinyl acetate, the vinyl chloride constituting over 80% by weight of the monomer mixture, the chlorinated polymer (1) constituting at least 50% by weight of the total weight of the components (1) and (2).

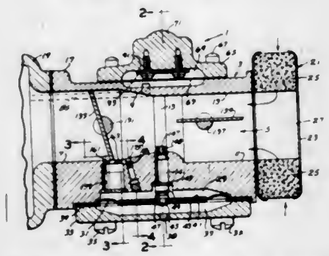
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3,167,599

## CARBURETOR

Morris C. Brown, St. Louis, and Eldon A. Johnson, Sunset Hills, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Sept. 28, 1962, Ser. No. 226,951
2 Claims. (Cl. 261—41)



1. A carburetor comprising a body having a mixture conduit extending therethrough and a fuel chamber at one side of said body, a diaphragm closing said fuel chamber, means for delivering fuel to said chamber controlled by said diaphragm, said mixture conduit being formed to provide a venturi, a rotatable throttle shaft extending across said mixture conduit downstream from said venturi, a throttle on said shaft, an independent high speed fuel system comprising a first fuel well in said body located between said fuel chamber and mixture conduit, a high speed fuel nozzle connecting said first fuel well with the mixture conduit at the throat of the venturi, a passage connecting said fuel chamber and fuel well, a first means for metering the flow of fuel through said passage to the fuel well, an independent acceleration system comprising a second well and an accelerating port opening from said second well into the mixture conduit at a point between said nozzle and said throttle when in closed position at which said accelerating port is traversed by the edge of said throttle when the throttle is moved toward wide open position, a separate passage connecting the second well and said fuel chamber, a second and separate means for metering the flow of fuel through said last-named passage, and an independent idle system including an idle port downstream from the high speed fuel nozzle for delivery of fuel from the fuel chamber to the mixture conduit when the throttle is at idle position, a third separate passage connecting said idle port and said fuel chamber, and third and separate means for metering flow of fuel through said idle passage, whereby fuel flow is accelerated from said fuel chamber through said accelerating system independently of the flow of fuel in said high speed and idle systems when said throttle moves to its wide open position and the accelerating port is relatively on the downstream side of the throttle.

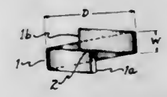
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3,167,600

## PACKING MATERIAL

Robert G. Worman, 1159 Harrelton Court, Evansville, Ind.

Filed Sept. 13, 1960, Ser. No. 55,656
7 Claims. (Cl. 261—94)



1. A tower packing element comprising a strip-shaped elongated member having opposite longitudinally extending edges intersecting with laterally extending edges at its opposite ends and arranged in the form of a substantially single turn helix with only the end portions of the opposite longitudinally extending edges substantially in contact with each other in axially superimposed and aligned overlapping relation, the width of the strip-shaped member being at least twice as great as the thickness thereof, the ratio of the outside diameter of the helix to the width of the strip-shaped member being from 1:1 to 4:1.

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3,167,601

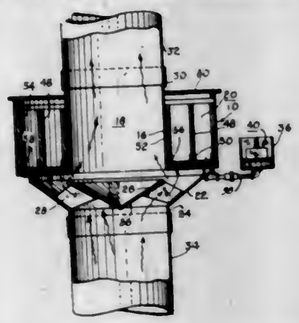
## HUMIDIFIER

Anton E. Schlising, Rte. 1, Tomahawk, Wis.

Filed June 5, 1962, Ser. No. 200,263
2 Claims. (Cl. 261—154)

1. A humidifier for hot air furnaces comprising an upright housing having an inner partition wall defining an inner chamber open at the top and bottom, said housing having an outer wall spaced from the inner wall and defining a generally U-shaped, horizontally disposed chamber partially surrounding said inner chamber, upstanding wall means lining said inner and outer walls and constructed of porous material and drawing water by capillary action, said housing having a flat bottom wall, a conduit element connected to the bottom wall of said housing,

said conduit element being adapted to be connected to a smoke pipe for the passage of hot flue gases therethrough, a cone-shaped smoke deflector, means positioning said cone-shaped deflector in said conduit element for directing the passage of said hot flue gases onto the flat bottom wall of said housing, an ingress opening and an egress



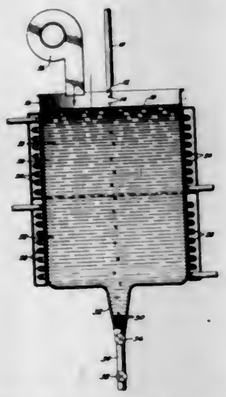
opening in the outer wall of said housing for passage of air, float means, valve means connected to said float means for admitting water to said outer chamber and passing along said upstanding wall means of porous material by said capillary action to humidify the air as passed thereover from said ingress opening.

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**3,167,602**
**METHOD OF ENCAPSULATING LIQUID PARTICLES IN THERMOPLASTIC SHELL**

**Itzhak Bentov, Belmont, and Robert M. Jolkovski, Boston, Mass., assignors, by mesne assignments, of fifty percent to Delavan Manufacturing Company, West Des Moines, Iowa, a corporation of Iowa, and fifty percent to The Aro Corporation, Bryan, Ohio, a corporation of Ohio**

**Filed Mar. 12, 1962, Ser. No. 179,031**
**7 Claims. (Cl. 264—4)**



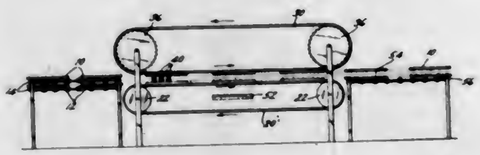
1. A method for encapsulating liquid particles in a protective shell of thermoplastic material which comprises providing a thin molten layer of said thermoplastic material supported by a bath having a specific gravity higher than the specific gravity of said thermoplastic material, which bath is maintained at a temperature above the melting point of said thermoplastic material at its upper surface and at a temperature below the melting point of said thermoplastic material in a cooling zone below said upper surface, discharging said liquid particles from a point above said molten layer under the influence of gravity so that they strike said molten layer with sufficient kinetic energy to pass intact through said layer and into said cooling zone, whereby said particles become encapsulated in a thin solid protective shell of thermoplastic material.

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**3,167,603**
**PROCESS AND APPARATUS FOR PRODUCING LAMINATED PANELS**

**Robert W. Lillie, Rumson, N.J., assignor to Union Carbide Corporation, a corporation of New York**

**Filed Mar. 31, 1961, Ser. No. 99,854**
**4 Claims. (Cl. 264—47)**



1. The process for producing foam-cored laminates comprising: continuously advancing a lower series of panels of sheet material on a lower conveyor belt and continuously advancing at the same rate thereof an upper series of panels of sheet material by means of an upper conveyor belt, releasably holding said upper series of panels to said upper conveyor belt a spaced predetermined distance apart from and substantially parallel to said lower series of panels, said holding being achieved by applying a vacuum through said upper conveyor belt through to the top surfaces of said upper series of panels, continuously depositing a uniform layer of foamable plastic material onto said lower series of panels while advancing said upper and lower series of panels, and heating said foamable material so that said material expands and cures within the definitional limits of the cavity formed by said panels and adheres thereto, said vacuum being generated by a motor-driven vacuum pump secured to said upper conveyor belt upon the passing of current pickup wheels communicating therewith along a bus bar carrying electrical energy during the expansion and curing of said foamable material.

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**3,167,604**
**PROCESS FOR THE PRODUCTION OF FIBROUS PRODUCTS CONSISTING OF POLYVINYL ALCOHOL OR ITS DERIVATIVES**

**Makoto Arakawa, Joto-ku, Osaka-shi, and Keizoh Ueda, Nishinomiya-shi, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, known as Kanegafuchi Spinning Co., Ltd., Tokyo-to, Japan**

**Filed Dec. 21, 1959, Ser. No. 860,698**
**Claims priority, application Japan, Apr. 13, 1959, 12,017/59**
**4 Claims. (Cl. 264—185)**



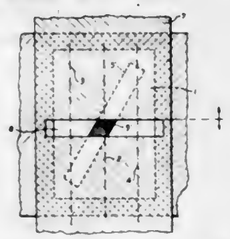
1. A method for the preparation of fibrous products comprising extruding an aqueous solution of polyvinyl alcohol containing boric acid into a coagulating bath, thereafter treating the thereby extruded and coagulated material with a solution at a pH of between 2–6 containing an oxidizing agent selected from the group consisting of periodic acid, lead tetra acetate and osmium oxide.

# ELECTRICAL

**3,167,605**
**PHOTO-ELECTRIC MEASURING AND ADJUSTING DEVICE**

**Johannes Heidenhain, Egerer, near Chieming, Germany, assignor to Fa. Wenczler & Heidenhain, Patentverwertung, Traunreut, Upper Bavaria, near Traunstein, Germany, a corporation of Germany**

**Filed Oct. 27, 1959, Ser. No. 848,990**
**Claims priority, application Germany, Nov. 7, 1958, W 24,416**
**2 Claims. (Cl. 88—14)**



1. An electric measuring and adjusting device for lengths comprising

a photo-electric microscope including an oscillating scanning element performing a uniform movement over a linear indication range,

a body having at least two marker lines constituting a first element, the displacement of which is to be measured,

a first diaphragm, constituting a second element and having a cut-out including said indication range and exposing a portion of the length of at least one of said marker lines,

a second diaphragm constituting a third element including a cut-out for determining the position of the zero indication of said photo-electric microscope by its position within the path of said photo-electric microscope and movable parallel to itself across said cut-out of said first diaphragm,

said three elements having a common overlapping area and each of said three elements forming a different angle relative to the other of said three elements, and

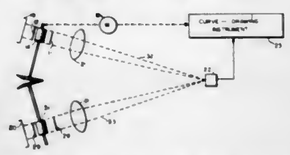
said linear indication range being only a portion of the scanning amplitude.

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**3,167,606**
**APPARATUS FOR ELIMINATING CORRELATION INTERFERENCE**

**George R. Gamertsfelder, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware**

**Filed Aug. 8, 1962, Ser. No. 215,569**
**8 Claims. (Cl. 88—14)**



1. An instrument for detecting and measuring correlation in position between patterns embodying functional representations in the presence of interference comprising,

a first pattern embodying a first function of an independent variable,

a second limited pattern embodying a second function of said variable spatially positioned with respect to said first pattern,

means correlating said first and second patterns by obtaining the average of the point by point products thereof in repeatedly shifted relative positions to form a first signal representing a correlation function including interference,

a third limited pattern embodying a third function of said variable equal to the average of said second function spatially positioned with respect to said first pattern,

means correlating said first and third patterns by obtaining the average of the point by point products thereof in repeatedly shifted relative positions to form a second signal representing a background correlation function,

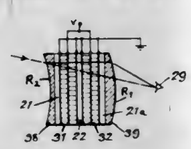
and means subtracting said second signal from said first signal to form a third signal representing a correlation function free from interference.

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**3,167,607**
**MULTI-ELEMENT ELECTRO-OPTIC CRYSTAL SHUTTER**

**Alvin M. Marks, 149—61 Powells Cove Blvd., and Mortimer M. Marks, 166—25 Cryders Lane, both of Whitestone, N.Y.**

**Filed Jan. 11, 1960, Ser. No. 1,782**
**5 Claims. (Cl. 88—61)**



1. An electro-optic device comprising a plurality of substantially flat plate-like electro-optic crystals disposed along an optical axis and having their major surfaces in parallel alignment in planes perpendicular to said optical axis, a light polarizing member on each outer major face of said crystals, a transparent electrically conductive film on each major face of said crystals and means including a first lead connected to alternate conductive films and a second lead connected to the remaining films to produce between the conductive films of the crystals an electrical potential difference sufficient to cause a retardation of the light passing through the said crystals whereby the potential difference applied between any two adjacent conductive films is less than the total potential difference necessary to effect the said retardation, a negative lens laminated to the entrant side of the device and a positive lens of substantially compensating power laminated to the exit side of the device whereby a cone of light entering the device will pass therethrough parallel to the optical axis of the device and be brought to the focal point of the positive lens surface on the exit side of the device.

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**3,167,608**
**HERMETICALLY SEALED TERMINAL STRUCTURE**

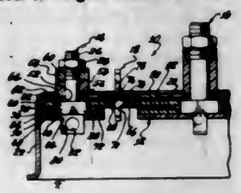
**Howard F. Mason, Los Angeles, Calif., assignor to Ansul Chemical Company, a corporation of Wisconsin**

**Filed Apr. 10, 1961, Ser. No. 101,770**
**2 Claims. (Cl. 174—50.56)**

1. In a hermetically sealed terminal structure, the combination of:

(*a*) a laminated wall comprising preformed rigid

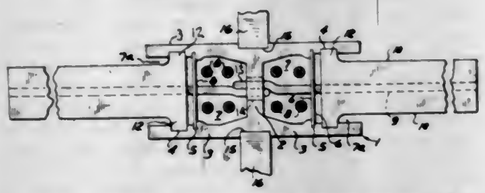
laminae of electrical insulating material having communicating holes therethrough;
(*b*) certain of said holes having edges which are nonaligned relative to each other;
(*c*) at least one of said holes being noncircular;
(*d*) a terminal extending through said wall and having portions respectively complementary to and disposed in certain of said holes with nonaligned edges and said noncircular hole;
(*e*) an outer lamina of said wall having a hole therethrough which is larged than said terminal;



(*f*) a bushing of electrical insulating material encompassing said terminal and disposed in and complementary to said hole in said outer lamina;
(*g*) said laminae and said bushing being bonded together; and
(*h*) whereby to hermetically seal said terminal in said laminated wall and said bushing with a stepped, sealed interface between said terminal and said laminated wall to positively prevent leake through said laminated wall along the exterior of said terminal.

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**3,167,609**
**CONDUCTOR CONTAINING POST AND BRACKET ASSEMBLIES**
**Donald T. Braun, Detroit, Mich., assignor to Detroit Partition Co., Detroit, Mich., a corporation of Michigan**
**Filed Sept. 25, 1962, Ser. No. 226,115**
**6 Claims. (Cl. 174—70)**



3. In combination, an elongated post having an H form in cross section, whereby said post has a web and has two pairs of spaced flanges oppositely projecting from the web, two elongated brackets oppositely projecting from the post, and having their respective inner ends inserted between the respective pairs of flanges, means on each pair of flanges for guiding the corresponding bracket in sliding travel lengthwise of the post, and a hook on the lower portion of the inner end of each bracket, said web having an aperture receiving the hooks of both brackets to maintain the transverse relation of both brackets to the post.

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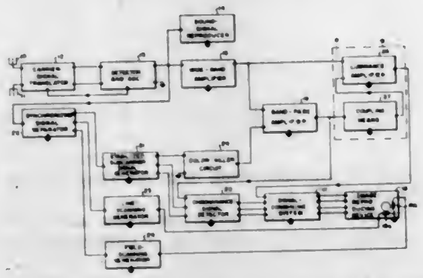
**3,167,610**
**PROCESS FOR APPLYING INSULATION TO CABLES**
**Thomas D. Callinan, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed Dec. 27, 1961, Ser. No. 162,578**
**3 Claims. (Cl. 174—124)**

1. A method for producing tight, helical wrappings of paper tape insulation on cables comprising loosely and helically wrapping a cable with a paper insulating tape, exposing the loosely wrapped cable to an atmosphere of high relative humidity and then exposing the wrapped cable to atmospheric humidity conditions until the wrapped cable reaches a state of equilibrium with the atmosphere.

3. The product obtained according to the method of claim 1.

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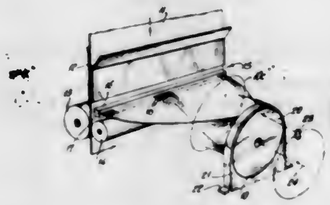
**3,167,611**
**COLOR-TELEVISION APPARATUS FOR IMPROVING RESOLUTION DURING MONOCHROME RECEPTION**
**Karl M. St. John, Hicksville, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois**
**Filed Mar. 25, 1960, Ser. No. 17,600**
**9 Claims. (Cl. 178—5.4)**



1. A compatible color-television apparatus for improving resolution during monochrome reception comprising: a wide band-width monochrome channel; means for supplying a signal similar to undesirable chrominance signals; and means for coupling said signal into said channel so that said undesirable chrominance signals are substantially deleted from said channel.

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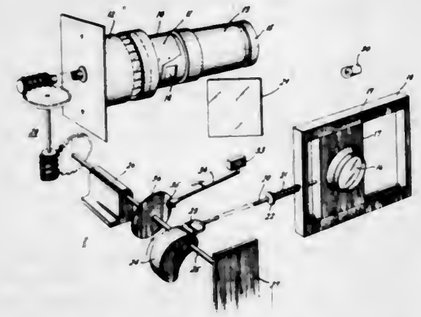
**3,167,612**
**ELECTRO-OPTICAL SCANNING APPARATUS UTILIZING AN OPTICAL TRANSMISSION LINK**
**Harry Strickholm, Dumont, N.J., assignor to Litton Systems, Inc., Beverly Hills, Calif.**
**Filed June 1, 1961, Ser. No. 114,164**
**4 Claims. (Cl. 178—7.1)**



1. Electro-optical scanning apparatus, comprising in combination, a multiplicity of optical fibers, means anchor-ing one end of the fibers adjacent to but in closely spaced relation to subject matter to be scanned, means anchoring the opposite ends of the fibers in a circular array, a light-source and phototube assembly rotatable as a unit concentric with said circular array to illuminate and scan said fibers in cyclical succession and optical means in said light-source and phototube assembly for causing the illuminating and scanning rays at said fiber ends to have different angles with respect to the axes of said fibers.



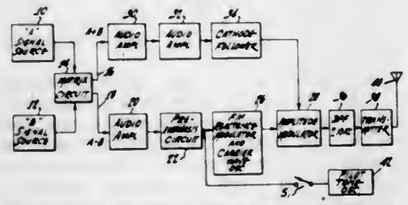
**3,167,613**
**SLOW-SCAN COMPOSITE SIGNAL-PRODUCING APPARATUS WITH MEANS FOR PRODUCING SYNC PULSES BY OFFSETTING BLACK LEVEL**
**Theodore I. Millen, Don Mills, Ontario, Canada, assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware**
**Filed Dec. 15, 1961, Ser. No. 159,711**
**9 Claims. (Cl. 178—7.1)**



1. Slow-scan picture signal-producing apparatus, comprising a rotatable scanning drum having spaced peripheral scanning windows or apertures in a common plane transverse to the axis of rotation of said drum, means for rotating said drum, means for repeatedly slowly moving an image to be scanned in front of said apertures so as to effect scanning of the image by said windows in successive lines and fields, means for translating the light passing through said windows from said image into an electrical signal, means for providing over the image area a constant low level of illumination, thereby to establish a "black" level in said signal, and means for interrupting the light passage to said translating means between successive line scans of the image, thereby to provide in said signal line synchronizing pulses on the "blacker than black" side of said level.

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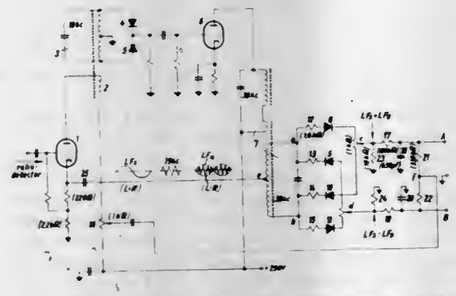
**3,167,614**
**MULTIPLICATIVE STEREOPHONIC SOUND SIGNALLING SYSTEM**
**Francis R. Holt, Willow Grove, Pa., and Jack Avins, New York, N.Y., assignors to Radio Corporation of America, a corporation of Delaware**
**Filed Mar. 16, 1959, Ser. No. 799,680**
**18 Claims. (Cl. 179—15)**



1. A stereophonic sound signalling system for transmission and reception within a given transmission channel bandwidth, said system comprising: a source of first and second stereophonically related signals; a source of a carrier wave; means coupled to said signal source and said carrier wave source for angle modulating and amplitude modulating a carrier wave with said first and second signals, respectively, to produce a multiplicatively modulated carrier wave having both angle modulation and amplitude modulation sidebands wherein the maximum frequency deviation of said carrier wave, in response to maximum amplitude modulating signals of frequencies up to the order of said maximum deviation, is a small fraction of such channel bandwidth, said means for angle modulating said carrier wave including means for preemphasizing the higher modulating frequencies of said first signal by a predetermined amount; means for transmitting said multiplicatively modulated carrier wave; and a receiver for said transmitted wave, said receiver comprising a common amplifying channel for the reception and amplification of said multiplicative wave, a first stereo channel coupled to said common channel and including an amplitude modulation detector for detecting the amplitude modulation of said received wave to reproduce said second signal, a second stereo channel coupled to said common channel and including a frequency modulation detector for recovering the angle modulation component from said received wave and means for deemphasizing said recovered angle modulation component by an amount corresponding to the amount of preemphasis applied to said first signal, a sound reproducing system, and means for applying said recovered second signal and said deemphasized first signal to said sound reproducing system.

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**3,167,615**
**F.M. STEREO DEMODULATOR USING A DIODE RING MODULATOR SWITCHING CIRCUIT**
**Karl Wilhelm and Karl-Heinz Schmidt, Hannover, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany**
**Filed Nov. 28, 1962, Ser. No. 240,679**
**Claims priority, application Germany Dec. 2, 1961**
**12 Claims. (Cl. 179—15)**



1. A circuit arrangement for obtaining two loudspeaker signals and usable in a multiplex-type stereo receiver which is compatible with monophonic operation, wherein the main carrier is modulated firstly, with the low-frequency sum signal, secondly, with a sub-carrier frequency on which the difference signal is transmitted by amplitude modulation with suppressed carrier, and thirdly, with a pilot frequency equal to half the sub-carrier frequency by means of which the sub-carrier is obtained in the receiver by doubling the frequency of the pilot frequency, and wherein the thus-obtained sub-carrier is used to switch electronically the entire stereophonic signal derived by demodulation of the received high frequency alternately from one loud-speaker channel to the other, with the sub-carrier remaining switched to each respective loud-speaker channel for the duration of one half cycle of the sub-carrier, said circuit arrangement comprising:
(*a*) a ring modulator incorporating a plurality of diodes, one of the diagonals of said ring modulator having said sub-carrier applied across it and the other diagonal being connected, via decoupling resistors, to said loud-speaker channels, respectively, the latter being grounded on one side;
(*b*) means for applying the entire stereophonic signal across the point of symmetry of said one diagonal and ground;

(c) means for applying to said loud-speaker channels, via respective ohmic resistances, at least the low-frequency sum signal of the entire stereophonic signal with a phase that is inverted with respect to said symmetry point and which is smaller than the signal applied to said symmetry point by an amount sufficient that the sum and difference formations of the sum and difference signals produced in said ring modulator is brought to the requisite amplitude ratio of the sum and difference signals; and

(d) a plurality of purely ohmic resistors each connected in series with a respective one of said diodes of said ring modulator, each such resistor being sufficiently large substantially to linearize the characteristics of the respective diodes.

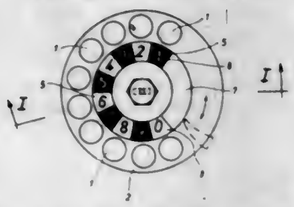
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**3,167,616**

## DIAL, PARTICULARLY FOR USE IN TELEPHONE APPARATUS OR THE LIKE

**Immanuel Buck, Justinus-Kerner-Weg 9, Fellbach, Stuttgart, Germany**

**Filed Mar. 23, 1961, Ser. No. 97,895**
**Claims priority, application Germany, Mar. 23, 1960, B 57,160**
**2 Claims. (Cl. 179—90)**



1. A dialing device for telephone apparatus and the like comprising

a stationary housing haivng an upwardly extending centrally disposed cylindrical portion,

a circular dial plate rotatably mounted on top of and slightly spaced apart from said cylindrical portion and of a diameter larger than that of said cylindrical portion to provide an annular zone extending beyond said cylindrical portion of said stationary housing.

said annular zone of said circular dial plate defining a plurality of finger holes disposed along a circular line,

a plurality of dial symbols provided along a circular line on the top face of said cylindrical portion and coordinated to said finger holes of said circular dial plate,

said dial plate having a transparent annular zone disposed axially above said dial symbols, so that the latter are clearly, fully and continuously visible during rotation of said dial plate, as well as during its resting position, and

said dial plate having an annular recess at its bottom face complementary to and receiving the upper end of said cylindrical portion in order to dispose said symbols within close vicinity of the bottom face of said transparent annular zone of said dial plate.

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**3,167,617**

## HANDSET RETAINING APPARATUS

**Leslie H. Gerhardt, Wauwatosa, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed July 16, 1962, Ser. No. 209,919**
**7 Claims. (Cl. 179—100)**

1. Apparatus for retaining a telephone handset in place on a telephone control head comprising a telephone control head, a telephone handset having a handle with a transmitter unit and a receiving unit on opposite ends thereof, a pair of resilient support members mounted on the control head, a pair of retaining members each pivotally mounted to a different one of the support members, resilient biasing means connecting each of the support members with a different one of the retaining members so as to normally bias one end of each retaining member outwardly with respect to the other retaining member, each unit having a cam surface directed inwardly toward the other unit and adapted to cam against a different one of the retaining members, the distance between the pivot axes of the retaining members being



greater than the distance between the cam surfaces of the units when the support members are not deflected whereby upon urging of the units into engagement with the retaining members the cam surfaces of the former cam against the latter initially deflecting said support members inwardly toward each other and as the cam surfaces of both units are depressed beyond the pivot axes of the retaining members the support members return to the non-deflected position urging the retaining members against the cam surfaces of the units so as to retain the handset in place on the control head.

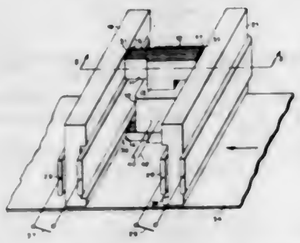
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**3,167,618**

## MAGNETIC RECORDER HEAD ASSEMBLY

**Stanley M. Oster, Letchworth, Herts, England, and Mark L. Naiman, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed July 30, 1959, Ser. No. 830,544**
**12 Claims. (Cl. 179—100.2)**



1. A magnetic head comprising a first magnetizable core having a first and second pole face, a transducer coil linking said first core so that both said first and said second pole faces are on the same side of said coil, a second magnetizable core oriented to form with said first core a first series magnetic circuit linking said transducer coil, said second core having a pole face confronting said first pole face and displaced therefrom to form a non-magnetic gap, a first control circuit including a coil linking said second core, a third magnetizable core oriented to form with said first core a second series magnetic circuit linking said transducer coil, said third core having a pole face confronting said second pole face and displaced therefrom to form a non-magnetic gap, a second control circuit including a coil linking said third core, means for selectively controlling the impedance of said first and second control coil circuits to control the flux changes at the corresponding gaps produced by energization of said transducer coil.

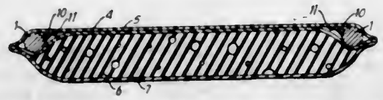


**3,167,619**

## HEADSTRAPS FOR EARPHONE

**Tore Georg Palmaer, Vrakvagen 31, Lidingo 1, Sweden**

**Filed Sept. 22, 1961, Ser. No. 140,063**
**3 Claims. (Cl. 179—156)**



1. A headstrap, in essence consisting of two generally parallel, springy strips with a crown cushion having channels along the edges thereof, said strips being bent so that the radius of curvature increases in the direction of the strip ends, and being inserted in said channels along the edges of said crown cushion, the cushion including lateral sections which run crosswise of the cushion at intervals between the strips, said sections holding the strips in proper positions at the ends of the cushion and increasing the flexibility of the cushion in the lengthwise direction and at the same time increasing the stiffness in the crosswise direction, said strips being free outside the cushion channels, and essentially movable independently.

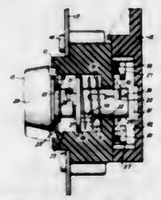
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**3,167,620**

## ROTARY SELECTOR SWITCH WITH ROTARY CONTACT CARRIER AND MEANS TO CONVERT BETWEEN DIFFERENT NUMBERS OF CIRCUIT CONTROLLING POSITIONS THEREOF

**John E. Keyser, Bloomington, and Roy E. Wheeler, Champaign, Ill., assignors to General Electric Company, a corporation of New York**

**Filed Nov. 13, 1962, Ser. No. 237,098**
**13 Claims. (Cl. 200—11)**



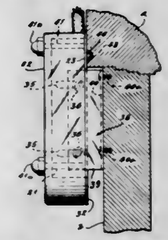
10. In a rotary selector switch, an insulating housing having a front side and having a rear surface facing away from said front side, a plurality of fixed contacts mounted on the housing at the rear surface thereof, a movable contact assembly mounted on the housing for rotation from said front side about an axis perpendicular to said rear surface, said contact assembly including a movable contact overlying the rear surface of the housing for cooperation with said fixed contacts, said contact assembly being selectively mountable on said housing in either of two positions which are spaced angularly about said axis and in each of which the movable contact is spaced from said fixed contacts, cooperating interfering parts on said contact assembly and on said housing effective when engaged to prevent rotation of said contact assembly about said axis relative to said housing in one direction, said interfering parts being disposed such that when the contact assembly is mounted in a first one of said two positions, the contact assembly is rotatable about said axis from said first position in said one direction to a circuit controlling position angularly spaced from said first position, and when said contact assembly is mounted in the second one of said two positions, the contact assembly is prevented from rotation about said axis in said one direction from said second position by engagement of said interfering parts, and resilient means biasing the contact assembly in an axial direction towards said front side to urge the movable contact into firm contact with the fixed contacts when the contacts are engaged.

**3,167,621**

## ELECTRICAL ALARM SWITCH FOR SAFE DOORS AND THE LIKE

**James W. Flotron, Jr., St. Louis County, Mo., assignor to Potter Electric Signal Company, St. Louis, Mo., a corporation of Missouri**

**Filed Mar. 18, 1963, Ser. No. 265,616**
**6 Claims. (Cl. 200—61.62)**



1. An alarm switch device for attachment to the outside surface of a door openable from and closable within a frame member which projects beyond the door, comprising

a housing having a base plate

including a plate end portion having an opening surrounded by a rim,

an electrical switch mounted in the housing and having an operating plunger projecting outwardly through the rimmed opening,

the plunger being spring-biased to extend beyond the rim of the opening,

the switch having a normal position at which the outward end of the plunger projects beyond said rim,

the switch further having an alarm position corresponding to a position of the operating plunger outwardly of the normal position,

the housing further having a mounting member adjustably spaceable beneath a portion of the base plate not including the end portion having the rimmed opening,

whereby the switch may be secured to the surface of the door in such spaced position that the undersurface of the base plate end portion will project beyond the door and close flush against such frame member.

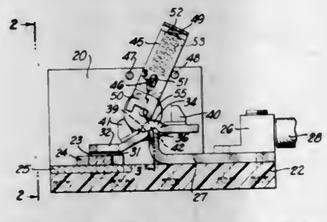
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**3,167,622**

## ROLLER ACTUATED SNAP ACTION ELECTRIC TOGGLE SWITCH

**Ross E. Locher, South Pasadena, Calif., assignor to Zinsco Electrical Products, Los Angeles, Calif., a corporation of California**

**Filed Aug. 24, 1962, Ser. No. 219,189**
**5 Claims. (Cl. 200—68)**



1. In an electrical toggle switch, the combination of:

a housing;

a fixed contact mounted in said housing;

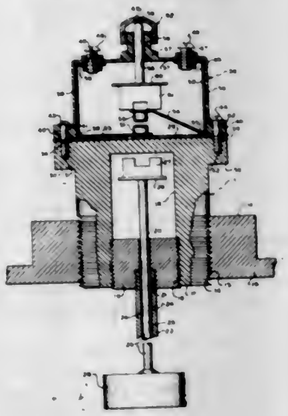
a contact carrier with a moving contact and means defining a roller track, with said fixed and moving contacts forming a contact set;

a pivot member mounted in said housing for pivotally supporting said contact carrier at a pivot axis on said pivot member;

an actuating member mounted in said housing for movement between switch open and closed positions and including groove means defining a path; and roller means mounted in said actuating member for movement along said track past said pivot axis as said actuating member is moved, with said roller means movable in said groove means along said track relative to said actuating member in a direction perpendicular to the axis of said roller means, and resilient means urging said roller means into engagement with said track whereby movement of said actuating member toward said closed position closes said contact set and movement of said actuating member toward said open position opens said contact set.

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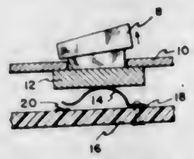
**3,167,623**
**LIQUID LEVEL SWITCH WITH NORMALLY CLOSED CONTACTS AND AUXILIARY MEANS TO MAINTAIN CONTACTS IN ENGAGED POSITION**
**Theodore Kaleta, 275 Albemarle St., Rahway, N.J.**
**Filed Aug. 15, 1962, Ser. No. 217,029**
**3 Claims. (Cl. 200—84)**



1. A liquid level detector switch comprising,
(*a*) a body member adapted for mounting on the top of a tank, the body member having a blind bore,
(*b*) a vertically movable first shaft mounted to the body extending into the blind bore,
(*c*) a magnet on the first shaft within the blind bore,
(*d*) a float on the opposite end of the first shaft,
(*e*) a cover mounted on the body defining a hermetically sealed chamber,
(*f*) a vertically movable second shaft mounted on the cover extending into the chamber and beyond the cover,
(*g*) a magnet on the end of the second shaft in the chamber,
(*h*) a stationary contact mounted in the chamber,
(*i*) a resilient spring mounted in the chamber extending between the magnet on the second shaft and the stationary contact,
(*j*) a contact on the spring in generally vertical alignment with a stationary contact, the spring normally urging the contact apart,
(*k*) the magnets attracting each other with a force sufficient to overcome the spring thereby engaging the contacts only when the magnets are within a predetermined distance from each other,
(*l*) means to engage the second shaft from without the chamber moving the said second shaft downwardly to cause engagement of the contacts,
(*m*) means for retaining the second shaft in a descended position to maintain engagement of the contacts, and
(*n*) means for electrically connecting the said contacts to a circuit external to the chamber.

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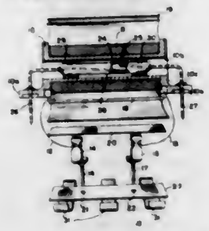
**3,167,624**
**PERMANENT MAGNETIC SWITCH**
**John Paul Jones, Jr., Wynnewood, Pa., assignor to Navigation Computer Corporation, a corporation of Pennsylvania**
**Filed Feb. 27, 1962, Ser. No. 175,942**
**8 Claims. (Cl. 200—87)**



1. A magnetic switch comprising, in combination, a panel, a pushbutton having a bottom surface which engages the top surface of said panel when said pushbutton is depressed and said switch is closed, means connecting said pushbutton to a permanent magnet through an aperture in said panel, said magnet being normally attracted to said panel and in fixed engagement thereto when said switch is open, and normally open contact means including a spring-like member arranged to be flexed in response to the downward movement of said pushbutton.

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**3,167,625**
**MOUNTING STRUCTURE FOR ELECTROMAGNETIC SEALED RELAY**
**James E. Russo, Locust, N.J., assignor to Wheelock Signals, Inc., Long Branch, N.J., a corporation of New Jersey**
**Filed Sept. 26, 1962, Ser. No. 226,236**
**1 Claim. (Cl. 200—87)**

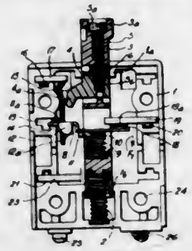


A sealed relay structure comprising a spool-like tunneled relay housing having integrally formed legs at both ends thereof, means defining slots open at the far ends in said legs, a sealed capsule within said housing and containing electrical contacts, an electrical winding on said housing, the energization and deenergization of said winding actuating said contacts, conductors connected with said contacts and extending beyond opposite ends of the sealed capsule, the external portions of said conductors bending at right angles and passing through slots in the slotted legs of the relay housing, the ends of said external conductors forming depending pins, means anchoring the conductors in said slots, depending pins forming terminals of said winding, and means mounting said depending pins forming terminals of said winding to the outer periphery of said winding, said mounting means including pin supporting strips conforming to the shape of the outer periphery of said winding, insulating means separating said winding and said strips, a rigid insulating base plate having holes therein through which said pins extend, and means affixing said base plate to the outer periphery of said winding.



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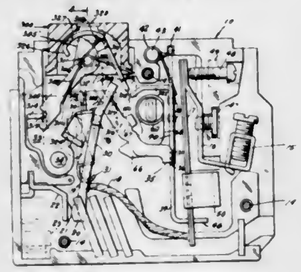
**3,167,626**
**NORMALLY CLOSED AUXILIARY CONTACT DEVICE INCLUDING A SLIDE MEMBER PROVIDED WITH FAST ACTING CONTACT MEANS**
**James P. Rochette, Nanterre, and Robert A. R. Caudron, Meudon, France, assignors to La Telemecanique Electrique, Nanterre, France, a company of France**
**Filed Oct. 5, 1962, Ser. No. 228,656**
**Claims priority, application France, Oct. 13, 1961, 875,859**
**6 Claims. (Cl. 200—104)**



1. A normally closed auxiliary contact device comprising a casing; a stationary contact supported in said casing; a lever pivoted on a fulcrum in said casing and having a movable contact thereon for cooperation with said stationary contact when the lever is rocked in one direction; a member slidable in said casing and displaceable in the opposite direction; return spring means acting between said casing and member for urging the member in said one direction; contact spring means acting between said member and said lever and urging said lever in said one direction for engaging said movable contact with said stationary contact; an actuating part carried by said member and engageable with a portion of said lever adjacent said fulcrum to rock said lever oppositely, to move the movable contact in said opposite direction to separate said movable contact from said stationary contact on displacement of the member in said opposite direction; and further spring means acting between said member and part to urge said part in said opposite direction relative to said member into a seated position in which said part is rigidly abutted against said member.

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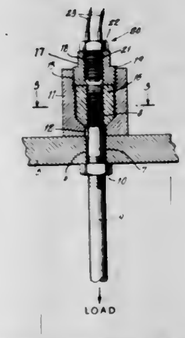
**3,167,627**
**PUSH-PUSH MULTIPOLED CIRCUIT BREAKER**
**Elwood T. Platz, Detroit, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Feb. 7, 1961, Ser. No. 87,722**
**12 Claims. (Cl. 200—116)**



1. A circuit breaker pole unit comprising a pair of cooperating contacts, an arm to which one of said contacts are mounted, a mechanism for operating said arm between a first and a second position wherein said contacts are engaged and disengaged, respectively; said mechanism including a cradle latchable in a reset position, first means biasing said cradle to a tripped position, said first means being operatively connected to said arm for operation thereof to said first position only when said cradle is in said reset position; said first means being operatively connected to said arm for operation thereof to said second position whenever said cradle is in said tripped position; second means manually operable in a first direction to move said cradle to reset position; third means, and additional means mounting said third means to said second means for movement therewith as well as relative thereto; said third means including a portion operatively positioned to prevent said arm from being operated by said first means to said first position until said second means has reached a predetermined position wherein said cradle is free to move to tripped position after said cradle is unlatched.

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**3,167,628**
**FUSE MEMBER MADE OF INTIMATE MIXTURE OF POWDERED METALS AND METHOD FOR MAKING THE SAME**
**Harold M. Lang, Syosset, N.Y., assignor to Sigmund Cohn Corp., Mount Vernon, N.Y., a corporation of New York**
**Filed Aug. 4, 1961, Ser. No. 129,417**
**8 Claims. (Cl. 200—135)**



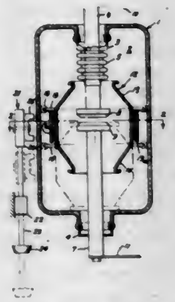

1. A fuze member comprising an intimate mixture of at least one powdered metal selected from the group consisting of palladium, platinum, rhodium, ruthenium, iridium and gold and at least one powdered metal selected from the group consisting of aluminum and magnesium.

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**3,167,629**
**MOVABLE SHIELD STRUCTURE FOR VACUUM GAP DEVICES**
**James D. Cobine, Rexford, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Feb. 23, 1962, Ser. No. 176,485**
**11 Claims. (Cl. 200—144)**

1. A vacuum switch comprising in combination: an envelope defining a vacuum space and composed at least in part of a transparent body through which the interior of the space may be viewed; a pair of electrodes within the vacuum space, and movable between a spaced circuit-breaking relation and a containing circuit-making relation, said electrodes being active on motion from the circuit-making to circuit-breaking relation to generate vaporized conducting material that tends to condense in a conducting coating on the inside face of said part of the envelope, said electrodes being positioned within the envelope in locations viewable from outside the envelope and through said part of the envelope; movable opaque shield means located between the inside face of the envelope and the electrodes, said shield means being movable

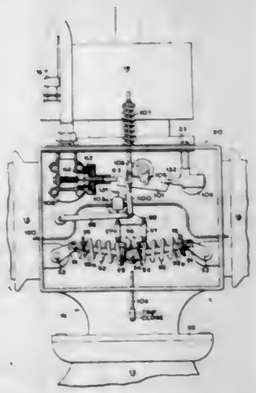
independent of the circuit-making and circuit-breaking movements of said electrodes between an active position in registration with and protecting said part of the envelope and a viewing position out of registration with said



part of the envelope to permit viewing of the electrodes; and means outside the envelope operable to move the shield means at will between the active and viewing positions.

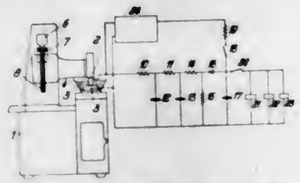
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**3,167,630**
**MULTI-BREAK GAS BLAST CIRCUIT BREAKER AND OPERATING MEANS THEREFOR**
**Alfred Alderman, Stanislaw Mieczyslaw Gonek, and Henry Rowlinson, all of Stafford, England, assignors to The English Electric Company Limited, London, England, a British company**
**Filed May 26, 1960, Ser. No. 31,881**
**Claims priority, application Great Britain June 2, 1959**
**4 Claims. (Cl. 200—145)**



1. A gas blast electric circuit breaker including at least two pairs of interrupting contacts, the movable contacts of the pairs being arranged for simultaneous actuation but having no positive mechanical connection between them, a common valve for controlling a blast of gas through separate contact enclosures for the pairs of contacts and arranged to open at the beginning of an opening operation of the circuit breaker, and means for allowing the said valve to close only after a predetermined total movement of all the movable contacts of said pairs of contacts towards their open positions said means comprising a lever having two points in its length connected so as to move in correspondence with the respective movement of the movable contacts, and having a third intermediate point connected with closing means for said valve so as to allow the valve to close after a predetermined movement of said third point.

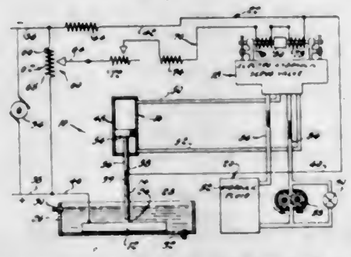
**3,167,631**
**METHOD OF AND APPARATUS FOR ELECTRO-EROSION GRINDING**
**Hans J. Schulz, Wuppertal-Vohwinkel, Hans Schierhol, Aachen, and Edmund Lang, Babenhausen, Hessen, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany**
**Filed Sept. 5, 1961, Ser. No. 135,840**
**Claims priority, application Germany, Sept. 10, 1960, D 34,232**
**4 Claims. (Cl. 219—69)**



1. A method of electro-erosively traverse grinding by means of a rotating electrode forming with the work piece a sparking-gap which comprises storing a representative of the minimum working gap between electrode and work in each traverse in the form of a characteristic electrical quantity and controlling the in-feed of the electrode before the next traverse to adjust the said gap for the next traverse or to maintain the existing gap in accordance with the magnitude of the said quantity.

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**3,167,632**
**ELECTRO-HYDRAULIC ELECTRODE FEED FOR SPARK CUTTING APPARATUS**
**Thomas J. O'Connor, Ann Arbor, Mich., assignor to Esco Products, Inc., Ann Arbor, Mich., a corporation of Michigan**
**Filed Dec. 18, 1961, Ser. No. 159,955**
**1 Claim. (Cl. 219—69)**



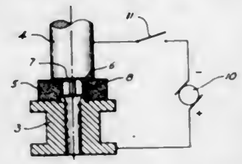
Apparatus for spark erosion machining of a conductive workpiece comprising a source of unidirectional pulsed electric energy having a positive and negative terminal, a tank for supporting a workpiece immersed in a dielectric fluid, means for electrically connecting a workpiece positioned in the tank to the positive side of the source of electric energy, a hydraulic cylinder positioned over the tank, a piston reciprocally mounted within said cylinder, a piston rod connected to said piston and extending longitudinally of said cylinder and out of one end of the cylinder for movement toward and away from a workpiece positioned in the tank on reciprocation of the piston within said cylinder, an electrode secured to said piston rod for reciprocal movement therewith, a source of hydraulic actuating fluid for reciprocally moving the piston within the cylinder, an electro-hydraulic servo-valve connected between the source of hydraulic fluid and the cylinder including a pair of control coils wound in the same direction for actuating the valve to connect the source of hydraulic fluid to the cylinder on being energized to move the piston, piston rod and electrode in a predetermined direction with respect to the workpiece



in accordance with the magnitude and polarity of the energizing signal in the control coils and the direction of winding of the control coils, a potentiometer having a resistance element connected directly across the source of electric energy and including a movable wiper arm, a first resistor directly connected to the negative terminal of the source of pulsed electrical energy at one end and directly connected to the electrode at the other end, and a rheostat having a resistance element in series with the wiper arm of said potentiometer and including a wiper arm connected through a second resistor in series therewith and with the control coils of the electro-hydraulic servo-valve directly between the electrode and the first resistor.

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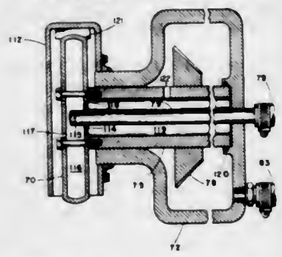
**3,167,633**
**ELECTRIC ARC TORCH**
**Zygmunt Fonberg, Lebanon, N.H., assignor to Thermal Dynamics Corporation**
**Filed May 7, 1962, Ser. No. 193,360**
**4 Claims. (Cl. 219—75)**



1. A plasma arc torch comprising a first electrode, a nozzle-like second electrode, a ring shaped insulator between said electrodes, a coating of conductive material on the inner surface of said insulator and joining said electrodes, means for supplying an electric current to pass between said electrodes and through said material, said same means being capable of supporting an arc between said electrodes, and means for gas-stabilizing such arc away from the inner surface of said insulator.

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**3,167,634**
**SEAM WELDING MEANS**
**George W. Kreiter, Irving, and John H. Riza, Grand Prairie, Tex., assignors to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware**
**Original application Feb. 26, 1962, Ser. No. 175,411, now Patent No. 3,119,007, dated Jan. 21, 1964. Divided and this application July 5, 1962, Ser. No. 216,695**
**4 Claims. (Cl. 219—84)**



1. In a resistance seam welding device having electrode wheels provided with inner cavities and connecting means for establishing communication between said cavities and a source of fluid, each of said wheels having two opposed faces and a rim, the combination with said wheels and connecting means of:

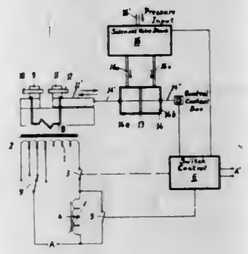
a respective shield enclosing substantially all of both faces and all except a workpiece-engaging peripheral portion of the rim of each wheel;

at least one opening providing communication between the interior of each wheel and the interior of the associated shield;

and a reservoir connected into the connecting means and containing a liquid, normally gaseous fluid.

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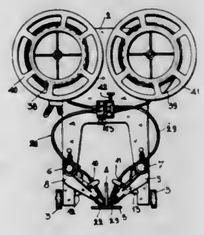
**3,167,635**
**FLASH BUTT WELDING MACHINE**
**Hans Ulrich Neidhardt, Zurich, and Alfred Neukom, Dubendorf, Zurich, Switzerland, assignors to H. A. Schlatter A.G., Zollikon, Zurich, Switzerland**
**Filed Apr. 17, 1962, Ser. No. 188,137**
**Claims priority, application Switzerland, Apr. 14, 1961, 4,485/61**
**7 Claims. (Cl. 219—97)**



1. A flash butt welding machine having means for moving workpieces into positions relative to each other as required for the flashing phase and the upsetting phase of a welding operation, comprising, in combination, electric energy supply means for applying the required voltages to the workpieces during the flashing and during the upsetting phases, respectively, of the welding operation; current rise preventing means connectable in said electric energy supply means; and control means for rendering said current rise preventing means operative when the workpieces are moved into a position corresponding to a predetermined moment within but before the end of the flashing phase of the welding operation and for rendering said current rise preventing means inoperative when the workpieces are moved into a position corresponding to the upsetting phase of the welding operation.

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**3,167,636**
**AUTOMATIC ELECTRIC ARC WELDING MACHINE**
**Henri Marie Louis Bosteels, Uccle, Brussels, Belgium, assignor to La Soudure Electrique Autogene, Procedes Arcos, Anderlecht, Brussels, Belgium**
**Filed Apr. 24, 1962, Ser. No. 189,885**
**Claims priority, application Belgium, May 3, 1961, 603,366**
**2 Claims. (Cl. 219—125)**

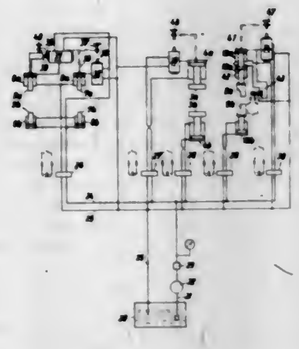


1. In an automatic electric arc welding machine for simultaneously welding two joints in the angles formed on either side of a vertical web to be welded to a horizontal piece, a movable frame displaceable in parallel alignment

with the two weld joints, a wire feed mechanism on the frame comprising a driving roller journalled on the frame, a circumferentially extending groove in the driving roller for receiving weld wire, two driven rollers journalled on the frame, each of said driven rollers displaced from one another and in circumferential contact with the driving roller and adapted to force the weld wire against the driven rollers whereby two weld wires are fed through the feed mechanism at equal linear speeds in divergent directions, drive means for the driving roller, sheaths on the frame for receiving the weld wires from the driving roller and guiding the weld wires arcuately from a divergent to a convergent direction, and oblique guides on the frame for receiving the weld wire from the sheaths and guiding the weld wires toward the joints.

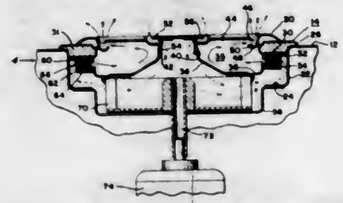
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**3,167,637**
**WORK-HOLDING APPARATUS**
**Alfred Neukom, Dubendorf, Zurich, and Guenther Rabenow, Wettingen, Aargau, Switzerland, assignors to H. A. Schlatter AG, Zurich, Switzerland**
**Filed Apr. 5, 1962, Ser. No. 185,320**
**Claims priority, application Switzerland, Apr. 7, 1961, 4,068/61**
**10 Claims. (Cl. 219—161)**



1. In a work-holding apparatus for welding machines or the like, in combination, a pair of electrodes and a pair of work-gripping members; first moving means operatively connected to at least one of said electrodes for moving the same toward the other of said electrodes to place a workpiece located between said electrodes in engagement with said electrodes so that current can be conducted through said electrodes to the workpiece; second moving means operatively connected to at least one of said work-gripping members for moving the same toward the other of said work-gripping members so that a workpiece located between said work-gripping members can be engaged and gripped by said work-gripping members to be supported thereby, the gripping force produced by said work-gripping members being greater than the engaging force produced by said electrodes; and means cooperating with said second moving means for rendering the same operative or inoperative, at the option of the operator, with said first moving means so that when the workpiece is relatively heavy said second moving means can be rendered operative to cause a relatively heavy workpiece to be gripped and supported by the pair of work-gripping members while engaged by the pair of electrodes, while when a workpiece is relatively light the second moving means can be rendered inoperative so that such a relatively light workpiece will be gripped and held by said electrodes to have not only current supplied thereto by said electrodes but also to be supported by said electrodes.

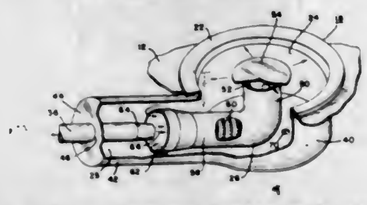
**3,167,638**
**SURFACE COOKING UNIT**
**James R. Hornaday, Jr., Birmingham, Edwin J. Miller, Detroit, and Charles W. Vigor, East Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 22, 1961, Ser. No. 97,572**
**8 Claims. (Cl. 219—368)**



6. A surface cooking unit for an electric range comprising range top means having an opening therein, means in said opening for supporting a utensil on the range top, substantially planar baffle means spaced slightly below the plane of a utensil bottom supported on said supporting means to define a thin planar air circulation space in said range top means immediately below said utensil bottom, said air circulation space closable at least partially by a utensil supported thereon, electrical heating means remote from said air circulation space and positioned in fixed relationship to the supporting means in a manner to prevent straight line radiation from said heating means to said air circulation space, supply air passage means connecting one side of said heating means with said air circulation space and oriented with respect to said supporting means to direct air immediately against a utensil supported on said supporting means, return air passage means connecting said air circulation space with the other side of said heating means, and air impelling means in one of said passage means for circulating air between said heating means and said air circulation space for heating said utensil, said baffle plate means, said supply air passage means and said return air passage means having low thermal mass so that the heat output at said air circulation space will be substantially immediately responsive to the energization and deenergization of said heating means.

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**3,167,639**
**SURFACE COOKING UNIT FOR AN ELECTRIC RANGE**
**Richard S. Gaugler, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Sept. 7, 1961, Ser. No. 136,460**
**5 Claims. (Cl. 219—370)**

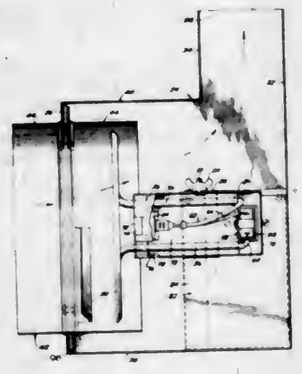


1. A surface cooking unit for an electric range comprising range top means having an opening therein, an annular support ring in said opening for supporting a utensil on the top of said range, said support ring and the bottom of said utensil defining a substantially closed air circulation space in said range top means, electrical heating means remote from said air circulation space and positioned in fixed relationship to said support ring in a manner to prevent straight line radiation from said heating means to said air circulation space, a tubular supply air passage means enclosing said heating means and having a supply inlet adjacent one side of said heating means and a supply outlet directed upwardly in a manner to discharge through said support ring into said air circulation space, deflector means over said supply outlet to radially divert air toward said support ring along said air circulation space, means forming an annular return air passage surrounding said supply air passage means and having an annular return inlet connected to said supply outlet along said air circulation space and an annular return outlet circumscribing said supply inlet and connected in air return relationship thereto, and air impelling means including a venturi connected to said supply inlet and a forced air jet blowing into said venturi for returning air from said return inlet through said return air passage means to said venturi and for forcing said air sequentially into heat transfer relationship with said heating means and to said supply outlet for heating said utensil, said deflector means, said supply air passage means and said return air passage means having low thermal mass so that the heat output at said air circulation space will be substantially immediately responsive to the energization and deenergization of said heating means.



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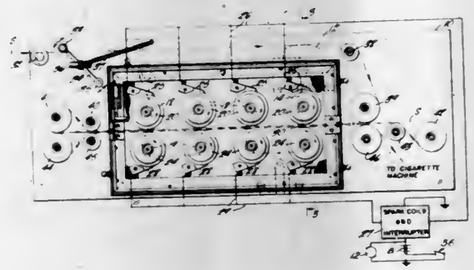
**3,167,640**
**REGISTER BOAT HEATER ASSEMBLY**
**John W. Norris and Richard D. Miller, both of Marshalltown, Iowa, assignors to Lennox Industries, Inc., a corporation of Iowa**
**Filed Aug. 25, 1961, Ser. No. 133,910**
**3 Claims. (Cl. 219—374)**



1. A register boot adapted to be fixedly connected to a support comprising an L-shaped housing having an inlet opening in one wall adapted to be connected to a duct and through which air is received and a discharge outlet in another wall through which air is discharged from said housing, said discharge outlet being elongated along the length thereof and having a narrow width, said walls being disposed at an angle to one another whereby a generally L-shaped air flow passageway is defined within the housing, electrical heating means disposed entirely within said housing adjacent said inlet opening and transversely thereof including a heating element disposed in said air flow passageway out of alignment with said discharge outlet, readily releasable means in said housing accessible through said discharge outlet and cooperating with said electrical heating means for detachably supporting said heating means in said housing adjacent said inlet opening, and readily releasable electrical connector means in said housing for detachably connecting said heating means to a source of power, said electrical heating means being constructed and arranged for insertion and removal as a unit through said discharge outlet, said heating means being detachable from said housing and removable therefrom by passage through said L-shaped passageway and said discharge outlet.

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**3,167,641**
**APPARATUS FOR PERFORATING SHEET MATERIAL**
**Harris B. Parmele, Glen Ridge, and M Sabel Block, Bloomfield, N.J., and John Berner, Greensboro, N.C., assignors to P. Lorillard Company, New York, N.Y., a corporation of New Jersey**
**Original application Nov. 6, 1958, Ser. No. 772,251. Divided and this application Dec. 12, 1962, Ser. No. 260,089**
**2 Claims. (Cl. 219—384)**



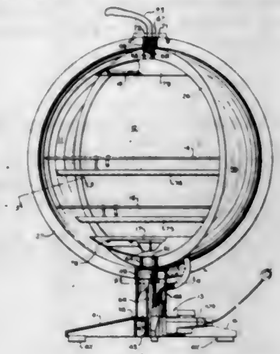
1. In apparatus for perforating sheet material, the combination of a pair of wheels each having electrical conducting rims and mounted for rotation in substantial peripheral contact, driving means for rotating at least one of said wheels, means for feeding sheet material between said wheels in the direction of rotation thereof, electrical source means for creating an electrical tension across said wheel rims for drawing a spark between them, and intermittent make-and-break control means interposed between said source means and said wheel rims, a conducting brush engaging the rim of each of said wheels and interposed between said control means and the corresponding wheel rim for conducting the electrical sparking impulses thereto and simultaneously cleaning the same, whereby said sheet material is perforated by the spark drawn across said wheel rims as the material moves through the gap created thereby between said wheel rims.

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**3,167,642**
**PORTABLE ELECTRIC OVEN**
**Charles S. Reis, 210 Thompson Ave., Mountain View, Calif.**
**Filed July 27, 1961, Ser. No. 127,325**
**3 Claims. (Cl. 219—413)**

2. An oven comprising a base, a vertical support shaft of thermal conductive material extending upwardly from said base, inner and outer insulated hemispheres, each said hemisphere including inner and outer spaced hemispherical shells supported in spaced relationship by a ring, insulation disposed between the spaced hemispherical shells forming each of said inner and outer insulated hemispheres, the ring of the inner hemisphere being fixedly mounted on the support shaft, said shaft being exposed to the interior of said inner hemisphere, and the ring of the outer hemisphere being rotatably mounted on the support shaft, a support sleeve carried by the base and serving to rotatably support the outer hemisphere whereby the outer hemisphere may be rotated to open

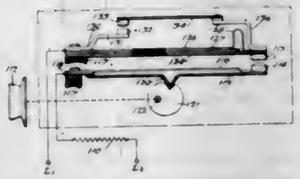
and close the oven, heating means supported within the oven for heating articles placed therein, and a thermo-



stat connected to control said heating means, said thermostat being associated with the support shaft to sense the oven temperature to control the same.

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**3,167,643**
**THERMAL WATTAGE CONTROLLER**
**Charles Roger Turner, Philadelphia, Pa., assignor, by mesne assignments, to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan**
**Filed Mar. 8, 1961, Ser. No. 94,227**
**26 Claims. (Cl. 219—511)**

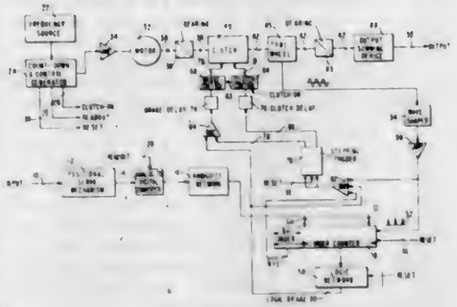


1. A wattage controller comprising a thermally responsive cycling switch having a pair of contacts arranged to be connected in series with a heating unit, manually operable means for urging one of said contacts into the other contact with controllable resilient displacement of both contacts to adjust the power input to said heating unit by varying the ratio of closed to open time, thermomotive means for opening said contacts, a resistance heater thermally associated with said thermomotive means connected in circuit through said contacts to a power supply comprising the sole effective means for heating said thermomotive means, and means for progressively varying the heat effect of said resistance heater upon said thermomotive means as the power input is adjusted.

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**3,167,644**
**OPEN LOOP AND CLOSED LOOP INTEGRATOR OF AN ANALOG PHYSICAL VARIABLE**
**Robert F. Boehm, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed June 22, 1960, Ser. No. 37,900**
**6 Claims. (Cl. 235—154)**

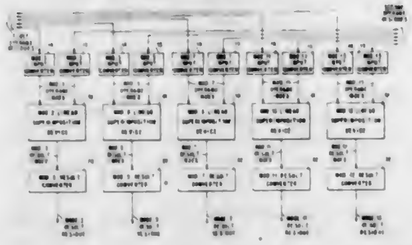
1. An integrator for providing an integral representation of a voltage analog representation of a physical variable comprising, in combination: a servo-mechanism to convert said voltage analog representation into a corresponding mechanical motion; an analog-to-digital converter adapted to receive said mechanical motion and to provide a corresponding digital representation of said analog voltage in binary form and the two's complement form thereof; means for sampling said digital representation at a particular periodicity; a binary counter adapted to store said two's complement form; means for providing a group of electrical information pulses and an exactly corresponding group of mechanical angular increments; said binary counter being adapted to receive and count said electrical information pulses in serial binary



addition; control means connected to said binary counter adapted to provide a control signal when said binary counter reaches a pre-established number to terminate the pulse production of said means for providing; and output summing means to sum said angular increments to provide an analog integral representation of said physical variable.

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**3,167,645**
**METHOD AND APPARATUS FOR PERFORMING ARITHMETICAL OPERATIONS IN THE SYSTEM OF RESIDUAL CLASSES**
**Walter Hoffmann, Rueschlikon, Zurich, Switzerland, and Hellmuth E. Müller, Solna, Sweden, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Dec. 8, 1960, Ser. No. 74,516**
**Claims priority, application Switzerland, Dec. 30, 1959, 82,488/59**
**2 Claims. (Cl. 235—156)**



1. An arithmetic unit for processing two applied operand signals, each represented in the System of Residual Classes by residues of a plurality of different data moduli, to develop a result comprising, in combination:

a plurality of first operand conversion means, one for each of said data moduli, and each responsive to one of the residue signals representing the first operand for developing a corresponding first operand index signal;

a plurality of second operand conversion means, one for each of said data moduli, and each responsive to one of the residue signals representing the second operand for developing a corresponding second operand index signal;

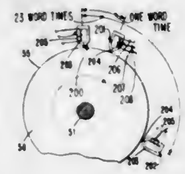
a plurality of adders, one for each of said data moduli, and each responsive to the corresponding first and second operand index signals for adding said index signals to develop a result index signal, where each addition is performed at a different modulus, each of which is one less than the corresponding data modulus;

and a plurality of result conversion means, one for each of said data moduli, and each responsive to one of the correspondig result index signals for developing a result residue signal.



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**3,167,646**
**APPARATUS FOR PROCESSING DATA INCLUDING AN INSTRUCTION AND MULTIPLICAND-DIVISOR REGISTER EMPLOYED ON A TIME SHARED BASIS**
**Paul H. Giroux, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed Mar. 31, 1961, Ser. No. 99,755**
**13 Claims. (Cl. 235—165)**

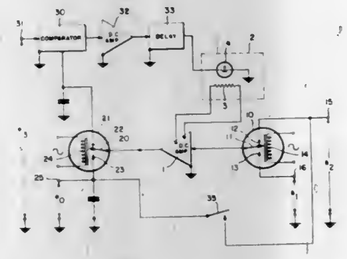


1. A register for temporarily storing information quantities comprising a magnetic drum, means to rotate said magnetic drum, a record track on said magnetic drum, a write head positioned in transducing relation with respect to track, a first read head positioned in transducing relation with respect to said track for sensing information quantities on said track and in spaced relation with respect to said write head in the direction of rotation of said drum, a second read head positioned in transducing relation with respect to said track for sensing information quantities on said track and in spaced relation with respect to said first read head in the direction of rotation of said drum, first circuit means interconnecting said write head and said first read head to cause a first quantity of information supplied to said write head to be sensed by said first read head and returned to said write head for recording on said track during a first time interval, means to supply a second quantity of information to said write head for recording by said write head on said track in immediately following relation with respect to said first quantity of information and to be periodically sensed by said first read head and returned to said write head for recording on said track during a second time interval, and second circuit means interconnecting said second read head to said write head to cause said first quantity of information sensed by said second read head at the end of said second time interval to be supplied to said write head for recording on said track and to be thereafter sensed by said first read head during a third time interval.

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**3,167,647**
**ELECTRICAL ANALOG COMPUTING CIRCUIT WITH SQUARE ROOT EXTRACTION CAPABILITY**
**William F. Newbold, Springfield Township, Montgomery County, Pa., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Aug. 15, 1961, Ser. No. 131,651**
**3 Claims. (Cl. 235—193)**

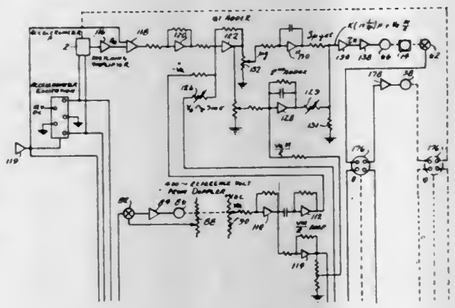
1. A computing circuit comprising a first amplifier means having a photoelectric gain control means, a first input signal terminal, a second input signal terminal, a first switch means for alternately connecting an input circuit of said amplifier means to said first and said second input terminals, signal comparison means for comparing the amplitudes of two input signals to produce a representative difference signal, a third input terminal for applying an input signal as one input signal to said comparator means, an output terminal, second switch means operated synchronously with said first switch means for



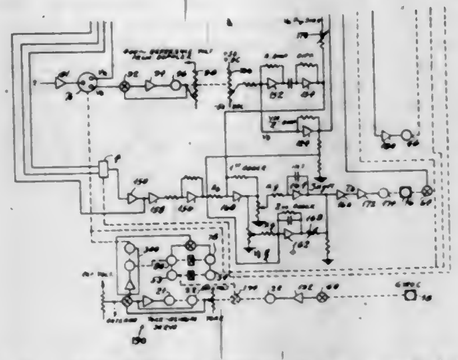
alternately applying an output signal from said first amplifier means as a second input signal to said comparator means and as an output signal to said output terminals, means connecting said output terminal to said first input terminal, and means responsive to said comparator means to produce a control signal to affect said gain control means whereby to reduce said difference signal to a zero amplitude level.

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**3,167,648**
**NAVIGATION COMPUTER FOR REPRESENTING THE VERTICAL DIRECTION**
**William H. Heath, New York, Yves Nubar, Mount Vernon, George Arshal, Jamaica, Stewart Reiner, New Rochelle, and David C. Hughes, New York, N.Y., and John R. White, Los Angeles, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Original application May 12, 1954, Ser. No. 429,418, now Patent No. 3,165,927, dated Jan. 19, 1965. Divided and this application Sept. 14, 1955, Ser. No. 534,414**
**2 Claims. (Cl. 235—193)**



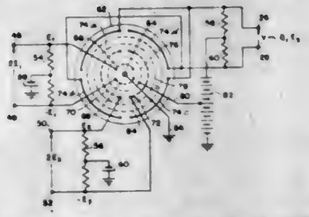
1. A computer of the character described for use in a vehicle that operates in a fluid medium comprising adding means to combine a plurality of input voltages, one input voltage being proportional to ground velocity, integrating means connected to receive and integrate the output of said adding means, a second adding means, a third adding means connected to combine the output of said integrating means and said second adding means,



and modulator means connected to the output of said third adding means to modulate said signals into a 400 cycle carrier wave.

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3,167,649
**ANALOGUE MULTIPLIER APPARATUS**
Robert M. Walp, 1145 E. Mariposa St., Altadena, Calif.
Filed May 16, 1961, Ser. No. 110,592
6 Claims. (Cl. 235—194)
(Granted under Title 35, U.S. Code (1952), sec. 266)



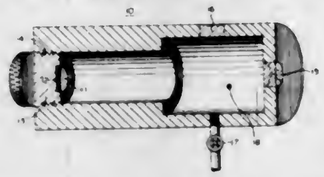
3. An electronic analogue four-quadrant multiplication apparatus comprising, in combination: converter means for providing first and second analogue input voltages $E_1$ and $E_2$ representative of first and second variable quantities, respectively, and for providing a corresponding pair of oppositely-poled analogue input voltages $-E_1$ and $-E_2$; a vacuum tube comprising an elongated cathode structure, a pair of radially-spaced control grid structures surrounding said cathode structure, a plate structure surrounding said control grid structures, said plate structure having diametrically-opposed first and third sections and diametrically-opposed second and fourth sections defined by orthogonal cleavage planes containing said elongated cathode structure, one of said control grid structures having two sections defined by one of said cleavage planes, and the other of said control grid structures having two sections defined by the other of said cleavage planes; means for applying the voltage $E_1$ to that control grid structure section electronically associated with said first and fourth plate structure sections, the voltage $-E_1$ to that control grid structure section electronically associated with said second and third plate structure sections, the voltage $E_2$ to that control grid structure section electronically associated with said first and second plate structure sections, and the voltage $-E_2$ to that control grid structure section electronically associated with said third and fourth plate structure sections; said plate structure sections each providing a load current expressed by the algebraic summation

$$i+aE_1+bE_2+cE_1E_2$$

wherein $i$, $a$, $b$ and $c$ are constants and wherein the signs of terms involving the voltages $E_1$ and $E_2$ are dependent upon the polarities of said voltages; means for deriving an intermediate output voltage proportional to algebraic summation of the load currents provided by said first and third plate structure sections; means for deriving an intermediate output voltage proportional to algebraic summation of the load currents provided by said second and fourth plate structure sections; and means differentially combining said intermediate output voltages, whereby to yield an analogue output voltage substantially proportional to the product of said first and second variable quantities.

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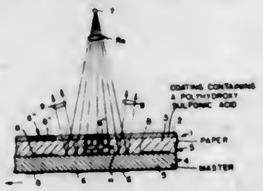
3,167,650
**PORTABLE ULTRAVIOLET SOURCE PRODUCED BY A RADIOACTIVE SOURCE MATERIAL**
Randolph G. Taylor, 7611 12th St. NW., Washington, D.C.
Filed Sept. 11, 1962, Ser. No. 222,982
4 Claims. (Cl. 250—84)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A portable ultraviolet lamp which comprises an elongated housing made of a radiation absorptive material, a removable radioactive material holding means secured in one end of said housing, a radioactive material selected from a group comprising strontium 90 and iron 55 secured by said holding means, at least one ultraviolet transmissive window secured in the end of said housing opposite said radioactive material, an evacuation and gas admittance valve secured to said housing, and a gaseous filling in said housing between said radioactive material and said window, said gaseous filling adapted to absorb radiation emitted by said radiation material and to emit its characteristic ultraviolet spectrum through said window.

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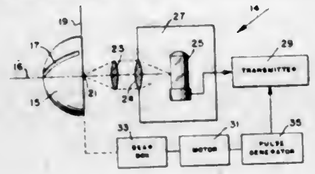
3,167,651
**THERMOGRAPHIC REPRODUCTION PAPER AND METHOD OF MAKING AND USING**
George C. Huett, Hartwell L. Briggs, and Cornelius B. Lawyer, Chicago, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed May 15, 1962, Ser. No. 194,912
17 Claims. (Cl. 250—65)




1. A process for graphically reproducing an original which comprises: placing an original having preferential radiation absorbing areas in contact with a cellulosic paper base coated with a visibly heat-sensitive composition, said composition containing an aromatic polyhydroxy sulfonic acid compound, and thereafter irradiating said original with heat producing radiations to effect a reaction in the areas of said supported layer registering with said radiation absorbing areas, whereby said original is visibly reproduced, the amount of acid coated on said base being from about 1 to about 4 grams per square yard.



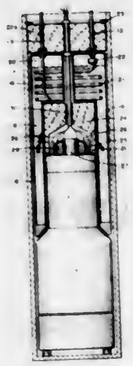
3,167,652
**MISS DISTANCE AND VECTOR MEASUREMENT SYSTEM**
Henry T. Welsbrich, Jr., 905-B Richmond, China Lake, Calif.
Filed Oct. 3, 1961, Ser. No. 142,743
8 Claims. (Cl. 250—71.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)




1. A system for determining the miss distance between two relatively movable objects, comprising a source of radiation on one of said objects, a radiation detection device on the other of said objects, said device including an amount of scintillation material adapted to emit scintallations when exposed to said radiation, a reticle disposed between said source of radiation and said material and adapted to be rotated about an axis, said reticle being a spheroid form and opaque to said radiation but having a narrow radial slot of uniform width therein adapted to adapted to pass radiation to the material when aligned therewith, means for periodically pulsing a time signal correlated to the rotational position of said slot, and means adapted to convert said scintillations into transmittable signals which correlated with said time signals are indicative of the direction and distance of the source of radiation from the radiation detection device.

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3,167,653
**COOLING RADIATION DETECTORS IN WELL LOGGING APPARATUS**
Robert C. Rumble and Wilmer A. Hoyer, Houston, Tex., assignors, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,906
3 Claims. (Cl. 250—71.5)



3. Apparatus for use in maintaining temperature stability of a detector unit used in well logging operations comprising:

a logging casing adapted to be suspended on a wire line in a well bore and including a plug comprising a stationary ring member screw threaded to one end of said casing and a rotatable member being provided with inlet and outlet refrigerant passageways extending from the exterior of said rotatable member to within said casing;

removable caps adapted to sealingly close off said passageways;

an enclosure arranged within said casing;

two conduits arranged in said casing, one extending from one of said passageways and the other extending from the other of said passageways;

sealing means closing off the space between said conduits and said passageways and the space between said rotatable member and said stationary member;

a photomultiplier detector unit arranged in said enclosure;

a reservoir of cooling medium arranged in said enclosure;

a refrigerant circulating coil arranged in said cooling medium reservoir and connected at one end to one of said conduits and the other end thereof to said other conduit to form a continuous passageway;

an expansion orifice arranged adjacent one of said conduits;

first insulation means closing off one end of said enclosure;

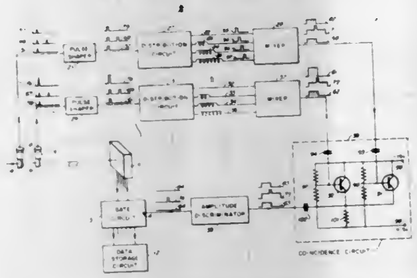
second insulation means arranged between said reservoir of cooling medium and said detector unit;

a hollow annular heat sink arranged between said second insulation means and said detector unit; and

means extending through said enclosure for carrying electrical leads to said photomultiplier tube.

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3,167,654
**DOUBLE PULSE RECOGNITION CIRCUIT**
Larry Scott, Paris, France, assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 29, 1963, Ser. No. 276,671
8 Claims. (Cl. 250—71.5)



1. In a circuit for preventing signals from a charged particle sensitive apparatus from being received by an associated particle registering device when successive charged particles enter said apparatus within a time interval less than that required for said registering device to distinguish between said successive particles, the combination comprising a normally closed gating means for transmitting signals from said apparatus to said registering device, a first and second charged particle detector disposed in the path of particles entering said apparatus and producing separate output pulses in response to said particles, a first and second pulse stretcher receiving said output pulses from said first and second detectors respectively and producing stretched pulses of uniform duration from said output pulses, a coincidence circuit having a pair of pulse input means each receiving said stretched pulses from a separate one of said pulse stretchers and producing an output signal upon the receipt of concurrent input signals, said coincidence circuit being of the class producing an output signal having an amplitude proportional to that of the smallest of said concurrent input signals, and an amplitude detecting means coupled between said coincidence circuit and said gating means for temporarily opening said gating means when the

amplitude of the output signal from said coincidence circuit exceeds the amplitude level resulting from activation of said charged particle detectors by a single one of said charged particles.

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3,167,655

## TARGET FOR A NEUTRON GENERATOR CONSISTING OF A COATING OF ONE OF THE LANTHANON ELEMENTS ON A BASE METAL

**Reuben Redstone, Baldock, and Michael Charles Rowland, Hitchin, England, assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission**

**Filed Aug. 25, 1961, Ser. No. 136,135**
**1 Claim. (Cl. 250—84.5)**



A target for a neutron generator of the type in which a beam of energetic ions of hydrogen isotope bombards a target comprising a thin film of metal impregnated with hydrogen isotope, said thin film of metal being supported on a metallic substrate consisting of a metal chosen from the group consisting of molybdenum, tungsten, chromium and manganese, and said thin film of metal having a thickness in the range of about 1 to about 2 mg./cm.$^2$ and said thin film of metal being selected from the group consisting of yttrium and the lanthanons having an atomic number from 57 through 71, the atomic ratio of hydrogen isotope to impregnated metal being not above 1.8:1, and said target being capable of operating at an optimum efficiency at a temperature of at least about 600° C.

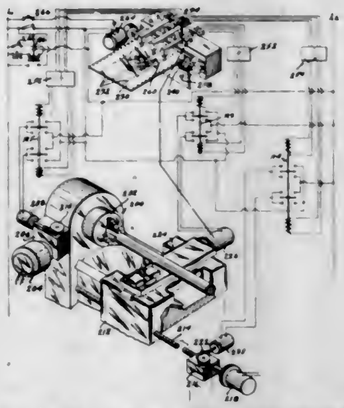
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3,167,656

## PHOTOELECTRIC MACHINE TOOL CONTROL

**Harry A. Toulmin, Jr., Dayton, Ohio, assignor to The Commonwealth Engineering Company of Ohio, Dayton, Ohio**

**Filed Aug. 10, 1960, Ser. No. 48,763**
**7 Claims. (Cl. 250—202)**



1. In a control unit for a machine tool having a work piece and tool supports relatively movable in two different directions; an elongated chart, a plurality of lines drawn longitudinally along the chart as color contrast thereon, means for moving the chart in the direction of its length, a photo electric scanning means pertaining to each line and including two photo-electric detectors sensitive to the lateral position of the pertaining line on the chart, and means sensitive to unbalanced actuation of the detectors for moving the said scanning means laterally so as to maintain a predetermined fixed position between the scanning means and the pertaining lines during movement of the said chart longitudinally, said movement of said scanning means operating means for controlling the relative movement of said workpiece and tool support and said last-named means including gears, amplifiers, reversing relays and motors.

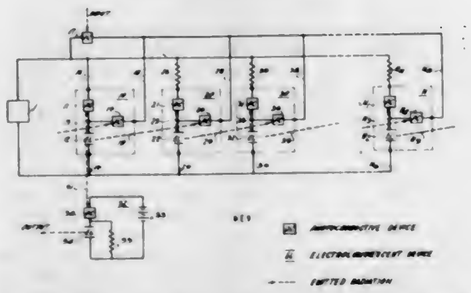
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3,167,657

## ELECTRO-OPTICAL COUNTER CIRCUIT

**James F. Vize, Palo Alto, Calif., assignor to General Electric Company, a corporation of New York**

**Filed May 19, 1961, Ser. No. 111,271**
**9 Claims. (Cl. 250—208)**



1. A counter circuit comprising, a constant current source, a plurality of more than two stages each having a photoconductive device and an electroluminescent device in series to form an electro-optical pair, each of said electro-optical pairs electrically connected to said constant current source in parallel with the electro-optical pair of each of the other of said stages, each of said electro-optical pairs having a high conductivity state and a low conductivity state, said constant current source capable of supplying sufficient current to maintain only one of said electro-optical pairs in the high conductivity state, means for shunting the photoconductive device in one of said electro-optical pairs while said one electro-optical pair is in the low conductivity state, said means comprising a photoconductive device responsive to radiation from the electroluminescent device of one of said electro-optical pairs in the high conductivity state.

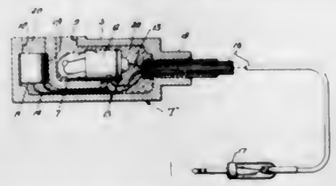
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3,167,658

## APPARATUS FOR USE IN SENSING THE PULSE

**Harold Kenneth Richter, Willow Grove, Pa., assignor to Air-Shields, Inc., Hatboro, Pa., a corporation of Delaware**

**Filed July 17, 1961, Ser. No. 124,728**
**4 Claims. (Cl. 250—239)**



1. A transducer adapted for use in taking a pulse reading comprising a device unitarily incorporating a light source and a photocell and having a side face adapted to be placed in contact with a body surface, both said light source and said photocell being optically exposed through said one side face of the device, and an optical shield between the light source and the photocell, the shield having an edge portion extended substantially to the plane of said side face.



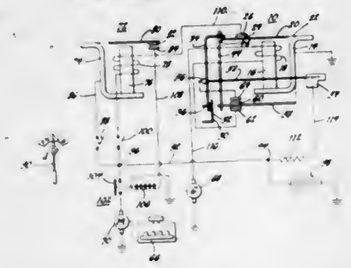
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3,167,659

## AUTOMATIC STARTING CONTROL

**Harold J. Cromwell, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed July 12, 1960, Ser. No. 42,281**
**5 Claims. (Cl. 290—38)**



1. In combination, an internal combustion engine, an electric starting motor adapted to crank said engine, a generator driven by said engine, a storage battery, a starting circuit interconnecting said starting motor and said storage battery, and relay means controlling said starting circuit, said relay means including an actuating coil winding and a pair of normally closed switch contacts, means connecting said coil winding with said generator whereby said contacts are opened when said generator is developing a predetermined output voltage, latch means holding said contacts open when said generator develops said predetermined output voltage to cause said contacts to open, and means for releasing said latch means at a predetermined time delay following a reduction of generator output voltage below said predetermined value.

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3,167,660

## SELECTIVE COUNTING APPARATUS

**Gerald T. Moore, Bedford, and Henry P. Kilroy, Littleton, Mass., assignors to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin**

**Filed Feb. 2, 1960, Ser. No. 6,280**
**9 Claims. (Cl. 307—88)**



1. In apparatus for measuring off different selected numbers of recurring input signals received from a source, the combination comprising a scaling chain having a plurality of scaling units connected in tandem relation with the last such unit having an output terminal, a plurality of input terminals leading to different points in said scaling chain to provide different over-all scaling ratios for the chain, a plurality of bi-state devices adapted to reside in either "1" or "0" states and normally residing in the "0" state, each of said bi-state devices corresponding to one of said input terminals, means for setting one of said devices to its "1" state according to the particular selected number of signals which is to be measured off, means responsive to each of said input signals for driving all of said bi-state devices toward their "0" states, means responsive to the switching of each of said bi-state devices from its "1" to its "0" state for restoring that device to its "1" state after a time delay which is less than the period between said recurring input signals, means responsive to the switching of any of said bi-state devices from its "1" to its "0" state for creating a signal on the corresponding one of said input terminals, and means responsive to a signal on the output terminal of said scaling chain for clearing all of said bi-state devices to their "0" states without transmitting a signal to any of said input terminals.

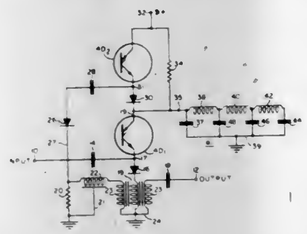
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3,167,661

## FAST RECHARGING PULSE GENERATOR

**Laddie T. Rhodes, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed Jan. 30, 1961, Ser. No. 85,937**
**4 Claims. (Cl. 307—88.5)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A fast recovery pulse generator for providing a pulse train of very short duration pulses comprising a pulse forming network, a potential source, a load, charging switch means comprising a first four-layer diode connected between said potential source and said pulse forming network, discharging switch means comprising a second four-layer diode connected between said load and said pulse forming network for permitting said pulse forming network to discharge through said discharging switch means and across said load, means for connecting said potential source to said pulse forming network through which the pulse forming network is initially charged, and feedback circuit means including delay means connected between said load and said charging switch means for producing a delayed trigger pulse for firing the charging switch means, said pulse being delayed for a time sufficient to allow the pulse forming network to discharge through said load, whereby said pulse forming network is recharged when said charging switch means is fired.

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3,167,662

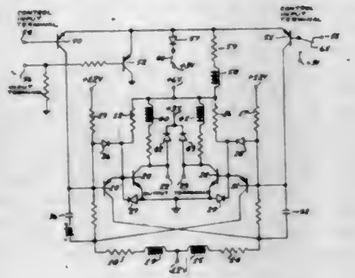
## HIGH-SPEED TRANSISTOR FLIP-FLOPS

**Norman R. Crain, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York**

**Filed Feb. 2, 1962, Ser. No. 170,707**
**14 Claims. (Cl. 307—88.5)**

1. A flip-flop comprising: a first and second transistor, each having a base, emitter and collector; means for cross-coupling said first and second transistors to form a bistable switch; a third transistor having a base, emitter and collector and being connected in a common-emitter

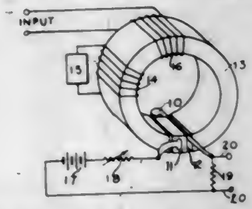
configuration; means for coupling the base of said third transistor to the emitter of said second transistor; and



a first unidirectional conducting means coupling the base of said second transistor to the base of said third transistor.

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**3,167,663**
**MAGNETO-SEMICONDUCTOR DEVICES**
**Ivars Melngailis, Cambridge, Arthur R. Calawa, Chelmsford, and Robert H. Rediker, Newton, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts**
**Filed Aug. 6, 1962, Ser. No. 215,007**
**17 Claims. (Cl. 307—88.5)**




1. A semiconductor control device comprising a bar of semiconductor material having a rectifying junction contact separated from an ohmic contact by a distance much longer than the minority carrier diffusion length at low injection levels, means for maintaining said bar at a temperature sufficiently low to permit minority carrier injection across said junction, an output load for said device, a power source biasing said junction for forward current flow through said load at a carrier injection density producing a plasma, a magnetic field applied transverse to the direction of current flow in said bar to deflect said plasma and means for controlling the strength of said field to control the deflection of said plasma thereby changing the resistance of said base to control the flow of current in said load.

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**3,167,664**
**FLIP-FLOP USING SILICON CONTROLLED RECTIFIERS**
**Leonard J. Stascavage, Bowie, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 29, 1962, Ser. No. 241,084**
**1 Claim. (Cl. 307—88.5)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

A switching circuit for alternately switching a load from a conductive to a nonconductive state comprising:

a power source,

a first silicon controlled rectifier having its cathode connected to ground,

a load having one terminal connected to said power source and the other terminal connected to the anode of said first silicon controlled rectifier.

a second silicon controlled rectifier having its cathode connected to ground,

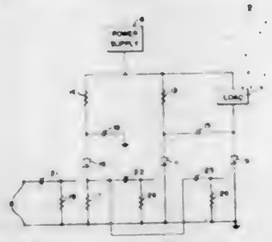
a current limiting resistor connected between said power source and the anode of said second silicon controlled rectifier and being incapable of maintaining conduction of said silicon controlled rectifier,

a capacitor connected between the anodes of said first and said second silicon controlled rectifier respectively,

a third silicon controlled rectifier having an input gate terminal for receiving pulses from an external source,

another current limiting resistor connected between said power source and the anode of said third silicon controlled rectifier,

a bias resistor connected between ground and the cathode of said third silicon controlled rectifier,




and another capacitor connected between ground and the anode of said third silicon controlled rectifier,

whereby an input pulse of the proper polarity and magnitude at the input gate terminal initiates conduction of said third silicon controlled rectifier and the charge on said other capacitor maintains conduction of said third silicon controlled rectifier for a predetermined time producing an output pulse across said bias resistor and initiates conduction of said first and said second silicon controlled rectifiers and said current limiting resistor subsequently terminates said second silicon controlled rectifier, and a second output pulse generated by said third silicon controlled rectifier initiates conduction of said second silicon control rectifier and the commutation action of said capacitor terminates the conduction of said first silicon controlled rectifier and said current limiting resistor terminates conduction of said second silicon controlled rectifier.

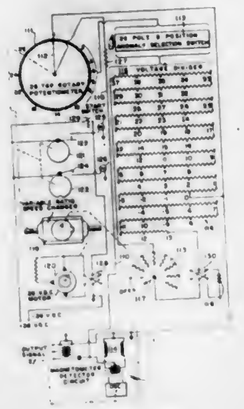
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**3,167,665**
**MAGNETIC ANOMALY SIMULATOR**
**Ensley A. Godby, Osgoode, Ontario, and Ralph C. Baker, Ottawa, Ontario, Canada, assignors to Her Majesty the Queen in the right of Canada as represented by the Minister of National Defence**
**Filed Mar. 20, 1961, Ser. No. 96,798**
**Claims priority, application Canada, May 12, 1960, 798,808**
**5 Claims. (Cl. 307—106)**

5. A magnetic anomaly simulator for use in a magnetic detector system having a magnetometer detector element, said simulator comprising a source of direct current voltage, a voltage divider having a plurality of connections adapted to be connected across said source of direct current voltage, potential difference varying means connected in series between said source of direct current voltage and said voltage divider; a rotary potentiometer having a continuous resistance element, a plurality of taps and a wiper adapted to contact the continuous resistance element; variable ratio transmission means in driving connection with the wiper of said potentiometer, motor means driving said variable transmission so that said wiper can



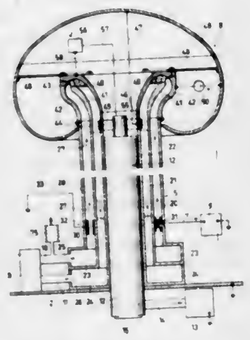
be rotated at variable speeds, means adapted to connect said taps of said rotary potentiometer to connections of said voltage divider, and connections from said rotary potentiometer for supplying the output voltage from said



wiper to said magnetometer detector element, to simulate the detection of a magnetic anomaly, said potential difference varying means being adapted to vary the amplitude of the wave form thus generated.

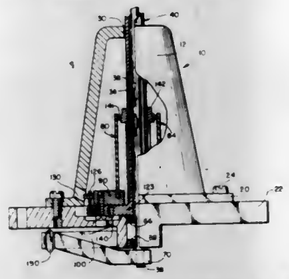
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**3,167,666**
**COMBINED ACCELERATOR AND STATIC VOLTAGE GENERATOR**
**Karl Janner, Hans Geiger Str. 13, Erlangen, Germany; Sascha Magun, Wiederhold Str. 13, Stuttgart, Germany; and Erwin Schopper, Haus Hardtberg, Konigstein, Taunus, Germany**
**Filed Nov. 7, 1961, Ser. No. 158,629**
**11 Claims. (Cl. 310—6)**



1. A static voltage generator comprising, two concentrically arranged passages, one of said passages having an inlet at one end, the other one of said passages having an outlet at one end, and the two passages being in communication with one another at their other ends, means for supplying a charge carrier fluid under pressure to said inlet and for removing the fluid from said outlet whereby the generated voltage charge is carried through the two passages, and voltage generating means adjacent said inlet for electrically charging the fluid supplied, and electrode means adjacent said other ends for withdrawing the charges carried by the fluid.

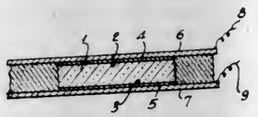
**3,167,667**
**PIEZOELECTRIC FORCE CONTROLLER**
**Richard Lukso, Grand Rapids, Mich., assignor to Lear Siegler, Inc.**
**Filed Aug. 8, 1962, Ser. No. 215,647**
**11 Claims. (Cl. 310—8.6)**



1. A movement sensor comprising: a piezoelectric crystal adapted to emit a signal when deformed with the signal being generally proportionate to the deformation; active means operably associated with said crystal and causing a force tending to constantly deform said crystal; said crystal normally being restrained from deformation by contact with an element, the movement of which is to be sensed; and said crystal being mounted to allow deformation by said force in an amount generally proportionate to movement of said element, thereby creating a signal generally proportionate to movement of said element.

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**3,167,668**
**PIEZOELECTRIC TRANSDUCERS**
**Florence Nesh, Otis Gardens, 1445 Otis Place NW., Washington 10, D.C.**
**Filed Oct. 2, 1961, Ser. No. 142,443**
**11 Claims. (Cl. 310—9.7)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



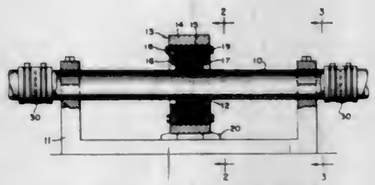
1. A piezoelectric transducer which comprises a polarized piezoelectric body having metal electroded opposite faces, a separate metal plate abutting in direct face to face contact with each said electroded face and extending beyond the margins of said body between said plates, a nonconducting adhesive interposed between and filling the space between said plates along the margins of said plates, entirely around and in contact with said body, bonding said plates together and to said body, with the adhesive completely covering and protecting the surface of that part of said body between said plates, and an individual conductor lead connected directly to each of said plates.

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**3,167,669**
**ELECTROMAGNETIC ROTARY FIELD APPARATUS FOR GENERATING AND APPLYING GYRATORY SONIC VIBRATIONS**
**Albert G. Bodine, Jr., Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)**
**Application Sept. 12, 1960, Ser. No. 55,537, which is a division of application Ser. No. 825,117, July 6, 1959, which in turn is a division of application Ser. No. 772,210, Nov. 6, 1958, now Patent No. 2,960,317. Divided and this application Oct. 10, 1961, Ser. No. 144,218**
**3 Claims. (Cl. 310—10)**

1. In a gyratory sonic vibration generator, the combination of: a gyrationally compliant shaft member, means

for clamping said member in such manner as to hold longitudinal tension thereof between two points spaced longitudinally thereof, at least a portion of said member between its clamped points being composed of a material



capable of receiving a lateral thrust in response to a magnetic field in a plane transverse to said member, and means for subjecting said portion of said member to a rotating electromagnetic field force transversely intersecting and turning about an axis parallel to said member.

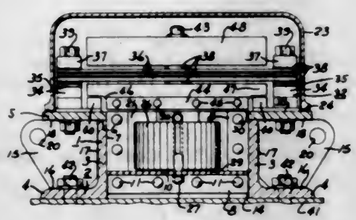
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3,167,670

## ELECTROMAGNETIC VIBRATORS

William V. Spurlin, Indiana, Pa., assignor, by mesne assignments, to Link-Belt Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 26, 1962, Ser. No. 247,119
11 Claims. (Cl. 310—29)



1. A vibrator consisting of a base the underside of which is arranged to be secured to the object to be vibrated and having an opening extending upwardly therefrom, a magnetic core with pole faces and secured to said base within said opening to expose said pole faces upwardly, an operating coil mounted on said core, leaf spring means the ends of which are secured to said base to span said opening above said pole faces, an armature secured to the underside of said leaf spring means to match and be supported in operative spaced relation above said pole faces, and a striker secured with said armature to said leaf spring means and extending beyond said armature to engage said base when said coil is energized to attract said armature.

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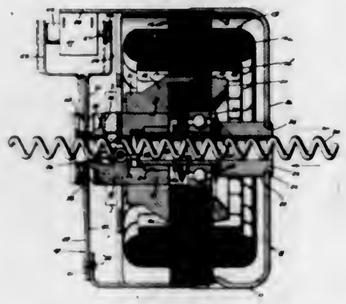
3,167,671

## LINEAR MOTION DEVICE

Julius H. Staak, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Aug. 5, 1960, Ser. No. 47,863
15 Claims. (Cl. 310—83)

1. For use in a linear motion device, a mechanical movement arrangement comprising a coreless worm member having helical turns formed of relatively stiff wire material, the wire being substantially nonexpansible in its helically wound form and having stiff rod-like characteristics when subjected to axial compressive and tensive forces, and a nut member having a bore extending axially therethrough for receiving said worm member, said worm member being substantially greater in axial length than said nut member, said nut member having means operatively connecting said worm member and said nut member together whereby rotary motion of one



of said members imparts linear motion to said other member.

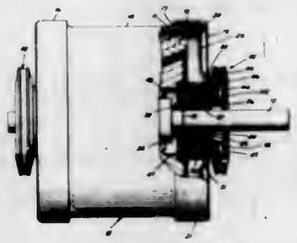
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3,167,672

## SLEEVE BEARING MOUNTING ARRANGEMENT IN AN ELECTRIC MOTOR

Myron D. Tupper, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Oct. 27, 1960, Ser. No. 65,338
5 Claims. (Cl. 310—90)



1. For use in an electric motor, an end frame assembly for supporting a shaft comprising a member formed of sheet material having a wall section formed with an aperture therethrough, a sleeve type bearing including a bore having a journal surface and first and second end portions, said first end portion projecting through said aperture, means securing said first end portion to said wall section, the bore in at least said first end portion being dimensionally greater in cross-section than the diameter of said journal surface, the dimensionally greater bore extending from the extreme end of said first end portion to a point axially beyond said aperture for insuring that the place of bearing support of said first end portion will not interfere with rotation of rotor shaft on said journal surface.

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3,167,673

## ROTARY ELECTRO-MAGNETIC MACHINE

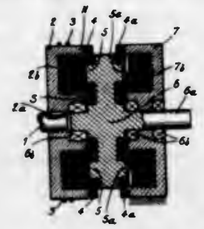
Joseph Miquel, Jean Grange, and Elie Cazal, all of 11 Rue Gandon, Paris 13, France

Filed Mar. 8, 1961, Ser. No. 94,255
Claims priority, application France, Mar. 10, 1960, 820,873, Patent 1,258,970
10 Claims. (Cl. 310—93)

1. A rotary electro-magnetic machine comprising an annular electro-magnet, a shaft, means journalling said electro-magnet along its geometrical axis to said shaft, a carrier of non-magnetic material co-axial with said electro-magnet, means coupling said carrier for joint angular rotation with said shaft, at least one axle extending eccentrically from said carrier and directed between the



poles of said electro-magnet, an annular magnetic core mounted for idle rotation on said axle and having a face



directed towards said electro-magnet, and a film of diamagnetic lubricating substance coating said face.

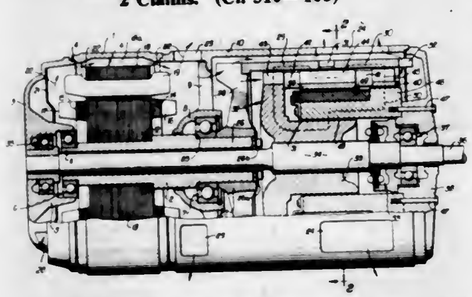
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3,167,674

## EDDY CURRENT COUPLING

Richard C. Woodward, Jr., Fullerton, Calif., assignor, by mesne assignments, to Emerson Electric Co., a corporation of Missouri

Filed Feb. 19, 1962, Ser. No. 174,184
2 Claims. (Cl. 310—105)



1. In an eddy current coupling: a support; a non-rotary magnetic member having a reduced hub at one end attached to said support; an annular coil mounted on said non-rotary magnetic member; a first rotary magnetic member substantially encompassing said non-rotary magnetic member and said coil; said non-rotary magnetic member and said first rotary magnetic member having a pair of opposed annular surfaces for defining a path of magnetic flux between opposite ends of said rotary magnetic member via said non-rotary magnetic member, said path being encompassed by said coil; a second rotary magnetic member substantially encompassing said first rotary magnetic member; said rotary magnetic members having corresponding first ends extending in side-by-side relationship about said hub; separate bearings carried by said hubs respectively mounting said first ends for rotation about said hub; and a pair of shafts respectively attached to the other ends of said rotary magnetic members; said rotary magnetic members having generally cylindrically extending opposed eddy current surfaces for creating a coupling between said rotary members.

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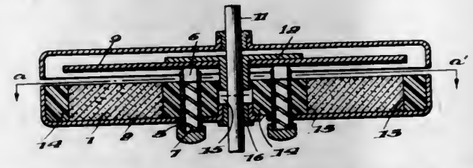
3,167,675

## DYNAMO-ELECTRIC MACHINE HAVING LAMELLAR WINDINGS AND PLANE AXIAL AIR GAP

André Vindevogel, St.-Ouen, France, assignor to Compagnie Electro-Mecanique, Paris, France, a French body corporate

Filed Dec. 12, 1962, Ser. No. 244,168
Claims priority, application France, Dec. 21, 1961, 882,726
8 Claims. (Cl. 310—239)

1. In a dynamo-electric machine of the type having as elements an annularly configured magnetic field member, a shaft and a disc secured to said shaft and having lamellar type windings thereon arranged in confronting relation to one face of the magnetic field member to establish an axial planar air gap therebetween, brushes arranged in tubular brush holders located within the annular magnetic field member, and a casing within which said elements are disposed, the improvement wherein said annular magnetic field member and said tubular brush holders are at first temporarily held in their respective proper positions within said casing and are there-



after permanently and simultaneously secured in said positions by an in situ molded mass of plastic material having a good heat conductivity characteristic, said plastic mass filling the space between the casing wall and the external periphery of said annular magnetic field member and being adherent thereto and said plastic mass also being included within and in contact with and adhering to the internal periphery of said annular magnetic field member so as to completely surround and contact and support said tubular brush holders.

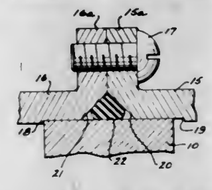
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3,167,676

## STATOR CLAMPING STRUCTURE FOR ELECTRIC MACHINES

Forrest Estol Fuller, North Hampton, Ohio, assignor to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio

Filed Aug. 3, 1960, Ser. No. 47,280
4 Claims. (Cl. 310—258)



1. In an electric machine having a housing comprising a pair of end bells having mutually opposed edges and provided with means for clamping them together, and a stator fitting snugly within said housing; means to prevent movement of said stator within said housing, comprising an O-ring snugly encircling said stator, and a chamfer on the inside of each of said mutually opposed edges of said bells, said chamfers, when said end bells are clamped together, forming a triangular space less than the diameter of said O-ring, such that when said stator is disposed within said bells, and said bells are telescoped toward each other until said chamfers are just tangent to said O-ring, said bells are out of contact with each other, whereby when said bells are clamped together in abutting contact, said O-ring is compressed and exerts a radially inward clamping pressure against said stator.

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3,167,677

## ELECTROLUMINESCENT DEVICE

Winfried J. Fremuth, Stamford, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Dec. 16, 1960, Ser. No. 76,190
6 Claims. (Cl. 313—108)

1. In an integrated electroluminescent structure characterized by:

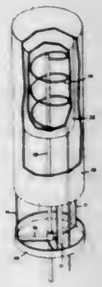
(1) a first electrically-conductive layer;
(2) a second electrically-conductive layer; at least one of said first and second layers being light conductive; said first and second layers being insulated from electrical contact by,



(3) an interposed unitary multi-layer phosphor-bearing dielectric layer in unitary contact with both, and bonded to at least one of, said first and second electrically-conductive layers; the improvement wherein said multi-layer dielectric layer comprises:
(*a*) a first film-layer in adhesive contact with, and bonded to, said first electrically-conductive layer, said first film-layer essentially comprising a phosphor uniformly dispersed throughout a film having a major proportion of cyanoethylated cellulose and a minor proportion of cyanoethylated polyvinyl alcohol; and
(*b*) a second film layer superimposed on, and bonded to, said first film-layer, said second film-layer essentially comprising cyanoethylated cellulose having a phosphor uniformly dispersed therethrough.

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**3,167,678**
**GETTER OPERATING AT VARIOUS TEMPERATURES TO OCCLUDE VARIOUS GASES**
**Richard W. Griessel, Albany, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed June 19, 1961, Ser. No. 118,104**
**10 Claims. (Cl. 313—180)**



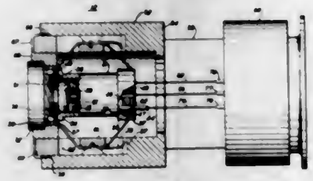
1. A getter device comprising in combination, a plurality of getter members, an independent heater element for said getter members, one of said getter members interposed between said heater element and another of said getter members in heat shielding relationship thereto whereby said one getter member will be heated to a higher temperature than said other getter member to getter a gas not gettered by said other getter member at a lower temperature.

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**ERRATUM**

For Class 313—198 see:
Patent No. 3,167,683

**3,167,679**
**CATHODE STRUCTURE**
**Laurence G. Lyon, Green Brook Township, Somerset County, Leif Rongved, New Providence, and John W. West, Millington, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 14, 1961, Ser. No. 95,677**
**9 Claims. (Cl. 313—270)**



7. A supporting structure for an electron emissive cathode comprising a cathode, a plurality of wire loops, the wires of said loops passing through slots in an annular member surrounding said cathode whereby said wires are held under tension, the cathode being mounted within said loops and in contact therewith adjacent the ends of said cathode.

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**3,167,680**
**DUAL SWEEP GENERATOR**
**Frank E. Seestrom, Dallas, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa**
**Filed Nov. 8, 1961, Ser. No. 151,061**
**5 Claims. (Cl. 315—23)**



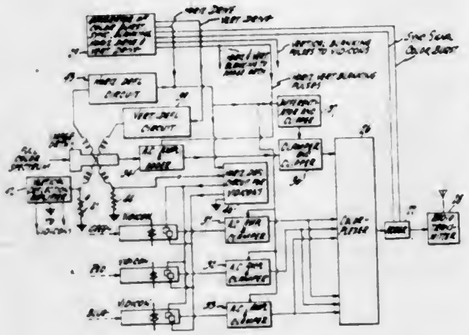

2. In a visual indicating means including cathode ray tube means, circuit means for producing a time-continuous two-level scan on the screen of the cathode ray tube means, comprising first input signal pulse means, first bistable means responsive to an input pulse to assume a first of two stable states, saw-tooth wave signal generating means responsive to the transition of said first bistable means to its first stable state to initiate the generation of a saw-tooth wave signal, voltage threshold sensitive circuit means responsive to a predetermined level of amplitude of said saw-tooth wave signal to cause said first bistable means to assume its second stable state, second bistable means responsive to the transition of said first bistable means to its second stable state to assume its first stable state, and pulse generating means responsive to the transition of said second bistable means to its first stable state to generate a pulse, said first bistable means responsive to said last-mentioned pulse to again assume its first stable state.

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**3,167,681**
**ELECTROSTATIC DEFLECTION CIRCUIT**
**Robert A. Dischert, Burlington Township, Burlington County, N.J., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed Mar. 27, 1962, Ser. No. 182,781**
**6 Claims. (Cl. 315—25)**

1. In combination, an electromagnetic deflection system and an electrostatic deflection system, said electromagnetic deflection system comprising a deflection coil through which deflection current flows, said current having a waveform that has a forward trace time portion and a return time portion, means for obtaining from said electromagnetic deflection system a voltage having a forward trace time portion and a return time portion with the forward trace time portion being the same as the forward trace time portion of said current, said electrostatic deflection system comprising an adding circuit, circuit means to which the voltage obtained from said electromagnetic deflection system is applied and through which there is supplied to said adding circuit a second voltage having a waveform in which a forward trace time portion corresponds to the forward trace time portion of said first-mentioned voltage, means for generating and supplying to said adding circuit a voltage wave that occurs during the return time portion of said current waveform and which has a waveshape such that when it is added to said second voltage there is obtained a combined wave having a forward trace time portion all of which has the same degree of slope and part of which occurs during the return time portion of said deflection current, means for amplifying said combined wave and for supplying said amplified wave with one polarity for application to one plate of a pair of electrostatic deflection plates and for supplying said amplified wave with the opposite polarity for application to the other plate of said pair of electrostatic deflection plates.

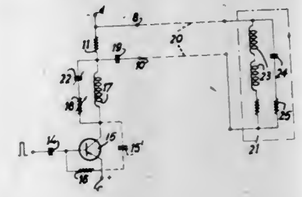




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**3,167,682**
**CIRCUIT ARRANGEMENT FOR GENERATING A VOLTAGE WITH AN IMPULSE AND A SAW-TOOTH COMPONENT FOR FEEDING A LOW-IMPEDANCE LOAD**
**Friedrich Bender, Welterstadt, near Darmstadt, Germany, assignor to Fernseh G.m.b.H., Am Alten Bahnhof, Darmstadt, Germany**
**Filed Oct. 28, 1959, Ser. No. 849,215**
**Claims priority, application Germany, Oct. 29, 1958, F 26,911**
**8 Claims. (Cl. 315—27)**

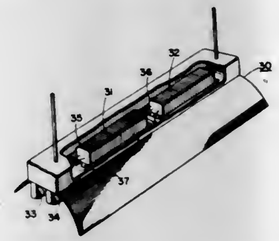
1. Circuit arrangement for feeding a low impedance transmission line with a voltage consisting of a square wave component and a sawtooth component, comprising, in combination, input means for introducing a sequence of square wave impulses; an integrating network, comprising a resistance member and an inductive reactance member in series, said input means being connected to the ends of said integrating network, respectively; output means including a first output terminal connected to one end of said resistance member and a second output terminal connected to the junction point between said resistance member and said inductive reactance member for delivering a sawtooth voltage derived from said resistance member upon application of said square wave impulses; and impedance means connected between said junction point and said input means for superimposing a square



wave voltage, proportional to said square wave impulses, on said sawtooth voltage, said impedance means being selected to produce linearity of said sawtooth voltage and a desired amplitude ratio between said square wave and said sawtooth voltages.

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**3,167,683**
**DIMMING SYSTEM AND APPARATUS FOR FLUORESCENT LAMPS**
**Theodore R. Harpley, Danville, Ill., assignor to General Electric Company, a corporation of New York**
**Filed June 5, 1962, Ser. No. 200,176**
**1 Claim. (Cl. 313—198)**

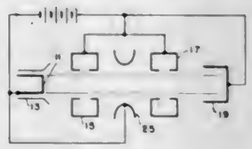


In a system for dimming at least one fluorescent lamp from a power supply, said lamp being associated with a lamp fixture and a ballast means for starting and operating said lamp, the illumination level of said fluorescent lamp being controlled by a dimmer control potentiometer located remotely of said fixture and a ballast means, the improvement comprising a lamp fixture, a dimming auxiliary, an elongated case housing, said dimming auxiliary mounted on said lamp fixture, said dimming auxiliary including a phase control means including a switching network and electrical leads for connection to the power supply and the ballast means, said phase control means controlling the supply of current from the power supply to the ballast means in each half cycle thereby to provide the current required to operate the fluorescent lamp at various levels of illumination, said phase control means including electrical leads for connection in circuit with the dimmer control to limit the control potentiometer current supplied to said phase control means and thereby control the point in each half cycle at which said switching network is activated to thereby vary the interval of current conduction in each half cycle of the power supply, said control current being relatively small in magnitude as compared with the current supplied by switching network means to the ballast means, and said channel serving as a heat sink for the ballast means and said phase control means.

### 3,167,684
### KLYSTRON TUBES

Johann R. Hechtel, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 20, 1960, Ser. No. 3,702
2 Claims. (Cl. 315—5.34)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. The improvements for use with a velocity modulated electron tube having a cathode forming a circular cross sectioned electron beam for flow along a longitudinal axis, an input cavity resonator, and an output cavity resonator, comprising;

(*a*) electrode means for maintaining rectilinear electron beam flow along the length of said beam between the input and output cavity resonators, said electrode means including a set of first, second and third elements longitudinally spaced along said beam with the second element interposed between the first and third elements,

(*b*) said first element being formed from a transverse wall of the input cavity resonator forming a wall face in axially confronting relationship to said second element, said transverse wall of the input cavity resonator having a central aperture through which the beam emerges from the input cavity resonator,

(*c*) said second element being a concentrically aligned toroidal member forming a radially inwardly facing surface of revolution defined by the revolution of a radially inwardly convex curve which is bi-laterally symmetrical about a transverse reference plane and having one of its bi-lateral halves shaped and spaced from the edge of the beam in accordance with the curve $\phi=0$, as shown in FIG. 2,

(*d*) said third element being formed from a transverse wall of the output cavity resonator forming a wall face in axially confronting relationship to the second element, said transverse wall of the output cavity resonator having a central aperture through which the beam enters the output cavity resonator,

(*e*) said transverse walls of the input and output cavity resonators being equi-distantly spaced from said reference plane and spaced apart from one another by an axial distance which is approximately four times the radial distance from the edge of the beam to the nearest portion of said radially inwardly convex curve,

(*f*) means for applying a potential equal to the cathode potential to said second element, and

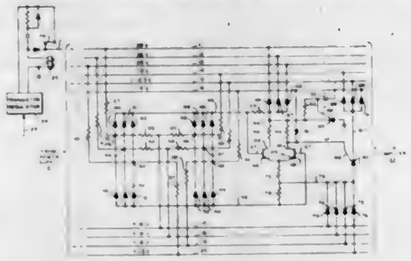
(*g*) means for applying a predetermined potential more positive than said cathode potential to said first and third elements.

### 3,167,685
### COMPUTER PROTECTION CIRCUIT

John P. Bade, New Rochelle, Eugene R. Keeler, Bayside, and Theodore W. Kwap, Brewster, N.Y., assignors to General Precision, Inc., a corporation of Delaware

Filed May 8, 1961, Ser. No. 108,373
8 Claims. (Cl. 317—9)

4. A protective circuit for a plurality of separate power supplies, some of which at least have different voltage levels comprising, a plurality of comparison circuits each of which interconnects a respective pair of power supply outputs of substantially different voltage levels, each comparison circuit being adjusted to provide a preselected output voltage at an intermediate terminal thereof under normal power supply operating conditions, means connected to the intermediate terminals of all of said comparison circuits and operated by the departure of any one thereof from said preselected value for generating a first pulse signal, a first controlled rectifier having a cathode connected to a first group of power supplies and an

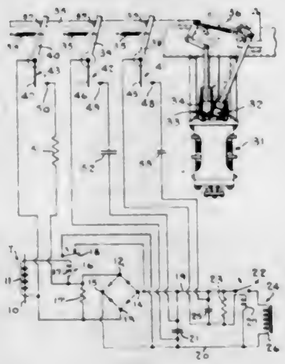


anode connected to a second group of power supplies, said first controlled rectifier including a gate electrode, means for applying said first pulse signal to said gate electrode, and a second controlled rectifier having a cathode connected to a third group of power supplies and an anode connected to ground, said second controlled rectifier including a gate electrode capacitatively coupled to at least one of said first group or power supplies.

### 3,167,686
### ELECTRONIC TIME DELAY DEVICES

Richard E. Riebs, Hales Corners, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Original application Mar. 19, 1959, Ser. No. 800,567. Divided and this application Oct. 5, 1961, Ser. No. 143,094
19 Claims. (Cl. 317—22)



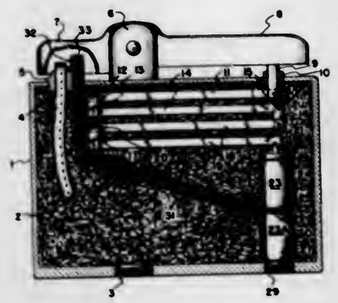
1. A repeating circuit interrupter having switch means in circuit with an electrical system, switch operating means including switch opening and reclosing means, cumulative means having means advanceable for each operation of said switch operating means, a timer having an input circuit, means connected to said system for supplying current to said input circuit proportional to the current in said system, an intermediate circuit connected to said input circuit and including resistance means and first capacitance means to provide an RC timing circuit, overload current responsive means normally shunting said current around said first capacitance means to prevent the accumulation of charge thereon, said overload current responsive means having control means in circuit with the input circuit and operable upon the occurrence of an overload in said system to prevent the shunting of said current so that said first capacitance means may begin charging, a second capacitance means, and means controlled by said cumulative means and operative after a predetermined number of operations of said switch operating means for connecting said second capacitance means in a circuit relation with said first capacitance means which increases the capacitance of said RC timing circuit, a final output circuit including output means connected to said switch opening means for initiating the operation thereof, said output means having control means in circuit with said intermediate circuit and operative to initiate the operation of said output means when the voltage on the RC timing circuit means reaches a predetermined value.



### 3,167,687
### PIEZOELECTRIC LIGHTER

Thomas J. Bultkus, 838 Lenox Ave., Waukegan, Ill.

Filed Jan. 2, 1963, Ser. No. 248,981
3 Claims. (Cl. 317—83)



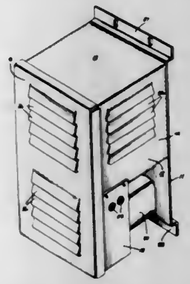
1. A lighter of the character described comprising in combination a fuel receptacle, a burner mounted upon said receptacle, a snuffer overlying said burner, a manually depressible actuating member connected to one end of a lever arm pivotally mounted near its opposite end, the end of said lever arm nearest the pivot being mechanically connected to the free end of a second parallel lever arm pivotally mounted near its opposite end, said second lever arm in turn being mechanically connected to a plurality of successive lever arms pivotally mounted at points opposite to their input ends, the mechanical output of the last lever arm being connected to the input of a piezoelectric generator, conductive means for connecting electric output of said piezoelectric generator to a spark gap in proximity to said burner, means interconnecting said actuating member, snuffer, and piezoelectric generator to lift said snuffer and expose said burner while simultaneously discharging output of said piezoelectric generator across said spark gap upon depression of the actuating member.

### 3,167,688
### BALLAST CASE ASSEMBLY

Walter J. Hein, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Nov. 21, 1960, Ser. No. 70,740
4 Claims. (Cl. 317—100)

1. A case assembly for a ballast apparatus including a ballast transformer and at least one capacitor, said case assembly comprising an elongated base member, a metallic casing having four side walls extending vertically of said base member and defining a main compartment for receiving said ballast transformer and having an opening for assembling said ballast transformer therein, said metallic casing having three auxiliary side walls and a bottom wall to form a cantilevered compartment for receiving lead terminals and the terminal end portion of the capacitor, said cantilevered compartment extending longitudinally from said main compartment and having an opening to provide access to the lead terminals, said bottom wall of said cantilevered compartment being spaced apart from and overlying said base member, said bottom wall of said cantilevered compartment having an aperture to receive the terminal end portion of said capacitor thereby

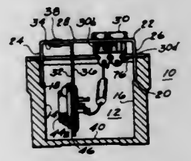


providing a protective enclosure for said terminal end portion and lead terminals, said aperture providing sufficient clearance to minimize heat transfer from said casing to said capacitor, and means for covering said openings in said main compartment and said cantilevered compartment, and means for securing the capacitor to said base member in a vertically upstanding relationship therewith and spaced from said main compartment so that heat transfer from said compartment to said capacitor is minimized.

### 3,167,689
### ELECTRICAL ASSEMBLY

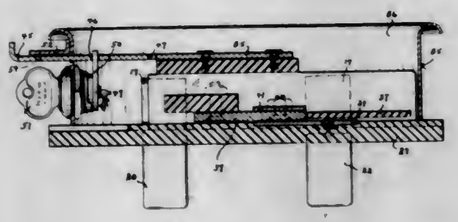
Armand G. Mueller, Wauwatosa, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Feb. 20, 1961, Ser. No. 90,424
7 Claims. (Cl. 317—100)



1. An assembly comprising; a rectangular receptacle formed of insulating material having an open rectangular cavity with inwardly extending ledges formed along opposed side walls thereof, a metal channel member having a U-shaped cross section with spaced parallel arm portions resting on the ledges and a bight portion spaced above the marginal edges of said opposed walls, a second metal member secured to the bight portion and having a portion extending into the cavity, at least one thermo emissive electronic device mounted in heat conducting relation on the extending portion of the metal member within the cavity, a plurality of other electronic components supported by the channel member and second metal member, and an insulating resinous material within the cavity encapsulating the device and other electronic components and securing the metal member in said cavity whereby the metal member and the channel member are maintained in position on the receptacle and serve as heat radiating members for the device.

3,167,690
**MEANS FOR PREVENTING THE UNAUTHORIZED USE OF ELECTRICITY THROUGH A METER**
Alvin J. Wallman, 823 Market St., Beatrice, Nebr.
Filed Apr. 27, 1962, Ser. No. 190,580
1 Claim. (Cl. 317—108)



A means for connecting or disconnecting the electrical circuitry of an electricity use meter having a base portion with rearward and forward sides and a detachable head portion with rearward and forward sides, comprising, in combination,

said meter base portion having four female socket terminals in its forward side,

said meter head portion having four terminal prongs extending rearwardly from its rearward side,

a cup housing having rearward and forward sides detachably secured to said meter between said meter base portion and said meter head portion, said cup housing having its rearward side positioned adjacent the forward side of said meter base portion and its forward side positioned adjacent the rearward side of said meter head portion,

said cup housing having four spaced apart terminal prongs on its rearward side extending rearwardly therefrom which are received by said four female socket terminals in said meter base portion respectively,

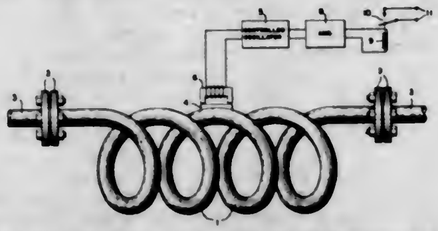
said cup housing having four spaced apart female socket terminals in its forward side which receive said four terminal prongs of said meter head portion respectively,

means directly electrically connecting two of said terminal prongs of said cup housing, respectively, with two of said socket terminals of said cup housing,

and a movable means in said cup housing electrically connecting the other two terminal prongs of said cup housing, respectively, with the other two socket terminals of said cup housing at times, said movable means having two spaced apart notches therein and a detachable key actuated locking means having a member capable of selective movement into each of the two notches.

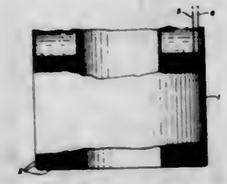
3,167,691
**ELECTRICAL APPARATUS**
Mitchell J. Halista, Philadelphia, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 23, 1960, Ser. No. 17,106
4 Claims. (Cl. 317—157)

1. A pressure transducer comprising a helical fluid-conduit element, connecting means for inserting said element to bridge a gap in a fluid conduit to provide a continuous fluid path with said fluid conduit, a ferrite element means fastened to the outer surface of said conduit element and means for detecting a spatial motion of said ferrite element means relative to said means for detecting



whereby to indicate a change in the fluid pressure of the fluid within said helical fluid conduit element.

3,167,692
**SUPERCONDUCTING DEVICE CONSISTING OF A NIOBIUM-TITANIUM COMPOSITION**
Bernd T. Matthias, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 24, 1961, Ser. No. 104,992
6 Claims. (Cl. 317—158)



1. A superconducting magnet configuration comprising a plurality of turns of a material comprising a composition of the Nb-Ti system and consisting essentially of from 10 to 90 atomic percent Nb and from 90 to 10 atomic percent Ti, together with means for maintaining the said turns at a temperature at least as low as the critical temperature for the said material and with means for introducing a current of such magnitude that a field of at least 30 kgauss is produced.

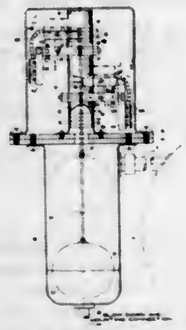
3,167,693
**ELECTROMAGNETIC RELAY**
Merle A. Hayward, Plainfield, Ill., assignor to Phillips-Eckardt Electronic Corporation, Joliet, Ill., a corporation of Illinois
Filed Sept. 13, 1961, Ser. No. 137,829
4 Claims. (Cl. 317—165)



1. In a relay of the character disclosed, a relay coil, a pair of sheet metal core members each having a coil leg within said relay coil and an end leg at one end thereof, the two end legs being at opposite ends of said coil, an armature spot-welded flat-wise against one of said end legs and having a free end spaced from and flat-wise adjacent the other of said end legs for attraction to and electrical contact with said other end leg when said core members and armature are magnetized by passage of current through said coil, said coil legs of said core members being cemented together with a layer of material interposed between the two to electrically insulate them from each other but permit the passage of a magnetic circuit therebetween, said core members serving as terminals for the relay controlled circuit.



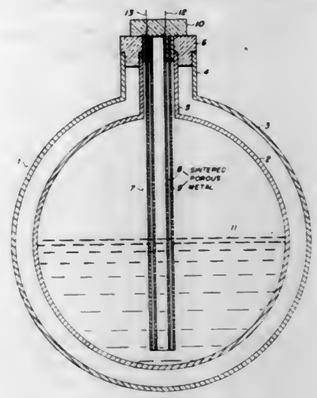
3,167,694
**PERMANENT MAGNET SENSING ELEMENT OF LIMITED ROTATION OPERATING SNAP ACTION ELECTRIC SWITCHES**
Martin Bekedam, 9 Northwood Court, Orinda, Calif.
Filed Mar. 6, 1961, Ser. No. 93,514
4 Claims. (Cl. 317—201)



1. In a control mechanism: a non-magnetic tube; a magnet-holding member having a fixed pivotal axis that is transverse to the tube axis; a first magnet carried by the member and placed near the tube exterior and having its poles oriented with respect to the tube axis so that the axis of polarity of both poles is parallel to the axis of the tube; a second magnet slidable within the tube and having its poles paralleling the tube axis; like poles on the two magnets extending substantially in the same direction; said second magnet being movable along the tube toward the first magnet and having a flux field that will tend to overlap the flux field of the first magnet as the two magnets near each other, means for causing the overlapping portions of the two flux fields to be compressed as the second magnet approaches the first magnet, said means comprising two stop means for limiting the swinging of the pivotal member between two extreme positions; the compressed flux fields creating a greater force, tending to move the adjacent end of the first magnet away from the second magnet and hold the member in one of its extreme positions against one of the stop means as the second magnet moves toward the first magnet, than is created by the natural magnetic force of the opposite poles of the two magnets to attract each other; the force created by the compressed flux fields in maintaining the first magnet and its holding member in one extreme position, being suddenly reversed when the second magnet starts to pass the first magnet, the overlapping or compressed flux fields exerting a force to swing the first magnet and member with a snap action into its other extreme position against the other stop means because the portions of the flux fields of the first and second magnets that have been compressed in the restricted space provided between the magnets as the second magnet passes the first one are suddenly free to expand into the enlarged space just above the first magnet and will react suddenly on each other to swing said first magnet against said other stop.

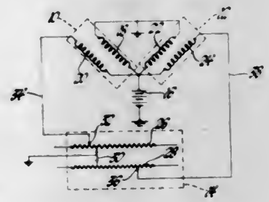
3,167,695
**LIQUID LEVEL CAPACITANCE PROBE**
John C. Bronson, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 20, 1961, Ser. No. 146,666
2 Claims. (Cl. 317—246)

1. In a liquid level capacitance probe for liquefied gases comprising two concentric tubes which form the capacitor and means for connecting said concentric tubes to an electrical capacitance indicating circuit, the improvement consisting of said two concentric tubes being constructed from sintered porous metal having approxi-



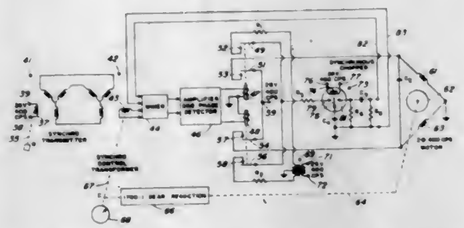
mately 50% voids whereby a free transfer of gas may occur through said material.

3,167,696
**GAUGE CIRCUIT**
Robert B. Gelenius, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 8, 1962, Ser. No. 193,144
7 Claims. (Cl. 318—25)



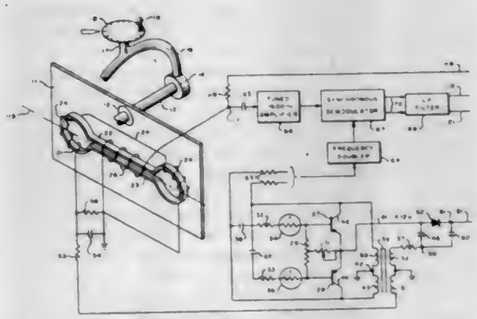
1. An indicator circuit for controlling the position of an indicator armature comprising first and second coils, energizing means connected to the first and second coils to produce first and second constant and equal magnetic fields along first and second magnetic axes, the first and second magnetic axes intersecting at a predetermined angle, third and fourth coils, variable energizing means connected to the third and fourth coils to produce third and fourth magnetic fields along the first and second magnetic axes opposite in direction to the first and second magnetic fields respectively, the variable energizing means including a voltage source and first and second inter-dependently variable resistors connected in series with the third and fourth coils, a slidable contact attached to the first and second resistors for inter-dependently varying the portion of the resistors connected in series with the third and fourth coils, the slidable contact being positionable to vary the respective portions of the first and second resistors between predetermined maximum and minimum values, the minimum values of the first and second resistors respectively occurring at different positions of the slidable contact, and a magnetic armature rotatably mounted in magnetic proximity to the coils and responsive to the magnetic fields to be aligned with the resultant thereof.

3,167,697
SYNTHETIC RATE GENERATOR
William G. Anderson, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 11, 1960, Ser. No. 61,962
5 Claims. (Cl. 85—65)



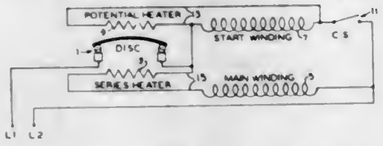
1. A servomechanism with rate feedback comprising: transmitter means for producing an output signal dependent upon the position of a movable element thereof, receiving means for producing an output signal dependent upon the position of a movable element thereof, error detecting means for comparing said output signals to produce an error signal representing a difference in the relative position of said movable elements, driving means, a power supply, switching means selectively energized in response to said error signal to apply the output of said power supply to selectively condition said driving means for rotation in either direction, a rate circuit in which a rate signal is developed corresponding to the build-up-to-speed and the coast-to-stop characteristic of said movable elements, said rate circuit comprising an electrical filter with two time constants, means responsive to the operation of said switching means for connecting said rate circuit to a source of power and means to supply the output of said rate circuit as a feedback signal to said error detecting means.

3,167,698
AUTOPILOT EMPLOYING EARTH INDUCTOR COMPASS
John W. Gray, Pleasantville, and Norman L. Du Bois, Thornwood, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Aug. 15, 1961, Ser. No. 131,592
18 Claims. (Cl. 318—28)



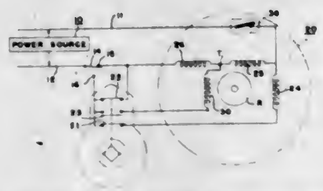
1. An autopilot for a craft comprising, an earth inductor compass including a sensing coil, means exciting said compass whereby an output signal is generated thereby, means demodulating said output signal, means amplifying said demodulated output signal, a motor energized by said amplified signal deflecting a rudder located on said craft, and negative feedback means applying a signal the magnitude of which is representative of the amount of deflection of said rudder to said sensing coil in a direction such as to generate a magnetic flux opposing the earth's flux passing through said inductor compass.

3,167,699
PROTECTIVE CONTROL CIRCUIT
Robert A. Renaud, Corpus Christi, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 10, 1962, Ser. No. 216,145
5 Claims. (Cl. 318—221)




1. A circuit comprising a first winding, a thermostatic switch forming when closed a first series circuit connection with said first winding across a pulsating supply circuit, thereby forming a primary loop circuit when said supply circuit is closed, a control switch operable between an open position and a closed position and having a first part and a second part, a second winding in inductive relation to said primary loop circuit, a heater in heat-exchange relationship with said thermostatic switch, circuitry including said first part of said control switch connecting said heater in parallel with at least a portion of said second winding when said control switch is in closed position, and circuitry including said second part of said control switch connecting said second winding across said supply circuit through said thermostatic switch when said control switch is in closed position, means for operating said switch parts together, whereby the loop formed by the parallel connection of said heater with said second winding is opened when said second winding is disconnected from said supply circuit by said control switch.

3,167,700
MULTI-SPEED POLE-CHANGE ARRANGEMENT
George A. Neyhouse, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,508
6 Claims. (Cl. 318—224)

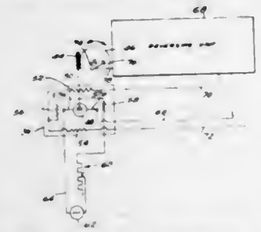



1. A winding arrangement fitted into a slotted magnetic core, comprising, a first main winding means fitted substantially evenly into radially outer locations of said slotted magnetic core to provide a predetermined number of electrical poles between opposite ends thereof, a phase winding means fitted to said slotted core in a location radially inwardly of said first main winding means, a secondary modified main winding means fitted into radially inner locations of said slotted magnetic core and including series connected coils at least in part permitting material saving in said secondary winding means unevenly distributed therewith for less than full electrical pole designations per se, and a tap juncture that permits splitting away needed electrical poles in said first winding means connected to one end of said secondary modified main winding means, said first and second winding means thus complementing each other for operation with a greater number of electrical poles than for said first winding means alone.

2. The arrangement of claim 1 wherein said first main winding means includes concentric coil portions that form a total of four electrical poles, said phase winding means also having concentric coil portions offset in angular positioning from those of said first main winding means though defining an identical number of electrical poles, said secondary modified main winding means having at least four electrical poles defined thereby and connected in series to said tap juncture with two electrical poles of said first main winding means being shared for both four and six-pole connection thereby to reduce conductor material required and to facilitate magnetic core slot fill.



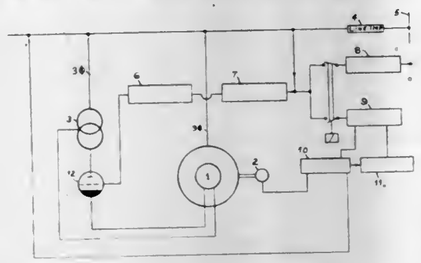
3,167,701
WASHING MACHINE PROVIDED WITH MOTOR REVERSING MEANS
Nils Kauri Lindgren, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 21, 1959, Ser. No. 861,052
Claims priority, application Sweden, Dec. 23, 1958, 11,997/58
10 Claims. (Cl. 318—282)



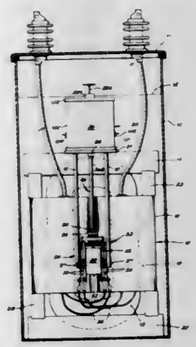
1. A washing machine comprising driven means adapted for being rotated selectively in opposite directions, a source of rotary power coupled to said driven means for rotating the latter, the rotary power being reversible for the selective driving of said driven means in opposite directions, and reversing means coupled to said source for reversing said rotary power, said reversing means interrupting the rotation of said driven means between the rotation thereof in one and the other of said opposite directions and comprising an energy accumulator which stores energy in response to said rotary power, a release operatively associated with said accumulator and responsive to said source for releasing the energy from said accumulator, a delay device coupled to said accumulator for causing the latter to release its energy over a finite period of time, and a control means coupled to said accumulator and to said source and being responsive to the accumulator for reversing the rotary power, said control means being responsive to the accumulator during the releasing of said energy to terminate the supply of rotary power by said source.

3,167,702
VIBRATION DAMPING ARRANGEMENT FOR ROTARY FIELD SYSTEM OF EXCITATION REGULATION SYNCHRONOUS MACHINES
Arnold Schönung, Lindenberg, Pfalz, and Kurt Stahl, Brunnengasse, Germany, assignors to Brown, Boveri & Cie, Aktiengesellschaft, Mannheim, Germany, a joint-stock company
Filed Aug. 14, 1961, Ser. No. 131,289
Claims priority, application Germany Aug. 18, 1960
5 Claims. (Cl. 322—17)

1. In a synchronous electrical machine apparatus the combination comprising a stator element connected to a network and a rotary field system, means for exciting the windings on said rotary field system, regulating means having the output thereof connected to said exciting means for controlling the output of said exciting means, means producing and supplying to the input of said regulating means a first nominal input control value, and means producing and supplying to the input of said regulating means a second nominal input control value, said first and second nominal input values serving to control the output of said regulating means, said first nominal input control value being determined in accordance with a value of the network and said second nominal input control value being determined in accordance with the product of the load angle and a derivative thereof with respect to time, said load angle being proportional to the difference between an alternating voltage in phase with the voltage of the network and another alternating voltage in phase with the rotary field system.



3,167,703
SELF-REGULATING TRANSFORMER
Carl Schindler, Wauwatosa, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed June 17, 1959, Ser. No. 820,965
58 Claims. (Cl. 323—43.5)



1. In combination, an electrical transformer having taps in the primary winding, a tap changer including stationary contacts connected to said taps, rotatable contact means adapted when rotated to sequentially engage said stationary contacts and to change the ratio of transformation of said transformer, a rotatable shaft, means including a spring operatively connected at one end to said shaft and at the other end to said rotatable contact means for stepping said rotatable contact means to a succeeding tap position and opposing rotation of said shaft with a force proportional to the angular rotation thereof; said shaft being rotated through a first predetermined angle between tap positions; a work cylinder, a piston reciprocable within said work cylinder, means for converting displacement

of said piston into rotation of said shaft, an electromagnetic vibratory pump having a pole structure and an energizing winding on said pole structure energized from the secondary of said transformer and being responsive to the cyclic fluctuations of the alternating current for pumping liquid, said pump including valve means magnetically suspended in said pole structure in a mean position determined by the strength of the magnetic flux in said pole structure for selectively delivering fluid from said pump into either end of said work cylinder in accordance with said mean position, and feedback compensating means for varying the position of said valve means in accordance with the angular rotation of said shaft, the rate at which the position of the valve means is changed by said feedback means incident to rotation of said shaft being substantially equal to the rate at which the position of said valve means is changed by the magnetic flux as a result of variation in transformer secondary voltage, and means for disabling said feedback means after rotation of said shaft in either direction through a second predetermined angle which is greater than one half said first predetermined angle, said disabling means being adjustable to vary said second predetermined angle.

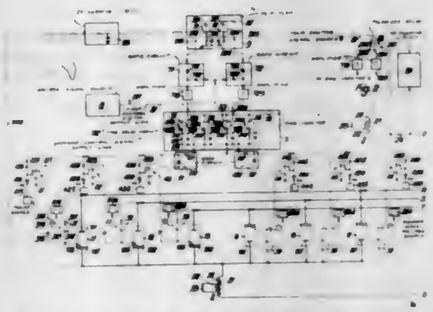
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**3,167,704**

## CURRENT CONTROL CIRCUIT ARRANGEMENT

**Walter Maag, Geroldswil, Switzerland, assignor to H. A. Schlatter Aktiengesellschaft, Zollikon, Zurich, Switzerland**

**Filed Sept. 8, 1960, Ser. No. 54,714**
**Claims priority, application Switzerland, Sept. 9, 1959, 78,009**
**6 Claims. (Cl. 323—58)**



1. A current control circuit arrangement comprising, in combination,

first phase converting means for converting a multiphase alternating current to a half cycle of positive polarity of single-phase alternating current and having an input, an output and an energization control;

second phase converting means for converting a multiphase alternating current to a half cycle of negative polarity of single-phase alternating current and having an input, an output and an energization control;

means for supplying a multiphase alternating current to the inputs of said first and second phase converting means;

transformer means connected to the outputs of said first and second phase converting means;

phase converting control means for alternately energizing said first and second phase converting means and having inputs and outputs connected to the energization controls of the said first and second phase converting means, said phase converting control means comprising a ring counter circuit including a first stage having input means and output means and a second stage connected diametrically opposite said first stage and having input means and output means, the input means of said first and second stages constituting the inputs of said phase converting control means and the output means of the said first and second stages constituting the outputs of the said phase converting control means; and

control means for controlling in accordance with said single-phase alternating current said phase converting control means to initially energize upon energization of said transformer means by one of said first and second phase converting means that one of the said first and second phase converting means producing a single-phase alternating current of opposite half cycle polarity from the last half cycle polarity of the single-phase alternating current produced upon the previous deenergization of the said transformer means, said control means having an input connected to the outputs of the said first and second phase converting means and outputs connected to the inputs of said phase converting control means.

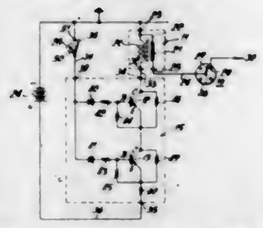
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**3,167,705**

## SERIES STACKED IGNITION SYSTEM USING SERIES DIODES IN THE BASES

**Gerhard Söhner, Endersbach, Kreis Waiblingen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany**

**Filed Dec. 19, 1961, Ser. No. 160,455**
**Claims priority, application Germany, Dec. 22, 1960, B 60,590**
**3 Claims. (Cl. 323—62)**



1. In an ignition control arrangement for internal combustion engines, in combination, a source of continuous electric energy; control pulse generator means for furnishing control pulses adapted to time the ignition moments; ignition coil means having a primary winding and a secondary winding for delivering a high voltage ignition pulse in response to an interruption of current flow through said primary winding; at least two transistor means having their emitter-collector circuits connected in series with each other and in circuit with said source and said primary winding, the base electrodes of said transistor means being in circuit with said control pulse generator means in such a manner that during each of said control pulses said transistor means are conductive so as to pass current from said source to said primary winding, and that during the intervals between said control pulses said transistor means are nonconductive so as to interrupt said current; and at least one rectifier means connected between the base electrode of one of said transistor means and said control pulse generator in such a manner that the emitter-base current of said one transistor means is enabled to pass through said rectifier means.

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**3,167,706**

## NUCLEAR MAGNETIC RESONANCE ANALOG TO DIGITAL CONVERTER APPARATUS

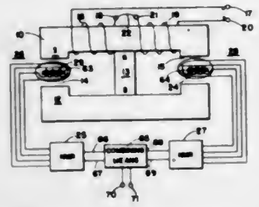
**Barrett Doyle, New Brighton, Minn., assignor to Honeywell Inc., a corporation of Delaware**

**Filed Aug. 31, 1961, Ser. No. 135,219**
**5 Claims. (Cl. 324—.5)**

1. An analog to digital converter comprising: a magnetic device having two air gaps therein; magnetic flux producing means in intimate contact with said magnetic device so as to produce substantially constant and equal magnetic fields in each of said air gaps; winding means having a current applied thereto, said winding means being wound on said magnetic device and causing a substantial change of the magnetic field in one of the air gaps in said magnetic device, said magnetic device and said magnetic flux producing means being arranged so







that said winding means has substantially no effect on the flux density in said flux producing means; a first and second nuclear magnetic resonance device; means mounting said first nuclear magnetic resonance device in one of the air gaps in said magnetic device and said second nuclear magnetic resonance device in the other air gap; heterodyning means; and means connecting said heterodyning means to said first and second nuclear magnetic resonance devices.

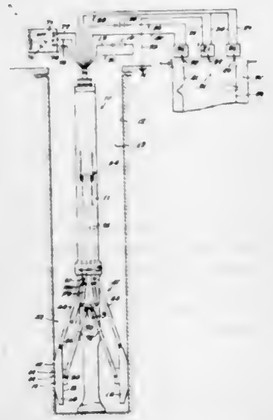
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**3,167,707**

## WELL LOGGING APPARATUS HAVING LATERALLY SHIFTABLE WALL ENGAGEABLE ELECTRODE SUPPORTS

**Willis J. Oliver, Derrick City, Pa., assignor to Seismograph Service Corporation, Tulsa, Okla., a corporation of Oklahoma**

**Filed Dec. 29, 1960, Ser. No. 79,276**
**10 Claims. (Cl. 324—1)**



3. In a well logging tool, the combination comprising, a tool body, a pair of elongated pads carried by said body for vertical movement within a bore hole, a plurality of vertically alined electrodes carried by at least one of said pads for selective engagement with the bore hole wall, reversible power means associated with said body for simultaneously urging said pads laterally into engagement with the wall of the bore hole and for simultaneously retracting said pads laterally from engagement with the wall of the bore hole, said reversible power means including a pair of resilient elements each associated with a respective one of said pads so that said pads move laterally independently, and means for maintaining said electrode carrying pad parallel with the axis of said tool body during vertical movement of the body within said bore hole.

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**3,167,708**

## MAGNETIC PARTICLE DETECTION DEVICE HAVING TWO SEPARATE MOVABLE ELECTROMAGNETS AND AN INTERFITTING BAR MEMBER FOR MAGNETICALLY COUPLING THE CORES OF SAME

**Maxwell Pevar, 8116 Fayette St., Philadelphia, Pa.**

**Filed July 12, 1962, Ser. No. 209,464**
**1 Claim. (Cl. 324—38)**



Magnetizer for nondestructive inspection or testing of workpieces by means of magnetic particles, the magnetizer comprising: two separate, relative to one another movable magnets, each magnet having a core surrounded by an induction coil; said cores each having a workpiece-engaging surface at one end; means for connecting the coils of both magnets to a source of electric current, said connecting means and the directions of the windings of both coils being such as to insure opposite magnetic polarity of said workpiece-engaging surfaces of both magnets; each of said cores being thin in one direction transversely to the axis of the coil surrounding it compared with its dimensions in the other two directions perpendicular to said one direction and to each other; a bar-like member of magnetically conductive material and of constant cross-sectional shape and dimensions; the other end of each core extending beyond said coil and providing an opening completely through the core in the direction of its thin dimension and mating in shape and dimensions to the cross-section of said bar-like member so as to permit said member to be inserted into and slide in the openings of both cores thereby closing the magnetic circuit between the cores while permitting adjustment of the distance between both magnets without changing their angular position relative to each other, and whereby said bar-like member may be pulled out of said cores so as to permit independent handling and movement of each of said magnets.

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**3,167,709**

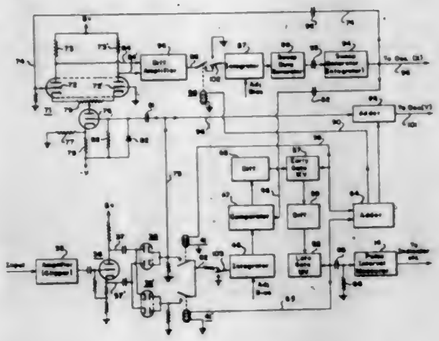
## APPARATUS FOR MEASURING PULSE INTERVAL OF QUASI-PERIODIC PULSE SIGNALS

**Warren D. White, East Norwich, and Herbert S. Sawyer, Bethpage, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware**

**Filed Mar. 24, 1960, Ser. No. 17,344**
**8 Claims. (Cl. 324—68)**

1. Apparatus for measuring interpulse intervals of quasi-periodic pulse signals which comprises means for generating a repetitive reference sweep, means for phase-comparing said pulse signals and said reference sweep to produce a control signal, means for utilizing said control signal to control the frequency of said reference sweep, means for generating a repetitive tracking gate, means for comparing the time occurrence of said pulse signals and said tracking gate to produce an error signal varying with changes in phase therebetween, means for comparing said

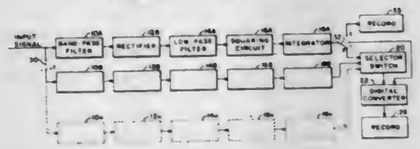
error signal with said reference sweep to produce a tracking gate control signal, means for utilizing said tracking



gate control signal to control the generation of said tracking gate, and means for indicating variations in the time occurrences of the tracking gate.

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**3,167,710**
**SYSTEM FOR ANALYSIS OF ELECTRICAL SIGNALS INCLUDING PARALLEL FILTER CHANNELS**
**James R. Cox, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware**
**Filed Feb. 1, 1961, Ser. No. 86,342**
**9 Claims. (Cl. 324—77)**

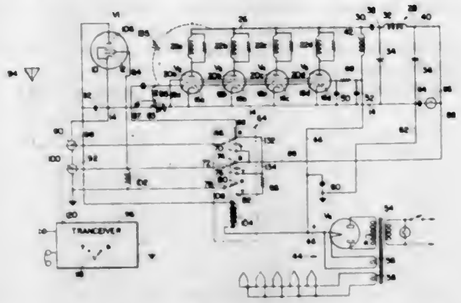


1. An apparatus for use in determining the frequency power spectrum of a portion of an electrical transient, which comprises a combination: a first filter to which the transient is fed, said filter having a band pass of X cycles per second where X represents any numerical value which is small compared to the center frequency; a rectifier electrically connected to the output of said first filter; a second filter electrically connected to the output of said rectifier, said second filter being of a character to pass that portion of the signal fed to it having a frequency of X cycles per second or less; a squaring circuit electrically connected to the output of said second filter; and means to integrate the output of said squaring circuit.

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**3,167,711**
**TRANSCEIVER HAVING MEANS FOR NEUTRALIZING INHERENT DISTRIBUTED CAPACITY**
**Paul N. Wright, Wabash, Ind.**
**Filed June 3, 1964, Ser. No. 372,241**
**10 Claims. (Cl. 325—18)**

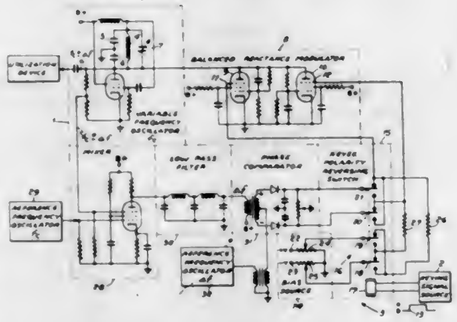
10. For use in the transmitting or receiving of radio signals, a radio frequency amplifier having input and output circuits, said amplifier having a control electrode and an output electrode, said electrodes having interelectrode capacity therebetween, said control electrode being coupled into said input circuit, said output electrode being coupled into said output circuit, an antenna circuit, an equipment-connecting circuit, first switch means for alternatively selectively coupling said antenna circuit to said input and output circuits, second switch means for alternatively selectively coupling said equipment-connecting circuit to said input circuit when said antenna circuit is coupled to said output circuit and to said output circuit when said antenna circuit is coupled to said input



circuit, said first and second switch means including inherent capacitor means for neutralizing said interelectrode capacity.

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**3,167,712**
**FREQUENCY SHIFT KEYER WITH AUTOMATIC FREQUENCY CONTROL**
**Norman H. Young, Jr., and Philip K. Spahr, Nutley, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland**
**Filed Mar. 17, 1961, Ser. No. 96,478**
**18 Claims. (Cl. 325—163)**



7. A frequency shift keyer comprising a source of variable frequency signal, a frequency control means coupled to said source, means coupled to said source including at least means responsive to the signal of said source to provide a frequency control signal, a switching means coupled to said responsive means and said control means, and a source of coded intelligence signal coupled to said switching means to control the coupling of said control signal to said control means to shift the frequency of said variable frequency signal between two predetermined frequencies in accordance with said intelligence signal and to maintain the frequency of said variable frequency signal at said predetermined frequencies.

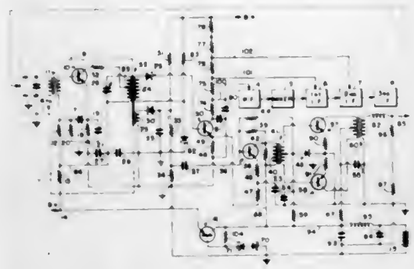
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**3,167,713**
**ELECTRONIC AUTOMATIC CONTROL CIRCUITRY FOR SATELLITE COMMAND RECEIVER**
**Donald W. Bastian, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware**
**Filed June 22, 1961, Ser. No. 118,791**
**3 Claims. (Cl. 325—319)**

3. In a radio receiver of the type including an amplitude modulation radio frequency stage, an oscillator modulator stage, and at least first and second intermediate frequency stages, said stages being coupled in cascade



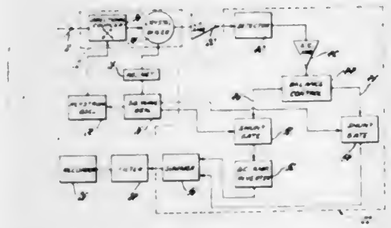
in the order named, a novel gain control system comprising, in combination: an output transformer for the intermediate frequency system, said transformer comprising two secondaries; automatic gain control detector means coupled to one of said secondaries; amplitude-modulated signal detector means coupled to the other of said secondaries; said automatic gain control detector means com-



prising diodes poled with their anodes individually connected to the terminals of said one secondary; automatic gain control amplifying means coupled to said automatic gain control detector, the automatic gain control amplifying means having a tapped-resistance output circuit; and individual connections from said tapped-resistance load to said radio frequency stage and said first and second intermediate frequency stages for controlling their gains.

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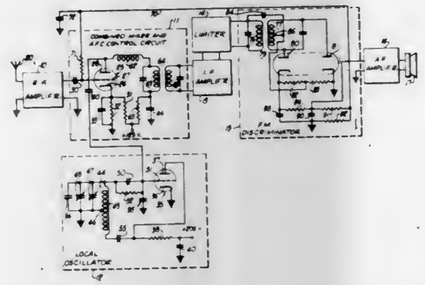
**3,167,714**
**SIGNAL-REFERENCE TIME-DUPLEXED MICROWAVE RADIOMETER**
**Theodore V. Seling, Lansing, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 27, 1962, Ser. No. 219,447**
**7 Claims. (Cl. 325—363)**



1. Apparatus for detecting the temperature of a target radiating microwave energy including an antenna upon which microwave energy from the target may be incident, a source of constant microwave frequency signals, means connected to the source to turn the source on and off at a fixed rate, input means, frequency mixing means connected through the input means to the antenna and to the source and responsive to the combination of inputs from the antenna and the source to produce a first output signal during the on time of the source and responsive to the absence of an input from the source to produce a second output signal, the first signal being related to the magnitude of microwave energy incident upon the antenna and the second signal being related to the temperature of the frequency mixing means, and receiving means connected to receive the first and second signals and adapted to produce a third signal related to the difference therebetween.



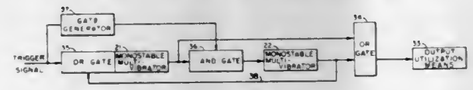
**3,167,715**
**FM AUTOMATIC FREQUENCY CONTROL CIRCUIT USING MIXER TUBE**
**Linus O. Hubbard, Chicago, Ill., assignor to Wells-Gardner Electronics Corporation, Chicago, Ill., a corporation of Illinois**
**Filed June 26, 1961, Ser. No. 119,679**
**9 Claims. (Cl. 325—420)**



1. In a superheterodyne receiver, a mixer tube, means for supplying a radio frequency signal to the signal grid of said mixer tube, a local oscillator tube, means for supplying a local oscillator signal from said local oscillator tube to the signal grid of said mixer tube, means for deriving an intermediate frequency signal from the plate circuit of said mixer tube, frequency discriminating means for developing from said intermediate frequency signal a control voltage which varies with changes in the frequency of the intermediate frequency carrier, means for applying said control voltage to said mixer tube to control the plate resistance thereof, means responsive to changes in the plate resistance of said mixer tube for varying the amplitude of local oscillations produced by said local oscillator tube, and means for varying the frequency of said local oscillations in accordance with said variations in the amplitude of said local oscillations.

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**3,167,716**
**PULSE TRAIN GENERATOR FOR PRODUCING ODD OR EVEN NUMBER OF PULSES WITH VARIABLE PULSE SPACING**
**Melvin F. Williams, Washington, D.C., and Alexander F. Thornhill, Accokeek, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 29, 1961, Ser. No. 155,870**
**6 Claims. (Cl. 328—38)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A pulse train generator comprising a plurality of "$n$" monostable pulse forming means, where "$n$" is an integer, electrically coupled in a ring for energizing each of said pulse forming means in consecutive order, each of said "$n$" monostable pulse forming means having an input and an output, or "OR" gate having a plurality of "$n$" inputs and an output, output utilization means connected to said output of said "OR" gate, means connecting the output of each of said pulse forming means to a respective input of said "OR" gate, an "AND" gate coupled in said ring of pulse forming means, said "AND" gate having an output and at least two inputs with one input coupled to a first monostable pulse forming means and the output thereof coupled to another of said mon-

ostable pulse forming means, gate generator means coupled to another input of said "AND" gate for providing an output signal of selected duration, and trigger means coupled to said gate generator means and to one of said pulse forming means for concurrent energization thereof.

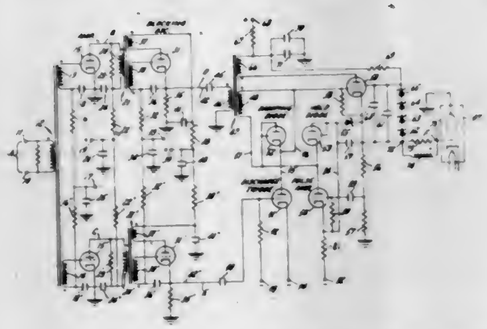
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3,167,717

## PULSE GENERATOR WITH OUTPUT AMPLIFIER CONTROLLED BY RESPECTIVE SEQUENTIALLY PULSED DRIVER-AMPLIFIERS CONTROLLING LEADING AND TRAILING EDGES

Martin L. Jones, Baltimore, and Abel J. Savage, Randallstown, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 17, 1962, Ser. No. 245,331
13 Claims. (Cl. 328—61)



1. A generator of fast rise and fall time square wave pulses comprising:

a pair of driver-amplifier circuits responsive to oppositely poled first and second input signals to produce amplified output signals on an output of each in the sequence of the oppositely poled signals;

an output amplifier tube circuit having a grid coupled to the output of one of said driver-amplifiers responding to the first of said sequence of poled input signals, and having a cathode output;

a first means coupled to said cathode output responsive to a rise in cathode output voltage to a raised level as a result of said first input signal to produce said driver-amplifier output signal to connect the cathode to the grid of said output amplifier to hold said cathode output voltage at said raised level; and

a second means coupled to said output amplifier tube circuit grid and to the output of said other driver-amplifier circuit in response to the second in sequence of said input signals to short said output amplifier whereby a square wave is produced on the cathode output with fast rise and fall leading and trailing edges with a flat top sustained by said first means.

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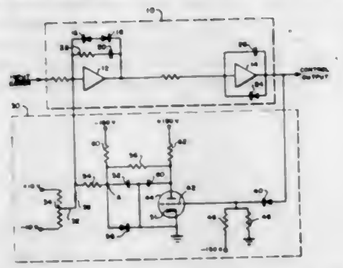
3,167,718

## AUTOMATIC FREQUENCY ACQUISITION CIRCUIT

Donovan C. Davis, Pasadena, and Louis A. Ule, Rolling Hills, Calif., assignors to the United States of America as represented by the Secretary of the Army

Filed Apr. 26, 1961, Ser. No. 105,824
6 Claims. (Cl. 328—127)

1. A system for controlling the output of a double integrator adapted for use in a tracking system comprising means applied to the input of the first integrator for causing the output thereof to drift in a given direction such that the output thereof approaches saturation and the output of the second integrator approaches zero voltage output, and means including a feedback loop coupled between the output of said second integrator and the input of said first integrator and responsive to only said



zero voltage output for cyclically reversing the drift of said first integrator.

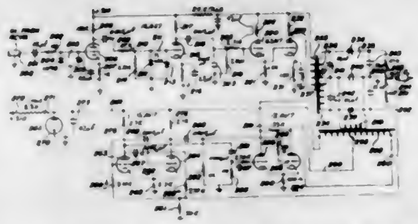
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3,167,719

## PHASE LOCKED DETECTOR

Conrad H. Hoeppner, Indialantic, Fla., assignor to Radiation, Inc., Melbourne, Fla., a corporation of Florida

Filed Nov. 17, 1959, Ser. No. 853,611
9 Claims. (Cl. 329—122)



1. A phase locked detector, comprising an amplitude limiter, an alternating current amplifier connected in cascade with said amplitude limiter, said amplifier having an output circuit including a transformer primary winding, a voltage sensitive multi-vibrator deriving a variable frequency output, a phase sensitive bridge having two input circuits and an output terminal, each of said input circuits including a transformer secondary winding, a further transformer primary winding, means coupling the output of said voltage sensitive multi-vibrator in driving relation to said further transformer primary winding, means coupling each of said primary windings to one of said secondary windings, and a direct current circuit connecting said output terminal to said voltage sensitive multi-vibrator in frequency control relation thereto the conduction path of said bridge between the output of said multivibrator and said last named circuit being substantially zero for the variable frequency output of said multivibrator.

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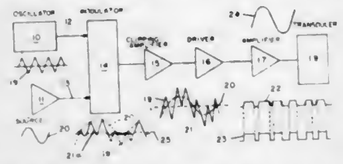
3,167,720

## POWER AMPLIFICATION MEANS

Madan M. Sharma, Los Angeles, Calif., assignor to Transis-Tronics, Inc., a corporation of California

Filed Feb. 10, 1961, Ser. No. 88,348
2 Claims. (Cl. 330—10)

1. A power amplifying system for low level audio signals comprising: a generator of relatively high frequency waves at a fixed frequency, said waves havng sloping leading and trailing edges; a source of audio signals at low level and varying in frequency; a modulator connected to said source and to said generator and having circuits therein adapted to be responsive to said audio signals to vary the amplitudes of said relatively high frequency waves and to produce unidirectional pulses at said fixed frequency varying in amplitude in accordance with the instantaneous values of said audio signals; an amplitude limiting circuit connected to said modulator and responsive to said uni-directional pulses produced thereby to develop uni-directional rectangular pulses of constant amplitude and varying durations, the variations in duration of said rectangular pulses being proportional to the variations in



amplitude of said uni-directional pulses from said modulator; and a power switching amplifier connected to said amplitude limiting circuit and adapted to respond to said uni-directional rectangular pulses of variable duration to vary the average current in said power switching amplifier in accordance with said variations in duration.

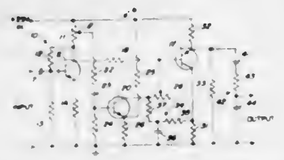
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3,167,721

## TRANSISTORIZED NOISE PULSE BLANKING NETWORK INCLUDING FEEDBACK MEANS

Samuel L. Broadhead, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Feb. 18, 1963, Ser. No. 259,063
6 Claims. (Cl. 330—19)



4. A network for eliminating noise pulses superposed on a received audio signal, said network comprising: means for clipping said spurious pulses at a predetermined level; signal combining means; means for coupling the output signal from said clipping means to said signal combining means; an amplifier connected to said clipping means, said amplifier being biased to pass only noise pulses and inverting the same; means for coupling the output from said amplifier to said signal combining means; and feedback means including a low-pass filter connected between said signal combining means and said amplifier for controlling the amplitude of the output pulses from said amplifier so that said inverted noise pulses coupled to said signal combining means substantially cancel all noise pulses superposed on the audio signal.

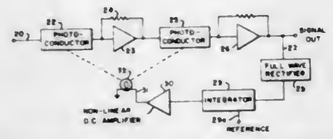
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3,167,722

## AGC UNIT USING PHOTOCONDUCTORS

Charles E. Weller, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 20, 1961, Ser. No. 153,390
5 Claims. (Cl. 330—59)



1. An automatic gain control for amplifiers comprising: an amplifier having an input and output terminal; a light-sensitive device having substantially pure resistance, the resistance of said device varying with the quantity of illumination that falls on said device, said device being coupled in series with the input of said amplifier; the output of said amplifier being coupled to a rectifying circuit; said rectifying circuit being coupled to an integrating circuit having an adjustable time constant; said integrating circuit being coupled to a non-linear direct current amplifier and said direct current amplifier being coupled to a light source, and said light source being disposed to illuminate said device whereby the signal from said direct current amplifier will vary the illumination given off by said light.

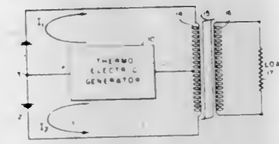
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3,167,723

## TUNNEL DIODE STATIC INVERTER

Joseph M. Marzolf, 6420 Garland Drive, Falls Church, Va.

Filed Nov. 25, 1960, Ser. No. 71,842
4 Claims. (Cl. 331—107)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A static inverter comprising a saturable core with square loop hysteresis characteristics having secondary and center tapped primary windings, a pair of tunnel diodes connected back to back and to opposite terminals of said primary winding, a direct current source connected between the common terminal of said diodes and the center tap of said primary and polarized to send forward current through both diodes in opposite direction through said primary, said source having a voltage level exceeding that corresponding to the current peak of each of the diodes.

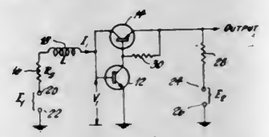
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3,167,724

## HOOK TYPE TRANSISTOR RELAXATION OSCILLATOR

Lucio M. Vallese, Glen Ridge, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 28, 1960, Ser. No. 79,091
2 Claims. (Cl. 331—111)

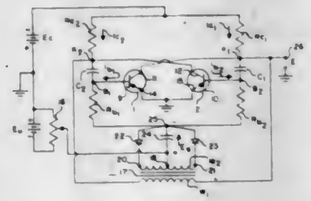


1. A relaxation oscillator comprising, in combination: transistor means corresponding to a pair of transistors, each having a base, emitter and collector element, connected together to form a hook common-emitter circuit, one said transistor providing positive feedback for the other; connections for a source of biasing voltage; an inductive storage element; a first resistance having a value which is less than the magnitude of the negative resistance of the $V_1$–$I_1$ (input voltage versus input current) characteristic of said transistor means, the value of said first resistance including the resistance of said biasing-voltage source and said inductive storage element, said biasing-source connections, said inductive storage element and said first resistance being connected in series between the base and emitter elements of said other transistor; connections for a source of supply voltage; a second resistance, said supply-voltage connections and said second resistance being connected in series between the

emitter elements of said transistor; and a third resistance connected between the emitter of said one transistor and the collector of said other transistor for adjusting the supply potential to the proper value for the collector element.

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**3,167,725**
**SELF-STARTING TRANSISTOR RELAXATION GENERATOR**
**Adriaan Derks, Schiedam, Netherlands, assignor to The Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands, a corporation of the Netherlands**
**Filed Jan. 16, 1962, Ser. No. 166,662**
**Claims priority, application Netherlands, Jan. 25, 1961, 260,449**
**1 Claim. (Cl. 331—113)**

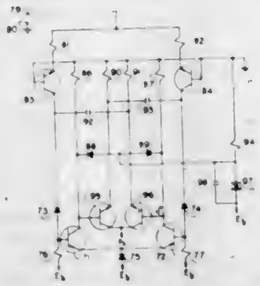


A self-starting transistor relaxation generator comprising two transistors, two condensers respectively connecting the base of each transistor to the collector of the other, a source of operating potential for the transistors with one terminal earthed, a circuit connecting the emitter electrodes of both transistors conductively to the earthed terminal of said potential, resistors connected to the base and collectors of each transistor, the other terminal of said source being connected through the collector resistors to the transistors, a voltage producing circuit coupled between the two base resistors and said earthed terminal including both a source of control voltage $E_u$ for producing conduction in said transistors at less than saturation and for controlling the frequency of oscillation of said generator and a source of signal voltage $E_s$ derived from the oscillations at the two said collector resistors by means of a transformer having a primary winding coupled therebetween and a secondary winding coupled with a rectifier circuit which is connected in series circuit with said source of control voltage for producing direct current flow in said voltage producing circuit, wherein the source of signal voltage $E_s$ is at a magnitude such that the collector current of said transistors when conducting in the presence of the control voltage $E_u$ is saturated.

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**3,167,726**
**VOLTAGE CONTROLLED, VARIABLE FREQUENCY OSCILLATOR**
**Roy P. Foerster, Baltimore, Md., assignor to Martin-Marietta Corporation, a corporation of Maryland**
**Filed Mar. 25, 1960, Ser. No. 17,690**
**11 Claims. (Cl. 332—16)**

9. A voltage-controlled oscillator comprising first and second oscillator transistors of a first conductivity type, first and second control transistors of a second conductivity type opposite said first conductivity type, each of said transistors having at least base, emitter and collecor electrodes, circuit means constructed and arranged for operationally completing the emitter-collector circuits of said oscillator transistors and including at least one power source, capacitive feedback circuit means interconnecting the said collector and base electrodes of said oscillator transistors for maintaining multivibrator oscillations therebetween, said control transistors having the base electrodes thereof connected to a common voltage reference and having the collector electrodes thereof coupled to respective base electrodes of said oscillator transistors, and input circuit means constructed and arranged for introducing input signals between the emitter elec-



trodes of said control transistors and said common voltage reference so that the discharge of said capacitive feedback circuit means will be linearly proportioned to the magnitude of the input signal, whereby the frequency of the oscillations between said oscillator transistors will be in direct linear proportion to the input signal.

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**3,167,727**
**MICROWAVE ZIG-ZAG LINE COUPLERS**
**Clarence D. Lunden, Tacoma, and Luis L. Oh, Seattle, Wash., assignors to Boeing Airplane Company, Seattle, Wash., a corporation of Delaware**
**Filed Mar. 9, 1961, Ser. No. 94,589**
**16 Claims. (Cl. 333—7)**



6. A microwave energy switching device, comprising first and second elongated line conductors of zig-zag configuration having substantially equal pitch, and means supporting the same in noncoplanar predetermined spatial relationship and including means to permit relative movement between said conductors.

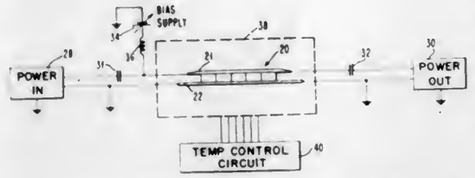
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**3,167,728**
**TRANSMISSION LINE HAVING VARIABLY BIASED FERROELECTRIC DIELECTRIC, USEFUL AS VARIABLE ATTENUATOR OR VARIABLE DELAY LINE**
**Edward F. Hahn, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed May 15, 1961, Ser. No. 109,918**
**5 Claims. (Cl. 333—30)**

3. A variable radio frequency attenuator comprising means for generating radio frequency energy, output means adapted to receive radio frequency energy, a two electrode transmission line connecting said input means to said output means, at least one tri-glycine sulfate crystal between said electrodes, means for applying a variable D.C. bias to said tri-glycine sulfate crystal to control the attenuation of said transmission line and means for



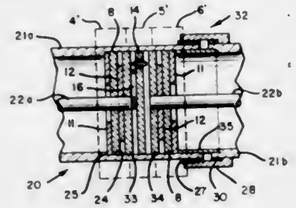
maintaining said crystal at a constant temperature slightly above its Curie point.




5. A variable delay device comprising, wave generating means for generating electromagnetic waves; wave receiving means for receiving electromagnetic waves; wave transmitting means connecting said wave generating means and said wave receiving means, said wave transmitting means comprising two conductors separated by crystals of ferroelectric material; and means for varying the bias applied to said ferroelectric material, thereby varying the time required for electromagnetic waves to propagate from said wave generating means to said wave receiving means.

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**3,167,729**
**MICROWAVE FILTER INSERTABLE WITHIN OUTER WALL OF COAXIAL LINE**
**Robert D. Hall, Los Altos, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed Oct. 29, 1962, Ser. No. 233,790**
**7 Claims. (Cl. 333—73)**



1. A radio frequency filter for a coaxial line having an inner conductor and an outer conductor, including reactance means disposed completely within said outer conductor and connected in electrical series with said center conductor and in shunt between said center and outer conductors, said reactance means comprising

dielectric means engaging the inner surface of the outer conductor and extending transversely of the axis of the line,

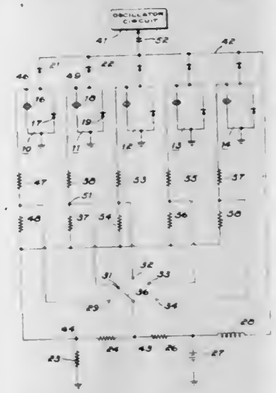
first and second conductive patterns on said dielectric means having a predetermined capacitance, and

a third conductive pattern on said dielectric means having a length corresponding to a predetermined inductance, each of said patterns being electrically connected to at least one of said conductors.

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**3,167,730**
**PLURAL CIRCUITS SELECTIVELY GATED TO COMMON BRANCH BY DIODE GATES IN WHICH DIODES ARE EITHER HIGHLY OR SLIGHTLY BACK-BIASED**
**Albert E. Anderson and Darrell E. Newell, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa**
**Filed Aug. 22, 1960, Ser. No. 50,985**
**6 Claims. (Cl. 334—15)**

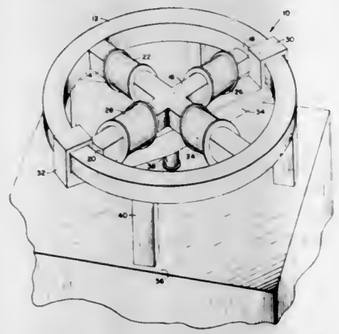
1. A selective switching system for selecting one of a plurality of first circuit means, said selective switching systems comprising a voltage source, a plurality of switching circuits connected in parallel with each other with respect to said voltage source, and operating means for selectively switching any of said switching circuits, each of said switching circuits comprising second circuit means including a first diode capacitor means connected in series with one of said first circuit means, and third circuit means including a second diode capacitor means connected in parallel with said first circuit means, said first and second diode capacitor means polarized to present their high back impedances to said voltage source, said operating means



comprising isolating means for supplying to the junctions between said second and third circuit means a first potential of a magnitude to provide a large back-biasing voltage across each of said first diode capacitor means and a small back-biasing voltage across each of said second diode capacitor means, said operating means further comprising selecting means for supplying to the said junction of a selected one of said switching circuits a second potential of a magnitude to provide a small back-biasing potential across the first diode capacitor means and a large back-biasing potential across the second diode capacitor means of the selected one of said switching circuits.

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**3,167,731**
**MAGNETIC PICK-UP DEVICE**
**Charles E. Lee and Richard L. Moore, Huntsville, Ala., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army**
**Filed Jan. 3, 1962, Ser. No. 164,203**
**7 Claims. (Cl. 336—79)**



1. A magnetic pick-up device comprising: a toroidal magnetic core; first and second bar members being con-

nected to each other, said first bar member having its ends connected to said magnetic core, said second bar member being disposed to form air gaps between its ends and said core; a pair of primary windings coupled to said first bar member; a pair of secondary windings coupled to said second bar member; and means for controlling the coupling between said primary windings and said secondary windings when said primary windings are energized.

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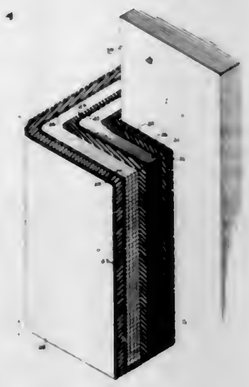
**3,167,732**

## ENCAPSULATED TRANSFORMER

**William J. Novak, Oreland, Pa., assignor to H. K. Porter Company, Inc., Philadelphia, Pa., a corporation of Delaware**

**Original application Oct. 15, 1959, Ser. No. 846,678, now Patent No. 2,975,385, dated Mar. 14, 1961. Divided and this application Sept. 6, 1960, Ser. No. 54,322**

**4 Claims. (Cl. 336—205)**



1. In an electrical power distribution transformer, a pre-formed coil structure disposed about one leg of the transformer core and including both high voltage and low voltage windings comprising, a high voltage winding wound upon a first electrical insulator coil form, said high voltage winding and first coil form having a varnish coating thereon to form a sealed unit, a second electrical insulator coil form wrapped closely about said sealed unit and a low voltage winding wound thereupon, said low voltage winding and second coil form and sealed unit being bonded together with a hardsetting weather-resistant plastic composition to form a completely encapsulated pre-formed coil structure.

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**3,167,733**

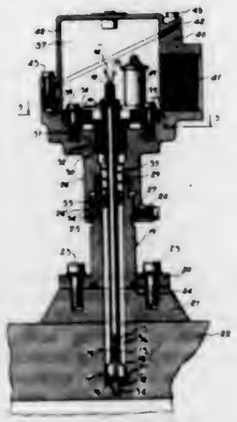
## RESISTANCE TEMPERATURE SENSING ELEMENT

**Emanuel J. Di Noia, Briarcliff Manor, N.Y., assignor, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**Filed Feb. 28, 1964, Ser. No. 348,215**

**16 Claims. (Cl. 338—28)**

1. A heat sensing unit comprising a button of a metal of the group consisting of gold, silver, platinum and aluminum and having a contact face to receive heat and having a recess in the opposite face, a solid mass of zirconium oxide in said recess in contact with the surface of said recess, and a grid of platinum filament embedded in said mass of zirconium oxide.



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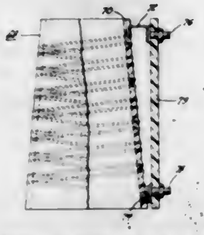
**3,167,734**

## HUMIDITY SENSING ELEMENT

**Byron L. Brucken and Victor A. Williamitis, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Nov. 27, 1959, Ser. No. 855,589**

**8 Claims. (Cl. 338—35)**



1. A humidity sensitive element comprising a cylindrical support member having an integral annular flanged base portion, a first electrical terminal on said base portion, a second electrical terminal on said base portion, a plastic film on said support member, said plastic film including an electrolytic and an hygroscopic material, whereby a mass ionization throughout said plastic film occurs when said film is exposed to moisture, and first and second electrical conductors connected to said first and second terminals, respectively, and embedded in said film in a spiral convolution about said support member.

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**3,167,735**

## POTENTIOMETER

**Robert A. Waters, Weston, Mass., assignor to Waters Manufacturing, Inc., Wayland, Mass., a corporation of Massachusetts**

**Filed Mar. 27, 1961, Ser. No. 98,445**

**6 Claims. (Cl. 338—89)**

1. In a potentiometer comprising a wire-wound resistance element of uniform turns spacing and a contact member mounted for rotation about an axis at differing distances from portions of the resistance element and having a contacting surface successively engaging the resistance element at differing distances from the axis, the angle between the direction of extension of the contact member and the direction of extension of the portion of the resistance element contacted varying at such distances, the improved construction wherein the width of the contacting surface is different at differing distances from the





axis, the width of successive portions of the contacting surface having such relation to the angle formed upon its engagement of the resistance element that the contacted length portion of the resistance element remains substantially constant.

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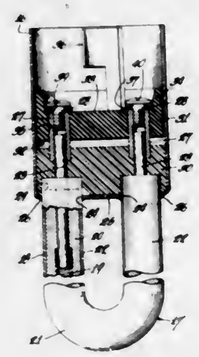
**3,167,736**

## ELECTRIC HEATERS

**Sidney J. Temple, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.**

**Filed Mar. 13, 1962, Ser. No. 179,361**

**5 Claims. (Cl. 338—221)**



1. An electric heater, comprising a sheathed electric heating element, a plug and socket connector for said heating element, including a cup-shaped shell forming the socket and adapted to receive said plug through the open end thereof, said heating element being connected to said shell and having an end extending through an opening in the closed end of said shell and further having a terminal pin extending longitudinally within said shell, a disc-like dielectric body removably positioned within said shell and having one side directed toward the closed end of said shell and an opposite side directed toward the open end of said shell, a male electrical connector member carried by said body and adapted to be electrically connected to a female electrical connector member carried by said plug when the latter is inserted into said shell open end, said male connector member having a portion overlying such opposite side of said body, a metal sleeve receiving and mechanically and electrically secured to said terminal pin, said body having an opening for passing said sleeve, and a capscrew threaded into said sleeve and having its head bearing against said male connector portion.

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**3,167,737**

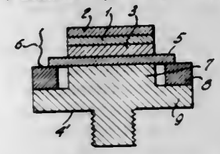
## SEMICONDUCTOR DEVICE

**Hiroshi Yamamoto and Koichi Ikeda, both of Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan**

**Filed Jan. 3, 1964, Ser. No. 335,601**

**Claims priority, application Japan, Feb. 4, 1963, 38/4,502**

**4 Claims. (Cl. 338—316)**



1. A semiconductor device comprising

a semiconductor element having a metal plate secured to one surface thereof, supporting means of copper and a metal frame, said metal plate having a coefficient of thermal expansion close to that of said element,

said metal plate further having a larger area than the area of said element,

said supporting means having a base portion at the center thereof,

said metal frame having a smaller coefficient of thermal expansion than that of said copper,

said element, said metal plate and said supporting means being physically secured together in coaxial relationship,

and said metal frame being inserted between and physically secured to a peripheral portion of said metal plate and a peripheral portion of said supporting means, whereby strains in said semiconductor element due to physical deformation resulting from temperature variations are substantially eliminated.

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**3,167,738**

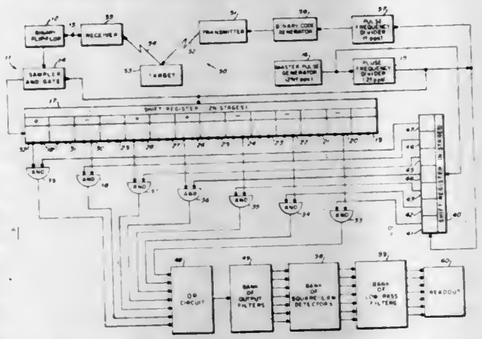
## SEQUENTIAL MATCHED FILTER

**Everett C. Westerfield, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed May 22, 1962, Ser. No. 197,564**

**19 Claims. (Cl. 340—3)**

**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A sequential matched filter comprising in combination, a master pulse generator, a pulse frequency divider coupled to the output of said master pulse generator, a binary flip-flop adapted for receiving and converting a varying amplitude encoded intelligence signal into a two-level binary signal, a sampler And gate connected to the outputs of said binary flip-flop and said pulse frequency divider, a shift register having a plurality of stages with a predetermined binary program stored thereon, said shift

register being connected to said pulse frequency divider for being shifted by the output pulses therefrom and to the output of said sampler And gate for receiving the samples of the encoded intelligence signal to be shifted therethrough, and means connected to the outputs of said master pulse generator and said pulse frequency divider and to said shift register for sequentially scanning the outputs thereof and converting same into a single analog signal.

5. An echo-ranging system comprising in combination, means for broadcasting a programmed target search signal, means associated with said broadcasting means for receiving an echo of said search signal after it has been reflected by a target, means connected to said receiving means for statistically sampling said received echo signal, synchronizing means connected to said sampling means and the aforesaid broadcasting means for synchronously actuating each, a sequential matched filter connected to an output of said sampling means and said synchronizing means for producing an analog signal proportional to degree of match between said echo signal samples and the program of said programmed target search signal at any given instant.

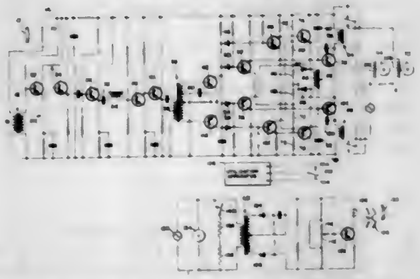
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**3,167,739**

## ELECTRONIC OBJECT DETECTOR

**Larry J. Girard, Littleton, and Norman L. Stauffer, Denver, Colo., assignors to Honeywell Inc., a corporation of Delaware**

**Filed May 19, 1960, Ser. No. 30,125**
**7 Claims. (Cl. 340—38)**



1. An electronic sensing and signaling apparatus comprising means for producing a beam of signal radiation, means for directing said beam of radiation toward a path along which an object to be sensed passes, signal producing means for detecting reflections of said radiations from said path and from said object to be sensed, signal selecting means for distinguishing between signals produced as a result of reflections from said path and signals produced as a result of reflections from said object to be sensed, means responsive to said signals produced as a result of reflections from said path to change the intensity of the radiation from said beam producing means in accordance with changes in intensity of said reflections from said path, and means responsive to said signals produced as a result of reflections from said object to produce an output signal.

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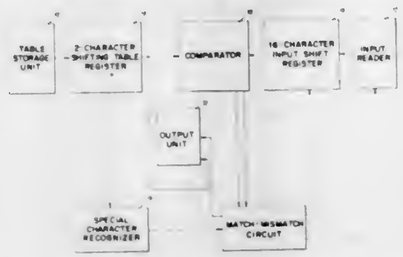
**3,167,740**

## DATA COMPARISON SYSTEM UTILIZING A UNIVERSAL CHARACTER

**Gilbert W. King, Briarcliff Manor, and Warren B. Strohm, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Apr. 12, 1961, Ser. No. 102,487**
**9 Claims. (Cl. 340—146.2)**

1. Data processing apparatus comprising, in combination, a first data source storing data characters including a universal character, means operable for reading said characters, a second data source storing data characters, means operable for reading last said characters, means for comparing characters from said first source with characters from said second source, means for deriving a mismatch indicating signal when two compared characters do not match, means for deriving a match indicating signal when




a predetermined group of consecutive characters from said second source match a corresponding group of consecutive characters from said first source, means operative to recognize said universal character, and means operable by said recognizing means to inhibit the derivation of said mismatch indicating signal.

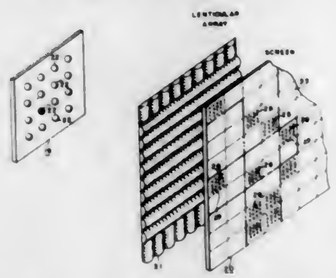
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**3,167,741**

## AUTOMATIC CHARACTER READOUT SYSTEM

**Laurence R. Brown, Berwyn, Pa., assignor, by mesne assignments, to Drexel Dynamics Corporation, Philadelphia, Pa., a corporation of Pennsylvania**

**Filed Feb. 26, 1960, Ser. No. 11,206**
**4 Claims. (Cl. 340—146.3)**



1. In a character recognition system; a reading station having a light source, a lenticular lens array, a pattern screen, and a plurality of light-responsive devices; said pattern screen having a plurality of pattern characters stored thereon within a common area in superimposed interlaced fashion, each pattern character being formed of an array of spaced-apart dots each of which occupy dot positions separate and distinct from and interlaced with those of the other pattern characters; said lenticular lens array being positioned closely adjacent to said pattern screen; means for transporting through said reading station a carrier having thereon characters to be recognized, each of said plurality of light-responsive devices being positioned to receive light rays from said source, as modified by said carrier and the characters thereon, which pass through said lenticular array and through a different array of dot positions on said pattern screen associated with a different one of said pattern characters; a plurality of threshold-adjusted sensing circuits each instantaneously responsive to the amount of light reaching a different one of said light-responsive devices for sensing that the amount of light which has reached a particular one of said light-responsive devices is beyond a threshold value; and asynchronous output means coupled to said sensing circuits for developing and delivering an output signal in substantially instantaneous response to sensing that the amount of light at one of said light-responsive devices is beyond the threshold value.



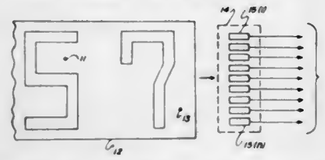
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**3,167,742**

## MAGNETIC REPRODUCING APPARATUS

**George M. Miller, Mountain View, Calif., assignor to General Electric Company, a corporation of New York**

**Filed Nov. 7, 1960, Ser. No. 67,717**
**11 Claims. (Cl. 340—146.3)**



1. Apparatus for reading symbols printed on a document with magnetic ink comprising: a reading transducer comprising a plurality of separate transducer elements each individually responsive to the passage of magnetic portions of a printed document adjacent thereto; a plurality of signal limiting devices each connected to a respective one of said transducer elements and each operable to limit the signal from the connected transducer element to a predetermined amplitude; a summing circuit connected to said devices and operable to produce a signal proportional to the sum of the signals from said devices; and a signal threshold device connected to said summing circuit and operable in response to a signal above a predetermined amplitude from said summing circuit to produce an output signal.

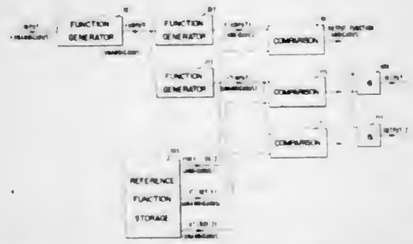
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**3,167,743**

## UNAMBIGUOUS IDENTIFICATION SYSTEMS

**William L. McDermid, Peekskill, Harold E. Petersen, Chappaqua, and Glenmore L. Shelton, Jr., Carmel, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Dec. 19, 1960, Ser. No. 76,909**
**18 Claims. (Cl. 340—146.3)**




2. An apparatus for indicating the reference pattern that is similar to a specimen in a specimen identification system utilizing comparison of a function of the specimen $f(s)$ to functions of reference patterns $f(r)$ where at least one plurality of said functions of the reference patterns $f(r)$ are identical, comprising, in combination: means for generating said function of the specimen $f(s)$; means for comparing said function of the specimen $f(s)$ with said functions of reference patterns $f(r)$ to uniquely identify said specimen when the specimen is similar to a reference pattern whose function $f(r)$ is unique, and to ambiguously identify the specimen to be similar to one of a plurality of reference patterns having identical functions $f(r)$ when unique identification is not indicated; means for generating a second function of the specimen $f'(s)$ that is unique for all specimens that are similar to any reference pattern in a plurality of reference patterns having identical functions $f(r)$; and means for comparing said second function of the specimen $f'(s)$ with second functions $f'(r)$ of said identified plurality of reference patterns, to uniquely identify the specimen.

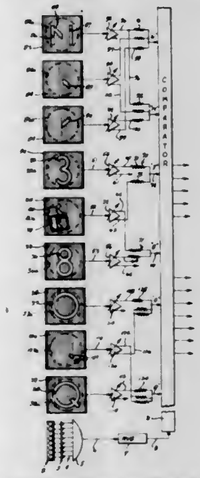
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**3,167,744**

## OPTICAL MASK READING MACHINE

**Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota**

**Filed Aug. 23, 1961, Ser. No. 140,966**
**13 Claims. (Cl. 340—146.3)**



10. In an optical character reading machine to identify characters of a set wherein each character of a group of characters within the set has at least one common feature and a distinguishing feature which distinguishes one character of the group from the others within the group, the improvement comprising a mask assembly, means to project an image of an unknown character on the masks of said assembly, said assembly including a group of masks for said group of characters, said mask-group including a first mask having a window corresponding at least to said common feature of the characters within said character-group, said mask-group also including at least a second mask provided with a window corresponding to said distinguishing feature, photoelectric transducing means optically aligned with said first and said second masks to provide electrical outputs corresponding to the correlation between the image projected on said first and second masks, and means for combining said outputs to provide a new signal on which to base the character-identity decision.

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**3,167,745**

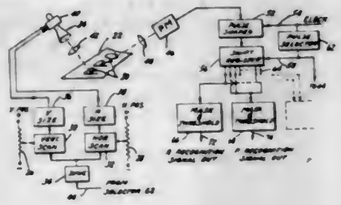
## CHARACTER IDENTIFICATION SYSTEM EMPLOYING PLURAL RESISTOR-CORRELATION MASKS

**James S. Bryan, Hatboro, and Charles F. Teacher, Philadelphia, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware**

**Filed Jan. 15, 1962, Ser. No. 166,082**
**7 Claims. (Cl. 340—146.3)**

1. In a character recognition system which includes means for scanning an area which includes a character to be recognized, said scanning means including means for generating time spaced signals representative of the character scanned, a multi-stage shift register, means for setting said shift resister to represent said time spaced signals, means for repeatedly shifting stage by stage the signals stored in said shift register, a plurality of individual character recognition circuits each arranged to

provide an output signal in response to the scanning of a different selected character, at least one of said individual character recognition circuits comprising a plurality of resistor-correlation masks, each of said resistor-correlation masks comprising a plurality of resistors, one terminal of each of said resistors of a mask being



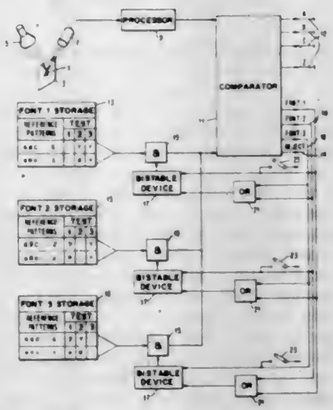
connected to a common output terminal of that mask, a second terminal of each of said resistors of a mask being connected to an output of a respective one of said stages of said shift register, a coincidence circuit having a plurality of inputs, and means connecting each input of said coincidence circuit to a corresponding one of said common terminals.

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**3,167,746**
**SPECIMEN IDENTIFICATION METHODS AND APPARATUS**

**Jose Reines, Bronx, and Glenmore L. Shelton, Jr., Carmel, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Sept. 20, 1962, Ser. No. 224,934**
**12 Claims. (Cl. 340—146.3)**




1. A style-adaptive specimen identification system comprising, in combination:

a plurality of storage circuits, each storing reference pattern data corresponding to the reference patterns in a style and each storing style test data corresponding to at least one style test pattern in another style;

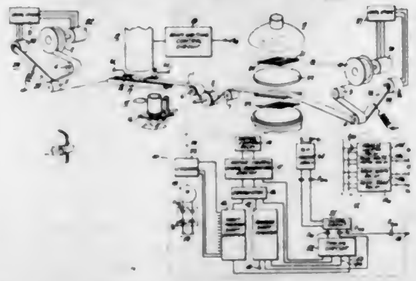
analyzing means responsive to the specimen and to the data stored in a selected storage circuit, for providing an indication of the identity of the specimen when the specimen is similar to a reference pattern corresponding to stored reference pattern data, and for providing an indication of the specimen style when the specimen is similar to a style test pattern corresponding to stored style test data;

and selecting means, responsive to the output of the analyzing means when an indication of specimen style is provided, for selecting the storage circuit means which contains the reference patterns in the indicated style as an input to the analyzing means.

**3,167,747**
**TRERMOPLASTIC FILM RANDOM ACCESS ANALOG RECORDING**

**William C. Hughes and John E. Wolfe, Schenectady, and Richard J. Rieke, Scotia, N.Y., assignors to General Electric Company, a corporation of New York**

**Filed Aug. 21, 1959, Ser. No. 835,209**
**4 Claims. (Cl. 340—172.5)**



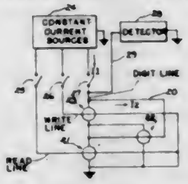
1. A new and improved random access library storage analog recording and readout system including in combination electron writing means for writing an entire page of information to be stored in analog form on a selected location of a solid impressionable thermoplastic film recording medium, heating means for heating the thermoplastic film recording medium subsequent to the electron writing to thereby permanently record in analog form the page of information to be stored by the production of permanent deformations formed in the thermoplastic film recording medium, radiant energy readout means for illuminating an entire page of information thus recorded in analog form and retrieving the information in the form of a spatial radiant energy image produced by the deformations in the thermoplastic film recording medium, and random access transport means for positioning any randomly selected storage location on the thermoplastic film recording medium at said electron writing means to record information or at said radiant energy readout means to retrieve information previously recorded, said random access transport means including a drive means to transport the thermoplastic film recording medium in two opposite directions, and drive control means adapted to receive site selection information and actuate the drive means in response thereto to accurately position a selected location on the thermoplastic film recording medium either at the electron writing means or the radiant energy readout means.

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**3,167,748**
**CRYOTRON MEMORY**

**John W. Bremer, Sunnyvale, and Oliver J. Cotey, Van Nuys, Calif., assignors to General Electric Company, a corporation of New York**

**Filed July 5, 1962, Ser. No. 207,534**
**11 Claims. (Cl. 340—173.1)**




7. A storage circuit comprising: first and second superconduetive loop circuits connected in series, each loop circuit providing parallel current paths; means for applying a digit current to said series connected loop circuits; a first current controlled resistance means connected in one of the current paths of said first loop; means for applying a write current to said first resistance means for rendering said one current path of said first loop resistive whereby substantially all of said digit current is diverted to the other current path of said first loop; means for removing said digit and write currents whereby a storage current is established in said loop; a second current controlled resistance means in a first path of said second loop, said second resistance means being responsive to a storage current in said first loop to render said first path of said second loop resistive.

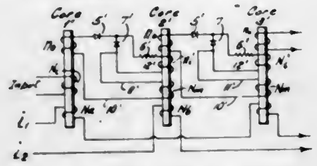


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**3,167,749**
**MAGNETIC CORE SHIFT REGISTER CIRCUIT**

**James W. Sedin, Los Altos, Calif., and Robert E. Wesslund, St. Paul, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**

**Filed July 29, 1959, Ser. No. 830,441**
**7 Claims. (Cl. 340—174)**



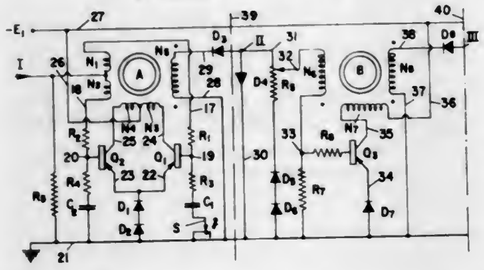

1. A shift register comprising a chain of information storing cores stably magnetizable selectively in each of two directions, input, output and advance windings on each core, the output winding of each core except the last connected in series with the input winding of the next successive core, a blocking winding on each core after the first core, connected in series with the series connected input winding on the same core and the output winding on the preceding core and having turns in a direction to oppose the said input winding with which it is connected, means connected with each set of said three series connected windings and cooperating with said blocking winding for blocking the transfer of energy from said input winding back to the output winding on the preceding core with which it is in series but insufficient to prevent a change in magnetization of the core on which the blocking winding is located.

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**3,167,750**
**COUNTING DEVICE**

**Charles A. McKay, Sepulveda, and Searle G. Nevius, Playa Del Rey, Calif., assignors to The Foxboro Company, a corporation of Massachusetts**

**Filed Aug. 15, 1961, Ser. No. 131,679**
**8 Claims. (Cl. 340—174)**



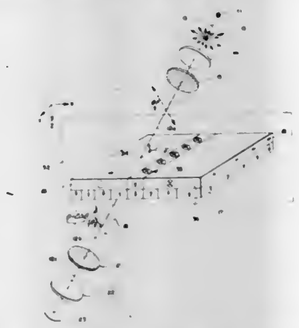

1. A counting device comprising, in combination: a standardizing stage for receiving a series of electrical input pulses to be counted, said standardizing stage generating a series of constant energy pulses of identical polarity to each other in response to said input pulses, the number of said constant energy pulses being directly proportional to the number of said input pulses; and an accumulator stage connected to said standardizing stage to receive said constant energy pulses, said accumulator stage including input resistance means, said constant energy pulses being applied across said resistance means; a magnetic storage core; an input coil inductively coupled to said storage core, said input coil having one end connected to said resistance means for passing a proportional part of said constant energy pulses to said storage core to step said core from a first state of saturation towards a second state of saturation; a fixed resistance, the other end of said input coil connecting through said fixed resistance to ground; a reset coil inductively coupled to said storage core for switching the saturation of said core from said second state to said first state in response to current passing through said reset coil in a given direction; a power supply consisting of a single voltage source connected to one side of said reset coil; a reset switching means connected between the other side of said reset coil and ground; said reset switching means being responsive to the voltage at the junction point of said other end of said input coil and said fixed resistance to close only when a given voltage is attained at said junction point as determined by the impedance of said input coil when said core reaches its second state of saturation, closing of said reset switching means passing current through said reset coil to switch said core from its second to its first state of saturation; and an output coil inductively coupled to said core to provide a single output pulse each time said storage core is switched from said second state to said first state, said core consisting solely of said input coil, reset coil, and output coil.

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**3,167,751**
**MAGNETO-OPTIC READOUT FOR MAGNETIC DATA STORAGE DEVICE**

**Robert C. Kelner, Concord, and Harrison W. Fuller, Needham Heights, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware**

**Filed May 26, 1961, Ser. No. 112,942**
**2 Claims. (Cl. 340—174.1)**



1. Data processing apparatus for producing a signal indicative of data stored in a magnetic storage medium in the form of a sequence of opposite oriented substantially parallel magnetic domains, comprising:

(*a*) a magnetic scanning medium disposed adjacent to the magnetic storage medium and having an easy direction of magnetization substantially parallel to the magnetic domains in such storage medium;

(*b*) means for applying a magnetic field to the magnetic scanning medium to propagate therein an interdomain wall successively overlying individual ones of the domains in the magnetic storage medium;

(*c*) means for illuminating the magnetic scanning medium and the magnetic storage medium with plane-

polarized light directed at an acute angle to the surface of such mediums;

(*d*) means, including a photocell actuated by the plane-polarized light passing through the magnetic scanning medium and the magnetic storage medium, for producing a signal having a first amplitude when the magnetic field of the scanning medium is parallel with the magnetic field of a domain in the magnetic storage medium and having a second amplitude when such magnetic fields are anti-parallel.

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3,167,752

## APPARATUS FOR REPRODUCING FROM MAGNETIC RECORDS

Steven Ivan Warman and Julius Magyary, London, England, assignors to Honeywell Inc., a corporation of Delaware

Filed July 10, 1961, Ser. No. 122,886
7 Claims. (Cl. 340—174.1)



1. A flux-sensitive "read" head responsive to the presence of an externally applied magnetic flux comprising a magnetic core arranged to define a gap therein, a read coil wound on said core and responsive to a flux change in said core to produce an output signal, and an auxiliary flux producing means arranged to affect the overall reluctance of said core in response to a signal applied to said auxiliary flux producing means and having an auxiliary winding threaded through two holes formed in a part of said core remote from said "read" coil and aligned in the direction of flux threading said "read" coil, wherein said core part has the form of a longitudinally slotted strip with a magnetic cross piece secured transversely across the slot and carrying said auxiliary winding.

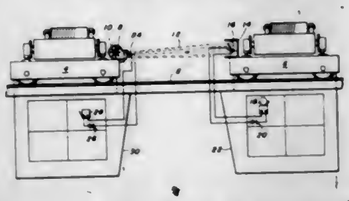
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3,167,753

## PROXIMITY WARNING SYSTEM

A John B. Fairburn, Lorain, Ohio, assignor to United States Steel Corporation, a corporation of New Jersey

Filed Mar. 5, 1963, Ser. No. 262,905
2 Claims. (Cl. 340—241)



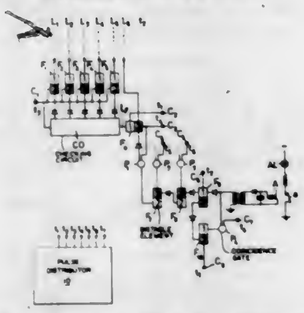
1. In a vehicle and an object approachable by said vehicle the improvement therewith of a system for warning of the proximity of said vehicle to said object, said system comprising a transmitter on one of said vehicle and said object and a receiver on the other of said vehicle and said object, said transmitter comprising means for generating a jet air stream directed toward said receiver, said receiver including an alarm, and an air-actuated switch controlling said alarm, said switch being positioned to be actuated by said jet air stream and completing a circuit to said alarm when said transmitter is within a predetermined proximity of said receiver.

3,167,754

## SELF-CHECKING SUPERVISION CIRCUIT

Willem Smit and Antonie Wijbe van 't Slot, both of Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 14, 1961, Ser. No. 138,201
Claims priority, application Netherlands, Sept. 17, 1960, 255,978
4 Claims. (Cl. 340—253)



1. A self-checking supervision circuit comprising a source of coded signals to be checked, a checking circuit for checking said coded signals and providing a first pulse output when the coded signals being checked are correct, bistable element means having first and second stable conditions, first and second input terminal means, and output terminal means, said first input terminal means being arranged to set said bistable element means to said first condition upon application of a pulse thereto, said second input terminal means being arranged to set said bistable element means to said second condition upon the application of a pulse thereto, said output terminal being arranged to provide an output when said bistable elements are shifted from said first condition to said second condition, means for energizing said checking circuit and bistable element in cycles of a plurality of sequential instants comprising means for applying a pulse to said first input terminal means at a first instant, means for applying a pulse to said second input terminal means at a second instant only if a coded signal to be checked is present, means for applying said coded signal to said checking circuit at a third instant whereby said first pulse is applied to said first input terminal means at said third instant if said coded signals are present, means for applying a pulse to said second input terminal means at a fourth instant, means inhibiting output pulses from said output circuit except during said fourth instant, alarm means, and means connecting said alarm means to said bistable element means whereby the absence of a pulse at said output terminal means during said fourth instant is indicated.

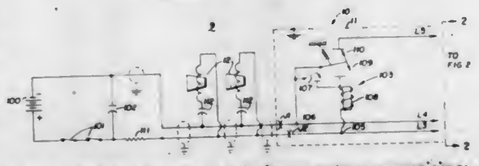
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3,167,755

## MONITOR CIRCUITS FOR DETECTION AND ALARM SYSTEMS

Howard M. Larrick, 3105 Harvard Ave. NW., Canton, Ohio, and Walter R. Brosch, 2032 Grogg Road, Akron, Ohio

Filed Feb. 11, 1963, Ser. No. 257,606
3 Claims. (Cl. 340—261)



1. A burglar detection and alarm system comprising; a plurality of transducer devices, a pair of transmission lines having first and second ends and connecting said transducer devices in parallel with each other, each said transducer device being connected across said transmission lines through an isolating capacitor, a direct current monitor voltage source connected across the first end of said transmission lines to superimpose a monitor signal thereon, an amplifier having an input and output, an alarm control circuit connected to the output of said amplifier and having a trigger relay, a coupling element connecting the second end of said transmission lines to the input of said amplifier for conducting signals to said amplifier from said transducer devices while isolating said monitor signal from said amplifier, and an undervoltage relay connected across said transmission lines between said transducer devices and said coupling element, said relay having a contact normally closed when said relay is de-energized to bypass said amplifier and alarm control circuit by connecting said amplifier input to said trigger relay, thereby actuating said trigger relay upon variation in said monitor signal.



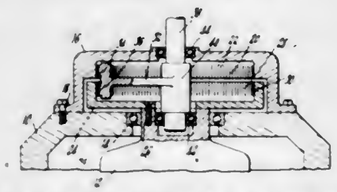
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3,167,756

## ANALOG TO DIGITAL CONVERSION APPARATUS

Ervin J. Rachwal, Holbrook, and Bruce J. Loughlin, South Acton, Mass., assignors to Data Technology, Inc., New York, N.Y., a corporation of New York

Filed Dec. 7, 1959, Ser. No. 857,747
2 Claims. (Cl. 340—347)



1. Apparatus for providing a digital indication of the angular displacement of a first member with respect to a second member comprising a first magnetic flux sensing head movable in accordance with the movement of said first member,

a second magnetic flux sensing head movable in accordance with the movement of said second member,

a disc cooperating with said first and second magnetic flux sensing heads for providing digital information on the displacement of said first member relative to said second member,

said disc including first and second trains of indicia of equal angular length recorded on opposite radial surfaces thereof, each train of indicia being magnetically recorded thereon in an endless series and including a single index indication, and each said indicium being recorded in the form of a sine wave with the peaks of each sine wave equally spaced in each said series and one series including one more indicium than the number of indicia in the other series,

structure enclosing said disc and flux sensing heads and secured to said first member,

said first flux sensing head being mounted on said enclosing structure for rotation therewith about a predetermined axis, said second flux sensing head being mounted within said enclosuring structure for rotation independently thereof about said axis and said disc being positioned between said first and second flux sensing heads and mounted for rotation about said axis,

drive means for said disc extending from said enclosing structure in one direction along said axis, and

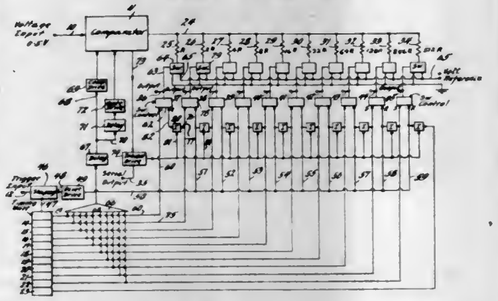
drive means for said second flux sensing head extending from said enclosing structure in the opposite direction along said axis.

3,167,757

## CONVERTER

Joseph A. D'Aquila, Oreland, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Filed Oct. 24, 1960, Ser. No. 64,465
7 Claims. (Cl. 340—347)



1. In an analog to digital converter, a comparator energized by the analog signal to be converted and by a variable voltage level input, means for producing a fixed level voltage corresponding to each order of the digital number to be found and additively coupling each of said voltages in time sequence to said input from the highest order to the lowest order, means including said comparator for sequentially comparing said additive voltage at the input with the analog signal after each fixed level voltage has been added and for removing the previously added fixed level voltage from the input in the event that the voltage level at said input exceeds the analog signal, said last mentioned means including time delay means for delaying each comparison of said fixed level voltages with said analog voltage until a time period after each fixed level voltage is produced, and means for reading out the various orders of said digital number contained in said analog signal.

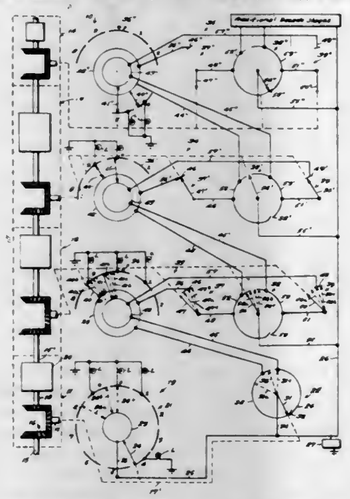
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3,167,758

## ANALOG TO DIGITAL CONVERTER

Keats A. Pullen, Jr., Rte. 1, Box 381, Kingsville, Md.

Filed Aug. 30, 1961, Ser. No. 135,084
3 Claims. (Cl. 340—347)
(Granted under Title 35, U.S. Code (1952), sec. 266)

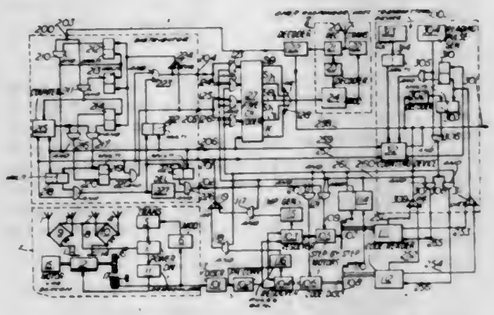


1. In an analog to digital converter circuit, the circuit comprising a plurality of counter units for a succession of orders of counting, each counter unit comprising a plu-

rality of switch positions defined by commutator segments and a relatively rotatable means in slidable engagement with said segments for making successive electrical contact therewith, a gear train connected to the said relatively rotatable means for rotating the means in a fixed ratio, and preselector commutator switching systems carried by and rotatable with the relatively movable means of each counter unit, for providing direct electrical interconnection between decades in the count-transfer interval, each system comprising a commutator having active segments and movable contact means associated therewith for interconnecting the segments and movable contacts so that the transfer of the count in the higher counter units will be controlled through successive direct switching in each decade to the preselector commutator of the lowest counter unit.

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**3,167,759**
**AIR NAVIGATION INFORMATION SYSTEM**
**Jacques Villiers, Paris, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed May 4, 1961, Ser. No. 126,736**
**Claims priority, application France, May 5, 1960, 826,282, Patent 1,269,616**
**10 Claims. (Cl. 343—6)**

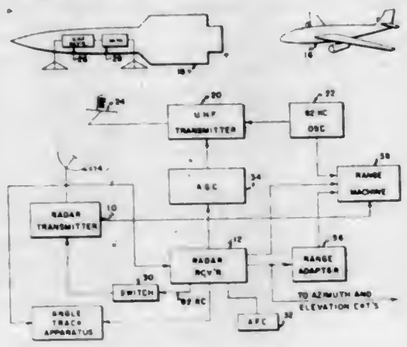


1. A radio navigation system comprising a radio beacon, means to produce a directive radiation pattern, means for producing a rotary sweep of said pattern over a given arc, means associated with said rotary sweep means for imparting to the energy transmitted from said beacon a plurality of predetermined characteristic control signals over a predetermined sector of the arc, means for advancing said predetermined sector in discrete steps over the given arc and means for effecting successive sweeps of said pattern over said given arc.

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**3,167,760**
**BEACON SYSTEM FOR TRACKING SMALL MISSILES**
**Jesse R. Karp, New Rochelle, Walter Swenson, Huntington, Joel S. Spira, New York, and Elliot L. Gruenberg, Zena, N.Y., assignors to Maxson Electronics Corporation, a corporation of New York**
**Filed Oct. 28, 1959, Ser. No. 849,229**
**10 Claims. (Cl. 343—7)**

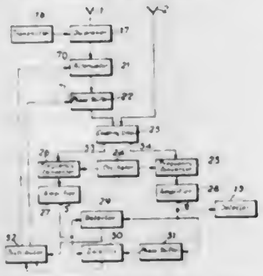
1. Apparatus for tracking an aircraft and a missile adapted to be launched therefrom, comprising a radio receiver in said missile, a frequency modulation radio transmitter in said missile connected to the output of said radio receiver for frequency modulating the output of said transmitter in accordance with the output of said receiver, a radar system for tracking said aircraft, a second transmitter for transmitting to said radio receiver, means including a constant frequency oscillator for amplitude modulating said second transmitter, a frequency modulation receiver tuned for receiving the carrier wave of the transmitter in said missile, means responsive to said last mentioned receiver for rendering




the radar system inoperative, and tracking means connected to said frequency modulation receiver and said oscillator.

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**3,167,761**
**RADAR SYSTEM TO SUPPRESS INTERFERENCE SIGNALS**
**Guy Le Parquier, Paris, France, assignor to Compagnie Generale de Telegraphie Sans Fil, a corporation of France**
**Filed Oct. 4, 1961, Ser. No. 142,866**
**Claims priority, application France, Oct. 10, 1960, 840,705**
**5 Claims. (Cl. 343—7)**

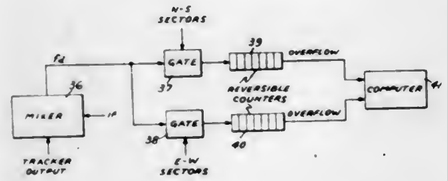


1. A radar receiver comprising: a radar transmitting-receiving aerial; a main input channel fed by the radar transmitting-receiving aerial; an auxiliary substantially omnidirectional aerial; an auxiliary input channel fed by said auxiliary aerial; a variable attenuator, having a control input, inserted in one of said input channels; a variable phase-shifter, having a control input, inserted in one of said input channels; an addition and subtraction circuit having two inputs respectively fed by said two input channels and two outputs feeding respectively a sum channel with a sum signal and a difference channel with a difference signal; means coupled to said difference channel for detecting said difference signal; means coupled to said sum channel and to said difference channel for deriving from said sum signal and from said difference signal a first error signal tending towards zero when the amplitude of said difference signal tends towards zero and a second error signal tending towards zero when the phase-shift between said sum signal and said difference signal tends towards zero and for upwardly limiting the frequency band of said error signals; and means for applying said first error signal to said control input of said variable attenuator and said second error signal to said control input of said variable phase-shifter.



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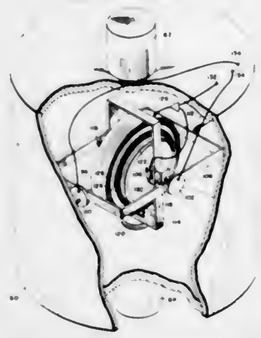
**3,167,762**
**DOPPLER RADAR SYSTEM**
**Malcolm C. Vosburgh, Montclair, and Joseph Murgio, Clifton, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland**
**Filed Apr. 9, 1959, Ser. No. 805,167**
**15 Claims. (Cl. 343—9)**




1. A doppler radar system for use on board a vehicle to determine the movement and position of said vehicle relative a reradiating element comprising a source of radio frequency signals, means to transmit said signals in a circular scan pattern toward said element, means to receive reradiated signals from said element, means to derive intermediate frequency signals from said received signals containing the doppler frequency signals, means to derive from said doppler frequency signals the movement information of said vehicle relative said reradiating element, means to derive from said intermediate frequency signals including said doppler frequency signals digital signals and means to derive from the digital doppled signals the position information of said vehicle relative said reradiating element.

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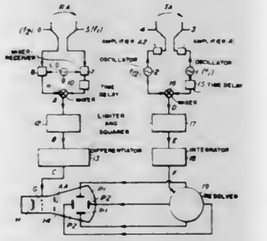
**3,167,763**
**VERTICAL SENSOR**
**Clare E. Barkalow, Comstock Park, and Henry C. Daubert, Jr., Grand Rapids, Mich., assignors, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware**
**Filed May 5, 1960, Ser. No. 26,997**
**18 Claims. (Cl. 343—9)**



16. In combination: a vertical gyroscope, gimbal supported upon a supporting vehicle; a separate gimbaled means supported upon said vehicle; means mounted upon said supporting vehicle for detecting the magnitude and direction of the horizontal component of velocity of said supporting vehicle relative to the surface of the earth; a pendulum mounted for two degrees of freedom and one degree of controlled rotation relative to said separate gimbaled means, the controlled degree of rotation being about an azimuth axis, the first and second degrees of freedom being, respectively, free rotation about a pair of normal axes parallel and normal to the horizontal component of velocity and normal thereto; means connected to said velocity detecting means adapted and connected to align said last named gimbals about said azimuth axis; a rotor connected to said last named gimbals to spin about a horizontal axis normal to the horizontal component of velocity of said supporting vehicle; and means connected to said velocity measuring means adapted to apply a torque between said pendulum and said rotor proportional to the magnitude of acceleration of said vehicle in accordance with a predetermined ratio; angle detecting means connected to said pendulum and said vertical gyroscope to determine the angle between said pendulum and the spin axis of said vertical gyroscope; means connected between said angle detecting means and said vertical gyroscope to apply torques of appropriate magnitude and sense in response to signals from said detecting means to erect said vertical gyroscope to the position of said pendulum.

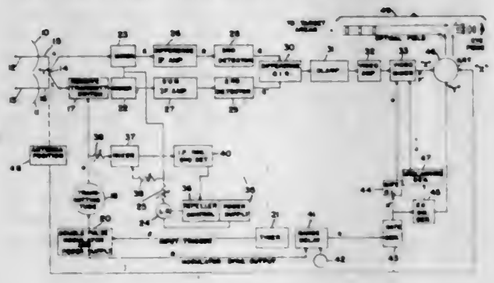
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**3,167,764**
**RADAR LOCATING SYSTEM EMPLOYING PLURAL TRANSMITTED FREQUENCIES**
**Edward Marshall Wells, Great Baddow, Essex, and John Hosking Blythe, Chelmsford, Essex, England, assignors to The Marconi Company Limited, London, England, a British company**
**Filed Oct. 23, 1961, Ser. No. 146,762**
**Claims priority, application Great Britain, Dec. 5, 1960, 41,746/60**
**5 Claims. (Cl. 343—10)**



1. A radar system of the kind referred to comprising means for producing a plurality of different radio frequency signals, a plurality of amplifiers each arranged to amplify a different one of the produced radio frequency signals, means for directionally transmitting the different amplified signals in radio beams differing in direction by small azimuthal angle or angles, means for swinging the transmitted beams together in a predetermined scanning path in azimuth, a corresponding plurality of reflected radio signal directional receiving means differing in direction by a small azimuthal angle or angles equal to the angle or angles between the transmitted beams, each of said receiving means being arranged and adapted to receive reflected energy produced by a different one of the transmitted beams, means for swinging said receiving means together in azimuth in correspondence with the azimuth swinging of the transmitted beams, a combining circuit for the reflected energies received by said receiving means, and signal channels of different time delays between said receiving means and said combining circuit, said time delays being so dimensioned in relation to the speed of scanning and the small azimuthal angular difference that the energies received by said receiving means due to the passage of the transmitted beams across a particular reflecting object arrive simultaneously at said combining circuit.

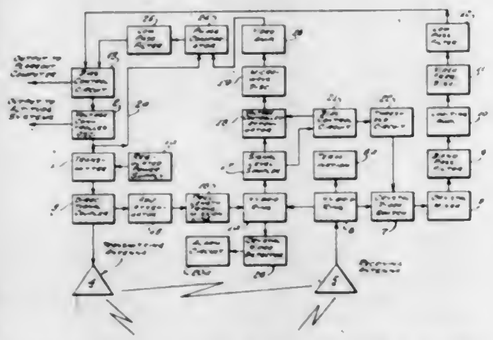
3,167,765
**PHASE-COMPARISON MONOPULSE RADAR**
Vincent D. Stabilito, Riverside, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed June 13, 1961, Ser. No. 116,889
3 Claims. (Cl. 343—11)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A radar system including signal generating means for operation in a range above the high-frequency band, means for modulating the output of said generating means to produce a signal consisting of a carrier amplitude-modulated by a pair of short pulses which are of equal length and are separated by a time interval equal to the time duration of one of said pulses, means including a phase sensitive antenna assembly comprising dual paraboloids with their feed centers at the same elevation and displaced from one another in azimuth for transmitting said signal to an object to be detected and for converting the reflected signal from said object to sum and difference carrier signals, a local oscillator, means for combining the output of said oscillator with each of said sum and difference signals to convert said signals to an intermediate frequency, a separate narrow-band intermediate-frequency amplifier connected for amplifying each of said converted sum and difference carrier signals, said oscillator having an operating frequency for offsetting the converted signals to one edge of the respective amplifier pass bands and said amplifiers having a band pass width which provides summation of the two short pulse spectrums and is small as compared with the converted modulated carrier band width, thereby to provide effective single side band amplification of said signals, means for combining the outputs of said amplifiers to produce a differential control signal, and means responsive to said control signal for indicating the position of said object with respect to the center line of said antenna assembly.

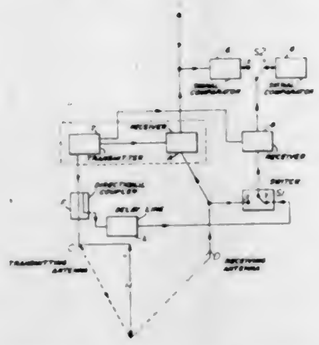
3,167,766
**RADIO ALTIMETER SYSTEM**
Russell Snyder Norris, Jr., State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1960, Ser. No. 52,270
8 Claims. (Cl. 343—14)

6. A distance measuring system comprising
a transmitter for transmitting frequency modulated waves over a transmission path of unknown distance,
a source of modulation signals,
means coupling said modulation signals to modulate the output of said transmitter,
a receiver adapted to receive the direct and the echo signals of said transmitted signal
transmission line means between said transmitter and said reeciver for coupling a signal from said transmitter to said receiver which is approximately 180° out of phase with said direct signal,
said receiver including means for separating said echo signal from said direct signal,
said receiver further including means to detect the modulation signal in said received echo signal,
a phase comparator coupled to receive the output from said detector means,
means coupling a reference signal from said source to said comparator to thereby allow said comparator to compare the phase of said detected signal and the modulation signal coupled to said receiver,



means responsive to said phase comparison to develop a control signal,
and means coupling said control signal to said modulation signal source to vary the output of said source to maintain a constant phase difference between said detected signal and said modulation signal.

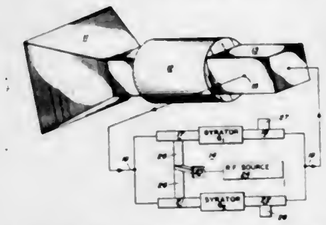
3,167,767
**RADIO ALTIMETERS**
Marino Pompeo Giovanni Capelli, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,510
Claims priority, application Great Britain, Sept. 20, 1960, 32,219/60
4 Claims. (Cl. 343—14)



4. A frequency modulated radio altimeter comprising a transmitter, first and second receivers, a transmitting antenna coupled to said transmitter, means coupling the output of said transmitter to said first and second receivers, a delay line, a receiving antenna, means coupling said receiving antenna to said first receiver and to said delay line, means coupling the output of said delay line to said second receiver, a signal comparator, a height indicating means, means coupling the outputs of said first and second receivers to said comparator means and means coupling the output of said first receiver to said height indicating means.

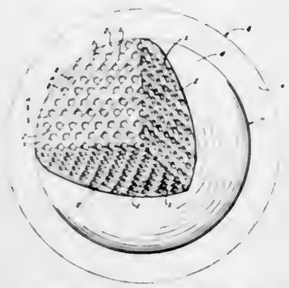


3,167,768
**PRECISION TARGET USING SINGLE SIDEBAND MODULATOR**
Harold A. Rosen, Santa Monica, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 19, 1961, Ser. No. 83,854
3 Claims. (Cl. 343—17.7)



1. A precision target for monitoring radar systems through cancellation of transmitter feed-through comprising a calibrated horn for receiving microwave energy, a 45° gyrator connected to the output of said horn, coupling means having at least two ports connected to said 45° gyrator, single sideband modulating means, means connecting one port of the coupling means and the input of the modulating means, first and second signal paths within said modulating means, first and second rator in each of said signal paths, and means connecting the output of said modulating means with another port of said coupling means.

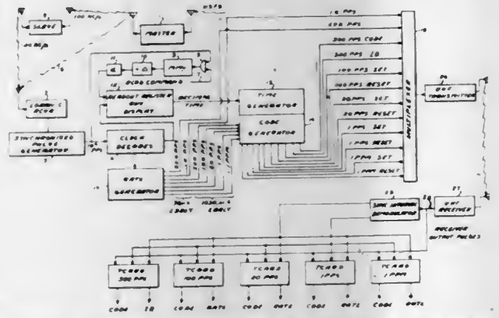
3,167,769
**RADIO FREQUENCY REFLECTOR**
Joseph M. Boyer, Rolling Hills, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Sept. 26, 1960, Ser. No. 58,422
14 Claims. (Cl. 343—18)



5. A reflector of electromagnetic energy comprising a plurality of scattering obstacles, said obstacles being spaced apart in a substantially spherical volume by a dielectric material of plastic foam completely filling the space between said obstacles.

3,167,770
**TIME-MULTIPLEX SYSTEM FOR THE DISTRIBUTION OF SERIAL PULSE TIME CODES WITH MICROSECOND SYNCHRONIZATION**
Robert H. Doherty and Thomas L. Davis, Boulder, Colo., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 17, 1961, Ser. No. 132,245
5 Claims. (Cl. 343—103)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A time distribution system comprising a sending station having a pulse generator synchronized with a time standard and producing pulses at a standard pulse rate, a plurality of receiving stations at various distances from said sending station and apparatus including a single channel one-way transmission link from said sending station to said receiving stations for generating at each receiving station a plurality of serial pulse signals of different repetition rates all much lower than said standard rate, the pulses of each of which are synchronized within a microsecond with the pulses of said standard rate, said apparatus comprising: a clock comprising a cascade of decade counters at said sending station for counting the pulses of said standard rate; a rate generator connected to said clock decades for generating sync pulses at a rate much lower than said standard rate and a plurality of serial pulse rate signals of different pulse repetition rates, the highest rate being a submultiple of the sync pulse rate and each remaining rate being a submultiple of the next higher rate, said sync pulses being generated early relative to the pulses of said standard rate by an amount equal to the signal propagation time over the transmission link to the most

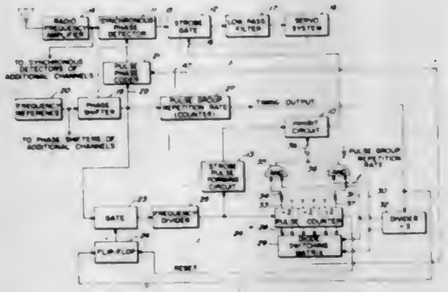


distant receiving station and the pulses of said rate signals being generated early relative to the pulses of said standard rate by an amount equal to said signal propagation time plus the interval between sync pulses; means synchronized with the said signals for producing a plurality of serial pulse time signals the pulses of each of which are coincident with the pulses of one of said rate signals; multiplexing means receiving said time signals and said sync signals for producing a multiplex signal in which the pulses of said time signals occur at different instants in the sync interval; means for applying said multiplex signal to said transmission links for transmission to said receiving stations; and means at each receiving station for separating the sync pulses from said multiplex signal and delaying them by an amount equal to the amount by which they were generated early less the signal propagation time to the receiving station; means for gating the pulses of said time signals from said sync interval; and means for regenerating said gated pulses in synchronism with said delayed sync pulses.

3,167,771
**BLANKING CIRCUIT SYNCHRONIZED WITH CODE FOR BALANCING DETECTOR INTERFERENCE**
Paul M. Cunningham, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 28, 1962, Ser. No. 247,906
7 Claims. (Cl. 343—103)

7. In a loran receiving system having a plurality of detectors for demodulating incoming coded pulse signals, the coded pulse signals being successive groups of predetermined numbers of pulses, a source of timing signal with servo phase controlling means for each of said detectors, each of said servo means responsive to the departure of control voltage from a normal value to

change the phase of the output of the respective source of timing signal, a strobing gate for each of said detectors, each of said strobing gates having a strobing control circuit, an input coupled to the output of a respective one of said detectors, and an output connected to a respective one of said servo means to supply control voltage thereto, said detectors normally being disabled, means for enabling said detectors one at a time for receiving predetermined groups of said incoming coded signals, a coder including a pulse counter, said coder being responsive to application of phase controlled signal from said sources of timing signal to form pulses of signal in synchronism with pulses of said incoming coded signals at the outputs of said plurality of detectors, a strobe pulse forming circuit, means for synchronizing the operation of said strobe pulse forming circuit with said timing means to provide a strobing pulse within the interval of each pulse of said incoming coded signal; an inhibit circuit having an input, an output, and an inhibit control

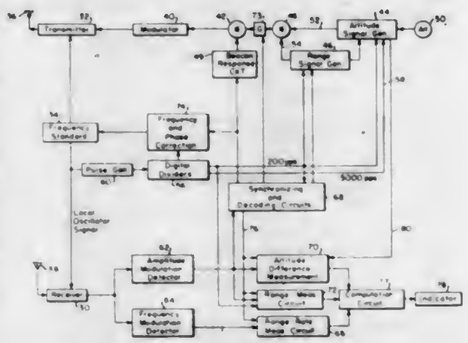


circuit, said input of said inhibit control circuit being connected to said strobe pulse forming circuit, said output of said inhibit control circuit being connected to said strobing control circuit, said pulse counter having a separate output corresponding to each pulse in each group of pulses of said coded pulse signals, means for connecting said inhibit control circuit to selected ones of said outputs of said pulse counter to apply inhibit voltage to said inhibit control circuit for the duration of the pulses corresponding to said selected output circuits, said inhibit circuit normally being conductive to pass strobing pulses from said pulse forming circuit to the strobing control circuit of each of said strobing gates, said strobing gates being conductive during the application of said strobing pulses thereto to sample incoming pulses corresponding to said strobing pulses for applying control voltage to said respective servo means, and said inhibit circuit being nonconductive in response to application of said inhibit control voltage to prevent application of control voltage to said servo means.

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**3,167,772**
**COLLISION AVOIDANCE SYSTEM**
**James J. Bagnall, Jr., Arlington, and Lawrence F. Fenton, Malden, Mass., assignors to National Company, Inc., Malden, Mass., a corporation of Massachusetts**
**Filed July 23, 1962, Ser. No. 211,603**
**18 Claims. (Cl. 343—112)**

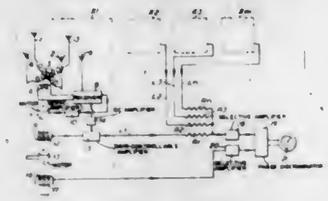
1. A system for indicating the threat of collision between at least two relatively mobile stations comprising means for keeping time at said stations, means for transmitting radio frequency signals from a first of said stations at a predetermined time, means at a second of said stations for receiving said signals, means at said second station for determining the travel time of the received signal, means to derive an indication of the range between said stations from said travel time, and means at said second station to derive an indication of the rate of



change of range of said stations from said received signal, and means for evaluating the threat of collision between said stations from said range and range rate information.

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**3,167,773**
**RADIO DIRECTION FINDING SYSTEMS**
**Dennis William George Byatt, Great Baddow, England, assignor to The Marconi Company Limited, London, England, a British company**
**Filed Mar. 13, 1963, Ser. No. 264,944**
**Claims priority, application Great Britain, Apr. 11, 1962, 14,048/62**
**6 Claims. (Cl. 343—117)**



1. A radio direction finding system comprising a plurality of spaced self-orienting direction finders providing direction representative signals; means for deriving control signals dependent upon the strengths of the signals received at the different direction finders; means, controlled by said control signals, for controlling the strengths of said direction representative signals so that the strengths of the direction representative signals depend upon the strengths of the signals received at the different direction finders; means for combining said direction-dependent signals; and means for utilising the combined resultant to indicate the direction of a station being received.

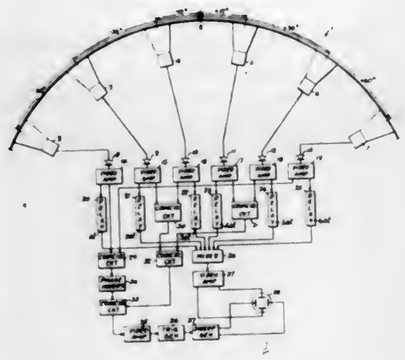
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**3,167,774**
**MULTI-ANTENNA DIRECTION FINDER**
**Louis A. De Rosa, Bloomfield, N.J., assignor to International Telephone and Telegraph Corporation, a corporation of Maryland**
**Filed Dec. 5, 1952, Ser. No. 324,170**
**9 Claims. (Cl. 343—119)**

1. In a system for obtaining information on the bearing of a source of electromagnetic wave energy; a plurality of directive antennas disposed for collective coverage of a predetermined range, a plurality of means, each



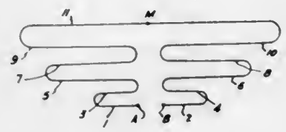
associated with one of said antennas, to detect the signal received by its associated antenna, means to impart an



identifying characteristic to the outputs of each of said signal detectors, and means to compare the amplitude of each of said identified signal detections.

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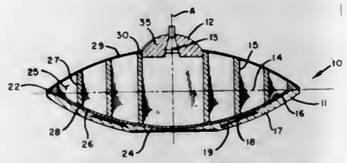
**3,167,775**
**MULTI-BAND ANTENNA FORMED OF CLOSELY SPACED FOLDED DIPOLES OF INCREASING LENGTH**
**Rudolf Guertler, 138 Balaclava Road, Eastwood, near Sydney, New South Wales, Australia**
**Filed Sept. 29, 1960, Ser. No. 59,333**
**Claims priority, application Australia, Oct. 7, 1959, 53,459/59**
**3 Claims. (Cl. 343—806)**



1. An antenna consisting of a plurality of pairs of dipoles having parallel axes disposed in a common plane with the centers of said dipoles defining a straight line, the spacing between adjacent dipoles being less than one-tenth of a wavelength at the highest frequency of operation, the length of the dipoles increasing from pair to pair, all dipole elements on one side of said straight line being connected serially, the terminals of the last longest dipole being short-circuited, and all dipole elements on the other side of said straight line being connected serially, so that a continuous meandering conducting path is provided starting from one terminal of the first shortest dipole and continuing serially through all dipole elements on one side of said straight line, thence through all dipole elements on the other side of said straight line and finishing at the other terminal of the first shortest dipole, thus enabling each element to act as a radiating element in cooperation with the element opposite with reference to said straight line and to take part in transmission line stub operation with an adjacent element, the entire antenna so formed exhibiting highest sensitivity along said straight line, and being capable of operating over a wide range of frequencies.

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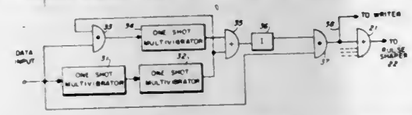
**3,167,776**
**DIELECTRIC FOAM ANTENNA**
**Menahem Sulliteanu, Palo Alto, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed May 31, 1962, Ser. No. 199,121**
**4 Claims. (Cl. 343—872)**



1. In an antenna system, a reflector having a focal axis and comprising
a plastic foam layer having concave and convex surfaces,
a coaxial peripheral flange attached to said foam layer,
a metallic layer attached to and coextensive with the convex surface of said foam layer,
a plurality of plastic foam stiffener members having first and second end portions, said first end portions being attached to the concave surface of said foam layer at spaced locations from said axis,
said stiffener members comprising a plurality of plane sheets extending parallel to each other and to said focal axis in a first direction and spaced apart in a second direction transversely of said first direction, and
spacer members extending between and attached to said sheets in rows parallel to said second direction, and
a skin member connected to and covering said second ends of said stiffener members and connected to said flange of said reflector.

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**3,167,777**
**RECORDING AND REPRODUCING SYSTEM**
**Harry A. Zagorites, 82 Montana St., San Francisco, Calif.; Marko I. Lipanovich, 514 Distel Drive, Los Altos, Calif.; and Laurence A. Perrine, 520 San Mateo Ave., Pacific, Calif.**
**Filed Mar. 16, 1962, Ser. No. 180,373**
**4 Claims. (Cl. 346—74)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

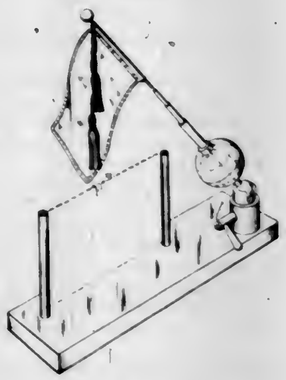


1. In a system for simultaneously recording timing data and $n$ channels of information data on a recording medium, means having an output for generating timing signals, n input terminals adapted to receive n information signals, respectively, a recording medium, $n+1$ writers for recording said signals on said recording medium, each of said writers having a signal input, said timer output and said input terminals being connected to said writers, respectively, an OR gate having $n+1$ inputs and an output, said timer output and said input terminals being connected to said OR gate inputs, respectively, means for indexing said recording medium with respect to said writers, indexing rate limiting means comprising an AND gate having first and second inputs and an output, an amplifier having an input and an output, means for coupling said output of said OR gate to said first input of said AND gate, said output of said AND gate being connected to said input of said amplifier, a monostable multivibrator having an input and an output, said multivibrator input being connected to said indexing means input and to said amplifier output, and said multivibrator output being connected to said second input of said AND gate.

# DESIGNS

JANUARY 26, 1965

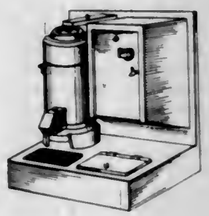
200,146
COMBINED CARD DISPLAY AND PENNANT HOLDER
Milan Mudrinich, 33—25 92nd St., Jackson Heights, N.Y.
Filed Feb. 25, 1964, Ser. No. 78,769
Term of patent 7 years
(Cl. D1—3)



200,147
SIGN FOR MERCHANDISING DISPLAY STANDS AND THE LIKE
Thaddeus I. Kingsford, Atlanta, Ga., assignor to Scripto, Inc., a corporation of Georgia
Filed Feb. 5, 1963, Ser. No. 73,457
Term of patent 14 years
(Cl. D1—12)




200,148
COMBINED COFFEE URN AND DISPENSING CABINET
Ford Se Bastian, Merion, Pa., assignor to Coffee Chef Corporation, Merion Station, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1962, Ser. No. 72,751
Term of patent 3½ years
(Cl. D2—3)



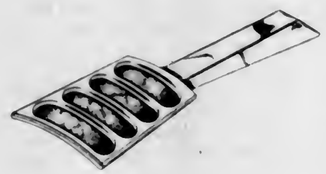
200,149
COMBINED COFFEE URN AND DISPENSING CABINET
Ford Se Bastian, Merion, Pa., assignor to Coffee Chef Corporation, Merion Station, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1962, Ser. No. 72,752
Term of patent 3½ years
(Cl. D2—3)



200,150
MANTILLA OR THE LIKE
Lillian Gettinger, 2509 Shelley Dale Drive, Baltimore, Md.
Filed Oct. 7, 1963, Ser. No. 76,881
Term of patent 14 years
(Cl. D3—13)



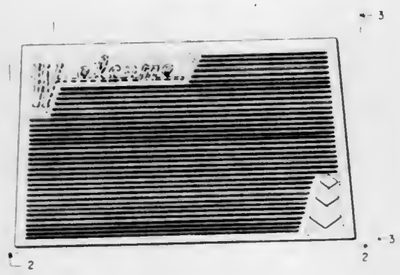
200,151
HAND TOOL FOR GARMENT CONDITIONING
David A. Martin, 2375 Colgate Drive, Costa Mesa, Calif.
Filed Feb. 3, 1964, Ser. No. 78,500
Term of patent 14 years
(Cl. D9—2)







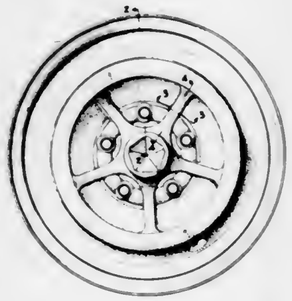
200,152
FLOOR MAT
Meyer Steinberg, Woodmere, N.Y., assignor to Ideal Rubber Products Co., Brooklyn, N.Y.
Filed Apr. 30, 1964, Ser. No. 79,757
Term of patent 14 years
(Cl. D9—6)



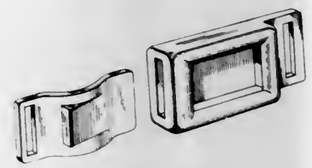
200,153
PASSENGER CONVEYOR BALUSTRADE
Carl John Kroepel, Manhasset, and James Lichtgarn, Garden City, N.Y., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed July 1, 1963, Ser. No. 75,607
Term of patent 14 years
(Cl. D13—7)



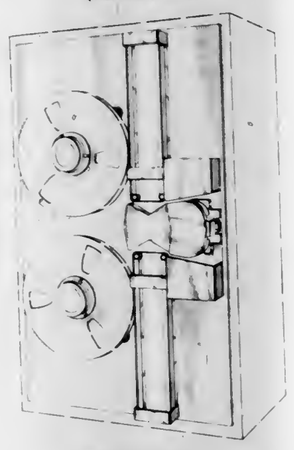
200,154
WHEEL
Warren L. Meyer and Seymour H. Riggs, both of Lansing, Mich., assignors to Motor Wheel Corporation, Lansing, Mich., a corporation of Michigan
Filed Jan. 20, 1964, Ser. No. 78,290
Term of patent 14 years
(Cl. D14—30)



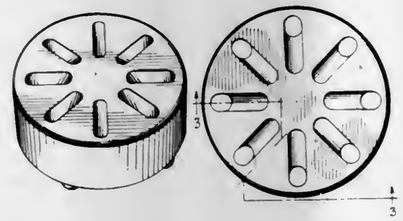
200,155
CLASP FASTENER OR SIMILAR ARTICLE
Jon Hedu, Watertown, Conn., assignor to Watertown Manufacturing Company
Filed Sept. 27, 1963, Ser. No. 76,754
Term of patent 14 years
(Cl. D17—3)



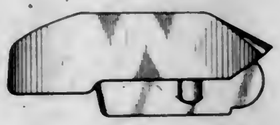
200,156
MAGNETIC TAPE UNIT OR SIMILAR ARTICLE
Roy A. Blom, 143 Monroe St., Massapequa Park, N.Y.
Filed Sept. 27, 1963, Ser. No. 76,762
Term of patent 14 years
(Cl. D26—5)



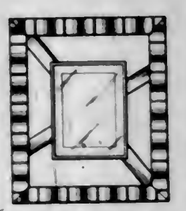
200,157
MOUNTING PAD FOR TRANSISTOR UNIT AND THE LIKE
Nathaniel R. Vincent, Santa Monica, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Dec. 26, 1962, Ser. No. 72,952
Term of patent 14 years
(Cl. D26—10)



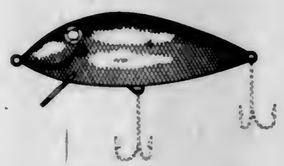
200,158
TELEPHONE SET
Marco Zanuso, Milan, Italy, assignor to Società Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy
Filed Oct. 9, 1963, Ser. No. 76,924
Claims priority, application Italy Apr. 10, 1963
Term of patent 14 years
(Cl. D26—14)



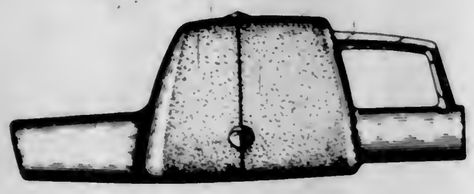
200,159
PICTURE FRAME OR THE LIKE
Violet H. Mueller and Harry E. Mueller, both of 604 N. Hamilton, Salem, Ill.
Filed May 31, 1963, Ser. No. 75,144
Term of patent 3½ years
(Cl. D29—20)



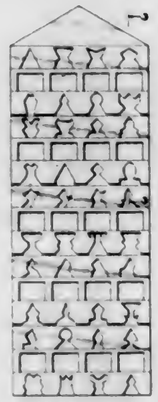
200,160
FISHING LURE
George Dennis Pinnell, 1000 Ave. C, Dodge City, Kans.
Filed Aug. 5, 1963, Ser. No. 76,102
Term of patent 14 years
(Cl. D31—4)



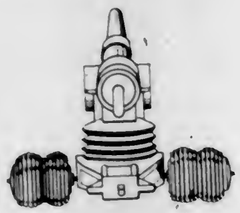
200,161
FISHING REEL CASE
James L. Hvale, Chicago, and John A. Eckmann, Morton Grove, Ill., assignors to Flambeau Plastics Corporation, Baraboo, Wis., a corporation of Wisconsin
Filed Jan. 13, 1964, Ser. No. 78,168
Term of patent 14 years
(Cl. D31—4)



200,162
GAME BOARD FOR RECEIVING GAME PIECES
Marinus Yantes, 3446 Queen Ave. N., Minneapolis, Minn.
Filed Dec. 4, 1963, Ser. No. 77,652
Term of patent 3½ years
(Cl. D34—5)



200,163
TOY CANNON
William C. Peterson, 31 Water St., Claremont, N.H.
Filed Dec. 30, 1963, Ser. No. 77,953
Term of patent 7 years
(Cl. D34—15)

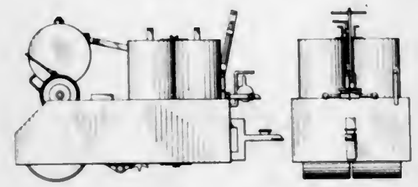


200,164
PORTABLE SADDLE RACK
Le Roy J. Hyman, Del Jay Farm, Chagrin River Road, Gates Mills, Ohio
Filed July 1, 1964, Ser. No. 80,660
Term of patent 14 years
(Cl. D38—1)

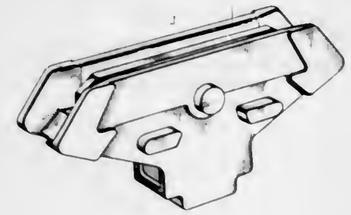




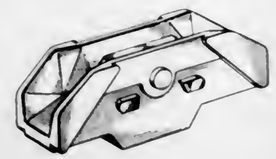
200,165
COMBINE
Daniel Dorfman, Woodbury, N.Y., assignor to Lawn-A-Mat Chemical and Equipment Corporation, Uniondale, N.Y., a corporation of New York
Filed Jan. 20, 1964, Ser. No. 78,266
Term of patent 14 years
(Cl. D40—1)



200,166
CURRENT COLLECTOR HEAD FOR TROLLEY ELECTRIFICATION SYSTEM
James A. Corl, San Carlos, Calif., assignor to Insul-8 Corp., San Carlos, Calif., a corporation of California
Filed July 2, 1963, Ser. No. 75,616
Term of patent 14 years
(Cl. D41—1)



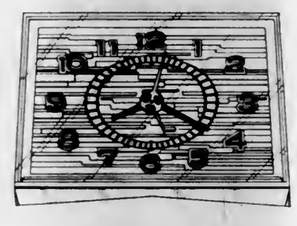
200,167
CURRENT COLLECTOR HEAD FOR TROLLEY ELECTRIFICATION SYSTEM
James A. Corl, San Carlos, Calif., assignor to Insul-8 Corp., San Carlos, Calif., a corporation of California
Filed July 2, 1963, Ser. No. 75,639
Term of patent 14 years
(Cl. D41—1)



200,168
REEL FOR SEAT BELT
William B. Hixenbaugh, Maple Heights, Ohio, assignor to The Durox Company, a corporation of Ohio
Filed Jan. 27, 1964, Ser. No. 78,368
Term of patent 14 years
(Cl. D41—1)



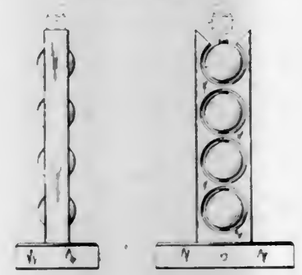
200,169
CLOCK
Charles A. McLeod, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 10, 1964, Ser. No. 78,152
Term of patent 14 years
(Cl. D42—7)



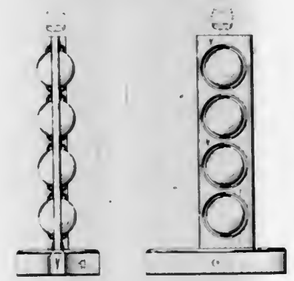
200,170
LINK CHAIN
Max Hartmann, Warwick, R.I., assignor to Armbrust Chain Company, Providence, R.I., a corporation of Rhode Island
Filed May 27, 1963, Ser. No. 75,066
Term of patent 14 years
(Cl. D45—4)



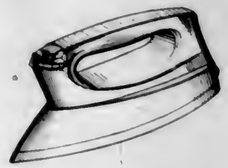
200,171
LAMP BASE
Clifton Beck, 136 N. Plank Road, Newburgh, N.Y.
Filed Aug. 30, 1963, Ser. No. 76,410
Term of patent 3½ years
(Cl. D48—20)



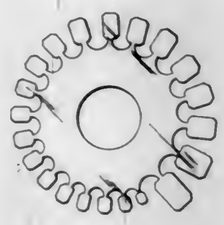
200,172
LAMP BASE
Clifton Beck, 136 N. Plank Road, Newburgh, N.Y.
Filed Aug. 30, 1963, Ser. No. 76,411
Term of patent 3½ years
(Cl. D48—20)



**200,173**
**ELECTRIC IRON**
John Christopher Keith Hardaker, High Wycombe, England, assignor to The General Electric Company Limited, London, England
Filed June 4, 1963, Ser. No. 75,262
Claims priority, application Great Britain Dec. 6, 1962
Term of patent 7 years
(Cl. D49—6)



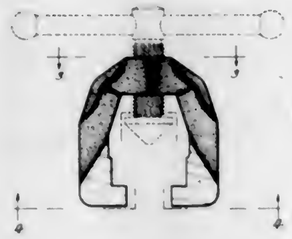
**200,174**
**JEWELER'S GAUGE FOR PRECIOUS STONES**
John T. Califra, 22 Rochelle St., Staten Island, N.Y.
Filed July 15, 1963, Ser. No. 75,802
Term of patent 14 years
(Cl. D52—6)



**200,175**
**FORK OR SIMILAR ARTICLE**
Jerome Ross, 118—66 Metropolitan Ave., Kew Gardens, N.Y.
Filed Apr. 2, 1964, Ser. No. 79,312
Term of patent 3½ years
(Cl. D54—12)



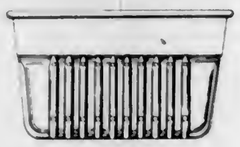
**200,176**
**FLARING TOOL YOKE**
George E. Franck, Morton Grove, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed July 22, 1963, Ser. No. 76,031
Term of patent 14 years
(Cl. D54—13)



**200,177**
**SHIPPING CONTAINER**
Leonardus Arnoldus Nicolaas Bijvoet, Overveen, and Heinrich Johann Steen, Delft, Netherlands, assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed July 10, 1963, Ser. No. 75,727
Term of patent 14 years
(Cl. D58—3)

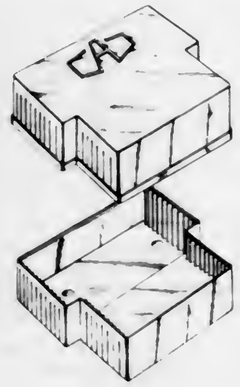


**200,178**
**BASKET FOR FRUIT OR THE LIKE**
Jack V. Barnes, 29911 Katella Ave., Laguna Beach, Calif., and Thomas C. Hunter, 6813 Atlantic Blvd., Long Beach, Calif.
Filed Mar. 13, 1963, Ser. No. 73,961
Term of patent 3½ years
(Cl. D58—4)

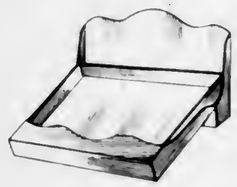




**200,179**
**FILING CASE**
Greene C. Hosch, 529 S. E St., Lake Worth, Fla.
Filed May 14, 1963, Ser. No. 74,883
Term of patent 3½ years
(Cl. D58—11)



**200,180**
**DISPLAY CONTAINER**
Peter D. Korzaan, Teaneck, N.J., assignor to Utility Printing Company, Carlstadt, N.J., a partnership
Filed Oct. 18, 1962, Ser. No. 72,178
Term of patent 3½ years
(Cl. D58—12.6)



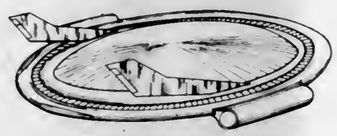
**200,181**
**SPOUT FOR ATTACHMENT TO THE NECK OF A CONTAINER**
John M. Warner, 940 Circle Drive, Elm Grove, Wis.
Filed Aug. 28, 1963, Ser. No. 76,376
Term of patent 7 years
(Cl. D58—26)



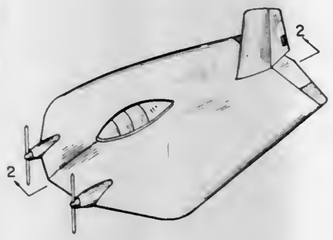
**200,182**
**DISPENSER TOP FOR A PRESSURE CONTAINER**
Philip L. Crowell and William C. Harris, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Nov. 20, 1963, Ser. No. 77,508
Term of patent 14 years
(Cl. D58—26)



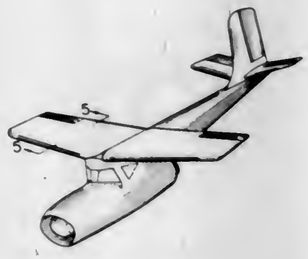
**200,183**
**AIRCRAFT**
Donald Earl Ordway, Ithaca, N.Y., assignor to Therm, Incorporated, Ithaca, N.Y., a corporation of New York
Filed Dec. 7, 1961, Ser. No. 67,830
Term of patent 14 years
(Cl. D71—1)



**200,184**
**AIRCRAFT**
William Coelho Thomas, 11083 Cloverlawn, Detroit, Mich.
Filed Jan. 23, 1963, Ser. No. 73,439
Term of patent 14 years
(Cl. D71—1)



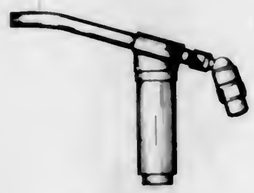
**200,185**
**AIRCRAFT**
William Coelho Thomas, 11083 Cloverlawn, Detroit, Mich.
Filed Jan. 23, 1963, Ser. No. 73,440
Term of patent 14 years
(Cl. D71—1)



**200,186**
**TAP HANDLE**
William Mortimer Kelly, 7 Primrose Ave., Sans Souci, New South Wales, Australia
Filed Sept. 16, 1963, Ser. No. 76,606
Term of patent 14 years
(Cl. D91—3)



**200,187**
**COMBINED SHOWER HEAD AND BATH OIL DISPENSER**
John E. Davis, Sherman Oaks, Calif., assignor to J. Briskin, Inc., Sherman Oaks, Calif., a corporation of California
Filed Dec. 27, 1963, Ser. No. 77,940
Term of patent 14 years
(Cl. D91—3)



**200,188**
**FIRE HYDRANT**
Cornelius Sampson, Berkeley, Calif., assignor to East Bay Municipal Utility District, a public corporation of California
Filed Jan. 6, 1964, Ser. No. 78,087
Term of patent 14 years
(Cl. D91—3)



# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 26TH DAY OF JANUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Barlament, Norval S., and S. J. Campbell, to FMC Corp. Apparatus for cutting articles. Re. 25,718, 1–26–65, Cl. 83—201.
Bennett, Leslie H.: *See*—
Decker, William H., Rieck, and Bennett. Re. 25,716.
Campbell, Samuel J.: *See*—
Barlament, Norval S., and Campbell. Re. 25,718.
Clary Corp.: *See*—
Mayo, George L. Re. 25,715.
Decker, William H., R. J. Rieck, and L. H. Bennett, to Maxant Button and Supply Co. Fabric-covered garment-button assembling device. Re. 25,716, 1–26–65, Cl. 79—5.
Dykeman, George, and T. R. Schuerger, to United States Steel Corp. Apparatus for controlling the operation of multiple combustion zones. Re. 25,722, 1–26–65, Cl. 236—15.
Ex-Cell-O Corp.: *See*—
Johnson, Forrest A., and Miller. Re. 25,719.
FMC Corp.: *See*—
Barlament, Norval S., and Campbell. Re. 25,718.
Glaxo Group Ltd.: *See*—
Howell, Dennis G., Parr, and Heath. Re. 25,721.
Heath, Kathleen R.: *See*—
Howell, Dennis G., Parr, and Heath. Re. 25,721.
Howell, Dennis G., R. Parr, and K. R. Heath, to Glaxo Group Ltd. Swine erysipelas vaccine. Re. 25,721, 1–26–65, Cl. 167—78.
Johnson, Forrest A., and H. D. Miller, to Ex-Cell-O Corp. Positioner for magnetic data storage device. Re. 25,719, 1–26–65, Cl. 346—74.
Lapidus, Morris. Machine for making slabs. Re. 25,717, 1–26–65, Cl. 25—9.
Maxant Button and Supply Co.: *See*—
Decker, William H., Rieck, and Bennett. Re. 25,716.
Mayo, George L., to Clary Corp. Wood component member cutting apparatus. Re. 25,715, 1–26–65, Cl. 143—38.
Miller, Herbert D.: *See*—
Johnson, Forrest A., and Miller. Re. 25,719.
Parr, Robert: *See*—
Howell, Dennis G., Parr, and Heath. Re. 25,721.
Rieck, Roy J.: *See*—
Decker, William H., Rieck, and Bennett. Re. 25,716.
Schuerger, Thomas R.: *See*—
Dykeman, George, and Schuerger. Re. 25,722.
Thompson, Earl A. Precision feed mechanism. Re. 25,720, 1–26–65, Cl. 51—103.
United States Steel Corp.: *See*—
Dykeman, George, and Schuerger. Re. 25,722.

# LIST OF DESIGN PATENTEES

Armbrust Chain Co.: *See*—
Hartmann, Max. 200,170.
Barnes, Jack V., and T. C. Hunter. Basket for fruit or the like. 200,178, 1–26–65, Cl. D58—4.
Beck, Clifton. Lamp base. 200,171, 1–26–65, Cl. D48—20.
Beck, Clifton. Lamp base. 200,172, 1–26–65, Cl. D48—20.
Bijvoet, Leonardus A. N., and H. J. Steen, to Inland Steel Co. Shipping container. 200,177, 1–26–65, Cl. D58—3.
Blom, Roy A. Magnetic tape unit or similar article. 200,156, 1–26–65, Cl. D26—5.
Briskin, J., Inc.: *See*—
Davis, John E. 200,187.
Califra, John T. Jeweler's gauge for precious stones. 200,174, 1–26–65, Cl. D52—6.
Coffee Chef Corp.: *See*—
Se Bastian, Ford. 200,148.
Se Bastian, Ford. 200,149.
Corl, James A., to Insul-8 Corp. Current collector head for trolley electrification system. 200,166, 1–26–65, Cl. D41—1.
Corl, James A., to Insul-8 Corp. Current collector head for trolley electrification system. 200,167, 1–26–65, Cl. D41—1.
Crowell, Philip L., and W. C. Harris, to S. C. Johnson & Son, Inc. Dispenser top for a pressure container. 200,182, 1–26–65, Cl. D58—26.
Davis, John E., to J. Briskin, Inc. Combined shower head and bath oil dispenser. 200,187, 1–26–65, Cl. D91—3.
Dorfman, Daniel, to Lawn-A-Mat Chemical & Equipment Corp. Combine. 200,165, 1–26–65, Cl. D40—1.
Douglas Aircraft Co., Inc.: *See*—
Vincent, Nathaniel R. 200,157.
Durox Co., The: *See*—
Hixenbaugh, William B. 200,168.
East Bay Municipal Utility District: *See*—.
Sampson, Cornelius. 200,188.
Eckmann, John A.: *See*—
Hvale, James L., and Eckmann. 200,161.
Flambeau Plastics Corp.: *See*—
Hvale, James L., and Eckmann. 200,161.
Franck, George E., to Imperial-Eastman Corp. Flaring tool yoke. 200,176, 1–26–65, Cl. D54—13.
General Electric Co. Ltd., The: *See*—
Hardaker, John C. K. 200,173.
Gettinger, Lillian. Mantilla, or the like. 200,150, 1–26–65, D3—13.
Hardaker, John C. K., to The General Electric Co. Ltd. Electric iron. 200,173, 1–26–65, Cl. D49—6.
Harris, William C.: *See*—
Crowell, Philip L., and Harris. 200,182.
Hartmann, Max, to Armbrust Chain Co. Link chain. 200,170, 1–26–65, Cl. D45—4.
Hedu, Jon, to Watertown Mfg. Co. Clasp fastener or similar article. 200,155, 1–26–65, Cl. D17—3.
Hixenbaugh, William B., to The Durox Co. Reel for seat belt. 200,168, 1–26–65, Cl. D41—1.
Hosch, Greene C. Filing case. 200,179, 1–26–65, Cl. D58—11.
Hunter, Thomas C.: *See*—
Barnes, Jack V., and Hunter. 200,178.
Hvale, James L., and J. A. Eckmann, to Flambeau Plastics Corp. Fishing reel case. 200,161, 1–26–65, Cl. D31—4.
Hyman, Le Roy J. Portable saddle rack. 200,164, 1–26–65, Cl. D38—1.
Ideal Rubber Products Co.: *See*—
Steinberg, Meyer. 200,152.
Imperial-Eastman Corp.: *See*—
Franck, George E. 200,176.
Inland Steel Co.: *See*—
Bijvoet, Leonardus A. N., and Steen. 200,177.
Insul-8 Corp.: *See*—
Corl, James A. 200,166.
Corl, James A. 200,167.
Johnson, S. C. & Son, Inc.: *See*—
Crowell, Philip L., and Harris. 200,182.
Kelly, William M. Tap handle. 200,186, 1–26–65, Cl. D91—3.
Kingsford, Thaddeus I., to Scripto, Inc. Sign for merchandising display stands and the like. 200,147, 1–26–65, Cl. D1—12.
Korsaan, Peter D., to Utility Printing Co. Display container. 200,180, 1–26–65, Cl. D58—12.6.
Kroepel, Carl J., and J. Lichtgarn, to Otis Elevator Co. Passenger conveyor balustrade. 200,153, 1–26–65, Cl. D13—7.
Lawn-A-Mat Chemical & Equipment Corp.: *See*—
Dorfman, Daniel. 200,165.
Lichtgarn, James: *See*—
Kroepel, Carl J., and Lichtgarn. 200,151.
Martin, David A. Hand tool for garment conditioning. 200,151, 1–26–65, Cl. D9—2.
McLeod, Charles A., to Sunbeam Corp. Clock. 200,169, 1–26–65, Cl. D42—7.
Meyer, Warren L., and S. H. Riggs, to Motor Wheel Corp. Wheel. 200,154, 1–26–65, Cl. D14—30.
Motor Wheel Corp.: *See*—
Meyer, Warren L., and Riggs. 200,154.
Mudrinich, Milan. Combined card display and pennant holder. 200,146, 1–26–65, Cl. D1—3.
Mueller, Harry E.: *See*—
Mueller, Violet H. and H. E. 200,159.
Mueller, Violet H. and H. E. Picture frame or the like. 200,159, 1–26–65, Cl. D29—20.
Ordway, Donald E., to Therm, Inc. Aircraft. 200,183, 1–26–65, Cl. D71—1.
Otis Elevator Co.: *See*—
Kroepel, Carl J., and Lichtgarn. 200,153.
Peterson, William C. Toy cannon. 200,163, 1–26–65, Cl. D34—15.
Pinnell, George D. Fishing lure. 200,160, 1–26–65, Cl. D31—4.
Riggs, Seymour H.: *See*—
Meyer, Warren L., and Riggs. 200,154.
Ross, Jerome. Fork or similar article. 200,175, 1–26–65, Cl. D54—12.
Sampson, Cornelius, to East Bay Municipal Utility District. Fire hydrant. 200,188, 1–26–65, Cl. D91—3.
Scripto, Inc.: *See*—
Kingsford, Thaddeus I. 200,147.
Se Bastian, Ford, to Coffee Chef Corp. Combined coffee urn and dispensing cabinet. 200,148, 1–26–65, Cl. D2—3.
Se Bastian, Ford, to Coffee Chef Corp. Combined coffee urn and dispensing cabinet. 200,149, 1–26–65, Cl. D2—3.
Società Italiana Telecomunicazioni Siemens S.p.A.: *See*—
Zanuso, Marco. 200,158.
Steen, Heinrich J.: *See*—
Bijvoet, Leonardus A. N., and Steen. 200,177.
Steinberg, Meyer, to Ideal Rubber Products Co. Floor mat. 200,152, 1–26–65, Cl. D9—6.
Sunbeam Corp.: *See*—
McLeod, Charles A. 200,169.

Therm, Inc.: *See*—
Ordway, Donald E. 200,183.
Thomas, William C. Aircraft. 200,184, 1–26–65, Cl. D71—1.
Thomas, William C. Aircraft. 200,185, 1–26–65, Cl. D71—1.
Utility Printing Co.: *See*—
Korsaan, Peter D. 200,180.
Vincent, Nathaniel R., to Douglas Aircraft Co., Inc. Mounting pad for transistor unit and the like. 200,157, 1–26–65, Cl. D26—10.
Warner, John M. Spout for attachment to the neck of a container. 200,181, 1–26–65, Cl. D58—26.
Watertown Mfg. Co.: *See*—
Hedu, Jon. 200,155.
Yantes, Marinus. Game board for receiving game pieces. 200,162, 1–26–65, Cl. D34—5.
Zanuso, Marco, to Societá Italiana Telecomunicazioni Siemens S.p.A. Telephone set. 200,158, 1–26–65, Cl. D26—14.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 26TH DAY OF JANUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Brown, Morris C., and Johnson. 3,167,599.
Kemp, Willard E. 3,167,026.
Abbott Laboratories: *See*—
Ling, Wilfred C. 3,167,299.
Overby, Lacy R. 3,167,566.
Redmer, Wilbert W. 3,167,085.
Abramson, Abraham, to Raylite Electric Corp. Artificial Christmas tree branch construction. 3,167,467, 1–26–65, Cl. 161—24.
Abramson, Robert Y.: *See*—
Kelly, Jack J., and Abramson. 3,167,092.
Acme Visible Records, Inc.: *See*—
Tome, Lloyd M. 3,167,074.
Adams, Clifford B.: *See*—
Holstein, Alvin W., Adams, and Visos. 3,167,215.
Adams, Floyd S., to Crosby-Frisian Fur Co. Method for making fur-covered brushes. 3,167,356, 1–26–65, Cl. 300—21.
Adams, Samuel F., and R. J. Guerin, to American Paper Tube Co. Vibration-suppressed bobbin assemblies. 3,167,262, 1–26–65, Cl. 242—46.21.
Adamson, George H., to K. J. Kohanso. Timepiece. 3,166,889, 1–26–65, Cl. 58—57.
Adelman, Barnet R.: *See*—
Lawrence, Herbert R., and Adelman. 3,166,897.
Adler, Carl: *See*—
Gutridge, Jack E., Borger, and Adler. 3,167,028.
Adler, Franklin P., to Pullman Inc. Trough type center hatch arrangement. 3,167,030, 1–26–65, Cl. 105—377.
Admiral Corp.: *See*—
Squire, Herbert D. 3,167,186.
Advanced Kinetics, Inc.: *See*—
Furth, Harold P. 3,167,043.
Aeronca Mfg. Corp.: *See*—
Brunner, John E. 3,167,018.
Aeroprojects, Inc.: *See*—
Bancroft, Dennison, Elmore, Jones, and Maropis. 3,166,840.
Aeroquip Corp.: *See*—
Cline, William M., and Clemons. 3,167,334.
Aesup, Etablissement: *See*—
Simmen, Robert. 3,166,943.
Afsanick, Julius. Container fabrication. 3,166,995, 1–26–65, Cl. 93—55.1.
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Bacon, Francis T., and P. W. Jones, to National Research Development Corp. Method of forming a nickel fuel cell electrode. 3,167,457, 1–26–65, Cl. 136—120.

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Bastian, Donald W., to Avco Corp. Electronic automatic control circuitry for satellite command receiver. 3,167,713, 1–26–65, Cl. 325—319.

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Berlinsky, Anthony A., and M. J. Brennan, to United States of America, Commerce. Automatic or manual multiple programmer. 3,167,244, 1–26–65, Cl. 234—15.

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Beutel, William F., to Martin-Marietta Corp. Flexible fuel bundle for continuously refueled nuclear reactors. 3,167,484, 1–26–65, Cl. 176—87.

Blair, Jerry J., and G. W. Eckert, to Texaco Inc. Anti-icing jet fuel composition containing a hexaalkyl phosphoric triamide. 3,167,411, 1–26–65, Cl. 44—72.

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Birnkrant, Milton. Inflatable furniture arrangements. 3,166,799, 1–26–65, Cl. 20—1.11.

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Blenkle, Erwin, to Bochumer Eisenhutte Heintzmann & Co. Hydraulically operated mine prop. 3,166,991, 1–26–65, Cl. 92—109.

Blenkle, Erwin, to Bochumer Eisenhutte Heintzmann & Co. Piston with sealing means. 3,166,993, 1–26–65, Cl. 92—181.

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Blenkle, Erwin. 3,166,993.

Bodine, Albert G., Jr. Electromagnetic rotary field apparatus for generating and applying gyratory sonic vibrations. 3,167,669, 1–26–65, Cl. 310—10.

Bodine, Albert G., Jr. Sonic applicator for surface cleaning. 3,166,772, 1–26–65, Cl. 15—22.

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Bonta, Ivan L., to Organon Inc. Preparations acting on the central nervous system and the manufacture thereof. 3,167,476, 1–26–65, Cl. 167—65.

Booker, Bernard A. Portable crane. 3,167,200, 1–26–65, Cl. 214—523.

Booth, Jack J., and W. C. Branch. Dispensing valve unit. 3,167,090, 1–26–65, Cl. 137—604.

Borax, Benjamin. Rack for holding paint tubes. 3,167,184, 1–26–65, Cl. 211—84.

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Bosteels, Henri M. L., to La Soudure Electrique Autogene, Procedes Arcos. Automatic electric arc welding machine. 3,167,636, 1–26–65 Cl. 219—125.

Böttcher, Paul. Thickness grinding machine. 3,166,874, 1–26–65, Cl. 51—87.

Bouchard, Gaston R. Universal joints, especially for automobile vehicles. 3,166,918, 1–26–65. Cl. 64—17.

Bovenkerk, Harold P., to General Electric Co. Insulating structures with variable thermal conductivity and method of evacuation. 3,167,159, 1–26–65, Cl. 189—34.

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Brayton, Paul R. Process for the production of heat-resistant pigments and paints containing said pigments. 3,167,516, 1–26–65, Cl. 252—301.1.

Brazell, William A. Storage battery case. 3,167,458, 1–26–65, Cl. 136—166.

Breitengross, Richard A., Jr., and W. E. Donaldson, to United States of America, Navy. Method for suppressing rocket motor exhaust flame. 3,1655,896, 1–26–65, Cl. 60—35.6.

Bremer, John W., and O. J. Cotey, to General Electric Co. Cryotron memory. 3,167,748, 1–26–65, Cl. 340—173.1.

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Bristow, Robert H., to General Electric Co. Ceramic articles and methods of making. 3,167,438, 1–26–65, Cl. 106—46.

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Broadhead, Samuel L., Jr., to Collins Radio Co. Transistorized noise pulse blanking network including feedback means. 3,167,721, 1–26–65, Cl. 330—19.

Brogan, Daniel J. Method of determining vanadium. 3,167,394, 1–26–65, Cl. 23—230.

Bronson, John C., to United States of America, Atomic Energy Commission. Liquid level capacitance probe. 3,167,695, 1–26–65, Cl. 317—246.

Brooks, Donald H., to International Protected Metals, Inc. Method of forming a resin coating on metal. 3,167,442, 1–26–65, Cl. 117—21.

Brooks, E. J., Co. : *See*—
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Brooks, Winfred M., and S. M. Moberg, to E. J. Brooks, Co. Shackle seals. 3,167,340, 1–26–65, Cl. 292—311.

Brosch, Walter R : *See*—
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Bross, Helmut K., 50% to F. T. Johmann. Container for fluids with reserve space. 3,167,056, 1–26–65, Cl. 120—42.16.

Bross, Helmut K., 50% to F. T. Johmann. Containers for fluids with reserve space. 3,167,056, 1–26–65. Cl. 120—42.16.

Brossard, Frank I. Reading stand. 3,167,086, 1–26–65, Cl. 108—4.

Brown, Bernard B., L. J. Luts, C. J. Smith, Jr., and E. A. Weilmuenster, to Olin Mathieson Chemical Corp. Process for producing alkyl alkylphosphonochloridates. 3,167,574, 1–26–65, Cl. 260—461.

Brown, Boveri & Cie., Aktiengesellschaft : *See*—
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Schönung, Arnold, and Stahl. 3,167,702.

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Andrews, Zenas B., Brown, and Price. 3,167,294.

Brown, Dwight C. Collapsible pallets. 3,167,038, 1–26–65, Cl. 108—56.

Brown, Laurence R., to Drexel Dynamic Corp. Automatic character readout system. 3,167,741, 1–26–65, Cl. 340—146.3.

Brown, Morris C., and E. A. Johnson, to ACF Industries, Inc. Carburetor. 3,167,599, 1–26–65, Cl. 261—41.

Brown, Roger W., to Pneumo Dynamics Corp. Stock reel. 3,166,963, 1–26–65, Cl. 82—38.

Brownyer, Nelson R., to Rockwell-Standard Corp. Automatic brake system. 3,167,158, 1–26–65, Cl. 188—141.

Broyles, Ned L. Quick-action interlocking suspension fastener. 3,167,342, 1–26–65, Cl. 294—67.

Brucken, Byron L., to General Motors Corp. Rotary clothes dryer with direct drive motor and speed reducer assembly. 3,167,409, 1–26–65, Cl. 34—133.

Brucken, Byron L., and V. A. Williamitis to General Motors Corp. Humidity sensing element. 3,167,734, 1–26–65, Cl. 338—35.

Brunner, Alfred, to Sulzer Freres, Societe Anonyme. Apparatus for control of a steam power plant. 3,166,910, 1–26–65, Cl. 60—107.

Brunner, John E., to Aeronca Mfg. Corp. Missile safety and arming circuit. 3,167,018, 1–26–65, Cl. 102—70.2.

Bruno, Anthony T. : *See*—
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Brunswick Corp. : *See*—
Strohm, Elwood. 3,166,761.

Bryan, James S., and C. F. Teacher, to Philco Corp. Character identification system employing plural resistor-correlation masks. 3,167,745, 1–26–65, Cl. 340—146.3.

Bryan, Warren P. Method for improving well production and salt water disposal. 3,167,125, 1–26–65, Cl. 166—45.

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Buchanan Electrical Products Corp. : *See*—
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Bucher, Foster L., to Dahlman Mfg. & Sales, Inc. Vine pulling apparatus. 3,167,132, 1–26–65, Cl. 171—27.

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Buck, Immanuel. Dial, particularly for use in telephone apparatus or the like. 3,167,616, 1–26–65, Cl. 179—90.

Buck, Russell E., to Buck Tool Co. Adapter for mounting expanding mandrel on a chuck. 3,167,325, 1–26–65, Cl. 279—1.

Buck Tool Co. : *See*—
Buck, Russell E. 3,167,325.

Budzich, Tadeusz, and A. Pitt. Fluid distributing and circulating system. 3,166,905, 1–26–65, Cl. 60—53.

Budzyna, Joseph M., to Draper Corp. Loom picker. 3,167,096, 1–26–65, Cl. 139—159.

Budzynski, Louis R.: *See*—
Chidsey, Francis A., Jr., Nigrelli, Standley, and Budzynski. 3,166,879.

Buehler, Gebruder: *See*—
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Buell, Bennett G., to American Cyanamid Co. 5-cyano-2-(p-aminophenyl)naphth[1,2-d]-oxazole. 3,167,565, 1–26–65, Cl. 260—308.

Buitkus, Thomas J. Piezoelectric lighter. 3,167,687, 1–26–65, Cl. 317—83.

Bull, Rame W.: *See*—
Staunton, John J. J., Malter, Gleason, and Bull. 3,167,396.

Bumpious, Doyle A., to International Harvester Co. Steering and support device. 3,167,327, 1–26–65, Cl. 280—464.

Buning, Robert, to Dynamit Nobel Aktiengesellschaft. Process for the polymerization of vinylchloride with a catalyst mixture of trialkyl aluminum and boric acid-trialkyl ester. 3,167,534, 1–26–65, Cl. 260—92.8.

Burges, Glen W., to Clark Equipment Co. Retractable outrigger and the like. 3,167,188, 1–26–65, Cl. 212—145.

Burhans, William G., and W. H. Gray, to W.G.B. Oil Clarifier, Inc. Filter. 3,167,507, 1–26–65, Cl. 210—117.

Burndy Corp.: *See*—
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Burrows, Sumner. Refrigerated cartons and refrigerating means for use therewith. 3,166,916, 1–26–65, Cl. 62—237.

Bushi, Michael. Method of making a split ring. 3,166,827, 1–26–65, Cl. 29—148.4.

Butler, James A. Popliteal support. 3,167,351, 1–26–65, Cl. 297—423.

Byars, Garner B., Sr., L. Johnson, and H. W. King, to Auto Fire Corp. Automatic dump type charcoal lighter. 3,167,040, 1–26–65, Cl. 110—1.

Byatt, Dennis W. G., to The Marconi Co. Ltd. Radio direction finding systems. 3,167,773, 1–26–65, Cl. 343—117.

Cacossa, Frank G., to The Flintkote Co. Outer wall construction. 3,166,872, 1–26–65, Cl. 50—214.

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Thomas, John R. 3,167,525.

Callery Chemical Co.: *See*—
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McElroy, Albert D., Hashman, and Renforth. 3,167,386.

Callinan, Thomas D., to International Business Machines Corp. Process for applying insulation to cables. 3,167,610, 1–26–65, Cl. 174—124.

Calvin, Charles A. Gun rack and method of manufacture thereof. 3,167,182, 1–26–65, Cl. 211—64.

Cameron Machine Co.: *See*—
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Canada, Her Majesty the Queen in right of, as represented by the Minister of National Defence: *See*—
Godby, Ensley A., and Baker. 3,167,665.

Canadian Westinghouse Co., Ltd.: *See*—
Collins, Peter J., and Tower. 3,167,481.

Cannaday, Richard L.: *See*—
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Cape, Arthur T., to Coast Metals, Inc. Preparation of brazing alloys and products formed thereby. 3,167,406, 1–26–65, Cl. 29—196.

Capelli, Marino P. G., to International Standard Electric Corp. Radio altimeters. 3,167,767, 1–26–65, Cl. 343—14.

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Carlsberg, Robert E.: *See*—
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Carney, William M., Jr., to The Greif Bros. Cooperage Corp. Device for securing the filler neck of a container liner to the container. 3,167,210, 1–26–65, Cl. 220—63.

Carpenter, Arvell A., and H. A. Wright; said Carpenter assor. to H. A. Wright. Central vacuum cleaning apparatus. 3,167,414, 1–26–65, Cl. 55—296.

Carr, John W. Upright lumbo-sacral traction system. 3,167,068, 1–26–65, Cl. 128—75.

Carr, Paul: *See*—
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Carrier Corp.: *See*—
Church, Richard A., and Haritonoff. 3,167,253.
Stenger, Harvey G., and Kropiwnicki. 3,167,293.
Swart, Richard H., Jr. 3,167,114.

Carter, James M., to Elmwood Liquid Products, Inc. Method for refrigerating. 3,166,913, 1–26–65, Cl. 62—56.

Carter, William, Co., The: *See*—
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Casteljns, Henri F., to International Standard Electric Corp. Electro-dynamic motor operated valve. 3,167,094, 1–26–65, Cl. 137—625.33.

Castellana, Jack P., and R. R. Roberts, to General Motors Corp. Brake control mechanism. 3,166,951, 1–26–65, Cl. 74—531.

Caudron, Robert A. R.: *See*—
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Caufman, Robert L., to All American Engineering Co. Aerial pick-up system. 3,167,302, 1–26–65, Cl. 258—1.2.

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Miquel, Joseph, Grange, and Casal. 3,167,673.

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Cessna Aircraft Co., The: *See*—
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Chaloux, Lewis H.: *See*—
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Chamberlain Corp.: *See*—
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Olsen, Cleo B. 3,166,926.

Chamberlin, James A.: *See*—
Czerwinski, Waclaw, Chamberlin, and Woodward. 3,167,016.

Champion Papers Inc.: *See*—
Bray, Leonard E. 3,167,231.

Chandler Evans Corp.: *See*—
Maljanian, John M., and Meyer. 3,166,902.

Chaplin, Joseph E., Sr. Sheet metal roofing fastener bender. 3,166,961, 1–26–65, Cl. 81—15.

Charle, Roger, and R. Lantz, to l'Oreal. Color stabilized hair dye composition of ammonia and trihydroxybensene. 3,167,478, 1–26–65, Cl. 167—88.

Charton Co., Inc.: *See*—
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Herman, Elkan R. 3,167,401.

Cheney Bigelow Wire Works Inc.: *See*—
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Chezaud, Jean C., and H. Lachaussee, to Societe Rhodiaceta. Crimping of polyvinyl alcohol yarns by means of alkaline solutions. 3,167,383, 1–26–65, Cl. 8—115.5.

Chidsey, Francis A., Jr., B. J. Nigrelli, W. E. Standley, and L. R. Budzynski, to Container Corp. of America. Wrap-around carton loader. 3,166,879, 1–26–65, Cl. 53—48.

Chisholm, Matthew C. C., to Teleflex Inc. Liquid level gauge. 3,166,849, 1–26–65, Cl. 33—126.7.

Chlormetals Inc.: *See*—
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Choulings, Leslie C., to Automotive Products Co. Ltd. Fluid pressure master cylinders. 3,166,908, 1–26–65, Cl. 60—54.6.

Chow, Alfred W., and J. R. E. Hoover, to Smith, Kline & French Laboratories. Derivatives of 7-aminocephalosporanic acid. 3,167,550, 1–26–65, Cl. 260—243.

Christensen, James, and D. Hartman, to Schick Electric Inc. Adjustable spacer bar for multiple-head electric shaver. 3,166,842, 1–26–65, Cl. 30—43.1.

Church, Richard A., and B. W. Haritonoff, to Carrier Corp. Control arrangement for air distributing units. 3,167,253, 1–26–65, Cl. 236—80.

Chute, Richard, to Continental Motors Corp. Regenerator rim attachment. 3,167,115, 1–26–65, Cl. 165—7.

Cisco, Edward S., to Stanray Corp. Coupler operating device. 3,167,189, 1–26–65, Cl. 213—166.

Clark, Claude A., to The Dow Chemical Co. Blender. 3,167,306, 1–26–65, Cl. 259—4.

Clark Equipment Co.: *See*—
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Claybourn, Carlton C. to Miehle-Goss-Dexter, Inc. Sheet control and spray collection chamber. 3,167,012, 1–26–65, Cl. 101—416.

Claywell, Jack W., and S. O. Peterson, to Preway Inc. Dish basket and cup rack structure for a dishwasher. 3,167,183, 1–26–65, Cl. 211—71.

Clemar Co.: *See*—
Robinson, Maurice E. 3,166,880.

Clemons, William G.: *See*—
Cline, William M., and Clemons. 3,167,334.

Clevite Corp.: *See*—
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Simpson, Peter, Clough, and Todhunter. 3,167,390.

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Coast Metals, Inc.: *See*—
Cape, Arthur T. 3,167,406.

Cobine, James D., to General Electric Co. Movable shield structure for vacuum gap devices. 3,167,629, 1–26–65, Cl. 200—144.

Cogsdill, Stuart A., to Cogsdill Tool Products, Inc. Deburring tool. 3,166,958, 1–26–65, Cl. 77—73.5.

Cogsdill Tool Products, Inc.: *See*—
Cogsdill, Stuart A. 3,166,958.

Cohn, Sigmund, Corp.: *See*—
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Colby, Edward E., to The Procter & Gamble Co. Slurry treatment of flour with proteolytic enzymes and dry mixes utilising the resulting flour. 3,167,432, 1–26–65, Cl. 99—93.

Coleman Instruments Corp.: *See*—
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Colgate-Palmolive Co.: *See*—
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Collins, Peter J., and S. N. Tower, to Canadian Westinghouse Co., Ltd. Reactor refueling system. 3,167,481, 1–26–65, Cl. 176—30.

Collins Radio Co.: *See*—
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Anderson, William G. 3,167,697.
Broadhead, Samuel L., Jr. 3,167,721.
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Seestrom, Frank E. 3,167,680.

Collins, William F., Jr. Holder for collapsible tubes and the like. 3,167,287, 1–26–65, Cl. 248—108.





Collura, Peter C., to Container Corp. of America. Easy-opening reclosable carton with hinged cover. 3,167,239, 1–26–65, Cl. 229—51.

Collura, Peter C., and J. D. Desmond, to Container Corp. of America. Reduceable carton with reclosure feature. 3,167,240, 1–26–65, Cl. 229—51.

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Combustion Engineering Inc.: *See*—
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Commonwealth Engineering Co. of Ohio, The: *See*—
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Congoleum-Nairn Inc.: *See*—
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Consoletti, Paul C., to Omark Industries, Inc. Saw chain. 3,167,100, 1–26–65, Cl. 143—135.

Consolidated Astronautics Inc.: *See*—
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Globus, Alfred R. 3,167,428.

Constantin, George W.: *See*—
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Container Corp. of America: *See*—
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Cook, Evin L., to Socony Mobil Oil Co., Inc. Fluid-actuated drilling tool. 3,167,136, 1–26–65, Cl. 173—73.

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Cook, Leo W., to Borg-Warner Corp. Clutch device. 3,167,162, 1–26–65, Cl. 192—68.

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Cordova, Elmer R. Apparatus for integral molding of irregularly shaped hollow articles. 3,166,817, 1–26–65, Cl. 25—130.

Corley, Charles B., Jr., and P. R. McStravick, to Jersey Production Research Co. Well-pumping system. 3,166,944, 1–26–65, Cl. 74—95.

Corsette, Douglas F., and R. C. Cooprider, to The Drackett Co. Protective cap for a liquid dispenser. 3,167,217, 1–26–65, Cl. 222—182.

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Cote, Alphonse C., and D. F. Stanfill, III, to United States of America, Navy. Optical display apparatus. 3,166,974, 1–26–65, Cl. 88—24.

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Cotton, Robert B., to All American Engineering Co. Arrest cable support. 3,167,277, 1–26–65, Cl. 244—110.

Cotton, Robert B., to All American Engineering Co. Aerial pick-up system. 3,167,303, 1–26–65, Cl. 258—1.2.

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Cowles, Warren H., and R. L. Ensinger, to Holley Carburetor Co. Compressor bleed actuator. 3,166,989, 1–26–65, Cl. 91—359.

Cox, James R., to Jersey Production Research Co. System for analysis of electric signals including parallel filter channels. 3,167,710, 1–26–65, Cl. 324—77.

Crain, Norman R., to General Electric Co. High-speed transistor flip-flops. 3,167,662, 1–26–65, Cl. 307—88.5.

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McInerney, John A. 3,167,088.

Crane, George R., to Litton Systems, Inc. Tape recorder. 3,167,267, 1–26–65, Cl. 242—55.13.

Crane, Samuel P. Expanded foraminous plastic article. 3,167,353, 1–26–65, Cl. 297—453.

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Crawford, William, and J. A. H. Wood, to Socony Mobil Oil Co., Inc. Metal working lubricant. 3,167,511, 1–26–65, Cl. 252—48.8.

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Cretors, Charles J., to C. Cretors & Co. Apparatus for producing candy coated popped corn and the like. 3,167,453, 1–26–65, Cl. 118—19.

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Cromwell, Harold J., to General Motors Corp. Automatic starting control. 3,167,659, 1–26–65, Cl. 290—38.

Cross, Alexander D., to Syntex Corp. 17-tetrahydropyranyl ethers of 19-nor, 3-keto androstanes. 3,167,547, 1–26–65, Cl. 260—239.55.

Cross, Alexander D., to Syntex Corp. 10a-steroid-19-oic acid (19,11) lactones, 19-carboxylic acid (19a,11) lactones and 11a,19-dihydroxy- and 11a-hydroxy-19-hydroxymethyl-10a-androstenes. 3,167,548, 1–26–65, Cl. 260—239.57.

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Cunningham, Cecil C. Innerspring mattress construction. 3,166,768, 1–26–65, Cl. 5—351.

Cunningham, Paul M., to Collins Radio Co. Blanking circuit synchronized with code for balancing detector interference. 3,167,771, 1–26–65, Cl. 343—103.

Cushman, Wilhela. Cushion type mop with diaposable cover. 3,166,775, 1–26–65, Cl. 15—228.

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Czerwinski, Waclaw, J. A. Chamberlin, and F. A. Woodward, to The de Havilland Aircraft of Canada, Ltd. Rocket propelled missile. 3,167,016, 1–26–65, Cl. 102—49.

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Czike, Sándor and G. Rotary four-cycle internal combustion engine. 3,167,058, 1–26–65, Cl. 123—44.

Czyzewski, Alfred, and A. Jager, to Schering, A.G. Pesticidal 3-methyl-5-isopropyl phenol esters of N-mono- and N-dimethcarbamic acid. 3,167,472, 1–26–65, Cl. 167—30.

Daguier, Maurice. Heat-treatment process for metallic and other products. 3,167,459, 1–26–65, Cl. 148—13.1.

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Daley, Robert E. Method of and apparatus for pouring ingots. 3,166,806, 1–26–65, Cl. 22—147.

Daley, Robert E. Reuseable hot top. 3,166,807, 1–26–65, Cl. 22—147.

D'Amico, John J., and M. W. Harman, to Monsanto Co. Manufacture of thiolcarbamates. 3,167,571, 1–26–65, Cl. 260—455.

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Danielson, Ellsworth H., and W. C. McNeely, to Selectivend Corp. Automatic coin selector. 3,167,165, 1–26–65, Cl. 194—9.

D'Aquila, Joseph A., to United Aircraft Corp. Converter. 3,167,757, 1–26–65, Cl. 340—347.

Darby, Ronald A., F. P. Hodges, and W. L. Letsch, to United States of America, Navy. Radiation level indicator for sonar projectors. 3,167,150, 1–26–65, Cl. 181—.5.

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Daubert, Henry C., Jr.: *See*—
Barkalow, Clare E., and Daubert. 3,167,763.

Davenport, Kent J., and J. S. McEwan. Game board with altitude standards and simulated aircraft mounted thereon with means for varying altitude and attitude. 3,167,313, 1–26–65, Cl. 273—134.

Davis, Charles J., and R. N. Nissen; said Nissen assor. to said Davis. Self-propelled excavating machine. 3,167,194, 1–26–65, Cl. 214—138.

Davis, Donovan C., and L. A. Ule, to United States of America, Army. Automatic frequency acquisition circuit. 3,167,718, 1–26–65, Cl. 328—127.

Davis, Dwight E.: *See*—
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Davis, Ernest G., and E. E. Wiseman, to Borg-Warner Corp. Disc brake. 3,167,156, 1–26–65, Cl. 188—72.

Davis, Raymond R.: *See*—
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Davis, Thomas L.: *See*—
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Day, Fred M. Reciprocating propeller. 3,167,130, 1–26–65, Cl. 170—160.1.

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Klekens, Gerrit, Sher, Van Dorsser, De Graaf, and Zaalberg. 3,167,413.

De Havilland Aircraft of Canada, Ltd., The: *See*—
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Delaney, Lawrence J., Jr. Educational testing device. 3,166,860, 1–26–65, Cl. 35—48.

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Del Francia, Joel A., to Institutional Food Equipment Corp. Combination cook stove and retractable oven. 3,167,065, 1–26–65, Cl. 126—19.

De Lorenzo, Eugene J., and R. V. Wright, to Olin Mathieson Chemical Corp. Solid reaction products of amines and non-volatile reaction products of diborane and conjugated diolefin hydrocarbons. 3,167,589, 1–26–65, Cl. 260—583.

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Dengle, Sydney H., and W. McKowen, to Meredith Publishing Co. Plastic spline construction for books. 3,167,328, 1–26–65, Cl. 281—29.

De Nijs, Petrus J., to Lederfabriek L. Mombers, N.V. Coated textile materials and process. 3,167,446, 1–26–65, Cl. 117—42.

Dennis, Clement O., and W. C. Shaver. Apparatus for supporting, loading and unloading tire retreading matrices. 3,166,787, 1–26–65, Cl. 18—2.

De Paul, Richard E., to Container Corp. of America. Can carrier carton with chime engaging retaining tabs. 3,167,213, 1–26–65, Cl. 220—112.

Derks, Adriaan, to The Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten behoeve van Nijverheid, Handel en Verkeer. Self-starting transistor relaxation generator. 3,167,725, 1–26–65, Cl. 331—113.

De Rosa, Louis A., to International Telephone and Telegraph Corp. Multi-antenna direction finder. 3,167,774, 1–26–65, Cl. 343—119.

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Di Noia, Emanuel J., to Universal Oil Products Co. Resistance temperature sensing element. 3,167,733, 1–26–65, Cl. 338—28.

Dischert, Robert A., to Radio Corp. of America. Electrostatic deflection circuit. 3,167,681, 1–26–65, Cl. 315—25.

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Dock, Mortimer R., G. C. Sweeney, Jr., and L. H. Chaloux. Method of making a timer. 3,166,839, 1–26–65, Cl. 29—422.

Doherty, Robert H., and T. L. Davis, to United States of America, Air Force. Time-multiplex system for the distribution of serial pulse time codes with microsecond synchronization. 3,167,770, 1–26–65, Cl. 343—103.

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Downs, Samuel, Jr., 27% each to H. Zinkin, G. H. Bragg, W. Y. Thompson, and 19% to Dr. C. H. Glass. Offset driving tool. 3,166,757, 1–26–65, Cl. 1—47.

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Dunseth, Maria G., and M. L. Salutsky, to W. R. Grace & Co. Process for descaling sea water. 3,167,505, 1–26–65, Cl. 210—28.

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Edgeley, Brian W., and J. B. Cousins, to Form Master Ltd. Web-printing mechanism with intermittently rotatable feed means. 3,167,008, 1–26–65, Cl. 101—228.

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Edwards, Harold A., to Nailsea Engineering Co. Ltd. Cleaning devices for gas filtering apparatus. 3,167,415, 1–26–65, Cl. 55—302.

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Egbert, Charles W., to Borg-Warner Corp. Air conditioning systems. 3,167,116, 1–26–65, Cl. 165—22.

Egleston, Harry B., to Ex-Cell-O Corp. Rotating carton tucker apparatus. 3,166,994, 1–26–65, Cl. 93—44.1.

Eisenberg & Co./U.S.A. Agency, Inc.: *See*—
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Erner, William E., to Air Products and Chemicals, Inc. Process for the production of alkaline cyanates in sulfoxide and sulfone solvents. 3,167,887, 1–26–65, Cl. 23—75.

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Farkas, Adalbert, J. M. Hersh, and R. L. Mascioli, to Air Products and Chemicals, Inc. Methyl substituted 1,4-diazabicyclo-(2,2,2)-octane and process. 3,167,555, 1–26–65, Cl. 260—268.

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King, Gilbert W., and Strohm. 3,167,740.
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Iwantscheff, George, and R. Dotzer, to Siemens-Schuckertwerke Aktiengesellschaft. Method of producing gallium from the residues from chemical production of aluminum alkyls and aluminum alkyl derivatives. 3,167,422, 1–26–65, Cl. 75—84.5.
Paccard, René-Philippe, to S. J. Kaufmann. Electric alarm clock. 3,166,887, 1–26–65, Cl. 58—18.
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Jaicklea, Enrique F. Perpetual movable calendar. 3,166,862, 1–26–65, Cl. 40—109.
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Joffe, Edward J., to Park Plastics Co., Inc. Apparatus for manufacturing a film mount. 3,166,795, 1–26–65, Cl. 18—42.
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Bross, Helmut K. 3,167,057.
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Johnson, Jerry L., to Charton Co., Inc. Chair with a unitary suspended seat and backrest. 3,167,352, 1–26–65, Cl. 297—445.
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Jones, Martin L., and A. J. Savage, to United States of America, Navy. Pulse generator with output amplifier controlled by respective sequentially pulsed driver-amplifiers controlling leading and trailing edges. 3,167,717, 1–26–65, Cl. 328—61.
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Kaleta, Theodore. Liquid level switch with normally closed contacts and auxiliary means to maintain contacts in engaged position. 3,167,623, 1–26–65, Cl. 200—84.
Kaneda, Hiromu, and K. Segawa, to Nippon Electric Co. Ltd. High-speed printing apparatus in computer systems. 3,167,002, 1–26–65, Cl. 101—93.
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Arakawa, Makoto, and Ueda. 3,167,604.
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Sassen, Bernard, Mylchreest, and Kargl. 3,167,434.
Karp, Jesse R., W. Swenson, J. S. Spira, and E. L. Gruenberg, to Maxson Electronics Corp. Beacon system for tracking small missiles. 3,167,760, 1–26–65, Cl. 343—7.
Kartaschoff, Pierre, to Laboratoire Suisse de Recherches Horlogeres. Means for adjusting a time-measuring system by means of a time-standard. 3,166,888, 1–26–65, Cl. 58—23.
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Kelly, Jack J., and R. Y. Abramson, to Tech-Quip. Quick disconnect coupling. 3,167,092, 1–26–65, Cl. 137—614.01.
Kelner, Robert C., and H. W. Fuller, to Laboratory For Electronics, Inc. Magneto-optic readout for magnetic data storage device. 3,167,751, 1–26–65, Cl. 340—174.1.
Kemp, Willard E., to ACF Industries, Inc. Hopper door operating mechanism. 3,167,026, 1–26–65, Cl. 105—250.
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Key, Roy R. Dough-twisting apparatus. 3,167,167, 1–26–65, Cl. 198—26.
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Keyser, John E., and R. E. Wheeler, to General Electric Co. Rotary selector switch with rotary contact carrier and means to convert between different numbers of circuit controlling positions thereof. 3,167,620, 1–26–65, Cl. 200—11.
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Klass, Donald L., and J. E. King, to The Pure Oil Co. Process for preparing β-hydroxy-carbyloxy acid sulfates. 3,167,572, 1–26–65, Cl. 260—457.
Klauss, Erwin, to Maschinenfabrik Augsburg-Nurnberg, A.G. Throw-in and throw-off control device for multicolor printing presses. 3,167,007, 1–26–65, Cl. 101—184.
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Klipping, Gustav, to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e. V. Cooling arrangement. 3,166,915, 1–26–65, Cl. 62—217.
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Kovacs, Andrea, and R. Righi, to S.I.A.P.A. (Societa Italo Americana Prodotti Antiparassitari, S.p.A.). Synergistic fungicidal compositions. 3,167,471, 1–26–65, Cl. 167—22.

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Kratochvil, John J., to Victor Mfg. & Gasket Co. Grommet unit. 3,167,324, 1–26–65, Cl. 277—235.

Krebbiel, Robert D., to The Cessna Aircraft Co. Combination control valve and master cylinder. 3,166,890, 1–26–65, Cl. 60—10.5.

Kreiter, George W., and J. H. Riza, to Ling-Temco-Vought, Inc. Seam welding means. 3,167,634, 1–26–65, Cl. 219—84.

Kremp, Rudolf, to Agfa Aktiengesellschaft. Transparency holder. 3,167,180, 1–26–65, Cl. 206—45.20.

Kretsch, Rosi, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for working up stretched aromatic polyester filament. 3,166,886, 1–26–65, Cl. 57—157.

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Krönig, Walter, J. Beier, and H.-J. Müller, to Farbenfabriken Bayer Aktiengesellschaft. Process for the hydrogenation of hydrocarbons in the gasoline boiling range. 3,167,498, 1–26–65, Cl. 208—143.

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Kruger, James B., and P. A. Braginets, to Philip Morris, Inc. Plastic container with flexible hinge. 3,167,207, 1–26–65, Cl. 220—31.

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Leebrick, John R., to M & T Chemicals Inc. Compositions containing biologically active polymer of organotin acid ester compounds. 3,167,473, 1–26–65, Cl. 167—38.6.

Leebrick, John R., to M & T Chemicals Inc. Tin salts of p-vinylbenzoic acid, polymers thereof and process for preparing said salts. 3,167,532, 1–26–65, Cl. 260—86.1.

Lehman, Henry E. : *See*—
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Le Lan, Armand M., to H. Ernault-Batignolles. Copying machine tools. 3,166,962, 1–26–65, Cl. 82—14.

Lemelson, Jerome H. Ducted sheeting construction. 3,166,829, 1–26–65, Cl. 29—155.

Lemmond, Everett C. Automatic poultry drop shackle. 3,166,785, 1–26–65, Cl. 17—44.1.

Lemmond, Everett C. Package agitator for increasing ice capacity. 3,167,304, 1–26–65, Cl. 259—1.

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Leo, Ivan A. Powered moldboard plow. 3,167,134, 1–26–65, Cl. 172—40.

Le Parquier, Guy, to Compagnie Generale de Telegraphie Sans Fils. Radar system to suppress interference signals. 3,167,761, 1–26–65, Cl. 343—7.

Letsch, William L. : *See*—
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Van Embden, Jan C. M., and Boldingh. 3,167,513.

Leveskis, Newton G., to U.S. Peroxygen Corp. Organic peroxide preparation. 3,167,591, 1–26–65, Cl. 260—610.

Leviton, Abraham, and M. J. Pallansch, to United States of America, Agriculture. Process for preparing sterilized concentrated milk products. 3,167,437, 1–26–65, Cl. 99—212.

Levy, Marilyn, to United States of America, Army. Monobaths containing sodium polyacrylate and polyvinyl-pyrralidone. 3,167,429, 1–26–65, Cl. 96—61.

Lewis, Edward F., to General Motors Corp. Fastening means. 3,167,336, 1–26–65, Cl. 287—53.

Lewis, William F. Painting kit. 3,167,177, 1–26–65, Cl. 206—1.7.

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Liermann, Jean, to Commissariat a l'Energie Atomique. Device for aligning fuel cartridges in a channel of a nuclear reactor. 3,167,483, 1–26–65, Cl. 176—77.

Lillie, Robert W., to Union Carbide Corp. Process and apparatus for producing laminated panels. 3,167,603, 1–26–65, Cl. 264—47.

Linda, Frank R., to International Paper Co. Container and blank. 3,167,230, 1–26–65, Cl. 229—4.5.





Lindgren, Nils K., to Electrolux, Aktiebolaget. Washing machine provided with motor reversing means. 3,167,701, 1–26–65, Cl. 318—282.

Lineback, Oliver C., to United Shoe Machinery Corp. United thermosetting and folding machines. 3,167,452, 1–26–65, Cl. 118—1.

Ling, Wilfred C., to Abbott Laboratories. Flow regulating device. 3,167,299, 1–26–65, Cl. 251—8.

Ling-Temco-Vought, Inc. : *See*—
Kreiter, George W., and Riza. 3,167,634.

Link-Belt Co. : *See*—
Spurlin, William V. 3,167,670.

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Linton, Roy J., to Linton Mfg. Co., Inc. Wind musical instrument. 3,166,969, 1–26–65, Cl. 84—380.

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Litman, Roger A., to General Instrument Corp. Support for lapping transistor wafers or the like. 3,166,875, 1–26–65, Cl. 51—216.

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Grafstein, Paul L. 3,167,379.
Strickholm, Harry. 3,167,612.

Lizza, Albert J., to United States of America, Army. Differential gas system for gas-operated firearms. 3,166,983, 1–26–65, Cl. 89—191.

Lobelle, Marcel J. O., to M. L. Aviation Co. Ltd. Easily donned flying helmet. 3,167,069, 1–26–65, Cl. 128—141.

Locher, Ross E., to Zinaco Electrical Products. Roller actuated snap action electric toggle switch. 3,167,622, 1–26–65, Cl. 200—68.

Lodge, Alvin : *See*—
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Lohmer, Karl, and G. Kolb, to Agfa Aktiengesellschaft. Production of photographic silver halide emulsions. 3,167,430, 1–26–65, Cl. 96—114.

Lohr, Thomas E., to General Motors Corp. Compound motion seat adjuster. 3,167,297, 1–26–65, Cl. 248—419.

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Thorn, Richard P. 3,167,157.

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Love, John. Auxiliary valves for internal combustion engines. 3,167,059, 1–26–65, Cl. 123—75.

Lovelace, Joe B., and W. E. Patterson, to Pittsburgh Plate Glass Co. Method of applying an aqueous size to strands formed of glass filaments and product produced thereby. 3,167,468, 1–26–65, Cl. 161—175.

Lowrie, Harman S., to G. D. Searle & Co. Process for the preparation of 3-phenyl-4-hydroxycinnoline. 3,167,552, 1–26–65, Cl. 260—250.

Ludlow, Edmund, and B. H. Irwin, to Arvin Industries, Inc. Sound attenuating gas conduit and resonators therefor. 3,167,152, 1–26–65, Cl. 181—48.

Lukson, Richard, to Lear Siegler, Inc. Piezoelectric force controller. 3,167,667, 1–26–65, Cl. 310—8.6.

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Lunden, Clarence D., and L. L. Oh, to Boeing Airplane Co. Microwave zig-zag line couplers. 3,167,727, 1–26–65, Cl. 333—7.

Luper, Forrest E., to F. E. Luper and J. R. Lundberg, d.b.a. Luper & Lundberg. Trellis. 3,166,869, 1–26–65, Cl. 47—47.

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Leebrick, John R. 3,167,532.

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Macaul, Robert T., and D. J. Donovan, to Ingersoll-Rand Co. Drilling method for mining thin ore bodies. 3,167,354, 1–26–65, Cl. 299—11.

MacDonald, Ira A., and A. S. Geisler, to Atlas Chemical Industries, Inc. Plasticised yeast. 3,167,433, 1–26–65, Cl. 99—96.

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Mackie, Harry A., to General Motors Corp. Pendant air bearing load supporting device. 3,167,145, 1–26–65, Cl. 160—7.

Mackie, Harry A., and W. J. Streetman, to General Motors Corp. Door hinge mechanism. 3,166,783, 1–26–65, Cl. 16—163.

Magers, William, and P. G. Wermager, to United States of America, Navy. Magazine door assembly. 3,167,339, 1–26–65, Cl. 292—144.

Magnavox Electronics Co. Ltd., The : *See*—
Humby, Edward T. 3,167,316.

Magnesium Elektron Ltd. : *See*—
Petch, James H. T., and Fisher. 3,167,425.

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Maisch, Oliver, to Tuthill Pump Co. Internal tube seal and connector. 3,167,335, 1–26–65, Cl. 285—317.

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Malek, Jan M. Solar evaporator. 3,167,488, 1–26–65, Cl. 202—174.

Maljanian, John M., and G. A. Meyer, to Chandler Evans Corp. Fuel control for a regenerative gas turbine engine. 3,166,902, 1–26–65, Cl. 60—39.16.

Malone, Robert W., to Esso Research and Engineering Co. Combination additive for gasoline. 3,167,410, 1–26–65, Cl. 44—69.

Malone, Robert W., to Esso Research and Engineering Co. Method of preparing and employing phosphorus oxide smokes to make phosphate esters. 3,167,577, 1–26–65, Cl. 260—461.

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Mancini, Louis P. First aid cabinet. 3,167,370, 1–26–65, Cl. 312—209.

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Mansfield, Vaughn. Method for producing coke and gas from carbonizable material. 3,167,487, 1–26–65, Cl. 202—22.

Manship, Luther P., to The Proctor-Silex Corp. String fastening device. 3,166,809, 1–26–65, Cl. 24—121.

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Marks, Alvin M. and M. M. Multi-element electro-optic crystal shutter. 3,167,607, 1–26–65, Cl. 88—61.

Marks, George M. Electric thread cutting apparatus. 3,167,097, 1–26–65, Cl. 139—266.

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Marks, Alvin M. and M. M. 3,167,607.

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Foerster, Roy P. 3,167,726.

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McInerney, John A., to Crane Co. Concentric duct valve construction. 3,167,088, 1–26–65, Cl. 137—375.
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McVicker, Noah W. and J. S., to Rainbow Crafts, Inc. Plastic modeling composition of a soft, pliable working consistency. 3,167,440, 1–26–65, Cl. 106—150.
Meadors, Victor G., to Jersey Production Research Co. Oil reservoir depletion process. 3,167,119, 1–26–65, Cl. 166—9.
Meadows, Ernest D., to Meadows Mfg. Co. Spindle control mechanism. 3,166,883, 1–26–65, Cl. 57—88.
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Meingailis, Ivars, A. R. Calawa, and R. H. Rediker, to Massachusetts Institute of Technology. Magneto-semiconductor devices. 3,167,663, 1–26–65, Cl. 307—88.5.
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Miller, Theodore A., and H. L. Fowler; said Fowler assor. to said Miller. Apparatus for making dipped articles from thermosetting material. 3,166,791, 1–26–65, Cl. 18—24.
Millen, Theodore I., to Philco Corp. Slow-scan composite signal-producing apparatus with means for producing sync pulses by offsetting black level. 3,167,613, 1–26–65, Cl. 178—7.1.
Millenaar, Richard J., and E. G. Blair, deceased (by M. T. Blair, executrix), to Oscar Mayer & Co., Inc. Sausage stuffing and linking apparatus. 3,166,784, 1–26–65, Cl. 17—33.
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Moore, Gerald T., and H. P. Kilroy, to Giddings & Lewis Machine Tool Co. Selective counting apparatus. 3,167,660, 1–26–65, Cl. 307—88.
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Moore, Lawrence A., to The Black-Clawson Co. Paper machine headbox with adjustable slice. 3,167,470, 1–26–65, Cl. 162—347.
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Moosmayer, Alex, and U. Ebert, to Mecano-Bundy G.m.b.H. Thermostatically controlled valves. 3,167,249, 1–26–65, Cl. 236—34.
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Moran, Eric R., and G. R. Jefferies, to North American Philips Co. Inc. Apparatus for separating into pieces thin wafer shaped plates of brittle material. 3,167,228, 1–26–65, Cl. 225—103.
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Pascoe, George, and C. S. Cseke, to Ford Motor Co. Apparatus for plotting two dimensional data. 3,166,846, 1–26–65, Cl. 33—1.

Patrick, Earnest H. Combined refrigerator and air conditioner. 3,166,912, 1–26–65, Cl. 62—7.

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Pelavin, Milton H., to Technicon Chromatography Corp. Chromatography analysis apparatus with standardization provision. 3,166,929, 1–26–65, Cl. 73—53.

Pelavin, Milton H., to Technicon Instruments Corp. Digital read-out apparatus. 3,167,377, 1–26–65, Cl. 346—14.

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Pevar, Maxwell. Magnetic particle detection device having two separate movable electromagnets and an interfitting bar member for magnetically coupling the cores of same. 3,167,708, 1–26–65, Cl. 324—38.

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Point, Marcel A. R., and R. C. Morel, to Societe Anonyme de Machines Electrostatiques. Electrostatic sprayer system having a separate high resistivity conductor. 3,167,255, 1–26–65, Cl. 239—15.

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Pugin, Andre, to J. R. Geigy, A.-G. Compositions containing pigments. 3,167,441, 1–26–65, Cl. 106—168.

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Solomon, Ernest. 3,167,497.

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Rabenow, Guenther: *See*—
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Rabinow, Jacob, to Control Data Corp. Optical mask reading machine. 3,167,744, 1–26–65, Cl. 340—146.3.

Rachwal, Ervin J., and B. J. Loughlin, to Data Technology, Inc. Analog to digital conversion apparatus. 3,167,750, 1–26–65, Cl. 340—347.

Radiation, Inc.: *See*—
Hoeppner, Conrad H. 3,167,719.

Radio Corp. of America: *See*—
Bigler, John M. 3,166,836.
Dischert, Robert A. 3,167,681.
Holt, Francis R., and Avins. 3,167,614.

Rainbow Crafts, Inc.: *See*—
McVicker, Noah W. and J. S. 3,167,440.

Ramella, Amilcare, to Socony Mobil Oil Co., Inc. Reformate yields by reforming a blend. 3,167,495, 1–26–65, Cl. 208—139.

Ramsden, Thomas R.: *See*—
Miller, Henry L., and Ramsden. 3,167,004.

Ramsey, William R., to Western Electric Co., Inc. Device for controlling the cutting depth of a tool. 3,166,987, 1–26–65, Cl. 90—62.

Ramstedt, Clarence F., to United States of America, Navy. Torpedo autopilot servo. 3,167,048, 1–26–65, Cl. 114—23.

Rand, Henry J., to R. P. Scherer Corp. Rotary distributor for pressure cuff tourniquets. 3,167,067, 1–26–65, Cl. 128—24.

Randol, Glenn T. Compound master cylinder for hydraulic brake systems. 3,166,907, 1–26–65, Cl. 60—54.6.

Rapata, George M., to Illinois Tool Works Inc. Expandable fastener. 3,166,972, 1–26–65, Cl. 85—73.

Rapp, Guenther, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of caprylic lactam. 3,167,542, 1–26–65, Cl. 260—239.3.

Rappas, James A. Keyway strip for concrete pavement forms. 3,166,815, 1–26–65, Cl. 25—118.

Rasmussen, Roy M. Shoulder pad construction. 3,166,760, 1–26–65, Cl. 2—2.

Ratz, Rudi F. W., to Olin Mathieson Chemical Corp. Process for the preparation of 3,9-dihydroxy-2,4,8,10-tetraoxa-3,9-diphosphaspiro [5,5] undecane-3,9-dioxide. 3,167,576, 1–26–65, Cl. 260—461.

Raylite Electric Corp.: *See*—
Abramson, Abraham. 3,167,467.

Reames, Leonard W., to Edward J. Sopcak & Thomas L. Draper. Abrasive sheet support system. 3,166,877, 1–26–65, Cl. 51—1.97.

Rediker, Robert H.: *See*—
Meingailis, Ivars, Calawa, and Rediker. 3,167,663.

Redmer, Wilbert W., to Abbott Laboratories. Flow regulating device. 3,167,085, 1–26–65, Cl. 137—315.

Redstone, Reuben, and M. C. Rowland, to United States of America, Atomic Energy Commission. Target for a neutron generator consisting of a coating of one of the lanthanon elements on a base metal. 3,167,655, 1–26–65, Cl. 250—84.5.

Reed, Selmar A. Garbage receptacle rack. 3,167,185, 1–26–65, Cl. 211—84.

Reffell, Brian R. A., to The Walter Kidde Co., Ltd. Parachute 3,167,279, 1–26–65, Cl. 244—145.

Reid, John B.: *See*—
Kline, Richard, Reid, and Spence. 3,166,771.

Reigh Clarence J.: *See*—
Hursh, Samuel R., and Reigh. 3,167,282.

Reineke, Harry W., Jr., and K. L. Odinet. Desanding hose and cutting tool. 3,167,126, 1–26–65, Cl. 166—104.

Reiner, Stewart: *See*—
Heath, William H., Nubar, Arahal, Reiner, Hughes, and White. 3,167,648.

Reines, Jose, and G. L. Shelton, Jr., to International Business Machines Corp. Specimen identification methods and apparatus. 3,167,746, 1–26–65, Cl. 340—146.3.

Reis, Charles S. Portable electric oven. 3,167,642, 1–26–65, Cl. 219—413.

Reliance Electric Engineering Co., The: *See*—
Satola, William J. 3,166,804.

Renaud, Robert A., to Texas Instruments Inc. Protective control circuit. 3,167,699, 1–26–65, Cl. 318—221.

Renaut, Paul, and J. Dory. Ultrasonic inspection apparatus using short elastic pulses. 3,166,931, 1–26–65, Cl. 73—67.8.

Rendle, Laurence K.: *See*—
Wilsdon, Ronald D., and Rendle. 3,167,039.

Renforth, Jack C.: *See*—
McElroy, Albert D., Hashman, and Renforth. 3,167,366.

Renfroe, Raymon L. Erection clamp. 3,167,343, 1–26–65, Cl. 294—67.

Rheem Mfg. Co.: *See*—
Ohtsu, Koichi. 3,167,264.

Rheinmetall G.m.b.H.: *See*—
Petzsch, Lothar. 3,166,848.

Rhodes, Donald E., to Kerr-McGee Oil Industries, Inc. Massive crystals of $U_3O_8$. 3,167,388, 1–26–65, Cl. 23—14.5.

Rhodes, Herbert C. Device for automatically coating and rolling up sheeted dough pieces. 3,167,032, 1–26–65, Cl. 107—4.

Rhodes, Laddie T., to United States of America, Navy. Fast recharging pulse generator. 3,167,661, 1–26–65, Cl. 307—88.5.

Richards, Stanley: *See*—
Zmuda, Andrew W., Richards, and Staschke. 3,166,894.

Richter, Harold K., to Air-Shields, Inc. Apparatus for use in sensing the pulse. 3,167,658 1–26–65, Cl. 250—239.

Riebs, Richard E., to McGraw-Edison Co. Electronic time delay devices. 3,167,686, 1–26–65, Cl. 317—22.

Rieke, Richard J.: *See*—
Hughes, William C., Wolfe, and Rieke. 3,167,747.

Righi, Renato: *See*—
Kovacs, Andrea, and Righi. 3,167,471.

Riley, Thomas J.: *See*—
Freche, John C., Riley, and Waters. 3,167,426.

Riza, John H.: *See*—
Kreiter, George W., and Riza. 3,167,634.

Robbins, Carl B. Clip for embalming operations. 3,166,819, 1–26–65, Cl. 27—21.

Robbins, Carl G.: *See*—
Laben, Wallace J., Robbins, and Schmidt. 3,167,455.

Robbins & Myers, Inc.: *See*—
Fuller, Forrest E. 3,167,676.

Roberge, Francis D. Ordnance aerial transfer system. 3,167,278, 1–26–65, Cl. 244—137.

Roberts, Russell R.: *See*—
Castellana, Jack P., and Roberts. 3,166,951.

Robertshaw Controls Co.: *See*—
Wantz, Clarence, Branson, and Demi. 3,167,250.

Robiette, Alfred G. E. Production of metals or alloys from ores. 3,167,420, 1–26–65, Cl. 75—11.

Robinson, Kenneth L.: *See*—
Pepitone, Vincent, and Robinson. 3,166,878.

Robinson, Maurice E., to Clemar Co. Mower. 3,166,880, 1–26–65, Cl. 56—6.

Rochette, James P., and R. A. R. Caudron, to La Telemecanique Electrique. Normally closed auxiliary contact device including a slide member provided with fast acting contact means. 3,167,626, 1–26–65, Cl. 200—104.

Rockwell Mfg. Co. : *See*—
Farrell, Thomas C. 3,166,937.
Fisher Harry W., Crumley, and Lehman. 3,166,936.

Rockwell-Standard Corp. : *See*—
Brownyer, Nelson R. 3,167,158.

Roessler, Charles C., to American Mfg. Co., Inc. Mechanical apparatus. 3,166,960, 1–26–65, Cl. 81—9.1.

Rohde, Robert P., to General Motors Corp. Pulsating power unit devices. 3,167,020, 1–26–65, Cl. 103—41.

Rongved, Leif : *See*—
Lyon, Laurence G., Rongved, and West. 3,167,679.

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Hallatt, Robert J., and Whitebook. 3,166,914.
Hallatt, Robert J., and Whitebook. 3,166,917.

Rosan Engineering Corp. : *See*—
Rosan, Joseph. 3,167,105.

Rosan, Joseph, to Rosan Engineering Corp. Self-locking nut and bolt unit. 3,167,105, 1–26–65, Cl. 151—11.

Rosekrans, Alvie. Pipe sleeve holder. 3,167,310, 1–26–65, Cl. 269—52.

Rosen, Harold A., to United States of America, Navy. Precision target using single sideband modulator. 3,167,768, 1–26–65, Cl. 343—17.7.

Rosenfeld, Morton M. Reinforced wall structure. 3,166,873, 1–26–65, Cl. 50—373.

Rosenkranz, George : *See* —
Djerassi, Carl, and Rosenkranz. 3,167,568.

Rosenkranz, George, and M. Velasco, to Syntex Corp. 16β-methyl-16α, 17α-dihydroxy pregnenes and the 16α, 17α-cyclic ketals and acetals thereof. 3,167,545, 1–26–65, Cl. 260—239.55.

Rosenthal, Sol R. Transcutaneous injection device. 3,167,073, 1–26–65, Cl. 128—253.

Rouse, Thomas P. M., Jr. Pressure vessels. 3,167,204, 1–26–65, Cl. 220—5.

Roussel-UCLAF, S.A. : *See*—
Hagemann, Guy. 3,167,474.

Rowland, Michael C. : *See*—
Redstone, Reuben, and Rowland. 3,167,655.

Rowlinson, Henry : *See*—
Alderman, Alfred, Gonek, and Rowlinson. 3,167,630.

Royal Industries, Inc. : *See*—
Proctor, Ralph H. 3,167,208.

Rozlog, Matt, and J. L. Williams. Sheet material dispenser. 3,167,367, 1–26–65, Cl. 312—39.

Rozlog, Matt, and J. L. Williams. Sheet material dispenser. 3,167,368, 1–26–65, Cl. 312—39.

Ruckstuhl, Franz, to Erik Allan Olsson. Device for centering the stream of metal to the middle of the mould during vertical continuous casting. 3,166,803, 1–26–65, Cl. 22—57.2.

Rudolph, Rome R. Power driven golf cart. 3,167,146, 1–26–65, Cl. 180—19.

Rumble, Robert C., and W. A. Hoyer, to Jersey Production Research Co. Cooling radiation detectors in well logging apparatus. 3,167,653, 1–26–65, Cl. 250—71.5.

Ruschman, Frederick J., Jr. Curtain guide device for curtain rods. 3,167,225, 1–26–65, Cl. 223—105.

Ruschmann, Henry F. Operating upon sheets of foil. 3,166,966, 1–26–65, Cl. 83—262.

Russell, Robert G. : *See*—
Slayter, Games, Morgan, Russell, and Scheffler. 3,166,895.

Russo, James E., to Wheelock Signals, Inc. Mounting structure for electromagnetic sealed relay. 3,167,625, 1–26–65, Cl. 200—87.

Ruud, Gunnar. Apparatus for the removal of material in a bottom die plate for use in the preparation of box blanks of paper board or similar material. 3,166,984, 1–26–65, Cl. 90—12.

S.I.A.P.A. (Societa Italo Americana Prodotti Antiparassitari, S.p.A.) : *See*—
Kovacs, Andrea, and Righi. 3,167,471.

SKF Industries, Inc. : *See*—
Helms, John F. 3,167,365.

SPOFA, Sdruzeni podniku pro zdravotnickou vyrobu : *See*—
Ernest, Ivan, and Protiva. 3,167,588.

Sackett, A. J., & Sons Co., The : *See*—
Sackett, Walter J. 3,167,173.

Sackett, Walter J., to The A. J. Sackett & Sons Co. Bulk unloader. 3,167,173, 1–26–65 Cl. 198—53.

St. John, Karl M., to Hazeltine Research, Inc. Color-television apparatus for improving resolution during monochrome reception. 3,167,611, 1–26–65, Cl. 178—5.4.

Sakai, Tomoharu, and T. Osato, to Sumitomo Metal Industries Ltd. Steel form for placing concrete. 3,166,818, 1–26–65, Cl. 25—131.

Salutsky, Murrell L. : *See*—
Dunseth, Maria G., and Salutsky. 3,167,505.

Salvetti, Adriano. Surface engaging braking system. 3,167,154, 1–26–65, Cl. 188—5.

Samuelson, Gilbert J., and A. D. Franse, to Petrolite Corp. Processing of ores. 3,167,402, 1–26–65, Cl. 23—309.

Sandvikens Jernverks Aktiebolag : *See*—
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Sankyo Co., Ltd. : *See*—
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Yura, Yasuo. 3,167,564.

Santourian, Melcon, to Phillips Petroleum Co. Producing oil from an oil-bearing stratum having high directional permeability. 3,167,117, 1–26–65, Cl. 166—2.

Sarazen, John C., to Burndy Corp. Multi-tap connector. 3,167,375, 1–26–65, Cl. 339—99.

Sarett, Lewis H., A. R. Matzuk, and T.-Y. Shen, to Merck & Co., Inc. 2,5-diazabicyclo[2,2,1]heptanes and 2,2,2 octanes. 3,167,561, 1–26–65, Cl. 260—293.

Sarkisian, Robert S., to Arlington Aluminum Co. Sectional display shelf structure. 3,167,187, 1–26–65, Cl. 211—153.

Sasen, Bernard, G. D. Mylchreest, and A. J. Kargl, to Emhart Corp. Apparatus for manufacture of cooked meat products. 3,167,000 1–26–65, Cl. 99—358.

Sasen, Bernard, G. D. Mylchreest, and A. J. Kargl, to Emhart Corp. Manufacture of cooked sausage products. 3,167,434, 1–26–65, Cl. 99—109.

Satola, William J., to The Reliance Electric Engineering Co. Duct spacer with clips for a squirrel-cage rotor. 3,166,804, 1–26–65, Cl. 22—116.

Sauerman, Ernst C., to F. L. Smithe Machine Co., Inc. Envelope making machine. 3,166,996, 1–26–65, Cl. 93—62.

Saunders, Cye E. Paint brush wrapper. 3,167,178, 1–26–65, Cl. 206—15.1.

Saunders, Kenneth W., W. H. Montgomery, and J. C. French, to American Cyanamid Co. Process for the preparation of iminodiacetonitrile. 3,167,580, 1–26–65, Cl. 260—465.5.

Saunders, Kenneth W., W. H. Montgomery, and J. C. French, to American Cyanamid Co. Process for the preparation of methylene glycinonitrile. 3,167,581, 1–26–65, Cl. 260—465.5.

Saunders Kenneth W., W. H. Montgomery, and J. C. French, to American Cyanamid Co. Process for the preparation of glycinonitrile. 3,167,582, 1–26–65, Cl. 260—465.5.

Savage, Joel J. : *See*—
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Savage, Robert H., to General Electric Co. Analytical balance. 3,167,143, 1–26–65, Cl. 177—190.

Savin, Allen G. Hub and bearing assembly for trailers. 3,167,357, 1–26–65, Cl. 301—1.

Sawester, Joseph A. : *See*—
Hill, John R., and Sawester. 3,167,176.

Sawyer, Herbert S. : *See*—
White, Warren D., and Sawyer. 3,167,709.

Scanlon, Edward C. Plastic molding machine. 3,166,794, 1–26–65, Cl. 18—30.

Scanlon, John J., Jr., to United States of America, Army. Obturator for small arms. 3,166,864, 1–26–65, Cl. 42—16.

Scannell, John B., to Greene, Tweed & Co. Method of forming a piston and like components. 3,166,832, 1–26–65, Cl. 29—156.62.

Scheffler, Lewis F. : *See*—
Slayter, James, Morgan, Russell, and Scheffler. 3,166,895.

Scheinman, Arnold. Corrugated shipping container. 3,167,236, 1–26–65, Cl. 229—38.

Schellentrager, Eugene W., to The Atlas Bolt & Screw Co. Scale dials. 3,167,139, 1–26–65, Cl. 177—70.

Schenley Industries, Inc. : *See*—
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Scherer, R. P., Corp. : *See*—
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Schering, A.G. : *See*—
Czyzewski, Alfred, and Jager. 3,167,472.

Schick Electric Inc. : *See*—
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Schiebeler, Werner, to International Standard Electric Corp. Printing arrangement for high-speed teleprinters. 3,167,166, 1–26–65, Cl. 197—1.

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Schilke, Warren R., and R. D. Watson, to General Motors Corp. Battery. 3,167,456, 1–26–65, Cl. 136—10.

Schindler, Carl, to McGraw-Edison Co. Self-regulating transformer. 3,167,703, 1–26–65, Cl. 323—43.5.

Schlatter, H. A., Aktiengesellschaft : *See*—
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Neidhardt, Hans U., and Neukom. 3,167,635.
Neukom, Alfred, and Rabenow. 3,167,637.

Schmidt, John C. : *See*—
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Schmidt, Karl-Heinz : *See*—
Wilhelm, Karl, and Schmidt. 3,167,615.

Schlising, Anton E. Humidifier. 3,167,601, 1–26–65, Cl. 261—154.

Schmidgall, Carl H. Joint construction and seal therefor. 3,166,802, 1–26–65, Cl. 20—92.

Schmiech, Robert M., to United States of America, Navy. Device for arming an underwater weapon at shallow depths. 3,167,013, 1–26–65, Cl. 102—13.

Schonenberger, Kurt B., to Furnier- und Sperrholzwerk J. F. Wers, Jr., K. G. Werzalit-Pressholzwerk, Oberstenfeld. Apparatus for producing bosilke containers. 3,166,789, 1–26–65, Cl. 18—16.

Schönung, Arnold, and K. Stahl, to Brown, Boveri & Cie, Aktiengesellschaft. Vibration damping arrangement for rotary field system of excitation regulation synchronous machines. 3,167,702, 1–26–65, Cl. 322—17.

Schopper, Erwin : *See*—
Janner, Karl, Magun, and Schopper. 3,167,666.

Schultz, Edward H., Jr., to Nagel-Chase Mfg. Co. Caster construction. 3,166,780, 1–26–65, Cl. 16—21.

Schultz, Edward H., Jr., to Nagel-Chase Mfg. Co. Socket device. 3,166,781, 1–26–65, Cl. 16—39.

Schultz, Paul L., to R. J. Enstrom Corp. Construction of airfoils having elastically-bent afterbodies. 3,167,129, 1–26–65, Cl. 170—159.

Schulz, Hans J., H. Schierhol, and E. Lang, to Deutsche Edelstahlwerke Aktiengesellschaft, and Allgemeine Elektricitats-Gesellschaft. Method of and apparatus for electro-erosion grinding. 3,167,631, 1–26–65, Cl. 219—69.

Schumann, Edward L., to The Upjohn Co. O-(ring-substituted) benzyl ethers of acylpyridineoxime 1-oxides. 3,167,563, 1–26–65, Cl. 260—296.

Schwabische Huttenwerke G.m.b.H. : *See*—
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Schwerdtel, Wulf : *See*—
Krönig, Walter, Schwerdtel, and Vöpel. 3,167,597.

Scognamillo, Frank. Rotary machine with blade centering rings. 3,167,022, 1–26–65, Cl. 103—136.

Scognamillo, Frank. Rotary machine with rings holding blades centered longitudinally and radially in the operating chamber. 3,167,023, 1–26–65, Cl. 103—136.

Scott, Daniel C. : *See*—
Echler, Albert, and Scott. 3,167,198.

Scott, Larry, to United States of America, Atomic Energy Commission. Double pulse recognition circuit. 3,167,654, 1–26–65, Cl. 250—71.5.

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Jensen, Philip B. 3,166,758.

Sdruzeni Podniku textilniho strojirenstvi : *See*—
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Searle, G. D., & Co. : *See*—
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Wagner, Hans A. 3,167,553.

Sedin, James W., and R. E. Wesslund, to United States of America, Navy. Magnetic core shift register circuit. 3,167,749, 1–26–65, Cl. 340—174.

Seestrom, Frank E., to Collins Radio Co. Dual sweep generator. 3,167,680, 1–26–65, Cl. 315—23.

Segawa, Kaoru : *See*—
Kaneda, Hiromu, and Segawa. 3,167,002.

Seismograph Service Corp. : *See*—
Oliver, Willis J. 3,167,707.

Selck, Walter E., to Walter E. Selck and Co. Trowel with interchangeable blades. 3,166,776, 1–26–65, Cl. 15—235.6.

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Self, Luther W. : *See*—
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Selling, Theodore V., to General Motors Corp. Signal-reference time-duplexed microwave radiometer. 3,167,714, 1–26–65, Cl. 325—363.

Sellmaier, Alfons, to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Low temperature gas decomposition plant. 3,167,417, 1–26–65, Cl. 62—42.

Sence, Leonard H., to Allis-Chalmers Mfg. Co. Nonclogging centrifugal pump. 3,167,021, 1–26–65, Cl. 103—103.

Senkowski, Alexander, and B. L. Cosh, to Tractor Research Ltd. Tractor seats. 3,167,298, 1–26–65, Cl. 248—420.

Servage, Henri, to Moulinage et Retorderie de Chavanoz. Apparatus and process for the manufacture of highly crimped yarns by false twist. 3,166,881, 1–26–65, Cl. 57—34.

Seulen, Gerhard, to Deutsche Edelstahlwerke Aktiengesellschaft, and Allgemeine Elektricitats-Gesellschaft. Method of surface hardening steel workpieces in the form of bodies of revolution. 3,167,460, 1–26–65, Cl. 148—143.

Severy, Lawrence A. : *See*—
Snow, Thomas W., and Severy. 3,166,770.

Shanner, Harriet : *See*—
Shanner, William M. 3,167,436.

Shanner, William M., 43.75% to W. M. and H. S. Shanner, 43.75% to R. J. and E. M. Hilgers, and 12.50% to A. P. Murphy. Fermentation suspending process. 3,167,436, 1–26–65, Cl. 99—154.

Sharma, Madan M., to Transis-Tronics, Inc. Power amplification means. 3,167,720, 1–26–65, Cl. 330—10.

Sharp, Lorid G., to Socony Mobil Oil Co., Inc. Method for producing high viscosity oil. 3,167,121, 1–26–65, Cl. 166—11.

Shaver, William C. : *See*—
Dennis, Clement O., and Shaver. 3,166,787.

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Stewart, Alva T., and Fischer. 3,167,529.
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Sherburne, Philip C., to Grinnell Corp. Pipe hanger. 3,167,286, 1–26–65, Cl. 248—62.

Sherwood, John F. Actuator and seal with shaft-lubricating means therefor. 3,166,892, 1–26–65, Cl. 60—28.

Sherwood, John F. Electrothermal actuator. 3,166,893, 1–26–65, Cl. 60—28.

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Shirakura, Shiro, Shimano, and Ueno. 3,166,851.

Shimisu, Bunji : *See*—
Iwai, Issei, and Shimisu. 3,167,562.

Shirakura, Shiro, H. Shimano, and M. Ueno, to Yehan Numata. Electric-controlled micrometer. 3,166,851, 1–26–65, Cl. 33—166.

Shulman, Harold D., to Allegheny Steel Corp. Film-forming composition. 3,167,522, 1–26–65, Cl. 260—17.4.

Siemens & Halske Aktiengesellschaft : *See*—
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Siemens-Schuckertwerke Aktiengesellschaft : *See*—
Iwantscheff, George, and Dotzer. 3,167,422.

Sierichs, William C. *See*—
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Silverman, Leslie, to United States of America, Atomic Energy Commission. Respirator with positive air seal. 3,167,070, 1–26–65, Cl. 128—143.

Simison, Jack H., 50% to P. L. Montemurro. Apparatus for setting a fence post in concrete. 3,166,871, 1–26–65, Cl. 50—103.

Simmen, Robert, to Etablissement Aesup. Watertight sealing means for electric toothbrushes and the like. 3,166,943, 1–26–65, Cl. 74—18.

Simmers, Charles F., to The Morgan Engineering Co. Rotating joint for water cooled trunnion. 3,167,332, 1–26–65, Cl. 285—41.

Simon-Carves Ltd. : *See*—
Simpson, Peter, Clough, and Todhunter. 3,167,390.

Simpson, Peter, G. F. G. Clough, and K. H. Todhunter, to Simon-Carves Ltd. Treatment of waste acid liquor. 3,167,390, 1–26–65, Cl. 23—100.

Singer Co., The : *See*—
Mishcon, Lester. 3,166,920.

Sizer, Phillip S., to Otis Engineering Corp. Dual well packer. 3,167,127, 1–26–65, Cl. 166—120.

Skeggs, Leonard T., and B. R. Stuart, to Technicon Instruments Corp. Panel mounting for tubing and accessories for analysis apparatus. 3,167,397, 1–26–65, Cl. 23—253.

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# CLASSIFICATION OF PATENTS

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| 223– 37 | 3,167,223 | 230 | 3,167,292 | 294 | 3,167,561 | 292–144 | 3,167,339 | 282 | 3,167,701 | | 3,167,771 |
| 98 | 3,167,224 | 309 | 3,167,293 | 294.3 | 3,167,562 | 311 | 3,167,340 | 322– 17 | 3,167,702 | 112 | 3,167,772 |
| 105 | 3,167,225 | 358 | 3,167,294 | 296 | 3,167,563 | 294– 67 | 3,167,341 | 323– 43.5 | 3,167,703 | 117 | 3,167,773 |
| 224– 45 | 3,167,226 | 399 | 3,167,295 | 302 | 3,167,564 | | 3,167,342 | 58 | 3,167,704 | 119 | 3,167,774 |
| 49 | 3,167,227 | 419 | 3,167,296 | 307 | 3,167,565 | | 3,167,343 | 62 | 3,167,705 | 806 | 3,167,775 |
| 225–103 | 3,167,228 | | 3,167,297 | 319 | 3,167,566 | 74 | 3,167,344 | 324– .5 | 3,167,706 | 872 | 3,167,776 |
| 226– 8 | 3,167,229 | 420 | 3,167,298 | 346.4 | 3,167,567 | 83 | 3,167,345 | 1 | 3,167,707 | 346– 14 | 3,167,377 |
| 229– 4.5 | 3,167,230 | 250– 65 | 3,167,651 | 397.45 | 3,167,568 | 84 | 3,167,346 | 38 | 3,167,708 | 32 | 3,167,378 |
| 17 | 3,167,231 | 71.5 | 3,167,652 | 397.47 | 3,167,569 | 87.2 | 3,167,347 | 68 | 3,167,709 | 74 | Re.25,719 |
| | 3,167,232 | | 3,167,653 | 400 | 3,167,570 | 296– 84 | 3,167,348 | 77 | 3,167,710 | | 3,167,777 |
| 23 | 3,167,233 | | 3,167,654 | 448.2 | 3,167,573 | 137 | 3,167,349 | 325– 18 | 3,167,711 | 79 | 3,167,379 |
| | 3,167,234 | 84 | 3,167,650 | 455 | 3,167,571 | 297–267 | 3,167,350 | 163 | 3,167,712 | 82 | 3,167,380 |
| 29 | 3,167,235 | 84.5 | 3,167,655 | 457 | 3,167,572 | 423 | 3,167,351 | 319 | 3,167,713 | 107 | 3,167,381 |
| 38 | 3,167,236 | 202 | 3,167,656 | 461 | 3,167,574 | 445 | 3,167,352 | 363 | 3,167,714 | 109 | 3,167,382 |
| 51 | 3,167,237 | 208 | 3,167,657 | | 3,167,575 | | | | | | |


## CLASSIFICATION OF DESIGNS


| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D 1– 3 | 200,146 | D14– 30 | 200,154 | D31– 4 | 200,161 | D41– 1 | 200,168 | D54– 12 | 200,175 | D58– 26 | 200,182 |
| 12 | 200,147 | D17– 3 | 200,155 | D34– 5 | 200,162 | D42– 7 | 200,169 | 13 | 200,176 | D71– 1 | 200,183 |
| D 2– 3 | 200,148 | D26– 5 | 200,156 | 15 | 200,163 | D45– 4 | 200,170 | D58– 3 | 200,177 | | 200,184 |
| | 200,149 | 10 | 200,157 | D38– 1 | 200,164 | D48– 20 | 200,171 | 4 | 200,178 | | 200,185 |
| D 3– 13 | 200,150 | 14 | 200,158 | D40– 1 | 200,165 | | 200,172 | 11 | 200,179 | D91– 3 | 200,186 |
| D 9– 2 | 200,151 | D29– 20 | 200,159 | D41– 1 | 200,166 | D49– 6 | 200,173 | 12.6 | 200,180 | | 200,187 |
| 6 | 200,152 | D31– 4 | 200,160 | | 200,167 | D52– 6 | 200,174 | 26 | 200,181 | | 200,188 |
| D13– 7 | 200,153 | | | | | | | | | | |



# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

January 26, 1965 Volume 810 Number 4


# TRADEMARKS

## NOTICES

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 50,668** (DR. PEPPER in script), The Dr. Pepper Co., Aerated tonic beverages and syrups for the same; **Reg. No. 197,401** (DR. PEPPER (in script) GOOD FOR LIFE), The Circle A Company, Nonalcoholic, maltless beverages sold as soft drinks; **Reg. No. 422,562** (DR. PEPPER (in script) GOOD FOR LIFE AND DESIGN), Dr. Pepper Co., Nonalcoholic, maltless beverages sold as soft drinks, and syrups for making the same; **Reg. No. 524,679** (DR. PEPPER (in script) AND DESIGN), same; **Reg. No. 524,680** (DR. PEPPER in script), same; **Reg. No. 544,157** (10–2–4 DR. PEPPER), same; **Reg. No. 561,181** (DR. PEPPER), same; **Reg. No. 675,112** (DR. PEPPER AND DESIGN), same, Soft drinks; **Reg. No. 675,747**, same, filed Dec. 7, 1962, D.C., N.D. Tex. (Dallas), Doc. 9363, *Dr. Pepper Company* v. *Pepsi-Cola Company*. Case dismissed without prejudice Feb. 19, 1963.

**Reg. No. 197,401.** (See Reg. No. 50,668.)

**Reg. No. 403,279(a)** (FURACIN), The Norwich Pharmacal Company, Antiseptics and germicides; **Reg. No. 441,715(a)**, same, Eaton Laboratories, Inc., Antibacterial preparations; **2,490,006**, W. Kimel et al., PROCESS OF NITRATING FURAN DERIVATIVES; **2,548,178**, R. F. Raffauf, PROCESS OF MAKING 5-NITRO-2 FURALDEHYDE SEMICARBAZONE; **2,812,282(a)**, V.R. Ellis, STABILIZED AQUEOUS SOLUTION OF NITROFURAZONE; **2,866,795**, G. Swain, PREPARATION OF 5 - NITRO - 2 FURALDEHYDE SEMICARBAZONE; **2,898,335**, J. H. Nichols, NITRATING AN N-2(2-FURYL) ALKYLIDENE HYDRAZINE COMPOUND; **2,927,116**, Gever and O'Keefe, PROCESS FOR THE PREPARATION OF AZOMETHINES OF 5-NITRO-2 FORMYL FURAN WITH HYDRAZINE COMPOUNDS, filed Aug. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C810(1), *The Norwich Pharmacal Company* v. *Performance Products Company*.

**Reg. No. 403,279(b)**; **Reg. No. 441,715(b)**; **Reg. No. 541,155** (FURASPOR), Eaton Laboratories, Inc., Anti-mycotic, antibacterial preparations for use in the treatment of fungal infections; **Reg. No. 567,186** (FURADROXYL), same, Antibacterial preparations for use in the treatment of oral infections, including dental caries; **Reg. No. 569,966** (FURADANTIN), same, Anti-bacterial preparations for use in the systemic and/or local treatment of infections; **Reg. No. 567,238** (FUROXONE), same, Antibacterial preparations; **Reg. No. 624,810** (FURAMAZONE), The Norwich Pharmacal Company, same; **Reg. No. 631,188** (TRICOFURON), same, Antibacterial preparations for the treatment of vaginal infections; **Reg. No. 640,259** (ENTEFUR), same, Antibacterial preparation for veterinary use; **Reg. No. 642,827** (FUREA), same, Preparation for use as an intrauterine medication following termination

## CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1964

| | |
|---|---|
| Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] | 15,498 |
| Date of oldest new application | Apr. 17, 1964 |
| Date of oldest amended application | Apr. 1, 1964 |

J. H. MERCHANT, Director, Trademark Examining Operation

| TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application: New | Oldest Application: Amended |
|---|---|---|
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44 | 5–25–64 | 5–13–64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 4–17–64 | 4–1–64 |
| Renewals (All Classes) | 11–2–64 | 11–17–64 |
| Sec. 12 (c) Publications (All Classes) | 11–5–64 | ------- |

Applications filed during the month of November 1964—2026

Registrations Issued ---------- 393—No. 783,810 to No. 784,202
Renewals Issued ---------- 42


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PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

of pregnancy or abnormal delivery; Reg. No. 668,722 (FURESTROL), same, Anti-bacterial preparation put up in the form of urethal suppositories; Reg. No. 668,376 (MICOFUR), same, Fungicide used as an ingredient in preparations for the treatment of fungus and other infections; Reg. No. 672,087 (FURADEX), same, Antibacterial preparation for veterinary use; Reg. No. 668,987 (AMIFUR), same, Anti-bacterial preparation; Reg. No. 669,789 (ALTAFUR), same, Preparation for the treatment of bacterial infections in humans and animals; Reg. No. 707,739 (DANTAFUR), same, Veterinary anti-bacterial preparations for use in the systemic and/or local treatment of infections; Reg. No. 713,869 (FURAZETS), same, Pharmaceutical preparation for the treatment of infections of the mouth and throat; 2,813,283(b), filed Aug. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C309(2), *The Norwich Pharmacal Co.* v. *Jos. E. Loeber et al.*

Reg. No. 422,562. (See Reg. No. 50,668.)

Reg. No. 437,589 ("MR. DONUT" AND DESIGN), Finis L. Radgedale, Doughnuts; Reg. No. 668,784 (MISTER DONUT), Mister Donut of America, Inc., Snack bar services; Reg. No. 673,396 (DESIGN OF GROTESQUE HUMAN), same; Reg. No. 668,376 (MISTER DONUT), Mister Donut of America, Inc., doing business as Mister Donut, Flour, filling, and jellies for doughnuts, coffee and vegetable shortening, filed Aug. 5, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64-1100-TC, *Mister Donut of America, Inc.* v. *Mr. Donut.*

Reg. No. 441,715(a). (See Reg. No. 403,279(a).)

Reg. No. 441,715(b). (See Reg. No. 403,279(b).)

Reg. No. 534,679. (See Reg. No. 50,668.)

Reg. No. 534,680. (See Reg. No. 50,668.)

Reg. No. 541,155. (See Reg. No. 403,279(b).)

Reg. No. 544,157. (See Reg. No. 50,668.)

Reg. No. 561,181. (See Reg. No. 50,668.)

Reg. No. 567,126. (See Reg. No. 403,279(b).)

Reg. No. 569,968. (See Reg. No. 403,279(b).)

Reg. No. 567,236. (See Reg. No. 403,279(b).)

Reg. No. 634,810. (See Reg. No. 403,279(b).)

Reg. No. 661,126. (See Reg. No. 403,279(b).)

Reg. No. 639,770 (FROSTIE AND DESIGN), The Frostie Company, Root beer and extract for making same; Reg. No. 642,670 (FROSTIE OLD FASHION in script), same, Root beer, and syrups and extracts therefor; Reg. No. 650,504 (FROSTIE OLD FASHION (inscript) ROOT BEER ETC. AND DESIGN), same, Root beer and syrups and extracts from which a soft drink having a root beer flavor may be prepared; Reg. No. 653,486 (FROSTIE), same, Root beer and extract for making same; Reg. No. 662,662 (FROSTIE OLD FASHION (in script) ROOT BEER ETC. AND DESIGN), same, Root beer; Reg. No. 676,543 (MR. FROSTIE in script), same; Reg. No. 722,206 (FROSTIE), same, Soft drinks and flavoring bases for making the same; Reg. No. 752,206 (FROSTIE AND DESIGN), same, Paper drinking cups; Reg. No. 756,654 (FROSTIE AND DESIGN), same, Glass bottles, filed Oct. 15, 1963, D.C. Colo. (Denver), Doc. 8239. Transferred Nov. 14, 1963, D.C., N.D. Tex. (Dallas), Doc. 3-63-361, *The Frostie Company* v. *Dr. Pepper Company.* Defendant has not infringed plaintiff's trademarks); no injunction shall issue against defendant July 8, 1964.

Reg. No. 640,280. (See Reg. No. 403,279(b).)

Reg. No. 642,257. (See Reg. No. 403,279(b).)

Reg. No. 643,670. (See Reg. No. 639,770.)

Reg. No. 650,504. (See Reg. No. 639,770.)

Reg. No. 653,486. (See Reg. No. 639,770.)

Reg. No. 660,722. (See Reg. No. 403,279(b).)

Reg. No. 662,662. (See Reg. No. 639,770.)

Reg. No. 668,376. (See Reg. No. 403,279(b).)

Reg. No. 668,784. (See Reg. No. 427,509.)

Reg. No. 672,087. (See Reg. No. 403,279(b).)

Reg. No. 673,396. (See Reg. No. 427,509.)

Reg. No. 675,112. (See Reg. No. 50,668.)

Reg. No. 675,747. (See Reg. No. 50,668.)

Reg. No. 677,166 (THE BEST WESTERN MOTELS B.W.M. AND DESIGN), M. K. Guertin, doing business as Best Western Motels, Promotional and advisory services to associated independent motel operators—namely, the furnishing of advertising, advertising listings, promotional material and printed business forms; Reg. No. 667,405 (MEMBER THE BEST WESTERN MOTELS AND DESIGN), same, Indicating membership in aplicant's organization, filed Sept. 14, 1962, D.C. N. Dak. (Fargo), Doc. 3965, *Western Motels, Inc.* v. *Kenneth Frandsen and Nettie Frandsen.* Action dismissed with prejudice, pursuant to stipulation and order Jan. 24, 1963.

Reg. No. 678,542. (See Reg. No. 639,770.)

Reg. No. 662,570. (See Reg. No. 427,509.)

Reg. No. 662,927. (See Reg. No. 403,279(b).)

Reg. No. 667,405. (See Reg. No. 677,166.)

Reg. No. 669,789. (See Reg. No. 403,279(b).)

Reg. No. 707,739. (See Reg. No. 403,279(b).)

Reg. No. 713,869. (See Reg. No. 403,279(b).)

Reg. No. 722,206. (See Reg. No. 639,770.)

Reg. No. 752,206. (See Reg. No. 639,770.)

Reg. No. 756,654. (See Reg. No. 639,770.)

# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962. 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 177,737. Wisconsin Laboratories, Inc., Dousman, Wis. Filed Sept. 25, 1963.

### PROTEXEM

Owner of Reg. No. 737,366.

**Class 6—Chemicals and Chemical Compositions**

For Slip-Proofing Liquid, Sold in Aerosols and in Liquid Form, as a Belt Dressing and for Slip-Proofing Other Items Generally.
First use Jan. 1, 1962.

**Class 15—Oils and Greases**

For Lubricating Oil.
First use July 1, 1961.

**Class 52—Detergents and Soaps**

For Solvent, Vapor Type, for Conditioning Paint Brushes and Spray Guns and Nozzles.
First use Apr. 30, 1945.

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SN 180,971. Stromburg Siegert & Co. G.m.b.H., Dusseldorf, Germany. Filed Nov. 12, 1963.



### Stromburg

The word "Stromburg" means "stream castle." Owner of German Reg. No. 765,840, dated Sept. 27, 1962.

**Class 47—Wines**

For Sparkling Wines.

**Class 49—Distilled Alcoholic Liquors**

For Brandies, Whisky, Vodka, Gin, Alcoholic Bitters, and Liqueurs.

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SN 183,341. Tucker Manufacturing Corp., Leominster, Mass. Filed Dec. 20, 1963.



Owner of Reg. No. 669,135.

**Class 2—Receptacles**

For Salad Bowls; Salad Forks and Spoons; Sectional Food Plates; Mugs; Tumblers; Knives, Forks and Spoons; Dust Pans; Dish Pans; Waste Baskets; Wash Basins; Pails; Mixing Bowls; Cake Plate and Cover Sets; Food Containers for Use in Refrigerators; Laundry Baskets; Decanters; Baby Baths; Picnic Jugs; Serving Bowls; Jerry Cans; Trash Cans; Ice Buckets; Colanders; Utility Tubs; Tableware Trays; Diaper Containers; Drainboard Trays; Measuring Cups; Insulated Picnic Coolers; Watering Cans; Hamper Baskets; Dish Drying Racks; Punch Bowl Sets Consisting of a Punch Bowl and Cups; Bathroom Ensembles Consisting of a Waste Basket and a Tissue Dispenser; Picnic Sets Consisting of Dishes, Mugs and Cutlery; and Flower Vases; All of the Above Items Being Made of Plastic.
First use July 26, 1957, on dust pans and pails.

**Class 22—Games, Toys, and Sporting Goods**

For Toy Tea Sets and Swim Boards.
First use July 15, 1957, on toy tea sets.

**Class 32—Furniture and Upholstery**

For Storage Hassocks.
First use Aug. 16, 1963.

**Class 50—Merchandise Not Otherwise Classified**

For Door Mats and Fly Swatters.
First use Oct. 15, 1959, on fly swatters.

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SN 183,667. Consumers Glue Company, St. Louis, Mo. Filed Dec. 27, 1963.

### CONSUMERS

**Class 1—Raw or Partly Prepared Materials**

For Whiting.
First use 1948.

**Class 4—Abrasives and Polishing Materials**

For Pumice Stone and Rotten Stone for Use as Abrasives.
First use 1948.

**Class 5—Adhesives**

For Glue, Vermin-Proof Dry Paste, Tileboard Adhesive Cement, Rubber Tile Adhesive Cement, Asphalt Tile Adhesive Cement, Vinyl Asbestos Tile Adhesive, Wall Tile Adhesive Cement, Waterproof Linoleum Adhesive Cement, Acoustical Waterproof Adhesive Cement, Ceramic Tile Adhesive Cement, Wallpaper Paste, Wall Sizing and Adhesive Composition for Applying Hard Surface Material to Counters, Table Tops and the Like.
First use June 2, 1906.

**Class 6—Chemicals and Chemical Compositions**

For Chemical Wallpaper Remover, Sodium Silicate (Water Glass), Tri-Sodium Phosphate and Yellow Dextrine.
First use 1939.

**Class 12—Construction Materials**

For Patching Plaster, Concrete Patcher, Plaster of Paris, Tile Grout, Crack Filler (Cold Water Putty), Dry Wood Putty, Spackling Compound, Furnace Cement, Joint Cement,

Concrete and Liquid Latex Patching Material, and Composition for Patching Holes in Concrete or Wood Surfaces.
First use 1934.

**Class 52—Detergents and Soaps**

For Composition for Removing Wax, Brush Cleaner (Paint Brush), and Paint and Varnish Remover.
First use 1938.

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SN 201,561. American Motors Corporation, Detroit, Mich. Filed Sept. 10, 1964.



**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electric Ranges and Parts Thereof.

**Class 24—Laundry Appliances and Machines**

For Clothes Washing Machines, Clothes Dryers, and Parts Thereof.

**Class 31—Filters and Refrigerators**

For Refrigerators, Freezers, and Parts Thereof.

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Air Conditioning Apparatus and Parts Thereof.

First use in or before August 1957.

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## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 173,702. Rubber Fabrics Company, New York, N.Y. Filed July 24, 1963.

**EVERWHITE 177**

For Fabric Backed Foam Rubber Padding Sold by the Piece.
First use June 4, 1963.

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SN 174,359. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Aug. 5, 1963.

**FIRESTONE**

Owner of Reg. No. 140,804.
For Raw or Partly Prepared Plastic Resins in the Form of Powders, Granules, Pellets, or Chips, for Further Use in the Industrial Arts.
First use June 10, 1958.

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SN 176,978. Albert Trostel & Sons Company, Milwaukee, Wis. Filed Sept. 13, 1963.

**BULLDOZER**

For Leather.
First use Oct. 31, 1960.

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SN 186,975. The Thibaut & Walker Co., Inc., Newark, N.J. Filed Feb. 18, 1964.

**T & W**

Owner of Reg. No. 764,179.
For Resinous Compositions—Namely, Synthetic Resins, and Thermoplastic Compounds—Namely, Thermoplastic Molding Compounds, Plastics in Sheet, Powder, Rod, and Tube Form for General Use in the Industrial Arts.
First use June 1885.

SN 192,053. Ed. F. Mangelsdorf & Bro., Inc., St. Louis, Mo. Filed Apr. 27, 1964.

**R-2**

For Clover Seed.
First use Jan. 9, 1959.

---

SN 192,126. Charles F. Moore, d.b.a. Charles F. Moore Farm, Dyersburg, Tenn. Filed Apr. 20, 1964.

**CM**

For Registered Polled Hereford Cattle.
First use May 1942.

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SN 195,123. Magnet Cove Barium Corporation, Houston, Tex. Filed June 8, 1964.

**STABILMUL**

For Emulsion Stabiliser for Use in Emulsion-Type Drilling Muds Comprising a Dry Powdered Concentrate Consisting of a Mixture of Clay, Inorganic Salt, Petroleum Hydrocarbon Resin and an Organic Treating Agent.
First use Jan. 3, 1963.

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SN 198,197. Charles C. Moore, Springfield, Mo. Filed July 20, 1964.

**FRIEND O'MAN**

For Dogs.
First use May 1, 1964.



SN 198,795. J. J. Newberry Co., New York, N.Y. Filed June 30, 1964.

PLAYMATE

Owner of Reg. No. 778,835.
For Cuttlebone Used for Bird Food.
First use Oct. 18, 1963.

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SN 199,925. Staymark, Inc., New York, N.Y. Filed Aug. 14, 1964.

**STAYMARK**

For Belt Backing, Which Is Not Precut but Is Sold in Roll Form, Used in the Manufacture of Belts for Wearing Apparel.
First use August 1960.

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SN 200,614. Harry Vlachos, Inc., New York, N.Y. Filed Aug. 25, 1964.

**JET-FRESH**

Owner of Reg. No. 772,998.
For Fresh Cut Flowers.
First use July 29, 1964.

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### Class 2—Receptacles

SN 169,771. Shelmark Industries, Incorporated, Columbus, Ohio. Filed May 27, 1963.

SHELMARK
INDUSTRIES INCORPORATED

The words "Industries Incorporated" are disclaimed apart from the mark as shown. The drawing is lined for red and gray, which colors are regarded as features of the mark.
For Merchandise Receptacles for Packaging, Made of Foamed Plastic.
First use Mar. 6, 1963.

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### Class 5—Adhesives

SN 192,850. Sichel-Werke GmbH, Hannover-Limmer, Germany. Filed May 6, 1964.

**SICHEL**

For Adhesives—Namely, Starch Pastes, Combined Paste and Sizings for Walls, Wallpaper Paste and Glue.
First use in 1921; in commerce in 1930.

### Class 6—Chemicals and Chemical Compositions

SN 156,440. Sylvan Pools, Inc., Doylestown, Pa., assignee of Herman Silverman, d.b.a. Sylvan Pool Supply Co., Doylestown, Pa. Filed Nov. 1, 1962.

**SYLVAN**

Owner of Reg. No. 622,461.
For Chlorine Liberating Preparation for Use in Water, Particularly Swimming Pool Water.
First use on or about Oct. 4, 1962.

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SN 156,544. American Home Products Corporation, New York, N.Y. Filed Nov. 5, 1962.

**SQUEEZE 'N WEED**

For Herbicides.
First use Apr. 25, 1959.

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SN 166,304. Multiform Desiccant Products, Inc., Buffalo, N.Y. Filed Apr. 8, 1963.

**NATRASORB**

For Desiccant—Namely, an Alkali Metal Aluminum Silicate Similar to Many Natural Clays and Feldspars.
First use on or about Mar. 8, 1963.

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SN 168,943. Millen Industries, Inc., New York, N.Y. Filed May 15, 1963.

**DEPENDOLITH OFFSET**

The word "Offset" is disclaimed apart from the mark as shown.
For Solutions, Chemicals, and Ink Eradicator Used in Connection With Offset Duplication.
First use June 1962.

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SN 169,046. Michigan Salt Company, St. Louis, Mich. Filed May 16, 1963.

**PEARLS**

For Salt Preparation Used as a Water Softener in Industry.
First use Mar. 26, 1953.

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SN 169,554. Earl R. Lewis, d.b.a. Chlor-O-Sac Company, Baltimore, Md. Filed May 23, 1963.

**CHLOR-O-SAC**

For Sanitizing Chlorine Tablets for Use in Wash or Rinse Water.
First use Mar. 1, 1963.

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SN 169,928. Hadley Brothers Uhl Company, St. Louis, Mo. Filed May 29, 1963.

**TUF-TOE**

Owner of Reg. No. 594,696.
For Chemical Composition for Application to Leather To Provide a Hard, Flexible Film on the Leather in the Manufacture of Box Toes and Counters.
First use Dec. 18, 1962.

SN 170,400. Glyco Chemicals, Inc., New York, N.Y. Filed June 5, 1963.

## ETHOSPERSE

For Chemical Preparations Useful as Dispersing Agents, Emulsifiers, Solubilisers, and Surfactants as in Cleaning Compounds, Cosmetics, Papermaking, Pharmaceuticals, Textiles and Others, as a Thickener as in Shampoos; as a Humectant and Also a Plasticiser as in Adhesives and Starch Compositions; and as High Pressure Lubricant as in Metal Drawing Operations and as ingredients in Such Lubricants.
First use May 2, 1963.

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SN 171,105. Diamond Alkali Company, Cleveland, Ohio. Filed June 17, 1963.

## NEOGLOSS

For Finish for Leather To Provide Luster and Resistance to Water.
First use July 1945.

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SN 172,534. United States Rubber Company, New York, N.Y. Filed July 5, 1963.

## THIOSTAT

For Chemical To Prevent Growth of a Bacteria That Is Harmful in Oil Recovery Operations.
First use May 6, 1963.

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SN 173,371. Lewis Research Laboratories, Inc., Englewood, N.J. Filed July 19, 1963.

DRAIN-AID

For Non-Poisonous, Non-Toxic Enzyme and Bacteria Powder Used in Sinks, Drains and Grease-Traps To Help Liquify Waste.
First use Dec. 28, 1956.

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SN 175,893. Etablissements Kuhlmann, Societe Anonyme, Paris France. Filed Aug. 26, 1963.

## LYRCAMINE

Owner of French Reg. No. 488,570, dated June 2, 1960 (Paris); Natl. Inst. No. 145,550.
For Dyestuffs, Particularly for Dyeing Copolymers and Polymers of Acrylic Nitrile.

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SN 178,359. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Oct. 7, 1963.

## BUFFAR

Owner of Reg. Nos. 594,056, 644,347, and others.
For Buffer Solution.
First use Sept. 17, 1963.

SN 178,427. The Dow Chemical Company, Midland, Mich. Filed Oct. 7, 1963.

## PARAN

For Solvents.
First use Aug. 23, 1963.

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SN 178,591. Continental Oil Company, Ponca City, Okla. Filed Oct. 9, 1963.

## ADOMALL

For Chemical Compositions Containing Quaternary Ammonium Compounds Which Have Bactericidal, Corrosion-Inhibiting, Surfactant, Detergent and Foaming Properties Which Are Sold to the Oil Industry for Use in Fracturing and Squeesing Operations.
First use Jan. 17, 1963.

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SN 181,655. Meirett Inc., Danbury, Conn. Filed Nov. 21, 1963.

## "XYZ"

THE "END" OF INSECTS

Without waiver of common law rights, applicant disclaims the words "The 'End' of Insects" apart from the mark as shown.
For Insecticides.
First use June 20, 1961.

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SN 190,041. West Chemical Products, Inc., Long Island City, N.Y. Filed Mar. 31, 1964.

## AIR STRIP

For Vaporific Insecticide.
First use Mar. 16, 1964.

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SN 190,116. Ranger Industries, Inc., Corpus Christi, Tex. Filed Apr. 1, 1964.

RANGER

For Bleach.
First use Mar. 11, 1964.

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SN 193,110. Churchill Chemical Company, Galesburg, Ill. Filed May 11, 1964.

## STYX

For Insecticides for Fast Knockdown, and Long Residual Kill of Resistant Insects, Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs and/or Repackaging Under Their Brand Names.
First use on or about Feb. 25, 1963.



SN 195,702. Petrolite Corporation, St. Louis, Mo. Filed June 15, 1964.

## TOL-FLOTE

For Flotation Reagent.
First use Oct. 9, 1963.

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SN 199,792. Chemco Photoproducts Company, Inc., Glen Cove, N.Y. Filed Aug. 13, 1964.

## POWERTONE

For Photographic Developer—Namely, Photographic Developer Concentrated Solution.
First use November 1963.

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SN 199,865. J. & L. Adikes, Inc., Jamaica, N.Y. Filed Aug. 14, 1964.

## REN-O-VATE

For Herbicide.
First use Mar. 17, 1964.

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### Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 202,435. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## CAMPUS

For Smokers' Pipes.
First use June 1957.

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### Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 177,202. Diamond National Corporation, New York, N.Y. Filed Sept. 10, 1963.

BFD

For Matches.
First use May 15, 1956.

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SN 191,347. AMP Incorporated, Harrisburg, Pa. Filed Apr. 17, 1964.

## AMPACT

Owner of Reg. Nos. 405,714, 761,875, and others.
For Explosive Cartridges for Use With Powder-Actuated Tools.
First use Apr. 10, 1964.

### Class 10 — Fertilizers

SN 200,041. Sternco Industries, Inc., Allendale, N.J. Filed Aug. 17, 1964.

## LONGLIFE

Owner of Reg. Nos. 674,270 and 764,547.
For Foods and Fertilisers for Aquarium Plants.
First use May 15, 1952.

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SN 200,843. Grayson Hinckley, Jr., Palo Alto, Calif. Filed Aug. 28, 1964.

## RUDOLPH

For Perfumed Reindeer Manure.
First use Aug. 15, 1963.

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### Class 11 — Inks and Inking Materials

SN 168,940. Millen Industries, Inc., New York, N.Y. Filed May 15, 1963.

DEPENDOLITH OFFSET

The word "Offset" is disclaimed apart from the mark as shown.
For Inks Used in Connection With Offset Duplication.
First use June 1962.

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### Class 12 — Construction Materials

SN 170,068. Russell E. Hartsough, d.b.a. Hartsough Manufacturing Company, Walkerton, Ind. Filed May 31, 1963.

*Hart-Saw*

For Poultry Houses and Poultry House Flooring.
First use about May 1958.

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SN 186,809. Bestwall Gypsum Company, Ardmore, Pa. Filed Feb. 17, 1964.

## DENS-COTE

For Gypsum Composition Board Reinforced With Glass Fiber; and Plaster in Powder Form.
First use on or about Nov. 11, 1963, on plaster.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 200,527. Allied Tube & Conduit Corporation, Blue Island, Ill. Filed Aug. 26, 1964.



For Metal Tubing and Conduit, and Galvanized Metal Tubing and Conduit.
First use May 1, 1962.

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SN 200,874. Signode Corporation, Chicago, Ill. Filed Aug. 28, 1964.

CONTRAX

For Nonmetallic Strapping or Ligatures and Seal Blanks for Use Therewith.
First use Aug. 7, 1964.

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## Class 14—Metals and Metal Castings and Forgings

SN 186,530. Greenville Tubes, Inc., Greenville, Pa. Filed Feb. 12, 1964.




Without prejudice to any common law rights, the word "Tubes" and the representation of a tube appearing in the drawing are disclaimed.
For Metal Tubing.
First use in or about September 1960.

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SN 196,159. Howe Sound Company, New York, N.Y. Filed June 22, 1964.

MONO GRAF

For Castings Produced With Shell Molds Including Metal Castings and Ceramic Castings.
First use June 10, 1964.

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## Class 15—Oils and Greases

SN 96,821. Texaco Inc., New York, N.Y. Filed May 10, 1960.

THE TEXAS COMPANY

Owner of Reg. No. 163,541.
For Gasoline, Naphtha, Lubricating Oil, Lubricating Grease, Cutting Oils, Hydraulic Transmission Oil, Diesel Fuel, Petroleum Wax, Coal Spray Oil, Aircraft Engine Preservative Oil, Jet Engine Fuel, Flushing Oil, Absorption Oil, Petroleum Base Rust Inhibitor, Illuminating Oils, Kerosene, Gas Oil, and Asphalt.
First use January 1908 on lubricating oil.

## Class 16—Protective and Decorative Coatings

SN 142,793. Conchemco, Incorporated, d.b.a. Seidlitz Paint & Varnish Co., Kansas City, Mo. Filed Apr. 23, 1962.

LIQUID POWDER

For Tinting Units for Paint.
First use Apr. 3, 1962.

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SN 174,611. Ross Builders Supplies, Inc., Greenville, S.C. Filed Aug. 7, 1963.

RBS

For Interior Paints for Plaster, Wallboard, Concrete, and Brick Walls.
First use June 14, 1955.

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## Class 18—Medicines and Pharmaceutical Preparations

SN 144,957. Don Hall Laboratories, Portland, Oreg. Filed May 18, 1962.

DEXYTAL

For Composition for Controlling Appetite and Relieving Mental Depression.
First use Mar. 5, 1954.

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SN 160,120. Lever Brothers Company, New York, N.Y. Filed Jan. 3, 1963.

GLINT

For Preparation for the Hygienic Care of the Eyes.
First use June 21, 1962.

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SN 167,830. Multibiotics Corporation of America, Baltimore, Md. Filed Apr. 30, 1963.

MULTIBIOTIC

For Antibiotic Impregnated Gauze Pads and Bandages for Use as Sterile Dressings, and Mixtures of Antibiotics.
First use November 1951.

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SN 169,759. Park Products, Inc., Charlotte, N.C. Filed May 27, 1963.




For Throat Antiseptic.
First use May 1, 1962.

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SN 172,179. Gold Leaf Pharmacal Co., Inc., New Rochelle, N.Y. Filed July 1, 1963.

CHOLIPLEX ELIXIR

The term "Elixir" is disclaimed apart from the mark as shown.
For Nutritional Supplement Containing Vitamins and Minerals.
First use May 15, 1951.



SN 176,411. Watkins Products, Inc., Winona, Minn. Filed Sept. 5, 1963.

PEP-N-TONE

For Multi-Vitamin With Minerals Chewable Tablet.
First use Sept. 18, 1962.

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SN 180,568. Dawe's Laboratories, Inc., Chicago, Ill. Filed Nov. 6, 1963.




Owner of Reg. Nos. 709,867 and 725,840.
For Fructose for Intravenous Infusions; Glucose Oxidase for Analytical Determination of Urinary Glucose; Vitamin A and Vitamin D for Human Consumption and Animal Feeds; Medicated Additives for Animal and Poultry Feeds; and Medicated Feed Premixes.
First use prior to 1959; 1939 as to "Dawe's."

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SN 181,625. Fellows Medical Mfg. Co., Inc., Detroit, Mich. Filed Nov. 21, 1963.

HEPATHROM

For Anticoagulants.
First use in or about August 1958.

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SN 183,148. American Home Products Corporation, New York, N.Y. Filed Dec. 17, 1963.

KILTECT-100

For Veterinary Preparation for External Use—Namely, a Screw Worm Killer, Parasite Repellant and a Wound Dressing.
First use Dec. 27, 1955.

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SN 186,095. Makers of Kal, Inc., Los Angeles, Calif. Filed Feb. 5, 1964.

LOBO-BAN

For Preparation for Curbing the Desire for Tobacco.
First use Jan. 27, 1964.

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SN 186,436. Bristol-Myers Company, New York, N.Y. Filed Feb. 11, 1964.

CONGESPIRIN

For Nasal Decongestant and Analgesic.
First use Sept. 3, 1963.

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SN 186,702. David A. Brown and George Anton (joint owners), d.b.a. The Brown Pharmaceutical Company, Los Angeles, Calif. Filed Feb. 14, 1964.

LIPO-NICIN

For Combination Nicotinic Acid, Niacinamide, Ascorbic Acid, Thiamine HCl, Riboflavin and Pyridoxine HCl, as a Vasodilator in Tablet Form.
First use November 1959.

SN 188,039. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Mar. 5, 1964.

SEQUALATE

For Steroid Hormone Preparation.
First use Jan. 24, 1964.

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SN 188,042. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Mar. 5, 1964.

SYNTRACEPT

For Steroid Hormone Preparation.
First use Jan. 24, 1964.

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SN 189,156. Drugmaster, Inc., St. Louis, Mo. Filed Mar. 20, 1964.

FORE-GO

For Low Calorie Losenge for Use in Weight Control.
First use Feb. 5, 1964.

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SN 189,157. Drugmaster, Inc., St. Louis, Mo. Filed Mar. 20, 1964.




For Low Calorie Losenge for Use in Weight Control.
First use Feb. 5, 1964.

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SN 189,506. Schlein's Periodontal Supply, Teaneck, N.J. Filed Mar. 24, 1964.

DUO-FLOR

For Molded Soluble Tablets Containing Stannous Fluoride and Sodium Silicofluoride Used as an Application to the Teeth.
First use Sept. 6, 1962.

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SN 196,215. Viva Laboratories, Inc., Horsham, Pa. Filed June 22, 1964.

V-BEX

For Intravenous Solution Used in the Supportive Treatment of Debilitated Animals.
First use Mar. 18, 1964.

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SN 198,482. Laboratoires Chibret, Societe Anonyme, Clermont-Ferrand, Puy-de-Dome, France. Filed July 24, 1964.

BACICOLINE

Owner of French Reg. No. 3,717, dated Apr. 24, 1961 (Clermont-Ferrand); Natl. Inst. No. 165,168.
For Pharmaceutical and Medicinal Preparations for Ocular and Auricular Use.

SN 198,775. Riker Laboratories, Inc., Northridge, Calif. Filed July 29, 1964.

## DORBANEX

Owner of Reg. Nos. 566,264 and 644,083.
For Peristaltic Stimulant.
First use July 21, 1964.

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SN 199,164. American Home Products Corporation, New York, N.Y. Filed Aug. 4, 1964.

## ETOGYN

For Progestational Preparation.
First use June 20, 1964.

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SN 199,331. The William A. Webster Company, Memphis, Tenn. Filed Aug. 5, 1964.

## WANS

For Suppositories To Control Nausea and Vomiting.
First use May 27, 1964.

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SN 199,382. Merck & Co., Inc., Rahway, N.J. Filed Aug. 6, 1964.

## DIUPRES-Ka

Owner of Reg. No. 686,829.
For Medicinal Preparation for Use in the Treatment of Hypertension.
First use June 22, 1964.

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SN 199,383. Merck & Co., Inc., Rahway, N.J. Filed Aug. 6, 1964.

## DIURIL-Ka

Owner of Reg. Nos. 519,753, 660,963, and 676,884.
For Medicinal Compound for Use as a Diuretic and as an Agent in the Treatment of Hypertension.
First use June 22, 1964.

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SN 199,523. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Aug. 10, 1964.

## PREFRIN

Owner of Reg. Nos. 711,449, 734,732, and 645,653.
For Nasal Drops for Relief of Nasal Congestion Associated With Colds and Sinusitis, and Medicated Eye Solution.
First use May 30, 1950.

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SN 199,524. American Cyanamid Company, Wayne, N.J. Filed Aug. 10, 1964.

## VI-MAGNA

Owner of Reg. No. 410,360.
For Multi-Vitamin Preparation.
First use June 17, 1948.

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SN 199,868. Arnar-Stone Laboratories, Inc., Mount Prospect, Ill. Filed Aug. 14, 1964.

## TEMSERT

For Analgesic Anti-Pyretic Rectal Inserts.
First use on or before Jan. 1, 1962.

SN 200,061. Armour Pharmaceutical Company, Chicago, Ill. Filed Aug. 18, 1964.

## ARMOXIN

For Thyroid Tablets.
First use Aug. 10, 1964.

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SN 200,127. Vitaminerals, Inc., Glendale, Calif. Filed Aug. 18, 1964.

## EFF-VAC

For Laxative.
First use Aug. 10, 1964.

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SN 200,277. Norden Laboratories, Inc., Lincoln, Nebr. Filed Aug. 20, 1964.

## SPANBOLET

Owner of Reg. No. 566,206.
For Pharmaceutical Preparations Used in Veterinary Medicine for the Treatment of Infectious Diseases of Cattle, Such as Pneumonia, Enteritis, General Respiratory and Digestive Infections, and Other Infections Which Respond to Sulfa Drug Therapy.
First use July 6, 1964.

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SN 200,315. Atlas Chemical Industries, Wilmington, Del. Filed Aug. 21, 1964.



The mark consists of a globe design within the small letter "a."
Owner of Reg. No. 735,856.
For Medicines and Pharmaceutical Preparations.
First use Aug. 25, 1961.

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SN 200,490. Research Supplies, Albany, N.Y. Filed Aug. 24, 1964.

## NOR-PAN

For Nutritional Supplement for Veterinary Purposes.
First use Aug. 6, 1964.

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SN 200,491. Research Supplies, Albany, N.Y. Filed Aug. 24, 1964.

## NOR-STRONE

For Veterinary Composition for the Treatment of Urinary Incontinence in Spayed Bitches, Prostatic Hypertrophy, Pyometra False Pregnancy, and To Induce Lactation.
First use Aug. 6, 1964.

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SN 200,503. Sterling Drug Inc., New York, N.Y. Filed Aug. 24, 1964.

## TADWIN

For Analgesic Preparation.
First use May 6, 1964.



200,504. Sterling Drug Inc., New York, N.Y. Filed Aug. 24, 1964.

## TALWIN

For Analgesic Preparation.
First use July 31, 1964.

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SN 200,547. Carter Products, Inc., New York, N.Y. Filed Aug. 25, 1964.

## INTRAMUSCULAR MILTOWN

The word "Intramuscular" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 605,387 and 648,127.
For Pharmaceutical Preparation for Use in the Treatment of Tetanus.
First use May 10, 1957.

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SN 200,666. Smith, Miller & Patch, Inc., New York, N.Y. Filed Aug. 26, 1964.

## VASOGANT

For Anti-Biotic Ophthalmic.
First use Aug. 14, 1964.

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SN 200,810. American Cyanamid Company, Wayne, N.J. Filed Aug. 28, 1964.

## ARISTOSPAN

Owner of Reg. Nos. 653,318, 737,451, and others.
For Steroid Preparation.
First use Aug. 10, 1964.

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SN 201,169. American Cyanamid Company, Wayne, N.J. Filed Sept. 3, 1964.

## ARISTOFORM

Owner of Reg. Nos. 653,318, 737,451, and others.
For Steroid Preparation.
First use Aug. 25, 1964.

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SN 201,170. American Cyanamid Company, Wayne, N.J. Filed Sept. 3, 1964.

## ARISTOQUIN

Owner of Reg. Nos. 653,318, 737,451, and others.
For Steroid Preparation.
First use Aug. 25, 1964.

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SN 201,286. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 4, 1964.

## TEGRETOL

Owner of Reg. No. 720,264.
For Anti-Epileptic Preparation.
First use Aug. 31, 1964.

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SN 201,843. International Minerals & Chemical Corporation, Skokie, Ill. Filed Sept. 14, 1964.

## MC-63

Owner of Reg. Nos. 582,756 and 696,296.
For Acidulated Condensed Water Soluble Fraction of Sugar Beet Juice Used as an Animal Feed Supplement.
First use Jan. 23, 1963.

## Class 19—Vehicles

SN 184,959. Pullman Incorporated, Chicago, Ill. Filed Jan. 20, 1964.

P-S HYDROFRAME 60 CUSHIONED

The term "Cushioned" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 693,753, 749,024, and others.
For Railway Freight Vehicles.
First use Mar. 20, 1963.

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## Class 21—Electrical Apparatus, Machines, and Supplies

SN 181,788. Robert Milsk, d.b.a. R & K Tuner & Mfg. Co., Detroit, Mich. Filed Nov. 22, 1963.

## DAZEE TUNER

The word "Tuner" is disclaimed apart from the mark as shown.
For Rebuilt Television Tuners.
First use June 1, 1963.

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SN 181,967. Crouse-Hinds Company, Syracuse, N.Y. Filed Nov. 27, 1963.

## SHIELD-beam

For Electric Floodlights and Electric Lighting Equipment.
First use Sept. 9, 1963.

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SN 182,287. Penn-Union Electric Corporation, Erie, Pa. Filed Dec. 3, 1963.

## POSI-CRIMP

For Electrical Connectors, Terminals, Fittings, and Stampings, Such as Ring, Spade, Square, Tongue and Hook Terminals With Standard and Short Barrels of the Compression and Push-On Type, and Parallel and Butt Connectors.
First use June 20, 1961.

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SN 184,047. Erie Technological Products, Inc., Erie, Pa. Filed Jan. 6, 1964.

## MONOCON

For Ceramic Capacitors.
First use January 1963.

SN 195,347. Westamp, Inc., Los Angeles, Calif. Filed June 10, 1964.

WESTAMP

For Amplifiers, Inverters, Power Supplies, Signal Modulators and Null Detectors.
First use Dec. 16, 1957, on amplifiers.

## Class 22 — Games, Toys, and Sporting Goods

SN 183,942. Wright & McGill Company, Aurora, Colo. Filed Jan. 2, 1964.

### TRAILMASTER

For Fishing Rods.
First use on or about Aug. 1, 1959.

SN 184,224. Ferro Corporation, Cleveland, Ohio. Filed Jan. 8, 1964.

PER-TEE

Owner of Reg. No. 723,470.
For Golf Tee Markers.
First use on or about Nov. 11, 1963.

SN 185,906. Lansing Company of California F. W. Wild, Inc., San Francisco, Calif. Filed Feb. 3, 1964.

### LANSING LANES

No claim of exclusive right is made to "Lanes" for bowling alleys and equipment therefor.
For Bowling Alleys and Automatic Pin Spotting Equipment Therefor.
First use May 28, 1963.

SN 186,301. Wilson Sporting Goods Co., River Grove, Ill. Filed Feb. 7, 1964.

Wilson

Owner of Reg. Nos. 382,480, 632,617, and 760,275.
For Golf Clubs, Balls, Bags, Shag Bags, Club Covers, Carts, Cart Packs, Cart Seats, and Putting Discs; Tennis Balls, Rackets, Racket Presses, Nets, Net Curtains, Net Posts, Net Post Reels; Volley Balls; Volley Ball Nets, Standards, and Score Books; Badminton Rackets, Shuttlecocks, Racket Presses, Racket Covers, Posts, and Nets; Squash Balls, Rackets, and Racket Presses; Table Tennis Bats, Nets, Balls, and Tables; Baseballs; Baseball Gloves, Mitts, Sliding Pads, Head Protectors, Catchers' Protectors, Catchers' Masks, Catchers' Leg Guards, Rosin Bags, Bats, Score Books, Bases, Plates, and Pitchers' Boxes; Baseball Umpires' Masks, Protectors, Leg Guards, and Indicators; Softballs; Softball Gloves, Mitts, Bats, Catchers' Protectors, Bases, and Masks; Putting Shots; Discuses; Hurdles; Starting Blocks; Batons; Vaulting Poles; High Jump Standards; Vaulting Standards; Cross Bars; Javelins; Track Scorecards and Scorebooks; Grip Developers; Exercisers; Jump Ropes; Wrist, Elbow, Knee, Ankle and Athletic Supporters for Use in Sporting Activities; Ankle Wraps; Shuffleboard Cues and Discs; Cage Balls and Cage Ball Bladders; Pole Goals; Hand Balls and Handball Gloves; Pitching Horseshoes and Horseshoe Stakes; Playground Balls; Tether Balls and Tether Ball Poles; Footballs; Football Pads, Cleats, Toes, Face Protectors, Chin Straps, Helmets, Mouth Protectors, Safety Goggles, Blocking Sleds, Goal Line Markers and Blocking Dummies; Basketballs; Basketball Backboards, Goals, Rebound Rings, Rebound and Jump Board Standards, Eyeglass Protectors, and Eyeglass Holders; Field Hockey Sticks, Poles, Shin Guards, Kick Pads and Goalie Guards; Soccer Balls; Soccer Goal Nets and Shin Guards; Archery Bows, Strings, Bow String Wax, Arrows, Targets, Target Stands, Target Faces, Arm Guards, Shooting Tabs and Quivers; Bat Tennis Sets; Croquet Sets; Feather Balls; Bean Bags; Deck Tennis Rings; Fencing Foils; Sabres; Dueling Swords; Fencing Masks; Boxing Gloves; Striking Bags; Striking Bag Gloves and Platforms; Boxers' Hand Wraps, Mouth Pieces, Head Guards and Training Bags; Medicine Balls; Cage Balls; Wrestling Knee Pads and Ear Guards; Barbells; Dumbbells; Parallel Bars; Gym and Wrestling Mats; Golf Spikes, Shoe Accessories, Shoe Trees, Shoe Spike Wrenches, Club Spray Finish and Ball Markers; Tennis Court Markers; Baseball Pitchers' Toe Plates and Batting Cages; Football Kicking Tees, Sideline Markers, Lineman's Chain Sets; Ball Gauges and Inflating Needs; Soccer Shoe Studs; Whistles; Athletic Bandage Wraps and Elastic Bandages for Use in Athletics; Bowling Ball Cases, Tennis Carry-Alls, Baseball and Bat Bags, Baseball Umpires' Ball Bags, Baseball Uniform Carrying Cases, Football Equipment Carrying Cases, Football Duffle Bags and Fencing Bags; Golf Gloves; Baseball Uniforms, Shoes and Socks; Softball Uniforms; Track Shoes; Football Shoes, Pants and Scrimmage Vests; Field Hockey Shoes; Soccer Shoes; Archers' Gloves; Fencing Jackets and Gloves; Boxing Shoes; and Wrestling Shoes.
First use 1917.

SN 187,965. St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada. Filed Mar. 4, 1964.

Canadian Royal

The word "Canadian" is disclaimed apart from the mark as shown.
For Ice Skate Blades.
First use May 8, 1959; in commerce May 8, 1959.

SN 188,730. Cosom Corporation, Minneapolis, Minn. Filed Mar. 16, 1964.

### COSOM

Owner of Reg. No. 547,104.
For Baseball Bats and Balls for Use Therewith; Equipment Comprising Scoops and Balls for Playing Scoop Games; Practice Golf Balls and Golf Tees; Footballs; Bowling Pins and Bowling Balls; Hockey Sticks and Pucks Used in Conjunction Therewith; and Minnow Buckets; All Formed From Plastic.
First use Oct. 1, 1948.

SN 190,697. C & C Toys, Inc., Seattle, Wash. Filed Apr. 9, 1964.

ZULU BLOW GUN

No claim of exclusive right is made to "Blow Gun" for the goods recited.
For Toy Blow Dart Gun.
First use Dec. 12, 1963.



SN 191,727. John Vojinov, Detroit, Mich. Filed Apr. 21, 1964.

### TOM-BOY

For Fishing Rods.
First use Apr. 7, 1964.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 181,872. FMC Corporation, San Jose, Calif. Filed Nov. 26, 1963.

### RATED AERATION

For Sewage Treatment "Package Plants" Comprising Compartmented Tanks, Apparatus for Screening and Comminuting, Air Lift Pumps and Blowers, Air Diffusers and Sludge Collectors for Use in Treating Sewage.
First use in or about April 1959.

SN 186,966. Owatonna Tool Company, Owatonna, Minn. Filed Feb. 18, 1964.

OTC

Owner of Reg. No. 237,653.
For Mechanics' Manual and Power-Operated Hand Tools.
First use Feb. 20, 1944.

SN 192,657. Karl Altenburger K.G., Jestetten, Baden, Germany. Filed May 5, 1964.

### SYNCHRON

For Rim Brakes, Particularly for Bicycles, Motor Bikes and Motorcycles, Applied on the Wheel Rims Thereof.
First use Sept. 1, 1961; in commerce May 1, 1962.

SN 194,805. Kinefac Corporation, Worcester, Mass. Filed May 26, 1964.

### KINE-MISER

Owner of Reg. No. 760,307.
For Roll-Forming and Roll-Finishing Attachments for Use on Turning Machines.
First use Sept. 10, 1962.

SN 194,306. Kinefac Corporation, Worcester, Mass. Filed May 26, 1964.

### KINE-FINISH

Owner of Reg. No. 760,307.
For Roll-Finishing Dies for Use on Rolling Machines and Attachments.
First use Nov. 7, 1962.

SN 194,307. Kinefac Corporation, Worcester, Mass. Filed May 26, 1964.

### KINE-ROLLER

Owner of Reg. No. 760,307.
For Roll-Forming and Roll-Finishing Machines.
First use Mar. 30, 1963.

SN 194,344. Bacon American Corporation, Muncie, Ind. Filed May 27, 1964.

### TREAD ROBOT

No claim is made to the word "Tread" apart from the mark.
For Apparatus for Retreading Vehicle Tires.
First use Apr. 30, 1964.

SN 194,464. Central Engineering Company, Inc., Milwaukee, Wis. Filed May 28, 1964.

### PORTO-SPREADER

For Vehicle Mounted Sand and Salt Distributors.
First use on or about May 7, 1964.

SN 194,683. Trinity Tool Co., Detroit, Mich. Filed June 1, 1964.

### TRINCO

For Sand and Abrasive Machines.
First use January 1957.

SN 194,769. Adams, Inc., Greenville, S.C. Filed June 3, 1964.

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For Control Devices for Textile Machines—Namely, Stop Motions for Roving Frames, Control Means for Textile Machines Especially Roving Frames and the Like, and Data Collecting and Recording Systems for Textile Production Machines.
First use December 1962.

SN 198,820. Blaw-Knox Company, Pittsburgh, Pa. Filed July 30, 1964.

### ROTO-VAK

For Mechanically Agitated Film Vacuum.
First use in about 1953.

SN 200,554. Detrex Chemical Industries, Inc., Detroit, Mich. Filed Aug. 25, 1964.

### TRI-SEAL

For Detergent-Solvent Degreasers.
First use May 22, 1964.

SN 200,797. U.S. Industries, Inc., New York, N.Y. Filed Aug. 27, 1964.

### CHANGEMATIC

For Metal Working Presses Including Devices for Transferring a Workpiece Between Stations in the Line.
First use July 22, 1964.

SN 202,535. American Safety Equipment Corporation, New York, N.Y. Filed Sept. 24, 1964.

MR. SAFTEE

For Fire Extinguishers.
First use July 1964.

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SN 202,536. Chicago Pneumatic Tool Company, New York, N.Y. Filed Sept. 24, 1964.

AIR-SCRIBE

For Hand Held Pneumatic Tools, About the Size of a Pen, Which Deliver a Series of Hammer Blows to a Stylus.
First use 1963.

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SN 203,194. Eugene L. Milas, d.b.a. Lengene Sales, Buffalo, N.Y. Filed Oct. 2, 1964.

TYPESMAN

For Typewriters and Parts Thereof.
First use Sept. 1, 1964.

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SN 203,211. Southwest Grease & Oil Co., Inc., d.b.a. P. & J. Equipment Co., Wichita, Kans. Filed Oct. 2, 1964.

ULTRA-MATIC

For Lever-Operated Grease Guns.
First use Sept. 22, 1964.

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## Class 24 — Laundry Appliances and Machines

SN 197,055. Antar Industries, Inc., New York, N.Y. Filed July 6, 1964.

Antar

Owner of Reg. No. 639,371.
For Washing Machines.
First use Apr. 27, 1963.

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## Class 25 — Locks and Safes

SN 198,215. Wilbur W. Randall, Hartford, Conn. Filed July 20, 1964.

MATCH-IT

For Coin Savings Banks.
First use June 9, 1964.

## Class 26 — Measuring and Scientific Appliances

SN 199,018. The Bunker-Ramo Corporation, Canoga Park, Calif. Filed Aug. 3, 1964.



For Digital Computers and Peripheral Equipment Therefor.
First use on or before Apr. 1, 1964.

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SN 199,238. Univis, Inc., Fort Lauderdale, Fla. Filed Aug. 4, 1964.

U/Z

For Sunglasses, Ophthalmic Frames, Mountings, and Parts Thereof.
First use January 1963.

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## Class 27 — Horological Instruments

SN 170,739. General Electric Company, Schenectady, N.Y. Filed June 11, 1963.

MEL-O-TONE

For Clocks.
First use May 1963.

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SN 204,345. Benrus Watch Company, Inc., New York, N.Y. Filed Oct. 20, 1964.

AMERICA'S CUP

For Watches.
First use Sept. 24, 1964.

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## Class 28 — Jewelry and Precious-Metal Ware

SN 173,721. F. W. Woolworth Co., New York, N.Y. Filed July 24, 1963.

EMBASSY

For Men's Cuff Links, Tie Bars, and Tie Tacks.
First use June 11, 1963.



SN 173,725. A & M Jewel Co., Brooklyn, N.Y. Filed Aug. 6, 1964.




"14K" is disclaimed apart from the mark as shown.
For 14K Gold Jewelry.
First use July 1, 1963.

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SN 205,135. Milton I. Aion, d.b.a. Joseph Aion, Philadelphia, Pa. Filed Oct. 30, 1964.

MIA

For Jewelry in General and Ladies' and Men's Stone and Diamond Rings, Signet Rings, Brooches, Bracelets, Pendants, and Charms.
First use on or about Oct. 23, 1964.

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## Class 29 — Brooms, Brushes, and Dusters

SN 204,820. Pellon Corporation, New York, N.Y. Filed Oct. 26, 1964.

PADK

For Polishing Pads, Sheets and Discs.
First use January 1960.

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SN 204,821. Pellon Corporation, New York, N.Y. Filed Oct. 26, 1964.

PADW

For Polishing Pads, Sheets and Discs.
First use January 1960.

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## Class 30 — Crockery, Earthenware, and Porcelain

SN 164,588. Wedgwood & Co., Ltd., Tunstall, Stoke-on-Trent, England. Filed Mar. 6, 1963.

HEDGE ROSE

Applicant hereby disclaims any exclusive rights in or to the word "Rose" except as a part of the trademark.
For Earthenware Dinnerware.
First use July 31, 1962; in commerce July 31, 1962.

SN 172,526. Societa Ceramica Italiana Societa per Azioni, Laveno, Varese, Italy. Filed July 5, 1963.




Priority claimed under Sec. 44(d) on Italian application filed Mar. 16, 1963; Reg. No. 166,287, dated Sept. 9, 1964. The exclusive use of the words "Di Laveno Italy" and/or its English equivalent "of (or from) Laveno Italy" is disclaimed apart from the trademark as a whole.
For Crockery—Namely, Dishes, Cups, Pots, Jars, Dinnerware, All Made of Baked Clay.
First use March 1963.

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## Class 31 — Filters and Refrigerators

SN 169,886. Thermovac Industries Corp., Brooklyn, N.Y. Filed May 28, 1963.

THERMOVAC

For Freeze Drying Machines for Dehydrating Organic and Inorganic Matter, and Parts Therefor.
First use Jan. 18, 1963.

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SN 184,693. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Jan. 16, 1964.

ROLL-FLO

For Air Filters for Air-Conditioning and Ventilating Systems.
First use Dec. 30, 1963.

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SN 184,694. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Jan. 16, 1964.

AUTO-ROLL

For Air Filters for Air-Conditioning and Ventilating Systems.
First use Dec. 30, 1963.

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SN 184,695. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Jan. 16, 1964.

ELECTRO-ROLL

For Air Filters for Air-Conditioning and Ventilating Systems.
First use Dec. 30, 1963.

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SN 184,696. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Jan. 16, 1964.

ELECTRO-FLO

For Air Filters for Air-Conditioning and Ventilating Systems.
First use Dec. 27, 1963.

SN 184,697. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Jan. 16, 1964.

## MANU-ROLL

For Air Filters for Air-Conditioning and Ventilating Systems.
First use Dec. 30, 1963.

SN 186,146. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Feb. 6, 1964.

## ELECTRO-CAP

For Air Filters for Air-Conditioning and Ventilating Systems.
First use Dec. 26, 1963.

SN 186,147. Cambridge Filter Manufacturing Corp., Syracuse, N.Y. Filed Feb. 6, 1964.

## CAP-FLO

For Air Filters for Air-Conditioning and Ventilating Systems.
First use Jan. 17, 1964.

### Class 32 — Furniture and Upholstery

SN 35,638. The Dunleavy Company, Waltham, Mass. Filed Aug. 16, 1957.

THE FILEX LINE

The words "The" and "Line" are disclaimed apart from the mark as shown. The drawing is lined for shading purposes.
For Office Filing Equipment—Namely, Cabinets, Drawers, Boxes, Desks, Tables, and Folder Supporting Frames for File Cabinet Drawers.
First use November 1942; March 1923 as to "Filex."

SN 180,736. Hardboard Fabricators, Inc., St. Louis, Mo. Filed Nov. 8, 1963.

## PAGODA

For Merchandise Display Stand.
First use Oct. 28, 1963.

SN 199,834. Ronald E. Jackson, d.b.a. Jackson Products, Greenville, Mich. Filed Aug. 13, 1964.

## LIF-TABLE

For Convertible Units Functioning as Both Bed and Table.
First use June 25, 1964.

SN 200,066. Lester L. Brossard, Chicago, Ill. Filed Aug. 18, 1964.

## HI-TEMP

For Traffic Safety Mirrors for Blind Corners and Industrial Purposes.
First use June 19, 1964.

SN 200,237. Del-Mar Industries, Inc., Atlanta, Ga. Filed Aug. 20, 1964.

Del-Mar

For Kitchen Cabinets and Accessories Thereto and Vanities.
First use Jan. 1, 1941.

SN 201,051. Rowe Furniture Corporation, Salem, Va. Filed Sept. 1, 1964.

ROWE

"FIRST IN FASHION"

Owner of Reg. No. 567,872.
For Living Room Furniture—Namely, Upholstered Pieces of the Following Styles and Groups; Davenports, Chairs, Double Sofas (Two-Part Sofas), Sectional Pieces, Two-Piece Suites (Davenport and Chair of Similar Design Sold as Set), Three-Piece Suites (Davenport and Chairs), and Ottomans.
First use Aug. 28, 1950.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 172,050. The Cosmodyne Corporation, Hawthorne, Calif. Filed June 28, 1963.

## CHEMCOLD

For Atmosphere and Temperature Control Systems for Preservation of Goods in Storage and Transit.
First use June 1, 1963.

SN 181,599. Air Balance Inc., Philadelphia, Pa. Filed Nov. 21, 1963.

## AIR/DYNAMIC

For Backdraft Dampers and Shutters.
First use Apr. 26, 1963.

SN 181,600. Air Balance Inc., Philadelphia, Pa. Filed Nov. 21, 1963.

Fire/Seal

For Fire Dampers.
First use Aug. 20, 1963.



SN 186,581. Vapor Corporation, Chicago, Ill. Filed Feb. 12, 1964.

VAPOR TAN-JET

For Steam Generators for the Production of Steam for General Heating Purposes and for Processes Requiring Steam.
First use Oct. 22, 1962.

SN 186,582. Vapor Corporation, Chicago, Ill. Filed Feb. 12, 1964.

VA-POWER

For Steam Generators Which Produce Steam for General Heating Purposes and for Various Processes Requiring Steam.
First use July 16, 1963.

SN 199,362. The Gas Council, London, England. Filed Aug. 6, 1964.

## SE-DUCT

Owner of British Reg. No. B821,652, dated June 7, 1961.
For Ventilating Apparatus and Ventilating Installations.

SN 199,949. Harry Arnsberg, d.b.a. Harry Arnsberg Co., Portland, Oreg. Filed Aug. 17, 1964.

## ZEFYR

For Battery Energized Miniature Fan.
First use on or about May 4, 1962.

SN 200,102. Hartzell Propeller Fan Company, Piqua, Ohio. Filed Aug. 18, 1964.

DUCT AXIAL

For Fans.
First use Feb. 24, 1964.

SN 200,195. The Lau Blower Company, Dayton, Ohio. Filed Aug. 19, 1964.

## VARI-BLADE

For Air Moving Propellers for Fans, and Parts Therefor.
First use Oct. 10, 1962.

SN 200,784. Revcor, Inc., Carpentersville, Ill. Filed Aug. 27, 1964.

## BLASTAIRE

For Blower Wheels.
First use in or about December 1953.

SN 201,508. All-State Welding Alloys Co., Inc., White Plains, N.Y. Filed Sept. 9, 1964.

## SUPREMIUM PACK

For Welding Wire.
First use May 9, 1963.

### Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 195,735. Stemco Manufacturing Company, Inc., Longview, Tex. Filed June 15, 1964.

Stemco

For Oil and Grease Seals, Gaskets, O-Rings, and Accessory Parts Thereof.
First use Dec. 31, 1952.

SN 196,957. The Firestone Tire & Rubber Company, Akron, Ohio. Filed July 2, 1964.

## INDY

For Pneumatic Vehicle Tires.
First use Mar. 12, 1964.

### Class 36 — Musical Instruments and Supplies

SN 184,380. The Hi-Billies, Trenton, N.J. Filed Jan. 10, 1964.

HB

Hi-Billies Records

No claim is made to the word "Records" as the name of the goods.
For Grooved Phonograph Records.
First use Sept. 10, 1963.

SN 184,879. John F. Berry, d.b.a. Repeat Records, Long Beach, Calif. Filed Jan. 20, 1964.

## REPEAT

For Phonograph Records and Pre-Recorded Magnetic Tape.
First use Dec. 12, 1963.

SN 195,342. Traficante, Inc., Minneapolis, Minn. Filed June 10, 1964.

## PALMER

For Accordions.
First use May 22, 1959.

## Class 37 — Paper and Stationery

SN 35,639. The Dunleavy Company, Waltham, Mass. Filed Aug. 16, 1957.

THE FILEX LINE

The words "The" and "Line" are disclaimed apart from the mark as shown. The drawing is lined for shading purposes.
For Filing Supplies—Namely, Folders, Guides, Cards, Indexes and Tabs.
First use November 1942; March 1963 as to "Filex."

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SN 159,845. L. H. Parke Company, Philadelphia, Pa. Filed Dec. 27, 1962.

Parke's

For Toilet Tissue.
First use March 1960.

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SN 168,941. Millen Industries, Inc., New York, N.Y. Filed May 15, 1963.

DEPENDOLITH PAPER

The word "Paper" is disclaimed apart from the mark as shown.
For Offset Paper Plates, Copy Paper and Imaging Materials (Such as Pencils, Pens, and Erasers) Used in Connection With Offset Duplication.
First use Jan. 3, 1963.

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SN 168,942. Millen Industries, Inc., New York, N.Y. Filed May 15, 1963.

DEPENDOMATS OFFSET

The word "Offset" is disclaimed apart from the mark as shown.
For Offset Paper Plates.
First use June 1962.

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SN 168,944. Millen Industries, Inc., New York, N.Y. Filed May 15, 1963.

DEPENDOLITH OFFSET

The words "Offset" is disclaimed apart from the mark as shown.
For Metal Plates, Pads, Molleton Covers and Blankets Used in Connection With Offset Duplication.
First use June 1962.

SN 175,374. Arvey Corporation, Chicago, Ill. Filed Aug. 20, 1963.

TRANSO FLIP SEAL

Applicant disclaims the word "Seal" apart from the mark as shown. Owner of Reg. Nos. 226,598, 694,933, and others.
For Mailing Envelopes.
First use June 1, 1962.

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SN 191,431. Orlando Paper Corp., Oceanside, N.Y. Filed Apr. 17, 1964.



For Paper Products—Namely, Note and Composition Books, Ruled and Unruled Writing Paper, Paper Wire Bound and Plastic Bound Spiral Books, Typewriter Paper, Legal Pads, and Stenography Books.
First use April 1962.

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SN 193,022. Richard H. Lutes, d.b.a. Unipost Co., Mankato, Minn. Filed May 8, 1964.

UNIPOST

For Business Record Forms.
First use Aug. 1, 1963.

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SN 194,501. Marcal Paper Mills, Inc., East Paterson, N.J. Filed May 28, 1964.

AQUA-GARD

For Paper Towels.
First use at least as early as January 1961.

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SN 195,295. Gustav Stabernack G.m.b.H., Lauterbach, Hesse, Germany. Filed June 10, 1964.

CHRO-WELL

Owner of German Reg. No. 700,584, dated Feb. 28, 1957.
For Cardboard, Carton, Paper Goods and Cardboard Goods, Particularly Packing Material Made of Paper, Cardboard, Corrugated Cardboard and Carton.

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## Class 38 — Prints and Publications

SN 153,162. Michael M. Dean, d.b.a. Mehmet Sabahattin, Chilliwack, British Columbia, Canada. Filed Sept. 14, 1962.

DREAMOLOGY

For Column Heading Printed From Time to Time.
First use Dec. 11, 1961; in commerce Dec. 11, 1961.



SN 168,288. CBS Films, Inc., New York, N.Y. Filed May 7, 1963.

DEPUTY DAWG

For Comic Magazines, Comic Strips and Motion Picture Films—Namely, Cartoon Films.
First use May 28, 1960, on motion picture films.

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SN 168,289. CBS Films, Inc., New York, N.Y. Filed May 7, 1963.

HECTOR HEATHCOTE

For Comic Strips and Motion Picture Films—Namely, Cartoon Films.
First use Nov. 30, 1960, on comic strips.

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SN 168,291. CBS Films, Inc., New York, N.Y. Filed May 7, 1963.



For Motion Picture Films—Namely, Cartoon Films.
First use Feb. 1, 1963.

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SN 169,416. American Aviation Publications, Inc., Washington, D.C. Filed May 21, 1963.

missile/space daily

The drawing is lined for blue. Owner of Reg. Nos. 696,906 and 747,383.
For Daily Newsletter of Aerospace Activities.
First use May 20, 1963.

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SN 181,521. Business Publishers, Inc., Silver Spring, Md. Filed Nov. 20, 1963.

AIR/WATER pollution report

For Fortnightly Newsletter.
First use Oct. 7, 1963.

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SN 185,608. Howard R. Lowe & Associates, Inc., Billings, Mont. Filed Jan. 29, 1964.

PETRODATA

For Periodical Booklet Covering Information With Respect to Oil and Gas Wells and Distributed From Time to Time to Subscribers.
First use May 16, 1963.

SN 188,576. Process Equipment Manufacturers Association, New York, N.Y. Filed Mar. 12, 1964.

PEMA

For Brochure and Work Sheets.
First use Dec. 2, 1963.

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SN 195,814. Rothchild Printing Company, Inc., New York, N.Y. Filed June 16, 1964.

Q-TAB

For Point of Sale Decorative and Advertising Printed Matter.
First use April 1963.

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SN 197,140. Krause Milling Company, Milwaukee, Wis. Filed July 6, 1964.

KM TICKER

Owner of Reg. No. 692,905.
For Corn Market News Publication.
First use May 28, 1964.

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## Class 39 — Clothing

SN 121,492. The Manhattan Shirt Company, New York, N.Y. Filed June 6, 1961.

SIZE-FIXT

Owner of Reg. No. 391,739.
For Outer Dress Shirts.
First use Aug. 29, 1940.

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SN 157,527. L. Mayers & Son, Inc., Baltimore, Md. Filed Nov. 19, 1962.




For Neckties and Belts.
First use Oct. 10, 1962.

SN 186,485. Associated Dry Goods Corporation, New York, N.Y. Filed Mar. 27, 1963.

Security
QUALITY PLUS

Applicant disclaims the words "Quality Plus" apart from their usage with the mark as a whole, reserving, however, all common law rights thereto.
For Men's Underwear, Shirts, and Hosiery and Boys' Underwear.
First use Sept. 29, 1962.

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SN 177,764. Capezio Inc., New York, N.Y. Filed Sept. 26, 1963.



For Leotards, Tunics, T-Shirts, Tights, Trunks, Double Trunks, Briefs, Skirts, Opera Hose, Dance Belts, Toe Shoes, Toe Pads Made of Fur, Lambs Wool or Foam Rubber, Ribbon Lacing, Toe Shoe Covers, Soft Ballet Shoes, Tap Shoes, Taps, Sandals, Acrobat Shoes, Exercise Shoes, Stage Character Shoes, Street Shoes, and Slippers for Men, Women, and Children.
First use Apr. 15, 1962.

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SN 180,024. R. J. Potvin Shoe Company, Brockton, Mass. Filed Oct. 29, 1963.

HONEYDOLLS

For Infants' and Children's Leather Shoes.
First use Sept. 13, 1963.

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SN 180,646. Ernest Buckwalter Pty. Limited, Northmead, New South Wales, Australia. Filed Nov. 7, 1963.

Country Club
Tailored by Buckwalter

The exclusive use of the wording "Tailored by" as shown in applicant's mark is disclaimed apart from the mark as a whole. Owner of Australian Reg. No. A85462, dated Dec. 3, 1959.
For Dress, Work, and Flannel Shirts; Nightshirts, Bath Robes; Canvas, Wool, Cotton, Fabric, and Leather Gloves; Wool and Leather Mittens, Pajamas, Belts for Personal Wear, Suspenders, and Cravats.

SN 180,779. Henry I. Siegel Co., Inc., New York, N.Y. Filed Nov. 8, 1963.

H.I.S.

Owner of Reg. Nos. 549,951, 746,683, and others.
For Women's and Misses' Shirts, Shorts, Skirts, Slacks and Coordinates.
First use Oct. 1, 1963.

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SN 182,424. Irvington Place, Inc., New York, N.Y. Filed Dec. 5, 1963.

IRVINGTON PLACE

For Ladies' Suits, Skirts, Coordinated Outfits, Jumpers, and Slacks.
First use Aug. 3, 1962.

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SN 189,524. Prim Products, Inc., Newark, N.J. Filed Mar. 23, 1964.

His n Her Royal Shyness

For Infants' Pants.
First use July 9, 1963.

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SN 194,370. Delightform Foundations, Inc., Easton, Pa. Filed May 27, 1964.

Super fashion

Owner of Reg. No. 589,504.
For Brassieres.
First use Aug. 1, 1952.

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SN 194,963. Davidow Suits, Inc., New York, N.Y. Filed June 5, 1964.

DAVANTE

For Ladies' and Misses' Clothing—Namely, Suits, Jackets, Skirts, Dresses, Coats, Dress Ensembles, and Blouses.
First use on or about Oct. 6, 1952.

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SN 194,966. Davidow Suits, Inc., New York, N.Y. Filed June 5, 1964.

DAVENELLA

For Ladies' and Misses' Clothing—Namely, Suits, Jackets, Skirts, Dresses, Coats, Dress Ensembles, and Blouses.
First use on or about June 2, 1954.

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SN 195,282. Cat's Paw Rubber Company, Inc., Baltimore, Md. Filed June 10, 1964.

MIRA-GRIP

For Rubber Soles and Heels.
First use Apr. 28, 1964.

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SN 195,832. Warshauer & Franck, Inc., Boston, Mass. Filed June 16, 1964.

DEMI-MODES

For Women's and Misses' Dresses.
First use on or about Feb. 29, 1964.



SN 195,839. Beaver Shirt Manufacturing Co., Inc., New York, N.Y. Filed June 17, 1964.

Valet Pac

For Men's and Boys' Sport Shirts.
First use Oct. 2, 1963.

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SN 197,536. Blue Bell, Inc., Greensboro, N.C. Filed July 10, 1964.

DON HARDING

"Don Harding" is the name of a living individual whose consent is of record.
For Men's and Boys' Slacks, Shorts, Shirts, and Jackets.
First use July 6, 1964.

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## Class 40—Fancy Goods, Furnishings, and Notions

SN 88,224. H. Goodman & Sons, Inc., New York, N.Y., assignee of Delamere Company, Inc., New York, N.Y. Filed Dec. 30, 1959.

WET AND SET

For Chemically Treated Tissue Paper for Facilitating the Curling of Hair.
First use on or about Dec. 2, 1959.

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SN 155,981. Astor-Werk Otto Berning & Co., Schwelm, Westphalia, Germany, by change of name from Firma Otto Berning & Co., Schwelm, Westphalia, Germany. Filed Oct. 26, 1962.

ASTOR

For Eyes, Hooks, Belt-Parts—Namely, Buckles, Belt-Backing and Belt-Points, Upholstering Buttons and Upfastening Cords and Laces.
First use February 1961; in commerce February 1961.

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SN 200,078. Creative Craft Co., Inc., Dania, Fla. Filed Aug. 18, 1964.

LACE-TYS

For Shoe String Knot Retainer.
First use Jan. 15, 1964.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 194,516. Raybestos-Manhattan, Inc., Manheim, Pa. Filed May 28, 1964.

RM
GREEN
SHIELD

The drawing is lined for the color green.
For Asbestos Cloth.
First use May 1, 1964.

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SN 196,046. N.V. Jerseyfabriek Jan Van Tiel en Zonen, Amsterdam, Netherlands. Filed June 19, 1964.

Van Tiel

For Knit Fabrics.
First use 1957; in commerce June 1960.

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SN 197,561. Henry Glass & Co., New York, N.Y. Filed July 10, 1964.

CHATEAU

For Goods in the Piece Made of Cotton, Synthetic Fibers and Combinations Thereof.
First use June 19, 1964.

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## Class 44—Dental, Medical, and Surgical Appliances

SN 179,296. Zions Research Products, Inc., Salt Lake City, Utah. Filed Oct. 17, 1963.

EUTHENICS

For Dental Appliances—Namely, Dental Units, Holders for Dental Operating Instruments and Tools, Operating Room Chairs and Stools, Storage Cabinets, Neck Rests; and Hand Held Dental Instruments and Tools Such as Drills, Water Sprays, Evacuating Devices, and the Like.
First use about Dec. 1, 1960.

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SN 199,678. David Kaplan, Sharon, Mass. Filed Aug. 11, 1964.

DALE

For Surgical Binders and Support Bands.
First use in or about July 1961.

SN 199,715. American Home Products Corporation, New York, N.Y. Filed Aug. 12, 1964.

## CASTA-RINGER

For Applicator for Rubber Rings for Castration, Docking and Deborning.
First use July 29, 1964.

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SN 199,768. Softub, Inc., Chicago, Ill. Filed Aug. 12, 1964.

## SOFTUB

For Therapeutic Bed Baths and Equipment Used Therewith—Namely, Water Cart, Hoses, Antiseptic Tanks, Thermometer, and Pump Units.
First use Jan. 29, 1964.

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SN 199,871. W. A. Baum Co., Inc., Copiague, N.Y. Filed Aug. 14, 1964.

## EXTENDEX

For Tubing Used in Sphygmomanometers.
First use Aug. 4, 1964.

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SN 199,893. Danmarc Company, Inc., Fort Worth, Tex. Filed Aug. 14, 1964.

magic whirl

For Hydrotherapy Equipment—Namely, Bathtub Liquid Agitators.
First use Apr. 24, 1964.

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SN 200,580. McGaw Laboratories, Inc., Milledgeville, Ga. Filed Aug. 25, 1964.

## ADD-A-FLO

For Control Valve and Extension Tube for Directing the Flow of Parenteral Fluids.
First use on or before Apr. 9, 1964.

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SN 201,230. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Sept. 3, 1964.

## GYNELOOP

For Medical Device for Intrauterine Application.
First use July 24, 1964.

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### Class 45—Soft Drinks and Carbonated Waters

SN 158,119. Wonder Bar Products, Inc., Bronx, N.Y. Filed Nov. 28, 1962.

## WONDER BAR

For Non-Alcoholic Powdered Flavored Mix for Making Alcoholic Cocktails.
First use Dec. 28, 1961.
Subj. to Intf. with SN 182,638 and SN 201,212.

SN 182,958. Merit House, Inc., New York, N.Y. Filed Dec. 13, 1963.

## CAPTAIN QUICK'S

For Non-Alcoholic Mix for Use in Making Alcoholic Cocktails and Other Mixed Drinks.
First use Nov. 14, 1963.

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### Class 46—Foods and Ingredients of Foods

SN 175,383. Bonus Foods Ltd., d.b.a. Farmerette Foods, Burnaby, British Columbia, Canada. Filed Aug. 20, 1963.

## FARMERETTE

Priority claimed under Sec. 44(d) on Canadian application filed Feb. 21, 1963; Reg. No. 134,516, dated Feb. 7, 1964.
For Canned Boneless Chicken.

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SN 180,749. Lorens & Lihn GmbH, Bad Godesberg, Mehlem, Germany. Filed Nov. 8, 1963.

LIHN

For Crushed Sweetened Fruits Contained in Glass, Canned Dietary Jams, Jellies, and Preserves, Cocoa, Dietary Cocoa, Chocolate Candy, and Sugar Substitutes for Use as a Food Additive.
First use Oct. 24, 1954; in commerce Oct. 29, 1959.

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SN 181,777. L. S. Heath & Sons, Inc., Robinson, Ill. Filed Nov. 22, 1963.




No claim is made to the words "From the Makers of" and "Toffee Crunch," and to the representation of the goods, apart from the mark in its entirety. Owner of Reg. Nos. 389,755, 598,577, and others.
For Candy.
First use Nov. 14, 1963.

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SN 182,671. Societa per Azioni Lucchese Olii e Vini, d.b.a. Filippo Berio & C., Lucca, Italy. Filed Dec. 9, 1963.

Filippo Berio

The mark consists of the words "Filippo Berio and Cia."
For Edible Olive Oil.
First use Jan. 1, 1955; in commerce Jan. 1, 1955.



SN 189,766. Ce De Candy, Inc., Elisabeth, N.J. Filed Mar. 27, 1964.

## SMARTIES

Owner of Reg. No. 442,152.
For Candy.
First use Apr. 17, 1950.

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SN 189,782. Kapson Laboratories, Inc., Newport, Oreg. Filed Mar. 26, 1964.

## HUSTLE

For Dietary Food Concentrate for Weight Control.
First use Mar. 19, 1964.

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SN 190,506. L. Frank & Co., Inc., New Orleans, La. Filed Apr. 7, 1964.

## BABY BEEF

For Dressed Turkeys.
First use Oct. 15, 1961.

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SN 191,128. Carnation Company, Los Angeles, Calif. Filed Apr. 15, 1964.

## CARNATION

Owner of Reg. Nos. 35,072, 762,844, and others.
For Instant Powdered Non-Dairy Creamer for Coffee and Whipping.
First use Feb. 2, 1961.

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SN 191,129. Carnation Company, Los Angeles, Calif. Filed Apr. 15, 1964.

## CARNATION

Owner of Reg. Nos. 35,072, 762,844, and others.
For Frosen Pies of the Following Description: Fruit Pies—Namely, Cherry Pie, Peach Pie, Apple Pie, and Apricot Pie; Berry Pies—Namely, Blueberry Pie, Boysenberry Pie, Blackberry Pie; Cream Pies—Namely, Custard Pie, Lemon Pie, Chocolate Cream Pie, Coconut Cream Pie, Strawberry Cream Pie, Butterscotch Cream Pie, and Banana Cream Pie; and Pumpkin Pie, Mince Pie, and Pecan Pie.
First use Oct. 10, 1955.

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SN 191,139. Dayle Products Co., Inc., Boston, Mass. Filed Apr. 15, 1964.

## TASTE-AID

For Imitation Flavors for Use in Conjunction With Pet Foods.
First use Oct. 16, 1958.

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SN 191,609. San Diego Products Co., San Diego, Calif. Filed Apr. 20, 1964.

South Coast

For Salad Dressing; Thousand Island Dressing; Bleu Cheese Dressing; French Dressing; Mayonnaise; Pickles; Sweet Relish; Barbecue Sauce; Taco Sauce; Vinegar; Imitation Maple Syrup; Fountain Syrups; Horseradish; and Salad Oil.
First use June 15, 1949.

SN 192,385. Fred's Frozen Foods, Inc., Noblesville, Ind. Filed Apr. 30, 1964.

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For Frozen Uncooked Pork Fritters.
First use on or about Dec. 15, 1963.

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SN 192,755. Robb-Ross Company, Inc., Sioux City, Iowa. Filed May 5, 1964.

## HONEY BUN

No claim of exclusive right is made to "Honey," said word being the name of the goods.
For Honey.
First use Apr. 9, 1964.

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SN 192,933. National Biscuit Company, New York, N.Y. Filed May 7, 1964.




The portrait in the drawing is that of a fanciful figure. The word "Gitana" is common to several romance languages and is translated in English to mean gypsy.
For Biscuits and Crackers.
First use Feb. 18, 1964.

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SN 198,022. August Creamery, Inc., Moonachie, N.J. Filed July 17, 1964.

## AUGUSTUS BRAND

For Cheeses.
First use June 1, 1963.

SN 200,801. Wagner Bros. Feed Corp., d.b.a. Wild Bird Conservation, Brooklyn, N.Y. Filed Aug. 27, 1964.




For Bird Food.
First use August 1960.

SN 201,411. General Foods Corporation, White Plains, N.Y. Filed Sept. 8, 1964.

## PANLETS

For Prepared Coconut Confectionery Centers for Use in Making Coconut Candy.
First use Apr. 19, 1964.

SN 201,412. General Foods Corporation, White Plains, N.Y. Filed Sept. 8, 1964.

## PANNETEERS

For Prepared Coconut Confectionery Centers for Use in Making Coconut Candy.
First use Apr. 19, 1964.

### Class 47 — Wines

SN 153,997. Supreme Wine Co., Inc., South Boston, Mass. Filed Sept. 26, 1962.




The letters "S" and "W" appear within the crest design. The drawing is lined for red and gold. Owner of Reg. Nos. 352,820, 701,093, and others.
For Wines.
First use May 2, 1962.

SN 169,252. Duff Gordon & Co. Sociedad Anonima, Puerto de Santa Maria, Andalucia, Spain. Filed May 20, 1963.

## EL CID

Owner of Spanish Reg. No. 31,077, dated Apr. 25, 1918.
For Sherry Wines.

SN 178,829. Louis Bert & Cie, Barsac, Gironde, France. Filed S.R. Oct. 4, 1963; Am. P.R. June 1, 1964.

## PIERRE DANTRAC

The term "Pierre Dantrac" does not represent any living individual. Owner of French Reg. No. 45,059, dated Mar. 22, 1949 (Bordeaux); Natl. Inst. No. 448,854.
For Wines.

SN 183,751. E. & J. Gallo Winery, d.b.a. Hunt Club Cellars, Modesto, Calif. Filed Dec. 30, 1963.

# HUNT ROOM

For Wines.
First use Dec. 6, 1963.

### Class 48 — Malt Beverages and Liquors

SN 182,638. Minneapolis Brewing Company, Minneapolis, Minn. Filed Dec. 9, 1963.

## WUNDERBAR

The German word "Wunderbar" signifies "wonderful" in the English language.
For Beer.
First use Feb. 23, 1959.
Subj. to Intf. with SN 158,119 and SN 201,212.

### Class 49 — Distilled Alcoholic Liquors

SN 177,392. West Indies Distillers, Ltd., Charlotte Amalie, St. Thomas, Virgin Islands, by change of name and assignment from West Indies Distillers, Ltd., St. Thomas, Virgin Islands. Filed Sept. 19, 1963.

## KING'S WHARF

For Rum.
First use Oct. 3, 1960; in commerce Feb. 3, 1961.

SN 191,824. The American Distilling Company, d.b.a. Fair Castle Importing Co., New York, N.Y. Filed Apr. 23, 1964.

## HEATHER HOUSE

For Whisky.
First use Mar. 15, 1963.

SN 191,825. The American Distilling Company, d.b.a. The American Distilling Co., Inc., New York, N.Y. Filed Apr. 23, 1964.

## CANADIAN HOST

No claim of exclusive right is made to "Canadian" as used on Canadian whisky.
For Canadian Whisky.
First use Mar. 15, 1963.



SN 201,212. Majestic Distilling Company, Inc., Lansdowne, Md. Filed Sept. 3, 1964.

## WONDER BAR

For Whiskey.
First use March 1953.
Subj. to Intf. with SN 158,119 and SN 182,638.

### Class 50 — Merchandise Not Otherwise Classified

SN 170,411. Herbert Keeton, Campbellsville, Ky. Filed June 5, 1963.

## VENEER-O-CRAFT

For Handicraft Kits Comprising Wood Veneers for Assembling Into Various Articles.
First use January 1962.

SN 188,837. Art Anson, Inc., Allentown, Pa. Filed Mar. 17, 1964.

## E-Z-C

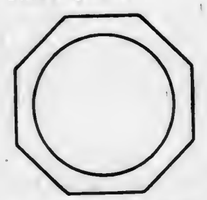
For Telephone Dial Attachment Comprising Large Luminescent Numerals for Increased Visibility, Particularly, in the Dark.
First use Jan. 19, 1964.

SN 192,283. Gestetner Limited, London, England. Filed Apr. 29, 1964.

## GESTETNER

Owner of British Reg. No. 836,344, dated June 29, 1962.
For Paper Printing Plate for Use With Offset Duplicating Apparatus, Printers' Blankets (Not of Textile Material), and Engravers' Plates.

SN 199,342. American Flange & Manufacturing Co., Inc., New York, N.Y. Filed Aug. 6, 1964.



For Closures for Containers and Parts Thereof, for Metal Drums, Cans, Bottles and Other Containers—Namely, Caps, Bushings, and Flanges.
First use Oct. 17, 1931, as to closures, bushings, and flanges.

### Class 51 — Cosmetics and Toilet Preparations

SN 152,360. Valden Co., Inc., Minneapolis, Minn. Filed Aug. 31, 1962.




For Shaving Preparation.
First use Aug. 10, 1962.

SN 164,661. Helena Rubinstein, Inc., New York, N.Y. Filed Mar. 14, 1963.

## DEW-KISSED

For Lipstick.
First use August 1960.

SN 177,479. Beautee Parfait, Inc., Hollywood, Calif. Filed Sept. 23, 1963.

## BEAUTEE PARFAIT

For Protective Lotion for the Nails and Hands and for Conditioning the Cuticle; and Antiperspirant.
First use Nov. 30, 1962.

SN 179,561. Societe d'Hygiene Dermatologique de Vichy-Vichy Source de Beaute, Societe Anonyme, Vichy, Allier, France. Filed Oct. 22, 1963.

## VICHY SOURCE DE BEAUTE

No claim is made to the word "Vichy" apart from the mark as shown. The English translation of the French wording "Vichy Source de Beaute" is "Vichy source of beauty." Owner of French Reg. No. 2,092, dated Mar. 7, 1962 (Cusset); Natl. Inst. No. 181,638; and U.S. Reg. No. 688,414.
For Perfumery, Hair Lotions, Dentrifices, Eau de Cologne, Face Power, Rouge and Cosmetic Skin Creams.

SN 184,707. Eau de Colognefabriek J. C. Boldoot N.V., Amsterdam, Netherlands. Filed Jan. 16, 1964.

## BOLDON

Owner of Dutch Reg. No. 145,033, dated Aug. 7, 1962.
For Perfumery, Scented Water, Eau de Cologne, After-Shave Lotion and Sticks, Pre-Shave Lotion, and Shaving Cream.

SN 188,535. Firmenich, Incorporated, New York, N.Y. Filed Mar. 12, 1964.




Owner of Reg. Nos. 210,917 and 546,643.
For Artificial and Synthetical Perfumes Sold in Bulk Form for Use as an Ingredient in the Manufacture of Cosmetic Products and Perfumes.
First use Dec. 2, 1963.

SN 188,839. Blair Laboratories, Inc., Yonkers, N.Y. Filed Mar. 17, 1964.




For Sun-Screen Preparation.
First use Mar. 6, 1964.

SN 190,985. Societe Anonyme Compagnie Francaise des Parfums d'Orsay, Puteaux (Seine), France. Filed Apr. 13, 1964.

## TILLEUL

The word "Tilleul" in French means "lime-tree" or "linden-tree" or "base-wood tree." Priority claimed under Sec. 44(d) on French Reg. No. 518,942, dated Jan. 23, 1964 (Paris); Natl. Inst. No. 218,668.

For Perfumes, Perfume Extracts, Toilet Water, Cosmetic Lotions for the Body, Face, Hands and Feet, Talcum Powder, Face Powder, Body Powder, Dusting Powder, Sachet Powder, Bath Powder, Powder Compacts, Bath Salts, Bath Oils, Cosmetic Skin Creams for the Face and Hands, Lipsticks, Brilliantine, and Hair Tonic.

SN 192,257. Avon Products, Inc., New York, N.Y. Filed Apr. 29, 1964.

## BLUE BLAZER

For After Shave Lotion, Foam Shave Cream, After Shave-After Shower Cologne Spray, Spray Personal Deodorant, Gel Hair Dress and Talc.
First use Apr. 8, 1964.

SN 192,466. John H. Breck, Inc., Springfield, Mass. Filed May 1, 1964.

## DATE SET

The word "Set" is disclaimed apart from the mark as shown.
For Hair Setting Preparation.
First use Apr. 9, 1964.

SN 192,799. Dermik Pharmacal Co., Inc., Syosset, N.Y. Filed May 6, 1964.

## NORMA-SKREEN

For Pharmaceutical Preparation for Use on Normal Skin To Aid in Tanning and Help Prevent Burning.
First use Jan. 15, 1964.

SN 192,800. Dermik Pharmacal Co., Inc., Syosset, N.Y. Filed May 6, 1964.

## MEDI-SKREEN

For Pharmaceutical Preparation for Use on Sun-Sensitive Skin To Aid in Tanning and Help Prevent Burning.
First use Jan. 15, 1964.

### Class 52 — Detergents and Soaps

SN 182,697. ALD, Inc., Chicago, Ill. Filed Dec. 10, 1963.

## ALDKLEEN

Owner of Reg. Nos. 639,267, 665,715, and others.
For Metal, Rubber, and Plastic Cleaner.
First use Sept. 5, 1963.

SN 188,951. Bunlap Corporation, New York, N.Y. Filed Mar. 18, 1964.

## BUNLAP

For General Purpose Aerosol Spray Detergent Cleaners for Washable Surfaces.
First use Feb. 25, 1964.

SN 190,266. Industrial Chemical Services, Inc., New Orleans, La. Filed Apr. 3, 1964.

## THE HI-DRESS LINE

No claim is made to the word "Line" apart from the mark as shown.
For Cleaners for Use on Upholstery, Rugs, Tires, Concrete, Metal or Painted Surfaces, and Windshields, and a Preparation for Removing Insects, Road Grime and Other Foreign Matter From Windshields.
First use June 1, 1959.

SN 190,738. Merlite Industries Inc., New York, N.Y. Filed Apr. 9, 1964.

## DuraSan

For Automatic Toilet Bowl Cleaner.
First use Jan. 17, 1964.

SN 190,986. Societe Anonyme Compagnie Francaise des Parfums d'Orsay, Puteaux (Seine), France. Filed Apr. 13, 1964.

## TILLEUL

The word "Tilleul" in French means "a lime tree" or "linden tree" or "bass wood tree." Priority claimed under Sec. 44(d) on French Reg. No. 518,942, dated Jan. 23, 1964 (Paris); Natl. Inst. No. 218,668.
For Toilet Soaps.



SN 191,123. Bunlap Corporation, New York, N.Y. Filed Apr. 15, 1964.

BunLap

For General Purpose Aerosol Spray Detergent Cleaners for Washable Surfaces.
First use Mar. 2, 1964.

SN 191,697. Maria Mota Mas, Barcelona, Spain. Filed Apr. 21, 1964.

## CREMACAO

Owner of Spanish Reg. No. 93,749, dated Oct. 30, 1933.
For Toilet Soaps.

SN 192,328. Schalk Chemicals Inc., Union, N.J. Filed Apr. 29, 1964.




The drawing is lined for red and blue. The words "Spot Grease Remover" are disclaimed apart from the mark. Owner of Reg. No. 617,992.
For Spot and Stain Removing Composition.
First use Apr. 17, 1964.

SN 192,630. Puritan Chemical Company, Atlanta, Ga. Filed May 4, 1964.

## POWERTEX

For Industrial and Institutional Cleaner.
First use on or about Apr. 21, 1952.

SN 192,632. Puritan Chemical Company, Atlanta, Ga. Filed May 4, 1964.

## PYRO-JET

For Steam Cleaning Preparations Containing Sodium Hydroxide Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs.
First use on or about Nov. 3, 1952.

SN 192,763. John T. Stanley Co., Inc., New York, N.Y. Filed May 5, 1964.

## GUAPA

The word "Guapa" may be translated into English as "elegant, vain, gay, sprightly."
For Toilet Soap.
First use Feb. 17, 1964.

SN 193,108. Churchill Chemical Company, Galesburg, Ill. Filed May 11, 1964.

## TRIPLE PLAY

For Detergents Having Germicidal Properties Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs.
First use on or about Sept. 10, 1962.

SN 193,111. Churchill Chemical Company, Galesburg, Ill. Filed May 11, 1964.

## OR-3D

For Detergent With Disinfecting and Deodorizing Properties for Use on All Types of Surfaces, Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs.
First use on or about Feb. 14, 1963.

SN 195,774. "42" Products, Ltd., Inc., Santa Monica, Calif. Filed June 16, 1964.

## COMBAT

For Dandruff Control Shampoo.
First use Apr. 13, 1964.

SN 196,253. Cowles Chemical Company, Cleveland, Ohio. Filed June 23, 1964.

## SOUND-OFF

For Cleaning Compound for Use in Cleaning Metal Surfaces.
First use June 1, 1964.

# SERVICE MARKS

### Class 100 — Miscellaneous

SN 177,504. Robert E. Dilatush, Decatur, Ill. Filed Sept. 23, 1963.

## FIRE SIDE HOME

Applicant disclaims the word "Home" separate and apart from the mark as shown.
For Service of Planning Nursing Homes, Shelter Care Homes, and Homes for the Aged, Convalescents, and the Infirm, Including the Services Connected Therewith.
First use July 27, 1963.

SN 180,188. Robert E. Dilatush, Decatur, Ill. Filed Oct. 31, 1963.



For Service of Planning Nursing Homes, Shelter Care Homes and Homes for the Aged, Including the Services Connected Therewith.
First use July 27, 1963.

SN 182,084. Hellmuth, Obata and Kassabaum, Inc., St. Louis, Mo. Filed Nov. 29, 1963.

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For Complete Architectural and Interior Design Services; Construction Management and Contract Document Interpretation; and Complete Building Engineering and Design Services Including Engineering and Design of Plumbing, Heating, Ventilating, Air-Conditioning, Mechanical, and Electrical Systems.

First use June 27, 1955.

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SN 184,349. Builders' Hardware Manufacturers' Association, New York, N.Y. Filed Jan. 10, 1964.

bhma

For Association Services—Namely, the Promotion of the Interests of Manufacturers of Builders' Hardware by Furnishing Liaison With Congressional Committees and Offices of the Federal Government, by Preparing Advertisements and Other Conventional Means.

First use Nov. 18, 1963.

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SN 191,458. Tracor, Inc., Austin, Tex. Filed Apr. 17, 1964.

## TRACOR

For Research, Development and Engineering in the Fields of Chemistry, Physics, Nucleonics, Electronics, Mechanics, Psychology, and Business; and Product Design, Development and Production in the Field of Aerospace, Marine and Acoustics.

First use at least as early as May 1, 1962.

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## Class 101 — Advertising and Business

SN 167,766. Stivers Office Service, Chicago, Ill. Filed Apr. 29, 1963.

## STIVERS LIFESAVERS

The surname "Stivers" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 602,832 and 611,902.

For Maintaining a Staff of Trained Office Personnel To Provide Services for Clients on a Temporary Basis.

First use July 14, 1947.

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SN 179,316. Chip's Franchise System, Inc., Rocky Mount, N.C. Filed Oct. 18, 1963.

CHIPS

For Operation of Drive-Ins Serving Food and Beverages.

First use on or about June 1, 1962.

SN 183,152. California Notary Association, Woodland Hills, Calif. Filed Dec. 17, 1963.

For Furnishing of Services Assisting Persons To Obtain Certification as Notaries Public in the Several States.

First use June 15, 1960.

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SN 188,563. A. C. Nielsen Company, Chicago, Ill. Filed Mar. 12, 1964.

NCH

Owner of Reg. No. 672,958.

For Marketing Research Services—Namely, Measurement of (1) Consumer Product Sales at Point of Sale, (2) Local Radio and Television Audiences, and (3) Combined Television and Magazine Audiences; and Processing of Merchandise Coupons.

First use Oct. 1, 1962.

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## Class 102 — Insurance and Financial

SN 175,953. Systems Programming Corporation, State College, Pa. Filed Aug. 28, 1963.

## MEDI-BILL

For Accounting and Bookkeeping Services Rendered to Doctors and Dentists Including Monthly Analysis of Accounts Receivable by Age and Type of Treatment.

First use on or about Mar. 15, 1963.

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SN 186,832. Federal Employees' Distributing Company, d.b.a. Fedco, Inc., Los Angeles, Calif. Filed Feb. 17, 1964.

## FEDCHARGE

Owner of Reg. Nos. 646,261, 648,168, and others.

For Department Store Credit Services.

First use September 1963.

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SN 189,549. The Chase Manhattan Bank, New York, N.Y. Filed Mar. 25, 1964.

## REMEMBER . . . YOU HAVE A FRIEND AT THE CHASE MANHATTAN BANK

Owner of Reg. Nos. 717,319, 717,320, and others.

For Banking Services—Namely, Financing, Credit and Loan Services, Savings and Other Interest-Bearing Accounts, Checking Accounts, Special Checking Accounts, Foreign Exchange, Letters of Credit and Travelers' Checks, Fiduciary and Other Trust Department Services.

First use January 1960; Mar. 31, 1955, as to the service mark "The Chase Manhattan Bank."



SN 189,550. The Chase Manhattan Bank, New York, N.Y. Filed Mar. 25, 1964.

## YOU HAVE A FRIEND AT CHASE MANHATTAN

Owner of Reg. Nos. 717,319, 717,320, and others.

For Banking Services—Namely, Financing, Credit and Loan Services, Savings and Other Interest-Bearing Accounts, Checking Accounts, Special Checking Accounts, Foreign Exchange, Letters of Credit and Travelers' Checks, Fiduciary and Other Trust Department Services.

First use January 1960; Mar. 31, 1955, as to the service mark "Chase Manhattan."

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SN 193,559. The Lumber Mutual Fire Insurance Company of Boston, Massachusetts, Boston, Mass. Filed May 15, 1964.

## LUMBERMATIC

Owner of Reg. No. 739,819.

For Insurance Underwriting Services.

First use Jan. 1, 1960.

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## Class 103 — Construction and Repair

SN 187,369. I. G. Wheeler & Sons, Inc., Pittsburgh, Pa. Filed Feb. 24, 1964.

CORBESTOS

For Waterproofing and Preserving Corrugated Roofing.

First use on or about Apr. 1, 1963.

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## Class 105 — Transportation and Storage

SN 186,284. Slimcruises Limited, London, England. Filed Feb. 7, 1964.

## SLIMCRUISE

For Operating Vacation Cruises Especially Designed for Those Who Wish To Lose Weight.

First use Oct. 15, 1963; in commerce Dec. 9, 1963.

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## Class 106 — Material Treatment

SN 186,763. Paris Processing Corp., New York, N.Y. Filed Feb. 14, 1964.

## PERSHAH

For Embossing of Pile Fabrics of Others.

First use on or about Jan. 10, 1964.

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## Class 107 — Education and Entertainment

SN 152,391. James Farnsworth, d.b.a. Jim Farnsworth Ski Movies, Boston, Mass. Filed Sept. 4, 1962.

## SKI-O-RAMA

For Exhibition of Motion Pictures of the Sport of Snow Skiing Prepared by a Special Film Technique.

First use Apr. 19, 1962.

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SN 191,357. Buffalo Courier-Express, Inc., Buffalo, N.Y. Filed Apr. 17, 1964.

## COURIER-EXPRESSIONS

For Title of a Quiz-Type of Television Entertainment Program.

First use Jan. 20, 1964.

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# COLLECTIVE MEMBERSHIP MARKS

## Class 200

SN 165,198. Allegheny County Bar Association, Pittsburgh, Pa. Filed Mar. 22, 1963.

THE ALLEGHENY COUNTY BAR ASSOCIATION — CHARTERED FEBRUARY 28TH A.D. 1870

The drawing is lined for shading purposes. The Latin words shown in the mark are "not bearing the sword in vain."

For Indicating Membership in the Applicant.

First use in or before 1907.

# TRADEMARK REGISTRATIONS ISSUED
## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

783,810. PACELLA. J. H. Benecke, Kommanditgesellschaft. SN 167,364. Pub. 11–10–64. Filed 4–23–63.

783,811. U.S. PERMOBOND. United States Rubber Company. MULTIPLE CLASS (Classes 1 and 5). SN 170,128. Pub. 11–10–64. Filed 5–31–63.

783,812. OWEN CLAY. United Clay Mines Corporation. SN 174,810. Pub. 11–10–64. Filed 8–9–63.

783,813. ULTRATHENE. National Distillers and Chemical Corporation. SN 187,598. Pub. 11–10–64. Filed 2–27–64.

783,814. RJ–100. Monsanto Chemical Company. SN 189,006. Pub. 11–10–64. Filed 3–18–64.

783,815. KYDEX. Rohm & Haas Company. SN 189,017. Pub. 11–10–64. Filed 3–18–64.

783,816. ROOKPLAZ. Checkmate Chemicals, Inc. SN 189,441. Pub. 11–10–64. Filed 3–24–64.

783,817. CDG. Charles Dana Gibson, d.b.a. Deer Run Farms. SN 189,463. Pub. 11–10–64. Filed 3–24–64.

783,818. STYGENE. Chemfax, Incorporated. SN 189,551. Pub. 11–10–64. Filed 3–25–64.

783,819. CYCLAL. Ciba Corporation. SN 189,552. Pub. 11–10–64. Filed 3–25–64.

783,820. CANTRECE. E. I. du Pont de Nemours and Company. SN 189,562. Pub. 11–10–64. Filed 3–25–64.

783,821. CHEMFAX ETC. AND DESIGN. Chemfax, Incorporated. SN 189,652. Pub. 11–10–64. Filed 3–26–64.

783,822. ISOTHANE. Bernel Foam Products Company, Inc. SN 190,145. Pub. 11–10–64. Filed 4–2–64.

783,823. BRUT. S. M. Arnold, Inc. SN 190,691. Pub. 11–10–64. Filed 4–9–64.

783,824. DURACET. The Franklin Chemical Company. SN 190,710. Pub. 11–10–64. Filed 4–9–64.

783,825. CLEVYL. Societe Rhovyl. SN 192,241. Pub. 11–10–64. Filed 4–28–64.

### Class 2 — Receptacles

783,826. A WORLD GLOBE SURROUNDED BY FIGURES BEARING GIFTS. World Gift Company. SN 177,130. Pub. 11–10–64. Filed 9–16–63.

783,827. PORT-A-BIN. Metcraft Products, Inc. SN 199,479. Pub. 11–10–64. Filed 8–7–64.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

783,828. PERFECTION. William Elwood Hulan, d.b.a. Hulan Leather Shop. SN 197,299. Pub. 11–10–64. Filed 7–7–64.

783,829. WHITMO AND DESIGN. Morris White Fashions, Inc. SN 199,848. Pub. 11–10–64. Filed 8–13–64.

### Class 4 — Abrasives and Polishing Materials

783,830. CONGOLEUM-NAIRN FINE FLOORS AND DESIGN. Congoleum-Nairn Inc. SN 189,554. Pub. 11–10–64. Filed 3–25–64.

783,831. IMPERVIUM. Puritan Chemical Company. SN 192,627. Pub. 11–10–64. Filed 5–4–64.

783,832. PLEXIN. Puritan Chemical Company. SN 192,629. Pub. 11–10–64. Filed 5–4–64.

### Class 5 — Adhesives

783,811. (See Class 1 for this trademark.)

783,833. FIGURE OF MAN STANDING ON ROLL OF TAPE (DESIGN). Arno Adhesive Tapes, Inc. SN 186,432. Pub. 11–10–64. Filed 2–11–64.

783,834. PASTY PALS. LePage's, Inc. SN 192,918. Pub. 11–10–64. Filed 5–7–64.

### Class 6 — Chemicals and Chemical Compositions

783,835. ANTIDISCRASSICUM. Safe-T-Water Co. SN 133,918. Pub. 11–10–64. Filed 12–11–61.

783,836. LASTIL. The British Drug Houses, Limited. SN 157,195. Pub. 11–10–64. Filed 4–2–63.

783,837. KILL-TOX. Hayes-Sammons Chemical Company. SN 166,715. Pub. 11–10–64. Filed 4–15–63.

783,838. POWER-TOX. Hayes-Sammons Chemical Company. SN 166,716. Pub. 11–10–64. Filed 4–15–63.

783,839. AL-KOLITO. Puerto Rico Distilling Company. SN 169,656. Pub. 11–10–64. Filed 5–24–63.

783,840. NUSAT. The Harshaw Chemical Company. SN 171,544. Pub. 11–10–64. Filed 6–21–63.

783,841. DIOXIN. Sindar Corporation. SN 177,377. Pub. 11–10–64. Filed 9–19–63.

783,842. LITEPOZ. The Dow Chemical Company. SN 178,896. Pub. 11–10–64. Filed 10–14–63.

783,843. POLAMINE. Wyandotte Chemicals Corporation. SN 179,293. Pub. 11–10–64. Filed 10–17–63.

783,844. SERVICE SELLS QUALITY TELLS AND DESIGN. Wood Chemical Co. Inc. SN 181,086. Pub. 11–10–64. Filed 11–13–63.

783,845. CATAPAL. Continental Oil Company. SN 187,563. Pub. 11–10–64. Filed 2–27–64.

783,846. CONOPAL. Continental Oil Company. SN 187,565. Pub. 11–10–64. Filed 2–27–64.

783,847. ROSHEENE. R. O. Hull & Company, Inc. SN 188,109. Pub. 11–10–64. Filed 3–6–64.

783,848. $B_1T$. General Aniline & Film Corporation. SN 188,354. Pub. 11–10–64. Filed 3–10–64.

783,849. MORSODREN. Morton Salt Company. SN 188,455. Pub. 11–10–64. Filed 3–11–64.

783,850. N-A-C. Mead Johnson & Company. SN 189,792. Pub. 11–10–64. Filed 3–27–64.

783,851. ARMORIZE AND DESIGN. Romolo Capolino, d.b.a. Armorize Company. SN 190,238. Pub. 11–10–64. Filed 4–3–64.

783,852. PEN DIP. Heatbath Corporation. SN 190,262. Pub. 11–10–64. Filed 4–3–64.

783,853. PX. Heatbath Corporation. SN 190,263. Pub. 11–10–64. Filed 4–3–64.

783,854. TEXPAD. The Harshaw Chemical Company. SN 192,392. Pub. 11–10–64. Filed 4–30–64.

783,855. CVRL. Richard Fay Neugebauer, d.b.a. California Veterinarian Research Laboratory. SN 192,937. Pub. 11–10–64. Filed 5–7–64.





783,856. IRGAPADOL. Geigy Chemical Corporation. SN 193,350. Pub. 11–10–64. Filed 5–13–64.

783,857. TINOLITE. Geigy Chemical Corporation. SN 193,351. Pub. 11–10–64. Filed 5–13–64.

783,858. HOUSEBOY AND DESIGN. Hy Pac, Inc. SN 193,374. Pub. 11–10–64. Filed 5–13–64.

783,859. CHEVRON (DESIGN). Standard Oil Company of California. SN 193,588. Pub. 11–10–64. Filed 5–15–64.

783,860. STA-HI. Larry E. Pilley, d.b.a. Sta-Hi Sales Company. SN 193,982. Pub. 11–10–64. Filed 5–21–64.

783,861. GLIDCO. The Glidden Company. SN 194,048. Pub. 11–10–64. Filed 5–22–64.

783,862. MYRCENE 85. The Glidden Company. SN 194,049. Pub. 11–10–64. Filed 5–22–64.

783,863. IRGAFOMAL. Geigy Chemical Corporation. SN 197,281. Pub. 11–10–64. Filed 7–7–64.

### Class 7 — Cordage

783,864. VYTACORD. The Goodyear Tire & Rubber Company. SN 166,459. Pub. 11–10–64. Filed 4–10–63.

783,865. G AND DESIGN. Gibson Greeting Cards, Inc. MULTIPLE CLASS (Classes 7, 37, 38, and 50). SN 174,583. Pub. 11–10–64. Filed 8–7–63.

783,866. GIBSON AND DESIGN. Gibson Greeting Cards, Inc. MULTIPLE CLASS (Classes 7, 37, 38, and 50). SN 174,584. Pub. 11–10–64. Filed 8–7–63.

### Class 8 — Smokers' Articles, Not Including Tobacco Products

783,867. TAR-X. George Risk. SN 195,449. Pub. 11–10–64. Filed 6–11–64.

783,868. COMET. Ronson Corporation. SN 197,234. Pub. 11–10–64. Filed 7–6–64.

783,869. MANOR. Manor Merchandise Corp. SN 198,187. Pub. 11–10–64. Filed 7–20–64.

783,870. GL AND DESIGN. Glass Laboratories, Inc. SN 200,095. Pub. 11–10–64. Filed 8–18–64.

### Class 10 — Fertilizers

783,871. PETE AND DESIGN. Martinsville Mulch, Inc. SN 162,575. Pub. 11–10–64. Filed 2–12–63.

783,872. VIGILANTE. Socony Mobil Oil Company, Inc. SN 190,552. Pub. 11–10–64. Filed 4–7–64.

783,873. VITANITE. Socony Mobil Oil Company, Inc. SN 190,553. Pub. 11–10–64. Filed 4–7–64.

### Class 12 — Construction Materials

783,874. MOLONEY ALL-WEATHER DOORS AND DESIGN. Moloney Products, Inc. SN 138,520. Pub. 11–10–64. Filed 2–23–62.

783,875. UNIT-FORM. Williams Form Engineering Corporation. SN 173,802. Pub. 11–10–64. Filed 7–25–63.

783,876. RAJAH. Kaiser Aluminum & Chemical Corporation. SN 191,298. Pub. 11–10–64. Filed 4–16–64.

783,877. ACMETITE. Acme Backing Corporation. SN 191,350. Pub. 11–10–64. Filed 4–17–64.

783,878. CAMATIC. Kelley Company, Inc. SN 192,185. Pub. 11–10–64. Filed 4–28–64.

### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

783,879. PRINCESS WARE. Maryland Plastics Incorporated. SN 165,443. Pub. 11–10–64. Filed 3–26–63.

783,880. TWIN-BOX. Hydro-Meca. MULTIPLE CLASS (Classes 13, 21 and 23). SN 172,354. Pub. 11–10–64. Filed 6–28–63.

783,881. BULLDOG. National Fence Manufacturing Co., Inc. SN 178,212. Pub. 11–10–64. Filed 10–2–63.

783,882. GUN-NAILS. Signode Corporation, by change of name from Signode Steel Strapping Company. SN 184,185. Pub. 11–10–64. Filed 1–7–64.

783,883. QUIK-PIN. Miller Products Co. SN 188,991. Pub. 11–10–64. Filed 3–18–64.

783,884. X RAXCO. Chicago Roll Forming Corporation. SN 189,271. Pub. 11–10–64. Filed 3–23–64.

783,885. FLUSH-LOK. Universal Fluid Dynamics Co. SN 193,067. Pub. 11–10–64. Filed 5–8–64.

783,886. TARGETMASTER. Hanawal Manufacturing Company, Limited. SN 193,163. Pub. 11–10–64. Filed 5–11–64.

783,887. SKIPPER'S CHOICE. Marine Hardware & Supply Co. SN 193,481. Pub. 11–10–64. Filed 5–14–64.

783,888. STRIP-LOK. Long-Lok Corporation. SN 194,396. Pub. 11–10–64. Filed 5–27–64.

### Class 14 — Metals and Metal Castings and Forgings

783,889. 3 DIAMONDS (DESIGN). Mitsubishi Metal Mining Co., Ltd. SN 176,564. Pub. 11–10–64. Filed 9–9–63.

783,890. ECONO-ROD. Continental Steel Corporation. SN 196,022. Pub. 11–10–64. Filed 6–19–64.

783,891. ECONO-WIRE. Continental Steel Corporation. SN 196,023. Pub. 11–10–64. Filed 6–19–64.

783,892. ALLEGHENY. Allegheny Ludlum Steel Corporation. SN 197,051. Pub. 11–10–64. Filed 7–6–64.

### Class 15 — Oils and Greases

783,893. XEROIL. The DoAll Company. SN 175,099. Pub. 11–10–64. Filed 8–15–63.

783,894. POLYCOAT. Battenfeld Grease & Oil Corporation, Inc. SN 182,762. Pub. 11–10–64. Filed 12–11–63.

783,895. UTP AND DESIGN. Farley Butane Company. SN 190,172. Pub. 11–10–64. Filed 4–2–64.

783,896. ETERNA 6000. The Frontier Refining Company. SN 192,144. Pub. 11–10–64. Filed 4–27–64.

783,897. MF AND DESIGN. Massey-Ferguson Limited. SN 196,457. Pub. 11–10–64. Filed 6–25–64.

### Class 16 — Protective and Decorative Coatings

783,898. STRATHOLINER. Strathmore Products, Inc. SN 181,422. Pub. 11–10–64. Filed 11–18–63.

783,899. CONTROLAC. Strathmore Products, Inc. SN 181,423. Pub. 11–10–64. Filed 11–18–63.

783,900. WUNDERCOTE. General Kinetics, Inc. of West Palm Beach. SN 181,771. Pub. 11–10–64. Filed 11–22–63.

783,901. URAPOL. Poly Resins. SN 181,793. Pub. 11–10–64. Filed 11–22–63.

783,902. K MART AND DESIGN. S. S. Kresge Company. SN 185,607. Pub. 11–10–64. Filed 1–29–64.

## Class 17—Tobacco Products

783,903. REPRESENTATION OF A MAN WITH HAT. The American Tobacco Company. SN 191,650. Pub. 11–10–64. Filed 4–21–64.

## Class 18—Medicines and Pharmaceutical Preparations

783,904. DENTINOX. Dentinox Gesellschaft fuer Pharmaceutische Praeparate Lenk & Schuppan. SN 166,532. Pub. 11–10–64. Filed 4–11–63.

783,905. EGMOVIT. Iromedica A.G. SN 168,416. Pub. 11–10–64. Filed 5–8–63.

783,906. REFRESH'N. Stanley Drug Products, Inc. SN 171,496. Pub. 11–10–64. Filed 6–20–63.

783,907. LEMOS. Laboratorio Lemos Soc. Resp. Ltda. SN 175,500. Pub. 11–10–64. Filed 8–21–63.

783,908. AKTEX AND DESIGN. S & S Pharmaceutical Company, d.b.a. S & S Sales Company. SN 176,673. Pub. 11–10–64. Filed 9–10–63.

783,909. VITA TONIC. Sternco Industries, Inc. SN 177,102. Pub. 11–10–64. Filed 9–16–63.

783,910. ASPAPOPS, Joseph Lovine, d.b.a. G.I. Drug Company. SN 186,955. Pub. 11–10–64. Filed 2–18–64.

783,911. INAPSINE. McNeil Laboratories, Incorporated. SN 190,096. Pub. 11–10–64. Filed 4–1–64.

783,912. VIALIBRAN. Biofarma, Societe Anonyme. SN 191,116. Pub. 11–10–64. Filed 4–15–64.

783,913. KAO 22. The Purdue Frederick Company. SN 191,882. Pub. 11–10–64. Filed 4–23–64.

783,914. EVENOL. Delta Drug Corporation. SN 192,575. Pub. 11–10–64. Filed 5–4–64.

783,915. CINETRAST. Barnes-Hind Barium Products. SN 193,096. Pub. 11–10–64. Filed 5–11–64.

783,916. ACRA/SIL. Alberto-Culver Company. SN 193,432. Pub. 11–10–64. Filed 5–14–64.

783,917. OPTO-MIST. Success Chemical Co., Inc. SN 193,824. Pub. 11–10–64. Filed 5–19–64.

783,918. ULTI-LEP. American Home Products Corporation. SN 193,836. Pub. 11–10–64. Filed 5–20–64.

783,919. QUESTRAN. Mead Johnson & Company. SN 193,886. Pub. 11–10–64. Filed 5–20–64.

783,920. TRANCODYNE. Sterling Drug Inc. SN 193,995. Pub. 11–10–64. Filed 5–21–64.

783,921. MILKOTE. American Home Products Corporation. SN 194,340. Pub. 11–10–64. Filed 5–27–64.

783,922. GRANUVITOL. The Purdue Frederick Company. SN 194,418. Pub. 11–10–64. Filed 5–27–64.

783,923. SPASMID-PB. Dalin Pharmaceuticals, Inc. SN 194,581. Pub. 11–10–64. Filed 6–1–64.

783,924. RAMETIN. Farbenfabriken Bayer Aktiengesellschaft. SN 194,590. Pub. 11–10–64. Filed 6–1–64.

783,925. LISCAL. Geigy Chemical Corporation. SN 194,719. Pub. 11–10–64. Filed 6–2–64.

783,926. TOFRACHLOR. Geigy Chemical Corporation. SN 194,720. Pub. 11–10–64. Filed 6–2–64.

783,927. GRADEIN. Geigy Chemical Corporation. SN 194,721. Pub. 11–10–64. Filed 6–2–64.

783,928. ANAFRANIL. Geigy Chemical Corporation. SN 194,722. Pub. 11–10–64. Filed 6–2–64.

783,929. GE-SUND-HEIT. F. B. Washburn Candy Corp., d.b.a. F. B. Washburn Corp. SN 194,845. Pub. 11–10–64. Filed 6–3–64.

783,930. CONQUEST. American Home Products Corporation. SN 194,862. Pub. 11–10–64. Filed 6–4–64.

783,931. MODATON. Warren-Teed Pharmaceuticals Inc. SN 195,473. Pub. 11–10–64. Filed 6–11–64.

783,932. EXEMTIN. Block Drug Company, Inc. SN 195,840. Pub. 11–10–64. Filed 6–17–64.

783,933. HAMMOCKS AND DESIGN. Hammock Bros. SN 196,040. Pub. 11–10–64. Filed 6–19–64.

783,934. JET-A-SEPTIC. Hudson Vitamin Products, Inc. SN 197,296. Pub. 11–10–64. Filed 7–7–64.

## Class 19—Vehicles

783,935. H AND DESIGN. Henschel-Werke Aktiengesellschaft. SN 169,371. Pub. 11–10–64. Filed 5–21–63.

783,936. SAILWING. Barish Associates, Inc. SN 176,707. Pub. 11–10–64. Filed 9–11–63.

783,937. R-PLUS. Raven Industries, Inc. SN 183,224. Pub. 11–10–64. Filed 12–18–63.

783,938. NATIONAL CARTS INC. AND DESIGN. National Carts, Incorporated. SN 187,311. Pub. 11–10–64. Filed 2–24–64.

783,939. ECON-O-MAT. Birmingham Auto Supply Co. SN 194,026. Pub. 11–10–64. Filed 5–22–64.

783,940. ULTREX. Union Carbide Corporation. SN 194,082. Pub. 11–10–64. Filed 5–22–64.

783,941. CAPELLA. Cullip Industries, Inc. SN 194,365. Pub. 11–10–64. Filed 5–27–64.

783,942. JEWELTONE. Seiberling Rubber Company. SN 194,426. Pub. 11–10–64. Filed 5–27–64.

## Class 20—Linoleum and Oiled Cloth

783,943. SPRING. Congoleum-Nairn Inc. SN 192,364. Pub. 11–10–64. Filed 4–30–64.

## Class 21—Electrical Apparatus, Machines, and Supplies

783,880. (See Class 13 for this trademark.)

783,944. ATC AND DESIGN. Audiotronics Corporation. SN 139,567. Pub. 11–10–64. Filed 3–12–62.

783,945. SHOPPER'S FAIR. Mangel Stores Corporation. SN 151,952. Pub. 11–10–64. Filed 8–27–62.

783,946. STELLAVOX AND DESIGN. Georges Quellet. SN 156,519. Pub. 11–10–64. Filed 11–2–62.

783,947. ELECTRI-WARM. American Radiator & Standard Sanitary Corporation. SN 165,731. Pub. 11–10–64. Filed 4–1–63.

783,948. PRIMER. Yardney Electric Corp. SN 168,788. Pub. 11–10–64. Filed 5–13–63.

783,949. RESISTA PVC-COTE. Resista International, Inc. SN 169,764. Pub. 11–10–64. Filed 5–27–63.

783,950. THE ROYALTY OF RADIO TELEVISION AND HIGH FIDELITY. Zenith Radio Corporation. SN 177,135. Pub. 11–10–64. Filed 9–16–63.

783,951. LEAREPEATER. Lear Jet Corporation. SN 180,915. Pub. 11–10–64. Filed 11–12–63.

783,952. MOTOMATIC. Electro-Craft Corporation. SN 183,045. Pub. 11–10–64. Filed 12–16–63.

783,953. STABILITE. Stackpole Carbon Company. SN 188,286. Pub. 11–10–64. Filed 3–9–64.

783,954. G-STRING. Surface Conduction, Inc. SN 188,293. Pub. 11–10–64. Filed 3–9–64.

783,955. TELEMICROPHONE. Sony Corporation. SN 188,922. Pub. 11–10–64. Filed 3–17–64.

783,956. AE AND DESIGN. Aeronautical Electronics, Inc. SN 190,850. Pub. 11–10–64. Filed 4–13–64.

783,957. KAPPA-82. Channel Master Corporation. SN 190,882. Pub. 11–10–64. Filed 4–13–64.

783,958. ALPHA-82. Channel Master Corporation. SN 190,886. Pub. 11–10–64. Filed 4–13–64.



783,959. DEL-CON. General Motors Corporation. SN 195,093. Pub. 11–10–64. Filed 6–8–64.

783,960. BRADFORD AND DESIGN. Bradford Novelty Co., Inc. SN 197,046. Pub. 11–10–64. Filed 7–6–64.

783,961. GL AND DESIGN. Glass Laboratories, Inc. SN 200,096. Pub. 11–10–64. Filed 8–18–64.

## Class 22—Games, Toys, and Sporting Goods

783,962. HEDLUND LETTER H AND DESIGN. Hedlund Manufacturing Company. SN 163,048. Pub. 11–10–64. Filed 2–19–63.

783,963. JUDY. Jolly Toys, Inc. SN 165,426. Pub. 11–10–64. Filed 3–26–63.

783,964. A DAVIS ORIGINAL AND DESIGN. H. Davis Toy Corporation. SN 166,531. Pub. 11–10–64. Filed 4–11–63.

783,965. NORTHWESTERN AND DESIGN. Northwestern Golf Company. SN 168,026. Pub. 11–10–64. Filed 5–2–63.

783,966. GLOBAL GOLF. A & W Root Beer Co. SN 174,145. Pub. 11–10–64. Filed 8–1–63.

783,967. A-PAC-UP. Reliart Trailer Manufacturing Corp. SN 185,317. Pub. 11–10–64. Filed 1–24–64.

783,968. SCRAMBLER. Victor Comptometer Corporation. SN 189,023. Pub. 11–10–64. Filed 3–18–64.

783,969. HARI-KARI. Harry J. Miele, d.b.a. Hari-Kari Sales Company. SN 189,197. Pub. 11–10–64. Filed 3–20–64.

783,970. SEA SCAMP. Gentex Corporation. SN 189,999. Pub. 11–10–64. Filed 3–31–64.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

783,880. (See Class 13 for this trademark.)

783,971. X-TRA-EDGE. Paper, Calmenson & Co. SN 142,846. Pub. 11–10–64. Filed 4–23–62.

783,972. IDEAL. J. Wiss & Sons Co. SN 143,077. Pub. 11–10–64. Filed 4–25–62.

783,973. SWR THREE CHAMBER SYSTEM AND DESIGN. Seitz-Werke G.m.b.H. SN 160,445. Pub. 11–10–64. Filed 1–9–63.

783,974. COBALT 529. Simonds Saw and Steel Company. SN 166,045. Pub. 11–10–64. Filed 4–3–63.

783,975. H AND DESIGN. Henschel-Werke Aktiengesellschaft. SN 169,451. Pub. 11–10–64. Filed 5–22–63.

783,976. ATLAS AND DESIGN. The Tait Manufacturing Company. SN 177,570. Pub. 11–10–64. Filed 9–23–63.

783,977. FLUIDFLO. Consolidated Engineering Company. SN 178,334. Pub. 11–10–64. Filed 10–4–63.

783,978. CURVE-FLO AND DESIGN. The Goodyear Tire & Rubber Company. SN 181,351. Pub. 11–10–64. Filed 11–18–63.

783,979. OMARK AND DESIGN. Omark Industries, Inc. SN 182,202. Pub. 11–10–64. Filed 12–2–63.

783,980. OMARK. Omark Industries, Inc. SN 182,203. Pub. 11–10–64. Filed 12–2–63.

783,981. BLACK-TRITE 33. Continental Drill Corporation, Inc. SN 183,159. Pub. 11–10–64. Filed 12–17–63.

783,982. CASCADE. Hauni-Werke Körber & Co. K.G. SN 184,064. Pub. 11–10–64. Filed 1–6–64.

783,983. TRAVELIFT. Drott Manufacturing Corporation. SN 191,751. Pub. 11–10–64. Filed 4–22–64.

783,984. CINTIMILL. Cincinnati Lathe and Tool Co. SN 193,334. Pub. 11–10–64. Filed 5–13–64.

783,985. CINTIMATIC. Cincinnati Lathe and Tool Co. SN 193,335. Pub. 11–10–64. Filed 5–13–64.



783,986. PARA-BLOC. Tavaro S.A. SN 193,598. Pub. 11–10–64. Filed 5–14–64.

783,987. CARBO-CLAD. Walter T. Cole Tool Corporation. SN 193,631. Pub. 11–10–64. Filed 5–18–64.

783,988. FIREBIRD. Oneida Ltd. SN 193,692. Pub. 11–10–64. Filed 5–18–64.

783,989. B-V. AND DESIGN. Bonney Vehslage Tool Co. SN 193,847. Pub. 11–10–64. Filed 5–20–64.

783,990. UNILINK. The Heim Universal Corporation. SN 193,957. Pub. 11–10–64. Filed 5–21–64.

783,991. STAG. Buck Bros. Inc. SN 194,275. Pub. 11–10–64. Filed 5–26–64.

783,992. BUCK BROS. Buck Bros. Inc. SN 194,276. Pub. 11–10–64. Filed 5–26–64.

783,993. CASCO. Casco Products Corporation. SN 194,360. Pub. 11–10–64. Filed 5–27–64.

783,994. DONASONIC. Donaldson Company, Inc. SN 195,071. Pub. 11–10–64. Filed 6–8–64.

783,995. WESTCHESTER. Studebaker Corporation. SN 195,899. Pub. 11–10–64. Filed 6–17–64.

783,996. CHICKADEE AND DESIGN. Eastman Machine Company. SN 196,511. Pub. 11–10–64. Filed 6–26–64.

783,997. PORTA-MATIC. Gray Manufacturing Company, Inc. SN 197,031. Pub. 11–10–64. Filed 7–3–64.

783,998. DUPLIMATIC. Moslo Machinery Company. SN 197,156. Pub. 11–10–64. Filed 7–6–64.

783,999. RIM. S.p.A. Virginio Rimoldi & C. SN 197,332. Pub. 11–10–64. Filed 7–7–64.

784,000. B. Crescent Niagara Corporation. SN 197,477. Pub. 11–10–64. Filed 7–9–64.

## Class 24—Laundry Appliances and Machines

784,001. TRIPLE CHECK AND DESIGN. G. C. Murphy Company. SN 196,893. Pub. 11–10–64. Filed 7–1–64.

## Class 26—Measuring and Scientific Appliances

784,002. "F" PUPILENS. Irving P. Filderman. SN 154,583. Pub. 11–10–64. Filed 10–5–62.

784,003. CISSELL. W. M. Cissell Manufacturing Co., d.b.a. W. M. Cissell Manufacturing Co., Inc. SN 171,094. Pub. 11–10–64. Filed S.R. 6–17–63; Am. P.R. 3–9–64.

784,004. MINILOG. Elliott Brothers (London) Limited. SN 181,222. Pub. 11–10–64. Filed 11–15–63.

784,005. FLEXI-POST. Flexi-Post, Inc. SN 193,147. Pub. 11–10–64. Filed 5–11–64.

## Class 28—Jewelry and Precious-Metal Ware

784,006. LITTLE QUEEN. Donley Manufacturing Co., Inc. SN 199,892. Pub. 11–10–64. Filed 8–14–64.

## Class 29—Brooms, Brushes, and Dusters

784,007. CLOVERLEAF. Stanley Home Products, Inc. SN 188,812. Pub. 11–10–64. Filed 3–16–64.

784,008. CLEVYL. Societe Rhovyl. SN 192,211. Pub. 11–10–64. Filed 4–28–64.

784,009. DENTA-FLEX. E. I. du Pont de Nemours and Company. SN 198,033. Pub. 11–10–64. Filed 7–17–64.

## Class 30 — Crockery, Earthenware, and Porcelain

784,010. A WORLD GLOBE SURROUNDED BY FIGURES BEARING GIFTS. World Gift Company. SN 177,132. Pub. 11–10–64. Filed 9–16–63.

## Class 31 — Filters and Refrigerators

784,011. PORTA CO₂LD. General Dynamics Corporation. SN 182,417. Pub. 11–10–64. Filed 12–5–63.

## Class 32 — Furniture and Upholstery

784,012. STYLIZED LETTER P AND DESIGN. Plan Hold Corporation. SN 178,297. Pub. 11–10–64. Filed 10–3–63.

784,013. EASTERN SUPERLUME AND DESIGN. Eastern Products Corporation. SN 188,853. Pub. 11–10–64. Filed 3–17–64.

784,014. LITTLE NELL. Lincoln Manufacturing Co., Inc., d.b.a. W. H. Frick Co. SN 193,186. Pub. 11–10–64. Filed 5–11–64.

784,015. CALCUTTA. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company. SN 193,300. Pub. 11–10–64. Filed 5–12–64.

784,016. CITADEL. Sperry Rand Corporation. SN 193,415. Pub. 11–10–64. Filed 5–13–64.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

784,017. KOOLWALL. Hanson Manufacturing Company, Inc. SN 160,635. Pub. 11–10–64. Filed 1–14–63.

784,018. WELD MOLD PROCESS WM AND DESIGN. Weld Mold Company. SN 161,571. Pub. 11–10–64. Filed 1–28–63.

784,019. DIRECTAIRE. Todd Shipyards Corporation. SN 162,504. Pub. 11–10–64. Filed 2–11–63.

784,020. VORTACOOL. Cleveland Technical Center, Inc. SN 168,164. Pub. 11–10–64. Filed 5–6–63.

784,021. CARBOTROL. Basic Products Corporation. SN 184,024. Pub. 11–10–64. Filed 1–6–64.

784,022. SUNBEAM. Sunbeam Corporation. SN 184,760. Pub. 11–10–64. Filed 1–16–64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

784,023. VANE. National Coupling Company, Inc. SN 185,434. Pub. 11–10–64. Filed 1–27–64.

## Class 36 — Musical Instruments and Supplies

784,024. LIVING SHAKESPEARE. Living Shakespeare, Inc. SN 173,935. Pub. 11–10–64. Filed 7–29–63.

## Class 37 — Paper and Stationery

783,865. (See Class 7 for this trademark.)

783,866. (See Class 7 for this trademark.)

784,025. PERFECTOWEB. Oxford Paper Company. SN 177,652. Pub. 11–10–64. Filed 9–24–63.

784,026. O.K. Mississippi Industrial Land and Timber Corporation. SN 178,019. Pub. 11–10–64. Filed 9–30–63.

784,027. CLEVYL. Societe Rhovyl. SN 192,212. Pub. 11–10–64. Filed 4–28–64.

784,028. WEAREVER. David Kahn, Inc. SN 193,677. Pub. 11–10–64. Filed 5–18–64.

## Class 38 — Prints and Publications

783,865. (See Class 7 for this trademark.)

783,866. (See Class 7 for this trademark.)

784,029. DRUGS IN PROSPECT. Paul de Haen. SN 162,656. Pub. 11–10–64. Filed 2–13–63.

784,030. DESIGN OF WORLD WITH ORBITING SATELLITES. Color Guild Associates. SN 166,066. Pub. 11–10–64. Filed 4–4–63.

784,031. LIVING SHAKESPEARE. Living Shakespeare, Inc. SN 173,934. Pub. 11–10–64. Filed 7–29–63.

784,032. CONCEPTTEXT C CONCEPTTEXT AND DESIGN. Robert Sanderson, d.b.a. Concept Textbook Company. SN 175,324. Pub. 11–10–64. Filed 8–19–63.

784,033. RETAIL CLERKS UNION AND DESIGN. Retail Clerks International Association. SN 176,954. Pub. 11–10–64. Filed 9–13–63.

784,034. MODERN BUSINESS AND DESIGN. Alexander Hamilton Institute, Incorporated. SN 177,355. Pub. 11–10–64. Filed 9–19–63.

784,035. THE BLEEDING TURNIP LINE AND DESIGN. Sydney W. Southwood, d.b.a. The Bleeding Turnip Line. SN 177,814. Pub. 11–10–64. Filed 9–26–63.

784,036. MAGABOOK. Galaxy Publishing Corp. SN 184,372. Pub. 11–10–64. Filed 1–10–64.

784,037. SYSTEMATIC DIGIT 7. Furman W. Quick, d.b.a. Systematic Digit 7. SN 186,278. Pub. 11–10–64. Filed 2–7–64.

784,038. THE EXPONENT. The Iowa Engineering Society. SN 187,290. Pub. 11–10–64. Filed 2–24–64.

784,039. METAL MEN. National Periodical Publications, Inc. SN 187,313. Pub. 11–10–64. Filed 2–24–64.

784,040. IT'S TIME FOR THE COFFEE BREAK. Michael C. Rann, d.b.a. Michael C. Rann Agency. SN 187,330. Pub. 11–10–64. Filed 2–24–64.

784,041. BOWLING. American Bowling Congress. SN 187,713. Pub. 11–10–640. Filed 3–2–64.

784,042. JACKRON. The Jackmeyer Corporation. SN 187,927. Pub. 11–10–64. Filed 3–4–64.

784,043. THE MARKET PRICE. The Market Place, Inc. SN 188,251. Pub. 11–10–64. Filed 3–9–64.

784,044. MOBILE HOME/TRAVEL TRAILER DEALER. Trailer Dealer Publishing Company. SN 189,514. Pub. 11–10–64. Filed 3–24–64.

784,045. DIAL-A-DOUBLE. William Joseph Kunkler, d.b.a. Dial-A-Double. SN 189,902. Pub. 11–10–64. Filed 3–30–64.

784,046. NEW VISTAS. General Development Corporation. SN 192,586. Pub. 11–10–64. Filed 5–4–64.

## Class 39 — Clothing

784,047. PEM CLASSICS. Pem Classics, Inc. SN 137,086. Pub. 11–10–64. Filed 2–1–62.

784,048. SPIFFIES. The Atlas Company, d.b.a. The Atlas Co. SN 138,836. Pub. 11–10–64. Filed 3–1–62.



784,049. RUN-KNOT TOP AND TOE. Sheffield Hosiery Mills, Inc. SN 139,144. Pub. 11–10–64. Filed 3–5–62.

784,050. MISS HOLLY OF 5TH AVE. Holly Stores, Inc. SN 166,096. Pub. 11–10–64. Filed 4–4–63.

784,051. FANCIFUL HUMAN FIGURES. Erlee Manufacturing Corporation. SN 175,649. Pub. 11–10–64. Filed 8–23–63.

784,052. CONVERTIBLE FLYER. Saks & Company. SN 175,691. Pub. 11–10–64. Filed 8–23–63.

784,053. JODIE RAE PETITES. Alix of Miami, Inc. SN 178,397. Pub. 11–10–64. Filed 10–7–63.

784,054. SLIPSTREAM. Hat Council, Inc. SN 180,882. COLLECTIVE MARK. Pub. 11–10–64. Filed 11–12–63.

784,055. WEARTEX. House of Worsted-Tex, Inc. SN 183,487. Pub. 11–10–64. Filed 12–11–63.

784,056. ANDY LEWIS QUALITY AND DESIGN. Neisner Brothers, Inc. SN 184,094. Pub. 11–10–64. Filed 1–6–64.

784,057. SMART TIME. The Eastern Isles, Inc. SN 184,798. Pub. 11–10–64. Filed 1–17–64.

784,058. RUGBY. Rugby Knitting Mills, Inc. SN 184,968. Pub. 11–10–64. Filed 1–20–64.

784,059. SAV-A-SKIRT. Beverly Vogue Company. SN 185,487. Pub. 11–10–64. Filed 1–28–64.

784,060. MR. M AND DESIGN. Parkcrest of Dallas, Inc. SN 185,528. Pub. 11–10–64. Filed 1–28–64.

784,061. TURTLE DOVES. F. Jacobson & Sons, Inc. SN 186,082. Pub. 11–10–64. Filed 2–5–64.

784,062. RIEKER SEALED SOLE AND DESIGN. Firma Rieker & Co. SN 186,972. Pub. 11–10–64. Filed 2–18–64.

784,063. BERKELEY HALL. Merit Clothing Company. SN 187,504. Pub. 11–10–64. Filed 2–26–64.

784,064. FLEX-TON. The Hercules Trouser Company. SN 189,470. Pub. 11–10–64. Filed 3–24–64.

784,065. EMPIRIC FOOTWEAR. John Winter & Son, Inc. SN 189,519. Pub. 11–10–64. Filed 3–24–64.

784,066. EASETTA. Chestnut Hill Industries, Inc. SN 189,869. Pub. 11–10–64. Filed 3–30–64.

784,067. SWIMMER. Melville Shoe Corporation. SN 190,527. Pub. 11–10–64. Filed 4–7–64.

784,068. FLEX-A-WAIST. The Asher Company. SN 191,241. Pub. 11–10–64. Filed 4–16–64.

784,069. KEYVER AND DESIGN. Bettee' Hosiery Mills, Inc. SN 191,490. Pub. 11–10–64. Filed 4–20–64.

784,070. IMPERIAL. Julius Schmid, Inc. SN 191,614. Pub. 11–10–64. Filed 4–20–64.

784,071. "FOUR IN ONE." Beryl Mills, Inc. SN 191,668. Pub. 11–10–64. Filed 4–21–64.

784,072. APRANTS. Constance Thackeray. SN 191,809. Pub. 11–10–64. Filed 4–22–64.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

784,073. BRIGADOON. Deering Milliken, Inc. SN 171,324. Pub. 11–10–64. Filed 6–19–63.

784,074. CAVALIER. Fields Plastics & Chemicals, Inc. SN 183,393. Pub. 11–10–64. Filed 12–23–63.

784,075. TROY LEISURE BLANKET. Troy Mills Incorporated. SN 187,825. Pub. 11–10–64. Filed 3–2–64.

784,076. SPRINGFIELD AND DESIGN. Chatham Manufacturing Company. SN 187,912. Pub. 11–10–64. Filed 3–4–64.

784,077. BIG "M." Deering Milliken, Inc. SN 192,374. Pub. 11–10–64. Filed 4–30–64.

## Class 43 — Thread and Yarn

784,078. SMOOTH SERGE. Standard Coosa Thatcher Company. SN 188,808. Pub. 11–10–64. Filed 5–1–64.

784,079. CLEVYL. Societe Rhovyl. SN 192,215. Pub. 11–10–64. Filed 4–28–64.

784,080. LANYLE. Brunswick Worsted Mills, Inc. SN 192,467. Pub. 11–10–64. Filed 5–1–64.

784,081. POMFRET. Brunswick Worsted Mills, Inc. SN 192,468. Pub. 11–10–64. Filed 5–1–64.

## Class 44 — Dental, Medical, and Surgical Appliances

784,082. BABYLISS. Societe de Distribution d'Appareils pour la Coiffure (S.O.D.A.C.). SN 172,690. Pub. 11–10–64. Filed 7–9–63.

784,083. CRISCORD. Lester H. Roth. SN 176,116. Pub. 11–10–64. Filed 8–30–63.

784,084. EYE-FASHION. Mehron, Inc. SN 178,465. Pub. 11–10–64. Filed 10–7–63.

784,085. SILVA. Silva Inc. SN 182,368. Pub. 11–10–64. Filed 12–4–63.

784,086. ULTIMATE. Ketchum & Co. Inc., d.b.a. Ultimate. SN 184,079. Pub. 11–10–64. Filed 1–6–64.

784,087. OXSILIT. One Wilkinson Avenue, Inc. SN 185,807. Pub. 11–10–64. Filed 1–31–64.

784,088. DIAMOND JAW. Snowden-Pencer Corporation. SN 188,058. Pub. 11–10–64. Filed 3–2–64.

784,089. SCANDIA SAUNA AND DESIGN. Nordic American Manufacturing Co. SN 199,093. Pub. 11–10–64. Filed 8–3–64.

784,090. MICRO-CRIMPED. Meadox Medicals, Incorporated. SN 199,749. Pub. 11–10–64. Filed 8–12–64.

## Class 45 — Soft Drinks and Carbonated Waters

784,091. BIDU COLA. Crush International Inc., assignee of Inter-American Orange-Crush Company. SN 162,443. Pub. 11–10–64. Filed 2–11–63.

## Class 46 — Foods and Ingredients of Foods

784,092. COLONIAL. Colonial Provision Co., Inc. SN 125,469. Pub. 11–10–64. Filed 8–7–61.

784,093. RED LABEL. S. S. Pierce Co. SN 155,520. Pub. 4–28–64. Filed 10–19–62.

784,094. CHOCK FULL O' NUTS. Chock Full O' Nuts Corporation. SN 156,077. Pub. 11–10–64. Filed 10–29–62.

784,095. CHAMPAGNE DRESSING ETC. AND DESIGN. Stanley J. Demos, d.b.a. Stanley Demos. SN 162,630. Pub. 11–10–64. Filed 2–13–63.

784,096. ROYAL SCOT AND DESIGN. The Miami Margarine Company, d.b.a. Delmar Products Company. SN 165,446. Pub. 11–10–64. Filed 3–26–63.

784,097. HONEY BONS. Stevens Candy Kitchens, Incorporated. SN 166,842. Pub. 11–10–64. Filed 4–16–63.

784,098. PAKCO-PAK. Pakco Companies, Inc. SN 172,768. Pub. 11–10–64. Filed 7–10–63.

784,099. BANNER. Armour and Company. SN 173,090. Pub. 11–10–64. Filed 7–16–63.

784,100. EASTER LANE TREATS. Frankford Candy & Chocolate Co., Inc. SN 174,951. Pub. 11–10–64. Filed 8–13–63.

784,101. PRINCE. Prince Macaroni Manufacturing Company. SN 175,210. Pub. 11–10–64. Filed 8–16–63.

784,102. MOUNTAIN PRIDE. Tomatoes Unlimited, Inc. Waynesville. SN 175,955. Pub. 11–10–64. Filed 8–28–63.

784,103. SALUD. Liquori Hermanos S.A. Agropecuaria, Comercial, Industrial, e Inmobiliaria. SN 176,545. Pub. 11–10–64. Filed 9–9–63.

784,104. TOP TASTE. National Tea Co. SN 177,200. Pub. 11–10–64. Filed 9–13–63.

784,105. SUNTINT. National Fruit Product Co., Inc. SN 177,537. Pub. 11–10–64. Filed 9–23–63.

784,106. SOVEX. Carene B. Hirlinger, d.b.a. Sovex Food Products. SN 177,661. Pub. 11–10–64. Filed 9–24–63.

784,107. DERRY'S PINA COLADA AND DESIGN. Derry Products, Inc. SN 178,422. Pub. 11–10–64. Filed 10–7–63.

784,108. SPF-LAC. The Borden Company. SN 179,314. Pub. 11–10–64. Filed 10–18–63.

784,109. A CUP TO A CUP. Mary Ellen's, Incorporated. SN 179,703. Pub. 11–10–64. Filed 10–24–63.

784,110. MURDICK'S FAMOUS. G. Gould Murdick. SN 183,088. Pub. 11–10–64. Filed 12–16–63.

784,111. BURGUNDY. E. J. Brach & Sons. SN 184,027. Pub. 11–10–64. Filed 1–6–64.

784,112. POST. General Foods Corporation. SN 186,072. Pub. 11–10–64. Filed 2–5–64.

784,113. COLLEGE PARK. El-Ge Potato Chip Co., Inc. SN 187,737. Pub. 11–10–64. Filed 3–2–64.

784,114. N-R-G (ENERGY). National Dairy Products Corporation. SN 187,877. Pub. 11–10–64. Filed 3–3–64.

784,115. FAMOUS STAR. Star Canning Company. SN 187,882. Pub. 11–10–64. Filed 3–3–64.

784,116. FAST BREAK. National Biscuit Company. SN 188,045. Pub. 11–10–64. Filed 1–24–64.

784,117. CATHAY. Bentley-Markey, Inc. SN 190,779. Pub. 11–10–64. Filed 4–10–64.

784,118. ZAMBA. Berger & Plate Company of San Francisco, d.b.a. Berger and Plate Company. SN 190,781. Pub. 11–10–64. Filed 4–10–64.

784,119. LEAF TROLL. Leaf Brands, Inc. SN 196,870. Pub. 11–10–64. Filed 7–2–64.

784,120. GOLDEN ORCHARD. Wilbur B. Cox, d.b.a. Kings Foods Products. SN 197,093. Pub. 11–10–64. Filed 7–6–64.

784,121. GREEN SHIELD. The Arkansas Rice Growers Cooperative Association. SN 197,248. Pub. 11–10–64. Filed 7–7–64.

784,122. LOTUS. The Arkansas Rice Growers Cooperative Association. SN 197,249. Pub. 11–10–64. Filed 7–7–64.

784,123. MONOGRAM. The Arkansas Rice Growers Cooperative Association. SN 197,250. Pub. 11–10–64. Filed 7–7–64.

## Class 47 — Wines

784,124. NAPOLEON ETC. AND DESIGN. Societe N. Napoleon & Cie. SN 173,875. Pub. 11–10–64. Filed 7–26–63.

784,125. HERE XVII SOUVEREIN AND DESIGN. Distillers Corporation (S.A.) Limited. SN 187,484. Pub. 11–10–64. Filed 2–26–64.

## Class 49 — Distilled Alcoholic Liquors

784,126. PUSCHKIN AND DESIGN. Distillerie König GmbH, by change of name from Puschkin GmbH. SN 142,448. Pub. 11–10–64. Filed 4–17–62.

784,127. GODDARD'S. Goddards Limited. SN 172,657. Pub. 11–10–64. Filed 7–9–63.

## Class 50 — Merchandise Not Otherwise Classified

783,865. (See Class 7 for this trademark.)

783,866. (See Class 7 for this trademark.)

784,128. DULTOP. Bourges Color Corporation. SN 147,693. Pub. 11–10–64. Filed 6–26–62.

784,129. KLEERTOP. Bourges Color Corporation. SN 147,694. Pub. 11–10–64. Filed 6–26–62.

784,130. ANTHONY. Anthony Schools. SN 161,434. Pub. 11–10–64. Filed 1–25–63.

784,131. RE NU AND DESIGN. The Borden Company. SN 175,714. Pub. 11–10–64. Filed 8–26–63.

784,132. A WORLD GLOBE SURROUNDED BY FIGURES BEARING GIFTS. World Gift Company. SN 177,134. Pub. 11–10–64. Filed 9–16–63.

784,133. MW. Mack-Wayne Plastics Company. SN 190,941. Pub. 11–10–64. Filed 4–13–64.

784,134. VYN-A-WOOD. Evers Industries, Inc. SN 191,269. Pub. 11–10–64. Filed 4–16–64.

784,135. EDMARK AND DESIGN. T. J. Edwards, Inc. SN 191,847. Pub. 11–10–64. Filed 4–23–64.

## Class 51 — Cosmetics and Toilet Preparations

784,136. CREME EMOLIA. Maradel Products Inc. SN 145,271. Pub. 11–10–64. Filed 5–23–62.

784,137. FASHION FAIR. Robert J. Leigh, d.b.a. Fashion Fair Company. SN 162,104. Pub. 11–10–64. Filed 2–5–63.

784,138. TRE BEAU COSMETICS AND DESIGN. Tre Beau Cosmetic Company. SN 164,281. Pub. 11–10–64. Filed 3–8–63.

784,139. HALL OF FAME AND DESIGN. Carley, Inc. SN 165,207. Pub. 11–10–64. Filed 3–22–63.

784,140. OLD SPICE AND DESIGN. Shulton, Inc. SN 165,845. Pub. 11–10–64. Filed 4–1–63.

784,141. KAPREX. Caprex, Inc. SN 170,027. Pub. 11–10–64. Filed 5–31–63.

784,142. ANA BOLENA ETC. AND DESIGN. Fernando Terrego Martin. SN 172,280. Pub. 11–10–64. Filed 6–17–63.

784,143. HOLDEX. Rhodes Pharmacal Co., Inc. SN 172,686. Pub. 11–10–64. Filed 7–9–63.

784,144. STRATONE. La Maur, Inc. SN 176,544. Pub. 11–10–64. Filed 9–9–63.

784,145. HAWAIIAN SURF. Victor F. Trebay. SN 185,090. Pub. 11–10–64. Filed 1–21–64.

784,146. COSWAY. Cosway Company, Inc. SN 187,179. Pub. 11–10–64. Filed 2–21–64.

784,147. SALSODENT. B and L Products. SN 187,998. Pub. 11–10–64. Filed 3–5–64.

784,148. NYCE. American Dietaids Company. SN 188,176. Pub. 11–10–64. Filed 3–9–64.

784,149. MAGIC ROSE. Elizabeth Hartley, Inc. SN 191,172. Pub. 11–10–64. Filed 4–15–64.

784,150. CLANDESTINE. Elizabeth Hartley, Inc. SN 191,173. Pub. 11–10–64. Filed 4–15–64.

784,151. HALLMARK. Elizabeth Hartley, Inc. SN 191,175. Pub. 11–10–64. Filed 4–15–64.

## Class 52 — Detergents and Soaps

784,152. SYNERGIZER. Emery Industries, Inc. SN 145,176. Pub. 11–10–64. Filed 5–22–62.

784,153. OLD SPICE AND DESIGN. Shulton, Inc. SN 166,500. Pub. 11–10–64. Filed 4–10–63.

784,154. SUDS WITH MUSCLES. Peck's Products Company. SN 174,435. Pub. 11–10–64. Filed 8–5–63.



784,155. HANSOFT. Purex Corporation Ltd. SN 187,430. Pub. 11–10–64. Filed 2–25–64.

784,156. TERRIFIC. Easy Way Chemicals, Inc. SN 187,570. Pub. 11–10–64. Filed 2–27–64.

784,157. TOP MAN. Petrol Inc. SN 188,791. Pub. 11–10–64. Filed 3–16–64.

784,158. DANCE. Colgate-Palmolive Company. SN 190,597. Pub. 11–10–64. Filed 4–8–64.

784,159. CALLA AND DESIGN. Odie T. Pipkin, d.b.a. Calla Chemical Company. SN 190,827. Pub. 11–10–64. Filed 4–10–64.

# Service Marks.

## Class 100 — Miscellaneous

784,160. COASTA-RINK. Bill Curphy, d.b.a. Bill Curphy Enterprises. SN 156,384. Pub. 11–10–64. Filed 11–1–62.

784,161. BIFF-BURGER. Mary Carter Paint Co., assignee of National Biff-Burger System, Inc. SN 164,457. Pub. 11–10–64. Filed 3–12–63.

784,162. ENVIRONETICS. Saphier, Lerner, Schindler, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 185,263. Pub. 11–10–64. Filed 3–22–63.

## Class 101 — Advertising and Business

784,163. PLASTICULTURE. Gulf Oil Corporation, assignee of Spencer Chemical Company. SN 161,106. Pub. 11–10–64. Filed 1–21–63.

784,164. REPRESENTATION OF TOP HAT, GLOVES AND CANE. James J. Mitchell. SN 162,764. Pub. 11–10–64. Filed 2–14–63.

784,165. D-U-N-S. Dun & Bradstreet, Inc. SN 170,994. Pub. 11–10–64. Filed 6–14–63.

784,166. IFIS. Stanley-Rose Company. SN 182,749. Pub. 11–10–64. Filed 12–10–63.

784,167. GREATER DETROIT BOARD OF COMMERCE ETC. AND DESIGN. Greater Detroit Board of Commerce. SN 185,669. Pub. 11–10–64. Filed 1–30–64.

## Class 102 — Insurance and Financial

784,168. CAP AND DESIGN. College Assurance Plan, assignee of CAP, Inc. SN 172,636. Pub. 11–10–64. Filed 7–9–63.

784,169. CONQUEROR AND DESIGN. Bradshaw Insurance Agency. SN 184,432. Pub. 11–10–64. Filed 1–13–64.

784,170. HS. Hayden, Stone & Co., Incorporated. SN 185,775. Pub. 11–10–64. Filed 1–31–64.

784,171. SAILING SHIP WITHIN A PILOT WHEEL (DESIGN). The North Atlantic life Insurance Company of America. SN 187,879. Pub. 11–10–64. Filed 3–3–64.

## Class 103 — Construction and Repair

784,162. (See Class 100 for this trademark.)

## Class 104 — Communication

784,172. TNT COLOR AND DESIGN. Theatre Network Television, Inc. SN 178,238. Pub. 11–10–64. Filed 10–2–63.

## Class 107 — Education and Entertainment

784,173. MU AND DESIGN. Harvey Emerson Enterprises, Inc., d.b.a. Modern Upholstery Institute. SN 175,398. Pub. 11–10–64. Filed 8–20–63.

# Collective Membership Mark

## Class 200

784,174. RCIA AND DESIGN. Retail Clerks International Association. SN 176,953. Pub. 11–10–64. Filed 9–13–63.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

784,175. Since 1868 Crescent Corporation, d.b.a. Crescent Corporation, New York, N.Y. SN 174,983. Filed P.R. 8–13–63; Am. S.R. 11–18–64.




For Luggage.
First use July 1963.

## Class 5 — Adhesives

784,176. Halliburton Company, Duncan, Okla. SN 176,302. Filed P.R. 9–4–63; Am. S.R. 10–7–64.

## CASING-KOTE

For Chemicals or Materials, Particularly an Epoxy Resin Adhesive and a Catalyst or Curing Agent for Said Resin, Used for Preparing the External Surfaces of Casing, Pipe, and the Like To Aid in Improving the Bonding of Cement Thereon.

First use Aug. 14, 1963.

## Class 12 — Construction Materials

784,177. Vetter Stone Company, Kasota, Minn. SN 158,941. Filed P.R. 12–11–62; Am. S.R. 11–25–64.

THE MINNESOTA STONE FAMILY OF FINE STONES

For Quarried Stone Sold for Building Purposes.
First use Sept. 7, 1961.

## Class 18 — Medicines and Pharmaceutical Preparations

784,178. Charles A. Crete, d.b.a. Pharmaceutical Associates, San Francisco, Calif. SN 166,445. Filed P.R. 4–10–63; Am. S.R. 10–28–64.

Dri-Nōz

For Nasal and Sinus Decongestant.
First use Mar. 8, 1962.

784,179. Xttrium Laboratories, Inc., Chicago, Ill. SN 168,971. Filed P.R. 5–15–63; Am. S.R. 11–2–64.

ALL-FAMILY

For Vitamins.
First use Feb. 29, 1960.

784,180. Xttrium Laboratories, Inc., Chicago, Ill. SN 169,674. Filed P.R. 5–24–63; Am. S.R. 11–19–64.

ENTIRE FAMILY

For Vitamins.
First use Sept. 1, 1961.

## Class 38 — Prints and Publications

784,181. The Seymour Mittelmark Organisation, Inc., New York, N.Y. SN 141,116. Filed P.R. 3–29–62; Am. S.R. 4–30–64.

FASHION FLASHBACKS IDEAS OF YESTERYEAR selected from the MITTELMARK LIBRARY

For Pamphlets Containing Reprints of Fashion Advertisements.
First use Dec. 15, 1961.

784,182. Hitchcock Publishing Company, Wheaton, Ill. SN 168,086. Filed P.R. 5–3–63; Am. S.R. 11–23–64.

TRUCKING BUSINESS

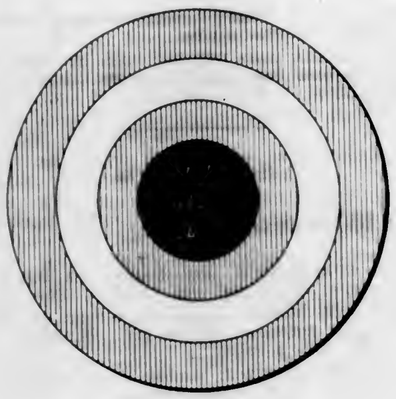
For Trade Magazine.
First use Apr. 19, 1963.

784,183. Jobber News & Products Publishing Corp., Chicago, Ill. SN 171,664. Filed P.R. 6–24–63; Am. S.R. 11–25–64.

THE JOBBER'S SHOP

For Informational Column Appearing Regularly in a Monthly Trade Newspaper.
First use May 1, 1963.

784,184. Profit Targets, Inc., Indianapolis, Ind. SN 178,043. Filed P.R. 7–15–63; Am. S.R. 11–20–64.



The drawing is lined for red, but color is not claimed as a feature of the mark.
For Books Providing a Statistical Analysis of the Salability and Pricing of Products.
First use July 2, 1963.

784,185. Continental News, Inc., Los Angeles, Calif. SN 174,262. Filed P.R. 8–2–63; Am. S.R. 4–21–64.

INTERNATIONAL NUDISTOUR GUIDE

For Magazine.
First use May 1962.

784,186. Continental News, Inc., Los Angeles, Calif. SN 174,263. Filed P.R. 8–2–63; Am. S.R. 4–21–64.

THE WESTERN NUDIST

For Magazine.
First use June 1962.

784,187. Frasure Hull, Incorporated, Winter Garden, Fla. SN 196,865. Filed P.R. 7–1–64; Am. S.R. 11–12–64.

FLORIDA FIELD REPORT

For Weekly Agricultural Newspaper.
First use July 12, 1962.

## Class 40 — Fancy Goods, Furnishings, and Notions

784,188. Gaylord Products, Incorporated, Chicago, Ill. SN 176,299. Filed P.R. 9–4–63; Am. S.R. 11–23–64.

TEENY

For Hair Clips.
First use Jan. 9, 1958.



## Class 46 — Foods and Ingredients of Foods

784,189. Italiano Food Products, Inc., Lebanon, Pa. SN 148,633. Filed P.R. 5–2–62; Am. S.R. 11–18–64.

Italiano

For Alimentary Pastes, Including Spaghetti and Macaroni in Various Sizes, Lengths, Styles, Shapes and Cuts.
First use Apr. 9, 1962.

784,190. Rod's Food Products, Inc., Los Angeles, Calif. SN 162,023. Filed P.R. 2–4–63; Am. S.R. 11–24–64.

koffee kreamer

For Individual Serving Containers of Coffee Cream.
First use Jan. 17, 1963.

784,191. Gold Medal Candy Corporation, Brooklyn, N.Y. SN 181,228. Filed P.R. 11–15–63; Am. S.R. 8–31–64.




For Peanut Brittle.
First use July 16, 1963.

784,192. Export-Union Deutscher Weinguter Rhein-Mosel-Pfalz GmbH, Mainz, Germany. SN 190,910. Filed 4–13–64.




The German words "Im Brautschleier" translated as "in the wedding veil" and the words "Feiner Deutscher Rheinwein" translated as "fine German Rhine wine."
For Wine.
First use Dec. 27, 1957; in commerce Dec. 27, 1957.

## Class 51 — Cosmetics and Toilet Preparations

784,193. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. SN 169,414. Filed P.R. 6–22–63; Am. S.R. 11–23–64.

ALO-face

For Face Cream.
First use Feb. 6, 1963.

784,194. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. SN 169,415. Filed P.R. 6–22–63; Am. S.R. 11–23–64.

ALO-PLUS

For Face Cream.
First use Mar. 13, 1963.

784,195. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. SN 172,707. Filed P.R. 7–10–63; Am. S.R. 11–23–64.

## AFTER TAN

For Lotion for Skin Grooming.
First use Feb. 3, 1953.

784,196. Revlon, Inc., New York, N.Y. SN 180,766. Filed P.R. 11–8–63; Am. S.R. 11–18–64.

## SOFTLY BEIGE

For Eye Shadow Make-Up.
First use Oct. 17, 1963.

784,197. Clairol Incorporated, New York, N.Y. SN 185,577. Filed P.R. 1–29–64; Am. S.R. 11–24–64.

## THE HOLDING SPRAY THAT LEAVES YOUR HAIR SO TOUCHABLE

For Hair Spray.
First use Nov. 22, 1963.

784,198. L. H. Kellogg Chemical Company, Minneapolis, Minn. SN 189,311. Filed P.R. 3–23–64; Am. S.R. 11–18–64.

## COVER-BLEND

For Liquid Cosmetic Used in Embalming.
First use June 10, 1960.

# Service Marks

### Class 101 — Advertising and Business

784,199. The E. F. MacDonald Company, Dayton, Ohio. SN 135,145. Filed P.R. 1–3–62; Am. S.R. 9–13–63.

## GIFT SEALS

For Promoting the Sale of Goods of Others Through the Use of Trading Stamps and Certificates Redeemable for Merchandise or Money.
First use Oct. 10, 1961.

784,200. Statistical Tabulating Corporation, Chicago, Ill. SN 147,643. Filed P.R. 6–25–62; Am. S.R. 8–25–64.

SPACE

For Technical Writing—Namely, Converting Information From Prints to Electrical Data Processing Forms, Preparation of Art Work for Technical Manuals or Catalogs, Inventory and Production Control and Documentation and Logistic Support of Spare Parts.
First use June 4, 1962.

### Class 103 — Construction and Repair

784,201. Watkins Leasing Company; Watkins Rental Company; and Penn Truck Aids, Inc., Chester, Pa., assignees of Watkins Motors, Chester, Pa. SN 149,231. Filed 7–17–62.

## WATKINS SYSTEM

For Maintenance and Repair Services for Motor Vehicles.
First use June 1, 1961.

### Class 105 — Transportation and Storage

784,202. Atlas Lift Truck Rentals & Sales, Inc., Schiller Park, Ill. SN 193,839. Filed 5–20–64.

## THE NAME THAT CARRIES WEIGHT

For Leasing of Industrial Fork Lift Trucks.
First use Mar. 1, 1963.

# TRADEMARK REGISTRATIONS RENEWED

26,104. GUDEBROD BROS. CHAMPION AND DESIGN. Cl. 23. 2–19–1895.
191,938. PYRAMID AND DESIGN. Cl. 46. 11–25–24.
192,281. VELTONA. Cl. 42. 12–2–24.
192,313. GLOW-SHEEN. Cl. 42. 12–2–24.
192,374. DAGENITE. Cl. 21. 12–2–24.
192,543. CROCKETT & JONES AND DESIGN. Cl. 39. 12–9–24.
192,648. CATARACT. Cl. 37. 12–9–24.
193,212. GOLIATH. Cl. 36. 12–23–24.
193,213. X-L-O. Cl. 36. 12–23–24.
193,216. HAPPY DAYS. Cl. 36. 12–23–24.
193,217. ATTA BOY. Cl. 36. 12–23–24.
193,379. BANJO AND DESIGN. Cl. 39. 12–30–24.
193,978. SWEET CROP AND DESIGN. Cl. 17. 1–13–25.
194,330. TRICONESE. Cl. 42. 1–20–25.
197,022. LAND O'LAKES. Cl. 46. 4–7–25.
197,337. CRACKER JACK AND DESIGN. Cl. 46. 4–14–25.
197,366. CEL-O-GLASS. Cl. 50. 4–14–25.
197,394. GRECIAN. Cl. 51. 4–14–25.
197,661. ARISTEX AND DESIGN. Cl. 42. 4–21–25.
197,681. BLEND'S MAH FRIEND. Cl. 46. 4–21–25.
197,754. ARVEY. Cl. 12. 4–21–25.
409,683. PLAID. Cl. 51. 10–17–44.
410,557. PLATHEIUM. Cl. 37. 12–5–44.
410,591. BIZZY BILDINE BLOX. Cl. 22. 12–5–44.
410,632. OPTONIC. Cl. 16. 12–5–44.
410,676. SWEET CLOVER. Cl. 46. 12–12–44.
410,701. CARTIER. Cl. 51. 12–12–44.
410,946. 61. Cl. 37. 12–26–44.
410,947. 71. Cl. 37. 12–26–44.
411,392. AYTINAL. Cl. 18. 1–16–45.
411,592. BACTRACILLIN. Cl. 18. 1–23–45.
411,737. WOOLSOL. Cl. 52. 1–30–45.
411,810. TRANSITOP. Cl. 12. 2–6–45.
412,042. SLACKAJACK. Cl. 39. 2–13–45.
412,190. CORONADO. Cl. 23. 2–20–45.
412,343. RAWLINGS. Cl. 22. 2–27–45.



412,787. GOLDEN FLEECE AND DESIGN. Cl. 40. 3–27–45.
412,954. EMULSION DE SCOTT. Cl. 18. 4–3–45.
412,980. SCOTT'S EMULSION. Cl. 18. 4–3–45.
413,247. GOLD GRANITE BOND AND DESIGN. Cl. 50. 4–17–45.
413,284. EDISON. Cl. 6. 4–17–45.
413,916. RAWLINGS. Cl. 39. 5–15–45.

# TRADEMARK REGISTRATIONS CANCELED

### Section 8

*The following registrations issued Dec. 9, 1958*

670,798. FOAMALON. Cl. 1.
670,799. DEERHEAD. Cl. 1.
670,803. TAY-GLO. Cl. 1.
670,816. MURALON. Cl. 12.
670,817. ALLITE. Cl. 12.
670,829. AERON. Cl. 14.
670,833. STAVITE. Cl. 18.
670,837. DENTRETS. Cl. 18.
670,840. HITRIM. Cl. 21.
670,842. ROTO-FORK FUN TOOL AND DESIGN. Cl. 21.
670,850. DIAL-TENNA. Cl. 21.
670,857. OMEGA AND DESIGN. Cl. 21.
670,866. CORRUSTEEL. Cl. 21.
670,874. ATTENUTRON. Cl. 21.
670,879. RIVESTIMENTO DALMINE. Cl. 23.
670,880. M-H-F. Cl. 23.
670,881. GLYCODRATOR. Cl. 23.
670,893. TCS AND DESIGN. Cl. 23.
670,898. TRU-EDGE. Cl. 23.
670,900. TACO AND DESIGN. Cl. 23.
670,905. LUNDELL ETC. AND DESIGN. Cl. 23.
670,910. PERM-ALUM. Cl. 23.
670,916. DUBL DUAL. Cl. 26.
670,919. PERFECT HELPER. Cl. 29.
670,920. KILNCRAFT. Cl. 30.
670,923. MARBLETONE. Cl. 32.
670,925. SPACE-GUARD. Cl. 32.
670,926. TAO COLLECTION. Cl. 32.
670,927. SILL RACK RITE AND RESIGN. Cl. 32.
670,928. 2-WAY SERVA-TRAY-TABLE. Cl. 32.
670,929. QUADRILLE. Cl. 32.
670,931. CATALINA. Cl. 32.
670,934. GOLDEN TRIANGLE. Cl. 33.
670,939. HERCULES. Cl. 34.
670,941. POWER THROW. Cl. 34.
670,942. LUXWOOD. Cl. 34.
670,945. DUNCAN RHYTHOCYCLE. Cl. 36.
670,946. HIFISTAR. Cl. 36.
670,947. HIFIMAT. Cl. 36.
670,950. ALTA. Cl. 36.
670,954. ROYAL PLUMAGE. Cl. 39.
670,957. TREASURE X. Cl. 39.
670,961. PHOENIX HARGURG AND DESIGN. Cl. 39.
670,962. LONDONUS. Cl. 39.
670,964. T'N' GREEN. Cl. 39.
670,975. HIGH TENSION. Cl. 39.
670,976. JUSTIN AND DESIGN. Cl. 39.
670,978. GRADS BY BRISTOL AND DESIGN. Cl. 39.
670,979. LADY ORIS AND DESIGN. Cl. 39.
670,980. SAFESIDE. Cl. 39.
670,982. WAICO. Cl. 42.
670,985. TURBEX. Cl. 44.
670,992. POP-IN. Cl. 46.
670,994. EHLERS AND DESIGN. Cl. 46.
670,996. PORTA-CABANA. Cl. 50.
670,997. FLORA-FOUNTAIN. Cl. 50.
671,001. DROPS OF BRILLIANCE. Cl. 51.
671,010. NAILSOLV. Cl. 52.
671,012. THE DATICS CORP. AND DESIGN. Cl. 100.
671,025. MRS. BROWN'S. Cl. 46.
671,028. BLISSFIELD. Cl. 46.
671,033. ISCO SAFE SPOTTER AND DESIGN. Cl. 52.

### Section 18

251,861. HELLO THERE! Cl. 46. 1–15–29.
413,666. EL CID. Cl. 45. 5–8–45.
704,458. RAT-A-KATE. Cl. 6. 9–20–60.
720,844. HYDROGEL. Cl. 6. 9–5–61.
723,878. FABRIC-ON. Cl. 37. 11–14–61.

# TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

195,691. ELECTROLUX. Cl. 21. 3–3–25. Aktiebolaget Elektrolux. Electrolux Corporation, New York, N.Y. Amended to appear:

ELECTROLUX

412,028. LENTHERIC. Cl. 51. 2–13–45. Lentheric, Incorporated. Helene Curtis Industries, Inc., Chicago, Ill. Amended: In the statement, column 1, lines 9 through 19, the description of goods is deleted and *perfumes and perfume preparations; toilet waters; bath, talcum, sachet and after shaving powders; shampoo preparations; after shave lotions; bath oil; bath and bubble bath salts; and sachets* is inserted.

412,407. LENTHERIC. Cl. 51. 3–6–45. Lentheric, Incorporated. Helene Curtis Industries, Inc., Chicago, Ill. Amended: In the statement, column 1, lines 8 and 9, the description of goods is deleted and *toilet and bath soaps* is inserted.

410,464. Z AND DESIGN. Cl. 44. 11–28–44. Zenith Radio Corporation, Chicago, Ill. Amended to appear:



410,894. Z AND DESIGN. Cl. 21. 12–26–44. Zenith Radio Corporation, Chicago, Ill. Amended to appear:



629,832. "WHITING." Cl. 15. 7–3–56. Whiting Oil Company, Clifton Forge, Va. Restricted under the provisions of Section 18 of the Trademark Act of 1946 to that area of the United States comprising the States of Wisconsin, Illinois, Indiana, Kentucky, Tennessee, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, Maryland, Pennsylvania, Michigan, Ohio, New York, New Jersey, New Hampshire, Vermont, Maine, Massachusetts, Connecticut, Rhode Island, Delaware, Arkansas, Iowa, Louisiana, Missouri, Minnesota, Oklahoma, Idaho, Colorado, Washington, Oregon, Montana, Wyoming, Kansas, Nebraska, North Dakota, South Dakota, Alaska, Hawaii, and the District of Columbia, by order of the First Assistant Commissioner dated December 15, 1964, following decision on Concurrent Use Proceeding No. 254, *Whiting Brothers Oil Company, doing business as Whiting Brothers and Whiting Bros.* v. *Whiting Oil Company.*

683,872. STAZON. Cl. 12. 8–25–59. Plastic Products Company. Curtis Products, Inc., Chicago, Ill. Amended:

In the statement, column 2, lines 1 and 2, the description of goods is deleted and *putty and caulking compound* is inserted.

766,872. SUE CORY. Cls. 51 and 52. 3–17–64. Helene Curtis Industries, Inc., Chicago, Ill. Corrected: In the statement, column 2, line 3, "1951" should be deleted and *1961* should be inserted and in line 6, "Jan. 17, 1961" should be deleted and *Sept. 25, 1957* should be inserted.

779,733. MISCELLANEOUS DESIGN. Cl. 14. 11–10–64. Foote Mineral Co., Exton, Pa. Corrected: In the statement, column 2, line 8, "ZY" should be deleted and *Zr* should be inserted.

# INDEX OF REGISTRANTS

## JANUARY 26, 1965

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)


A & W Root Beer Co., Santa Monica, Calif. 783,966, pub. 11–10–64. Cl. 22.

Acme Backing Corp., New York, N.Y. 783,877, pub. 11–10–64. Cl. 12.

Aeronautical Electronics, Inc., Raleigh, N.C. 783,956, pub. 11–10–64. Cl. 21.

Aktiebolaget Elektrolux. Electrolux Corp., New York, N.Y. 195,691. Am. 7(d). Cl. 21.

Alberto-Culver Co., Melrose Park, Ill. 783,916, pub. 11–10–64. Cl. 18.

Alexander Hamilton Institute, Inc., New York, N.Y. 784,034, pub. 11–10–64. Cl. 38.

Alix of Miami, Inc., Miami, Fla. 784,053, pub. 11–10–64. Cl. 39.

Allegheny Ludlum Steel Corp., Pittsburgh, Pa. 783,892, pub. 11–10–64. Cl. 14.

Allied Chemical Corp., New York, N.Y., by change of name from Allied Chemical & Dye Corp., New York, N.Y. 670,817, canc. Cl. 12.

Allied Chemical & Dye Corp.: *See*—
Allied Chemical Corp.

Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 784,193–5. Cl. 51.

Alta Records, Clarks Summit, Pa. 670,950, canc. Cl. 36.

American Bowling Congress, Milwaukee, Wis. 784,041, pub. 11–10–64. Cl. 38.

American Chewing Products Corp., Newark, N.J. 410,676, ren. 1–26–65. Cl. 46.

American Dietalds Co., Yonkers, N.Y. 784,148, pub. 11–10–64. Cl. 51.

American Home Products Corp., New York, N.Y. 783,918, pub. 11–10–64. Cl. 18.

American Home Products Corp., New York, N.Y. 783,921, pub. 11–10–64. Cl. 18.

American Home Products Corp., New York, N.Y. 783,930, pub. 11–10–64. Cl. 18.

American Radiator & Standard Sanitary Corp., New York, N.Y. 783,947, pub. 11–10–64. Cl. 21.

American Tobacco Co., The, New York, N.Y. 783,903, pub. 11–10–64. Cl. 17.

Anthony Schools, Los Angeles, Calif. 784,130, pub. 11–10–64. Cl. 50.

Arco Co., The, Cleveland, Ohio, to Mobil Finishes Co., Inc., New York, N.Y. 410,632, ren. 1–26–65. Cl. 16.

Arkansas Rice Growers Cooperative Association, The, Stuttgart, Ark. 784,121–3, pub. 11–10–64. Cl. 46.

Armour and Co., Chicago, Ill. 784,099, pub. 11–10–64. Cl. 46.

Arno Adhesive Tapes, Inc., Michigan City, Ind. 783,833, pub. 11–10–64. Cl. 5.

Arnold, S. M., Inc., St. Louis, Mo. 783,823, pub. 11–10–64. Cl. 1.

Arvey Corp.: *See*—
Cello Products, Inc.

Arvey Corp.: *See*—
Regenstein-Veeder Co.

Asher Co., The, Fitchburg, Mass. 784,068, pub. 11–10–64. Cl. 39.

Atlas Co., The, d.b.a. The Atlas Co., Ephrata, Pa. 784,048, pub. 11–10–64. Cl. 39.

Atlas Lift Truck Rentals & Sales, Inc., Schiller Park, Ill. 784,202. Cl. 105.

Audiotronics Corp., North Hollywood, Calif. 783,944, pub. 11–10–64. Cl. 21.

B and L Products, Walsenburg, Colo. 784,147, pub. 11–10–64. Cl. 51.

Barish Associates, Inc., New York, N.Y. 783,936, pub. 11–10–64. Cl. 19.

Barnes-Hind Barium Products, Sunnyvale, Calif. 783,915, pub. 11–10–64. Cl. 18.

Basic Products Corp., Chicago, Ill. 784,021, pub. 11–10–64. Cl. 34.

Battenfeld Grease & Oil Corp., Inc., Kansas City, Mo. 783,894, pub. 11–10–64. Cl. 15.

Beechbam Products Inc.: *See*—
Scott & Bowne.

Behrens, E. H., & Co., Inc., to F. Schumacher & Co., New York, N.Y. 192,313, ren. 1–26–65. Cl. 42.

Benecke, J. H., Kommanditgesellschaft, Hannover-Vinnhorst, Germany. 783,810, pub. 11–10–64. Cl. 1.

Bentley-Markey, Inc., San Francisco, Calif. 784,117, pub. 11–10–64. Cl. 46.

Berger and Plate Co.: *See*—
Berger & Plate Co. of San Francisco.

Berger & Plate Co. of San Francisco, d.b.a. Berger and Plate Co., San Francisco, Calif. 784,118, pub. 11–10–64. Cl. 46.

Bernel Foam Products Co., Inc., Buffalo, N.Y. 783,822, pub. 11–10–64. Cl. 1.

Beryl Mills, Inc., New York, N.Y. 784,071, pub. 11–10–64. Cl. 39.

Bette Hosiery Mills, Inc., San Mateo, Calif. 784,069, pub. 11–10–64. Cl. 39.

Beverly Vogue Co., Los Angeles, Calif. 784,059, pub. 11–10–64. Cl. 39.

Biofarma, Societe Anonyme, Neuilly-sur-Seine (Seine), France. 783,912, pub. 11–10–64. Cl. 18.

Birmingham Auto Supply Co., Birmingham, Ala. 783,939, pub. 11–10–64. Cl. 19.

Blair Specialty Co., Olney, Ill. 670,842, canc. Cl. 21.

Blazon, Inc., Akron, Ohio. 670,931, canc. Cl. 32.

Block Drug Co., Inc., Jersey City, N.J. 783,932, pub. 11–10–64. Cl. 18.

Bomac Laboratories Inc., Beverly, Mass. 670,874, canc. Cl. 21.

Bonney Vehslage Tool Co., Newark, N.J. 783,989, pub. 11–10–64. Cl. 23.

Borden Co., The: *See*—
Cracker Jack Co., The.

Borden Co., The, New York, N.Y. 784,108, pub. 11–10–64. Cl. 46.

Borden Co., The, New York, N.Y. 784,131, pub. 11–10–64. Cl. 50.

Bourges Color Corp., New York, N.Y. 784,128–9, pub. 11–10–64. Cl. 50.

Bourns Laboratories, Inc., Riverside, Calif. 670,840, canc. Cl. 21.

Brach, E. J., & Sons, Chicago, Ill. 784,111, pub. 11–10–64. Cl. 46.

Bradford Novelty Co., Inc., Boston, Mass. 783,960, pub. 11–10–64. Cl. 21.

Bradshaw Insurance Agency, Delphi, Ind. 784,169, pub. 11–10–64. Cl. 102.

British Drug Houses, Ltd., The, London, England. 783,836, pub. 11–10–64. Cl. 6.

British Needle Co. Ltd., The, Redditch, England. 412,787, ren. 1–26–65. Cl. 40.

Bruce, C. W., d.b.a. Bruce Marble and Granite Works, Fort Scott, Kans. 413,247, ren. 1–26–65. Cl. 50.

Bruce Marble and Granite Works: *See*—
Bruce, C. W.

Brunswick Worsted Mills, Inc., Mooxup, Conn. 784,080–1, pub. 11–10–64. Cl. 43.

Buck Bros. Inc., Millbury, Mass. 783,991–2, pub. 11–10–64. Cl. 23.

CAP Inc.: *See*—
College Assurance Plan, Inc.

Calla Chemical Co.: *See*—
Pipkin, Odie T.

Capolino, Romolo, d.b.a. Armorize Co., Drexel Hill, Pa. 783,851, pub. 11–10–64. Cl. 6.

Caprex, Inc., Detroit, Mich. 784,141, pub. 11–10–64. Cl. 51.

Carley, Inc., Haddonfield, N.J. 784,139, pub. 11–10–64. Cl. 51.

Carter, Mary, Paint Co., from National Biff-Burger System, Inc., Tampa, Fla. 784,161, pub. 11–10–64. Cl. 100.

Carter Products, Inc.: *See*—
Wallace Laboratories, Inc.

Cartier, Inc., New York, N.Y. 410,701, ren. 1–26–65. Cl. 51.

Casco Products Corp., Bridgeport, Conn. 783,993, pub. 11–10–64. Cl. 23.

Cello Products, Inc., New York, N.Y., to Arvey Corp., Chicago, Ill. 197,366, ren. 1–26–65. Cl. 50.

Centennial Mills, Inc.: *See*—
Tacoma Grain Co.

Channel Master Corp., Ellenville, N.Y. 783,957–8, pub. 11–10–64. Cl. 21.

Chatham Mfg. Co., Elkin, N.C. 784,076, pub. 11–10–64. Cl. 42.

Checkmate Chemicals, Inc., Greenville, S.C. 783,816, pub. 11–10–64. Cl. 1.

Chemco Specialties, Inc., d.b.a. Industrial Specialties Co., Dayton, Ohio. 671,033, canc. Cl. 52.

Chemfax, Inc., Gulfport, Miss. 783,818, pub. 11–10–64. Cl. 1.

Chemfax, Inc., Gulfport, Miss. 783,821, pub. 11–10–64. Cl. 1.

Chestnut Hill Industries, Inc., Hollywood, Fla. 784,066, pub. 11–10–64. Cl. 39.

Chicago Roll Forming Corp., Cicero, Ill. 783,884, pub. 11–10–64. Cl. 13.

Ciba Corp., New York, N.Y. 783,819, pub. 11–10–64. Cl. 1.

Cincinnati Lathe and Tool Co., Cincinnati, Ohio. 783,984–5, pub. 11–10–64. Cl. 23.

Cissell, W. M., Mfg. Co., d.b.a. W. M. Cissell Mfg. Co., Inc., Louisville, Ky. 784,003, pub. 11–10–64. Cl 26.

Cissell, W. M., Mfg. Co., Inc.: *See*—
Cissell, W. M., Mfg. Co.

Clairol Inc., New York, N.Y. 784,197. Cl. 51.

Cleveland Technical Center, Inc., Cleveland, Ohio. 784,020, pub. 11–10–64. Cl. 34.

Club Aluminum Products Co., Chicago, Ill. 670,934, canc. Cl. 33.

Chock Full O' Nuts Corp., New York, N.Y. 784,094, pub. 11–10–64. Cl. 46.

Cohen, Weenen & Co., to Cohen, Weenen & Co., Ltd., London, England. 193,978, ren. 1–26–65. Cl. 17.

Cohen, Joseph H., & Sons, Inc.: *See*—
Cohen, Joseph H., & Sons, Vanity Clothes, Inc.

Cohen, Joseph H., & Sons, Vanity Clothes, Inc., to Joseph H. Cohen & Sons, Inc., New York, N.Y. 412,042, ren. 1–26–65. Cl. 39.

Cohen, Weenen & Co., Ltd.: *See*—
Cohen, Weenen & Co.

Cole, Walter T., Tool Corp., South Beloit, Ill. 783,987, pub. 11–10–64. Cl. 23.

Colgate-Palmolive Co., New York, N.Y. 784,158, pub. 11–10–64. Cl. 52.
College Assurance Plan, Inc., from Cap Inc., Milwaukee, Wis. 784,168, pub. 11–10–64. Cl. 102.
Colonial Provision Co., Inc., Boston, Mass. 784,092, pub. 11–10–64. Cl. 46.
Color Guild Associates, Los Angeles, Calif. 784,030, pub. 11–10–64. Cl. 38.
Congoleum-Nairn Inc., Kearny, N.J. 783,830, pub. 11–10–64. Cl. 4.
Congoleum-Nairn Inc., Kearny, N.J. 783,943, pub. 11–10–64. Cl. 20.
Consolidated Engineering Co., Houston, Tex. 783,977, pub. 11–10–64. Cl. 23.
Contina Bureaux- und Rechenmaschinenfabrik, Aktiengesellschaft, Vaduz, Liechtenstein. 670,946–7, canc. Cl. 36.
Continental Drill Corp., Inc., Chicago, Ill. 783,981, pub. 11–10–64. Cl. 23.
Continental News, Inc., Los Angeles, Calif. 784,185–6. Cl. 38.
Continental Oil Co., Ponca City, Okla. 783,845–6, pub. 11–10–64. Cl. 6.
Continental Steel Corp., Kokomo, Ind. 783,890–1, pub. 11–10–64. Cl. 14.
Cosway Co., Inc., Beverly Hills, Calif. 784,146, pub. 11–10–64. Cl. 51.
Cox, Wilbur B., d.b.a. Kings Foods Products, San Francisco, Calif. 784,120, pub. 11–10–64. Cl. 46.
Cracker Jack Co., The, Chicago, Ill., to The Borden Co., New York, N.Y. 197,337, ren. 1–26–65. Cl. 46.
Crescent Niagara Corp., Buffalo, N.Y. 784,000, pub. 11–10–64. Cl. 23.
Crete, Charles A., d.b.a. Pharmaceutical Associates, San Francisco, Calif. 784,178. Cl. 18.
Crockett & Jones, to Crockett & Jones, Ltd., Northampton, England. 192,543, ren. 1–26–65. Cl. 39.
Crockett & Jones, Ltd.: *See*—
Crockett & Jones.
Crush International Inc., from Inter-American Orange-Crush Co., Evanston, Ill. 784,091, pub. 11–10–64. Cl. 45.
Cullip Industries, Inc., Ellaville, Ga. 783,941, pub. 11–10–64. Cl. 19.
Curphy, Bill, d.b.a. Bill Curphy Enterprises, Dallas, Tex. 784,160, pub. 11–10–64. Cl. 100.
Curphy, Bill, Enterprises: *See*—
Curphy, Bill.
Curtis Companies Inc., Clinton, Iowa. 670,923, canc. Cl. 32.
Curtis, Helene, Industries, Inc.: *See*—
Lentheric, Inc.
Curtis, Helene, Industries, Inc., Chicago, Ill. 671,001, canc. Cl. 51.
Curtis, Helene, Industries, Inc., Chicago, Ill. 766,872, cor. Cl. 51.
Curtis Products, Inc.: *See*—
Plastic Products Co.
Dalin Pharmaceuticals, Inc., Bayside, N.Y. 783,923, pub. 11–10–64. Cl. 18.
Dalmine S.p.A., Milan, Italy. 670,879, canc. Cl. 23.
D'Apparella pour la Coiffure (S.O.D.A.C.), Societe de Distribution, Paris, France. 784,082, pub. 11–10–64. Cl. 44.
Datics Corp., The, Fort Worth, Tex. 671,012, canc. Cl. 100.
Davis, H., Toy Corp., Newark, N.J. 783,964, pub. 11–10–64. Cl. 22.
Dean-Morris Shoe Co., Inc., Middleboro, Mass. 670,964, canc. Cl. 39.
Deering Milliken, Inc.: *See*—
Madison Woolen Co.
Deering Milliken, Inc., New York, N.Y. 784,073, pub. 11–10–64. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 784,077, pub. 11–10–64. Cl. 42.
De Haen, Paul, New York, N.Y. 784,029, pub. 11–10–64. Cl. 38.
Delmor Products Co.: *See*—
Miami Margarine Co., The.
Delta Drug Corp., Jacksonville, Fla. 783,914, pub. 11–10–64. Cl. 18.
Demos, Stanley J., d.b.a. Stanley Demos, Cincinnati, Ohio. 784,095, pub. 11–10–64. Cl. 46.
Dentinox Gesellschaft fuer Pharmazeutische Praeparate Lenk & Schuppan, Berlin-Steglitz, Germany. 783,904, pub. 11–10–64. Cl. 18.
Derry Products, Inc., Brooklyn, N.Y. 784,107, pub. 11–10–64. Cl. 46.
Distillerie Konig GmbH, from Puschkin GmbH, Lisihus, Zug, Switzerland. 784,126, pub. 11–10–64. Cl. 49.
Distillers Corp. (S.A.) Ltd., Stellenbosch, Cape Province, Republic of South Africa. 784,125, pub. 11–10–64. Cl. 47.
DoAll Co., The, Des Plaines, Ill. 783,893, pub. 11–10–64. Cl. 15.
Donaldson Co., Inc., Minneapolis, Minn. 783,994, pub. 11–10–64. Cl. 23.
Donley Mfg. Co., Inc., North Attleboro, Mass. 784,006, pub. 11–10–64. Cl. 28.
Dow Chemical Co., The, Midland, Mich. 783,842, pub. 11–10–64. Cl. 6.
Dracket Co. of Canada, Ltd.: *See*—
Suprasol Ltd.
Drexel Furniture Co., Drexel, N.C. 670,929, canc. Cl. 32.
Drott Mfg. Corp., Milwaukee, Wis. 783,983, pub. 11–10–64. Cl. 23.
Dual Parking Meter Co., The, Pittsburgh, Pa. 670,916, canc. Cl. 26.
Dun & Bradstreet, Inc., New York, N.Y. 784,165, pub. 11–10–64. Cl. 101.
Duncan Rhythocycle, Inc., Philadelphia, Pa. 670,945, canc. Cl. 36.
Dunham Bros. Co., Brattleboro, Vt. 670,975, canc. Cl. 39.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 783,820, pub. 11–10–64. Cl. 1.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 784,009, pub. 11–10–64. Cl. 29.
Eastern Isles, Inc., The, New York, N.Y. 784,057, pub. 11–10–64. Cl. 39.
Eastern Products Corp., Baltimore, Md. 784,013, pub. 11–10–64. Cl. 32.
Eastman Machine Co., Buffalo, N.Y. 783,996, pub. 11–10–64. Cl. 23.
Easy Way Chemicald, Inc., Oklahoma City, Okla. 784,156, pub. 11–10–64. Cl. 52.
Edison, Thomas A., Inc., West Orange, N.J., to McGraw-Edison Co., Elgin, Ill. 413,284, ren. 1–26–65. Cl. 6.
Edwards, T. J., Inc., Jamaica Plain, Mass. 784,135, pub. 11–10–64. Cl. 50.
Ehlers, Albert, Inc., Brooklyn, N.Y. 670,994, canc. Cl. 46.
Electro-Craft Corp., Hopkins, Minn. 783,952, pub. 11–10–64. Cl. 21.
Electrolux Corp.: *See*—
Aktiebolaget Elektrolux.
El-Ge Potato Chip Co., Inc., York, Pa. 784,113, pub. 11–10–64. Cl. 46.
Ellen's, Mary, Inc., Orrville, Ohio. 784,109, pub. 11–10–64. Cl. 46.
Elliott Brothers (London) Ltd., London, England. 784,004, pub. 11–10–64. Cl. 26.
Emerson, Harvey, Enterprises, Inc., d.b.a. Modern Upholstery Institute, Fallbrook, Calif. 784,173, pub. 11–10–64. Cl. 107.
Emery Industries, Inc., Cincinnati, Ohio. 784,152, pub. 11–10–64. Cl. 52.
Erlee Mfg. Corp., Passaic, N.J. 784,051, pub. 11–10–64. Cl. 39.
Evers Industries, Inc., Long Island City, N.Y. 784,134, pub. 11–10–64. Cl. 50.
Excel Potting Soil, Inc., South Bend, Ind. 670,803, canc. Cl. 1.
Export-Union Deutscher Weinguter Rhein-Mosel-Pfalz GmbH, Mains, Germany. 784,192. Cl. 47.
F. & B. Mfg. Co., Chicago, Ill. 670,857, canc. Cl. 21.
Fairfax Mfg. Co., Inc., The, Falls Church, Va. 670,985, canc. Cl. 44.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 783,924, pub. 11–10–64. Cl. 18.
Farley Butane Co., Abilene, Tex. 783,895, pub. 11–10–64. Cl. 15.
Fashion Fair Co.: *See*—
Leigh, Robert J.
Febo, Fulvio, d.b.a. Prescripto Products, Brooklyn, N.Y. 670,837, canc. Cl. 18.
Ferrante, Alex, d.b.a. Ferrante's Pop-In Pizza, Milwaukee, Wis. 670,992, canc. Cl. 46.
Ferrante's Pop-In Pizza: *See*—
Ferrante, Alex.
Fields Plastics & Chemicals, Inc., Lodi, N.J. 784,074, pub. 11–10–64. Cl. 42.
Filderman, Irving P., Memphis, Tenn. 784,002, pub. 11–10–64. Cl. 26.
Firma Rieker & Co., Tuttlingen, Wurttemberg, Germany. 784,062, pub. 11–10–64. Cl. 39.
Fisher Flouring Mills Co., Seattle, Wash. 197,681, ren. 1–26–65. Cl. 46.
Flexi-Post, Inc., Fort Lauderdale, Fla. 784,005, pub. 11–10–64. Cl. 26.
Foamalon Co. Inc., New York, N.Y. 670,798, canc. Cl. 1.
Foote Mineral Co., Exton, Pa. 779,733, cor. Cl. 14.
Frankford Candy & Chocolate Co., Inc., Philadelphia, Pa. 784,100, pub. 11–10–64. Cl. 46.
Franklin Chemical Co., The, Columbus, Ohio. 783,824, pub. 11–10–64. Cl. 1.
Frontier Refining Co., The, Denver, Colo. 783,896, pub. 11–10–64. Cl. 15.
G.I. Drug Co.: *See*—
Levine, Joseph.
Galaxy Publishing Corp., New York, N.Y. 784,036, pub. 11–10–64. Cl. 38.
Gamble Stores, Inc., to Gamble-Skogmo, Inc., Minneapolis, Minn. 412,190, ren. 1–26–65. Cl. 23.
Gamble-Skogmo, Inc.: *See*—
Gamble Stores, Inc.
Gaylord Products, Inc., Chicago, Ill. 784,188. Cl. 40.
Giegy Chemical Corp., Ardsley, N.Y. 783,856–7, pub. 11–10–64. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 783,863, pub. 11–10–64. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 783,925–8, pub. 11–10–64. Cl. 18.
General Aniline & Film Corp., New York, N.Y. 783,848, pub. 11–10–64. Cl. 6.
General Development Corp., Miami, Fla. 784,046, pub. 11–10–64. Cl. 38.
General Dynamics Corp., New York, N.Y. 784,011, pub. 11–10–64. Cl. 31.
General Foods Corp., White Plains, N.Y. 784,112, pub. 11–10–64. Cl. 46.
General Kinetics, Inc. of West Palm Beach, West Palm Beach, Fla. 783,900, pub. 11–10–64. Cl. 16.
General Motors Corp., Detroit, Mich. 783,959, pub. 11–10–64. Cl. 21.
Gentex Corp., New York, N.Y. 783,970, pub. 11–10–64. Cl. 22.
Gibson, Charles D., d.b.a. Deer Runn Farms, Hillsdale, N.Y. 783,817, pub. 11–10–64. Cl. 1.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 783,865–6, pub. 11–10–64. Multiple Class (Classes 7, 37, 38, and 50).
Glass Laboratories, Inc., Brooklyn, N.Y. 783,961, pub. 11–10–64. Cl. 21.
Glass Laboratories, Inc., Brooklyn, N.Y. 783,870, pub. 11–10–64. Cl. 8.
Glidden Co., The, Cleveland, Ohio. 783,861–2, pub. 11–10–64. Cl. 6.





Globe-Wernicke Co., The, Cincinnati, Ohio. 670,925, canc. Cl. 32.
Goddards Ltd., St. Thomas, Virgin Islands. 784,127, pub. 11–10–64. Cl. 49.
Gold Medal Candy Corp., Brooklyn, N.Y. 784,191. Cl. 46.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 783,864, pub. 11–10–64. Cl. 7.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 783,978, pub. 11–10–64. Cl. 23.
Gourgh, George, New York, N.Y. 670,996, canc. Cl. 50.
Graver Tank & Mfg. Co., Inc., East Chicago, Ind. 670,881, canc. Cl. 23.
Gray Mfg. Co., Inc., St. Joseph, Mo. 783,997, pub. 11–10–64. Cl. 23.
Greater Detroit Board of Commerce, Detroit, Mich. 784,167, pub. 11–10–64. Cl. 101.
Grecian Chemical Co., to Grecian Chemical Co., Inc., Philadelphia, Pa. 197,394, ren. 1–26–65. Cl. 51.
Grecian Chemical Co., Inc.: *See*—
Grecian Chemical Co.
Gudebrod Bros. Silk Co., Inc.: *See*—
Gudebrod, Christian E.
Gudebrod, Christian E., New York, N.Y., to Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 26,104, ren. 1–26–65. Cl. 23.
Gulf Oil Corp., Pittsburgh, Pa., from Spencer Chemical Co., Kansas City, Mo. 784,163, pub. 11–10–64. Cl. 101.
Halliburton Co., Duncan, Okla. 784,176. Cl. 5.
Hammock Bros., Knoxville, Tenn. 783,933, pub. 11–10–64. Cl. 18.
Hanawai Mfg. Co., Honolulu, Hawaii. 783,886, pub. 11–10–64. Cl. 13.
Hanson Mfg. Co., Inc., Dallas, Tex. 784,017, pub. 11–10–64. Cl. 34.
Hari-Kari Sales: *See*—
Miele, Harry J.
Harshaw Chemical Co., The, Cleveland, Ohio. 783,840, pub. 11–10–64. Cl. 6.
Harshaw Chemical Co., The, Cleveland, Ohio. 783,854, pub. 11–10–64. Cl. 6.
Hartley, Elizabeth, Inc., New York, N.Y. 784,149–51, pub. 11–10–64. Cl. 51.
Hat Council, Inc., New York, N.Y. 784,054, pub. 11–10–64. Cl. 39.
Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany. 783,982, pub. 11–10–64. Cl. 23.
Hayden, Stone & Co., Inc., New York, N.Y. 784,170, pub. 11–10–64. Cl. 102.
Hayes-Sammons Chemical Co., Mission, Tex. 704,458, canc. Cl. 6.
Hayes-Sammons Chemical Co., Mission, Tex. 783,837–8, pub. 11–10–64. Cl. 6.
Heatbath Corp., Springfield, Mass. 783,852–3, pub. 11–10–64. Cl. 6.
Hedlund Mfg. Co., Nokomis, Ill. 783,962, pub. 11–10–64. Cl. 22.
Helm Universal Corp., The, Fairfield, Conn. 783,990, pub. 11–10–64. Cl. 23.
Henschel-Werke Aktiengesellschaft, Kassel, Germany. 783,935, pub. 11–10–64. Cl. 19.
Henschel-Werke Aktiengesellschaft, Kassel, Germany. 783,975, pub. 11–10–64. Cl. 23.
Hercules Trouser Co., The, Columbus, Ohio. 784,064, pub. 11–10–64. Cl. 39.
Herrmann, A. S., Inc., to Herrmann & Jacobs Corp., New York, N.Y. 197,661, ren. 1–26–65. Cl. 42.
Herrmann & Jacobs Corp.: *See*—
Herrmann, A. S., Inc.
Hirlinger, Carene B., d.b.a. Sovex Food Products, Holly, Mich. 784,106, pub. 11–10–64. Cl. 46.
Hitchcock Publishing Co., Wheaton, Ill. 784,182. Cl. 38.
Hofman, Leo C., West Hyattsville, Md. 670,954, canc. Cl. 39.
Hohner, M., Inc., Hicksville, N.Y. 193,212–3, ren. 1–26–65. Cl. 36.
Hohner, M., Inc., Hicksville, N.Y. 193,216–7, ren. 1–26–65. Cl. 36.
Holly Stores, Inc., New York, N.Y. 784,050, pub. 11–10–64. Cl. 39.
Home Canning Co., The, Blissfield, Mich. 671,028, canc. Cl. 46.
House of Worsted-Tex, Inc., Philadelphia, Pa. 784,055, pub. 11–10–64. Cl. 39.
Hudson Vitamin Products, Inc., New York, N.Y. 783,934, pub. 11–10–64. Cl. 18.
Hulan, William E., d.b.a. Hulan Leather Shop, Shelbyville, Tenn. 783,828, pub. 11–10–64. Cl. 3.
Hull, Frasure, Inc., Winter Garden, Fla. 784,187. Cl. 38.
Hull, R. O., & Co., Inc., Cleveland, Ohio. 783,847, pub. 11–10–64. Cl. 6.
Hydro-Meca, Paris Xieme, France. 783,880, pub. 11–10–64. Multiple Class (Classes 13, 21, and 23).
Hy Pac, Inc., Palmetto, Fla. 783,858, pub. 11–10–64. Cl. 6.
Ida Mae Salads, Inc., Brentwood, Md. 671,025, canc. Cl. 46.
Industrial Specialties: *See*—
Chemco Specialties, Inc.
Inter-American Orange-Crush Co.: *See*—
Crush International Inc.
International Paper Co., to International Paper Co., New York, N.Y. 192,648, ren. 1–26–65. Cl. 37.
Iowa Engineering Society, The, Des Moines, Iowa. 784,038, pub. 11–10–64. Cl. 38.
Iromedica A.G., Sankt Gallen, Switzerland. 783,905, pub. 11–10–64. Cl. 18.
Italiano Food Products, Inc., Lebanon, Pa. 784,189. Cl. 46.
Jackmeyer Corp., The, New York, N.Y. 784,042, pub. 11–10–64. Cl. 38.
Jacobson, F., & Sons, Inc., New York, N.Y. 784,061, pub. 11–10–64. Cl. 39.
Japan American Trading Agency, Inc., Los Angeles, Calif. 723,878, canc. Cl. 37.
Jobber News & Products Publishing Corp., Chicago, Ill. 784,183. Cl. 38.
Johns-Manville Corp., New York, N.Y. 411,810, ren. 1–26–65. Cl. 12.
Jolly Toys, Inc., New York, N.Y. 783,963, pub. 11–10–64. Cl. 22.
Justin Boot Co.: *See*—
Justin, H. J.
Justin, H. J., & Sons, Inc., d.b.a. Justin Boot Co., Fort Worth, Tex. 670,976, canc. Cl. 39.
Kahan, Sheldon, d.b.a. Kahan Shoes, Chicago, Ill. 670,980, canc. Cl. 39.
Kahan Shoes: *See*—
Kahan, Sheldon.
Kahn, David, Inc., North Bergen, N.J. 784,028, pub. 11–10–64. Cl. 37.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 783,876, pub. 11–10–64. Cl. 12.
Kaplan Furniture Co., Cambridge, Mass. 670,926, canc. Cl. 32.
Kayser, Julius, & Co., to Kayser-Roth Corp., New York, N.Y. 194,330, ren. 1–26–65. Cl. 42.
Kayser-Roth Corp.: *See*—
Kayser, Julius, & Co.
Kelley Co., Inc., Milwaukee, Wis. 783,878, pub. 11–10–64. Cl. 12.
Kellogg, L. H., Chemical Co., Minneapolis, Minn. 784,198. Cl. 51.
Ketchum & Co. Inc., d.b.a. Ultimate, New York, N.Y. 784,086, pub. 11–10–64. Cl. 44.
Kings Foods Products: *See*—
Cox, Wilbur B.
Knowles, Edwin M., China Co., The, Newell, W. Va. 670,920, canc. Cl. 30.
Kresge, S. S., Co., Detroit, Mich. 783,902, pub. 11–10–64. Cl. 16.
Kunkler, William J., d.b.a. Dial-A-Double, Columbus, Ohio. 784,045, pub. 11–10–64. Cl. 38.
Laboratorio Lemos Soc. Resp. Ltda., Buenos Aires, Argentina. 783,907, pub. 11–10–64. Cl. 18.
Lady Oris Hosiery Shops, Inc., New York, N.Y. 670,979, canc. Cl. 39.
La Maur, Inc., Minneapolis, Minn. 784,144, pub. 11–10–64. Cl. 51.
Land O'Lakes Creameries, Inc.: *See*—
Minnesota Co-Operative Creameries Association, Inc.
Leaf Brands, Inc., Chicago, Ill. 784,119, pub. 11–10–64. Cl. 46.
Lear Jet Corp., Wichita, Kans. 783,951, pub. 11–10–64. Cl. 21.
Leigh, Robert J., d.b.a. Fashion Fair Co., Arcadia, Calif. 784,137, pub. 11–10–64. Cl. 51.
Lennox Industries, Inc., Marshalltown, Iowa. 670,898, canc. Cl. 23.
Lentheric, Inc. Helene Curtis Industries, Inc., Chicago, Ill. 412,028. Am. 7(d). Cl. 51.
Lentheric, Inc. Helene Curtis Industries, Inc., Chicago, Ill. 412,407. Am. 7(d). Cl. 51.
Lepage's, Inc., Pittsburgh, Pa. 783,834, pub. 11–10–64. Cl. 5.
Levine, Joseph, d.b.a. G.I. Drug Co., Brooklyn, N.Y. 783,910, pub. 11–10–64. Cl. 18.
Liguori Hermanos S.A. Agropecuaria, Comercial, Industrial, e Inmobiliari, Buenos Aires, Argentina. 784,103, pub. 11–10–64. Cl. 46.
Lincoln Mfg. Co., Inc., d.b.a. W. H. Frick Co., Fort Wayne, Ind. 784,014, pub. 11–10–64. Cl. 32.
Living Shakespeare, Inc., New York, N.Y. 784,024, pub. 11–10–64. Cl. 38.
Living Shakespeare, Inc., New York, N.Y. 784,031, pub. 11–10–64. Cl. 38.
London, Louis, & Sons, London, England. 670,962, canc. Cl. 39.
Long-Lok Corp., Los Angeles, Calif. 783,888, pub. 11–10–64. Cl. 13.
Lundell Mfg. Co., Cherokee, Iowa. 670,905, canc. Cl. 23.
MacDonald, E. F., Co., The, Dayton, Ohio. 784,199, Cl. 101.
Mack-Wayne Plastics Co., Wayne, N.J. 784,133, pub. 11–10–64. Cl. 50.
Macy, R. H., & Co., Inc., New York, N.Y. 193,379, ren. 1–26–65. Cl. 39.
Madison Industries, Inc., Toledo, Ohio. 670,928, canc. Cl. 32.
Madison Woolen Co., Madison, Maine, to Deering Milliken, Inc., New York, N.Y. 192,281, ren. 1–26–65. Cl. 42.
Mangel Stores Corp., New York, N.Y. 783,945, pub. 11–10–64. Cl. 21.
Manor Merchandise Corp., Brooklyn, N.Y. 783,869, pub. 11–10–64. Cl. 8.
Manpro Corp., Detroit, Mich. 671,010, canc. Cl. 52.
Maradel Products Inc., New York, N.Y. 784,136, pub. 11–10–64. Cl. 51.
Marine Hardware & Supply Co., Boston, Mass. 783,887, pub. 11–10–64. Cl. 13.
Market Place, Inc., The, Oxon Hill, Md. 784,043, pub. 11–10–64. Cl. 38.
Martin, Fernando T., Madrid, Spain. 784,142, pub. 11–10–64. Cl. 51.
Martinsville Mulch, Inc., Indianapolis, Ind. 783,871, pub. 11–10–64. Cl. 10.
Maryland Plastics Inc., Federalsburg, Md. 783,879, pub. 11–10–64. Cl. 13.
Massey-Ferguson Ltd., by change of name from Massey-Harris-Ferguson Ltd., Toronto, Ontario, Canada. 670,880, canc. Cl. 23.
Massey-Ferguson Ltd., Toronto, Ontario, Canada. 783,897, pub. 11–10–64. Cl. 15.
McGraw-Edison Co.: *See*—
Edison, Thomas A., Inc.

McNeil Laboratories, Inc., Fort Washington, Pa. 783,911, pub. 11–10–64. Cl. 18.
Mead Johnson & Co., Evansville, Ind. 783,850, pub. 11–10–64. Cl. 6.
Mead Johnson & Co., Evansville, Ind. 783,919, pub. 11–10–64. Cl. 18.
Meadox Medicals, Inc., Haledon, N.J. 784,090, pub. 11–10–64. Cl. 44.
Mehron, Inc., New York, N.Y. 784,084, pub. 11–10–64. Cl. 44.
Melville Shoe Corp., New York, N.Y. 784,067, pub. 11–10–64. Cl. 39.
Merit Clothing Co., Mayfield, Ky. 784,063, pub. 11–10–64. Cl. 39.
Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany. 670,829, canc. Cl. 14.
Metcraft Products, Inc., Baltimore, Md. 783,827, pub. 11–10–64. Cl. 2.
Miami Margarine Co., The, d.b.a. Delmor Products Co., Cincinnati, Ohio. 784,096, pub. 11–10–64. Cl. 46.
Miele, Harry J., d.b.a. Hari-Kari Sales, Williamsport, Pa. 783,969, pub. 11–10–64. Cl. 22.
Miller Products Co., Des Moines, Iowa. 783,883, pub. 11–10–64. Cl. 13.
Minnesota Co-Operative Creameries Association, Inc., St. Paul and Minneapolis, Minn., to Land O'Lakes Creameries, Inc., Minneapolis, Minn. 197,022, ren. 1–26–65. Cl. 46.
Mississippi Industrial Land and Timber Corp., Jackson, Miss. 784,026, pub. 11–10–64. Cl. 37.
Mitchell, James J., Chicago, Ill. 784,164, pub. 11–10–64. Cl. 101.
Mitsubishi Metal Mining Co., Tokyo, Japan. 783,889, pub. 11–10–64. Cl. 14.
Mobil Finishes Co., Inc.: *See*—
Arco Co., The.
Modern Upholstery Institute: *See*—
Emerson, Harvey, Enterprises, Inc.
Modine Mfg. Co., Racine, Wis. 670,941, canc. Cl. 34.
Moloney Products, Inc., Albia, Iowa. 783,874, pub. 11–10–64. Cl. 12.
Monsanto Chemical Co., St. Louis, Mo. 783,814, pub. 11–10–64. Cl. 1.
Morris White Fashions, Inc., New York, N.Y. 783,829, pub. 11–10–64. Cl. 3.
Morton Salt Co., Chicago, Ill. 783,849, pub. 11–10–64. Cl. 6.
Moslo Machinery Co., Cleveland, Ohio. 783,998, pub. 11–10–64. Cl. 23.
Moss, Clarence L., d.b.a. Moss Plastic Products Co., Birmingham, Ala. 670,919, canc. Cl. 29.
Moss Plastic Products Co.: *See*—
Moss, Clarence L.
Murdick, G. Gould, Charlevoix, Mich. 784,110, pub. 11–10–64. Cl. 46.
Murphy, G. C., Co., McKeesport, Pa. 784,001, pub. 11–10–64. Cl. 24.
Napoleon, N., & Cie, Societe, Marseilles, Bouches-du-Rhone, France. 784,124, pub. 11–10–64. Cl. 47.
National Aluminum Co., Columbus, Ohio. 670,816, canc. Cl. 12.
National Biff-Burger System, Inc.: *See*—
Carter, Mary, Paint Co.
National Biscuit Co., New York, N.Y. 784,116, pub. 11–10–64. Cl. 46.
National Carts, Inc., Azusa, Calif. 783,938, pub. 11–10–64. Cl. 19.
National Coupling Co., Inc., Fort Wayne, Ind. 784,023, pub. 11–10–64. Cl. 35.
National Dairy Products Corp., New York, N.Y. 784,114, pub. 11–10–64. Cl. 46.
National Distillers and Chemical Corp., New York, N.Y. 783,813, pub. 11–10–64. Cl. 1.
National Fence Mfg., Co., Inc., Bladensburg, Md. 773,881, pub. 11–10–64. Cl. 13.
National Fruit Product Co., Inc., Winchester, Va. 784,105, pub. 11–10–64. Cl. 46.
National Periodical Publications, Inc., New York, N.Y. 784,039, pub. 11–10–64. Cl. 38.
National Tea Co., Chicago, Ill. 784,104, pub. 11–10–64. Cl. 46.
Neisner Brothers, Inc., Rochester, N.Y. 784,056, pub. 11–10–64. Cl. 39.
Neugebauer, Richard F., d.b.a. California Veterinarian Research Laboratory, Pasadena, Calif. 783,855, pub. 11–10–64. Cl. 6.
Nordic American Mfg. Co., San Francisco, Calif. 784,089, pub. 11–10–64. Cl. 44.
North Atlantic Life Insurance Co. of America, The, Mineola, N.Y. 784,171, pub. 11–10–64. Cl. 102.
Northwestern Golf Co., Chicago, Ill. 783,965, pub. 11–10–64. Cl. 22.
Oil Center Sales, Lafayette, La. 720,844, canc. Cl. 6.
Olafsen Vitamins, Inc., to Walgreen Laboratories, Inc., Chicago, Ill. 411,392, ren. 1–26–65. Cl. 18.
Omark Industries, Inc., Portland, Oreg. 783,979–80, pub. 11–10–64. Cl. 23.
One Wilkinson Avenue, Inc., Jersey City, N.J. 784,087, pub. 11–10–64. Cl. 44.
Oneida Ltd., Oneida, N.Y. 783,988, pub. 11–10–64. Cl. 23.
Oxford Paper Co., New York, N.Y. 784,025, pub. 11–10–64. Cl. 37.
Pakco Companies, Inc., Hammonton, N.J. 784,098, pub. 11–10–64. Cl. 46.
Paper, Calmenson & Co., St. Paul, Minn. 783,971, pub. 11–10–64. Cl. 23.
Parfums Blanchard, New York, N.Y. 409,683, ren. 1–26–65. Cl. 51.
Parkcrest of Dallas, Inc., Dallas, Tex. 784,060, pub. 11–10–64. Cl. 39.
Parker Pen Co., The, Janesville, Wis. 410,557, ren. 1–26–65. Cl. 37.
Parker Pen Co., The, Janesville, Wis. 410,946–7, ren. 1–26–65. Cl. 37.
Pastushin Industries, Inc., Los Angeles, Calif. 670,939, canc. Cl. 34.
Peck's Products Co., St. Louis, Mo. 784,154, pub. 11–10–64. Cl. 52.
Pem Classics, Inc., New York, N.Y. 784,047, pub. 11–10–64. Cl. 39.
Pem Fan Foundations, Inc., New York, N.Y. 670,957, canc. Cl. 39.
Petrol Inc., Cleveland, Ohio. 784,157, pub. 11–10–64. Cl. 52.
Phoenix Gummiwerke Aktiengesellschaft, Hamburg-Hargurg, Germany. 670,961, canc. Cl. 39.
Pierce, S. S., Co., Boston, Mass. 784,093, pub. 4–28–64. Cl. 46.
Pipkin, Odie T., d.b.a. Calla Chemical Co., Fullerton, Calif. 784,159, pub. 11–10–64. Cl. 52.
Plan Hold Corp., Torrance, Calif. 784,012, pub. 11–10–64. Cl. 32.
Plastic Products Co. Curtis Products, Inc., Chicago, Ill. 683,872. Am. 7(d). Cl. 12.
Pilley, Larry E., d.b.a. Sta-Hi Sales Co., Laramie, Wyo. 783,860, pub. 11–10–64. Cl. 6.
Poly Resins, Sun Valley, Calif. 783,901, pub. 11–10–64. Cl. 16.
Prescripto Products: *See*—
Febo, Fulvio.
Prince Macaroni Mfg. Co., Lowell, Mass. 784,101, pub. 11–10–64. Cl. 46.
Pritchett & Gold and E.P.S. Co., Dagenham Dock, England. 192,374, ren. 1–26–65. Cl. 21.
Profit Targets, Inc., Indianapolis, Ind. 784,184. Cl. 38.
Puerto Rico Distilling Co., Arecibo, Puerto Rico. 783,839, pub. 11–10–64. Cl. 6.
Purdue Frederick Co., The, Yonkers, N.Y. 783,913, pub. 11–10–64. Cl. 18.
Purdue Frederick Co., The, Yonkers, N.Y. 783,922, pub. 11–10–64. Cl. 18.
Purex Corp. Ltd., Wilmington, Calif. 784,155, pub. 11–10–64. Cl. 52.
Puritan Chemical Co., Atlanta, Ga. 783,831–2, pub. 11–10–64. Cl. 4.
Puschkin GmbH: *See*—
Distillerie Konig GmbH.
Quellet, Georges, Hauterive, Neuchatel, Switzerland. 783,946, pub. 11–10–64. Cl. 21.
Quick, Furman W., d.b.a. Systematic Digit 7, Baltimore, Md. 784,037, pub. 11–10–64. Cl. 38.
Rann, Michael C., d.b.a. Michael C. Rann Agency, Chicago, Ill. 784,040, pub. 11–10–64. Cl. 38.
Raven Industries, Inc., Sioux Falls, S. Dak. 783,937, pub. 11–10–64. Cl. 19.
Rawlings Corp., The: *See*—
Rawlings Mfg. Co.
Rawlings Mfg. Co., to The Rawlings Corp., St. Louis, Mo. 412,343, ren. 1–26–65. Cl. 22.
Rawlings Mfg. Co., to The Rawlings Corp., St. Louis, Mo. 413,916, ren. 1–26–65. Cl. 39.
Regenstein-Veeder Co., to Arvey Corp., Chicago, Ill. 197,754, ren. 1–26–65. Cl. 12.
Reliart Trailer Mfg. Corp., Stanton, Mich. 783,967, pub. 11–10–64. Cl. 22.
Resista International, Inc., Los Angeles, Calif. 783,949, pub. 11–10–64. Cl. 21.
Retail Clerks International Association, Washington, D.C. 784,033, pub. 11–10–64. Cl. 38.
Retail Clerks International Association, Washington, D.C. 784,174, pub. 11–10–64. Cl. 200.
Revlon, Inc., New York, N.Y. 784,196. Cl. 51.
Rhodes Pharmacal Co., Inc., Chicago, Ill. 784,143, pub. 11–10–64. Cl. 51.
Risk, George, Columbus, Nebr. 783,867, pub. 11–10–64. Cl. 8.
Roberts, Fred, Co., San Francisco, Calif. 670,997, canc. Cl. 50.
Rod's Food Products, Inc., Los Angeles, Calif. 784,190. Cl. 46.
Rohm & Haas Co., Philadelphia, Pa. 783,815, pub. 11–10–64. Cl. 1.
Rouson Corp., Woodbridge, N.J. 783,868, pub. 11–10–64. Cl. 8.
Roth, Lester H., Pittsburgh, Pa. 784,083, pub. 11–10–64. Cl. 44.
Rugby Knitting Mills, Inc., Buffalo, N.Y. 784,058, pub. 11–10–64. Cl. 39.
S.p.A. Virginio Rimoldi & C., Milan, Italy. 783,999, pub. 11–10–64. Cl. 23.
S & S Pharmaceutical Co., d.b.a. S & S Sales Co., North Miami Beach, Fla. 783,908, pub. 11–10–64. Cl. 18.
S & S Sales Co.: *See*—
S & S Pharmaceutical Co.
Safe-T-Water Co., Half Moon Bay, Calif. 783,835, pub. 11–10–64. Cl. 6.
Saks & Co., New York, N.Y. 784,052, pub. 11–10–64. Cl. 39.
Sanderson, Robert, d.b.a. Concept Textbook Co., Mount Vernon, N.Y. 784,032, pub. 11–10–64. Cl. 38.
Sapbier, Lerner, Schindler, Inc., New York, N.Y. 784,162, pub. 11–10–64. Multiple Class (Classes 100 and 103).
Schmid, Julius, Inc., New York, N.Y. 784,070, pub. 11–10–64. Cl. 39.
Schumacher, F., & Co.: *See*—
Behrens, E. H., & Co., Inc.
Scott & Bowne, Bloomfield, to Beecham Products Inc., Clifton, N.J. 412,954, ren. 1–26–65. Cl. 18.
Scott & Bowne, Bloomfield, to Beecham Products Inc., Clifton, N.J. 412,980, ren. 1–26–65. Cl. 18.
Selberling Rubber Co., Barberton, Ohio. 783,942, pub. 11–10–64. Cl. 19.
Seltz-Werke G.m.b.H., Bad Kreuznach, Germany. 783,973, pub. 11–10–64. Cl. 23.



Seymour Mittelmark Organization, Inc., The, New York, N.Y. 784,181. Cl. 38.
Sheffield Hosiery Mills, Inc., Miami, Fla. 784,049, pub. 11–10–64. Cl. 39.
Shulton, Inc., Clifton, N.J. 784,140, pub. 11–10–64. Cl. 51.
Shulton, Inc., Clifton, N.J. 784,153, pub. 11–10–64. Cl. 52.
Signode Corp., from Signode Steel Strapping Co., Chicago, Ill. 783,882, pub. 11–10–64. Cl. 13.
Sill Rack-Rite Co.: *See*—
Sill, Robert E.
Sill, Robert E., d.b.a. Sill Rack-Rite Co., Rochester, Minn. 670,927, canc. Cl. 32.
Silva Inc., La Porte, Ind. 784,085, pub. 11–10–64. Cl. 44.
Simonds Saw and Steel Co., Fitchburg, Mass. 783,974, pub. 11–10–64. Cl. 23.
Since 1868 Crescent Corp., d.b.a. Crescent Corp., New York, N.Y. 784,175. Cl. 3.
Sindar Corp., New York, N.Y. 783,841, pub. 11–10–64. Cl. 6.
Slick Industrial Co., d.b.a. Illinois Shade Division of Slick Industrial Co., Chicago Heights, Ill. 784,015, pub. 11–10–64. Cl. 32.
Snowden-Pencer Corp., Los Gatos, Calif. 784,088, pub. 11–10–64. Cl. 44.
Societe Rhovyl, Paris, France. 783,825, pub. 11–10–64. Cl. 1.
Societe Rhovyl, Paris, France. 784,008, pub. 11–10–64. Cl. 29.
Societe Rhovyl, Paris, France. 784,027, pub. 11–10–64. Cl. 37.
Societe Rhovyl, Paris, France. 784,079, pub. 11–10–64. Cl. 43.
Socony Mobil Oil Co., Inc., New York, N.Y. 783,872–3, pub. 11–10–64. Cl. 10.
Sony Corp., Shinagawa-ku, Tokyo, Japan. 783,955, pub. 11–10–64. Cl. 21.
Southwest Commodity Corp., El Centro, Calif. 670,799, canc. Cl. 1.
Southwood, Sydney W., d.b.a. The Bleeding Turnip Line, San Gabriel, Calif. 784,035, pub. 11–10–64. Cl. 38.
Sovex Food Products: *See*—
Hirlinger, Carene B.
Spencer Chemical Co.: *See*—
Gulf Oil Corp.
Sperry Rand Corp., New York, N.Y. 784,016, pub. 11–10–64. Cl. 32.
Stackpole Carbon Co., St. Marys, Pa. 783,953, pub. 11–10–64. Cl. 21.
Staley, A. E., Mfg. Co., Decatur, Ill. 670,833, canc. Cl. 18.
Standard Coosa Thatcher Co., Chattanooga, Tenn. 784,078, pub. 11–10–64. Cl. 43.
Standard Oil Co. of California, San Francisco, Calif. 783,859, pub. 11–10–64. Cl. 6.
Stanley Drug Products, Inc., Portland, Oreg. 783,906, pub. 11–10–64. Cl. 18.
Stanley Home Products, Inc., Westfield, Mass. 784,007, pub. 11–10–64. Cl. 29.
Stanley-Rose Co., Mobile, Ala. 784,166, pub. 11–10–64. Cl. 101.
Star Canning Co., Lindale, Tex. 784,115, pub. 11–10–64. Cl. 46.
Statistical Tabulating Corp., Chicago, Ill. 784,200. Cl. 101.
Sterling Drug Inc., New York, N.Y. 783,920, pub. 11–10–64. Cl. 18.
Sterling National Industries, Inc., Milwaukee, Wis. 670,910, canc. Cl. 23.
Sternco Industries, Inc., Allendale, N.J. 783,909, pub. 11–10–64. Cl. 18.
Stevens Candy Kitchens, Inc., Chicago, Ill. 784,097, pub. 11–10–64. Cl. 46.
Strathmore Products, Inc., Syracuse, N.Y. 783,898–9, pub. 11–10–64. Cl. 16.
Studebaker Corp., South Bend, Ind. 783,995, pub. 11–10–64. Cl. 23.
Success Chemical Co., Inc., Brooklyn, N.Y. 783,917, pub. 11–10–64. Cl. 18.
Sunbeam Corp., Chicago, Ill. 784,022, pub. 11–10–64. Cl. 34.
Suprasol Ltd., to The Drackett Co. of Canada, Ltd., Toronto, Canada. 411,737, ren. 1–26–65. Cl. 52.
Surface Conduction, Inc., New York, N.Y. 783,954, pub. 11–10–64. Cl. 21.
Taco Heaters, Inc., Cranston, R.I. 670,900, canc. Cl. 23.
Tacoma Grain Co., Tacoma, Wash., to Centennial Mills, Inc., Portland, Oreg. 191,938, ren. 1–26–65. Cl. 46.
Tait Mfg. Co., The, Dayton, Ohio. 783,976, pub. 11–10–64. Cl. 23.
Tavaro S.A., Geneva, Switzerland. 783,986, pub. 11–10–64. Cl. 23.
Thackeray, Constance, Toledo, Ohio. 784,072, pub. 11–10–64. Cl. 39.
Theatre Network Television, Inc., New York, N.Y. 784,172, pub. 11–10–64. Cl. 104.
Thieme Construction Supplies, Inc., West Compton, Calif. 670,893, canc. Cl. 23.
Thomas Industries, Inc., Louisville, Ky. 670,942, canc. Cl. 34.
Timmerman, B. C., d.b.a. Timmerman Mfg. Co., Hibbing, Minn. 410,591, ren. 1–26–65. Cl. 22.
Timmerman Mfg. Co.: *See*—
Timmerman, B. C.
Todd Shipyards Corp., New York, N.Y. 784,019, pub. 11–10–64. Cl. 34.
Tomatoes Unltd., Inc., Waynesville, N.C. 784,102, pub. 11–10–64. Cl. 46.
Trailer Dealer Publishing Co., Chicago, Ill. 784,044, pub. 11–10–64. Cl. 38.
Tre Beau Cosmetic Co., Baltimore, Md. 784,138, pub. 11–10–64. Cl. 51.
Trebay, Victor F., Deer Park, N.Y. 784,145, pub. 11–10–64. Cl. 51.
Troy Mills Inc., Troy, N.H. 784,075, pub. 11–10–64. Cl. 42.
Ultimate: *See*—
Ketchum & Co. Inc.
Union Carbide Corp., New York, N.Y. 783,940, pub. 11–10–64. Cl. 19.
United Clay Mines Corp., Trenton, N.J. 783,812, pub. 11–10–64. Cl. 1.
United States Rubber Co., New York, N.Y. 783,811, pub. 11–10–64. Multiple Class (Classes 1 and 15).
Universal Fluid Dynamics Co., Alpena, Mich. 783,885, pub. 11–10–64. Cl. 13.
Valsey-Bristol Shoe Co. Inc., Monett, Mo. 670,978, canc. Cl. 39.
Veiga, G.A., New York, N.Y. 413,666, canc. Cl. 45.
Vetter Stone Co., Kasota, Minn. 784,177. Cl. 12.
Victor Comptometer Corp., Chicago, Ill. 783,968, pub. 11–10–64. Cl. 22.
Waite Carpet Co., Oshkosh, Wis. 670,982, canc. Cl. 42.
Walgreen Laboratories, Inc.: *See*—
Olafsen Vitamins, Inc.
Wallace Laboratories, Inc., New Brunswick, N.J., to Carter Products, Inc., New York, N.Y. 411,592, ren. 1–26–65. Cl. 18.
Wandleside Cable Works Ltd., London, England. 670,866, canc. Cl. 21.
Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. 783,931, pub. 11–10–64. Cl. 18.
Washburn, F. B., Candy, d.b.a. F. B. Washburn Corp., Brockton, Mass. 783,929, pub. 11–10–64. Cl. 18.
Washburn, F. B., Corp.: *See*—
Washburn, F. B., Candy.
Watkins Leasing Co.; Watkins Rental Co.; and Penn Truck Aids, Inc., from Watkins Motors, Chester, Pa. 784,201. Cl. 103.
Watkins Motors: *See*—
Watkins Leasing Co.; Watkins Rental Co.; and Penn Truck Aids, Inc.
Welch, C. E., Merced, Calif. 251,861, canc. Cl. 46.
Weld Mold Co., Dearborn, Mich. 784,018, pub. 11–10–64. Cl. 34.
Whiting Oil Co., Clifton Forge, Va. 629,832. Am. 7(d). Cl. 15.
Williams Form Engineering Corp., Grand Rapids, Mich. 783,875, pub. 11–10–64. Cl. 12.
Winter, John, & Son, Inc., Short Hills, N.J. 784,065, pub. 11–10–64. Cl. 39.
Wiss, J., & Sons Co., Newark, N.J. 783,972, pub. 11–10–64. Cl. 23.
Wood Chemical Co., Inc., Lubbock, Tex. 783,844, pub. 11–10–64. Cl. 6.
World Gift Co., Dallas, Tex. 783,826, pub. 11–10–64. Cl. 2.
World Gift Co., Dallas, Tex. 784,010, pub. 11–10–64. Cl. 30.
World Gift Co., Dallas, Tex. 784,132, pub. 11–10–64. Cl. 50.
Wyandotte Chemicals Corp., Wyandotte, Mich. 783,843, pub. 11–10–64. Cl. 6.
Xttrium Laboratories, Inc., Chicago, Ill. 784,179–80. Cl. 18.
Yardney Electric Corp., New York, N.Y. 783,948, pub. 11–10–64. Cl. 21.
Zenith Radio Corp., Chicago, Ill. 410,464. Am. 7(d). Cl. 44.
Zenith Radio Corp., Chicago, Ill. 410,894. Am. 7(d). Cl. 21.
Zenith Radio Corp., Chicago, Ill., by merger from Zenith Radio Corp., Chicago, Ill. 670,850, canc. Cl. 21.
Zenith Radio Corp., Chicago, Ill. 783,950, pub. 11–10–64. Cl. 21.

U.S. GOVERNMENT PRINTING OFFICE:O—1966

# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

February 2, 1965 Volume 811 Number 1


# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of December 1964

| | |
|---|---|
| Examiner affirmed | 308 |
| Examiner affirmed in part | 49 |
| Examiner reversed | 77 |
| Total | 434 |

### Foreign Patents Received in the Scientific Library as of December 31, 1964

| Source | Date received | Highest number |
|---|---|---|
| Australia: | | |
| (*Abstracts*) | Dec. 21, 1964 | 48,862 |
| (*Patents*) | Dec. 21, 1964 | 250,580 |
| Austria | Dec. 28, 1964 | 237,130 |
| Belgium | Oct. 16, 1962 | 573,100 |
| Canada | Dec. 18, 1964 | 700,160 |
| Czechoslovakia | Dec. 7, 1964 | 111,700 |
| Denmark | Dec. 18, 1964 | 100,000 |
| East Germany | Dec. 1, 1964 | 33,430 |
| Egypt | Jan. 30, 1964 | 4,326 |
| Finland | Nov. 16, 1964 | 33,750 |
| France: | | |
| (*Patents*) | Dec. 21, 1964 | 1,368,000 |
| (*Additions*) | Dec. 10, 1964 | 83,350 |
| (*Medicaments*) | Oct. 19, 1964 | 2,000 M |
| (*Additions*) | May 4, 1964 | 23 CAM |
| Germany: | | |
| (*Auslegeschriften*) | Nov. 24, 1964 | 1,179,160 |
| (*Patents*) | Nov. 24, 1964 | 1,166,639 |
| Great Britain | Dec. 28, 1964 | 977,750 |
| India | Oct. 15, 1964 | 86,939 |
| Ireland | Mar. 5, 1964 | 23,892 |
| Italy | Apr. 25, 1963 | 616,900 |
| Japan | Dec. 15, 1964 | 25,700/64 |
| Netherlands | Nov. 23, 1964 | 120,002 |
| Norway | Dec. 1, 1964 | 104,865 |
| Pakistan | Feb. 3, 1964 | 112,446 |
| Philippine Republic | Apr. 13, 1962 | 458 |
| Poland | Dec. 1, 1964 | 48,577 |
| Rumania | Dec. 17, 1964 | 42,750 |
| Sweden | Dec. 28, 1964 | 192,423 |
| Switzerland | Dec. 22, 1964 | 382,215 |
| U.S.S.R. | Dec. 21, 1964 | 165,632 |

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: Missing 1–10,000
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1938
Latest 16,461/1941

### Patents Available for Licensing or Sale

2,689,600. PORTABLE ARMREST FOR AUTOMOBILE SEATS. Fritz H. Van Briesen, Box 171, George, Iowa, 51237.

2,954,810. NUT HULLING MACHINE. Am-Car Dekerneliser Corporation. Correspondence to: Bankhead T. Davies, 2060 N. 14th St., Arlington, Va., 22201.

3,058,212. DRY SHAVER DEVICE WITH SPATIALLY SEPARATED CUTTER TEETH. Ferdinand Holzmann, Hamburg, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,109,574. FOLDABLE CONTAINER. Ferdinand Lange, Minden, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,155,787. HIGH VOLTAGE SWITCH ARRANGEMENT FOR INSULATED CONDUCTORS. Moser-Glaser Transformatore A.G., Muttens, Switzerland. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

---

The following 2 patents are offered by Robert Poult, % Southwest International, Inc., P.O. Box 374, Albuquerque, N. Mex.

3,155,151. HEAT EXCHANGERS.

3,157,987. INTERNAL COMBUSTION ENGINES SUPERCHARGED BY MEANS OF A TURBOBLOWER.

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General Electric Company is prepared to grant non-exclusive licenses under the following 6 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Patent Counsel, Military Communications Department, General Electric Company, P.O. Box 129, Oklahoma City, Okla.

2,940,056. MODULATOR AND MODULATION SYSTEM.

Applications for license under the following patent may be addressed to: Patent Attorney, Specialty Control Department, General Electric Company, Waynesboro, Va., 22980.

3,151,282. EXTENDED RANGE POSITIONING CONTROL SYSTEM.

Applications for license under the following 3 patents may be addressed to: Patent Counsel, Construction Industries Division, General Electric Company, 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn.

3,155,882. CIRCUIT BREAKER PANELBOARD.

3,156,008. RELEASE MECHANISM FOR MOLDING MACHINE.

3,158,786. OVERCURRENT PROTECTION DEVICE.

Applications for license under the following patent may be addressed to: Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,156,866. METHOD AND MEANS FOR INDICATING THE MODE OF FAILURE OF INSULATORS.

### New Applications Received During December 1964

| | |
|---|---|
| Patents | 7,905 |
| Designs | 405 |
| Plant Patents | 12 |
| Reissues | 18 |
| Total | 8,340 |

### Issue—February 2, 1965

| | | | | |
|---|---|---|---|---|
| Patents | 966—No. | 3,167,778 to No. | 3,168,743, | incl. |
| Designs | 40—No. | 200,189 to No. | 200,228, | incl. |
| Plant Patents | 3—No. | 2,468 to No. | 2,470, | incl. |
| Reissues | 1—No. | 25,728 | | |
| Total | 1010 | | | |

## TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

### Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

PART 3—FORMS FOR PATENT CASES

*Forms and Rules of Practice*

The following amended rules of practice and illustrative forms are adopted pursuant to Public Law 88-292, March 26, 1964, 78 Stat. 171, thus prescribing the documents presently required to be filed in the Patent Office under oath which may be subscribed to by a written declaration in the indicated form in lieu of the oath otherwise required.

In the Federal Register of June 24, 1964, proposed amended § 1.65 and a proposed § 1.68 as well as an illustrative form (3.11(a)) for this purpose were published and intention was stated to conform other affected rules and forms to effect the purpose of Public Law 88-292.

Interested persons were invited to submit their comments or suggestions on the proposals, and full and careful consideration has been given to all the material submitted.

Use of the declaration in the prescribed instances may be by any applicant, foreign or domestic. The provisions of § 1.66 of the rules relating to oaths remain in effect with respect to oaths when oaths are used, but this rule is not applicable to a declaration when used as an alternative to an oath. When a declaration is used, the ribboning procedure is not necessary, nor is it necessary to appear before an official in connection with the making of a declaration.

Suggestions were made that the rules allow the declaration to be made separately, apart from the other parts of the application. Except in the case of the declaration not accompanying an already accepted application (form 3.13(a)), and in the case of the supplemental declaration for amendment presenting claims for material disclosed but not originally claimed (form 3.14(a)), the declaration, like the oath, is an integral part of the application in accordance with section III of Title 35 of the United States Code, and 37 CFR 1.51 and shall be maintained together therewith.

Further suggestions were made that the use of the declaration be extended even further than was proposed. Amendments herein adopted would allow the declaration to be used as part of the original application for a patent involving designs, plants, and other patentable inventions; for reissue patents; when claiming matter originally shown or described but not originally claimed; or when filing a divisional or continuing application. Experience in these areas may very well provide a basis for more extended use of declarations in the future but, as an initial matter, the use will be limited to these listed instances.

These amended rules shall take effect on the date of this publication. Declarations, executed on and after that date, in proper form, will be accepted in the prescribed instances in lieu of the oath heretofore required.

The text of the new rule, amendments to existing rules, and illustrative forms follow:

Sections 1.41, 1.42, 1.43, 1.45, 1.47, 1.51, 1.52, 1.57, 1.61, 1.67, 1.76, 1.153, 1.162, and 1.175 are amended by inserting the words "or declaration" after the word "oath" wherever it occurs, including occurrences in the title of a section.

Paragraph (c) of § 1.53 is amended by inserting the phrase ", or declaration made," after the phrase "signed and sworn to".

Paragraph (a) of § 1.172 is amended by inserting the phrase ", or declaration made," after the phrase "sworn to" in the two occurrences of this latter phrase.

The caption "THE OATH", preceding § 1.65 is amended to read "STATEMENT; OATH OR DECLARATION".

Section 1.65 is amended to read as follows:

§ 1.65 *Statement of applicant.*

(a)(1) The applicant, if the inventor, must state that he verily believes himself to be the original and first inventor or discoverer of the process, machine, manufacture composition of matter, or improvement thereof, for which he solicits a patent; that he does not know and does not believe that the same was ever known or used before his invention or discovery thereof, and shall state of what country he is a citizen and where he resides and whether he is a sole or joint inventor of the invention claimed in his application. In every original application the applicant must distinctly state that to the best of his knowledge and belief the invention has not been in public use or on sale in the United States more than one year prior to his application or patented or described in any printed publication in any country before his invention or more than one year prior to his application, or patented in any foreign country prior to the date of his application on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application in this country. He shall state whether or not any application for patent on the same invention has been filed in any foreign country, either by himself, or by his legal representatives or assigns. If any such application has been filed, the applicant shall name the country in which the earliest such application was filed, and shall give the day, month, and year of its filing; he shall also identify by country and by day, month, and year of filing, every such foreign application filed more than twelve months before the filing of the application in this country. (2) This statement (i) must be subscribed to by the applicant, and (ii) must either (a) be sworn to (or affirmed) as provided in § 1.66, or (b) include the personal declaration of the applicant as prescribed in § 1.68. See § 1.153 for design cases and § 1.162 for plant cases.

(b) If the application is made as provided in §§ 1.42, 1.43, or 1.47, the applicant shall state his relationship to the inventor and, upon information and belief, the facts which the inventor is required by this section to state.

(c) An additional statement may be required if the application has not been filed in the Patent Office within a reasonable time after execution of the original statement.

A new § 1.68 is included to read as follows:

§ 1.68 *Declaration in lieu of application oath.*

(a) The applicant may, in lieu of making an oath or affirmation in the manner provided by § 1.66, set forth in the body of the statement required from him by § 1.65 his written declaration that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true, if, and only if, the applicant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardise the validity of the application or any patent issuing thereon.

(b) A written declaration by the applicant satisfying the foregoing conditions, may also be used in lieu of an oath when presenting a claim for matter not originally claimed (§ 1.67), when applying for a reissue patent (§§ 1.171 and 1.172), when applying for a patent for a design (§§ 1.151 and 1.153), and when applying for a patent for a plant (§§ 1.161 and 1.162).

Form 3.11a, an alternative to form 3.11, *Oath to accompany application for patent*, follows:

3.11a *Declaration to accompany application for patent.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances. The petition and specification precede the declaration.)

(1) _____, the above-named petitioner__ declare__ that _____ citizen__ of the United States (2) and resident__ of (3) _____ that _____ verily believe__ (4) _____ to be the original, first, and (5) _____ inventor__ of the improvement in (6) _____ described and claimed in the annexed specification; that (7) _____ do__ not know and do__ not believe that the same was ever known or used before (8) _____ invention thereof, or patented or described in any printed publication in any country before (8) _____ invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States or an application filed by (9) _____ or (8) _____ legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said invention has been filed by (9) _____ or (8) _____ representatives or assigns in any country foreign to the United States, except as follows: (10) _____

The undersigned petitioner__ declare__ further that all statements made herein of (8) _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.

Inventor's full name or names (11) _____

_____
(Signature)

Date _____.

Notes: See §§ 1.65 and 1.68.

(1) Name of inventor; if the invention is joint, the names of all the joint inventors.



(2) If the applicant be an alien, state of what foreign country he is a citizen or subject.

(3) Give city and State, or if a foreign resident, city and country, of residence. If more than one inventor give residence of each inventor if different. Street address need not be given here as it appears elsewhere.

(4) "Himself" in the case of a sole inventor; "themselves" in the case of joint inventors.

(5) "Sole" in the case of a sole inventor; "joint" in the case of joint inventors.

(6) Title of the invention.

(7) "He" in the case of a sole inventor; "they" in the case of joint inventors.

(8) "His" in the case of a sole inventor; "their" in the case of joint inventors.

(9) "Him" in the case of a sole inventor; "them" in the case of joint inventors.

(10) If no application has been filed in a foreign country strike out the words "except as follows:". If one or more applications have been filed in foreign countries, the first application and each application more than twelve months old (six months in design cases) must be recited. The country and date of filing the foreign application must be given and the number of the application or other identifying data may also be stated. The claim for priority under 35 U.S.C. 119 (see § 1.55) may be made here. The following examples illustrate various situations.

(a) Only one prior foreign application filed: state "in (country) on (date)." If the right of priority is also claimed add "the right of priority of which application is claimed."

(b) More than one prior foreign application: state "in (country) on (date) and in other countries on subsequent dates." The country and date do not need to be recited except for the first filed application and each application more than twelve months old (six months in design cases).

(11) All petitioners are to sign (see section 1.41).

Form 3.12a, an alternative to form 3.12, *Oath to accompany application for patent, by an administrator* (or *executor*), follows:

3.12a *Declaration to accompany application for patent by an administrator* (*or executor*).

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, the above-named petitioner, declares that he is a citizen of the United States of America and a resident of _____, that he is the administrator of the estate (or executor of the last will and testament) of C _____ D _____, deceased, late a citizen of the United States and resident of _____, that he verily believes the said C _____ D _____ to be the original, first and sole inventor of the improvement in _____ described and claimed in the foregoing specification; that he does not know and does not believe that the same was ever known or used before the invention thereof by the said C _____ D _____, or patented or described in any printed publication in any country before the said invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by the said C _____ D _____ or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said invention has been filed by the said C _____ D _____ or his representatives or assigns in any country foreign to the United States except as follows: _____

The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon. Inventor's full name or names _____

_____
(Signature)

Date _____.

Form 3.13a, an alternative to form 3.13, *Oath not accompanying application*, follows:

3.13a *Declaration not accompanying application.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, declares that he is a citizen of the United States of America and resident of _____, that on _____, 19____, he filed application for patent Serial No. _____ in the United States Patent Office, that he verily believes himself to be the original, first and sole inventor of the improvement in _____ described and claimed in the specification of said application for patent; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to the date of said application, or in public use or on sale in the United States more than one year prior to the date of said application; that said invention has not been patented before the date of said application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to the date of said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon. Inventor's full name or names _____

_____
(Signature)

Date _____.

Form 3.14a, an alternative to form 3.14, *Supplemental oath for amendment presenting claims for matter disclosed but not originally claimed*, follows:

3.14a *Supplemental declaration for amendment presenting claims for matter disclosed but not originally claimed.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

_____, whose application for Letters Patent for an improvement in _____, Serial No. _____, was filed in the United States Patent Office on or about the _____ day of _____ 19__, declares that the subject matter of the foregoing (1) amendment was part of his invention, was invented before he filed his original application, above identified, for such invention; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year before his application, or in public use or on sale in the United States more than one year before the date of his application, that said invention has not been patented in any foreign country before the date of his application on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application in the United States, and has not been abandoned.

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Inventor's full name or names _____

_____
(Signature)

Date _____.

NOTE: (1) If the supplemental declaration does not accompany the amendment, the amendment should be identified. See § 1.67.

Form 3.16a, an alternative to form 3.16, *Combined petition, oath, and specification* (*single signature form*); *sole inventor*, follows:

3.16a *Combined petition, declaration and specification* (*single signature form*); *sole inventor.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

[TITLE OF INVENTION]

[SPECIFICATION]

I, _____, declare that I am a citizen of _____, residing at _____; that I have read the foregoing specification and claims and I verily believe I am the original, first, and sole inventor of the invention in _____ described and claimed therein; that I do not know and do not believe that this invention was ever known or used before my invention thereof, or patented or described in any printed publication in any country before my invention thereof, or more than one year prior to this application; or in public use or on sale in the United States more than one year prior to this application; that this invention has not been patented in any country foreign to the United States on an application filed by me or my legal representatives or assigns more than twelve months before this application; and that no application for patent on this invention has been filed by me or my representatives or assigns in any country foreign to the United States, except as follows:

And I hereby appoint _____, Registration No. _____, my attorney (or agent) to prosecute this application and to transact all business to the Patent Office connected therewith.

Wherefore I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specification and claims, declaration, power of attorney, and this petition.

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise

the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address: _____

NOTE: This form may be executed only when attached to a complete application as the last page thereof.

Form 3.17a, an alternative to form 3.17, *Oath in division or continuing application*, follows:

3.17a *Declaration in division or continuing application.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
[This form of declaration may be used with an application disclosing and claiming only subject matter disclosed in a prior copending application of the same inventor.]

_____; the above-named petitioner declares that he is a citizen of the United States and resident of _____; that he verily believes himself to be the original, first, and sole inventor of the improvements in _____ described and claimed in the foregoing specification, that this application discloses and claims only subject matter disclosed in his pending application, Serial No. _____, filed _____; that he does not know and does not believe that the said invention was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to said application, or in public use or on sale in the United States more than one year prior to said application; that said invention has not been patented before the date of said application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:

_____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____

The title to form 3.18 is amended to read: *"Oath in copending application containing additional subject matter*, and a form 3.18a, alternative to form 3.18 follows:

3.18a *Declaration in copending application containing additional subject matter.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
[This form of declaration may be used with an application disclosing and claiming subject matter disclosed in a prior copending application of the same inventor and also disclosing additional subject matter.]

_____, the above-named petitioner, declares that he is a citizen of the United States and resident of _____, that he verily believes himself to be the original, first and sole inventor of the improvement in _____ described and claimed in the foregoing specification; that this application in part discloses and claims subject matter disclosed in his earlier filed pending application, Serial No. _____, filed _____; that, as to the subject matter of this application which is common to said earlier application, he does not know and does not believe that the same was ever known or used before his invention thereof or patented or described in any printed publication in any country before his invention thereof or more than one year prior to said earlier application, or in public use or on sale in the United States more than one year prior to said earlier application; that said common subject matter has not been patented before the date of said earlier application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows _____; that, as to the subject matter of this application which is not common to said earlier application, he does not know and does not believe that the same was ever known or used before his invention thereof or patented or described in any printed publication in any country before his invention thereof or more than one year prior to the date of this application, or in public use or on sale in the United States more than one year prior to the date of this application, and that said subject matter has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to the date of this application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:

_____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____

The parenthetical material reading "(The specification and oath follow the petition.)" following form 3.21 is amended to read: "(The specification and oath, or declaration, follow the petition.)"

Form 3.23a, an alternative to form 3.23, *Design patent application, oath*, follows:

3.23a *Design patent application; declaration.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

_____, the above-named petitioner__, declare__ that _____ citizen__ of _____, and resident__ of _____, that _____ verily believe__ to be the original, first and _____ inventor__ of the design for _____ described and claimed in the foregoing specification; that _____ do__ not know and do__ not believe that the same was ever known or used before _____ invention thereof, or patented or described in any printed publication in any country before _____ invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said design has not been patented in any country foreign to the United States on an application filed by _____ or _____ legal representatives or assigns more than six months prior to this application; and that no application for patent on said design has been filed by _____ or _____ representatives or assigns in any country foreign to the United States, except as follows: _____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post Office address _____

NOTE: See applicable notes under form 3.11(a).

The parenthetical material reading "(The specification and oath follow the petition.)" following form 3.25 is amended to read: "(The specification and oath, or declaration, follow the petition)".

Form 3.26a, an alternative to form 3.26, *Plant patent application, oath*, follows:

3.26a *Plant patent application, declaration.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, the above-named petitioner declares that he is a citizen of the United States of America and resident of _____ that he verily believes himself to be the original, first and sole inventor of the new and distinct variety of _____ described and claimed in the foregoing specification; that he has asexually reproduced the said new and distinct variety; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said new and distinct variety of plant has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address _____

Form 3.31a, an alternative to form 3.31, *Reissue application, oath; by the inventor*, follows:

3.31a *Reissue application, declaration; by the inventor.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

_____, the above-named petitioner, declares that he is a citizen of the United States of America, and a resident of _____ in the State of _____; that he verily



believes him self to be the original, first, and sole inventor of the invention described and claimed in Letters Patent No. _____ and in the foregoing specification and for which improvement he solicits a patent; that he does not know and does not believe that said improvement was ever known or used before his invention thereof, that (continue with the allegations and facts required by §1.175) _____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address _____

Form 3.32a, an alternative to form 3.32, *Reissue application, oath; by assignee*, follows:

3.32a *Reissue application, declaration; by assignee.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, the above-named petitioner, says that he is a citizen of the United States and resident of _____ in the State of _____; that the entire title of Letters Patent No. _____, for _____, granted on _____ to C _____ D _____, is vested in him; that he verily believes the said C _____ D _____ to be the original, first and sole inventor of the invention described and claimed in the aforesaid Letters Patent and in the foregoing specification; that he does not know and does not believe that said invention was ever known or used before the invention thereof by the said C _____ D _____; that (continue with the allegations and facts required by §1.175) _____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____
Post office address _____

NOTE: May be used only when the reissue application does not seek to enlarge the claims of the original patent.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6; P.L. 88–292, 78 Stat. 171)

EDWARD J. BRENNER,
*Commissioner of Patents.*

Approved:
J. HERBERT HOLLOMON,
*Assistant Secretary for Science and Technology.*

[F.R. Doc. 64–13368; Filed, Dec. 28, 1964; 8:51 a.m.]

*Published in 29 F.R. 18502–18506, Dec. 29, 1964*

## Citation of Publications and Foreign Patents

*Foreign Patents*

In accordance with Rule 107, for each foreign patent cited, there should be indicated the number of sheets of drawing and pages of specification and also the sheet number(s) and page number(s) specifically relied upon if less than the entire disclosure is used. Because it is essential to conserve space in the Examiner's file of applications and to minimize the cost to applicant under the automatic supply of references cited, whenever the total number of sheets and pages in any foreign patent exceeds ten, the Examiner should keep the total relied on as near to ten as possible. Applicants who desire a copy of the complete foreign patent or of the portion not "relied on" must order it, not through the automatic supply system, but in the usual manner.

*Publications*

Publications such as German allowed applications and Netherlands printed specifications should be similarly handled. With other publications such as books, periodicals and catalogues, the specific pages relied upon should be cited. If the copy relied upon is located only in the Group making the action (there is no call number), the additional information, "Copy in Group —" should be given.

RICHARD A. WAHL,
Jan. 4, 1965. *Acting Superintendent, Patent Examining Corps.*

## Erratum

In the OFFICIAL GAZETTE, issue of November 24, 1964, under the heading "Patent Suits," first column, lines 34 and 39, for "J. N. Halstead", each occurrence, read *J. H. Halstead*; same column, line 42, strike out "Judgment for plaintiff June 25, 1964." and insert instead *Claims 3, 4 and 5 of Patent No. 2,949,978 held invalid and not infringed; claims 1 and 2 of Patent No. 2,956,643 held valid and infringed, June 24, 1964.*

## Disclaimers

2,627,949.—*Corwin D. Willson*, Flint, Mich. DEMOUNTABLE SHELTER. Patent dated Feb. 10, 1953. Disclaimer filed Nov. 9, 1964, by the inventor.
Hereby enters this disclaimer to claim 4 of said patent.

2,978,996.—*Frank T. Moser*, Allentown, Pa. VARIEGATOR ATTACHMENT FOR SOFT FROZEN CONFECTION FREEZER. Patent dated Apr. 11, 1961. Disclaimer filed Oct. 23, 1964, by the assignee, *Mister Softee, Inc.*
Hereby enters this disclaimer to the entire term of said patent.

3,019,615.—*Frank T. Moser*, Easton, Pa. ICE CREAM MIX CONTROL. Patent dated Feb. 6, 1962. Disclaimer filed Oct. 23, 1964, by the assignee, *Mister Softee, Inc.*
Hereby enters this disclaimer to the entire term of said patent.

## Adjudicated Patents

(C.A. Ohio) Phillips Patent No. 2,733,902 (261–41), FOR CHARGE FORMING DEVICE. Claims 1 and 2 *Held* invalid and not infringed. *Tillotson Mfg. Co.* v. *Textron, Inc., Homelite*, 337 F.2d 833; 143 USPQ 269.

(C.A. Ohio) Phillips Patent No. 2,841,372 (261–41), FOR DELIVERING COMBUSTIBLE MIXTURE TO AN INTERNAL COMBUSTION ENGINE. Claims 4 to 7, 9 to 12, and 14 to 17 *Held* valid but not infringed. *Id.*

(C.A. Va.) Gallagher and Pelino Patent No. 2,880,309 (264–169), FOR HOTBOX DETECTOR. Claims 5, 6 and 9 to 11 *Held* invalid. *Servo Corp. of America* v. *General Electric Co.*, 337 F.2d 716; 143 USPQ 85.

(C.A. Fla.) Lorenz Patent No. 2,918,113 (297–89), FOR MULTIPLE POSITION RECLINING CHAIR, *Held* invalid. *Lorenz* v. *General Steel Products Co.*, 337 F.2d 726; 143 USPQ 140.

(C.A. Fla.) Fletcher Patent No. 2,940,509 (297–89), FOR MULTIPLE-POSITION CHAIR. Claims 1, 2, 10, 11, 14, and 16 *Held* invalid. *Id.*

(C.A. Fla.) Schliephacke Patent No. 2,940,510 (297–88), FOR MULTIPLE POSITION RECLINING CHAIR. Claims 1, 2 and 6 to 10 *Held* Invalid. *Id.*

(D.C. Va.) Bullard Patent No. 2,575,183 (188–112), FOR CONTROL MECHANISM, *Held* not infringed. *Bullard Co.* v. *General Electric Co.*, 234 F. Supp. 995; 143 USPQ 416.

(D.C. Va.) Bullard Patent No. 2,575,792 (192–142), FOR CONTROL MECHANISM, *Held* not infringed. *Id.*

# PATENT EXAMINING CORPS

**H. B. WHITMORE, Superintendent**

## CONDITION OF PATENT APPLICATIONS AS OF JANUARY 1, 1965

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 7-20-62 | 4- 9-56 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 11-30-62 | 6-14-57 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 12-31-56 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 8- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 9-18-62 | 12-28-56 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-20-62 | 1- 3-56 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 3-28-57 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 11-19-62 | 3- 2-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 5- 1-53 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-19-62 | 2-25-58 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 5-16-57 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 7-19-57 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-28-62 | 12-14-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 4-14-59 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 206,227 |
| Total number of Design applications pending | 5,784 |
| Total number of applications awaiting action (excluding Designs) | 141,524 |
| Total number of Design applications awaiting action | 2,717 |
| Date of oldest new application awaiting action | July 5, 1962 |
| Date of oldest amended application awaiting action | May 1, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during February 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*

Patents ..... Numbers 2,435,187 to 2,436,781, inclusive

Plant Patents ..... Numbers 783 to 785, inclusive



| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner. Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids. | 5-23-63 | 2-11-63 |
| METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner. Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 7-29-59 |
| MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner. Special Article Making; Assembling, Tool and Implement Making; and Metal Working. | 10-23-62 | 3- 2-60 |
| MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders. | 2- 5-63 | 9-25-58 |
| HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner. Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling. | 1-16-63 | 4-20-60 |
| FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner. Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing. | 2- 1-63 | 8-28-59 |
| POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner. Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3-23-63 | 5-12-60 |
| HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner. Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination. | 3- 1-63 | 5-19-59 |
| **GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner. Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working. | 7- 8-63 | 12-28-59 |
| CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner. Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 8-28-58 |
| PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12-31-62 | 7-23-57 |
| TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner. Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-14-63 | 12-10-59 |
| TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner. Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 3- 6-63 | 10-16-58 |
| FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner. Furniture; Supports; Cabinet Structures; Receptacles; Baggage. | 4-18-63 | 11- 5-60 |
| PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner. Printing; Typewriters; Stationery; Material Treatment. | 7-17-62 | 8-14-59 |
| PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisory Examiner. Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner. Industrial Arts; Household, Personal and Fine Arts. | 3- 9-64 | 9-26-61 |

# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE KEMPER M. HAMMELL

*No. 7235. Decided November 5, 1964*

[— CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—EVIDENCE—COMMERCIAL SUCCESS.
"While well-documented proof of commercial acceptance, shown to be directly attributable to the merits of the claimed invention, is evidence of patentability, such proof is not persuasive where * * * the remainder of the evidence so clearly indicates that the claimed invention would have been obvious at the time it was made."

2. SAME—PARTICULAR SUBJECT MATTER—"METHODS AND TOOLS FOR MAKING CONNECTIONS."
The refusal of certain claims in an application entitled "Methods and Tools for Making Connections," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 490,862.

AFFIRMED.

*William Hintze* (*Truman S. Safford, Curtis, Morris & Safford, Marshall M. Holcombe, AMP Incorporated*, of counsel) for appellant.

*Clarence W. Moore* (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH and ALMOND, JR., *Associate Judges*, and Judge WILLAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

This appeal requires us to determnie whether appellant's method, as defined in appealed claims 6 and 9 of his patent application, Serial No. 490,862, filed February 28, 1955, entitled "Methods and Tools for Making Connections," would have been obvious under the conditions stated in 35 U.S.C. 103.

The specification indicates that the disclosed method and tools are designed for use with tapered electrical connectors. One such connector, described briefly in appellant's application, is a two-part unit in which a tapered male plug is inserted in a female receptacle. Provision is made for lead wires to be attached to the plug and receptacle. The degree of taper is such that when the plug and receptacle are in optimum frictional contact, the connector is self-locking.

As pointed out in an affidavit of Pierce, an employee of appellant's assignee, the usual method of assembling such connectors prior to appellant's invention involved forcing the plug into the receptacle with a pair of pliers. This method, says Pierce, was generally unsatisfactory because of non-uniform results and worker fatigue. Appellant's brief states that workers engaged in assembling such connectors were sometimes prone to push too hard, or not hard enough. If the push were too hard, the result was often deformation of the receptacle or even pushing the plug all the way through the receptacle, with consequent loss of the desired mechanical and electrical contact. If not hard enough, the result might be a loose connection, vulnerable to corrosion and possible loss of electrical contact due to vibration and other mechanical or thermal stresses.





Diagrammatically presented, appealed claim 6 reads:

6. The method of making a tapered force fit mechanical and electrical connection between a tapered terminal and a receptacle therefor comprising the steps of

(1) first pressing said terminal into mating relation with said receptacle
(a) by application of an inserting force of increasing magnitude
(b) while storing a portion of the inserting force to accumulate a predetermined amount of potential energy,
(2) and subsequently applying said predetermined amount of potential energy to said tapered connector as an impact force thereby to bring said tapered terminal into optimum frictional engagement with said receptacle.

Appealed claim 9 is similar to claim 6, except that the "inserting force" of claim 6 is defined as "spring pressure" and there is no requirement in the method of claim 9 that the energy for the final impact force be drawn from the inserting force.

The advantage of appellant's claimed method is that application of a calibrated impact force for final seating of the connector parts assures substantially uniform assembly.

Appellant's application discloses an apparatus for carrying out the claimed method. While it is only the method with which we are here concerned, an understanding of the apparatus facilitates understanding of the claimed method. The apparatus is an inserting tool which consists essentially of a plug holder mounted on a spring-loaded plunger, and a cylindrical housing forming the handle of the tool. The plug half of a connector is placed in the holder and the narrow end of the plug is inserted loosely into the receptacle. After alignment, a gradually increasing pressure is brought to bear on the inserting tool and the connector parts are pushed into a closer fit. During this part of the operation a portion of the energy of the pushing is absorbed by and stored in the spring. When the stored energy reaches a certain predetermined amount, a detent releases a hammer and the spring forces the hammer down, delivering a sharp blow to the plunger which finally seats the plug in the receptacle.

Both claims stand rejected as unpatentable over the following references:

Chisholm, 1,720,318, July 9, 1929.
Hedler, 2,060,864, November 17, 1936.
"Taper Connectors," Electrical Manufacturing, August 1953, p. 143.

The Chisholm patent discloses an apparatus for locking embossed aluminum printing strips onto projections on a holder. The apparatus delivers a blow of constant magnitude to the strip, thus crimping its edges over the edges of the projection. The mechanism is very similar to the tool disclosed by appellant in that it stores a portion of the energy of the initial thrust and delivers it in the form of a sharp, measured impact by means of a spring and latch arrangement.

The Hedler patent discloses a method and means for joining a cable to a cable fitting. The cable end is inserted into a tapered sleeve and the sleeve is driven into a similarly tapered hole in the fitting, causing the sleeve to bite firmly into the cable.

The Electrical Manufacturing article discloses tapered connectors substantially like those for which appellant designed his claimed assembly method.

The problem appellant faced prior to his invention was to find a

way to insure uniform assembly of the plug and receptacle elements. However, as the Board stated:

> • • • the solution to the problem of applying a limited but adequate force to effect the connection of two parts to be joined was already known to reside in storing potential energy during the application of the initial pressing force to be released automatically later as a calibrated impact that completes the setting of the parts. This procedure is precisely that taught by the Chisholm patent for the recognized advantages of securing uniformly an adequate but not excessive assembly force. Application of this known assembly procedure of Chisholm, with its known advantages to the assembly of tapered electrical terminals of the Electrical Manufacturing article with a known requirement for these same advantages, is obvious to one of ordinary skill in the art and is unpatentable.

Moreover, we might point out, as did the Examiner, that Hedler teaches the use of impact means to effect a force-fit frictional connection.

Appellant argues that a claimed method may be patentable despite the prior existence of apparatus capable, with modifications, of carrying out the method. We are in full agreement, so long as the qualifying word "may" indicates a possibility rather than a certainty. For it is also true that such apparatus is prior art like any other, and must be weighed fully in the determination of what would have been obvious to one of ordinary skill in the art at the time the invention was made.

Appellant contends further that Chisholm represents "nonanalogous" art. While we agree that Chisholm is not specifically directed to the art of tapered electrical connectors, it does disclose a tool capable of delivering a calibrated impact force. And we think its teaching would have been pertinent to that art and within the knowledge of a worker faced with appellant's particular problem.

We have considered fully the Pierce affidavit, which states that tapered electrical connectors "are presently sold at an annual rate in substantial excess of 100,000,000, and are assembled principally by the method disclosed in" appellant's application. [1] While well-documented proof of commercial acceptance, shown to be directly attributable to the merits of the claimed invention, is evidence of patentability, such proof is not persuasive where, as here, the remainder of the evidence so clearly indicates that the claimed invention would have been obvious at the time it was made. E.g., *In re Sinex*, 50 CCPA 1004, 309 F.2d 488, 135 USPQ 302; *In re Jaeger et al.*, 44 CCPA 767, 241 F.2d 723, 112 USPQ 477.

[2] For the foregoing reasons, the appealed decision is affirmed.

AFFIRMED.

# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,614,738**, B. E. Mills, BEVERAGE DISPENSING MACHINE; **3,066,529**, De Shon and Clement, SECONDARY ARTICLE DISPENSER FOR VENDING MACHINES, **filed** Aug. 4, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1348, *The Seeburg Corporation* v. *Rock-Ola Ipi Corporation et al.*

**2,812,282**, V. R. Ellis, STABILIZED AQUEOUS SOLUTION OF NITROFURAZONE; **Reg. No. 466,379** (FURACIN), The Norwich Pharmacal Company, Antiseptics and germicides; **Reg. No. 441,715**, same, Eaton Laboratories, Inc., Antibacterial preparations; **Reg. No. 541,155** (FURASPOR), same, Antimycotic, anti-bacterial preparations for use in the treatment of fungal infections; **Reg. No. 567,186** (FURADROXYL), same, Anti-bacterial preparations for use in the treatment of oral infections, including dental caries; **Reg. No. 589,968** (FURADANTIN), same, Anti-bacterial preparations for use in the systemic and/or local treatment of infections; **Reg. No. 587,228** (FUROXONE), same, Antibacterial preparations; **Reg. No. 624,810** (FURAMAZONE), The Norwich Pharmacal Company, same; **Reg. No. 631,188** (TRICOFURON), same, Antibacterial preparations for the treatment of vaginal infections; **Reg. No. 640,250** (ENTEFUR), same, Antibacterial preparation for veterinary use; **Reg. No. 642,527** (FUREA), same, Preparation for use as an intrauterine medication following termination of pregnancy or abnormal delivery; **Reg. No. 660,732** (FURESTROL), same, Anti-bacterial preparation put up in the form of urethal suppositories; **Reg. No. 663,376** (MICOFUR), same, Fungicide used as an ingredient in preparations for the treatment of fungus and other infections; **Reg. No. 672,087** (FURADEX), same, Antibacterial preparation for veterinary use; **Reg. No. 683,927** (AMIFUR), same, Anti-bacterial preparation; **Reg. No. 689,789** (ALTAFUR), same, Preparation for the treatment of bacterial infections in humans and animals; **Reg. No. 707,729** (DANTAFUR), same, Veterinary anti-bacterial preparations for use in the systemic and/or local treatment of infections; **Reg. No. 713,809** (FURAZETS), same, Pharmaceutical preparation for the treatment of infections of the mouth and throat, **filed** Aug. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C309(3), *The Norwich Pharmacal Co.* v. *Jos. E. Loeber et al.*

**2,874,955**, B. D. McIntyre et al., VEHICLE SUSPENSION SYSTEM; **2,896,938**, B. Walker, VEHICLE SUSPENSION DEVICE; **2,912,235**, same, AUTOMATIC AUXILIARY SUPPORT FOR A VEHICLE, **filed** Sept. 15, 1959, D.C., W.D. Tenn. (Memphis), Doc. 3791, *Monroe Auto Equipment Company* v. *Heckethorn Manufacturing & Supply Co.* This action as it applies to Patent No. 2,874,955 was dismissed on plaintiff's motion before the trial. Claims 2 and 3 of Patent No. 2,896,938 held invalid; claim 14 of Patent No. 2,912,235 held invalid; complaint dismissed Jan. 9, 1962. **APPEALED** Mar. 30, 1962, C.C.A., 6th Cir. On remand—judgment of District Court, dated Jan. 9, 1962, vacated; after reconsideration, aforesaid judgment in favor of defendant, dated Jan. 9, 1962, reinstated Mar. 8, 1963. **APPEALED** Mar. 29, 1963, C.C.A., 6th Cir. Judgment of District Court affirmed May 14, 1964.

**2,896,938.** (See 2,874,955.)

**2,912,235.** (See 2,874,955.)

**2,967,348**, Seglin and Winnicki, METHOD FOR PREPARING DENSE SODIUM CARBONATE FROM CRUDE TRONA, **filed** Apr. 18, 1963, D.C. Del. (Wilmington), Doc. 2656, *Stauffer Chemical Co. et al.* v. *FMC Corporation.* **Same, filed** Apr. 19, 1963, D.C. Del. (Wilmington), Doc. 2659, *Stauffer Chemical Company et al.* v. *FMC Corporation.* On Sept. 30, 1963, on a motion of the plaintiffs with the consent of the defendant, an order was entered consolidating Civil Action 2659 with Civil Action 2656. Stipulation of dismissal without order of court Dec. 17, 1964.

**3,001,291**, S. J. Pingree, FUR SEAL AND PROCESS FOR PREPARING SAME, **filed** Aug. 27, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C326(2), *Fouke Fur Co.* v. *Pierre Laclede Fur Co. et al.*

**3,003,195**, A. Varga, METHOD OF AND APPARATUS FOR THE TREATMENT OF COTTON FIBRES, **filed** June 6, 1963, D.C., N.D. Ga. (Atlanta), Doc. 8434, *Carding Specialists (Canada) Limited* v. *Lummus Cotton Gin Co. et al.* **TRANSFERRED, filed** Sept. 6, 1963, D.C., M.D. Ga. (Columbus), Doc. 974—claims 1, 2, and 3 of Patent No. 3,003,195 held invalid; defendants have not infringed; plaintiff enjoined from bringing further suit; complaint dismissed (notice Aug. 31, 1964).

**3,006,688**, A. J. Quellette, BABY SEAT; **3,101,972**, C. A. Laughlin, SUPPORT STANDS; **Des. 178,806**, A. J. Quellette, BABY CHAIR; **Des. 195,169**, same, BABY CARRIER, **filed** Feb. 1, 1962, D.C., N.D. Ohio (Cleveland), Doc. C62–93, *Infanseat Co., Inc. et al.* v. *Century Products, Inc.* Patent Nos. 3,006,688, 3,101,972, and D. 195,169 included by the second amended complaint Jan. 7, 1964. Stipulation and order that plaintiff withdraws without prejudice Par. 22 to 25 of complaint and reference to Pat. No. 3,101,972 contained in Par. 2 and 9 of prayer for relief, and that defendant withdraws without prejudice Par. 22 to 25 and 47 of its answer and Par. 61 to 63 of its counterclaim including portion 63 which constitutes a prayer for relief Aug. 24, 1964.

**3,007,596**, L. C. Matsch, THERMAL INSULATION; **3,009,601**, same, **filed** Aug. 11, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–547, *Union Carbide Corporation* v. *Ryan Industries, Inc.*

**3,009,601.** (See 3,007,596.)

**3,010,584(a)**, A. Rutkovsky et al., ARTICLE STORING AND DELIVERING APPARATUS WITH INCLINED ARTICLE-SUPPORTING RACK; **3,118,531(a)**, same, CONVEYOR FOR SELECTIVE DISPATCHING OF ARTICLES, **filed** Aug. 21, 1964, D.C., Dist. of Columbia, Doc. 2062–64, *Railex Corporation* v. *Joseph Guss & Sons, Inc. et al.*

**3,010,584(b)**; **3,039,614**, A. Rutkovsky et al., ARTICLE STORING AND DELIVERING APPARATUS; **3,118,531(b)**; **3,152,682**, A. Rutkovsky et al., CONVEYOR FOR SELECTIVE DISPATCHING OF ARTICLES, **filed** Nov. 2, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–1076, *Railex Corp.* v. *White Machine Co., Inc.*



**3,032,574**, Ziegler and Gellert, PRODUCTION OF ALUMINUM TRIALKYLS AND ALUMINUM ALKYL HYDRIDES, **filed** Oct. 6, 1959, D.C. Del. (Wilmington), Doc. 2142, *Ethyl Corporation* v. *Hercules Powder Company et al.* Patent held infringed by plaintiff; plaintiff enjoined July 15, 1964.

**3,033,163**, Hostetler and Myers, MECHANICAL POULTRY FEEDER, **filed** Aug. 13, 1964, D.C., W.D. Mich. (Detroit), Doc. 4853, *Chore-Time Equipment, Inc.* v. *Automatic Poultry Feeder Co., Inc. et al.*

**3,035,273**, J. Krystal, CAP, **filed** Aug. 12, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1395, *American Needle and Novelty Co.* v. *Portis Hat Corporation.*

**3,039,614.** (See 3,010,584(b).)

**3,040,168**, T. Stearns, INSTRUMENT LIGHTING DEVICE, **filed** May 16, 1963, D.C., S.D.N.Y., Doc. 63/1416, *Kollsman Instrument Corp.* v. *Astek Instrument Corp.* Stipulation and order of dismissal Aug. 4, 1964.

**3,048,959**, W. W. Lowther, AIR CLEANING DEVICE AND METHOD, **filed** Aug. 27, 1964, D.C. Minn. (Minneapolis), Doc. 4–64/285, *Novo Industrial Corporation* v. *Donaldson Company, Inc.*

**3,056,529.** (See 2,614,738.)

**3,066,651**, M. G. Harwood et al., POULTRY BLINDER AND FASTENER, **filed** Oct. 24, 1963, D.C.N.J. (Trenton), Doc. 886–63, *Louis Jay Harwood et al.* v. *Kuhl Poultry Equipment Company.* Stipulation of dismissal Aug. 14, 1964.

**3,065,807**, L. E. Tyler, FERTILIZER SPREADER; **Des. 197,240**, same, TRAILER TYPE FERTILIZER SPREADER, **filed** Aug. 27, 1964, D.C., S.D. Ill. (Springfield), Doc. 3584, *Tyler Manufacturing Company, Inc.* v. *Tryco Manufacturing Company, Inc.*

**3,066,397**, R. E. Hudson, PNEUMATIC DEVICE, **filed** Aug. 6, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–394, *Bell Corporation* v. *Warren Automatic Tool Co.*

**3,068,177(a)**, H. M. Riegelman, LOCKING DEVICE FOR CLOSURE MEMBERS, **filed** Aug. 7, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1127–JWC, *Ador Corporation* v. *Met-Tec Aluminum Sash & Door Co., Inc.*

**3,068,177(b)**; **Des. 198,363**, H. M. Riegelman, HANDLE FOR WINDOWS, **filed** Oct. 15, 1964, D.C., S.D. Calif. (Fresno), Doc. 2571–ND, *Ador Corporation* v. *Walker Insulation Co., Inc. et al.*

**3,068,177(c)**; **3,111,209**, H. M. Riegelman, ROLLER MEANS FOR SLIDABLE CLOSURE MEMBER; **Des. 198,363(b)**, **filed** Aug. 7, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1128–JWC, *Ador Corporation* v. *International Window Corp. et al.*

**3,092,160**, Hartman and Gerrans, APPARATUS FOR ORIENTING AND HALVING STRAWBERRIES, **filed** Dec. 31, 1963, D.C. Oreg. (Portland), Doc. 63–614, *Kenneth R. Hartman* v. *General Foods Corporation et al.* Case dismissed without prejudice Aug. 5, 1964.

**3,099,404**, J. Kaufman et al., RECESSED LIGHTING FIXTURES, **filed** Aug. 12, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1393, *Markstone Manufacturing Company* v. *Englewood Electrical Supply Co. et al.*

**3,010,972.** (See 3,006,688.)

**3,111,209.** (See 3,068,177(c).)

**3,116,885**, M. Morse, SILICON RUBBER LIGHT FILTER FOR INCANDESCENT LAMPS, **filed** Aug. 20, 1964, D.C.N.J. (Newark), Doc. 786–64, *Milton Morse* v. *Master Specialties Co.*

**3,117,880**, W. Lunsford, LIQUID WOOD-EXPANDING COMPOSITION, **filed** Aug. 12, 1964, D.C.N.J. (Newark), Doc. 744–64, *Lunsford Alden Co.* v. *American Piano Supply Co.*

**3,118,531(a).** (See 3,010,584(a).)

**3,118,531(b).** (See 3,010,584(b).)

**3,130,035**, W. H. Culver, METHOD FOR DEFOLINATING AND DESICCATING COTTON, **filed** Aug. 28, 1964, D.C., N.D. Tex. (Dallas), Doc. 3–669, *Pennsalt Chemicals Corporation* v. *Universal Chemical Company, doing business as Hi-Yield Chemical Company et al.* **Same, filed** Sept. 21, 1964, D.C., N.D. Tex. (Dallas), Doc. 3–700, *Pennsalt Chemicals Corporation* v. *Hi-Yield Chemical Company.* Cause dismissed Nov. 30, 1964.

**3,131,794**, A. W. Bender, METAL WALL OR CEILING PANEL, **filed** Aug. 10, 1964, D.C., S.D. Calif. (San Diego),

Doc. 3119–SD–C, *Albert W. Bender* v. *El Cajon Awning & Mfg. Co. et al.*

3,139,871, J. M. Sisko, CORE BLOCK CONSTRUCTION, filed Aug. 6, 1964, D.C., S.D. Fla. (Miami), Doc. 64–465, *John M. Sisko* v. *Southern Resin & Fiberglass Corp.*

3,141,489, P. H. Bunten, BASEBOARD RADIATOR WITH CONNECTOR UNITS, filed Aug. 10, 1964, D.C.N.J. (Camden), Doc. 749–64, *Repco Products Corporation* v. *Suntemp Industries, Inc.*

3,152,662. (See 3,010,584(b).)

Des. 178,893(s). (See 3,006,688.)

Des. 178,893(b), A. J. Quellette, BABY CHAIR, filed Aug. 14, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–980–Y, *Infanseat Company* v. *Wham-O Mfg. Co. et al.* Stipulation and order of dismissal without prejudice Nov. 16, 1964.

Des. 180,958, P. J. Papadakos, ROTARY WING AIRCRAFT, filed Aug. 26, 1964, D.C., S.D.N.Y., Doc. 64/2646, *Morris Salit* v. *Jefferson Electric Co.*

Des. 183,006, N. S. Leichter, HANDLE OR SIMILAR ARTICLE, filed Nov. 30, 1962, D.C., S.D. Calif. (Los Angeles), Doc. 62–1561–CC, *Ajax Hardware Manufacturing Corp.* v. *Jaybee Manufacturing Corporation.* Stipulation and order dismissing plaintiff's first and second causes of action with prejudice Aug. 10, 1964.

Des. 195,169. (See 3,006,688.)

Des. 195,925, W. E. Stumpf, DISPLAY STAND, filed July 16, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1273, *The Alan I. W. Frank Corporation* v. *American Indoor Display Corp. et al.* Design patent included by amended and supplemental complaint (patents not listed in original complaint). Default against defendant, Jerome Springer, entered Aug. 3, 1964. Final judgment; patent held valid and infringed; defendants, American Indoor Display Corporation and Jerome Springer, enjoined; complaint dismissed as to defendants, Rossman, Cole and Mrs. Cole Aug. 3, 1964.

Des. 197,340. (See 3,085,807.)

Des. 196,263(s). (See 3,088,177(b).)

Des. 196,263(b). (See 3,088,177(c).)

### Erratum

In the OFFICIAL GAZETTE, issue of January 12, 1965, under the heading "Patent Suits," p. 319, second column, lines 13 to 17 thereof, strike out "2,925,931, S. T. Carter, LABELING MACHINE FOR APPLYING WRAP-AROUND LABELS; 2,996,822, S. W. Souza, CONTRAST COLOR EMBOSSED PLASTICS, filed July 30, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42660, *Dymo Industries, Inc.* v. *Aaron L. Rubino.*"; same p. 319, second column, line 55 thereof, strike out "2,996,822. (See 2,925,931.)".

# REISSUES

## FEBRUARY 2, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

**25,723**

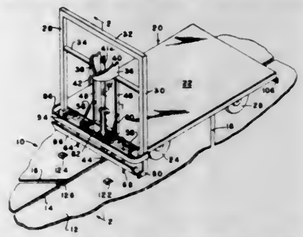
### TOW TRUCK SYSTEM

**Lynn Bradt, Easton, Pa., and John G. Dorrance, Phillipsburg, N.J., assignors to SI Handling Systems Inc., Phillipsburg, N.J., a corporation of Pennsylvania**

**Original No. 3,103,895, dated Sept. 17, 1963, Ser. No. 169,270, Jan. 29, 1962. Application for reissue May 23, 1964, Ser. No. 380,730**

**21 Claims. (Cl. 104—88)**

1. A tow truck system comprising means defining a main slot, a truck mounted for movement along said main slot by means of engagement between a tow pin on said truck and a portion of a tow line, the direction of said tow line corresponding to the direction of said main slot, a rotatably mounted accumulation bumper on a front portion of said truck, a movable rear bumper mounted on a rear portion of said truck, and means structurally interconnecting said front bumper with said rear bumper so that said rear bumper may be selectively rendered immobile in response to rotary movement of said front bumper.



# PLANT PATENTS

## GRANTED FEBRUARY 2, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

**2,468**

### FUCHSIA PLANT

**Horace M. Tiret, 2126 Taraval St., San Francisco, Calif.**

**Filed Nov. 12, 1963, Ser. No. 323,186**

**1 Claim. (Cl. Plt.—84)**

A new and distinct variety of fuchsia plant herein described, characterized by the delicate pastel color of the flower combined with unusual form and superior trailing habit of growth, resulting in an appearance unlike any fuchsia of its type.

**2,469**

### BLACKBERRY PLANT

**William E. Silva, 408 Water Trough Road, Sebastopol, Calif.**

**Filed Aug. 27, 1963, Ser. No. 305,021**

**1 Claim. (Cl. Plt.—46)**

A new and distinct variety of blackberry plant, substantially as herein shown and described, particularly characterized by its large, generally cylindrical and very firm berries, its heavy rate of berry production with all berries ripening on the plant during one season, and its freedom from leaf spot and cane blight.

**2,470**

### GLADIOLUS PLANT

**Carl H. Fischer, St. Charles, Minn., assignor to Selected Glads, Inc., New Albany, Ind., a corporation of Tennessee**

**Filed Nov. 8, 1963, Ser. No. 322,546**

**1 Claim. (Cl. Plt.—85)**

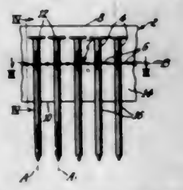
The new and distinct variety of gladiolus plant, substantially as herein shown and described, the blossom being characterized by its small size, beauty of form and ruffling and ability to open from tight bud.

# PATENTS

## GRANTED FEBRUARY 2, 1965

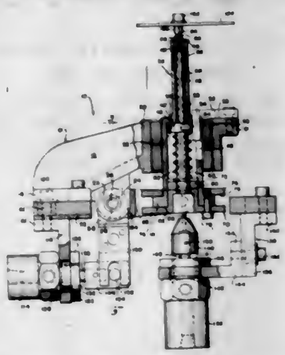
## GENERAL AND MECHANICAL

**3,167,778**
**FASTENER PACKAGES**
**Harold T. Decot, Wenham, and Norman S. Derrah, Lynn, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey**
**Filed Oct. 17, 1962, Ser. No. 231,223**
**17 Claims. (Cl. 1—56)**



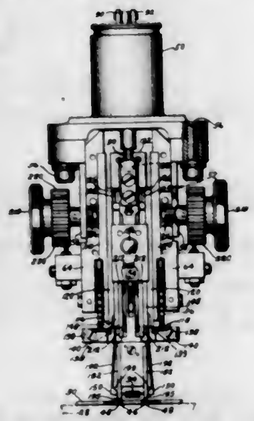
3. A package of articles such as fasteners and the like, each article having a shank and an enlarged end providing a head angularly projecting from the shank, said package comprising only a single strip of sheet material having at least one line of releasable members removably securing the articles to a side of the strip with the axis of each article forming an acute angle with at least a portion of the side surface of the strip, each article having spaced contacts with the strip surface at its head and its shank, each article being secured by a single member of the line of which it is a part engaging its shank at a location spaced from its enlarged head end.

**3,167,779**
**TRANSISTOR CLINCHER**
**Joseph D. Ahearn, Binghamton, N.Y., assignor to Universal Instruments Corporation, Binghamton, N.Y., a corporation of New York**
**Filed Oct. 7, 1963, Ser. No. 314,255**
**12 Claims. (Cl. 1—210)**



1. An electrical component handling device for bending and clinching the leads of components to a board, each component having a body section and a series of parallel wire leads extending outwardly from a side thereof, the body section of a component residing on a first face of said board, with each of the leads to be bent and clinched extending through the board perpendicular thereto, and outwardly of a second face of said board; a means adjacent the first face of said board for locating said component body section against said board, a clamping rod situated adjacent and perpendicular to the second face of said board, means to reciprocate said rod against said board between the parallel leads of said component, a bending and clinching means situated adjacent and perpendicular to the second face of said board, means to reciprocate said bending and clinching means to bend and clinch said leads to said board while the clamping rod abuts against said board to support it.

**3,167,780**
**MACHINE FOR CUTTING, FORMING AND INSERTING LEADS OF ELECTRICAL COMPONENTS**
**Lawrence E. Mueller, Livonia, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Dec. 5, 1962, Ser. No. 242,409**
**6 Claims. (Cl. 1—322)**

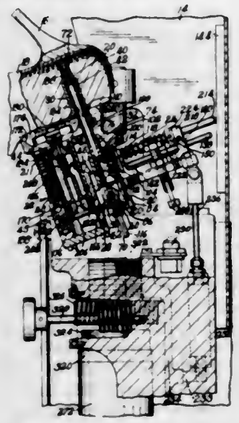


1. In a machine for bending a pair of leads of an electrical component and inserting the leads, a body having a guideway and a lower open end, a retractable anvil beneath the lower end of said body to support an electrical component having oppositely directed leads projecting respectively beyond and laterally of said anvil, a pair of laterally spaced apart slide members guided for vertical movement by said guideway, a pair of forming tools respectively carried by said slide members, said forming tools having normally raised positions above said anvil in straddling relationship therewith and movable downwardly to engage and bend end portions of the leads downwardly in substantially parallel relationship, stop means limiting downward movement of said forming tools to predetermined positions, a vertically movable operating member between said forming tools, a pair of laterally spaced apart driver members carried by said operating member and slidably guided respectively by the opposed faces of said slide members and movable respectively in paths aligned axially with the bent down end portions of the leads, said driver members having normally raised positions above the normally raised positions of said forming tools and movable downwardly to positions below the lower predetermined positions of said forming tools, said forming tools normally projecting laterally into the paths of downward travel of said driver members and mounted for displacement laterally outwardly of said paths, clutch means connecting said forming tools to said operating member and releasable by and upon the stopping of said forming tools at said predetermined positions by said stop means, and cam means on said forming tools and on said driver members cooperable following the stopping of said forming tools at said pretermined positions to displace said forming tools by the downward movement of said driver members below the predetermined lower limits of travel of said forming tools.





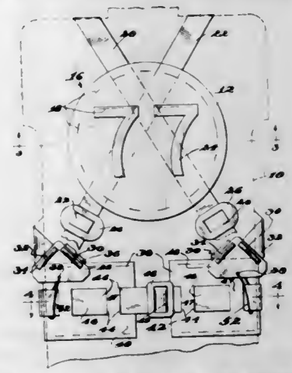
**3,167,781**
**HEEL ATTACHING MACHINES**
**Chester E. Rogers, Jr., Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey**
**Filed Dec. 7, 1962, Ser. No. 242,942**
**14 Claims. (Cl. 1—335)**



1. In a wheel attaching machine comprising a jack pivotal between a work receiving position and an operative position, means loacted on said jack for mounting a last bearing a shoe, said mounting means comprising a mount and a spindle, and means for retaining said spindle against movement and for permitting movement of said mount when the jack is in the work receiving position, the combination of means operative by the pivotal movement of said jack to free said spindle and retain said mount.

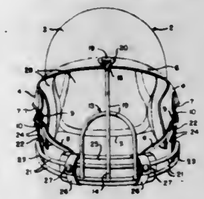
**3,167,782**
**ADJUSTABLE AND REVERSIBLE SPORT IDENTIFICATION**
**Porter C. Wilson, 320 E. Elvira Road, and Norman C. Adams, 4258 Camino de la Colina, both of Tucson, Ariz.**
**Filed Mar. 22, 1962, Ser. No. 181,603**
**2 Claims. (Cl. 2—1)**

2. An adjustable and reversible identification apparel of plastic material for athletic contests, comprising a pair of crossed shoulder straps, each strap having front and back portions adapted to extend around the torso of a wearer; at least one colored identification background of doubled material of different identifying colors on opposite sides thereof, said shoulder straps passing between said sides of said identification background; connecting plates secured to the ends of said crossed shoulder straps, each shoulder strap forming a loop adapted to extend around the torso with the respective ends of said strap attached to a respective common connecting plate; a foldable, reversible, belt background of different identifying colors on opposite sides, said identifying colors corresponding to those of said identification background; spaced slits in said belt background forming spaced belt loops thereon, said belt background being adjustable by



folding back the ends of said belt background and aligning two of said belt loops formed thereon; a belt extending through said belt loops in said belt background; and means for securing said connecting plates to said belt.

**3,167,783**
**PROTECTIVE HELMET**
**Lindsay Wolfe, Swarthmore, Pa., assignor to American Baseball Cap, Inc., Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 7, 1963, Ser. No. 286,257**
**2 Claims. (Cl. 2—9)**



1. A protective lacrosse helmet comprising a cap of stiff shock absorbing material having a head covering portion and a bill projecting outwardly from the head covering portion at the front thereof to shade the eyes of the wearer and protect the upper portion of the face of the wearer against blows by a lacrosse stick and a face guard fastened to the cap and disposed at the front thereof to protect the face of the wearer, the upper portion of the face guard being connected to the bill of the cap, the connection between the upper portion of the face guard and the bill of the cap being a pivotal connection having an axis extending transversely of the bill of the cap enabling the face guard to be swung outwardly and upwardly about such axis when the helmet is to be put on or taken off the head of the wearer.

**3,167,784**
**NECKWEAR FOR SUPPORTING AN ORNAMENT**
**Louis L. Less, Clinton, Iowa, assignor to One-in-Hand Tie Company, Clinton, Iowa, a partnership**
**Filed Oct. 4, 1962, Ser. No. 228,378**
**10 Claims. (Cl. 2—150)**

1. An article of neckwear comprising, in combination, a necktie having a preformed knot and a portion depending from said knot,

said knot being normally worn adjacent the top of the collar of the wearer,

said depending portion being substantially wider than it is thick and terminating at a point substantially less than half the distance from the top of the collar to the top of the pants of a normal wearer,



said depending portion comprising a front portion and a tail portion each having ends remote from said knot with the width of said tail portion being no greater than the width of said front portion and said front portion being adapted to substantially overlie said tail portion as normally worn, and

means attaching the remote end of said front portion to the remote end of said tail portion; and

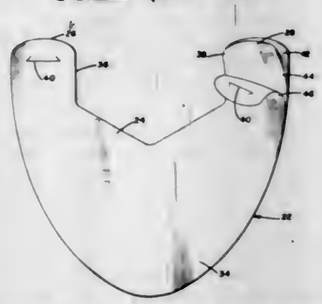
an exposed ornament of material different from said necktie and depending from said remote ends of said depending portion of said necktie,

said ornament comprising a medallion and tie-attaching means,

said attached front and tail portions supporting said tie-attaching means, whereby said medallion is suspended below the end of said depending portion.

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**3,167,785**
**HAIR RETAINER AND HEAT SHIELD**
**Frances E. Uhl, 610 Pierce Ave., Columbus, Ohio**
**Filed Sept. 4, 1962, Ser. No. 221,005**
**1 Claim. (Cl. 2—174)**



In combination with a hair retainer a heat shield comprising of:

(*a*) a generally U-shaped pliable disposable sheet portion,

(*b*) said sheet portion composed of a plurality of layers including an inner layer and an outer layer,

(*c*) said sheet portion having a lower portion for shielding the neck and right and left upper portions extending from said lower portion,

(*d*) said right and left upper portions being provided with ear receiving apertures in only said inner layer.

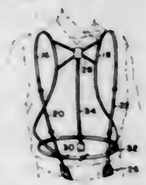
(*e*) said plurality of layers being secured together at said lower portion and unsecured adjacent said apertures in said upper portions, whereby the ears of a wearer are shielded,

(*f*) the inner side edges of said U-shaped sheet portion being curved inwardly to conform with the shape of the base of the wearer's neck,

(*g*) and a separate net portion for covering the hair including a lower rear portion overlying the upper edge of said sheet portion for retaining said sheet portion in a stable position in close conformity with the shape of the wearer's head.

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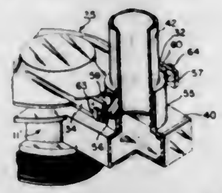
**3,167,786**
**CONCEALABLE TROUSER SUPPORT**
**Jerome E. Johnson, 5 Pascack Road, Woodcliff Lake, N.J.**
**Filed Dec. 20, 1962, Ser. No. 246,118**
**3 Claims. (Cl. 2—327)**



1. A concealable trouser support adapted to be worn by a person wearing trousers and a skirt, the skirt having its bottom edges tucked inside the waist band of the trousers, said support comprising a structure to be worn underneath the shirt and including first and second vertical loops, each loop being adapted to fit about a corresponding shoulder of the wearer, first and second vertical straps, each strap depending downward from a corresponding one of said loops toward said waist band, first and second support clasps, each support clasp being respectively secured to the bottom end of the corresponding strap, and a strap member being adapted to extend generally horizontally across the back of the wearer between the rear top portions of both loops and being secured to both loops; and first and second trouser clasps being adapted to be secured to said waist band, each trouser clasp being engagable with a corresponding support clasp in such manner that the shirt is held between the trouser and support clasps, each pair of engaged clasps having cooperating male and female clasp members which when engaged exhibit a relative clearance therebetween at least equal to the thickness of said shirt to permit the wearer, after clasp engagement, to move portions of the shirt with respect to said trousers to adjust the fit of the shirt without causing clasp disengagement.

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**3,167,787**
**PIVOTED VALVE MOUNTING ASSEMBLY**
**Hugh McDermott Connealy, Los Angeles, Calif.**
**(155 E. 157th St., Gardena, Calif.)**
**Filed Aug. 30, 1963, Ser. No. 305,686**
**3 Claims. (Cl. 4—58)**

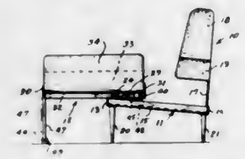


1. In valve closure means for use with a flush tank or similar tank having an outlet opening and an upstanding drainpipe, the improvement comprising: a valve closure member; a first pair of elements in the form of arms extending integrally from the valve closure member; a bushing having a second pair of diametrically opposed elements extending therefrom in the form of trunnions, said bushing being resilient and of a size to be mounted about the lower part of the drainpipe; said first pair of elements having apertures adjacent their ends and pivotally embracing said trunnions; said pairs of elements being resilient whereby said valve closure may be selectively released from said bushing; and at least one lateral projection adjacent the ends of said trunnions to prevent inadvertent removal of said arms.



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**3,167,788**
**CONVERTIBLE SOFA**
**William K. Murphy, Port Washington, and George J. Mercier, Bayside, N.Y., assignors to The Murphy Door Bed Company, Inc., New York, N.Y.**
**Filed Jan. 9, 1963, Ser. No. 250,346**
**2 Claims. (Cl. 5—17)**



1. A convertible sofa-bed comprising a fixed rectangular open frame, a movable rectangular frame, and mounting means by which said movable frame is mounted on said fixed frame for back and forth movement between sofa and bed positions; said fixed rectangular frame comprising a pair of spaced front and rear frame members connected together at the ends thereof by a pair of straight angle iron end frame members having the horizontal flanges thereof lowermost and extending inwardly of said fixed frame, a first pair of frame supporting legs secured to the front of said fixed frame and a second pair of frame supporting legs secured to the back of said fixed frame, said second pair of supporting legs being shorter than said first pair of supporting legs whereby said straight angle iron end frame members incline rearwardly and downwardly; said movable frame comprising a pair of spaced parallel front and rear frame members connected together at the ends thereof by a pair of angle iron end frame members having the horizontal flanges thereof uppermost and extending outwardly of said movable frame; and a pair of supporting legs secured to the front of said movable frame, said mounting means comprising each of the said angle iron end members of said fixed frame having a vertically disposed roller mounted thereon at the forward end thereof in position to engage the horizontally disposed flange of the adjacent angle iron end member of said movable frame, and a horizontally disposed roller mounted thereon adjacent to and rearwardly of the vertically disposed roller mounted thereon in position to engage the vertical flange of the adjacent angle iron end member of said movable frame; and each of the angle iron end members of said movable frame having a vertically disposed roller mounted thereon at the rear end thereof in position to engage the horizontally disposed flange of the adjacent angle iron end member of said fixed frame, and a horizontally disposed roller mounted thereon adjacent to and forwardly of the said vertically disposed roller mounted thereon in position to engage the vertical flange of said adjacent angle iron end member of said fixed frame; the rearward and downward inclination of the said end members of said fixed frame and the cooperative arrangement of the said vertically and horizontally disposed rollers being such that the supporting legs carried by said movable frame are maintained out of contact with the floor until the said movable frame has been moved forwardly to an over center position with respect to the vertically disposed rollers carried by the fixed frame; said movable frame being adapted to have a cushioned seat mounted thereon, and said fixed frame having vertically disposed supports which are adapted to have a bolster secured thereto.

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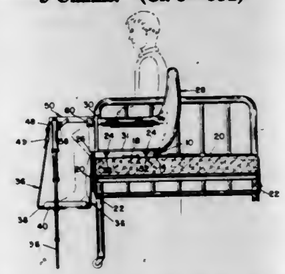
**3,167,789**
**PATIENT SUPPORTING AND CARRYING MEANS FOR OPERATING AND STRETCHER TABLES AND HOSPITAL BEDS**
**Edward T. Wicks, 133 3rd St., New City, N.Y.**
**Filed July 9, 1962, Ser. No. 208,377**
**4 Claims. (Cl. 5—81)**



1. Patient supporting and transferring means for patient supporting units such as hospital beds and stretcher and operating tables, comprising the combination of a plurality of segmented rails mounted on each of said units and a plurality of platform sections slidably mounted on the segmented rails of any one such unit for slidable movement onto the rails of any other of said units, each said unit being provided with a plurality of pairs of rails, the rails of each pair being disposed in spaced parallel relation to each other, and each said platform section being provided with a pair of parallel rail engaging bearings spaced for alignment with said pair of parallel rails, each parallel pair of rails of each unit being aligned with all of the other parallel pairs of rails on the same unit and the parallel rails of each unit being spaced for alignment with the parallel rails of any other unit, said platform sections being slidably movable on their respective rail engaging bearings from one pair of parallel rails to another on any one unit and from the parallel rails on any one unit to the parallel rails of any other unit.

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**3,167,790**
**INVALID BED SEAT**
**Gladys B. Hickey, 55 Wachusett St., Worcester, Mass.**
**Filed Dec. 28, 1962, Ser. No. 247,955**
**5 Claims. (Cl. 5—332)**



1. A chair construction comprising an independently movable seat member, an upstanding flange thereon, means on said flange for receiving a backrest, a backrest, fasteners on the backrest for cooperation with the backrest receiving means on the flange for temporarily releasably securing the backrest in position with respect to said flange, said backrest being completely removable from the seat flange, and means on said seat for securing the same in desired position on a bed.

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**3,167,791**
**MODULE BOAT**
**Motiejus Balciunas, 1825 S. May St., Chicago, Ill.**
**Filed July 30, 1964, Ser. No. 386,238**
**1 Claim. (Cl. 9—2)**

A lightweight transportable boat comprising: a plurality of floatation modules, substantially all of said modules each comprising a lightweight thin-walled self-floating vessel adapted to fit substantially within another of said modules and having a bottom, parallel opposing

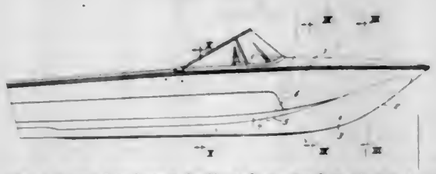
vertical end walls, and opposing outwardly sloping side walls having top and bottom edges, said side walls being spaced equally for each said module and said end walls being spaced differingly for each said module, at least one of said end walls of each said module completely and evenly abutting an end wall of an adjacent module, said plurality of modules so abutting forming an elongate boat configuration having continuous and parallel longitudinal lines formed by said top and bottom edges of said side walls; a separable rigid framework means external to said group of modules and continuously enclosing and confining said modules therein, said framework means in-



cluding a plurality of elongate longitudinal channel members having angularly intersecting interior surfaces, said angular surfaces of said longitudinal channel members continuously abutting only said longitudinal lines of said boat configuration, further channel members transverse said boat configuration abutting each end thereof and rigidly interconnecting said longitudinal channel members, and vertical connecting means securing said longitudinal channel members to one another, said abutting confinement of said modules within said framework means providing the sole means for the securing of said modules together into said boat configuration.

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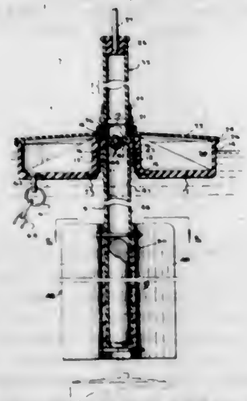
**3,167,792**
**BOAT HULL DESIGN**
**Thomas L. Faul, Skaneateles, N.Y., and Charles W. Wittholz, Silver Spring, Md., assignors to Lone Star Boat Company, Plano, Tex., a corporation of Texas**
**Filed May 16, 1963, Ser. No. 280,796**
**1 Claim. (Cl. 9—6)**



In a boat having a hull, a bow and a stern; a pair of parallel forward channels on the bottom of the hull beginning at a point near the bow, said channels being bordered on the outer edges by relatively steep walls; a central longitudinal keel disposed centrally of the hull separating the channels, the bottom of the hull on each side of the keel within the channels being sloped upwardly from the keel to intersect the relatively steep walls; the said channels becoming progressively shallower and flatter from the front to a point near the center of the length of the hull at which point they merge into substantially flat, shallow, inner planing surfaces which extend along the bottom of the hull to a point near the stern, the said inner planing surfaces being of uniform width from a point forward of the mid-point of the length of the hull; a pair of auxiliary planing surfaces, each beginning at a point on the outer side of one of the channels near the rear end thereof and extending along and parallel to the channels and inner planing surfaces, said auxiliary planing surfaces being disposed angularly upwardly and outwardly with reference to the channels and inner planing surfaces, and extending from a point forward of the mid-point of the length of the hull to the stern thereof.

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**3,167,793**
**BUOY**
**John B. Keats, Erie, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Oct. 29, 1963, Ser. No. 319,876**
**7 Claims. (Cl. 9—8)**



1. A buoy comprising a base fabricated wholly of resilient material and including a flat bottom, a wall rising from and extending about the perimeter of said bottom, and a hollow core rising from said bottom and spaced from said wall and having the upper portion projecting above the upper end of said wall, the space between said core and said wall forming a chamber open at its top, the core being out of communication with said chamber, a buoyant material disposed within said chamber, a removable cover fabricated wholly of resilient material of the type of said base resilient material and closing the open top of said chamber and having the outer boundary embracingly and sealingly secured to the upper end of said wall, said cover having a central opening receiving and extending snugly about the projecting upper end portion of said core with the part of the cover constituting the wall of said opening seating upon and sealingly secured to said projecting core portion, a socket member fabricated wholly of resilient material of a lesser resiliency than said base resilient material, said socket member being disposed within and fixedly supported in the upper end of the projecting core portion, a standard fabricated wholly of plastic material and disposed so as to extend through said socket member with a portion projecting out of and above said socket member and serving as a flagpole and with a portion projecting out of and below the bottom of said base and serving as a supporting element, means operatively connecting the standard to said socket member, a stabilizer fabricated wholly of plastic material and disposed about and fixedly supported on the portion of said standard serving as a supporting element, and weighting means operatively connected to said stabilizer.

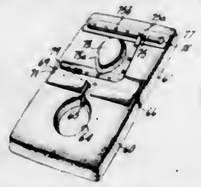
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**3,167,794**
**FOLDABLE YOKE LIFE PRESERVER**
**Belden B. Brown, Wallacks Point, Stamford, Conn.**
**Filed June 12, 1961, Ser. No. 116,498**
**1 Claim. (Cl. 9—338)**

A foldable, yoke-type life preserver comprising buoyant first and second body portions pivotally secured for movement relative to each other for positioning in adjacent side-by-side relationship and positionable relative to each



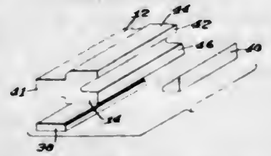
other in face-to-face relationship so that one body portion overlies the other in registry therewith so that said life preserver is foldable into a compact, buoyant, folded unit and in said side-by-side relation the life-preserver is in an extended condition and said body portions form substantially an extension of each other, flexible means pivotally connecting said two portions and dimensioned to allow said portions to overlie one another when in a folded condition and to be positioned forming a continuation of each other when the two body portions are in said extended condition, each of said body portions having the configuration of a quadrilateral in which at least two sides are substantially parallel, said first portion having a through opening spaced inwardly from the outer edges of said first body portion and extending through to the major face surfaces of the body thereof for receiving therein the neck of a wearer of the life preserver, said buoyant second body portion comprising a single, unitary,



buoyant prominence on a major surface of said second body portion, said prominence being disposed spaced inwardly from the outer edges of said second body portion in a position for insertion into said through opening in said first body portion and having circumferential dimensions defining a volume comprising a single center of buoyancy displaced relative to a center of buoyancy of said second body portion and displaced outwardly from said major face surface in a position outwardly from said major surface effective to position thet wearer in an upright position jointly with said portions and to develop a turning moment effective to rotate the wearer of said preserver to a position in which the face of the wearer is constantly kept in a direction away from the water in the event the wearer is in a rest condition in the water, and means to secure the life-preserver on the body of the wearer with said second body portion lower than said first portion and said prominence extending in a direction away from the front side of the body of said wearer.

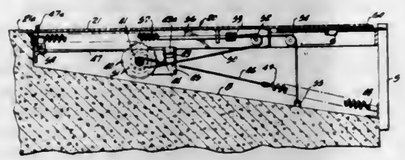
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**3,167,795**
**METHOD OF MAKING BEADED SHOE WELTING**
**Percy Wilton Greene, Whitman, Mass., assignor to Barbour Corporation, Brockton, Mass., a corporation of Massachusetts**
**Filed Sept. 19, 1962, Ser. No. 224,676**
**7 Claims. (Cl. 12—146)**




1. The method of making a solid one-piece beaded welting free of overlapped and cemented portions which comprises the steps of cutting and removing from one marginal edge of an elongated rectangular fillet a wedge shaped strip to provide two spaced portions having a welt extension, and then molding the precut fillet to form and shape said spaced portions to provide an upstanding bead and an inseam flange extending from said welt extension.

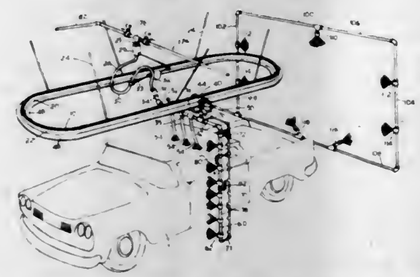
**3,167,796**
**DOCKBOARD UNIT**
**Richard C. Layne, P.O. Box 601, Lansdale, Pa.**
**Filed Apr. 24, 1962, Ser. No. 189,764**
**5 Claims. (Cl. 14—71)**



1. In a dockboard unit for installation in a dock having an inclined pit, a ramp pivotally mounted to the dock for swinging vertically and having its inner end pivoted and its outer end free for vertical swinging, ramp raising means including rocker members, each of which is pivotally connected at one end to the ramp and at the other end slidably supported on the pit incline and helical compression springs, one of which is anchored to the dock and the other end pivotally connected to the rocker member, ramp hold-down means including a tension spring anchored to the dock at one end, a cable connected to the tension spring at the end remote from the dock, a shaft rotatably journalled in the ramp, said cable wrapped around and secured to the shaft, a ratchet wheel fixed on the shaft, a pawl in selective engagement with the ratchet wheel and pivotally connected to the ramp, a drum fixed on the shaft, a cable secured to and wrapped around the drum at one end and anchored to the dock at the other end, and a spring biased pulley slidably mounted on the ramp and engaged by the said cable, a lip slidably mounted at the outer end of the ramp and adapted to move in a plane parallel to the plane of the ramp between a retracted and extended position, lip extending means actuated upon upward movement of the dockboard for extending the lip relative thereto including cable means attached to the dock at one end and to the lip at the other end, lip latching means including a rotatable lug on the ramp adapted to engage the lip in extended position and lip retracting means connected at one end to the ramp and at the other end to the lip.

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**3,167,797**
**APPARATUS FOR VEHICLE WASHING**
**Robert W. Hergonson, Syracuse, N.Y., assignor to The O. M. Edwards Company, Inc., Syracuse, N.Y., a corporation of New York**
**Filed May 23, 1962, Ser. No. 197,064**
**2 Claims. (Cl. 15—3)**



1. A vehicle washer comprising a tank for water detergent and an insoluble finely divided compound, having mixing means for maintaining the compound in suspension, a source of supply for rinse water, a high pressure pump having its inlet connected to said tank and source through valvular means, a source of low pressure rinse water having aspirator means for mixing a

small percent of a wetting agent with said low pressure water, a multiple nozzle high pressure spray pipe having a series of high pressure fan spray nozzles adapted to direct overlapping fan sprays upon the top and side surfaces of a vehicle, a second multiple nozzle low pressure spray pipe disposed adjacent said first named pipe and having a series of low pressure spray nozzles adapted to be directed toward the top and side surfaces of a vehicle, a valve connection between said multiple nozzle pipes, a travelling support for said spray pipes, a supply pipe disposed above said support and having connections to said pump and to said low pressure water, said connections each having check valves therein for flow toward said supply pipe, and a flexible hose and swivel connection connecting said supply pipe with said high pressure spray pipe.

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**3,167,798**
**COMBINATION MOP HEAD HOLDER AND BRUSH HOLDER**
**Eva Dryden, 6137 Morella Ave., North Hollywood, Calif.**
**Filed Feb. 18, 1963, Ser. No. 259,049**
**2 Claims. (Cl. 15—115)**



1. A combination mop head holder and brush holder means comprising: a base means having a forward direction and an opposite rearward direction and two oppositely aligned transverse directions substantially perpendicular to said forward and rearward directions, said base means being transversely elongated and being integrally provided with upwardly and rearwardly directed handle attachment means comprising bifurcated split socket means positioned for fastening attachment with respect to a corresponding mating forward end portion of a longitudinal operating handle means, said base means comprising a laterally elongated base member provided with clamping bar means positioned forward of said laterally elongated base member and being similarly laterally elongated and being relatively movably mounted with respect to the corresponding rearwardly adjacent laterally elongated base member for controllably clamping or releasing a mop head between said laterally elongated clamping bar means and said laterally elongated base member; and controllably operable actuating means effectively coupled between said laterally elongated clamping bar means and said laterally elongated base member for relatively forwardly and rearwardly moving same between a separated non-clamping relationship and a closing clamping relationship; said transversely elongated base means further comprising an integral brush holder means taking the form of a substantially flat horizontally transversely elongated and rearwardly directed brush holder panel member integral with said transversely elongated base member and forming therewith a rigid integral connection means at the forward edge of said brush holder panel member and at the lower edge of said transversely elongated base member in an angular relationship such as to include an acute angle between said upwardly and rearwardly directed socket means and said brush holder panel member, said base means comprising said transversely elongated base member and said transversely elongated rearwardly extending brush holder panel member comprising an integral plate of thin-sheet material integrally formed in said angular relationship with said rigid integral connection means therebetween; said brush holder panel member being provided with brush-engageable attachment means comprising threaded fastener means carried by said brush holder panel member and projecting vertically downwardly therefrom for controllably disengageable threaded fastening attachment with respect to the back of an auxiliary scrubbing brush means having a plurality of downwardly directed bristles extending from the lower surface thereof in a position for effective back-up supporting cooperating with a mop head during a floor mopping operation and for direct contact with an underlying horizontal floor surface during a floor scrubbing operation.

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**3,167,799**
**INTERCHANGEABLE BRUSH**
**Ruth R. McKinley, P.O. Box 14, South Houston, Tex.**
**Filed May 3, 1963, Ser. No. 277,857**
**1 Claim. (Cl. 15—176)**



A detachable hair brush and handle assembly comprising, in combination,

a body and a manipulating handle extending from one end thereof, said body having an elongated recess opening at one face thereof and including side, end, and bottom walls disposed in rectangular relation to each other to provide included angles,

a plurality of compressible pin type fastener elements on and perpendicular to the bottom wall of the recess, each of said elements disposed adjacent the corners and within said included angles, said elements being of less length than the depth of the recess,

a substantially rectangular bristle base whose sides and ends are angularly disposed to also define included angles to snugly and flushly mate with and fit into the said included angles of said recess, said base having fastener keeper openings also located in the corners defined by said included angles of the sides and ends thereof and adapted to be frictionally engaged by all of said fastener elements, whereby both angular and perpendicular movement between said base and body is resisted,

and an opening in the body of the handle exposing a portion of the base to permit the insertion of means for exerting a force applied only substantially parallel to the axes of said fastener elements to assist in effecting the separation of said base from the body.

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**3,167,800**
**WASHING BRUSHES**
**Louis J. Mundo, 1407 W. Pershing Road, Chicago 9, Ill.**
**Filed May 10, 1963, Ser. No. 279,516**
**5 Claims. (Cl. 15—179**

1. A rotatable washing brush having a pair of brush elements comprising,

(*a*) semi-circular cores having hollow elongated walls,

(*b*) means provided by said walls for receiving bundles of brush bristles so that the same will extend substantially perpendicular thereto,

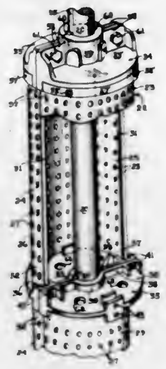
(*c*) an elongated rotatable shaft about which each hollow core is freely mounted,

(*d*) mounting means for mounting said cores in a coplanar relation with respect to each other and circumferentially spaced about the shaft,

(*e*) means provided by said mounting means for removably receiving the opposite peripheral edges of said hollow walls for mounting said cores thereto,



(*f*) means provided by said mounting means through which said shaft is freely journalled with the hollow walls of said cores circumferentially spaced thereabout, and



(*g*) means for connecting said mounting means and said cores carried thereby to said shaft for rotation therewith.

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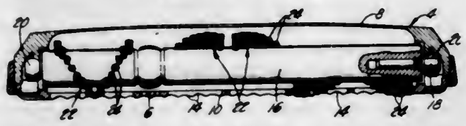
**3,167,801**
**SCRAPING DEVICES**
**Homi Behram Engineer, 11 Lilford Road, London SE. 5, England**
**Filed Mar. 21, 1963, Ser. No. 267,007**
**6 Claims. (Cl. 15—236)**



1. A scraping device comprising a body, a surface on said body having a plurality of spaced recesses therein which extend generally parallel to one another, a plurality of blades received respectively in said recesses and having sharp edges facing outwardly of said recesses, and elastic strips mounted on said body and passing through slots in said blades, the distance between said slots and the edges of said blades opposite their sharp edges being less than the depth of said recesses, whereby said blades are resiliently supported normally substantially perpendicular to said surface with their sharp edges projecting above said surface and their opposite edges spaced from the bottoms of said recesses.

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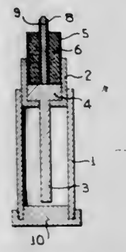
**3,167,802**
**VACUUM CLEANER BRUSH**
**Edmund C. Pratt, Santa Ana, Kenneth R. House, Norwalk, Randolph J. Smith, Anaheim, and Dennis G. Phillips, Buena Park, Calif., assignors to Interstate Engineering Corporation, Anaheim, Calif., a corporation of California**
**Original application May 8, 1962, Ser. No. 193,112. Divided and this application July 20, 1964, Ser. No. 383,577**
**3 Claims. (Cl. 15—383)**



1. In a power cleaner, a floor traversing head including a hollow casing having an elongated air inlet across the bottom thereof, a rotary brush in said casing including a spindle with bristles extending therefrom, the bristles being in V-shaped groups, each group of bristles extending only part of the length of the spindle and having its end in staggered misalignment relative to the adjacent end of an adjacent group of bristles around the spindle.

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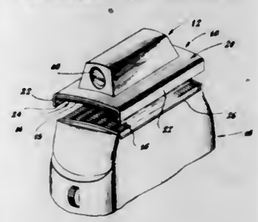
**3,167,803**
**FELT PEN**
**Shigeki Shimamura, 833 Kyodo-machi, Setagaya-ku, Tokyo, Japan**
**Filed Aug. 30, 1963, Ser. No. 307,763**
**1 Claim. (Cl. 15—528)**



A construction of felt pen in which felt padding (4) with tip (3) installed protruding downward is installed inside pen body fitting tube (2) which is fitted to the tip of ink tube (1), main pen part (6) formed by winding a piece of paper into a cylindrical form and whose outer surface except for the ends has been coated with setting resin (5) is inserted and installed on said padding (4), the entire inner surface of the middle hole (7) of pen body (6) is impregnated with setting resin, and one or more fine body (9) of twisted yarn with setting resin layer (8) formed similarly on the outer surface except for the ends is fitted freely withdrawable and insertable within said middle hole.

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**3,167,804**
**LUBRICATING ATTACHMENT FOR ELECTRIC RAZORS AND THE LIKE**
**Bert Arno Naumann, % U.S. Forest Service, Dillon, Colo.**
**Filed Oct. 28, 1963, Ser. No. 319,148**
**6 Claims. (Cl. 15—563)**



1. Apparatus for lubricating electric razors and the like comprising, in combination,

(A) a cover shaped to fit over the cutting head of an electric razor or the like,

(1) said cover having means for being detachably secured to the cutting head of an electric razor or the like,

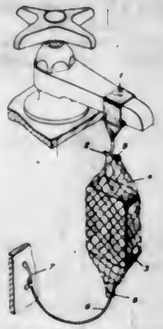
(B) a lubricant distributor pad on one side of said cover,

(C) a lubricant reservoir on said cover, and

(D) wick means connecting said reservoir to said distributor pad

whereby lubricant from said reservoir is passed to said distributor pad through said connecting means to lubricate the cutting head of an electric razor or the like when said cover is secured thereto.

3,167,805
NET ENCLOSED SOAP ARTICLE
Paul Zappinger, Bodenweg 12, Arlesheim, and Wernhard Huber, Pelikanweg 9, Basel, Switzerland
Filed Dec. 21, 1962, Ser. No. 246,423
Claims priority, application Switzerland, Dec. 22, 1961, 14950/61; February 20, 1962, 2128/62
12 Claims. (Cl. 15—568)



1. An article of manufacture comprising soap and net immediately ready for use and consisting of at least one bar of soap which is permanently enclosed in a net possessing resilient properties upon use of said soap and consisting of a hydrophobic, thermoplastic high polymer, said net having further a substantially smooth exterior on all sides and slip-fast meshes of an average width of 1 to 20 millimeters.

3,167,806
AUTOMATIC POWDER DUSTER
Lester L. Hogan, 3525 S. Staples St., Corpus Christi, Tex.
Filed May 6, 1963, Ser. No. 278,158
3 Claims. (Cl. 15—602)

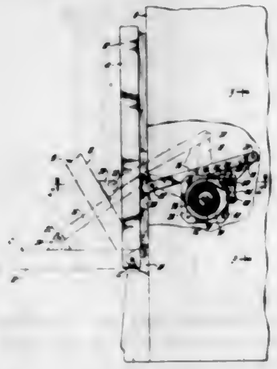


3. A neck duster of the class described, comprising, in combination a hollow container having a circular contour open at one end and closed at the other, a cover to close said open end, means in said closed end to hold a plurality of fine bristles, an opening centrally located in said closed end, and a powder dispensing tube frictionally held in said opening and slideable therein, one end of said tube extending beyond said container on the outside and having a head with holes among the bristles, with the opposite end extending into said container being provided with a gatherer.

3,167,807
DOOR CHECK AND HOLD-OPEN
Theodore A. Schaad, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,652
6 Claims. (Cl. 16—85)

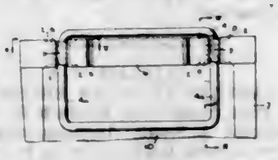
6. In combination with a door hinged and movable between closed and opened positions, a door hold-open mechanism comprising

a folding linkage pivotally connected and extensible between said door and a door way defining supporting structure in spaced relation to the pivotal axis of the door and including a link having detented cam surface thereon,



a bell crank detent lever pivotally support in spaced relation to said cam surface and engageable therewith to provide intermediate door opened positions, and spring means operably connected to progressively bias said lever into firmer door supporting and hold-open maintaining engagement with the detented cam surface as the door is swung between its closed and opened positions.

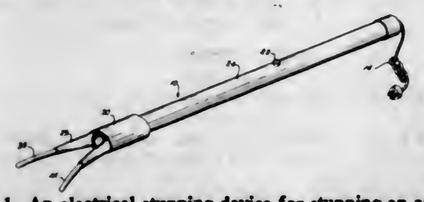
3,167,808
HANDLE SUPPORT FOR A STORAGE BATTERY CONTAINER
Hans-Georg Lindenberg and Rolf Seyberlich, both of Hannover, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Nov. 21, 1961, Ser. No. 153,916
Claims priority, application Germany, Nov. 25, 1960, A 36,126
5 Claims. (Cl. 16—125)



1. Handle support means for a storage battery container having a thickened upper rim portion, comprising a handle having two legs, a guide member for each of said handle legs, the guide members being arranged in a pair of recesses in said rim portion, the recesses extending substantially perpendicularly through the rim portion and having a transverse cross-section which narrows towards the surface of the rim portion, and clamping means holding the guide members in said recesses against vertical displacement, the guide members holding the handle legs in said recesses and conforming to said recesses whereby the guide members are held against outward lateral displacement by the narrow section of the recesses at the surface of the rim portion.



3,167,809
ELECTRICAL STUNNING DEVICE
Wilbur G. Rollins, Rochester, N.Y., assignor to Tobin Packing Co., Inc., Rochester, N.Y., a corporation of Delaware
Filed July 26, 1963, Ser. No. 297,907
2 Claims. (Cl. 17—1)



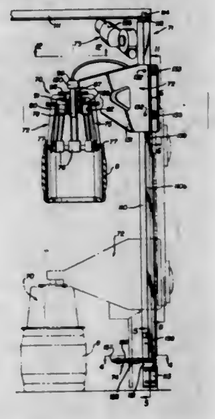
1. An electrical stunning device for stunning an animal prior to slaughtering comprising: an elongated tubular handle made of dielectric material and having first and second end portions and front and rear faces with the first end portion serving as a gripping area to be gripped by one hand of the operator and with an intermediate portion serving as another gripping area to be gripped by the second hand of the operator; a pair of electrodes made of an electrically conducting material mounted on said tubular handle and having prong-like portions projecting from the second end of the handle in diverging relationship and being curved towards the front of the handle and terminating in forwardly and outwardly facing ends spaced apart a distance sufficient to approximately span the area of the head between the base of the ears of the animal to be stunned; a control box with transformer means mounted therein with a pair of secondary coils, one serving as a source of relatively high voltage electric current and the other serving as a source of relatively low voltage electric current and having a relay with an electromagnet in the circuit of the low voltage secondary coil and a relay switch actuated by the electromagnet in the circuit of the high voltage secondary coil; electrical leads extending through the tubular handle and connected to the electrodes at the second end portion of the tubular handle and having means at the first end portion to connect the leads to the circuit of the relatively high voltage secondary coil so as to be controlled by the relay switch; and a control switch mounted on the rear face of the handle in the intermediate gripping area thereof and having leads for connecting it to the circuit of the low voltage secondary coil in series with the relay electromagnet, said control switch being spring biased so as normally to be maintained in open position so that when the operator grips the said intermediate gripping area to press the electrodes against the head of an animal to be stunned the control switch is closed to actuate the relay and energize the electrodes, and when the pressure is released the control switch is opened and the relay is deactivated and the electrodes deenergized.

3,167,810
TIRE CARCASS LOADING APPARATUS FOR TIRE CURING PRESS
Leslie Edward Soderquist, Silver Lake, Ohio, assignor to The McNeil Machine & Engineering Company, Akron, Ohio, a corporation of Ohio
Filed May 17, 1961, Ser. No. 110,683
6 Claims. (Cl. 18—2)

1. Apparatus including a tire band holder for use with a press having separable upper and lower mold sections for shaping and curing unvulcanized tire bands, said holder being operative to grip the inside surface of a tire band while said band is carried into registry with a lower mold section and loaded thereon prior to the shaping and curing operation, said apparatus further including;

a vertically extending and rotatable support permanently located at the front of the press and adjacent a lower mold section, said support having surfaces substantially parallel to the axis of said lower mold section;

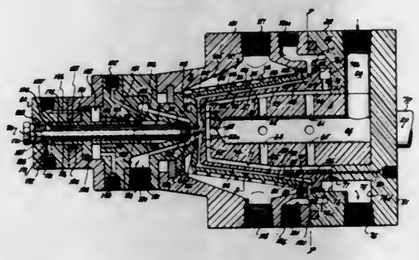
said band holder being carried by a non-extensible jib arm extending radially of said support and being movably mounted thereon by a carriage adapted to engage said parallel support surfaces;



means to rotate said support to a predetermined position so that said band holder is aligned concentric with said axis of the lower mold section; and,

additional means to move said carriage longitudinally along said parallel support surfaces just before and during release of said band onto said lower mold section.

3,167,811
APPARATUS FOR FORMING THIN WALL ARTICLES OF MANUFACTURE FROM EXPANDABLE FUSIBLE PLASTIC
Robert A. Kraus and Edmund J. Kraus, both of 1024 Oak Ave., Duarte, Calif.
Filed Apr. 14, 1960, Ser. No. 22,165
2 Claims. (Cl. 18—5)



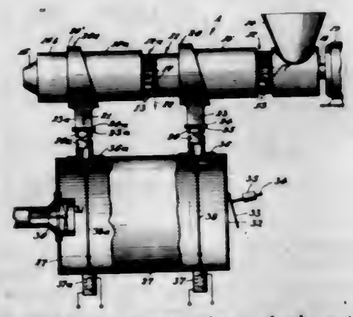
1. An apparatus for forming a thin-walled article of manufacture by the expansion and fusion of expandable fusible plastic beads comprising: a mold apparatus housing, said housing being longitudinally separable along a transverse parting line and including a male mold housing and a female mold housing, said male and female mold housing being formed of insulating material; a male mold element carried by said male housing and a female mold element carried by said female mold housing, said male and female mold elements being mateable at the mated position of said male and female housing to provide a mold cavity defining by the interior walls thereof the configuration of the article to be molded; a vacuum air passage defined by said mated male and female mold elements in communication with said cavity proximate one end thereof; a plastic inlet opening to said cavity at the second end thereof opposite said one end, said

female mold element defining said opening, said opening extending axially into said cavity, said opening having a cross-sectional configuration substantially less than the cross-sectional configuration of said second end of said mold cavity, said female housing defining a plastic inlet passage therethrough in communication with said plastic opening; means for admitting said plastic beads into said plastic inlet passage; a longitudinally reciprocal plunger mounted in said female housing and movable from a first to a second position, said plastic inlet passage being in communication with said plastic inlet opening at said first position of said plunger, said plunger at said second position thereof closing said inlet opening; means for moving said plunger selectively from said first to said second position; means for selectively extracting air from said cavity through said vacuum passage when said plunger is in said first position to thereby create a pressure in said cavity substantially less than atmospheric to draw said beads from said plastic inlet passage into said cavity; means for selectively heating said plunger proximate said inlet opening; means for exhausting air through said inlet passage at said second position of said plunger to exhaust beads therefrom back to said bead admitting means; a first fluid passage defined by said female mold housing surrounding said female mold element; a second fluid passage defined by said male mold housing surrounding the interior wall of said male mold element; means for selectively conducting heated fluid to said passages to raise the temperature within said cavity to a temperature above the expansion and fusion temperature of said beads; means for selectively conducting cooling fluid to said passages to lower the temperature within said cavity to a temperature below the expansion and fusion temperature of said beads; and means for separating said mold housing to remove the molded article from said apparatus.

### 3,167,812
### APPARATUS FOR CONTROLLING THE TEMPERATURE OF PLASTIC MATERIAL IN AN EXTRUDING MACHINE

Gerd von Bennigsen, Gelsenbrunn, Post Glicking, Germany, assignor to Krauss-Maffei Aktiengesellschaft, Munich-Allach, Germany

Filed July 28, 1961, Ser. No. 127,731
9 Claims. (Cl. 18—12)

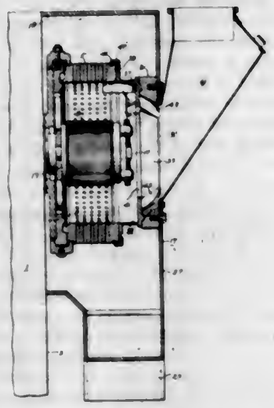


1. A machine for transforming a plastic material into an extruded article, said machine comprising, in combination, an elongated extrusion cylinder having a longitudinal axis and comprising material admitting means at one end thereof, extrusion die means at the other end thereof, and at least two groups of external annular fins disposed intermediate said material admitting means and said die means and located in planes substantially perpendicular to said axis; a plurality of heating means each disposed about and defining with one of said groups of fins a plurality of separate arcuate channels each having an intake and an outlet angularly spaced from said intake by substantially less than 360 degrees; and a cooling arrangement comprising a single coolant receiving tank and means for conveying coolant separately from said coolant receiving tank to the intakes of channels defined by each of said groups of fins whereby stream of coolant flow through said channels in planes perpendicular to said axis and are discharged through said outlets after intensive and short-lasting exchange of heat with the corresponding portions of the cylinder and the heating means.

### 3,167,813
### EXTRUSION MILL AND FEEDER MEANS THEREFOR

James T. Keefe, San Carlos, Calif., assignor to California Pellet Mill Company, San Francisco, Calif., a corporation of California

Continuation of application Ser. No. 773,449, Nov. 12, 1958. This application Sept. 10, 1962, Ser. No. 223,577
6 Claims. (Cl. 18—12)



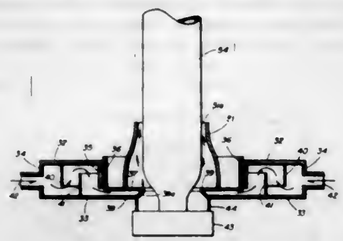
1. An extrusion mill having a cylindrical die rotatably supported with its axis substantially horizontal to provide a die chamber, extrusion means within said cylindrical die, means enclosing said die and having a feed opening therein, means providing a conical surface affixed to and flaring inwardly from said die enclosing means, substantially concentric with the feed opening therein, and with said inwardly flaring conical surface in substantially axial alignment with said die, a feeder blade assembly including a plurality of blades arranged on a circle concentric with the free end of said die, with each blade directed spirally along and in proximity to but out of contact with said inwardly flaring conical surface, and means for rotating said feeder blade assembly relative to said conical surface during rotation of said die to throw material from said conical surface into said cylindrical die between the internal periphery thereof and said extrusion means.

### 3,167,814
### APPARATUS FOR FORMING BLOWN TUBULAR FILMS

Herbert O. Corbett, Canandaigua, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed July 5, 1961, Ser. No. 122,028
8 Claims. (Cl. 18—14)

1. An apparatus for forming tubular films of molten thermoplastic materials, comprising, in combination with a die defining an annular orifice, an annular plenum chamber; a venturi throat having a relatively constant diameter portion; and means for passing a gaseous heat exchange medium through said venturi throat, at high velocity, by way of said plenum chamber, whereby to produce in said throat, a zone of subatmospheric pressure; means for supporting said plenum chamber and throat in closely spaced, radially closed relation to said die and



said orifice; and means for drawing said tube through said venturi throat.

### 3,167,815
### CAN CARRIER CLIP FORMING MACHINE

Gerald T. Erickson and Richard Erickson, Westport, Conn., assignors to Snap Pac Corporation, Houston, Tex.

Filed Oct. 20, 1961, Ser. No. 146,635
6 Claims. (Cl. 18—19)



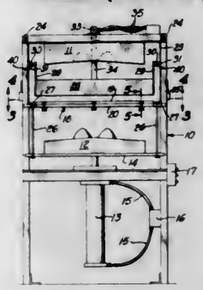
1. A can carrier clip forming machine for automatically and continuously forming can carrier clips with opposing feet on opposite ends of a central connecting portion from flat blanks, the machine comprising; means for feeding can carrier clip blanks from a stack of flat blanks one at a time, conveyor means for continuously transporting the blanks in fixed spaced apart relationship, a retaining runner overlying one edge of the conveyor and the blanks positioned therein with the edge of the runner at a bend line in one foot of the blank, a heating element in the retaining runner for heating the blank to a forming temperature in the vicinity of the bend point as the blanks are being transported by the conveyor means thereunder, a clip raising rail positioned on the side of the conveyor opposite the retaining runner gradually raising and approaching the edge of the runner in the direction of movement of the conveyor means so that the rail contacts the clip blank and forces the clip blank to bend at its heated bend line to create one foot on the blank and leave the remaining portion of the blank upstanding, another heating element in the edge of the clip raiser rail contacting the upstanding partially formed blank and heating this portion of the blank in the area of a bend line for forming a top foot, and a stationary top folding runner overlying the upstanding blank and contacting the top edge of the blank to gradually form the top foot in the blank by contacting the blank and causing it to bend about the heated bend line while the blank is being continuously conveyed by the conveyor means.



### 3,167,816
### APPARATUS FOR MAKING BRASSIERES AND OTHER GARMENTS

Jack E. Howard and Lewis A. Kaplan, Los Angeles, Calif., assignors to International Fabric Molders, Inc., Los Angeles, Calif., a corporation of California

Filed Nov. 30, 1961, Ser. No. 156,021
4 Claims. (Cl. 18—19)

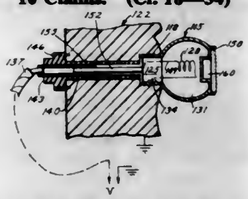


2. An apparatus for making a brassiere part or the like from flat thermoplastic sheet material which is unsuitable for use in hot molds comprising a male mold having portions projecting vertically above the remainder thereof, said male mold being mounted for vertical reciprocal movement, a frame mounted above said male mold, pin means adjacent the periphery of said frame for holding a sheet of flat thermoplastic sheet material on said frame, means normally maintaining said male mold in lowered position, counterweight means connected to said frame and normally urging said frame upwardly, means connecting said frame to said mold whereby said frame is restricted from upward movement until said mold is moved upwardly, a pair of tracks extending laterally away from said frame, a heater rack slidably mounted on said tracks, means for moving said heater rack to two positions, in one of which said rack is adjacent and parallel to said frame and in the other of which it is moved laterally away from said frame, a female mold formed complementarily to said male mold and fixedly mounted above said frame a sufficient distance to permit the lateral movement of said heater rack between said frame and said female mold, said heater rack adapted to heat the material on said frame and then be retracted to permit the movement of said male mold toward said female mold, said frame moving upwardly with said male mold, and stop means for limiting the upward movement of said frame, whereby the upwardly projecting portions of said male mold will contact portions of said material before the remainder of said material is contacted to cool said first contacted portions and prevent undue stretching of said first contacted portions.

### 3,167,817
### BLOW MOLD INSERTS FOR MOLDING CAVITIES

Albert M. Zalkind, Arlington, Va., assignor, by mesne assignments, to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York

Filed Apr. 13, 1962, Ser. No. 187,344
10 Claims. (Cl. 18—34)

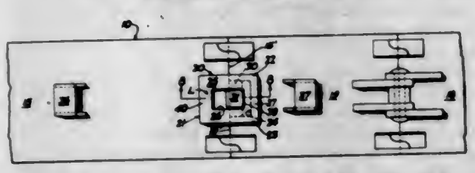


10. In a blow molding apparatus, the combination of a mold block and an insert for molding a cavity in a body

being molded in said mold block, means for translating said insert relative to said mold block wherein said insert is simultaneously rotated, said insert being provided with relatively fixed cutting means whereby said rotation of said insert is operative to effect cutting of material molded therearound.

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**3,167,818**
**LATCH FOR CURING RIM**
White Rose, Hayward, Calif., assignor to Elrick Industries, Inc., Oakland, Calif.
Filed Mar. 19, 1962, Ser. No. 180,546
1 Claim. (Cl. 18—43)

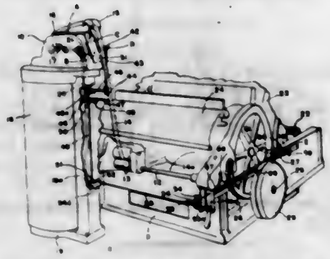


A latch for the closing joint of a collapsible curing rim in which a pair of aligned matching rim segments have a closeable segment swingable into normally end abutting relation to the other terminal segment to resist separation, each rim segment having a lug projecting from its back adjacent the abutting end thereof requiring the use of a manually operated tool consisting of a pair of connected lever members to simultaneously engage the lugs and push the same apart to separate the abuttable segments; the latch comprising a male latch member having a mounting portion secured on the back of the said other terminal segment between the related socket and the adjacent end of such terminal segment and a tongue on said mounting portion extending beyond the end of such terminal segment, a female member having a flat plate portion provided with downwardly extending flanges along both sides to substantially midway the ends of such plate portion secured to the back face of the closeable segment with the midway ends of said flanges aligned with the adjacent end of such closeable segment and providing a socket between the latter and said flat plate portion for receiving said tongue when the segments are aligned, said flat plate portion extending beyond the adjacent end of the closing segment such as to normally obstruct the latter from swinging into alignment with the terminal segment, the flat plate portion having an open center formed therein half overlying said socket and half beyond the adjacent end of the closing segment and having a bight at the end of said flat plate adapted to rest upon the mounting plate of said male latch member when the segments are separated, and a knob formed on the outer surface of said tongue half the size of the center opening in said flat plate portion and adapted to extend into that half of said center opening of said flat plate portion extending beyond the adjacent end of the closing segment when the segments are separated, and the bight of said first plate portion engages said mounting plate for aligning the segments for abutting relation and for engaging said knob to limit separation of the aligned segments a distance not exceeding the projection of said tongue beyond the end of the terminal segment.

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**3,167,819**
**COILER HEAD STOP MOTION**
Howard W. Bradburn, Rte. 4, Marion, N.C.
Continuation of application Ser. No. 189,431, Apr. 23, 1962. This application Aug. 6, 1964, Ser. No. 389,530
2 Claims. (Cl. 19—25)

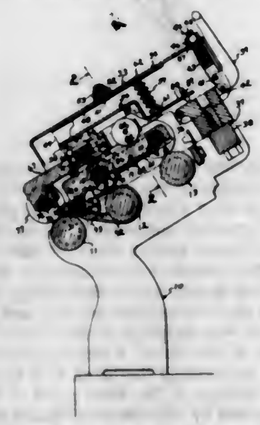
1. In a textile machine and the like having a coiler head with a trumpet compressing a strand fed thereto by feeding means, the improvement including, an arm supporting the trumpet, a pivotal mounting for said arm carried by the coiler head, first resilient means exerting force upon the arm urging the trumpet upwardly against the force exerted thereon by the strand, the force exerted by the strand normally maintaining the trumpet in a depressed position, depending linkage means carried by the arm urged downwardly by said first resilient means,



second resilient means also normally urging said arm downwardly and released by movement of said linkage means responsive to upward movement of the arm by said first resilient means upon the occurrence of a faulty strand, and mechanical means actuated by said second resilient means when released to deactivate the feeding means to discontinue the feeding of the strand to the trumpet.

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**3,167,820**
**TOP ROLL ASSEMBLY FOR FIBER ATTENUATING APPARATUS**
Burrel C. Cole, 1328 13th St., Columbus, Ga., assignor of fifty percent to Charlton H. Williams, Columbus, Ga.
Filed June 4, 1962, Ser. No. 199,910
11 Claims. (Cl. 19—253)



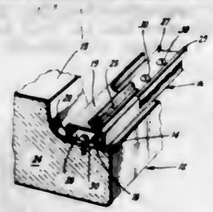
1. In a top roll assembly for fiber attenuating apparatus including a supporting roll stand, top rolls and bottom line rolls

(*a*) an over arm having a housing of generally inverted U-shape as viewed in cross section,
(*b*) means pivotally supporting said over arm adjacent the rear of said roll stand whereby said over arm extends forwardly thereof,
(*c*) adjustable means to lock said over arm against upward movement relative to said roll stand,
(*d*) an inwardly projecting adjustable bracket carried by the inner surface of said over arm,
(*e*) means to hold said bracket in selected positions relative to said over arm,
(*f*) a first pressure lever pivotally connected adjacent one end to said bracket,
(*g*) a spring member interposed between the other end of said first pressure lever and said bracket to exert force in a direction to move said other end away from said bracket,
(*h*) and a second pressure lever pivotally connected intermediate its ends to said first pressure lever between said spring member and the point said first pressure lever is connected to said bracket and disposed to exert downward force on the top rolls.



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**3,167,821**
**CABINET STRUCTURE**
Thomas R. Clark, Blue Bell, and William J. Clark, Philadelphia, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,240
2 Claims. (Cl. 20—35)

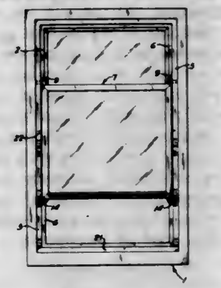


1. Refrigerator cabinet door construction comprising: a door outer panel having a substantially planar inturned flange; a substantially non-resilient door liner having a substantially planar peripheral edge portion overlying said flange in contact therewith and spaced inwardly from the periphery of the door outer panel; door sealing means of flexible and resilient material having a bead portion seating on said flange and spaced from the recited peripheral edge portion of said liner; a clamping strip disposed in spaced overlying relationship with respect to said planar flange, said strip including a pair of spaced edge portions and a portion intermediate said edge portions, at least a part of said sealing means bead portion being interposed between one edge portion of said strip and said flange, said peripheral edge portion of said door liner being interposed between said other edge portion of said clamping strip and said flange, and said intermediate portion of said strip being spaced in its entirety from the confronting flange; and holding means extending from said intermediate portion of said clamping strip into holding engagement with said planar flange and urging said intermediate portion toward said flange, said holding means in such position being effective continuously to urge said one edge portion of said strip pivotally against said bead portion about said liner edge portion as a fulcrum.

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**3,167,822**
**DOUBLE HUNG WINDOW**
Alexander J. Biro, Indiana, Pa., assignor to Season-All Industries, Inc., Indiana, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1963, Ser. No. 305,759
7 Claims. (Cl. 20—52)

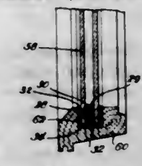
1. A double hung window comprising a window frame, upper and lower window sash disposed in said frame, means supporting the upper sash in the frame, opposite sides of the frame being provided with vertical side channels formed between inner and outer side flanges offset inwardly from the upper sash, the inner surfaces of the outer flanges normally being engaged by the outer surface of the lower sash, the distance between the inner flanges being greater than the width of the lower sash, horizontal pivot members secured to the top of the lower sash and projecting laterally therefrom into said channels and slidable vertically therein, supporting members rigidly secured to the lower part of the lower sash and projecting laterally therefrom into said channels and movable vertically therein, said inner flanges being provided below said pivot members with vertically spaced pairs of notches, deflecting members in the channels at the tops of the notches to prevent said supporting members from being raised inside the channels above the notches, the



notches being formed to permit a pair of said supporting members to leave the channels to enable the bottom of the lower sash to be swung inwardly prior to raising the sash high enough for the supporting members to be swung back into the channels through a higher pair of said notches, and stops inside the channels below said higher pair of notches for supporting said supporting members in order to support the raised lower sash.

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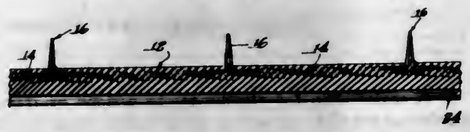
**3,167,823**
**PANEL MOUNTING STRUCTURE**
Albert J. Palfey, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 20, 1961, Ser. No. 153,411
6 Claims. (Cl. 20—56.5)



1. In a panel mounting structure having a sheet-like element supported in a groove means of a frame, a resilient gasket extending around the periphery of the sheet-like element for support within the groove means of the frame, and a sealant extending about the sheet-like element and inwardly spaced from its periphery in engagement with a wall of the groove means, the gasket, and the sheet-like element, said sealant being non-adhering to said gasket but being adhesively bonded to the sheet-like element and the groove means of the frame.

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**3,167,824**
**SPONGE RUBBER WEATHERSEAL**
John J. Berwanger, Hinsdale, Ill., assignor to Hood Sponge Rubber Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 12, 1961, Ser. No. 102,617
3 Claims. (Cl. 20—69)

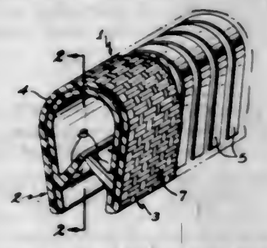


1. A longitudinally yielding sealing strip for attachment to a panel having a series of apertures spaced apart

therein; said sealing strip comprising a resiliently deformable, elongate body of rubber-like material, an elongate helical coil spring reinforcing member embedded in and embraced by said body, a plurality of spaced apart attachment clips for securing said sealing strip to the associated panel, each attachment clip including a head portion extending outwardly from said body for insertion into the respectively associated apertures in the panel and a pair of oppositely extending elongate foot portions imbedded in said body material, each foot portion being juxtaposed with the inner surfaces of a plurality of next adjacent coils of said coil spring on opposite sides of the head portion in generally straight line arrangement to provide a mechanical interconnection with the adjacent coils as well as the imbedded connection with the body material resisting relative separation between each clip and the spring while permitting swinging of each clip through a substantial angle along an axis substantially parallel to the longitudinal axis of the spring.

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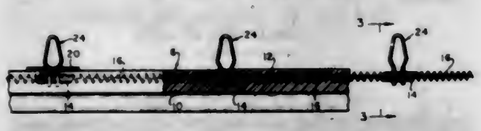
**3,167,825**
**STRIP STRUCTURES**
**Robert A. Zoller, Bay Village, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Nov. 13, 1961, Ser. No. 151,915**
**9 Claims. (Cl. 20—69)**



1. A generally channel-shaped strip structure for embracing engagement with and clamping retention on an edge flange or other support therefor, said strip structure comprising a core and a covering therefor, said core comprising a series of individual, entirely disconnected generally channel-shaped elements of resilient sheet metal and of relatively narrow strip-like form, said elements being disposed transversely of said strip structure in closely spaced relation therealong, and opposed projections carried by said core covering for clamping engagement with the edge flange or other support on which the strip structure is to be mounted in use thereof.

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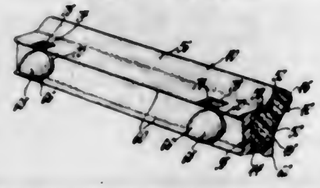
**3,167,826**
**SPRING AND ATTACHING DEVICE FOR SEALER STRIP**
**Ernest J. Watzl and Thomas W. Campbell, Dayton, Edward L. Zarowoste, Waynesville, and George W. Tomashot, Dayton, Ohio, assignors to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware**
**Filed Nov. 26, 1962, Ser. No. 240,064**
**2 Claims. (Cl. 20—69)**



1. A sealer strip for attachment to a door or frame member or the like, comprising an elongated strip formed of resilient material such as rubber, an elongated wire helix embedded in said strip and extending substantially from end to end thereof, said helix having spaced along its length, alternate sections of substantially continuous cylindrical exterior surface and relatively high rigidity in which the convolutions are substantially abutting, and other alternate sections of relatively great flexibility in which the convolutions are relatively widely spaced, and a plurality of attaching devices each having a part at least partially surrounding one of said first sections of the helix and having another part extending outside the resilient strip and shaped for attachment within a hole in the door or frame member.

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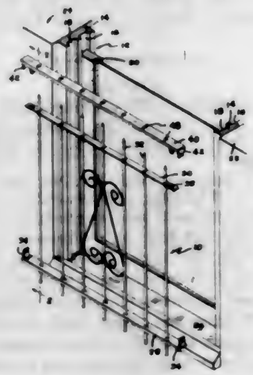
**3,167,827**
**VINYL WEATHERSTRIP**
**Harry R. Alley, Anderson, Ind., James H. Wernig, Birmingham, Mich., and Lyle N. Williams, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Continuation of application Ser. No. 17,639, Mar. 25, 1960. This application Jan. 24, 1963, Ser. No. 254,047**
**4 Claims. (Cl. 20—69)**



1. A flexible sealing strip, comprising, a resilient elongate body of plastic resin foam material, said body including a base section and an integral sealing lip projecting angularly from the upper wall of said base section, and having an outer coextensive layer of substantially non-porous plastic resin material formed integrally therewith so as to encase said body therewithin, a plurality of hollow mounting buttons of substantially non-porous plastic resin material projecting from the lower wall of said base section, said base section including a lateral passage located below said sealing lip and opening to one side wall of said base section and to the interior of said buttons to permit the insertion of a tool into the interior of said buttons.

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**3,167,828**
**SECURITY GUARD FOR WINDOWS**
**Clarence L. Hutchinson, Jr., 1657 Springhill Ave., Mobile 17, Ala.**
**Filed Jan. 24, 1963, Ser. No. 253,588**
**4 Claims. (Cl. 20—71)**

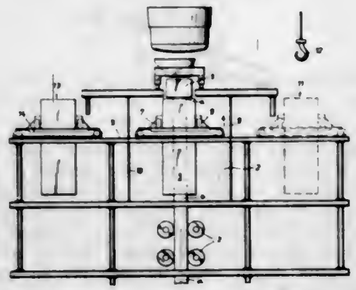


1. In combination with a framed window opening, a security grill comprising, vertically spaced horizontal cross rails positioned laterally of the framed opening, vertical bars secured in horizontally spaced relationship between said cross rails, flanged window frame engaging abutments fixed on the remote ends of the lowermost cross rail, a third rail telescoping said vertical bars and disposed in juxtaposition with the uppermost cross rail, window frame engaging flanged abutments fixed on the remote ends of the third rail element, and padlock receiving eyes on said third rail projecting through laterally spaced openings in the uppermost cross rail.



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**3,167,829**
**APPARATUS FOR CONTINUOUS CASTING OF METAL**
**Walter Hess, Duesseldorf, Germany, and Enzo Colombo and Erik Olsson, Zurich, Switzerland, assignors to Concast Ag., Zurich, Switzerland**
**Filed Feb. 20, 1962, Ser. No. 174,609**
**4 Claims. (Cl. 22—57.2)**

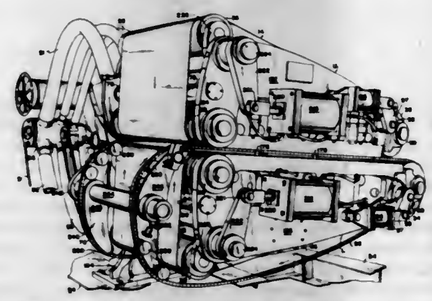


1. Apparatus for use in a continuous casting plant having a continuous casting mold to solidify the surface of molten material poured therein into a strand issuing therefrom and drawn therefrom by lowering rolls which comprise guiding means positioned between said mold and said rolls and adjacent said mold to receive the strand issuing from said mold and to guide and support the surface of said strand as it leaves the mold, cooling means for cooling said strand as the strand passes through and is supported by said guilding means, said guiding means and said cooling means being assembled as a unit on a common frame, means for moving said common frame including said guiding and cooling means transversely to the longitudinal axis of the issuing strand to a position giving access to said unit, and means for precisely adjusting the alignment of said unit with respect to said mold, said last named means comprising rails extending transversely of the longitudinal axis of said issuing strand, a truck being mounted on said rails and movable thereover, said unit being supportably coupled to said truck, and means for adjusting said unit by movement in the direction of said rails, and by movement in a direction transverse both to the axis of said strand and to the direction of said rails to precisely adjust the alignment of said unit with respect to said mold.

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**3,167,830**
**CONTINUOUS METAL CASTING APPARATUS**
**Richard Hazelett and Robert William Hazelett, Mallets Bay, Winooski, Vt., assignors to Hazelett Strip-Casting Corporation, Winooski, Vt.**
**Filed Dec. 8, 1960, Ser. No. 74,520**
**15 Claims. (Cl. 22—57.4)**

1. Apparatus for continuously casting molten metal comprising first and second moving flexible belts, means supporting and driving said belts for movement in the same direction at the same speed in spaced face-to-face relationship defining a casting region therebetween including first and second aligned rolls positioned on opposite sides of the casting region at the input end thereof, said rolls being directly opposed to each other at the input end of the casting region and having deep circumferential grooves therein with high narrow closely spaced ridges between said deep groves, said belts curving around said first and second rolls, respectively, in travelling toward the casting region and defining the input end of the casting region between said first and second rolls, a container of molten metal positioned closely adjacent to the curving portions of both of said belts and closely adjacent to the input to the casting region, a short molten metal injector nozzle communicating with said metal container and inserted into the input end of the casting region between the curving areas of said belts travelling around said respective rolls, a source of liquid coolant under pressure, a first plurality of curved coolant feed tubes communicating with said source and fitting into the deep circumferential grooves of the first roll beneath the curving inner surface of the first belt for flowing coolant along its curving surface in a region near to said nozzle, a second plurality of curved coolant feed tubes communicating with said source and fitting into the deep circumferential grooves of the second roll beneath the curving inner surface of the second belt for flowing coolant along its curving surface in



a region near to said nozzle, said first and second plurality of coolant feed tubes having an oval shape transversely to their length and nesting deeply into said deep circumferential grooves with the larger dimension of said oval shape extending down deeply into said grooves, said closely spaced high narrow ridges providing closely adjacent points of support for the curving areas of the belt, and said oval coolant feed tubes providing a large coolant carrying capacity while resisting straightening under the pressure of the coolant flowing therethrough.

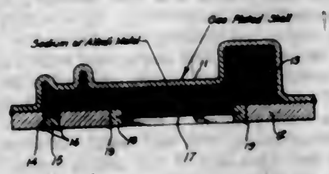
10. In a machine for continuously casting wide thin shapes from molten metal having a pair of endless flexible moving casting belts with portions of the belts travelling in the same direction in spaced face-to-face relationship defining a casting region therebetween, at least three rolls for supporting each belt, belt-tensioning means comprising one of said rolls having the belt flexed therearound and having the stretches of the belt on either side of said roll defining an acute angle, pivoted arm means supporting said roll, and driving mechanism for moving said arm means, the axis of said arm means approaching the bisector of said acute angle when said belt is fully tensioned.

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**3,167,831**
**GAS PLATED METAL SHELL MOLDS AND PATTERNS**
**William C. Jenkin, Dayton, Ohio, assignor to Union Carbide Corporation, New York, N.Y.**
**Filed Dec. 11, 1961, Ser. No. 158,296**
**2 Claims. (Cl. 22—136)**

1. A mold for making gas plated metal patterns and shapes comprising a hollow open sided metal shell formed by gas plating, a backing plate closing the open side of said shell and welded to the outer edges thereof

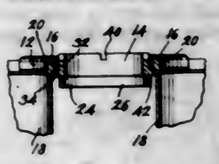
and thereby forming a hollow mold, said hollow mold being completely filled with a molten metal mass, and



said backing plate having a pressure expansible diaphragm for relieving expansion pressures.

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3,167,832
CLAMP-TYPE RIMMED CAN HOLDER
Theron M. Holland, 390 Colorado Blvd., Denver, Colo.
Filed Sept. 13, 1962, Ser. No. 223,420
8 Claims. (Cl. 24—81)

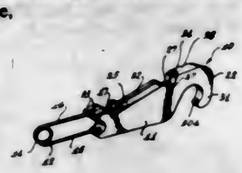


1. A clamp-type holder for use in releasably interlocking two or more substantially identical cylindrical rimmed cans together in assembled relation which comprises, a rim-engaging element having the underside thereof provided with at least three non-intersecting concave circular grooves of the same radius that merge into one another at their extremities defining points of tangency therebetween which cooperate to locate the corners of a regular polygon having sides equal in length to the diameter of the can rims, each of said grooves being of a width and depth adapted to receive a segment of the can rim and restrain same against lateral movement, a latch element carried by the rim-engaging element for rotational movement relative thereto about an axis passing through the center of the polygon and essentially normal to the plane thereof, and a lug corresponding to each rim-receiving groove projecting from the latch element and arranged in equiangularly spaced relation around the periphery thereof, each of said lugs including a cam surface positioned and adapted to engage the cylindrical wall of a can whose rim is located within the groove and releasably lock into position underneath the latter upon rotational movement of the latch element from an unlocked position uncovering said groove to a latched position partially covering same, and said lugs upon rotational movement of the latch element from latched to unlocked position being adapted to uncover the groove and release the can rim for removal therefrom.

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3,167,833
SAFETY PIN
Dorina J. Swartz, Yorba Linda, Calif. (P.O. Box 3545, Fullerton, Calif.), assignor of one-half to Richard J. Buechner, Fullerton, Calif.
Filed Feb. 4, 1964, Ser. No. 342,416
6 Claims. (Cl. 24—158)

1. In a safety pin:
a body of generally elongate form having longitudinal edges, a front end, and a rearward end, and having a deep lateral cloth-receiving notch sunk in one longitudinal edge thereof near said front end so as to provide a hook-like formation at said front end,
there being a pin guide hole in said body near said one longitudinal edge thereof along a longitudinal line of said body which extends across the mouth of said hook-like formation, with a portion of said hole in the latter, and the remainder extending entirely through the portion of said body in back of said hook-like formation,
the other longitudinal edge of said body slanting angularly away from said hole in said body in a direction from the rearward end of said body toward the forward end thereof,
a steel wire pin comprised of two pin shanks connected by a spring loop extending generally in the same direction from said loop, one of said pin shanks being receivable in said pin guide hole, and being pointed at its free end,
the other of said pin shanks being adapted to overlie said slanting longitudinal edge of said body, and its free end having a shoe element adapted for sliding engagement and guidance by said slanting longitudinal edge,



said pin shanks being angularly spread apart as said pin is moved to cause said shoe element to ride up said slanting surface and the pointed pin shank to advance in said guide hole across the mouth of said notch, and said pin shanks having a normal angular position relative to one another such as to develop an elastic return stress as they are so angularly spread apart, and
there being a locking depression in said slanting edge of said body positioned to register with said shoe element when an end portion of the pointed pin shank has been received into the guide hole portion in said hook-like formation, said shoe element dropping into said depression and being yieldably locked therein by virtue of elastic restoring stress developed in said pin by said spreading of said pin shanks.

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3,167,834
ZIPPER
Wolfgang Schmiele, Hildesheim, Germany, assignor to Wetzell Gummiwerke AG, Hildesheim, Germany
Filed Jan. 22, 1963, Ser. No. 253,143
Claims priority, application Germany, Jan. 25, 1962, W 31,545
4 Claims. (Cl. 24—205.1)

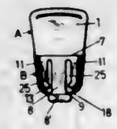


1. A fluid-tight zipper comprising, in combination, an elongated flexible carrier web; a plurality of coupling links fastened spaced from each other along one edge of said web, said web being folded substantially midway between the free ends thereof along a pair of fold lines extending inclined at substantially 45° to the other edge of said web toward each other to form with said coupling links a pair of substantially parallel link chains joined at one end of said zipper by a substantially triangular portion of said web; a slide having a wedge portion located between said link chains and a pair of guide flanges respectively engaging the coupling links on said chains for coupling the latter during movement of said slide toward said one end of said zipper and for uncoupling the same during the movement of said slide in opposite direction; and an elastic sealing member fastened to said triangular portion of said web and engaging a bottom face of said wedge portion when said slide is moved to said one end of said zipper.



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3,167,835
LOCKING DEVICES
Sigurd Walter Bengtsson, Rattgatan 6, Goteborg, Sweden
Filed Oct. 1, 1963, Ser. No. 312,969
Claims priority, application Sweden, Oct. 12, 1962, 10,928/62; May 20, 1963, 5,573/62
3 Claims. (Cl. 24—230)



1. A locking device for releasable interconnection of two parts and comprising two locking members and being directly hand operable, a head portion on the first of these locking members being adapted to be secured to the first of said parts, a shoulder formed by said head portion, at least one resilient locking bolt extending from said shoulder, said locking bolt, having a resilient locking offset, the second of said locking members consisting of a locking socket having a locking edge portion and being adapted to be secured to the second of said parts, said socket having a through hole, the locking bolt being adapted to be inserted through an entrance end of said hole, and extending in locking position out through the opposite exit end of the through hole said locking offset being adapted by its inherent spring action to engage with said locking edge portion of the socket surrounding the entrance end of the hole after insertion of the locking bolt in the socket so as to releasably lock said members in relation to each other, the shoulder of the fastening head bearing on the end of the socket surrounding the entrance end of the hole, in this locking position, at least one guide arm extending from said shoulder and being positioned collaterally with the locking bolt, said guide arm being practically rigid and being formed integrally with said head and locking bolt, a guide surface formed by a longitudinal side of said arm opposite to the locking bolt, said guide surface converging substantially towards the locking offset of the bolt and being adapted to cooperate with the wall of the hole of the socket for guiding the locking bolt to its locking position, and said guide arm being located entirely within the socket in said locking position.

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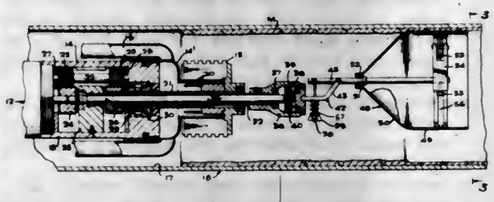
3,167,836
HOOK FASTENER FOR FURNITURE WEBBING
Leonard D. Walter, 1275 NW. 33rd St., Miami, Fla.
Filed Nov. 18, 1963, Ser. No. 324,498
1 Claim. (Cl. 24—265)



A fastener for securing the ends of a flexible webbing band to a support comprising an upper band engaging portion having a laterally extending centrally disposed tongue adapted to overlie an associated band and laterally extending side portions disposed on opposite sides of and separated by the said tongue and struck downwardly from a longitudinal edge of the said upper portion a distance substantially equal to the thickness of the said band and merging into laterally extending generally planar support engaging portions lying in a plane generally parallel to the plane of the upper band engaging portion and terminating in reversely bent downwardly extending support engaging hooks, said side portions being adapted to be positioned within apertures formed in an end portion of the said associated webbing band when the said band end portion is disposed between the said upper band engaging portion and the planar support engaging portions so that when the said band end is wrapped about the said support and an associated fastener tension in the band will cause the said hooks to firmly frictionally engage the said support and the tongue to frictionally engage the portion of the band thereunder.

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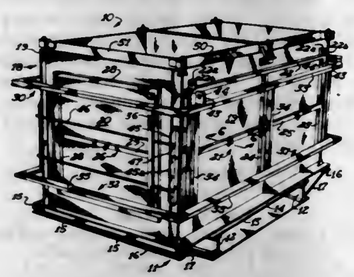
3,167,837
PIPELINING MACHINE
Francis M. Matheny, Lynwood, Calif., assignor to Pipe Linings, Inc., Wilmington, Calif., a corporation of California
Filed July 20, 1962, Ser. No. 211,266
5 Claims. (Cl. 25—38)



3. A pipelining machine adapted to be moved axially through a pipe to be lined, comprising means for applying cement mortar to the inner wall of the pipe, a troweling roller, roller support means mounted on said machine supporting said roller beyond the mortar applying means for rotation about an axis parallel to but radially offset from the axis of the pipe, and means for rotating said roller support means about the axis of the pipe.

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3,167,838
APPARATUS FOR MOLDING SEPTIC TANKS
Frank Robert Bergsten, 427 Western, and Arvid H. Bergsten, 759 W. Main, both of Anoka, Minn.
Filed Oct. 11, 1961, Ser. No. 147,400
3 Claims. (Cl. 25—130)



1. Apparatus for molding a generally rectangular shaped compartmented septic tank from cementitious material and wherein the septic tank includes a pair of substantially identical side-by-side compartments and in which the septic tank is comprised of an imperforate bottom wall having upstanding side and end walls integrally formed therewith and having an upstanding intermediate wall integrally formed with the bottom wall and extending between the side walls,
said apparatus comprising
a substantially flat horizontal imperforate base,

a substantially rectangular hollow female mold structure positioned on said base and including a pair of substantially flat, upstanding, spaced-apart side plates and a pair of substantially flat, upstanding, spaced-apart end plates, said plates being simultaneously shiftable between an operative closed position and an inoperative open position,

each of said plates having opposite upstanding edge portions disposed in engagement with adjacent edge portions of adjacent plates when said plates are in the operative closed position, and said plates being shiftable outwardly and out of engagement with each other when in the inoperative open position,

a rigid substantially rectangular frame structure spaced outwardly of and extending around said female mold structure,

a plurality of links pivotally connecting said plates with said rigid frame and cooperating with said frame during vertical movement thereof to cause simultaneous shifting of said plates between said operative and inoperative positions,

a pair of substantially identical open topped, generally rectangular shaped hollow male mold structures disposed in side-by-side spaced-apart relation within said female mold structure and each including an imperforate bottom wall and upstanding side walls integrally formed therewith,

a plurality of positioning cams fixedly mounted on the upper peripheral portion of certain of said plates of said female mold structure and projecting outwardly therefrom,

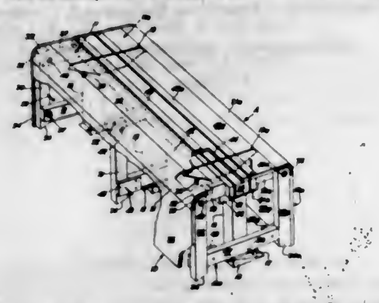
a plurality of positioning cams fixedly mounted adjacent the upper peripheral portion of the side walls of each of said male mold structures and projecting outwardly therefrom, said last mentioned cam engaging the upper peripheral edge of certain of said plates and also engaging said first mentioned positioning cam to automatically position and suspend each of said male mold structures in predetermined spaced-apart, side-by-side relation within said female mold structures and also positioning each of said male mold structures in predetermined spaced relation from the inner surface of said plates and the upper surface of said base when said plates are in the operative closed position.

and a plurality of elongate retaining rods extending between and being detachably connected with the base and with the upper peripheral edge portion of the side walls of each of said male mold structures exteriorly of the female mold structure and being operative for retaining said male mold structures in their side-by-side predetermined spaced relation within said female mold structures during the molding operation as cementitious material is introduced into the space between the male and female mold structures.

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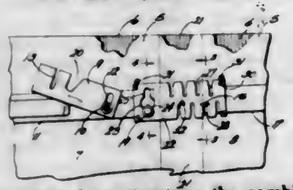
**3,167,839**
**CRYPT FORM**
**Bruce R. Gamse, San Jose, Calif., assignor to Carl N. Swenson Co., Inc., San Jose, Calif.**
**Filed Nov. 24, 1961, Ser. No. 154,564**
**6 Claims. (Cl. 25—130)**

6. A crypt cell form for mounting on a flat, horizontal, permanent floor surface, said form comprising a pair of generally similar side wall structures each being of a height slightly less than the interior height of a crypt cell to be molded thereon, a top structure for hinged interconnection to each side wall structure, hinge means hingedly connecting a side of each top structure to the upper end of each side wall structure for swinging downwardly and outwardly from a position at right angles thereto, the axis of the hinge means being spaced diagonally downwardly and inwardly from the line of intersection of extensions of the top and outer surfaces of the top and side wall structures respectively when said structures are erected in crypt-molding relation substantially at right angles to each other, the upper outer portion of each side wall structure and its associated top structure beyond their interconnecting hinge means being relieved inwardly within a radius shorter than that from the axis of the hinge means to the outer surfaces of the side wall and top structures when the latter are erected in crypt molding position, a break-away cove strip of sheet metal supported on, and lightly connected substantially co-extensively with the outer surfaces of each side wall and its associated top structure and enclosing such relieved portions in radially outwardly spaced relation thereto, thereby to provide clearance betwen such relieved portions and a crypt cell molded thereon to facilitate removing the form from the interior of a crypt cell molded thereon, and removable support means for supporting the top structures with the latter in horizontally aligned relation with each other, and with their associated side wall structures substantially upright.



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**3,167,840**
**CONCRETE FORM LOCKING MEANS**
**Robert G. Hoffmann, New Milford, Ill., assignor to Simplex Forms System, Inc., Rockford, Ill., a corporation of Illinois**
**Filed May 28, 1962, Ser. No. 198,213**
**4 Claims. (Cl. 25—131)**



1. In a concrete form structure, the combination of a pair of laterally spaced coplanar vertical form sections each comprising a panel having horizontally extending metal strips fastened to the outer side thereof, the end portions of said strips being approximately in horizontal alignment and adapted to be interconnected so as to interconnect said sections, one of said end portions having a projection thereon at right angles thereto and the other having a bayonet slot provided therein, a form spacer pin disposed at right angles to and protruding between the ends of said form sections and having an end portion engaging in said slot on which there is a head on the extremity providing a shoulder, said pin being detachably engageable in said slot and when so engaged being adapted to assume side pull to serve as a coupling pin in drawing the form sections together, a vertical filler strip which may be furnished in different widths to suit different requirements disposed in and filling the space between said form sections in coplanar relationship thereto, and an elongated straight and rigid lever of appreciably greater length than the filler strip's width engaging the outer side

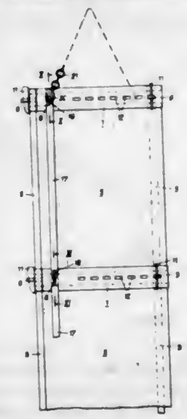


of and disposed substantially horizontally in transverse relationship to said filler strip and said form sections and detachably pivotally connected at one end on said projection and having a series of spaced vertical slots provided therein opening from each of its opposite longitudinal edges on its other end, the lever being reversible and the slots in the two series being staggered in relation to one another and accordingly differently spaced from the first mentioned end of the lever and adapted for selectively receiving the headed end of said pin in any one of said slots to fasten the form sections together supporting the filler strip in abutment on its opposite side edges with the edges of said form sections, said projection being of cylindrical form to serve as a pivot, and said elongated lever having an elongated vertical slot provided in the first mentioned end slidably and pivotally receiving said pivot projection, whereby with either set of slots disposed for engagement of the spacer pin in one of said slots to permit adjustment of the first mentioned end of said lever vertically to compensate for misalignment of the spacer pin with respect to the pivot projection and also to enable loose connection of the lever with the spacer pin followed by drawing the form sections together against opposite sides of the filler strip by cam action by vertical movement of one end of said lever relative to the other end after such lever is connected with said pin.

4. As an article of manufacture, a form locking lever for use with concrete forms, the same comprising an elongated, straight, generally rectangular plate or body having nail holes provided in the corner portions thereof and also having a plurality of evenly spaced parallel slots opening from one longitudinal edge substantially at right angles thereto and a plurality of similarly spaced parallel slots opening from the other longitudinal edge substantially at right angles thereto in staggered relation to the first mentioned slots, the slots all having flared outer ends, and a slot for a pivot pin provided in one end portion parallel to the other slots, the slot having an enlarged portion at the middle thereof through which the head on a pivot pin may be entered freely.

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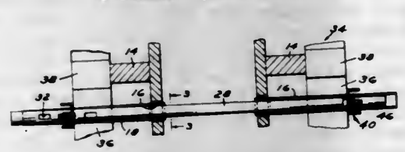
**3,167,841**
**MOLD-SUPPORTING FRAME STRUCTURE AND CONSTRUCTION ELEMENT THEREFOR**
**Edelbert Wehr, Reichenfels, Carinthia, Austria, assignor to Dr. Gerhard Weinberger K.G., Reichenfels, Carinthia, Austria, a corporation of Austria**
**Filed Apr. 9, 1963, Ser. No. 271,744**
**Claims priority, application Austria, Apr. 10, 1962, A 2,985/62**
**8 Claims. (Cl. 25—131)**



1. A construction element for a mold-supporting frame structure, comprising an elongated body of channeled profile with upper and lower generally horizontal flanges engageable by respective edges of a pair of vertically aligned mold panels, a substantially vertical web spanning said flanges and extending therebeyond for contact with adjoining portions of said panels, said body being formed at one end with a transverse shoulder and with a male extremity projecting beyond said shoulder, said web being formed between said flanges with a series of openings traversed between said panels by the male extremity of an adjoining construction element and locking means at said extremity for holding another adjoining construction element engaged by it in contact with said shoulder.

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**3,167,842**
**SPREADER BAR AND TIE ROD ARRANGEMENT FOR CONCRETE WALL FORMS**
**Frank G. Paull, Jr., Northville, Mich., assignor to Kwik Lock Forms Co., Plymouth, Mich., a corporation of Michigan**
**Filed June 6, 1963, Ser. No. 286,041**
**8 Claims. (Cl. 25—131)**



1. In a concrete wall form construction comprising a pair of spaced apart opposed wall forms which define the opposite faces of the concrete wall poured therebetween, the wall forms comprising panels having reinforcements secured to the outer faces thereof and having transversely aligned openings therein, means for retaining the wall forms in fixed spaced apart relation comprising a tie rod extending through aligned openings in the opposed panels, said tie rod extending transversely through the panels and outwardly beyond the reinforcements on the wall forms, said tie rod having openings therethrough in the end portions thereof beyond the reinforcements, a pair of spreader bars, each spreader bar having one end thereof hooked to the panel at said opening and locked thereto against movement transversely of the panel, said spreader bars extending outwardly of the panels beyond said reinforcements, one adjacent each of the opposite ends of the tie rod, each spreader bar having an opening therein registering with an opening in the end portion of the tie rod, said registering openings lying outwardly beyond the plane of said reinforcements and wedge means driven through said registering openings at each end of the tie rod and engaging said reinforcements.

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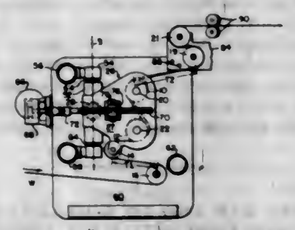
**3,167,843**
**WEFT STRAIGHTENING APPARATUS**
**John D. Robertson and William P. McCleary, Taunton, Mass., assignors to Mount Hope Machine Company, Incorporated, Taunton, Mass., a corporation of Massachusetts**
**Filed Jan. 24, 1963, Ser. No. 253,684**
**4 Claims. (Cl. 26—51.4)**

3. Weft straightening apparatus, comprising:

a base, a frame pivotally mounted on said base for angular adjusting movement about a first axis, and means mounted on said base for pivoting said frame to selected angular positions;

at least one rotatable longitudinally-curved roll having an axle, said axle being mounted in said frame for angular adjusting movement about a longitudinal rectilinear axis thereof which extends normally to said first axis, and means mounted on said frame for angularly adjusting the axle of said longitudinally-curved roll;

and at least two straight rolls rotatably mounted on said base on parallel axes defining a common plane, said plane being spaced from said curved roll, and arranged to guide a traveling web to and from said curved roll;

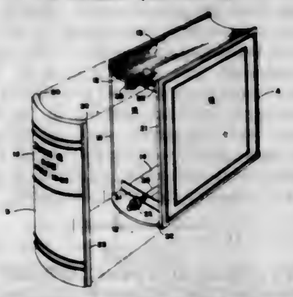


said common plane being inclined at an angle of substantially less than 90° to said first axis such that in a neutral position of said frame in which the rectilinear axis of said curved roll is parallel to the axes of said straight rolls, the opposite edge portions of a web engaged with said rolls have equal path lengths of travel through the apparatus, and that in skew-correcting positions of said frame in which said rectilinear axis is inclined to the axes of said straight rolls, the opposite edge portions of the web have substantially different path lengths of travel through the apparatus;

the axle of said longitudinally-curved roll being angularly adjustable to at least one neutral position in which the central and edge portions of the web have equal path lengths of travel through the apparatus, and angularly adjustable to bow-correcting positions in which the central and edge portions of the web have substantially different path lengths of travel through the apparatus.

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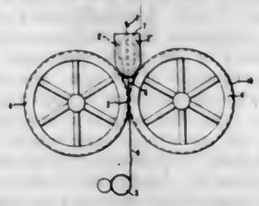
**3,167,844**
**BOOK URN**
**Gustav Bachofner, Rte. 2, Box 268, Troutdale, Oreg.**
**Filed Jan. 29, 1962, Ser. No. 169,504**
**1 Claim. (Cl. 27—1)**



A book urn comprising a main casting having an open side and five side walls simulating the covers and exposed page edges of a book, a pair of integral apertured bridge lugs extending across each of the inside faces of said side walls which simulate the top and bottom page edges of the book, said walls which simulate the top and bottom page edges having projecting end portions extending beyond the walls simulating the covers of the book at the open side of said urn, a closure casting on said open side simulating the binding edge of the book, transverse grooves spaced from the upper and lower ends of said closure casting receiving said projecting end portions of said top and bottom walls of said main casting, outward bulges in the side edges of said closure casting adjacent to the joint line with said main casting simulating hinge portions of the book covers, a pair of apertured recesses in the outside of the vertical page edge wall of said main casting in alignment with the apertures in said bridge lugs, screw bolts having heads in said recesses and extending through said bridge lug apertures for threaded engagement at their ends with said closure casting, said closure casting having threaded bosses engaging said bolts for maintaining the closure casting in position to close said open side, and retainers on said bolts between said lugs and the closure casting engaging ends of the bolts.

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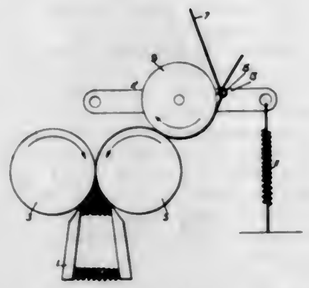
**3,167,845**
**BULK YARN PROCESS AND APPARATUS**
**Ole Haakon Claussen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed July 19, 1960, Ser. No. 43,891**
**14 Claims. (Cl. 28—1)**



1. The process for manufacture of a bulked fibrous strand which comprises feeding a strand of synthetic organic thermoplastic fibers to a turbulent stream of plasticizing fluid to crimp the fibers, forwarding the crimped strand in plasticized condition at high speed in the stream of plasticizing fluid to a foraminous surface, moving the surface in substantially the direction of strand travel at a slower speed than the speed at which the strand is conveyed thereto to support the plasticized strand in relaxed condition, additionally crimping the relaxed strand solely by directing a stream of plasticizing fluid against the fibers to crimp the fibers on the surface, separating the strand from the fluid, and setting the crimp in the strand.

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**3,167,846**
**APPARATUS AND METHOD FOR CRIMPING YARN**
**Kurt Iwnicki, Pontnr, and David B. Miller, Newport, England, assignors to British Nylon Spinners Limited, Pontypool, England**
**Filed Aug. 29, 1962, Ser. No. 220,289**
**Claims priority, application Great Britain, Sept. 14, 1961, 32,964**
**4 Claims. (Cl. 28—1)**



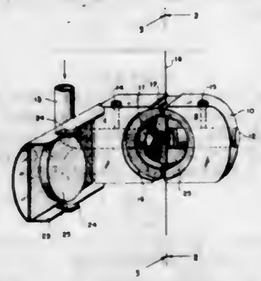
1. Apparatus for crimping a continuous filamentary structure comprising: a crimping chamber; two fixed closely-spaced feed rolls driven at a predetermined rate such that said structure when passed between them is forced into said chamber; and structure forwarding means



comprising a third roll arranged so that said structure is in contact with a portion of the periphery of said third roll and is gripped between said third roll and one of said feed rolls, said third roll being driven by said one feed roll such that said structure is positively forwarded by said third roll at the same rate as said predetermined rate at which it is forced into said chamber.

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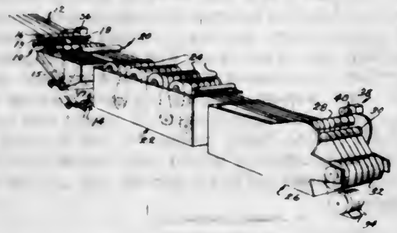
**3,167,847**
**TREATMENT OF MULTI-FILAMENT YARN**
**Conrad J. Gonsalves, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware**
**Filed Nov. 19, 1962, Ser. No. 238,506**
**Claims priority, application Netherlands, Nov. 28, 1961, 271,935**
**4 Claims. (Cl. 28—1)**



4. An apparatus for intertwining a substantially untwisted thermoplastic synthetic high polymer multifilament yarn which comprises a nozzle having a fine orifice for supplying gas under pressure, a cylindrical resonance chamber having an opening disposed opposite the nozzle orifice at a distance from 1 to 3 mm., said opening having a diameter between 1.0 and 1.8 times the exit diameter of said orifice sound damping means surrounding said chamber, yarn guides located above and below the nozzle and chamber to position the yarn between the nozzle and the opening to the chamber, said guides embodying means to dampen the vibration of the yarn passing therebetween and to localize the nodes at those points, said guides being spaced from 20–55 mm. apart.

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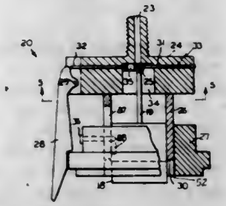
**3,167,848**
**STRETCH CONTROL OF MATERIAL IN A TEXTILE PROCESSOR**
**Fujio Abe, Greensboro, and John V. Cauthen, Franklinton, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware**
**Filed Feb. 27, 1963, Ser. No. 261,277**
**12 Claims. (Cl. 28—28)**



1. In a textile processor for processing textile material and including an input end having driving means for drivingly receiving the material to be processed and an output end including means for drawing processed material thereto at a predetermined rate, said material being subject to change in length due to said processing, the improvement comprising: means at said input end for providing a first series of pulses having a recurrence rate corresponding to the speed of said material into said processor, means at said output end for providing a second series of pulses having a recurrence rate corresponding to the speed of said processed material out of said processor, a presettable digital counter and count-attained switch interconnected so as to count the pulses in said first series and operate said switch upon counting a predetermined number of pulses, digital counting means for counting the pulses in said second series, delay-operated switch means for initiating counting action by said counter and counting means a predetermined time after the delay-operated switch means is energized, means for energizing said delay-operated switch means when said driving means reaches a desired running speed and for deenergizing same below that speed, first actuating means coupled to said delay-operated switch means and said count-attained switch for ending the counting action by said counter and counting means upon operation of said count-attained switch as aforesaid, operation means for causing an operation relative to the count attained by said counting means when said counting ends as aforesaid, the difference between the count of the said counter and counting means being related to the change in length of said material passing through the processor during the instant counting period, means for resetting said counter and counting means, and second actuating means and connected second delay means coupled to be energized via said first actuating means for operating said operation and resetting means in accordance with said second delay means.

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**3,167,849**
**MEANS FOR MAKING COVERED BELT BUCKLES**
**George Eisenpresser, Lawrence, and Henry Gunther, Astoria, N.Y., assignors to National Die and Button Mold Co., Inc., New York, N.Y., a corporation of New York**
**Filed Apr. 8, 1963, Ser. No. 271,195**
**3 Claims. (Cl. 29—3)**

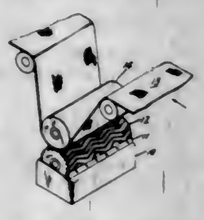


1. For use in the making of a belt buckle consisting of an upper frame tightly enveloped by initially flat fabric rings formed into an endless U-channel on said upper frame and having its inner and outer marginal edge lanes folded in up against the underside of the upper frame and a lower frame against said folded-in lanes and clinched by the upper frame to maintain the assembly, a press apparatus for assembling such buckle, of the type consisting of a press head including an upper block body from which depends an upright tubular member within which a core fits for vertical sliding movement and lower press means including an upwardly biased plunger opposite said core, adapted on association with the press head to cooperate with the press head to form a fabric blank ring piece into an endless inverted U-channel about an upper frame and seat said upper frame with said fabric channel form thereon, against the bottom edge of said tubular member and encircling said core and then adapted to bend in the outer and inner marginal edge lanes of said blank up against the underside of the upper frame and to bring the upper frame so covered against a lower frame and with said plunger in a predetermined lowered position,

to clinch the covered upper frame to the lower frame, wherein the improvement consists of a pin extending vertically upward from the core; the block body of the press head having a hole to receive said pin, a closure member biased to be normally positioned to close said hole and thus act as a first limit stop to halt upward movement of said core in said tubular member; and cooperative means on said press head and lower press means, to shift said closure member to open said hole to allow said pin to enter therein to an exteat whereupon an upper surface on said core comes into contact with said block body and thus act as a second limit stop to halt upward movement of said bore on said tubular member; the respective distances between said surface to the upper end of said pin and to the lower end of the core, being predetermined lengths whereby said core protrudes downwardly out of said tubular member when said hole is closed and is capable of upward movement into said tubular member to its second limit stop above the lower end of the tubular member when said hole is open; the shifting of said closure member taking place to open said hole, occurring upon downward movement of the press head onto the lower press means after said seating occurs and before said core contacts the said plunger.

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**3,167,850**
**TRANSFER ROLL**
Frank W. Broderick, P.O. Box 2, Stirling, N.J.
Filed Dec. 21, 1962, Ser. No. 246,627
3 Claims. (Cl. 29—121)

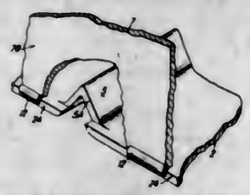


1. A snag-proof transfer roll of chrome-molybdenum alloy steel engraved for uniform transfer of fluid to a moving monofilament web, said roll having a Rockwell C scale hardness of from 45 to 60 and having a fine grained pre-engraved surface structure obtained by heat treatment to from transformation point to 25° F. above the final transformation temperature of said alloy followed by quenching at said temperature, said chrome molybdenum alloy having a composition of carbon range 0.45 to 0.55 percent by weight, manganese range 0.60 to 0.90 percent by weight, maximum amount of phosphorous 0.40 percent by weight, maximum amount of sulfur 0.050 percent by weight, chromium range about 0.80 to about 1.10 percent by weight and the molybdenum range about 0.15 to about 0.25 percent by weight.

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**3,167,851**
**METHOD OF MAKING BOX-SECTION STRUCTURAL ELEMENTS**
William Graham Cowan, East Kilbride, Scotland, assignor to J. H. Carruthers & Company Limited, East Kilbride, Scotland, a British company
Filed Jan. 21, 1963, Ser. No. 252,929
Claims priority, application Great Britain, Jan. 23, 1962, 2,383/62
4 Claims. (Cl. 29—155)

1. A method of manufacturing an elongated hollow box-section structural member including welding together four metal wall strips at their edges, comprising providing each strip of one pair of opposed strips with a longitudinal series of transverse ribs having their ends spaced inwards from the edges of the strip, erecting all four wall strips into a box-section structure with the pair of ribbed strips at the top and bottom and with the edges of the other pair of strips abutting the opposed faces of the ribbed strips, and the opposed faces of said other pair of



strips abutting the ends of the ribs, and feeding the structure longitudinally through a welding machine to weld together at the corners of the structure all four strips simultaneously along the external joint lines at the sides of the structure.

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**3,167,852**
**METHOD OF MAKING AN ELECTRICAL SWITCH**
Robert Stengl, Morton Grove, Ill., assignor to Standard Grigsby Inc., a corporation of Delaware
Filed Oct. 26, 1960, Ser. No. 65,182
8 Claims. (Cl. 29—155.55)

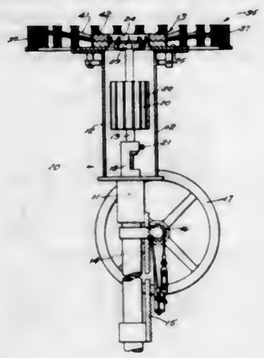


6. The method of assembling a multiple contact switch comprising forming from a generally planar sheet of metal an assembly of circumferentially disposed contacts each having a free radially remote transversely extending terminal portion, an intermediate mounting portion and a radially inward contact portion, positioning said contact portions in a plane spaced from the plane of said mounting portions away from said terminal portions while maintaining said contact portions in interconnected relationship through a radially inward integral connecting ring, passing said terminal portions through appropriate apertures in an insulating stator having an enlarged central aperture whereby said connecting ring is aligned with said central aperture and an annular recess is defined by said contact portions and the peripheral portion of said stator adjacent said central aperture, removing said connecting ring by passing a tool through said central aperture to render said contacts electrically independent, fitting an insulating rotor into said central aperture with outer projecting portions thereof passing between said contacts and occupying said annular recess, securing a retainer to said rotor on the terminal side of said stator whereby said peripheral stator portion is entrapped between said retainer and said outer rotor portions, securing a contact member to said stator to be in continuous electrical contact with said retainer, said retainer being conductive, and securing a radially extending contactor to said rotor electrically connected to said retainer and in engagement with any one of said contacts.

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**3,167,853**
**METHOD OF WINDING ARMATURE CORES DIRECTLY FROM SPOOLED SUPPLIES**
Cecil Farmer, 12 Elm St., Pawtucket, R.I.
Filed Dec. 30, 1960, Ser. No. 79,855
3 Claims. (Cl. 29—155.57)

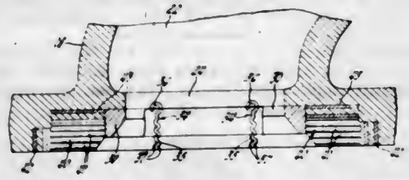
1. The method of winding coils in the grooves of an armature core of an electric generator and the like comprising the steps of positioning a length of wire unsevered from a supply spool through a pair of diametically opposed guide slots to align with each of two diametrically spaced grooves in the armature core with said spool rotatably mounted and adjacent one of said guide slots, engaging the wire with some part fixed to the armature shaft at such a location along the wire as to provide from the shaft to the free end of the wire enough length to wind a coil about the core, moving the armature axially past said guide slots and maintaining alignment



of the armature grooves and the guide slots so that the wire passes into said diametrically located grooves, rotating the armature core about its axis to a second position whereby the said guide slots are aligned with another set of grooves, moving the armature axially in the opposite direction to the rest position whereby wire is inserted in said other grooves, reversely rotating the armature core about its axis to the first position, thence similarly continuing the winding of the wire parts into their respective grooves so as to simultaneously complete the winding of two coils on the core.

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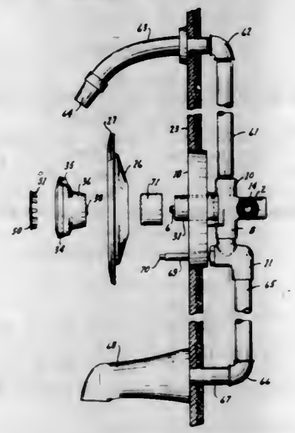
**3,167,854**
**METHOD AND CORING FOR CASTING AND MANUFACTURING CYLINDER HEADS AND THE LIKE**
Vernon E. Schafer, Jr., Livonia, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Apr. 2, 1957, Ser. No. 650,249, now Patent No. 2,893,371, dated July 7, 1959. Divided and this application Oct. 30, 1958, Ser. No. 770,704
17 Claims. (Cl. 29—156.4)



13. A method of manufacturing a member having a surface thereon adapted to be subjected to extreme thermal conditions, said method including the steps of first casting said member to include at least one insert nonfusible therein and intersecting said surface and the further step of subjecting said finished surface to cyclic thermal conditions thereby effecting the formation of expansion isolating grooves immediately adjacent each insert by the compressive upsetting of a layer of said member adjacent said surface against each insert to prevent the extreme thermal stresses which would otherwise result in said member adjacent to and including said surface from the extreme thermal conditions normally applied to said surface during operational use of said member.

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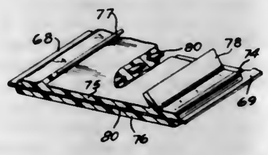
**3,167,855**
**METHOD OF INSTALLING FAUCET**
Alfred M. Moen, 151 Lakeview Drive, R.D. 1, Grafton, Ohio
Filed Feb. 3, 1960, Ser. No. 6,468
7 Claims. (Cl. 29—157)



1. The method of installing a faucet, which includes the steps of fixing a housing in permanent position in relation to a support, securing a plaster ground member by securing parts upon said housing when so fixed, inserting a valve member in said housing, completing the plaster finishing of a wall adjacent said housing and against said plaster ground member on said housing, removing and discarding the plaster ground member, thereafter positioning within the cavity left by the removal of the ground member an escutcheon plate, securing said escutcheon plate by said securing parts in fixed relation to said housing, positioning a handle upon said valve member, and securing said handle to said valve member.

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**3,167,856**
**METHODS OF MAKING STRIP STRUCTURES**
Robert A. Zoller, Bay Village, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Original application Nov. 13, 1961, Ser. No. 151,915. Divided and this application Feb. 20, 1964, Ser. No. 346,258
14 Claims. (Cl. 29—413)



1. The method of making a generally channel-shaped strip structure for embracing engagement with and clamping retention on an edge flange or other support therefor and wherein said strip structure is provided throughout its length with a series of transversely disposed resilient metal members of relatively narrow form and in closely spaced and entirely unconnected relationship, said method comprising the step of providing a flat resilient sheet metal strip with a series of transverse slots closely spaced therealong and terminating short of the side edges of the strip, the step of weakening the metal strip along two

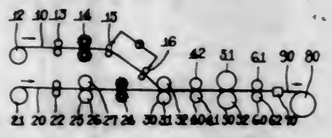
longitudinal lines that intersect said transverse slots adjacent the ends thereof, the step of providing both faces of said metal strip with a covering material, the covering material terminating inwardly of the side edges of the strip but outwardly beyond the longitudinal weakening lines, the step of removing those side edge portions of the strip which lie outwardly beyond the longitudinal weakening lines, the step of closing the side edge openings in the covering material formed by the removal of the side edge portions of the strip, and the step of bending the covered strip into generally channel shape.

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**3,167,857**
**METHOD OF MANUFACTURING COMPOSITE METAL WIRES**

**Tetsuo Saito, Kenkichi Yamaji, and Kimio Kakizaki, Hitachi, Japan, assignors to Hitachi Wire & Cable Limited, Tokyo, Japan, a corporation of Japan**

**Filed May 15, 1961, Ser. No. 110,028**
**Claims priority, application Japan, Sept. 7, 1960, 35/37,564**
**2 Claims. (Cl. 29—474.1)**



1. A method for manufacturing a composite metal wire comprising, providing a core wire of steel and coating said core wire with zinc, heating the thus coated core wire to a temperature of 200 to 300° C., providing a metal tape selected from the group consisting of aluminum and copper, passing the heated core wire and the metal tape together between forming rolls and thereby wrapping said tape circumferentially around said coated core wire, passing the core wire and tape between press rolls with said core wire and tape being in a heated condition but at temperatures which are below their respective recrystallization temperature, and effecting a pressure welding of said core wire to said tape by means of said press rolls.

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**3,167,858**
**PROCESS OF LEAD CLADDING**

**Victor E. Knapp, Roslyn, N.Y., and Neil F. Ritchey, Chester County, Pa., assignors to Knapp Mills Incorporated, Long Island City, N.Y., a corporation of New York**

**No Drawing. Filed Dec. 22, 1959, Ser. No. 861,198**
**12 Claims. (Cl. 29—487)**

1. The process of metallurgically bonding lead sheets to sheets of a basic metal included in the group consisting of copper, aluminum, iron, and their alloys, which comprises the steps of coating a surface of the basic metal sheet with nickel, applying a tin-lead eutectic to the nickel coated surface of the basic metal sheets, applying a tin-lead eutectic coat to a surface of the lead sheets at least partially melting the said eutectic coatings, pressing the eutectic coated surface of the lead sheets and the basic metal sheets together, cooling the basic metal and the lead while subjected to the pressure, and thereafter removing the pressure from the basic metal and the lead sheets.

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**3,167,859**
**METHOD OF PRODUCING SHOULDERED SLEEVES AND SIMILAR ARTICLES**

**William D. Bailey, Cheshire, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island**

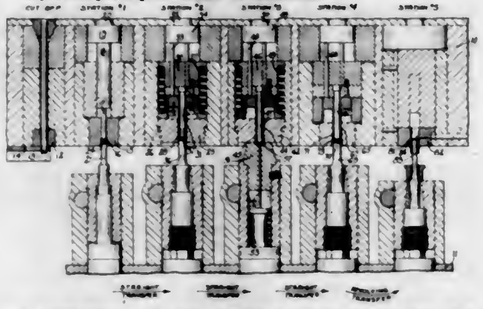
**Filed Dec. 15, 1958, Ser. No. 780,304**
**2 Claims. (Cl. 29—539)**

1. The method of making a thin-walled sleeve-like metal article having an external shoulder thereon comprising:

(*a*) cutting a workpiece from a length of solid metal stock,

(*b*) confining the workpiece by the action of an advancing punch in a die having a substantially uniform cross-sectionl opening and having a pin of smaller cross-sectional size than the die opening extending into the die opening from the rear thereof said die being slidable with respect to said pin,

(*c*) advancing the punch and die relatively to the pin to force the workpiece over the pin and extrude the metal rearwardly into the void around the pin whereby a cup-shaped blank is formed,



(*d*) confining the blank within a recess in the face of a second advancing punch and in a second die having a substantially uniform cross-sectional opening and having a second pin of smaller cross-sectional size than the die opening extending into the die opening from the rear thereof and being slidable with respect thereto, and

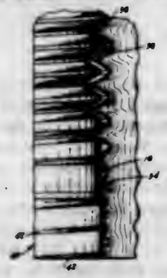
(*e*) advancing the last-named punch and die relatively to the pin to force the blank over the pin and further extrude and lengthen the wall of the cup-shaped blank into the void around the pin and, at the same time, form a shoulder on the blank having an annular bevelled surface adjacent the outer end thereof by means of the recess in the punch while holding the pin against movement to cause it to bear the pressure exerted by the punch on the blank, whereby a blank is formed having a hollow, elongated thin-walled skirt portion extending from a base having an external shoulder thereon.

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**3,167,860**
**METHOD OF CONTRACTING A HOLE**

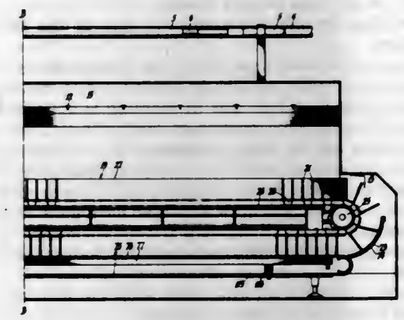
**Donald P. Welles, Jr., Rockford, and Keith A. Hill, Rockton, Ill., assignors to Beaty-Welles Corporation, South Beloit, Ill., a corporation of Illinois**

**Original application Apr. 28, 1958, Ser. No. 731,528, now Patent No. 3,038,253, dated June 12, 1962. Divided and this application Feb. 23, 1961, Ser. No. 102,333**
**6 Claims. (Cl. 29—556)**



1. A method of reducing the effective diameter of a hole in a particular material from an initial larger diameter to a desired final smaller diameter, including the steps of applying material working pressure radially outwardly to the inner surface of the hole at uniformly spaced areas and of sufficient intensity to displace the material in such areas into the intermediate areas, increasing the dimension of each of the spaced areas of applied pressure and the intensity of the pressure applied thereto to displace material in the intermediate areas inwardly of the initial larger diameter, continuing the step of increasing the dimension of each of the spaced areas of applied pressure and the intensity of the pressure applied thereto until the diameter of the displaced material in the intermediate area is less than the desired final smaller diameter, and sizing the displaced material to the desired final smaller diameter.



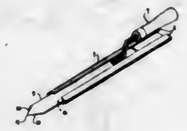


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**3,167,861**
**TOOL**

**Oliver P. Knebel, 10459 Sappington Lane, St. Louis County, Mo.**

**Filed Nov. 18, 1963, Ser. No. 324,260**
**2 Claims. (Cl. 30—294)**



1. A tool for perforating and threading a flexible member through the body of an automobile seat comprising in combination a knife and a sheath therefor; said knife being an elongated flat member having substantially the width of the passageway internal of said sheath but slideable therein and having a pointed knife edge extending completely across the forward end thereof, a stop for engaging said sheath at the opposite end thereof, and a handle secured to the body of the knife and positioned adjacent said opposite end thereof; said sheath being a slotted, channel-like, rigid open-ended member longer than said knife permitting said knife to be moved freely forwardly and backwardly therewithin and to be removed and reinserted from either end thereof when said stop is not in engagement with said sheath said channel having a depth sufficient to accommodate both said knife and said stop in the disengaged position.

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**3,167,862**
**METHOD AND APPARATUS FOR MANUFACTURING CHEDDAR, CHESHIRE OR LIKE CHEESE**

**Joseph Czulak, Mount Eliza, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate**

**Filed Apr. 1, 1963, Ser. No. 269,688**
**Claims priority, application Australia, Mar. 30, 1962, 15,983/62**
**21 Claims. (Cl. 31—49)**

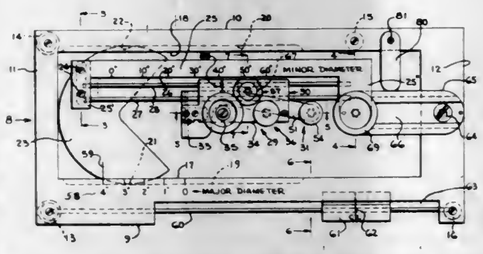
2. Apparatus for converting granular cheese curd into a fused, partly fibrous mass, comprising means defining a series of compartments to hold partly drained curd and including only a single wall between each adjacent pair of compartments, means to invert the series of compartments after the curd has partly consolidated therein, and means providing a moving floor to the inverted compartments, the inverted compartments allowing the curd to spread and flow therefrom under the action of gravity.

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**3,167,863**
**ELLIPSOGRAPH**

**Alexander F. Komorowski and Henry A. Komorowski, both of 69 E. 4th St., Bayonne, N.J.**

**Filed Apr. 26, 1963, Ser. No. 275,890**
**3 Claims. (Cl. 33—30)**




1. An ellipsograph for drawing, on a surface, a complete ellipse having a major and a minor axis, comprising,

a frame having a front, back, and sides, and having slide-engaging means at the inner edges of said front and back,

a slide movable within said frame near one side thereof between said slide engaging means, and designed to turn and reciprocate therein,

a scale arm carrying a minor axis scale and attached at one end to and above said slide in a manner such that said slide and scale arm are movable freely as a unit as the hereinafter-mentioned rotating arm is rotated, said scale arm projecting toward the opposite frame side,

a rotating arm swivably attached at its one end to the middle of the top of said opposite frame side and having slide-engaging means thereon,

swivel engaging means disposed on the other end of said scale arm designed to engage in slidable and rotatable relation with the slide-engaging means on said rotating arm,

knob locking means for locking said other scale arm end in said latter slide-engaging means while said connected rotating arm is free to rotate,

a plate slidably engaged to said scale arm and carrying an indicator and designed to slide in parallel relation with and adjacent to said scale arm,

a vertically-adjustable scriber mounted in downwardly-directed relation on said plate in a manner such that when said scale arm is positioned in parallel relation

with said rotating arm, the scriber is disposed within the center area of said frame,

a marking on said slide adjacent one of the sliding edges,

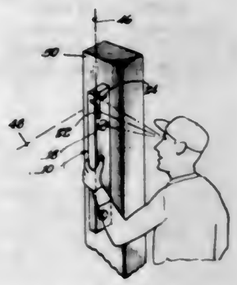
a major axis scale disposed on the frame member adjacent said slide marking in a manner such that when said plate is slid so that its marking is opposite the desired minor axis reading on said scale arm and the marking on the slide is opposite the desired major axis marking on said frame, and said knob is locked, rotation of said knob, while the scriber is in contact with a surface, will draw an ellipse having the desired dimensions,

a centerline slide attached to a non-side frame member, and

a marker disposed on said latter slide for spotting the center line of an ellipse to be drawn.

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**3,167,864**
**SPIRIT LEVEL**
**Edward H. Lange, 930 Meadow Lane, Elgin, Ill.**
**Filed Sept. 19, 1961, Ser. No. 139,094**
**4 Claims. (Cl. 33—63)**

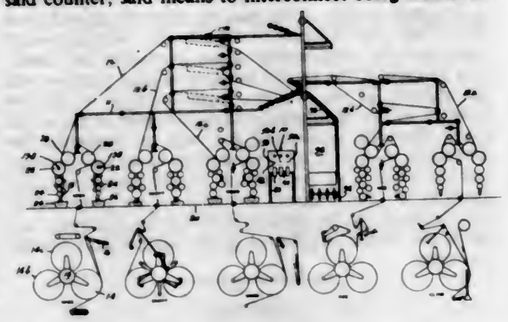


1. An instrument for establishing perpendicular lines of sight, comprising in combination: a rigid body having a side surface, a planar datum edge surface adapted to contact a structural member to be located, and two intersecting edge surfaces substantially perpendicular respectively to said side surface; first optical means supported by said body and including a reflecting prism having an entrance face viewable from said side surface and having an exit face opening through one of said intersecting edge surfaces whereby to establish a first line of sight to a horizontal reference object; second optical means supported by said body at right angles to said first optical means and including a reflecting prism having an entrance face viewable from said side surface and having an exit fact opening through the other of said intersecting edge surfaces whereby to establish a second line of sight to a vertical reference object, said second line of sight being perpendicular to said first line of sight; and bubble tube means mounted on said body to be viewable from said side surface and to be disposed with respect to said planar datum edge surface for use in situating said structural member.

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**3,167,865**
**AUTOMATIC SYSTEM FOR WEB LENGTH MEASUREMENT**
**Solomon Steinberg, New York, N.Y.**
**(108—20 68th Road, Forest Hills 75, N.Y.)**
**Filed Apr. 11, 1962, Ser. No. 186,766**
**14 Claims. (Cl. 33—127)**

1. A system for web length measurement for use with a continuous web treating machine having web feed means and means to interconnect web portions, comprising: measuring means on said web feed means supplying an impulse for a predetermined length unit of said web; a web length unit counter; said measuring means actuating said counter; said means to interconnect being connected



to said counter to stop the counter, whereby total continuous web length may be read off said counter.

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**3,167,866**
**BORE AXIS LOCATING TOOL**
**Norbert F. Steineman, 122 N. Water St., New Bremen, Ohio**
**Filed Aug. 7, 1961, Ser. No. 129,887**
**4 Claims. (Cl. 33—172)**

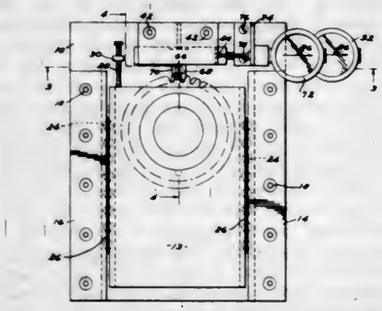


1. In an axis locating tool, the combination of a supporting shaft adapted to be clamped into the rotatable tool holder of a machine tool in alignment with the axis of rotation of said tool holder, a tool body supported by said shaft, a rotatable support member so carried by said tool body that its axis of rotation is fixed in alignment with the axis of rotation of said shaft and said tool holder, an elbow feeler lever pivoted to a support bracket mounted on said rotatable support member, an indicator attached to said tool body and having an operating plunger aligned with the axis of said supporting shaft, said elbow feeler lever comprising a contact arm adapted to contact a workpiece and an arm transverse to said contact arm and frictionally pivoted to said contact arm, the end of siad transverse arm being engageable with the plunger of said indicator near the axis of said plunger.

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**3,167,867**
**GEAR TEETH CHECKING GAGE**
**Jan Reef, 41520 8-Mile Road, Northville, Mich.**
**Filed July 25, 1962, Ser. No. 212,354**
**5 Claims. (Cl. 33—179.5)**

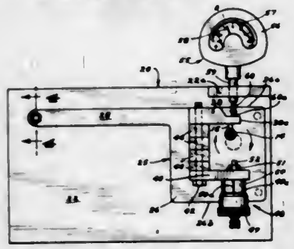
1. A gage for checking gear teeth comprising, in combination, a base having a way for a gear carrying carriage, a gear carrying carriage mounted upon the way for slidable reciprocation, a gear positioning pin supported upon the base at one end of the way and projecting toward a gear carried by the carriage to enter the space between two gear teeth when the carriage is advanced over the way toward the pin, a gear tooth checking pin supported upon the base in proximity to the gear positioning pin and projecting toward the gear carried by the carriage to enter the space between two gear teeth and engage one of them when the positioning pin is received between its two gear teeth, said checking pin supported upon the base for shiftable movement in response to pressure thereagainst by said engaged gear tooth, an indicator coupled with said checking pin to be actuated thereby in response



to shiftable movement of the pin upon pressure of a gear tooth thereagainst; and further characterized in that two shiftable checking pins are provided supported in proximity to the positioning pin and so aligned therewith as to enter the space between the same two teeth of the gear as the positioning pin, and said two checking pins are adapted to engage the same tooth to be acted upon thereby, and each checking pin is provided with its own indicator and coupled therewith to actuate the same in response to pressure thereagainst of a gear tooth.

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**3,167,868**
**DEVICE FOR PREDETERMINING BORING TOOL DIAMETER**
**Harold E. G. Arneson, % Professional Instruments Co., 6824 W. Lake St., Minneapolis, Minn.**
**Filed Mar. 20, 1962, Ser. No. 181,037**
**1 Claim. (Cl. 33—185)**



A device for presetting the diameter of a boring tool mounted on a spindle in connection with a boring machine having in combination,

a base plate member disposed on the table of said machine,

an elongated table member mounted on said base plate member, a pair of opposed anvil portions supported on one end portion of said elongated table member, means movably supporting said elongated table member on said base plate at said one end portion thereof, and means pivotally supporting said elongated table member on said base plate member at a point thereof remote from said one end portion,

means spacing said anvil portion in measured spaced relation and said anvil portions being aligned axially of said boring tool to be respectively alternately engaged by the cutting point of said boring tool,





measuring means carried by said base plate relative to said end portion of said elongated table member to indicate the extent of the movement thereof resulting from the displacement of said respective anvil portions by engagement thereof by said cutting point,

said one end portion of said elongated table member being substantially rectangular in plan, a leg portion forming a coplanar extension of one side of said one end portion,

said pivotal means being at the free end of said leg portion,

an upstanding wall at one side of said one end portion in longitudinal alignment with said extended leg portion forming stationarily one of said anvil portions at its inner side,

said spacing means comprising premeasured spacing members movably spacing the other of said anvil portions from said stationary anvil portion,

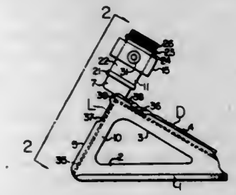
means holding said anvil portions and said spacing members rigid with said elongated table member, and

said measuring means being in engagement with said upstanding wall and in alignment with said anvil portion thereof to measure the movement of said wall in the direction towards and away therefrom

whereby said extent of movement is an increment added to the measured space between said anvil portions to determine the actual cutting diameter of said boring tool.

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**3,167,869**
**OPTICAL MEASURING DEVICE**
**William E. Raney, 20080 Frazier Drive, Rocky River, Ohio, and Arthur T. West, Fairview Park, and Howard C. Liebing, Middleburg Heights, Ohio; said West and said Liebing assignors to William E. Raney, Lakewood, Ohio**
**Filed Apr. 24, 1962, Ser. No. 189,776**
**7 Claims. (Cl. 33—201)**



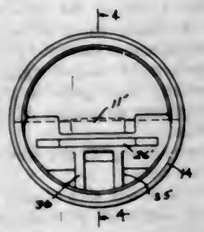
1. An optical measuring device comprising a base having a triangular stand thereon, said triangular stand including workpiece supporting surfaces extending substantially normal to each other, an optic assembly fixedly mounted at the apex of said stand, the light path of said assembly extending substantially parallel to one of said supporting surfaces and substantially normal to the other, and means in said optic assembly to measure a workpiece supported on said supporting surfaces.

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**3,167,870**
**LEVEL AND VIAL SUPPORT THEREFOR**
**Walter E. Streeter, 2622 Sunnydale Blvd., Erie, Pa.**
**Filed Feb. 23, 1961, Ser. No. 91,263**
**13 Claims. (Cl. 33—211)**

5. A level comprising an elongated level body having an opening therein, said opening having an inside surface conforming to the surface of the frustum of a cone, a support for a level vial in said opening, said level vial support comprising a ring member having spaced inwardly extending bosses on the inside thereof, a bar integrally attached to each outer side of each said boss, each said boss having a bore aligned with the bore in the other

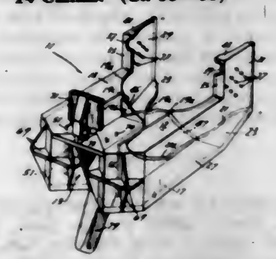
said boss, and a level vial having its ends disposed in said bosses and extending therebetween, one of said bars



extending along each side of said vial forming a protection therefor.

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3,167,871
SOUND THERAPY DEVICE
Melvin H. Brooks, 2345-A N. 8th St., Milwaukee 6, Wis.
Filed May 1, 1962, Ser. No. 191,487
14 Claims. (Cl. 35—35)



1. A device usable in sound therapy comprising a housing having

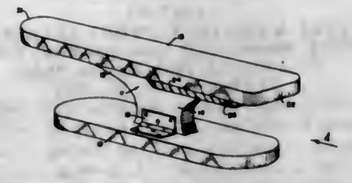
an end wall,

two pair of opposed walls extending from said end wall, one pair of said two pair of opposed walls constituting top and bottom walls and having free end margins adapted to be positioned in adjacent relation to the user's head, and the other pair of said two pair of opposed walls constituting side walls and having portions extending from said end margins of said top and bottom walls so as to be adapted to extend in covering relation to the ears of the user, and

a pair of spaced baffles extending between said top and bottom walls in generally parallel relation to said side walls from positions in spaced relation to said end wall to adjacent the free end margins of said top and bottom walls, said baffles defining a central passage therebetween and side passages between said side walls and said baffles.

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3,167,872
POINT-PRESSER, SLEEVE-BOARD COMBINATION
Emil M. Johnson, 3131 W. 19th Ave., Denver, Colo.
Filed Oct. 1, 1962, Ser. No. 227,355
3 Claims. (Cl. 38—135)



1. In combination with a point presser formed of select, close-grained wood such as maple and having a base, a comparatively narrow, flat body upstanding therefrom having parallel sides and being formed as a central column portion affixed to the base, an arm outstanding from each side thereof, with the top of the column portion and the arms forming a flat, narrow top surface across this body and with the undersurface of one arm being inclined upwardly and outwardly to define, with the top surface, a flat-angled wedge-shaped end; a flat, elongate sleeve board attachment having a length substantially the length of the body and being adapted to be detachably mounted onto the top of said body, a pair of parallel guide strips depending from the undersurface of the sleeve board adapted to snugly embrace the body when mounted thereon and being adapted to permit longitudinal movement of the sleeve board with respect to the body when the top surface of the body is against the undersurface of the sleeve board between the strips, and a transverse holding means between the guide strips spaced below the undersurface of the sleeve board adapted to permit the wedge-shaped end of said point presser to be slidably wedged between the undersurface of the sleeve board and the holding means, and wherein the angle of said wedge-shaped end is substantially less than the normal holding critical frictional angle formed between the undersurface of the sleeve board and the upper surface of the holding means, whereby to frictionally secure the sleeve board onto the point presser body.

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3,167,873
RECORD FILE
Lloyd M. Toms, Crozet, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,321
2 Claims. (Cl. 40—124)



1. In a record filing device, a plurality of internested dividers each comprising a panel and a pair of foot members extending respectively from the opposed faces of the panel, a first one of said foot members extending from the lower edge of the panel and being disposed normal thereto, the second being disposed inwardly of said bottom edge and having a first component disposed normal to said panel and a second terminal component disposed at an incline outwardly therefrom, the first foot member of one divider element being disposed within the second foot member of an adjacent divider element.

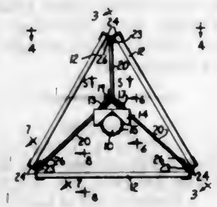
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3,167,874
DISPLAY SIGN SUPPORT
William F. Pogue, 3413 S. Regal, P.O. Box 1009, Spokane, Wash.
Filed Aug. 13, 1962, Ser. No. 216,518
2 Claims. (Cl. 40—145)

1. A display sign support comprising:

a central member fixed to a pole and extending parallel thereto;

a plurality of support arms radiating outwardly from said central member in two parallel planes perpendicular to the pole axis, the outer end of each arm terminating in a bent portion extending parallel to the pole axis, each of said bent portions in each of said planes being equi-angularly spaced relative to the pole axis;

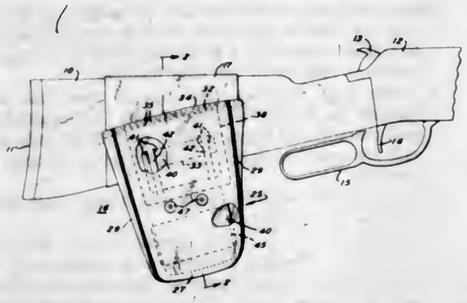


and a plurality of sign frames having mounting brackets at each side thereof on their back surfaces adapted to be slidably secured to the bent portions of said support arms in an enclosed polygonal configuration.

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3,167,875
HAND PROTECTOR AND GUNSTOCK CARRIER
Norman T. Winner, 13 Rorer Ave., Hatboro, Pa., and Elton Lindsey, 10 Fern Ave., Willow Grove, Pa.; said Lindsey assignor of forty percent to Robert J. Curtis, Willow Grove, Pa.
Filed May 18, 1964, Ser. No. 368,008
10 Claims. (Cl. 42—1)

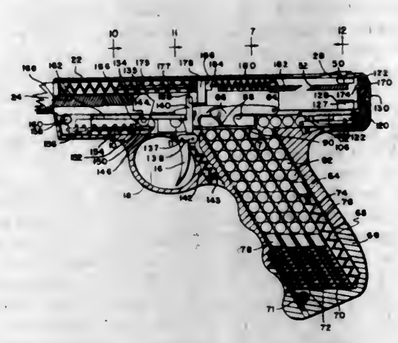


1. A hand protector and gunstock carrier comprising a positioning band for mounting in encircling relation to a gunstock forwardly of the butt of the gunstock, a retaining member for holding said band in position, and means carried by said band for protecting the hand while supporting the gunstock along a lower margin thereof, said means including a hand receiving pocket closed at its lower end and secured at an upper part thereof to one side of said band below the top thereof, said pocket extending downwardly from said band, said pocket being of greater length along said band than its width at said upper part and having wall portions of a length to extend along and beneath said band for disposition of the fingers in supporting relation beneath the band, said pocket having at said upper part an upwardly facing access opening along said band for insertion of the hand and for disposition of the hand in said pocket in said supporting relation.

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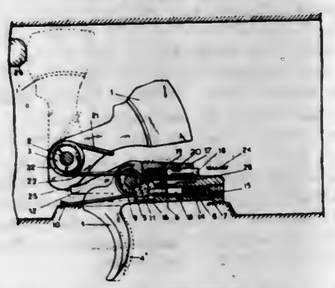
3,167,876
HANDGUN
John M. Milroy, Jr., Wilson, Va.
(211 High St., Blackstone, Va.)
Filed Oct. 19, 1960, Ser. No. 63,656
15 Claims. (Cl. 42—7)

1. A handgun comprising, a frame and handgrip stock, a barrel fixed on the frame, a receiver slidable on the barrel, a magazine in said stock supporting cartridges transversely thereof and perpendicular to a vertical-plane containing the axis of the barrel, feeding and orienting means in said receiver transferring said cartridges from the magazine into firing position in said barrel, and firing mechanism including a trigger and firing pin.



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3,167,877
TRIGGER MECHANISM FOR A FIREARM
Friedhelm G. Jüngeling, Amsterdam, Netherlands, assignor to Staatsbedrijf Artillerie-Inrichtingen, Hembrug-Zaandam, Netherlands, a corporation of the Netherlands
Filed Nov. 8, 1962, Ser. No. 236,351
Claims priority, application Netherlands, Nov. 22, 1961, 271,660
3 Claims. (Cl. 42—69)



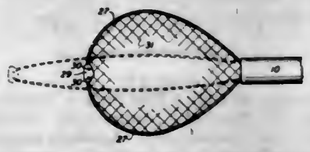
1. A trigger mechanism for a firearm, such as a rifle, comprising a trigger having a rearwardly extending arm and mounted for rotation about a pivot axle, a projection on said arm spaced rearwardly of said axle, a stationary abutment for engagement with said arm to limit rotational movement of the trigger, a spring urging said trigger to an inoperative position with its arm engaging said abutment, a sear supported on said axle for rotation and sliding movement longitudinally of said arm, a hammer, a cam on said hammer, a spring urging said hammer toward firing condition, said sear having a first arm cooperating with said cam to lock said hammer in a non-firing condition, a second arm on said sear having a portion engageable with said projection on the trigger arm, and a spring urging said portion of the second arm of the sear into engagement with said projection on the arm of the trigger, said sear when in position for engagement with the projection on the trigger arm being prevented from further longitudinal rearward movement by the trigger axle.

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3,167,878
TELESCOPIC LANDING NET
Guy M. Daffron, Anaheim, Calif., assignor to George H. Moore, Sterling, Colo.
Filed Apr. 29, 1963, Ser. No. 276,343
2 Claims. (Cl. 43—12)

1. A telescopic landing net comprising a tubular handle having open forward and rearward ends formed with

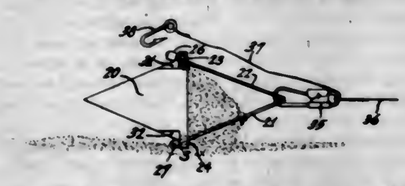
a radially-intruding rib substantially coextensive with and fixedly paralleling the axis thereof, an annular fillet fixedly and interiorly intruding radially about the forward end thereof, and means defining an aperture radially thereof inwarly adjacent its rearward end, a cylindrical, open-ended, longitudinally-split sleeve reciprocably housed in said handle in rotationally-immobilized coaction with said rib and end-registered opposition to said fillet thereby limiting sleeve travel forwardly of the handle, a block of less length than said sleeve secured therewithin in substantially coplanar registration of the block and sleeve ends opposed to said fillet attended by provision of a socket in and opening rearwardly of the handle from said sleeve, a resiliently-expansible, collapsible, net-equipped frame operatively connected to the end of said block directed forwardly of the handle and outstanding from said block longituinally of the handle for extension and retraction relative to and through the forward end of the



handle in reaction to shift of said sleece and block within the handle, a C-clip intrusively engaged at its free ends through and diametrically of the rearward end of the handle to swing in freely-embracing relation therewith, an abutment washer loosely transverse of the handle inwardly thereof adjacent and retained against outward shift by the intruded ends of said C-clip, resiliently-expansive means within the handle between end engagement with said abutment washer and opposite end reception in the sleeve socket yieldably biasing said sleeve away from the washer for consequent extension of the net-equipped frame outwardly from the forward end of the handle, a detent spring-biased in diametric association with said block and sleeve for radial extension through the sleeve to latching engagement with the aperture adjacent the rearward end of the handle when the net-equipped frame is retracted within the handle, and a cap deachably closing the rearward end of the handle.

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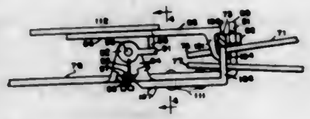
**3,167,879**
**FISHING DEVICES**
**George L. Beers, 410 Peyton Ave., Haddonfield, N.J.**
**Filed July 19, 1963, Ser. No. 296,204**
**6 Claims. (Cl. 43—44.96)**



1. A fishing sinker for attachment to a fishing line comprising a weighted body having one end substantially larger than the opposite end to minimize the resistance to the movement of said sinker through the air in one direction and to provide substantial resistance to the movement of said sinker through the sand at the bottom of a body of water in the opposite direction, said body having a plurality of apertures around the periphery of said larger end and having a central axis extending through said larger and smaller ends, said peripheral aperture being substantially parallel to said central axis, and means for attaching said body to a fishing line including a plurality of members each extending freely slidable through a different one of said apertures, said members being sufficiently rigid that they are not deformed by the forces normally applied to said sinker while fishing, means at the ends of said members for preventing the ends thereof from passing through said apertures and further means including a portion of each of said members adapted to be brought together for the attachment of a fishing line.

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**3,167,880**
**ANIMAL TRAP**
**Herbert L. Counts, 522 Idleyld Rte., Roseburg, Oreg.**
**Filed Aug. 26, 1963, Ser. No. 304,383**
**1 Claim. (Cl. 43—93)**



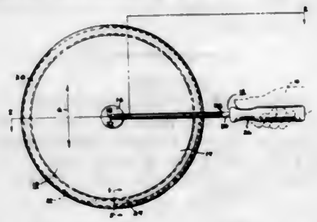
An animal trap comprising,
an elongated ground engaging base member bent upwardly at both of its ends,
a pair of cooperating jaw members,
means swingably attaching said jaw members to said upwardly bent ends of said base member,
jump-springs interposed between said base member and said jaw members,
means swingably attaching said jump-springs to said bent up ends of said base member for independent lateral movement in a horizontal plane into angular positions relative to the base member,
a trigger plate hingedly superimposed upon said base member in vertical alignment with the longitudinal axis thereof and engageable at one of its ends with said jaw members when the latter are in an open set position,
a lug struck downwardly from said trigger plate intermediate the ends thereof,
a tread plate carried by the opposite end of said trigger means whereby downward movement of the tread plate by weight imposed thereupon will disengage the trigger means from said open jaw members,
opposing lugs integrated with and extending upwardly from said base member intermediate the ends thereof,
a hub rockably mounted between said lugs by a pin extending therethrough,
a rigid flange integrated with and extending radially outward from said hub and bearing upwardly against downwardly struck lug of the trigger plate,
a steel spring plate secured to said hub and extending downwardly therefrom at right angles to said flange,
a detent comprising a vertically disposed adjusting screw extending upwardly through said base member with its top end in contact with the bottom end of said steel plate at one side thereof, whereby the tripping range of sensitivity of the trap may be regulated from the minimal resistance of said top end of the adjusting screw when in contact with the bottom end of said spring plate to a greater degree by upward advancement of the adjusting screw.

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**3,167,881**
**SPINNING DISC TOY WITH SHIFTABLE WEIGHT**
**Alfred A. Mazzadra, 174 Harding Ave., Stratford, Conn.**
**Filed Apr. 11, 1962, Ser. No. 186,675**
**3 Claims. (Cl. 46—47)**

1. A spinning toy comprising: a flat, solid disc; a handle including a hand grip and a rod means extending from one end thereof and having a spindle bearing at its free end; said disc provided with a central bearing rotatably mounted on said spindle bearing to freely rotatably mount said disc thereon; an unbalancing particulate weight means; weight confining means encircling the periphery of said disc and defining an annular passageway of circular cross section spaced from the central bearing, said weight means being freely movable therein; said weight means comprising the sole means for causing rota-

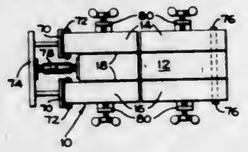




tion of said disc about said spindle bearing in response to transverse back and forth movement of said disc in its major plane in air while free of any support or operating means other than said handle, said weight means altering its shape and position relative to said disc during such rotation and thereby influencing the speed and smoothness of disc rotation.

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**3,167,882**
**MEANS FOR AND METHOD OF PRESTRESSING CONCRETE**
**John A. Abbott, Menlo Park, Calif., assignor to FMC Corporation, a corporation of Delaware**
**Filed Dec. 14, 1960, Ser. No. 75,856**
**9 Claims. (Cl. 50—128)**

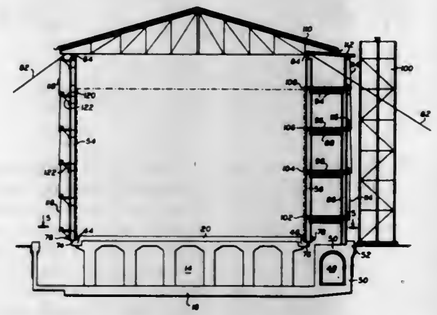


1. A composite rod for applying compressive stress to concrete in which the rod is cast, comprising an elongate, thermally conductive element formed of a material having a high compressive strength, a concrete compressing element extending along said first named element and being formed of a material having a high modulus of elasticity, and a bonding agent bonding said elements together substantially along their entire length, said first named element being under compression and maintaining the concrete compressing element under tension while the elements are bonded together, said bonding agent being of a type that forms a bond which is substantially weakened by the application of heat to the compressed element for transferring the restoring force of said concrete compressing element from the compressed element to the concrete in which the rod is cast, said concrete compressing element being formed with external concrete gripping means.

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**3,167,883**
**OVEN CONSTRUCTION**
**Fritz Hofmann, Bochum-Dahlhausen, Germany, assignor to Otto Construction Corp., New York, N.Y., a corporation of New York**
**Filed July 10, 1962, Ser. No. 208,711**
**2 Claims. (Cl. 50—531)**

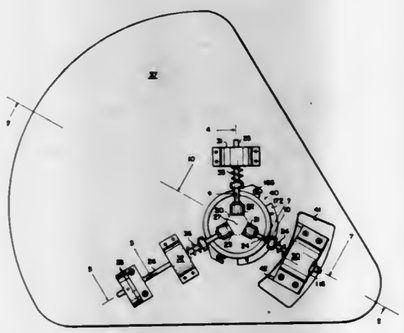
1. A method of erecting a temporary protective roof and temporary scaffolding, which roof and scaffolding are to be utilized in the construction of a coke oven battery, this method comprising erecting in permanent rows on both sides of the base plate of said coke oven battery a portion, but not all, of the buckstays to be utilized in said coke oven battery, each of said buckstays being substantially vertical, said buckstays on each side being widely spaced from one another, securing the lower ends of each of said buckstays to said base plate, securing the upper ends of each of said buckstays in each row to one another by means of longitudinal members, said longitudinal members providing a support for said protective roof, temporarily vertically mounting a row of buckstays in



spaced parallel relationship to one of said permanent rows, rigidly connecting said temporary row of buckstays to said permanent row of buckstays by means of horizontal tying members, erecting working platforms upon and supported by said horizontal tying members, erecting said protective roof so that it is supported by said longitudinal members, subsequently removing said temporary buckstays, and permanently erecting buckstays in said rows between said widely spaced buckstays.

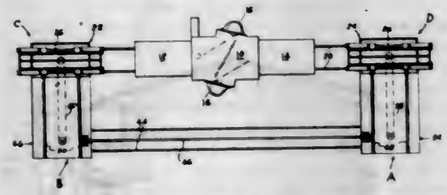
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**3,167,884**
**SPHERE LAPPING MACHINE AND METHOD**
**Howard J. Thompson, Stillwater, Minn., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Nov. 27, 1962, Ser. No. 240,308**
**14 Claims. (Cl. 51—3)**



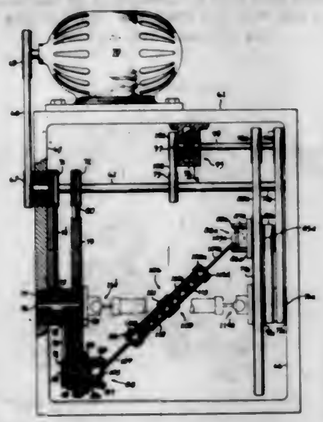
1. Means for causing random rotation of a sphere comprising, in combination: a plurality of hollow friction members mounted on the converging ends of a like plurality of horizontal shafts radial to the sphere to engage the surface thereof at areas centered at points substantially equally spaced about a great circle thereof; means causing rotation of said members about the axes of said shafts at independently adjustable rates; and means causing angular oscillation of one of said shafts, in a horizontal plane, about the center of the sphere.

3,167,885
APPARATUS FOR SURFACE TREATMENT OF METAL COILS
Paul Gloor, Schaffhausen, Switzerland, assignor, by mesne assignments, to The Wheelabrator Corporation, Mishawaka, Ind., a corporation of Delaware
Filed Oct. 25, 1962, Ser. No. 233,100
Claims priority, application Switzerland Oct. 26, 1961
10 Claims. (Cl. 51—15)



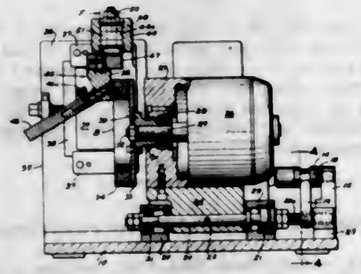
1. A means for treatment of metal coils comprising a housing, means within said housing for throwing treating material onto work passing through said housing, a guide track extending lengthwise through said housing from an inlet at one end to an outlet at another, a conveyance means mounted for movement on said guide track through said housing from the inlet end to the outlet end, a cylindrical frame adapted to carry said coils in spiral, spread-apart relationship, means mounting the frame on said conveyance means, means for displacement of the conveyance means through said housing, and means for imparting rotational movement to said frame relative to said supporting conveyance means during passage of the conveyance means from the inlet end to the outlet end of said housing.

3,167,886
LAPPING DEVICE
Charles D. Harrison, Fort Worth, Tex., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,527
4 Claims. (Cl. 51—26)



4. A device for simultaneously lapping two ball and socket joints comprising, in combination, a support structure including a pair of spaced apart support members, rotatable members mounted upon said support members, mounting means carried by each of said rotatable members for rotation about axes displaced from the axes of rotation of said rotatable members, said mounting means each including provisions for mounting ball and socket joints comprised of ball and socket portions to permit relative swivel movement between the said ball and socket portions, variable length means operably interconnecting said rotatable mounting means through said ball and socket joints and provided with means for biasing the said ball and socket joint portions into abutment for lapping coaction, and driving means for effecting said relative swivel movement between said joint portions by driving said rotatable members in rotation relative to each other and said rotatable mounting means in rotation relative to said rotatable members.

3,167,887
DRILL POINTING MACHINE
Elverton J. Crippen, Jr., deceased, late of St. Louis County, Mo., by Evelyn Crippen, administratrix, 7508 Cromwell Drive, St. Louis County, Mo.
Filed Feb. 2, 1962, Ser. No. 170,844
15 Claims. (Cl. 51—55)

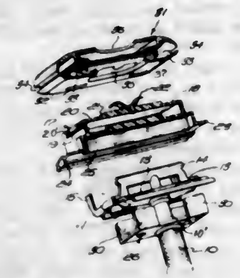


1. In a drill pointing machine the combination of a rotating grinding member having a flat grinding surface, support means adjacent said grinding member and having a pivot head thereon with the axis of the pivot head normally coincident with the plane of said flat grinding surface and intercepting the axis of rotation of said grinding member, and a drill positioning device mounted in said pivot head and having a portion projecting adjacent said flat grinding surface, said projecting portion having a drill guiding bore therein open to said flat grinding surface at a substantially constant oblique angle relative to said flat grinding surface, said device being pivotally movable about the pivot head axis and moving said projecting portion, and stop means for said device positioned on said support means to be engaged by said device, said stop means being located in spaced relation such that said drill guiding bore axis may be swung through an included angle relative to the flat grinding surface which is greater to one side than the other of a position perpendicular to said flat grinding surface, and the apex of said last mentioned angle of swing being coincident with the axis of said pivot head.

3,167,888
BLADE SUPPORTING AND SHARPENING ASSEMBLY
Walter A. Shanley, 172 Marlborough St., Boston, Mass.
Filed July 18, 1962, Ser. No. 210,634
6 Claims. (Cl. 51—59)

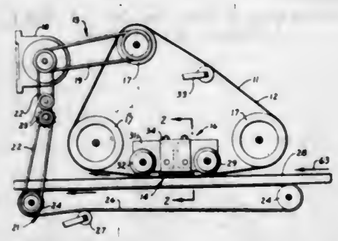
1. A blade supporting and sharpening assembly comprising a handle, a blade seat, and a blade locating bar and for mounting a centrally slotted double edged blade, finger actuatable blade positioning means mounted on said handle said means having plural portions adapted to engage the bottom of said blade for a substantial distance along the cutting edges thereof, said means being adapted to raise up and support said blade along said edges on said locating bar a substantial distance above said seat, and a sharpening member reciprocatable on said locating bar, said sharpening member including means for cooperating with said locating bar thereby limiting the reciprocating movements of said sharpening member to short strokes parallel to said blade edges, said sharpening member having also a blade conditioning surface adapted to compressively engage between said plural portions and said conditioning surface the cutting





edges of and thereby to sharpen said blade when said blade is supported by said positioning member and said sharpening member is adapted to be reciprocated on said locating bar.

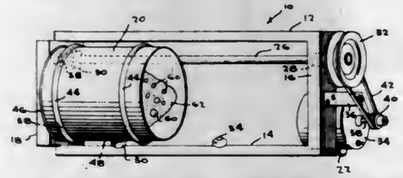
3,167,889
APPARATUS FOR FINISHING WOOD AND THE LIKE
Arno M. Jacobi, Belmont, Calif., assignor to Walter Jacobi & Sons, Inc., Belmont, Calif., a corporation of California
Filed Feb. 7, 1962, Ser. No. 171,604
19 Claims. (Cl. 51—141)



1. An apparatus for finishing irregularly shaped surfaces on wood and the like, comprising a belt having an abrasive surface, means for moving said belt through a work station, means for moving work through said work station with the surface of the work to be finished in juxtaposed position with respect to the abrasive surface of the belt, a backing unit at said work station adjacent to said moving belt on the side opposite the abrasive surface, said backing unit having an irregular surface of a configuration which matches the configuration of a desired finished surface, and means for shaping the belt in front of the work station to form a predetermined irregularly shaped surface of substantially the same shape as the irregularly shaped surface of the backing unit.

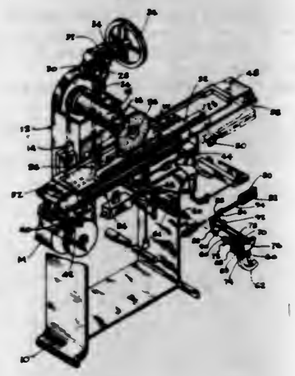
3,167,890
ROTARY TUMBLER
Dean F. Smith, Box 203, Bismarck, N. Dak.
Filed Sept. 18, 1962, Ser. No. 224,412
11 Claims. (Cl. 51—164)

11. An apparatus for tumbling particulate materials, comprising an open framework with side rails, and end rails, one of said end rails extending above said framework, a relatively long slender roller of uniform cross-sectional shape journalled in the respective said end rails, on an axis parallel to said side rails, and located adjacent one of said side rails, a pair of supporting legs carried by the respective, said side rails, adjacent said other of said end rails, whereby to support said framework at an angle to the horizontal, with the bottom of said one of said end rails constituting a ground support, a plurality of point-bearing supports, secured to said rails and directed inwardly of said framework, at least one of said point-bearing supports carried on the other of said side rails, and at least one of said point-bearing supports carried on said one of said end rails, and an open-top cylindrical container having an pair of



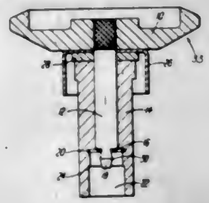
friction bands on its periphery, in mutually spaced relation, and adapted to dwell on said roller, said point-bearing support on said other of said side rails adapted to contact the periphery of said container, between said bands, and said point-bearing support on said one of said end rails adapted to be contacted by the bottom of said container.

3,167,891
GRINDING MACHINE
Loring Coes, Jr., Princeton, and Emmanuel Millas, Worcester, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 163,983, Jan. 3, 1962. This application Jan. 25, 1963, Ser. No. 253,966
24 Claims. (Cl. 51—165)



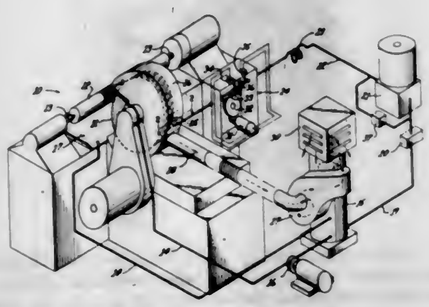
1. The combination in a grinding machine having a work support and a grinding wheel movable relative to each other, of means for establishing a norm of operation in which conventional grinding is effected, a detector operably sensitive to a change in the performance of the machine due to a change in the grinding characteristics of the wheel such as are produced by loading and dulling of the wheel, means responsive to operation of the detector to change the norm of operation to effect a breakdown and renewal of the surface of the wheel, and means for rendering the last-named means inoperative after a predetermined length of time.

3,167,892
## SHAFT MOUNTING ARRANGEMENT
Josef Longin Anecki, Slough, England, assignor to Lan-Elec Limited, Slough, England, a company of Great Britain
Filed June 5, 1961, Ser. No. 115,000
Claims priority, application Great Britain, June 7, 1960, 19,997/60
5 Claims. (Cl. 51—168)



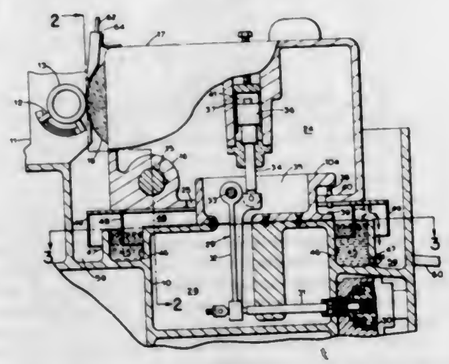
1. In rotary machinery, the combination of a non-rotary bearing sleeve and a shaft journalled for rotation therein, and a radially resilient bent wire spring member captive in and contiguous with said non-rotary bearing sleeve and having an internal through aperture, the shaft being profiled at one end into a tail spigot which is of a maximum diameter at a position intermediate its ends, said spigot having inner and outer portions of frusto-conical form respectively inwardly and outwardly of said position of maximum diameter and being adapted to enter said internal aperture of said resilient member to wedge outwardly opposed portions of said member until the maximum diameter has passed through the aperture so that said resilient member seats on said inner frusto-conical portion and holds the shaft captive against axial movements under normal forces in operation while permitting it to rotate relatively to said resilient member and said sleeve.

3,167,893
## APPARATUS FOR CLEANING GRINDING WHEELS
Dante S. Giardini and Richard N. Roney, Dayton, Ohio, assignors to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,484
4 Claims. (Cl. 51—262)



1. A cleaning apparatus for cleaning metal loading from a rotating grinding wheel applied in grinding a desired contour in a metallic workpiece comprising,
a supply reservoir containing a grinding wheel coolant liquid for cleaning and cooling,
a first pumping system for supplying said cooling liquid from said reservoir to the grinding zone,
means for returning said cooling liquid to said supply reservoir,
a second supply system for pumping said liquid from said reservoir to a point remote from the grinding zone at high pressure comprising,
a supply conduit having an outlet orifice with an effective outlet diameter of the order of 1/100 of an inch,
pumping means for supplying said liquid through said orifice at high pressures generally within a range of 4,000 to 20,000 pounds per square inch to cause a high velocity jet of low volume to eject from said orifice,
supporting means to hold said orifice in close proximity to the forming surface of the grinding wheel and directed thereagainst thereby forcing said liquid into the grinding wheel,
means for moving said orifice across the forming surface of the grinding wheel during grinding to thereby clean it of metal loading,
filter means in said supply conduit upstream of said orifice for preventing obstruction thereof,
and suction means for collecting the cleaning liquid mist formed by the jet contacting the grinding wheel and returning said liquid to said reservoir, whereby through the continuous removal of metal loading during grinding more efficient and precise forming of metal contours is achieved.

3,167,894
## LIQUID SEAL FOR MACHINE TOOL MEMBERS
William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 8, 1962, Ser. No. 193,089
3 Claims. (Cl. 51—268)



1. In a machine tool for performing an operation on a workpiece, said machine tool having a base member and having a movable member mounted on the base member for reciprocating movement between two extreme positions relative thereto during said operation, a trough for fluid in the base member completely surrounding the movable member, the outer boundary of said trough defined by a continuous upstanding flange, and an inner skirt and an outer skirt connected to and extending around the movable member in spaced relation to straddle said flange, said inner skirt extending below the level of fluid in the trough in any position of the movable member between said two extreme positions to define a seal between said base member and said movable member and said outer skirt extending over the flange to minimize entry of foreign matter into the trough, and a source of fluid to cool the operation on the workpiece, said source connected to the trough to supply fluid thereto.

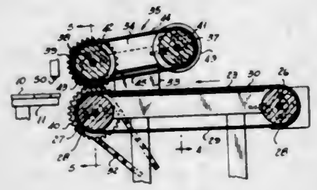


3,167,895
## METHOD OF FILLING SUTURE PACKAGE
Vernon C. Egler, Palatine, and Harold R. Morgan, Dolton, Ill., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Original application June 3, 1958, Ser. No. 739,623, now Patent No. 3,062,372, dated Nov. 6, 1962. Divided and this application June 29, 1962, Ser. No. 206,458
4 Claims. (Cl. 53—35)



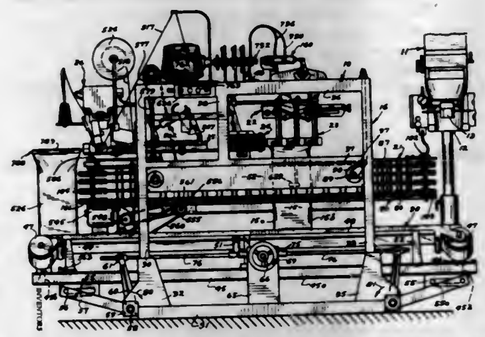
1. The method of forming a continuous resilient organic suture into a repetitive series of substantially similar geometric configurations within a relatively flat apertured compartment formed by the peripheral junction of two superimposed panels meeting at points near their peripheries whereby said suture is freely dispensable, comprising thrusting a suture end and progressively the adjacent end portion of said suture into said compartment causing said end to contact and move along one of said panels and wedge between the acute angle said panels form adjacent their juncture, continuing to thrust said suture progressively lengthwise into said compartment with said end wedged whereby other end-adjacent portions of the suture within the compartment are caused to bend and the bends to enlarge into the peripheral confines of the compartment thereby wedging themselves into a geometric configuration, thereafter continuing to thrust said suture progressively lengthwise into said compartment to form a relatively flat repetitive series of substantially similar geometric configurations in contiguous relationship, with each configuration substantially paralleling the planes of said panels, and terminating lengthwise thrust of said suture into said compartment with an end of said suture remaining projecting therefrom.

3,167,896
## PACKAGING
Nicholas Marcalus, West Englewood, N.J.
(1 Market St., East Paterson, N.J.)
Filed July 18, 1963, Ser. No. 295,981
5 Claims. (Cl. 53—35)



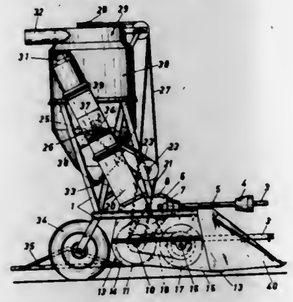
5. A method of packaging a plurality of elongated rolls of wrapping paper comprising inserting the rolls lengthwise in a pyramid shape within a transparent bag having a circumferential area sufficient to receive the plurality of rolls loosely in pyramid shape and to tautly encompass the rolls when rearranged in a common plane, moving the container and articles bodily lengthwise along a path, and progressively applying downward pressure along the length of the topmost roll in the container during movement of the rolls along said path and thereby forcing all of the rolls into a common plane.

3,167,897
## AUTOMATIC BAG TOP FORMING AND SEWING APPARATUS
Frank L. Hopkins and Richard H. Ayres, Minneapolis, Minn., assignors to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Filed Nov. 2, 1961, Ser. No. 149,773
35 Claims. (Cl. 53—139)



3. In bag top forming apparatus for shaping a bag top preparatory to be provided with a sewed bag top closure, a longitudinally extending frame, conveyor means mounted on the frame for conveying a filled bag in a longitudinally forward direction, means mounted on the frame above said conveyor means for forming gussets in the bag as it is being conveyed in a forward direction by said conveyor means, said gusset forming means including inside gusset formers extendable into the bag mouth, outside gusset formers and means for operating said gusset formers to form gussets in the bag top while the bag is being moveably conveyed in a forward direction by said conveyor means, means for automatically leveling the formed bag top and retaining it in a leveled condition as the bag is being advanced by the conveyor means, the last mentioned means being mounted on the frame forwardly of the gusset forming means, and means for operating the conveyor means, gusset forming means and bag top leveling and retaining means in the aforementioned manner.

3,167,898
## HARVESTERS
Anton Bertil Grönberg, Villa Karlsborg, Ottum, Sweden
Filed Oct. 20, 1961, Ser. No. 146,494
Claims priority, application Sweden, Oct. 21, 1960, 10,067/60
3 Claims. (Cl. 56—23)



1. In a harvester, a mower comprising: a knife rod movable reciprocally in a horizontal plane and provided with a row of stationary knives for mowing a crop; a feeder bottom extending rearwardly from said knife rod; a horizontal screw conveyor journaled above said feeder bottom for conveying mowed material from both ends of

the conveyor toward its center and then rearwardly, a housing disposed rearwardly of said screw conveyor for receiving mowed material from said screw conveyor, a generally cylindrical housing extending upwardly and rearwardly from said first-mentioned housing, means within said first-mentioned housing for crushing the mowed material and conveying it into said generally cylindrical housing, said crushing and conveying means including a flail rotor within said first-mentioned housing, and means within said generally cylindrical housing for disintegrating material conveyed thereto by said flail rotor, said disintegrating means including a horizontally disposed knife rotor.

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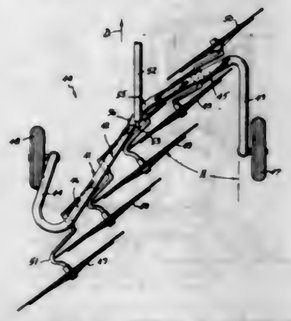
**3,167,899**
**ROTARY APPARATUS FOR CLEARING FURROWS**
John L. Best, P.O. Box 408, Milan, Tenn.
Filed Oct. 9, 1962, Ser. No. 229,352
6 Claims. (Cl. 56—25.4)



1. A rotary apparatus for clearing a furrow comprising:
(*a*) an elongated frame having upper and lower portions,
(*b*) means for mounting the upper portion of said frame upon a rotary spindle for rotating about an axis through said upper and lower portions,
(*c*) upper cutter blades fixed to and extending laterally from the upper portion of said frame,
(*d*) lower cutter blades fixed to and extending laterally from the lower portion of said frame, and
(*e*) a pair of flexible beaters fixedly mounted to the lower portion of said frame to depend below said frame, said beaters being spaced on opposite sides of said rotary axis.

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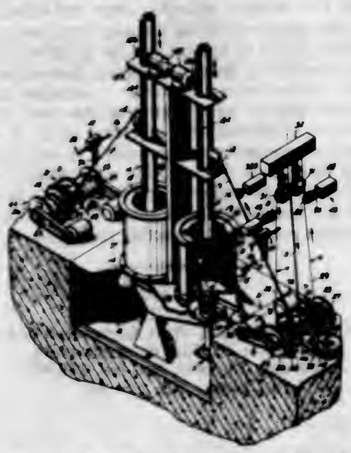
**3,167,900**
**ROTARY SIDE DELIVERY RAKES**
George C. Wood, Edenton, N.C.
Original application Oct. 5, 1960, Ser. No. 60,667. Divided and this application Nov. 20, 1961, Ser. No. 160,385
5 Claims. (Cl. 56—377)



4. In a rotary side delivery rake, the combination of an elongated frame member of a substantially S-shaped configuration having an intermediate portion disposed obliquely to the direction of travel of the rake and reversely directed first and second end portions, said intermediate portion being angulated intermediate its ends whereby to provide a relatively short front region and a relatively long back region having a smaller degree of angularity to the direction of travel than the front region, said first end portion of the frame member being integral with the front end of said front region of the intermediate portion and extending rearwardly therefrom, and said second end portion being integral with the rear end of said back region and extending forwardly therefrom, travelling wheels provided at the rear and front ends of the respective first and second end portions of the frame member and disposed substantially in transverse alignment, an angularly adjustable hitching bar connected to said intermediate portion of the frame member adjacent the angulation therein, a plurality of rotatable raking wheels mounted for raising and lowering movement on said front and back regions of the intermediate portion of the frame member and rearwardly of the same, and an additional rotatable raking wheel mounted for raising and lowering movement on the front region of said intermediate portion forwardly of the same.

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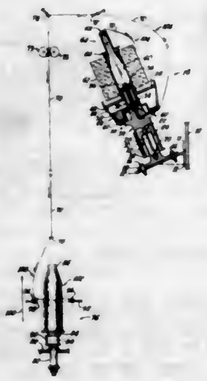
**3,167,901**
**METHODS OF AND APPARATUS FOR REELING STRANDS IN A MULTICYCLE OPERATION**
Daniel George Stetka, Pennington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 3, 1963, Ser. No. 292,519
15 Claims. (Cl. 57—34)



1. Apparatus for handling strand material in a two-cycle, bidirectional operation which comprises:
a plurality of rotatable reels for supplying and taking up strand material,
means for guiding the strand material along a predetermined path of travel past at least one of the reels,
means for removing the strand material from at least one of the reels and moving the strand material along the predetermined path in one direction to permit processing of the strand material,
snagger means connected operatively to a predetermined one of the rotatable reels for securing the strand material to said predetermined reel to take up processed strand material on said predetermined reel,
means for moving a portion of the advancing strand material out of the predetermined path of travel into engagement with the snagger means, and
means for driving the predetermined reel to reverse the direction of travel of the strand material and effect taking up of the processed strand material on the predetermined reel.



**3,167,902**
**APPARATUS FOR TWISTING FIBROUS STRANDS**
Roy E. Smith, Anderson, S.C., and Francis C. Skalko, Lincoln, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,273
2 Claims. (Cl. 57—58.83)



1. In a system for rewinding continuous strand,
a base supported in space and having spaced coaxial bearings with the axis generally vertically disposed and canted slightly from true vertical,
an intermediate spinner member having a coaxial shaft carried in said base bearings and having a strand guide tube coaxial thereto and operably connected with a radially opening throat to direct strand radially outwardly,
a bowl-shaped package support journalled on the strand guide tube of the intermediate spinner member,
weight means in said package support to prevent rotation thereof,
a package of strand carried coaxially on said package support,
an annular guide in the free end of said package support and having an eye coaxial to the package to direct the strand from the periphery of the package as a first free ballon around the free end of the package and axially through the package and into the interior of the intermediate spinner member and into the strand guide tube and throat of the intermediate spinner member, and the throat being effective to direct the strand radially from the axis of the package outwardly to a second free balloon entirely surrounding the package and the first free balloon,
a first strand guide coaxial to and spaced from the free end of the package,
a second strand guide offset from the first strand guide and in a generally horizontal plane with said first guide,
a pair of abutting pull rolls beneath said second guide,
a third strand guide beneath said pull rolls,
and a ring and traveller package winding device beneath said third strand guide.

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**3,167,903**
**BRIDLES**
Vincent C. J. Peterson, Huntingdon Valley, and Charles H. Layton, Forty Fort, Pa., assignors to American Chain & Cable Company, Inc.
Filed Aug. 28, 1961, Ser. No. 134,314
5 Claims. (Cl. 57—145)

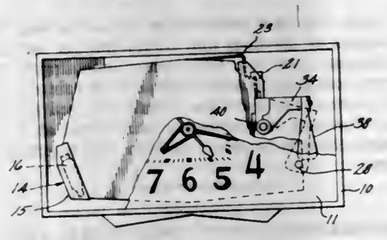
1. A length of wire rope having a reinforced section, the reinforcement comprising a plurality of strands lying



in the valleys of the rope body, and means securing the ends of the strands in the valleys of the rope body against longitudinal movement.

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**3,167,904**
**LIGHTED ALARM SET INDICATOR**
William C. Wingler, Northboro, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 6, 1964, Ser. No. 350,012
3 Claims. (Cl. 58—22.7)




1. In an alarm clock, a translucent dial, an opaque mask positioned behind said dial, a lens positioned behind said mask, said lens being aligned with said dial and said mask, a light source positioned adjacent one edge of said lens for illuminating said dial, a light reflective surface formed in said lens to reflect light toward said dial, said mask having a hole aligned with said reflective surface such that light striking said reflective surface passes through said hole to cause a light spot to appear on said dial when the clock is in a darkened surrounding, an alarm shut-off lever manually movable between an alarm-off and an alarm-set position, a mounting plate positioned behind said mask, a stud projecting from said plate opposite said mask, an elongated shutter-lever having an elongated passage therethrough for insertion over said stud with a close sliding fit, said shutter-lever also having a cam surface arranged for engagement by said alarm shut-off lever, a shutter mounted on said shutter-lever for movement between said mask and said lens to selectively block passage of light through said hole, a spring engaging said shutter-lever, said alarm shut-off lever pivoting said shutter-lever when said alarm shut-off lever is moved to the alarm-off position to move said shutter between said mask and said lens to block passage of light through said hole so that the light spot will not appear on said dial, said spring pivoting said shutter-lever when said alarm shut-off lever is moved to the alarm-set position to uncover said hole to allow passage of light through said hole so that the light spot will appear on said dial.

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**3,167,905**
**MOTION TRANSFORMERS FOR ELECTRONICALLY CONTROLLED TIMEPIECE**
Max Hetzel, New Hyde Park, N.Y., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed July 16, 1963, Ser. No. 295,406
1 Claim. (Cl. 58—23)

A timepiece comprising:
(A) a gear train for turning the hands of the timepiece,
(B) a tuning fork having a pair of vibrating tines attached at their roots to a yoke and extending upwardly therefrom and a mounting base lying to one side of said tines, said base being attached at one

end to said yoke and extending upwardly therefrom, said tines being closely adjacent each other,

(C) means sustaining said tines in vibration,



(D) and a motion transformer for converting the vibrations of the tines into rotary motion for driving said gear train, said transformer including a ratchet wheel coupled to said train and a pair of fingers of substantially the same length attached to the respective tines and engaging said wheel at different points thereon to drive same in double-acting relation.

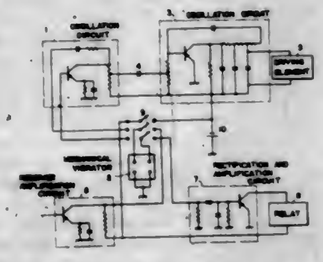
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3,167,906

## TIMEKEEPER CORRECTED BY ELECTRIC TIME SIGNALS

Masao Fukata, Mitaka-shi, and Yoshikazu Sato, Setagaya-ku, Tokyo-to, Japan, assignors to Kokusai Denki Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Aug. 27, 1963, Ser. No. 304,925
Claims priority, application Japan, Aug. 31, 1962, 37/37,095, 37/37,096
2 Claims. (Cl. 58—35)



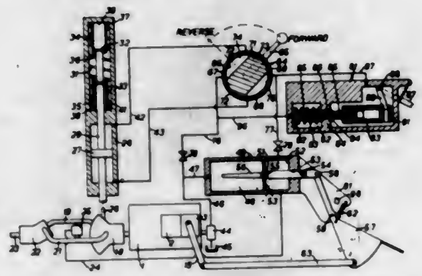
1. A timekeeping device corrected by an electric time signal comprising, a first oscillatory circuit, a second oscillatory circuit frequency locked with said first oscillatory circuit to supply driving power for driving said device, said second oscillatory circuit comprising a self-exciting oscillatory circuit, a time signal receiving circuit, a resonator normally connected to sad first oscillatory circuit to control the frequency thereof, means to switch over said resonator to connect it to function as a signal selecting wave filter in said time signal receiving circuit during a selected interval of time just before and after arrival of said time signal, a driving element to receive the output of the said self-excited second oscillatory circuit during all the intervals when said resonator functions to control the frequency of said first oscillatory circuit and as said filter, an automatic switching means to actuate said switch-over means to operably connect said resonator to said first oscillatory circuit and to operably connect said resonator during a few seconds just before and after said time signal is received in an operative condition to function as said filter of the time signal receiving circuit, whereby the indications of said devices are corrected in response to and in accordance with the time signals selected and received.

3,167,907

## INFINITELY VARIABLE TRANSMISSION

Bertram C. Kempson, Cheltenham, England, assignor to Dowty Hydraulic Units Limited, Gloucester, England, a British company

Filed May 13, 1963, Ser. No. 279,849
Claims priority, application Great Britain, May 22, 1962, 19,716/62
25 Claims. (Cl. 60—19)



1. The combination with an engine having an engine speed governor responsive to engine speed to control fuel flow to the engine to tend to maintain engine speed within a predetermined range, of an infinitely variable speed ratio power transmission arranged to transmit power from the engine, a transmission governor responsive to reduction of engine speed below a speed within the predetermined range of the governor to reduce controllably the speed ratio of the transmission adjustment means for the engine governor to select varying speed ranges of operation of the engine and an interconnection from the engine governor to the transmission governor for adjusting the speed at which the transmission governor begins to reduce transmission speed ratio so that such speed is always less than the top speed of the range selected by the engine governor.

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3,167,908

## ROCKET PROPELLANT SYSTEM

James W. Dale, Winchester, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application Dec. 22, 1958, Ser. No. 781,800. Divided and this application Dec. 21, 1961, Ser. No. 161,314
10 Claims. (Cl. 60—35.4)

1. A method for applying immediate thrust to a rocket system comprising introducing a fluid fuel component into contact with the exposed surface of a compact mass of the solid oxidant component, nitrosyl chlorotetrafluoride, in a combustion chamber of a rocket motor to effect the spontaneous ignition of said two components, said fuel is introduced at a rate to provide sufficient thrust to the entire rocket system to launch said system, and the total supply of said oxidant is sufficient to oxidize the total supply of said fuel carried in said rocket system.

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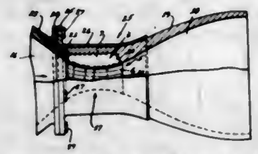
3,167,909

## SELF-COOLED ROCKET NOZZLE

Russell F. Thielman, Cleveland, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 24, 1961, Ser. No. 105,120
4 Claims. (Cl. 60—35.6)

1. A stationary insulating self-cooling insert assembly adapted for protecting reaction motor gas discharge nozzles from the effects of high temperature exhaust gases generated in the motor comprising: a plurality of units sized relative to each other and to the adjacent nozzle wall portions to provide a predetermined surface continuity therebetween for minimizing directional disturbances in exhaust gases flowing adjacent thereto, each of said units including a housing having a pressurizable chamber, said housing having a pair of end walls sized to the nozzle wall, one of the end walls having an inlet for filling the chamber with a solid coolant material which converts to a gas at the operating temperature of the exhaust gases, a housing top wall sized to conform to the adjacent nozzle wall, a housing bottom wall having its outer surface shaped to conform to the shape



of the inner surfaces of the adjacent nozzle wall portions to provide a predetermined surface continuity therebetween for minimizing directional disturbances in the flow of exhaust gases adjacent thereto, a plurality of apertures formed in said bottom wall for discharge of gases generated from the coolant material to provide a heat transfer barrier between said bottom wall and the adjacent flowing exhaust gas stream, and housing side walls sized to conform to adjacent side walls of like units.

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3,167,910

## THRUST TERMINATION DEVICE AND METHOD

Robert B. Weaver, Palo Alto, Calif., assignor to Weaver Associates, Palo Alto, Calif., a partnership

Filed Jan. 25, 1963, Ser. No. 253,910
15 Claims. (Cl. 60—35.6)



1. In a device for terminating the thrust on an accidentally ignited solid-propellant rocket motor of the type having a casing, means encompassing the casing to retard expansion of the casing during pressure build-up within the casing caused by burning of the solid propellant within the casing and means actuated by the encompassing means as it is expanded to rupture the casing to thereby destroy the rocket motor.

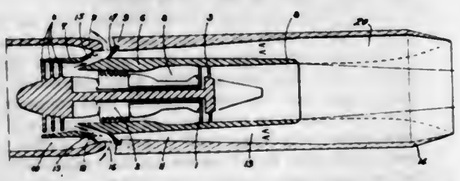
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3,167,911

## THRUST-REVERSING DEVICE FOR COMBINED TURBOJET-RAMJET UNITS

Pierre Yves Almable Fernand Sandré, Chatillon-sous-Bagneux, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France

Filed Jan. 26, 1962, Ser. No. 168,949
Claims priority, application France, Jan. 27, 1961, 851,008, Patent 1,286,886
10 Claims. (Cl. 60—35.54)



1. A combined turbojet-ramjet engine with thrust-reversing device, said turbojet being a turbofan, comprising:

(a) a turbofan casing,

(b) a turbofan in said casing, comprising two concentric and mechanically independent rotors, one rotor having a low-pressure compressor and turbine and the other rotor having a high-pressure compressor and turbine, and a combustion system,

(c) said casing comprising two portions, one a fore portion surrounding the low-pressure compressor and the other a central portion surrounding the high-pressure compressor, the combustion system and the turbines,

(d) a jet pipe terminating the downstream extremity of said casing with respect to the general direction of flow of air through said turbofan,

(e) the low-pressure compressor being traversed by the whole of said air passing into said turbofan,

(f) an outer casing, concentric with and surrounding said turbofan casing,

(g) a ramjet engine within said outer casing and comprising sequentially, with respect to said general direction of flow of said air, an annular feed duct defined between said outer casing and said turbofan casing, an annular combustion chamber surrounding said jet pipe, and an exhaust nozzle, the outlet section of said turbofan jet pipe being located within said outer casing at a substantial distance upstream, with respect to said direction of flow of said air, of the outlet section of said exhaust nozzle,

(h) first passage means through said turbofan casing located between said fore portion and said central portion, air passing into said turbofan being divided, on leaving said low-pressure compressor, into a primary air flow passing through said high-pressure compressor, said combustion system and said turbines, and a secondary air flow passing through said first passage means to intermingle with a direct air flow through said ramjet annular feed duct,

(i) second passage means through said outer casing located adjacent to and slightly downstream of said first passage means,

(j) means for shutting off said direct air flow through said ramjet duct and simultaneously deviating and evacuating said secondary air flow outwards and forwards, with respect to said direction of said air flow, through said second passage means,

(k) the thrust due to said primary air flow being reduced without being deviated when said means for shutting off said direct air flow through said ramjet duct and simultaneously deviating and evacuating said secondary air flow outwards and forwards, with respect to said direction of said air flow, through said second passage means are actuated.

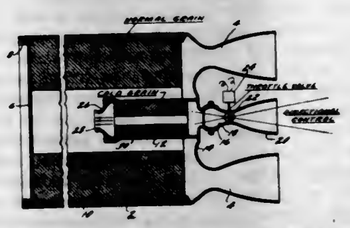
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3,167,912

## THRUST CONTROL FOR SOLID ROCKET

Walter A. Ledwith, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 4, 1960, Ser. No. 298
5 Claims. (Cl. 60—35.55)

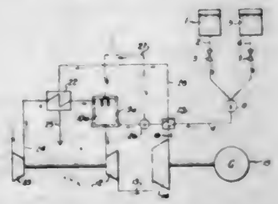


5. In a rocket, a main rocket combustion chamber in which a propellant is decomposed, a plurality of nozzles communicating with and located at one end of

said chamber, said nozzles being arranged in a ring about the axis of the chamber, an auxiliary chamber located within the main chamber and communicating with the main chamber and having a propellant therein, said auxiliary chamber having an orifice therein connecting said chambers, an auxiliary thrust nozzle also communicating with said auxiliary chamber, and controlling means for adjusting the flow from said auxiliary chamber thereby to control the discharge through the orifice into the main chamber, said auxiliary nozzle being mounted to swing about a point on the axis of the auxiliary nozzle for directional control of the rocket.

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**3,167,913**
**CONTINUOUS FLOW COMBUSTION CYCLE**
**Erhard Mühlberg and Siegfried Meurer, Nurnberg, Germany, assignors to Maschinenfabrik Augsburg-Nurnberg A.G., Nurnberg, Germany**
**Filed Apr. 2, 1963, Ser. No. 274,891**
**Claims priority, application Germany, July 12, 1958, M 38,254**
**9 Claims. (Cl. 60—39.02)**

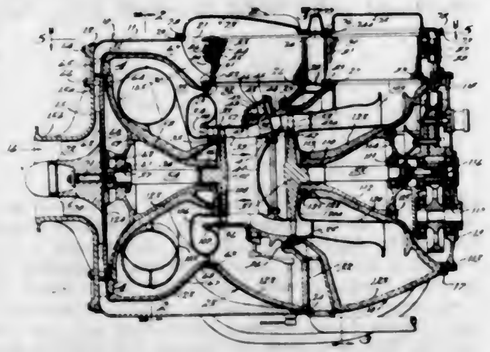


1. A process for generating power in a power plant having a combustion engine including a combustion chamber wherein fuel is burned and the resulting hot products of combustion are used as the working fluid for the engine, such as a gas turbine, the improvement comprising mixing liquid hydrocarbon fuel with water in a proportion such that in the presence of heat substantially all of said liquid fuel and at least a part of the water will be converted to hydrogen and carbon monoxide, endothermically reacting said liquid fuel and water substantially entirely with heat available outside of and through the wall of said chamber to form a gaseous fuel composed of carbon monoxide and hydrogen having a higher heat content than said liquid fuel, burning said gaseous fuel in said combustion chamber to produce hot combustion gas which provides the heat for said endothermic reaction, and then passing the hot combustion gas into said engine for actuating said engine.

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**3,167,914**
**GAS TURBINE ENGINE HOUSING**
**Giovanni F. Savonuzzi, Birmingham, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware**
**Filed July 3, 1961, Ser. No. 121,672**
**12 Claims. (Cl. 60—39.51)**

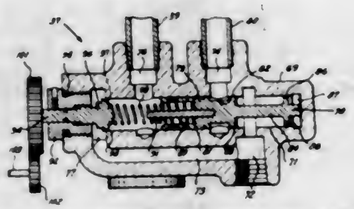
1. In a gas turbine engine having a pair of coaxial rotors, an outer housing, an inner housing within said outer housing and containing said rotors, journal means carried by said outer housing and rotatably supporting said rotors, annular gas passage means supported by said inner housing coaxially with said rotors for conducting motive gases thereto, baffle means subject to the axial pressure of said motive gases and carried by said annular gas passage means to close the area radially inwardly thereof at a location between said rotors, said inner housing being thereby urged axially in the downstream direction by said pressure, a plurality of domes in said outer housing at locations spaced around the axis of said gas passage means and rotors, a corresponding plurality of platforms carried by said inner housing, each platform extending transversely to a radius from said axis and having gas passage sectors opening radially therethrough, each platform also being spaced radially inwardly from the outer surface of one of each of said domes to provide a regenerator chamber, said inner and outer housing slid-



ably engaging each other at axially opposite ends of said inner housing to support the latter, the sliding engagement between said housings at the downstream end of the inner housing being at mating conical surfaces of said housings coaxial with said rotors and enlarging in said downstream direction.

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**3,167,915**
**CONTROL SYSTEM FOR A MATERIAL SPREADER MACHINE**
**Lyle C. Phillips, Cedar Rapids, Iowa, assignor to Henderson Manufacturing Co., Manchester, Iowa, a corporation of Iowa**
**Filed Nov. 6, 1962, Ser. No. 235,739**
**1 Claim. (Cl. 60—52)**

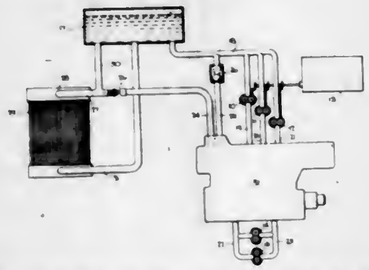


A fluid power transmission system comprising:
(*a*) fluid motor means having an inlet port and an outlet port,
(*b*) pump means having an inlet port and an outlet port operable to supply fluid under pressure to said fluid motor,
(*c*) a reservoir fluidly connected to said inlet port of the pump means and said outlet port of said fluid motor means to receive fluid from said motor means and supply fluid to said pump means,
(*d*) valve means having a longitudinal bore, an inlet port adjacent each end of said bore and in fluid communication therewith said inlet ports being fluidly connected to said pump means, a by-pass outlet port and a regulated flow outlet port in fluid communication with said bore between said inlet ports, said by-pass outlet port being fluidly connected to the inlet port of the fluid motor means and said regulated flow outlet port being fluidly connected to said reservoir, a spool member slidably positioned in said bore to separate the outlet ports and open and close the by-pass outlet port, and adjustable screw forming a restricted passage with said bore between an inlet port and the regulated flow outlet port, a compression spring engaging said screw and said spool to bias said spool to close said by-pass outlet port whereby the amount of fluid which flows out of the by-pass port is regulated by the size of the restricted passage formed by the adjustable screw and bore,
(*e*) a reversible electric motor connected to said adjustable screw for the controlling of the size of the restricted passage, and
(*f*) switch means operable to reversibly connect said electric motor to a source of electric power.



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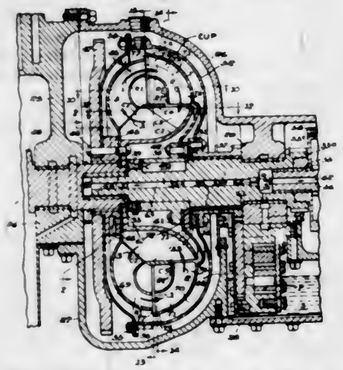
**3,167,916**
**HYDRAULIC DRIVE FOR INDUSTRIAL TRUCK**
**Charles S. Schroeder, Villanova, Pa., assignor to Yale & Towne, Inc., New York, N.Y., a corporation of Ohio**
**Filed Nov. 1, 1963, Ser. No. 320,812**
**5 Claims. (Cl. 60—53)**



1. In a hydraulic circuit, a fluid reservoir, a radiator, passage means connected to said radiator through which fluid may pass into said radiator, a fluid conducting passage for fluid to be cooled by said radiator terminating in a pressure nozzle in said passage means, bypass conduit means connected at one end to said passage means adjacent the discharge end of said nozzle and connected at the opposite end to said reservoir.

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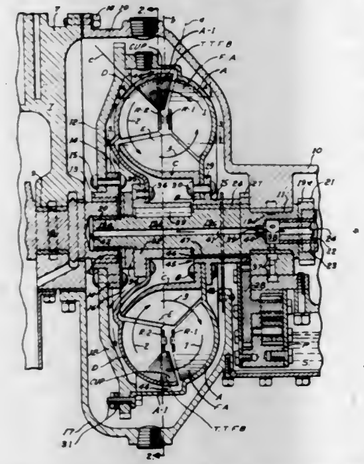
**3,167,917**
**HYDRAULIC COUPLING**
**Alexander M. Alexandrescu, 549 E. 114th St., Cleveland, Ohio**
**Filed Sept. 7, 1960, Ser. No. 54,438**
**9 Claims. (Cl. 60—54)**



1. A fluid coupling having a normal direction of rotation comprising a driving shaft and a coaxial driven shaft; an impeller, a turbine, and an entrance impeller defining a torus ring and providing complementary portions of a torus section; said impeller and entrance impeller being carried by said driving shaft and said turbine being carried by said driven shaft; said impeller comprising an annular impeller shell carrying a plurality of driving blades each having an edge attached to said impeller shell, an outlet edge adjacent to the outer periphery of said ring, and an inlet edge adjacent to the inner periphery of said ring; said turbine comprising an annular turbine shell carrying a plurality of driven blades each having an edge attached to said turbine shell, an inlet edge adjacent to the outer periphery of said ring, and an outlet edge adjacent to the inner periphery of said ring; said entrance impeller comprising an annular entrance impeller shell carrying a plurality of deflector blades each having an edge attached to said entrance impeller shell, an inlet edge closely adjacent to said outlet edges of said driven blades, and an outlet edge closely adjacent to said inlet edges of said driving blades; each said deflector blade being tilted away from said normal direction of rotation adjacent to its inlet edge about an axis which is crosswise of a radial flow area of the vortical flow of the fluid whereby fluid from said driven blades impinges upon flat sides of said deflector blades and causes a reactive force to be transferred through the fluid back to said driven blades and exerts a driving force at the inner periphery of said turbine in said normal direction of rotation.

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**3,167,918**
**FLUID COUPLING**
**Alexander M. Alexandrescu, 549 E. 114th St., Cleveland, Ohio**
**Filed Sept. 12, 1961, Ser. No. 138,230**
**5 Claims. (Cl. 60—54)**



1. A fluid coupling comprising a driving shaft and a coaxial driven shaft; a sleeve shaft freely rotatable upon said driven shaft; an impeller, a turbine, and a fluid shifter element defining a torus ring and providing complementary portions of a substantially circular torus section; said impeller comprising an annular impeller shell carrying a plurality of driving blades each having an edge attached to said impeller shell, an outlet edge adjacent to the outer periphery of said ring, and an inlet edge adjacent to the inner periphery of said ring; said turbine comprising an annular turbine shell carrying a plurality of driven blades each having an edge attached to said turbine shell, an inlet edge adjacent to the outer periphery of said ring, and an outlet edge adjacent to the inner periphery of said ring; said fluid shifter element comprising an annular fluid shifter shell carrying a plurality of vanes each having an edge attached to said fluid shifter shell, an inlet edge adjacent to said outlet edge of said driven blades, and an outlet edge adjacent to said inlet edge of said driving blades; said impeller being carried

by said sleeve shaft; means connecting said driving shaft with said impeller; the outlet edges of said driven blades and the inlet edges of said driving blades being angled away from each other and away from a plane disposed medially through said torus ring transversely to the axis thereof; said fluid shifter element being mounted to said impeller and said vanes extending across said plane and redirecting fluid from said turbine back to said impeller in use of said coupling.

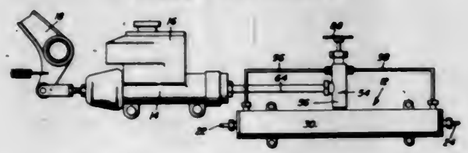
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3,167,919

## SAFETY DEVICE FOR HYDRAULIC BRAKES

Alton Kimball, Rte. 20 at Canal St., Bouckville, N.Y.

Filed May 2, 1963, Ser. No. 277,644
8 Claims. (Cl. 60—54.5)



1. A vehicle hydraulic brake system including a master brake cylinder, a plurality of wheel brake cylinders, a conduit means connecting said master cylinder to said wheel brake cylinders together with a safety device interposed in said conduit means, said safety device comprising an actuator cylinder with a pair of rigid actuator pistons freely slidable therein and defining between their proximate faces an operating chamber and defining actuating chambers between their remote ends and the adjacent ends of said actuator cylinder, said safety device further comprising a selector valve assembly having a body and including a valve casing with a valve chamber therein, a pair of valve seats disposed in said valve chamber, a selector valve reciprocably mounted in said valve chamber and engageable alternately with said valve seats and controlling flow therethrough from said valve chamber, said conduit means including a supply conduit establishing continuous communication between said master cylinder and said valve chamber and a passage establishing communication through one of said valve seats between said valve chamber and said operating chamber, brake actuating conduits connecting each actuating chamber with a wheel brake cylinder, said conduit means further including a fluid supply means establishing communication through the other valve seat with each of said actuating chambers for replenishing the latter with brake operating fluid and returning said actuator pistons into said operating chamber, a pair of stop means each disposed in the other end of an actuating chamber, each stop means consisting of a sleeve surrounding the entrance of a brake actuating conduit into an actuating chamber, each actuator piston being engageable at the outer end of its stroke with said sleeve and shutting off flow of brake fluid from said actuating chamber to said brake actuating conduit, said fluid supply means having a pair of ports each communicating with an actuating chamber between said stop and the adjacent surrounding wall of said actuating chamber.

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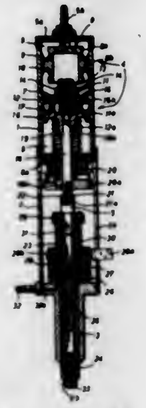
3,167,920

## ARRANGEMENT FOR CONTROLLING THE MOVEMENT OF A MACHINE PART

Claude G. Fleury, 2125 Fruitville Pike, Lancaster, Pa.

Filed May 3, 1963, Ser. No. 277,843
Claims priority, application Switzerland, May 29, 1962, 6,521/62
5 Claims. (Cl. 60—54.5)

1. Arrangement for controlling the movement of a machine part comprising a first and second cylinder separated by a partition having an opening and an attenuated passage connecting said cylinders, a first piston movable axially in said first cylinder and dividing said first cylinder into a first chamber between said piston and said partition and a second chamber at the opposite end of said piston, a second piston movable axially in said second cylinder and defining a third chamber between said second piston and said partition, means biasing said second piston toward said partition, a rotatable working spindle carried by said second piston and extending in a direction away from said partition, valve means for closing said opening in said partition, means biasing said valve means to closed position, means carried by said second piston and engaging



said valve means to hold said valve means open when said second piston is within a selected distance from said partition, said second and third chambers being filled with liquid, means for admitting pressure fluid to said first chamber to move said first piston toward said partition and thereby force said liquid through said opening and passage from said second chamber into said third chamber to move said second piston against said first mentioned biasing means away from said partition until said means for holding said valve means open is disengaged from said valve means to close said opening, whereupon said liquid flows through only said attenuated passage to move said second piston in the same direction at a slower rate.

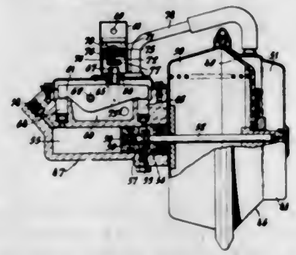
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3,167,921

## FLUID PRESSURE OPERATED SERVO-DEVICES FOR HYDRAULIC SYSTEMS, PARTICULARLY BRAKING SYSTEMS FOR VEHICLES

Leslie C. Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Mar. 28, 1962, Ser. No. 183,138
Claims priority, application Great Britain, Mar. 29, 1961, 11,510
5 Claims. (Cl. 60—54.6)



1. A servo motor control means for use in a hydraulic braking system operated by a pneumatic pressure difference comprising a housing with a vacuum chamber therein adapted to communicate with a vacuum source,



two spaced apart slidable plungers in said housing, one of said plungers being operated from the braking system secondary hydraulic pressure, the other of said plungers being operated from the braking system primary pressure, a pivot pin disposed in said housing, an elongated rocker arm mounted on said pivot pin for pivotal movement thereabout, said pivot pin being disposed at substantially right angles with respect to the longitudinal axis of said arm and the longitudinal axis of said plungers, the opposite ends of said arm being disposed in contact with said plungers for tilting movement by said plungers, a hydraulic cylinder in said housing in communication with each of said plungers for subjecting one plunger to the secondary hydraulic pressure and the other plunger to the primary hydraulic pressure, said vacuum chamber having an opening therein, a casing secured on said chamber over said opening, a hollow tubular valve member extending through said opening, a flexible diaphragm secured to said chamber and said tubular member, said tubular member being operatively connected to said rocker arm for movement in said opening by movement of said arm, annular seat means and a poppet valve in said casing dividing the casing into an outer air chamber and an inner vacuum chamber, said inner vacuum chamber being disposed adjacent said tubular member, said tubular member having an outer portion extending into said inner vacuum chamber and an inner portion extending into said vacuum chamber, said outer air chamber having an air inlet in communication with the atmosphere, said inner vacuum chamber having an outlet for communicating with a servo device to transmit pneumatic pressure thereto, a valve stem connected to said air poppet valve and extending into said inner vacuum chamber, a valve disc on said valve stem in said inner vacuum chamber adapted to seat on the outer portion of said tubular member to prevent flow through it, biasing means in said outer chamber normally urging said poppet valve in a closed position and seated on said annular seat means, said air poppet valve and said valve disc being positioned with respect to each other and with respect to said annular seat means and tubular member for seating of said valve disc on said tubular member, and thereafter opening of said poppet valve.

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3,167,922

## DEVICE FOR THE CORRECTION OF RIVER BEDS

Jacques Chabert and Maurice Remillieux, Paris, France, assignors to Electricite de France (Service National), Paris, France, a French national service

Filed Apr. 25, 1961, Ser. No. 105,467
Claims priority, application France, May 3, 1960, 826,022
3 Claims. (Cl. 61—2)



1. A device installed in a river for forming a channel therein, said river having an upstream deep and a downstream deep and an alluvial shelf which separates the upstream deep from the downstream deep and is less deep than said deeps, the river having a first horizontal direction of flow generally parallel to the river banks at high water and a second horizontal direction of flow having a lower water level than said flow of said first direction and moving from said upstream deep to said downstream deep and across said alluvial shelf at an angle to said first direction, said device comprising a series of spaced screens having horizontally elongated substantially vertical side faces upstanding from said alluvial shelf, the series of screens extending across the shelf from the upstream deep to the downstream deep with their directions of elongation extending in the general direction of said second direction, each screen having an end upstream relative to the other end thereof and being on the end toward the upstream deep, the upstream side faces of said screens with regard to said first direction of flow crossing a portion of the path of flow of water moving in said first direction, the upstream ends of said screens with regard to said second direction of flow lying on a line parallel to said second direction, the downstream ends of said screens with regard to said second direction of flow being displaced from said line in a direction that is upstream with regard to said first direction of flow and by a distance such that said upstream side faces form acute angles with the portion of said line which is downstream of the respective screen thereby to induce helical currents that move in said second direction to form in said shelf a channel that is disposed parallel to said line and that interconnects said upstream and said downstream deeps and is disposed downstream of said screens with regard to said first direction of flow.

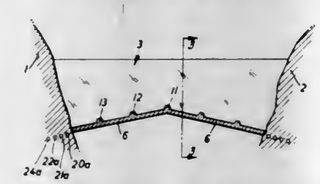
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3,167,923

## BARRAGE CONSTRUCTION

Albert Löhr, Richterstrasse 2, Cologne-Junkersdorf, Germany, and Alfred Feiner, Rheinaustrasse 10, Porz-Westhoven, Germany

Filed Aug. 10, 1961, Ser. No. 130,538
Claims priority, application Germany, Aug. 12, 1960, L 36,824
6 Claims. (Cl. 61—31)



1. A barrage construction comprising a body member for extending transversely and vertically of a water bed for impeding the flow of water thereby, said body member including primary membrane means extending the span and height of said body member for intercepting percolating water and causing it to descend along said primary membrane means, said body member including secondary membrane means disposed horizontally at the base of said primary membrane means and extending the span of said body member, said second membrane means comprising a plurality of horizontally disposed overlying passage portions communicating with said end face of said primary membrane means along isolated span sections and independent of said vertical surface, said passage portions providing means to catch water percolating along the isolated span sections with which the passage portion communicates, and section conduit means connected to each of said passage portions for conducting percolating water therefrom.

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3,167,924

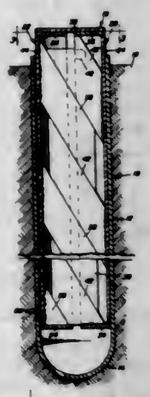
## COLLAPSIBLE MANDREL FOR HOLLOW PILES

Lawrence G. Barcus, 1877 Praun Lane, and William R. Barcus, 2001 New Jersey, both of Kansas City, Kans.

Filed Mar. 13, 1959, Ser. No. 799,278
9 Claims. (Cl. 61—53.72)

1. A collapsible mandrel for a hollow pile comprising a pair of longitudinally extending mandrel sections, said mandrel sections having outer surfaces engageable with said pile and opposed face plates, a plurality of longitudinally spaced wedge members extending from each of said face plates inwardly spaced from the outer surfaces,

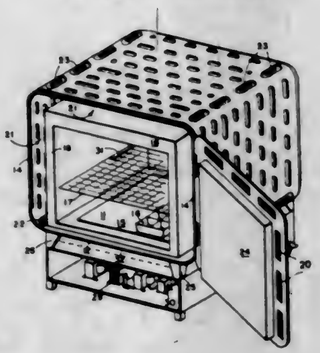
said wedge members all lying in a common longitudinal plane and having mating edge surfaces parallel to each other and sloping at an angle to the opposed face plates, the wedge members of one of said mandrel sections being interfitted with and complementing the wedge members



of the other of said mandrel sections whereby as one of said mandrel sections is moved relative to the other of said mandrel sections the spacing between said face plates varies and driving means connected to said one of the mandrel sections for directly transmitting force thereto in a direction parallel to said common longitudinal plane.

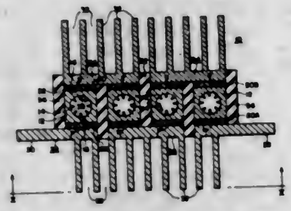
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3,167,925
THERMOELECTRIC COOLING DEVICE
Thore M. Elfving, 433 Fairfax Ave., San Mateo, Calif.
Filed Mar. 14, 1963, Ser. No. 265,129
12 Claims. (Cl. 62—3)



1. A thermoelectrically refrigerated device comprising a horizontal thermocouple array with hot and cold junction sides, said cold junction sides facing upward and said hot junction sides facing downward, a metal cover plate in heat exchange relationship with the cold junction side, an insulated structure enclosing a refrigerated space above said metal cover plate, a double-walled hermetically sealed panel partly filled with a heat transfer medium having a horizontal heat absorbing portion in thermal contact with the hot junction side of said thermocouple assembly and supporting the thermocouple array and insulated structure, said double-walled panel having at least one vertical heat dissipating portion disposed along at least one side of said insulated structure and forming at least one outside wall of the thermoelectrically refrigerated device.

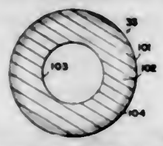
3,167,926
THERMOELECTRIC APPARATUS
William M. Wepfer, Pittsburgh, and Cecil J. Mole, Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1963, Ser. No. 332,010
6 Claims. (Cl. 62—3)



1. In a thermoelectric device, a pair of spaced modules formed from electrically and thermally conductive material, a layer of thermoelectric material secured to a surface of each of said modules, a heat exchange means including a plurality of electrically conducting fins thereon mounted in bridging relationship between said layers of thermoelectric material whereby a series current flow path is formed through said heat exchange means, said thermoelectric layers and said modules, each of said modules having a passageway formed therein and conduit means formed from insulating material connecting said passageways in series.

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3,167,927
PROMOTION OF DROPWISE CONDENSATION
Paul J. Lynch, East Syracuse, and Philip L. Taylor, Schenectady, N.Y., assignors to Carrier Corporation, a corporation of Delaware
Filed June 23, 1961, Ser. No. 119,169
3 Claims. (Cl. 62—56)



1. In an absorption refrigeration machine comprising an evaporator section, an absorber section, a generator section and a condenser section, and means interconnecting said sections to form a refrigeration system, the improvement comprising said condenser section including a plurality of heat exchange tubes each having an exterior mercurous surface thereon, and means to pass cooling fluid through said heat exchange tubes to cool and condense refrigerant on said exterior mercurous surface thereof, said mercurous surface serving to promote dropwise condensation of refrigerant thereon to improve the efficiency of said condenser section.

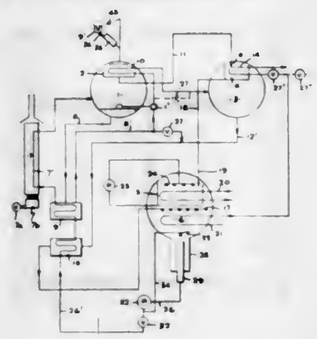
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3,167,928
METHOD OF AND APPARATUS FOR VENTING FIXED GAS FROM ABSORPTION REFRIGERATION SYSTEM
Judson S. Swearingen, Los Angeles, Calif., assignor to Electronic Specialty Co., Los Angeles, Calif., a corporation of California
Filed Apr. 26, 1963, Ser. No. 275,843
22 Claims. (Cl. 62—85)

1. A process for absorption refrigeration which comprises:
(A) absorbing refrigerant vapors in an absorption liquid in an absorption zone;
(B) removing absorption liquid containing refrigerant from said absorption zone;



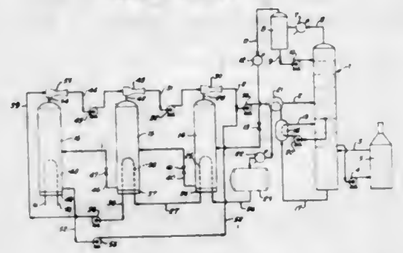
(C) heating the same to an elevated temperature in a regeneration zone and vaporizing refrigerant vapors at temperature and pressure more elevated than in the absorption zone;
(D) separating vapors from the unvaporized absorption liquid and passing said vapors into a condensation zone and condensing the same in said condensation zone at substantially said pressure;
(E) evaporating said condensed refrigerant vapors in an evaporation zone at a substantially lower pressure and temperature and passing vapors generated in the evaporation zone into the absorption zone;



(F) introducing absorption liquid removed from said regeneration zone into said absorption zone and absorbing said vapors in said absorption liquid in said absorption zone;
(G) separating fixed gases from said vapors in said condensation zone specified in (D);
(H) passing vapors and gases from said condensation zone to a closed gas accumulation zone;
(I) maintaining said gases in said accumulation zone, at a pressure higher than the pressure in the ambient space and periodically venting said gases to said space while maintaining said gases during said venting step at a pressure higher than in said space to which said gases are vented.

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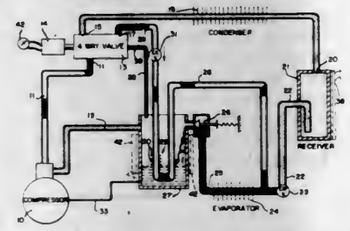
3,167,929
JET PUMP ABSORPTION REFRIGERATION
Robert L. Rorschach, 3611 S. Braden Place, Tulsa, Okla.
Filed Nov. 30, 1962, Ser. No. 241,363
7 Claims. (Cl. 62—101)



3. In an absorption process having a hot section to separate the refrigerant from the absorbent, and having a cold section to chill an outside medium, the steps of passing substantially pure absorbent flowing from the hot section to the cold section into heat conducting relation with substantially pure refrigerant liquid discharged from the hot section to thereby transfer heat from the absorbent to the refrigerant and cool the absorbent and partially vaporize the refrigerant, ejecting absorbent flowing from the cold section to the hot section, and drawing said refrigerant vapor into the ejected absorbent to thereby absorb the refrigerant vapor in said ejected absorbent to enrich the same.

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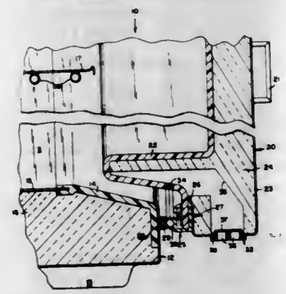
3,167,930
REFRIGERATION SYSTEM
Leo Block, Monterey Park, Richard E. Von Berg, Santa Ana, and Ivan Rasovich, Los Angeles, Calif., assignors to Freightliner Corporation, Montebello, Calif., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,537
9 Claims. (Cl. 62—190)



1. In a closed circuit refrigeration system including compressor means having suction and discharge connections, condenser means normally receiving fluid under pressure from said discharge connection, receiver means in fluid communication with said condenser means, said receiver means having inlet and outlet connections, expansion valve means for passing and expanding fluid moving via said outlet connection in a direction leading from said receiver means and serving to block passage of fluid moving in a reverse direction, evaporator means disposed downstream of said expansion valve means, pressure regulating means and fluid accumulator means disposed downstream of said evaporator means for regulating fluid pressure at said suction connection to the compressor, flow path control means operable to selectively heat the evaporator means, said flow control means serving to selectively divert the fluid normally flowing from said discharge connection to the condenser so as to direct the fluid to flow from said discharge connection to said evaporator means and bypass said condenser, while further serving to fluid-couple said suction connection to said condenser in a manner bypassing said evaporator to withdraw fluid from said condenser during the selective discharge of compressed fluid to said evaporator.

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3,167,931
CABINET CONSTRUCTION
James G. Bryson, Tyler, Tex., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,811
6 Claims. (Cl. 62—273)



3. A refrigerated cabinet comprising:
a box section having means defining an access opening therein,

an access door section adapted to substantially close said access opening,

said cabinet including means providing a seal between said access door and said box section to substantially prevent the passage of air between the interior and exterior of said box section when said access door is closed, and

a pressure operated check valve associated with one of said sections, said valve comprising:

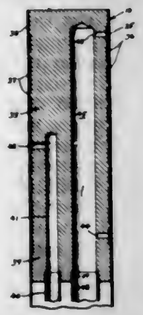
a ported base member disposed between the interior and exterior of said cabinet,

a diaphragm member secured to said base and covering the port in said base member on the side of said base member adjacent the interior of said cabinet, said diaphragm being flexible and arranged to flex away from said base to uncover said port and to admit air automatically into said cabinet upon the occurrence of a predetermined difference in pressure between the exterior and the interior of said cabinet, so as to facilitate opening of said access door.

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3,167,932
## EVAPORATOR FOR A LIQUID FREEZING APPARATUS

Anthony John Ross, 116 Myrtle Ave., Elmhurst, Ill.
Filed May 18, 1962, Ser. No. 195,726
4 Claims. (Cl. 62—354)



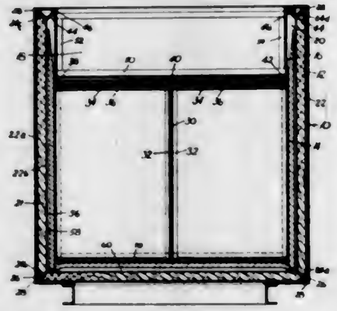
1. In an apparatus for freezing liquids including an evaporator having a freezing wall, means for supplying liquid to one side of said wall, and an ice removing device for removing frozen liquid from said one side of said wall; the improvement which comprises, means defining a generally helical refrigerant flow passage extending along the other side of said freezing wall, said flow passage having a single refrigerant inlet intermediate the ends of the freezing wall and a pair of refrigerant outlets, one adjacent each end of the freezing wall, and means including a single expansion control device for supplying expansible refrigerant to said inlet for flow in opposite directions along the freezing wall to the outlets.

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3,167,933
## CRYOGENIC STORAGE APPARATUS

John H. Beckman, Wilfried Haumann, Remo J. Berta, and Patrick L. Murphy, Indianapolis, Ind., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 24, 1962, Ser. No. 232,685
14 Claims. (Cl. 62—371)

1. A low temperature storage container having spaced outer jacket and inner vessel walls with an evacuable insulation space therebetween comprising in combination: composite outer jacket bottom and side walls constructed of a core material and metallic sheeting substantially completely covering the exterior and interior surfaces of said core material and bonded thereto to form an outer jacket of substantially uniform rectangular cross-section for the container, the metallic sheeting being constructed to form a gas-tight outer wall of said evacuable insulation space; an inner vessel of substantially uniform cross-section within said container comprising bottom and side walls constructed of relatively flexible metallic sheeting and adapted to contain a vaporizable refrigerant; a neck tube of substantially the same cross-section as said inner vessel gas-tightly constructed and joined to the top portions of said outer jacket and said inner vessel to suspend the latter from the former; the inner vessel side and bottom walls and said neck tube being constructed to form a gas-tight

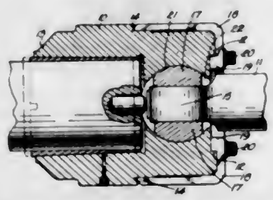


inner wall of said evacuable insulation space; inner vessel wall cross-bridging means within said inner vessel constructed to prevent excessive inner vessel wall deformation resulting from the pressure differential between the inner vessel interior and the surrounding evacuable insulation space; cover means comprising top and bottom walls of substantially rectangular cross-section and insulation means disposed therebetween, said cover means being constructed to loosely fit within said neck tube and close the container opening defined by said neck tube such that refrigerant vapors escaping from said inner vessel pass along the inner surface of said neck tube and cool said inner surface thereby recovering the refrigerating effects of such vapor.

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3,167,934
## UNIVERSAL JOINTS

Charles M. Fenwick, Johannesburg, Transvaal, Republic of South Africa, assignor to The SKF Ball Bearing Company (Proprietary) Limited
Filed Apr. 2, 1963, Ser. No. 269,916
Claims priority, application Republic of South Africa, May 25, 1962, 62/2,204
1 Claim. (Cl. 64—7)



A universal joint of the type having a coupling head formed with two opposed jaws that between them define a cylindrical space and a slot communicating with the space, a T-shaped flattened end on the coupling shaft that passes through the slot for the head of the T to lie along the cylindrical space and part cylindrical slippers in the cylindrical space to either side of the head of the T, and two semi-cylindrical shells for closing off each end of the cylindrical space so that the two shells, when in

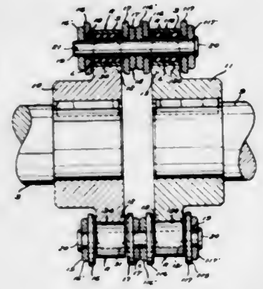


position, form an annular shell sleeve around the coupling head; in which each shell engages in an axially facing groove on the periphery of the head and is formed with a hook formation that engages under a radial formation on the front of the head in a radially inward direction.

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3,167,935
## DOUBLE CHAIN AND SPROCKET COUPLING

Thomas L. Fawick, Shaker Heights, Ohio (Hotel Statler-Hilton, Cleveland 14, Ohio)
Original application Sept. 7, 1962, Ser. No. 222,044. Divided and this application Dec. 23, 1963, Ser. No. 332,718
4 Claims. (Cl. 64—19)

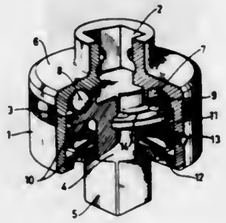


1. A double chain and sprocket coupling comprising first and second rigid, separate, rotatable sprockets positioned axially adjacent one another and in approximate axial alignment, each sprocket having alternate teeth and recesses in its periphery, a first endless chain encircling said first sprocket and composed of a plurality of successive, pivotally inter-connected, rigid links and rollers at the pivotal interconnections between successive links snugly engaging the recesses in the first sprocket, a second endless chain encircling said second sprocket and composed of a plurality of successive, pivotally interconnected, rigid links and rollers at the pivotal interconnections between said last-mentioned links snugly engaging the recesses in the second sprocket, means rigidly interconnecting said chains, and each roller in each chain having a bushing of rubber-like material which is deformable and resilient to accommodate shock loading and misalignment of the sprockets.

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3,167,936
## TORQUE LIMITING DEVICES

Arne Engquist, Enkoping, Sweden, assignor to Aktiebolaget Bahco, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 13, 1961, Ser. No. 151,814
Claims priority, application Sweden, Nov. 16, 1960, 11,041/60
2 Claims. (Cl. 64—29)

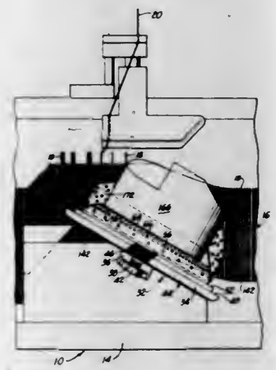


1. In an adjustable torque tranmsission apparatus for the transmission of torque not to exceed a predetermined maximum; bowl shaped casing means for receiving torque about its central axis; shaft means for transmitting torque about said central axis; said bowl means having a first journal for supporting said shaft means for rotation about said central axis; an annular plate element threadably engaged with the interior of said bowl means and spaced from said first journal, providing a second journal for supporting said shaft means for rotation about said central axis; said shaft means being disposed in said first and second journals and having a flange portion disposed therebetween; said flange portion and said bowl means each having an opposed planar surface perpendicular to said central axis; annular spring means disposed about said shaft means between said annular plate element and said flange portion, biasing said opposed surfaces towards each other; a plurality of pocket-like cavities in said planar surface of said bowl means; a plurality of recesses in said planar surface of said flange portion; a ball disposed within each of said cavities to a depth greater than the radius of said ball, and normally disposed in one of said recesses to a depth less than the radius of said ball; whereby when the applied torque is less than the predetermined maximum each of said balls remains disposed within said respective cavity and in said recess, thereby interlocking said bowl means and said shaft means against relative rotation, and when the applied torque is greater than the predetermined maximum, said ball overcomes the bias of said spring means, camming said planar surfaces apart by rotating out of said recess, while remaining disposed within said cavity, thereby freeing said bowl means and said shaft means for relative rotation.

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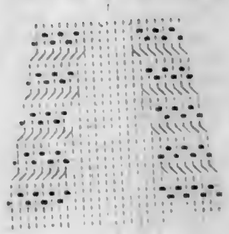
3,167,937
## PATTERN WHEEL CONTROL SYSTEM

William L. Carroll, 328 N. Newlin, Whittier, Calif.
Filed Mar. 30, 1962, Ser. No. 183,836
9 Claims. (Cl. 66—50)



1. In a pattern wheel control system adapted to be utilized in conjunction with a circular knitting machine having a fixed bed and a rotating bank of needles on said bed, the combination of: a plurality of pattern wheels mounted on said bed adjacent said bank of needles, each of said pattern wheels having a plurality of slots engageable with said needles to drive said pattern wheel and an individual, continuous pattern associated therewith; a plurality of pivotal jacks in each of said pattern wheel retractable by the associated pattern to prevent said jacks from energizing an associated needle in said bank; and a magazine for said pattern fixedly mounted upon each of said pattern wheels.

3,167,938
METHOD FOR NARROWING PLAIN STITCH OR RIB FABRIC ON A FLAT KNITTING MACHINE
Fritz Seiler, Corcelles, Neuchatel, Switzerland, assignor to Edouard Dubied et Cie. (Société Anonyme), Neuchatel, Switzerland
Filed Aug. 20, 1962, Ser. No. 217,822
Claims priority, application Switzerland, Aug. 18, 1961, 9,730/61
3 Claims. (Cl. 66—70)



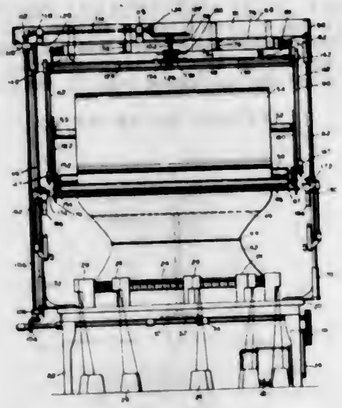
1. A method for narrowing a fabric on a flat knitting machine by the transfer of determined stitches carried by the outermost needles of at least one side of a predetermined middle zone of the fabric, comprising the steps of arranging said needles at a determined distance from the margins of the fabric, transferring stitches from one needle bed to another, thereby releasing the stitches from said outermost needles, each transfer of stitches being followed by a lateral displacement toward said middle zone of at least one group of marginal stitches outside said middle zone which are not transferred, said lateral displacement causing the innermost needle of said group of marginal stitches to approach the needle from which the outermost stitch is released, and thereafter putting the latter needle is a rest position with said innermost needle of said group of marginal stitches taking its place in the middle zone of the fabric.

3,167,939
NEEDLE BED AND A TRANSFER NEEDLE IN A FLAT TYPE KNITTING MACHINE
Sadami Imon, 13 Futatsubashi-machi 1-chome, Nakamura-ku, Nagoya, Japan
Filed July 6, 1962, Ser. No. 208,020
Claims priority, application Japan, July 13, 1961, (utility model) 36/35,778
3 Claims. (Cl. 66—96)



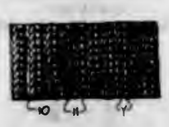

1. A transfer needle for use in conjunction with a needle bed of a flat type knitting machine having a plurality of needle guide grooves, each guiding a knitting needle, said transfer needle comprising a horizontal arm adapted to be received in a needle guide groove in the needle bed and having two depending side walls on its under side defining an inverted U-shaped groove, one side wall of said groove having a height which at most is substantially equal to the height of a knitting needle, the other side wall of said groove being shorter than said one wall and having a height which at most is substantially equal to one half of the height of the knitting needle.

3,167,940
KNITTING MACHINES
Willard P. Limbacher, Horseheads, and Richard F. Yackel, Syracuse, N.Y., assignors, by mesne assignments, to Tompkins Brothers Company, Inc., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,759
6 Claims. (Cl. 66—151)



1. A knitting machine comprising a base, a rotary needle cylinder, disposed above said base, drive means including a drive motor in said base for positively driving the needle cylinder, a take up reel support frame mounted on said base having a circular track disposed above said needle cylinder and coaxial therewith, a take up reel hanger frame disposed beneath said track, and having support rollers riding on said track, reel hanger drive means driven from said base drive means for rotating said reel hanger frame with said needle cylinder at the same angular velocity, a take up reel on said hanger, take up reel drive means carried by said hanger, and driven by the rotation of said hanger, locking means independent of said drive means mounted on said support frame and cooperating with means on said hanger frame for locking, at will, the hanger frame against rotation relative to the support frame, and means operable by said locking means to deenergize said motor when in hanger frame locking position.

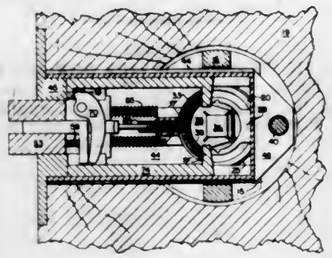
3,167,941
KNIT FABRIC
Joseph Rab, Los Angeles, Calif., assignor to Kayser-Roth Corporation, New York, N.Y., a corporation of New York
Filed Mar. 7, 1961, Ser. No. 94,018
10 Claims. (Cl. 66—202)




1. A jersey knit fabric comprising a stretchable body fabric and a plurality of spaced apart walewise ribs extending outwardly from one face of said body fabric, said body fabric being knit of relatively lightweight stretchable yarns knit in groups of successive courses and wales, said stretchable yarns being tucked in single wales positioned between said groups of successive wales, and said walewise ribs being knit of relatively heavyweight yarns knit in said single wales between said groups of successive wales and in a single course positioned between each of said groups of successive courses.

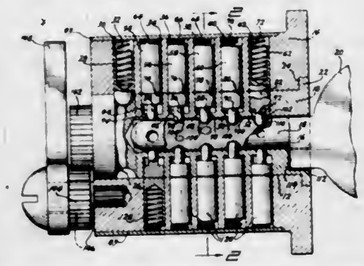


3,167,942
REMOTELY CONTROLLABLE LOCK SET
Warner W. Clements, Los Angeles, Calif. (13435 Java Drive, Beverly Hills, Calif.)
Filed July 24, 1961, Ser. No. 126,823
9 Claims. (Cl. 70—148)



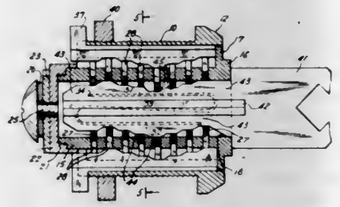
5. In the door-mounting portion of a lock set:
a retractible latch bolt mounted in normally non-retracted position;
an extendable feeler bolt mounted in normally non-extended position;
a rotatable outside knob;
means responsive to the outside knob for first extending the feeler bolt as said knob is turned and then retracting both the latch bolt and said feeler bolt as said knob is further turned;
and dogging means for arresting the latch-bolt-retracting action of said previously named means whenever the feeler bolt is externally blocked from extending to a predetermined point.

3,167,943
LOCK
Joseph Schreiber, 18507 Forrer, and George Schreiber, 18493 Winthrop, both of Detroit, Mich.
Filed Mar. 19, 1962, Ser. No. 180,596
3 Claims. (Cl. 70—358)



1. A locking mechanism comprising in combination: a substantially cylindrical stationary barrel-like housing having a cylindrical longitudinal axial bore extending from end to end; a cylindrical plug rotatably and coaxially disposed in said bore in said housing; said plug having a cylindrical longitudinal coaxial bore open at one end and closed at the other end; a shoulder on the peripheral surface of said plug situate coaxially the open end of said plug; a correspondingly enlarged diameter portion on the longitudinal bore of said housing; a circular groove on the peripheral surface of the other end of said plug; a slidable pin disposed in said housing and biased toward the axis of said housing for forcing the end of said pin to abut against the bottom of said groove for securely maintaining said plug within the longitudinal bore of said housing whilst still allowing rotation of said plug in relation to said housing; at least one row of first radial bores in said housing; second radial bores in said plug normally axially aligned with said first radial bores and having a main diameter portion substantially equal to the diameter of said first radial bores and a reduced diameter portion leading into the coaxial bore in said plug; a tumbler in each said first radial bore; a pin in each said second radial bore, each pin having a reduced diameter portion with a hemispherical end adapted to normally project within the coaxial bore in said plug through the reduced diameter portion of said second radial bore and a plurality of said pins having varied body lengths according to a predetermined code; coil springs normally urging said tumblers and their corresponding pins towards the common axis of said housing and plug, and forcing said tumblers part of the way into said second radial bores of an amount determined by the length of the enlarged body portion of the corresponding pin, for normally locking said plug and said housing together; a removable cover plate covering each row of said first radial bores in said housing and normally maintaining said coil springs under compression; a key having a substantially cylindrical shank portion adapted to be introduced all the way into the coaxial bore in said plug; depressions on the surface of said shank according to said predetermined code for lifting said pins of an amount corresponding to their respective varied body lengths to cause the abutting surfaces of said tumblers and pins to be aligned with the adjoining ends of said first and second radial bores for unlocking said plug from said housing; and a tab integral with said shank for introduction into a slot in the open end of the coaxial bore in said plug for rotatably driving said plug in relation to said housing.

3,167,944
TUMBLER LOCK
Lenox K. Pickering, Little Neck, N.Y., assignor to John F. Wellekens, Staten Island, N.Y.
Filed Feb. 14, 1962, Ser. No. 173,180
8 Claims. (Cl. 70—382)

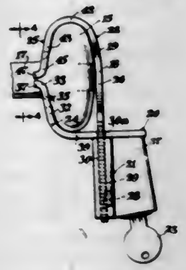


1. A lock including in combination a cylinder, a plug rotatably supported in the bore of said cylinder, a slide supported by said plug to shift transversely thereof, said cylinder being formed with a support, a strip removably mounted by said support, said strip having a fin extending into the cylinder bore in line with said slide and directly engaging the latter to prevent a rotation of said plug and said slide and plug being formed with openings to receive a key engageable with an edge of said slide to shift the latter to a position clear of said fin, the strip being provided with a head at its rear end with at least a part thereof extending beyond the cylinder and engageable to enable the strip to be withdrawn from the cylinder.

3,167,945
KEYHOLE OBSTRUCTING LOCKING DEVICES
Frank Goodman, 250 W. 77th St., New York, N.Y.
Filed July 3, 1963, Ser. No. 292,652
10 Claims. (Cl. 70—428)

2. In combination with a door having a knob and a keyhole, a locking device comprising two separable knob-engaging components, a ratchet lock attached to one of said components, the other of said components having a bar proportioned for coactive releasable engagement with

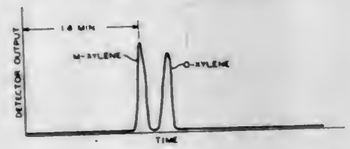
said ratchet lock, a wall on one of said components proportioned and positioned for obstructing relation to said keyhole when said bar is in operative engagement with



said lock, said components having respective curved sections formed to coactively embrace said knob when said wall is in said keyhole-obstructing position.

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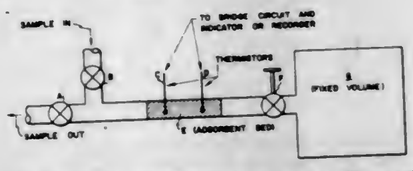
**3,167,946**
**CHROMATOGRAPHIC METHOD AND APPARATUS**
**Arthur B. Broerman and Buell O. Ayers, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**
**Filed May 22, 1961, Ser. No. 125,300**
**6 Claims. (Cl. 73—23.1)**




1. A method of analyzing a fluid mixture which comprises introducing said fluid mixture as a vapor into the inlet of a zone containing a partitioning liquid on an inert support, whereby said liquid selectively retards the passage of said vaporous fluid mixture through said zone, said inert support comprising granules prepared from solid polyhalogenated hydrocarbon polymers treated by contacting said granules with a solution of an alkali metal in liquid ammonia, and measuring a property of the effluent from said zone which is representative of the composition thereof.

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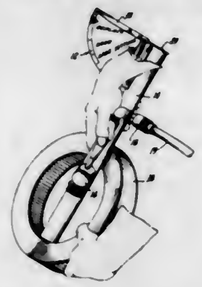
**3,167,947**
**GAS DETECTOR AND ANALYZER**
**Harry M. Crawford, Point Murray, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Aug. 7, 1961, Ser. No. 129,659**
**9 Claims. (Cl. 73—23.1)**




1. An improved autoregenerating gas analyzer which comprises: an adsorption zone containing adsorbent material; a sample inlet means connected to one end of said adsorption zone; a fixed volume trap; a conduit connecting said trap to the other end of said adsorption zone; a pressure reducing means in said conduit; a sample outlet means connected to said one end of said adsorption zone; valve means for permitting a gaseous sample to alternately flow into said sample inlet means and outwardly through said sample outlet means; temperature sensitive means in both said ends of said adsorption zone for detecting a temperature differential between said one end and said other end of said adsorption zone.

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**3,167,948**
**PNEUMATIC TESTING DEVICE FOR AIR FILTERS**
**Frank E. Farkas, Chicago, and Russell F. Trask, Crystal Lake, Ill., assignors to The Mettle Corporation**
**Filed Jan. 12, 1962, Ser. No. 165,777**
**1 Claim. (Cl. 73—38)**



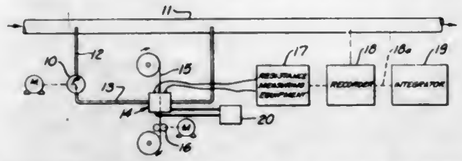
A system for measuring and indicating the gaseous flow resistance of a pervious member including an elongated conduit having a gate pivotally mounted on one end thereof, said gate being mounted for movement between a position wherein said gate is transversely opposed to flow through said conduit and a position generally aligned with the direction of flow, said conduit having an intake nozzle at one end thereof, a nozzle supported within said conduit and having an outlet orifice directed toward said gate, a pressure delivery conduit connected to said nozzle, and adapted for connection to a source of fluid under pressure, a valve in said conduit for opening and closing said conduit to flow therethrough, an indicating pointer connected to said gate for movement therewith, an indicating dial mounted on said conduit for cooperation with said pointer, said dial having a first mark thereon for indicating a flow rate corresponding generally to said second named position of said gate and other marks corresponding to positions of said pointer when said gate is positioned successively closer to said first named position, and an adjustable regulating valve in said delivery conduit for restricting the pressure from said source and maintaining the pressure sufficient to move said pointer to said first mark when said intake nozzle is unrestricted.

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**3,167,949**
**METHOD AND APPARATUS FOR MEASURING DISPERSED MATERIALS IN OILS**
**Richard W. Stenzel, Palos Verdes Estates, Calif. (1681 Tam O'Shanter Road, Apt. 10–L, Seal Beach, Calif.), and William F. Eberz, 34812 Doheny Place, Capistrano Beach, Calif.**
**Continuation of application Ser. No. 834,972, Aug. 20, 1959. This application Aug. 8, 1962, Ser. No. 218,475**
**9 Claims. (Cl. 73—53)**

1. Apparatus for measuring the amount of suspended material in an oil stream, comprising first and second chambers having a common wall that is comprised of two spaced, rectangular plates in the same plane having parallel edges that define an aperture between the chambers to permit the flow of oil therethrough, said edges being movable relative to each other and having means for adjusting the size of said aperture; an inlet port in the first chamber and an outlet port in the second; means for supplying oil from said stream to said inlet port and means for removing it from said outlet port, a strip of filter medium covering and overlapping said aperture, said filter strip being impregnated with a material which is ionized by water selected from the group consisting of anionic and cationic surface active agents, means for continuously moving said filter strip past said aperture to continual-

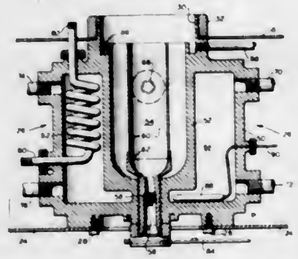





ly expose fresh filter surface to the stream of oil flowing therethrough, a perforate metallic member in contact with and supporting said filter medium but electrically insulated from all portions of said chambers except said filter medium, and means for determining the electrical resistance between the perforate membrane and said wall containing said aperture.

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**3,167,950**
**VISCOSIMETER**
**Harry Gamlen, 5 Downey Way, Hillsborough, Calif.**
**Filed June 1, 1960, Ser. No. 33,132**
**1 Claim. (Cl. 73—56)**

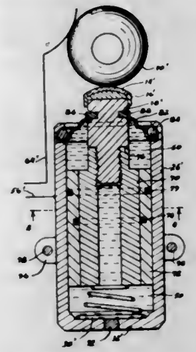


A viscosimeter comprising in combination a body defining a chamber for impounding a quantity of liquid the viscosity of which is to be measured and a jacket surrounding said chamber with said chamber having a top open directly to atmosphere, means for passing a fluid through said jacket to control the temperature of the liquid in said chamber, a fluid efflux orifice extending from said chamber adjacent to the bottom thereof, means for opening and closing said orifice, means for collecting a sample of fluid passing through said orifice while measuring the time necessary to collect said sample, an overflow gallery surrounding the upper end of said chamber, a fluid efflux passageway leading from said gallery below the level of the top of said chamber, and a supply conduit for said liquid leading through said jacket in heat exchange relation with fluid in said jacket and to said chamber, the capacity of said supply conduit exceeding the capacity of said orifice, and the capacity of said passageway exceeding the capacity of said conduit.

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**3,167,951**
**SENSING APPARATUS WITH SELF-POSITIONING SUPPORT**
**George Wintriss, Carversville, Pa.**
**Filed June 5, 1961, Ser. No. 114,989**
**11 Claims. (Cl. 73—71.4)**

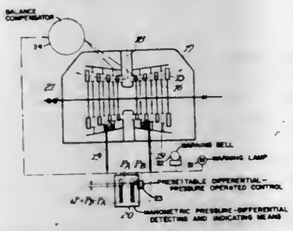
1. Apparatus for detecting change in the operating conditions of a rotating part including a transducer for operative contact with the circumference of the rotating part, an electric circuit responsive to the effective pressure of the transducer with said rotating part, a holder for the transducer, a support for the holder, the support including cylinder and piston elements, means biasing one of said elements in a direction to move the transducer toward the rotating part, the cylinder containing a fluid that prevents rapid relative movement of the piston element in the cylinder element of the support in a direction to return the transducer toward the rotating part when said



transducer and its holder are displaced against said bias by radial movements of the rotating part, the fluid having a viscosity that limits the relative movement of the holder toward the rotating part to a speed substantially less than the vibration displacement speed resulting in a break of the circuit between the transducer and the rotating part to thereby indicate change in the operating conditions above a predetermined limit.

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**3,167,952**
**OPERATION MONITORING SYSTEM FOR MULTIFLOW TURBINES**
**Yuji Kitagawa, Hitachi-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan**
**Filed Jan. 31, 1963, Ser. No. 255,233**
**Claims priority, application Japan, Feb. 2, 1962, 37/3,313**
**4 Claims. (Cl. 73—116)**



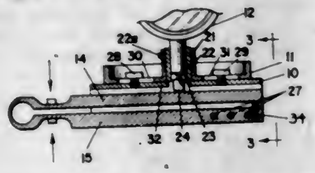

1. A monitoring system for the operation of a multiflow turbine assembly including at least two turbines into which are introduced respective flows of an operating pressure medium under the same conditions, said monitoring system comprising a pressure-detecting means for detecting the pressure of the said operating medium at a given stage in each of the said turbines and means for comparing the pressures so detected by the said pressure-detecting means.

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**3,167,953**
**MECHANICAL FORCE GAUGE**
**Ralph R. Dillon, Van Nuys, Calif., assignor to W. C. Dillon & Company, Inc., a corporation of California**
**Filed July 5, 1962, Ser. No. 207,644**
**7 Claims. (Cl. 73—141)**

1. A force gauge comprising: a resilient element having connected ends and free ends to define a hairpin shape and

including force engaging surfaces adjacent to its connected ends so that opposing forces exerted thereon cause at least one of its free ends to move relative to the other; a supporting channel housing said free ends, said channel



being secured to one of said free ends and indicator means supported from said channel and responsive to relative movement of the other of said free ends to measure said opposing forces.

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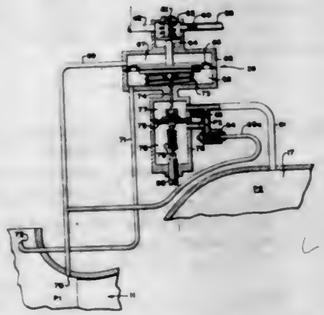
3,167,954

## MASS FLOW RATE SENSOR FOR COMPRESSORS

Dan B. Le May, Palos Verdes Estates, and Wilton Everts Parker, Encino, Calif., Carlton Hutton Paul, Scottsdale, Ariz., Alexander Silver, East Woodland Hills, Calif., Paul G. Stein, Phoenix, Ariz., and Homer J. Wood, Sherman Oaks, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Original application June 15, 1956, Ser. No. 591,591. Divided and this application Apr. 29, 1959, Ser. No. 809,810

11 Claims. (Cl. 73—168)



3. A mass flow sensor for compressors of the type having an inlet and an outlet comprising: first and second fluid pressure responsive elements connected for movement in unison; means for directing fluid pressures conforming to the total and static pressures at the inlet of a compressor to opposed portions of said first fluid pressure responsive element; means for directing fluid pressure conforming to compressor outlet pressure to one portion of said second fluid pressure responsive element to oppose the force of the fluid pressure conforming to the total pressure; means including a pair of sonic nozzles in series through which fluid pressure conforming to compressor outlet pressure is passed to a region of lower pressure to create a reference pressure and apply the same to an opposed portion of said second fluid pressure responsive element; and means actuated by said fluid pressure responsive elements to cause a variable signal.

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3,167,955

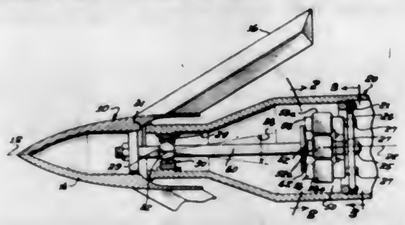
## PITCH AND YAW INDICATOR AND THE LIKE

Alfred J. Klose, Pasadena, Calif., assignor to Giannini Controls Corporation, Inc., Duarte, Calif., a corporation of New York

Filed Apr. 11, 1961, Ser. No. 102,247

4 Claims. (Cl. 73—180)

1. Means responsive to the direction of a fluid stream, comprising a support, a head member having a head axis and being mounted on the support for swinging movement of the head axis with respect to the support, vane structure on the head member for energizing a fluid stream to align the head axis with the direction of the fluid stream, said vane structure developing a torque about the head axis by virtue of relative movement of the



fluid stream, bearing means interposed between the vane structure and the support, to permit rotation of the vane structure with respect to the support about an axis substantially parallel to the head axis in response to said torque, and output means for developing a signal in response to variations of the angular position of the head axis.

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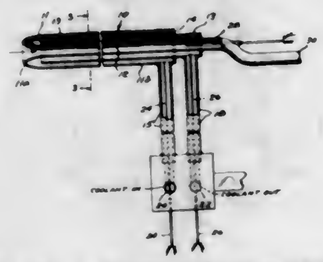
3,167,956

## CALORIMETRIC PROBE

Jerry Grey, 61 Adams Drive, Princeton, N.J.

Filed Mar. 12, 1963, Ser. No. 264,525

7 Claims. (Cl. 73—190)



1. The method of measuring properties of high temperature gases which consists in

passing a sample of said gas through a tube-type probe which is relatively long in relation to its internal diameter,

abstracting a measured quantity of heat from said gas by passing a coolant in heat exchange relation therewith,

measuring the mass flow of the gas,

measuring the temperature of the gas upon abstraction of heat therefrom by said coolant,

measuring the heat loss occurring when a measured quantity of said coolant is passed in heat exchange relation with said probe when said gas is not flowing,

recording the data so measured from which the enthalpy of the hot gas and other desired properties may be computed.

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3,167,957

## HEAT METER

Enzo Ziviani, Legnago, Verona, Italy, assignor to Riello Filli Officine Fonderie, Legnago, Verona, Italy

Filed July 11, 1960, Ser. No. 42,111

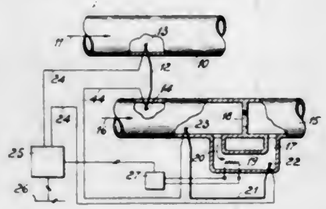
Claims priority, application Italy, July 14, 1959, 11,899/59, 11,900/59

2 Claims. (Cl. 73—193)

1. A heat meter for measuring the quantity of heat absorbed by a utilizing plant, especially in a hot water heating plant in which a heating fluid passes from an inlet end to an outlet end comprising, in combination,



means for separating a predetermined fraction of flow of the heating fluid at the outlet end; heating means operated by a source of power to directly heat said fractional flow to a measurement temperature; means for thermostatically controlling said heating means so that the difference between said measurement temperature and the temperature of the heating fluid at the outlet end is a predetermined fraction of the temperature drop of fluid in the plant itself, said control means comprising a first pair of thermoelectric couples located in the heating fluid and respectively at the inlet end and at the outlet end and electrically connected to produce an electromagnetic force proportionate to the difference between the temperature of the heating fluid at said inlet end and at said outlet end, and at least one second pair of thermoelectric couples respectively located in the fractional flow of heating fluid which has been separated and



subjected to heating by said heating means and in the heating fluid at the outlet end and electrically connected to produce an electromagnetic force proportionate to the difference between the temperature of said fractional flow of said heating fluid and the temperature of the heating fluid at said outlet end, said second pair of couples being such as to generate an electromotive force equal in absolute value to that generated by the first pair of couples when the first mentioned difference in temperature is a predetermined multiple of the second difference in temperature, said first pair of couples being connected in opposition to said second pair of couples to a control device for said heating means, so as to determine operation of the latter when said electromotive forces are equal or different; and means for measuring the quantity of power absorbed by said heating means.

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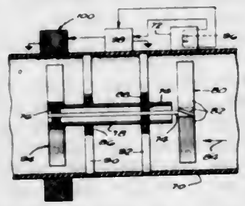
3,167,958

## DEVICES FOR MINIMIZING THE EFFECTS OF FRICTION

Hans E. Hollmann, Studio City, Calif., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Apr. 8, 1960, Ser. No. 22,077

9 Claims. (Cl. 73—231)



6. A flowmeter comprising: fixed support means; a hollow cylinder; outer bearing means to support said hollow cylinder rotatably from said support means; a shaft; inner bearing means to support said shaft rotatably inside said hollow cylinder; a bladed member fixed to said shaft in a position to rotate upon fluid flow in an axial direction thereagainst; means on said support means adjacent said bladed member for generating an electrical signal that pulsates with the speed of the bladed member; drive means for said hollow cylinder; means between said pulse generating means and said drive means for the controlling of said drive means whereby the drive means rotates in synchronism with the bladed member.

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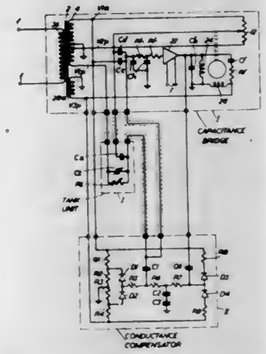
3,167,959

## CAPACITIVE LIQUID LEVEL DEVICE WITH COMPENSATOR

Ivan Boris David Johnson, Guildford, Surrey, England, assignor to S. Smith & Sons (England) Limited

Filed Feb. 6, 1962, Ser. No. 171,525

10 Claims. (Cl. 73—304)



1. A liquid contents gauge comprising two electric signal paths both of which have capacitive reactance, the capacitive reactance of a first of the two paths being variable in dependence upon the quantity of liquid to be measured, means for supplying a first alternating current signal to an input end of said first signal path, means for applying to an input end of the second signal path a second alternating current signal of opposite phase to said first signal and having an amplitude which is selectively variable relative to the amplitude of said first signal, signal combining means responsive to signals appearing at output ends of the first and second paths to derive therefrom a control signal having an amplitude dependent upon the relative amplitudes of the signals at the output ends, control means which is responsive to difference from a predetermined value in the amplitude of the control signal derived by said signal combining means to vary the amplitude of said second signal in a sense tending to reduce said difference to zero, means for detecting in the control signal as this is applied to said control means any signal component which is in phase with one of said first and second signals, and means responsive to any component detected as aforesaid to inject into said control signal before it is applied to said control means a signal to tend to cancel the detected in-phase component.

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3,167,960

## TEMPERATURE PROBE

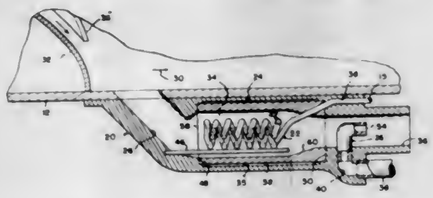
Conrad E. Miesiak, Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Aug. 7, 1961, Ser. No. 129,871

6 Claims. (Cl. 73—349)

6. A temperature probe for use with a gas turbine engine or similar device, comprising a housing secured to the device and having a chamber therein for housing a temperature sensing element, said housing also having air intake and exhaust passages therein leading to and from the chamber, means positioned adjacent the air intake passage for deflecting air drawn into the device into the air intake passage through the chamber and out of the exhaust passage, a temperature sensing element mounted in said chamber for sensing the temperature of air passed therethrough comprising a continuous tubular coil filled

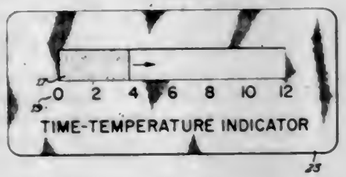
with a temperature sensing media having both right and left hand wound portions with the individual convolutions of the right and left hand wound portions overlapping, a heat insulating sleeve secured within said chamber providing an air space between the chamber surface and the sleeve outer surface, the cross sectional area of the sleeve opening minus the area occupied therein by the tempera-



ture sensing element being substantially equal to that of the intake passage and the surface of the intake passage and inner surface of the sleeve being formed to provide a smooth transition between the intake passage and sleeve and the sleeve and exhaust passage and means positioned within the exhaust passage of the housing for maintaining a minimum air flow through the chamber.

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**3,167,961**
**CONDITION RESPONSIVE DEVICES**
**Robert B. Koch, Hopkins, and Roger P. Keller, Bloomington, Minn., assignors to Honeywell Inc., a corporation of Delaware**
**Filed Dec. 15, 1961, Ser. No. 159,669**
**7 Claims. (Cl. 73—356)**

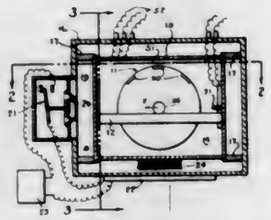



1. In a time-temperature integrator device wherein an indication of the time-temperature experience of a system is visually indicated by the migration and detection of a reaction product generated at a metal-electrolyte interface, the indication being provided by the migration of said reaction product along a matrix medium containing said electrolyte, the improvement which comprises utilizing in said device and electrolyte substance consisting essentially of salt and a quantity of water sufficient to produce ionization, said electrolyte substance further characterized in having a liquefaction point above the melting point of water.

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**3,167,962**
**DOUBLY INTEGRATING ACCELEROMETER**
**Dominick P. Scotto, Plainview, N.Y., assignor to American Bosch Arma Corporation, a corporation of New York**
**Filed Dec. 6, 1961, Ser. No. 157,471**
**5 Claims. (Cl. 73—490)**

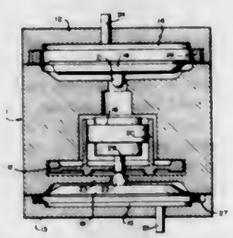
5. In a device of the character described, a sealed chamber, a track in said sealed chamber, a mass, a shaft in said mass, said shaft being adapted to roll on said track, means for determining the angular displacement of said shaft, and a fluid in said chamber, said mass being in substantial but not exact neutral buoyancy in said fluid, said mass comprising a hollow drum filled with said fluid and having a plurality of openings in a small fraction of its surface thereby to entrap said fluid in said drum and to permit said fluid to leak into and out of said drum, said track comprising a tensioned, flexible tape extending normally to said shaft, said tape having an axially-oriented rectangular aperture therein and having axially spaced



from said aperture a region of reduced width aligned with said aperture and of smaller width than said rectangular aperture, the portion of said tape containing said aperture and reduced-width region being wrapped about said shaft with said reduced-width region extending through said aperture.

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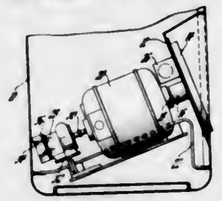
**3,167,963**
**STRAIN GAGE DIFFERENTIAL PRESSURE TRANSMITTER**
**Julius C. Boonshaft, Huntingdon Valley, Pa., assignor to Robertshaw Controls Company, a corporation of Delaware**
**Filed Apr. 9, 1962, Ser. No. 186,131**
**4 Claims. (Cl. 73—398)**



1. A device for indicating small differences in the forces exerted by two different systems, said device including a housing having a generally central cavity, a first flexible diaphragm sealing one end of said cavity, means for applying a first force to the outside surface of said first diaphragm, a second diaphragm sealing the other end of said cavity, means for applying a second force to the outside surface of said second diaphragm, a sensor mounted within said cavity between said diaphragms, a non-compressible fluent material filling the remaining space within said cavity between said diaphragms whereby a difference in said first and second forces manifests itself as a movement of the diaphragms toward the smaller force, said sensing means being coupled at one point to said housing and having a sensing projection in contact with at least one of said diaphragms to sense the amount of motion of said diaphragms with respect to said housing, and resilient preloading means for said sensing means serving as the coupling between said sensing means and said housing and comprising a spring member applying a prescribed force between the portion of said sensing means coupled to said housing and said sensing projection to permit the sensing of motions in either direction.



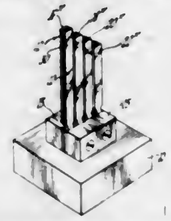
**3,167,964**
**APPARATUS AND METHOD FOR TESTING SEAL QUALITY**
**Robert L. Dega, Utica, Mich., and Edward H. McDonald, Tipp City, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 10, 1961, Ser. No. 101,950**
**5 Claims. (Cl. 73—432)**



4. A method of checking lip type shaft seals comprising, mounting a seal to be tested on a rotatable fixture with the lip of the seal in engagement with a portion of the fixture simulating a shaft of the size with which the seal is intended to be used, securing the seal to the fixture for conjoint rotation therewith, rotating the fixture and the seal at a predetermined speed, establishing whether the seal lip and the shaft simulating portion of the fixture remain in engagement, rotating the fixture and the seal at a predetermined higher speed, and establishing whether the seal lip and the shaft simulating portion of the fixture remain in engagement.

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**3,167,965**
**ACCELEROMETER**
**Frederick J. Peterson, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 19, 1962, Ser. No. 245,845**
**6 Claims. (Cl. 73—492)**



1. Means for permanently recording whether a body has been subjected to a predetermined magnitude of acceleration force in a given direction comprising a beam member mounted at one end to a body subjected to acceleration forces whereby when the body is subjected to an acceleration force having a force component of predetermined magnitude normally of the place defined by the width and length of the beam member such that when the member is in an unstressed condition a bending moment will be produced acting to stress the beam member beyond its elastic limit so as to thereby deform the member with a permanent set, said beam member being crimped along its length so as to provide a degree of stiffness to the member to minimize any tendency to whip when the body has been acted upon by acceleration forces.

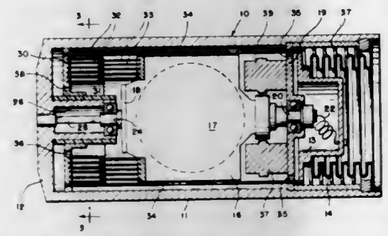
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**3,167,966**
**INSTRUMENT DAMPER**
**Francis C. Ashleman, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware**
**Filed Sept. 14, 1962, Ser. No. 223,608**
**8 Claims. (Cl. 73—497)**

1. In an instrument wherein there is a member movable with respect to a reference portion of said instrument, said member being arranged to be displaced by a force to be measured, and there is means which exerts a restoring force which tends to resist said displacing force in a manner that said restoring force increases with the amount of said displacement, so that said movable member with said restoring means comprises a spring mass system in said instrument, the instrument being such that for the proper operation thereof, motion of said movable member must be damped with respect to said reference portion, an instrument damper comprising:

(*a*) a first drag member which is secured to and movable with said movable member, said first drag member having a plurality of plates, each of which presents at least one drag surface, each portion of each drag surface being parallel to the direction of the displacing motion of said movable member,

(*b*) a second drag member which is secured to, and stationary with respect to, the reference portion of said instrument, said second drag member having a plurality of plates which are arranged to interfit with said first-named plates so that each of said second-named plates presents a drag surface facing toward,



and spaced a predetermined distance from, a related one of said first-named plates, the portions of said plates which so face each other being the drag area of said plates, said instrument being arranged to contain a damping fluid, and said drag members being disposed relative to one another to receive said damping fluid between said drag surfaces, the damping fluid acting to create a viscous drag between said first and second drag members and,

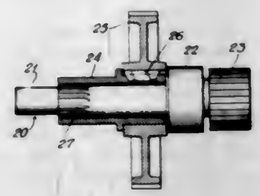
(*c*) means to move said drag members relative to one another in a direction other than that of said displacing motion of said movable member, so as to vary the drag area of said drag members some of said plates of one drag member being so arranged that as said drag members are moved relative to one another so as to increase the drag area, some of said plates of one drag member begin to come into facing relationship with their related plates of the other drag member, said plates thus being so arranged that the change of drag area is inversely proportional to the change in viscosity of the damping fluid.

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**3,167,967**
**MULTIPLE CLUSTER GEAR TRAIN**
**Marvin E. Silberger, York, Pa., assignor to American Chain & Cable Company, Inc.**
**Filed Oct. 23, 1962, Ser. No. 232,468**
**1 Claim. (Cl. 74—411)**

In a gear train including input and output gears fixed concentrically on respective separate axially rotatable coaxial shafts and drivingly interconnected by at least two identical gear clusters, each gear cluster including a jackshaft mounted only for axial rotation with respect to and parallel with said axial shafts and having first and second pinions supported concentrically thereon in meshing engagement with the respective input and output gears, improved transmission means for at least one of said gear clusters comprising a cylindrical metal sleeve disposed

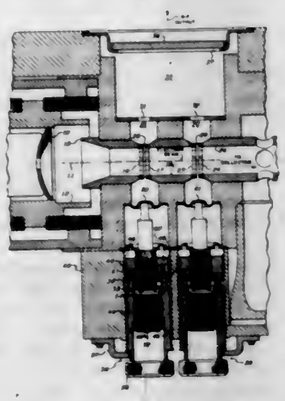
concentrically about the associated jack-shaft, one end portion of said sleeve being secured to the associated jack-shaft to rotate therewith and the other end portion of said sleeve being secured to one of the associated pinions to rotate therewith, the intermediate portion of



said sleeve between said end portions being elastically torsionally deformable during operation of the gear train, whereby torque is resiliently transmitted through at least one of said gear clusters and is substantially equalized in all of said gear clusters.

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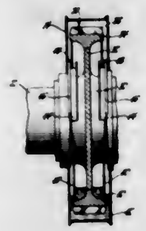
**3,167,968**
**TUNING MECHANISM**
**Lars H. Sandstrom, Gainesville, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware**
**Filed Dec. 4, 1962, Ser. No. 242,249**
**5 Claims. (Cl. 74—424.8)**



1. Apparatus for imparting an axially directed force to a non-rotatable member comprising the combination,
a body member having an axially-aligned threaded bore,
first and second differential screw mechanisms axially spaced within said bore,
each of said differential screw mechanisms comprising an internally and externally threaded nut and an axially-aligned screw threadably engaging the internal threads of its respective nut,
means for joining together the nuts of said differential screw mechanisms in a non-rotatable but axially-translatable manner with respect to each other,
means for maintaining the screw of the first one of said differential screw mechanisms in a non-rotatable relationship with respect to said bore,
the axial screw of said second differential screw mechanism being independently rotatable within its respective nut and being adapted to exert an axially directed force against the screw of said first differential screw mechanism.

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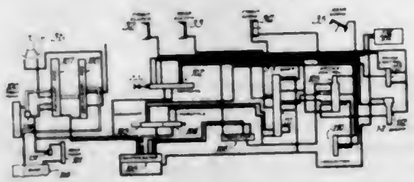
**3,167,969**
**TRACTION MOTOR GEAR CASE**
**Thomas B. Dilworth and James W. Tharp, Hinsdale, Ill., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 31, 1962, Ser. No. 220,713**
**6 Claims. (Cl. 74—467)**



1. In combination with a gear case, a gear mounted for rotation therein, said gear case adapted to contain lubricant therein, means to increase the lubricant storage capacity of said gear case comprising a hub and a rim connected by a web forming a part of said gear, and a disc secured to the inner peripbery of said rim and forming therewith a storage area for the reception of lubricant, said storage area being adapted to retain lubricant above the level of lubricant contained in said gear case.

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**3,167,970**
**MANUAL AND AUTOMATIC TRANSMISSION**
**Oskar Wagner and Richard E. Young, Muncie, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Apr. 23, 1962, Ser. No. 189,587**
**6 Claims. (Cl. 74—472)**



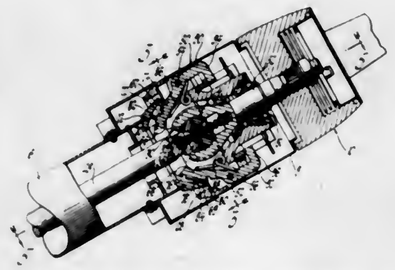
1. A control system for an automatic transmission providing a plurality of drive ratios comprising a first means shiftable to a plurality of positions, a source of fluid pressure a second means operatively connected to said first means and said source and movable between two positions, a third means operatively connected to said first means and said source and movable between two positions, said second and third means operatively connected to said transmission to establish different drive ratios for said transmission, said first means having a first position wherein said second and third means are hydraulically locked in one of said two positions to establish a first drive ratio, said first means having a second position wherein said second means is moved to the other of said two positions and said third means is hydraulically locked in said one position to establish a second drive ratio, said first means having a third position wherein said second means remains in said other position and said third means



is released enabling said third means to move between either of said two positions to establish a drive ratio associated with each of said two positions.

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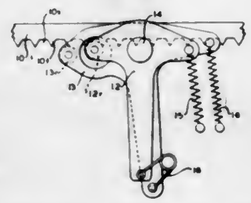
**3,167,971**
**ADJUSTABLE STEERING COLUMN**
**Philip B. Zeigler and Robert D. Wight, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Sept. 6, 1962, Ser. No. 221,833**
**9 Claims. (Cl. 74—493)**



1. An adjustable steering assembly comprising a fixed lower column section and an upper column section, means operatively linking said sections, a lower steering shaft rotatable in said lower column, an upper steering shaft journalled in said upper column, a universal joint connecting said upper and lower steering shaft, and means for retaining said upper section in a plurality of angular positions relative to said lower section, said means including a dual latch mechanism having paired elements operable in alternating sequence through said range of said angular positions.

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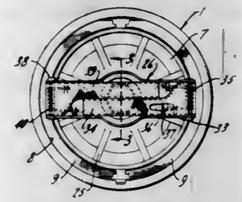
**3,167,972**
**DETENT MECHANISM**
**Douglas C. Durgin, West Orange, N.J., assignor to Monroe International Corporation, a corporation of Delaware**
**Filed Apr. 10, 1962, Ser. No. 186,510**
**5 Claims. (Cl. 74—527)**



1. The combination with an adjustable member, and means for adjusting said member to a succession of positions;
of a detent mechanism, comprising
a rack having tooth spaces each corresponding to two of said positions;
a pair of pawls alternately operable to engage respectively a tooth space and the top of a rack tooth upon movement of said member to its successive positions; and
means operable to urge said pawls alternately into engagement respectively with a tooth space and away from engagement with a rack tooth upon movement of said member to its successive positions.

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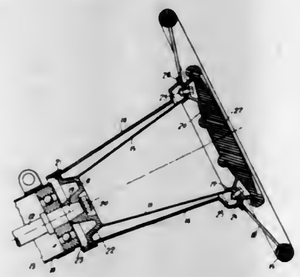
**3,167,973**
**MANUAL RELEASE STRUCTURE**
**Edward J. Brodl, La Grange Park, Harold L. Dobrikin, Highland Park, and Victor Mastis, Chicago, Ill., assignors to Berg Airlectro Products Co., Chicago, Ill., a corporation of Illinois**
**Original application Oct. 13, 1961, Ser. No. 144,882, now Patent No. 3,109,347, dated Nov. 5, 1963. Divided and this application Jan. 10, 1963, Ser. No. 250,628**
**2 Claims. (Cl. 74—547)**



2. A handle member comprising a generally rectilinear base section, an aperture intermediate the ends of said base section, and a pair of manually operable sections, one of said manually operable sections being pivotally mounted on each of the opposite ends of said base section, yielding means engaging said base section and each of said manually operable sections, said yielding means being arranged to urge said manually operable section into a position overlying and in contact with said base section, each of said manually operable sections having an offset portion, said offset portions being urged by said yielding means to a position adjacent each other and into parallel, interpenetrating relationship with the base section.

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**3,167,974**
**STEERING WHEEL**
**Karl Wilfert, Stuttgart-Degerloch, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed Nov. 8, 1961, Ser. No. 151,079**
**Claims priority, application Germany, Nov. 11, 1960, D 34,707**
**4 Claims. (Cl. 74—552)**

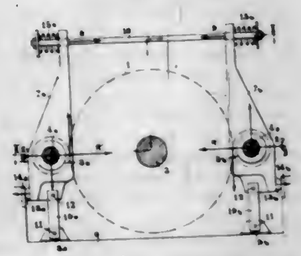


1. A safety steering wheel comprising a support, a hub member, means for rotatably mounting said hub member on said support, a steering wheel rim disposed in coaxial relationship to and axially spaced from said hub member, a spacer sleeve rigidly connected at one end thereof with said rim and at the other end thereof with said hub member, said spacer sleeve having a hollow, annular configuration with the diameter thereof decreasing continuously towards the end secured to said hub member, said spacer sleeve being constructed to enable axial deformation at relatively low compressive loads, said spacer sleeve at the end secured to said hub member having marginal portions folded around the periphery of said hub member, said

spacer sleeve at the end adjacent said rim having a flange portion, an annular member secured to said rim and overlying said flange portion, an essentially annular centrally apertured plate having portions overlying said annular member, readily detachable means connecting said flange portion, said annular member and said essentially annular plate to each other, and resilient cushion means supported upon said plate member.

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**3,167,975**
**DEVICE FOR TRANSMITTING MOTION TO A GEAR**
**François Durand, 108 Blvd. Carnot, Le Vesinet, France**
**Filed July 31, 1962, Ser. No. 214,105**
**Claims priority, application France, May 12, 1962, 897,368**
**7 Claims. (Cl. 74—665)**

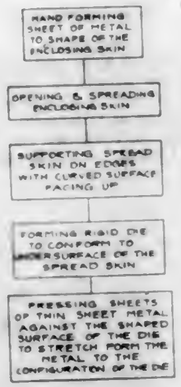


1. A device for transmitting motion to a gear provided with peripheral teeth and mounted on a fixed base body, comprising, in combination, at least two driving pinions uniformly spaced about said gear and meshing with the teeth thereof; at least two mountings spaced from said base body and respectively turnably supporting said pinions; at least one guiding track provided on said gear arranged concentrically to the teeth thereof; at least one roller supported by each of said mountings, coaxially arranged with the driving pinion supported thereon and engaging said guiding track; a pair of coupling bars respectively connecting said mountings to fixed points of said base body which are spaced from each other, said bars being adapted to restrain said mountings tangentially with respect to the gear, each of said bars being pivotally connected at opposite ends therof to the respective mounting and the respective fixed point; at least one tie-rod interconnecting said two mountings; spring means provided on said tie-rods for urging said two mountings toward each other and to keep said rollers in engagement with said guiding track; and at least one fixed stop for each of said mountings and cooperating therewith to limit the motion thereof.

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**3,167,976**
**METHOD OF MAKING STRETCH DIE AND METHOD OF STRETCHING ARTICLE THEREON**
**Romeo A. Lalli, 1805 Stratford Ave., Stratford, Conn.**
**Filed May 31, 1963, Ser. No. 284,590**
**6 Claims. (Cl. 76—107)**

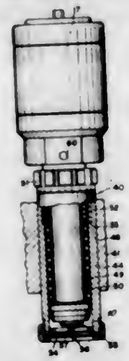
1. The method of stretch forming thin sheets of resilient metal to produce a predetermined compound curvature therein, comprising the steps of hand shaping a sheet of thin, resilient metal to the required shape having said compound curvature, spreading the hand shaped sheet and supporting the spread sheet solely on the side edges thereof on a flat surface so that the friction between the flat surface and the edges will hold the resilient sheet in said spread position, forming a rigid die to the shape of the hand shaped sheet in said supported position, and thereafter drawing sheets of said metal over the die and stretching the sheets into surface contact with the die to provide




sheets that will revert to the required compound curvature when removed from the die.

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**3,167,977**
**MACHINE FOR PIERCING BALL PEN POINTS OR SIMILAR ARTICLES OF MANUFACTURE**
**Guido Bertoglio, Lugano-Viganello, Switzerland**
**Filed Oct. 22, 1959, Ser. No. 848,143**
**Claims priority, application Switzerland, Dec. 30, 1955, 28,336; Apr. 25, 1956, 32,551**
**2 Claims. (Cl. 77—5)**

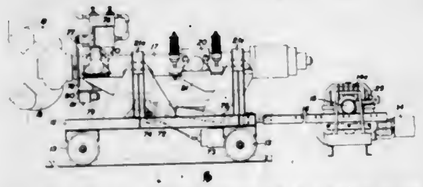


1. Apparatus for performing precise tooling operations on relatively small workpieces comprising:
a chuck for gripping a workpiece;
a tool unit having an operating tool attached thereto for performing an operation on a workpiece in said chuck;
operating means for selectively reciprocating said tool unit along an axis to cause said operating tool to engage a workpiece held in said chuck thereby to perform a preselected operation upon such workpiece;
precise centering means carried by and movable with said tool unit having tapered surfaces for engaging a workpiece as said operating tool moves toward such workpiece thereby to guide such workpiece to a precisely centered position with respect to said operating tool, said centering means being out of contact with said operating tool,
means resiliently biasing the tapered surfaces of said centering means toward a normal position in advance of said operating tool to contact and center a workpiece before an operation is performed thereon by said operating tool, such that upon arrest of movement of said centering means by contact with a workpiece said operating tool continues its axial movement under the influence of said operating means and against the force of said biasing means to engage such workpiece; and
micrometer means including adjustable abutment surfaces engageable between said tool unit and said centering means to limit the permissible axial movement of said operating tool with respect to said centering means.



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**3,167,978**
**CONTROL SYSTEM FOR FORGING PRESS**
**John George Wistreich, London, England, and Peter Norris Baker, deceased, late of Sheffield, England, by Raymond Baker, administrator, Sheffield, England, assignors to The British Iron and Steel Research Association, London, England, a British association**
**Filed May 8, 1961, Ser. No. 109,478**
**10 Claims. (Cl. 78—96)**

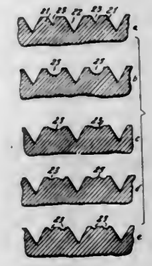


1. An electrical control system for a forging press and workpiece manipulator comprising first positional control means for controlling longitudinal movement of a manipulator in response to an initiating signal, second positional control means for controlling rotational movement of a manipulator in response to an initiating signal, two-position switch means, means responsive to movement of a reciprocable member of a forging press in one direction of movement thereof to actuate said switch means to a first one of its two positions and responsive to movement of said member in the other direction of movement thereof to actuate said switch means to the second one of its two positions, means responsive to the actuation of said switch means to said first position to apply an initiating signal to said first control means, and means responsive to the actuation of said switch means to said second position to apply an initiating signal to said second control means.

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**3,167,979**
**DIES FOR ROTARY DIE THREAD ROLLING MACHINES**
**Frederick William Cooper, Birmingham, England, assignor to G.K.N. Screws & Fasteners Limited, Birmingham, England, a British company**
**Filed Oct. 10, 1961, Ser. No. 144,123**
**Claims priority, application Great Britain, Oct. 15, 1960, 35,402/60**
**3 Claims. (Cl. 80—7)**

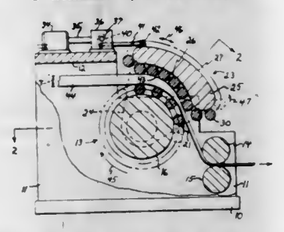
1. Dies for the production of spaced thread type screws in a rotary die thread rolling machine of the type wherein blanks are introduced in succession into the space between a rotary die having a thread form around its circumference and a co-operating stationary die of segmental form, said dies comprising a stationary die having on its face which co-operates with the rotary die a thread form comprising alternate ribs and main grooves extending from the starting end to the finishing end of the die, each rib having a sharp form at the starting end and changing gradually from such sharp form to a flat-top form at the finishing end, and a rotary die having around its circumference a thread form comprising alternate ribs and main grooves, each rib having a form, throughout its length, which is similar to the flat-top form at the finishing end of a rib on the stationary die, but each rib on the rotary die having its crest provided with at least one groove running the length of



the rib and of depth which is relatively shallow as compared with the depth of the main grooves on the rotary die.

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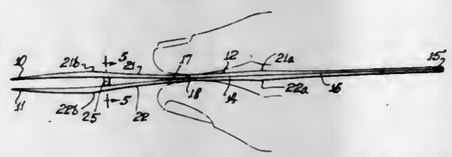
**3,167,980**
**METAL ROLLING**
**Albert W. Scribner, 6 Country Club Road, Darien, Conn.**
**Filed July 5, 1962, Ser. No. 207,664**
**3 Claims. (Cl. 80—18)**



1. A method of roll reducing a metal work blank; comprising the steps of
operatively positioning the work blank to receive a series of roll working strokes,
placing a pair of work rolls in operative engagement with opposite sides of a portion of said work blank,
moving one of said work rolls through a plurality of working strokes in one direction with respect to said portion of the work blank,
simultaneously moving the other of said rolls through a plurality of working strokes in the other direction with respect to said portion of the work blank, and progressively feeding said blank toward said work rolls.

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**3,167,981**
**TWEEZERS**
**Norman E. Kern, Los Angeles, Calif., assignor to Kern Chemical Corporation, Los Angeles, Calif., a corporation of California**
**Filed Nov. 8, 1961, Ser. No. 151,031**
**3 Claims. (Cl. 81—43)**

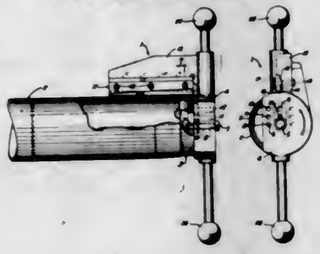



1. A reverse action tweezer comprising first and second spaced apart resilient arm members connected together at one end thereof and provided a pair of gripping jaws at the opposite end thereof; the interior surfaces of said arm members being generally concave in curvature, a longitudinally extending section of reduced

cross-sectional thickness on each of said tweezer arms extending from a point spaced from the connected end to a point spaced from the gripping end of said tweezer arms, a fulcrum pin affixed to one of said arms and extending from the interior surface of said first arm to the interior surface of the opposite arm and being in non-affixed bearing contact with said opposite arm at the normal relaxed condition of said tweezer arms.

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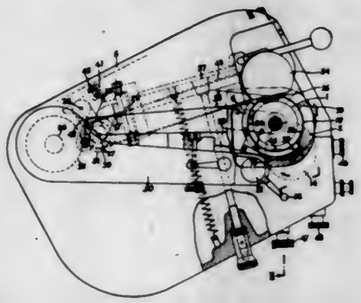
3,167,982
**TOOL FOR TAPERING TUBING ENDS**
Noble Sherwood, Shorewood, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed July 18, 1962, Ser. No. 210,788
4 Claims. (Cl. 82—4)



3. A tool for tapering the surface of a conduit comprising, a base member having a longitudinal axis and being adapted to be positioned in frictional non-compressive and generally continuous peripheral wall supporting relation with respect to a conduit, a blade mounting member removably secured to the base member, the blade mounting member having a plurality of spaced axial bores disposed in generally parallel alignment with the longitudinal axis of the base member, means for connecting the base member to the blade mounting member through an axial bore, a cutting blade secured to the mounting member and extending therefrom at an angle to the longitudinal axis of the base member complementing the angle of taper to be imparted in the conduit, and means for rotating the cutting blade to taper the conduit.

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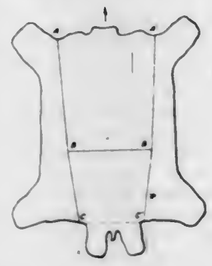
3,167,983
**SLITTING MACHINE FOR INCISING THE EDGES OF FLEXIBLE WORKPIECES**
Dieter Braun, 6 Dinkelshuhlstrasse, Stuttgart-Bad Cannstatt, Germany
Filed June 6, 1962, Ser. No. 200,459
7 Claims. (Cl. 83—4)



1. A slitting machine for incising the edges of workpieces of relatively flexible material, and comprising a rotary circular cutting member positioned in a horizontal cutting plane, an upper guide member mounted above said cutting member and having a guide edge extending over about 180° of the periphery thereof, a rotary feeding member mounted below said cutting member and effective over a portion of the 180° over which said guide edge extends, a first lower guide member positioned below said cutting member beneath said upper guide member and adjacent said feeding member and having a guide edge effective over the remaining portion of said 180°, said first lower guide member being resiliently vertically displaceable, a second lower guide member mounted below said cutting member and having a guide edge concentric thereto, the guide edges of said upper and said second lower guide members extending over the entire periphery of said cutting member and the radii of said guide edges being greater than the radius of said cutting member.

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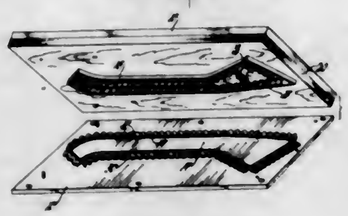
3,167,984
**LEATHER CROPPING FROM HIDES**
Claude C. Jarnagin, Newport, Tenn., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 28, 1963, Ser. No. 268,799
6 Claims. (Cl. 83—34)



1. An improved method for cropping hides comprising: cutting a hide simultaneously along two spaced lines across the belly section thereof; cutting said hide along two converging lines across the shoulder area of said hide, said two spaced lines and said converging lines being coextensive; and moving the hide during the cutting along one of said spaced and converging lines and holding said hide stationary during the cutting along the other of said lines.

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3,167,985
**STEEL RULE DIE STRIPPING DEVICE**
James Bagie Madsen, London, Ontario, Canada, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 24, 1961, Ser. No. 112,339
1 Claim. (Cl. 83—139)



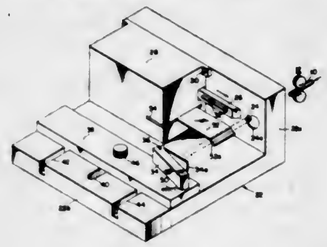
In a die set for blanking out a shape from sheet metal; a shaped male punch member, a female die member, means mounting said punch member and said female die



member in mutual alignment for relative movement toward and away from one another from a spaced position into an engaged position, said female die member comprising die blade means defining an opening of predetermined contour, said punch member adapted to fit within said opening, rubber stripper means located adjacent the peripheries of said die blade means and punch member, said stripper means adjacent said punch member spaced from said punch member to provide a working space for said die blade means, said stripper means formed of flat elongated strips of rubber laminated together to form a built-up member being of a depth greater than said die blade means when in the spaced position and having corrugation formed along the opposite edges side thereof, said corrugations greatly increasing the exposed surface of said stripper means and permitting greater axial and transverse expansion thereof when said punch member and female die member are in the engaged position, the exact spacial relationship of the outer surface of the rubber stripper means therefore not being critical relative to the outer surface of said die blade means due to the softer spring rate of the stripper means.

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3,167,986
**AUTOMATIC CUTTING DEVICE**
Robert L. Jacobs, Hilliard, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Dec. 5, 1960, Ser. No. 73,719
3 Claims. (Cl. 83—160)



1. Apparatus for cutting pieces having a predetermined length from a continuous stock of longitudinal extent comprising,

a housing having a base member and an upstanding member having an inside face abutting thereagainst,

a transverse bore in said upstanding member for receiving said continuous stock,

a cutter blade having one surface mounted flush against said inside face of said upstanding member and having a beveled surface opposite said flush mounted surface for deflecting cut pieces away from said cutter blade,

a shallow recess provided in said inside face of said upstanding member on the opposite side of said bore from said cutter blade for receiving the cut ends of said pieces deflected by the beveled side of said blade,

a limit switch having a spring-loaded actuating arm positioned in horizontal alignment with said bore and located at a distance from said cutter blade equivalent to said predetermined length,

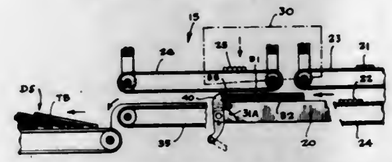
means for confining said cutter blade to horizontal movement from a first position away from said bore to a second position over said bore,

means for feeding said stock through said bore toward said limit switch,

cutter blade drive means energized by said limit switch to move said cutter blade from said first position to said second position upon actuation of said switch by said stock and including means for automatically withdrawing said cutter blade to said first position.

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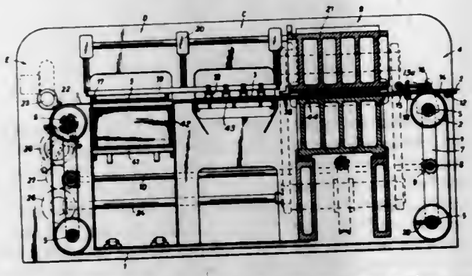
3,167,987
**BOOK TRIMMING MACHINE**
William B. McCain, Hinsdale, Ill., assignor to Chicago Machinery Laboratory, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 23, 1963, Ser. No. 304,159
6 Claims. (Cl. 83—268)



6. In a book trimming machine wherein books are advanced to a trimming station each to have the sheets at one end thereof trimmed along a line transverse to the book back by a knife and cooperating counter blade presenting a shear face to the knife, a break-out prevention die engageable with the back of each book at said one end thereof, said die having a forward face that presents a profile complemental to the back of the book for supporting said book and having a shear face in the plane of the shear face of the counter blade, and said knife having a cutting stroke that includes the shear face of the counter blade and the shear face of the die.

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3,167,988
**CONVEYOR MEANS FOR SHEET AND STRIP MATERIAL PUNCHING APPARATUS**
Friedrich Schröter, Hannover, Germany
(Am Waldchen 8, Isernhagen NB Sud, Germany)
Filed June 1, 1959, Ser. No. 817,266
Claims priority, application Germany, June 2, 1958, Sch 24,172
3 Claims. (Cl. 83—422)



1. An apparatus for punching and embossing sheet and web-shaped paper material, comprising means for feeding said material, a single pair of laterally spaced intermittently movable endless conveyor belts, belt adjusting means on which said belts are mounted for adjusting the belts toward and away from each other, a punching press having punch supporting means adapted to removably support cutting means of various sizes and material supporting means opposed to said punch supporting means, which support means are spaced from each other a distance only slightly greater than the thickness of the material and said belts when said cutting means are in cutting relationship with said material, said belts at least when they are in positions closest to each other running between said opposed supporting means, tacking means consisting of means on said belts having a height which together with the thickness of said belts is less than the spacing between said supporting means when said cutting means are in cutting relationship with said material, said tacking means being for tacking the paper material to said belts adjacent the side edges thereof sufficiently securely to resist the lifting forces generated by the paper

material and the operation of the apparatus tending to lift the paper material from the belts, means for pressing the material against said tacking means at the point where the tacking means enter the apparatus, and means for stripping the tacked portions of the paper material from the tacking means at the point where the tacking means leave the apparatus, whereby cooperating cutting means of different dimensions laterally of the direction of movement of said belts can be placed in said punch supporting means and said belts can be adjusted toward and away from each other and run between said supporting means without being touched by said supporting means during a punching operation.

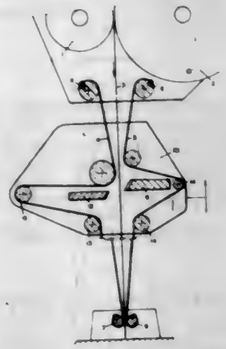
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3,167,989

## DEVICE FOR GUIDING A WEB OF MATERIAL FROM WHICH VARIABLE LENGTHS ARE TO BE SEVERED

Cornelis Sol, Westzaan, Netherlands, assignor to N.V. Machinefabriek "Verwachting," Wormer, Netherlands, a corporation of the Netherlands

Filed May 21, 1963, Ser. No. 281,956
Claims priority, application Netherlands, May 23, 1962, 278,766
2 Claims. (Cl. 83—449)



1. Means for transversely severing a web of material comprising opposed supply rollers for advancing the web, a pair of oppositely arranged belts each having one end attached to a stationary holder at the delivery side of the supply rollers and on opposite sides of the web, and its opposite end attached to a stationary holder at a more advanced point in the travel of the web, a longitudinally adjustable blade holder between the points of attachment for the belts, a pair of cooperating blades on the blade holder and means for guiding the belts in spaced relation along the direction of travel of the web and in the rear of the cutting blades.

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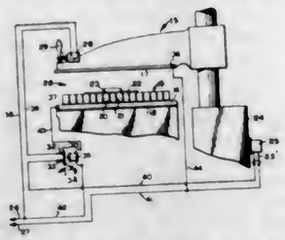
3,167,990

## DIE CLICKER CONDUCTIVE BLOCKS

Francis P. Gilmartin, 172 Pacific St., Brooklyn, N.Y.

Filed Jan. 5, 1960, Ser. No. 539
3 Claims. (Cl. 83—658)

1. In a cutting block to serve as part of an electrical switch means in a die clicker, of the character described, a dielectric cutting block body presenting two opposite surfaces, each of comparatively large area and any of them for presentment to be met by the cutting edge of a cutting die; said dielectric block body comprising a plurality of relatively thick, wear-resisting insulative members, each said member extending to said opposite surfaces and electrically-conductive sheet elements, each said element extending through said block from one such surface to the other; said members and elements being in alternate relation and adjacent elements and members being in contact with each other to form a unitary laminated structure; the edges of said elements being spaced in the surface they are part of and together constitute but a small part of the area of the surface they are part of; the



spacing of the elements being such that when a die meets one of said surfaces, it will meet at least one of said element; said elements being of softer material than the die which is to meet any of said surfaces.

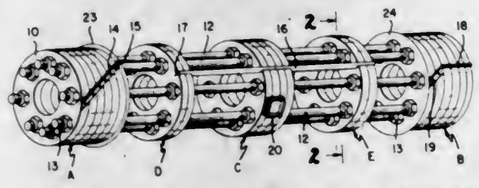
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3,167,991

## ROTARY CUTTER ASSEMBLY

Norman T. Miller, 3412 Muirfield Drive, Toledo, Ohio

Filed Feb. 21, 1962, Ser. No. 174,876
1 Claim. (Cl. 83—662)



A rotary cutter assembly for cutting glass fiber mats or the like comprising a plurality of plywood discs arranged in predetermined groups spaced laterally from each other, the discs being formed with annular rows of holes registering respectively with each other, screw threaded rods extending through the registering holes in the discs, nuts on said rods arranged on opposite sides of the respective groups of discs, the rods and nuts constituting the sole means for retaining the discs in position and providing a self sustaining assembly, horizontal notches in certain adjacent groups of discs, a knife blade wedged into said notches and spanning the space between such groups, and other knife blades secured directly to the peripheral surfaces of the discs.

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3,167,992

## DEVICE FOR THE FIXING OF THE TOOL OF A PLATEN PRESS AGAINST THE UPPER BED

Josef Kury, Pully, Switzerland, assignor to J. Bobst and Son SA., Prilly, near Lausanne, Switzerland, a corporation of Switzerland

Filed Jan. 3, 1963, Ser. No. 249,157
Claims priority, application Switzerland, Jan. 11, 1962, 387/62
4 Claims. (Cl. 83—700)



1. Apparatus for supporting a tool beneath the upper platen of a press which has a smooth flat undersurface, said apparatus comprising a frame, means secured to said upper platen for supporting said frame therebeneath such that said frame can be slidably introduced and withdrawn from beneath the platen, a tool peripherally supported by said frame and including a sheet contained within the frame defining a space with the undersurface of the platen, a rigid plate in said space detachably supported by said platen, said plate having a surface in contact with said undersurface of the platen, said plate being provided in the aforementioned surface thereof with a plurality of parallel transverse grooves having opposite ends, said plate being further provided in said surface with a longitudinal groove in communication with said transverse grooves at one of the ends thereof, whereby a network of grooves is established in said surface of the plate which is covered by the undersurface of the platen, and conduit means connected to the plate and in communication with the network of grooves for establishing suction therein, said plate being provided with spaced holes regularly arranged along the transverse grooves and opening into said grooves for thereby having suction developed therein, said sheet of the tool having an upper surface proximate the holes in the plate such that the upper surface of the sheet is drawn against the plate and is held thereagainst by the said suction.



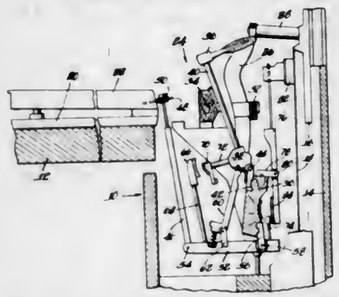
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3,167,993

## PIANO ACTION SPOON

Clifford W. Andersen, Chicago, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio

Filed Mar. 25, 1963, Ser. No. 267,597
4 Claims. (Cl. 84—240)



1. A post-type actuator for use in a piano action mechanism, said actuator comprising: a shank portion having a longitudinal axis and including an end formation adapted for assembly to a whip; and a substantially rigid head portion on said shank portion opposite said end formation for actuatably contacting a resiliently surfaced portion of a pivotally mounted damper lever, said head portion being substantially a solid of revolution and having its geometric center substantially aligned with the longitudinal axis of said shank portion.

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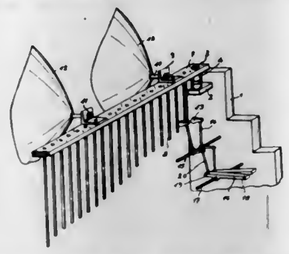
3,167,994

## MUSICAL INSTRUMENT WITH MECHANICAL RADIATING MEANS

Francois Pierre Maurice Baschet, 38 Rue Boileau, Paris, France

Filed June 10, 1963, Ser. No. 286,542
Claims priority, application France, Mar. 12, 1957, 733,963
8 Claims. (Cl. 84—404)

1. A musical instrument comprising a metal carrier bar, a plurality of generators of tuned vibrations including metal rods one end of each being rigidly connected to said carrier bar so as to have a node of vibration at the connecting point thereof, said carrier bar having a mass such that it is incapable of undergoing any substantial shifting in space under the action of the vibrations imparted thereto by said generators, said generators when set in vibratory motion imparting to said carrier bar vibrations corresponding to the tuned vibrations thereof, at least one large radiating nontuned means of substantially



rigid material engaging said carrier bar for transforming the vibrations thereof into sound and radiating same into the atmosphere, and means for imparting vibrations to said generators of tuned vibrations.

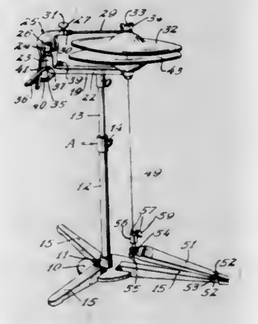
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3,167,995

## CYMBAL SUPPORTS

Fred J. La Londe, 1604 Valerio Place, Santa Barbara, Calif.

Filed Aug. 15, 1963, Ser. No. 302,400
8 Claims. (Cl. 84—421)



1. A cymbal support including
a base,
a standard supported by said base,
a generally horizontal arm supported by said standard,
a first cymbal resiliently supported at one end of said arm,
a lever pivotally connected to the other end of said arm and extending over said first cymbal,
resilient means urging said lever away from said first cymbal,
a second cymbal supported by said lever above said first cymbal,
foot pedal means hingedly connected to said base, and
a flexible connector connecting said second cymbal and said foot pedal and extending through the center of said first cymbal.

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3,167,996

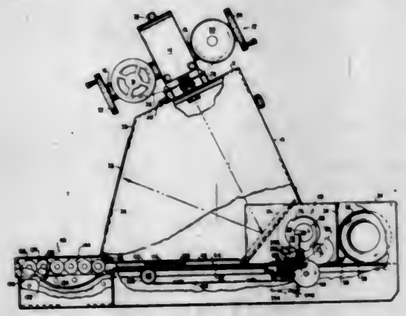
## COMBINATION FILM PROJECTOR AND PRINTING APPARATUS

Harold Adler, Huckleberry Hill, Lincoln, Mass.

Filed Nov. 30, 1960, Ser. No. 72,729
6 Claims. (Cl. 88—24)

1. In a photographic printer, means for intermittently advancing, exposing, and developing sensitized paper cyclically, comprising in combination: an easel, paper-feeding means for passing an indefinite length of sensitized paper over said easel; a planar element pivotally mounted with respect to said easel, for movement to a lowered

position overlying said easel to overlie and guide paper thereover in a flat condition, and for movement to a raised position for exposing of paper positioned on said easel; programming mechanism comprising at least one cam means and intermittent drive gearing, drivingly connected for joint rotation, and motive means for rotationally driving said cam means and drive gearing; means drivingly connecting said planar element with said cam means; means drivingly connecting said paper-feeding means with said intermittent drive gearing; said cam means and said



intermittent drive gearing being constructed and arranged to successively and cyclically move said planar element to said raised position for exposure of paper previously positioned on said easel, actuate said paper-feeding means to feed exposed paper from said easel and to feed fresh paper onto said easel, halt said paper-feeding means, move said planar element to said lowered position to overlie and guide the paper thereon, and re-actuate said paper-feeding means to position the paper on said easel for subsequent exposure.

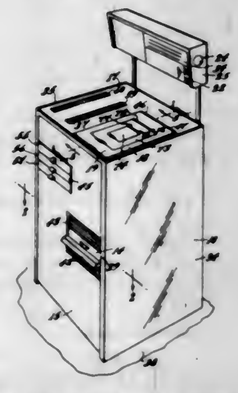
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3,167,997

## COMBINED ENLARGING AND PHOTOGRAPHIC MACHINE

Fred P. Robin, Cheltenham, Pa., assignor to Quik Photo-Electronics, Inc., a corporation of Pennsylvania

Filed July 7, 1961, Ser. No. 122,540
4 Claims. (Cl. 88—24)



1. In a combined enlarging and photographic machine, the combination of

an equipment holding enclosure,

said enclosure having a top, a front, a back and parallel sides joining the front and back;

a mounting platform secured within the enclosure,

said platform having a plurality of positions permitting adjustment of the distance between the platform and the enclosure top;

an enlarger secured to the mounting platform,

said enlarger carrying adjustable lens and said enlarger directing a magnifying beam of light toward the enclosure top;

a negative holding tray slidably mounted in the enclosure front,

said tray rotatably carrying a negative holding turntable and

the said tray being positioned to introduce the negative turntable into the beam of light between the enlarger and the enclosure top,

the said turntable supporting a plurality of negative holding clips of varying sizes;

and a clear glass target provided in the said enclosure top,

said target being positioned to receive the magnified beam of light from the enlarger

and said target having a plurality of rectangular lines scribed thereon,

said lines defining rectangles of varying sizes arranged in spaced relationship

whereby a plurality of magnified images of various sizes may be focused in turn on the target and whereby a plurality of negatives of various sizes may in turn be accommodated.

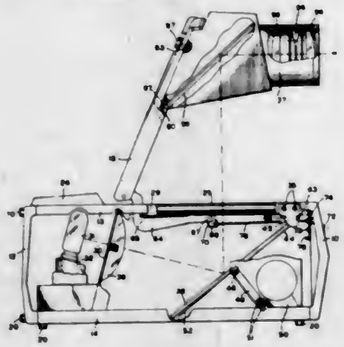
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3,167,998

## PORTABLE OVERHEAD PROJECTING APPARATUS

Roger H. Appeldorn, White Bear Lake, Minn., and Frank C. Lustig, Highland Park, Ill., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Apr. 17, 1961, Ser. No. 103,487
11 Claims. (Cl. 88—26)



1. A portable overhead projector comprising a box-like case having a top wall formed with an opening adjacent one end extending across the major portion of the width thereof and having an area greater than half the area of said top wall, a transparency stage co-extensive with said opening, a flat mirror within said case extending from adjacent said one end of said top wall downwardly under said stage at an angle of less than 45 degrees from the plane of said top wall, a projection lamp mounted within said case adjacent the opposite end of said top wall in position to direct light rays at said mirror at an angle of incidence less than 45 degrees, a yoke movably mounted on said case and having an operative position inclined above said stage, said yoke also having a second position in substantial parallelism with said top wall, and a projection lens assembly carried by said yoke in operative position above said stage when said yoke is in operative position, said lens assembly when in said operative position being disposed to receive light from said lamp reflected through said stage by said mirror for projection toward a remote screen.

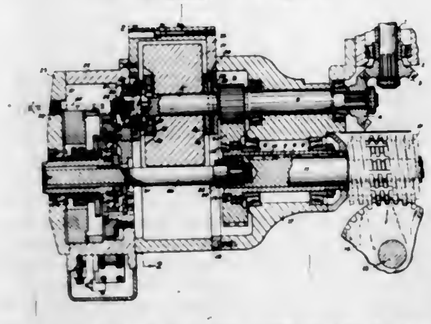


3,167,999

## VIBRATION DAMPING MEANS FOR DRIVEN SHAFTS

John Mountean, Jr., North Olmsted, Ohio, assignor to The Lees-Bradner Company, Cleveland, Ohio, a corporation of Ohio

Filed June 5, 1962, Ser. No. 200,189
2 Claims. (Cl. 90—4)



1. In a hobbing machine construction, a housing, a driven rotatable shaft, a second rotatable shaft driven by said first shaft, a toothed cutting tool on said second shaft for performing a cutting operation on a workpiece movable in timed relation with said tool, means for axially shifting said second shaft and tool, means for damping vibrations generated during entry, passing through and eruption of the tool from the cut performed by the tool in the workpiece, said means including a flywheel rotatable on said first shaft, a pair of disks rotatable with said first shaft, one of said disks being both rotatable with said first shaft and slidable axially thereon, a back-up member rotatable with and relatively slidable axially on the said first shaft with respect to said one disk, means comprising resilient annuli concentric to the axis of said first shaft between said member and said one disk, and means for adjusting the axial position of the member with respect to the said one disk whereby to select the force of compression exerted on said resilient annuli and to the flywheel, friction rings fixed on each disk and adapted for frictional contact with the opposed side faces of said flywheel under selected forces of compression, and means disposed axially of said back-up member for exerting selected forces of compression upon said flywheel through said back-up member, said resilient annuli, said disks and the respective friction means carried by said disks.

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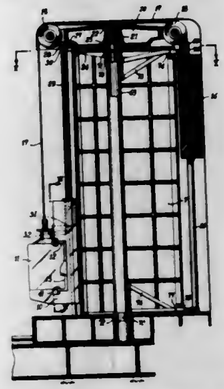
3,168,000

## BALANCE COMPENSATING DEVICES

René Deflandre, Paris, France, assignor to Société dite: Dorefa Etablissement pour le Développement Recherches et Fabrications Industrielles, Vaduz, Liechtenstein

Filed Apr. 1, 1963, Ser. No. 269,577
Claims priority, application France, Apr. 5, 1962, 893,377
10 Claims. (Cl. 90—11)

1. In a milling and boring machine having an upright with a front face and a rear face and vertical slideways on said front face thereof, a saddle mounted for sliding movement on said vertical slideways of said upright and having horizontal slideways, and a headstock mounted for sliding movement on said horizontal slideways of said saddle, the provision of means for balancing the weight of said headstock in such sliding movements thereof, said balancing means comprising a horizontal beam mounted at a point intermediate both ends thereof for pivotal movement on a vertical axis on the top of said upright so that one end of said beam constantly hangs over said headstock, a loose pulley mounted at each end of said beam, flexible suspension means passed over both said pulleys and having one end thereof attached to said headstock substantially on the vertical line passing through the center of gravity of said headstock, a counterweight movable along the rear face of said upright and



attached to the other end of said flexible suspension means and having a weight substantially equal to the weight of said headstock, and means for pivoting said beam about said vertical axis in unison with the horizontal sliding movement of said headstock on said saddle.

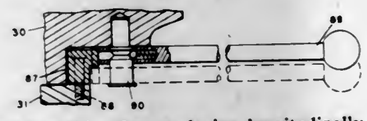
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3,168,001

## HEADSTOCK SPINDLE ADJUSTMENT MECHANISM FOR SPIRAL MILLING MACHINE

Robert W. Nashold, New Richmond, and Herman J. Baldwin and Vincent L. Mitchell, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Original application Dec. 19, 1958, Ser. No. 781,747, now Patent No. 3,101,649, dated Aug. 27, 1963. Divided and this application Apr. 26, 1963, Ser. No. 289,150
5 Claims. (Cl. 90—11.48)



1. In a machine for producing longitudinally extending spiral flutes simultaneously on a plurality of workpieces, said machine having a bed, a swiveling saddle on said bed, a slide on said saddle, means including a plurality of longitudinally adjustable spindles on said slide for rotatably supporting the workpieces in parallel relationship on the slide, and a plurality of cutting tools supported for rotation about a common axis on said bed for cutting a flute in each of said workpieces, the invention comprising means for swinging said saddle to position the axes of said spindles at an angle with respect to said cutting tools corresponding to the helix angle of the flutes to be cut in the workpieces, and means for simultaneously adjusting each of said spindles longitudinally along said slide to maintain said spindles in proper alignment with said cutting tools to enable the tools to cut corresponding flutes in each of said workpieces.

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3,168,002

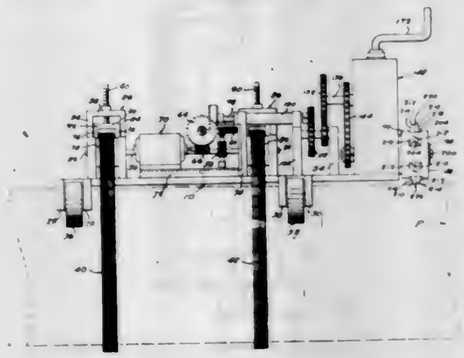
## PIPE CUTTING AND BEVELLING MACHINE

Paul D. Walling, Rte. 1, Box 8, Sunnyside, Wash.

Filed Mar. 1, 1963, Ser. No. 262,054
7 Claims. (Cl. 90—12)

3. A pipe cutting machine comprising a substantially flat base plate having outer and inner sides, longitudinally

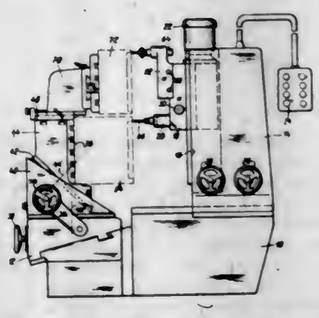
spaced pipe engaging rollers journaled on the base plate at the side edges thereof and extending inwardly from said inner surface, longitudinally spaced wheels mounted on the outer side of the base plate adjacent to the side edges of the base plate, said wheels being located between



the rollers, endless pipe embracing bands extending transversely around the base plate and trained over the wheels, a cutting head assembly mounted centrally upon the outer side of the base plate at one end of the base plate, said assembly having a longitudinal rotary cutting head extending beyond said one end of the base plate.

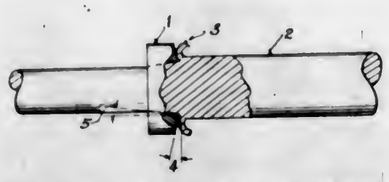
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**3,168,003**
**UNIVERSAL MACHINE TOOL**
**Johann Müller and Horst Lanzenberger, Munich, Germany, assignors to Hans Deckel, Munich, Germany, and Friedrich Wilhelm Deckel, Zug, Switzerland**
**Filed Feb. 14, 1963, Ser. No. 258,483**
**Claims priority, application Germany Feb. 27, 1962**
**11 Claims. (Cl. 90—13.1)**



1. A universal machine tool of the type having a clamping table and a tool means which are movable relative to each other in three coordinate directions, the improvement comprising, in combination, a fixed horizontal tool axis means connected to said tool means, a clamping surface adapted to receive a workpiece carried by said clamping table, said clamping surface disposed for swiveling around a first pivot axis means on said clamping table disposed at substantially 45° to said clamping surface, and said clamping surface disposed for rotation around a second pivot axis means vertically disposed on said clamping table and at substantially 45° to said first pivot axis means for selectively positioning all sides of a workpiece clamped on said clamping surface adjacent said fixed horizontal tool axis means for work thereon, thereby providing a more stable fixed horizontal tool axis means.

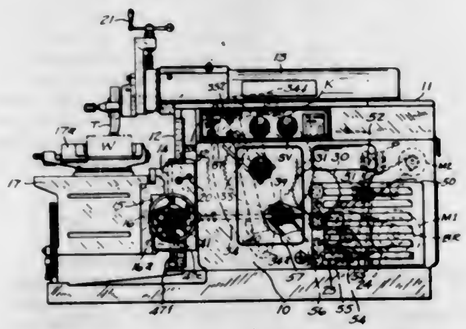
**3,168,004**
**COLD FINISHING OF METAL**
**George Zavodny, Jr., and Norman N. Breyer, Chicago, and Elliot S. Nachtman, Evanston, Ill., assignors to La Salle Steel Company, Hammond, Ind., a corporation of Delaware**
**Filed May 11, 1962, Ser. No. 194,142**
**15 Claims. (Cl. 90—24)**



1. In the process of removing surface metal from elongate workpieces of repeating cross-section, the steps of advancing the metal linearly through a shaving tool which completely encircles the workpiece for the removal of said surface metal, prior to metal removal, heating the metal to be removed from the work to a temperature within the range of 250° F. to the lower critical temperature for the metal, and maintaining the rate of advancement of the work through the shaving tool to cause the temperature of the metal being removed to be raised to a final temperature near the hot working region of the metal.

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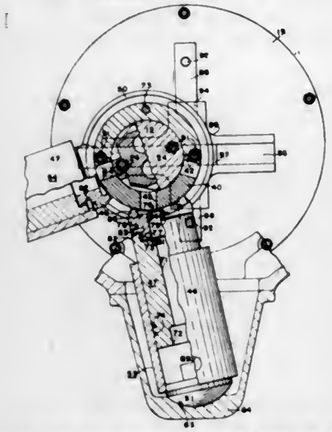
**3,168,005**
**SHAPING MACHINE**
**Granger Davenport, Montclair, N.J., Clifford E. Heimall, Berlin, Mass., and Theodore R. Crocker, Bound Brook, N.J., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts**
**Filed Oct. 17, 1960, Ser. No. 63,159**
**9 Claims. (Cl. 90—40)**



1. In a shaping machine having a ram reciprocably mounted thereon and a work table movably mounted thereon, the combination of a main-drive motor, continuously operative driving connections between the main-drive motor and the ram operative to reciprocate the ram whenever the main-drive motor is operating, said continuously operative connections including selectively shiftable change-speed gear, manually controlled hydraulically operated means operatively connected with the change-speed gearing for shifting the gearing to obtain any one of a plurality of different ram speeds with the main-drive motor not operating, a pump for supplying fluid under pressure for actuating said hydraulically operated means, and a separate motor with continuously operative driving connections to the pump for driving said pump operable independent of the operation of the main-drive motor.



**3,168,006**
**HYDRAULIC ENGINE**
**Robert N. Bennett, McComb, Ohio, assignor to The Oilgear Company, Milwaukee, Wis.**
**Filed Apr. 8, 1963, Ser. No. 271,186**
**7 Claims. (Cl. 91—176)**



1. In a hydraulic engine having a housing, a crankshaft mounted in and for rotation relative to said housing; a crankpin having a generally cylindrical surface and carried by said crankshaft with the center line of said crankpin parallel to and spaced radially from the axis of said crankshaft, and at least three equally spaced, radial, cylinder assemblies mounted with their center lines being normal to the axis of rotation of said crankshaft, the improvement comprising, in combination, cooperating pivot means mounted on said housing and said cylinder assemblies at the outer end of each of said cylinder assemblies, a piston in each of said cylinder assemblies, two diametrically opposed circumferentially separated valve ports in the surface of said crankpin which define two diametrically opposed and axially extending lands in the surface of said crankpin, two fluid passageways extending through said crankpin and each communicating with one of said valve ports, and said fluid passageways being open to inlet and outlet ports, respectively, in said housing, an annular port ring rotatably mounted on and in bearing circumjacency with said crankpin, said port ring having an axial width greater than the axial extent of said valve ports, radial ports in said port ring, one for each of said cylinders and being equally spaced circumferentially, an individual, arcuate, pressure shoe mounted on the inner end of each of said pistons and bearing on the outer surface of said port ring, each of said pressure shoes having a central and radially extending port therethrough, a fluid passageway leading from the interior of each cylinder and communicating through the central port of the respective one of said pressure shoes with the respective one of the radial ports in said port ring, and guide means connected to said port ring for restraining said port ring against rotation relative to said housing and for guiding said port ring in a circular path of translation relative to said housing upon rotation of said crankpin, said guide means comprising a cross-slide guided in one direction on said port ring and in a transverse direction on said housing.

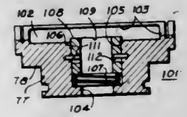
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**3,168,007**
**RADIAL CRANK TYPE HYDRAULIC MACHINE**
**Ernst Wiedmann, Oconomowoc, Wis., assignor to The Oilgear Company, Milwaukee, Wis.**
**Filed Feb. 16, 1963, Ser. No. 330,850**
**5 Claims. (Cl. 91—176)**

1. A flow-through bearing for a crank type of hydraulic machine having a valve sleeve journalled on a crank for valving motive fluid between the crank and a radially arranged piston and cylinder unit swingably supported so as to remain in radial alignment with the crank,

said flow-through bearing adapted to transmit thrust and conduct motive fluid between the valve sleeve and the piston and cylinder unit and adapted to be urged by hydrostatic forces into sealing engagement with the valve sleeve,

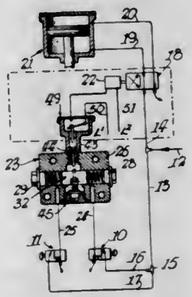
said flow-through bearing having a concave cylindrical bearing surface with a central recess open to a flow-through passage and wherein the central recess is of minimum area for maintaining registration with a cylinder port in the valve sleeve, and



said flow-through bearing also having a balance area recess in its bearing surface with a land spacing the central flow-through recess from the balance area recess, whereby the bearing surface cooperates with the surface of the valve sleeve and a port therein to conduct motive fluid through the bearing and to limit the rate of flow of pressure fluid from the central flow-through recess in the face of the bearing to the balance area recess therein, so that hydrostatic forces expanding the piston and cylinder unit overcome the hydrostatic forces tending to separate the flow-through bearing from the valve sleeve, particularly on start-up of the hydraulic machine.

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**3,168,008**
**BALANCED RELAY VALVE FOR SAFETY CONTROL SYSTEM**
**Robert I. Bingel, Arlington Heights, Ill., assignor to Mead Specialties Company, Inc., Chicago, Ill., a corporation**
**Filed Oct. 19, 1962, Ser. No. 232,671**
**4 Claims. (Cl. 91—178)**

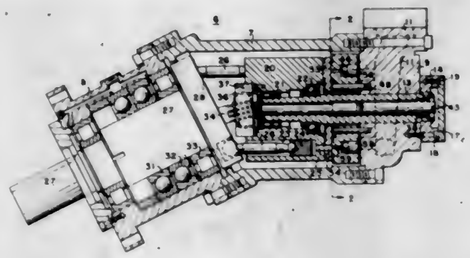


1. In a control system for a workpiece wherein two valves must be simultaneously operated to initiate workpiece action, a pair of three-way valves each connected to a source of pressure fluid, exhaust and a control relay, said relay including a body having a bore, a spool element slidably mounted in said bore, means in said bore biasing said spool to a centered position in said bore, a plunger mounted in said spool for transverse movement relative to the spool movement, means communicating one of said valves with said relay for moving said plunger, and means in said relay actuatable by said plunger only when said spool is in centered position.

### 3,168,009
### HYDRAULIC MOTOR WITH TACHOMETER SHAFT

Adolf R. Grad, Milwaukee, Wis., assignor to The Oilgear Company, Milwaukee, Wis.

Filed May 12, 1961, Ser. No. 109,660
2 Claims. (Cl. 91—198)



1. In a hydraulic positive displacement angle motor comprising a stationary housing having a first end and a second end, a relatively high torque power output drive shaft rotatably supported by a plurality of bearings in said first end of said housing so as to be radially and axially rigid therewith, a bearing axle rigidly secured in said second end of said housing and extending axially inward therefrom at a fixed angle to the axis of said power output drive shaft, a cylinder barrel, bearing means within said cylinder barrel for rotatably supporting said cylinder barrel on said bearing axle in radially and axially rigid relation thereto within said housing, a plurality of cylinder bores and cylinder ports in said cylinder barrel generally parallel to the axis thereof, said cylinder bores containing pistons connected by articulated connecting rod means to the power output drive shaft for transmitting all of its output torque, said second end of said housing serving as a manifold for motive fluid supply and discharge passages, a distributor valve non-rotatably mounted on said manifold between said manifold and said cylinder barrel and having a pair of arcuate ports with which said cylinder ports alternately register as said cylinder barrel rotates, an improvement comprising said bearing axle being hollow and an auxiliary shaft extending through said bearing axle, means connecting an axially inner end of said auxiliary shaft to said cylinder barrel for rotation therewith, means rotatably supporting an axially outer end of said auxiliary shaft within said bearing axle, whereby said auxiliary shaft is in effect an extension of the cylinder barrel through the housing that rotatably supports the cylinder barrel radially of the cylinder barrel, and said auxiliary shaft is adapted for connection to an auxiliary device for supplying only a relatively small torque thereto.

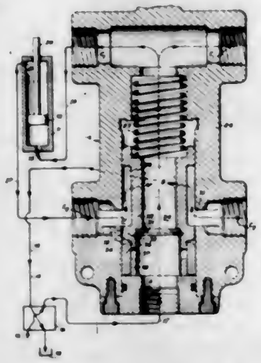
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### 3,168,010
### SEQUENCE VALVES

William W. Thomas, Glenview, Ill., assignor to Waterman Hydraulics Corporation, Evanston, Ill., a corporation of Illinois

Filed Jan. 9, 1963, Ser. No. 250,381
8 Claims. (Cl. 91—420)

1. A sequence valve of the character described comprising in combination a valve body having an exit port for fluid adapted to be delivered to a hydraulic motor for energizing the advance portion of its cycle of operation, a return port in said body for flow from the motor in the said advanced portion of its cycle, a discharge port for said return flow, an inlet port for pressure fluid from a pressure source, a main passage through said valve body to conduct flow from said inlet port to said exit port, a control valve in said passage adapted to be acted on by the flow from inlet to exit ports, an orifice in said valve through which said flow passes to create a pressure drop in said flow as it passes said valve for moving said valve in response to the rate of flow, a spring resisting said valve movement, a return flow passage in said housing for conducting return flow entering said return port to said discharge port, said valve being constructed and arranged to control and cut off flow through said return flow passage



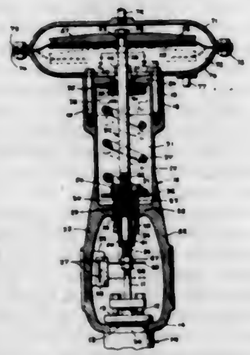
as said valve is moved by flow through said orifice, said valve having a by-pass port opened to said return flow as said valve moves to cut off flow through said return passage, said by-pass port being connected to said main passage and thereby diverting said return flow to said main passage, whereby the return flow is diverted to said main passage to augment the flow through said exit port and to said motor.

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### 3,168,011
### REVERSIBLE PNEUMATIC ACTUATOR

Hans D. Baumann, Decatur, Ill., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Sept. 19, 1963, Ser. No. 310,009
13 Claims. (Cl. 92—59)



9. In a reversible fluid actuator;
a supporting frame;
an actuator stem reciprocally mounted in said frame and adapted at one end to be connected to a device to be actuated;
a resilient compression means carried by said frame and surrounding said actuator stem, said compression means being positioned between longitudinally spaced first and second end walls on said frame;



first and second force buttons at opposite ends of said compression means having axial bores slidably receiving said actuator stem;
an axially adjustable stop means carried by said first end wall movable into engagement with said first force button;
a closed diaphragm chamber carried by said second end wall, said chamber comprising opposed clamping plates;
a flexible diaphragm means dividing said chamber into first and second fluid compression compartments, said means being connected to said actuator stem at the end remote from the end connected to a device to be actuated;
each of said compartments having a fluid access opening;
releasable means for fastening the edge of said diaphragm means between said clamping plates;
said diaphragm means being in contact engagement with said second force button;
and means carried by said diaphragm means and said second force button, respectively, for adjusting the distance between said diaphragm means and said second force button by released, selected rotation of said diaphragm means.

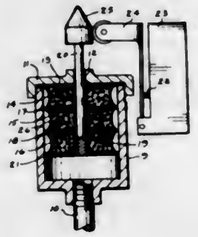
11. A reversible fluid actuator as set forth in claim 9, wherein said means for adjusting the distance between said diaphragm means and said second force button comprises at least one axially directed finger and recess, said finger being out of said recess in one rotated position of said diaphragm means and said finger being in said recess in another released, rotated position of said diaphragm means.

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### 3,168,012
### FLUID PRESSURE RESPONSIVE ACTUATOR

Selden T. Williams, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Nov. 7, 1962, Ser. No. 236,078
5 Claims. (Cl. 92—90)

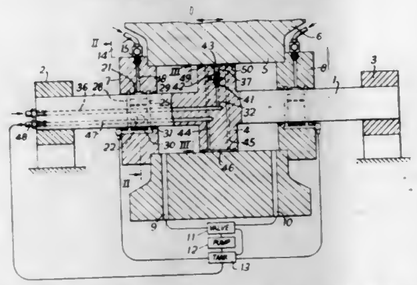


1. A fluid pressure responsive actuator comprising
(*a*) a hollow chamber having a hole through one wall thereof;
(*b*) a body of elastomeric material consisting of a multiplicity of integrally united elastically walled and hermetically closed gas-containing cells, said body having a hole therethrough in line with said hole in the chamber wall;
(*c*) means for securing said body inside said chamber with one surface which extends entirely across said body in a direction normal to the hole in said body, being adhesively attached throughout, to the inner surface of said chamber wall around said first hole;
(*d*) an actuator pin attached to that surface of said body opposite said one surface and extending through said hole to the exterior of said chamber; and
(*e*) a connection to said chamber for admitting pressure fluid to or exhausting it from said chamber.

### 3,168,013
### HYDRAULIC SYSTEMS

David Theodore Nelson Williamson, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a British company

Filed Apr. 11, 1963, Ser. No. 272,287
Claims priority, application Great Britain, Apr. 19, 1962, 15,314
4 Claims. (Cl. 92—112)



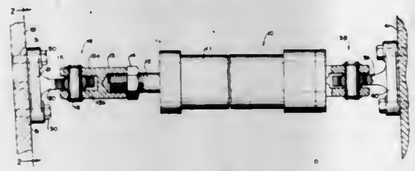
1. A hydraulic actuator for a machine tool slide comprising a slide member having a cylindrical bore and two cylinder heads at opposite ends of a cylindrical space defined by said bore and said cylinder heads, a piston shaft arranged axially through said bore and through said cylinder heads, each of the cylinder heads having a conduit communicating with a space between the cylinder head and the piston shaft and through which fluid can be forced under pressure so as to provide a fluid bearing, a piston head on said piston shaft at a position between said cylinder heads and spaced therefrom so as to provide two chambers, each having one end wall formed by the piston head and another end wall formed by one of the cylinder heads, means to force fluid under pressure into one of the said chambers to exert a separating force between the piston head and the cylinder head forming the end walls of the chamber, and means to hold the piston shaft against axial movement so that said separating force causes axial movement of said slide member.

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### 3,168,014
### MOUNTING ARRANGEMENT FOR HYDRAULIC PISTON AND CYLINDER

Wilfred Aslan, Woodcliff Lake, N.J., assignor to Alkon Products Corporation, Hawthorne, N.J., a corporation of New York

Filed Sept. 11, 1962, Ser. No. 223,307
8 Claims. (Cl. 92—118)



1. Fluid motor driving means comprising:
(*a*) a fluid cylinder,
(*b*) a piston reciprocally mounted in said cylinder,
(*c*) a piston shaft extending through one end of said cylinder,
(*d*) a rigid mounting pad member,
(*e*) rigid spacer means extending away from one face of said pad member and terminating in faces disposed in a single plane with said faces spaced apart in triangular configuration and being of limited area with respect to the area of said one face thereof and adapted to collectively define a substantially three-point contact with the element to be driven,

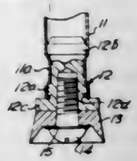
(*f*) a bore extending through each of said spacer means in a direction substantially perpendicular to said plane for receiving bolts adapted to be secured to the element to be driven,

(*g*) a rigid arm rigidly fixed to said pad member and extending away therefrom in a direction opposite to said spacer means, and

(*h*) universal joint means for connecting said arm to the exposed end of said piston shaft.

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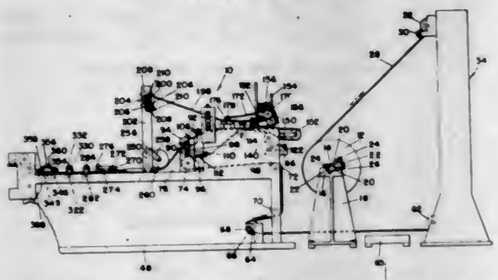
**3,168,015**
**INFLATING DEVICES FOR VEHICLE TIRES**
**Maurice Albert Pound, Wollaton, Nottingham, England, assignor to Raleigh Industries Limited, a company of Great Britain, Northern Ireland and the Isle of Man**
**Filed May 27, 1963, Ser. No. 283,182**
**Claims priority, application Great Britain, May 30, 1962, 20,765**
**4 Claims. (Cl. 92—245)**



1. An inflator plunger assembly comprising a hollow cylindrical plunger rod, a plug in the end of said rod, said plug being of resiliently deformable material, said plug having an integral radial flange of a diameter substantially greater than that of said rod, the lower face of said flange being flat, a washer having a flat upper face in contact with said lower face, a self tapping screw extending through said washer and into said plug, the end of said rod being in contact with the upper face of said flange.

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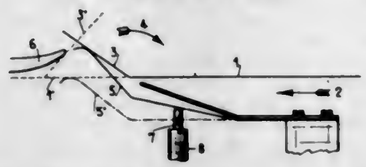
**3,168,016**
**METHOD AND APPARATUS FOR PLACING SEALED-IN INSERTS ON PACKAGING MATERIAL**
**Abraham B. Kehr, 1414 Highland Ave., Abington, Pa.**
**Filed Aug. 1, 1962, Ser. No. 216,701**
**13 Claims. (Cl. 93—8)**



1. A machine for forming pocketed bags with removable sealed inserts comprising, in operative connection with each other, a main supply reel having a strip coiled thereon, feed means for moving said strip to a bag forming assembly, said bag forming assembly comprising a framework, an adhesive-applying means in said framework for applying adhesive to said strip in spaced pocket-forming patterns, insert-deposit means on said framework for depositing a series of individual inserts on said strip in spaced arrangement longitudinally of said strip and within said patterns, an auxiliary supply reel on said framework, feed means for feeding an auxiliary strip from said auxiliary reel into superimposed position relative to both said first-mentioned strip and the inserts positioned thereon, means for bonding said auxiliary strip to said first-mentioned strip along said pocket-forming patterns to seal said inserts within individual pockets, serrating means for serrating the pocketed strip between pockets, folding and pleating means on said framework for longitudinally folding said pocketed strip on opposite sides of said pockets and forming pleats at opposite sides of the folded strip, severing means on said framework for severing said pocketed strip along the serrations formed by said serrating means, thereby acting to form individual bags, and end sealing means to overlap and seal one end of said bags.

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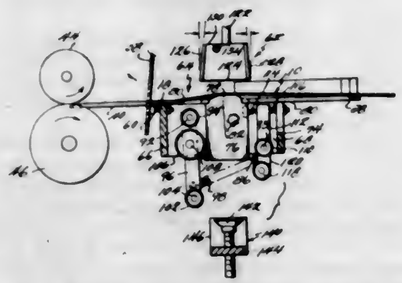
**3,168,017**
**DEVICE FOR FOLDING A FLAP OF A CARDBOARD BLANK**
**Arthur Frei, Les Pierrettes, St. Sulpice, Switzerland, assignor to J. Bobst and Son S.A., Prilly, near Lausanne, Switzerland, a corporation of Switzerland**
**Filed Sept. 20, 1962, Ser. No. 224,927**
**Claims priority, application Switzerland, Sept. 27, 1961, 11,261/61**
**7 Claims. (Cl. 93—49)**



1. Apparatus for folding a portion of a blank comprising means for advancing said blank in substantially flat condition along a determinable path, means operatively supported with respect to said path for contacting said portion of the blank and deflecting the same, means located downstream of the last said means and in the path of the blank for engaging the portion thus deflected for folding the same and means supporting the means which deflects the portion of the blank to move said means away from the blank and free of the same as said portion is engaged for being folded, said means for deflecting the portion of the blank including a flexible element and the means supporting the latter means including a movably supported element which is in contact with the flexible element to urge the same from a neutral position in which the flexible element lies outside the path of the blank to a position in said path to contact said portion.

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**3,168,018**
**BOXMAKER**
**Maurice B. Dunn, Charlotte, N.C., assignor to Memco Machinery Corporation, Charlotte, N.C., a corporation of North Carolina**
**Filed Sept. 18, 1962, Ser. No. 224,374**
**19 Claims. (Cl. 93—51)**



1. In a machine for at least partially setting up a carton blank having a first panel with opposite lengthwise extending edges to which are respectively hingedly coupled second and third panels, each of said second and third panels having a respective end flap hinged on corresponding panel ends with the said second panel flap having a slot into which is insertable, when the said second and third panels are folded to a position generally perpendicular to and in the same direction from said third panel, a tab of said third panel flap to hold said second and third panels substantially in said folded position, the combination comprising:

a female die,

a male die having

a first side conforming to said first panel for pushing said carton blank into said female die first panel forward, and

for said second panel, a second side extending longitudinally of said first side and at an acute angle thereto at least at the corner therebetween,

said female die having folding means operative in response to movement of said male die in said female die and including

first means for holding said end flaps generally perpendicularly of their respective panels,

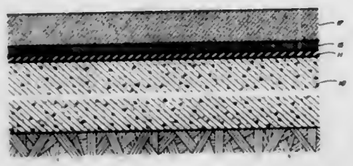
second means for folding said second panel at least at its flap end over onto said second male die side to effect substantially said acute angle between said first and second panels, and

third means for folding said third panel to cause said tab to be inserted into said slot to hold said second and third panels as aforesaid.

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**3,168,019**
**JET AIRCRAFT RUNWAY HAVING ANTI-SKID PROPERTIES WHEN WET**
**Bernard Stanley Lynn, 19451 Black Road, Los Gatos, Calif.**
**Filed Nov. 16, 1961, Ser. No. 152,732**
**6 Claims. (Cl. 94—5)**

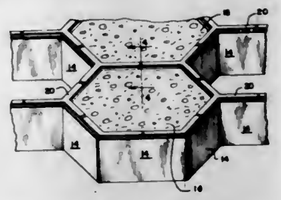


4. A runway suitable as a landing strip for quickly decelerating heavy jet aircraft, comprising a runway hard surface having thereon vulcanized rubber which has been removed from the tires of aircraft by landing impact, an adhesive coating of xylene in an asphalt-water emulsion disposed on said runway and an anti-skid thixotropic surface coating disposed on said adhesive layer comprising approximately 20% asphalt-water emulsion by weight, approximately 75% sharp plaster sand by weight and approximately one percent of Portland cement and powdered rosin together by weight.

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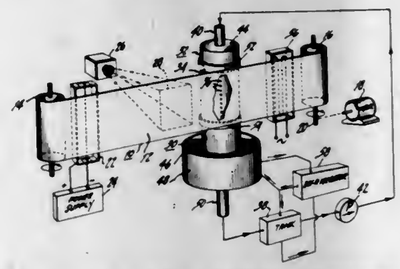
**3,168,020**
**PRESTRESSED UNIT**
**George J. Yevick, New York, N.Y. (536 Nordhoff Drive, Leonia, N.J.)**
**Filed Nov. 25, 1960, Ser. No. 71,534**
**7 Claims. (Cl. 94—8)**

1. A prestressed structural unit comprising a reticulate member whose cells are each bounded by two spaced walls, blocks of the same cross-sectional configuration as that of the said cells in the said cells, shim elements extending between the spaces between the said spaced walls and urging the spaced walls apart, the said blocks being in compression over a continuous circumferential zone.



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**3,168,021**
**ELECTROSTATIC PRINTING**
**Martin L. Levene, Elkins Park, Pa., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed May 1, 1961, Ser. No. 106,950**
**6 Claims. (Cl. 95—1.7)**



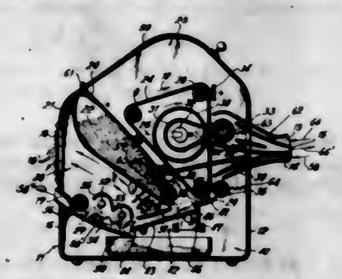
5. Electrophotographic apparatus comprising: means for transporting electrophotographic sheet material along a predetermined path with a recording surface thereof substantially vertically disposed; at least one corona generating wire substantially vertically disposed adjacent said path for electrostatically charging said recording surface; means for projecting a light image onto said sheet material in said path to produce an electrostatic latent image on said recording surface; developer means for developing said electrostatic latent image with a liquid developer composition, said developer means including an elongated surface substantially vertically disposed adjacent said path, means spacing said recording surface a predetermined distance from said elongated surface and means for injecting liquid developer composition into the space between and in contact with both said recording surface and said elongated surface; and means adjacent said path for drying said recording surface.

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**3,168,022**
**APPARATUS FOR PRODUCING PHOTOCOPIES**
**Walter Limberger, Hamburg, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany, a corporation of Germany**
**Filed Oct. 11, 1962, Ser. No. 229,853**
**Claims priority, application Germany, Mar. 8, 1956, L 24,300; Mar. 12, 1956, L 24,336**
**12 Claims. (Cl. 95—1.7)**

4. An apparatus for automatically producing copies by electrostatic means, comprising a housing provided with three closely spaced channels opening on one wall thereof, said channels being separated from each other by two closely spaced plate members and including a lower inlet channel and an upper inlet channel for admitting two juxtaposed sheets each edge-fed into a respective one of said channels, said sheets including a master sheet and a copy sheet, the third channel being positioned between said two inlet channels and forming a first outlet channel, said housing being further provided

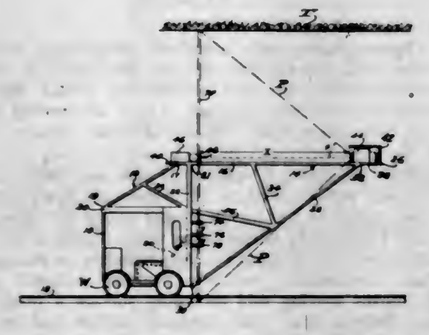
with a second outlet channel remote from said inlet channels; guide means in said housing for conveying said master sheet from one of said inlet channels over a looped first path to said first outlet channel and conveying said



copy sheet from the other of said inlet channels over a second path to said second outlet channel; and transfer means in said housing for xerographically reproducing a message from said master sheet on said copy sheet during passage thereof over said first and second paths, respectively.

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**3,168,023**
**MEASURING DEVICE**
**Donald E. Harmon, 5001 Strathmore Ave., Kensington, Md.**
**Filed Sept. 7, 1961, Ser. No. 136,583**
**6 Claims. (Cl. 95—11)**



1. In apparatus for measuring the height and width of a tunnel or the like, a self-propelled vehicle, an outrigger frame mounted on said vehicle and extending outwardly therefrom, a first platform mounted on the outer portion of said outrigger frame, a second platform mounted intermediate the end portions of said outrigger frame, a camera mounted on said first platform, a housing including a light source arrangement mounted on said second platform in cooperative association with said camera, said light source projecting a 360° vertical plane of light, and fixed reference points supported on said vehicle and within said plane of light.

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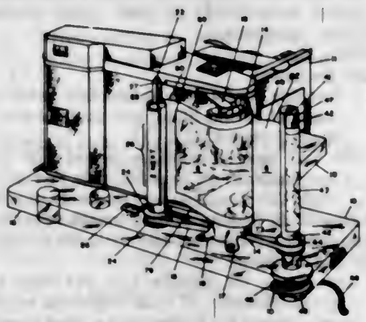
**3,168,024**
**PHOTOGRAPHIC APPARATUS**
**Samuel O. Raymond, Watertown, Mass. (Main St., North Falmouth, Mass.)**
**Filed Nov. 21, 1961, Ser. No. 153,837**
**11 Claims. (Cl. 95—11)**

1. Apparatus for advancing, separating and storing the negative paper and the print paper that comprise a single composite sheet material disposed within a photographic device utilizing a one-step photographic process and having means for restraining advancement of said sheet material, which means has been rendered inoperative, said apparatus comprising:

(*a*) supporting means;

(*b*) first means, mounted on said supporting means, for advancing said sheet material and for receiving and holding said negative paper;

(*c*) a capstan mounted axially on said first means;



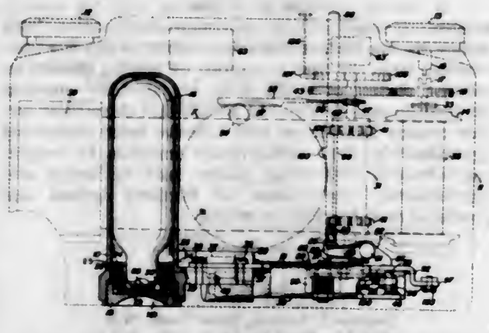
(*d*) a lanyard mounted on said capstan, which may be wound around said capstan and given a quick pull thereby imparting a single fairly rapid rotational motion to said first means to cause said first means to advance said sheet material and to receive and hold said negative paper;

(*e*) second means, displaced from said first means and mounted on said supporting means, for separating said print paper from said sheet material and for receiving and holding said print paper; and

(*f*) third means interconnecting said first and second means and adapted to cooperate with said capstan and lanyard for, when the latter pair is operated, causing said second means to separate said print paper from said sheet material and to receive and hold said print paper.

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**3,168,025**
**PHOTOGRAPHIC CAMERA**
**Johannes G. Padelt, Rochester, and Arthur F. Hurlburt, Fairport, N.Y., assignors to Graflex, Inc., Rochester, N.Y., a corporation of Delaware**
**Original application May 3, 1957, Ser. No. 656,830, now Patent No. 3,039,441, dated June 19, 1962. Divided and this application May 8, 1962, Ser. No. 193,185**
**16 Claims. (Cl. 95—31)**

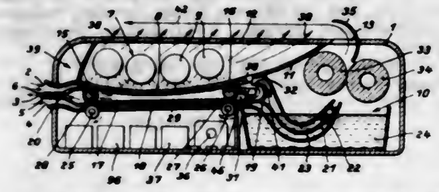


4. The combination with a camera having a shutter, a rotary take-up spool, and shutter-cocking mechanism, of means for rotating said spool and actuating said shutter cocking mechanism comprising a storage chamber for compressed gas, a cylinder, a piston reciprocable in said cylinder, a first duct connected to said chamber, a second duct connected to one end of said cylinder, and a movable valve for controlling connection and disconnection of said ducts.



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**3,168,026**
**APPARATUS FOR PREPARING PHOTOCOPIES**
**Walter Limberger, Hamburg, Germany, assignor to Lumoprint Zindler KG, Hamburg, Germany**
**Filed Nov. 25, 1958, Ser. No. 776,286**
**Claims priority, application Germany, Nov. 27, 1957, L 29,159; Dec. 20, 1957, L 29,329**
**16 Claims. (Cl. 95—75)**



1. A photocopying device for reproducing a master copy on sheet material, comprising a housing having a base, walls connected to said base and a cover plate connected to said walls, one of said walls being provided with at least one slot adapted to admit a first sheet carrying the master copy and a second sheet having a photosensitive surface adapted to receive an image of said master copy, said housing further having an exit slot for said first sheet adjacent said one slot; illuminating means within said housing comrising a light-transmissive first guide plate and a light source disposed on one side of said guide plate; conveyor means within said housing disposed on the other side of said guide plate, said conveyor means comprising an endless band, at least two axially spaced support rollers for said band and drive means for said support rollers, said band having a forward run and a return run, said forward run being positioned and adapted to press said sheets against said guide plate with said first sheet lying next to said band; a developing section positioned beyond said conveyor means within said housing; sheet-separating means between said conveyor means and said developing section; and guide means for said sheets adjacent said conveyor means; said sheet-separating means being positioned and adapted to deflect said second sheet from said band into said developing section while directing said first sheet between said return run and said guide means; said guide means comprising a second guide plate resiliently bearing on said return run and extending toward said exit slot.

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**3,168,027**
**AUTOMATIC CYLINDER TRACKING APPARATUS**
**Emilio G. Mastroianni, Endicott, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware**
**Filed Feb. 18, 1963, Ser. No. 259,102**
**4 Claims. (Cl. 95—77.5)**

4. In combination with a printing and exposing unit of a diazotype copy machine including a glass printing cylinder with end collars, belts contacting the periphery of the cylinder for rotating the same, an improved cylinder tracking apparatus comprising:

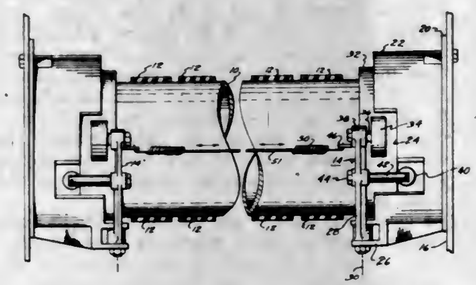
(*a*) a stationary support adjacent each end of the rotatable cylinder and at least partially enclosing the end collars thereof,

(*b*) a bifurcated caster arm pivotally mounted by the stationary support, there being a caster arm for each end of the cylinder,

(*c*) rotatable bearing rollers for contacting the collars of the glass cylinder and rotatably supporting the cylinder,

(*d*) means mounting the bearing rollers to each end of each of the bifurcated caster arms,

(*e*) a pair of end thrust rollers, each adapted to contact an opposite end of the cylinder,

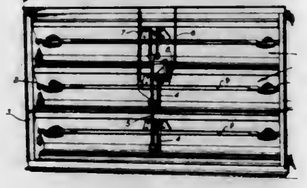


(*f*) means for supporting the end thrust rollers from the caster arm such that movement of the cylinder against the end thrust rollers causes corresponding movement of the caster arm, and

(*g*) resilient means including a cable and tension springs interconnecting the bifurcated caster arms for substantially simultaneous movement so that any sensed lateral creep of the cylinder will result in repositioning the pivotable caster arms and rotatable supports carried thereby to cause the cylinder to track in a direction opposite to the creep.

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**3,168,028**
**DAMPER BLADE AND ASSEMBLY**
**Francis M. Booth and William M. Kane, Marysville, Calif., assignors to Frank M. Booth, Inc., Marysville, Calif., a corporation of California**
**Filed June 4, 1962, Ser. No. 199,950**
**3 Claims. (Cl. 98—110)**



1. In an elongated sheet metal damper blade formed with a channel extending longitudinally thereof having walls of uniform substantially semi-cylindrical cross-sectional contour from end to end thereof projecting to one side of said blade providing a concave substantially semi-cylindrical inner surface adapted to follow and engage the outer surface of a shaft having approximately the same cylindrical contour, said blade having planar portions respectively at opposite sides of said channel, and said channel being open at the ends of said blade:

(*a*) the walls of said channel being formed at a point intermediate the ends of the latter with a gap of substantial width longitudinally of said channels;

(*b*) a bridge piece integral with and stamped from said blade extending longitudinally of said channel and across said gap and projecting to the opposite side of said blade that is opposite to said one side thereof;

(*c*) said bridge piece including side portions of similar size extending generally toward each other from the planar portions at opposite sides of said channel at angles relative to said planar portions that are respectively substantially less than a right angle, and

(*d*) said bridge piece further including an intermediate portion integral with and connected with said side portions at the ends of the latter that are remote from said planar portions, said intermediate portion being formed with an inner surface of cylindrical cross-sectional contour at each of the ends of said intermediate portion axially of the channel and said last mentioned surfaces being concentric with and spaced from the axis about which said semi-cylindrical surface of said channel is developed a distance sufficient to coact with said semi-cylindrical surface that is at opposite sides of said gap for tightly gripping the outer cylindrical surface of such shaft upon driving such shaft into said channel longitudinally of the latter, and

(*e*) a cylindrical shaft in said channel having its outer cylindrical surface tightly gripped by said semi-cylindrical surface of the walls of said channel and the cylindrical surface of said intermediate portion of said bridge piece against axial and rotary movement of said shaft relative to said blade under forces substantially exceeding those encountered in normal and continued operation of said damper blade,

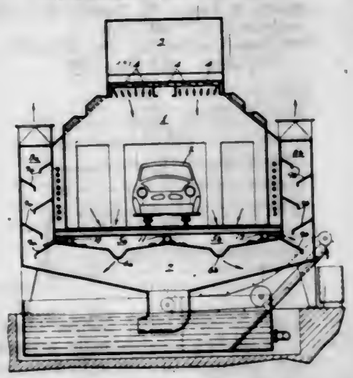
(*f*) said shaft extending axially outwardly of said channel to provide a free end for mounting in a bearing.

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**3,168,029**
**ARRANGEMENT FOR PLANTS FOR PAINT SPRAYING OF CONTINUOUSLY MOVING OBJECTS**

Nils Dock, Saltsjo-Duvnas, Åke Arborgh, Jonkoping, and Gunnar Wilhelmsson, Smalands Taberg, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Feb. 21, 1962, Ser. No. 174,835
2 Claims. (Cl. 98—115)



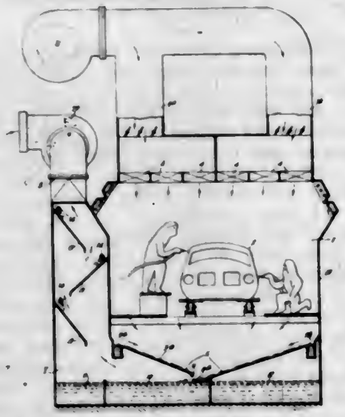
1. Paint spraying apparatus for moving objects, comprising in combination, an enclosed elongated wide spray booth through which objects to be sprayed travel, means for supplying ventilating air through air inlets arranged at the top and along the length of the booth, a liquid catch basin in the bottom of said booth, means defining a full length longitudinal drop separator duct in said booth below the level of travel of articles through the booth and above the liquid level in said basin, a bottom wall for said duct having a bottom outlet to said basin closed to the passage of air therethrough and the bottom wall sloping toward said outlet, a top wall for said duct having at least one V-shaped full-length longitudinal channel converging to a narrow outlet slot with inwardly projecting flanges through which liquid and air flow, said top wall extending completely across the bottom of said booth, means for supplying washing liquid above said top wall on both sides of said channel to flow down with the paint particles and air through said narrow slot, said duct having an air outlet on each side, a baffled exhaust shaft leading from each of said side outlets, and means to supply additional washing liquid to the upflowing air and entrained paint and washing liquid particles in said exhaust shafts, said bottom wall of the duct being of a width to embrace the width of said spray booth and said exhaust shafts.

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**3,168,030**
**ARRANGEMENT IN SPRAY-PAINTING CHANNELS**

Gunnar Wilhelmsson, Smalands Taberg, Åke Arborgh, Jonkoping, and Jan Sjögren, Nacka, Sweden, assignors to Aktiebolaget Svenska Fläktfabriken, Stockholm, Sweden

Filed Dec. 20, 1962, Ser. No. 246,159
Claims priority, application Sweden, Dec. 22, 1961, 12,898/61
2 Claims. (Cl. 98—115)



1. A plant for spray-painting and the like comprising a channel having a pair of longitudinally extending, spaced side walls, and a pair of substantially V-shaped bottom walls depending from said side walls, air supply means disposed along the upper portion of said channel and adapted to provide a flow of air across objects being painted in said channel, one of said bottom walls terminating in an upwardly projecting portion substantially perpendicular to said one bottom wall, the other of said walls terminating short of said end portion but aligned therewith so as to define a constricted, slot-shaped opening, liquid supply means positioned along the upper portion of each of said V-shaped bottom walls and adapted to supply a covering liquid film over said walls, means for exhausting the ventilating air through said slot so that as ventilating air supplied by said air supply means, and laden with paint particles after sweeping across the objects being painted, passes through said constricted opening, said liquid is mixed into said ventilating air thereby atomizing said liquid and entraining paint particles therein.

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**3,168,031**
**ARRANGEMENT IN SPRAY-PAINTING PLANTS**

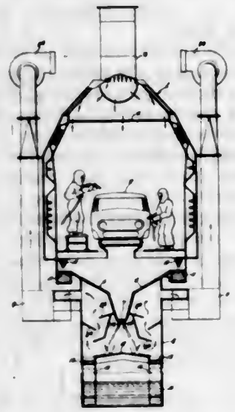
Gunnar Wilhelmsson, Smalands Taberg, Åke Arborgh, Jonkoping, and Jan Sjögren, Nacka, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Dec. 20, 1962, Ser. No. 246,161
Claims priority, application Sweden, Dec. 22, 1961, 12,899/61
2 Claims. (Cl. 98—115)

1. A plant for spray-painting and the like comprising a longitudinally extending channel, air supply means in



communication with said channel adapted to provide a flow of air across objects being painted in said channel, air discharge means at the bottom of said channel for discharging said ventilating air, said air discharge means comprising substantially V-shaped, longitudinally extending bottom walls, terminating in a constricted slot-shaped opening extending substantially the length of said channel, a drop separator underlying said discharge means and connected thereto, suction means connected to said drop separator adapted to provide a differential pressure between said channel and said drop separator to allow ventilating air flow from said channel through said drop separator, liquid supply means positioned along the upper portion of said V-shaped bottom walls and adapted to supply a cleaning liquid to sweep over the V-shaped bottom walls of said channel so that as said ventilating air laden with paint particles passes through said constricted



opening said liquid is mixed into said ventilating air entraining paint particles therein, said drop separator operable to separate said ventilating air from said liquid in which is entrained paint particles, said drop separator including a bottom wall extending longitudinally of said plant beneath said opening to catch said paint-laden liquid and sloped toward one end of said plant so as to afford a run off for said liquid, a paint separation tank underlying said bottom wall and having a longitudinal extent substantially the same as said channel, said tank connected to the terminus of said sloped bottom wall at said one end of said plant, defoaming means extending into said paint separation tank at the end opposite from said one end to remove paint particles from the surface of the liquid pump means connected to said tank to cause the liquid to move from said one end to said opposite end whereby upon separation of the paint from the liquid, said separated liquid is recycled for use in said liquid supply means.

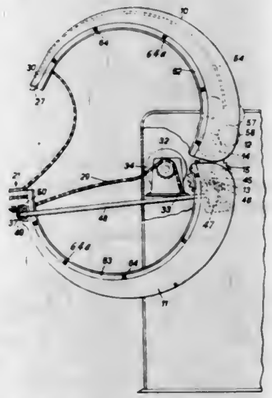
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**3,168,032**
**MACHINES FOR SECURING A WIRE OR LIKE TIE OR STRAP AROUND A COIL OR BUNDLE**

Douglas Stewart Faulkner, Lower Walton, Warrington, England, assignor to Rylands Brothers Limited, Warrington, England, a company of Great Britain

Filed July 23, 1962, Ser. No. 211,680
Claims priority, application Great Britain, July 29, 1961, 27,609/61
5 Claims. (Cl. 100—12)

1. A machine for putting and securing a tie around an article comprising a pair of openable and closable arms having ends which meet when the arms are closed, means gearing said arms together for movement in unison but so that one arm moves at a greater speed than the other, means for opening and closing said arms whereby they are opened to receive, closed to embrace and subsequently opened to release said article when the tie has been secured thereto, means for supporting a coil of tie-wire stock, groove means in said arms positioned so as to meet when the arms are closed and provide a spiral guideway extending around said arms when they are closed, feed rollers on one of said arms for feeding said wire stock around said guideway, so as to circumscribe the article when the arms are closed and for subsequently, when reversed, pulling the tie-wire out of said guideway and into a circumscribing loop tightly about the article, driving means for driving said feed rollers in opposite directions so as to effect said feeding of the tie-wire around the guideway and said pulling of the tie-wire out of the guideway, gripper means at the meeting ends of the arms for holding a free end of said tie-wire during the pulling thereof out of the guideway and tightly around the article, said guideway being open at one side of the



arms so that the tie-wire leaves the guideway laterally of the arms, cover means over said guideway to retain the tie-wire therein during the feeding of the tie-wire around the guideway, resilient means supporting said cover means over the guideway whereby said cover means can yield to allow the tie-wire to be pulled out of the guideway and tightly around the article, cutter means at the meeting ends of the arms for severing the article circumscribing loop of tie-wire from the wire stock and twisting means at the meeting ends of the arms for giving a double twist to the ends of the article ciriumscribing loop to secure said ends together after the loop has been pulled out of the guideway and drawn tightly around the article by said reverse pulling of the tie-wire, said twisting means comprising a twisting wheel having a slot which is operative to receive the ends to be twisted together, and means for moving said twisting wheel from a position in which its slot holds the tie to a position which allows the tie to be removed from the twisting wheel.

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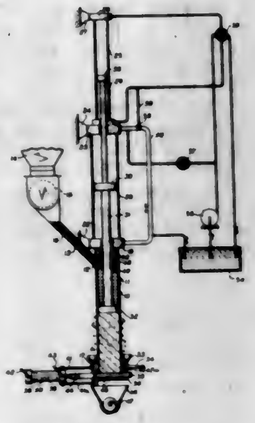
**3,168,033**
**LIQUID-SOLID SEPARATING APPARATUS**

Edward F. Hansen, P.O. Box 95, Stanton, N.J.

Filed Oct. 10, 1962, Ser. No. 229,629
2 Claims. (Cl. 100—179)

1. Apparatus for separating oil from seeds comprising an elongated perforated cylinder, said cylinder having a charging inlet in the cylinder wall spaced from a first end of said cylinder, means for feeding seeds into said inlet, an extractor piston mounted for reciprocal movement within said cylinder, means for reciprocating said piston, a sleeve slidably mounted within said cylinder between said piston and said first end, means for biasing said sleeve axially within said cylinder in a direction away from said first end, stop means for limiting the axial movement of

said sleeve adjacent said inlet to close said inlet, said sleeve being retracted toward said first end to open said inlet by contact between said piston and said sleeve during the



movement of said piston toward said first end and gate means adjacent a second end of said cylinder for opening and closing said second end.

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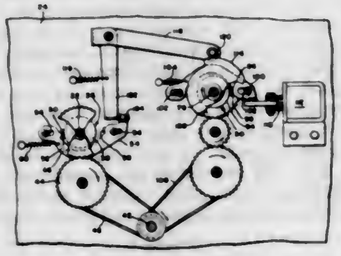
**3,168,034**
**ROLLING BED PRESS**
**Samuel B. McClocklin and Donald J. Kaplan, Owatonna, Minn., assignors to The Owatonna Tool Company, Owatonna, Minn., a corporation of Minnesota**
**Filed Oct. 28, 1963, Ser. No. 319,114**
**13 Claims. (Cl. 100—214)**



1. A press comprising in combination;
(*a*) a pair of spaced upright frame members,
(*b*) a cross-head member positioned between the spaced upright frame members,
(*c*) means slidably mounting and positioning said cross-head member between said upright frame members,
(*d*) means adapted to mount a tool and actuator mounted on said cross-head member for movement along the extent of and between said spaced upright frame members,
(*e*) a base member including two side support sections for mounting said spaced upright frame members with the frame members being positioned generally midway along the extent of each of said side support sections and extending translationally therefrom,
(*f*) a plurality of mounting rod means included in the side sections of said base member and extending through the extremities of said upright frame members to secure the same,
(*g*) a support plate positioned on each of the side support sections of said base member extending along the extent of the same and having a load bearing surface on the upper edge of the same,
(*h*) a bolster bed including a pair of relatively movable parts having load bearing surfaces at the extremities thereof positioned between said support plates and normally resting on said load bearing surfaces thereon,
(*i*) a plurality of shear bars including flange like projections mounted in said side support sections of said base member with said flange projections supporting said support plates on said side support sections of said base member and with certain of said mounting rod means extending therethrough to support the same,
(*j*) a cam bar positioned on each of said support plates and extending along the extent of the same,
(*k*) eccentric shaft means positioned through said support plates and mounting said cam bars for movement on the surface of said support plates, and
(*l*) roller means positioned on a surface of said bolster bed remote from said load bearing surfaces and adapted to ride on said cam bars to move said bolster bed along said support plates toward and away from said upright frame members, the eccentric shaft means in said cam bars being adapted when rotated to raise said cam bars on said support plates and lift said bolster bed off of the load bearing surface of said support plates to permit engagement of said roller means with said cam bars and movement of said bolster bed thereon.

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**3,168,035**
**READ-IN MECHANISM FOR SETTABLE TYPE WHEELS**
**Richard J. Jablonski, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Dec. 28, 1961, Ser. No. 162,749**
**3 Claims. (Cl. 101—110)**



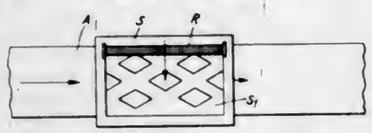
1. In a print wheel positioning apparatus having a rotatable print wheel to be stopped in a position with a selected one of a plurality of print elements thereof at a print line, a toothed read-in wheel to drive the print wheel and having a slip clutch drive connection, a scanner switch rotatable with said read-in wheel to successively open a plurality of switches representative respectively of different possible positions of said read-in wheel, a retractable stop member normally in a position blocking rotation of said read-in wheel, a spring connected to said stop member to retract said stop member, a second stop member mounted for movement into engagement with said read-in wheel between a pair of the teeth thereof to stop said read-in wheel, a spring connected to and urging said second-mentioned stop member into



engagement with said read-in wheel, a rotatable cam normally in a home position holding said first-mentioned stop member in the blocking position thereof, said cam rotatable through a cycle of rotation to release said first-mentioned stop member for retraction by said spring and then return said stop member to the blocking position, a second cam rotatable with said first-mentioned cam to release said second-mentioned stop member and normally holding said second-mentioned stop member in retracted position, an electrically operated holder operable to restrain said second-mentioned stop member and electrically connected to one of said scanner switches, a latch keeper on said second-mentioned stop member, a latch member biased to latch engagement with said keeper, and means on said first-mentioned stop member and on said latch member cooperable to control operation of the latter.

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**3,168,036**
**PROCESS FOR PRINTING UPON FABRIC OR THE LIKE WITH AT LEAST ONE PRINTING STENCIL**
**Johann F. Elsasser, Kirchberg, Bern, Switzerland**
**Filed Dec. 20, 1961, Ser. No. 160,729**
**Claims priority, application Switzerland, Dec. 21, 1960, 14,190/60**
**1 Claim. (Cl. 101—129)**

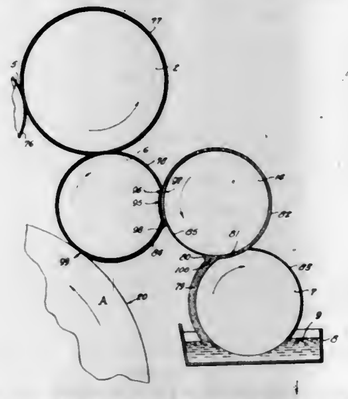



A method of printing a continuous pattern upon a web of material by means of a printing stencil, said method comprising the steps of:
(*a*) providing a continuous planar web of material having an upper and a lower surface;
(*b*) disposing the lower surface of said web of material upon a transport device;
(*c*) operating said transport device to move said web of material at a constant speed in a forward longitudinal direction;
(*d*) positioning a printing stencil having a pattern thereon over the upper surface of said web of material;
(*e*) lowering said printing stencil downward into superposed engagement with the upper surface of said web of material;
(*f*) moving said lowered printing stencil with said web of material at said constant speed and in a forward longitudinal direction for a distance approximately equal to one-half the distance of the pattern;
(*g*) applying coloring material through said printing stencil to impress said pattern onto the upper surface of said web of material only during said movement through said approximate one-half distance;
(*h*) raising said printing stencil upward to remove said pattern from engagement with said web of material;
(*i*) moving said raised printed stencil at said constant speed but in a reverse longitudinal direction for said approximate one-half distance; and,
(*j*) sequentially repeating steps (*a*) through (*i*) inclusive.

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**3,168,037**
**MEANS FOR DAMPENING LITHOGRAPHIC OFFSET PRINTING PLATES**
**Harold P. Dahlgren, Dallas, Tex.**
**Filed May 2, 1960, Ser. No. 26,035**
**6 Claims. (Cl. 101—148)**

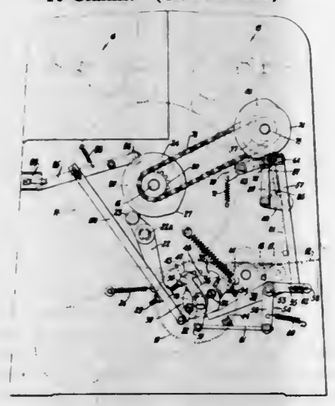
1. In a device for dampening the plate on a lithographic press, a dampening fluid transfer roller having a continuous, uninterrupted, hard, smoothly finished, hydrophilic surface thereon; a resilient ink coated applicator roller in rotative contact with the plate and with the surface of the transfer roller; a dampening fluid metering roller having a smooth resilient, surface thereon in rotative contact with the surface of the transfer roller, and adapted to be indented in metering relationship with the transfer roller; means to apply dampening fluid to the surfaces of the resilient metering roller and the transfer



roller as their surfaces approach contacting relationship; means to adjust the surface pressure relationship between the resilient metering roller and the transfer roller; means to adjust the surface pressure relationship between the applicator roller and the transfer roller; the contacting surfaces of the transfer roller and applicator roller being rotated in the same direction at different surface speeds; and means to vary the relative speed of rotation between the applicator roller and the transfer roller.

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**3,168,038**
**DRUM LATCHING MECHANISM FOR PRINTING PRESS**
**Leonard Miaskoff, Flushing, and Frederick L. Warner, Brooklyn, N.Y., assignors, by mesne assignments, to Fairchild Camera and Instrument Corporation, a corporation of Delaware**
**Filed June 25, 1962, Ser. No. 204,853**
**10 Claims. (Cl. 101—233)**



1. In a sheet fed printing press having a first cylinder and a second cylinder which are separated in the absence of a sheet and automatically engaged when a sheet is present, cylinder separating means comprising eccentric mounting means for said first cylinder so that said first

cylinder can be moved between a printing position and a non-printing position, a catch member secured to said eccentric means, spring means for biasing said catch member to urge said first cylinder to a non-printing position, latch means to engage said catch member against the bias of said spring means to maintain said first cylinder in a printing position, means for biasing said latch means into a non-latching position, means for detecting the absence of a sheet, a cyclically operated lever means, releasing means carried by said catch member and normally biased out of the path of said lever means, and additional means responsive to the detecting means detecting the absence of a sheet for projecting said releasing means into the path of said lever means whereby said lever means will engage said releasing means to pivot said catch member against the bias of the spring maintaining it in a latched position so that the latch means will be biased to a non-latching position and the spring means will urge said first cylinder to a non-printing position.

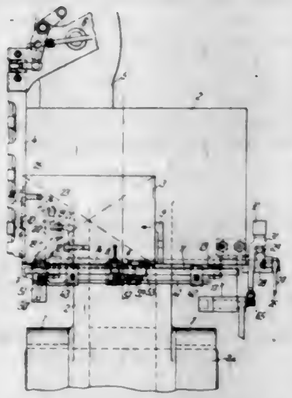
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**3,168,039**

## PLATEN PRINTING MACHINES

**Artur Büttner, Heidelberg, Germany, assignor to Schnellpressenfabrik Aktiengesellschaft Heidelberg, Heidelberg, Germany, a corporation of Germany**

**Filed Dec. 18, 1961, Ser. No. 159,964**
**Claims priority, application Germany, Aug. 4, 1961, Sch 30,090**
**12 Claims. (Cl. 101—287)**



1. In a platen printing machine having an impression platen operable to an open position for receiving thereon successively individual sheets of stock to be printed and operable to a closed position for printing on said sheets, and gripper means operable automatically to deliver individual sheets of printing stock onto said platen while in its open condition, the improvement which comprises apparatus for register-retaining alignment of said sheets of printing stock comprising a pair of feed guides, means mounting said feed guides axially spaced in aligned positions for cooperating with a common lower edge of a sheet of stock delivered to said platen and mounting said feed guides to position said sheets of stock on said platen, a pair of side guides disposed for cooperating individually with a respective same side edge of said individual sheets and aligning said sheets individually in conjunction with said feed guides, means automatically operable cyclically to move the feed guides away from said platen downwardly clear of said platen and to return said feed guides to a raised position for guiding and holding said sheets on said platen when said sheets are delivered to said platen, means operable automatically for imparting a lateral movement to said feed guides in one direction during raising of said feed guides and means for alternatively moving said feed guides laterally in an opposite direction during raising thereof thereby importing an upward oblique movement to said feed guides to move said individual sheets alternatively toward said side guides, and means operable automatically to impart lateral movement to one of said side guides in a direction opposite to the lateral movement imparted to said feed guides when operating with said one side guide to position the opposite sides of each sheet in exact same registry when delivered to said platen.

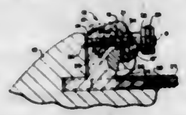
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**3,168,040**

## PLATE CLAMP REGISTERING MECHANISM

**Robert K. Norton, Twinsburg, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware**

**Filed July 18, 1962, Ser. No. 210,632**
**10 Claims. (Cl. 101—415.1)**



1. In a rotatable printing press cylinder having a body member and a longitudinal gap in the periphery thereof,

(*a*) a plate clamp member mounted in and extending along one side of said gap and adapted to be adjusted generally laterally in opposite directions from a predetermined plate-receiving position spaced from said gap side,

(*b*) first means for positively adjusting said clamp member away from said gap side,

(*c*) second means for moving said clamp member toward said gap side,

(*d*) plate registering elements mounted on said clamp member for registering an image-carrying flexible printing plate to said cylinder when said clamp member is located in said predetermined plate-receiving position,

(*e*) a plurality of spaced gauging elements mounted on one of said members and each having a first abutment engageable with said body member and a second abutment engageable with said clamp member, said abutments, when engaged, serving to positively predetermine the plate-receiving position of the clamp member with respect to said gap side, and,

(*f*) means for operating each gauging element in a manner normally tending to simultaneously disengage said abutments from said clamp and body members for enabling said second means to move said clamp member toward said gap side from its plate-receiving position, said gauging elements being constructed and arranged to restore said clamp member to its predetermined plate-receiving position upon re-engagement of said abutments.

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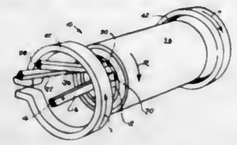
**3,168,041**

## FLUID IMPULSE MECHANISM AND METHOD OF PRODUCING COLLISION REACTIONS

**George J. Yevick, 536 Nordhoff Drive, Leonia, N.J.**

**Original application Apr. 20, 1959, Ser. No. 807,721, now Patent No. 3,084,629, dated Apr. 9, 1963. Divided and this application Apr. 30, 1962, Ser. No. 191,697**
**1 Claim. (Cl. 103—1)**

A method of imparting pulsed delivery to a conductive fluid comprising the steps of continuously projecting a sheet of conductive fluid across two spaced apart and elongated electrodes maintained at different electrical potentials, the sheet being of a width less than the length of the electrodes, and maintaining a magnetic field at right angles to the sheet of fluid, whereby the fluid sheet is urged along the electrodes upon its formation of an electrical path therebetween, the finite time required for the sheet



to span the space between the electrodes resulting in a series of discrete, spaced apart sheets passing along the electrodes.



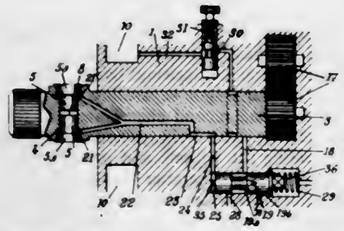
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**3,168,042**

## PUMPS, AND IN PARTICULAR FUEL INJECTION PUMPS HAVING OPPOSED PISTONS AND A ROTARY DISTRIBUTING VALVE ELEMENT

**Pierre Etienne Bessiere, Neuilly-sur-Seine, France, assignor to Societe Anonyme pour l'Exploitation des Procedes Chimiques et Physiques, Zug, Switzerland, a Swiss company**

**Filed Dec. 27, 1960, Ser. No. 78,472**
**Claims priority, application France, Jan. 8, 1960, 815,223**
**5 Claims. (Cl. 103—2)**



1. For use with an internal combustion engine, a fuel feed pump which comprises, in combination, a first part provided with a recess forming two communicating pump cylinders opposed to each other, two pistons each reciprocable in one of said cylinders respectively, said two pistons limiting with said cylinders two variable volume spaces respectively, said two pistons limiting between them a working space, a second part, said two parts being rotatable with respect to each other about an axis transverse to the axes of said cylinders, a cam carried by said second part, means for operatively connecting said pistons with said cam so that, under the effect of the rotation of said two parts with respect to each other, said pistons are reciprocated in said cylinders respectively, with opposed movements, the movements of said pistons in the respective directions for which the volume of said working space is reduced being called delivery strokes and those in the respective opposed directions return strokes of said pistons, said cam comprising a number of lobes, each of said lobes being capable of producing, by cooperation with said pistons, a delivery stroke followed by a return stroke thereof, one of said parts being provided with a delivery conduit in constant communication with said working space, one of said parts being provided with a cylindrical housing arranged to communicate with said delivery conduit during the delivery strokes of said pistons and said housing having a discharge port, a reciprocating shuttle fitting slidably in said cylindrical housing adapted to clear said discharge port, so as to place it in communication with said delivery conduit, during the corresponding delivery strokes of said pistons, said shuttle being slidable in piston-like fashion in said housing so as to limit with the inner wall thereof a variable volume chamber, the movements of said shuttle in said housing in the direction for which the volume of said variable volume chamber is increased being called outward strokes and those in the opposed direction return strokes of said shuttle, a plurality of fuel delivery means carried by that of said parts which is not provided with said delivery conduit, the number of said delivery means being equal to the number of lobes of said cam, cooperating conduit means in said two parts arranged to connect each of said delivery means successively with said delivery conduit as one of said cam lobes is cooperating with said pistons to produce delivery strokes thereof, said parts being provided with repective passages arranged to communicate together and with said variable volume chamber during the return strokes of said pistons for form an outflow conduit having a throttled portion of cross-section very substantially less than the cross-section of said shuttle, means operative by said pistons and comprising passages in said parts out of communication with said delivery conduit, for connecting said variable volume spaces to said variable volume chamber to feed liquid to said variable volume chamber during the delivery strokes of said pistons to produce outward strokes of said shuttle, and means operatively connected with said shuttle for urging said shuttle with a substantially constant force to produce the return strokes thereof, whereby, for speeds of rotation of said parts with respect to each other above a given value, said shuttle return strokes are the shorter as said speed of rotation is higher.

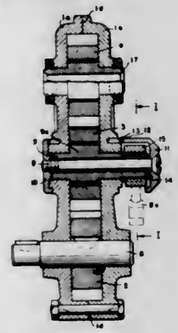
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**3,168,043**

## VARIABLE DISPLACEMENT PUMPS OF THE TRIPLE-GEAR TYPE

**Georg Wiggermann, Kressbronn, Germany, assignor to Reiners & Wiggermann Getriebe- und Maschinenbau, Kressbronn, Germany, a corporation of Germany**

**Filed Oct. 21, 1960, Ser. No. 64,199**
**10 Claims. (Cl. 103—120)**

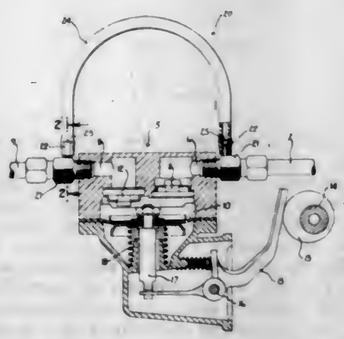


1. A controllable-displacement hydraulic machine comprising a train of at least three spur gears for displacing hydraulic medium including an intermediate gear and two outer gears meshable therewith, a housing for said gears having two component portions whose separating surface is located in a plane which divides the gear teeth within the axial thickness of said gears, said housing being provided with a plurality of journalling locations for the respective gears so arranged that the respective gear axes are located substantially in a single plane passing through the axes of said outer gears, the peripheral wall surfaces of said housing extending closely about each of said two outer gears and being spaced from the non-meshing portion of said intermediate gear and extending beside the lateral surface of the teeth of said intermediate gear so as to form a ring-shaped hollow space adjacent said non-meshing portion of said intermediate gear for the guidance of blind hydraulic currents formed to cause said blind currents to pass tangentially and in counterflow about said intermediate gear, drive means connected to one of said outer gear, means for radially displacing said intermediate gear and the respec-

tive journalling location for said intermediate gear being located so that the spacing of the axis of said intermediate gear from the axes of said two outer gears is variable continuously and only in a range wherein the spacing of the intermediate gear axis from the axis of said one outer gear is always at least as great as the spacing between said intermediate gear axis and the axis of the other of said two outer gears, said housing being provided with supply and discharge ducts for input and output of hydraulic medium, said respective ducts being located in said housing on mutually opposite sides of said plane passing through the axes of said outer gears, said ducts communicating with the interior of said housing in the vicinity of the area where said intermediate gear meshes with said other gear, said means for displacing the intermediate gear comprising a control shaft mounted in said housing and coaxial with said intermediate gear for journalling and radially displacing the latter, a control member connected to said control shaft to control the radial displacement of said intermediate gear, fastening means coaxial with said control shaft for fastening said two housing portions together, structural bracing means for supporting and fastening means against the external surfaces of the respective housing portions, said bracing means comprising a pressure cap which extends about the end of said control shaft, said pressure cap being provided with a recess through which said control member passes from said control shaft to the outside, said recess serving for limiting the angular range of displacement of said control member, said housing conforming to the outer periphery of said intermediate gear so closely that the latter can perform only its necessary radial displacing motion, said ring-shaped hollow space including channels adjacent to lateral surfaces of at least said intermediate gear, said channels being located in both of said two housing portions for guiding blind flow currents of hydraulic medium.

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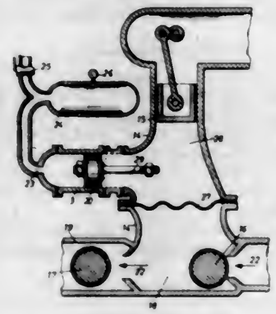
**3,168,044**
**PRESSURE RELIEF DEVICE FOR FUEL PUMPS**
**David B. Stevens, Mequon, and Eugene Shermeister, Sheboygan, Wis. (both of Rte. 2, Box 449A, Thiensville, Wis.)**
**Filed June 17, 1963, Ser. No. 288,299**
**2 Claims. (Cl. 103—41)**



1. A device for relieving the pressure at the outlet of a fuel pump and returning fuel thereat to the inlet of the pump, comprising: a pair of tubular pipe fittings, each having means for connecting the same with a port in a fuel pump so that one of said fittings may be located at the inlet of the fuel pump and the other at its outlet; a nipple embedded in each fitting and projecting laterally therefrom, said nipples being secured to their respective fittings in a fluid-tight manner and opening into the interior of the fittings; a tube having its opposite end portions telescoped onto and tightly secured to the nipples so as to connect one fitting with the other; and a constriction in the bore of at least one of said nipples.

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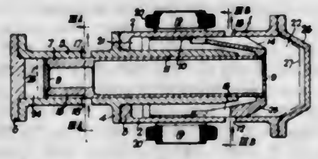
**3,168,045**
**PUMP FOR THICK MATERIALS**
**Martin Sebastiani, Owingerstrasse 1, Uberlingen, Bodensee, Germany**
**Filed Sept. 13, 1961, Ser. No. 137,785**
**2 Claims. (Cl. 103—44)**



1. In a pump for thick material such as mortar, feeding a pressure line having at least one control valve at its end, the combination comprising: walls defining a sectional casing, a diaphragm separating the two sections and forming first and second chambers, said first chamber communicating with said pressure line, said diaphragm controlling the volume and pressure of said first chamber, said second chamber containing a pressure fluid; a pumping piston displaceably disposed in said second chamber; means for driving said piston; means defining a cylinder communicating with said second chamber; a yielding piston slidably disposed in said cylinder and being subjected to the pressure of said fluid at one side, said yielding piston enlarging and decreasing the effective volume of said second chamber depending upon the pressure therein and corresponding to the displacement of said yielding piston; a compression chamber having compressed air therein communicating with said cylinder on the other side of said yielding piston; and a conduit having a valve therein communicating with said compression chamber and open to the atmosphere so that the quantity of compressed air within said compression chamber can be varied, whereby the resilient counter-force acting against said other side of said yielding piston can be selectively adjusted.

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**3,168,046**
**FLUID OPERATED PUMP SYSTEMS**
**Allan Barker and John Ashton, Saughall, near Chester, England, assignors to United Kingdom Atomic Energy Authority, London, England**
**Filed May 17, 1960, Ser. No. 29,600**
**Claims priority, application Great Britain May 20, 1959**
**2 Claims. (Cl. 103—50)**



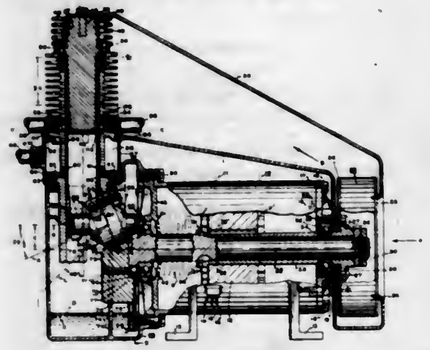
1. A fluid operated pump comprising: an elongate casing; a stationary sleeve enclosed in said casing; a double ended piston defining two opposing end surfaces and an intermediate cylindrical bearing surface, the piston being



rotatable and reciprocable in the sleeve; an electrical stator mounted on the casing; means on the piston responsive to the stator for rotating the said piston; first inlet and outlet port means on the casing adjacent one end thereof for flow of a pressurized fluid into and out of a first space in the casing at the said one end, and second inlet and outlet port means on the casing adjacent the other end thereof for the operative passage of a second fluid into and out of a second space in the other end of the casing; the piston defining first and second slot means adjacent one end of the piston, each of the slot means operatively and alternately communicating with the first inlet and outlet port means during rotation of the piston, the first slot means directing the pressurized fluid toward one side of the end surface at the one end of the piston and the second slot means directing the pressurized fluid toward the other side of the said end surface at the one end to reciprocate the piston during the alternate communication; and the piston defining third slot means adjacent the other end thereof for alternately connecting the second inlet and outlet ports to the said second space for pumping of the second fluid therethrough on reciprocation and rotation of the piston.

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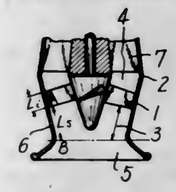
**3,168,047**
**VOLUME DISPLACEMENT MEANS WITH SLEEVE VALVE CONTROL**
**James A. Hardman, 225 West 4th North, Logan, Utah**
**Filed Sept. 25, 1962, Ser. No. 227,630**
**18 Claims. (Cl. 103—57)**



1. Volume displacement apparatus with sleeve valve control, said apparatus including, in combination: a cylinder; a piston operatively disposed in said cylinder and having a characteristic motion with respect to said cylinder of cyclical reciprocation and simultaneous, correspondingly cyclical sweeping revolvement within said cylinder; a rotor spaced from the axis of reciprocation and revolvement of said piston, journaled for revolvement about an axis which is transverse with respect to piston orientation, and having a characteristic motion of revolvement; socket means disposed in said rotor eccentrically with respect to the axis of revolvement of the latter, a ball universally received by said socket means in a ball and socket joint, said ball having a central bore, stub shaft means rigidly secured to said piston and journalled in said central bore of said ball, said piston and cylinder being provided with port means and orifice means, respectively, which are registerable during predetermined periods of piston stroke, said piston and cylinder being so oriented with respect to one another as to effect passage through said port and orifice means, upon a first unique registration thereof, through said cylinder and into said piston during one portion of piston stroke and, subsequently, upon a second unique registration thereof, from said piston back through said cylinder during another portion of piston stroke, of selected materials employed in connection therewith, to effect desired work.

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**3,168,048**
**FULL RANGE OPERABLE HIGH SPECIFIC SPEED PUMPS**
**Tomitaro Toyokura, Isogo-ku, Yokohama, and Kazuo Kida, Kaya-machi, Mishima, Japan, assignors to Dengyosha Machine Works, Ltd., Tokyo, Japan, a corporation of Japan**
**Filed Sept. 23, 1963, Ser. No. 310,567**
**Claims priority, application Japan, Nov. 14, 1962, 37/51,230**
**1 Claim. (Cl. 103—89)**



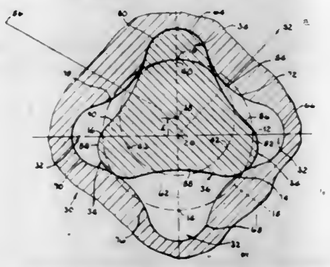
A full range operable high specific speed pump which reducing the shut-off horse power fulfilling the condiing a divergent pipe toward the direction of flow for reducing the shut-off horse power fullfilling the condition selected from the group consisting of

$$L_s \geqq 0.7L_1 \text{ and } D_s \leqq 0.9D_1$$

wherein $L_1$ represents a width at the tip of impeller blades as measured on the meridian section $L_s$ the length of restricted pipe wall on the suction side of impeller taken on the meridian section (the length measured from the point (A) on the suction side of the tip of impeller blade to the point (B) at the smallest radius of inner wall of the restricted pipe on the suction side of impeller taken along the inner wall of the pipe), $D_1$ a diameter on the suction side of the tip of impeller blades and $D_s$ an inner diameter of the smallest section of the restricted pipe on the suction side of the impeller.

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**3,168,049**
**HELICAL GEAR PUMPS**
**Alan Taylor, Lakeview, Johannesburg, Transvaal, and Stanley Ashbourne Eaton Payne, Blairgowrie, Johannesburg, Transvaal, Republic of South Africa, assignors to Mono Pumps Africa (Proprietary) Limited, Lakeview, Johannesburg, Transvaal, Republic of South Africa**
**Filed Sept. 21, 1962, Ser. No. 225,212**
**Claims priority, application Great Britain Sept. 26, 1961**
**7 Claims. (Cl. 103—117)**



1. Helical screw thread apparatus comprising a stator, and a rotor mounted to rotate sealingly within the stator, the rotor longitudinal axis being off-set a distance E from the stator longitudinal axis; a number *n* which is at least four, of internal female helical threads in the stator entirely formed by part circular stator lobe arcs and by

part circular stator blending arcs joining the stator lobe arcs at positions of common tangents to these arcs, the stator lobe arc centers being on a stator scroll circle whose center is on the longitudinal axis of the stator, the diameter of the stator scroll circle being of a value D; and a number $n-1$ external male helical threads on the rotor entirely formed by part circular rotor lobe arcs having the same radius of curvature as the stator lobe arcs and by part-circular rotor blending arcs joining the rotor lobe arcs at positions of common tangents to these arcs, the rotor lobe arc centers being on a rotor scroll circle having its center on the rotor axis, the rotor scroll circle being tangential to the stator scroll circle; the ratio of D to E being substantially equal to

$$\frac{16 \sin \frac{180°n-540°}{2n(n-1)} \cos \frac{540°}{2n} \sin \frac{360°}{2(n-1)}}{\left(1-\cos \frac{180°}{n}\right)\left(1-\cos \frac{180°n-540°}{(n-1)}\right)-4 \sin^2 \frac{180°n-540°}{2n(n-1)}}$$

the cross-section of the space within the stator at longitudinally spaced points along its length being constant in shape, although varying in angular orientation about the stator axis, and being defined by a figure the periphery of which consists of the stator lobe arcs described from stator lobe centers within the cross-section and equiangularly spaced around the stator scroll circle, and a corresponding number of the part circular stator blending arcs joining the stator lobe arcs and described from centers outside the cross-section and equiangularly spaced around a circle concentric with the stator scroll circle at positions angularly intermediate the stator lobe centers; the cross-section of the rotor at longitudinally spaced points along its length being constant in shape although varying in angular orientation about the rotor axis, and being defined by a figure the periphery of which consists of $n-1$ part circular rotor lobe arcs, and described from rotor lobe centers within the rotor cross-section and equiangularly spaced around the rotor scroll circle, and a corresponding number of the part circular rotor blending arcs joining the rotor lobe arcs described from centers outside the rotor cross-section and equiangularly spaced around a circle concentric with the rotor scroll circle at positions angularly intermediate the latter; the rotor scroll circle having a diameter which is substantially equal to the stator scroll circle diameter D less twice the eccentricity E, the distance of the describing centers of the stator blending arcs from the stator axis being substantially equal to

$$\frac{2E(D-2E)}{4E-D\left(1-\cos \frac{180°}{n}\right)}$$

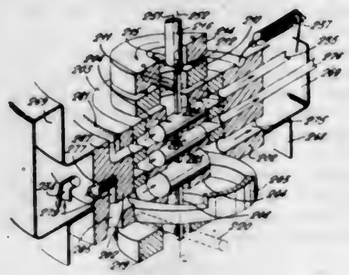
and the distance of the describing centers of the rotor blending arcs from the rotor axis being substantially equal to

$$\frac{2E(D-4E)}{6E-D+(D-2E) \cos \frac{180°}{n-1}}$$

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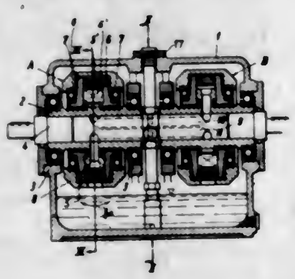
**3,168,050**
**PISTON PUMP**
**Nikolaus Laing, Rosenbergstrasse 24a, Stuttgart, Germany**
**Filed Jan. 5, 1962, Ser. No. 164,552**
**Claims priority, application Germany Jan. 5, 1961**
**19 Claims. (Cl. 103—161)**

1. A piston pump comprising a pump body, a cylinder block mounted for rotation within the pump body about an axis and defining a plurality of parallel bores extending transversely to said axis, a piston reciprocably mounted in each of said bores, the pump body defining with the cylinder block, an intake chamber and a delivery chamber for each of said bores, both chambers extending over the major portion of a 180° arc centered on said axis, guide members one at either end of the cylinder block and mounted for rotation within the pump body about a second axis parallel to and spaced from the first-mentioned axis, said guide members providing parallel tracks extending transversely to said second-mentioned axis, a slide reciprocably mounted in each track, and an elongated resilient coupler extending parallel to said axes and interconnecting said slides and said pistons for rotation as a unit in an orbital path by reason of a torque transmitted through said coupler.



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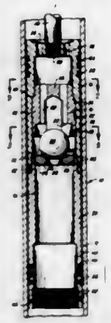
**3,168,051**
**ROTARY FLUID-PRESSURE MACHINE**
**Johannes Krudewig, Goppingen, and Herbert Sick, Faurndau, Germany, assignors to Gebrüder Boehringer Gesellschaft mit beschränkter Haftung Maschinenfabrik und Eisengiesserei, Goppingen, Germany**
**Filed Mar. 29, 1963, Ser. No. 268,913**
**Claims priority, application Germany, Apr. 4, 1962, B 66,669**
**9 Claims. (Cl. 103—202)**



1. A hydraulic drive, comprising a housing; rotor means journaled in said housing for angular displacement about a common axis; nonrotating conduit means at least partly surrounded by said rotor means and mounted in said housing for at least limited radial displacement therein while being substantially coaxial with said rotor means and forming a fluid path therefor, said rotor means being rotatable relatively to said conduit means, connecting means fixed with respect to said housing and generally radially offset from said conduit means while forming a fluid path communicating with said conduit means; and generally radial fluid-transmission means yieldably communicating between said connecting means and said conduit means for permitting said displacement of said conduit means.



**3,168,052**
**PLUNGER AND VALVE ASSEMBLY**
**Clyde L. Pate, Oklahoma City, Okla.**
**Filed Feb. 4, 1963, Ser. No. 255,890**
**6 Claims. (Cl. 103—225)**



1. A plunger and valve assembly adapted to be reciprocated by a sucker rod string within the working barrel of a subsurface oil well pump, comprising:

a first tubular barrel having an upper end forming an outlet and adapted to be secured to the lower end of a reciprocating sucker rod string, said barrel having a counterbore therein extending from the lower end thereof partially therethrough and having a female thread formed in the lower end portion of said counterbore;

a second tubular barrel having a lower end forming an inlet, said second barrel having a counterbore therein extending from the upper end thereof partially therethrough and having a male thread thereon threadedly engaged with the female threads in said first tubular barrel;

a valve cage pressed into the counterbore of said first barrel, said cage being provided with a plurality of axially extending apertures for permitting the passage of fluid therethrough;

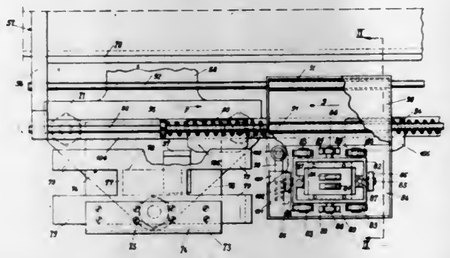
an annular valve seat pressed into the counterbore of said second barrel, said seat having an axial bore therethrough whereby fluid passing through said seat will be directed relatively away from said threads; and,

a valve ball loosely disposed in said valve cage for a flow of fluid upwardly around said ball and through said valve cage and being of a size to mate with said seat to prevent a flow of fluid downwardly through the plunger and valve assembly.

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**3,168,053**
**CONTROL OF CONVEYORS**
**Jean Miroux, Paris, France, assignor to Association des Ouvriers en Instruments de Precision, Paris, France, a corporation**
**Filed Nov. 28, 1960, Ser. No. 72,224**
**Claims priority, application France, Dec. 15, 1959, 813,038**
**9 Claims. (Cl. 104—88)**

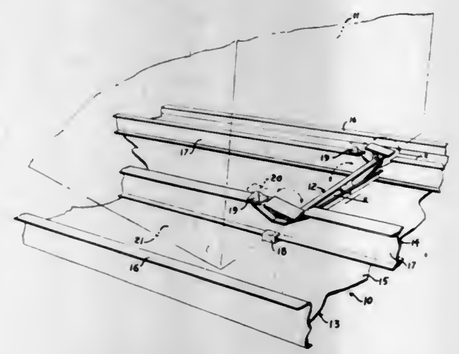
1. In a conveyor comprising a plurality of movable trolleys driven along a track, a system using magnetically recorded coded information for the individual remote control of said trolleys, said system comprising on some at least of said trolleys a plate rigidly fitted thereon, a magnetizable area on said plate for magnetically storing information useful to said remote control, two paths on said plate respectively adjacent to said area and substantially parallel to said track, at least one reading station fitted along said track, said station comprising a frame, a carriage borne by said frame, mounting means on said frame for said carriage and adapted for lateral swinging movement and transversal displacement of said carriage relative to said frame, two pairs of rolling members rotatably fixed on said carriage, electromagnetic reading means for scanning said magnetizable area of said trolley plate, said reading means comprising at least one electromagnetic reading head secured to said carriage, and



resilient means secured to said frame and acting on said carriage for registering each pair of said carriage rolling members respectively with one of said plate paths when said trolley passes by said station, thereby temporarily providing a constant air gap between said reading head and said magnetizable area of said plate.

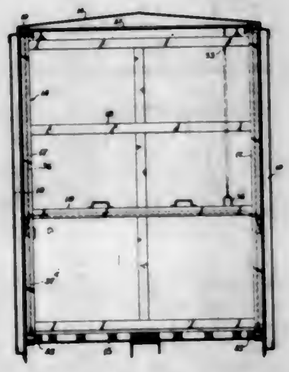
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**3,168,054**
**CONTAINER LOADING EQUALIZER**
**Norman E. Bateson, Munster, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware**
**Filed Oct. 16, 1961, Ser. No. 145,286**
**7 Claims. (Cl. 105—366)**



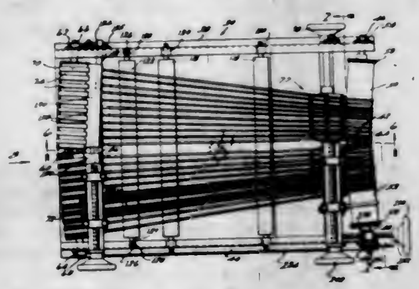
1. In a freight vehicle, a support for detachably securing cargo carrying containers of the type having locating means provided thereon, said support structure comprising a container platform having a substantially rigid planar supporting surface for supporting the container thereon, means on said platform complementary to the locating means on the container for positioning the container on said platform, and means on said platform substantially universally movable out of and into a position coplanar with said rigid planar supporting surface, said substantially universally movable means being disposed to be contacted by respective end corners of the container during lowering of the latter on to said platform when the container locating means are in substantial alignment with said complementary means on said platform and being movable out of said coplanar position to conform to the attitude of the end edge portion of the container and to provide surface contact therealong.

**3,168,055**
## MOVABLE BULKHEAD FOR RAILROAD CARS
Edward Vander Hyde, Chicago, Gerald McLaughlin, Western Springs, and Adolph G. Kuellmar, Blue Island, Ill., assignors to UNARCO Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed May 11, 1964, Ser. No. 366,242
9 Claims. (Cl. 105—376)



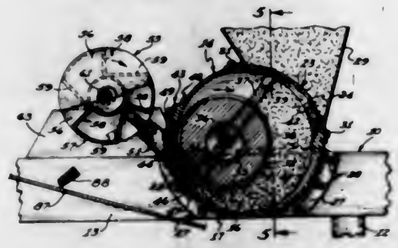
1. In a railroad freight car having side walls, a roof and a floor, a movable bulkhead structure comprising tracks adapted to be mounted in a car adjacent to its roof, a bulkhead suspended from the tracks for movement lengthwise of the car, latch strips in the car adjacent to the floor and roof thereof, latch parts movably carried by the bulkhead for engagement with the latch strips to latch the bulkhead in a selected position in the car, and operating means for the latch parts including a lever pivotally mounted at each edge of the bulkhead for swinging in the plane of the bulkhead toward and away from toward the center of the bulkhead and link means connecting the levers to cause them to turn simultaneously in opposite directions.

**3,168,056**
## DOUGH STRETCHING APPARATUS
Eugene O. Engels, 423 Brockway Place, Saginaw, Mich.
Filed July 13, 1961, Ser. No. 123,832
18 Claims. (Cl. 107—9)



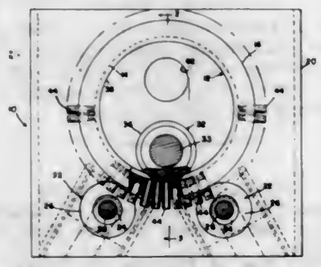
3. A dough stretching apparatus comprising a first pair of rollers having their axis of rotation in substantially the same horizontal plane and in intersecting vertical planes, a second pair of rollers also having their axis of rotation in substantially the same horizontal plane and in intersecting vertical planes, a plurality of belts supported on and extending between said first and second pairs of rollers, and adjusting means extending between said belts and adapted to adjust the spacing between said belts to provide varying degrees of divergence thereof.

**3,168,057**
## HAY PELLETIZING MACHINE
Theron L. Bliss, P.O. Box 345A, Rte. 1, Buckeye, Ariz.
Filed Apr. 14, 1961, Ser. No. 103,086
15 Claims. (Cl. 107—14)



1. In a hay pelletizing machine, a generally tubular shell member, a rotor assembly rotatably supported within said shell member with its axis offset from but parallel to the shell member axis, a rotor vane slidably supported within a radially disposed slot extending entirely through said rotor, said vane dimensioned to ride along an inside surface of the shell member, the said rotor and shell member together defining a tapered crescent shaped space, at least one die member secured in an aperture in the shell at a minimum cross-sectional area location with respect to said crescent shaped space, said aperture extending through the shell and being positioned at an apical portion of said crescent shaped space, said die member including at least one tapered die in which the smaller cross-sectional portion faces outwardly, means for introducing hay or the like for compaction, and means for driving said rotor to cause the said rotor vane to move said hay along said tapered crescent shaped space, and through the said die to form compacted hay pellets.

**3,168,058**
## REPLACEABLE TUBE INSERT FOR A PELLETING MACHINE
Arthur Raymond Cunningham, 9615 S. Beverly Ave., Chicago 43, Ill.
Filed Oct. 1, 1962, Ser. No. 227,303
7 Claims. (Cl. 107—14)



1. In a machine for compressing and pelleting a cut crop, a rotatable ring having circumferentially spaced holes extending generally radially therethrough and through which the cut crop is to be pressed, said holes having relatively enlarged radially outer end portions and relatively reduced radially inner end portions, shoulders separating said relatively enlarged and reduced portions of said holes, and tubes disposed radially with respect to said ring, the radially inner end portions of said tubes extending into the enlarged portions of said holes, the radially inner ends of said tubes being in opposed relation to said shoulders, the inner end portions of said tubes being externally threaded from the radially inner ends thereof and having threaded engagement with the enlarged portions of said holes for axial adjustment



of said tubes in said holes, said tubes projecting from said holes radially outward beyond the radially outer surface of said ring, the inner surfaces of said tubes being of the same size and shape as the reduced portions of said holes and extending substantially flush with and in continuation of said reduced portions, vent holes provided in the walls of the projecting portions of said tubes, said holes being inclined inwardly toward the axes of said tubes in an outward direction.

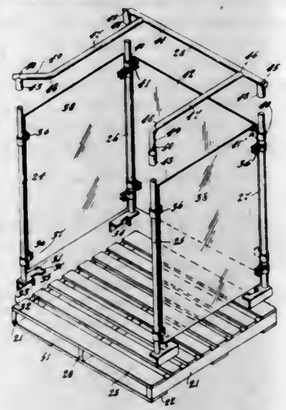
**3,168,059**
## PRODUCT DISPENSING DEVICE
George E. Germann, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Apr. 11, 1963, Ser. No. 272,410
4 Claims. (Cl. 107—14)



1. An apparatus to dispense a viscous product such as cookie dough or cracker spread, said apparatus comprising: a pressurized dispensing can to contain said product, a valve assembly mounted on one end of said can and having a dispensing stem formed with a discharge end, said dispensing stem being yieldingly held in a closed position and movable by moderate force to a discharge position in which product from said can is dispensed from the discharge end of said stem, a dispensing attachment comprising a connecting portion, a body, and a base, said connecting portion being arranged to interfit with said stem in a manner to locate said attachment in a dispensing position, said base presenting contact means occupying a single plane, said contact means being so arranged that when said attachment is in its dispensing position, said contact means is spaced radially outward from said stem and is spaced from said can beyond the discharge end of said stem, so as to be able to properly engage a contact surface, said attachment defining a forming cavity communicating with the discharge end of said dispensing stem, whereby when said can is manipulated to press said base portion against said surface in a manner to move said stem to its discharge position, a portion of said product is dispensed into said cavity, said attachment having a die member located in said forming cavity, whereby product dispensed from said stem passes through said die to take a predetermined shape as it is discharged from said stem.

**3,168,060**
## PALLET STACKING DEVICE
Arthur C. Farley, Philadelphia, Pa., assignor to Artco Corporation, Lansdale, Pa., a corporation of Pennsylvania
Filed Nov. 28, 1962, Ser. No. 240,621
1 Claim. (Cl. 108—53)

In a pallet stacking device, four uprights positioned at right and left, front and rear corners of a lower pallet, feet at the bottom of the uprights engaging the lower pallet, an upper frame secured to the four uprights comprising a back bar connecting the right and left rear uprights at the top, and a horizontal side bar at each side extending from the back bar at a position displaced toward the opposite side of the pallet stacking device from the adjoining rear upright, extending forward to a position adjacent the front upright on the same side and then bent toward the front upright and secured thereto, whereby the upper frame including the back bar and the side bars at



each side can support an upper pallet, and an operator can walk in without any obstruction at the front.

**3,168,061**
## CONVERTIBLE FOLDING SNACK TABLE AND BED-TRAY
Marshall T. Bedol, Shaker Heights, Ohio, assignor to The Marshallan Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 26, 1964, Ser. No. 347,470
2 Claims. (Cl. 108—116)

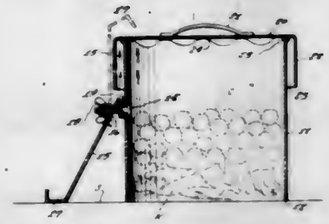


1. A convertible folding snack-table and bed-tray, comprising in combination, a rectangular tray having a depressed bottom wall and a marginal rim, which latter extends above the plane of the bottom and laterally outward; a plurality of spaced, downwardly directed, resilient clamp members secured to the under face of the rim; two sets of paired hinge members secured to the underface of the bottom wall, spaced longitudinally thereof, between the clamp members; a first pair of U-shaped leg members, the leg portions of which are longer than the horizontal cross portions thereof; means pivotally connecting said legs, intermediate their ends, in crossed relation to one another, whereby the so joined leg members may be pivoted between a first, extended or X-shaped position and a second, folded or nested position, the horizontal cross portions of the so joined U-shaped members being separably engageable with the tray rim clamp members to support the tray in a horizontal position when said paired leg members are in their first positions, and to support the tray in a vertical, dependent plane when said leg members are in their second position; a second pair of U-shaped leg members, the leg portions of which are shorter than the horizontal cross portions thereof, with the terminal end of each leg flattened to provide frictional bearing surfaces, each of said second pair of leg members being permanently and pivotally engaged

through its terminal bearing surface with one of the paired hinge members; the so mounted second pair of leg members being pivotable between a first, extended position wherein they depend from the underside of the tray, and a second or folded position wherein they lie flat against the underside of the tray bottom wall; the tray serving as a snack-table when attached to the first pair of U-shaped leg members, in their first position, and as a bed-tray, when detached therefrom, with the second pair of U-shaped leg members in their first position.

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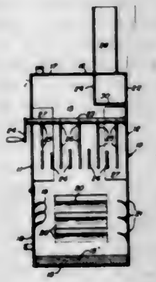
**3,168,062**
**ADJUSTABLE INDUCED DRAFT BARBECUE LIGHTER WITH FUELSAVER HOOD**
**Frederick W. Arnold, 1525 NE. 30th Court, Pompano Beach, Fla.**
**Filed Jan. 11, 1963, Ser. No. 250,820**
**5 Claims. (Cl. 110—1)**



1. A fire control device comprising a tubular base for encircling a fire and being open at its bottom and at its top, said base having a bottom surface for contacting a surface on which a fire is laid and forming therewith when inclined a draft inlet controlled by the relative angular position of said bottom surface to such fire supporting surface, a leg angularly disposed relative to said base exteriorly thereof and movably connected thereto adjacent its upper end, said leg having a bottom pad for engaging said fire supporting surface upon which said base is disposed, and adjustable means providing the connection of said leg to said base having cooperating threaded members for adjusting the relative position of said leg to said base whereby to angularly raise or lower the side of the base and its corresponding bottom surface portion adjacent to said leg to incline the same and to thereby adjust the draft inlet opening.

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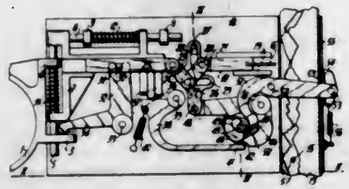
**3,168,063**
**INCINERATOR**
**Erwin F. Moldenhauer, 2036 4th St., Boulder, Colo.**
**Filed June 12, 1961, Ser. No. 116,557**
**4 Claims. (Cl. 110—18)**



1. An incinerator comprising an upright housing furnished with a charging door at its upper end and a clean-out door adjacent its lower end, a grate structure transversely of said housing above said clean-out door, means for the admission of air to said housing beneath said grate structure, means for directing some of the admitted air to the upper end interior of the housing in by-passing relation with the grate structure, a vent stack serving the upper end interior of the housing, means for the admission of air directly to the housing interior subjacent said stack, a deflector closing to and interiorly of the housing spacedly and embracingly over said latter means and the adjacent end of the stack to determine an open-ended flow passage connecting laterally between the housing interior and stack, and an ignition aperture in said deflector in substantial alignment with the stack.

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**3,168,064**
**EMBROIDERY APPLIANCE ADAPTED TO BE ATTACHED TO A SEWING MACHINE**
**Marcel Fresard, Geneva, and Fred Bucher, Jussy, Geneva, Switzerland, assignors to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland**
**Filed Oct. 22, 1962, Ser. No. 232,168**
**Claims priority, application Switzerland, Oct. 26, 1961, 12,429/61**
**8 Claims. (Cl. 112—102)**



1. In an embroidery appliance adapted to be attached to a sewing machine and including a work-piece supporting frame guided for displacement relative to the sewing machine in two directions at right angles to each other, a pattern bar presenting two profiles each shaped as a function of one coordinate of an embroidery pattern, and two mechanisms each having a tappet engageable with one pattern bar profile for effecting frame displacements to positions prescribed by the pattern bar; the improvement comprising a transmission device for each of said two mechanisms disposed between each tappet and the frame, means alternately transmitting to the frame the position given to each tappet by the profile of the related pattern bar and retracting the tappet from the profile of the related pattern bar independently of the position of the frame, and brake means for locking the transmitting means during the time intervals when the tappets are out of engagement with the profiles of the pattern bar.

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**3,168,065**
**SEWING MACHINE WORK HOLDER**
**Oscar A. Trujillo, 310 Camaritas, South San Francisco, Calif.**
**Filed Aug. 28, 1961, Ser. No. 134,297**
**1 Claim. (Cl. 112—105)**

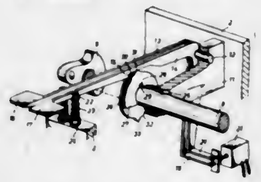


A fixture for holding down a garment hook while being machine sewn to garments and the like, including a base member mountable on a sewing machine; a pair of jaws pivoted from said base member and having a normally adjacent faces at their free ends, each face having a detent opening toward the face of the other of said jaws and defining a vertical restraining surface curved to adapt said jaws about the radius of the eyelet of a garment hook; spring means biasing the faces of said jaws together to grasp and retain a different one of the eyelets of said garment hook in each of said detents; and a hold-down guide nose rigidly mounted on said base member and centered between the free ends of said jaws, said guide nose having a downwardly sloping, inwardly curved guide surface terminating at a recess which opens downwardly underneath said guide surface to receive the hook portion of said garment hook, said guide surface adapted to direct a thread tensioned during sewing downwardly and over the extreme end of the hook portion of said garment hook.



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**3,168,066**
**NEEDLE-POSITIONING MECHANISM FOR POWER-DRIVEN SEWING MACHINES AND THE LIKE**
**Kristen Hedegaard, Gentofte, Denmark, assignor to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany**
**Filed Nov. 9, 1962, Ser. No. 236,548**
**Claims priority, application Germany, Nov. 14, 1961, P 28,227**
**8 Claims. (Cl. 112—219)**



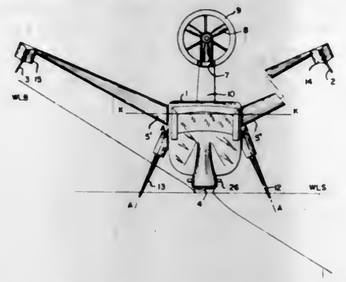
1. In a power-driven sewing machine including a reciprocating needle, a drive shaft and means to operate said needle by said shaft, and an electric motor to drive said shaft, needle positioning apparatus comprising in combination:

(1) a control member,
(2) resilient means to normally urge said member to an inoperative position,
(3) a control cam upon said shaft for cooperation with said member being disengaged from said member in said inoperative position,
(4) electric switch means controlled by said member, to connect said motor by closing said switch means upon operation of said member from said inoperative position to an operative position of engagement with said cam against the action of said resilient means,
(5) said cam having a first radial projection of relatively low height and adapted to engage and operate said member to open said switch means, and
(6) said cam having a second radial projection at a predetermined angular spacing from said first projection, said second projection being of relatively greater height than and following said first projection in the direction of rotation of said shaft, whereby
(7) to brake said shaft to a full stop upon engagement of said member by said second projection after disconnection of said motor by said first projection, while maintaining said member in said operative position.

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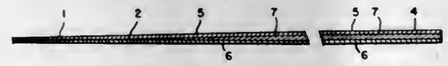
**3,168,067**
**SURFACE WATERCRAFT**
**Waldemar A. Graig, 729 Grand Ave., Dayton, Ohio**
**Filed Dec. 5, 1960, Ser. No. 73,790**
**12 Claims. (Cl. 114—66.5)**

1. In a craft operating on water and supported in motion by means developing dynamic lift forces, lateral stabilization means on the craft including port and starboard downwardly extending hydrofoil means, each producing hydrodynamic forces tending to heel the craft toward the opposite side; said hydrofoil means being rotatively held in supports affording rotary freedom about axes associated with pitchwise rotations and being provided with angle of attack stabilization means for automatic stabilization of said hydrofoil means at their assigned lift producing angles of attack and preventing the hydrofoil means from partaking in any possible yaw of the craft.



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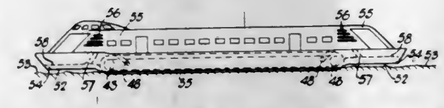
**3,168,068**
**BATTEN FOR SAILS**
**George A. Lasko, 1367 Vulcan St., El Cajon, Calif., and Donald B. Gordon, 1912 Galveston St., San Diego, Calif.**
**Filed Mar. 9, 1964, Ser. No. 350,218**
**3 Claims. (Cl. 114—102)**



1. A sail batten comprising at least a pair of strips of a predetermined length each having opposite end portions and a central portion therebetween, a core portion between the pair of strips extending between a first of the end portions through the central portion and terminating short of a terminal edge of a second of the end portions, said core portion tapering between said central and second end portions, the portions of said strips overlying said core being wholly bonded thereto, and the portions of the strips overlying each other at the second end portions being similarly wholly bonded thereto.

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**3,168,069**
**VEHICLES FOR TRAVELLING OVER A SURFACE**
**Julian Thomas Everest, South Darenth, near Dartford, Kent, and Reginald Bannerman Page, Hythe, England, assignors to Hovercraft Development Limited, London, England, a British company**
**Filed Mar. 8, 1963, Ser. No. 263,925**
**Claims priority, application Great Britain, Mar. 9, 1962, 9,148/62**
**21 Claims. (Cl. 115—1)**

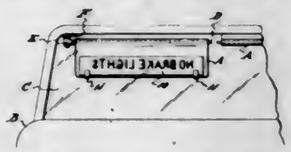


1. A vehicle for travelling over a surface and which in operation is supported above that surface, at least in part, by a cushion of pressurised gas formed beneath the vehicle, comprising at least one movable member depending from the bottom of the vehicle and extending parallel to the fore and aft axis thereof, said member including a part which comes into contact with the said surface and partially contains said cushion, and means for so moving

said member that said part travels beneath the vehicle in a direction, relative to the vehicle, opposite to that in which the vehicle is travelling.

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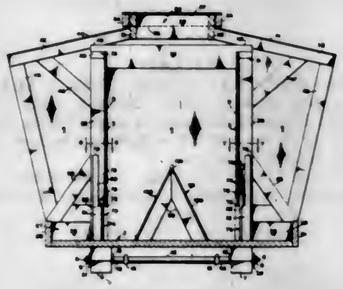
**3,168,070**
**INTER-AUTOMOBILE DEFECT WARNING SIGN**
**Alick E. Verney III, 81 N. Mitchell Ave., Livingston, N.J.**
**Filed Jan. 30, 1964, Ser. No. 341,341**
**2 Claims. (Cl. 116—28)**




1. A signalling device for use in a first vehicle having a transparent windshield at its front end, said signalling device comprising:
a fixed support arranged adjacent to said windshield;
a flat opaque sun visor rotatably mounted on said fixed support for adjustment between an operative position in which the plane thereof is vertically arranged and an inoperative position which is at an angle of between 90 and 180 degrees with respect to said operative position;
said sun visor having a forward surface which faces the windshield when the sun visor is in its operative position;
means for signalling the driver of a second vehicle which precedes said first vehicle comprising a sign attached to the forward surface of said sun visor, said sign bearing on its face indicia which forms the mirror image of at least one word, whereby the indicia is observable as forming at least one coherent word when it is reflected by the rear view mirror of the second vehicle.

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**3,168,071**
**PORTABLE FEEDING STATIONS FOR CATTLE**
**Lloyd E. Collins, P.O. Box 601, Phoenix, Oreg.**
**Filed Feb. 12, 1963, Ser. No. 257,905**
**2 Claims. (Cl. 119—53)**



1. A portable feeding station for cattle comprising,
a base having a front edge and a rear edge,
a vertically disposed retaining wall secured to said front and rear edges of the base throughout the length thereof,
a housing mounted upon the base and having front, rear, and end walls,
said front and rear housing walls spaced inwardly from said front and rear retaining walls and converging upwardly relative to said base whereby to prevent feed, when being loaded into the housing, from clinging to said front and rear walls or stacking thereagainst,
stud partitions spaced apart throughout the length of said base and supporting said front and rear walls, transverse disposed partition wall members interconnecting said stud partitions and said vertical retaining walls, whereby to divide the housing into feeding stalls throughout the length thereof,
said front and rear housing walls having dispensing openings therein intercommunicating its interior of said housing with said feeding stalls,
vertical post members adjacent the sides of said dispensing openings and extending upwardly from the top edge thereof in spaced relation to said front and rear walls,
each post having a shoulder on the same horizontal plane as the top edge of the dispensing openings,
a gate for each dispensing opening vertically slidable relative thereto and having a top edge and a bottom edge,
said top edge of each gate having a projection thereacross normally resting upon its respective post shoulders when in a closed position and slidable upwardly through said space above the shoulders whereby the gate may be tilted downwardly and outwardly to engage its bottom edge with said post shoulders to hold the gate in an open position,
a feed divider disposed centrally of the interior of the housing and extending full length therof along said base,
said divider comprising two walls converging upwardly to an apex centrally aligned with said filler opening, whereby feed supplied to the interior of the housing through said filler opening and not clinging to said front and rear walls because of their downward divergence will be distributed gravitationally to both sides of the housing through said dispensing openings and into said feeding stalls.

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**3,168,072**
**PENCIL**
**Masakiyo Nikta, 2583 5-chome, Kamimeguro, Meguro-ku, Tokyo, Japan**
**Filed June 21, 1963, Ser. No. 289,703**
**Claims priority, application Japan, June 10, 1963, 38/30,392**
**1 Claim. (Cl. 120—83)**

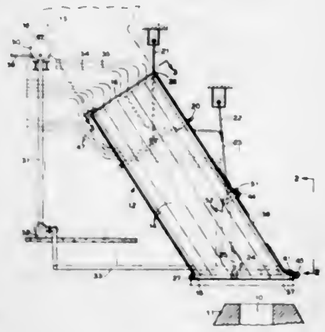


A lead pencil which comprises: a lead holder, said holder being formed from a generally rectangular blank of sheet material selected from the group of cardboard and synthetic plastics, said blank having a longitudinally extending semi-circular groove provided in one surface thereof, said holder being made by folding said blank along a line normal to said grooves so as to bring portions of said surface as defined by said line into superposed position whereby portions of said groove in each of said surface portions co-act to define an elongated cavity having one end open; and a pencil lead, said lead being adapted to be partially received within said cavity and protrude outwardly from said holder in the plane of said superposed surfaces, said surfaces being bonded together to hold said lead within said cavity, the corners of one end of said holder disposed adjacent to said protruding lead being cut off along a pair of diverging lines extending from points immediately adjacent to said open end of said cavity, said holder being provided with a least one pair of score lines disposed parallel to said divergent lines and at least one score line disposed parallel to said end of said holder and connecting said pair of score lines, whereby portions of said holder as defined by said score lines may be removed to successively expose portions of said lead disposed within said cavity.



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**3,168,073**
**FORCED FLOW WATER COOLED HOOD**
**Edwin Durham, Wadsworth, and Hubert George Stallkamp, Akron, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey**
**Filed Dec. 1, 1961, Ser. No. 156,246**
**10 Claims. (Cl. 122—7)**

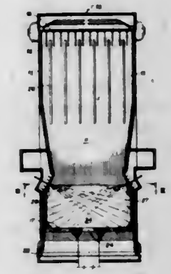


1. Heat exchange apparatus comprising panels of coplanar tubes joined to form imperforate walls of a gas-pass, means for passing a hot gas through said gas-pass, means for passing a wall cooling fluid through said tubes to absorb heat from the hot gases passing through said gas-pass, means for pendantly supporting said gas-pass walls as a unit at spaced positions therealong including hanger means extending downwardly from a fixed position, said hanger means having a pivotable attachment on one end portion of said gas-pass, and separate hanger means extending downwardly from a fixed position, said separate hanger means having a pivotable attachment on an opposite end portion and being spaced longitudinally of said gas-pass from said one end portion, said supporting means permitting guided thermal movement of said heat exchange apparatus relative to said fixed positions.

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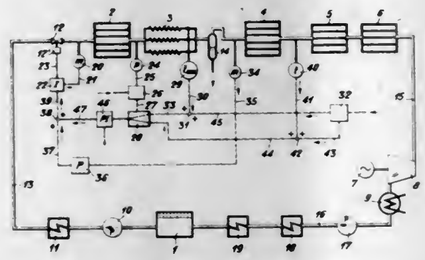
**3,168,074**
**WASTE LIQUOR FURNACE**
**Max H. Kuhner, Oakham, and Earle C. Miller, Worcester, Mass., assignors to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts**
**Filed May 24, 1962, Ser. No. 197,400**
**9 Claims. (Cl. 122—235)**

1. A waste liquor furnace, comprising a boiler having a steam-and-water drum, a furnace having front, rear, side, roof, and bottom walls defining a combustion chamber, abutments extending inwardly from two opposed walls adjacent the bottom wall and having downwardly-facing lower surfaces, the said surfaces defining with the bottom wall a high-temperature cell, burner means mounted on the said lower surfaces of the abutments, said burner means including air supply means and spray means for projecting waste liquor into the high-temperature cell, each of the said burner means being provided with air vanes which are adjustable about horizontal axes, the said spray means consisting of a spray nozzle located centrally of each burner means in the flow of air downstream of the said air vanes to bring about intersection of the lines of action of the air and liquor and mixing of the air and liquor after the air has passed over the vanes.



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**3,168,075**
**METHOD AND APPARATUS FOR CONTROLLING OPERATION OF FORCED FLOW CRITICAL AND SUPERCRITICAL PRESSURE STEAM GENERATORS**
**Paul Profos, Winterthur, Switzerland, assignor to Sulzer Freres, S.A., Winterthur, Switzerland, a corporation of Switzerland**
**Filed Aug. 21, 1961, Ser. No. 132,876**
**Claims priority, application Switzerland, Aug. 26, 1960, 9,596/60**
**1 Claim. (Cl. 122—451)**



A forced flow steam generator constructed and arranged so as to selectively produce steam at subcritical and at supercritical pressure, comprising:
a tubular evaporating section wherein water is evaporated,
a tube system connected to said evaporating section for receiving operating medium therefrom and having an outlet,
said evaporating section having an inlet,
control means connected to said inlet for controlling the rate of feedwater supply to said tubular evaporating section,
first temperature responsive means connected substantially to the end of said tubular evaporating section and being responsive to the temperature of the operating medium flowing thereat,
second temperature responsive means connected to said tube system upstream of the outlet thereof and being responsive to the temperature of the operating medium flowing within and upstream of the outlet of said tube system,

a change-over device for selectively connecting said first temperature responsive means and said second temperature responsive means to said control means for selectively controlling the rate of feedwater supply either in response to the temperature of the operating medium substantially at the end of said evaporating section or in response to the temperature of the operating medium flowing within said tube system, and

means responsive to the pressure of the operating medium in the steam generator and operatively connected to said change-over device for actuating the latter to connect said first temperature responsive means to said control means when the pressure of the operating medium is below the critical pressure of water and to connect said second temperature responsive means to said control means when the pressure of the operating medium is above the critical pressure.

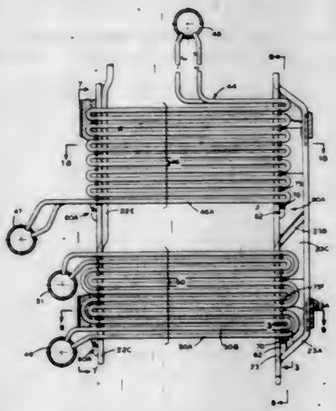
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**3,168,076**

## SUPERHEATER FOR A VAPOR GENERATOR

**Oscar Olsen, Albertson, N.Y., and Raymond J. Boyer, Westfield, N.J., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey**

**Filed May 19, 1958, Ser. No. 736,109**
**3 Claims. (Cl. 122—510)**



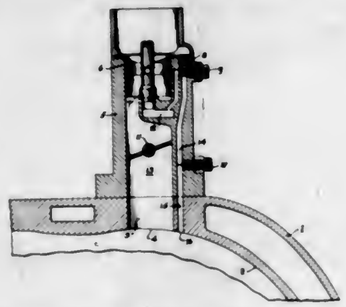
1. In a vapor generator having a fluid circulation system and an upright furnace chamber having a heating gas outlet at one end and supplied at its opposite end with high temperature heating gases and formed by walls including radiant heat absorbing vapor generating tubes connected into said fluid circulation system, a drainable superheater disposed across the flow of gases in said furnace at a location between the point of gas supply and the gas outlet and connected for series vapor flow from said radiant heat absorbing vapor generating tubes and subdividing said furnace into upper and lower substantially unobstructed radiation chambers, said superheater constituting substantially the entire vapor superheating surface of said generator and comprising a plurality of horizontally spaced tube platens arranged in vertical planes and extending across substantially the full width of the furnace, each platen including a multiplicity of horizontally extending return bend tubes, said superheater having its heating surface proportioned and arranged so that the superheater tube portions adjacent the upper and lower radiation chambers absorb heat mostly by direct radiation and the remaining intervening superheater tube portions absorb heat chiefly by convection to provide a substantially constant vapor temperature leaving the superheater over a wide range of loads.

**3,168,077**

## ROTARY COMBUSTION ENGINE

**Walter Froede, Neckarsulm, Wurttemberg, Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, Germany, and Wankel G.m.b.H., Lindau (Bodensee), Germany**

**Filed Jan. 18, 1962, Ser. No. 167,011**
**Claims priority, application Germany, Feb. 1, 1961, N 19,522**
**5 Claims. (Cl. 123—8)**



1. In a rotary combustion engine of the kind comprising an outer body having a cavity therein and an inner body relatively rotatable within said cavity about an axis laterally spaced from but parallel to the axis of said cavity, said outer body having axially-spaced end walls and a peripheral wall interconnecting the end walls to form said cavity, the inner surface of the cavity peripheral wall having a multi-lobe profile which is basically an epitrochoid, said inner body having end faces disposed adjacent to said outer body end walls for sealing cooperation therewith and having a peripheral surface with a plurality of circumferentially-spaced apex portions, an apex seal member carried by each apex portion and engaging the multi-lobe inner surface of the outer body peripheral wall and also its axially-spaced end walls in sealing relation to form a plurality of working chambers between the two bodies which vary in volume on relative rotation of the two bodies, a carburetor feeding fuel-air mixture into said cavity via a main channel which extends through said outer body and terminates at said cavity in a main intake port, said channel having a relatively large cross-section, and a throttle disposed within said channel, the improvement comprising physically separate idling mixture intake channel means extending through said outer body and terminating in at least one idling mixture intake port at said cavity to provide separate communication between said carburetor and said cavity, the latter channel means having substantially smaller cross-section than the former and providing communication of said small cross-section between said cavity and said carburetor when said throttle is closed, whereby idling fuel consumption is substantially diminished.

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**3,168,078**

## ROTARY PISTON COMBUSTION ENGINE SYSTEM

**Heinz Lamm, Stuttgart-Bad Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany**

**Filed Nov. 8, 1962, Ser. No. 236,206**
**Claims priority, application Germany, Nov. 15, 1961, D 37,455**
**16 Claims. (Cl. 123—8)**

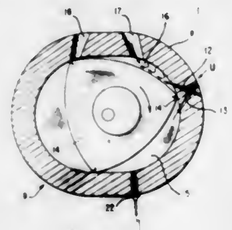
1. A rotary piston internal combustion engine, especially of the type having a trochoidally-shaped working chamber in cross section, comprising:

housing means forming said working chamber,

polygonal piston means within said housing means and having a plurality of apices and approximately arcuately-shaped working surfaces with the apices in substantially continuous contact along the internal surface of said housing means,

means for supporting said piston means for rotary movement within said housing means in such a manner that a plurality of relatively small substantially sickle-shaped spaces are formed of varying volume corresponding to the different phases of the operation of the engine and effectively providing a suction space, a compression space and an expansion space,

inlet and outlet channel means within said housing



means for controlling the gas exchange of the engine,

and means for imparting to the inflowing combustion stream admitted through said inlet channel means an eddying motion including means for deriving a fluid pre-compressed within said engine from one of the phases of the operation of the engine consisting of the compression phase and the expansion phase and blowing said fluid into the inflowing stream in the form of a disturbance flow for producing said eddying motion.

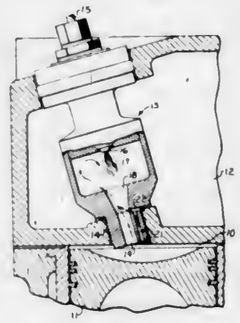
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**3,168,079**

## PRECOMBUSTION CHAMBER WITH MEANS TO IMPROVE AIR FLOW PATTERN

**Rex D. Henderson, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**

**Filed Mar. 5, 1963, Ser. No. 262,945**
**2 Claims. (Cl. 123—32)**



1. In a precombustion chamber for use in an internal combustion engine which includes an injection nozzle directed inwardly of the chamber from one side thereof, a tapered throat at the other side coaxially aligned with the nozzle and a tubular orifice communicating between the tapered throat and the main combustion chamber of the engine and coaxial with the throat, the improvement which comprises a passage communicating between the main combustion chamber and the juncture of the tapered throat and tubular orifice.



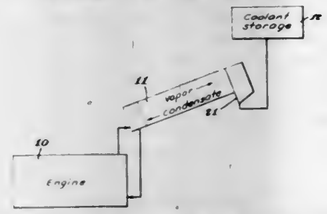


**3,168,080**

## BOILING COOLING SYSTEM

**Michael P. Latterner, Midland, and Thomas F. Rozek, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**Filed Feb. 10, 1964, Ser. No. 343,543**
**1 Claim. (Cl. 123—41.26)**




In a boiling cooling system for an internal combustion engine, said system comprising a condenser connected to a cooling jacket integral with said internal combustion engine and containing coolant, the improvement which comprises in combination a coolant storage tank communicating with said condenser by means of a coolant inlet, said coolant storage tank being provided with a bag vent, a tank vent, a collapsible bag within said tank, said collapsible bag connected to said bag vent, said bag vent providing communication between the atmosphere and the interior of said collapsible bag, said tank vent having an open-shut valve attached thereto, said tank vent providing communication between the interior of said coolant storage tank and the atmosphere, said valve having actuation means whereby said valve is opened when the coolant level falls below a predetermined minimum and closes when the coolant level reaches a predetermined maximum.

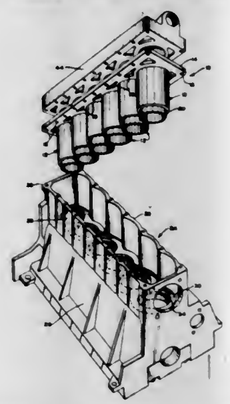
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**3,168,081**

## ENGINE BLOCK ASSEMBLY

**Alfred F. Bauer, Toledo, Ohio, assignor to National Lead Company, New York, N.Y., a corporation of New Jersey**

**Continuation of application Ser. No. 102,187, Apr. 11, 1961. This application Mar. 4, 1963, Ser. No. 262,780**
**2 Claims. (Cl. 123—41.74)**

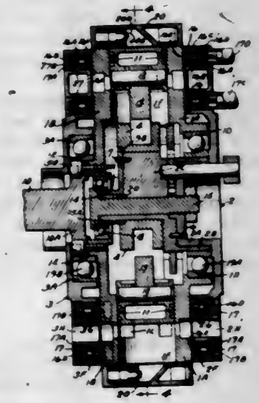


1. A die-cast light metal alloy engine block comprising: a lower die-cast section having an internal chamber with an open upper end and a bottom wall having an opening therein, said section having sidewalls which extend upwardly around said opening in said bottom wall and which terminate in a sealing surface surrounding said upper end of said internal chamber, a ferrous cylinder liner, an intermediate die-cast section of a light metal alloy having a deck plate with surfaces for effecting a seal with said upper sealing surface of said sidewalls and a depending

generally cylindrical portion cast around and mechanically bonded to said cylinder liner, said depending generally cylindrical die-cast portion extending into said opening in said bottom of said lower die-cast section when said deck plate effects a seal with said sealing surface surrounding said upper end of said internal chamber, and means effecting a seal between said generally cylindrical die-cast portion in said bottom wall when said deck plate effects a seal with said sealing surface, whereby efficient heat transfer from the inside of said ferrous liner is effected to a liquid cooling chamber which surrounds the liner and all portions of which chamber are of a non-rusting die-cast metal of high heat conductivity.

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**3,168,082**
**ROTARY ENGINES**
**Joseph E. De Villiers, 420 Le Boeuf St., New Orleans 14, La.**
**Filed Sept. 29, 1960, Ser. No. 59,369**
**21 Claims. (Cl. 123—44)**

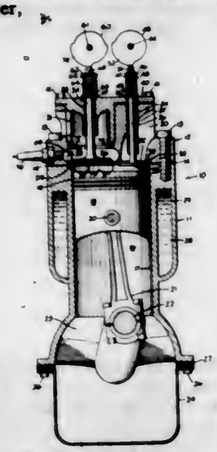


1. An engine or pump assembly comprising a stationary frame including opposed plates; a rotary block disposed for rotation about its axis between said plates, said block having a central annular cavity defining the crankcase of the assembly and having at least one cylinder bore in the block disposed radially of said axis; bearing means for supporting the block on the plates for rotation about said axis; a main shaft coupled with said block; an eccentric crankpin in said crankcase and supported by said plates offset from said axis of the block; a piston in each cylinder bore; a connecting-rod journal rotatably supported on said crankpin; a connecting rod connected between each piston and said journal; and mechanical coupling means connected between said journal and said rotary cylinder block for causing rotation of the journal about the eccentric crankpin in synchronism with the rotation of the block about its axis, each connecting rod being connected with said journal at a position which, with reference to a line passing through said axis and extending axially through the corresponding cylinder, is always displaced from said line in the direction of rotation of the block but closely approaches said line in one angular position of the journal.

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**3,168,083**
**INTERNAL COMBUSTION ENGINE EXHAUST VALVE ASSEMBLY**
**Lucian F. Buchanan, R.F.D. 1, Box 395, Metropolis, Ill.**
**Filed Oct. 22, 1962, Ser. No. 231,941**
**15 Claims. (Cl. 123—84)**

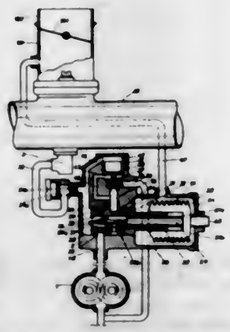
1. An internal combustion engine including
an engine block having a cylinder with a piston slidably carried therein,
an engine head having an intake passageway and an exhaust passageway formed therein,
said exhaust passageway having an upper portion and a lower portion forming a combustion chamber,
said combustion chamber having a top port opening into said upper portion of said exhaust passageway and a bottom port opening into said cylinder,



intake and exhaust valves slidably carried in said engine head,
said exhaust valve having a valve head residing within said combustion chamber, and said valve head being movable from said top port whereby said upper portion of said exhaust passageway is isolated from said combustion chamber to said bottom port whereby said combustion chamber is isolated from said cylinder.

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**3,168,084**
**TACHOMETRIC CARBURETTORS**
**Jocelyn Elie Louis Simonet, Paris, France, assignor to Societe du Carburateur Zenith, Lyon, Rhone, France, a company of France**
**Filed Feb. 20, 1963, Ser. No. 260,021**
**Claims priority, application France, Feb. 21, 1962, 888,735**
**12 Claims. (Cl. 123—119)**

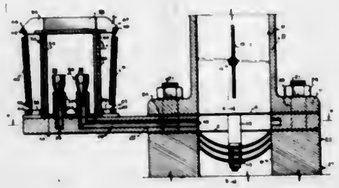


1. A tachometric carburettor for internal combustion engines comprising in combination means for dividing a flow of fuel delivered by a volumetric pump driven at a speed proportional to that of the engine into two streams through two calibrated passage means, duct means for supplying one of said streams to the engine, duct means for returning the other stream to the suction side of the pump, means for equalising the pressures of the fuel downstream of said calibrated passage means, control means for modifying the relative useful cross-sections of said calibrated passage means, and means responsive to both the inlet pressure of the engine and the engine speed for actuating said control means.



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**3,168,085**
**CARBURETION OPTIMIZATION STRUCTURE**
**William M. Stelter, 1772 East 70th South, Salt Lake City 17, Utah**
**Filed June 26, 1963, Ser. No. 290,830**
**6 Claims. (Cl. 123—141)**

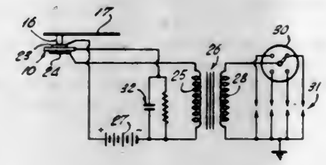


1. An auxiliary air injection structure for operative disposition between the carburetor and intake manifold of an internal combustion engine, said carburetor being provided with actuatable means for selectively, progressively opening and closing said carburetor, and said auxiliary air injection structure including, in combination: a passage plate constructed for disposition between said carburetor and said intake manifold, said passage plate including a transverse aperture constructed for communicative disposition between said carburetor and said intake manifold and at least one passageway disposed at least in part longitudinally therethrough and transversely intersecting said aperture, air accessible valve means for selectively and progressively opening and closing said passageway, means for progressively opening and closing said valve means, and means constructed for coupling said actuatable means with said valve opening and closing means to permit said valve means to allow air to be conducted through said passageway of said passage plate in accordance with the operating condition of said carburetor; and wherein said valve means includes valve gate means, valve slide plate mounting said valve gate means, and a cam follower affixed to said slide plate, and wherein said means for progressively opening and closing said valve means also includes a cam ramp rectilinearly translationally coupled by said coupling means to said actuating means and engaging said cam follower for progressively moving in translational displacements said slide plate and, hence, said valve gate means in accordance with the operating condition of said carburetor.

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**3,168,086**
**IGNITION SYSTEM**
**Albert M. Skellett, Madison, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware**
**Filed May 7, 1963, Ser. No. 278,665**
**10 Claims. (Cl. 123—148)**

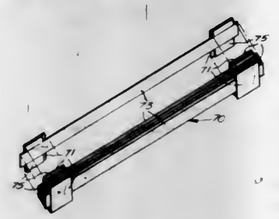
1. An ignition system for internal combustion engines comprising; a pressure-sensitive transistor including base, collector, and emitter electrodes; a stylus mounted in contact with one of said transistor electrodes; a rotatable cam coupled to a portion of said engine and adapted to exert pressure on the stylus each time a voltage pulse is to be transmitted to an engine spark plug; and a step-up transformer coupled between said transistor and



the spark plugs, the primary winding of said transformer coupled to said transistor electrodes for receiving pulsating current pulses therefrom.

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**3,168,087**
**WAFERING MACHINE**
**Robert W. Anderson, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts**
**Filed May 14, 1962, Ser. No. 194,356**
**14 Claims. (Cl. 125—16)**

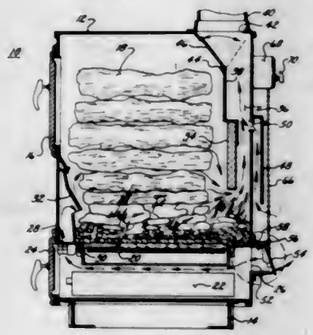


6. A blade head assembly for a multiple blade wafering machine comprising
a generally rectangular supporting frame,
a first blade package engaging means disposed transversely of one end of said supporting frame including a first pair of opposed elongated releasable jaws and a first pair of opposed releasable clamp members disposed adjacent the opposite ends of said first pair of jaws,
an adjustable supporting element disposed adjacent the other end of said supporting frame,
a second blade package engaging means disposed transversely of said supporting frame and supported by said supporting element including a second pair of opposed elongated releasable jaws and a second pair of opposed releasable clamp members,
an elongated multiple blade package engaged adjacent its opposite ends by said first pair of jaws and by said second pair of jaws respectively and clamped transversely adjacent its opposite ends by said first pair of clamping members and by said second pair of clamping members, respectively,
said blade package including a plurality of flat thin relatively wide spacer elements arrayed in first and second spaced parallel series, and
a multiplicity of relatively narrow elongated blades of thin flat strip material,
each with one end disposed between and bonded to adjacent spacer elements of the first series and the other end disposed between and bonded to adjacent spacer elements of the second series with the respective spacer elements projecting beyond both edges of the adjacent blades for engagement by said jaws, and
adjustable coupling means interconnecting said supporting frame and said supporting element and operable to displace said supporting element longitudinally relative to said supporting frame to tension the blades of said elongated multiple blade package.

### 3,168,088
### THERMOSTATICALLY CONTROLLED HEATING APPARATUS

Perry S. Martin, Harrisonburg, and Donald H. Gordon, Waynesboro, Va., assignors to Virginia Metalcrafters, Inc., Waynesboro, Va., a corporation of Virginia

Filed Feb. 28, 1962, Ser. No. 176,321
7 Claims. (Cl. 126—77)

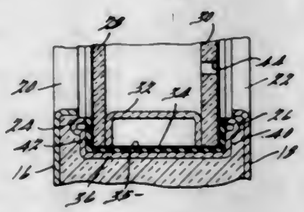


1. Heating apparatus comprising a combustion chamber, inlet means in communication with said chamber for introducing air therein, a damper operatively associated with said inlet means and movable to open and close said inlet means, temperature responsive means for moving said damper in response to the temperature in said chamber, and means operatively associated with said damper for causing said damper to snap to a closed position when said damper reaches a predetermined position.

### 3,168,089
### OVEN DOOR WINDOW UNIT

Robert B. Larkin, Farmington, Mich., assignor to Mills Products, Inc., Walled Lake, Mich., a corporation of Michigan

Filed Sept. 24, 1963, Ser. No. 311,081
6 Claims. (Cl. 126—200)



1. A window unit for an oven door comprising a pair of spaced tempered glass panels, a metal spacer disposed between said panels at the edges thereof, the peripheral edges of said panels being bound with sealing tape whereby said panels are secured together as a unit with said spacer therebetween, a rigid mounting frame extending around the periphery of said taped panels and in which said unit is clamped, said tape comprising a metal foil, a silicone adhesive sealing said tape to the peripheral edges of said panels, said unit being provided with a breather opening from one side thereof into the space between said glass panels.

### 3,168,090
### SELF-CONTAINED WELDING TORCH

Donald F. Billhardt, Redlands, Calif., assignor, by mesne assignments, to Lockheed Aircraft Corporation, Burbank, Calif., a corporation of California

Filed May 2, 1960, Ser. No. 26,072
4 Claims. (Cl. 126—263)

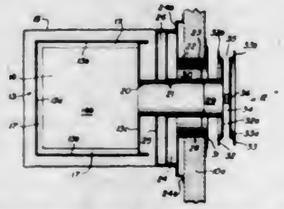


1. A self-contained welding torch consisting of a thin-walled tube of combustible plastic material loaded with a high energy, gas producing pyrotechnic material of the type used as solid rocket propellant, said tube material burning at a slower rate than said pyrotechnic material, whereby a short length of unburned tube projects beyond the burning surface to form a nozzle that directs and forms the flame into a pencil-thin jet.

### 3,168,091
### CONTROLLED DRAFT DEVICE FOR COMBUSTION HEATERS FOR ENCLOSED VEHICULAR STRUCTURES

George W. Jackson, Salt Lake City, Utah, assignor to Utah Hydro Corporation, Salt Lake City, Utah, a corporation of Utah

Filed Apr. 24, 1962, Ser. No. 189,736
1 Claim. (Cl. 126—307)



A dual-draft control device for combustion heaters adapted for use in vehicles, comprising

pipe structure defining an exhaust port and passage;

additional pipe structure surrounding the first pipe structure in spaced, sleeve fashion and defining therewith an air-intake port and passage;

a circular collar fixed to and surrounding the exhaust port, said collar having an inner annular portion which is substantially flat;

a circular disk spaced from said collar and having substantially the same outer circumference, said disk having a circular inner portion which is substantially flat, said inner annular portion of the said collar and said inner portion of said disk having substantially the same outer circumference;

means holding said disk in a plane substantially parallel to the plane of said collar to form a Venturi throat section of substantially constant dimension;

an outwardly-turned, circumferential flange rimming said collar;

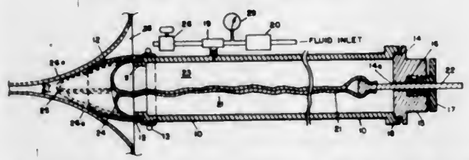


and a similar flange rimming said disk, the distance between said flanges being greater than the distance between said collar and said disk, said flange rimming the collar and the flange rimming the disk being substantially parallel, whereby the inlet to and outlet from the Venturi throat section are of substantially constant dimension.

### 3,168,092
### MEDICAL PROBING INSTRUMENT HAVING FLEXIBLE, EXTRUDABLE TUBING ADAPTED TO BE EXTRAVERTED UNDER PRESSURE INTO A BODY CAVITY

Daniel Silverman, 5969 S. Birmingham, Tulsa, Okla.

Filed June 15, 1961, Ser. No. 117,225
20 Claims. (Cl. 128—1.2)




1. An instrument for removably placing a long flexible thin-walled tubing into an elongated tortuous non-linear tubular cavity of length L and diameter D, comprising,

(*a*) a three dimensional substantially rigid pressure-tight casing of dimensions greater than D, comprising circumferential side walls and two end walls,

(*b*) one wall of said casing adapted to be placed against the mouth of said cavity,

(*c*) an opening in said wall of diameter less than D.

(*d*) a collapsed thin-walled flexible tubing, equal in length to a substantial fraction of length L inside said casing,

(*e*) means fastening in pressure-tight relation one end of said tubing across said opening,

(*f*) the other end of said tubing sealed against pressure,

(*g*) means for introducing fluid into said casing under pressure,

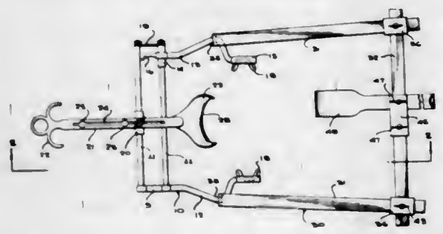
(*h*) means for withdrawing said tubing into said casing, and,

(*i*) means located in said casing for maintaining pressure in said casing, said means including pressure indication means and pressure control means.

### 3,168,093
### ABDOMINAL RETRACTOR DEVICE

William K. Gauthier, 310 Codifer Blvd., Metairie, La.

Filed Dec. 22, 1961, Ser. No. 161,634
18 Claims. (Cl. 128—20)

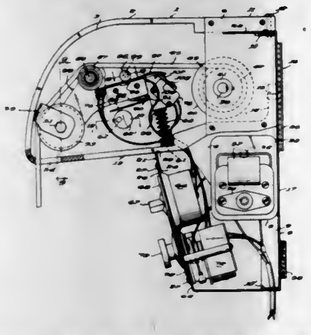


18. A surgical retractor comprising a U-shaped body having a pair of spaced legs connected by a bight member, a pair of hollow sleeves each having a pair of criss-crossing passages therethrough, one end of each leg slidably extending through one of said passages in each sleeve, opposite ends of said bight member slidably extending through the other passage in each of said sleeves, releasable means on each sleeve urging it into locking engagement with one of said legs and said bight member, the other end of each of the legs having means thereat for detachably connecting the said other ends to spaced rigid arms of another retractor, a retractor blade connected to said bight member and extending away from a plane defined by said legs.

### 3,168,094
### TRACTION THERAPY APPARATUS

Robert W. Siltamaki, Burbank, Calif., assignor, by mesne assignments, to Tru-Eze Mfg. Co., Inc., Burbank, Calif., a corporation of California

Filed July 3, 1961, Ser. No. 121,769
17 Claims. (Cl. 128—75)

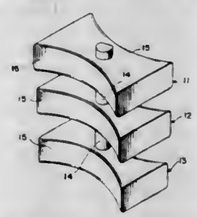


5. In a device for subjecting a patient to repeated applications of traction, a windlass means, a flexible member having one end thereof attached to said windlass means and having its other end provided with means for attachment to the portion of the body of the patient to be subjected to traction, reversible motor means for actuating said windlass means in alternate directions with resultant winding in and unwinding of said flexible member and consequent application and relief of traction on the patient, and control means for said reversible motor means including an electric switch and spring bias operating means engaging said switch including devices engaging said flexible member and tending to yieldingly laterally displace said flexible member whereby in response to imposition of a traction pull on said flexible member of a predetermined magnitude, said flexible member engaging devices will be moved against the spring bias thereon with resultant actuation of said switch to effect reversal of said motor means and consequent unwinding of said windlass means.

### 3,168,095
### DIGITAL SEPARATOR

Richard B. Magee, Altoona, Pa., assignor to Medi-Plastix Co., Inc., Altoona, Pa., a corporation of Pennsylvania

Filed Mar. 20, 1963, Ser. No. 266,662
2 Claims. (Cl. 128—81)

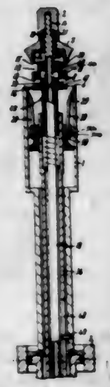


1. A toe separator and the like comprising a plurality of separate parallel separating members in spaced apart relationship, said members having inwardly concave op-

posite sides when viewed from the end of said separator, the transverse width of said members decreasing along the length of said separator, and said separate members being joined at their centers by a longitudinally extending connecting member, whereby air may circulate through the space around and between the separate spaced-apart members when the device is worn.

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**3,168,096**
**SURGICAL RESECTION INSTRUMENT AND ACCESSORY**
**Reindert Brummelkamp, Groenloseweg 1, Winterswijk, Netherlands**
**Filed Dec. 5, 1961, Ser. No. 157,878**
**Claims priority, application Netherlands Dec. 9, 1960**
**5 Claims. (Cl. 128—334)**



1. An instrument to be inserted at least in part in the human body, to be used in the resection therapy for carcinoma recti and other disease-caused abnormalities of the rectum and of the rectosigmoid and for carrying out an anastomosis between rectum and intestine, which comprises, in combination, a main tube; a central shaft traversing and protruding beyond said main tube; a head detachably connected to the top of said central shaft; screw means for connecting and disconnecting said head to and from said shaft; a narrow tube concentrically disposed beyond said central shaft and said main tube and protruding beyond the latter, provided with air suction openings; means for applying a vacuum to effect air suction; a bulge rigidly attached to said head at said head's lower end and resting detachably upon the upper edge of said main tube; screw means to raise said bulge from said upper edge of said main tube thereby baring, and providing access to, said narrow tube; said bulge, in raised position, being capable of insertion in said rectum therein causing constriction, compression and reversion of said rectum to approximately its original position under the influence of said vacuum in said narrow tube, said bulge also serving as a dissecting table; a knife disposed in said bulge and movable through said head, capable of cutting completely through said rectum upon moving in the direction of said head while carrying out a circular motion of a peripbery larger than that of the constricted rectum over said bulge; screw means for actuating said knife and moving it through said head; means for actuating said head on, and for detaching said head plus knife from said central shaft; a plastic ring, to be inserted in said intestine; a tubular part removably connected to said ring; means for attaching said ring plus tubular part to said shaft when said head is disconnected therefrom thus bringing said rectum and said intestine in intimate contact; means for disconnecting said tubular part from said ring after said contact has been made; means for disconnecting said tubular part from said shaft; and means for removal of said ring from the human body after said contact between said intestine and said rectum has become permanent.

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**3,168,097**
**NEEDLE HOLDER HAVING A ROTATING CLAMP FOR SURGICAL SUTURES**
**Enrico Dormia, Milan, Italy, assignor to Porges S.A., Paris, France**
**Filed July 27, 1961, Ser. No. 127,389**
**Claims priority, application Italy, Aug. 2, 1960, 13,851/60; July 12, 1961, 12,742/61**
**8 Claims. (Cl. 128—340)**



1. A needle holder for use with a needle effecting surgical sutures comprising an elongated tubular member, clamp means adapted to hold said needle including a hollow member having a cut-out portion adjacent one end thereof and a rod slidable within said hollow member, the end of said rod facing the cut-out portion of said hollow member and the facing surface of said cut-out portion forming a pair of opposed clamping jaws, and spring means associated with said rod normally holding said clamping jaws apart in the open position thereof, said hollow member being rotatably mounted at one end of said tubular means for rotation about an axis passing through said clamping jaws and perpendicular to the axis of said tubular member,

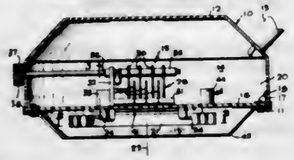
means for selectively clamping said jaws together against the action of said spring means to hold said needle including spindle means axially slidable in said tubular member, a rocker arm on said tubular member engaging at the opposite ends thereof the end of said rod opposite said clamping jaws and said spindle means, said spindle means including a wedge member engaging said rocker arm for applying axial movement of said spindle means to said clamping jaws to close the same, a handle means adapted to be operated by one hand secured to the end of said tubular member opposite said clamp means including at least one pivotal arm for selectively axially moving said spindle means to close said clamping jaws and releasable detent means for locking said pivotal arm in the position thereof corresponding to the clamping position of said clamping jaws, and first return spring means associated with the tubular member and said spindle means for normally holding said spindle means in the position thereof corresponding to said open position of said clamping jaws, and

means for selectively rotating said clamp means including pulley means secured to said clamp means, cable-like means passing around said pulley means, and an actuating sleeve means including a trigger member adapted to be operated by said hand, said actuating sleeve means being slidably mounted on said tubular member and operatively secured to one end of said cable-like means for pulling said cable-like means to rotate said pulley and therewith said clamp means, and second return spring means operatively secured to the other end of said cable-like means and said tubular member for normally keeping said clamp means in a preselected radial position with respect to said axis to effect return of said clamp means to said preselected position upon release of said actuating means.



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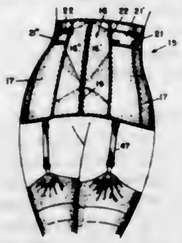
**3,168,098**
**ELECTROTHERAPEUTIC TREATMENT HEAD**
**William Denis Kendall and Frank A. Yarger, Los Angeles, Calif., assignors to Dynapower Systems Corporation, Los Angeles, Calif., a corporation of Delaware**
**Filed July 2, 1962, Ser. No. 206,903**
**2 Claims. (Cl. 128—404)**



1. An improved electrotherapeutic head, comprising a metallic shell having a front opening, means including a dielectric partition received through said front opening and carried by the shell to extend transversely therein and to form therewith separate compartments at the front and rear of said partition, a metallic multiple loop secondary coil extending generally transversely and spaced forwardly of the rear compartment and spiraling about a forwardly extending axis, a high voltage capacitor having exposed plates in the rear compartment, the capacitor and secondary coil having interconnected terminals, a low voltage primary coil extending generally transversely and spaced forwardly of the rear compartment and curving about said axis, the petition being solid and dielectrically shielding both coils from the capacitor, said means forming recesses to receive the coils, the coils having supported connection to said means, the capacitor being mounted at the rear side of the partition and extending within an axial cylinder passing through the primary coil turn, and non-metallic cover for said shell.

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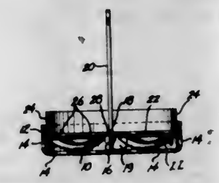
**3,168,099**
**TORSO MOLDING UNDERGARMENTS**
**Patrick J. Morano, Newark, N.J., assignor to Glamorise Foundations, Inc., New York, N.Y., a corporation of New York**
**Filed June 6, 1962, Ser. No. 200,500**
**3 Claims. (Cl. 128—547)**



1. In a torso molding undergarment, the combination of a back section, a pair of side sections extending forwardly therefrom and having a pair of transversely spaced apart front edges, a front panel of non-elastic material having a pair of side edges connected to the front edges of the respective side sections, and a circumferentially tensioned elastic waistband having its ends secured to the respective side edges of said front panel at the connection of said side edges to the front edges of said side sections, said band being superposed on and extending continuously around said side sections and said back section without said front panel being traversed by the band, the securing of the ends of said band to said side edges of said front panel serving to tension the front panel and flatten the abdominal region under the same when the undergarment is worn, the entire length of said band being detached from said side sections and said back section and being freely movable thereover in a circumferential direction.

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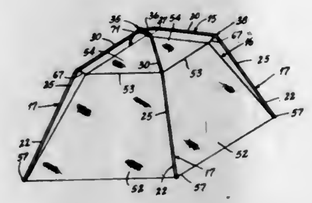
**3,168,100**
**CONTACT LENS DIPPER ASSEMBLY**
**Alvido R. Rich, Portland, Oreg. (1009 Main St., Vancouver, Wash.)**
**Filed Dec. 7, 1962, Ser. No. 246,857**
**8 Claims. (Cl. 134—137)**



1. A dipper assembly for contact lenses comprising a foraminous shallow tray with an upstanding peripheral wall, a separator wall integral within said peripheral wall and dividing said tray into two isolated compartments, each of a size to receive a contact lens, said separator wall being slightly higher than the overall height of a contact lens, a handle post integral with and standing upwardly from said separator wall, and foraminous cover means having an opening slippable over and substantially larger than said handle post, said peripheral wall being slightly higher than said separator wall and said cover when on said tray loosely nesting partly within the said peripheral wall and being supported in slightly spaced relation above contact lenses in the tray by resting solely on said separator wall, and partly standing above said peripheral wall so as to be readily graspable for removal from the tray.

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**3,168,101**
**OUTSIDE FRAME TENT**
**James C. Porter, New Haven, Mo., assignor, by mesne assignments, to Hawthorn Company Division of Kellwood Company, a corporation of Delaware**
**Filed Dec. 16, 1960, Ser. No. 76,280**
**6 Claims. (Cl. 135—1)**

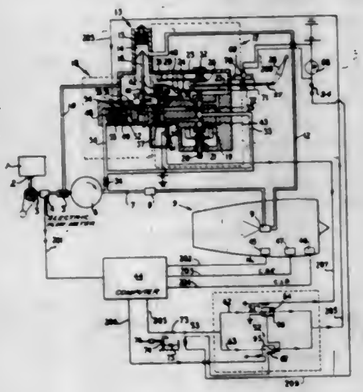


1. An outside frame tent construction, comprising: a self-supporting frame and a collapsible tent suspended therefrom; the tent having walls forming an enclosure with an apex; the frame comprising a plurality of U-shaped frame members, each comprising two elongated rod-like upright legs adapted to engage with the ground at their lower ends at spaced points and a rod-like, elongated frame top connector forming a continuation of the

upright legs and extending across from one to the other to connect them together at their upper ends, whereby each elongated, rod-like frame member may extend from a first point on the ground upwardly, then over and down to the ground at a second point spaced from the first, the U-shaped frame members being disposed at angles to each other with their elongated, rod-like top connectors in crossing relationship, and means securing the frame members together with their top connectors in radiating relationship at predetermined angles to each other and their upright legs projecting outwardly and downwardly for engagement on the ground, the means comprising clamping connecting means joining the top connectors at their crossing, clamping them resistingly against twisting to alter their angular relationship but yieldable to enable their angular relation to change in response to wind forces or irrengular shaping of the tent, the frame uprights being of substantially rigid but slightly yieldable material; the frame being of a size to embrace the tent and having its top above the top of the tent; and means to hang the tent from the frame and to dispose the lower part of the tent on the ground.

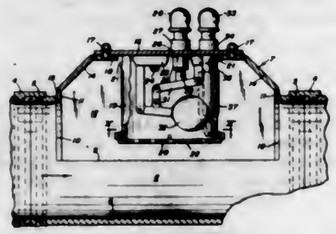
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**3,168,102**
**FUEL SUPPLY SYSTEMS**
**Stanley R. Tyler, Cheltenham, Edgar G. Hunt, St. Marks, Cheltenham, and William J. Bootle, Cranham, England, assignors to Dowty Fuel Systems Limited, Cheltenham, England**
**Filed Feb. 27, 1962, Ser. No. 175,906**
**Claims priority, application Great Britain, Feb. 28, 1961, 7,345/61**
**4 Claims. (Cl. 137—18)**



1. A fuel supply system for an engine including a pump for supplying fuel to the engine, means for varying the rate of flow of fuel from the pump to the engine, manually-operable means for controlling the fuel-flow varying means, means responsive to engine operating conditions for controlling the fuel-flow varying means to limit the rate of flow of fuel to the engine so as to prevent over-fueling of the engine, safety means operable to render the limiting means inoperative with the manually-operable means remaining operative, means responsive to a satisfactory acceleration of the engine to prevent operation of the safety means, and means responsive to selection of an increased engine speed by the manually-operable means to operate the safety means, after a delay after a selection of increased speed, to render the limiting means inoperative unless such operation of the safety means has been prevented by the acceleration responsive means.

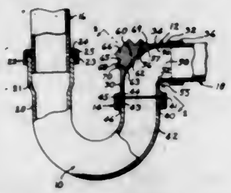
**3,168,103**
**PIPE LINE VENT**
**Theodore M. Kochaver, Duluth, Minn., assignor to United States Steel Corporation, a corporation of New Jersey**
**Filed June 22, 1962, Ser. No. 204,457**
**9 Claims. (Cl. 137—202)**



1. An atmospheric vent for preventing air and vacuum locks at an intermediate point of high elevation in a pipe line for transporting fluids comprising a valve mechanism for venting said pipe line to the atmosphere, a housing for said valve mechanism connected in and forming a part of said line at said high point, and means mounting said valve mechanism in said housing, the cross-sectional area of said housing being larger than the cross-sectional area of said pipe by an amount not substantially greater than the cross-sectional area occupied by said valve mechanism so that fluid travelling through said line flows through all parts of the interior of said housing to prevent its freezing when said housing is subject to sub-freezing temperatures.

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**3,168,104**
**PLUMBING TRAP**
**Richard J. Mathis, 2140 Sinclair St., Pomona, Calif.**
**Filed Nov. 16, 1962, Ser. No. 238,157**
**1 Claim. (Cl. 137—247.51)**



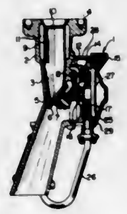
A plumbing trap adapted to be connected between a depending tail piece of a plumbing fixture and a horizontal drain pipe, said plumbing trap including in combination:
(1) a J-shaped trap member having upright legs of different length;
(2) a connection at the top of the longer upright leg adapted to receive said depending tail pipe, there being a union connection at the top of the shorter upright leg;
(3) a tubular elbow member having a depending portion and a horizontal portion joined by a knee portion, said portions defining a smooth interior passageway bounded inwardly by a relatively-small-radius inner curved surface of said knee portion and outwardly by a relatively-large-radius outer curved surface of said knee portion, said depending and horizontal portions providing circular passages having circular interiors of equal diameter, said curved surfaces merging into the circular interiors of said depending and horizontal portions, said curved surfaces being spaced substantially uniformly from each other in the vertical midplane of said knee portion to provide a waterway of substantially uniform width in



such plane, said outer curved surface being interrupted by a threaded clean-out opening through said knee portion of a diameter substantially equal to said circular passages and intersecting said outer curved surface in an edge forming an annulus with all portions thereof lying in a plane transverse to the central axis of said clean-out opening, said outer curved surface extending uninterruptedly to said threaded clean-out opening, the central axis of said clean-out opening being in said vertical midplane at an angle of approximately 45° from the central axes of said circular passages, said knee portion being substantially U-shaped in cross section in a transverse plane including said central axis of said clean-out opening with upper shoulders at the top of such U-shaped cross section merging toward said annulus, said shorter upright leg of said elbow member being connected to said depending portion of said elbow member by said union connection;
(4) an externally threaded clean-out plug removably threaded into said clean-out opening, said plug having a sphero-concave inner face terminating in a planar peripheral edge, all portions of said peripheral edge lying in a plane at right angles to the central axis of said plug, said inner face being of the same curvature in said vertical midplane as said outer curved surface when said peripheral edge is in a flush relation with said annulus, all portions of said sphero-concave surface adjacent said peripheral edge merging smoothly into the curve of said outer curved surface when said peripheral edge is in said flush relation whereby said sphero-concave surface presents with the flush outer curved surface a smooth continuation of said interior passageway free of projections; and
(5) a shouldered stop means sealing the interthread space and limiting the inward threading of said plug into said clean-out opening to a position in which said peripheral edge of said plug is in said flush relation with said annulus of said outer curved surface.

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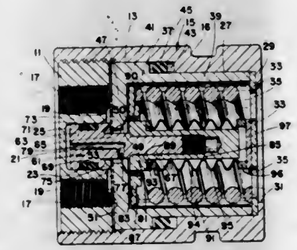
**3,168,105**
**LEVEL CONTROL VALVE**
**Richard L. Cisco, 23811 Fullmar Ave., Torrance, Calif., and Roger H. Blanchard, 729 S. Barrington Ave., Los Angeles, Calif.**
**Filed Sept. 27, 1962, Ser. No. 226,711**
**15 Claims. (Cl. 137—386)**



1. A valve for controlling the level of liquid in a tank comprising a housing having a passage therethrough for flow of liquid; a valve member movable in said housing to open and close said passage; a jet assembly having a nozzle means in communication with said passage upstream of said valve member and a receiver means spaced from said nozzle means upon which a jet of liquid from said nozzle means impinges to transform the velocity head of the jet to different pressure heads according to whether or not the jet is submerged in the liquid in the tank; an actuator means bearing on said valve member and movable in said housing by change in pressure head acting thereon thus to control movement of said valve member to open and close said passage; said actuator means and housing defining a chamber which is in communication with said receiver means and to which chamber such different pressure heads are transmitted to act on said actuator means.

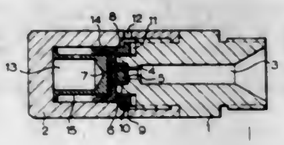
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**3,168,106**
**BALANCED PRESSURE REGULATOR**
**Emil A. Volk, Jr., Whitesboro, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware**
**Filed June 26, 1962, Ser. No. 205,321**
**3 Claims. (Cl. 137—505.18)**



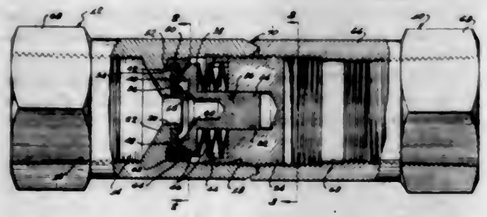
1. A pressure regulating valve for high pressure gas from a container having an outlet bore comprised of:
tubular housing means having an inlet end and an outlet end with axial outlet,
valve seat means having a transversely-extending wall terminating in an axially-centered opening and providing an annular valve seat around said opening,
a transversely-extending inlet member including an axial cavity facing said annular valve seat and having a diameter larger than said axially-centered opening,
said inlet member having circular recess extending radially outward from said cavity and having axial passages connecting to said circular recess whereby an axial-radial flow path to said valve seat opening is provided,
a cylindrical valve element slidably mounted in said cavity and having a pointed circular peripheral edge extending toward the facing surface of said valve seat,
a nylon sheet covering the facing surface of said valve seat at the location opposite said circular pointed edge of said valve element,
said valve element having an axial cylindrical extension radially-inwardly of said circular edge which projects through said valve seat opening to provide an annular flow path,
said valve element having a lateral passage opening into said annular flow path and an axial passage connected to said lateral passage to provide a balancing-bleed flow path from said annular flow path to the space defined by said cavity and said valve element,
control means including a bellows and a spring connected to said valve element extension,
said control means and said housing means providing a flow path from said axial opening to said housing axial outlet,
said spring normally urging said circular edge away from said valve seat,
said bellows when subject to a predetermined downstream pressure being constructed to move said valve element toward said valve seat to provide a predetermined downstream pressure.

3,168,107
RESILIENT CHECK VALVE
Frans H. Cressels, Hoensbroek, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed Oct. 7, 1960, Ser. No. 61,271
Claims priority, application Netherlands, Oct. 9, 1959, 244,203
4 Claims. (Cl. 137—525)



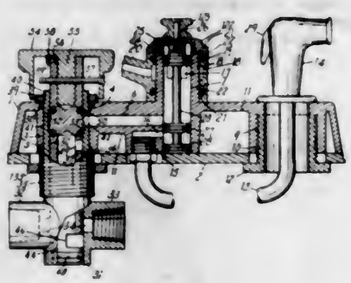
1. A valve apparatus for sealing fluids under high pressure and automatically maintaining constant pressure at the inlet end thereof responsive to the pressure of a control fluid comprising: housing means having fluid chamber means for receiving a control fluid under pressure, said housing means including inlet and outlet fluid passage means adapted for communication with one another via said fluid chamber means over a sealing surface adjacent said inlet and outlet fluid passage means, an elastic sealing element positioned adjacent said sealing surface, said elastic sealing element having a sealing face for sealing engagement with said sealing surface, the sealing face of said elastic sealing element being longitudinally movable toward and away from sealing engagement with said sealing surface, said control fluid in said fluid chamber means providing a closing force on said elastic sealing element on a surface thereof opposite to said sealing face to thereby automatically bias the sealing face of said elastic sealing element against said sealing surface and maintain constant pressure at the inlet end of said valve apparatus by permitting a fluid under pressure to lift said sealing face of said elastic sealing element from said sealing surface when the pressure of fluid at the inlet end of said valve exceeds the pressure of the control fluid in said fluid chamber means, thereby permitting the fluid at the inlet end of said valve to flow from said inlet fluid passage means across said sealing surface to said outlet fluid passage means until the pressure at the inlet end of said valve equals the pressure of the control fluid in said fluid chamber means.

3,168,108
FLUID VALVE
Ernest G. Patrick, South Gate, Calif., assignor to Robbins Aviation, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 11, 1962, Ser. No. 243,785
3 Claims. (Cl. 137—542)



1. A valve comprising:
a valve body having a fluid inlet, a fluid outlet, and a fluid passage therebetween including a bore leading from said inlet, and a downstream passage portion of larger cross section than said bore leading beyond said bore toward said outlet,
an annular seating face on said body around said bore facing toward said downstream portion of said fluid passage,
a seating annulus in said body around said bore positioned adjacent said seating surface,
a valve poppet guided for axial movement toward and from said seating annulus, said poppet embodying an annular head having a front, annular, coaxial seating edge projecting therefrom toward said seating annulus and being sealingly engageable therewith, said poppet head having an annular surface rearward of the plane of said annular seating edge and radially outside thereof, said annular surface having a projected area facing in the same direction as said seating edge,
wall means fixed with said valve body presenting an annular wall surface coaxial with said annular surface on said poppet head and at slight spacing distance from said annular surface on said poppet head when said seating edge is in engagement with said seating annulus, in such arrangement as to afford in such position, in a zone between said annular surfaces on said poppet head and wall means and outside said seating edge, a fluid space of relatively small volume into which fluid is admitted when said seating edge separates slightly from said seating annulus, and
conical spring washer means, of variable spring rate, seated in said valve body for urging said poppet to a position of engagement of its annular seating edge with said seating annulus.

3,168,109
DOMESTIC WATER MIXING AND DIVERTING VALVE ASSEMBLY
Hughlin E. Klingler, 223 Arcade Ave., Elkhart, Ind.
Filed Jan. 29, 1962, Ser. No. 169,551
16 Claims. (Cl. 137—597)

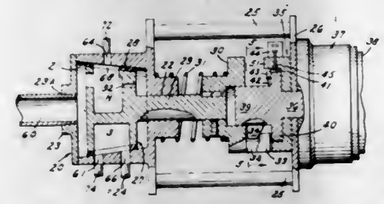


1. A domestic plumbing fixture comprising an elongated base having three spaced bores formed vertically therethrough with an upstanding neck around the middle bore and tapered seats formed around the ends of another of the bores,
said base having a flow passage formed therein between said last two bores and opening between said seats,
a downwardly opening spray connection formed in said base and opening laterally to said middle bore in axially spaced relation to said flow passage,
a nipple threaded in the bottom of the third of said bores and having a flange adapted to clamp against the underside of a sink panel,



a flexible spray tube connected to said spray connection and extending through said nipple and said third bore,
a diverter valve consisting of a spool core reciprocably mounted in said middle bore and having axially spaced collars with O-ring seals spaced to selectively seal said bore on opposite sides of said flow passage and opening to said spray connection or on opposite sides of said opening to said spray connection,
a third collar and O-ring seal on said core located in said neck,
said neck having a delivery port formed therein inwardly of the innermost position of said third seal,
said core having separate flow passages formed therein between said seals to open said passage in said base alternatively to said delivery port and said spray tube,
a faucet spout sleeved around said neck and having an annular flow passage communicating with said delivery port,
a cap on said neck retaining said spout thereon and limiting axial movement of said valve core,
a tubular valve body having a cylindrical central portion closely fitted in said other bore in said base with an outwardly projecting shoulder around the lower end of the central portion,
said central cylindrical portion of said body being of equal length and diameter to said neck on said base,
seals compressed between said tapered seats and said shoulder and a nut threaded on the body above the central portion of the body,
said central portion defining a transfer port registering with said flow passage in said base and spaced axially from the shoulder on said central portion by the same distance as the distance of the delivery opening in the neck from the base of the neck,
a second clamp nut on the body below said central portion adapted to clamp said valve body and base to a sink panel,
supply connections on the lower end of said valve body opening thereinto at oppositely angularly spaced points above the bottom of the body through rectangular supply ports,
a cylindrical second core rotatably and reciprocably mounted in said body and closely fitting therein adjacent said supply ports,
an O-ring seal around the lower end of said second core below said supply ports,
an axial flow passage formed centrally in said second core and opening at its lower end to the surface of the core through a sector shaped passage formed as a cross slot selectively registerable by rotation and axial motion with said supply ports,
said second core forming a lateral passage from the upper end of said axial passage registering with said transfer port in said central portion when said sector shaped passage is in registry with either one of said supply ports,
a pair of O-ring seals on said second core in spaced relation above said lateral passage to lie on opposite sides of said transfer port in the downward position of the second core,
the interior of said body being radically enlarged at said transfer port in said central portion with tapered edges at the ends of the enlargement to form an annular flow passage around the second core,
a projection on the upper end of said valve body forming a limit opening,
and an operating handle secured to said second core by a screw having a projection engageable in said opening to limit axial and angular motion of said handle and said second core.

3,168,110
AUTOMATIC WATER SOFTENER SYSTEM INCLUDING A PRESSURIZED BRINE TANK, CONTROL VALVE, VALVE OPERATING MEANS AND/OR TIMER COMBINATIONS
Earl C. Reynolds, 19130 Woodingham Drive, Detroit, Mich.
Original application Nov. 1, 1956, Ser. No. 619,817, now Patent No. 3,028,964, dated Apr. 10, 1962. Divided and this application Dec. 13, 1961, Ser. No. 163,951
10 Claims. (Cl. 137—624.13)

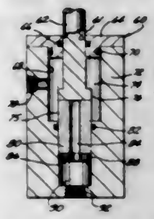


1. A rotary selector valve comprising a housing having a tapered wall expanding endwise outwardly terminating in an outer end defining a chamber and multiple ports communicating with said chamber, a tapered rotary selector valve core expanding endwise outwardly disposed in said chamber having separate inlet and switch chambers and ports adapted to selectively communicate with said housing ports; said core being axially endwise outwardly displaceable out of contact with said housing tapered chamber wall and non-frictionally rotatable relative to said housing; a cover plate on said housing outer end; said cover plate having a port for connection to raw water supply; a driven shaft on said core leading through said housing terminating in a direction opposite to said cover plate, a boss on the outer end of said driven shaft, a spring disposed between said housing and said boss displaceably urging said tapered core endwise inwardly into contact with said housing tapered chamber wall for sealing against said housing tapered wall, and means for moving said shaft axially endwise outwardly toward said cover plate against said spring to displace said core endwise outwardly from contact with said housing tapered wall and to then rotate said core relative to said housing; said means comprising a driven lug on said boss, said driven lug, boss, driven shaft and valve core being interconnected to move axially and angularly together; posts mounted on and extending from said housing, a support plate fixed on said posts; said support plate having an aperture; a drive head rotatably mounted on said support plate, a rise cam on said drive head coacting with said driven lug to move same axially when said rise cam is moved angularly; a step on said rise cam for contacting said lug to move said lug angularly, a drive shaft extending through the aperture of said support plate connected to said drive head, a motor, and a gear train driven by said motor connected to said drive shaft and connected through said drive shaft to said drive head to rotate said drive head angularly, and a drive dog on said drive head; said drive dog engaging said driven lug after said driven lug is moved axially into radial alignment with said drive dog by said rise cam.

3,168,111
THROTTLE VALVE
William A. Strauss, 712 Marburn Drive, Columbus, Ohio
Filed Dec. 22, 1961, Ser. No. 161,715
8 Claims. (Cl. 137—625.3)

1. A metering valve comprising, in combination, housing means forming a chamber including an inner wall surface, an inlet port and an outlet port; actuator means moveably mounted in said housing and including an actuator wall surface; a porous element forming passage means connecting said two ports, said porous element and one

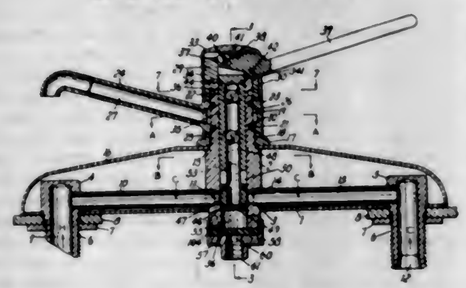
of said wall surfaces being in relative slideable engagement with one another; a first shut-off valve portion on one of said means; a second shut-off valve portion on the other of said means, one of said valve portions being moveable through a flow metering range and into sealed en-



gagement with the other of said valve portions by movement of said actuator; and an impervious washer in sealing engagement with an end of said porous element and including a bore connecting said porous element with one of said ports, said porous element including an outer side surface communicating with the other of said ports.

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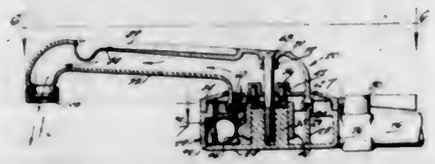
**3,168,112**
**TEMPERATURE MIXING AND DIVERTING VALVE FOR DOMESTIC PLUMBING FIXTURES**
**Hughlin E. Klingler, 223 Arcade Ave., Elkhart, Ind.**
**Filed Jan. 23, 1964, Ser. No. 339,641**
**20 Claims. (Cl. 137—625.17)**



18. A mixing and diverting valve comprising,
a tubular body having a cylindrical bore therethrough,
an external shoulder on said body with a thread and nut adjacent thereto for clamping the body intermediate of its ends to a surrounding plate,
hot and cold supply connections on said body opening to said bore through spaced inlet ports,
spaced first and second outlet ports formed through the sides of said body to said bore,
means on said body for connecting outlet conduits to said outlet ports,
a core rotatably and slidably mounted in said bore and having an internal bore formed therein,
means closing the ends of said bore in said core,
spaced flow openings formed through said core,
means formed in said core forming openings positioned to register variably with said inlet ports when said flow openings are in registry with said outlet ports,
annular seals positioned to seal between the outside of said core and the bore in said body on opposite sides of said inlet ports in the off position of said core,
a pair of annular seals positioned to seal between said core and the surface of said bore in said body at both ends of said core,
a bearing block axially fixedly connected to the one end of said body and having a motion limiting connection with said core,
said bearing block having an opening receiving said one end of said core,
and an operating handle connected to said core through said opening in said bearing block in rotary and axial driving relation to said core,
said core having a first closure portion associated with said opening forming therein moveable with the core into closing relation to either of said inlet ports through a substantial range of motion of said core,
said core having other closure portions opposite said flow openings therein moveable into selective closing relation with said outlet ports through substantial range of motion of the core and during part of the port closing motion of said first closure portion with each of said inlet ports.

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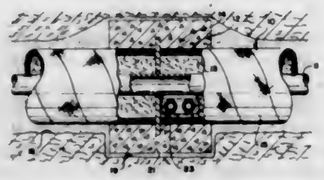
**3,168,113**
**MIXING VALVE**
**Otis S. McJohnson, 91 Drew Ave., Houston 6, Tex.**
**Filed Dec. 21, 1962, Ser. No. 246,520**
**5 Claims. (Cl. 137—636.1)**



2. A valve comprising a horizontally disposed body having a bottom, an outer circular wall rising from the perimeter of said bottom, an inner circular wall rising from said bottom concentrically of and spaced from said outer wall, an annular top wall extending between the inner wall and outer wall in spaced relation to the bottom, a post arranged concentrically of and spaced from said inner wall and rising from said bottom, and inverted cup shaped element slidably and rotably mounted on said post, a cam disposed exteriorly of and carried by the wall of said element, an elongated spout member having an inlet at one end and an outlet at the other end, said member being positioned with the inlet rotatably mounted on the portion of said inner wall adjacent the upper end thereof, means connecting said element to said member for rotation therewith, there being a pair of ports in said inner wall, said ports being in spaced relation, an openable and closable cam-operable valve in each of said ports each being in the path of movement of said cam, and conduit means having one end connected in communication with the space between said inner and outer walls.

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**3,168,114**
**INSULATED PIPE ANCHOR**
**Joseph L. Martin, Wadsworth, Ohio, assignor to Ric-Wil Incorporated, Barberton, Ohio, a corporation of Ohio**
**Filed Apr. 8, 1963, Ser. No. 271,411**
**6 Claims. (Cl. 138—105)**

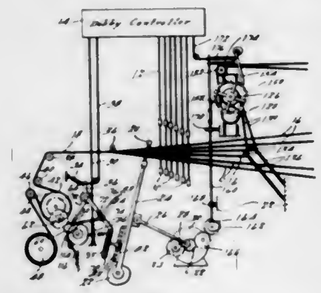


1. In a conduit system including an outer casing in spaced relation around an inner fluid conduit, an improved conduit anchor assembly including a support, the anchor assembly being for locking a portion of the fluid conduit against axial movement by fixing such fluid conduit portion to said support, said conduit anchor assembly comprising:
(*a*) a first elongated narrow tie member fixed to the fluid conduit;
(*b*) a second elongated narrow time member fixed to the support;
(*c*) said tie members extending longitudinally relative to the longitudinal axis of said fluid conduit;
(*d*) said tie members including portions in overlapping relation with each other; and,
(*e*) removable fastener means disposed transversely of the pipe and clamping said overlapping portions together.



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**3,168,115**
**WARP CONTROL MECHANISM FOR LOOMS**
**Walter A. Rheaume, Huntington Park, Calif., assignor to Raymond Development Industries, Inc., Huntington Park, Calif., a corporation of Delaware**
**Filed Sept. 20, 1962, Ser. No. 225,056**
**4 Claims. (Cl. 139—24)**

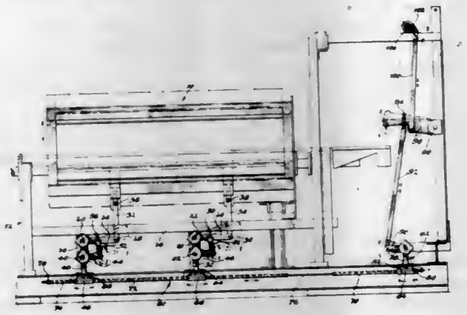


1. A warp control mechanism for a loom adapted to weave a multi-ply fabric including a first ply and a second ply having a greater flattened length than the first ply, comprising: a warp take-up roll adapted to engage woven fabric as it comes from the loom; first means normally drivingly connected to said roll for rotating it at predetermined intervals in a fabric take-up direction and holding it against the normal tension in the fabric urging it in the opposite direction; means for disconnecting said first means from said roll at predetermined intervals to allow it to be rotated in the opposite direction by the tension in the fabric; stop means for limiting the return movement of said roll; a pair of mating warp feed rolls rotatably mounted upon the loom between the heddles and warp source thereof and adapted to have the second ply warp ends frictionally engaged therebetween; means for preventing rotation of said rolls in a direction opposite to the direction of positive warp feed into the loom; and second drive means adapted to drivingly engage said rolls at predetermined intervals to positively feed the second ply warp ends passing between said rolls into the loom.

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**3,168,116**
**HARNESS MECHANISM FOR LOOMS**
**William R. Krenz, Buffalo, N.Y., assignor to Buffalo Weaving and Belting Co., Buffalo, N.Y.**
**Filed Mar. 25, 1963, Ser. No. 267,559**
**4 Claims. (Cl. 139—57)**

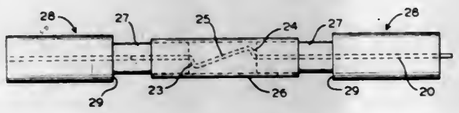
1. In a loom having a loom frame, a heddle frame adapted for vertical reciprocation, and a power input shaft,
a pair of generally horizontal levers, each pivotally mounted at one end thereof to said loom frame below said heddle frame, and each connected at its opposite end to said heddle frame,
a pair of bell cranks, each pivotally mounted to said loom frame below a respective one of said levers and each having a generally horizontal arm and a depending arm,



the horizontal arm of each bell crank being connected to a respective lever at a point on the latter nearer its pivotal connection to the loom frame than is its connection to the heddle frame,
a single horizontal link disposed below said heddle frame and connected to the depending arms of said bell cranks for imparting oscillatory motion thereto, and means connecting said power input shaft to said link for reciprocating said link.

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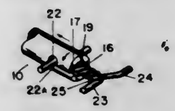
**3,168,117**
**METHOD OF MAKING TERMINAL LEAD**
**Earl J. Burke, Stamford, Vt., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts**
**Filed Apr. 14, 1961, Ser. No. 103,108**
**4 Claims. (Cl. 140—102.5)**



3. A method of forming a circular loop intermediate to aligned portions of an electrical component lead-wire, said method comprising predisposing a portion of a lead-wire intermediate the ends thereof to take a circular set, and then axially compressing said predisposed portion while radially restraining the same.

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**3,168,118**
**WIRE TWISTING DEVICE**
**James O. Holman, Huntington, W. Va., assignor to David R. Holman, Triangle, Va.**
**Filed Feb. 21, 1963, Ser. No. 260,161**
**10 Claims. (Cl. 140—118)**



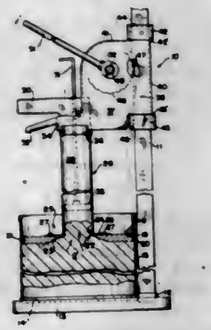
1. A tool for twisting together, crossed wires embracing an article, comprising a shaft-like member, a diametrical slot in the head of said shaft-like member, inlets bored on each side of said diametrical slot and concentric with said shaft-like member so as to receive a pair of crossed wires, and a pair of inclined circular bores in the rear of said head.

3,168,119
**DEVICE FOR TENSIONING BUNDLING STRAPS**
Daniel P. Schwester, East Orange, and Francis A. O'Loughlin, Scotch Plains, N.J., assignors to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed June 12, 1962, Ser. No. 202,013
7 Claims. (Cl. 140—123.6)



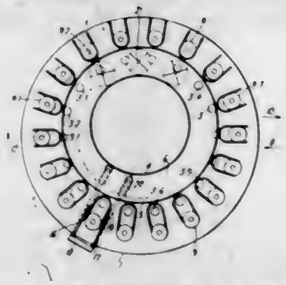
1. A hand tool for tensioning and subsequently cutting a plastic strap when looped about a plurality of bunched articles comprising a pair of jaw members connected for movement toward and away from each other in response to movement of a pair of integral, spring influenced handle members, said jaw members being formed at an acute angle to the longitudinal center line of said tool and to one side of said center line, angular means provided on the nose-end of each of said jaw members disposed normal thereto in opposed relation adapted respectively for supporting and guiding an end portion of a plastic strap between said jaw members and for severing the end portion of said strap upon movement of said angular means to cut-off position upon movement of said jaw members toward each other, and means pivotally mounted on one of said jaw members including a detent normally engaging the other of said jaw members for limiting movement of said jaw members toward each other short of advancing said angular means to cut-off position, said last named means including a manually operable extension for releasing said detent to permit movement of said jaw members to cut-off position.

3,168,120
**LOADING APPARATUS FOR CAULKING GUN**
Frank John Cypser, 217 Cliff St., Cliffside, N.J.
Filed Aug. 4, 1961, Ser. No. 129,362
4 Claims. (Cl. 141—27)



1. A caulking gun loading apparatus comprising a frame, means connected to said frame for supporting a receptacle containing caulking compound, means connected to said frame for holding a caulking gun with the open ended barrel thereof toward said receptacle, piston means slidable in said receptacle having aperture means generally at the center thereof for permitting the passage of compound therethrough upon movement of the piston means into said container, means on said piston adjacent to said aperture means for permitting engagement between the piston and an end portion of the barrel of the gun and passage of the compound into the gun, the holding means for said gun including guide means slidably engaging the frame for guiding movement of the gun and piston along the longitudinal axis thereof and along the longitudinal axis of the container, and mechanically operated mechanical advantage means for moving said receptacle and caulking gun relatively toward each other to force the piston and gun into the receptacle, whereby compound is moved from the receptacle to load the gun.

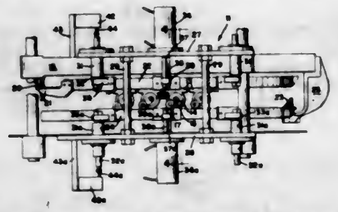
3,168,121
**APPARATUS FOR DISPENSING DOSES OF PULVERULENT MATERIAL**
Max Barthelemy, Deuil, France, assignor to Societe Parisienne d'Expansion Chimique S.P.E.C.I.A., Paris, France, a French body corporate
Filed Jan. 22, 1962, Ser. No. 167,742
Claims priority, application France Jan. 25, 1961
9 Claims. (Cl. 141—141)



1. Apparatus for dispensing doses of a pulverulent material, such apparatus comprising a disc having a horizontal upper surface and also having therein a plurality of dosing compartments opening at the said upper surface, means for rotating the said disc about a vertical axis, the compartments being arranged in a circular row about said axis, a plurality of pistons, one arranged slidably in each of the said compartments, means for moving each piston between upper and lower positions in the associated compartment, the piston in its upper position not projecting above the said upper surface of the disc, two concentric rings mounted fixedly closely above the upper surface of the disc eccentrically of said disc axis and defining between them an annular open bottomed magazine for the pulverulent material, the position of said rings being such that, as the said disc rotates, each compartment moves along a circular path which for part of its length extends directly below the said magazine and for the remainder of its length extends outside the said magazine, and means for moving the said pistons coordinated with the rotary movement of the disc so that, for each compartment, the piston therein moves to its lower position when the compartment is directly below the said magazine, whereby material in the magazine enters the compartment above said piston, and moves to its upper position when the compartment is outside of said magazine, whereby to discharge material in the compartment onto the upper surface of the disc.

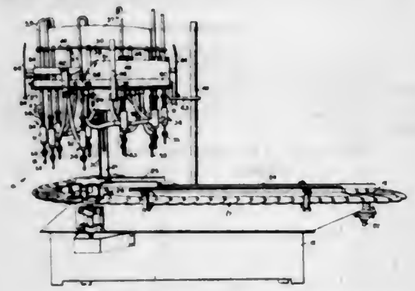
3,168,122
**FILLER**
Ralph C. Cross, Rochester, N.Y., assignor to Gerber Products Company, Fremont, Mich., a corporation of Michigan
Filed Jan. 3, 1962, Ser. No. 164,082
12 Claims. (Cl. 141—147)

1. In a filling machine wherein is provided a rotating turret having a plurality of valves carried thereby, a cam follower for each said valve and means for opening and closing said valve responsive to movement of said cam follower, the improvement which comprises, an upper valve actuator rail, first mounting means mounting said upper valve actuator rail parallel to a portion of the path of movement of said cam followers, an upper cam cooperable with each said cam follower to move said cam follower in a first direction to operate a valve, a lower valve actuator rail, second mounting means mounting said lower valve actuator rail parallel to said portion



of the path of movement of said cam followers, a lower cam cooperable with each said cam follower to move said cam follower in a second direction opposite said first direction to operate a valve, and means for moving said upper valve actuator rail toward said lower valve actuator rail to move all cam followers in said portion of the path of movement in said first direction.

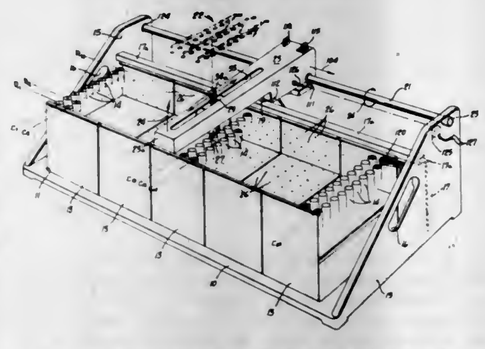
3,168,123
**AUTOMATIC MACHINES FOR FILLING BOTTLES, CANS AND THE LIKE**
Ernest Pellerino, 518 E. 6th St., New York, N.Y.; Arthur Martorelli, 1035 Crawford Ave., Brooklyn, N.Y.; and Harold Blank, 27—23 167th St., Flushing, N.Y.
Filed Jan. 24, 1962, Ser. No. 168,334
7 Claims. (Cl. 141—147)



1. In a machine for filling bottles, cans and similar containers, a frame, a vertical shaft rotatably mounted on the frame, a cam offering a ring path for cam followers, positioned about said shaft, means holding the cam so that said ring path is constantly concentric with said shaft, a member fixed on said shaft and releasable for sliding movement therealong; said cam being supported by said member to move with it along said shaft, a vertical post fixed to the frame, an arm extending from said cam, slidably fitted on said post for movement therealong, at least one vertical elongated element slidably mounted through said member, a valve-controlled discharge nozzle adapted to enter the container to be filled, carried on said sliding element, a cam follower carried at a fixed position on said sliding element; said cam follower being in constant contact with said cam ring path; said cam path being at a prescribed height along a first predetermined portion of a circle and at a lower height along a second predetermined portion of such circle; said circle portions being spaced; said cam path along the remaining portions of said circle, being slanted from said first circle portion to said second circle portion; said slanted cam path portions respectively connecting the first and second circle portions of said ring path whereby such path is endless and conveyor means below the discharge nozzle for transporting a container along a predetermined portion of the path of said discharge nozzle around said shaft.



3,168,124
**FRACTION COLLECTOR**
Andrew Lenkey, Menlo Park, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Nov. 13, 1961, Ser. No. 151,833
11 Claims. (Cl. 141—284)

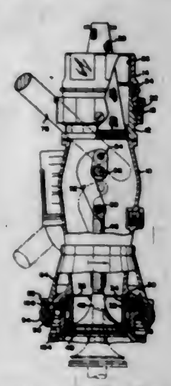


1. A fraction collector for delivering fluid material into containers arranged in a two-dimensional array of columns and rows, said fraction collector comprising a traveling support member arranged to move in the direction of said rows, a fluid material dispensing means arranged to move along said support member in the direction of said columns means serving to automatically step said dispensing means in a first direction along said columns by predetermined increments from one container to the next, motive means serving to drive said dispensing means in a second direction opposite to said first direction after said material has been delivered to the last container in the column temporally associated with said dispensing means, the driving in said second direction continuing until the first row of containers has been reached, means for subsequently automatically resuming the stepping of said dispensing means in said first direction, and means coupled to said support member to advance said support member in the direction of said rows and into alignment with the next said column prior to resuming said stepping movement.

3,168,125
**LEVER OPERATED NOZZLE**
Lester Perry Rosell, Dayton, Ohio, assignor to Buckeye Iron & Brass Works, Dayton, Ohio, a corporation of Ohio
Filed Oct. 3, 1962, Ser. No. 228,155
6 Claims. (Cl. 141—346)

1. In a lever operated nozzle assembly; a body having a flow passage therethrough from end to end, means at one end of the body for swivelly connecting the body to a supply conduit, a valve member closing the flow passage at the other end of the body and movable outwardly from the body to open said passage, a lever pivotally mounted on the outside of said body, a shaft connected to the lever and rotatable in the body and connected to the valve member for moving the valve member between open and closed positions, coupling means at the valve member end of the body for coupling it to the filling fitting of a receiver, a sleeve member axially slidable in said other end of the body between the valve member and the body, and sealed about its periphery to the body, means at the valve member end of the sleeve member for sealing engagement thereof by said valve member, and resilient

means between the other end of the sleeve member and the valve body to maintain pressure engagement of the sleeve with the valve member when the valve member is closed, said means for sealing engagement with the valve member comprising a resilient annular ring in the



end of the sleeve member, said valve member having a radial flange engageable in the region of its periphery with said resilient ring and also engageable with the end of said sleeve member, said resilient ring also being engageable with said fitting when the body is coupled thereto and said valve member is opened.

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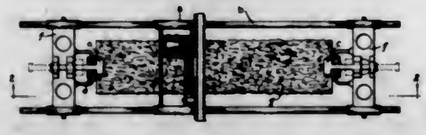
**3,168,126**
**SAW AND MITER GUIDE**
**Leo J. Konopka, 72 Rockwood Road, Florham Park, N.J.**
**Filed May 14, 1963, Ser. No. 280,258**
**6 Claims. (Cl. 143—6)**



1. A portable saw and mitre guide comprising:
a rectangular work piece-supporting lower table having side, front and rear edges;
a rectangular upper table to support a portable power driven rotary saw including a base having an underneath front-to-rear straight guide groove, said upper table being arranged with its side edges parallel to the corresponding side edges of the lower table;
a track member extending along the top face of the upper table parallel to the side edges thereof for guiding engagement with the saw base guide groove;
spacing means to support the upper table in parallel spaced relation above the lower table and thereby provide a transverse through work piece-passage therebetween;
work piece angle-positioning guide stops disposed between the upper and lower tables for backing abutment against each work piece inserted into the through work piece passage;
at least one side edge portion of the lower table having a straight longitudinal groove in its upper face;
fore-and-aft adjustable supplementary work piece angle-positioning guide stop means including a C-shaped clamp body embracing the grooved edge portion of the lower table and having a stationary lower jaw underlying said edge portion;
a vertically adjustable clamping screw in screw-threaded engagement with the upper portion of said clamp body;
a movable jaw swiveled on the lower end of said clamping screw and being of disk-shape having a cylindrical outer peripheral stop face;
and a diametrical spline provided on the underneath face of said movable jaw for longitudinal sliding engagement with the groove of said lower table.

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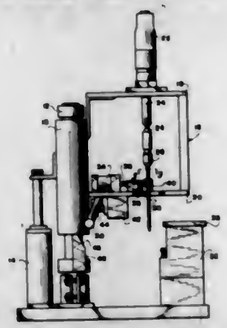
**3,168,127**
**SUPPORTING DEVICE FOR HAND CARRIABLE SAWMILL HAVING A RECTANGULAR GUIDE RAIL CARRIAGE MOUNTABLE UPON THE LOG**
**Charles E. McManama, Potlatch, Idaho**
**Filed Dec. 21, 1962, Ser. No. 246,551**
**3 Claims. (Cl. 143—19)**



1. In a portable sawmill having a rectangular frame adapted to surround the log, a pair of laterally spaced side rails, cross members connecting said rails adjacent the opposite ends thereof respectively, a saw slidably mounted on said side rails for cutting the log, a setting device mounted on each of said cross members, for engaging the opposite ends of the log, guide means mounted on the center of each of said cross members, an interim supporting means comprising a pair of elongate structures each slidably mounted in one of said guide means and extendable toward the other to overlie the log and temporarily support said sawmill on the log, said elongate structures being retractable to a position so that the sawmill may be lowered on the log for the cutting operation.

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**3,168,128**
**FASTENER DRIVING APPARATUS**
**John M. Steadle, Jr., Waverly, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Mar. 19, 1962, Ser. No. 180,716**
**1 Claim. (Cl. 144—32)**



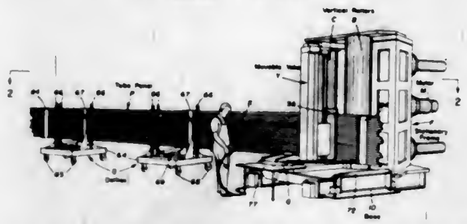
In a fastener driving apparatus comprising a guide support means, a first motor mounted for longitudinal movement relative to said guide support means and having a rotary spindle extending from said motor, a fastener engaging implement having one end adapted to engage fasteners, a universal-joint connection between the free end of said spindle, and the other end of said implement to flexibly transmit rotary motion from said spindle to said implement, a second motor connected to said implement to actuate said implement to pivot about said flexible connection into various angular positions relative to said spindle, control means for said second motor to control actuation of said implement, and cam means on said guide



support means and operatively engageable by said control means in response to longitudinal movement of said first motor and spindle to operate said control means.

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**3,168,129**
**APPARATUS FOR BENDING TUBE PANELS AND THE LIKE**
**Scott P. Henry, Ringgold, Ga., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware**
**Filed Oct. 25, 1961, Ser. No. 147,514**
**6 Claims. (Cl. 153—24)**

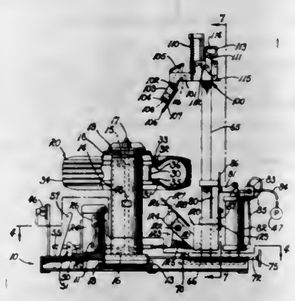


1. In a machine for bending tube panels and the like, the combination of a generally upright frame; relatively long first and second rollers mounted in and supported by said frame with their axes vertical and with the rollers being spaced apart sidewise along the front portion of the frame; a yoke also carried by said frame and organized for movement forwardly and rearwardly with respect to those first and second rollers, said yoke having upper and lower parts which are vertically spaced one from the other and which extend forwardly through said sidewise space between said first and second rollers; a relatively long die roll carried by and between said upper and lower yoke parts with its axis vertical and with such die roll being thus supported centrally in front of said first and second rollers for movement by the yoke towards and away therefrom; yoke-driving means carried by said frame and operative on said yoke in a way effective first to advance said die roll far enough in front of the first and second rollers as to provide space sufficient for a ready downward insertion of a tube panel or the like between that die roll and those first and second rollers and thereafter effective forcefully to pull said die roll rearwardly towards and between the sidewise spaced first and second rollers with an accompanying bending of such inserted tube panel; and release means for the aforementioned upper yoke part which enable that part to be removed from over the space between the die roll and the first and second rollers thus permitting a tube panel or the like initially to be lowered directly into said space in preparation for bending, and again to be removed upon completion of the bending operation then permitting the bent panel or the like to be taken from the machine via an upward raising directly out of said space, an external collar encircling the upper portion of said vertical dye roll and being slidable downwardly therealong so as to rest upon and engage the top edge of each tube panel that is brought into the machine for bending thereby, and means for clamping said collar in the panel-engaging position whereby to restrain the individual panel tubes against upward spreading during the bending operation.

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**3,168,130**
**WHEEL SUPPORTING AND TIRE DISMOUNTING APPARATUS**
**Eugene W. Turpin, 66 N. Academy, Sanger, Calif.**
**Filed Aug. 20, 1963, Ser. No. 303,285**
**6 Claims. (Cl. 157—1.28)**

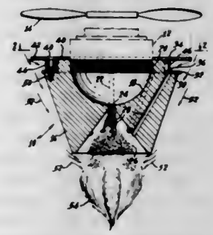
1. Apparatus to support a wheel assembly having a rim and a tire mounted thereon, the tire providing axially opposed side walls and beads carried thereby in sealing contact with said rim, the apparatus being adapted to move the tire beads axially away from the rim and comprising a base; an elongated column mounted on the base; a spindle rotatably mounted in the column and affording a primary axis of revolution; wheel clamping means carried by the spindle and adapted to support the wheel assembly for rotation about said axis; an elongated post; means mounting the post on the base in a position radially spaced from and substantially parallel to said axis; a carriage longitudinally slidably mounted for reciprocation on the post; power means carried by the base and operatively connected to the carriage to effect reciprocation thereof; a first slide carried on the post for relative reciprocal longitudinal movement adjacent one side of the carriage; a second slide carried on the post



for relative reciprocal longitudinal movement adjacent the opposite side of the carriage; a pair of circular shoes each having a respective pressure surface adapted to engage a respective one of the side walls of the tire adjacent the beads thereof; means mounting a respective one of said shoes on each of said slides for rotation about a respective axis inclined relative to said primary axis, each of said respective axes being substantially coplanar with said primary axis and being extended toward the tire in a direction outwardly divergent from said primary axis; means carried by each of said slides for individual selective releasable connection with said carriage; and power means carried by the base and operatively connected to said spindle to rotate the tire assembly while one of said shoes is in contact with and exerting a force on a respective side wall of the tire.

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**3,168,131**
**FUEL BURNER NOZZLE**
**Daniel D. Gross, 7 Sparrow Lane, Levittown, N.Y., assignor of one-sixth each to Milton L. Tolmach, East Williston, N.Y., Gwenne Dominick, Brooklyn, N.Y., and Al Levey, New Rochelle, N.Y.**
**Filed June 6, 1961, Ser. No. 115,236**
**6 Claims. (Cl. 158—76)**



1. In a fuel burner having means for producing a stream of air, a nozzle, said nozzle comprising a body positioned in said stream of air and having a chamber with an opening at one end positioned downstream of and in a direction away from said air stream producing

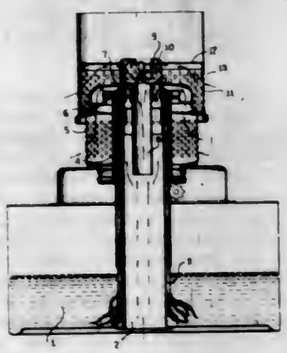
means, the air stream moving about the outside of said nozzle body toward and about said opening and therebeyond, fuel inlet means in direct communication with said chamber and spaced from said opening, air passage means defined in said body between said opening and said air stream producing means and converging toward said chamber to communicate air into said chamber from said stream of air to a portion of said chamber in the space between said fuel inlet means and said opening of said chamber, means fixed with respect to said nozzle between said air stream producing means and said air passage means in the direct path of the air stream to shield said air passage means from the direct movement of air from the air stream whereby air moving through said air passage means and into said chamber is at a pressure less than the pressure of the stream of air moving about said body and said opening.

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3,168,132
## LIQUID FUEL BURNER OR STOVE

Karl Gustav Axelsson, Malmkoping, Sweden, assignor to Nickelfabriksaktiebolaget Gottfrid Carlsson, Eskilstuna, Sweden, a joint-stock company of Sweden

Filed Aug. 31, 1961, Ser. No. 135,243
Claims priority, application Sweden, Sept. 8, 1960, 8,577/60
1 Claim. (Cl. 158—94)



A liquid fuel burner or stove comprising, a fuel tank provided with an air channel for the supply of primary air for combustion, said channel having a wall provided on its outer surface with an axially-adjustable cylindrical wick, the lower end of said wick being in contact with liquid fuel contained in the tank, a foraminous sleeve provided at the upper end of the channel and partially enclosed thereby, primary air being conveyed through said sleeve to the upper end of the wick, a cap encircling the sleeve to feed additional primary air under the cap to the upper end of the wick, a perforated air chamber located between the tank and the cap and supporting the cap and through which said additional primary air is fed, a central, open-ended tube extending downwardly within the air channel, an additional foraminous sleeve mounted over the first-mentioned foraminous sleeve and contsituting an upward extension thereof, the first foraminous sleeve containing a cross piece, the second foraminous sleeve having a closed top and a fastening element extending through the top to engage the cross piece, said second foraminous tube being in communication with the central open-ended tube to feed secondary air over the cap, said second foraminous sleeve and the cap being surrounded by a perforated jacket having an internal, horizontally-arranged air-deflecting ring for supplying and directing additional secondary air over the cap whereby a subsequent burning chamber is formed between said jacket and the second foraminous sleeve in order to promote a high combustion capacity and a complete combustion of the produced fuel gases.

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3,168,133
## GAS FIRED IGNITER

Robert J. Zoschak, Rutherford, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed July 3, 1962, Ser. No. 207,366
5 Claims. (Cl. 158—115)



1. An ignitor for fuel burners comprising:
a hollow cylindrical container having an inboard end and an outboard end, said inboard end being open and forming a flame port,
a hollow cylindrical body concentrically located in closely spaced relationship within said container with apertures spaced along its surface and having an inboard end and an outboard end, said inboard end being open and adjacent said flame port whereby an air-delivery chamber is formed between said container and said body and a pilot chamber is formed within said body, said apertures having a total cross-sectional area which is comparatively smaller than said air-delivery chamber,
an air inlet located adjacent said outboard end of said cylindrical container adapted to introduce a stream of air to said air-delivery chamber, a major portion of said air stream being conveyed through said air-delivery chamber with larger cross-sectional area to said flame port and a minor portion of said air stream passing from said air-delivery chamber through said spaced apertures with smaller cross-sectional area located on said body into said pilot chamber,
a separate gas conducting means within said hollow container having an inboard end and an outboard end, said inboard end being open and adjacent said flame port,
a gas flow divider means positioned across the outboard end of said pilot chamber and said gas conducting means, said divider means having a passageway therein to said pilot chamber and a passageway therein to said gas conducting means, said passageway to said pilot chamber being comparatively smaller in cross-sectional area than said passageway to said gas conducting means,
a gas inlet means including a pipe connected to said gas flow divider means and adapted to introduce a gas stream to said divider, a major portion of said stream entering the outboard end of said gas conducting means through said larger cross-sectional area in said divider and a minor portion entering the outboard end of said pilot chamber through said smaller cross-sectional area in said divider, and



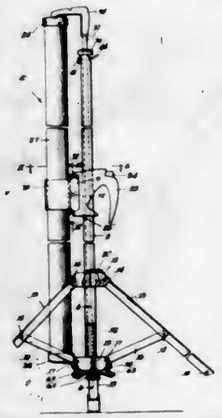
a spark means in said pilot chamber located adjacent said outboard end, said spark means causing a pilot flame to burn in said pilot chamber, said pilot flame causing the gas stream issuing from the gas chamber to burn at said flame port.

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3,168,134
## PORTABLE PROJECTION SCREEN

James A. Guske, Morton Grove, Ill., assignor to Radiant Manufacturing Corporation, Morton Grove, Ill., a corporation of Illinois

Filed Mar. 8, 1962, Ser. No. 178,463
8 Claims. (Cl. 160—24)

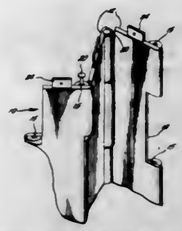


1. In a portable projection screen including a normally vertically arranged supporting member, a plurality of supporting legs carried by the supporting member and movable between a collapsed position for carrying and storage purposes and an extended position for supporting purposes, a handle member carried by the supporting member, a screen case having a roller rotatably mounted therein and a screen carried by the roller and adapted to be withdrawn from the screen case to picture exhibiting position, means mounting the screen case on the handle member for pivotal movement between a vertical position for carrying and storage purposes and a horizontal position for picture exhibiting purposes, an extension rod slidably carried by the supporting member, a hook member on the extension rod for locking the screen case in its vertical position when the extension rod is lowered and for suspending the screen in picture exhibiting position when the extension rod is raised, and a nipping lever carried by the supporting member and engaging the extension rod for locking the extension rod in its lowered and raised positions, the improvement comprising, spring means carried by the supporting member for raising the extension rod from its lowered position when the nipping lever is manipulated to release the screen case for pivotal movement from its vertical position, a leg latch member movably carried by the supporting member for latching the legs in collapsed position, actuating means normally disengaged from the leg latch member and operated by the spring means when the extension rod is raised from its lowered position by manipulation of the nipping lever for engaging and automatically moving the leg latch member to release the legs from their collapsed position, and manual means for manually moving the leg latch member independently from said actuating means and spring means to release the legs from their collapsed position.

3,168,135
## FOLDING DOOR

Milton W. Belfuss, 853 Duarte Road, Arcadia, Calif.

Filed Nov. 30, 1962, Ser. No. 241,417
2 Claims. (Cl. 160—229)



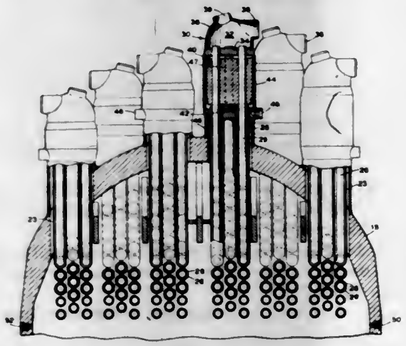
1. A folding door comprising a plurality of elongated wood panels disposed side by side, a set of longitudinally spaced elonged wood hinge sleeves mounted along each side of each panel, the sleeves being one-half round sections of molding with their flat sides against the panels, the sleeves having collinear longitudinal cuts on their flat sides, the sleeves along each side of a panel being disposed to make intermeshing fits between adjacent sleeves along the adjacent side of an adjacent panel, and a separate elongated hinge pin disposed through the collinear openings of each intermeshing set of hinge sleeves.

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3,168,136
## SHELL AND TUBE-TYPE HEAT EXCHANGER

Johannes H. Ammon, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 17, 1955, Ser. No. 494,871
8 Claims. (Cl. 165—70)

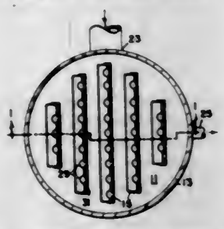


1. Conpartmentized heat exchanger construction including tubular side walls and end walls forming a shell chamber, a series of openings formed in each end wall, a series of spaced tubular sleeves connected to each end wall and projecting outwardly from the openings formed therein, closure means for the outer end of each sleeve, the axes of the sleeves projecting from one end wall being located intermediate the axes of the sleeves projecting from the other end wall, tube sheet means mounted within each sleeve, said tube sheet means in each sleeve being spaced outwardly of the sleeve connection with the end wall from which the sleeve projects, a tube bundle mounted on the tube sheet means in each sleeve and extending from the tube sheet means through the sleeve into the shell chamber, and the mounting of tube bundles in sleeves projecting from one end wall on axes intermediate the axes of sleeves mounting tube bundles projecting from the other end wall providing an interleaved arrangement between the series of tube bundles extending

into the shell chamber from the sleeves projecting outwardly from one end wall and the series of tube bundles extending into the shell chamber from the sleeves projecting outward from the other end wall.

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**3,168,137**
**HEAT EXCHANGER**
**John F. D. Smith, Fayetteville, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed Mar. 29, 1963, Ser. No. 269,046**
**3 Claims. (Cl. 165—110)**



1. A condenser adapted for condensing a refrigerant vapor in a refrigeration system, said condenser comprising:

(*a*) a hollow, generally plate-like member constructed of impervious heat conducting metal, said plate-like member having:

(1) a plurality of spaced vertically extending indentations in one of the surfaces of said plate-like member, said indentation lying in substantially a single plane and extending to a lower edge of said member,

(2) a substantially flat, heat conducting porous metal sheet overlying said surface of said plate-like member having said indentations, said porous metal sheet being secured to said plate-like member in heat transfer relation therewith and forming with said indentations a plurality of generally vertically extending passages for drainage of condensate from said member,

(3) a passage for introducing a cooling medium into the hollow interior of said hollow plate-like member, and

(4) a passage for withdrawing cooling medium from the hollow interior of said hollow plate-like member; and

(*b*) a shell surrounding said hollow, generally, plate-like member, for confining a refrigerant vapor, said shell having:

(1) a passage for admitting refrigerant vapor into said shell, and

(2) a passage for withdrawing condensed refrigerant from said shell.

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**3,168,138**
**HEAT EXCHANGER HAVING FOREIGN MATTER TRAPPING AND REMOVING MEANS**
**Robert J. Stoker, Phillipsburg, N.J., and Robert D. Board, Stockertown, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Aug. 6, 1962, Ser. No. 215,115**
**4 Claims. (Cl. 165—119)**

1. A heat exchanger comprising:

(*a*) casing means forming a chamber,

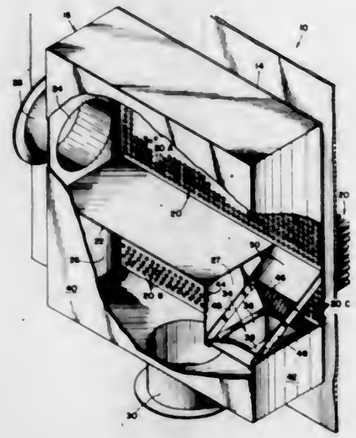
(*b*) inlet and outlet means communicating with said chamber to provide the flow of one fluid therethrough,

(*c*) a plurality of first tubes and a plurality of second tubes extending across said chamber to conduct a second fluid in indirect heat exchange relationship with the first fluid,

(*d*) transfer means at one end of said casing means to communicate the adjacent ends of said first and said second tubes and provide the flow of fluid from the first tubes to the second tubes,

(*e*) a header disposed at the casing means at the opposite end from said transfer means,

(*f*) a partition in said header to divide the interior of the latter into an inlet chamber communicating with said first tubes and an outlet chamber communicating with said second tubes,



(*g*) an inlet port in said header communicating with said inlet chamber and disposed with the longitudinal axis of the port normal to the longitudinal axes of said first tubes so as to pass a second fluid having foreign matter entrained therein into said inlet chamber,

(*h*) said partition having a recessed portion to form a trap remote from the inlet port to receive foreign matter separated from substantially all of the second fluid flowing into said first tubes as the second fluid changes the direction of flow into said first tubes,

(*i*) a passageway in said recessed portion of the partition and communicating with the outlet chamber to pass separated foreign matter into the outlet chamber along with some of said second fluid, and

(*j*) an outlet port in said header communicating with said outlet chamber to pass from the heat exchanger the second fluid discharging from said second tubes and the second fluid which contains separated foreign matter flowing from said passageway.

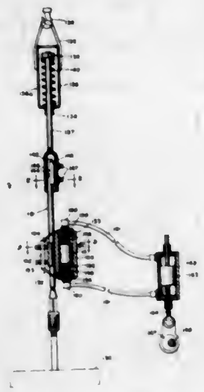
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**3,168,139**
**CONVERTING DRILLING MUDS TO SLURRIES SUITABLE FOR CEMENTING OIL AND GAS WELLS**
**Harvey T. Kennedy and Paul B. Crawford, Bryan, and James T. Hancock, Jr., Houston, Tex., assignors to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed May 8, 1961, Ser. No. 108,279**
**10 Claims. (Cl. 166—29)**

1. The process of securing in place a string of pipe in a borehole, which comprises mixing aqueous drilling mud with sufficient hydraulic cement to provide the desired strength after the mixture slurry has set, pumping the mixture slurry down the string of pipe and up the annular space between the string of pipe and the walls of the drilled borehole, and allowing the mixture slurry to set.



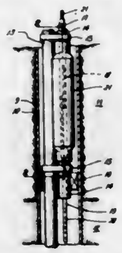
**3,168,140**
**METHOD AND APPARATUS FOR SONIC JARRING WITH FLUID DRIVE**
**Albert G. Bodine, Jr., Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)**
**Original application Feb. 20, 1956, Ser. No. 566,628, now Patent No. 2,972,380, dated Feb. 21, 1961. Divided and this application Dec. 22, 1960, Ser. No. 77,670**
**3 Claims. (Cl. 166—46)**



1. The method of moving a column system embodying a portion held fast in the earth and a portion extending therefrom which is acoustically free and in a condition to sustain a vibration wave pattern, that comprises: acoustically coupling a fluid-drive vibrator to said acoustically free portion of said column system at a point spaced from said held portion, and fluid driving said vibrator at a frequency which produces resonance of said column system and which establishes a vibration pattern with cyclic impulse force in said column system within the region of said held portion, said resonant frequency and said vibration pattern being established independently of minor irregularities in fluid drive effort by reason of inherent fluid drive flexibility.

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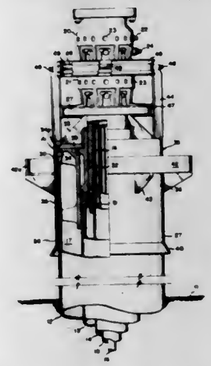
**3,168,141**
**ORIENTING MEANS FOR PERFORATING APPARATUS**
**Maurice P. Lebourg, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas**
**Filed May 29, 1959, Ser. No. 816,993**
**19 Claims. (Cl. 166—55.1)**



19. For use in a borehole, a well tool adapted to be passed through a string of pipe and including an orienting device and a well perforator, said orienting device including at least one arm having an end portion movably mounted on said device so that the remaining end portion is extendable and retractable in a longitudinal plane between a retracted position for passage through the bore of said pipe string and an extended position when disposed in a location having a larger bore than the bore of said pipe string, means for urging said arm outwardly into an extended position, means in said orienting device coupled to said arm for releasably locking said arm in an extended position, said perforator having a direction of firing fixed with respect to the plane of said arm so as to be oriented for firing with respect to said arm.

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**3,168,142**
**WELLHEAD BASE ASSEMBLY**
**Bruce J. Watkins, West Covina, and Glenn D. Johnson, Downey, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Dec. 28, 1961, Ser. No. 162,828**
**7 Claims. (Cl. 166—66.5)**



1. An operating base assembly adapted to be removably positioned on at least a portion of a wellhead assembly extending upwardly from an underwater well, said base assembly comprising

(*a*) a housing member having an opening extending vertically therethrough,

(*b*) stabilizer means for said base assembly carried by said housing member and adapted to engage the outer surface of a portion of said wellhead assembly,

(*c*) shoulder means carried on the inner wall of said housing member for seating on said wellhead assembly, and

(*d*) track means fixedly secured to said housing member and disposed radially outwardly therefrom, said track means having a smooth uninterrupted upper surface extending entirely around said housing member.

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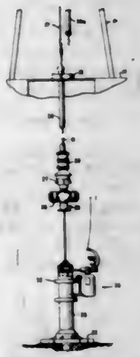
**3,168,143**
**GUIDE CABLE SYSTEM**
**Bruce J. Watkins, West Covina, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed June 28, 1962, Ser. No. 206,025**
**9 Claims. (Cl. 166—66.5)**

1. Apparatus for guiding equipment from an operational base floating on the surface of a body of water to an underwater installation positioned on the ocean floor having at least one elongated substantially vertical tubular member affixed thereto, said apparatus comprising

(1) guide cable means extending between said floating operational base and the underwater installation, said guide cable means having a substantially uninterrupted elongated outer surface between the floating base and the interior of said tubular member of said underwater installation,

(2) the upper end of said guide cable means being secured to said floating operational base,

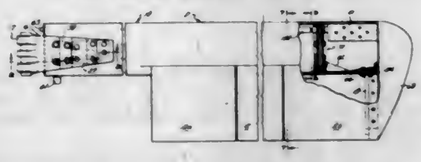
(3) the lower portion of said guide cable means extending downwardly into said elongated substantial-



ly vertical tubular member of said underwater installation and being arranged in sliding engagement therein.

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**3,168,144**
**BLADE SEALING MEANS**
George Capowich, Shelton, and Samuel F. Latters, Trumbull, Conn., and Pierce A. Mock, South Salem, N.Y., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,684
25 Claims. (Cl. 170—159)

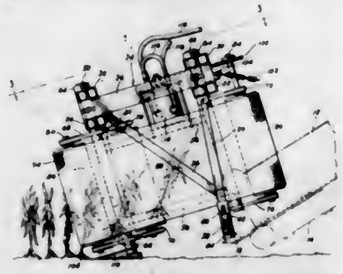


1. A rotor blade comprising:
(*a*) a tubular spar,
(*b*) sealing means in the end of said spar for maintaining a pressure differential across it,
(*c*) said sealing means including:
(1) resilient means having a relaxed contour which is under the contour of the inner surface of the spar,
(2) said resilient means having a groove located around its outer periphery,
(3) sealant located in said groove,
(4) means deforming said resilient means forcing the contoured edges against the interior of the spar,
(5) said sealant adhering the outer periphery of said deformed resilient means to the interior of the spar.

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**3,168,145**
**BEAN HARVESTING ATTACHMENT**
Wesley W. Gunkel, 1101 Hanshaw Road, Ithaca, N.Y., and Leon Lavern Anstee, 2400 New Holland Pike, Lancaster, Pa.
Filed Jan. 4, 1963, Ser. No. 249,472
9 Claims. (Cl. 171—61)

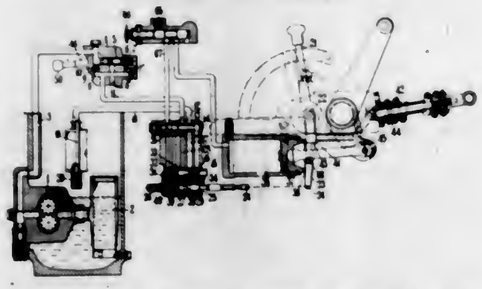
1. A dry bean harvesting mechanism attachable to the forward end of a delivery conveyor of a portable thresher and operable to engage and harvest standing dried bean vines having the pods still attached, said mechanism comprising a pair of endless flexible belts of substantial width at least equal to the height of such standing dried bean vines, an overhead frame attachable to the forward end of a portable thresher, a pair of elongated sub-frames extending generally longitudinally of the path of movement of the thresher to which said mechanism is attachable and extending substantially vertically downward from said overhead frame a distance substantially equal to the width of said belts, means connecting the upper portions of said sub-frames to said overhead frame for sole support thereby, said sub-frames each comprising upper and lower substantially parallel frame means, a plurality of rollers extending vertically between said frame means adjacent opposite ends of said sub-frames and rotatably supported thereby to support said belts for movement of adjacent courses of said belts in close engagement with each other and the lower edges



of the forward portions of said courses being close to the ground, whereby said courses respectively engage opposite sides of a row of beans and substantially completely envelop the same while the belts frictionally engage said vines from opposite sides, means to drive said belts in directions to move said coures thereof in the same direction rearwardly from the forward ends thereof and at the same speed, and means interconnected to the upper portions of said sub-frames and operable to urge the same yieldably and transversely toward each other to maintain said adjacent courses of said belts substantially parallel to each other and in firm frictional engagement with bean vines to be harvested by said mechanism.

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**3,168,146**
**TRACTOR HYDRAULIC SYSTEMS**
William R. Price, Hornchurch, and William J. Foxwell, Romford, England, assignors to Ford Motor Company, Dearborn, Mich.
Filed Nov. 2, 1961, Ser. No. 149,707
Claims priority, application Great Britain, Nov. 4, 1960, 38,002/60
6 Claims. (Cl. 172—7)



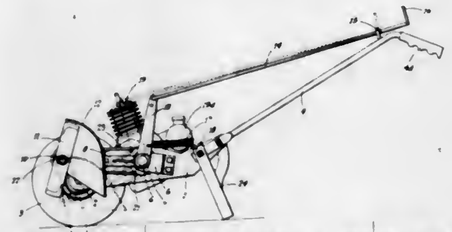
1. In a tractor having a 3-point implement hitch and a hydraulic system, including a pump and a lift cylinder, for lifting and lowering the hitch, means for sensing draft on an implement attached to the hitch, a valve for conrtolling passage of hydraulic fluid to and from said lift cylinder responsive to sensed draft on the implement to maintain a more or less uniform draft, a



control lever for operating the valve to raise and lower the hitch to move the implement between operating and non-operating position, a flow control valve interposed between the pump and the cylinder and manually adjustable for supplying fluid to the cylinder at a maximum rate of flow and at selected rates below said maximum rate, and a mechanical linkage located in the path of movement of the control lever and connected with the flow control valve, said linkage being independent of the draft sensing means and engaged and actuated solely by movement of the control lever to raise the implement to nonoperating position, and actuation of said linkage moving the flow control valve to provide maximum rate of flow.

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**3,168,147**
**LAWN EDGER**
Byron M. Peters, Rte. 1, Box 1695, Lathrop, Calif.
Filed Apr. 1, 1964, Ser. No. 356,451
1 Claim. (Cl. 172—15)

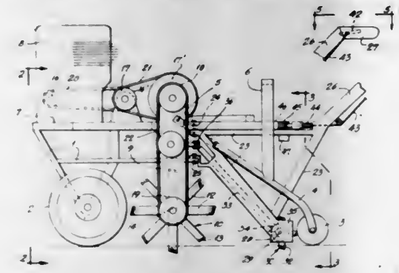


A lawn edger comprising a relatively elongated frame which includes a flat vertically disposed plate, a ground engaging wheel mounted on the frame adjacent its forward end and on one side thereof, a rotary edging blade disposed laterally out from the opposite side of the plate adjacent the forward end thereof, an axial shaft for the blade extending transversely of the plate, means including a plate-mounted engine operative to drive the shaft, an arm projecting rearwardly from and supporting the shaft for rotation, a plate-supported transverse spindle for the rear end of the arm, a sleeve fixed with the rear end of the arm and embracing the spindle as a pivot, another arm fixed with and upstanding from the sleeve, a tension spring connected to said other arm and to the plate at a rearward point and of a strength to yieldably swing the first named arm upwardly to dispose the blade clear of the ground, a handle bar secured on and projecting upwardly and rearwardly from the plate, a push rod connected to the upper end of said other arm and extending upwardly and rearwardly to adjacent the rear end of the handle bar, a stop element on the bar through which the rod is slidable, and an upstanding pad on the rear end of the rod initially disposed a predetermined distance rearwardly of the stop element; movement of said pad forwardly into engagement with the stop element advancing the rod sufficient to swing the arms to a position with the blade lowered into ground engagement.

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**3,168,148**
**STRADDLE ROW CULTIVATOR**
Henri Marcoux, Beaumont, Bellechasse County, Quebec, Canada
Filed Sept. 18, 1963, Ser. No. 309,724
1 Claim. (Cl. 172—42)

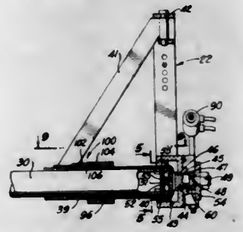
A cultivator comprising a main frame defining a passage in the center thereof for plants, main cultivator wheels rotatably mounted on said main frame on each side of said passage, a pair of auxiliary frames pivotally connected to said main frame about vertical pivot axes for pivotal movement of said auxiliary frames towards and away from each other in a horizontal path, each auxiliary frame having a control handle extending rearwardly therefrom and rigid therewith, each auxiliary frame carrying a rotatable auxiliary cultivator wheel extending inwardly therefrom at the lower end thereof, said main and auxiliary cultivator wheels each consisting of a hub and of a plurality of radially outwardly projecting arms carried by said hub and adapted to directly engage the ground for working the same, said auxiliary cultivator wheels having a smaller diameter and a smaller breadth than said main cultivator wheels, power means mounted on said main frame and driving mechanism connected to said power means and both to said main cultivator wheels and to said auxiliary cultivator wheels, said auxiliary cultivator wheels movable laterally of said main frame between a close contiguous position extending in the path of said passage and a spaced apart position fully clearing said passage upon pivotal movement of



said auxiliary frames, said auxiliary frames each consisting of a triangular frame having a horizontally disposed side spaced above ground, the front end of said horizontal side being pivotally connected to said main frame by two vertically spaced axially aligned vertical pivotal connections, said control handle extending from the opposite end of said horizontal side, a journal box formed at the lower apex of said triangular frame, said auxiliary cultivator wheel journaled in said journal box, said driving mechanism including a transmission shaft extending through the side of said triangular frame extended between said journal box and said pivotal connections, said transmission shaft drivingly connected to its associated auxiliary cultivator wheel, a connector shaft mounted in said main frame, and a universal joint connecting said connector shaft and said transmission shaft, said joint located on the axis joining the said two pivotal connections.

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**3,168,149**
**TWO-WAY PLOW**
William Fisk Mellen, Anaheim, Calif. (P.O. Box 2032, Fullerton, Calif.)
Filed Mar. 25, 1963, Ser. No. 267,404
8 Claims. (Cl. 172—226)

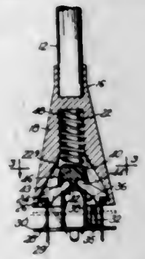


1. In an apparatus connectible to a lifting and draft means of a tractor, or the like, the combination of:
(*a*) a frame;

(*b*) means for connecting said frame to said lifting and draft means;
(*c*) a shaft;
(*d*) means connecting said shaft to said frame for rotary movement of said shaft about its axis to and from an operating position;
(*e*) an actuator substantially coaxial with said shaft, and mounted on said frame for rotation substantially about the axis of said shaft, for rotating said shaft about its axis;
(*f*) a single pivot means pivotally connecting said shaft to said actuator for pivotal movement of said shaft relative to said actuator about an axis perpendicular to the axis of said shaft, and constituting the sole connection between said shaft and said actuator; and
(*g*) means for rotating said actuator.

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**3,168,150**
**DEVICE FOR REMOVING IRREGULARITIES FROM A GROUND COVERING**
**Gilbert O. Kappler, Rte. 1, Box 125, Mulino, Oreg.**
**Filed Dec. 23, 1963, Ser. No. 332,826**
**6 Claims. (Cl. 172—371)**



1. A tool for removing indentations from putting greens comprising
an elongated normally vertical frame structure including a handle adjacent the upper end thereof and a housing adjacent the lower end thereof,
a base plate mounted on said housing beneath said lower end for movement toward and away from said housing, said base plate being normally biased outwardly, away from said lower end,
at least two spaced apart ground penetrating fingers pivotally mounted within said housing and arranged symmetrically about the axis of said frame structure.
said fingers projecting outwardly of said lower end and through openings in said base plate in a direction normally parallel to said axis, and
finger actuating means within said housing operatively connecting said base plate to said fingers for converging the outer ends of said fingers in response to relative movement of said housing toward said base plate.

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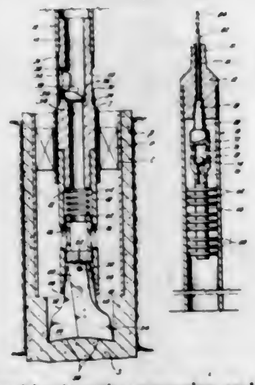
**3,168,151**
**CULTIVATOR RAKE**
**Charles H. Kavanagh, Waltham, Mass., assignor to Lewis C. Lillibridge, Waltham, Mass.**
**Filed May 29, 1961, Ser. No. 113,470**
**3 Claims. (Cl. 172—372)**



1. A rake comprising a handle, a base connected to said handle, and flexible tines connected to said base and extending beyond and having portions extending angularly in a downward direction, said base having a concave upper surface between opposite sides thereof transversely of the handle in position of use, said tines being connected to said base in positions whereby a line drawn across their face surfaces forms an arc corresponding to the concave upper surface of said base and being of a length so as to terminate approximately in the same plane when downward pressure is applied to said handle.

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**3,168,152**
**COMBINED CUTTING-REMOVING AND WELL-DEEPENING TOOL**
**John M. Reynolds, 804 Erie St., Shreveport, La.**
**Filed Aug. 22, 1960, Ser. No. 51,219**
**2 Claims. (Cl. 175—234)**



1. In a combined cutting-removing and well deepening tool of the impact type a tubular body, cutter elements pivotally mounted on and extending below the lower end of the body in position for lateral swinging beyond the into and out of positions extending laterally beyond the body, yieldable means positioned for coaction with the body and cutter elements to urge the cutter elements toward said extended positions, said body having an inlet located above said cutter elements and an outlet above said inlet, a tubular plunger movable vertically in the body between the inlet and outlet, means for connectinf the plunger to a cable for lifting and lowering the plunger, means in the body positioned for engagement with the plunger when the plunger is in its uppermost position in the body to cause the body to move upwardly with the plunger, said plunger being movable downwardly in the body when downward movement of the body is arrested, means for closing the plunger against downward flow of fluid therethrough during upward movement of the plunger in the body and for allowing upward flow of fluid therethrough during downward movement of the plunger in the body, and means in the body located between the inlet and outlet for preventing the downflow of fluid in the body during downward movement of the plunger and for permitting upflow of fluid therein during upward movement of the plunger in the body.

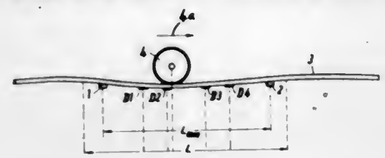
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**3,168,153**
**WEIGHING SYSTEM**
**Konrad Dinter, Konstanz, and Peter Wentzel, Munich, Germany, assignors to Telefunken Aktiengesellschaft, Berlin, Germany**
**Filed Mar. 23, 1961, Ser. No. 97,787**
**Claims priority, application Germany Mar. 31, 1960**
**9 Claims. (Cl. 177—133)**

1. A system for determining the weight of a rail vehicle wheel by measuring the elastic deformation to which a rail is subjected under the influence of the weight of the wheel, which rail is supported by ties spaced apart a given minimal distance, said system comprising, in combination: four measuring means arranged, respectively, at



four points $x_1$, $x_2$, $x_3$, $x_4$, along the rail which points are within said minimal distance, for determining values $k_1M_{x1}$, $k_2M_{x2}$, $k_3M_{x3}$, $k_4M_{x4}$ which are proportional to the



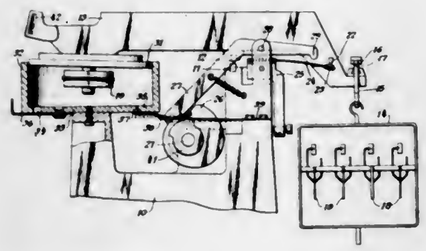
bending moments $M_{x1}$, $M_{x2}$, $M_{x3}$, $M_{x4}$ occurring at said points, respectively, said measuring means comprising electrical resistor means; and means for obtaining from said values the value

$$k_0\overline{P}=(p_1k_1M_{x1}-p_2k_2M_{x2})/(x_1-x_2)$$
$$-(p_3k_3M_{x3}-p_4k_4M_{x4})/(x_3-x_4)$$

wherein $p_1=-2k_0/k_1 \ldots p_4=-2k_0/k_4$, the maximum of said value $k_0\overline{P}$ being a measure of the weight of the wheel, said last-mentioned means connecting said electrical resistor means to form a bridge circuit such that when a source of electrical energy is applied across one diagonal of said bridge circuit, said value $k_0\overline{P}$ may be taken from the output of the other diagonal.

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**3,168,154**
**BALANCES FOR FINE WEIGHING**
**Frank Arthur Chappell, Orpington, and David Charles Tappin, Chipstead, near Sevenoaks, England, assignors to L. Oertling Limited, Orpington, Kent County, England, a British company**
**Filed Sept. 9, 1963, Ser. No. 307,497**
**Claims priority, application Great Britain, Sept. 13, 1962, 34,998/62**
**3 Claims. (Cl. 177—251)**

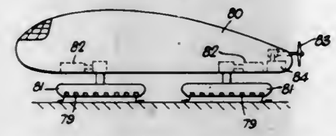


1. A balance for fine weighing having a frame and having a preweighing device embodied therein, said preweighing device comprising a balance beam, a counter weight at one end of said beam, and scale pan weight carrier and weights at the other end balancing said beam, a leaf spring having one end attached to the frame and the other end contacting the beam to selectively apply force to the beam opposing the out-of-balance load when an article to be weighed is added to the scale pan, a scale cooperating with said beam indicating the load in the balance by the deflection of the beam whereby the article is preweighed, and control means including an arrestment shaft and a lever pivoted to the frame between its ends and having one end actuated by the arrestment shaft and the other end contacting the spring and relieving the beam of said resilient force, and upon further relieving the beam of the weights indicated by the said scale, the scale will then indicate the accurate weight of the article.



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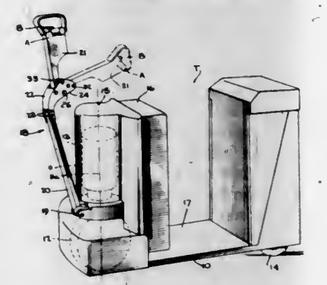
**3,168,155**
**VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER**
**Christopher Sydney Cockerell, Lymington, England, assignor to Hovercraft Development Limited, London, England, a British company**
**Filed Jan. 17, 1961, Ser. No. 83,276**
**Claims priority, application Great Britain, Jan. 19, 1960, 1,919/60**
**17 Claims. (Cl. 180—7)**



1. A support member for a vehicle for travelling over a surface comprising at least one rotationally symmetrical deflecting member located adjacent the periphery of the support member and having a deflecting surface which has the shape of a surface of rotation the generatrix of which is a smooth curve which extends, with respect to the axis of rotational symmetry, outwardly and downwardly and then downwardly and inwardly, and means mounted within the deflecting member and rotatable about the axis of symmetry of the deflecting member for causing air to flow outwardly from within the support member to the deflecting surface of the deflecting member so as to be deflected thereby downwards and inwards towards the surface over which the vehicle is operating to form a curtain of air, the bottom edge of the deflecting member being spaced outwardly from the remainder of the support member so as to provide an annular opening through which the curtain forming air flows both downwardly and upwardly to form a vortex curtain, the curtain together with the bottom surface of the support member and the surface over which the vehicle is operating enclosing a space in which a cushion of pressurised air is formed.

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**3,168,156**
**STEERING AND CONTROL HANDLE**
**Bronislaus I. Ulinski, Flossmoor, Ill., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio**
**Filed Jan. 11, 1962, Ser. No. 165,530**
**4 Claims. (Cl. 180—19)**



2. In a truck of the class described having a wheel on a steering mounting that is mounted for rotation in a steering axis on a front end portion of the truck and that is driven by a traction motor on the truck, and
a steering handle having a lower portion arranged forwardly from the steering axis and pivoted for vertical swinging movement between upwardly extending and forwardly extending positions on the steering mounting of said wheel, the improvement that comprises

an angular bracket rigidly secured to said lower portion of the handle,

opposed side members of said bracket extending in a rearward direction when the lower handle portion is in an upwardly extending position on its pivot,

an upper portion of said handle assembled between the side members of the bracket and equipped with manually operated motor controls,

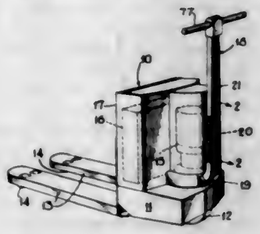
means pivoting said upper handle portion to the side members of the bracket for guided vertical swinging movement relatively to the lower handle portion,

a releasable pin for locking said upper handle portion to said bracket with the motor controls in a rearward position relatively to the steering axis of the wheel, so as to facilitate driving and steering control of the truck by an operator riding on the truck,

and means whereby said releasable pin is effective also to lock the upper handle portion in position with the motor controls substantially in aligned relation to the lower portion of the handle, for control of the steering and driving by a walking operator.

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**3,168,157**
**CONTROLLER**
**Bronislaus I. Ulinski, Flossmoor, Ill., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio**
**Filed May 10, 1963, Ser. No. 279,512**
**5 Claims. (Cl. 180—65)**

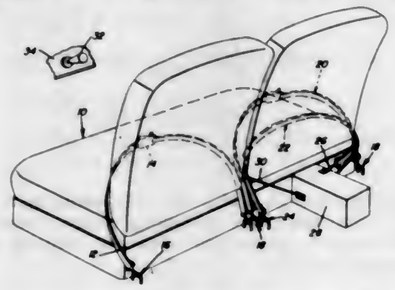


1. A steering and control handle for an electrically motorized industrial truck of the type having a steering and traction unit, comprising a hollow body pivoted at its lower end to the said steering and traction unit, a control member rotatably mounted at the upper end of said hollow body, resistors for the electric circuit of said truck mounted in said hollow body, electric contact means movable in said body to shunt the said resistors out of the electric circuit of said truck, a pair of directional switches within said hollow body, a pair of longitudinal moving rods mounted in said hollow body, means connecting said rods with said control member so that said rods move in opposed directions when said control member is rotated in either of opposed directions, and means whereby the movement of said rods in opposed directions by said control member actuates one or the other of said directional switches and also actuates said contact means to shunt out said resistors.

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**3,168,158**
**EMERGENCY RELEASE SYSTEM FOR SAFETY SEAT BELTS**
**William A. Schoeffler, 4011 California Ave., Carmichael, Calif.; and Vojin K. Janicich, 2571 23rd Ave., and Radovan P. Lazich, 2735 Kroy Way, both of Sacramento, Calif.**
**Filed Feb. 20, 1963, Ser. No. 260,017**
**9 Claims. (Cl. 180—82)**

1. An emergency safety system for a vehicle having seat belts and a power supply for vehicle operation, comprising, release means operatively connected to each of said seat belts, actuating mechanism fixedly mounted in the vehicle and operatively connected to said release means for unbuckling the seat belts, power operated means operatively connected to the actuating mechanism for actuation thereof when energized by said power supply, emer-



gency control means selectively connecting said power supply to the power operated means for energization thereof, and means responsive to actuation of the actuating mechanism for disconnecting the power supply to disable vehicle operation.

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**3,168,159**
**HEARING AID EARPIECE**
**Charles W. Strzalkowski, 811 N. 27th St., Milwaukee, Wis.**
**Application Feb. 18, 1958, Ser. No. 714,298, now Patent No. 3,068,954, dated Dec. 18, 1962, which is a continuation of application Ser. No. 308,444, Sept. 8, 1952. Divided and this application Aug. 2, 1962, Ser. No. 214,231**
**4 Claims. (Cl. 181—23)**



4. A hearing aid comprising a conduit leading toward the external auditory canal, means engaging the ear for fixing the position of the conduit, the conduit having an opening directed into the external auditory canal and spaced from the said auditory canal of the wearer and adjacent which the external auditory canal is directly open to the atmosphere to be subject to atmospheric pressure and to receive air-propagated sound waves, said means comprising a mold fitted to the outer ear and having a passage constituting part of said conduit, said mold further having a reflector portion spaced from the auditory canal and comprising a concave face through which the passage extends, said concave face being directed toward the auditory canal and the space between the said concave face and the auditory canal being open to the atmosphere.

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**3,168,160**
**STETHOSCOPE**
**David Littmann, Belmont, and John M. Goodnow, Greenbush, Mass., assignors to Cardiosonics Medical Instrument Co., Belmont, Mass.**
**Filed June 12, 1962, Ser. No. 205,158**
**10 Claims. (Cl. 181—24)**

1. In a stethoscope construction having a pair of rigid elongated ear tubes and a flexible Y-tube with integral arms and a stem, a pair of elongated leaf springs positioned within said Y-tube arms and prestressed to form U-shaped arcs, and means interengaging each of said leaf springs at their ends to said ear tubes with one spring longitudinally slidable with respect to the other, said



means interengaging said leaf springs at each end to said ear tubes including means enclosing portions of said leaf spring ends and said ends of said tubes, said means in-



terengaging such leaf springs at each end to said ear tubes comprising bushings secured about the ends of said springs and the ends of said tubes.

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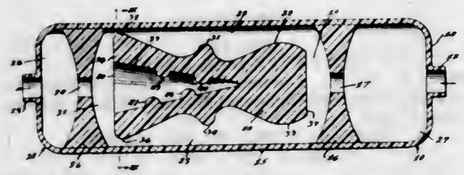
**3,168,161**
**STETHOSCOPE**
**David Littmann, Belmont, Mass., assignor to Cardiosonics Medical Instruments Corporation, Belmont, Mass., a corporation of Massachusetts**
**Filed Sept. 9, 1963, Ser. No. 307,739**
**7 Claims. (Cl. 181—24)**



1. In a stethoscope construction having a pair of rigid elongated ear tubes and a flexible Y tube with integral arms and a stem, a pair of elongated leaf springs positioned within said Y tube arms and prestressed to form U-shaped arcs, and means interengaging each of said leaf springs at their ends to said ear tubes with one spring longitudinally slidable with respect to the other to secure said ear tubes in selected angular relationship to one another.

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**3,168,162**
**NOISE FILTER**
**Harry E. Clary, Chesterland, and Phillip L. Bailey, Wickliffe, Ohio, assignors to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Jan. 3, 1962, Ser. No. 164,055**
**13 Claims. (Cl. 181—59)**



1. A noise silencer comprising:

casing means forming an expansion entrance section, and a longitudinally extending main section,

said entrance section forming an inlet passage and an outlet passage and an expansion chamber between said inlet and outlet passages,

said entrance section inlet and outlet passages having smaller cross-sectional flow area than the entrance section expansion chamber,

said main section having an inlet passage and an outlet passage with said inlet passage being connected to the entrance outlet passage to receive gas flow therefrom,

said main section forming a plurality of spaced flow channels extending longitudinally therein,

means providing each flow channel with a series of protrusions to provide expansive and contractive flow of gases and sound pressure waves therethrough,

means providing an entrance manifold within the main section connected to the main section inlet and to one end of each flow channel to receive the gas flow from the inlet and divide the gas flow into a gas stream for each flow channel, and

means providing an exit manifold connected to the other ends of said flow channels and said main section exit passage to receive the streams of gas from the flow channels and convergingly unite said streams to flow the united streams of gas through the main section outlet,

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**3,168,163**
**PORTABLE SCAFFOLDS**
**Clyde W. Prosser, 217 Oriole Drive, Pittsburgh, Pa.**
**Filed Oct. 15, 1962, Ser. No. 230,595**
**4 Claims. (Cl. 182—142)**

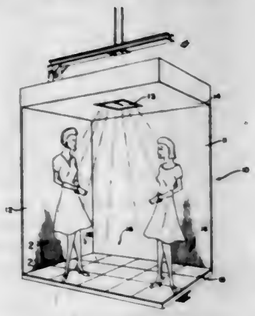


4. A portable scaffold particularly adapted for use in furnaces having an opening smaller than the interior diameter of the furnace and including a charging floor spaced above the furnace, said scaffold comprising a plurality of hollow elongated scaffold members telescoping within one another, cooperating lock means on the top and bottom of each said member adapted to hold the bottom of one member adjacent the top of the next smaller member in extensible position, support arms hinged at the top of the largest member adapted to be raised to the horizontal position and held there, removable grating means on said arms, means on the said largest member adapted to receive a crane hook whereby said members may be raised in the furnace, a plurality of spaced guides made up of telescoping guide members, one of said guide members of each guide being attached to the largest scaffold member radially spaced from the center thereof and extending transversely downwardly from the plane of the top end thereof and the guide member remote from said one guide member being removably attached to the charging floor to form an adjustable length elevator shaft, cage means movable within said telescoping guide members and

resiliently mounted guide wheels on said cage bearing on said telescoping guide members holding said cage centered therebetween.

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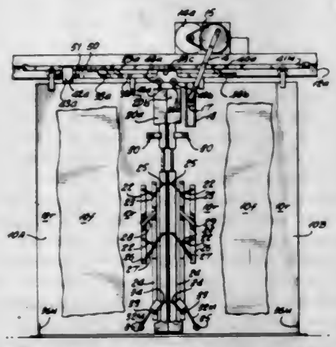
**3,168,164**
**ELEVATOR PHOTO-CELL BY-PASS CONTROL**
**William M. Kiely, Closter, N.J., assignor to Elevator Specialties Corp., County of Bronx, N.Y., a corporation of New York**
**Filed Oct. 3, 1962, Ser. No. 228,067**
**10 Claims. (Cl. 187—29)**



1. In combination with an elevator car, an overload limiting means comprising a light source located in the elevator car, a series of light responsive means spaced about the walls of the car, a relay adapted to be actuated to effect the by-passing of a stop when said car is loaded to a predetermined maximum safe capacity, said relay being connected in a circuit with said light responsive means whereby said relay is actuated when a predetermined amount of light beaming from said light source on said light responsive means is interrupted by the load carried in the elevator.

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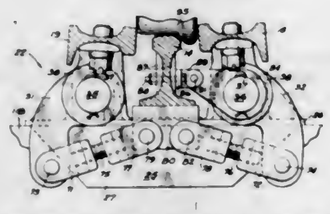
**3,168,165**
**PROTECTIVE DOOR REVERSING MEANS**
**Gino Bagnasco, New York, N.Y., assignor to Serge Elevator Company, Inc., New York, N.Y., a corporation of New York**
**Filed June 11, 1962, Ser. No. 201,345**
**8 Claims. (Cl. 187—52)**



1. In an elevator system, a frame, a pair of center-parting door slidable in said frame between abutting closed limits and opposing open limits, electrically reversible drive means for moving said doors in opposite directions between their respective open and closed limits, a parallelogram member movably mounted on the frame adjacent to said doors and extending between the open limits thereof, said parallelogram member having a component of motion transverse to the motion of said doors, a touch-retractive front safety edge movably mounted on each of said doors, both of said front safety edges being provided with an element for engaging and displacing said parallelogram member in response to retraction of the edge throughout a range of closing travel of the respective door from its open toward its closed limit, switch means mounted on said frame and operative in response to displacement of said parallelogram member, circuit means coupled between said electrically reversible drive means and said switch means for reversing said drive means when in the door closing mode, and means for preventing said elements from engaging said parallelogram member near the closed limits of said doors to allow said front safety edges to meet and retract upon closure of said doors without producing a reversal of said drive means.

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**3,168,166**
**RAILROAD CAR RETARDERS**
**Fred W. Creedle, Park Ridge, Ill., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware**
**Filed Dec. 4, 1962, Ser. No. 242,133**
**5 Claims. (Cl. 188—62)**

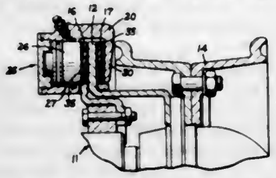


1. A weight-responsive railway car retarder comprising:
a fixed frame member straddling one traffic rail position of a railway section, said frame member having a pair of vertically extending substantially similar crank members pivotally mounted thereon in opposed spaced relation at opposite sides of the traffic rail position;
a pair of retarder rails each affixed to and supported by the upper end of the crank member on a respective side of the traffic rail position;
a traffic rail support block being disposed beneath the traffic rail, said traffic rail being at the height of said pivotal mountings for said crank members;
a pair of connecting rods pivotally connected to the lower ends of respective ones of said pair of crank members and each pivotally connected to said support block, said connecting rods being of approximately equal length;
and a traffic rail resting on and supported by said support block, at said traffic rail position between said retarder rails, whereby the downward force on said traffic rail resulting from the weight of a railway car wheel traversing said traffic rail is resolved into two substantially equal forces urging said retarder rails together into frictional engagement against the opposed sides of said wheel.

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**3,168,167**
**SPOT TYPE DISK BRAKE**
**William D. Walther, Dayton, Ohio, assignor to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio**
**Filed Sept. 7, 1962, Ser. No. 221,987**
**7 Claims. (Cl. 188—73)**

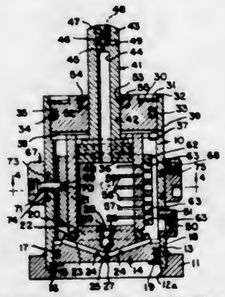
1. A disk brake including a rotating disk and a non-rotating friction pad support member subject to non-uniform elastic deflection axially outwardly from said disk upon actuation of said brake and a friction pad on said support member movable into braking engagement with said disk, the improvement comprising means at the junction of said pad and said pad support member defining a tapered surface supporting said pad at an inclination to said disk with no braking force thereon, the



inclination of said surface being in a direction generally radially of said disk and sloping toward said disk with increasing radial distance from the disk periphery providing substantially uniform forces radially of said pad during conditions of said elastic deflection of said support member.

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**3,168,168**
**ADJUSTABLE HYDRAULIC SHOCK ABSORBER**
**William J. Chorkey, 32331 Baintree, Farmington, Mich.**
**Filed Sept. 18, 1963, Ser. No. 309,639**
**8 Claims. (Cl. 188—96)**

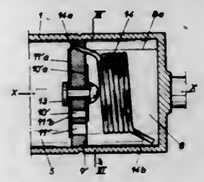


1. In an adjustable hydraulic shock absorber, the combination, comprising: an outer tube; an inner tube disposed in said outer tube and spaced apart therefrom; a piston slidably mounted in said inner tube; a rod connected to said piston and extended outwardly from one end of said outer tube for receiving a shock load; said inner tube being adapted to receive hydraulic fluid from said outer tube, and said inner tube being provided with a plurality of longitudinally spaced apart hydraulic fluid escape slots through which fluid is adapted to escape from the inner tube into the outer tube when the piston is moved inwardly in the inner tube under a shock load; and, means adjustably mounted on said inner tube and movable over said slots in the direction of the longest dimension of said slots to progressively vary the open length of said slots, for controlling the amount of opening of said escape slots to control the deceleration of the piston when it is moved inwardly in said inner tube as shock loads are dissipated by forcing the fluid from the inner tube into the outer tube through said escape slots.

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**3,168,169**
**AIR BLEEDING DEVICE FOR SHOCK ABSORBERS MOUNTED IN A SUBSTANTIALLY HORIZONTAL POSITION**
**Fernand Stanislas Allinquant, 53 Avenue le Notre, Sceaux, Seine, France**
**Filed Apr. 30, 1963, Ser. No. 276,852**
**Claims priority, application France, May 11, 1962, 897,276**
**3 Claims. (Cl. 188—100)**

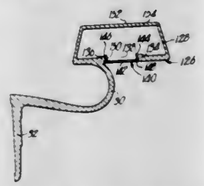
1. In a hydraulic shock absorber which comprises a cylinder arranged with its axis greatly inclined with respect to the vertical, a piston, a piston-rod, an auxiliary chamber communicating with the cylinder to compensate for variation, which occurs during relative movement of the piston and cylinder, in the volume occupied in the cylinder by the piston rod and valve means controlling communication between the auxiliary chamber and the cylinder, an air bleeding device which comprises a duct



of small cross-sectional area and of considerable length having one end thereof opening at a relatively high position of the cylinder and the other end thereof opening at a relatively low position of the said chamber, the dimensions of the duct being such that the loss of pressure therein is greater than the loss of pressure which occurs when the valve means are traversed in the two possible directions of displacement of the piston.

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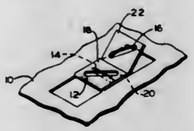
**3,168,170**
**HANDRAIL**
**Wenzel W. Thom, 5051 E. Lincoln, Wichita, Kans., assignor of one-half to Cecil D. Jones, Wichita, Kans.**
**Filed Oct. 31, 1960, Ser. No. 66,333**
**7 Claims. (Cl. 189—34)**



1. In railing structure, an elongated, generally tubular handrail having a longitudinal slot therein; a web integral with said rail and extending laterally therefrom; a flange integral with said web and substantially longitudinally coextensive in length with said rail, said flange extending away from the web a sufficient distance and in a direction to permit mounting of the rail on a generally upright surface at any desired point therealong and with said rail in normal disposition for hand gripping of the same; and filler means within said slot and releasably engaging said rail along the margins thereof defining said slot for filling the latter to render said rail smooth and rigid.

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**3,168,171**
**LAMINATED SHEET METAL NUT**
**Melvin A. Gaare, 610 E. Farnum, Royal Oak, Mich., assignor of fifty percent to Alfred E. Wilson, Dearborn, Mich.**
**Filed Dec. 26, 1961, Ser. No. 161,967**
**5 Claims. (Cl. 189—34)**



1. A ductile sheet having a screw receiving fastener formed therein in combination with a screw having a thread and a lead and having a greater hardness than

the sheet, the screw receiving fastener comprising a pierced tab consisting of a portion of the sheet and folded over to lie adjacent and parallel to the sheet, the tab and the adjacent portion of the sheet having pre-punched superimposed crossover slots arranged at an angle of at least sixty degrees with respect to each other and of a width slightly less than the major diameter of the screw thread, and the sheet being of a thickness slightly greater than half the lead of the screw.

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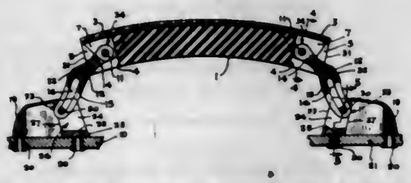
**3,168,172**
**DUAL-VENT WINDOW**
**Alfonso Alvarez, Upper Montclair, N.J., assignor to Asco Window Corporation, Plainview, N.Y.**
**Filed June 15, 1962, Ser. No. 202,796**
**4 Claims. (Cl. 189—72)**



4. A window construction comprising a main frame, an upper movable sash, a central fixed sash and a lower movable sash mounted in said frame, and means for moving said upper and lower sashes in opposite directions to open or closed position, a pair of simultaneously movable shades each in a slidable frame and positioned adjacent said center sash, said shades being movable into and out of position to cover said upper and lower movable sashes.

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**3,168,173**
**COLLAPSIBLE HANDLE**
**Sol Koffler, 600 Blackstone Blvd., Providence, R.I.**
**Filed Aug. 7, 1963, Ser. No. 300,599**
**4 Claims. (Cl. 190—58)**



1. A collapsible handle for luggage and the like comprising

(*a*) an elongated grip member with a recess formed in each end thereof,

(*b*) a reinforcing member passing longitudinally through said grip member from one end thereof to the other, said reinforcing member embodying a flexible metal strip extending longitudinally to points adjacent the ends of said grip member and also embodying metal tabs extending downwardly from each side of said metal strip at each end thereof and forming pairs of opposing aligned tabs adjacent the sides of said recesses in said grip member, and link-attaching members on respective pairs of said tabs,

(*c*) a pair of dog-leg shaped link members, each, respectively, pivotally attached to said link attaching member within each of said recesses, each of said link members having therein a slot extending laterally from one side of said link member to the other and longitudinally from the central portion of said link member substantially to the end thereof away from said grip member,

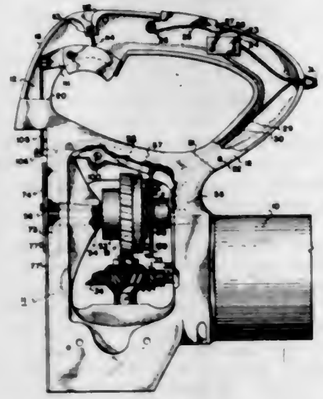
(*d*) a pair of substantially hollow attaching members, one disposed at each end of said grip member, part of the top and face of each of said attaching members adjacent to said grip member being removed to provide an opening in the face and top of each said attaching member, each said link member being receivable within the substantially hollow interior portion of the corresponding attaching member,

(*e*) means for mounting said attaching members on an article of luggage and the like, and

(*f*) a pair of link pin members, one passing through each of said attaching members and the slot in the corresponding link member, whereby said link members slidably and pivotally move in and out of the substantially hollow interior portion of said attaching members when said grip member is moved between a raised carrying position and a collapsed position.

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**3,168,174**
**LATCH OPERATED CLUTCH FOR STAPLING MACHINE**
**Joseph Mason Kirton, 968 North 800 West, Woods Cross, Utah**
**Filed Dec. 7, 1961, Ser. No. 170,298**
**2 Claims. (Cl. 192—28)**



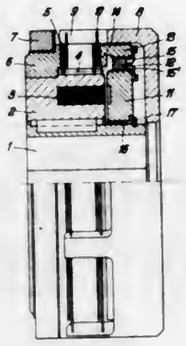
1. A clutch mechanism including, in combination, a shaft, an outer clutch member revolvable about said shaft and having an inner open area defined by similar inner sides thereof meeting in a plurality of mutually spaced vertices; an inner clutch member fixedly secured to said shaft and disposed within said inner open area of said outer clutch member for revolvement therewithin, said inner clutch member being provided with inwardly urgeable, spring loaded pawl means having a contact edge normally in engagement with said outer clutch member at an inner side thereof to effect engagement of said inner and outer clutch members, and said pawl means also including a pawl portion engageable by an external member to release engagement of said inner and outer clutch members; and clutch actuating means comprising an external member provided with an elongate, longitudinal slot encompassing said shaft, said external member being transversely movable with respect to said inner and outer clutch members and having transversely projection,



spaced dog protrusions respective ones of which are constructed and arranged to be withdrawably disposed, alternately, for engagement with said pawl portion of said pawl means to release engagement of said inner and outer clutch members.

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**3,168,175**
**ELECTROMAGNETIC CLUTCHES, PARTICULARLY OF THE AUTOMATIC ADJUSTMENT TYPE**
**Hermann Straub, Martin-Wieland-Strasse 17, Friedrichshafen, Germany, and Anselm Blum, Gunzenhaus, Gemeinde Kehlen, Germany**
**Filed Jan. 13, 1961, Ser. No. 82,651**
**7 Claims. (Cl. 192—84)**

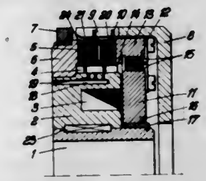


1. An electromagnetic clutch comprising a magnet body having a solenoid therein, sets of frictional ring clutch discs surrounding said magnet body, one such set being slidably splined to said magnet body, a clutch housing, another of such sets being slidably splined to said clutch housing, and armature means within said clutch housing, said armature means being movable toward said magnet body upon energization thereof, said armature comprising a ferrous disc, said disc being generally of the diameter of said magnet body, wear compensation means comprising a non-magnetic ring threaded to said ferrous disc on the periphery thereof and rotative with respect thereto and a disc compression ring threaded on the periphery of said non-magnetic ring and rotative with respect thereto, and said wear compensation means including pawl locking means co-acting with said non-magnetic ring to effect automatic locking of said compression ring with respect to said ferrous disc to ensure compensation for wear of said friction rings.

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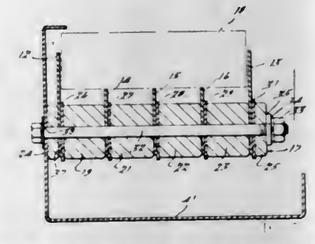
**3,168,176**
**ELECTROMAGNETICALLY OPERATED MULTI-DISC CLUTCH**
**Hermann Straub, Friedrichshafen, Germany, assignor to Zahnradfabrik Friedrichshafen, Aktiengesellschaft, Friedrichshafen, Germany**
**Filed Jan. 4, 1962, Ser. No. 167,463**
**Claims priority, application Germany, Feb. 21, 1961, Z 8,567**
**5 Claims. (Cl. 192—84)**

1. An electromagnetic clutch comprising a magnet body having a solenoid and comprising an armature, a plurality of friction discs arranged to have pressure exerted thereon by said armature when said solenoid is energized, and an annular array of rollers intermediate said friction discs, wherein said friction discs do not directly engage each other, but transmit torque through said rollers and support means for supporting said rollers with their axes at an angle of less than 90 degrees to the tangential direction of motion of said discs, said solenoid, armature, discs, and the roller array being concentric.



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**3,168,177**
**CLAMP FOR FLEXIBLE CHUTE**
**Henry A. Schuricht, Pontiac, and Homer G. Whitfield, Clarkston, Mich., assignors, by mesne assignments, to Hydromation Engineering Company, Plymouth, Mich., a corporation of Michigan**
**Filed Jan. 4, 1963, Ser. No. 249,391**
**2 Claims. (Cl. 193—25)**



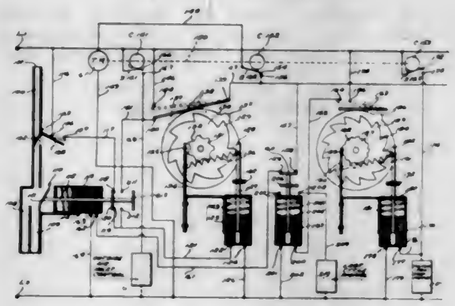
2. In a flexible chute having a pair of elongate flat flexible side bands and at least one elongate flat flexible supporting band located between said side bands, said bands being disposed on edge and extending in spaced generally parallel relationship to each other; a clamping assembly comprising a plurality of elongate flat ended spacing members each having a longitudinally extending bolt receiving opening therethrough, a clamping bolt extending through the openings in at least two of said spacing members to support a spacing member between each pair of adjacent sides of adjacent bands of said chute with said bolt passing transversely beneath said bands in underlying supporting engagement with the lower edges of said bands, a plurality of washer-like clamping members each having a centrally located bolt receiving aperture therethrough, said bolt passing through the apertures of said clamping members to support a clamping member between one end of each spacing member and the adjacent band, each clamping member having a flat portion engaged between the band end spacing member and above said bolt and a ridge portion on the clamping member below the bolt laterally offset from the flat portion by a distance equal to the thickness of the band to engage adjacent ends of adjacent spacing members below said bolt when a band and flat portion of the clamping member are gripped between the adjacent ends of adjacent spacing members above said bolt.

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**3,168,178**
**COIN METER AND LAST LOAD CIRCUITRY FOR A DRY CLEANER**
**Samuel E. Stone, Berrien Springs, and Guy D. Phillips, St. Joseph, Mich., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware**
**Filed Mar. 23, 1961, Ser. No. 97,952**
**10 Claims. (Cl. 194—1)**

2. Electrical control means for a coin-operated machine having an operating cycle comprising, a normally open

coin switch having an actuator operating to temporarily close said coin switch in response to insertion of a coin into said machine, a first energizing circuit controlled by said coin switch, a coin-count relay in said first energizing circuit having a ratchet actuator and operating to advance said actuator each time said first energizing circuit is temporarily energized, a normally open cycle-start switch operatively engaged by said ratchet actuator after a selected number of coin insertion actuations, a second energizing circuit controlled by said cycle-start switch, a sequential program controller having plural cam-operated switches and including a timer motor to actuate said switches in said second energizing circuit, a coin-reject relay in said second energizing circuit energized upon

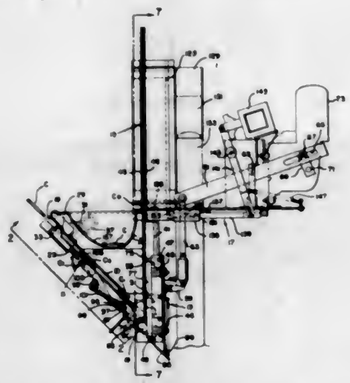


closing of said cycle-start switch and having means to reject coins inserted into said machine when said coin-reject relay is energized, a third energizing circuit controlled by one of said cam-operated switches, a cycle-count relay in said third energizing circuit and having a ratchet actuator, said cycle-count relay operating to advance said cycle-count ratchet actuator once each operating cycle, a fourth energizing circuit, and a last cycle relay in said fourth energizing circuit having normally open switch means movable to a closed position when said last cycle relay is energized, and a fifth energizing circuit having a signal means for operating a signal when said last signal relay operates, said switch means operated by said last cycle relay also operating to energize said second energizing circuit, thereby to energize said coin-reject relay.

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**3,168,179**
**COIN HANDLING DEVICE**
**Harry Frederick Tiedemann, Oakland, Calif., assignor to Nevada Electronics Inc., Reno, Nev., a corporation of Nevada**
**Filed Dec. 17, 1962, Ser. No. 245,184**
**6 Claims. (Cl. 194—98)**

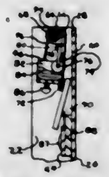
1. A coin handling device comprising a coin receiving chute having a coin slot at one end thereof, a vertical coin display column having its lower end disposed above the other end of said coin receiving chute, means for transferring and lifting coins from the chute into said vertical coin display column, the last named means including a transfer block disposed adjacent the bottom of said chute, said transfer block being movable between first and second positions, said transfer block in its first position being in registry with said chute and in its second position being in registry with said vertical coin display column, said transfer and lifting means further including means on said coin lifting means for grasping coins from said transfer block in its second position and for carrying the coins upwardly toward the vertical display column, said coin lifting means reciprocating vertically, and said means for grasping and carrying the coins including at least one dog,



and snubber means disposed in said chute when said transfer block is in its first position for preventing the passage of additional coins toward the transfer block.

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**3,168,180**
**MONEY-HANDLING DEVICES**
**Gustav F. Erickson, Kirkwood, Mo., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri**
**Filed June 12, 1961, Ser. No. 116,519**
**8 Claims. (Cl. 194—101)**



8. In a money-handling device, a coin passageway, a magnet disposed adjacent but disposed horizontally outwardly of said passageway, and one wall of said passageway having an opening therein at a point adjacent said magnet, said magnet interacting with slugs or coins of magnetic metal to draw said slugs or coins horizontally through said opening and out of said passageway, a roller that is adjacent said magnet and that contacts and positions coins or slugs that move horizontally outwardly of said passageway through said opening relative to the periphery of said wall adjacent said opening, whereby said coins or slugs cannot engage and be held by said magnet, said roller minimizing frictional forces between said slugs or coins and said one wall of said passageway and thereby facilitating movement of said slugs or coins through said opening and downwardly and away from said magnet.

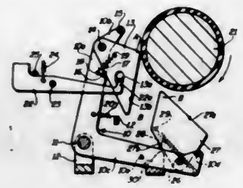
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**3,168,181**
**TYPE ACTION**
**Arthur R. Johnson, Wethersfield, Conn., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York**
**Filed July 16, 1962, Ser. No. 210,818**
**9 Claims. (Cl. 197—17)**

1. In a mechanism of the nature described, in combination,
a frame,
a power roll rotatably mounted on said frame,
a driven member mounted for oscillatory movement on said frame toward and away from said roll,
a roll cam rockably mounted on said member and adapted to engage said roll so as to be rocked thereby to



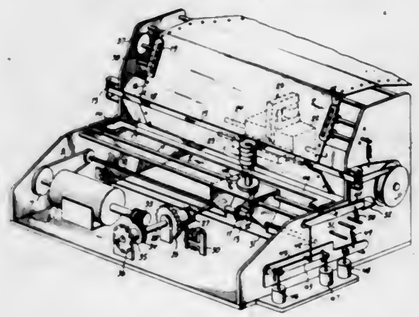
impart accelerating motion to said member as long as the cam remains in engagement with the roll,
a second roll cam rockably mounted on said member and adapted to engage said roll upon disengagement thereof by said first cam so as to be rocked by said roll to decelerate said member, means to impart continuous oscillatory movement to said member, and



spring means to bias each of said cams toward its point of engagement with said power roll, each of said cams having an accelerating surface and a decelerating surface that are serially effective to accelerate and decelerate said member twice during one oscillation of said member.

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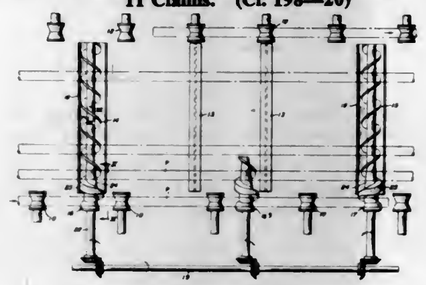
**3,168,182**
**TYPE WHEEL SHIFTING AND IMPACTING MEANS IN HIGH SPEED PRINTERS**
**David W. Bernard, East Rocks Road, Norwalk, Conn., and Jacob A. Randmer, 14 Exeter Lane, Wilton, Conn.**
**Filed Mar. 21, 1963, Ser. No. 266,983**
**20 Claims. (Cl. 197—55)**



1. In a high speed printer adopted for serially recording selected characters of a type font along the print line of a record medium, a type wheel formed with said type font contained in a plurality of individual bands of type arranged circumferentially about said type wheel, carriage means mounting said type wheel adjacent to said record medium and movable along a path parallel to said print line, means for spacing the travel of said carriage means in increments corresponding to the letter spacing of said print line, means for axially shifting said type wheel on said carriage to bring a selected band of said wheel into printing alignment with said print line, means for rotating said wheel to register a selected character type of the selected band into print position relative to said print line, means effective when the selected type is at said print position for impacting said selected type with said record medium to cause a character imprint by said selected type within the print line of said record medium, and circuit means responsive to simultaneous parallel input of pulses indicative of coded representations of said characters for controlling said shifting means and said impacting means.



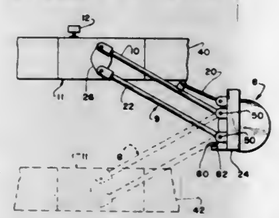
**3,168,183**
**KICKOUT DEVICE**
**Robert L. Copper, Wayne Township, Lawrence County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey**
**Filed Feb. 27, 1963, Ser. No. 261,360**
**11 Claims. (Cl. 198—20)**



1. A kickout device comprising a rotatable body and an eccentric helical flight extending approximately twice around the surface of said body and defining an eccentric groove therearound, said groove having in succession an article-receiving sector adjacent one end, a sector of gradually increasing radius axially offset from said article-receiving sector for lifting the article by cam action, and a sector of gradually decreasing radius for lowering the article, said groove having a smooth surface where each sector abuts adjacent sectors, said flight having a leading edge which has a zero lead at said article-receiving sector, a moderate lead at said sector of increasing radius, and a larger lead at said sector of decreasing radius for pushing the article sideways a short distance as it is lifted and a greater distance as it is lowered.

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**3,168,184**
**GLASS TRANSFER APPARATUS**
**Samuel N. Galvin, Bethlehem, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Apr. 23, 1963, Ser. No. 275,003**
**6 Claims. (Cl. 198—20)**



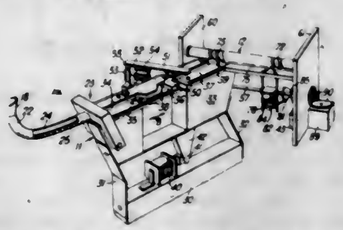
5. A Hydra-boom assembly for transferring plate load from a moving roller conveyor having rollers to another conveyor comprising in combination:
(*a*) base means,
(*b*) arm means pivotally mounted on said base means,
(*c*) a first fluid extension cylinder operatively mounted on said arm means for achieving vertical reciprocating motion,
(*d*) a pick up frame mounted on said first fluid extension cylinder to carry a plate load,
(*e*) vacuum cups disposed on said pick up frame to securely grip said plate load to said load pick up frame,
(*f*) a second fluid extension cylinder disposed on said pick up frame and operatively connected to said pick up frame to provide to said pick up frame horizontal motion in order that said pick up frame travel in the same direction and at the same velocity as said plate load,

(*g*) a pump disposed on said moving conveyor and operatively associated with said second fluid extension cylinder to control the motion of said second fluid extension cylinder, and

(*h*) a third fluid extension cylinder disposed on said base means and on said arm means to provide arcuate motion for said arm means.

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**3,168,185**
**FEED APPARATUS**
**Alfred Frederick Bader and Peter Martin Zollman, both of Hersham Factory Estate, Walton-on-Thames, Surrey, England**
**Filed July 26, 1962, Ser. No. 212,692**
**Claims priority, application Great Britain July 26, 1961**
**9 Claims. (Cl. 198—33)**

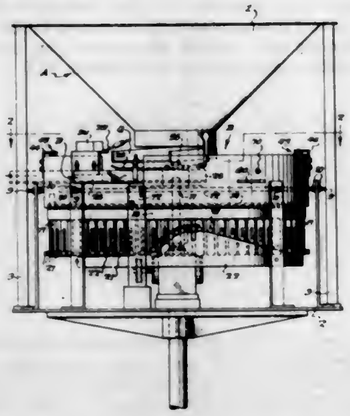


1. An apparatus for feeding devices such as transistor headers comprising an orientating device having an elongated slotted track along which the headers can move in succession with their flanges supported on the track and their longer electrode wires extending down through the track slot, means for effecting longitudinal vibration of the track to cause the headers to move therealong, at least one bend in the track the angle of which is such that the headers moving by the vibration round the bend will carry out a rotary orientating motion, a plough device blocking one side of the track at the last track bend whereby only headers which by rotation are correctly orientated can continue along the track, and a progressive feed device having spaced header receiving means disposed therealong in and by which the headers or the like are fed in succession in spaced relationship and at regular time intervals to a delivery point.

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**3,168,186**
**APPARATUS FOR ORIENTING HOLLOW-BODIED ARTICLES**
**William J. Young, Buffalo, N.Y., assignor to Consolidated Packaging Machinery Corporation, Buffalo, N.Y., a corporation of New York**
**Filed Dec. 11, 1962, Ser. No. 243,898**
**11 Claims. (Cl. 198—33)**

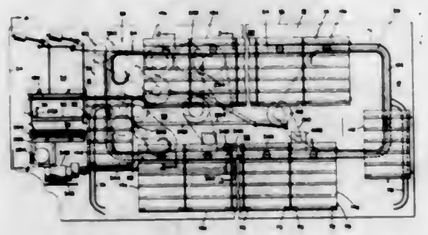
1. An apparatus for feeding, orienting and delivering a plurality of hollow-bodied articles comprising, in combination, article infeed means for feeding said articles in a random orientation, article delivery means for delivering said articles in a predetermined orientation, article orientation means disposed between and operatively associated with said infeed means and said delivery means and adapted to receive articles from said infeed means in random orientation and transfer said articles in a predetermined orientation to said delivery means, said orientation means including, a support means, a feed disc, a receiving disc and a sorting disc, all of said discs being rotatably mounted on said support means, a semi-cylindrical shell positioned around at least said receiving disc and said feed disc and fixedly mounted on said support means, said feed disc having a predetermined radius shorter than the radius of said shell by a distance slightly longer than a maximum outside diameter of the said articles to be oriented, said sorting disc having means defining a plurality of annular pin sleeves around its periphery, a plurality of article orientation pins slidably received in said sleeves and adapted to accept an article around



the upper portion thereof to properly orient it and means to reciprocate said pins to deliver a said properly oriented article to a delivery means.

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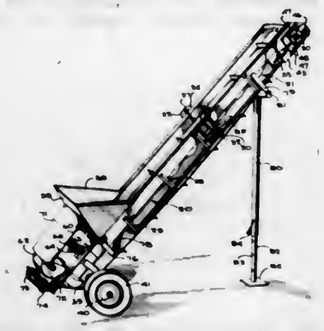
**3,168,187**
**CONTINUOUS PROOFER**
**Joe E. Thomas and Julian Rappaport, York, Pa., assignors, by mesne assignments, to Baker Perkins Inc., New York, N.Y., a corporation of New York**
**Filed Oct. 1, 1962, Ser. No. 227,497**
**21 Claims. (Cl. 198—85)**



1. In an article handling apparatus, a plurality of article carriers having vertically spaced shelves, means for conducting a succession of carriers in a closed loop including upper and lower runs and vertically traveling conveying means at one end of said runs for transporting successive carriers between said upper and lower runs in equidistant vertically spaced relation, article support means disposed adjacent said vertically traveling conveying means between the upper and lower ends thereof, article pusher means disposed adjacent said vertically traveling conveying means between the upper and lower ends thereof, means for continuously operating said vertically traveling conveying means, article support operating means for raising and lowering said article support means through less than half the distance between two successive carriers, article pusher operating means for extending and retracting said pusher means through a distance for transferring articles between said carriers and said support means, and control means operated in timed relation with said vertically traveling conveying means for effecting operation of said article support means through a raising and lowering cycle and said pusher through an extending and retracting cycle during each travel of a carrier through a distance equal to the distance between a pair of successive shelves.



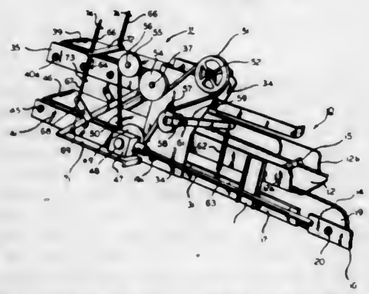
**3,168,188**
**PORTABLE POWER DRIVEN CONVEYOR**
**Stephen J. Verban, 1326 N. Kickapoo St., Lincoln, Ill.**
**Filed Apr. 23, 1962, Ser. No. 189,603**
**10 Claims. (Cl. 198—113)**



2. A portable conveyor including an elongated, relatively shallow lower frame section, an upper frame section of similar depth in alignment therewith and pivotally connected to the upper end of said lower frame section for pivoting forwardly and downwardly upon said lower frame section to fold said conveyor, said upper frame section being shorter than said lower frame section, a drive roller and an idler roller at opposite ends of said conveyor, a flexible, endless belt having its upper reach supported on said frame sections, said belt being stretched between said drive roller and said idler roller, means for driving said drive roller, wheel means at the lower end of said lower frame section, the axis of said wheel means being relatively close to said lower frame section, handle means on the upper end of said lower frame section extending beyond said upper end of said lower frame section whereby when said conveyor is folded the handles will be exposed for transport of the conveyor, and a second additional handle means at the lower end of said lower frame section.

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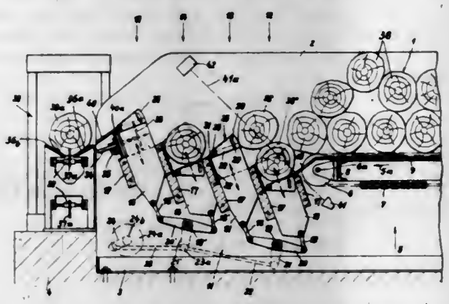
**3,168,189**
**CONVEYORS**
**Lloyd A. Luedtke, P.O. Box 123, Allenton, Wis.**
**Filed Nov. 1, 1961, Ser. No. 149,419**
**1 Claim. (Cl. 198—128)**



In a conveyor particularly adapted to elevate and discharge articles such as baled material, the combination of a frame, conveyor means supported on said frame for conveying articles at a low speed, said conveyor means including an endless flight supporting sprocket chain movable in an orbital path, a pair of endless higher speed conveyors supported on said frame and adapted to receive articles from said conveyor means, to accelerate the articles, and to discharge the articles, said high speed endless conveyors comprising a lower endless conveyor, and an upper endless conveyor spaced from said lower endless conveyor, means normally positioning said upper conveyor and said lower conveyor in convergent relation to each other in a discharge direction, means enabling said lower and upper conveyors to be displaced relative to each other by an article conveyed between said upper and lower conveyors, said last named means comprising spring means yielding by the presence of an article between said upper and lower conveyors, and means for driving said conveyor means and said upper and lower conveyors irrespective of the position of said upper conveyor with respect to said lower conveyor, said driving means comprising a power shaft, a sprocket driven by said power shaft and engageable with said sprocket chain, a speed change device driven by said power shaft, and an output drive shaft extending from said speed change device and drivingly connected with said upper and lower conveyors.

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**3,168,190**
**APPARATUS FOR TRANSFERRING LOGS AND LIKE OBJECTS**
**Heinz Nienstedt, Zum Nonnenberg 8, Recklinghausen, Germany**
**Filed Feb. 19, 1962, Ser. No. 174,209**
**Claims priority, application Germany, Feb. 20, 1961, N 19,626**
**12 Claims. (Cl. 198—218)**



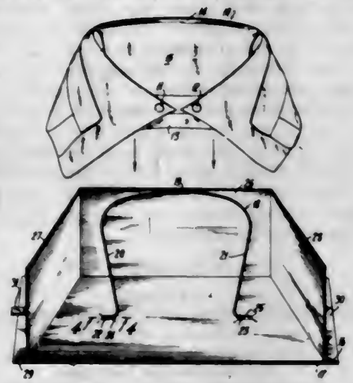
1. An apparatus for transferring elongated objects, particularly for transferring substantially round logs from a woodpile, comprising a multistage transfer conveyer having a first stage and at least one next stage preceded by said first stage, said conveyer comprising reciprocable pusher means in each of said stages adapted to consecutively transfer objects from a preceding stage to the next stage; propelling means movably mounted on said pusher means so as to engage said objects and promote the transfer thereof; and means for supplying objects to the pusher means in said first stage.

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**3,168,191**
**CARRYING CASE FOR A NURSE'S CAP**
**Clarence O. Trotman and Patricia P. Trotman, both of 129 Pearl St., Waterbury, Conn.**
**Filed Mar. 19, 1963, Ser. No. 266,447**
**2 Claims. (Cl. 206—8)**

1. A carrying case for a nurse's cap including a receptacle made of cardboard or the like and comprising a double ply base having the upper ply thereof provided with a pair of spaced apart apertures, upstanding walls on said base spaced from at least one edge thereof to define at least a partial open top enclosure on the base around the apertures therein, an inverted U-shaped wire having outwardly flared ends pivotally engaged in said apertures between the base plies so that the upper portion thereof can move toward one of said walls, the said wire being of sufficient height to rest against said one wall so as not to lie flat against the base when pivoted toward

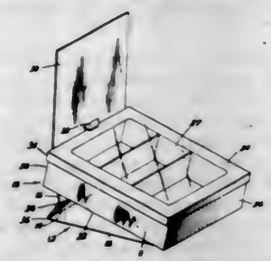
said one wall, whereby the said wire provides a hanger and holder for a nurse's cap, a nurse's cap positioned on said inverted U-shaped wire and engaging said one wall with the said wire pivoted toward the said wall, whereby the wire holds the cap within the enclosure in a generally erect condition to prevent its wrinkling and collapse



against the base, and a box open at one side to receive the said receptacle with the nurse's cap therein to complete the enclosure around the cap and to close the top thereof for protection of the cap, the receptacle being insertable within the box with the said one edge thereof exposed to provide a grip for facilitating removal of the receptacle.

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**3,168,192**
**PILFER PROOF DISPLAY BOX**
**Garnet K. Nicholson and Jack N. Morley, Toronto, Ontario, Canada, assignors to Union Carbide Canada Limited, a corporation of Canada**
**Filed Feb. 2, 1962, Ser. No. 170,636**
**6 Claims. (Cl. 206—45.24)**

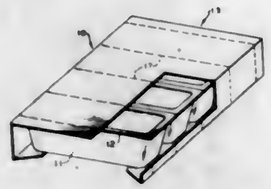


2. A pilfer proof display box for displaying merchandise comprising the combination of a container, a transparent cover hingeably mounted to one edge of said container, a display panel mounted to an edge opposite thereto and means for inclinably supporting said container; said display panel having at least one locking tab positioned therein adapted to lock said cover to said container so as to protect the merchandise in said container against pilferage.

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**3,168,193**
**FORMED CONTAINER MULTIPACK**
**Alfred Schechter, New Rochelle, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Aug. 20, 1962, Ser. No. 217,796**
**9 Claims. (Cl. 206—56)**

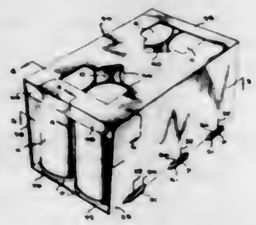
1. A pack comprising a plurality of independent, formed container units, a semi-rigid common cover member at least partially enclosing said container units to form a single unitary pack, said cover member being composed of a plastic and having on its upper surface a series of protrusions to aid in nesting said unitary packs on top of one another, said cover having semi-rigid side flaps extending from opposite edges of said cover folded over said units and inwardly of the bottoms of said units and upwardly in stressed condition against the bottoms of



said units, the distance between the under surface of the cover and the free edges of the upwardly extending portions of the side flaps, in unstressed condition, being less than the height of the container units and thereby provide by a single means an element which imparts rigidity to said unitary pack by forcing said container units against said cover member while at the same time providing cushioning for said unitary pack.

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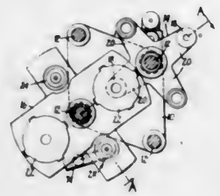
**3,168,194**
**CARRIER FOR CONTAINERS WITH MEANS FOR RETAINING CONTAINERS THEREWITHIN**
**Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, New York, N.Y., a corporation of New York**
**Filed May 25, 1960, Ser. No. 31,727**
**10 Claims. (Cl. 206—65)**



1. A wrap-around paperboard carrier package comprising top and bottom panels, said top and bottom panels being joined to each other by side walls along associated fold lines, said bottom panel including closure panels secured to each other, at least two rows of articles of at least two articles in each row being packaged in said carrier, each of said articles having an outwardly directed peripheral chime, article retaining means at each of opposite ends of at least one of said panels, each of said article retaining means including a first flange joined to said one panel and disposed generally normal thereto, a second flange connected to said first flange and disposed internally of said first flange, said second flange being angularly directed toward said one panel from its juncture with the first flange, a third flange connected to the second flange at a fold line and connecting said second flange to the one panel for holding the first flange in its generally normal position, a chime receiving opening in the second flange proximate said one panel, and a chime of outermost articles of each row being received in and retained by said openings of said retaining means.



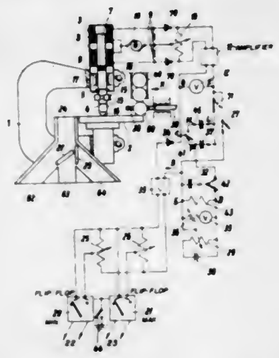
**3,168,195**
**DISCARD DISPOSAL MEANS FOR METAL EXTRUSION PRESSES**
**Peter Billen, Leverkusen, Germany, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain**
**Filed July 26, 1963, Ser. No. 297,893**
**8 Claims. (Cl. 207—1)**



1. In a metal extrusion press, an extrusion die, means for shearing a piece of billet-discard remaining on the face of said die from an extruded article, said means comprising a punch on which the piece of discard is impaled after shearing, said punch being movable from a discard-shearing position in the extrusion axis to a parking position outside the extrusion axis, discard-holding means which face the punch when the latter is in the parking position, and means for transferring the piece of discard from the punch to said discard-holding means.

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**3,168,196**
**ELECTRICAL MEASURING AND SORTING APPARATUS**
**Karl Max Harder, Vaduz, Liechtenstein, assignor to Eurotec Establishment, Vaduz, Liechtenstein**
**Filed Sept. 28, 1962, Ser. No. 226,878**
**Claims priority, application Austria, Oct. 5, 1961, A 7,482**
**12 Claims. (Cl. 209—90)**



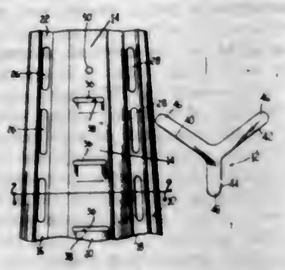
1. Electrical measuring apparatus for calipering and sorting work pieces according to size, comprising, in combination, measuring frame means including a measuring table; measuring head means carried by said frame means opposite said measuring table and comprising sensing pin means slidable longitudinally along a predetermined path in said head means substantially perpendicularly relative to said measuring table and including at least one portion constituting a magnetic core, at least one first pair of induction coils aligned with each other in said head means and surrounding said path of said magnetic core portion, at least one second pair of induction coils separate from said first pair of coils and connected therewith to constitute a compensation bridge circuit, and an alternating voltage generator means for feeding said bridge circuit and for producing at the terminals thereof an output voltage when said bridge circuit is in unbalanced condition due to a movement of said sensing pin means relative to said first pair of coils, said output voltage being an analog value of the magnitude of such movement out of a chosen reference position in which said bridge circuit is balanced; electric circuit means connected to said terminals and comprising first capacitor means for storing a first analog value of said output voltage corresponding to a chosen starting position of said sensing pin means and to a corresponding unbalance of said bridge circuit, second capacitor means for storing a second analog value of said output voltage corresponding to a displaced position of said sensing pin means caused by placing a work piece between said measuring table and said sensing pin means, third capacitor means for storing a third fixed analog value of said output voltage corresponding to a chosen reference position of said sensing pin means and corresponding to a lower tolerance limit dimension of said work piece, first switch means for connecting said first capacitor means with said compensation bridge terminals when said sensing pin means is in said starting position, second switch means for connecting said second capacitor means with said comepnsation bridge terminals when a work piece is in measuring position between said measuring table and said sensing pin means, and third switch means movable between a first position in which it connects said third capacitor means with an electric voltage source, control means being provided for adjusting the output voltage of said source so as to correspond as an analog value to a position of said sensing pin means corresponding to a chosen lower tolerance limit dimension of the work pieces to be measured, and a second position in which said third switch means connects said first, second and third capacitor means as a series-combination with each other so as to enable said series-combination to discharge a final output voltage which is the algebraic sum of the individual voltages stored in said first, second and third capacitor means and corresponds to the measured size of the particular work piece; and sorting means for sorting a plurality of successively measured work pieces according to size and comprising discriminator circuit means connected to said electric circuit means for being supplied with said final output voltage, sorting channels emanating from said measuring table and respectively assigned to piece sizes within, above and below a chosen tolerance range and electrically controllable gate means arranged across said channels and controlled by said discriminator circuit means in such a manner that after each measuring operation resulting in an energization of said discriminator circuit means by a final output voltage corresponding to a measured size of a particular work piece said gate means are so actuated that said particular measured workpiece is permitted to enter only that one sorting channel which is assigned to receiving work pieces with a size corresponding to the magnitude of said final output voltage which actuates the respective gate means.

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**3,168,197**
**TIE RACK**
**Stanley C. Sconza, 2836½ N. Prieur St., New Orleans 17, La.**
**Filed Apr. 1, 1963, Ser. No. 269,538**
**4 Claims. (Cl. 211—13)**

1. A tie rack comprising
a base having a pair of vertical coextensive spaced slots open in a direction facing one another,
a horizontal slot disposed between the vertical slots

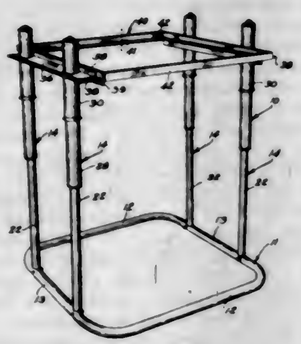
and aligned substantially with the lower ends of said vertical slots,



and a Y-shaped hanger removably mounted on the base with its arms extending into the vertical slots and its stem extending into the horizontal slot.

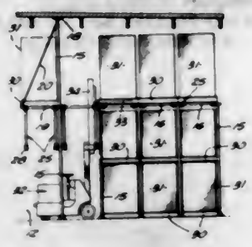
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**3,168,198**
**ELEVATOR ARTICLE-SUPPORTING APPARATUS**
Robert J. Shelley, 7009 SW. 62nd Court, Miami, Fla.
Filed Mar. 15, 1963, Ser. No. 266,152
10 Claims. (Cl. 211—49)



1. A portable elevator article-supporting apparatus comprising the combination of a supporting base, a plurality of elevator units each including relatively fixed vertically extending inner tubular guide member or standard having a lower end portion attached to the said supporting base, tubular guide means concentrically and telescopically mounted on each of said vertically extending tubular guide members or standards outwardly thereof, a load-carrying tubular sleeve member slidably mounted on each of said guide means, an article-supporting member carried by said tubular sleeve members, spring means arranged within said tubular guide means and normally urging the said load-carrying tubular sleeve members of said elevator units and the said supporting member carried thereby into a normally elevated position but said spring means being compressible under load applied to said tray-supporting member, and means for mounting the said article-supporting member upon the said load-carrying tubular sleeve members of said elevator units, each of the said load-carrying tubular sleeve members of each of said elevator units having an annular groove formed therein on the outer surface thereof, and the said means for mounting the said article-supporting member upon said load-carrying tubular sleeve members of said elevator units including a load-carrying member having a portion thereof mounted in the said annular groove in the said load-carrying tubular sleeve member of a plurality of said elevator units.

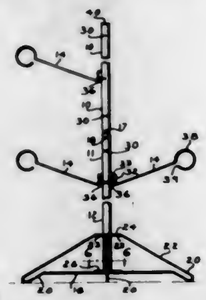
**3,168,199**
**PALLET STORAGE RACK ASSEMBLY**
Wayne W. Ashby, 6330 Carmelita Ave., Bell, Calif.
Filed Aug. 30, 1962, Ser. No. 220,392
7 Claims. (Cl. 211—150)



3. That improvement in storage rack assemblies for use in storing closely arranged rows of tiers of loaded pallets in a warehouse or the like and wherein said rack assemblies are of the type embodying parallel rows of rigid upright frames anchored rigidly in place and forming therebetween narrow storage aisles for tiers of loaded pallets; said improvements being characterized by the provision of a plurality of swing bars extending crosswise of the aisle at a level above an underlying loaded pallet and cooperating to support an upper loaded pallet directly thereon, said swing bars each having a notched end engageable with the upper side of a horizontally disposed portion of the frame on one side of the aisle and the other end having a loose pivotal connection with a horizontally disposed portion of the frame on the other side of the aisle and permitting the swing bars to be swung vertically and laterally as necessary to engage and disengage the notched end with the associated one of said frames while holding said bars captively assembled to the frame, and said swing bars lying substantially within the vertical plane of one of said frames when not in use to avoid interference with the use of the aisle.

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**3,168,200**
**TUBULAR DISPLAY STAND HAVING REMOVABLE ARTICLE SUPPORTS**
Robert L. Larson, Auburn, Mass., assignor to Parker Metal Goods Company, Worcester, Mass., a corporation of Massachusetts
Filed Nov. 26, 1962, Ser. No. 240,057
2 Claims. (Cl. 211—177)



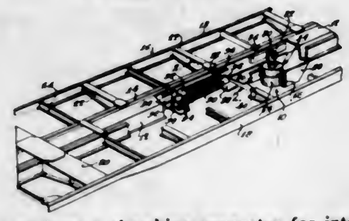
2. A display standard comprising a central tubular post having vertically spaced holes arranged as pairs in diametrical opposition, two diametrically opposed article supporting arms having upper terminal hook ends interlocked with diametrically opposed holes, each hook end being the sole support of the arm vertically, said arms having U-shaped members engaging the outside of the post and extending circumferentially of the post into end wise contact diametrically of the tube so that said members support their respective arms against lateral move-



ment, and a supporting base of wire arms having an interlocking engagement with the post to support the standard.

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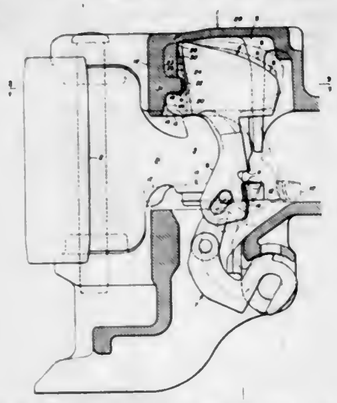
**3,168,201**
**IMPACT ABSORBING APPARATUS**
James T. Smith, Wilmette, and Osvaldo Chierici, Elmhurst, Ill., assignors to Keystone Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 10, 1964, Ser. No. 395,389
5 Claims. (Cl. 213—8)



1. In an impact absorbing apparatus for interposition between the draft gear and the lading in a railway car of the type having a buff and draft center sill and a lading supporting frame mounted for movement relative to each other, the apparatus having a pair of heads normally abutted against lugs carried on the center sill and force transmitting stops carried on the lading supporting frame, and a spring urging the heads toward normal position, the improvement comprising, a fluid reservoir pivotally mounted on the underframe, a cylinder mounted within said reservoir so that a clear space is provided between the exterior wall of the cylinder and the interior wall of the reservoir, a plurality of fluid flow restricting orifices in the wall of the cylinder communicating with said reservoir and spaced longitudinally of the cylinder, a piston slidable in said cylinder, a piston rod connected to said piston and projecting from said cylinder and said reservoir, and means pivotally connecting the outer end of said piston rod to the center sill.

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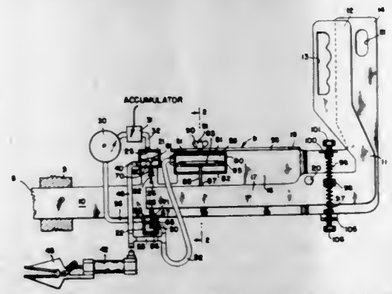
**3,168,202**
**COUPLER LOCKING MECHANISM**
Geoffrey W. Cope, Williamsville, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed Sept. 6, 1961, Ser. No. 136,284
4 Claims. (Cl. 213—146)



1. In a railway coupler having a head, a knuckle pivoted to the head, and a lock in a cavity in the head positionable to lock the knuckle closed and liftable from locking position to release and by swinging throw open the knuckle; the improvement comprising a lug projecting forwardly from a head of said lock, a shoulder in said coupler head at a front of the cavity therein, said lug on lifting of said lock engaging an underside of said shoulder to enable said lock to fulcrum on said underside in swinging to throw the knuckle open, and a front face on said lock head above said lug and confronting and spaced rearwardly from said shoulder on engagement thereof by said lug, the spacing of said front face and shoulder being such as to prevent contact therebetween over the range of relative swinging of said lock and coupler head despite service wear on parts thereof engaged during said swinging.

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**3,168,203**
**MANUALLY OPERATED HYDRAULIC ACTUATOR CONTROL HAVING FEEL-BACK**
Albert F. Gallistel, Wayzata, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed July 7, 1960, Ser. No. 41,273
12 Claims. (Cl. 214—1)



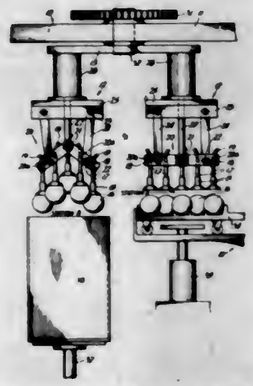

1. A remotely controlled manipulator device including a hand mechanism for performing gripping motions, said hand mechanism having a pair of relatively movable gripping members, first pressure responsive actuator means for effecting gripping movement of said gripping members, means for operating said output actuator including a source of pressure, conduit means connecting said actuator to the pressure source, valve means for permitting the flow of a fluid medium from the pressure source to the actuator, said valve means also adapted to prevent the flow of said fluid medium to said actuator, lever means for opening and closing said valve means by direct contact with said valve means, second pressure responsive actuator means providing manual sensing of the magnitude of the gripping force being exerted by the gripping members on an object, said second pressure responsive actuator means operatively connected between the valve means and the first actuator means, said second actuator means provided with an output member which directly contacts the lever means and exerts a force against said lever means, and means for varying the effective relative position of said second pressure responsive actuator means with respect to the lever means whereby the ratio of the force exerted by the gripping members with respect to the force exerted by the operator of the manipulator may be varied.

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**3,168,204**
**APPARATUS FOR PACKING FRUIT**
Izak Johannes Voullaire, Mildura, Victoria, Australia
Filed June 25, 1962, Ser. No. 204,738
Claims priority, application Australia June 29, 1961
7 Claims. (Cl. 214—6)

1. Apparatus for mechanically packing fruit in cases comprising means for delivering articles of fruit to form a layer thereof at a pick-up position with the articles in predetermined row formation, means co-operating in timed relation with said first-mentioned means firstly to engage with and deform the layer at the pick-up position

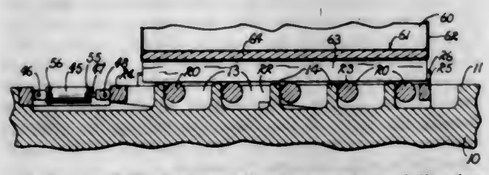
to dispose the articles of fruit in a convex form, secondly to lift and move the convex layer of fruit to a release position disposed relative to a fruit case of predetermined dimensions, and thirdly to release the layer of fruit to assume within the first case the said row formation, a source of partial vacuum, said lifting and moving means comprising a plurality of suction cups operatively connected to said source of partial vacuum, said cups being so arranged and controlled that each article of fruit is simultaneously vacuum attached to an individual suction cup and retained thereby in substantially the predetermined row formation of the said layer until required to



be released, said suction cups being supported in a horizontally disposed frame composed of two sub-frames connected together centrally by a hinge, each sub-frame being pivotally mounted for rocking about an axis parallel to the axis of said central hinge, whereby vertical movement of said hinge rocks said sub-frames about their pivotal axes disposing said sub-frames at an obtuse angle to one another thereby causing the layer of fruit vacuum attached to the suction cups to assume an upwardly arched form and the lateral rows of fruit at least to move inwardly so that the overall width of the layer is less than the interior width of a standard fruit case.

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**3,168,205**
**MOBILE PLATFORM INCORPORATING ELEVATIONALLY ADJUSTABLE CONVEYOR**
**Sherwood Green, P.O. Box 109, Madera, Calif.**
**Filed Mar. 8, 1963, Ser. No. 263,912**
**7 Claims. (Cl. 214—84)**



1. In a mobile platform affording a substantially plane surface elongated along a predetermined direction and being adapted to uphold a load unit deposited thereon, said load unit affording laterally opposed anchorage apparatus adapted to permit selective shifting of the load unit relative to said plane surface comprising a support frame; a plurality of load engaging members mounted in the frame for rotation about respective individual axes, each of said members affording a surface of support generated about its respective axis; means mounting the frame in the platform for rectilinear movement in a direction parallel to said predetermined direction as well as selective elevational movement relative to said plane surface; power means to effect selective elevational movement of the frame relative to said plane surface, including means locking the frame in a selected elevational position; and load retaining means carried by the frame and adapted to engage said anchorages to retain the load unit in a predetermined location on said plane surface upon retraction of the frame members and lowering of the load unit upon said plane surface.

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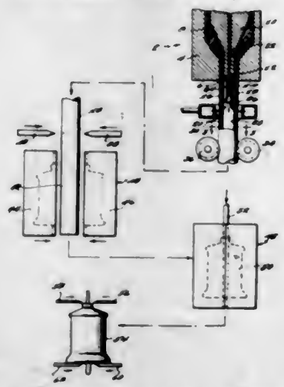
**3,168,206**
**TRAILER**
**George D. Washington, Lafayette, Ind., assignor to National Homes Corporation, Lafayette, Ind., a corporation of Indiana**
**Filed Dec. 13, 1962, Ser. No. 244,341**
**11 Claims. (Cl. 214—512)**



1. A trailer for carrying a prefabricated half-house section or other prefabriacted house section which comprises a main frame assembly having wheels attached thereto, a sled means, means mounted on said main frame assembly to support said sled means, means being adapted to move said sled means longitudinally with respect to said main frame assembly, means mounted on said sled means for raising and lowering a lift plate means, said lift plate means having a plurality of pivotal rollers mounted thereon, a pivot pin means, a pivot plate assembly resting on said pivotal rollers whereby said pivot plate assembly is pivotable with respect to said lift plate means about said pivot pin means, said pivot plate assembly having detachable extension means connected thereto, and means to move said pivot pin means transversely with respect to said main frame assembly whereby said pivot plate assembly is correspondingly moved.

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**3,168,207**
**BLOW MOLDING**
**Robert L. Noland and Walter O. Weber, Wilmington, Del., assignors to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware**
**Filed Sept. 25, 1963, Ser. No. 311,412**
**10 Claims. (Cl. 215—1)**

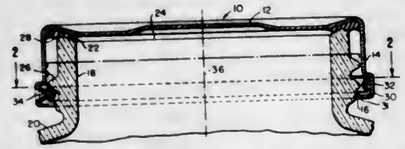


1. A blow molded container of a thermoplastic resin foam, said container consisting of (1) a foam resin core, (2) a non-porous tough outer skin of said resin, and (3) a non-porous tough inner skin of said resin, said core comprising over 50% and not over 95% of the total thickness of the skins and core and having a density of at least 12 lbs./cu. ft. and said core being composed and integral with said skins, said thermoplastic resin being oriented and strecthed at least 25% in at least one direction.



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**3,168,208**
**SEALING CLOSURE INCORPORATING LINEAR MOTION STRAIN WAVE DRIVE**
**Bernard G. E. Stiff, 1350 Main St., Lynnfield Center, Mass., assignor of twenty-five percent to William L. Ericson, Marblehead, Mass.**
**Filed Apr. 13, 1962, Ser. No. 187,334**
**8 Claims. (Cl. 215—40)**



1. A sealing closure for an opening in a container having a grooved circumferential portion extending about the opening, said sealing closure comprising, in combination:

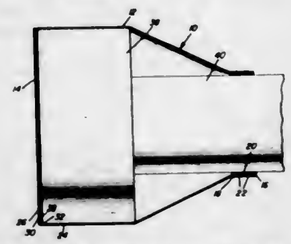
a deformable member comprising an annular body of revolution about a polar axis, said deformable member having at least one axial end thereof arranged to receive the grooved portion of the container and having a circumferential working surface portion of a different diameter when undeflected from the effective diameter of said grooved portion, said working surface portion extending circumferentially about said grooved portion in an assembled relation of said closure with said container;

a strain wave generator member engaging said deformable member to deflect said working surface portion into engagement with said grooved portion at a plurality of circumferentially-spaced positions interspaced by non-engaging positions, said generator member being rotatable about said polar axis with respect to said deformable member for propagating a rotating strain wave to produce linear motion of said deformable member along said polar axis with respect to said grooved portion;

and closure cap means drivingly engaged with one of said members for movement thereby along said polar axis to sealingly engage the opening in said container.

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**3,168,209**
**DUST COVER**
**Roy Glen Brookins, 1620 Spruce St., and Royce E. Hiler, 1339 S. Seneca St., both of Denver Colo.**
**Filed Nov. 29, 1962, Ser. No. 240,823**
**2 Claims. (Cl. 220—24)**



1. A cryogenic dust cover for enclosing and sealing exposed ends of interconnecting conduit members, said dust cover including a generally cylindrical body member constructed of flexible material, a generally circular end wall secured to and closing one end of said cylindrical body member, means operatively connected to the other end of said body member for drawing portions of the marginal edge portions of said other end radially inwardly toward the longitudinal center axis of said body member and causing said portions of said marginal edge portions to closely embrace a conduit member having one end disposed within said other end of said body member, said other end of said body member including an annular inturned portion folded back upon and stitched to said one end, said means comprising a cylindrical elastomeric member disposed inside and stitched to the inner surface of said annular inturned portion.

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**3,168,210**
**SAFETY FEATURE IN PRESSURIZED CONTAINERS**
**Gladney R. Williams, 502 Main St., East Aurora, N.Y.**
**Filed Dec. 28, 1962, Ser. No. 247,951**
**2 Claims. (Cl. 220—89)**



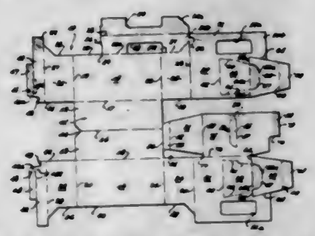
1. A pressurized container including a body unit having a side wall, a sealed base and a sealed cap containing dispensing means, said body unit side wall having plural perforations therethrough, said perforations being pressure sealed by sealing means fusible at a temperature lower than that required to rupture said container, at least two of said perforations being spaced apart lengthwise of said body unit with one located closely adjacent said base and the other located closely adjacent said cap, and at least two of said perforations being spaced apart circumferentially around said body unit side wall, thereby providing fusibly sealed perforations adjacent the opposite ends of said body unit side wall and on opposite sides of said body unit, whereby upon said container being subjected to a heat source at least one of said perforations and its immediate area will be exposed to said heat source, thereby allowing its sealing means to fuse at a critical temperature, thus releasing any pressure build up within said container.

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**3,168,211**
**PAPERBOARD BOTTLE CARRIER WITH REINFORCED PARTITIONS**
**Noel A. Petter, Glendale, Calif., assignor to Standard Paper Box Corporation, Los Angeles, Calif., a corporation of Delaware**
**Filed Mar. 20, 1962, Ser. No. 181,124**
**4 Claims. (Cl. 220—113)**

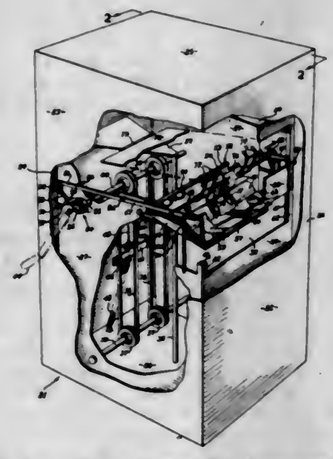
1. In a paperboard carrier for bottles and the like, of the type including two parallel side walls, a central longitudinal partition between and parallel to said side walls, four end walls hinged to the ends of the side walls and to the corresponding ends of the longitudinal partition, said longitudinal partition being comprised of a plurality of longitudinally disposed partition-forming walls fastened in a flat assembly, and a plurality of transverse partitions on each side of said longitudinal partition, each

comprising a flap formed from and hinged to the adjacent outermost longitudinally disposed partition-forming wall, and having a hinged tab at the end thereof fastened to the adjacent side wall, all in such manner that said carrier can assume, and be erected from, a flat-folded condition, wherein said side walls are adjacent said longitudinal partition, with the end walls at one end of the carrier bent inward inside said side walls and lying substantially in the plane of the longitudinal partition, with the end walls at the other end of the carrier extending outwardly from and beyond said side walls, in substantially the plane of the latter, and with said transverse partitions disposed similarly to said end walls, in substantially the plane of said longitudinal partition, said carrier being of the type constructed from paperboard blank means cut, scored, folded and glued into said flat-folded form and erectable therefrom by bending said end walls and transverse partitions outwardly into positions at right angles to said longitudinal partition while translating said longitudinal partition longitudinally relative to said side walls, the improvement comprising: transverse partition-reinforcing pads formed as original parts of said blank means with tear lines therealong and positioned therein for severance and displacement into new positions in said blank means, in surface contact with said transverse partitions, in the course of construction of said carrier from said blank means, said pads being adapted for gluing to said transverse partitions in said surface contact.



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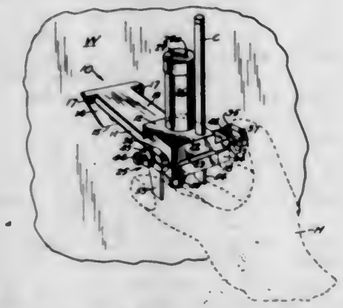
**3,168,212**
**DISPENSING APPARATUS FOR HORIZONTALLY DISPOSED ARTICLES**
**Eric W. Edwards, 15 London Road E., Guelph, Ontario, Canada**
**Filed Aug. 16, 1962, Ser. No. 217,476**
**10 Claims. (Cl. 221—39)**



1. A dispensing apparatus for dispensing one-by-one, horizontally disposed articles, such as shopping bags, newspapers and the like, comprising a cabinet having a portion forming an access opening in one vertical wall thereof, an elevating mechanism in said cabinet comprising a substantially horizontally disposed platform for supporting a stack of horizontally disposed articles thereon, said elevating mechanism including means connected to said platform and continuously urging said platform upwardly, an access control plate displaceably mounted in said cabinet and normally positioned in closing relation to said access opening in said one vertical wall, and a brake mechanism connected to, controlled and operated by movement of said access control plate, said brake mechanism including braking portions engaging an element of said means urging said platform upwardly, and preventing said platform from moving upwardly when said access control plate is in a position whereby removal of articles through said access opening can be effected, said access control plate maintaining said braking mechanism in an inoperative condition when said access control plate is in closing relation to said access opening, whereby said platform is constantly urged upwardly by said means continuously urging said platform upwardly.

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**3,168,213**
**DISPENSER**
**Kenneth C. De Gon, Alexandria, Va., assignor to General Refineries, Inc., St. Paul, Minn., a corporation of Minnesota**
**Filed Oct. 17, 1963, Ser. No. 316,849**
**6 Claims. (Cl. 221—96)**

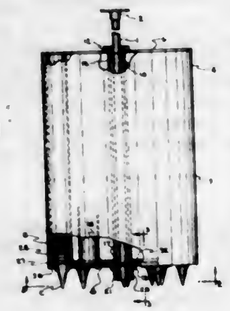


1. A dispenser for liquid mercury and silver pellets for use in producing dental amalgams,
comprising a frame having an elongate stripper plate-receiving slot extending therethrough and also having an elongate guide-way therethrough extending parallel with said slot and in side-by-side relation with said slot, said guideway having a cylindrical sleeve-like bushing affixed therein, said frame and bushing having upper portions and also having aligned mercury-supply openings in said upper portions to facilitate application of liquid mercury into said bushing, the upper portion of said frame also having a pellet supply opening communicating with said slot, said frame and bushing also having lower portions with pellet and mercury discharging ports spaced from said supply openings and adjacent each other and respectively communicating with said slot and guideway,
a slide effecting measuring and dispensing of mercury and dispensing of a silver pellet, said slide including a pair of end members spaced from each other, a pellet-stripping plate slidably mounted in said slot and rigidly affixed to said end members, said plate having a pellet-receiving and carrying aperture therethrough and aligned with said pellet-supply opening of the frame, said plate being movable in the slot to move said aperture therein into alignment with said pellet discharging port,
said slide also including a pair of cooperating cylindrical rods in spaced and end-to-end relation with each other and slidably mounted within said bushing in mercury-sealing relation to cooperate with said bushing in defining a mercury-measuring chamber therebetween, one of said rods having an outer end rigidly affixed to one of said end members and having an inner end extending to said mercury supply openings, the other of said rods having an inner end within said bushing and also having a reduced and threaded outer end threadably mounted in the other of said end members to facilitate axial adjustment thereof to change the capacity of said mercury-measuring chamber, said rods being longitudinally movable in said bushing to move said chamber into alignment with said mercury discharging port,
whereby to facilitate dispensing of accurate predetermined quantities of mercury along with the silver in a pellet for forming a dental amalgam.



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**3,168,214**
**DISPENSER FOR ICE CREAM CONES**
**James H. Breazeale, 1327 Valiant Drive, Fenton, Mo.**
**Filed Jan. 29, 1962, Ser. No. 169,570**
**5 Claims. (Cl. 221—119)**

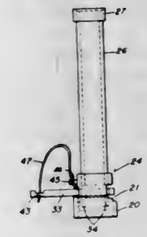


1. A dispenser for ice cream cones comprising a vertical cylindrical element adapted for rigid mounting solely at its upper end and having its lower end free, a magazine rotatably journaled on said element and including a plurality of vertical tubes adapted to receive stacks of cones, said tubes having bottom closure comprising a substantially horizontal sheet of rubber-like material slit along a plurality of lines radiating from substantially the center of each tube to form converging flaps of generally triangular shape adapted to permit the tip of the lowermost cone to protrude from the lower end of the tube responsive to the weight of cones in the tube and to permit removal of the lowermost cone responsive to the application of downward forces in excess of gravity to said lowermost cone, and means removably secured to the lower end portion of said element and underlyingly supporting said magazine thereon.

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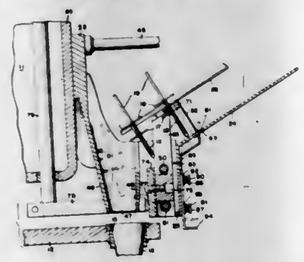
**3,168,215**
**TABLET DISPENSER**
**George Vido, 217 Rose St., Newark, N.J.**
**Filed June 11, 1963, Ser. No. 287,149**
**1 Claim. (Cl. 221—264)**

A tablet dispenser comprising a base, a hollow component fitted into the base and rising thereabove, a hollow cylindrical container for tablets fitted into and rising above said component, the component having opposed apertures positioned above the base, of which apertures one is wider than the other, a horizontally disposed and longitudinally slidable ejector extending through said apertures, one portion of the ejector being wider than the remaining portion and adapted to pass through the mentioned wider aperture but too wide to pass through the narrower aperture, said ejector having an oval aperture therethrough aligned with and under the bore of said tablet container and adapted to receive the lowest tablet of a vertical series of tablets, the tablet-receiving aperture in the ejector slanted downwardly and forwardly at its opposed front and rear sides to facilitate the ejection of a tablet, and the base having a forwardly and downwardly slanted concave lip to receive an ejected tablet, a plug at the bottom of said component below said ejector to guide an ejected tablet to said lip and to form a base for tablets in said tablet receiving aperture when aligned with the bore of the tablet container, holding means in the wall of said component and pressing against the tablet container to maintain the lower end of the container above the ejector, a handle in the form of a flat, bowed spring above the ejector and aligned therewith, the inner end of said flat spring being connected to said holding means and the outer end of the spring inserted into the outer end portion of the ejector.



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**3,168,216**
**FEEDING MECHANISM FOR FILLING MACHINE**
**Thomas E. Marion and Raymond L. Morse, Baltimore, Md., assignors to Universal Machine Co., Inc., Baltimore, Md., a corporation of Maryland**
**Filed June 25, 1962, Ser. No. 205,010**
**1 Claim. (Cl. 221—299)**

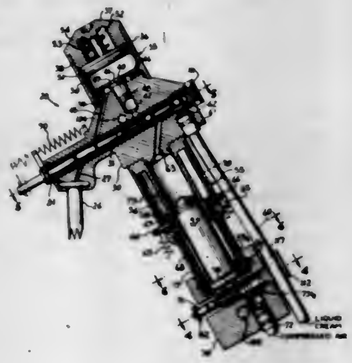


A device for feeding T-shaped articles having a horizontal flange and a stem projecting therebelow between a supply station and a delivery station, said device comprising spaced parallel bars for slidably supporting the flanges of the articles with the stems thereof projecting below the bars, means supporting the bars in an inclined plane between the stations to cause the articles carried thereby to slide from the supply station to the delivery station under the force of gravity, a carriage disposed below the bars in the path of travel of the stems of the articles, means for reciprocating said carriage transversely across said path between two extreme positions, said carriage having a transverse passageway therein for said stems, said carriage also having an inlet slot for the passageway on the side thereof facing the supply station aligned with the path of travel when the carriage is in

one of its extreme positions of reciprocation and an outlet slot for the passageway on the side thereof facing the delivery station aligned with the path of travel when the carriage is in the opposite extreme position of reciprocation, an abutment member for blocking passage to the carriage of articles between the supply station and carriage in said path of travel, means for selectively positioning and holding the abutment member in and out of blocking position, the means for holding the abutment member in and out of blocking position comprising a plate member, said abutment member being carried by the plate member, a stationary member having a surface with which the plate member is in slidable contact for movement thereon parallel to the path of movement of the abutment member, and yieldable pressure means acting between the plate member and surface for frictionally engaging the plate member with the surface to support it in different relative positions, and the means for selectively positioning the abutment member comprising means for applying manual force to the plate member to move it over said surface against the force of the yieldable pressure means.

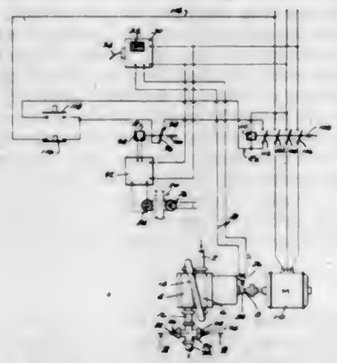
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**3,168,217**
**CREAM WHIPPING AND DISPENSING DEVICE FOR FOUNTAINS**
**Peter Alfred Nilsen, Villa Park, and Peter Henrik Lindved, Lombard, Ill., assignors, by mesne assignments, to Nilsen Mfg. Co., Haines City, Fla., a corporation of Florida**
**Filed Sept. 12, 1961, Ser. No. 137,641**
**4 Claims. (Cl. 222—4)**



1. In a cream whipping and dispensing device the combination comprising a first ported valve body and a second ported valve body, a metering cylinder between said valve bodies having a piston movable therein, said first ported valve body having a mixing chamber as well as a source of aerating gas under pressure and a discharge nozzle, said second ported valve body being connected to a source of gas pressure and having ports for connecting the metering cylinder to the source of gas pressure for endwise movement of the piston in the metering cylinder, valve plungers in said valve bodies, said valve plungers having means for mechanically coupling them together so that they move in unison, the ports being so arranged that in successive positions of the valve plungers (*a*) liquid cream is drawn into said metering cylinder, (*b*) aerating gas is charged in said mixing chamber, (*c*) the liquid cream is injected under pressure from said metering cylinder into the mixing chamber for intimate mixing with the aerating gas in the latter and (*d*) the mixed cream and gas is discharged from the mixing chamber through said nozzle in whipped form.

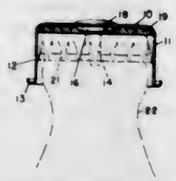
**3,168,218**
**METERING DEVICE WITH OPAQUENESS RESPONSIVE SHUTOFF**
**Gilbert R. Funk and Robert E. Holtgrieve, Waukesha, Wis., assignors to Waukesha Foundry Company, Waukesha, Wis., a corporation of Wisconsin**
**Filed Sept. 18, 1962, Ser. No. 224,356**
**10 Claims. (Cl. 222—23)**



3. The combination with a metering pump for opaque liquid and including a pumping rotor and means for making the pump output proportionate to the number of rotations of said rotor provided a solid flow of liquid is acted on thereby, means for counting the rotations of the rotor, and means responsive to the opaqueness of said liquid for terminating the operation of the pump in the event the flow therefrom ceases to be opaque.

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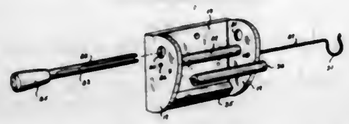
**3,168,219**
**FIRE EXTINGUISHER ATTACHMENT FOR CONTAINERS OF PRESSURIZED LIQUIDS**
**Frank X. Kamp, Deposit, N.Y.**
**Filed June 28, 1963, Ser. No. 291,512**
**2 Claims. (Cl. 222—82)**



1. In combination with a bottle containing fluid under pressure and having a crimp type cap, the provision of a shell having a circular top and dependent cylindrical side walls engageable over said cap, said shell being provided with a gasket abutting the underside of said top, a hollow cylindrical member having a constricted bore centrally affixed to and extending through said top, said gasket surrounding said hollow member, and said side walls being provided with a plurality of inwardly directed indentations for engagement with said cap to retain said shell on said cap, said hollow member having a sharpened inner end for effecting a single perforation in said cap whereby to permit escape of the pressurized contents of said container through said constricted bore without the admission of air, and said hollow member being provided with an integrally formed collar adjacent the underside of said top and said hollow member terminating immediately outwardly of said top in a flattened top portion whereby to clamp the hollow member firmly to said top.



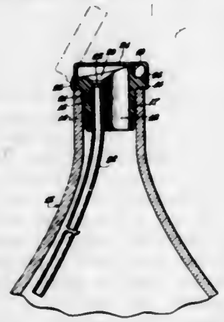
**3,168,220**
**DEVICE FOR THE REMOVAL OF MATERIAL FROM TUBES**
**John E. Gegner, Box 194, Centerville, Iowa**
**Filed Nov. 20, 1961, Ser. No. 153,330**
**3 Claims. (Cl. 222—98)**



1. In a device for facilitating the removal of material from a collapsible tube,
(*a*) a base portion,
(*b*) two spaced apart bearing ears on said base portion,
(*c*) a detachable shaft slidably rotatably extending through said to bearing ears,
(*d*) a roller below said shaft and operatively rotatably mounted on said two bearing ears,
(*e*) and a second roller below said shaft, adjacent said first roller and operatively detachable rotatably mounted on said two bearing ears; and
(*f*) said shaft having a slit opening in its length for detachably receiving the closed end portion of a collapsible material tube.

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**3,168,221**
**VENT MEANS FOR BOTTLES AND JUGS**
**Allen J. Parker, 113 Urquhart St., Lake Worth, Fla.**
**Filed July 3, 1963, Ser. No. 292,537**
**1 Claim. (Cl. 222—109)**



A vented closure for bottles or jars and with the bottles or jars having a reduced neck extension, a molded plug adapted to have frictional fitting engagement into the neck of the bottle, the plug being cylindrical and circumferentially grooved whereby to have gripping engagement with the inner wall of the neck, the plug being yieldable so that the grooves create a suction engagement with the inner wall of the neck, the plug having an enlarged circumferential flange that is adapted to seat upon the upper end of the neck and to limit the movement of the plug into the bottle, a second flange extending above the first flange and eccentric thereto and with the second flange being inclined downwardly to form a drainage recess, the plug having a relatively large bore extending vertically therethrough and, communicating with the recess, a second relatively small bore that is parallel with the first bore and closely adjacent thereto and with the second bore opening into the recess at the bottom of the recess, the second bore being reduced at its upper end to form a stop shoulder, a vent tube engageable into the second bore to a point that contacts the shoulder and to limit the movement of the tube therein, the tube projecting below the plug and curved intermediate its length to lie against an inner side wall of the bottle, a closure cap that is hingedly connected to the flange at a point slightly outwardly of the first named flange, the cap being cup-shaped and means formed upon the first named flange opposite to the hinge for frictionally holding the cap in a closed position, the plug and the cap being integrally molded from plastic, the first named bore constituting a pouring spout for contents of the bottle, the tube constituting an air vent for the bottle and with the recess adapted to receive any fluid that is disposed upon the spout after the bottle has been placed in an upright position and whereby to drain the excess fluid back to the bottle through the tube.

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**3,168,222**
**DISPENSING CONTAINER**
**Herbert J. Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware**
**Filed Jan. 14, 1963, Ser. No. 251,317**
**4 Claims. (Cl. 222—142.1)**



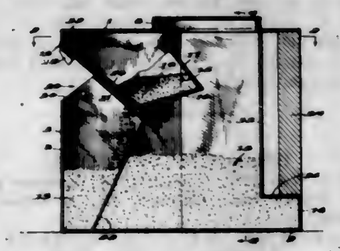

1. A dispensing container of plastic material including a one piece body portion capable of being nested with other body portions of like configuration, and a bottom element adapted to be subsequently applied thereto, said body portion including a tapering sidewall and an integral imperforate top joined to said sidewall at a circumferential margin opposite the margin with which said bottom element is adapted to be mounted, said imperforate top and the sidewall in the vicinity of their juncture being traversed by an oblique surface on which is provided means capable of rupture or removal for egress of the contents of said container, and a stacking ring element provided on the sidewall of said body portion which facilitates separation of said body portion from body portions of like configuration when nested therewith including an internal shoulder, and an external shoulder spaced vertically therefrom, the external shoulder of one container being engageable with the internal shoulder of an adjacent body portion in stacked, nested, telescoped relation therewith to limit the degree of telescoping.

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**3,168,223**
**CANISTER WITH BUILT-IN MEASURING DISPENSER**
**Claude V. Capers, 4313 Kemp Drive, Chattanooga, Tenn.**
**Filed Sept. 27, 1962, Ser. No. 226,644**
**11 Claims. (Cl. 222—158)**

1. A canister structure for storing and dispensing fluent materials in selected measured amounts, said canister structure including at least one upright interior corner portion established by two convergent upright side walls thereof, a transfer compartment and a combined measuring and dispensing compartment located in said corner portion, said upright side walls forming parts of the walls of at least one of said compartments, said transfer compartment being located in the upper part of said corner portion and adapted to be filled with fluent material from the supply stored within the canister by at least tilting the canister, said combined measuring and dispensing compartment being openable at its upper end to the ex-

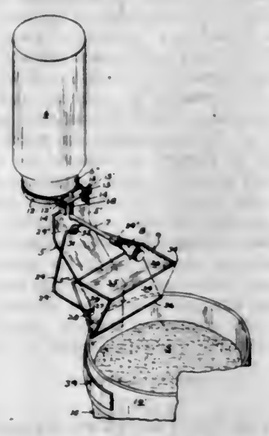
terior of the canister wall structure and being located in said corner portion at a level below said transfer compartment and having at least one graduated scale thereon, and a door controlling communication between said transfer compartment and said combined measuring and dispensing compartment, said door being openable to initiate gravity flow discharge of the fluent material from said transfer compartment into said combined measuring



and dispensing compartment, and said door being closable to cut off flow of the fluent material when the amount of the fluent material desired to be dispensed has been discharged into said combined measuring and dispensing compartment, said fluent material then being poured out of the upper end of said combined measuring and dispensing compartment by a second tilting action of said canister.

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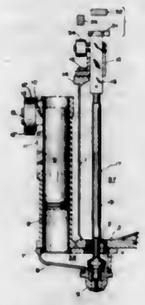
**3,168,224**
**DRIP FEED DEVICE**
**Armando Rios, 1926 88th Ave., Oakland 21, Calif.**
**Continuation of application Ser. No. 93,573, Mar. 6, 1961. This application Aug. 12, 1963, Ser. No. 302,764**
**3 Claims. (Cl. 222—181)**



2. In a water-dispensing unit for intermittently watering a plant-growing area, the combination with a water-supply container providing a discharge opening in its bottom, a rigid supporting standard adapted for its fixed upright disposal adjacent a receiving point for the discharged water, means mounting said container on said standard in fixed relation thereto, an adjustable drip valve, means connecting the drip valve with the discharge opening of the container in fixed relation thereto for a free gravity discharge of the liquid through the valve at an adjusted rate, a bail-carried and self-righting tilt basin disposed beneath the drip valve for gravitationally receiving successive basin-tilting charges of water from the drip valve and providing a straight spill edge for a direct gravity delivery of water thereover upon said plant-growing area, and means adjustable to adjust the basin-carrying bail on the standard for a swinging of the basin about a fixed horizontal axis whereby successive tilting actuations of the basin are adapted to deliver successive charges of the water received by the tilt basin from the drip valve in sheet form and directly upon the plant-growing area.

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**3,168,225**
**VALVE ARRANGEMENT FOR RECEPTACLE FILLING MACHINES**
**Bruce D. Miller and Robert L. Smith, both of Louisville, Ky., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Mar. 6, 1961, Ser. No. 93,566**
**5 Claims. (Cl. 222—380)**



1. In a receptacle filling machine: an inlet port, an outlet port and a discharge port, said inlet port leading from a source of fluid supply, a cylinder, a piston slidable in said cylinder during its intake and discharge strokes, an enlarged cavity leading from said outlet port, said discharge port leading from said enlarged cavity, a movable valve member having a first closure for closing said inlet port, a second closure for closing said outlet port and a third closure for closing said discharge port, said first, second and third closures being disposed on said movable valve member relative to said inlet, outlet and discharge ports to open said inlet port and close said outlet and discharge ports in a first position, to close all said inlet, outlet and discharge ports in a second position and to close said inlet port and open said outlet and discharge ports in a third position, means for actuating said movable valve member from the first position to the second position, means for enabling relative movement between said valve member and said valve member actuating means to enable said valve member to move from the second position to the third position and from the third position to the second position, said first closure having a portion against which fluid pressure in said passageway acts during the discharge stroke of said piston to move said valve member from the second position to the third position, means for actuating said piston, said valve member being returned to the second position from the third position should said piston cease to complete its discharge stroke.

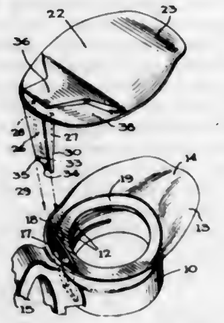
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**3,168,226**
**SEPARABLE DISPENSER TOP**
**Roland H. Underwood, Irvington, N.Y., and Robert M. Mitchell, South Norwalk, Conn., assignors, by mesne assignments, to General Foods Corporation, White Plains, N.Y., a corporation of Delaware**
**Filed Sept. 11, 1963, Ser. No. 308,151**
**11 Claims. (Cl. 222—472)**

1. In a separable pouring spout and valve structure, a base, a pouring spout at the forward extremity of said base, a handle made integral with said base extending downwardly from its rear extremity, a downwardly reduced recess in said base adjacent said handle disposed in the same vertical plane as said handle, a cap means



fitting over said base and conformed at its forward extremity to the pouring spout section thereof, a downwardly reduced, wedge-shaped tongue affixed beneath the lower, rear extremity of said cap fitting within said downwardly reduced recess in said base, a reduced flexure sec-



tion in the rear extremity of said cap extending forwardly of said tongue and of progressively decreasing forward thickness, studs disposed at the rear, lateral extremities of said tongue whereby it may be removably seated in said recess.

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**3,168,227**
**DOLL MANIKIN WITH DETACHABLE COMPONENTS**
**Olive D. Osmond, Ogden, Utah (13949 Nordhoff St., Arleta, Calif.)**
**Filed Nov. 30, 1960, Ser. No. 72,712**
**1 Claim. (Cl. 223—66)**



A portable miniaturized manikin one-half the size of a full-sized manikin comprising a knockdown scale model doll which is precision-made and scaled to accurately simulate and conform part-for-part and feature-for-feature to corresponding parts and features of a selected live model, said doll including a head, neck, shoulders, body, arms, legs and feet, the contours and measurements of which are proportional on a half-size scale to the overall corresponding parts, contours and measurements exemplary of the aforementioned live model, said doll being thus exclusively fashioned and adapted to aptly wear and display any one dress of a line of dresses expressly designed and expertly made in compliance with the requirements of said doll whereby a fittingly selected dress may then be utilized as a pattern or replica when making a conformably scaled full-sized dress, a base, said base having a flat top surface and being provided with a pair of rigid spaced parallel upstanding manikin supporting and retaining pins, the median portions of the feet at the bottom of the angle portions of the legs of the doll having downwardly opening sockets aligned with their respective pins, said pins fitting telescopically into said sockets and permitting the manikin to be removably supported in an erect display position atop said base, the arms of said doll being readily attachable and enabling the user to remove the arms temporarily while dressing the doll and thereafter inserting the arms through the sleeves of the dress which is fitted on the manikin, said arms being shaped and in proportion with the arms of the aforementioned live model and adjustably positioned and relatively oriented to assume and imitate at least one known mannerism typical of the appearance and unique "personality" of the imitated live model, the respective shoulder portions of said doll being provided with diametrically opposite cooperatively aligned relatively deep recesses defining outwardly tapered sockets, a permanent magnet of a cross-sectional thickness less than the depth of said socket and secluded and removably anchored in the bottom portion of each socket, the attachable upper ends of the aforementioned arms being mated and conformable with and abutting their respective shoulders, the shoulder abutting surfaces of said upper ends being flattened and each flattened end being provided with an axially projecting permanent magnet, said magnet being of a transverse cross-section less than the area of the coacting shoulder abutting surface and being shaped to and sized and fitting within the confines of an outer portion only of the adjacent socket and the respective fixed and movable magnets abutting each other and serving to detachably hold each arm in a given position alongside the body of the doll.

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**3,168,228**
**UPHOLSTERING TOOL**
**Delbert L. Lewis, 18801 Hawthorne Blvd., Torrance, Calif.**
**Filed Oct. 4, 1962, Ser. No. 228,465**
**3 Claims. (Cl. 223—102)**



1. An upholstering tool for inserting a filament through an article of furniture comprising
a pair of elongated needles,
each of said needles having a pointed distal end,
an eye adjacent said distal end,
and an elongated shank extending from said distal end,
means attaching said needles together at a location remote from said distal ends so that said needles are in a side-by-side relationship,
said location being sufficiently spaced from said distal ends that said distal ends are movable toward and away from each other by deflecting said shanks of said needles intermediate said attaching means to said distal ends,

said shanks of said needles having portions extending beyond said attaching means on the the side thereof remote from said distal ends,

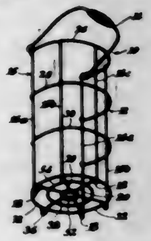
and a handle,

said portions of said shanks beyond said attaching means extending into said handle,

whereby said handle carries said needles for providing a means for forcing said needles through an upholstered article of furniture.

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**3,168,229**
**PLATE HOLDER**
**Sidney T. Helfetz, New York, N.Y.**
**(1430 Parkchester Road, Bronx, N.Y.)**
**Filed July 28, 1961, Ser. No. 127,547**
**2 Claims. (Cl. 224—45)**



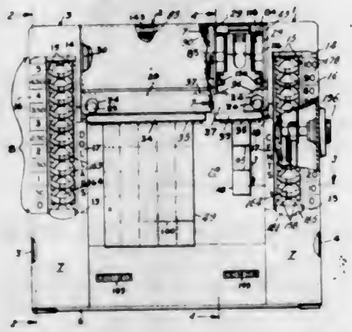
1. In a carryable magazine-type dish holder of the character described adapted for top loading and unloading of plates, and for containing said plates in a vertical columnar stack with the plates in contact, one upon another, the combination of a basket having an open circular top, the containing passageway outlines of said basket and said open top being of such size and shape as to closely conform to the outline of said plates, said basket having an opening in the side communicative with said top opening, said side opening being of width slightly less than the width of the containable plates whereby a chordal portion of the stacked plates project therefrom, and a bail-like handle pivotally attached to the basket outward of the chordal attachment points substantially where the sides of the side opening meet the top opening, said handle being adapted to be supported across the top of said basket and to lie substantially horizontally and entirely outside the projected confines of said containing passageway outlines, whereby an uninterruptable passage of the plates through the top opening is afforded when the said handle is in said non-carryable horizontal position.

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**3,168,230**
**STAMP DISPENSING MACHINE**
**Wolfgang B. Fahrenbach, Oakland, Calif., assignor to Roto-Stamp Corporation, San Francisco, Calif., a corporation of California**
**Filed Aug. 20, 1962, Ser. No. 217,996**
**5 Claims. (Cl. 225—16)**

1. In a stamp dispensing machine for dispensing stamps in a strip from a roll thereof, which machine includes a horizontal base and an upright housing thereover comprising an intermediate housing section provided with discharge opening for stamps from said roll and a pair of substantially corresponding vertically disposed end housing sections releasably connected with said intermediate section at two opposite lateral ends of the latter, roll supporting means removably supported within said intermediate housing section for supporting such roll for rotation thereof upon movement of a strip of stamps therefrom through said discharge opening, guide means within said intermediate section for guiding such strip from said roll to said discharge opening including a rotary drum having projections therein for extending through and positively engaging said strip for moving the latter to and through said discharge opening upon rotation of said drum in one direction;

(*a*) a pair of spaced, opposed, vertical end plates rigid with said base respectively disposed at opposite ends of said intermediate section adjacent to said end sections of said housing and a horizontal shaft rigid with said drum supporting the latter within said intermediate section for rotation of said drum with said shaft, one end portion of said shaft rotatably extending through and supported by one vertical plate of said pair and projecting into the one end section of said pair thereof adjacent to said one vertical plate, and shaft supporting means on said intermediate section including said one plate of said pair supporting said shaft for rotation thereof;



(*b*) an upper sprocket wheel and a lower sprocket wheel respectively positioned within the upper and lower portions of said one end section of said housing, said upper sprocket wheel being rigid on said end portion of said shaft and means independent of said end section rotatably supporting said lower sprocket wheel within said lower portion of said end section spaced a substantial distance below said upper sprocket wheel;

(*c*) said one end section having a vertical outer wall in spaced opposed relation to the one vertical end plate adjacent thereto and a flange integral with said outer wall extending laterally from the edges thereof to said one vertical end plate, said flange having a generally vertically extending portion formed with an elongated generally vertically extending slot, and a row of equally spaced indicia on said flange along one longitudinally extending edge of said slot for indicating in terms of value the number of stamps to be dispensed;

(*d*) an endless chain of pivotally connected links extending over said upper and lower sprocket wheels providing a pair of elongated flights of chain extending from one wheel to the other, and chain-positioning means rigid on said one vertical end plate and between said flights supporting one flight of said chain closely below and parallel with said slot from end to end of the latter against deflection of said one flight;

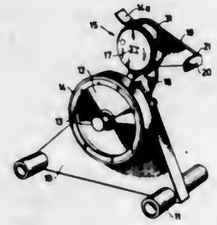
(*e*) equally spaced finger engageable elements respectively rigid with separate links of said chain spaced from each other a distance equal to the spacing between adjacent pairs of said indicia and sufficient to receive the outer end of a finger of a person between each adjacent pair thereof outwardly of said links, said elements projecting outwardly from said links substantially at right angles thereto and generally horizontally through said slot along said one flight for engagement of the upper surface of each element by said finger for moving said one flight downwardly upon downward movement of said finger to the lower end of said slot to thereby effect rotation of said drum and the dispensing of stamps from said roll through said discharge opening;

(*f*) said one housing section being removable from said intermediate portion and from said vertical plate independently thereof and independently of said shaft, sprocket wheels, chain and finger engageable elements to facilitate access thereto free from interference therewith, and means for releasably securing said one end housing to said vertical plate.



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**3,168,231**
**TAPE DISPENSER**
**Lennart Rönning, Casilla 2585, Santiago, Chile**
**Filed July 2, 1963, Ser. No. 292,499**
**6 Claims. (Cl. 225—72)**



1. A tape dispenser for adhesive tapes and the like, comprising:

(*a*) a frame,

(*b*) a tape supply wheel rotatably mounted on said frame,

(*c*) a first arm having one end pivotally mounted on said frame and extending beyond said frame and said supply wheel,

(*d*) a tape feeding wheel rotatably mounted on the free end of said first arm in substantially the same plane as said supply wheel, whereby a pull on the free end of a tape in frictional engagement with said feeding wheel moves said first arm forward and pulls a fixed length of tape from said supply wheel,

(*e*) a second arm having one end fixedly attached to said tape feeding wheel and rotatable therewith,

(*f*) tape severing means on the other end of said second arm at right angles thereto and extending across the plane of said supply wheel and said feeding wheel,

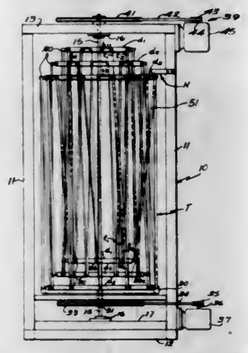
(*g*) spring means biasing said second arm in a generally horizontal rearward direction, and

(*h*) a flexible coupling means of predetermined length attached to said frame, wound part way around said feeding wheel and fixed at its other end to the feeding wheel second arm assemblage, whereby the previously mentioned movement of said first arm in a forward direction causes said flexible coupling means to rotate said feeding wheel and said second arm against the tension of said spring means and then stops the forward motion of said first arm at a point determined by the length of said flexible coupling means.

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**3,168,232**
**RANDOM ACCESS-SERIAL TAPE DATA STORAGE SYSTEM**
**Arnold R. Beaver, 44 Elm St., Morristown, N.J.**
**Filed Sept. 12, 1961, Ser. No. 137,621**
**7 Claims. (Cl. 226—119)**

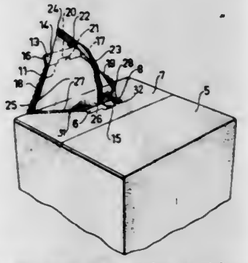
1. A random-serial access data tape storage system comprising a frame mounting an axle, a plurality of spindles disposed in two spaced groups along said axle, the spindles of each group being spaced around said axle and extending approximately radially outwardly therefrom, each spindle of each of said groups being aligned



longitudinally of said axle with a spindle of the other of said groups to define a spaced pair, and at least one endless data tape suspended between each of said spaced pairs of spindles.

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**3,168,233**
**DISPENSING MEANS IN A PACKAGE**
**Rolf Lennart Ignell, Lund, Sweden, assignor to A.B. Vapor, Lund, Sweden, a company of Sweden**
**Filed Aug. 9, 1962, Ser. No. 215,865**
**Claims priority, application Sweden Aug. 10, 1961**
**1 Claim. (Cl. 229—17)**

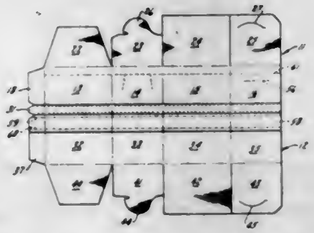


A dispensing package comprising a thin-walled flexible tube sealed closed at its opposite ends and distended into a rectangular liner structure in which the tube wall forms both an end wall of the rectangular liner structure and also opposed double walled hollow triangular liner ears each of which is folded downwardly about its base edge to lie flat against an adjacent wall of said rectangular liner structure, one of said hollow liner ears being in communication with the interior of said liner and being adapted upon rupturing an apex section of said ear to serve as a pouring spout for the contents within said liner, an outer rectangular carton snugly enclosing said rectangular liner structure and being provided with an outwardly swinging tear wall flap lying opposite to the said triangular ear which is to serve as the pouring spout and uncovering when swung outwardly an aperture in the adjacent carton end wall, and means adhesively securing only that portion of said triangular ear which lies inwardly of said rupturable apex section permanently to said outwardly swinging tear wall flap of said carton so as to enable said liner ear to be pulled outward through said carton end wall aperture to a dispensing position in which it is adequately supported by said tear wall flap as the latter is swung outwardly, and to be returned to a position within said carton when said tear wall flap is swung inwardly to reclose the carton, said triangular liner ear having a base line co-extensive with the adjacent

carton end wall edge and said end wall tear flap having a base of a length less than said end wall edge whereby said triangular liner ear when flat-folded overlappingly covers said end wall aperture and when pulled through said aperture automatically distends into a three-dimensional pouring spout shape.

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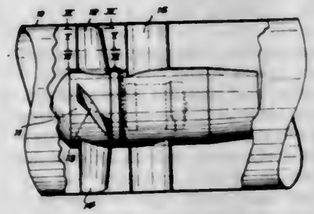
**3,168,234**
**DIVISIBLE FOOD CARTON**
**Fred H. Bartz, 9380 W. Loomis Road, Franklin, Wis.**
**Filed June 20, 1963, Ser. No. 289,235**
**7 Claims. (Cl. 229—51)**



1. A carton for ice cream and the like including a carton body defined by upper and lower sections, said upper and lower sections being comprised of folded portions cooperatively defining the side panels of said carton, said lower section having flaps joined to the folded portions thereof to define bottom closure flaps for said carton, said upper section having flaps joined to the folded portions thereof to define top closure flaps for said carton, said upper section being joined to said lower section at a medial portion of said carton, said lower section being positioned within the folded portions of said upper section at said medial portion, said lower section having upper flaps extending upwardly within and alongside the folded portions of said upper section, said upper section having a transverse tear line positioned above said medial portion, said lower section having fold lines between the folded portions thereof and said upper flaps adjacent said tear line, said upper flaps having sizes and proportions such as to form top closure flaps for said lower section after division of said carton along said tear line.

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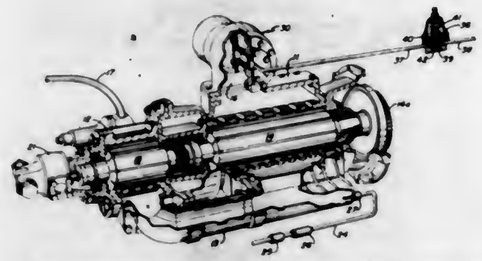
**3,168,235**
**HELICOIDAL FANS**
**René Jacques Valdi, Paris, France, assignor to Societe Lyonnaise de Ventilation Industrielle "Solyvent"**
**Filed Dec. 30, 1960, Ser. No. 79,849**
**Claims priority, application France, Dec. 12, 1958, 781,545, Patent 1,218,500**
**5 Claims. (Cl. 230—120)**



1. An axial fan of the type described comprising at least two blades mounted on a hub, in which the maximum thickness of the transverse section of each blade increases from the base to the extremity of said blade, the number $n$ of blades and the maximum thickness L of said blades, for a transverse section taken at a distance $r$ from the axis of the hub, being such that the relation $nL/2\pi r \geq 0.08$ is satisfied in the case of at least one transverse section, and an outer casing coaxially surrounding the extremity of said blades the chord of the blade having an increase in length at any given transverse section therethrough from the base to the extremity of the blade.

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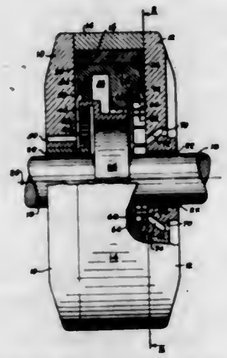
**3,168,236**
**OIL SCAVENGING SYSTEM FOR A ROTARY COMPRESSOR**
**Ralph E. Lamberton, Worthington, and Orville R. Lowther and Robert A. Redding, Columbus, Ohio, assignors to The Jaeger Machine Company, Columbus, Ohio, a corporation of Ohio**
**Filed Sept. 5, 1963, Ser. No. 306,760**
**15 Claims. (Cl. 230—207)**



1. In combination with a multi-stage rotary compressor having a high-pressure side including a high-pressure cylinder and a low-pressure side including a low-pressure cylinder and an interstage manifold connecting the high and low pressure cylinders thereof and having a high-pressure oil lubricating system connected to the cylinders, means for preventing the accumulation of excessive amounts of oil in the interstage manifold and comprising a fluid line connected between said interstage manifold and a source of higher pressure on the compressor to provide a pressure differential for creating a positive jet of fluid in the manifold to aid in removing the oil therefrom.

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**3,168,237**
**ROTOR COOLING ARRANGEMENT FOR ROTARY MECHANISMS**
**Hanns-Dieter Paschke, Neckarsulm, Wurttemberg, Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, Germany, and Wankel G.m.b.H., Lindau (Bodensee), Germany**
**Filed July 30, 1962, Ser. No. 213,495**
**Claims priority, application Germany, Sept. 9, 1961, N 20,533**
**6 Claims. (Cl. 230—210)**

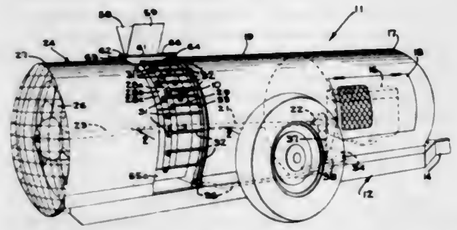


1. A rotary mechanism comprising an outer body having spaced end walls and a peripheral wall forming a cavity therebetween having an axis along which the end walls are spaced; a shaft co-axial with said cavity and having an eccentric portion; an inner body journaled on said eccentric portion and disposed within said cavity such that said inner body has a planetary motion about said axis, said inner body being hollow and having an inflow passage and an outflow passage for flow of liquid coolant therethrough with said outflow passage opening through an end face of the inner body and an annular channel member co-axially carried by the inner body at its said end face and disposed radially outwardly of said inner body outflow passage, said annular channel member having a portion sealingly engaging the adjacent end wall and having a plurality of circumferentially-spaced recesses which open radially inwardly and axially outwardly toward said end wall, said end wall having an outlet passage disposed so as to be in successive communication with said recesses during operation of the mechanism.



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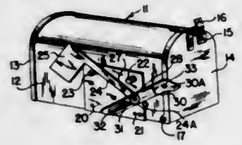
**3,168,238**
**CHEMICAL DISTRIBUTING MACHINE**
**Tracy Carrigan, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware**
**Filed Oct. 19, 1962, Ser. No. 231,811**
**9 Claims. (Cl. 230—274)**



1. In a chemical distributing machine, the combination of means for creating an air blast, means for directing the air blast through a passage defined by spaced apart walls having a curved periphery generated about a central axis, a flexible deflector, means for anchoring one end of said deflector at a predetermined location in said passage and immediately adjacent said axis, and means for selectively securing the other end of said flexible deflector in any one of a plurality of positions in said passage adjacent the outer periphery thereof and for retaining the deflector in selected degree of curvature for deflecting air out of said passage in selected direction and for minimizing turbulence in the flow of the deflected air.

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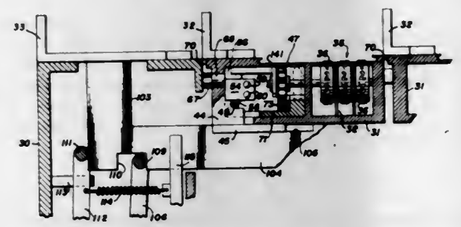
**3,168,239**
**SIGNALING DEVICE FOR MAIL BOX AND THE LIKE**
**Frederick J. Cooper, 36499 Dorchester Road, Gates Mills, Ohio**
**Filed July 22, 1963, Ser. No. 296,717**
**8 Claims. (Cl. 232—35)**



7. In a device for indicating the closure of a door on a mail box, the door being swingable on a horizontal hinge axis disposed along the bottom edge of the door opening, the combination of, a lever arm pivotally mounted intermediate its ends to a side of the mail box, a signal element mounted to one end portion of the lever arm, a pin mounted to an opposite end portion of the lever arm, a link member pivotally mounted to the door at a distance from said hinge axis, a slideway carried by the link member at a distance from said door and accommodating said pin to permit relative longitudinal movement of the pin along said slideway, the relative bias of said link member and lever arm being such that said pin is urged upwardly against the upper defining edge of said slideway in its movement along said slideway, and a detent element carried by the link member along said slideway and positioned adjacent said upper defining edge to engage and press against the said pin upon movement of the link member toward the said opposite end portion of the lever and thereby pivotally swing the lever in a direction to raise said one end portion of the lever carrying the said signal element.

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**3,168,240**
**VOTING MACHINE**
**Cothburn M. O'Neal, 404 S. College, Arlington, Tex.**
**Filed Apr. 8, 1963, Ser. No. 271,277**
**4 Claims. (Cl. 235—54)**



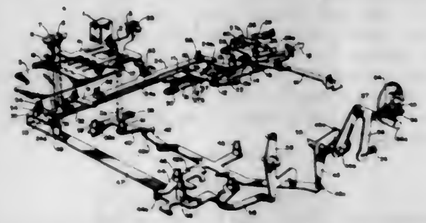
1. In a voting machine including a case, multiple elongate trays received in said case in side-by-side relation, laterally movable individual keys mounted in corresponding sides of said trays, a longitudinal movable rack within each said tray, a counter within each said tray opposite each said key, means carried by said keys operatively engaging said counters with said racks, plunger blocks between each said key and movable perpendicular to the direction of movement thereof, each said block receiving a compressible plunger therethrough and a rigid plunger extending therethrough, both said plungers being parallel with each other and slidably positioned transversely of the movement of said keys, means limiting the movement of said compressible plungers and rigid plungers, said compressible and rigid plungers being normally in respective alignment, means selectively moving at least one of said blocks to align the compressible plunger thereof with adjacent said rigid plungers, and wedges carried by said keys for movement between two of said blocks and the rigid and compressible plungers carried thereby.

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**3,168,241**
**LOCKING AND RELEASING MECHANISM FOR FUNCTION CONTROLLING KEYS OF CALCULATING MACHINES**
**Sture Efraim Toorell, Atvidaberg, Sweden, assignor to Aktiebolaget Atvidaberg-Facit, Atvidaberg, Sweden, a joint-stock company of Sweden**
**Filed Apr. 15, 1963, Ser. No. 273,088**
**Claims priority, application Sweden, Apr. 18, 1962, 4,374/62**
**2 Claims. (Cl. 235—130)**

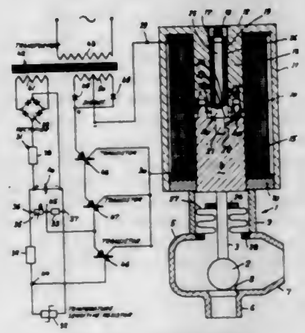
1. In a calculating machine of the type adapted to perform single operations and sequences of operations initiated by one of a group of function controlling keys, having means for preventing the operation of another

of the group of function keys after actuation of one of the group, and having key locking means to prevent release of a function key prior to the completion of the associated operation or sequence of operations, in combination, a hook member, a disengaging link, means mounting said hook member on said disengaging link, a rocker member actuated by the machine drive, a spring tensioned by initial movement of a function key to urge said hook member into the path of said rocker member, means under control of the locking mechanism and operative during subsequent movement of a function key prior to engagement of said hook member with said rocker member to move said disengaging link to thereby move said hook member out of the path of said rocker member, and means operable only upon completion of the iniated operation or sequence of operations to release said disengaging link to again permit said hook member to enter the path of said rocker member and to thereby release said locked function key.



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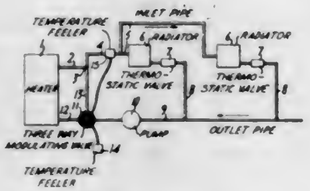
**3,168,242**
**ELECTROMAGNETICALLY OPERATED TEMPERATURE REGULATING SYSTEM**
**Rudolf Diener, Zurich, Switzerland, assignor, by mesne assignments, to Eldima A.G., Zurich, Switzerland**
**Filed Nov. 5, 1962, Ser. No. 235,309**
**4 Claims. (Cl. 236—75)**



1. A temperature regulating system comprising: a temperature-sensitive resistor the resistance of which varies in response to variations in the temperature to be regulated; a substantially balanced bridge circuit, said resistor being included in one of the arms thereof, said bridge circuit providing an output signal which varies in direction and magnitude in accordance with the deviation of said regulated temperature from a predetermined reference temperature; amplifier means having an input connected to said bridge circuit for amplifying said output signal; a solenoid valve for controlling the flow of a heat transfer medium to vary said regulated temperature, said valve comprising a hollow cylindrical operating winding connected to the output of said amplifier means for response to the amplified output signal of said bridge circuit; a magnetizable cylindrical plunger member axially movably disposed within said winding coaxially therewith for magnetization thereby; a fixed cylindrical magnetizable member disposed within said winding coaxially therewith for magnetization thereby, said plunger member and said fixed member having confronting end faces, one of said end faces having an integrally formed annular extension projecting axially therebeyond coaxially therewith, said extension being defined by a surface of revolution about the longitudinal axis of said coil generated by a regular iscosceles trapezoid convergent toward the other end face with an angle of convergence within the range from 20°–30°, the other end face having an annular recess formed therein of configuration complementary to said extension for receiving said extension therein; a movable valve member included in said solenoid valve, said valve member being connected directly to said plunger member for displacement therewith; fluid impermeable effectively frictionless bellows means interposed between said winding and said valve member for preventing fluid flow therebetween; a valve seat cooperating with said valve member for regulating fluid flow through said solenoid valve; and spring means yieldingly urging said valve member to engage said seat to shut off said solenoid valve, said spring means being pre-biased to hold said solenoid valve closed at all times when said bridge circuit provides an output signal not exceeding a predetermined minimum value, said spring means, said magnetizable members, said operating winding, said bridge circuit and said temperature-sensitive resistor being dimensioned to provide a stable linear relationship between the magnitude of the output of said bridge circuit and the displacement of said valve member.

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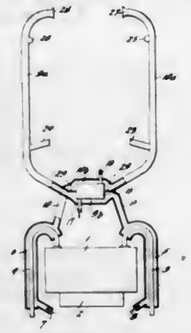
**3,168,243**
**HEATING SYSTEM**
**Kjeld Rikard Porland, Ringgade 68, Sonderborg, Denmark**
**Filed June 27, 1961, Ser. No. 173,844**
**Claims priority, application Germany, May 4, 1960, D 33,258**
**4 Claims. (Cl. 237—8)**




1. A system for the maintenance of predetermined temperatures in rooms provided with a plurality of radiators supplied with water in parallel from a source of heated water, including a heating unit, which comprises an individual outlet line from each radiator, a common outlet line connected to the individual outlet lines from all of said radiators, a modulating thermostatic valve in the individual outlet line of each of said radiators, said thermostatic valve responding both to the room temperature and to the individual outlet line water temperature, an inlet line from the source of heated water to said radiators, and means for mixing a selected portion of the water contained in said common outlet line with the water contained in said inlet line, said means including a modulating three-way valve for selectively dividing the flow of water in said common outlet line to said inlet line and to said source of heated water, said three-way valve being regulated in response to the exterior temperature.



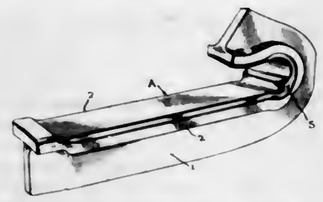
**3,168,244**
**HEATING SYSTEMS FOR MOTOR VEHICLES**
**Reinhard Gospodar, Eichelkamp 36, Wolfsburg, Germany**
**Filed May 24, 1963, Ser. No. 283,050**
**Claims priority, application Germany, May 25, 1962, V 22,552**
**1 Claim. (Cl. 237—12.3)**



A heating system for power vehicles with internal combustion motor near the back of the vehicle, comprising a heat exchanger extending around an exhaust gas line with the exchanger extending along each side of the engine, at least one auxiliary heater in the form of a combustion chamber within a casing, pipe connections to connect the casing with each heat exchanger, said chamber being adapted to receive a fuel-air mixture, a dividing wall in the casing and connected to the combustion chamber to provide two air lines in the auxiliary heater, and a pair of air lines one on each side of the vehicle and having a plurality of air outlet openings, said last-mentioned air lines connected to the two air lines in the auxiliary heater with the air lines and pipe connections crossing each other by means of the dividing wall so that the heated air from the heat exchanger on one side of the engine crosses over to the other side of the vehicle at the auxiliary heater, and the combustion chamber having a longitudinal axis at right angles to the longitudinal axis of the vehicle.

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**3,168,245**
**CONTINUOUS STOP RAIL ANCHOR**
**Max K. Ruppert, Chicago, Ill., assignor to Poor & Company, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 7, 1962, Ser. No. 171,679**
**2 Claims. (Cl. 238—327)**



2. As an article of manufacture, a rail anchor of rolled and bent metal comprising in combination,

(1) a body of T-shape cross sectional stock providing a stem having a flat vertical face, large areas of which in use abut against a vertical face of an adjacent cross tie,

(2) the body also providing oppositely disposed flanges with coplanar upper faces constituting in use a horizontal platform for engaging the base of a rail,

(3) a bent hook forming a continuation at one end of said body to provide in use an upper jaw, cooperable with a portion of the horizontal platform therebelow for gripping the top and bottom surface of one flange of a rail base, the stem at the bend providing a locus for installation forces,

(4) a single transversely continuous overdrive-stop-shoulder within the hook at the junction of the platform and hook, said shoulder in use contacting one vertical edge surface of the rail base.

(5) said stop shoulder being integral with the flanges and delineated by a first vertically upstanding planar wall, and an obtusely intersecting slightly upstandingly sloping second planar wall, the walls extending from edge to edge of the platform and presenting a straight horizontal ridge facing the open end of the hook,

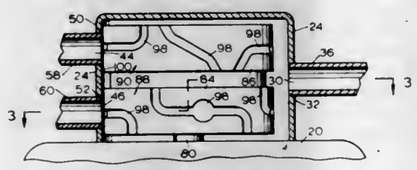
(6) said shoulder bounded on opposite sides by transversely continuous and smoothly merging valley portions of similar configuration throughout their lengths,

(7) whereby to provide an inner bend surface of the flange which has a minimal of abrupt changes, resulting in lesser concentration of installing and working stresses, thus contributing to a longer wear life of the rail anchor,

(8) and an upstanding locking shoulder at the opposite end of the body from said hook, to accommodate the opposite vertical edge surface of a rail base.

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**3,168,246**
**FOUNTAIN VALVE**
**John M. Musgrave, Woodbine, Iowa**
**Filed Sept. 13, 1963, Ser. No. 309,593**
**2 Claims. (Cl. 239—22)**



1. A valve assembly for automatically varying the rate of flow of fluid under pressure, said valve having a housing having an outlet and an inlet, a normally continuously rotating valve in said housing having a periphery passing across said outlet and forming a sliding fit therewith, said periphery being generally circular in cross section and being spaced from said inlet for reception of fluid into said housing, the periphery of said valve having a groove therein which is periodically in communication with said outlet, the valve and the interior of said housing being so cooperatively shaped and positioned that the majority of all fluid passing through the outlet at times when said groove is opposite said outlet passes through said groove, said groove being elongated in the direction of the circular periphery of said valve, said groove having varying cross sectional areas spaced along the elongation of said groove whereby as said valve rotates, the rate of flow through said valve varies, and means attached to said valve for normally continuously rotating said valve.

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**3,168,247**
**PRESSURE WASHING DEVICES**
**Helmuth Fred Schild, Milwaukee, Wis. (2305 Sandy Beach Road, Fond du Lac, Wis.)**
**Filed Sept. 24, 1962, Ser. No. 225,768**
**1 Claim. (Cl. 239—127)**

A cleaning apparatus including a wheel supported housing, a cleaning reservoir removably supported on top of said housing, a pump supported within said housing,

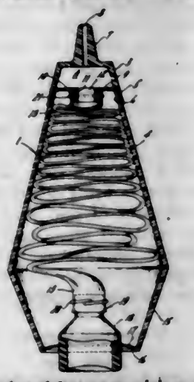
one side of said housing having a pair of control valves mounted thereon, said one side of said housing also including a pair of couplings exposed to the exterior of said housing, one of said couplings having a conduit connected to one of said valves and the other coupling being connected to an outlet conduit from said pump, said one valve being connected to an inlet conduit for said pump so as to allow flow from the coupling associated therewith to the intake of said pump, the other valve being connected through a conduit to the inlet conduit of said pump and to a supply conduit adapted to be detachably connected to said reservoir thereby allow-



ing flow from said reservoir to the inlet conuit of said pump under control of said other valve, a pressure relief passage between the outlet conduit of said pump and the inlet conduit therefor so as to allow circulation of fluid between the outlet and inlet of said pump when pressures in the outlet conduit of said pump exceed a predetermined amount, and a nozzle and outlet conduit assembly connected to said second coupling so as to allow flow of fluid therethrough from either of said conduits leading to the inlet conduit of said pump under the control of said valves and the forced circulation of said pump.

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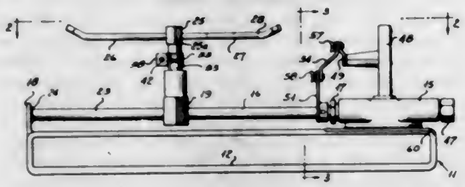
**3,168,248**
**HAND FIRE EXTINGUISHER**
**James V. Winslow, Rte. 2, Box 229, Waukesha, Wis.**
**Filed Mar. 15, 1963, Ser. No. 265,437**
**7 Claims. (Cl. 139—195)**



1. A hand fire extinguisher comprising a hand-carryable housing, a nozzle secured to one end of said housing, a fitting associated with said nozzle, an elongated hose having one of its ends secured to said fitting for communication with said nozzle, said hose being folded upon itself within said housing, a connector secured to the opposite end of said housing and communicating with the opposite end of said hose, and a snap fitting carried by said connector and removably engaging the opposite end of said housing.

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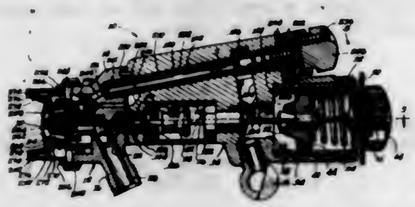
**3,168,249**
**LAWN SPRINKLER**
**Seth Waldo Thompson, 9 Gordon Road, Essex Fells, N.J.**
**Filed June 26, 1963, Ser. No. 290,836**
**6 Claims. (Cl. 239—242)**



5. A lawn sprinkler comprising a supporting frame, a housing mounted on said frame, a water motor in said housing, said housing having a water inlet connection to said motor and an outlet, a sprinkler supply pipe mounted on said frame to oscillate about a horizontal axis and connected to said outlet to receive water therefrom, a driving connection between said motor and said supply pipe for oscillation of said pipe with respect to said frame, a rotary sprinkler member carried by said sprinkler supply pipe, including a sprinkler head having water outlet apertures directed to cause rotation of the sprinkler head when water emerges under pressure from said apertures, and means defining a water passage interconnecting said sprinkler head and said sprinkler supply pipe whereby said sprinkler supply pipe and said sprinkler head are simultaneously supplied with water under pressure.

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**3,168,250**
**AIRBRUSH MECHANISM**
**Jens A. Paasche, Wilmette, Ill.**
**(1909 Diversey Parkway, Chicago 14, Ill.)**
**Filed Nov. 24, 1961, Ser. No. 154,770**
**13 Claims. (Cl. 239—300)**



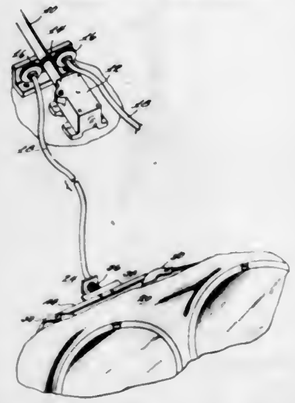
5. In an airbrush, the combination of a body, a spray head, means detachably connecting said spray head to said body, flow control means on said spray head including a reciprocable control member extending in the direction of said body, an air motor disposed on said body and including a piston substantially coaxial with said control member, said body defining an operating air space on the spray head side of said piston, a piston stem connected with said piston and extending through and beyond said air space toward said control member, means releasably connecting said piston stem and said control member, a packing capsule encircling an intermediate portion of said piston stem between said coupling and said air space, said body defining a bore therein receiving said capsule and being larger in transverse section than said capsule to provide for limited radial movement of said capsule in all directions, means providing a circumferential seal between said capsule and said body for different positions of radial adjustment of said capsule within said bore, and packing means within said capsule



forming a slidable seal between the capsule and said piston stem.

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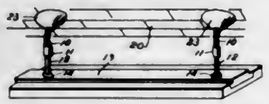
**3,168,251**
**MOVABLE VEHICLE HEAD LAMPS**
**Nelson Carter, Hiwassee, Va.**
**Filed Oct. 15, 1962, Ser. No. 230,376**
**1 Claim. (Cl. 240—62.51)**



An automatic system for controlling the position of vehicle head lamps comprising: a steering rod for said vehicle, a first gear mounted on said steering rod for rotation therewith and a second gear in operative engagement with said first gear; a flexible control cable having one end connected to said second gear; a gear bracket attached to said vehicle, said bracket including forward and rear arms having aligned apertures therein; a pinion extending between said arms and having its opposite ends journaled by said bracket within said apertures, one end of said pinion being connected to the other end of said control cable; a rack continuously engaging said pinion at the opposite end thereof immediately adjacent said forward arm, said rack having a curved slot therein to define a surface which engages said pinion, said engaging surface being concave with respect to said pinion; a head lamp arrangement including at least one head lamp pivotally connected at its top, at the front portion thereof, to said vehicle; said head lamp being joined to said rack rearwardly of the pivotal connection to permit rotation of said steering rod to be translated into combined lateral and vertical movement of said head lamp arrangement.

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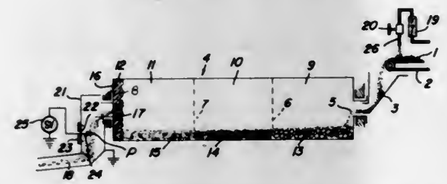
**3,168,252**
**FLEXIBLE FIXTURE SUSPENSION**
**Louis J. Cabernoch, Chicago, Ill., assignor to Curtis-Electro Lighting, Inc., Chicago, Ill., a corporation of Illinois**
**Filed Nov. 6, 1963, Ser. No. 321,858**
**1 Claim. (Cl. 240—78)**



A lighting fixture suspension comprising a non-horizontal ceiling, a pair of spaced suspension members, each of said members having hollow attaching means rigidly attached at its upper portion to said ceiling, a hollow bushing rigidly attached at its upper portion to the lower portion of said attaching means, a hollow flexible hose of woven steel wire and at least four inches in length, said flexible hose attached at its upper portion to the lower portion of said bushing, and a rigid tubing attached at its upper portion to the lower portion of said flexible hose, said rigid tubing being of larger extent than said flexible hose, and a lighting fixture attached to the lower portion of said rigid tubing of each of said spaced suspension members, said fixture being more than two feet in extent and between five and forty pounds in weight and adapted by its weight to cause said flexible hose to move to compensate for the inclined angle of the non-horizontal ceiling and permit said fixture to hang in horizontal position.

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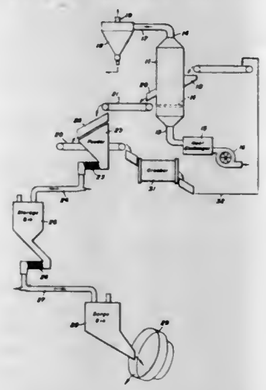
**3,168,253**
**METHOD OF GRINDING QUICKLIME**
**Senichi Masuda, Musashino-shi, Tokyo-to, Japan, assignor to Onoda Cement Company Limited, Yamaguchi Prefecture, Japan**
**Filed July 9, 1962, Ser. No. 208,433**
**Claims priority, application Japan, Oct. 18, 1961, 36/37,266/61**
**4 Claims. (Cl. 241—16)**



1. A method of grinding quicklime by means of a ball mill comprising the step of: continuously adding water in the form selected from the group consisting of liquid and saturated steam to the quicklime to be ground, the weight proportion of water added to quicklime per unit time lying between 0.1 and 5% whereby the virtual electric resistance of the quicklime is lowered to such extent that electric charges generated within the mill are considerably reduced through electric conduction but generation of excess heat of reaction due to bonding of CaO and $H_2O$ is essentially avoided.

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**3,168,254**
**METHOD FOR PREPARING THE FUEL COMPONENT OF AGGLOMERATOR-FEED MIX**
**Lambert J. Kilboy, Worth Township, Cook County, Ill., assignor to United States Steel Corporation, a corporation of New Jersey**
**Filed Feb. 21, 1963, Ser. No. 260,131**
**1 Claim. (Cl. 241—19)**

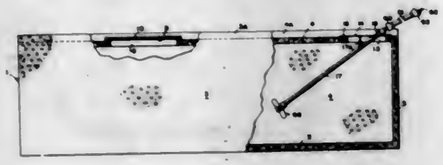


A method of preparing carbonaceous fuel for use as a component of an agglomerate with ore fines for sinter-

ing which comprises introducing such fuel ground to a size less than ¾" and containing particles of −100 mesh in size into a drier, passing hot gases through the fuel thereby removing moisture and fines of −100 mesh size therefrom, passing the off-gases from said dried through a dust collector, removing remaining fuel from ¾" to +100 mesh in size from said drier and classifying it into a size range smaller than ⅛" suitable for sinter-feed agglomerate and an oversize fraction between ⅛" and ¾", then crushing the oversize fraction and recycling it through said drier.

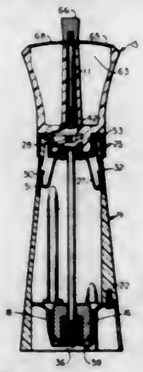
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**3,168,255**
**AGITATOR FOR LIQUID MANURE STORAGE TANKS**
**Paul M. Bellows, Rte. 1, Box 706, Ridgefield, Wash., and Joy E. Harlow, P.O. Box 206, Battle Ground, Wash.**
**Filed July 6, 1962, Ser. No. 207,878**
**2 Claims. (Cl. 241—46)**



1. A storage tank for liquid manure containing solids and hay and straw intermingled therewith,
said tank comprising front, rear, and side walls, and a one-piece over-all top wall having a filler opening therein at one side thereof,
said top wall having a second opening therein at one corner thereof and in alignment with said filler opening,
a cover plate permanently closing said second opening,
means for cutting, agitating, and blending the liquid, solids, and intermingled material into batter consistency,
said means comprising an elongated tubular housing permanently secured near one of its ends to said cover plate and extending upwardly and outwardly therefrom,
said housing extending downwardly and away from said cover plate on a vertical plane with said filler opening and closed at both of its ends by plug nuts,
a plurality of radial bearings fixedly mounted within said tubular housing at spaced-apart intervals,
a solid inflexible shaft journaled in said bearings through said plug nuts and extending outwardly from both ends of said housing,
a propeller secured to said downward end of said shaft,
means removably attaching the opposite upwardly and outwardly extending end of said shaft to a source of driving power rotatable through a variable range of r.p.m.,
the leading and peripheral edges of the propeller blades sharpened to a knife edge,
set collars secured to said shaft and bearing against the radial bearings to absorb lineal compressive forces imposed thereon by the propeller load in its agitating rotation and torsional propeller loads in its cutting rotation, whereby the inherent rigidity and inflexibility of said shaft further stiffened by said housing bearings and plug nuts will stabilize the assembly against distortion and vacillating tendencies relative to its securement to said cover plate.

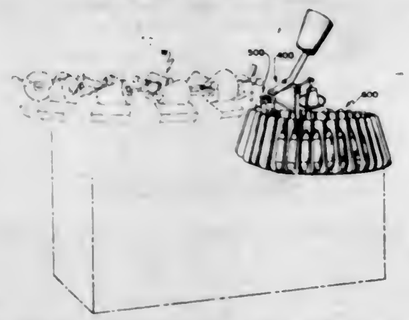
**3,168,256**
**PEPPER MILL**
**William E. Bounds and Elmer S. Morris, Manhattan Beach, and Carl A. Sundstrom, Palos Verdes, Calif., assignors to William E. Bounds Associates, Manhattan Beach, Calif., a partnership**
**Filed May 2, 1963, Ser. No. 277,631**
**10 Claims. (Cl. 241—168)**



1. In a pepper mill,
support means,
a first grinding member mounted on said support means for rotation relative thereto,
a second grinding member fixedly mounted on said support means, said second grinding member being positioned for grinding action in conjunction with said first member,
means for rotating said first grinding member relative to said second grinding member, and
selector means mounted for rotation relative to both said first grinding member and said support means for alternatively positioning the grinding surfaces of said first grinding member at one of several predetermined distances from the grinding surfaces of said second grinding member,
said selector means comprising a selector ring having at least one cam attached thereto, said support means having at least one cam surface formed thereon having several distinct steps, each of said steps defining a predetermined grinding position, said cam sliding along said cam surface with rotation of said ring.

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**3,168,257**
**WINDING MACHINE**
**Winthrop L. Perry, Milford, N.H., assignor to Abbott Machine Co., Inc., Wilton, N.H., a corporation of New Hampshire**
**Filed Sept. 29, 1961, Ser. No. 141,884**
**6 Claims. (Cl. 242—35.5)**

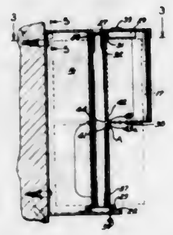


1. An automatic winding machine including a plurality of winding units, means for conveying the units in a procession, winding-unit tending mechanism disposed at a place past which the units travel, detecting means for determining whether a winding unit requires tending, said detecting means controlling the operation of the tending means, the machine including a motor adapted to operate at two speeds, one lower than the other, for driving the tending means and also the conveying means, an intermittent motion driving connection between the motor and the conveying means, and means under control of the detecting means operating when the tending means operates for switching the motor to its lower speed and for disconnecting the conveying means from the motor.



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**3,168,258**
**DISPENSER FOR ROLLED TOILET TISSUE**
**Evan L. Schwartz, 5426 N. Spahn, Lakewood, Calif.**
**Filed Oct. 5, 1962, Ser. No. 228,582**
**7 Claims. (Cl. 242—55.42)**

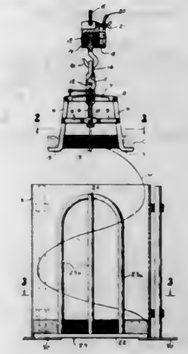


1. A device for use in storing a plurality of rolls of toilet tissue wrapped on severable cylindrical cores and sequentially permitting the removal of tissue from each of said rolls when moved to a predetermined first position in said device, comprising:
(*a*) a housing in which a compartment having an open end is provided in which compartment at least one of said rolls can be stored;
(*b*) a tube that extends through said housing and projects therebeyond a sufficient distance to permit said tube to concurrently support at least one of said rolls in said compartment and rotatably support one of said rolls on a portion of said tube that projects from said housing when disposed in said first position thereon;
(*c*) first means for maintaining one of said rolls at said first predetermined position on said portion of said tube that projects from said housing; and
(*d*) second manually operable means for severing the core of one of said rolls when in said first position and after said toilet tissue has been removed therefrom.

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**3,168,259**
**PROCESS OF PACKAGING WIRE**
**Robert S. Cady, Watertown, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut**
**Filed Feb. 27, 1963, Ser. No. 261,348**
**3 Claims. (Cl. 242—83)**

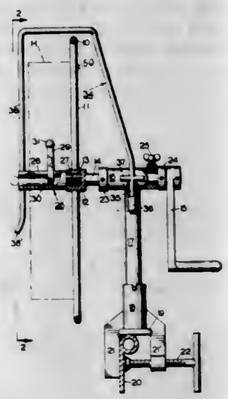
1. The process of packaging wire by converting a wire supply coil of relatively small mean diameter into a coil package of substantially larger mean diameter consisting of
(*a*) suspending the supply coil with its axis vertical so that it can rotate about its vertical axis under predetermined friction;
(*b*) initially directing the leading end of the supply coil around a receiving spool on which the package is to be formed, said receiving spool being located below and in vertical alignment with the supply coil;
(*c*) causing initial rotation of said supply coil about its vertical axis in the direction opposite to that of the coil winding;



whereby that portion of the wire between the supply coil and the receiving spool will assume an angle to the vertical so that the weight of said portion of wire exerts a continuing rotating force on the supply coil in the same direction as its initial rotation to cause said wire to fall automatically around said receiving spool into continuous convolutions of the desired diameter larger than the mean diameter of the supply coil.

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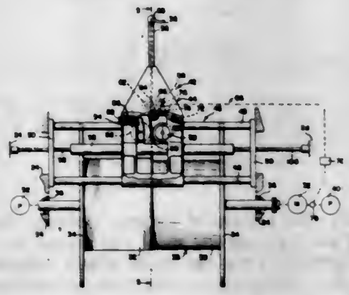
**3,168,260**
**DEVICE FOR ROLLING UP CANVAS HOSE**
**Arthur L. Kittelson, Rte. 2, Box 491, Roseburg, Oreg.**
**Filed Nov. 13, 1962, Ser. No. 236,900**
**1 Claim. (Cl. 242—86)**



In a device of the character described for forming collapsed hose into a roll, a wheel, a wheel shaft, said wheel secured to one end of said shaft, a crank handle at the other end of said shaft for rotating said shaft and wheel, a bearing mounting for said shaft, a rigid support for said bearing mounting, and a hose-supporting member secured in the hub of said wheel and extending from said hub and wheel oppositely from said shaft and co-axial with said hub and shaft, said hose-supporting member provided with a longitudinal slot extending longitudinally along said member and through the outer end of said member, a hose-engaging arm having one end hingedly mounted in said slot, said arm extending beyond the end of said member when positioned co-axially in said slot but adapted to be swung into a position substantially normal to the axis of said member for temporarily engaging an end of the hose when the hose is being rolled-up

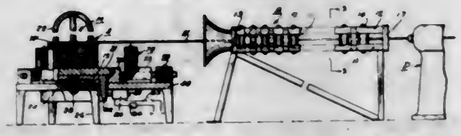
on said member, whereby said arm will be swung towards co-axial position in said slot when the rolled-up hose is manually slid off from said member, thereby releasing the hose end.

### 3,168,261
### CABLE WINDING MECHANISM
William H. Hainer, St. Paul, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 269,088
4 Claims. (Cl. 242—86.51)



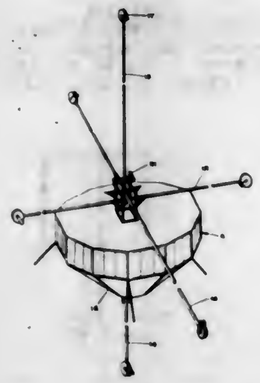
4. In a vehicle having an operating cable, the combination comprising: a winding reel adapted to have said cable wound thereon, a cable-guiding traverse mechanism including a carriage arranged for movement longitudinally of said reel, sensing means which is mounted on said carriage and functions to sense tension of said cable, control means which functions in response to said sensing means to cause said reel to wind in or pay out cable in response to, respectively, a decrease or an increase in cable tension, and drag means mounted on said carriage and acting on said cable at least when said cable is being wound onto said reel to place a predetermined tension on said cable as said cable is being wound onto said reel, said drag means comprising a pair of rollers engaging said cable and a power absorbing means operatively connected to at least one of said rollers to create a predetermined drag on said cable.

### 3,168,262
### WIRE COIL HOLDER
Jacques Ernest Germain, 214 Gage N., Hamilton, Ontario, Canada
Filed Dec. 31, 1962, Ser. No. 248,663
3 Claims. (Cl. 242—129)



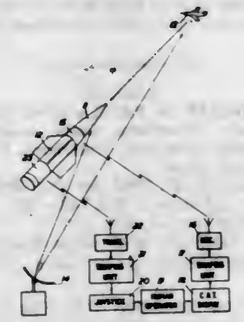
1. In a wire coil holding machine, the combination comprising:
- a turntable mounted to rotate freely on a vertical axis;
- a removable wire coil holder including a disc adapted to the laid upon said turntable and to be supported thereby, and a plurality of members secured to the upper surface of said disc, extending upwardly parallel to the vertical axis of said disc and operatively jointed together at a point above said disc;
- means for releasably locking said coil holder on said turntable, said means including a plurality of gripping members rotatably engaging said coil holder for holding said coil holder on said turntable in centered operative relationship and said means being further operative to simultaneously withdraw said gripping members from engagement with said coil holder to release said coil holder from said turntable;
- and means for controlling the rotation of said turntable.

### 3,168,263
### GRAVITY GRADIENT SATELLITE ORIENTATION SYSTEM
Lawrence J. Kamm, San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Nov. 20, 1961, Ser. No. 153,329
9 Claims. (Cl. 244—1)



2. A satellite vehicle orientation device comprising a satellite vehicle, an erecting elongated member having one end fastened to said satellite vehicle, a rigid elongated damper member pivotally connected to said satellite vehicle, and damping means connected to said damper member and said satellite vehicle.

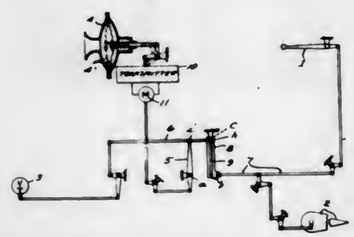
### 3,168,264
### GUIDANCE SYSTEMS FOR MISSILES AND OTHER MOVING BODIES
John Leonard Sendler, Belfast, Northern Ireland, assignor to Short Brothers & Harland Limited, Belfast, Northern Ireland, a British company
Filed Feb. 15, 1961, Ser. No. 112,134
Claims priority, application Great Britain, Feb. 23, 1960, 6,401/60
8 Claims. (Cl. 244—14)



1. A guidance system for a missile or other moving body comprising a surface-based radar signal transmitter for illuminating a remote target; a radar signal receiving dish mounted in the body for receiving radar signals reflected from the remote target; means including said radar signal receiving dish for generating information-carrying signals containing measurements of the relative angular position of the target with respect to the body, said generating means including means to produce a reference oscillation and means to derive from the reflected radar signals received from the target an oscillation the phase angle of which in relation to the reference oscillation is a measure of the angle between the projection of the body-to-target sight line onto a plane at right angles to the axis of the dish and a datum line in said plane; a radio transmitter mounted in the body for transmitting said information-carrying signals; a receiver located at an operator's station for receiving said information-carrying signals; a display device located at the operator's station and responsive to the received information-carrying signals to produce a visual representation of the relative angular position of the target with respect to the body; a manually operable control device for operation by a human operator to generate control signals in response to manual adjustment thereof; a further radio transmitter at the operator's station for transmitting said control signals; a further receiver mounted in the body for receiving said control signals; and a control system in the body responsive to the received control signals to guide the body in accordance with the operator's adjustments of the manually operable control device.

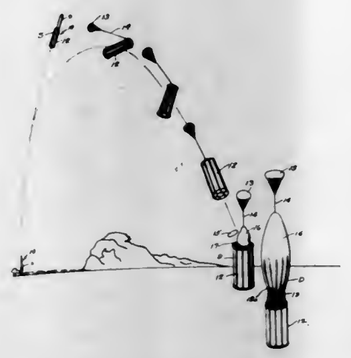


### 3,168,265
### CONTROL SYSTEM FOR AIRCRAFT WITH SLOW FLIGHT OR HOVERING CHARACTERISTICS, IN PARTICULAR FOR VERTICALLY STARTING AND LANDING AIRCRAFT
Klaus Pfaff, Meersburg, and Erhard Riedel, Friedrichshafen, Germany, assignors to Dornier-Werke G.m.b.H., Friedrichshafen, Germany, a firm of Germany
Filed Sept. 12, 1963, Ser. No. 308,588
Claims priority, application Germany, Sept. 14, 1962, D 39,844
7 Claims. (Cl. 244—76)



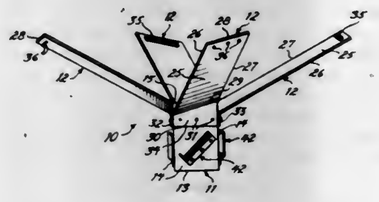
1. In an aircraft adapted for slow horizontal flight and for hovering and vertical flight:
- first attitude control means for controlling the attitude of the aircraft during horizontal flight,
- second attitude control means for controlling the attitude of the aircraft during hovering and vertical flight,
- regulating means operatively connected to said attitude control means,
- actuating means connected to said regulating means for actuating said regulating means,
- said regulating means including adjustable transmission means for adjusting the relative effect of said actuating means on said first and said second attitude control means, and
- means responsive to the horizontal flight speed of the aircraft, said speed responsive means being operatively connected to said transmission means for decreasing the effect of said actuating means on said second attitude control means upon increasing horizontal flight speed, and conversely.

### 3,168,266
### APPARATUS FOR SUPPORTING AIR-BORNE LOADS
Paul E. Yost, Sioux Falls, S. Dak., assignor to Raven Industries, Inc., Sioux Falls, S. Dak., a corporation of South Dakota
Filed Dec. 22, 1961, Ser. No. 161,675
7 Claims. (Cl. 244—138)



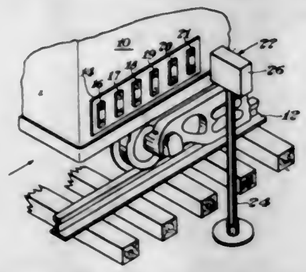
1. A system for recovering an air-borne load which comprises a parachute connected to the load for carrying aloft and for ejection at the beginning of a first phase of load descent to reduce the rate of descent of the load, a balloon envelope connected to the load at its lower end and connected to the parachute, means releasing the balloon at the beginning of a second phase of descent for being drawn away from the load by the parachute, means rapidly pre-inflating the balloon at the beginning of the second phase, and means for inflating the balloon with heated gas during said second phase for applying a vertical supporting lift to the load.

### 3,168,267
### AERIAL-DROP DEVICE
Edward G. Ferris, Apr. 40–A, Paulsboro Gardens, Paulsboro, N.J.
Filed May 14, 1963, Ser. No. 280,328
4 Claims. (Cl. 244—138)



2. An aerial-drop device comprising: a container having a bottom, side walls and a top; a plurality of wings extending outwardly from said side walls; hinge means connecting said wings to said side walls for swinging movement between outstanding radial positions and upstanding longitudinal positions; said wings each being arranged obliquely in its outstanding radial position to spiral said container upon being dropped; centrifugal weights on said wings to maintain the latter radially outstanding during spiral dropping movement; and a plurality of vanes projecting from said side walls below said wings and each arranged obliquely to initiate spiral container movement upon being dropped.

**3,168,268**
**TRAIN IDENTIFICATION SYSTEMS**
**Paul N. Bossart, Cheswick, and Robert J. King, Churchill Borough, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed Dec. 21, 1960, Ser. No. 77,444**
**4 Claims. (Cl. 246—2)**



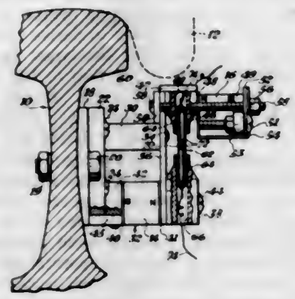
2. A system for identifying a moving object comprising, a plurality of magnetic members each having a north and a south pole and being mounted on said object in an array extending transversely to its direction of movement and arranged polaritywise to radiate a binary identification pattern, a plurality of wayside magnetic detectors arranged transversely of the direction of movement of said object each including a pair of spaced pole pieces disposed substantially in the same plane as said members and polarized by and when in registry with one of said members, a plurality of contacts, a movable polarized armature spaced between said pole pieces, said armature having a biased neutral position and adapted to be rocked into a first or second position to close one or another of said contacts according to the polarity induced in said pole pieces by said members, and means responsive to said actuated contacts for identifying said moving object.

3. A system for detecting the identity of a moving object comprising, an identification unit mounted on said object, said unit having a plurality of magnetized elements each having a north and a south pole and being arranged thereon polaritywise to radiate a binary coded identification pattern, a wayside magnetic detector responsive to the polarity arrangement of the magnetic elements for reading out said binary coded identification pattern element-by-element, said magnetic detector including a pair of spaced pole pieces of magnetic material disposed substantially in the same plane as said elements and polarized by and when in magnetic registry with one of said members, a plurality of contacts, a polarized armature spaced between said pole pieces and having a biased neutral position and adapted to be rocked into a first or second position to close one or another of said contacts according to the polarity induced in said pole pieces by said members, and identification means responsive to actuation of said contacts for determining the identity of said object.

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**3,168,269**
**TRACK INSTRUMENTS**
**Ernest W. Fisher, Dallas, Tex., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed Dec. 5, 1961, Ser. No. 157,162**
**7 Claims. (Cl. 246—249)**

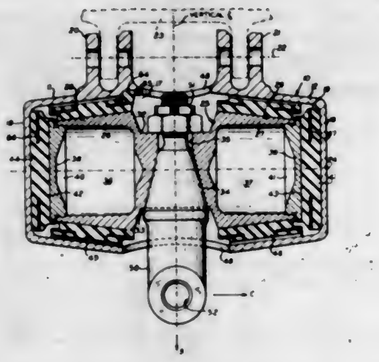
5. A device for indicating the presence of an object having low reluctance, comprising, a series magnetic circuit which includes a first magnet, a second magnet and magnetic means forming a first and a second air gap, said magnets and air gaps being chosen such that a first predetermined magnetic condition exists in a third air gap formed between like poles of said first and second magnets when no object having low reluctance is present in said first air gap and a second predetermined magnetic condition exists in said third air gap when an object having low



reluctance is present in said first air gap, and means for indicating the state of the magnetic condition in said third air gap.

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**3,168,270**
**ENGINE MOUNT**
**Erling J. Bligard, Northford, and Romolo H. Racca, Cheshire, Conn., assignors, by mesne assignments, to Cal-Val Research & Development Corp., Glendale, Calif., a corporation of Delaware**
**Filed Feb. 11, 1963, Ser. No. 257,480**
**14 Claims. (Cl. 248—5)**



1. An engine mount comprising a housing, pivot means on said housing for pivotally joining the housing to a supporting structure, a rigid core element within the housing, elastomeric means sandwiched between said core element and the housing separating one from the other, said core element and said elastomeric means being arranged within the housing such that all of said elastomeric means is subjected to shearing stress when said core element is rotated relative to said housing about an axis passing through the core and parallel to the pivotal axis of said pivot means, and means for coupling said core element to an engine.

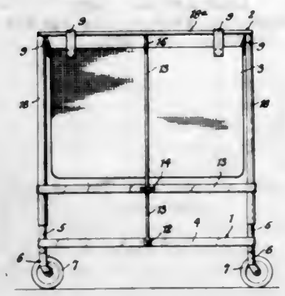
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**3,168,271**
**CLOTHES HAMPER**
**Harvey Deschenes, 128 Austin St., Worcester, Mass.**
**Filed Oct. 9, 1963, Ser. No. 315,062**
**8 Claims. (Cl. 248—129)**

4. A hamper construction having a carriage provided with a plurality of upstanding posts, a bag-support having a frame from which a bag is carried, hollow legs extending from the frame and telescopically fitted over the posts, springs contained within the posts and legs for biasing the



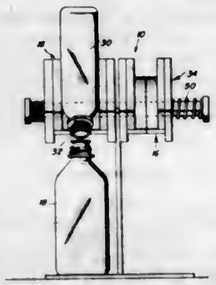
bag-support toward an elevated position, stop means for limiting the rising movement of the bag-support, said stop



means also constituting hold-down means for the bag-support when the same is in its lowered position.

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**3,168,272**
**BOTTLE HOLDER**
**Theodore C. Swinyar, % Collegedale Medical Center, Collegedale, Tenn.**
**Filed Jan. 24, 1963, Ser. No. 253,680**
**10 Claims. (Cl. 248—139)**

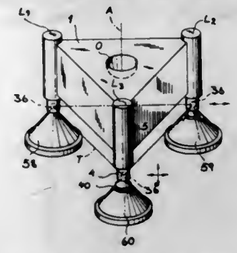


8. A bottle emptying aid consisting of a vertical support shaft, a horizontal support rod fixed to the upper end of the shaft and projecting laterally therefrom, a first flat bottle gripping side plate rotatably mounted on said rod in sliding abutment with the vertical shaft, a second flat bottle gripping side plate rotatably and slidably mounted on said rod, each side plate having a back plate thereon, said back plates projecting inwardly toward each other forward of the rod, said back plates forming a bottle supporting base between the side plates, means resiliently biasing said second side plate toward said first side plate, means for preventing relative rotation between the side plates on the support rod, and means limiting simultaneous rotation of the side plates on the rod.

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**3,168,273**
**TRIPOD STRUCTURE**
**Edmond P. Warnery, Boulogne-sur-Seine, Seine, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France**
**Filed May 9, 1963, Ser. No. 279,058**
**Claims priority, application France, May 17, 1962, 897,842**
**20 Claims. (Cl. 248—157)**

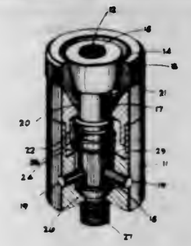
1. A tripod structure comprising a frame; a foundation; three supports secured to the frame at the apices of a triangle and provided each with a base fixedly secured to said foundation and with a load-transmitting member on said base, the load-transmitting members of at least two of said supports being laterally shiftable relatively to their respective bases but being normally urged thereagainst under downward pressure with sufficient friction to prevent their shifting; and actuator means in the bases of the last-mentioned supports engageable with said shiftable members and operable for applying vertical pressure-relieving forces thereto to reduce said friction to a



value small enough to allow said shiftable members to move laterally for compensating dimensional changes caused by differential thermal expansion between said frame and said foundation.

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**3,168,274**
**SUPPORTING STAND FOR INSTRUMENTS, TOOLS AND THE LIKE**
**Arthur Street, Tamworth, England, assignor to Polymathic Engineering Company Limited, Tamworth, England, a British company**
**Filed Sept. 17, 1963, Ser. No. 309,543**
**Claims priority, application Great Britain, Sept. 18, 1962, 35,412/62**
**2 Claims. (Cl. 248—176)**



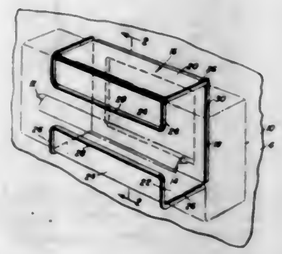
1. A supporting stand for instruments, tools and the like which includes a base member, an arm, an arm supporting element mounted on said base member for supporting the arm in oblique relation to a reference axis and an operating element movable to co-operate with the arm supporting element to displace the arm and arm supporting element around the reference axis so that the end of the arm remote from the arm supporting element traces out an orbital adjustment path, the arm supporting element including a part-spherical portion to which the end of the arm is connected and a cylindrical portion projecting from said part-spherical portion and mounted on the base member in such a manner as to permit limited rocking movement of the arm supporting element.

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**3,168,275**
**HOLDER FOR BOXED CLEANSING TISSUES**
**Stanley T. Grondin, Sturgeon, Wis. (Rte. 4, Sturgeon Bay, Wis.)**
**Filed Feb. 21, 1962, Ser. No. 174,825**
**1 Claim. (Cl. 248—205)**

A holder for boxed cleansing tissues and the like comprising an elongated open ended housing generally C-shaped in cross section, constructed of sheet material, and including an elongated, upright, and panel-like base wall whose upper and lower lengthwise edge portions include vertically aligned generally parallel laterally directed top and bottom walls which in turn terminate

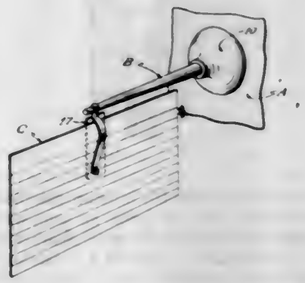
along their edge portions remote from said lengthwise edge portions, in laterally directed partial front walls disposed in a common plane generally paralleling said base wall, terminating at their free edge portions a spaced distance apart, and defining an open ended slot extending therebetween, the adjoining edge portions of



said top, bottom and partial front walls being outwardly flared and defining continuous reinforcing flanges extending throughout the length of said adjoining edge portions, and the exterior surface of at least one of said base, top and bottom walls being provided with pressure sensitive material.

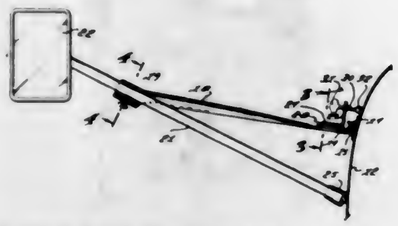
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**3,168,276**
**RECIPE CARD HOLDER**
**Helen K. Schneider, 1305 Grand Ave., St. Paul 5, Minn.**
**Filed Sept. 24, 1962, Ser. No. 225,509**
**2 Claims. (Cl. 248—206)**



1. A recipe card holder including:
a concavo-convex suction cup having a central boss on its convex outer surface,
said boss including an axial generally cylindrical socket,
a single supporting arm of circular cross-section supported in said socket and having an aperture therethrough normal to the axis of the arm and near the end of the arm most remote from said suction cup,
a spring clip supported near the end of the arm most remote from said suction cup,
said clip including a plate member to engage one side of a card, a spring finger integral with said plate and biased toward said plate member to engage the other side of the card plate,
a shank extending from the juncture between said plate member and said spring finger and extending through said aperture on an axis normal to the axis of said arm, and
a head on said shank to hold said shank on said arm to permit free rotation,
said shank and head being integrally connected to said plate member and spring finger.

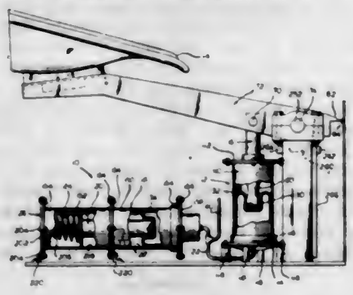
**3,168,277**
**REAR VIEW MIRROR**
**Anthony F. Stewart, 12091 Nieta Drive, Garden Grove, Calif.**
**Filed Dec. 30, 1963, Ser. No. 334,092**
**9 Claims. (Cl. 248—226)**



1. A vehicle mirror device comprising
a first member,
a mirror at the distal end of said first member,
the opposite end of said first member being adapted to engage a vehicle,
a second member,
said second member at one end engaging said first member
and being divergent away from said first member toward the opposite end of said second member,
said opposite end of said second member including means engageable in a linearly fixed relationship with a vehicle,
and a third means engageable with a vehicle,
said third means being carried by said second member on the side thereof opposite from said first member.

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**3,168,278**
**HYDRO-MECHANICAL VEHICLE SEAT SUSPENSION**
**Ralph P. Ogden, 7522 Walnut St., Hammond, Ind.**
**Filed May 2, 1962, Ser. No. 191,998**
**5 Claims. (Cl. 248—377)**

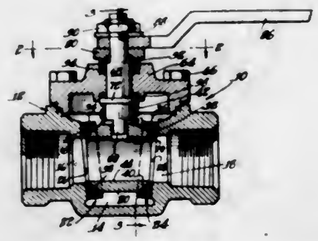


1. A load supporting device especially adapted for low vibration frequency applications, said device comprising:
an upright cylinder,
a piston member mounted in said cylinder for movement longitudinally thereof,
means for supporting the load on said piston member,
a rolling diaphragm member in liquid sealing relation with the lower portion of said cylinder and defining a flexible container,
with the lower end of said piston member resting on said diaphragm member,
said diaphragm member being in rolling engagement with said piston member lower end,
said device further comprising a spring chamber,
said spring chamber comprising
a cylinder having piston means mounted thereon in liquid sealing relation therewith for movement longitudinally thereof,
mechanical spring means for biasing said spring chamber piston means for movement toward one end of said spring chamber,
said piston means and said one end of said spring chamber defining a variable volume container,
and conduit means for connecting said containers of said chambers for conducting fluid flow therebetween,
said containers and said conduit means being fully charged with hydraulic liquid,
said device further including means cooperating with one of said chambers for providing a substantially constant spring rate over the range of travel of said piston member with respect to said load chamber cylinder,
stationary datum means for indicating when said piston member is disposed at a predetermined position along its said range of travel,
means for selectively positioning said piston member at said predetermined position when a load is supported on said piston member,
and means for damping the cushioning action of said device.



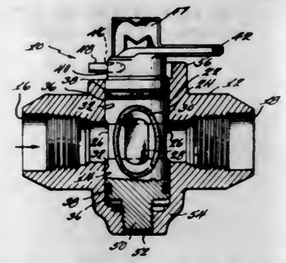
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**3,168,279**
**BALL VALVE HAVING OFFSET THROUGH PASSAGE**
**John Harry Anderson, Barlington, Wis., and Werner K. Priese, Barrington, Ill., assignors to Hills-McCanna Company, Carpentersville, Ill., a corporation of Illinois**
**Continuation of application Ser. No. 830,873, July 31, 1959. This application June 29, 1962, Ser. No. 206,512**
**9 Claims. (Cl. 251—181)**



3. In a ball valve, the combination of body means defining two passages having adjacent ends spaced apart, two valve seat supports disposed in proximity to said adjacent ends of the respective passages in generally transverse relation thereto and converging toward each other in one direction, a pair of centrally-open valve seats slidably mounted on said respective supports in general alignment with said respective passages and defining annular ball sealing surfaces, a valve ball disposed between said seats in engagement with said ball sealing surfaces on both seats, the ball sealing surface of each seat being defined on annular structure of the seat that extends between the ball sealing surface of the seat and the coacting support for the seat and has a size and a shape in transverse radial section that are substantially uniform all the way around the seat, means for rotating said ball between open and closed positions, said ball defining a bore therethrough oriented to connect said passages when the ball is in open position, and opposite ends of said bore being offset from the center of said ball in said direction in which said supports converge to effect a concentric alignment of said bore ends with said respective seats when the ball is in open position.

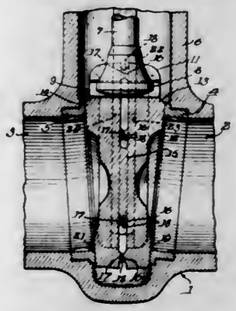
**3,168,280**
**ROTARY PLUG VALVE**
**Frank H. Mueller, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois**
**Filed July 30, 1963, Ser. No. 298,744**
**12 Claims. (Cl. 251—217)**



1. A rotary plug valve comprising: a housing member having a circular valve seat provided with at least one flow port; a plug member rotatable in said seat and having a flow passage terminating in at least one radial port movable into or out of registration with said seat port to open or close the valve; interengageable means associated with said members for retaining said plug member in operative relation with said seat when said plug member is in its open or closed positions and during rotation therebetween, said means being disengageable by rotation of said plug member through an angle greater than that through which said plug member rotates in moving between said open and closed positions; and check means associated with said members operative to limit the rotation of said plug member to movement between said open and closed positions, whereby removal of said plug member from said operative relation with said valve seat is effectively thwarted and may be accomplished only after defunctionalization of said check means.

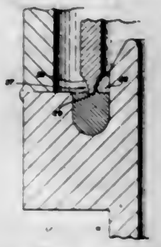
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**3,168,281**
**FLEXIBLE CASTING**
**James L. Yates, New Castle, Pa., assignor to Crane Co., Chicago, Ill., a corporation of Illinois**
**Original application Mar. 16, 1961, Ser. No. 96,141, now Patent No. 3,118,197, dated Jan. 21, 1964. Divided and this application Sept. 13, 1962, Ser. No. 223,468**
**5 Claims. (Cl. 251—327)**



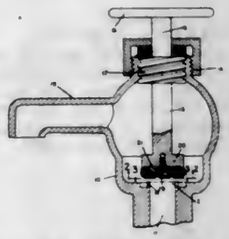
1. A cast gate valve closure member or the like having varying degrees of flexibility, the said closure member comprising substantially centrally connected oppositely disposed seating portions thereon, the connection for said seating portions including a plurality of tie means annularly disposed therebetween, the said tie means being subsequently made discontinuous at portions thereof forming lug means in oppositely disposed relation to provide predetermined limited space therebetween in a plane substantially coinciding with the plane of the said seating portions.

3,168,282
**ALL METAL VALVE WITH PARTICULAR HEAD AND SEAT CONSTRUCTION**
Donald W. Latshaw, Jr., Los Altos, and Russell E. Bostwick, Mountain View, Calif., assignors to Kane Engineering Laboratories, Palo Alto, Calif., a corporation of California
Filed Sept. 13, 1961, Ser. No. 137,852
2 Claims. (Cl. 251—333)



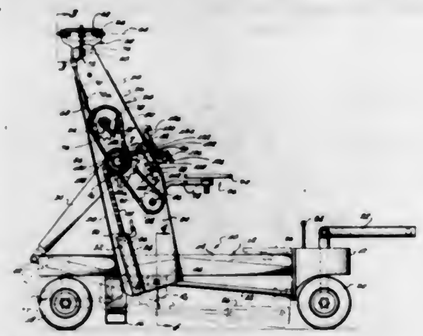
2. In a valve construction, a body having a passageway and inlet and outlet ports connected to the passageway, an annular recess formed in the body, a relatively soft metallic seating material having a relatively low melting point disposed in the recess formed in the body, said seating material being formed of an alloy of indium and copper with the copper ranging in percentage from one percent to 10 percent, and a valve member movable into and out of engagement with the seat.

3,168,283
**PARTICULAR HEAD AND SEAT COOPERATION FOR FAUCET VALVES**
John A. Gamble, % The Northern Supply Co., 731 McAlister Ave., Waukegan, Ill.
Filed Sept. 13, 1963, Ser. No. 308,756
2 Claims. (Cl. 251—333)



1. In a faucet, the combination of a hollow body having a supply conduit terminating in a liquid supply port, means to move the stem towards and from the port, a circular rib on the body surrounding the port and extending towards the stem and providing an annular sealing edge surface lying in a plane normal to the direction of movement of the stem, an enlarged head on the end of the stem, said head having a diameter greater than that of the rib and being provided with a perimetral flange extending towards the rib and providing a flange edge surface lying in a plane normal to the direction of movement of the stem and defining a circular recess in the enlarged head of diameter greater than the diameter of the rib, the body having an annular surface surrounding the rib and lying in a plane parallel to the plane of the edge surface of the rib and below said rib edge surface, together with a gasket of slightly yieldable material and including a body portion of diameter substantially equal to that of the perimetral flange of the enlarged head, and having a central thickness portion of diameter and thickness to seal snugly into the circular recess of the enlarged head, the perimetral portion of said gasket being provided with an annular surface facing the edge of the perimetral flange of the enlarged head substantially at the plane of said surface; said gasket also including a circular surface facing the rib of the body and lying in a plane normal to the direction of stem movement and constituting a primary gasket sealing surface, together with a circular flange on the gasket of diameter greater than that of the body rib and of dimension in the direction of stem movement, equal to the height of the rib measured between the plane of the edge surface of the rib and the plane of the annular surface of the body surrounding the rib; together with a circular tension band surrounding the gasket flange surface between the perimetral flange of the enlarged head and a circular line around the gasket flange above the plane of the edge surface of the gasket flange, said tension band retaining the gasket flange against outward spread over the flange area enclosed by said tension band; said tension band comprising the larger diameter flange of a circular reinforcing element of Z-cross-section, the smaller diameter flange of said reinforcing element being located between the concave surface of the perimetral flange of the enlarged head, and the gasket portion which is located in the circular recess of such enlarged head; and the central portion of said reinforcing element being located between the flange edge surface of the enlarged head, and the annular surface of the gasket which faces said edge of the perimetral flange of the enlarged head.

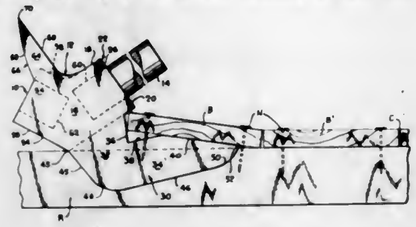
3,168,284
**HOIST MECHANISM**
James L. Fisher, 3981 Weslin Ave., Sherman Oaks, Calif.
Filed July 18, 1962, Ser. No. 210,783
9 Claims. (Cl. 254—8)



1. A hoist mechanism comprising:
a supporting base;
a boom pivotally supported for vertical swinging movement on said base;
hydraulic elevating means including a valve for effecting raising, lowering and stationary positioning of said boom;
a member operatively connected to said elevating means for movement proportional to vertical movement of said boom; and
means including adjustable limit stop means on said member for operating said valve to terminate movement of said boom in response to predetermined vertical movement of the boom.

3,168,285
**HAND TOOL FOR SEPARATING PLANK BOARDS**
Andrew S. Russac, 281 Marguerite Ave., and Louis S. Russac, 490 Louis Ave., both of South Floral Park, N.Y.
Filed Feb. 11, 1963, Ser. No. 257,396
2 Claims. (Cl. 254—131)

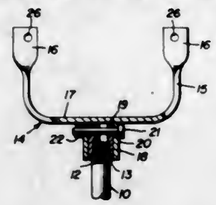
1. A hand-prying tool comprising a solid multi-sided metal body having a pair of spaced prongs, each of said prongs having a first portion extending laterally outwardly from one side of the body, each prong having a second portion extending laterally from said first portion at a slight angle to said one side of the body, said first and second portions of said prongs and said body forming aligned notches defined by said one side of the body and the adjacent edges of the laterally extending portions, said body having a first socket opening at said one end



thereof, an enlargement on the body on the other side thereof adjacent the other end of the body, said enlargement having a second socket opening, the axis of said latter opening disposed at an angle of 120° to the axis of the socket opening in the end of the body, said socket openings adapted to receive and to retain selectively a handle for manipulating the tool, and means on said other end defining fulcrum means for the tool.



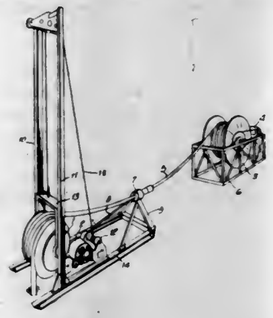
3,168,286
**JACK HEAD ASSEMBLY**
Ronald H. Rickert, P.O. Box 21, Dimmitt, Tex.
Filed Dec. 6, 1961, Ser. No. 157,462
2 Claims. (Cl. 254—134)



1. For removably mounting, supporting and transporting a hydraulic tractor pump assembly or the like on a wheeled jack, a jack head assembly comprising a one-piece generally U-shaped bracket including a bight portion and a pair of vertically extending arms connected thereto, the end portions of said arms being apertured and twisted 90°, a cylindrical coupling adapted to be threaded on a jack, a vertically dependent cylindrical sleeve affixed to the underside of the bight portion of the bracket and telescopically and rotatably receiving the coupling, said coupling being engaged with the bight portion of the bracket for transmitting the weight of a load on the bracket to the jack, and means detachably securing the sleeve on the coupling.

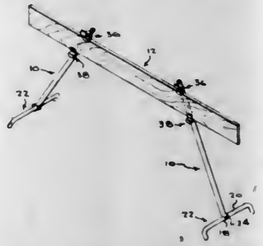
3,168,287
**WELL DRILLING APPARATUS**
Jean Parola, Rueil-Malmaison, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France
Filed Jan. 29, 1962, Ser. No. 169,391
Claims priority, application France Jan. 30, 1961
7 Claims. (Cl. 254—175.7)

1. In a surface apparatus for handling a drill-string having a rigid part comprising a well boring machine, said rigid part being suspended on a flexible tubing, the combination of reel means for the storage of the flexible tubing by winding of the same thereon, a lifting device comprising two vertical masts, a capstan comprising a body and so mounted between said vertical masts as to be slidable therealong over a length thereof at least equal to the height of said rigid part of the drill-string, a motor operatively connected to said capstan in the lowermost



position thereof and disconnected in any other position of the capstan and means on said capstan body for frictionally holding the tubing so as to substantially neutralize the traction, bending-torsional and crushing stresses to which the tube is subjected on that part of the tube which is wound on said reel means.

3,168,288
**ROAD BARRICADE**
Robert S. Wolk, % Leonard J. Kalish, Suite 1629, Du Pont Bldg., Miami 32, Fla.
Filed Dec. 28, 1962, Ser. No. 247,934
9 Claims. (Cl. 256—64)

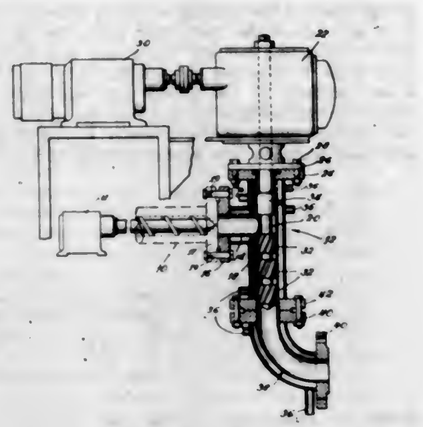


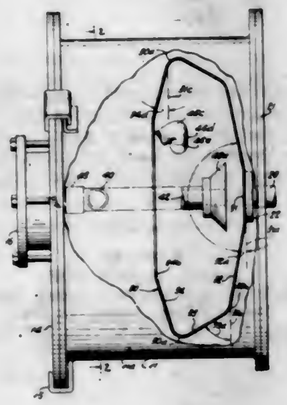
2. In combination, a barricade slab and at least one end support therefor comprising an upright having a transverse straddling foot member, and a pair of clips secured to said upright and located in spaced relation on said upright at an elevated position above said foot member, said barricade slab extending through and embraced by said pair of clips, said clips each comprising a hook element pivotally arranged on an axis substantially parallel to the general transverse direction of said foot member, said hook element comprising a web section accommodating a pivot, at least one arm section in spaced relation to the axial line of said pivot, and jutting transversely from said web section, and an end flange on said arm extending transversely from said arm in a direction away from the axial line of said pivot.

3,168,289
**DISC FOR CENTRIFUGE**
George S. Voses, Flushing, N.Y., assignor, by mesne assignments, to The Cornell Machine Company, Springfield, N.J., a corporation of New Jersey
Filed Aug. 20, 1962, Ser. No. 217,888
3 Claims. (Cl. 259—3)

1. In a centrifuge of the type described, a centrifugal disc for operation at selected speed comprising a flat cen-

ter portion for rotation at said selected speed about an axis, said disc being transverse to said axis, an annular intermediate portion connecting with the outer periphery of said center portion and extending forwardly outwardly therefrom at a shallow acute angle to the transverse, and an annular outer portion connecting with the outer periphery of said intermediate portion and extending forwardly outwardly therefrom at a large acute angle to the transverse, said center and intermediate portions being adapted to form a film of liquid material impelled upon the front of said center portion by rotation of said disc at said selected speed and to sustain said film to the outer periphery of said outer portion, the angle of said intermediate portion being such that the component of centrifugal force on the liquid along the surface of said intermediate portion is much greater than the component





of centrifugal force on the liquid normal to the surface of said intermediate portion so as to minimize friction and resulting abrasion and attrition of particles in said liquid, the angle of said outer portion being such that the component of centrifugal force on the liquid normal to the surface of said outer portion is greater than the component of centrifugal force on the liquid along the surface of said outer portion so as to produce high friction and high resulting abrasion and attrition of particles in said liquid, the respective angles and diameters of said intermediate and outer portions relative to said selected speed being such as to ensure delivery of said liquid film to the outer periphery of said disc with the major portion of the desired homogenization of the liquid occurring over the surface of said outer portion, and means for taking material from said disc positioned to receive said material beyond the outer periphery of said outer portion.

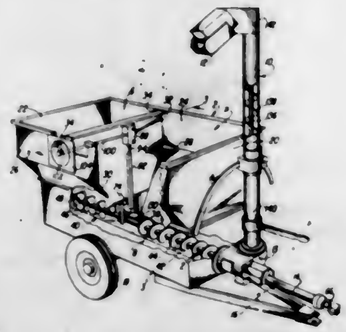
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**3,168,290**
**MIXING SINGLE SCREW EXTRUDER**
**Theodore C. Wallace, Torrance, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed June 20, 1962, Ser. No. 203,844**
**3 Claims. (Cl. 259—8)**

1. The combination of an extruder and a mixer assembly, and separate independent drive means for said extruder and for said mixer assembly, said mixer assembly being attached to the discharge end the barrel of the extruder and comprising pipe means having a longitudinal axis extending at an angle to the longitudinal axis of said extruder barrel and in open communication therewith at a juncture, a mixing torpedo located within said pipe means and including discrete screw portions juxtapositioned with said juncture, said torpedo being driven by said mixer assembly drive means.

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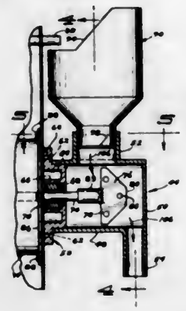
**3,168,291**
**BLENDING AUGER**
**Fred E. Knoedler and Robert L. Knoedler, Streator, Ill., assignors to Knoedler Manufacturers, Inc., Streator, Ill., a corporation of Illinois**
**Filed Aug. 1, 1961, Ser. No. 128,429**
**9 Claims. (Cl. 259—9)**



8. An auger wagon having a box for receiving, transporting, and discharging bulk materials, a horizontal auger in the bottom of said box and extending from end to end thereof and from said box at one end, a vertical auger mounted at said one end of the box and operatively connected to the horizontal auger, said box having a partition therein dividing the box into separate compartments for receiving in bulk materials to be blended, said partition having an opening through which the horizontal auger extends and through which the material is moved from one compartment to the other, said horizontal auger having a spiral flighting interrupted at said partition, adjustable gate means operatively associated with the opening in said partition to restrict the movement of the material through said opening to a rate in predetermined proportion to the capacity of the auger flighting in said other compartment, and means forming a shield about the auger flighting within said other compartment for relieving the pressure against the outlet side of said gate means.



**3,168,292**
**BEVERAGE MIXING DEVICE**
**Raymond C. Joechko, Minneapolis, Minn., assignor to Vendomatic Sales, Inc., Minneapolis, Minn., a corporation of Minnesota**
**Filed Dec. 18, 1961, Ser. No. 160,144**
**6 Claims. (Cl. 259—9)**



1. A beverage mixing device for vending machines comprising a horizontal cylindrical casing having an inlet and a longitudinally offset outlet, and a generally flat impeller blade mounted for rotation about a horizontal axis within said casing, said impeller having angled edges inclining inwardly toward said axis of rotation adjacent said outlet to provide a straight edge of appreciably lesser transverse length in the region of said outlet as compared with the length of the edge of the impeller blade in the region of said inlet.

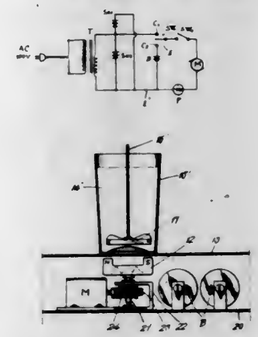
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**3,168,293**
**BLENDING APPARATUS AND PROCESS**
**John S. Eckert, Silver Lake, Ohio, assignor to The United States Stoneware Company, Tallmadge, Ohio, a corporation of Ohio**
**Filed June 16, 1961, Ser. No. 117,536**
**18 Claims. (Cl. 259—81)**



1. A hollow blender which includes two ends substantially parallel to one another and connected by retaining means which tapers from the respective ends toward a restrictive opening formed by the retaining means, which opening is substantially midway between said ends, said ends being elongated so that a plane containing one point at each end of one of the respective elongated ends and a third point in the restrictive opening meets a second plane which contains one point at each end of the other elongated end and said point in the restrictive opening, said planes meeting at a substantial angle in a line which passes through said point in the opening.

**3,168,294**
**MIXING APPARATUS WHEREIN MAGNETS ARE UTILIZED**
**Tadashi Hasumura, 3677 Kugenuma, Fujisawa, Kanagawa Prefecture, Japan**
**Filed Dec. 20, 1960, Ser. No. 77,234**
**Claims priority, application Japan, Aug. 15, 1960, 35/34,662**
**1 Claim. (Cl. 259—108)**



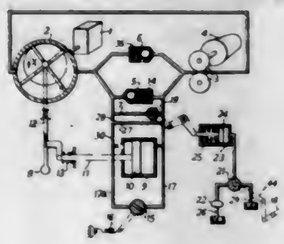
In a liquid stirring device, a frame and a horizontal supporting surface fixed with said frame in spaced relation thereabove, a shaft journaled in said frame below said surface, for rotation on a vertical axis, a first magnet fixed with the upper end of said shaft symmetrically of said axis for rotation contiguous and below said surface, a motor fixed with said frame, a speed-reducing driving connection between said motor and shaft, a stirring rod adapted to be inserted into a liquid container supported on said surface in alignment with said axis, a second magnet secured to said rod adjacent the lower end thereof, and a bladed stirring element removably mounted on said rod for rotation as a unit therewith, a step-bearing fixed with and below said second magnet in axial alignment with said rod, said rod, second magnet and element forming an assembly dynamically balanced about the axis of said rod and step bearing, said motor being a D.C. machine, a battery mounted to said frame, a step-down transformer, a rectifier, and circuit means connecting said motor, battery, the secondary of said transformer and said rectifier, said circuit means including switch means operable to alternatively connect said motor in series with said battery or said rectifier.

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**3,168,295**
**VARIABLE-RATIO HYDROSTATIC DRIVES**
**George W. Dorrell, Lydiard Millicent, Swindon, and Frank G. Tunnell, Hinton Parva, Swindon, England, assignors to The Plessey Company Limited, Ilford, England, a British company**
**Filed June 26, 1963, Ser. No. 292,192**
**Claims priority, application Great Britain, June 29, 1962, 25,144**
**7 Claims. (Cl. 259—177)**

1. In an automotive concrete mixer having a traction engine, road wheels, means, including a normally engaged clutch, for transmitting driving power from the engine to the road wheels, a clutch pedal operable to disengage said clutch, a rotatable concrete-mixer drum, and means for transmitting rotation from the engine to the drum; the combination comprising a variable displacement pump, driven by the engine, a fixed-displacement hydraulic motor drivingly connected with the drum, a hydraulic circuit for passing the hydraulic liquid delivered by a pump to the motor and return it from the motor to the pump, means for varying the displacement of said pump from a positive maximum to a negative maximum, said circuit including a line through which normally at least the

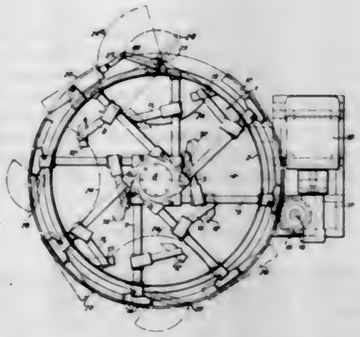
greater part of the liquid displaced by the pump moves from the pump to the motor, said line including a restrictor, a hydraulic servomotor, operable by the pressure drop in said restrictor against spring action, when the delivery of said pump is positive, to reduce said



delivery, and a normally open cut-off valve connected in series with said restrictor, and means at least operatively connecting said valve with said clutch pedal to close the valve when the clutch pedal is actuated to disengage the clutch and to open the valve upon restoration of the clutch pedal to its normal position.

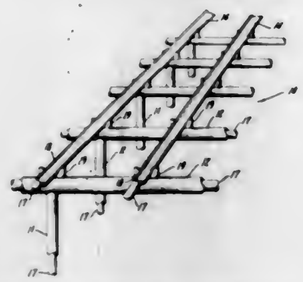
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**3,168,296**
**PAN TYPE CONCRETE MIXERS**
**Harold Raymond Cowley, Bath, Somerset, England, assignor to Stothert & Pitt, Limited, Bath, Somerset, England, a corporation of the United Kingdom**
**Filed May 13, 1963, Ser. No. 279,971**
**Claims priority, application Great Britain, Mar. 8, 1963, 9,295/63**
**12 Claims. (Cl. 259—178)**



7. A pan type mixer comprising an annular pan providing a mixing chamber; a vertical shaft substantially coaxial with said pan; a spider structure comprising a plurality of radially disposed spider arms mounted on said shaft for rotation about the axis thereof above the level of material to be mixed in said chamber; a plurality of supporting arms connected to and depending from said spider arms respectively into said mixing chamber; a plurality of blades connected to the respective supporting arms and being adapted to circulate within said mixing chamber on rotation of said spider structure; and a plurality of wear resistant sleeves surrounding and being secured to the respective supporting arms and extending between the connections of said supporting arms to said spider arms and the connections of said blades to said supporting arms.

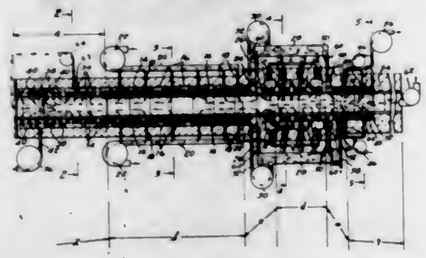
**3,168,297**
**FURNACE PIPE INSULATION AND METHOD**
**John R. Brough, Gary, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware**
**Filed May 2, 1962, Ser. No. 193,575**
**22 Claims. (Cl. 263—6)**



1. A reinforced insulating covering for a furnace pipe comprising insulation means, said insulation means including coil means fabricated of substantially high temperature heat resisting wire adapted to extend circumferentially of the pipe, said coil means including a series of circumferentially extending coil portions separated from each other along any longitudinal line through said insulation means, the wire of each of said coil portions in itself coiling about an axis adapted to encircle the pipe, means adapted to secure said coil means to the pipe, said insulation means further including a layer of refractory material encompassing and intimately contacting the wire of said coil means and adapted to intimately contact and surround the pipe.

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**3,168,298**
**TUNNEL KILN AND METHOD OF OPERATION**
**Arnold M. Cook, Holden, and David L. Mahoney, West Boylston, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts**
**Filed July 3, 1961, Ser. No. 123,361**
**17 Claims. (Cl. 263—28)**



9. The method of maintaining the temperature and atmosphere of a zone within a kiln substantially constant throughout, comprising creating a continuous flow of the atmosphere from within the zone toward its ends and, while removing the atmospheres at the ends, re-supplying a like atmosphere to the zone intermediate its ends and simultaneously heating the atmosphere in the zone.

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**3,168,299**
**SEAL FOR TUNNEL KILNS**
**Boyd C. Miller, 1123 W. Henderson St., Salisbury, N.C.**
**Filed July 16, 1963, Ser. No. 295,460**
**2 Claims. (Cl. 263—28)**

2. In a kiln having opposed side walls, a floor, longitudinally extending, spaced, parallel rails positioned in the lower portion thereof, one or more ware supporting

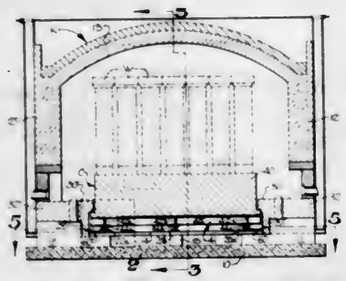


platforms guidably supported for longitudinal movement above said floors; the combination of

(*a*) means supporting said platforms for sliding movement on said rails and for sealing the area intermediate the rails from the area thereabove, said platform supporting means comprising

(1) rail caps of friction reducing material mounted on the upper surface of each of said rails,

(2) longitudinal beams extending downwardly from the undersurface of each corresponding platform and in alinement with said rails, and

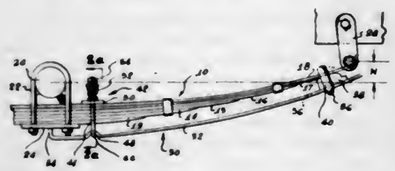


(3) a longitudinal runner mounted on the undersurface of each of said longitudinal beams for slidably engaging said rail caps, said longitudinal runners each having flanges depending downwardly on each side of said rail for limiting lateral movement of said runner on said rail, and

(*b*) an elongate, substantially horizontal, continuous partition mounted between each side wall and rail adjacent thereto whereby a seal is formed by engagement of said platform supporting means and by said partition to prevent the exchange of air between the areas above said platform and below said rails.

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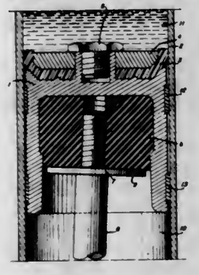
**3,168,300**
**AUXILIARY SPRING FOR AUTOMOTIVE VEHICLES**
**Joe L. Giovinazzo, Los Angeles, Calif., assignor to Cambria Spring Company, Los Angeles, Calif., a corporation of California**
**Filed Apr. 5, 1961, Ser. No. 100,946**
**3 Claims. (Cl. 267—48)**



1. In an automotive vehicle including an axle, a frame over said axle, and a leaf spring assembly secured at its center to said axle and at its ends to said frame, the improvements comprising an auxiliary spring leaf extending along the underside of said leaf spring assembly from said axle to one end of the leaf spring assembly, fulcrum means pivotally supporting one end of said auxiliary leaf on the underside of said leaf spring assembly below said axle for pivoting of the leaf in a vertical plane, means on the other end of said auxiliary leaf engaging said one end of said leaf spring assembly, and a limitedly yieldable lost-motion connection between said leaf spring assembly and said auxiliary leaf close to said fulcrum means which resiliently yields a fixed distance to accommodate limited downward pivoting of said auxiliary leaf without appreciable bending and is thereafter positively restrained against yielding, whereby said auxiliary leaf bends to reinforce said leaf spring assembly only after partial deflection of said assembly.

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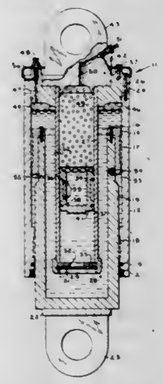
**3,168,301**
**PISTONS AND IN PARTICULAR PISTONS USED IN OLEO-PNEUMATIC SUSPENSION SYSTEMS**
**Fernand Stanislas Allinquant, 53 Ave. Le Notre, Parc de Sceaux, France**
**Filed Dec. 9, 1960, Ser. No. 75,022**
**Claims priority, application France, Dec. 16, 1959, 813,193**
**1 Claim. (Cl. 267—64)**



In an oleo-pneumatic vehicle suspension unit wherein a metal piston is slidable in a metallic cylinder with radial metal-to-metal clearance and at one face defines within said cylinder a chamber filled with oil under a substantial excess pressure, said piston at the other face thereof being connected to a rockable connecting-rod; a guide and seal packing for said unit, comprising, in combination, a flexible rubber seal of the cup type carried by said piston at said one face thereof and having a self-sealing lip directed toward the pressurized oil and against an adjacent inner surface of said cylinder, means for fluid tightly securing said cup seal to said piston, said piston being provided with at least one annular groove in its periphery, and at least one solid spacing ring of polytetrafluoroethylene arranged in said annular groove and projecting radially beyond the periphery of said piston, said spacing ring constituting the sole spacer means between said piston and said cylinder and preventing any metal-to-metal friction.

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**3,168,302**
**VEHICLE SUSPENSION SYSTEMS**
**Richard A. Burris, Pekin, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Dec. 26, 1962, Ser. No. 246,990**
**4 Claims. (Cl. 267—64)**



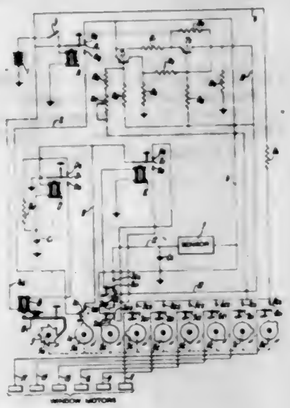
1. A dual rate pneumatic spring suspension system for a vehicle comprising, a first cylinder and a first piston

reciprocable therein, a second cylinder coaxially disposed within the first cylinder and a second piston reciprocable within the second cylinder, means defining first and second gas chambers within the respective first and second cylinders to provide pneumatic springs, said springs resisting axial movement of each piston inwardly of each cylinder, pressure transmitting means including a passageway from the first gas chamber to an open end of the second cylinder and liquid in the passageway directly exposed to the gas in the first gas chamber for transmitting all pressure from the first chamber to the piston in the second chamber, and a stop for limiting axial movement of the second piston outwardly of the second cylinder at pressures in the first chamber below the precharge pressure in the second chamber, wherein movement of the first piston inwardly of the first cylinder compresses the gas in the first chamber without compression of the gas in the second chamber until the pressure in the first chamber equals the precharged pressure in the second chamber and continued inward movement of the first piston compresses the gas in both the first and second chambers at a lowered spring rate in comparison to that which would be produced by the first chamber alone, said means defining first and second gas chambers in the respective first and second cylinders including a cap defining the upper boundaries of the gas chamber, a shroud, cap screw fastening means extending through the cap and disposed beneath the shroud, and a charging valve for the first gas chamber so located in the cap with respect to the cap screw fastening means and the shroud as to require removal of the valve and venting of the pressure in said chamber prior to removal of the cap.

### 3,168,303
### MOISTURE RESPONSIVE WINDOW CONTROL SYSTEM

**Kenneth R. Skinner, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Continuation of application Ser. No. 834,490, Aug. 18, 1959. This application Nov. 8, 1962, Ser. No. 237,433**
**10 Claims. (Cl. 268—19)**

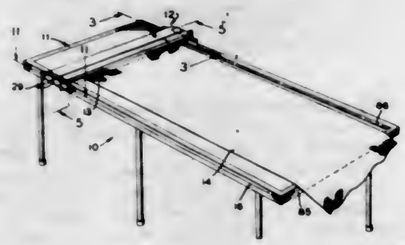


1. A rain responsive automatic window closing system including a voltage source, a window operating motor connected to close a window, wiring connecting said voltage source with said motor, a switch connected between said source and said motor, switch operating means, moisture responsive means connected between said switch operating means and said voltage source and operative when wet to energize said switch operating means to cause said switch operating means to close said switch and connect said motor with said voltage source, said wiring having a predetermined resistance providing less than a predetermined voltage drop between said voltage source and said motor when said motor is operating freely and providing said predetermined voltage drop when said motor is stalled due to its window encountering a resistance, and additional means connected between said switch operating means and said voltage source and responsive to said predetermined voltage drop for causing said switch operating means to open said switch upon the occurrence of said predetermined voltage drop.

### 3,168,304
### ARRANGEMENT FOR POSITIONING SHEET MATERIAL FOR CUTTING

**James J. Condon, 1442 W. Olive, Fullerton, Calif.**

**Filed Oct. 25, 1963, Ser. No. 318,890**
**12 Claims. (Cl. 269—304)**



3. A device for positioning sheet material comprising
a substantially flat support surface having parallel opposed side edges and an end edge interconnecting said side edges and at right angles thereto,
a carriage movable along said support surface,
said carriage including a straight upwardly extending abutment surface portion extending transversely of said support surface at right angles to said side edges of said support surface,
and having an additional surface projecting forwardly from the lower edge of said straight surface,
and a clamping means for securing a piece of sheet material on said additional surface in alignment with said transversely extending surface,
said clamping means including means for securing said piece of sheet material locally adjacent one of said opposed side edges,
and independently operable means for securing portions of said sheet material intermediate said opposed side edges
to provide clamping of substantially the entire width of said sheet material.

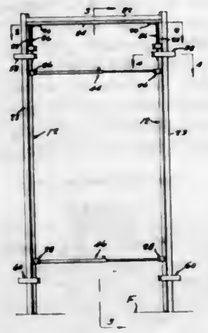
### 3,168,305
### DOOR JAMB SETTER

**William F. Lee, 933 42nd St., Sarasota, Fla.**

**Filed Jan. 19, 1962, Ser. No. 167,337**
**5 Claims. (Cl. 269—321)**

1. A door jamb setter comprising a pair of laterally spaced uprights, means on the uprights for holding the uprights in line with door side jambs, adjustable gauge bar means extending between and connected to the uprights, and side jamb clamping means on the uprights, said clamping means comprising channel brackets fixed on the uprights, L-shaped members having foot portions overlapped and slidably confined in the channel brackets, said foot portions having registered longitudinal slots, and



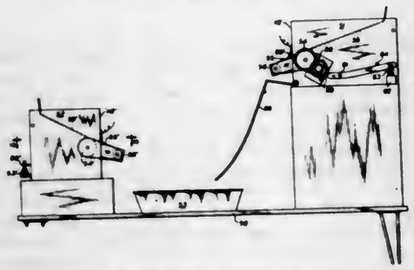


clamping screws extending through the slots and threaded into the channel brackets.

### 3,168,306
### APPARATUS FOR ASSOCIATING RELATED SHEETS FROM SEPARATE STACKS

**William B. Harrison, Jr., 6 Lee Road, Dryden, N.Y.**

**Filed Nov. 1, 1961, Ser. No. 149,311**
**7 Claims. (Cl. 270—58)**

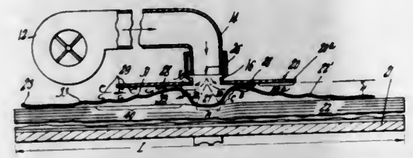


1. Apparatus for collating related groups of business records in sheet form, comprising:
a receiving tray;
a first feed hopper adapted to hold a group of indexed sheets and unindexed sheets stacked in numbered order;
a second feed hopper adapted to hold a group of sets of sheets, each related to a certain indexed sheet in the first-mentioned group, stacked in a correspondingly numbered order;
a conveyor associated with each of said hoppers and adapted to remove the lowermost sheet from a selected one of said hoppers and to deliver said sheet directly to the receiving tray; and
sensing means, including two sets of three longitudinally spaced brushes, each adapted to bear against a stationary contact to close an electric circuit, one set being located in each of the paths of said sheets so that a sheet under delivery to the receiving tray is adapted to insulate selectively from their respective contacts the brushes of the set located in the path of that sheet as it travels from said selected hopper as they are respectively delivered from the hoppers, for selecting the hopper from which the next sheet is delivered so that when an indexed sheet is under delivery from the first hopper, delivery from said first hopper will be interrupted when the index on said sheet reaches the point between one of said brushes and its contact and the said related set will be delivered from the second hopper, whereupon delivery from said first hopper will be resumed and continued until a succeeding indexed sheet is under delivery therefrom.

### 3,168,307
### FABRIC HANDLING

**Richard R. Walton, 10 W. Hill Place, Boston, Mass., and George E. Munchbach, Roslindale, Mass.; said Munchbach assignor to said Walton, Boston, Mass.**

**Filed July 9, 1962, Ser. No. 208,282**
**11 Claims. (Cl. 271—26)**



1. A cloth loosening apparatus for loosening the top sheet of cloth from a stack by distorting said sheet, said apparatus comprising a wall forming means located inwardly from the edges of said top sheet, said wall forming means arranged to apply a lifting force to a predetermined part of said sheet to form a wall therein, said wall forming means providing an open space above said stack in which said wall can stand at a substantial angle to an adjacent part of said sheet, said wall forming means adapted to form said wall without pressing said adjacent part against said stack, and positive pressurized air means including means supplying air under positive pressure arranged to produce a lateral stream of such air against the outer surface of said wall, in the general direction of said adjacent part of said sheet, whereby said air stream can at least partially pass laterally through said wall, thence laterally between said adjacent part and said stack to loosen said adjacent part from said stack.

### 3,168,308
### SHEET MEMBER HANDLING

**Richard R. Walton, 10 W. Hill Place, Boston, Mass., and George E. Munchbach, Roslindale, Mass.; said Munchbach assignor to said Walton, Boston, Mass.**

**Filed Aug. 8, 1960, Ser. No. 48,116**
**24 Claims. (Cl. 271—27)**



23. The method of initiating removal of an air permeable top cloth piece from a stack of air permeable pieces comprising, by means of an air outlet means provided with a positive air supply, initially directing a stream of air to flow against a margin portion of said top piece to promote its loosening, thereafter rotating said air outlet means to cause said air stream to flow at a substantial angle away from said stack, thereby applying a lifting force to said top piece and carrying said margin away from said stack.

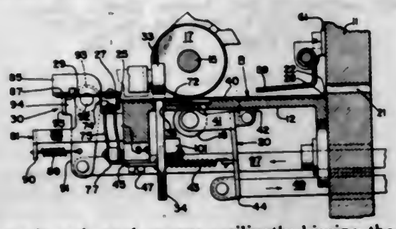
### 3,168,309
### CARD POSITIONING AND GUIDING MECHANISM

**Robert E. Schopp, San Jose, Albert S. Chou, Campbell, and Chester E. Spurrier, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Dec. 29, 1961, Ser. No. 163,208**
**9 Claims. (Cl. 271—58)**

1. Card aligning and guide mechanism for combination with a card processing mechanism wherein a plurality of

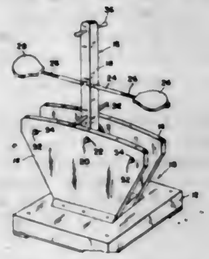
elongated, substantially identical, generally rectangular cards are fed, one at a time, in timed sequence, and transversely of their length, onto a table, and wherein each such card is then fed lengthwise thereof from the table prior to the completion of the transverse feeding of a next succeeding card; a straight, elongated positioning and guide member movably mounted in the path of the leading edge of each incoming card for movement laterally there-



of by each such card, means resiliently biasing the positioning and guide member toward each incoming card and into full contacting engagement with the leading edge of each such card, and means for thereafter anchoring the positioning and guide member in such position to resist angular displacement of the positioning and guide member and such card during the subsequent feeding of such card lengthwise thereof along said positioning and guide member.

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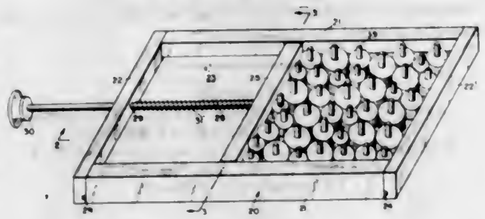
**3,168,310**
**CHILD'S AMUSEMENT DEVICE**
**William H. Strausser, 5082 Parker, Apt. 9, Detroit, Mich.**
**Filed Apr. 24, 1963, Ser. No. 275,273**
**4 Claims. (Cl. 272—54)**



1. A child's amusement device comprising a supporting frame having two vertical, laterally spaced parallel plates, a swinging unit including a generally upright member extending between said plates and pivoted thereto on a horizontal pin connecting said plates, said upright member having a riding portion projecting above said pin and above said plates, seating structure carried by said riding portion and having means for supporting a child on both sides of said upright member in the plane of oscillation thereof, said upright member having a depending portion beneath said pin and between said plates, a rod mounted between said plates and extending in an arc centered at said pin, and means for resiliently centering said upright member in a neutral vertical position and for resisting oscillation thereof in either direction from said neutral position including a first compression coil spring coaxial with and carried by said rod at one side of said depending portion and acting thereon when said upright member is in neutral position and throughout a relatively large arc of oscillation of said upright member in one direction from said neutral position to impose a yielding resistance thereto, a second compression coil spring coaxial with and carried by said rod at said one side of said depending portion acting thereon only during the final part of the oscillation of said upright member in said one direction to impose a yielding resistance thereto, a third compression coil spring coaxial with and carried by said rod at the opposite side of said depending portion and acting thereon when said upright member is in neutral position and throughout a relatively large part of oscillation of said upright member in the opposite direction from said neutral position to impose a yielding resistance thereto, and a fourth compression coil spring coaxial with and carried by said rod at said opposite side of said depending portion and acting thereon only during the final part of the oscillation of said upright member in said opposite direction to impose a yielding resistance thereto.

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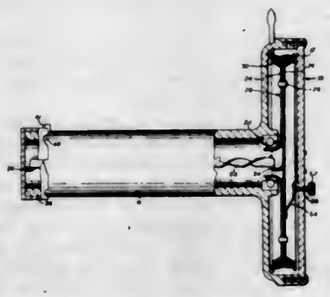
**3,168,311**
**GAME**
**Frank W. Sinden, Sterling, N.J., assignor, by mesne assignments, to Parker Brothers, Inc., Salem, Mass., a corporation of Maine**
**Filed May 1, 1962, Ser. No. 191,489**
**5 Claims. (Cl. 273—1)**



1. A game comprising a receptacle having a flat field and at least one wall, a pusher operable in said receptacle over said field, means to yieldingly urge said pusher toward said wall, and a plurality of removable play pieces disposed flatly against the surface of said field and at random within the area between said pusher and said wall, some of said play pieces being contactingly held against each other or against said wall or said pusher under the influence of said urging means while others of said play pieces are free from said influence, the construction and arrangement of said play pieces being such as to allow the removal of some but not all of the play pieces without releasing said urging means.

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**3,168,312**
**AUTOMATIC BALL RETRIEVING DEVICE**
**Edward R. Davis, P.O. Box 568, Sperry, Okla.**
**Filed Oct. 11, 1961, Ser. No. 144,362**
**4 Claims. (Cl. 273—26)**



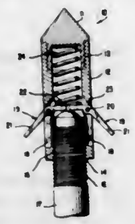
1. An automatic ball retrieving device comprising:
(*a*) a drum;
(*b*) means rotatably supporting said drum vertically spaced from the ground;
(*c*) a tensionable elongated member connected at one of its ends to said drum for driving said drum in rotation;



(*d*) a line adapted to be connected at one of its ends to the ball to be retrieved and connected at its other end to the periphery of said drum, said line being of a length such that the line can be extended from said drum to the ground; and
(*e*) means for introducing a predetermined degree of initial tension into said tensionable member whereby a ball connected to one end of said line and supported by said line can be supported at variable distances from said drum and above the ground in playing a variety of different games with different types of balls.

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**3,168,313**
**HUNTING ARROWHEAD WITH RETRACTABLE BARBS**
**Lewis E. Lint, R.R. 4, Winterset, Iowa**
**Filed Mar. 28, 1962, Ser. No. 183,141**
**3 Claims. (Cl. 273—106.5)**

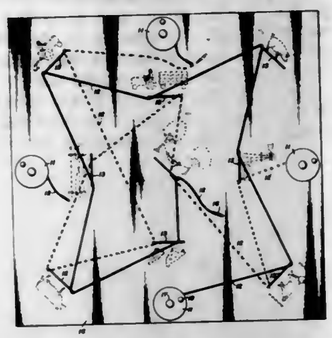


3. An arrow comprising:
(*a*) an arrowhead having a body member with a pointed tip end and a central bore extended partially through said body member from the end opposite said tip end, said bore having the side wall thereof formed with a longitudinally extended slot,
(*b*) an arrow shaft having one end thereof receivable within said bore for movement longitudinally thereof to first and second positions,
(*c*) coacting means on said body member and said one end of the arrow shaft for selectively holding said arrow shaft in said first and second positions therefor,
(*d*) a pivoted barb member in said slot having an inner end section and an outer end section, the outer end section being movable from a retracted position within the slot to a position extended laterally outwardly from said body member, and the inner end section being projected within said bore for engagement with said one end of the arrow shaft,
(*e*) means pivotally connecting the barb member intermediate the end sections thereof to said body member, and
(*f*) biasing means within said bore in contact with the inner section of the barb member acting to pivot the outer end section of the barb member to said laterally extended position therefor, the arrow shaft on movement to the first position therefor acting to move the outer end section of the barb member to the retracted position therefor, and on movement to the second position therefor permitting said biasing means to move the outer end section of the barb member to the laterally extended position therefor.

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**3,168,314**
**BOARD GAME EMPLOYING CORD WOUND ON SPOOLS**
**Paul B. Washburn, Rte. 1, Box 87–C, Azle, Tex.**
**Filed Dec. 20, 1962, Ser. No. 246,157**
**5 Claims. (Cl. 273—134)**

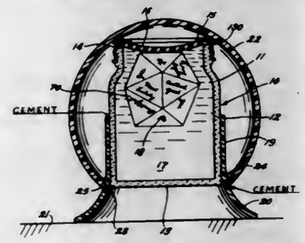
1. A game comprising a board, spools rotatably mounted on a surface of said board and equally sequentially spaced apart, a cord wound on each said spool, projections on the surface of said board and positioned thereon to be engaged by said cords, said cords being of equal length and just long enough to engage all said pro-



jections in a predetermined sequence, and means including chance and choice determining the sequence of engagement of any one cord with said projections.

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**3,168,315**
**AMUSEMENT DEVICE**
**Abe C. Bookman, % Alabe Crafts, 348 W. 5th St., Cincinnati, Ohio**
**Filed July 10, 1961, Ser. No. 123,030**
**2 Claims. (Cl. 273—145)**



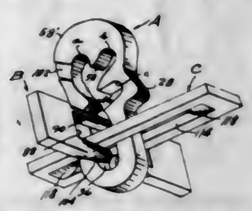

1. In an amusement device the combination of a fluid tight container having a tubular, upstanding side wall open at its upper end, a planar window closing and extending across the bottom of the container in a position normal to the axis of said side wall and of one-piece with said side wall, an opaque liquid filling the container, a multi-faced buoyant member immersed in the liquid, game indicia on each face of the buoyant member contrasted in color with the color of the opaque liquid, a fluid tight, flexible cap means closing and sealing the upper end of the container, an opaque, hollow casing member spaced from and surrounding the container, said casing having an opening therein for providing axial passage of the container side wall therethrough and means for mounting the container within the casing with the container window aligned with the opening in the casing.

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**3,168,316**
**THREE-PIECE PUZZLE**
**Joseph L. Lytle, P.O. Box 24, Wasta, S. Dak.**
**Filed Mar. 29, 1963, Ser. No. 268,991**
**4 Claims. (Cl. 273—156)**

1. A puzzle comprising first, second, and third pieces, said first and third pieces being formed with closed openings and said second piece being formed with an opening spaced from its side edges and defining first and second side bars, said second side bar being formed intermediate its ends with a single slot narrower than the thickness of the first piece, said first piece having a reduced thickness portion extending from a side edge thereof to its opening,

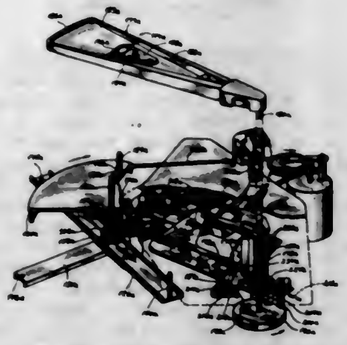
said reduced thickness portion being receivable through the single slot for passing the second piece into and out of the opening of the first piece, said second piece extending through the opening of the first piece and the first piece extending through the opening of the third piece and the third piece extending through the opening of the second piece, the opening of the second piece being longitudinally elongated and centered in the second piece, the parts of the second side bar at opposite sides of the single slot being rounded and tapered to the single slot,



the opening of the first piece comprising a substantially parallel-sided longitudinally disposed lower leg portion through which the side bars of the second piece extend in the assembled condition of the puzzle, and a trifoliate upper portion in communication with the upper end of the leg portion, into which the side bars of the second piece are adapted to be manipulated, said first second and third pieces being so configurated that proper manipulation thereof relative to each other would result in successful disengagement of the pieces.

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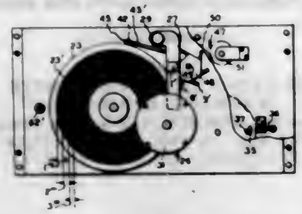
**3,168,317**
**RECORD SIZE SENSING APPARATUS FOR TONE ARM POSITIONING**
Hans Christian Hansen, 14 Christianscholmsvej, Copenhagen, Denmark
Continuation of application Ser. No. 225,946, May 12, 1951. This application Sept. 19, 1960, Ser. No. 57,069
42 Claims. (Cl. 274—10)



10. A record-changing phonograph in which the size of the next record to be played is gauged by means of an abutment on the tone arm, comprising a turn-table for supporting thereon the record to be played, a stationary spindle projecting upwardly from said turn-table for centering the record to be played with respect to said turn-table and including means for supporting thereon at least one record to be played in spaced relationship to said turn-table, a tone arm, a tone arm spindle structure for supporting thereon said tone-arm to swing about an axis of rotation, and means including rotatable cam means and an elongated cam engaging member forming effectively a unitary structure with said tone arm spindle structure for swinging movement in unison therewith for moving said tone arm against the record to be played next to gauge the size thereof by said abutment means while said next record is supported by said first-mentioned means on said spindle in spaced relationship with said turn-table.

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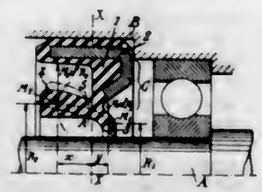
**3,168,318**
**PHONOGRAPH APPARATUS**
Lawrence N. Lea, 1683 University Ave., Bronx, N.Y.
Filed Oct. 2, 1961, Ser. No. 142,312
7 Claims. (Cl. 274—14)



1. In combination with a phonograph apparatus having a rotatably mounted record and a swingable pick-up arm including a stylus associated with a diaphragm, adapted when the record is turning and said stylus is in contact with a sound groove on the record, to translate vibrations of the stylus into sound, of a stop element rotatably mounted on the frame of the phonograph; said stop element being a block having faces about its axis of rotation, at such distances respectively from said axis, that that face thereof which is selectively brought into the path of said pick-up arm, when contacted thereby, will position the stylus at one of predetermined distances from the end of the record respectively; said stop element being in the path of said pick-up arm when the latter is moved towards the beginning of the record; one of said faces being at such distance from the axis of rotation of said block, that when said face is in the path of said pick-up arm and said arm brought against said face, the stylus will be at the beginning of the record.

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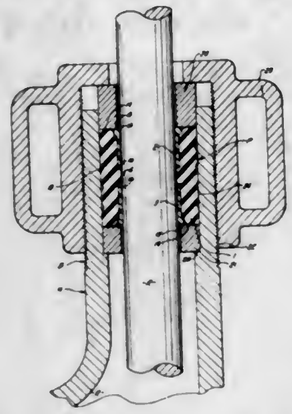
**3,168,319**
**PACKING FOR USE BETWEEN TWO PARTS COAXIALLY SURROUNDING EACH OTHER**
Jean-Félix Paulsen, Chateaudun, France, assignor to Luxembourgeoise de Brevets et de Participations, Luxembourg, a society of Luxembourg
Filed Mar. 26, 1963, Ser. No. 268,044
Claims priority, application France Apr. 2, 1962
8 Claims. (Cl. 277—25)



1. In combination, a first part in the form of a body of revolution about an axis and rotating about said axis, a second part in the form of a body of revolution about the same axis, one of said parts surrounding the other, a resilient packing of annular shape located between said two parts, said packing being secured to said first part and having an annular edge portion applied against the other part to ensure fluidtightness therewith, and means carried by said packing and responsive to the centrifugal force developed by the rotation of said first part for exerting on said edge portion a balancing action to keep it in tight sliding contact against said second part.



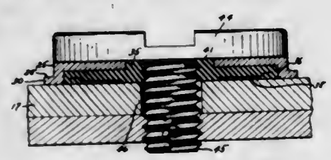
**3,168,320**
**DYNAMIC SEALING PACKING FOR POLISH RODS AND THE LIKE**
John Sneed, 18925 Prevost St., Detroit 35, Mich.
Filed May 3, 1962, Ser. No. 192,128
8 Claims. (Cl. 277—110)



1. Packing for a sliding fluid seal with a movable member adapted to have sliding and fluid sealing engagement therewith, comprising a right cylindrical, thick-walled, rubber-like, sleeve having a central axis and having ends normal to said axis and adapted to have coaxial engagement with said member and be compressed axially and thickened radially under axial compression, said sleeve having an annular rib of limited radial thickness spaced axially between said ends and adapted to slidably engage said member and having axially extending surfaces between said rib and said ends, said packing also comprising separate, longitudinally split, relatively thin-walled, nylon-like sleeves with separated, proximate, relatively movable circumferential ends and with radial wall thickness similar to the thickness of said rib and removably disposed in close movable contact with said surfaces between said rib and said ends of said rubber-like sleeve and adapted to slideably engage said member, proximate axial ends of said nylon-like sleeves engaging said rib axially when the other axial ends of said nylon-like sleeves are substantially flush with the said ends of said rubber-like sleeve whereby axial compression exerted simultaneously upon all the sleeves tends to expand said rib into tight contact with said element and move the said circumferential ends of said nylon-like sleeves relative to each other and to said rubber-like sleeve and constrain said nylon-like sleeves into tight contact with said element and said rib.

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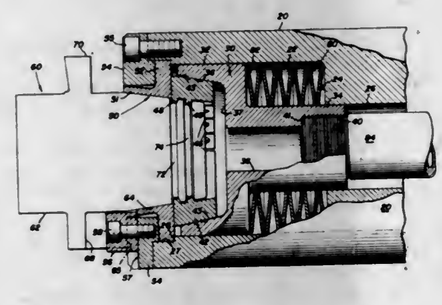
**3,168,321**
**COMPOSITE WASHER CONSTRUCTION**
Milton Glickman, Teaneck, N.J., assignor to Multi-Flex Seals, Inc., New York, N.Y.
Filed Feb. 18, 1964, Ser. No. 345,805
3 Claims. (Cl. 277—180)



1. A composite washer comprising: a metallic washer element and a resilient washer element bonded thereto; said metallic washer element including a substantially planar main body member of arcuate periphery and having a centrally disposed orifice therein, an axially extending cylindrical flange peripherally positioned upon said main body member, and a planar peripheral flange positioned upon said central flange; said resilient washer element being bonded to a planar surface of said main body member, and including a centrally disposed portion of increased thickness relative to said main body member, and lying within the area of said centrally disposed orifice in said metallic washer element, said last mentioned centrally disposed portion having a through opening therein of lesser diameter than and disposed beneath said centrally disposed orifice in said metallic washer element.

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**3,168,322**
**CHUCKING DEVICE FOR MACHINE TOOL SPINDLE AND TOOL HOLDER FOR USE THEREWITH**
Harry R. Dziedzic, Glenview, Ill., assignor to Scully-Jones and Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 18, 1962, Ser. No. 231,358
12 Claims. (Cl. 279—4)



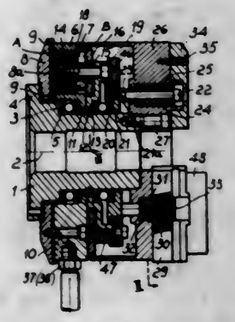
3. A chucking device adapted to be associated with a machine tool spindle for holding a tool or the like, comprising, in combination, a tool holder having a shank portion which is provided with at least one annular groove, an annular collet member adapted to be housed within a machine tool spindle so as to be held against forward axial movement and having a frusto-conical external surface and internal rib means adapted to cooperate with said groove when said tool holder is inserted in said spindle, said collet member normally being expanded to a first position wherein said rib means is disposed radially outwardly of said groove so as to permit entry of said shank into said collet and being compressible upon application to said external surface of a radially inward force to a second position wherein said rib is disposed within said groove to provide a positive axial lock between said shank and said collet, and actuator means having an internal frusto-conical end portion substantially encompassing said collet member and in engagement with the external surface thereof whereby upon axial movement of said actuator in one direction said collet is compressed to said second position and upon movement of said actuator in the opposite direction said collet is permitted to expand to said first position.

4. The invention of claim 3 wherein compression spring means is provided for yieldingly urging said actuator in a forward axial direction to compress said collet to said second position and wherein fluid pressure means is provided for moving said actuator in a rearward axial direction to permit said collet to expand to said first position.

### 3,168,323
### CHUCK WITH TOOTHED SECTOR CONTROL

Fausto Bellegrandi, Via Ugo Foscolo 9, Brescia, Italy

Filed Apr. 10, 1963, Ser. No. 271,984
Claims priority, application Italy, Apr. 12, 1962, 7,222/62
6 Claims. (Cl. 279—4)



1. A jaw chuck comprising a rotatable jaw carrying body with an axially extending sleeve member rigid therewith and connectable to the driving mechanism of a machine tool, said sleeve member defining an axis of rotation of said jaw chuck,

a plurality of jaws slidably carried by said jaw carrying body in a direction radial to said axis of rotation, said jaws having on their side flanks at least one projecting flat inclined plane engaging surface inclined with respect to said axis of rotation,

a plurality of sector members on said jaw-carrying body and in rigid rotatory relation therewith, said sector members being slidable in the direction of said axis of rotation and are provided along the radial sides thereof with at least one counter engaging inclined plane surface in constant slidable inclined plane engagement with said inclined plane engaging surface,

a non rotating annular body on said sleeve member, a first thrust bearing allowing relative rotation of said sleeve member with respect to said non rotating annular body, a plurality of pressure fluid cylinder chambers in said non rotating annular body, each of said cylinder chambers having a piston slidable therein in a direction parallel to said axis of rotation,

a first annular member surrounding said sleeve member and rigid with said pistons,

a second annular member surrounding said sleeve member and rigid with said sector members,

an axially slidable thrust bearing on said sleeve member and having an axially slidable race thereof rigid with said first annular member and the other axially slidable race thereof rigid with said second annular member, thereby allowing said pistons to displace said sector members in a direction parallel to said axis of rotation through said slidable thrust bearing,

duct means in said non rotating annular body connecting said cylinder chambers with the pressure fluid supply.

### 3,168,324
### CHUCK

Earle D. Kennell, Wilawana, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 15, 1963, Ser. No. 258,774
4 Claims. (Cl. 279—19.7)

1. A pneumatic percussion tool comprising:

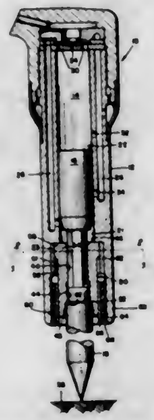
(*a*) a tool casing containing a chamber;

(*b*) a fluid actuated piston reciprocably mounted in said chamber;

(*c*) a chuck slidably mounted in the front end of said casing in a manner providing for a limited amount of free axial movement, said chuck being provided with an axial bore for receiving a tool kit and having a forward-facing shoulder;

(*d*) a tool bit slidably mounted in said axial bore in said chuck in a position to be repeatedly hammered by said piston;

(*e*) said chuck having a rear end exposed to the fluid



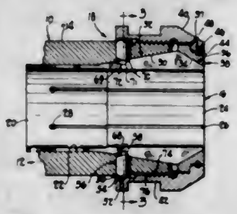
pressure in said chamber to urge said chuck forward away from said piston; and

(*f*) cushioning means within said front end of said casing and normally spaced forwardly from said shoulder on said chuck a substantial distance when said chuck is at the rear end of its travel in said casing, said cushioning means being adapted to engage said shoulder to limit and stop the forward travel of said chuck and to absorb the shock of stopping said chuck to reduce the transmission of said shock to the tool casing.

### 3,168,325
### SPRING COLLET CHUCK WITH COLLET RELEASING MEANS

Windsor N. Chittenden, 130 8th Ave. SE., Largo, Fla.

Filed July 16, 1963, Ser. No. 295,446
5 Claims. (Cl. 279—51)



1. In a spring collet chuck having an annular body with an internal taper mating an external taper on the collet carried therein and having a nut to tighten the collet,

the chuck body having circumferentially spaced radial guide holes therethrough,

an angularly bottomed groove formed circumferentially of said collet, functionally registering with said holes,

a pin radially floating in each hole and having an end profile to engage said groove to impart radial pressure and axial thrust thereto,

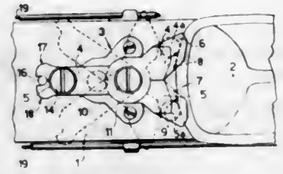
and means on said nut engageable with said pins to move the pins radially against the angular surfaces of the collet groove to exert said pressure and thrust.



### 3,168,326
### SKI BINDING

Ottavio Molino, Via Vibo 41, Turin, Italy

Filed May 10, 1963, Ser. No. 279,545
2 Claims. (Cl. 280—11.35)

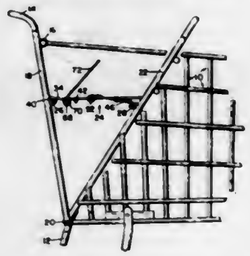


1. In a ski-binding including a front abutment engaging the front edge of a ski boot sole portion and a means urging the boot against said front abutment, said front abutment comprising two similar levers fulcrumed to a common pivot situated intermediate the lever ends and perpendicularly secured to the top ski face, retaining means for the boot sole tip arranged on the ends of said levers against which the boot is resiliently urged, both levers including portions situated on the other side of the pivot axis with respect to the boot sole tip, said portions having surfaces facing each other which lie in planes substantially perpendicular to the pivot axis and resilient means accommodated by said lever portions adapted to hold the levers in a folded position by an adjustable force which opposes the stress by the boot sole tip on the levers tending to unfold the latter, unfolding of at least one lever releasing the skier's foot.

### 3,168,327
### FOLDING SEAT CONSTRUCTION FOR NESTING GROCERY CARTS

Gerald J. Lachance, North Brookfield, Mass., assignor to Armand A. Lachance, Auburn, Mass.

Filed Nov. 5, 1962, Ser. No. 235,281
6 Claims. (Cl. 280—33.99)



1. Seat construction for a grocery cart including a frame, a basket on the frame, said basket including a rear gate swingingly mounted at its top end, and a pivoted wall swingingly mounted to the lower end of said gate so that the upper ends of the gate and the wall may be moved to and away from each other,

said seat construction comprising a pair of seat-supporting wire frames, one of said frames being pivotally connected to said gate and the other being pivotally connected to said wall, said frames being located intermediate the ends of said gate and wall respectively, means interpivoting said wire frames intermediate the swinging gate and the swinging wall so that the two wire frames are connected and may be folded into general parallelism with each other and with the gate and the wall respectively when the upper ends of the gate and the wall are moved together, said wire frames also having an extended seat forming position wherein they are in substantial alignment, and means holding the wire frames in said seat forming position,

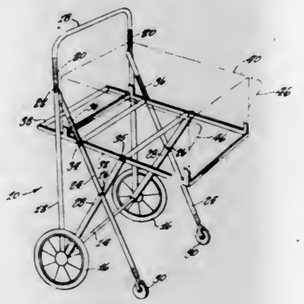
one of said wire frames including a single wire member in the form of a rectangle but having a free end, the free end being located adjacent the opposite end of the single wire, said opposite end being in the form of a hook having an open bight, and said wire being somewhat springy, the free end of the wire tending to be normally positioned spaced from said hook at the opposite side from the bight thereof, the resilience of the wire tending to maintain the free end in said spaced position, the free end of the single wire being capable of being moved against its inherent resiliency past the hook and into the bight to be located and held therein closing said single wire rectangular member,

and a seat, said seat comprising a solid member having a tubular element at an edge thereof, said tubular element having open ends and being mounted on and slidable over the free end of said single wire, so that when the free end of the latter is moved as aforesaid against the inherent resiliency of said single wire member into the bight of the hook, said tubular member and therefore the seat to which it is attached are held thereby in swinging relation on the single wire member, said seat selectively overlying the seat supporting frames and being movable to a generally vertical position lying against a part of the gate.

### 3,168,328
### TWO WAY SHOPPING CART

Leslie F. Hill, Sr., 105—32 192nd St., Hollis, N.Y.

Filed Aug. 24, 1961, Ser. No. 133,594
1 Claim. (Cl. 280—36)



A shopping cart comprising:

(*a*) an inverted U-shaped frame having a bight at its upper end forming a cart handle and an axle at its lower end, the frame having a pair of spaced parallel slots each in one side thereof adjacent the bight;

(*b*) a pair of spaced wheels rotatably mounted on the axle for movement of the cart along a supporting surface;

(*c*) a pair of spaced link members each pivotally connected at its lower end to the lower end of one side of the frame;

(*d*) a pair of spaced auxiliary frame members each pivotally connected intermediate its ends to one of the link members between its ends and having its upper end movable in one of the slots of the inverted U-shaped frame;

(*e*) each auxiliary frame member having a slot intermediate its upper end and its pivotal connection to one of the link members;

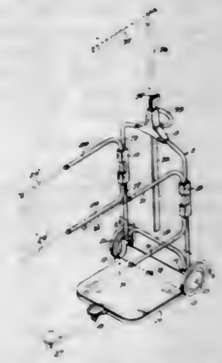
(*f*) a pair of spaced caster wheels connected to the lower ends of the auxiliary frame members;

(*g*) a carrier including a basket disposed adjacent the inverted U-shaped frame at one end being pivotally connected intermediate its ends to the upper ends of the link members for movement thereby between a vertical position and a horizontal position, and having means between its end adjacent the inverted U-shaped frame and its pivotal connection to the link members movable in the slots of the auxiliary frame members for guiding the carrier; and

(*h*) the carrier having a handle at its end adjacent the inverted U-shaped frame rotatable into the plane of the inverted U-shaped frame when the carrier is moved to its vertical position.

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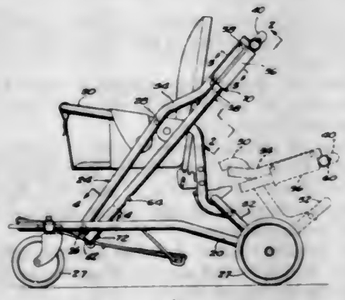
**3,168,329**
**UTILITY CART**
**Hans Goldschmidt, Atherton, Calif., assignor to H. Goldschmidt & Associates, Inc., Menlo Park, Calif., a corporation of California**
**Filed Aug. 14, 1963, Ser. No. 302,143**
**7 Claims. (Cl. 280—36)**



1. A utility cart comprising a generally vertical frame, a slide vertically extendable with respect to said frame, an arm slideably and pivotably received at the upper end of said slide, said arm having at least two positions one of which is generally horizontal, guide arms foldably secured to said vertical frame, said guide arms having at least two positions one of which is perpendicular to said generally vertical frame.

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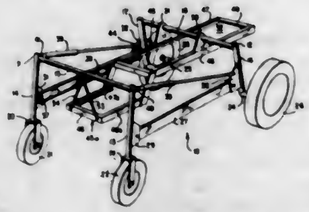
**3,168,330**
**COLLAPSIBLE HANDLE FOR BABY CARRIAGE**
**Paul C. Smith, Pacific Palisades, and Richard E. Hyde, Los Angeles, Calif., assignors to "Streles" of California, Los Angeles, Calif., a corporation of California**
**Filed May 4, 1962, Ser. No. 192,407**
**6 Claims. (Cl. 280—47.37)**



1. A collapsible handle for a baby stroller comprising: a sleeve having a detent receiving hole therein, a handle member having a leg slidably mounted within said sleeve, said leg having a spring loaded detent adapted to project into said hole, and means carried by said handle member for retracting said detent.

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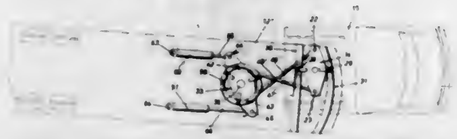
**3,168,331**
**VEHICLE FRAME**
**Cyril Rodney Johnson, Clarion, Iowa, assignor to Hagie Manufacturing Company, Clarion, Iowa, a corporation of Iowa**
**Filed Aug. 14, 1962, Ser. No. 216,924**
**9 Claims. (Cl. 280—106.5)**



1. A high clearance frame for a vehicle comprising; a front wheel support assembly, a rear wheel support assembly, a body support frame assembly pivotally suspended from one of said wheel support assemblies and rigidly suspended from the other of said wheel support assemblies, and means extended between said front and rear wheel support assemblies to maintain said assemblies in spaced relationship, said means including rigid means pivotally connected to said front and rear wheel assemblies and compression side brace means pivotally connected to said front and rear wheel support assemblies, said compression side brace means inclined downwardly from said one of said wheel support assemblies and having resilient means yieldably movable longitudinally of the brace means to absorb the stresses to which said high clearance frame is subjected.

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**3,168,332**
**TRAILER HITCH**
**Llewellyn Eynon, 27 Scarborough Beach Blvd., Toronto 13, Ontario, Canada**
**Filed Nov. 28, 1962, Ser. No. 240,611**
**6 Claims. (Cl. 280—423)**



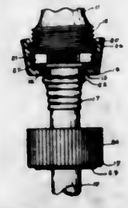
1. A trailer hitch for connecting a trailer to a pulling vehicle comprising in combination, first and second yoke members normally disposed crosswise of the pulling vehicle and trailer respectively and connectable together in pivotable relation, each of said yoke members having a pair of outer end portions and a central portion, means for securing the first yoke member to the pulling vehicle at the rearward end thereof, means for supporting said yoke member at the forward end of the trailer adapted to permit lateral movement of said yoke relative to the forward end of the trailer, means for securing the second yoke member to the trailer at the central portion thereof, one of said securing means providing a pivotable connection and the other securing means providing a rigid connection, a pair of crossed connecting rods each pivotally secured at one end to the end portion of the first yoke member and pivotally secured at the opposite end to an end portion of the second yoke member, and means



secured to the pivotally connected yoke member for rotating said pivotally connected yoke member relative to said rigidly connected yoke member.

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**3,168,333**
**QUICK DETACHABLE HOSE COUPLING**
**Walter H. Dziura, Naugatuck, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut**
**Filed Feb. 28, 1962, Ser. No. 176,279**
**3 Claims. (Cl. 285—35)**



1. A quick detachable hose coupling comprising

(*a*) a body member permanently secured to the end of the hose and having an outwardly extending radial flange at its end;

(*b*) a molded member of pliable plastic material having a circular base surrounding said body and adapted to bear against the inner surface of said flange;

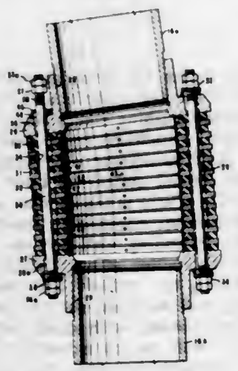
(*c*) a plurality of fingers integral with said base providing internally threaded segments to adapt the same for engagement with a complementary male fitting, said fingers being outwardly flexible to permit the same to be forcibly telescoped on to or away from such male fitting;

(*d*) a sleeve of rigid material adapted to be telescoped around said fingers to confine them against outward flexing; and,

(*e*) co-operating means on said sleeve and fingers to prevent relative rotation while permitting relative sliding movement.

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**3,168,334**
**FLEXIBLE PIPE JOINT**
**Glenn D. Johnson, Downey, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Nov. 28, 1961, Ser. No. 155,386**
**6 Claims. (Cl. 285—55)**



1. A flexible pipe joint assembly for flexibly connecting two sections of pipe together, said pipe joint assembly comprising

a pair of outwardly-extending end flanges,

means on each end flange for securing said flange coaxially to one pipe section,

a plurality of resilient compression rings arranged between said end flanges, a rigid separator ring positioned between each pair of compression rings, said compression rings and said separator rings having a central opening aligned with the bore of said pipe sections,

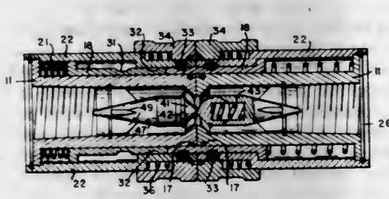
connector means extending between said flanges and secured thereto for applying tension to place the compression rings in compression, the spacing between said flanges being adjusted so that the compression rings are in fluidtight engagement with said separator rings at all times,

a replaceable axially flexible metallic wear liner carried by said assembly between the flanges thereof,

said flexible metallic wear liner including a spacer ring positioned between each pair of separator rings and between said separator rings and said flanges adjacent each compression ring, said spacer rings between said separator rings being of a size so limit the compression of said compression rings.

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**3,168,335**
**CONDUIT COUPLING HAVING IDENTICAL HALVES**
**Frederick H. Sumption, 3511 Vimy Ridge Ave., Norfolk 9, Va.**
**Filed Apr. 11, 1962, Ser. No. 186,752**
**6 Claims. (Cl. 285—70)**

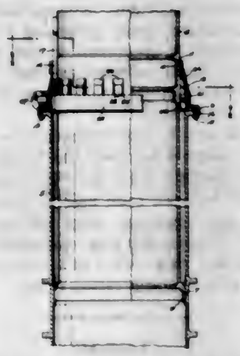


1. A coupling assembly for fluid lines comprising, complementary coupling units each including a tubular shaped body member and a sleeve surrounding and slidable axially on said body member and detent means carried by said tubular member, each sleeve being slidable on its tubular member to a projected position with its free end positioned beyond the free end of the associated body member, each sleeve having axially spaced inner and outer grooves in the same wall of the sleeve, each detent means including means engaging the associated sleeve in its inner groove when the sleeve is in an outer projected position releasably locking the sleeve with respect to its body member, the center of the outer groove in each sleeve when in the projected position being spaced beyond the free end of its body member a distance at least as great as the spacing of the free end of the other body member from the center of the groove engaging means thereon, each sleeve being retractable relative to its body member to a position with its free end axially spaced from the groove engaging means thereon a distance as great as the axial spacing of the outer groove from the free end of each sleeve, and each of said groove engaging means being spaced from the free end of its body member whereby the groove engaging means on one unit may engage the associated sleeve in its inner groove with the groove engaging means on the other unit engaging the same sleeve in the outer groove thereof.

## 3,168,336
## JOINT AND LOCK MECHANISM FOR TELESCOPING SPAR

Frank L. Lawrence, North Surrey, British Columbia, Canada, assignor, by mesne assignments, to Gearmatic Co. Ltd., North Surrey, British Columbia, Canada, a corporation of Canada

Filed Oct. 26, 1960, Ser. No. 65,166
5 Claims. (Cl. 285—81)



1. In a telescoping spar of a type which stands upright when in its operating position, in combination: a lower spar section provided adjacent its upper end with upwardly facing support means, an upper spar section received for telescoping slide movement within the lower section, a ring seated on said support means with said support means providing a thrust mounting therefor, means carried by the upper end of said lower spar section providing a journal mounting for said ring allowing the ring to turn about the center of the lower spar section as an axis, said ring including a set of spaced internal teeth formed on the inner radial perimeter thereof, a set of spaced external teeth carried on the outer radial perimeter of the upper section, said external teeth complementing said internal teeth and being positioned to lie immediately above the internal teeth when the spar is extended to its full height, the teeth of each of said two sets of teeth having a width such as to pass freely through the interstices which lie between the teeth of the other set, means carried by the upper end of the lower spar section for keeping the ring from being displaced upwardly, and means mounted on the upper end of said lower section for turning the ring to selectively position the internal teeth thereof in line either with said external teeth or the interstices therebetween.

## 3,168,337
## WELLHEAD ASSEMBLY

Glenn D. Johnson, Compton, and Bruce J. Watkins, West Covina, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 28, 1960, Ser. No. 72,168
8 Claims. (Cl. 285—133)

1. A wellhead assembly for supporting a casing string and a tubing string disposed within said casing string, both of said strings extending into a well bore and depending from said wellhead assembly, said wellhead assembly comprising

a housing member having an open upper end,

landing surface means formed in said housing member for supporting a tubing hanger thereon with a tubing string depending from said tubing hanger,

closure means releasably connectible to said housing member for closing the upper end thereof,

first passageway means defined by said wellhead assembly and extending through said closure means in communication between said tubing string depending within said housing member and the space above said closure means, portions of said first passageway means being defined by separable portions of said wellhead assembly,

first conduit means forming a portion of said separable portions of said wellhead assembly defining said first passageway means,

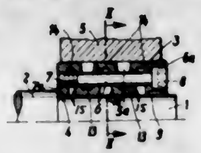
a connector means carried on one end of said first conduit means within said housing and engageable through vertically-directed motion by translation with a mating portion of said other separable portion, and

second passageway means defined by said wellhead assembly and extending through said closure means in communication between the space above the closure means and a space within said wellhead assembly formed between said tubing string and said casing string depending from said wellhead assembly.

## 3,168,338
## CLAMPING DEVICE

Rudolf Spieth, Kennenburger Str. 40–42, Esslingen (Neckar), Germany

Filed Nov. 19, 1962, Ser. No. 238,675
5 Claims. (Cl. 287—52)



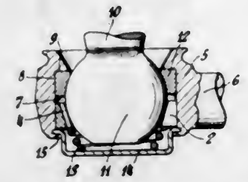
1. A clamping device for clamping machine elements such as pulleys and the like to shafts and mandrels, which includes: a clamping bushing comprising axially extending spaced coaxial cylindrical inner wall sections for mounting on a shaft means and also comprising axially extending spaced coaxial cylindrical outer wall sections for being received in a bore in the element to be clamped, said bushing furthermore comprising frusto-conical substantially radially extending wall sections spaced from each other in axial direction of said bushing and respectively interconnecting the ends of said inner and outer axially extending wall sections, said radially extending wall sections being provided with axially extending bores therethrough, and bolt means extending through said bores and being operable to reduce the spacing of said radially extending wall sections from each other to thereby increase the outer diameter of said outer wall sections and to decrease the inner diameter of said inner axially extending wall sections for respectively clamping said element to said shaft means.



## 3,168,339
## BALL AND SOCKET JOINT

Albert W. Townsend, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Nov. 2, 1962, Ser. No. 235,079
Claims priority, application Great Britain, Nov. 27, 1961, 42,333/61
1 Claim. (Cl. 287—87)

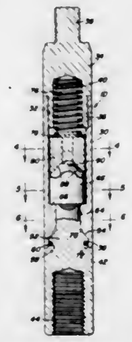


A ball and socket joint comprising a socket with a cylindrical bore and an open end, an annular inwardly extending shoulder formed in said bore adjacent said open end, a ball pin disposed in said bore with the pin extending outwardly through said open end, an upper annular bearing bush disposed in said bore between the ball and said shoulder and bearing thereagainst, said upper bush surrounding said ball and interposed between said bore and ball periphery, a lower annular bearing bush having an outer periphery extending parallel to the inner periphery of said bore, the inner periphery of said lower bush bearing against the ball and extending at an angle to the main axis of said lower bush, and means for urging said lower bush in an axial direction toward said upper bush, said lower bush comprising a split ring with a longitudinal recess disposed in its inner periphery opposite the point it is split.

## 3,168,340
## SUCKER ROD COUPLING

William E. Howard, Victoria, Tex. (3616 Lily St., Bay City, Tex.)

Filed Jan. 10, 1961, Ser. No. 81,832
6 Claims. (Cl. 287—119)



1. A sucker rod coupling comprising the combination of

(a) a vertically elongated body with a releasably attached connector element,

(b) said body having an opening extending upwardly from its bottom end and including an upper portion and a non-circular lower portion,

(c) said upper portion being diametrically enlarged relative to said lower portion and constituting a locking chamber having a bottom wall,

(d) said bottom wall including a shouldered seat extending laterally outwardly from the wall of said lower portion,

(e) said connector element having upper and lower portions,

(f) said connector element upper portion having a non-circular head complementary in cross-sectional shaped and size to said opening lower portion and movable therethrough into and out of said locking chamber when said head is rotationally registered with said opening lower portion,

(g) said head including a laterally projecting portion seating upon said shouldered seat and preventing withdrawal of said connector element through said opening lower portion when said head is in non-registry with the latter,

(h) said connector element lower portion having means for attachment to a member to be actuated by a sucker rod,

(i) resilient means engaging said body and said connector element and biasing said laterally projecting portion against said shouldered seat and yieldingly resisting rotation of said connector element,

(j) said resilient means comprising a plunger disposed for sliding movement in said opening upper portion and a spring engaging said plunger,

(k) guide means on said body and plunger preventing relative rotation therebetween,

(l) said plunger having abutting engagement with said connector element,

(m) said plunger and connector element having complementary cooperating recesses and projections provided with cooperating cam surfaces yieldingly maintained in engagement by said spring,

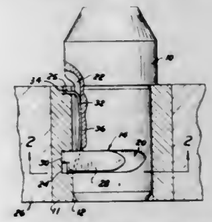
(n) said plunger comprising a vertically elongated body with said spring engaging its top surface and having said complementary recesses disposed upon its bottom surface,

(o) said camming surfaces on said connector element and said plunger recesses extending radially and being inclined outwardly and downwardly and centering the upper end of the connector element in the lower end of said plunger whereby relative rotation of said connector element with respect to said body moves said plunger upwardly and permits disassembly of said body from said connector element.

## 3,168,341
## SPRING CLIP RETAINER

Lucien J. J. Beaudet, 461 W. Marshall, Ferndale, Mich.

Filed Dec. 12, 1963, Ser. No. 330,051
2 Claims. (Cl. 287—119)



1. In combination, an elongated, cylindrical male member; a female member having an elongated cylindrical hole dimensioned for closely fitting and releasably receiving said male member; and a manually releasable spring clip between the male and female members for releasably locking said male member in said hole and formed separate from and disconnected from each of said members;

said male member having a transverse external arcuate groove near its lower end and a longitudinally extending upwardly extending external elemental elongated groove whose lower end merges with the center portion of the arcuate groove and whose upper end is above the upper end of the female member hole;

said female member hole having an internal arcuate recess at its lower end located complementarily to said arcuate groove of the male member when the members are assembled relatively; and a small socket at the upper end of the hole in the female member and exposed above said hole and alined longitudinally with the central part of said recess;

said spring clip having an arcuate gripping portion of C-shape at its lower end located and shaped to be received in the arcuate groove of the male member and engage around it; said spring clip also having an outwardly extending projection located in the center of the gripping portion and shaped to be received in the arcuate recess of the female member; said clip also having a longitudinally and upwardly extending elemental shank portion connected to the interior of the arcuate gripping portion and located and shaped to be received in the elemental groove of the male member; and an exposed accessible handle portion at the upper end of the shank portion overlying the upper end of the female member and received in the socket at the upper end of the hole in said female member to be accessible for movement of the spring clip towards the male member in the elemental groove of the latter; said handle portion extending radially away from the male member into said socket;

said male member, with the spring clip thereon, and the female member, being in assembled relationship, with the male member being inside the female member, and with the arcuate recess and arcuate groove being disposed in opposed relationship to each other;

and with the center of curvature of the arcuate recess being laterally spaced from the center of curvature of the arcuate groove; and with the radius of curvature of the groove and recess being proportioned so that the ends of the arcuate recess merge smoothly with the ends of the arcuate groove;

and with the upper surface of the arcuate recess overhanging the spring clip gripping member projection at that time in the center of such recess;

whereby, as the male member and the spring clip gripping portion thereon are rotated together in the female member, the spring clip projection, which at the start is within the arcuate recess center is gradually moved with a camming action, around the arcuate recess towards an end thereof and out of such arcuate recess into the clear and unrecessed part of the female member hole, becoming thus free to be lifted, with the male member, out of such hole;

the gripping portion being springy with an inherent tendency to contract.

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**3,168,342**
**KNOTTER MECHANISMS**
**Toby B. Harper, Dolph, Ark.**
**Filed Jan. 28, 1963, Ser. No. 254,179**
**9 Claims. (Cl. 289—2)**

1. A twine knotter for hay balers comprising, in combination:

a rotatably mounted power drive shaft driven by outside means;

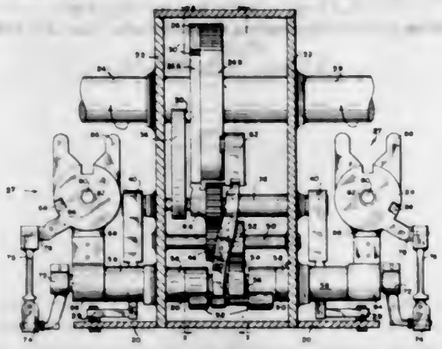
a bill hook shaft rotatably mounted parallel to and spaced from said power drive shaft;

a first bill hook member affixed to one end of said bill hook shaft and a second bill hook member affixed to the opposite end of said bill hook shaft;

a twine holder shaft rotatably mounted parallel to and spaced apart from said power drive shaft and said bill hook shaft;

a first and a second pivotally mounted twine holder means spaced apart from each other, each of said twine holder means mounted adjacent of said bill hook members;

means coupling said twine holders to said twine holder shaft, whereby the twine holders are actuated to grasp said twine by rotation of said twine holder shaft;

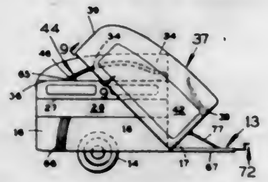


a main intermittent gear affixed to said power drive shaft; and

gear means driven by said main intermittent gear for rotation of said bill hook shaft and said twine holder shaft.

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**3,168,343**
**FOLDING MOBILE SHELTER**
**John Michael Marcel, 21 Holland Park, London W. 11, England**
**Filed Mar. 3, 1961, Ser. No. 93,190**
**4 Claims. (Cl. 296—27)**



1. A collapsible shelter comprising a base member, a cover shell hinged along a transverse edge thereof to said base member and swingable between a collapsed longitudinally extending position and an erected upright position, a roof member mounted on said base member and vertically movable between an elevated position and a depressed position, a pair of longitudinally extending skirt walls depending from opposite edges of said roof member, a pair of parallel tracks mounted on the outer faces of said skirt walls and extending along paths terminating in lower trailing and leading end sections and having raised intermediate sections, said tracks terminating at their leading ends in substantially horizontally extending sections, and a pair of follower members mounted on said cover shell remote from the hinged edge thereof and adapted to engage said tracks whereby movement of said cover shell between its collapsed and erected positions effects the movement of said roof between its depressed and elevated positions.

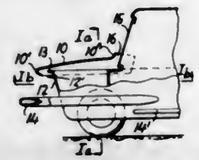
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**3,168,344**
**AUTOMOBILE COWLING**
**Béla Barényi, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed Nov. 14, 1961, Ser. No. 152,307**
**Claims priority, application Germany Nov. 15, 1960**
**3 Claims. (Cl. 296—28)**

1. In a motor vehicle comprising a hood pivotable about a substantially horizontal, rectilinear axis, and



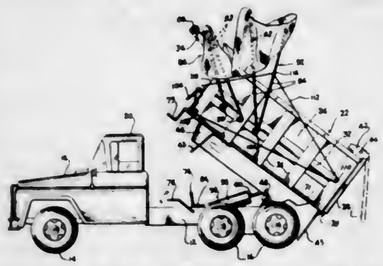
further comprising lower cowling parts; said hood extending over the full width of the vehicle, said lower cowling parts being disposed underneath said hood, said lower cowling parts including portions extending longitudinally of said vehicle and further portions extending transversely of said vehicle, said first-named and second-named portions terminating in substantially horizontal upper flange portions, joints between the underside of said hood and said horizontal flange portions, said hood having outer edge portions disposed in a single plane



and projecting along their entire length outwardly beyond said flange portions, said outer edge portions comprising further portions extending downwardly and inwardly toward the outer sides of said cowling parts, said further portions being disposed in positions lateral of said joints and being effective to shield said joints from end and side views, said further portions comprising terminal edges laterally spaced from said outer sides and terminating at a level below said flange portions and spaced therefrom when said hood is in closed position.

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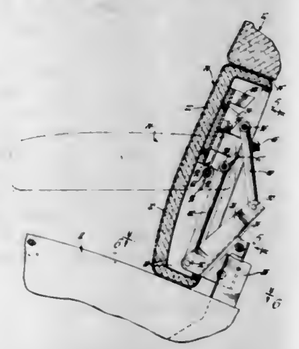
**3,168,345**
**COLLAPSIBLE COVER FOR TRUCKS**
**James J. Roberts, 380 Copeland Ave., Lyndhurst, N.J., and Louis J. Costanza, 16 Nottington Terrace, Clifton, N.J.**
**Filed Mar. 22, 1963, Ser. No. 267,150**
**1 Claim. (Cl. 296—100)**



In an automotive truck having a chassis and an open top dump body having spaced parallel side walls, a front wall having a boot secured to the upper end thereof and extending forwardly therefrom, and a pivoted gate at the rear end thereof, means pivotally securing said body to said chassis adjacent the rear ends thereof; a collapsible cover of flexible material for the open upper end of said body having the forward end thereof permanently secured to the forward edge of said boot, and means mounting said cover on said body for movement between extended closed position and collapsed open position over said boot, said means comprising; a plurality of spaced horizontally aligned pivot bolts secured to one side of said body intermediate the top and bottom and adjacent the forward end thereof, and a plurality of pivot bolts similarly secured to the other side of said body in transverse axial alignment with the pivot bolts secured to the said one side of said body, a plurality of inverted U-shaped bows having a top transverse bar and radial side bars at the ends of the transverse bar, two of which bows are pivotally secured to the rearmost pair of transversely aligned pivot bolts and one each of which is pivotally secured to each of the other transversely aligned pivot bolts, means by which said cover is permanently secured to the transverse bars of said bows, said bows extending radially upwardly and rearwardly from said pivot bolts when maintaining said cover in extended closing position over said body, and upwardly and forwardly when maintaining said cover in collapsed open position, and means by which said bows are adapted to be rotated back and forth about said pivot bolts between cover extended position and cover collapsed position, said means comprising; a transversely disposed shaft which is rotatably mounted on the front wall of said body and extends out beyond each side of said body, a crank by which said shaft is adapted to be rotated secured to one end of said shaft, a first pair of axially aligned pulleys one of which is rotatably mounted on each side wall of said body adjacent said front wall below the plane of said shaft, a second pair of axially aligned pulleys one of which is rotatably mounted on each side wall of said body adjacent the rear end of said body above the plane of said shaft, a pair of cables one at each side of said body, each of said cables having one end thereof secured to said shaft and wound thereon in one direction and the other end thereof secured to said shaft and wound thereon in the opposite direction, each of said cables extending downwardly around one of said first pair of pulleys thence rearwardly and upwardly around one of said second pair of pulleys and then forwardly to said shaft, said cables being connected to the side bars of said rearmost bow intermediate the transverse bar and the pivoted lower ends thereof, whereby rotation of said shaft will swing said bows from their upwardly and rearwardly extending position to their upwardly and forwardly extending position thereby moving said cover from extended closed position to collapsed open position, and rotation of said shaft in the opposite direction will swing said bows back to their upwardly and rearwardly extending position and thereby move said cover from collapsed open position back to extended closed position.

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**3,168,346**
**PULL-UP ARM REST FOR VEHICLE SEATS**
**Charles W. Rei, Jr., Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 31, 1963, Ser. No. 279,959**
**10 Claims. (Cl. 297—113)**

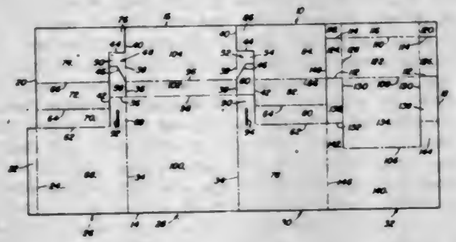


1. In a vehicle seat including a seat back having a forwardly facing recess, an arm rest movable between a retracted position occupying said seat back recess and a horizontal position extending forwardly from said seat back, a first bracket member secured to said seat back and having pivotal axes spaced vertically of the lower portion of the seat back recess to define a fixed link member, a second bracket member secured to and providing pivotal

axes spaced vertically of the retracted upper end portion of said arm rest and defining a second link member of shorter dimension than said first bracket member, a third link member pivotally interconnecting the lower pivot of said fixed bracket member and the lower retracted and forward extended pivot of said second bracket member, a fourth link member pivotally interconnecting the upper pivot of said fixed bracket link and the upper retracted and rearward extended pivot of the second bracket member, and abutment means engageable with at least one of said link members to limit and prevent further swinging movement of the arm rest upon reaching its extended position.

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**3,168,347**
**FOLDING CARDBOARD CHAIR**
**Terry J. Lyles, 2601 N. Grant, Springfield, Mo.**
**Filed Feb. 26, 1963, Ser. No. 261,075**
**7 Claims. (Cl. 297—442)**



1. A folding chair constructed of stiff sheet material slit and folded along predetermined lines, said chair consisting of a seat brace and a chair body, said chair body being formed of a single sheet of material, this body sheet being folded so as to initially present four right angular vertical sections, a right side section, a left side section, a front section, and a rear section, said right side, left side, and front sections each including a full seat panel folded therefrom, said seat panels being horizontally orientated and overlapped in superimposed relation to each other rearward of the initial vertical plane of the front section and between the initial vertical planes of the side sections so as to form a three layer seat portion, said front section and said rear section each including a seat back panel folded therefrom, said seat back panels being orientated vertically and overlapped between the side sections substantially in the vertical plane of the rear of said seat panels, said right side section and said front section each including a right arm panel folded therefrom, said right arm panels being orientated horizontally and overlapped in a plane above the seat panels and to the right thereof, and said left side section and said front section each including a left arm panel folded therefrom, said left arm panels being orientated horizontally and overlapped in a plane above the seat panels and to the left thereof.

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**3,168,348**
**WHEEL COOLING MEANS**
**James E. Fleming and Roy L. Matlock, both % Matlock & Cope Truck Body Manufacturing Corp., 151 Fairfield, Nashville 3, Tenn.**
**Filed Oct. 30, 1962, Ser. No. 234,088**
**2 Claims. (Cl. 301—6)**

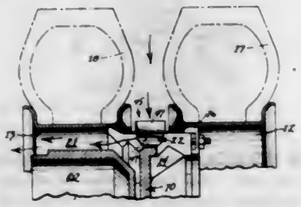
1. In a dual wheel having an inboard rim and an outboard rim spaced axially of each other and a brake drum mounted within and radially spaced from said inboard rim, wheel cooling means comprising:

(*a*) an annular cylindrical spacer having a radius greater than the radius of said brake drum but not greater than the radius of said inboard rim,

(*b*) said spacer being mounted between and in abutting relation with said rims to separate rims,

(*c*) said spacer having circumferentially spaced slots therethrough, each slot having a leading edge, a trailing edge, an inboard edge and an outboard edge,

(*d*) a deflector blade affixed to the trailing edge of each slot and extending radially outwardly of said

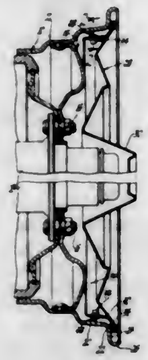


spacer and inclined toward the leading edge of its corresponding slot,

(*e*) each blade also being inclined to the rotational axis of said spacer so that the inboard edge of the blade trails its outboard edge in order to direct air from outside said spacer through said corresponding slot and inboard between said brake drum and said inboard rim when said wheel is rotated in the direction of said leading edges.

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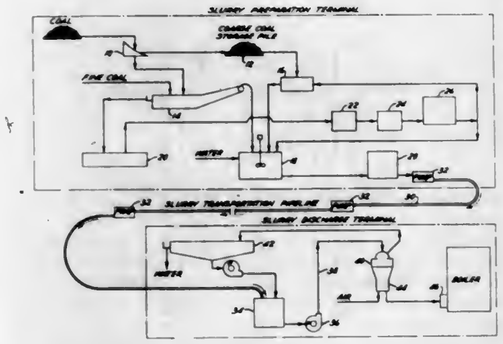
**3,168,349**
**WHEEL COVER**
**Arnold J. Maletzke, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 25, 1963, Ser. No. 267,632**
**9 Claims. (Cl. 301—37)**



1. A wheel cover comprising, a cover member including an apertured flange portion, retaining means mounted on said flange portion and having a portion thereof displaceable with respect to said flange portion and including means projecting through said aperture and engageable with a poriton of a vehicle wheel to displace said retaining means portion relative to said cover member flange portion, and means on said retaining means portion engageable with said cover member flange portion adjacent said aperture therein after said retaining means portion has been displaced a predetermined amount relative to said cover member flange portion.



**3,168,350**
**TRANSPORTATION OF COAL BY PIPELINE**
**John A. Phinney, James T. Clancey, Thomas J. Regan, and Edward J. Wasp, Pittsburgh, Pa., assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Aug. 29, 1961, Ser. No. 134,631**
**8 Claims. (Cl. 302—14)**



1. A system for transporting coal to distant places through a pipeline as a coal-water slurry which comprises

(*a*) obtaining relatively coarse coal particles having a spectrum of sizes and about 25 percent by weight of a size larger than 14 mesh Tyler standard screen series, said coarse coal particles when mixed with water to form a slurry having a given concentration of coal particles by weight and when transported at said given concentration through a pipeline at a given velocity will have a first pressure drop per unit length of pipeline,

(*b*) obtaining relatively fine coal particles having at least 20 percent by weight of a size that is smaller than 325 mesh Tyler standard screen, said fine coal particles when mixed with water to form a slurry of said same concentration of coal particles by weight and when transported at said same concentration through said pipeline at said same velocity will have a second pressure drop per unit length of pipeline,

(*c*) blending said coarse coal particles and said fine coal particles so that said blended product when mixed with water to form a slurry of said same concentration of coal particles by weight and when transported at said same concentration through said pipeline at said same velocity will have a third pressure drop per unit length of pipeline which is less than either said first or said second pressure drop,

(*d*) preparing a slurry of said blended product and water comprising at least 50 percent of said blended product of coal particles in water,

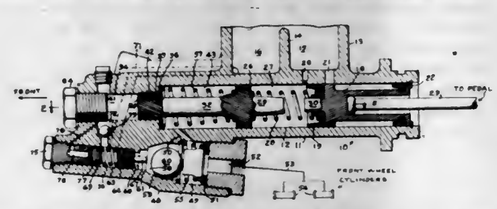
(*e*) pumping said slurry through a long distance pipeline, and

(*f*) recovering said slurry from the delivery end of said pipeline.

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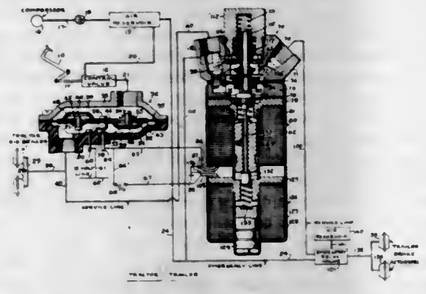
**3,168,351**
**MOTOR VEHICLE HYDRAULIC BRAKE SYSTEM**
**William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Detroit, Mich., a corporation of Delaware**
**Filed May 5, 1961, Ser. No. 108,107**
**11 Claims. (Cl. 303—6)**

1. In a hydraulic brake system for a motor vehicle having a plurality of wheel cylinders, a master cylinder having a pair of plungers therein defining therebetween a first pressure chamber, a duct connecting such pressure chamber with certain of said wheel cylinders, the side of one of said plungers opposite said pressure chamber forming with the adjacent end of said master cylinder a second pressure chamber communicating with the other wheel cylinders, means for supplying force to the other plunger to displace fluid from said one chamber through said duct to said certain wheel cylinders and to transmit movement to said one plunger to displace fluid from said second chamber to the other wheel cylinders, and a device in said duct normally operative for passing fluid therethrough from said first chamber to said certain wheel cylinders, said device comprising an auxiliary cylinder, a piston in such cylinder, one end of said auxiliary cylinder communicating with said first pressure chamber and the other end communicating with said certain wheel cylinders, said piston being hollow and having a downwardly and rearwardly sloping lower surface, a ball valve arranged on said surface, said piston having a port communicating with said other end of said auxiliary cylinder, said ball being movable upwardly along said surface to close said port upon a predetermined rate of vehicle deceleration, and a plunger connected to said piston and having a relatively small surface facing into said first-named end of said cylinder whereby, when said ball engages said seat, pressure in one end of said auxiliary cylinder acts to move said piston to displace fluid from said other end of said auxiliary cylinder, and said small surface subtracts from the pressure supplied from said first pressure chamber to move said piston whereby pressure in said other end of said auxiliary cylinder will be less than pressure in said first chamber.



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**3,168,352**
**TRACTOR TRAILER BRAKE SYSTEM**
**William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware**
**Filed Aug. 9, 1961, Ser. No. 130,360**
**17 Claims. (Cl. 303—7)**



1. In a tractor trailer brake system, manually operable control valve means for supplying fluid pressure to the actuators for the tractor brakes, a service line having a forward end connected to be supplied with pressure from said control valve means upon operation thereof, said service line having a rear end on the trailer, means connected to the rear end of said service line to be operated by pressure therein to operate the trailer brake actuators

in proportion to the degree of such pressure, and an automatic valve mechanism connected in said service line between the ends thereof, said automatic valve mechanism comprising a body having a pressure chamber connected to a source of pressure, said valve mechanism having a duct therethrough normally affording communication between said ends of said service line, a normally closed valve disconnecting said pressure chamber from said duct, a normally open valve in said duct connected to said normally closed valve, a valve seat movable in one direction to engage said normally open valve to close said duct and to transmit movement from such valve to said normally closed valve to open it and supply pressure from said pressure chamber to the rear end of said service line, and a solenoid having an armature mechanically connected to said valve seat whereby said solenoid is energizable to move said valve seat to close said normally open valve and open said normally closed valve to cut off communication through said duct and admit pressure to the rear end of said service line, said solenoid having a circuit including a switch arranged to be closed upon initial operation of said control valve means.

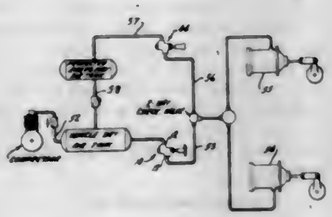
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**3,168,353**

## FLUID PRESSURE CONTROL SYSTEM AND VALVE THEREFOR

Charles Horowitz, Chicago, Ill., assignor to Berg Airlectro Products Co., Chicago, Ill., a corporation of Illinois

Filed June 13, 1962, Ser. No. 202,172
2 Claims. (Cl. 303—13)



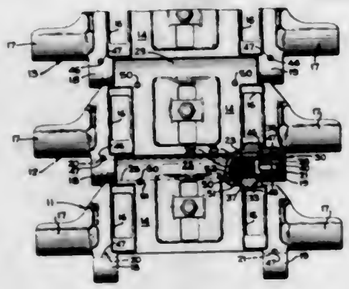
1. A vehicle brake system including a main pressure reservoir, an emergency pressure reservoir, a pressure conduit between said reservoirs, a check valve in said conduit to permit passage of pressure from said main to said emergency reservoir and to preclude passage of pressure in the opposite direction, a second pressure conduit extending from said main reservoir and discharging into one side of a two-way check valve, a third pressure conduit extending from said emergency reservoir and discharging into the opposite side of said two-way check valve, a fourth pressure conduit extending from said two-way check valve and discharging into a plurality of spring-applied, pressure-release brake-actuating members, a first control valve in said second pressure conduit, a second control valve in said third pressure conduit, each of said control valves having a vent passage to atmosphere, each of said control valves having a manually operable handle element extending therefrom, each of said handle elements being movable in one direction to permit passage of fluid pressure through its associated conduit and movable in the opposite direction to preclude said passage of fluid pressure and to vent the downstream portion of its associated conduit to atmosphere, said first control valve having elements effective to maintain the position in which they are placed in response to fluid pressure entering said first control valve, said second control valve being yieldingly urged into venting position.

**3,168,354**

## PIN JOINT FOR LINKS OF ENDLESS TRACKS

Donald L. Gibson, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 17, 1963, Ser. No. 281,168
11 Claims. (Cl. 305—14)



1. In combination, a first and a second link having juxtaposed edge portions, means defining aligned bores in said edge portions, a bearing unit disposed in said bores and including an outer member releasably secured to one of said links for rotation therewith and an inner member releasably secured to the other of said links, said inner and outer members having threads providing interengaging bearing surfaces, said bearing unit being freely insertable and removable as a unit into and out of said bores.

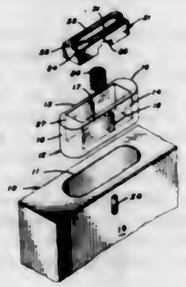
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**3,168,355**

## SLIDE ASSEMBLY FOR SLIDING DOORS

La Vern E. Rudolph, 283 W. 16th St., Holland, Mich.

Filed Jan. 9, 1961, Ser. No. 81,491
3 Claims. (Cl. 308—3)



2. A retractable door slide, comprising: a housing, at least one side of said housing having a central opening therein; a shoe slidably mounted in said housing, said shoe having a projecting tongue and a shoulder along at least one side thereof, said tongue normally projecting from said housing, and said shoe having a recess on the opposite side thereof from said tongue; and biasing means urging said shoe to increased projection from said housing, said biasing means including a coiled compression spring having one end thereof tightly received in said recess, said spring being disposed opposite the central opening in the side of said housing.

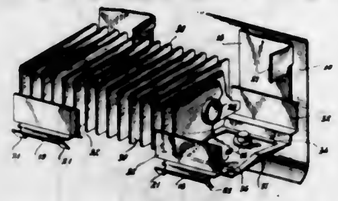


**3,168,356**

## ROTARY BEARING

Raymond C. Yama, North Coventry, Conn., assignor to Argo Industries, Incorporated, Hartford, Conn., a corporation of Connecticut

Filed Aug. 2, 1962, Ser. No. 214,392
4 Claims. (Cl. 308—6)



2. A bearing assembly which comprises a base; first and second substantially parallel cylindrical members, each having a first end and a second end and being mounted on said base substantially solely at said first end for rotation about its longitudinal axis; flange means on each cylindrical member extending outwardly therefrom and positioned such that the intersection of a surface thereof with a plane perpendicular to said longitudinal axis is a circle, each of the surface of said flange means and the cylindrical surface of each member being adapted to serve as simultaneous load supporting surfaces; a load having at least two parallel elongated rail members, each of said rail members abutting at least one supporting surface of a different cylindrical member for movement relative thereto and perpendicular to their longitudinal axes.

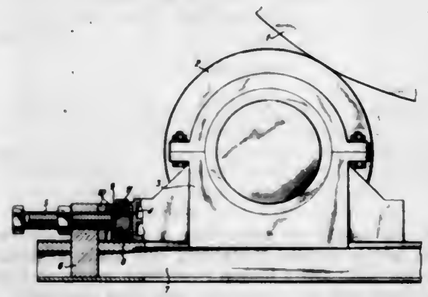
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**3,168,357**

## JOURNALLING DEVICE FOR SUPPORTING ROLLERS

Fritz Mornigkeit, deceased, late of Bochum-Harpen, Germany, by Hedwig Mornigkeit, administrator, Bochum-Harpen, Germany, assignor to Westfalia Dinnendahl Groppel Aktiengesellschaft, Bochum, Germany, a corporation of Germany

Filed May 1, 1963, Ser. No. 277,675
1 Claim. (Cl. 308—15)



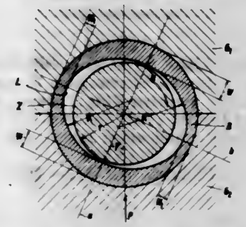
A journalling device for a supporting roller of a rotary kiln, tube mill or the like rotatable cylindrical structure, comprising a fixed base having an abutment, a roller-bearing block displaceable on said base toward and away from said abutment, a set screw in threaded engagement with said abutment, a pressure member interposed between said screw and said block and having an annular chamber coaxial to said screw, an annular piston coaxially slidable in said chamber and engageable with said abutment when said chamber is under pressure, said chamber having channel means for connection to a source of pressure medium, whereby said piston, when being pressed by pressure medium against said abutment, permits temporarily relieving said set screw.

**3,168,358**

## BEARING

Alfred Buske, Neckarsulm, Wurttemberg, Germany, assignor to Karl Schmidt G.m.b.H., Neckarsulm, Wurttemberg, Germany, a German corporation

Filed Dec. 18, 1962, Ser. No. 245,595
Claims priority, application Germany Dec. 27, 1961
5 Claims. (Cl. 308—37)



1. An assembly comprising a shaft and a sliding bearing therefor and in slide bearing engagement therewith, the bearing being in said bearing engagement at two diametrically opposed spaced loci about the shaft circumference, a line through said spaced diametrically opposed loci being offset from a line in the direction of the center of load on the shaft by an angle of about 8–60°, the offset being in the direction of rotation of the shaft.

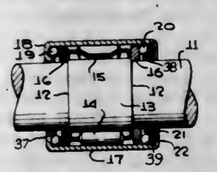
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**3,168,359**

## COMBINED RADIAL AND DUAL THRUST BEARING FOR SHAFTS

William Walter Murphy, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed Feb. 25, 1963, Ser. No. 260,531
14 Claims. (Cl. 308—174)



1. A combined radial and dual thrust bearing, comprising a shaft having an enlarged central portion forming an inner race member, a series of bearing rollers on said race member, an outer race member of thin ductile material surrounding said rollers, said outer race member having ends beyond the inner race member forming chambers, a series of thrust members in each chamber and abutment means for said thrust members against the opposite ends of the inner race member.

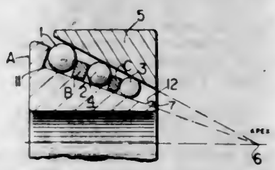
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**3,168,360**

## TAPERED BALL BEARING

Francis J. L. Dorl, 17 Mountain Ave., Summit, N.J.

Filed Jan. 21, 1963, Ser. No. 252,722
3 Claims. (Cl. 308—193)

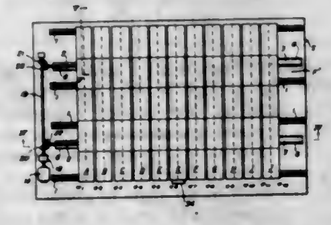


1. A tapered ball bearing, comprising an inner cone tapering in one direction, and having an end-thrust flange on one end, and a smooth race surface tapering down-

wardly therefrom; a plurality of rows of balls of decreasing diameter resting on the tapered inner cone; loose, movable rings separating said rows of balls and a tapered outer bearing cup, having a smooth race surface, the taper of the cone and the bearing cup being such that the extended lines of said tapered surfaces meet on the axis of the shaft of the assembled bearing.

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**3,168,361**
**SHIFTABLE STACK ASSEMBLY**
**Yoshiharu Naito, % Elecompack Company Ltd., 3rd Floor, Yachiyo Bldg., Tokyo, Japan**
**Filed Oct. 9, 1962, Ser. No. 229,373**
**Claims priority, application Japan, Apr. 26, 1962, 37/15,906**
**15 Claims. (Cl. 312—199)**

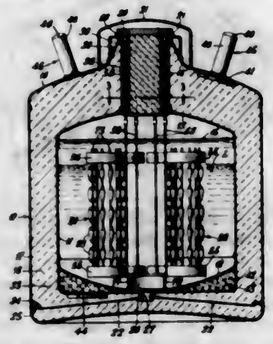


1. A stack assembly including a combination of a plurality of stacks for accommodating articles, said assembly comprising (1) a row of stacks each having at least one face through which articles may be taken out and put in, said stacks being arranged on a floor in side-by-side relation in a manner such that said faces of adjacent stacks are parallel to each other and being normally arranged closely adjacent to each other, and the face of any stack being made accessible for the taking out and putting in of articles therethrough by forming an aisle in front of the face by shifting at least one stack lying at the face by a distance corresponding to the width required of the aisle; (2) means for supporting said stacks in a manner such as to allow them to be shifted relative to each other in a direction normal to the faces and thus to move said faces of the adjacent stacks toward and apart from each other, and (3) shifting means for simultaneously shifting at least one of said stacks as selected, said shifting means including (i) at least one longitudinally slidable shifting bar extending for the depth of all of said stacks normally to the faces thereof and characterized by a plurality of apertures in longitudinally spaced array, said shifting bar being slidable with respect to each of the stacks of said row of stacks, (ii) means for transferring said shifting bar in longitudinal direction, and (iii) means for connecting selected ones of said stacks to be shifted to said shifting bar, said connecting means comprising electromagnetically actuated pin means mounted on said respective stacks and adapted to enter the apertures in said shifting bar.

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**3,168,362**
**THERMALLY INSULATED BULK STORAGE CONTAINER**
**Warren E. Perkins, Grand Island, N.Y., assignor to Union Carbide Corporation, a corporation of New York**
**Continuation of abandoned application Ser. No. 580,898, Apr. 26, 1956. This application Feb. 1, 1962, Ser. No. 172,052**
**15 Claims. (Cl. 312—214)**

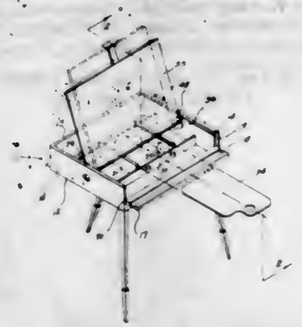
15. A system for storing products at low temperatures over prolonged periods of time which comprises: a thermally insulated vessel having a refrigerating compartment for holding a supply of low boiling liquefied gas in thermal association with such products and having a neck tube in the top thereof providing an access opening into the refrigerating compartment; a plurality of product holding means disposed outwardly and toward the wall of said refrigerating compartment by elongated handles extending through the access opening adjacent the inner wall of said neck tube and having formed upper ends to supportably engage the container; and a removable neck tube plug having a body portion with a plurality of



grooves formed in the circumference thereof to accommodate said elongated handles fitting within said neck tube such that the adjacent walls of said neck tube and said body portion define an anular channel to permit passage of refrigerant vapors upwardly therethrough in contact with said adjacent walls and said elongated handles.

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**3,168,363**
**ARTIST'S KIT**
**James R. Mouseur, 6260 SW. 21st St., Miami, Fla.**
**Filed May 24, 1963, Ser. No. 283,065**
**4 Claims. (Cl. 312—231)**



1. An artist's kit comprising a main tray-like receptacle having parallel upstanding side walls, an upstanding rear wall, and a hinged front wall, means to support said front wall in a forwardly projecting horizontal position, said front wall having a recessed inside surface shaped to receive brushes and similar artist's materials, the upper inside marginal portions of said side walls being formed with guide grooves, a rigid cover member slidably engageable in said guide grooves, a pair of supporting blocks, each formed with a groove, and means to pivotally secure said blocks in opposing relationship to each other to the inside surfaces of said side walls, said cover member being formed with notches at opposite ends of one margin thereof to define substantially parallel edge portions receivable in the grooves in the blocks with the top portions of said notches engaged on the top edges of said side walls, to at times support said cover member in an upstanding position between said side walls, whereby to define an easel.



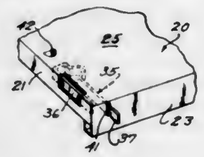
**3,168,364**
**AIRCRAFT CABIN WITH STORAGE CABINET FOR FOOD**
**Norbert Schaefer-Sell, Kleckerwaldweg 587, Jesteburg, Kreis Harburg, Germany**
**Filed Feb. 1, 1963, Ser. No. 255,555**
**Claims priority, application Germany, Feb. 1, 1962, Sch 30,917**
**2 Claims. (Cl. 312—297)**



1. A food storage and serving cabinet particularly for aircraft, comprising means dividing the interior of said cabinet into at least one temperature - controlled area which is opened at the front thereof, and a rolling shutter set for closing the front of the temperature-controlled area, comprising a first rolling shutter element, means for guiding said first rolling shutter element for movement adjacent the top wall of said temperature-controlled area and permitting a portion to extend downwardly therefrom for closing a portion of the front of said temperature-controlled area, a second rolling shutter element, means guiding said second rolling shutter element for sliding movement adjacent the bottom wall of said temperature-controlled area and permitting movement of an end portion upwardly and downwardly from the bottom along the front wall for closing a portion of said front wall of said temperature-controlled area, means, including a coil spring, connecting the inner ends of said first and second rolling shutter elements adjacent the rear of said temperature-controlled compartment, said first and second rolling shutter elements being slidable to permit portions thereof to expose a selected area of the front of said temperature-controlled cabinet; said coil spring being guided by a rod extending between said first and second rolling shutter elements.

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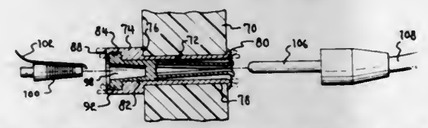
**3,168,365**
**CABINET STRUCTURE WITH SHELF ATTACHING AND SUPPORTING MEANS**
**Robert J. Evans, Aurora, Ill., assignor to Aurora Equipment Company, Aurora, Ill., a corporation of Illinois**
**Filed July 12, 1963, Ser. No. 294,676**
**12 Claims. (Cl. 312—351)**



1. A shelf,
means for securing the shelf to a cabinet comprising a U-shaped slidable clip with one leg of the U being longer than an adjacent leg,
the shelf having an inwardly turned retaining flange portion adjacent a side wall of the shelf and cooperable with the side wall in defining a channel-shaped guide with the shorter leg of said clip slidably retained in assembly with said channel-shaped guide, and another side wall of said shelf being normal to said side wall and having a slot and with an end of said longer leg being extendible through said slot for locking the shelf to a cabinet.

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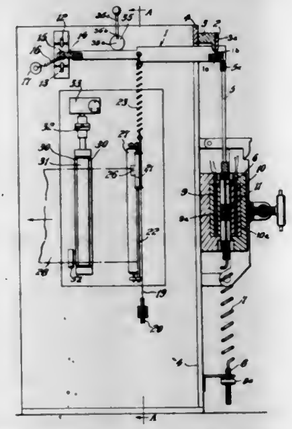
**3,168,366**
**ELECTRICAL CONNECTOR ASSEMBLY**
**Glenwood A. Fuller, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Filed June 12, 1962, Ser. No. 201,982**
**3 Claims. (Cl. 339—220)**



1. An assembly securing an electrical socket in an insulating board member including a mounting member having first and second sleeve portions of relatively thin malleable metal separated by a relatively thick portion having a flange on the exterior surface thereof and adapted to support a contact member therewithin, a contact member positioned within said mounting member, said contact member including a flange extending outwardly, contact portions at each end of the contact member adapted to receive axially forced pin members, including at one end resilient fingers extending out of the board member, the first sleeve portion of said mounting member being formed inwardly around said contact member flange to secure the contact member therein and outwardly against the board member to secure the mounting member against axial movement in one sense relative to the board member, the second sleeve portion being formed outwardly against the board member to secure the mounting member against axial movement in the other sense relative to the board member.

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**3,168,367**
**MECHANICAL OSCILLATION RECORDING DEVICE**
**William Arthur Gurney, Castle Bromwich, Arthur James Stubbs, Solihull, and Peter Henry Hollins, Sutton Coldfield, England, assignors to Dunlop Rubber Company Limited, London County, England, a British company**
**Filed Dec. 1, 1961, Ser. No. 156,216**
**Claims priority, application Great Britain Dec. 20, 1960**
**1 Claim. (Cl. 346—7)**



A recording device for indicating the increase in resistance to shear of a rubber composition as it is vulcanized

in a shear applying device comprising a beam member, a pivot on which said beam member is pivotally mounted adjacent one end, a first spring connected at one end to said beam member on one side of said pivot, a linkage connected at one end to said beam member on the other side of the pivot, a substantially inextensible strip connected to the other end of said linkage, a clamp for clamping a sample of rubber composition to said strip, heating means to heat said sample of rubber composition, a second spring connected to the inextensible strip to act in opposition to said first spring, and means to alternately stretch and relax said first spring to oscillate the beam member, said recording device comprising an electrically conductive support for electro-sensitive paper, an electroconductive stylus mounted on a carriage connected to the other end of said first spring to traverse said paper with said spring, a pair of contacts to limit the amplitude of movement of said beam member, a triode valve, a source of electrical power connected to the cathode of said valve and to said electrically conductive support, an anode in said valve connected to said stylus and a grid connected to said source of electrical power to apply a polarity to said grid to prevent discharge through the valve when said beam member is in contact with either of said contacts.

# CHEMICAL

### 3,168,368
### METHOD OF TREATING EXHAUST GASES OF INTERNAL COMBUSTION ENGINES

**George Alexander Mills, Swarthmore, Pa., assignor to Air Products and Chemicals, Inc., a corporation of Delaware**

**No Drawing. Filed Apr. 27, 1960, Ser. No. 24,896**
**1 Claim. (Cl. 23—2)**

The method of operating an internal combustion motor to provide an exhaust gas containing a low concentration of higher molecular weight combustible components which method includes the steps of: operating the internal combustion motor with a liquid hydrocarbon fuel containing molybdenum in a concentration range from 0.03 to 0.08% by weight of the fuel and tetraethyl lead in a concentration providing less lead than molybdenum; withdrawing from the internal combustion motor an exhaust gas containing higher molecular weight combustible components, said exhaust gas also containing entrained and suspended particles of molybdenum oxide; admixing said exhaust gas with an amount of air less than the amount of exhaust gas and directing the thus prepared mixture through a bed of porous refractory granules having a volume greater than the cubic displacement of the internal combustion motor, said granules containing a minor amount of an oxide of molybdenum, whereby at least a portion of the higher molecular weight combustible components in the exhaust gas are burned and accelerating amounts of molybdenum oxide catalyst are deposited on said refractory granules to stabilize the effectiveness of the catalytic combustion of such higher molecular weight combustible components in the exhaust gas.

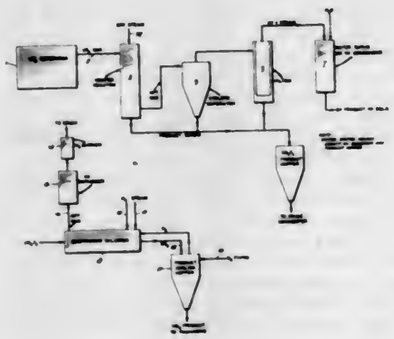
### 3,168,369
### URANIUM PROCESSING

**Stanton L. Reese and Thomas C. Runion, both of Erwin, Tenn., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**Filed Dec. 18, 1961, Ser. No. 159,974**
**4 Claims. (Cl. 23—14.5)**

1. A process for the preparation of uranium trioxide which comprises converting gaseous uranium hexafluoride to uranyl fluoride by treating the hexafluoride with steam at a temperature of about 230° to 350° F. at atmospheric pressure followed by conversion of the uranyl fluoride to uranyl oxide by treatment of the fluoride at a temperature about 800° to 1000° F. in the presence of steam while carefully excluding air from the reactor and recovering the uranium trioxide product.

3. A process for preparing uranium dioxide with an average particle diameter of 0.55 to 2.5 microns and a bulk density of 0.65 to 1.5 grams per cc. which comprises treating gaseous uranium hexafluoride with steam at a



temperature of 230–350° F., followed by treatment of the uranyl fluoride with hydrogen at a temperature of 1000 to 1400° F. for a period of about 2 hours and recovering the uranium dioxide product.

### 3,168,370
### PURIFICATION OF SODIUM DIURANATE

**Robert E. Reusser, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed May 19, 1960, Ser. No. 30,083**
**2 Claims. (Cl. 23—14.5)**

1. A method for purifying sodium diuranate containing impurities comprising vanadium values, which comprises roasting said sodium diuranate at elevated temperatures in the range between about 650° and 870° C. in the presence of a material consisting essentially of a salt selected from the group consisting of sodium carbonate and sodium chloride in the amount in the range between about 0.5 to 15 weight percent, based on said sodium diuranate, for a period of time in the range between about 10 to 30 minutes, leaching the resulting roasted product with water containing an amount of ammonium sulfate sufficient to minimize the peptization of the insoluble



sodium diuranate present in said leach mixture, and recovering relatively purer sodium diuranate from the resulting leach mixture.

### 3,168,371
### PROCESS FOR PRODUCING HIGH DENSITY URANIA FUEL ELEMENTS

**Philippe D. S. St. Pierre, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed Oct. 28, 1960, Ser. No. 65,609**
**2 Claims. (Cl. 23—14.5)**

2. A process for producing uranium dioxide particles which are at least 95 percent dense, comprising compacting amonmium diuranate at a pressure of not less than about 10 tons per square inch to form a green compact, heating the green compact in a reducing atmosphere to a temperature reducing the ammonium diuranate to uranium dioxide, and performing the heating at a rate of not less than about 100° C. per hour.

### 3,168,372
### METHOD FOR THE RECOVERY OF GALLIUM FROM ALUNITE

**Tadashi Nagumo and Masahiko Murakoshi, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan**

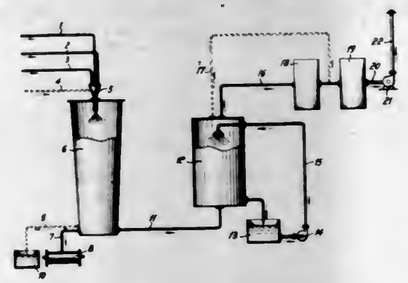
**Filed July 20, 1961, Ser. No. 125,428**
**Claims priority, application Japan, July 28, 1960, 35/32,754**
**1 Claim. (Cl. 23—19)**

A process for concentrating gallium contained in alunite ore in a two-stage countercurrent decomposition system by successively repeating the decomposition of alunite with nitric acid in successive decomposition periods, said process comprising: initially mixing in a first decomposition zone nitric acid of between 10 and 60% concentration with a charge of roasted alunite, at a temperature of about the boiling point, the amount of nitric acid added being in excess of that which is to be decomposed in the first decomposition zone and being controlled to keep the pH of the mixture less than 0.1, the mixing being effected for at least one hour and until gallium contained in the alunite is dissolved in the nitric acid solution, separating a solid phase and a liquid phase in the first zone, transferring from the first zone the liquid phase which is enriched with gallium to the second decomposition zone where the liquid phase is mixed with an amount of roasted alunite ore, which is in excess of that to be decomposed in the second decomposition zone to maintain the pH of the mixture between 0.1 and 1.0, until the gallium contained in the liquid phase from the first zone as well as the gallium contained in the ore is precipitated, separating in the second zone a liquid phase weak in gallium from a solid phase which is enriched with gallium, discharging the liquid phase from the second zone while the solid phase is returned to the first decomposition zone, wherein only nitric acid of between 10 and 60% concentration is added in a quantity in excess of the solid phase which is to be decomposed in the first zone to keep the pH of the mixture less than 0.1, the mixing being effected for at least one hour at a boiling temperature, until gallium is dissolved in the nitric acid solution, separating a solid phase and a liquid phase in the first zone and transferring the liquid phase which is enriched with gallium to the second decomposition zone, the process being repeated until gallium is concentrated to a predetermined concentration, whereafter the gallium is removed.

### 3,168,373
### PROCESS FOR THE MANUFACTURE OF ALKALI METAL PHOSPHATES

**Gerhard Hartlapp, Knapsack, near Cologne, Waldemar Bielenberg, Cologne Klettenberg, Harri Kribbe and Klaus Beltz, Knapsack, near Cologne, and Friedrich Thomas, Hermulheim, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany**

**Filed Dec. 19, 1960, Ser. No. 76,710**
**Claims priority, application Germany, Dec. 18, 1959, K 39,461**
**4 Claims. (Cl. 23—106)**



1. Process for the production of alkali metal phosphate from alkali metal chlorides, phosphorus, an oxidizing gas selected from the group consisting of oxygen, air and mixtures thereof and water vapor, which comprises separately feeding molten phosphorus, said oxidizing gas, said alkali metal chloride and water vapor concentrically of one another, in the same direction and along the same axial path to one another to a reaction zone of high energy density consisting of an incandescent flame produced by combustion of atomized molten phosphorus with the oxidizing gas, said alkali metal chloride being fed centrally of the phosphorus, oxidizing gas and water vapor atomizing and vaporizing the alkali metal chloride within said flame, reacting the resulting gaseous phosphorus combustion products with gaseous alkali metal chloride and the water vapor with the formation of alkali metal phosphate and hydrogen chloride and recovering the alkali metal phosphate, said alkali metal phosphate having a molar ratio of $P_2O_5$ to alkali metal oxide within the range of about 1:1 to about 1:2, the phosphorus, the oxidizing gas and the alkali metal chloride being supplied in such amounts that about 90 to 500 liters oxygen are fed per 100 grams phosphorus.

### 3,168,374
### PRODUCTION OF ZIRCONIUM COMPOUNDS FROM ALKALI METAL-ZIRCONIUM SILICATES

**Eugen Meyer-Simon and Artur Frey, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany**

**No Drawing. Filed Aug. 14, 1961, Ser. No. 131,103**
**Claims priority, application Germany, Sept. 3, 1960, D 34,163**
**6 Claims. (Cl. 23—117)**

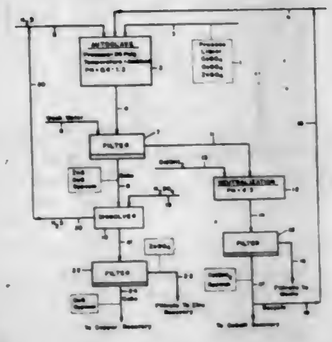
1. In a process for the recovery of zirconium values by reaction of an alkali metal-zirconium silicate with a concentrated acid which decomposes such silicate to form silicic acid and a soluble zirconium compound, the steps which comprise adding the quantity of acid required for reaction with the alkali metal component of the silicate to an aqueous suspension of such alkali metal-zirconium silicate over a period of about 1 to 2 hours and at a rate sufficiently slow that the temperature of the reaction mixture does not rise above 100° C., then rapidly adding the

remaining acid necessary to react with the zirconium component of the silicate and after the silicic acid formed has become water insoluble separating off such silicic acid to leave an aqueous solution of zirconium values.

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**3,168,375**
**PROCESS FOR THE TREATMENT OF AN AQUEOUS SOLUTION CONTAINING VARIOUS METAL SULPHATE SALTS FOR THE RECOVERY OF METAL VALUES, PARTICULARLY OF COBALT, THEREFROM**

Chat M. Barut, New York, N.Y., and Raymond O. Lehr, Westport, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Aug. 28, 1962, Ser. No. 219,964
11 Claims. (Cl. 23—135)

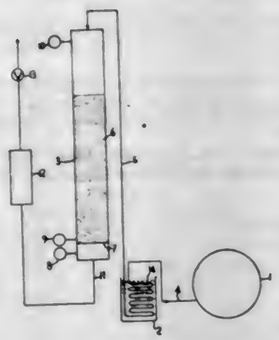


3. A process for treating an aqueous solution containing the sulphate salts of copper, zinc and cobalt comprising the steps of, adjusting the pH value of the solution to within the range of 0.9 to 1.2, reacting said solution with hydrogen sulphide at a pressure within the range of 20 to 30 p.s.i.g., maintaining said solution within the aforesaid pH range during said reaction to precipitate copper and zinc as sulphides, and separating the thus precipitated metal sulphides from the aqueous cobalt solution.

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**3,168,376**
**PROCESS FOR THE PURIFICATION OF LIQUID CHLORINE**

Elbert E. Neely, Corpus Christi, Tex., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 22, 1963, Ser. No. 318,484
11 Claims. (Cl. 23—219)

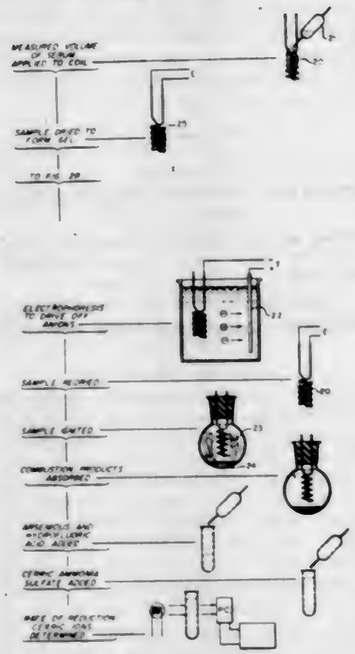


1. A method of purifying liquid chlorine containing contaminating quantities of non-volatile impurities comprising contacting said liquid chlorine with a bed of hydrated siliceous material of a member of the group consisting of hydrated silica and hydrated calcium silicate, said member having a surface area of 75 to 350 square meters per gram and an oil absorption of 100 to 350 grams per 100 grams of said member to thereby provide a substantial reduction in the non-volatile impurities contained in said liquid chlorine.

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**3,168,377**
**METHOD FOR THE DETERMINATION OF PROTEIN BOUND IODINE**

Fred G. Williams, Jr., Palo Alto, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed May 12, 1960, Ser. No. 28,710
13 Claims. (Cl. 23—230)



1. In the method of separating protein bound iodine from inorganic iodine in a sample and converting the protein bound iodine to inorganic iodine, the steps of drying the sample to form a gel, placing the gel in an electrolyte, applying a voltage gradient across the sample to remove the inorganic iodine from the gel by electrophoresis, placing the remaining gel in an enclosed atmosphere containing oxygen, and combusting the gel to convert the protein bound iodine in the gel to inorganic iodine.

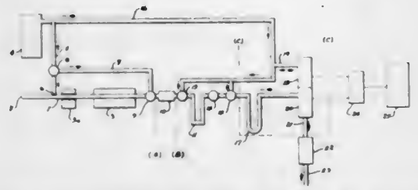
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**3,168,378**
**PROCESS FOR ANALYSIS OF ORGANIC COMPOUNDS**

Charles Maresh, Somerville, N.J., and Oliver Emil Sundberg, deceased, late of Somerville, N.J., by Gertrude Sundberg, executrix, Somerville, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
Filed Jan. 30, 1961, Ser. No. 85,927
10 Claims. (Cl. 23—230)

1. In a procedure for determining at least the elemental carbon, hydrogen and nitrogen content of an organic compound by combustion wherein a sample of said compound is completely pyrolyzed in a heat packed combustion tube through which a sweeping gas is continuously being passed and resultant vapors are passed through a zone packed with a metal oxide selected from the group consisting of the oxides of copper, nickel and cobalt; and subsequently, but while still in said heated combustion tube, the so-treated vapors are passed through a zone packed with copper metal having a large surface area; the improved procedure characterized by the sweeping gas being an inert gas having a boiling point below that of nitrogen, passing the so-treated vapors containing the products of combustion in the inert sweeping gas through an unheated zone packed with material capable of converting any water vapor in said so-treated gases to a gas selected from the group consisting of hydrogen, acetylene and the lower alkanes, which are gases



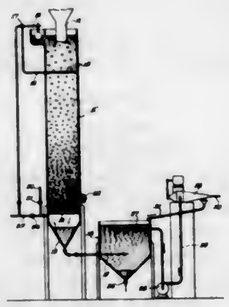


at room temperature and pressure; passing the so-treated gas mixture into a zone cooled to a temperature below at least the boiling point of acetylene; but at which the sweeping gas is not condensable; at least a portion of which cooled zone contains a solid adsorbent for nitrogen gas, and during at least the entire combustion period, collecting and holding in said cooled zone all nitrogen, carbon dioxide and said gas selected from the group consisting of hydrogen, acetylene, and said lower alkanes in the gas mixture, discharging from said cooled zone only said inert sweeping gas, and later discharging and detecting each of the collected nitrogen, carbon dioxide, and said gas selected from the group consisting of hydrogen, acetylene and said lower alkanes.

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**3,168,379**
**APPARATUS AND METHOD OF PRODUCING BRINE**

Howard C. Miller, Grand Saline, Tex., assignor to Morton Salt Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1957, Ser. No. 705,640
14 Claims. (Cl. 23—312)



1. In a method of preparing brine by contacting a bed of rock salt containing calcium sulfate as an impurity with a downwardly flowing stream of water, the improvement which comprises forming a bed of said salt with the bottom of the bed communicating directly with an open space thereunder whereby brine effluent from said bed falls freely from said bed, and collecting the freely falling brine containing entrained solid impurities as a mass out of contact with the bottom of said bed.

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**3,168,380**
**COLUMBIUM BASE ALLOYS**

Elihu F. Bradley, West Hartford, Conn., and John J. Rausch, Evanston, Joseph B. McAndrew, Chicago, and Charles R. Simcoe, Evergreen Park, Ill., assignors, by direct and mesne assignments, to United Aircraft Corporation, Hartford, Conn., a corporation of Delaware
No Drawing. Filed Nov. 3, 1961, Ser. No. 149,879
6 Claims. (Cl. 29—194)

4. A high-temperature oxidation resistant columbium base alloy containing at least 40 per cent by weight of columbium and having a coating comprising a composition of matter consisting of aluminum and columbium in an atomic ratio of about 3 to 1 and from 3 to 10 atomic per cent of silicon based on the sum total of atoms in the composition.

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**3,168,381**
**ALUMINUM ALLOY AND ARTICLE**

Walter D. Finnegan, Spokane, and Malcolm J. Finlayson, Veradale, Wash., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Sept. 1, 1960, Ser. No. 53,452
6 Claims. (Cl. 29—197.5)

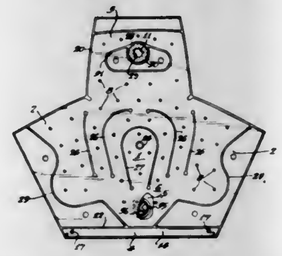


1. An aluminous brazing structure having a core of a structural aluminous material, and applied to a surface thereof a covering layer of a different aluminum base alloy consisting essentially, by weight, 6.8 to 8.2% silicon and from 1.5 to 2.0% zinc.

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**3,168,382**
**HAIR DRIER IMPROVEMENTS**

Worthy L. Chambers, Wilmette, and Gilbert R. Wolter, Elmhurst, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 6, 1961, Ser. No. 101,241
1 Claim. (Cl. 34—99)

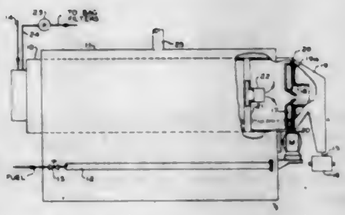


A hair drier cap, said cap comprising two similar shaped sheets of flexible impervious material which are nested with respect to each other and are coextensive with each other, each of said sheets having a central crown portion, an integral forward flap, a pair of integral side flaps and an integral rear portion, the forward and side flaps and the central and rear portions of the nested sheets being aligned with each other, a continuous seal extending about the outer edges of said two sheets for defining an air distributing manifold therebetween, a joint formed between the adjacent side edges of the sealed forward and side flaps for connecting them together, the aligned forward flaps comprising the forehead part of said cap and said manifold extending into said forehead part, apertures formed in all the mentioned flaps and portions of the inner one of said sheets for distributing drying air from said manifold to a cap user's

hair, said sheets being constructed from plastic material, said seal and joint being formed by heating said outer and side edges together, and another heat formed seal on each side of the cap and joining the side flaps together along a line extending from the rear of said cap to said joint, said cap having a band disposed along its head receiving opening for sealing said cap along the hair line of a user of said cap, said another heat formed seal being disposed above said band whereby said manifold is positioned above and spaced from the ears of a user of said cap, and still further heat formed seals in the crown portion of said cap, said last mentioned seals being continuous and spaced from each other and extending from the rear to the front of said cap to subdivide the crown portion into forwardly extending manifold passageways.

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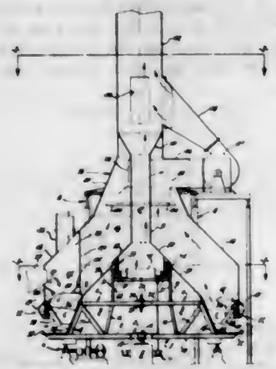
**3,168,383**
**DRYING OF WET CARBON BLACK PELLETS**
**Bruno F. Loewen, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed June 16, 1960, Ser. No. 36,646**
**6 Claims. (Cl. 34—137)**



1. Apparatus for drying carbon black pellets comprising, in combination, a rotatable drying tube having a stationary hood enclosing each open end thereof; a wear ring attached to each stationary hood so as to contact the adjacent end of said tube as a seal between said hood and said tube; means for feeding wet pellets to one stationary hood and means for removing dry pellets from the other hood; a stationary housing enclosing said tube; a furnace in communication with said housing to supply hot combustion gases to the annulus between said housing and said tube; a single means for supplying combustion gases from said annulus to the interior of said tube comprising a first conduit communicating with said annulus and the interior of said tube at about its axis of rotation spaced from and adjacent the stationary hood having means for removing dry pellets therefrom, said conduit having an opening in communication with the interior of said tube facing said stationary hood having means for removing dry pellets therefrom; a second conduit communicating with the stationary hood having means to feed wet pellets thereto; and blower means in said second conduit to cause combustion gases to pass through said first conduit, said rotatable tube and said second conduit.

5. The method of reducing carbon black loss from a heated, rotary drum, carbon black pellet dryer having a stationary hood at each end of the drum with a wear ring between the stationary hood and the adjacent end of the drum to effect a seal between the rotating drum and stationary hood and wherein a portion of combustion gases resulting from burning fuel to supply heat to said drum is utilized as purge gas to remove moisture released from the pellets passing therethrough which comprises introducing said purge gas to the interior of said drum at its axis of rotation and at a single point spaced from and adjacent the pellet exit end of said drum and concurrent with the flow of pellets; and withdrawing said purge gas from the opposite end of said drum so that said purge gas reverses its direction and sweeps substantially the entire length of said drum.

**3,168,384**
**MATERIAL COOLING APPARATUS**
**Melvin J. Greaves, Cleveland, Tage Werner, Rocky River, and Robert Eugene Touzalin, Aurora, Ohio, assignors, by mesne assignments, to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada**
**Filed Feb. 2, 1962, Ser. No. 170,664**
**11 Claims. (Cl. 34—168)**



1. In a cooling device of the character described the combination of a rotatable bin structure provided with an annular downwardly and outwardly inclined inner wall and an annular downwardly and inwardly inclined outer wall, said outer wall being of a shorter length than said inner wall, a substantially horizontal shelf extending outwardly from the base of the inner wall and beyond the lower extremity of said outer wall, said shelf also being open to the atmosphere, means for supporting and rotating said bin structure, a hood comprised of inner and outer segments enclosing the top portion of said bin structure and provided with exhaust conduit means, means for drawing cooling atmospheric air into said bin structure and into contact with the material disposed in said bin structure and for exhausting said air through said exhaust conduit means, a first sealing means sealing the inner segment of said hood with the annular downwardly and outwardly inclined inner wall of the bin structure, and another sealing means sealing the outer segment of said hood with said annular downwardly and inwardly inclined outer wall of said bin structure so as to insure the passage of cooling atmospheric air into and through the bin structure and the exhausting of said air through said exhaust conduit means.

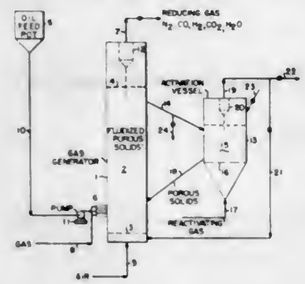
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**3,168,385**
**MOTOR FUELS**
**John J. Giammaria and Henry D. Norris, Woodbury, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York**
**No Drawing. Filed July 12, 1961, Ser. No. 123,419**
**6 Claims. (Cl. 44—56)**

1. A motor fuel blend of from about 50 to about 95% by volume of a saturated aliphatic hydrocarbon base stock in the gasoline boiling range and from about 5 to about 50% of a dialkyl ether containing from 4 to 10 as the sum of the carbon atoms in the two alkyl groups, containing a small amount, sufficient to increase the anti-knock characteristics of said blend, of tetraethyl lead, and from about one to about fifty grams, per gallon of said blend and sufficient to appreciate the octane number of said blend containing the tetraethyl lead, of a tertiary $C_4$ to $C_8$ alkyl ester of a $C_2$ to $C_8$ organic monocarboxylic hydrocarbon acid.



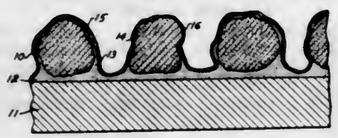
**3,168,386**
**CATALYZED GASIFICATION OF HYDROCARBONS TO HYDROGEN AND CARBON MONOXIDE**
**Karsten Herbert Moritz, John Frederick Moser, Jr., and Earl Joseph Estopinal, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed July 1, 1960, Ser. No. 40,261**
**1 Claim. (Cl. 48—212)**



A process for producing a hot gas stream containing principally $N_2$, CO, and $H_2$, which comprises supplying porous alumina particles of 40 to 300 micron size activated to a surface area of 160 to about 1200 square meters per gram and which remain sufficiently stable in size to form a turbulent dense fluidized solids bed, introducing a hydrocarbon feed into a cracking zone of said bed where the hydrocarbon feed is cracked to form $H_2$ and coke deposits on said particles maintained at a temperature in the range of 1750° to 2100° F. by heat radiated and conducted from an adjacent combustion zone, fluidizing said particles carrying coke deposits in said combustion zone by air of which oxygen reacts with said coke deposits to form carbon oxide gases and heat the particles to a temperature in the range of 1750° to 2100° F., wherein said air is introduced into said vessel in such a manner that substantially all of the oxygen of said air is consumed prior to contacting said hydrocarbon, turbulently admixing heated particles fluidized from the combustion zone into said cracking zone, contacting gaseous hydrocarbon and hydrogen from the cracking zone and gases containing CO, $CO_2$, with $N_2$ from the combustion zone at a temperature in the range of 1750° to 2100° F. with coke deposits of upwardly fluidized activated particles from the cracking zone, making said gases richer in CO and $H_2$, and separating a resulting hot gas stream containing mainly $N_2$, CO and $H_2$ with relatively small amounts of $CO_2$, $H_2O$ and gaseous hydrocarbon.

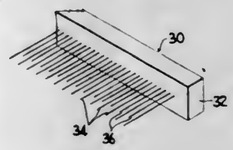
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**3,168,387**
**ABRASIVES**
**Donald R. Adams, Santa Monica, Calif. (9000 Sunset Blvd., Suite 319, Los Angeles, Calif.)**
**Filed Nov. 17, 1959, Ser. No. 853,582**
**31 Claims. (Cl. 51—295)**



8. A coated abrasive, comprising, a sheet backing, a plurality of granules of an abrasive substance bonded to said backing with a bonding material, said granules and said bonding material being coated with an adherent layer of a metal-leaf pigment.

**3,168,388**
**APPARATUS FOR PRODUCING GLASS FIBERS**
**Earl T. Martin and Robert F. Theobald, Shelbyville, Ind., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Sept. 7, 1962, Ser. No. 222,070**
**1 Claim. (Cl. 65—1)**



In apparatus for producing glass fibers including a source of molten glass, a bushing having a plurality of orifices therethrough for discharging streams of glass from said source, means for pulling said streams of glass to form fibers, the improvement which comprises a comb for separating said fibers, said comb including a plurality of spaced flexible teeth fixed at one end to a support and defining therebetween spaces terminating at the support each receiving a fiber, alternate ones of said teeth being of greater length than the others of said teeth to permit the fibers to be easily threaded into said spaces.

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**3,168,389**
**SILANE FORMING SIZE AND GLASS FIBER STRANDS TREATED THEREWITH FOR RESIN REINFORCEMENT**
**George E. Eilerman, Perrysville, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Dec. 28, 1960, Ser. No. 79,031**
**13 Claims. (Cl. 65—3)**

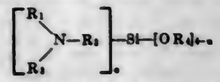


1. A method of forming a glass fiber strand which can be fabricated and laminated with a resin which comprises drawing glass streams through orifices in a bushing to form individual glass filaments, moving the filaments away from the bushing at a high rate of speed and forming them into a strand, applying to the filaments while they are moving at this speed an aqueous sizing solution consisting essentially of 1 to 5 percent by weight on a solids basis of a synthetic polymer latex of an ethylenic monomer, 0.3 to 2 percent by weight of an alkenyl acyloxy silane having the following structural formula:

$$(R_1)_n\text{—Si—}(O\overset{O}{\overset{\|}{C}}\text{—}R_2)_{4-n}$$

wherein $R_1$ is an alkenyl radical selected from the group consisting of vinyl and allyl radicals, $R_2$ is selected from the group consisting of hydrogen and an alkyl radical and $n$ is a whole number from 1 to 3, and dissolved therein

0.1 to 2 percent by weight an aminoalkyl alkoxy silane represented by the following structural formula:



wherein $R_1$ is selected from the group consisting of hydrogen, alkyl and $H[NHCH_2CH_2]_x$—, $x$ being a whole number from 1 to 5, $R_2$ is selected from the group consisting of hydrogen and alkyl, $R_3$ and $R_4$ are alkyl and $n$ is a whole number from 1 to 3, and 0.1 to 1 percent by weight of a textile softener, the total solids content of the solution being 2 to 5.5 percent by weight and the viscosity of the solution being less than 100 centipoises at 20° C., and drying the glass fibers so treated.

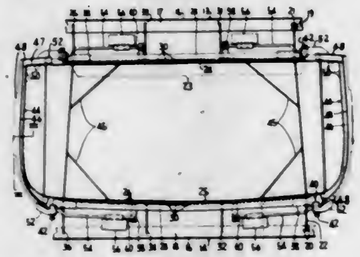
**3,168,390**
**APPARATUS FOR PRODUCING GLASS FIBERS**
**Robert F. Theobald, Shelbyville, Ind., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Sept. 7, 1962, Ser. No. 222,068**
**1 Claim. (Cl. 65—11)**



In apparatus for producing glass fiber products including a source of molten glass, a bushing having orifices therethrough for discharging streams of glass, means for drawing said streams into primary fibers for deliverance into a hot gaseous blast for attenuation into small diameter fibers, the improvement which comprises, an upper guide means located closely adjacent said drawing means and a lower guide means located between said drawing means and said gaseous blast and closely adjacent said gaseous blast, said upper guide member including a support, a plurality of spaced flexible pins extending from said support, alternate pins being of one length and different from the remainder of a different length, said lower guide member including a freely rotatable cylindrical member having a plurality of spaced grooves about its periphery, each groove in said lower guide means being in alignment with a space between adjacent pins in said upper guide means.

**3,168,391**
**TREATING GLASS SHEETS**
**Rudolph L. Malobicky, Tarentum, and Herbert W. Barch, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Jan. 12, 1961, Ser. No. 82,246**
**1 Claim. (Cl. 65—107)**

In the method of bending a flat glass sheet into conformity with an outline, stainless steel rail-type shaping surface of concave elevation curved to the shape desired for the glass sheet after bending by heating said glass sheet to an elevated temperature at which it sags into conformity with said curved shaping surface, the improvement comprising supporting said flat glass sheet on said shaping surface with a portion of its margin in bottom edge corner to surface contact with a flatwise disposed portion of said rail-type shaping surface having a thickness sufficiently less than the thickness of the supported glass sheet so that said flatwise disposed shaping surface portion has a thermal capacity sufficiently less than that of said marginal portion of said glass sheet adjacent thereto that its temperature increases at a faster rate than that of the portion of the supported glass sheet during the heating portion of the bending cycle and decreases at a faster rate than that of said glass sheet portion during the cooling subsequent to bending, heating said glass sheet and said shaping surface until said glass sheet reaches the glass softening point and the supported marginal portion of said supported glass sheet sags into flatwise contact with said portion of said shaping surface, and cooling said bent glass sheet simultaneously with said shaping surface after said supported marginal portion is in flatwise contact with said shaping surface portion disposed flatwise.



**3,168,392**
**AQUEOUS AMMONIACAL SOLUTION CONTAINING A COMPLEX ARSENIC COMPOUND**
**Barnard C. Creech, Flossmoor, Lawrence V. Collings, Park Forest, and Paul Shapiro, Chicago, Ill., assignors to Sinclair Research, Inc., a corporation of Delaware**
**No Drawing. Filed Aug. 28, 1961, Ser. No. 134,155**
**4 Claims. (Cl. 71—59)**

1. A composition consisting essentially of an aqueous ammoniacal solution of an ammonium salt having incorporated therein a complex arsenic compound prepared by reacting at an elevated temperature in an aqueous medium 1 to 2 mole parts of arsenic trioxide, about .5 to 1.5 mole parts of gluconic acid, and about 1.5 to 3 mole parts of a compound selected from the group consisting of ammonium and alkali metal hydroxides, said complex arsenic compound being present in an amount sufficient to decrease the rate of corrosion of ferrous metal by said solution.

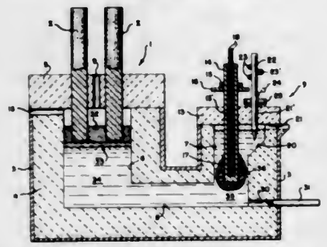
**3,168,393**
**METHOD OF SINTERING BLAST-FURNACE FEED**
**William T. Riley, Thornton Township, Cook County, and Richard E. Stoll, Bloom Township, Cook County, Ill., assignors to United States Steel Corporation, a corporation of New Jersey**
**Filed Sept. 7, 1961, Ser. No. 136,469**
**4 Claims. (Cl. 75—5)**



1. In a sintering process which includes feeding a moistened sinter mix to the grate of a downdraft traveling grate sintering machine to form a bed thereon, igniting the bed at its upper surface adjacent the point of feeding, and drawing combustion air downwardly through the bed, whereby combustion takes place in a narrow zone which moves downwardly from the point of ignition to a "burn-through point" near the discharge end of the grate, and whereby moisture in the products of combustion tends to condense as these products pass through relatively cool unsintered mix beneath said zone and the resulting additional moisture tends to create an "inversion point" intermediate the length of the bed, a method of preventing the formation of an "inversion point" comprising supplying additional heat to the bed to drive off condensed moisture from the unsintered material in advance of the location where the "inversion point" tends to form.



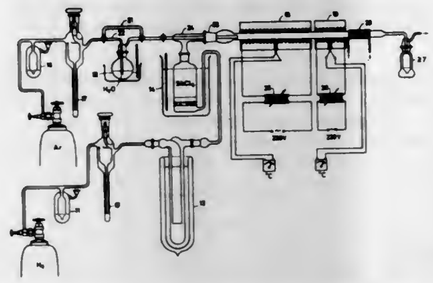
**3,168,394**
**PURIFICATION OF ALUMINUM**
**Arthur F. Johnson, 235 E. 42nd St., 27th Floor, New York, N.Y.**
**Filed May 10, 1962, Ser. No. 193,712**
**5 Claims. (Cl. 75—68)**



1. The process of producing commercially pure aluminum which comprises heating in an electric arc reduction furnace a body of a fused mixture of an aluminum oxidic material and a carbonaceous reducing agent over an underlying body of molten alloy of aluminum and a heavy metal, said heavy metal being a metal of the group consisting of boron, cobalt, chromium, iron, manganese, molybdenum, titanium, tungsten, vanadium and mixtures thereof and being in an amount such as to form an alloy with aluminum having a specific gravity of at least 4 maintaining a temperature at the interface of the fused material and the heavy metal alloy at from 1500° C. to 2600° C. at which temperature aluminum and the heavy metal are soluble in each other in large proportions, reducing aluminum from the aluminum oxidic material, the reduced aluminum dissolving in the heavy metal, as the body of heavy metal alloy increases due to the incorporation of reduced aluminum therein continuously passing through an enclosed duct liquid aluminum-enriched heavy metal alloy into a refining furnace and cooling the alloy therein to a temperature at which heavy metal alloy crystallizes out leaving an aluminum-rich alloy, further cooling in the refining furnace a portion of the aluminum-rich alloy and crystallizing out commercially pure aluminum, recovering the commercially pure aluminum, and returning the heavy metal alloy from the refining furnace to the reduction furnace.

**3,168,395**
**METHOD OF PRODUCING HIGHLY PURE ANTIMONY**
**Manfred Wilhelm, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany**
**Filed May 21, 1962, Ser. No. 196,343**
**Claims priority, application Germany, May 25, 1961, S 74,099**
**1 Claim. (Cl. 75—69)**

The method of producing highly pure antimony from antimony pentachloride, which comprises maintaining antimony pentachloride at a temperautre between about 100° to 120° C., bubbling dry hydrogen through the heated antimony pentachloride to produce a reaction mixture, maintaining, reduction zone at a temperature from about 700° to 900° C., passing said reaction mixture into said reduction zone, mixing purified inert gas, at a temperature of 60° to 80° C., charged with an effective quantity of water vapor, with said reaction mixture as



it enters said reduction zone to produce intermediate antimony-oxygen compounds, maintaining a precipitation zone at a temperature from about 400° to 500° C., and passing said intermediate compounds into said precipitation zone to precipitate antimony crystals from said intermediate compounds.

**3,168,396**
**RECOVERY OF MINERAL VALUES FROM ORE**
**Lyle M. Barker, Santa Rosa, Calif., assignor to Phelps Dodge Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed Feb. 21, 1961, Ser. No. 90,622**
**20 Claims. (Cl. 75—108)**

10. In a process for the recovery of copper from its ore, the steps comprising moistening the ore with an aqueous leaching solution of sulfuric acid in sufficient quantity to form a pulp the moisture content of which is no more than about 20% and in which the quantity of sulfuric acid in relation to the acid consuming capacity of the ore is such that when the pulp is diluted by the further addition of water to the density of a grinding slurry the slurry will have a residual free acid content with a pH of about 1.0 to about 2.0, permitting the pulp to remain undisturbed by agitation for a sufficient time so that substantially all of the copper soluble in the leaching solution is dissolved, diluting the pulp with water to form a slurry having a density suitable for grinding and a pH of about 1.0 to about 2.0, then adding to the slurry to precipitate the dissolved copper a reaction product formed by heating at a temperature of at least about 1500° F. a mixture containing pyrite and lime in the proportions of about one mole of pyrite to two moles of lime, and then separating the precipitated copper and the sulfide copper originally present in the ore from the remainder thereof.

**3,168,397**
**STEEL ALLOY**
**Lawrence R. Scharfstein, Reading, Pa., assignor to The Carpenter Steel Company, Reading, Pa., a corporation of New Jersey**
**No Drawing. Filed Jan. 3, 1962, Ser. No. 164,140**
**6 Claims. (Cl. 75—128)**

1. A corrosion resistant austenitic steel alloy, consisting essentially of in percent by weight:

From 17.5% to 26% chromium,
From 32.5% to 35% nickel,
From 2% to 3% molybdenum,
From 3% to 4% copper,

within the tolerances of good melting practice, and the remainder essentially iron, said alloy being characterized by freedom from stress corrosion cracking when under stress while exposed to sulfuric acid.

3,168,398
**PROCESS OF MANUFACTURING STAINLESS STEEL**

Kenkichi Tachiki, 117 Sanya-cho, Meguro-ku, and Masami Sata, 17 2-chome, Kaminakazato, Kita-ku, both of Tokyo, Japan

No Drawing. Filed Dec. 6, 1960, Ser. No. 73,996
Claims priority, application Japan, Dec. 14, 1959, 34/39,223
8 Claims. (Cl. 75—130.5)

1. A process for making stainless steel comprising mixing 10–50% finely divided chromium, 2–20% calcium, up to 6% carbon, the balance being iron and then heating said mixture to a temperature of between 1400° C. and 1700° C. in an inert gas atmosphere.

3,168,399
**METHOD OF PRODUCING CIRCULARLY CYLINDRICAL MEMBERS OF MATERIAL COMPOSED ESSENTIALLY OF ZIRCONIUM AND/OR NIOBIUM**

Shuichiro Takahashi, Yutaka Honda, Tatsuo Maekawa, and Yukio Ikawa, Omiya, and Sueo Yamamori, Amagasaki, Japan, assignors to Mitsubishi Atomic Power Industries, Inc., and Mitsubishi Denki Kabushiki-Kaisha, Tokyo, Japan, both corporations of Japan

Filed May 9, 1961, Ser. No. 108,781
Claims priority, application Japan, May 11, 1960, 35/23,483, 35/23,484
10 Claims. (Cl. 75—208)




1. A method of producing a tube of circular cross section composed essentially of at least one member of the group consisting of zirconium and niobium, comprising the steps of disposing coaxially a pair of metallic tubular members of circular cross section having different diameters to form an annular space therebetween, fitting into the interior of the internal tube a metallic mandrel member having the corresponding diameter, filling up the annular space with a powder of a material selected from the group consisting of zirconium, base alloys thereof, niobium, base alloys thereof and zirconium-niobium alloys to a high density and then closing the ends of the annular space, subjecting an element thus prepared to a swaging operation at a temperature between room temperature and approximately one third of the melting point of the used powder to thereby densify and sinter the mass of the powder to a high density, and removing the metallic members by mechanical and chemical means.

3,168,400
**RAPID PROCESSING OF PHOTOGRAPHIC COLOR MATERIALS**

John Blackmer and Howard W. Vogt, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 22, 1961, Ser. No. 111,489
12 Claims. (Cl. 96—22)

1. A process for forming a stable image in a photographic element comprising at least one photo-exposed silver halide emulsion layer containing an organic, hydrophilic, colloid binder comprising hardening said binder by reaction with an aqueous solution of an aldehyde prior to photographic development but after photoexposure, removing substantially immediately all free aldehyde from said binder prior to any photographic development by treatment with an aqueous solution of an amine compound selected from the class consisting of (A) a primary amine selected from the class consisting of hydroxylamine, semicarbazide, hydrazine, carbohydrazide, biuret, aminoguanidine, methylsemicarbazide and water-soluble salts of said compounds and (B) Girard's reagent, developing a photographic image by treatment of said silver halide emulsion layer with an aqueous alkaline photographic developer.

3,168,401
**LIGHT SENSITIVE DIAZO SULFONATE MATERIAL AND PREPARATION OF PRINTING PLATES THEREWITH**

Oskar Sus, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Continuation of application Ser. No. 685,408, Sept. 23, 1957. This application July 29, 1963, Ser. No. 298,427
Claims priority, application Germany, June 18, 1954, K 22,579
32 Claims. (Cl. 96—33)

22. A process for developing a printing plate which comprises exposing a light-sensitive layer, on a metal base, to light under a master and treating the exposed layer with a solvent selected from the group consisting of water and a weakly alkaline solution, the layer comprising a compound having the formula

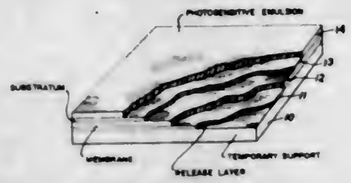
$$R-N=N-SO_3H.H_2NR_1$$

in which R and $R_1$ are aryl groups.

3,168,402
**PHOTOGRAPHIC STRIPPING FILM**

Nick G. Branibar, Parma, Ohio, assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, a corporation of Delaware

Filed Apr. 27, 1961, Ser. No. 106,035
5 Claims. (Cl. 96—83)




1. A photographic stripping film comprising a temporary support consisting of a translucent polystyrene plastic film base material incorporating an anti-halation pigment, a release layer consisting essentially of carboxymethyl cellulose coated on the temporary support, a membrane constituting a permanent support releasably secured to the temporary support by the release layer and a photo-sensitive silver halide emulsion permanently carried by the membrane.

3,168,403
**FLOCCULATED GELATINE EMULSIONS CONTAINING SULPHONATED COPOLYMERS OF STYRENE**

Wolfgang Himmelmann and Helmut Möder, Leverkusen, Rolf-Fred Posse, Cologne-Flittard, and Hans Ulrich, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 3, 1962, Ser. No. 164,193
Claims priority, application Germany, Jan. 10, 1961, A 36,460
9 Claims. (Cl. 96—114)

1. A process for the production of a photographic emulsion which comprises coagulating (i) a dispersion of light-sensitive silver halide particles in an aqueous solution of gelatin by the addition thereto of (ii) an aqueous solution of a water-soluble salt of a sulfonated copolymer of styrene and a monomer of the group consisting of acrylic and methacrylic acids, esters of acrylic and methacrylic acids with aliphatic alcohols, acrylamide and methacrylamide, acrylonitrile and methacrylonitrile, and vinylpyrrolidone, the sulfonated copolymer containing between 15 and 60 percent by weight of sulfo radicals and being formed by sulfonation of a copolymerized mixture consisting of between 70 and 97 percent by weight of styrene and between 3 and 30 percent by weight of one of the other specified monomers, separating the coagulum from the mixture, washing it with water, and redispersing it in another aqueous solution of gelatin.



3,168,404
**TREATMENT OF SURFACE OF PHOTOPOLYMERIZABLE ELEMENTS FOR IMAGE FORMATION**

William Jeremiah McGraw, Radnor, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 21, 1962, Ser. No. 218,455
5 Claims. (Cl. 96—115)

1. A process for improving photopolymerizable plates for subsequent, imagewise, photopolymerization which comprises applying to the surface of a photopolymerizable layer of a photopolymerizable element an aqueous solution containing a strong oxidizing agent selected from the group consisting of hydrogen peroxide, sodium hypochlorite, sodium perborate, urea peroxide, potassium peroxymonosulfate, potassium permanganate, calcium peroxide and zinc peroxide; said layer being solid, 5 to 250 mils in thickness and comprising:

(1) at least one addition polymerizable non-gaseous ethylenically unsaturated compound capable of forming a high polymer by photoinitiated polymerization in the presence of an addition polymerization initiator activatable by actinic radiation, and

(2) at least one preformed compatible solid macromolecular polymer.

3,168,405
**CULINARY COMPOSITION CONTAINING EDIBLE ACIDIC LIPID ANHYDRIDES**

James Bruce Martin and Norman Bratton Howard, Hamilton, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,860
20 Claims. (Cl. 99—91)

10. A culinary composition comprising flour having absorbed thereon from about 0.1% to about 8%, by weight of the flour, of an acidic lipid anhydride of the general formula:

$$R_m(—CO.O—)_n(—CO.O.CO—)_pX_q$$

wherein:

R is selected from the group consisting of aliphatic hydrocarbon radicals having from about 11 to about 21 carbon atoms,

X is a residue having from 1 to 6 carbon atoms derived from at least one member of the group consisting of mono- and polyhydric alcohol, mono- and polycarboxylic acid, and hydroxy mono- and polycarboxylic acid,

$m$=1 to 6,

$n$=0 to 10,

$p$=1,

$q$=0 to 6, and provided that when $n$=0, $q$=0 and $m$=2, and provided further that no carbon in R is attached to more than 2 other carbons.

3,168,406
**PROCESS FOR TREATING SOYBEAN FLOUR TO IMPROVE ITS FLAVOR**

Raymond J. Moshy, Westport, Conn., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 218,556, Aug. 22, 1962. This application Feb. 3, 1964, Ser. No. 342,266
10 Claims. (Cl. 99—99)

1. A process for treating a soybean flour characterized by its undesirable flavor, odor and color to produce a bland, odorless, substantially color-free soybean flour which comprises mixing a soybean flour which is substantially oil free in an aqueous solution to form a slurry thereof; digesting the soybean in the solution at about pH 4–6 by maintaining said slurry at a temperature of 70° to 212° F. for 10–120 minutes to insure complete and intimate contact of all soybean flour surfaces to thereby maximize release of the bitter and beany flavor principles and extract water solubles, said time and temperature of digestion being in inverse relationship to each other; substantially removing the aqueous solution from said digested soybean flour; mixing said digested soybean flour with a volatile, polar, organic water miscible solvent to create a second slurry; maintaining the pH of the second slurry at between pH 4 and 6.5; and separating from said slurry a bland and colorfree soybean flour.

3,168,407
**FUNGUS RESISTANT BONDED CORK**

Gerald Ernest Hamor Skrimshire and Elizabeth Joan Hooke, both of London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Mar. 15, 1962, Ser. No. 180,038
Claims priority, application Great Britain Mar. 15, 1961
9 Claims. (Cl. 106—15)

1. A method for the production of fungus resistant bonded cork which comprises incorporating with cork granules a bonding mixture and a minor but effective proportion of magnesium dehydroacetate to impart antifungal properties thereto, compressing and heating the resulting mass.

3,168,408
**COATING COMPOSITION FOR SUBBING POLYSTYRENE FILM**

Jay J. Uber, South Hadley, Mass., assignor to The Plastic Coating Corporation

No Drawing. Filed Sept. 18, 1961, Ser. No. 138,567
8 Claims. (Cl. 106—128)

1. A coating composition consisting essentially of about 0.5%, by weight, to about 2.0%, by weight, of gelatin; about 0.5%, by weight, to about 2.25%, by weight, of nitrocellulose having a viscosity characteristic no higher than 5 seconds as measured by the standard method ASTM Specification D301–50; about 1.5% by about 6.0%, by weight, of acetic acid; about 0.5%, by weight, to about 3.5%, by weight, of a liquid low molecular weight styrenated phenol polymer and a volatile organic solvent for said nitrocellulose.

3,168,409
**PROCESS FOR PREPARING THERMOPLASTIC REGENERATED CELLULOSE**

Eric Wellisch, Orange, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Apr. 20, 1961, Ser. No. 104,224
2 Claims. (Cl. 106—168)

1. A process for preparing thermoplastic regenerated cellulose which displays an amorphous structure under X-

ray diffraction and is characterized by deformability under heat and pressure which comprises mixing a cellulose formate ester with water and a plasticizer for cellulose at a temperature of 20° C. to 65° C. to produce a mixture of amorphous regenerated cellulose and formic acid, said water being employed in an amount of at least five moles per anhydroglucose unit in said formate ester, said plasticizer being chosen from the group consisting of a polyhydric alcohol containing 2 to 6 carbon atoms and a polyvinyl ester of acetic acid, propionic acid, butyric acid, stearic acid, lauric acid, and myristic acid, removing the formic acid from said mixture, reducing the moisture content of said amorphous regenerated cellulose at a temperature range of about 25° C. to 65° C. to a value of about 7 to 15 parts of water per 100 parts by weight of said amorphous regenerated cellulose, with said amorphous regenerated cellulose containing plasticizer to the extent of about 50 to 150 parts by weight per 100 parts by weight of regenerated cellulose.

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### 3,168,410
### PRASEODYMIUM-CERIUM YELLOW

**Jean P. Bruneau, Limoges, France, assignor to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio**

**Filed Jan. 17, 1962, Ser. No. 166,785**
**8 Claims. (Cl. 106—299)**

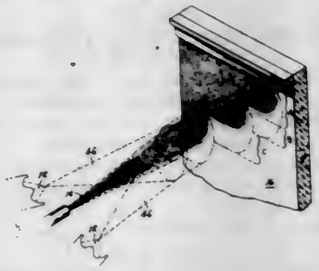
1. A yellow ceramic pigment being a calcination product consisting essentially of from 0.25% by weight to 10% by weight of oxide of cerium, from 0.5% to 10.0% by weight of oxide of praseodymium, from 10% by weight to 55% by weight of oxide of silicon, and from 35% by weight to 80% by weight of oxide of zirconium.

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### 3,168,411
### METHOD OF COATING BASE AND TOP COATS

**Richard L. Walsh, Newburyport, Mass., assignor, by mesne assignments, to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey**

**Filed Mar. 29, 1961, Ser. No. 99,142**
**3 Claims. (Cl. 117—26)**

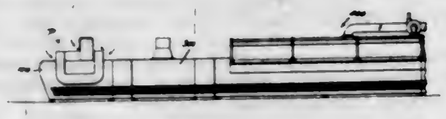


1. The method of coating a surface with a base coat and a top coat of a different composition in a single operation, comprising successively coating elongated colateral areas of a surface by means of successive parallel passes of a spray pattern which is elongated in a direction perpendicular to the direction of said passes, with top coat material predominating in one end portion of said elongated spray pattern and base coat material predominating in the other end of said elongated spray pattern, said successive passes overlapping so that on each pass said one end of the spray pattern recoats with top coat material the area coated on the previous pass with base coat material and said other end of the elongated spray pattern coats a theretofore uncoated portion of said surface with base coat material.

### 3,168,412
### REFLECTORIZING APPARATUS AND METHOD

**John R. Wald, Jr., Rufus W. Wilson, and Robert B. Bagshaw, Huntingdon, Pa., assignors to Wald Industries, Inc., Huntingdon, Pa., a corporation of Pennsylvania**

**Continuation of application Ser. No. 715,114, Feb. 13, 1958. This application Feb. 21, 1961, Ser. No. 91,301**
**16 Claims. (Cl. 117—33)**



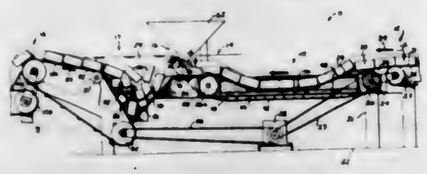
6. A method of making a sign comprising imparting motion to the sign in a predetermined direction, moving said sign beneath a spray of solidifiable thermosetting binder, continuing to pass said sign in the same line of travel beneath a sphere loader and feeding spheres to said uncongealed binder, continuing the motion of said sign to a heating zone wherein said binder passes from an "A" stage to a "B" stage in a relatively short distance, continuing the motion of said sign through a second baking stage of longer distance where said binder passes from a "B" stage to a "C" stage, thereafter continuing the motion of said sign in the same direction of travel and passing high pressure cooling air over said sign transversely of its line of travel.

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### 3,168,413
### METHOD OF AND MACHINE FOR MAKING USED BRICKS

**Lee Harrison, 1280 8th Ave., and William R. O'Leary, Jr., 1286 Noonan Drive, both of Sacramento, Calif.**

**Filed Dec. 4, 1961, Ser. No. 156,610**
**5 Claims. (Cl. 117—62)**



1. A method of treating new bricks to simulate the appearance of used bricks, said method comprising the steps of: submerging new bricks in an emulsified asphalt solution; withdrawing the bricks from said solution; allowing the withdrawn bricks to drain; applying a globule of mortar to one surface of each of the bricks; of tumbling a plurality of the bricks so that said one surface is caused to rub against the surfaces of other bricks; of removing the tumbled bricks; and of drying and stacking the bricks so removed.

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### 3,168,414
### PROCESS AND APPARATUS FOR WET-TREATING FIBROUS MATERIALS

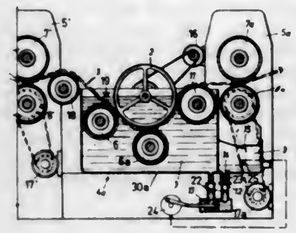
**Heinz Fleissner, Egelsbach, Germany, assignor to Firma Fleissner G.m.b.H., Egelsbach, near Frankfurt am Main, Germany, a company of Germany**

**Filed Mar. 7, 1962, Ser. No. 178,133**
**Claims priority, application Germany, Mar. 13, 1961, F 33,407**
**7 Claims. (Cl. 117—102)**

1. A process for wet-treating a self-supporting web of loosely coherent fibrous material, comprising the steps of continuously passing said web through a treatment bath, squeezing excess liquid from said material in a plurality of successive stages below the bath level at transversely



spaced locations which are relatively staggered at different stages, withdrawing said web from the bath immedi-



ately after the last squeezing stage, and further squeeze-drying the withdrawn web outside the bath.

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### 3,168,415
### TEXTILE FINISHING COMPOSITION, APPLICATION PROCESS, AND RESULTING PRODUCT

**Herman B. Goldstein, Raymond J. Peltier, and Michael A. Silvestri, Cranston, R.I., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Apr. 4, 1963, Ser. No. 270,553**
**17 Claims. (Cl. 117—139.4)**

4. A novel textile finishing composition comprising a tris(N-methylol-carbamoylethyl)amine obtained by reacting 1 mol of a tris(carbamoylethyl)amine with at least 4 mols of formaldehyde in a solvent at an alkaline pH until equilibrium is reached, and an acid acting catalyst.

11. The process of treating textile material with the composition of claim 4 to obtain improved properties which comprises the steps of impregnating the textile material with a solution containing between 2 and 25 weight percent of said composition, drying and curing the treated material, and thereafter washing the treated material to remove the excess treating composition.

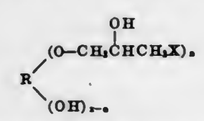
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### 3,168,416
### TEXTILE YARN COATED WITH CATIONIC SURFACTANT

**John D. Zech, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware**

**No Drawing. Original application Apr. 23, 1957, Ser. No. 654,472, now Patent No. 3,060,182, dated Oct. 23, 1962. Divided and this application May 15, 1962, Ser. No. 194,966**
**5 Claims. (Cl. 117—139.5)**

1. A textile yarn having applied thereto a cationic surfactant prepared by reacting at a temperature from about 75° to 150° C. a reactant (1) represented by the formula:

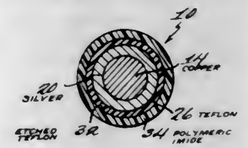


wherein R is a hydroxyl-free radical of a polyhydric alcohol, X is a halogen atom having an atomic weight greater than 30, $x$ is a number from 3 to 6 and $n$ is a number from 1 to $x$, with a second reactant (2) a basic amino nitrogen containing compound which is a higher fatty carboxylic acylation product of a polyalkylene polyamine which polyamine has from 3 to 5 amino groups.

### 3,168,417
### POLYIMIDE COATED FLUOROCARBON INSULATED WIRE

**Robert E. Smith, Jr., Burlington, and John M. Gardner, South Hero, Vt., assignors to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware**

**Filed Sept. 25, 1963, Ser. No. 311,420**
**19 Claims. (Cl. 117—213)**



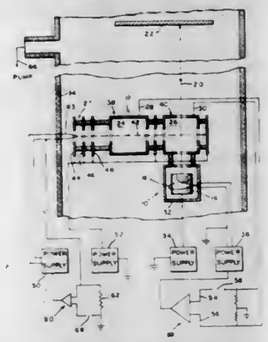

1. An electrical conductor having an insulating layer of a perfluorocarbon polymer and a layer of a heterocyclic polymeric imide bonded to and surrounding said perfluorocarbon polymer layer, said polymeric imide being selected from the group consisting of compounds having a member of the group consisting of benzene and naphthalene rings joined to two carbon atoms of a heterocyclic imide ring having 5 to 6 members in the ring, one to two of the atoms of the heterocyclic ring being nitrogen atoms and the balance of the atoms of the heterocyclic ring being carbon atoms.

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### 3,168,418
### DEVICE FOR MONITORING AND CONTROLLING EVAPORATION RATE IN VACUUM DEPOSITION

**Paul R. Payne, Jr., Boston, Mass., assignor to Alloyd Electronics, Cambridge, Mass., a corporation of Massachusetts**

**Filed Mar. 27, 1962, Ser. No. 182,899**
**10 Claims. (Cl. 118—7)**



1. A system comprising first means for heating a selected source material to generate a stream of vapor, second means for positioning a substrate in said stream, third means for continuously evacuating the region of said stream, fourth means for ionizing a proportion of said stream, fifth means for collecting ions therefrom in order to generate a signal and sixth means for applying said signal to said first means in order to control the temperature thereof.

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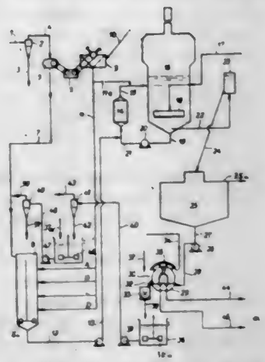
### 3,168,419
### PURIFICATION OF SUGAR JUICE

**Ferdinando Galé, Abbiategrasso, near Milan, Italy, assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware**

**Filed July 24, 1961, Ser. No. 126,148**
**Claims priority, application Italy, July 28, 1960, 13,588/60**
**6 Claims. (Cl. 127—50)**

1. Continuous process for purifying sugar juice comprising the steps of subjecting the raw juice to a liming

operation, subjecting the limed juice to treatment with carbon dioxide so as to precipitate calcium carbonate together with impurities, separating the calcium carbonate and impurities from the sugar juice, mixing the separated calcium carbonate and impurities with wash liquor to form a suspension, subjecting the thus formed suspension to centrifugal classification whereby the suspension is



classified into a fine fraction containing fine calcium carbonate particles and impurities and a coarse fraction containing clean relatively coarse calcium carbonate particles, and recycling at least a portion of said clean relatively coarse calcium carbonate particles back into the process so that said recycled carbonate is present during the precipitation of calcium carbonate in the juice.

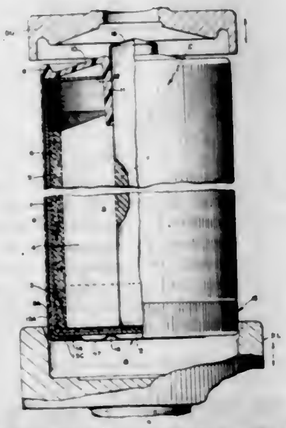
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**3,168,420**

**LEAK-RESISTANT ELECTROCHEMICAL CELL AND PROCESS FOR MANUFACTURING THE SAME**

**Jean Firmin Jammet, Poitiers, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France**

**Filed July 13, 1960, Ser. No. 42,625**
**Claims priority, application France, June 24, 1960, 831,028**
**4 Claims. (Cl. 136—133)**



3. A leak-resistant electrochemical cell comprising a cup-shaped electrode having a closed bottom, an insulative substantially cup-shaped casing whose inner dimensions approximate those of the outer dimensions of the cup-shaped electrode fitted over the latter and having an original wall length substantially greater than that of said electrode, the end portion of the casing originally protruding beyond said bottom being castellated and turned inwardly without thickening to lie parallel with the said bottom, a metal clamping ring of substantially L-shaped one-half section having a tubular portion and a flange portion with the tubular portion covering the lower part of said tubular casing and the flange portion lying outside of and against the inwardly-turned castellated end portion of said casing, said ring in the entire length of its tubular portion having finally reduced dimensions relative to its original dimensions and compressing the casing against the underlying portion of said electrode in the areas covered by said tubular portion to effect a leak-resistant joint, the inner diameter of said tubular wall part of said ring being approximately 0.1 to 0.5 mm. less than the exterior diameter of said casing above said ring, and the outer final dimension of said tubular portion of said ring being equal substantially to the outer dimension of said casing in the uncovered portions thereof adjacent said tubular portion of said ring so that in its length the outer surface of the cell presents a substantially unbroken straight line.

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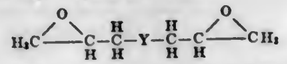
**3,168,421**

**BIBULOUS ION PERMEABLE MEMBRANES**

**Garth H. Beaver and George K. Greminger, Jr., both of Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed Aug. 25, 1961, Ser. No. 133,789**
**6 Claims. (Cl. 136—146)**

1. A bibulous membrane, permeable to the passage of ions when wetted with water, which bibulous membrane comprises as the principal and the essential ingredient thereof on a dry basis and in substantially uniform distribution throughout the continuous phase of the membrane, the product resulting from the reaction of a water-soluble cellulose ether with from about 0.1 to about 25 percent by weight of the ether of a water-soluble diepoxide having the general formula:



wherein Y is a bivalent member selected from the group consisting of —O— and bivalent residues of water-soluble organic compounds having at least two hydroxyls wherein one labile hydrogen has been removed from each of two hydroxyls.

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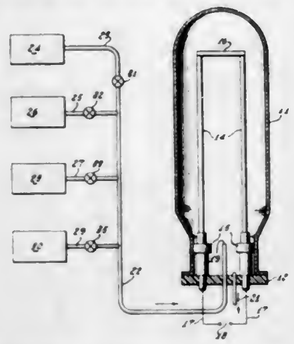
**3,168,422**

**PROCESS OF FLUSHING UNWANTED RESIDUE FROM A VAPOR DEPOSITION SYSTEM IN WHICH SILICON IS BEING DEPOSITED**

**John E. Allegretti, East Brunswick, and James Lago, Roselle, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**Filed Aug. 24, 1960, Ser. No. 53,578**
**12 Claims. (Cl. 148—175)**

1. The method of forming a body of essentially single crystal silicon semiconductor material containing at least two layers separated by a substantially sharp, well defined transition region, by depositing atoms of silicon from a vapor phase thereof onto a silicon starting element within a reaction chamber, said method comprising the steps of (1) depositing a first layer of essentially single crystal silicon upon a heated, essentially single crystal of silicon from a first source containing decomposable compounds of silicon and of a conductivity determining active impurity, (2) removing residual solid atoms of said active impurity material adhering as a solid to the inside of said reaction chamber by introducing a flushing gas within said chamber that reacts with said solid active impurity material to form a volatile compound that is swept out of said reaction chamber with the discharge of the gases therefrom, said gas being selected from the group consisting of silicon tetrachloride, silicon tetrabromide, silicon tetraiodide, hydrogen chloride, chlorine, iodine and bromine, and (3) depositing a second layer of essentially single crystal silicon upon said first layer from a second source containing a decomposable compound of silicon in the vapor phase, whereby the initial deposit of said second layer does not include any remanent of said con-



ductivity determining active impurity material that adhered as a solid to the interior of said reaction chamber at the conclusion of the formation of said first layer, so that the transition region between said first layer and said second layer is substantially sharp and well defined.

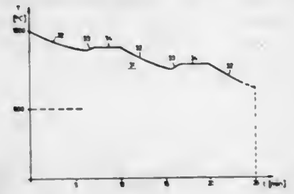
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**3,168,423**

**METHOD OF PRODUCING MONOCRYSTALLINE WAFERS FROM THE VAPOROUS PHASE WITH ALTERNATIVE COOLING AND INTERMEDIATE HOLDING STEPS**

**Walter Kriegstein, Rosstal, near Nurnberg, and Bruno Reiss, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany**

**Filed Mar. 13, 1963, Ser. No. 264,805**
**Claims priority, application Germany, Mar. 15, 1962, S 78,498 IVc/12c**
**8 Claims. (Cl. 148—175)**



1. The method of producing monocrystalline wafers by precipitating substance from the heated gaseous phase in a cooling zone of an evacuated vessel, which comprises heating the vessel and the substance contained therein to above the vaporization temperature of the substance, and thereafter subjecting the cooling zone of the vessel to cooling at a rate of 8 to 50° C. per minute in a plurality of steps within the incandescent range, and maintaining the temperature approximately constant between the respective cooling steps for an average interval of time approximately corresponding to that of the cooling steps.

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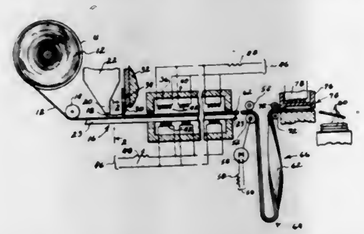
**3,168,424**

**MANUFACTURE OF COMPOSITE PLASTIC BOOK COVER AND PRODUCT OBTAINED**

**Mortimer S. Sendor, 80—30 221st St., Queens Village, N.Y.**

**Filed Feb. 12, 1960, Ser. No. 8,345**
**5 Claims. (Cl. 156—244)**

1. A method of making plastic book covers which comprises advancing a web of plastic flexible material in the direction of the length of the web and with continuous motion and in a substantially horizontal direction for a portion of the travel of the web, supporting the web in a substantially flat condition both longitudinally and transversely of its extent along said portion of the travel, flowing onto substantially horizontal portions of the thus supported portion of the web at least two separate coatings of plastic that extend continuously longitudinally of the web but over areas spaced from one another transversely of the web by an intermediate area of the web, controlling the thickness of the web, hardening the coat-



ing while on said supported portion of the web to impart a stiffness to the coating for making stiff and flat front and back covers for a book, bonding the coatings to the web along at least the edge regions of the coated area to form a multi-layer and stiffened construction over the coated portions of the web, and severing the coated web at locations spaced from one another by predetermined distances along the length of the coated web to make successive book covers each of which has front and back panels formed by the coated portions of the sheet and with the mid portion of the cover formed by the intermediate area of the sheet between the coated portions.

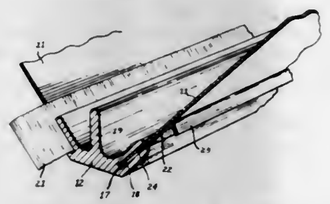
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**3,168,425**

**HOLLOW STRUCTURE AND METHOD OF MAKING IT**

**Bernard A. Wiplinger, Rte. 10, South St. Paul, Minn.**

**Filed Oct. 19, 1961, Ser. No. 146,257**
**10 Claims. (Cl. 156—293)**

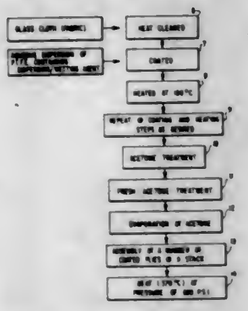


1. A method of securing sheets to stringers comprising: providing stringers having longitudinal slots therein, said slots being wider than said sheets are thick, providing sheets, providing bonding material, placing the bonding material and one edge of one said sheet in one slot of one of said stringers, providing a wedge substantially coextensive with each stringer-sheet joint, driving said wedge into said slot between said sheet and one side of said one slot of said one of said stringers to apply pressure between said sheet and the other side of the same slot of said one of said stringers with said bonding material therebetween, said wedges, bonding material and sheet edges springing said stringers within their elastic limits, and heating said stringer, sheet, bonding material and wedge and repeating said steps for each sheet edge to be secured.

### 3,168,426
### COATING OF MATERIALS WITH POLYMERS

Ian Blackie, Blyth, England, assignor to Formica Limited, London, England, a corporation of Great Britain

Filed June 28, 1961, Ser. No. 129,931
Claims priority, application Great Britain, June 29, 1960, 22,817/61
15 Claims. (Cl. 156—306)



10. A process which comprises treating a fibrous material with an aqueous dispersion of polytetrafluoroethylene which dispersion contains a non-ionic dispersing/wetting agent, heating the material at a temperature below the decomposition temperature of the dispersing/wetting agents in order to volatilize the aqueous dispersion medium completely and extracting from the treated and heated material by the action of a solvent said dispersing/wetting agent, said solvent having no substantial extractive effect upon said polymeric material.

15. A process as claimed in claim 10 in which the dispersion medium is first removed from the polytetrafluoroethylene-treated material, the dispersing/wetting agent is removed by the solvent, the residual solvent is evaporated, a plurality of plies and the so-treated material are assembled in a stack, a sheet of copper is then placed on both sides of the stack with a layer of pure polytetrafluoroethylene between said copper sheets and the stack whereafter the so-assembled stack is subjected to the action of heat and pressure to sinter and coalesce the polymer to produce a unitary product.

### 3,168,427
### ADHESIVES FOR VINYL AROMATIC RESINS

Floyd B. Nagle, Midland, and Arthur F. Roche, Freeland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 20, 1959, Ser. No. 828,070
7 Claims. (Cl. 156—307)

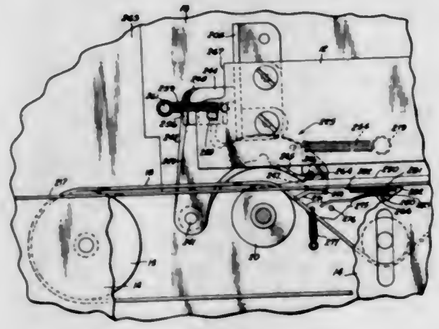
1. A method of bonding together pieces of normally solid thermoplastic monovinyl aromatic hydrocarbon resins which method comprises coating at least one surface to be bonded with liquid material selected from the group consisting of an alkyl laurate, wherein the alkyl group contains from 1 to 4 carbon atoms, inclusive, and solutions of said solid monovinyl aromatic hydrocarbon resins in said alkyl laurates as the bonding agent, pressing a surface of a second article of said solid monovinyl aromatic hydrocarbon resin into place over the coated area and allowing the joined surfaces to set.

### 3,168,428
### APPARATUS FOR SEALING ENVELOPES

Ronald V. Dorn, 315 14th St. NW., Albuquerque, N. Mex., and Reuben R. Logan, 4251 Zenith Ave. N., Robbinsdale, Minn., assignors of thirty percent to Reuben R. Logan and seventy percent to Ronald V. Dorn

Filed Nov. 16, 1961, Ser. No. 152,852
4 Claims. (Cl. 156—442)

1. An envelope sealing mechanism for sealing individual envelopes, of the kind having moisture-softenable adhesive coated closure flaps, moving one-by-one in flap-folded position along a given path in a predetermined plane, with the fold edges of the envelopes aligned with each other parallel to the path, at one edge thereof, comprising: a cantilever blade projecting transversely of the path of envelope movement, approximately in said plane, in position to deflect the flap from the body of the envelope through an acute angle, said blade terminating short of said one edge of the envelope path; means, com-

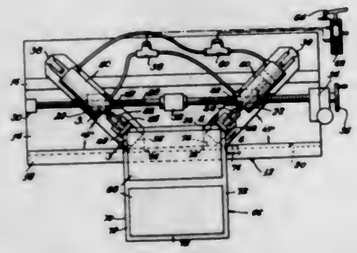


prising a yieldable flap opener member located adjacent said one edge of the envelope path, for deflecting each envelope, inwardly of its fold edge, toward said blade, in a direction transverse to said plane, immediately ahead of the free end of said blade; a moistener mounted on the flap-side of said blade in position to moisten the inner surface of each flap as it passes said blade; and means for pressing the flap and body portions of the envelopes together as each envelope moves beyond the blade.

### 3,168,429
### BOOK BINDING CORNER PRESS

Joseph J. Hackl, 416 Higgins Road, Park Ridge, Ill.

Filed Feb. 14, 1962, Ser. No. 173,303
7 Claims. (Cl. 156—492)



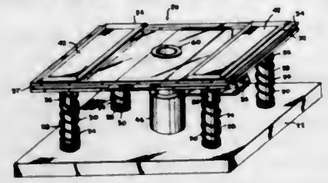
5. Apparatus for folding the corners of a cover upon a book board in preparation for the formation of a library corner comprising, a rectangular base plate, a pair of cover folding means movably mounted upon the base plate each including a press plate the face of which is at a 45° angle relative to an edge of the base plate, said cover folding means each including a power operated means for pivoting the press plate about its base in an arc of 90°, each of said press plates having a recessed surface providing ledges which are at a 45° angle relative the vertical center line of the plate, and a screw means for adjusting the distance between the cover folding means.



### 3,168,430
### APPARATUS FOR CUTTING AND APPLYING A DISC TO A BASE

Stephen Almasi, 8650 Boulevard E., North Bergen, N.J.

Filed June 11, 1962, Ser. No. 201,633
4 Claims. (Cl. 156—520)

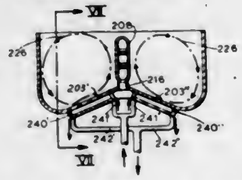


1. Apparatus of the kind described comprising a rectangular-shaped base, telescopically movable posts supported upright on the beam, a spring-pressed plate carried on the top ends of the movable posts, said plate having a central hole therein, another plate supported on the first named plate in closely spaced relation, said other plate having a hole in line with the hole in the first named plate, said first named plate serving as a support for a strip of flexible plastic sheet material across the hole therein, a cutter member supported in the hole in said other plate, said other plate serving as a support for a strip of flexible ornamental material over and across the cutter member, an upstanding headed die member supported on the base below and in line with the holes in said plates, and means for moving said plates downwardly thereby carrying the cutter member over the die member and severing a disc from the plastic material and subsequently severing a disc from the ornamental material and simultaneously pressing the ornamental disc upon the plastic disc.

### 3,168,431
### BREWING VESSELS AND THE LIKE

Walter Spielvogel, Essen-Bredeney, Germany, assignor to Weigelwerk G.m.b.H., Essen, Germany, a corporation of Germany

Filed Aug. 4, 1961, Ser. No. 129,409
Claims priority, application Germany, Aug. 8, 1960, W 28,342
3 Claims. (Cl. 159—37)



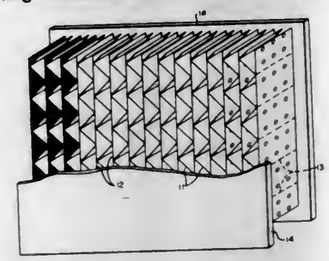
1. A brewing vessel for the concentration of a fermentative liquid, comprising a receptacle for said liquid having lateral wall means and a bottom, at least one generally flat heating element disposed centrally in said receptacle in a substantially vertical plane and extending below the level of said liquid, while including a substantially flat vertical surface subdividing said receptacle into at least two compartments, said heating element being subdivided vertically into a plurality of heating sections and being spaced from said wall means, and control means for selectively heating said sections by passing a heating fluid through selected ones of said sections.

### 3,168,432
### CORE MATERIAL

Thore M. Elfving, 433 Fairfax Ave., San Mateo, Calif.

Filed Dec. 22, 1961, Ser. No. 161,627
8 Claims. (Cl. 161—69)

1. A sandwich structure of the type including first and second spaced surface members and a core disposed between said surface members in which said core comprises corrugated spaced elements disposed with the corrugations extending generally perpendicular to said surface members, means for securing the ends of said corrugated spaced elements to said surface members, interconnecting elements secured between adjacent cor-

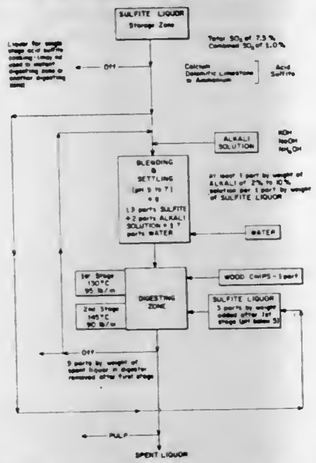


rugated spaced elements to form therewith a composite structure, and means for securing the edge of said interconnecting elements to said spaced surface members, said interconnecting elements cooperating with said corrugated spaced elements to provide communication through said structure between at least one edge and an opposed edge.

### 3,168,433
### SULFITE COOKING OF WOOD

James J. Ferrigan, Jr., Chester, Del., and Sydney Coppick, Ridley Park, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 28, 1962, Ser. No. 247,879
3 Claims. (Cl. 162—86)




1. A process of preparing and utilizing liquor for cooking pulp-yielding material, comprising the steps of:

(*a*) combining sufficient alkali with acid sulfite cooking liquor to produce alkali-modified liquor having a pH of from about 6 to about 7;

(*b*) cooking pulp-yielding material in the presence of the alkali-modified liquor to effect penetration of the pulp-yielding material therewith;

(*c*) withdrawing excess liquor from the cooked pulp-yielding material;

(*d*) adding acid sulfite cooking liquor to the penetrated and cooked pulp-yielding material in sufficient amount to adjust the pH of the resultant mixture to a value below 5;

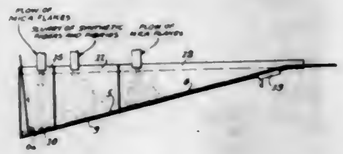
(*e*) continuing the pulping process while maintaining the pH of the aforementioned resultant mixture below 5.

3,168,434

## PAPER-BACKED MICA

Moses D. Heyman, New Hyde Park, N.Y., assignor, by mesne assignments, to Acim Paper Corporation, New Hyde Park, N.Y., a corporation of New York

Filed Mar. 1, 1962, Ser. No. 176,574
10 Claims. (Cl. 162—124)



1. A reinforced mica sheet comprising a fusible ply of synthetic fibers chosen from among resin, polyester and acrylic fibers, and a quantity of fibrids prepared from the thermoplastic polymers that are similar in chemical composition to the chosen synthetic fibers and having a melting point lower than the melting point of the synthetic fibers, and a ply integrated only from mica flakes having activated surfaces that promote cohesion among the flakes, the mentioned fibrids being in a fused state to bond the synthetic fibers of the fusible ply to the mica ply.

3,168,435

## METHOD AND MEANS FOR MOUNTING, DRIVING AND SUPPORTING ROLLS FOR ENDLESS MOVING BANDS

Edward D. Beachler, Beloit, Wis., assignor to Beloit Corporation, a corporation of Wisconsin

Filed Nov. 25, 1960, Ser. No. 71,685
13 Claims. (Cl. 162—348)



2. In a paper machine, a traveling band, a roll engaging and supporting the band and having normally a central deflection, shaft means for said roll, bearing means receiving said shaft means, and axially spaced relatively movable fluid actuated means engaging said bearing means applying a force couple to said shaft means to relieve the normal deflection in said roll.

12. A method of driving a looped forming wire in a paper machine, which comprises engaging the underside of said wire with a drive roll, rotating the roll to drive the wire, and bowing the shaft for the roll at a location between opposite ends of said shaft to deflect the central portion of the roll in a direction opposite to its normal deflection.

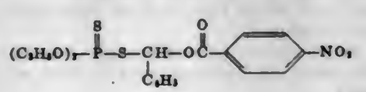
3,168,436

## S-[α-(4-NITROBENZOYLOXY)BENZYL]O,O-DIETHYL PHOSPHORODITHIOATE

John P. Chupp, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 7, 1960, Ser. No. 20,514
2 Claims. (Cl. 167—30)

1.



3,168,437

## STABILIZED GRANULAR GYPSUM-PESTICIDAL COMPOSITION AND METHOD OF PREPARATION

Arthur L. Galloway, Mentor, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Apr. 14, 1961, Ser. No. 102,939
26 Claims. (Cl. 167—42)

1. The method of preparing a pesticidal composition which comprises mixing dry calcium sulfate dihydrate, a dry pesticide and a dry material selected from the group consisting of ammonium sulfate, potassium sulfate, aluminum sulfate and urea to form an intimate dry mixture, adding to said dry mixture an amount of water sufficient only to effect pelletizing of said dry mixture, mixing the water and said dry mixture so as to form a sufficient amount of the reaction product of calcium sulfate dihydrate and the material selected from the aforementioned group to form pellets and provide hardness and water disintegration thereto and heating said pellets to a temperature in the range of about 100° to 200° F. to dry the pellets, said pellets having the pesticide intimately and substantially uniformly dispersed therein.

3,168,438

## VASODILATION BY NITRIC ACID ESTER DERIVATIVES OF NICOTINIC ACID

Alfred Halpern, Great Neck, N.Y., assignor to Synergistics, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,778
12 Claims. (Cl. 167—65)

1. A vasodilating preparation comprising from 5 to 50 mg. of a compound selected from the group consisting of the bis-nitric acid ester of nicotinic acid (beta-hydroxyethyl) amide, and the nitric ester of bis-(hydroxyethyl amine nicotinate and the pharmacologically acceptable acid addition salts and a pharmaceutical carrier.

3,168,439

## COMPOSITION COMPRISING N-(3',4'-DIMETHOXYPHENYLETHYL)-2,6-DIKETOPIPERAZINE AND 2-METHYL-3-ORTHO-TOLYL - 4(3H)QUINAZOLINONE

Gustav J. Martin, Philadelphia, Pa., assignor to William H. Rorer, Inc., Fort Washington, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,840
6 Claims. (Cl. 167—65)

1. As a tranquilizer and mood elevator, a composition for administration to a human being by mouth comprising a combination of from 66 to 396 milligrams per day of N-(3',4'-dimethoxyphenylethyl)-2,6-diketopiperazine and from 100 to 600 milligrams per day of a compound selected from the group consisting of 2-methyl-3-o-tolyl-4-quinazolone and the pharmaceutically acceptable salts thereof.

3,168,440

## STABLE VITAMIN COMPOSITION

Curtis E. Meyer, Galesburg, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed June 9, 1954, Ser. No. 435,615
1 Claim. (Cl. 167—81)

A storage-stabilized aqueous multivitamin composition containing vitamin $B_{12}$ activity and vitamin C wherein said vitamin $B_{12}$ activity is present in association with, as the stabilizing factor, a water soluble hog stomach extract.



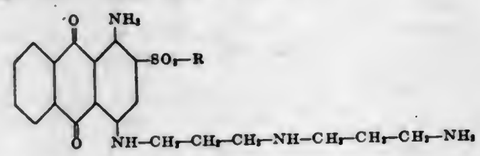
3,168,441

## BLUE ANTHRAQUINONE DYE

Milos Zdenek Bil, Flushing, N.Y., and Walter H. Brunner, Easton, Pa., assignors, by mesne assignments, to Clairol Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 31, 1961, Ser. No. 127,885
8 Claims. (Cl. 167—88)

5. A process for dyeing human hair which comprises applying thereto a tinctorially effective quantity of an aqueous solution containing an anthraquinone which is represented by the following formula:



wherein R is an alkali metal.

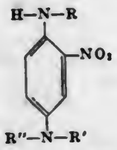
3,168,442

## COMPOSITIONS AND METHODS OF DYEING HUMAN HAIR WITH NITRO-p-PHENYLENEDIAMINES

Walter H. Brunner, Easton, Pa., and Alexander Halasz, Stamford, Conn., assignors to Clairol Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 12, 1964, Ser. No. 374,562
31 Claims. (Cl. 167—88)

1. A composition for dyeing living human hair comprising an aqueous solution of a tinctorially effective quantity of a p-phenylene diamine represented by the following formula:



wherein R is a member selected from the group consisting of non-olefinic and non-acetylenic hydrocarbon and having from 1 to about 8 carbon atoms, and hydroxyalkyl having from 1 to 4 carbon atoms; and R' is a member selected from the group consisting of saturated aliphatic hydrocarbon having from 1 to 4 carbon atoms and hydroxyalkyl having from 1 to 4 carbon atoms and R'' is selected from the group consisting of hydrogen and hydroxyalkyl having from 1 to 4 carbon atoms, provided that R'' is hydroxyalkyl only when R' is also hydroxyalkyl and further provided that at least one of R and R' is hydrocarbon; and a sufficient quantity of an alkalizing agent to give the aqueous solution a pH of about 7.5 to about 12.

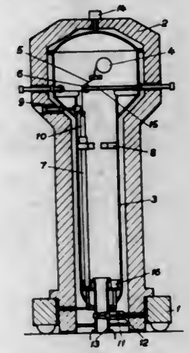
3,168,443

## CHARGING MACHINE FOR FUEL EXCHANGING IN A NUCLEAR REACTOR

Thor Lindheim, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Feb. 12, 1962, Ser. No. 172,505
Claims priority, application Sweden, Feb. 16, 1961, 1,577/61
4 Claims. (Cl. 176—30)

1. Charging machine for exchanging fuel in a nuclear reactor, comprising an outer radiation protecting housing, a pressure vessel inside said housing, means for vertically displacing said pressure vessel relatively to said housing, said pressure vessel comprising means forming a plurality of storing positions stationary with respect to said vessel and provided with coolant supply means, a central closable charging opening connectable to a nuclear reactor, hoist means for the lifting and lowering of fuel assemblies, and positioning means for the displacement



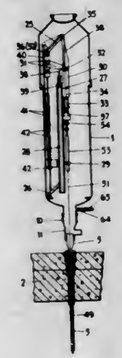
of fuel assemblies carried by said hoist means from a central hoist position above said central charging opening to one of said stationary cooled storing positions.

3,168,444

## SERVICING APPARATUS FOR GAS COOLED THERMAL REACTORS

David John Ingram, Barnehurst, Kent, England, assignor to The General Electric Company Limited, London, England

Continuation of application Ser. No. 686,073, Sept. 25, 1957. This application Nov. 27, 1961, Ser. No. 155,106
Claims priority, application Great Britain, Sept. 27, 1956, 29,608/56
8 Claims. (Cl. 176—32)

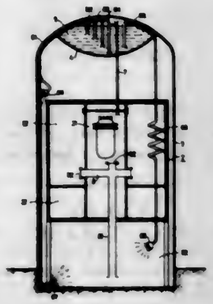


1. In a pressurized gas-cooled nuclear reactor of the kind including a reactor core housed within an enclosing shell, said shell providing a plurality of spaced normally closed points of access to said core, an apparatus for performing a multiplicity of distinct different servicing operations for said reactor, said apparatus comprising a travelling auxiliary pressure vessel constructed to withstand the full gas pressure of the reactor, an opening in said auxiliary pressure vessel, gas-tight sealing means for said opening, said sealing means being constructed to provide a gas-tight seal between said auxiliary pressure vessel and any selected one of said points of access, a plurality of distinct different separate selectively operable core servicing mechanisms for servicing a reactor core in said shell, said servicing mechanisms being disposed within said auxiliary pressure vessel, and positioning means for each said servicing mechanism, each said positioning means being disposed at least in part within said auxiliary vessel and constructed to bring its said

mechanism selectively into operational position relative to said opening, whereby to place its said mechanism in readiness to be passed into the enclosing shell through a selected point of access as and for the purpose aforesaid.

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**3,168,445**
**SAFETY EQUIPMENT FOR NUCLEAR POWER-REACTOR PLANTS**
**Albert Ziegler and Gerd Petersen, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany**
**Filed May 24, 1962, Ser. No. 197,485**
**Claims priority, application Germany, June 14, 1961, S 74,331**
**6 Claims. (Cl. 176—38)**



1. With a building structure for a nuclear power reactor of the type having large amounts of energy stored in cooling and working media, said building structure having a reactor space proper and having additional bottom space beneath said reactor space, the combination of safety equipment for minimizing the effects of a reactor accident comprising pressure-destructible diaphragm means normally blocking communication between said reactor space proper and said bottom space, a pressure-resistant steel enclosure containing said building structure, a storage tank for sprinkler water in the top region of said enclosure above said reactor space proper, an enclosed air chamber in said enclosure above the water level in said water tank, pipe lines connecting said air chamber with said reactor space, syphon pipes entering from above into the water tank and extending from below the water level upwardly and thence downwardly to said bottom space below said reactor space, and a number of sprinkler devices mounted in said bottom space and connected to said syphon pipes whereby said bottom space serves as a condensation chamber for vapor issuing in the event of reactor accident.

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**3,168,446**
**PRODUCTION OF 5'-NUCLEOTIDES AND OF NUCLEOSIDES**
**Einosuke Omura, Toyonaka, Koichi Ogata, Minoo, Yukio Sugino, Osaka, Seizi Igarasi, Ashiya, Masahiko Yoneda, Kobe, Yoshio Nakao, Osaka, and Ikuo Suhara, Nishinomiya, Japan, assignors to Takeda Pharmaceutical Industries, Ltd., Osaka, Japan**
**No Drawing. Filed Mar. 19, 1959, Ser. No. 800,396**
**Claims priority, application Japan Mar. 21, 1958**
**19 Claims. (Cl. 195—28)**

1. A microbiological process for hydrolyzing a member selected from the group consisting of ribonucleic acid, oligoribonucleotides and a mixture thereof into a member selected from the group consisting of 5'-nucleotides, nucleosides and a mixture thereof, which comprises bringing the said starting material into contact with ribonuclease-containing enzyme system produced from a microorganism selected from the group consisting of

*Fusarium roseum* Link,
*Fusarium solani* (Mart.) Appel and Wollenweber,
*Verticillium niveostratosum* Lindau,
*Gliomastix convoluta* (Harz.) Mason var. *felina* (Marchal) Mason,
*Helminthosproium sigmoideum* var. *irregulare* Cralley and Tullis,
*Bacillus subtilis* Cohn emend. Prazmowski,
*Bacillus brevis* Migula emend. Ford,
*Streptomyces griseus* (Krainsky emend. Waksman et al.) Waksman et al.,
*Streptomyces coelicolor* (Müller) Waksman and Henrici,
*Streptomyces flavus* (Krainsky) Waksman and Henrici,
*Streptomyces lavendulae* (Waksman and Curtis) Waksman and Henrici,
*Streptomyces ruber* (Krainsky) Waksman and Henrici,
*Streptomyces viridochromogenes* (Krainsky) Waksman and Henrici,
*Streptomyces purpurescens* Lindenbeim,
*Streptomyces albogriseolus* Benedict et al.,
*Streptomyces olivochromogenus* (Bergey et al.) Waksman and Henrici,
*Streptomyces aureus* (Waksman and Curtis) Waksman and Henrici,
*Streptomyces gougeroti* (Duche) Waksman and Henrici,
*Streptomyces griseoflavus* (Krainsky) Waksman and Henrici,

and isolating the desired hydrolyzate component.

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**3,168,447**
**METHOD OF PREPARING STABLE HUMAN PROFIBRINOLYSIN AND FIBRINOLYSIN**
**John H. Hink, Jr., and John K. McDonald, Berkeley, Calif., assignors to Cutter Laboratories, Inc., Berkeley, Calif., a corporation of Delaware**
**No Drawing. Filed June 11, 1962, Ser. No. 201,324**
**4 Claims. (Cl. 195—66)**

3. In the process for purifying the profibrinolysin in a fraction III–4 derived from a standard Cohn fraction III–2,3 of human blood, the improvement comprising adsorbing the profibrinolysin from said III–4 fraction onto tricalcium phosphate in a solution adjusted to a pH of about 7.0 to 8.8, separating the tricalcium phosphate containing the adsorbed profibrinolysin from the solution, and partially dissolving the tricalcium phosphate in an acid solution of a pH of about 2.5 to 4.2, said partial dissolving serving to release highly purified profibrinolysin into solution while contaminating proteins are retained on the undissolved portion of tricalcium phosphate, separating the solution containing the profibrinolysin from said undissolved tricalcium phosphate, and then completing the purification of the profibrinolysin in said solution.

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**3,168,448**
**PROCESS OF PREPARING A LIPOLYTIC ENZYME COMPOSITION**
**Irving Melcer, Park Forest, and John R. Hanss, Chicago, Ill., assignors to Wilson & Co., Inc., a corporation of Delaware**
**No Drawing. Filed Jan. 7, 1963, Ser. No. 249,601**
**8 Claims. (Cl. 195—66)**

1. A method of preparing a concentrate of lipolytic enzyme comprising removing material insoluble in aqueous solution of between 5% and 10% salt content from an aqueous medium obtained by extracting lipase enzyme-containing tissue selected from the group consisting of pork and sheep pancreas with water for a period of at least 8 hours at a temperature in the range between about 0° C. and 37° C., adjusting the concentration of salt ions in the aqueous solution to less than about 3% by weight, adding to the resultant low-ion



concentration solution a water-miscible organic liquid in quantities to precipitate a lipolytically active material, and separating the precipitated solids from said low-ion concentration solution.

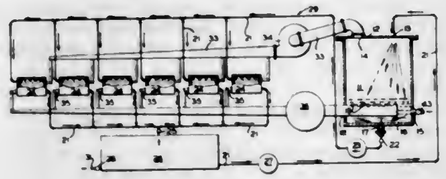
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**3,168,449**
**PROCESS OF PRODUCING MALT AND PRODUCTS PRODUCED THEREBY**
**Clifford M. Hollenbeck, Manitowoc, and Rudolph W. Brandstetter, Madison, Wis., assignors to Wisconsin-Zinn Malting Company, Manitowoc, Wis., a corporation of Wisconsin**
**No Drawing. Filed Feb. 12, 1964, Ser. No. 344,257**
**15 Claims. (Cl. 195—70)**

1. In the process of producing dried malt, the improvement which comprises crushing cool germinated green malt kernels at a temperature of 5° C. to 35° C. and having a moisture content of at least 25% into integral and unitary flakes characterized by breakage of the husks and a partial but minor exudation of the endosperm mass through the break in the husk, said crushing decreasing the thickness and increasing the surface to weight ratio of the kernels, to accelerate subsequent drying, and drying said flaked green malt until the moisture content of the dried malt is not more than 6%, said drying being effected at a temperature-time drying schedule which requires at least 5 hours of drying time to produce dried malt.

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**3,168,450**
**SALINE-TO-POTABLE WATER CONVERSION SYSTEM AND METHOD**
**Edward L. Black, 1111 Jefferson Ave., Falls Church, Va.**
**Filed May 8, 1961, Ser. No. 108,642**
**10 Claims. (Cl. 202—48)**

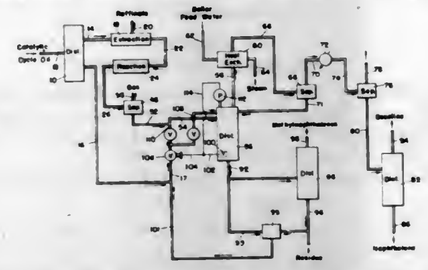


1. A saline-to-potable water conversion method comprising the steps of heating saline water in a vessel having an inflatable cover, transferring the heated saline water to a tank, forcing a gas through the heated saline water for warming and saturing the gas, conveying the warmed and saturated gas into the vessel under pressure sufficient to inflate the cover, the cover being at a temperature lower than that of the warmed gas such that the warmed and saturated gas condenses on the surface of the inflated cover, and collecting the condensate.

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**3,168,451**
**CONTROL PROCESS IN THE RECOVERY OF NAPHTHALENE FROM ALKYLNAPHTHALENE BY DISTILLATION**
**Alfred J. Gorand, Ridley Park, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey**
**Filed May 9, 1961, Ser. No. 108,861**
**4 Claims. (Cl. 202—39.5)**

1. In a distillation process wherein feed stock containing naphthalene and alkylnaphthalenes is distilled to obtain naphthalene as overhead and alkylnaphthalenes as residue, the improvement which comprises introducing into the distillation zone at the locus intermediate the feed point and overhead, when the temperature therein rises above a given level and lower boiling constituents of said alkylnaphthalenes are thereby vaporized, an absorber oil containing at least 50% aromatic constitutents and having boiling range above that of said lower boiling constituents, thereby to absorp vapors of the latter in said absorber oil, removing absorber oil and absorbed lower boiling constituents, together with the higher boiling con-



stituents of said alkylnaphthalenes, as residue, and discontinuing the introduction of said absorber oil when the temperature in the distillation zone falls below a given level.

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**3,168,452**
**METHOD OF MAKING A DERIVATIVE OF SALICYLIC ACID**
**Anthony Debe, 18203 Canterbury Road, Cleveland, Ohio**
**No Drawing. Filed June 28, 1961, Ser. No. 120,199**
**15 Claims. (Cl. 204—44)**

1. A method of making a solution containing a derivative of salicylic acid comprising the steps of reacting about 1 to 4 moles of salicylic acid with about 1 mole of hexamethylene tetramine in water at a temperature of about 125° to 190° F. and a pH of about 2½ to 5½ for at least about 4 hours to provide a reaction mixture, adding about 1 to about 1⁹⁄₁₀ moles of an alkali hydroxide and about 0.05 to 0.3 mole of hexamethylene tetramine to the reaction mixture, reacting said mixture with said hydroxide and said hexamethylene tetramine at a temperature below 190° F. to provide a solution having a pH of about 8½ to 10½.

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**3,168,453**
**ZINC CYANIDE PLATING BATH**
**Anthony Debe, 18203 Canterbury Road, Cleveland, Ohio**
**No Drawing. Filed June 28, 1961, Ser. No. 120,208**
**14 Claims. (Cl. 204—44)**

1. An aqueous alkaline cyanide plating bath comprising about 3 to 26 ounces per gallon of a cyanide of a metal comprising zinc cyanide, about 1 to 20 ounces per gallon of an alkali metal hydroxide, about 4½ to 26 ounces per gallon of an alkali metal cyanide, up to about 7.0 ounces per gallon of an alkali metal tartrate, and about 0.1 to 7.0 ounces per gallon of a reaction product of salicylic acid and hexamethylene tetramine.

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**3,168,454**
**METHOD OF MAKING CATALYTIC AGENT FOR PLATING BATH**
**Anthony Debe, 18203 Canterbury Road, Cleveland, Ohio, and Lloyd B. Portzer, deceased, late of Cleveland, Ohio, by Marietta R. Portzer, executrix, 3212 W. 142nd St., Cleveland, Ohio**
**No Drawing. Filed June 28, 1961, Ser. No. 120,442**
**12 Claims. (Cl. 204—44)**

1. A method of making a solution containing a derivative of salicylic acid, said solution being suitable for use as an anode corroder and a smoothing and grain refining agent in alkaline cyanide plating baths, the method comprising the steps of reacting about 1 to 4 moles of salicylic acid with about one mole of hexamethylene tetramine in about 30 to 90 moles of water at a temperature of about 125° to 190° F. and a pH of about 2½ to 5½ for at least about 4 hours to provide a reaction mixture,

and thereafter reacting about 2¼ to 4 moles of an alkali metal hydroxide with said reaction mixture for at least about 4 hours to provide a solution containing amino derivatives of salicylic acid and having a pH of at least about 10.

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**3,168,455**

## CORROSION PROTECTION

**Paul Shapiro, Chicago, and Lawrence V. Collings, Steger, Ill., and Thomas O. Counts, Denver, Colo., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 16, 1959, Ser. No. 787,111**

**8 Claims. (Cl. 204—147)**

1. In a cathodic protection system for reducing corrosion of a ferrous metal object in contact with soil the step which comprises providing in the soil adjacent to said object a small but effective quantity of an arsenate of a metal selected from the group consisting of zinc, manganese and the group IIA metals to reduce the current requirements of said cathodic protection system.

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**3,168,456**

## POLYMERIC CARBOXYLIC ACIDS BY IRRADIATION

**Clarence Lee Furrow, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Dec. 6, 1960, Ser. No. 73,960**

**5 Claims. (Cl. 204—154)**

1. A process for producing a polymeric carboxylic acid which comprises subjecting a 1-olefin having from 2–8 carbon atoms and at least one material selected from the group consisting of carbon dioxide and carbon disulfide to the action of ionizing radiation at a dose rate in the range $10^3$–$10^{10}$ rep. units per hour up to a total dosage in the range $10^8$–$10^{11}$ roentgens and at a temperature in the approximate range —60 to 100° C., the weight ratio of said selected material to olefin being in the range 1:1–100:1 and the pressure being sufficient to maintain at least a portion of said selected material in liquid phase.

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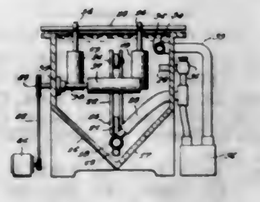
**3,168,457**

## APPARATUS FOR PRODUCING COMPOSITE ELECTROPLATED ARTICLES

**Alfred E. Grazen, Buffalo, N.Y., assignor to Platecraft of America Inc., Buffalo, N.Y., a corporation of New York**

**Original application June 22, 1959, Ser. No. 822,024, now Patent No. 3,061,525, dated Oct. 30, 1962. Divided and this application July 27, 1961, Ser. No. 131,046**

**4 Claims. (Cl. 204—212)**



1. An apparatus for producing composite coatings comprising an electroplating tank, a discharge means disposed in close proximity to the base of said tank, means for reciprocating said discharge means, and inlet means connected to said discharge means and located above said discharge means to introduce material from said discharge means back into said tank.

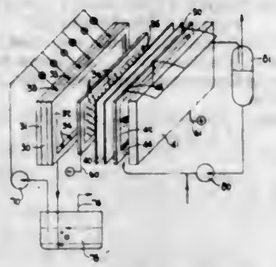
**3,168,458**

## ELECTROCHEMICAL CELL

**James W. Sprague, Streetsboro, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio**

**Filed Dec. 27, 1961, Ser. No. 162,333**

**1 Claim. (Cl. 204—237)**



The electrochemical reaction apparatus comprising in combination in a housing a solid electrode plate impermeable to liquid, a perforated metallic electrode plate including perforations having guide means integral therewith for guiding downwardly flowing fluid from the side of said plate away from the solid electrode to the opposite surface of said plate, said plates being in spaced parallel relation in said housing, and an ion transfer medium including a liquid impermeable barrier of an ion exchange resin, said barrier having electrolyte absorbent means in laminar relation therewith and in contatcing relation with said perforated plate said electrolyte absorbent means consisting of electrolyte absorbent fibrous material; said barrier means being disposed intermediate said electrode plates and in spaced parallel relation to said electrode plates, means for supplying a liquid electrolyte to the space between said barrier and said impermeable electrode plate said means marginally enclosing the space between barrier and said impermeable electrode plate and having a liquid inlet port and a liquid outlet port therein; means for supplying a different liquid electrolyte to one side of said perforated electrode plate including manifold means disposed along the upper marginal edge of said perforated electrode plate said manifold having perforations through the side wall thereof disposed for passing liquid therethrough and into contact with one of the vertical faces of said perforated electrode plate; manifold means adjacent the lower marginal edge of said perforated electrode plate including perforations through the side wall thereof communicating with the vertical faces of said perforated electrode plate and adapted to receive liquid electrolyte cascading over the surface of said perforated electrode plate; and means coacting with each of said manifold means for recirculating the said electrolyte through said perforated electrode plate said means including chemical treatment means for adjusting the concentration of electrochemical reactant materials in said electrolyte.

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**3,168,459**

## CRACKING A METAL-CONTAMINATED RESIDUAL OIL

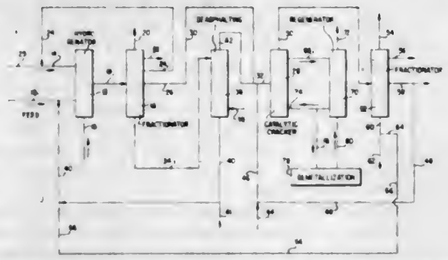
**Arvin D. Anderson, Anaheim, Calif., and Robert A. Sanford, Homewood, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**Filed May 4, 1961, Ser. No. 107,679**

**13 Claims. (Cl. 208—57)**

1. A process for treating a residual hydrocarbon oil boiling above the gasoline range and containing at least about 5 parts per million of each of nickel and vanadium as contaminating metals, comprising the steps of contacting said hydrocarbon oil in a hydrogenation zone with a hydrogen donor diluent in the proportions of about 0.1 to 10 volumes of diluent per volume of residual hydrocarbon oil; at a temperature in the range of about 700–1200° F. and a pressure from about atmospheric to about 200 p.s.i.g. thereby reducing partially the content of said contaminating metals by about 10 to 90% and increasing the hydrogen-to-carbon ratio of the hydrogenated effluent, subjecting resulting hydrogenated bottoms boiling primarily above about 950° F. and containing at least about 2 parts per million nickel and at least about 3 parts per million vanadium to solvent deasphalting to remove about 30 to 95% of said metal contaminants and produce an extract and raffinate, said extract containing about 40





to 95% of said hydrogenated bottoms, subjecting a hydrocarbon oil boiling above the gasoline range and containing sufficient of said extract to provide at least about 1 part per million of nickel and at least about 1 part per million vanadium, to contact with a solid cracking catalyst under cracking conditions to produce gasoline, removing metal-contaminated catalyst from the cracking system, said removed catalyst containing at least about 50 parts per million nickel and at least about 50 parts per million vanadium, demetallizing the removed catalyst to reduce its nickel and vanadium content by about 10 to 90%, returning demetallized catalyst to said cracking system and recovering products from said cracking.

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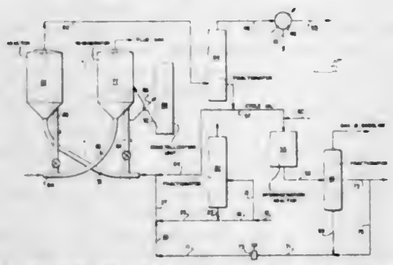
**3,168,460**

## CATALYTIC CONVERSION OF HEAVY OILS TO GASOLINE

**Leon M. Lehman, Brooklyn, N.Y., and Stanley Manne, Park Forest, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware**

**Filed Nov. 1, 1961, Ser. No. 149,272**

**10 Claims. (Cl. 208—67)**



9. A process for catalytically cracking a residual petroleum stock which contains more than about 0.3 p.p.m. NiO and more than about 0.5 p.p.m. $V_2O_5$ and at least about 10% hydrogenated recycle stock, which comprises subjecting the petroleum oil to catalytic cracking in the presence of a synthetic gel, silica-alumina cracking catalyst at a temperature of about 750 to 1000° F., sufficient to deposit said metallic impurities on the said catalyst and to produce a conversion to lower boiling materials, passing catalyst from the cracking zone to a regeneration zone wherein carbon is burned from the catalyst passing regenerated catalyst to the cracking zone, withdrawing from said cracking-regeneration system a portion of the catalyst containing at least about 200 p.p.m. nickel and at least about 500 p.p.m. vanadium, removing at least about 50% of the nickel and at least about 15% of the vanadium from the catalyst and returning the demetallized catalyst to the said catalytic cracking system, fractionating the products from cracking to separate a substantially metals-free fraction boiling essentially above 400° F. and a gasoline fraction, and subjecting the fraction boiling essentially above 400° F. to catalytic hydrogenation at a temperature of about 600 to 900° F. and a pressure of from about 300 to 3000 p.s.i.g. and with about 100 to 10,000 standard cubic feet of hydrogen per barrel, and sending hydrogenator effluent to catalytic cracking as said recycle stock.

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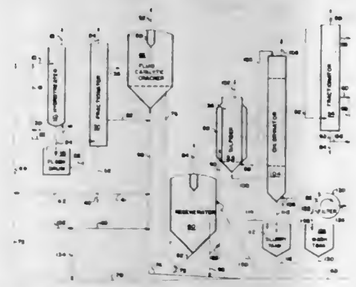
**3,168,461**

## CATALYTIC CRACKING OF MINERAL HYDROCARBON OIL

**Howard G. Russell, Munster, Ind., and Robert A. Sanford, Homewood, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**Filed Nov. 10, 1960, Ser. No. 69,243**

**13 Claims. (Cl. 208—89)**



1. In a method for converting to gasoline mineral hydrocarbon oil boiling above the gasoline range, the steps consisting essentially of hydrotreating the mineral hydrocarbon oil containing at least about 0.5 p.p.m. nickel and at least about 0.5 p.p.m. vanadium in the presence of a hydrogenation catalyst and molecular hydrogen at an elevated temperature of about 600 to 900° F. and superatmospheric pressure to reduce partially the content of said contaminating metal by about 10 to 90% while consuming hydrogen and increasing the hydrogen-to-carbon ratio, contacting resulting hydrocarbon product boiling above the gasoline range and containing at least about 0.1 p.p.m. nickel and at least about 0.3 p.p.m. vanadium with a solid silica-based cracking catalyst under cracking conditions in a cracking zone to produce a conversion of about 40 to 70% to products boiling in the gasoline range, passing catalyst from the cracking zone to a regeneration zone wherein carbon is burned from the catalyst, passing regenerated catalyst to the cracking zone, withdrawing from the cracking-regeneration system contaminated catalyst containing at least about 50 p.p.m. nickel and at least about 50 p.p.m. vanadium, demetallizing withdrawn catalyst to remove about 10 to 90% of said metal impurities and returning demetallized catalyst to the cracking system.

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**3,168,462**

## CATALYST DEMETALLIZATION

**Henry Erickson, Park Forest, Ill., assignor, by mesne assignments, to Sinclair Research Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed July 7, 1961, Ser. No. 122,394**

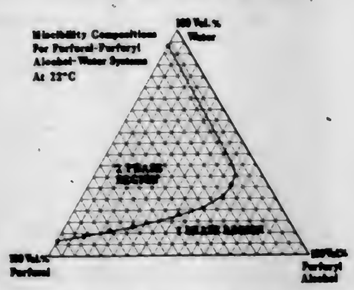
**16 Claims. (Cl. 208—120)**

6. A method for producing gasoline in a hydrocarbon cracking system having a catalytic cracking zone and a

catalyst regeneration zone which comprises cracking, at elevated temperature in said cracking zone, a hydrocarbon feedstock heavier than gasoline and contaminated with a metal selected from the group consisting of nickel and vanadium, said cracking being conducted in the presence of a synthetic gel, silica-based hydrocarbon cracking catalyst and during which cracking the catalyst becomes contaminated with said selected contaminant of said hydrocarbon feedstock, cycling the catalyst between the cracking zone and the catalyst regeneration zone in which latter zone carbon is removed from the catalyst, bleeding a portion of the contaminated catalyst from the cracking system, sulfiding bled catalyst by preliminary contact with a sulfiding vapor at about 500–1500° F. to convert contaminating metal to sulfide, washing the catalyst with a basic aqueous solution containing ammonium ions and about 0.1 to 10% of a chelating agent for the contaminant, based on the weight of the calatyst, to remove said contaminant, and returning resulting decontaminated catalyst to the hydrocarbon cracking system.

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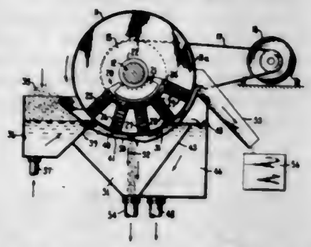
**3,168,463**
**SOLVENT EXTRACTION WITH A FURFURAL-FURFURYL ALCOHOL-WATER SOLVENT**
**Charles J. Norton, Denver, and Fred H. Poettmann, Littleton, Colo., assignors to The Marathon Oil Company, Findlay, Ohio, a corporation of Ohio**
**Filed Jan. 13, 1961, Ser. No. 82,433**
**17 Claims. (Cl. 208—323)**




1. In a separation of aromatic hydrocarbons from a mixture of the same with non-aromatic hydrocarbon materials by solvent extraction, the step of treating a liquid mixture containing aromatic hydrocarbons with a selective solvent consisting of an intimate mixture of furfural, furfuryl alcohol and water.

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**3,168,464**
**PERMANENT MAGNETIC SEPARATOR**
**James J. Ferris, Upper Montclair, and Otto C. Mayer, Fair Lawn, N.J., assignors, by mesne assignments, to Eriez Manufacturing Company, Erie, Pa.**
**Filed Dec. 4, 1961, Ser. No. 156,774**
**13 Claims. (Cl. 209—223)**



1. In a magnetic separator having driven means defining

a drum having a non-magnetizable, travelling conveyor surface for removing magnetizable material from a stream of material comprising magnetizable and non-magnetizable material brought into contact with said conveyor surface,

said drum made up of a generally cylindrical non-magnetizable shell comprising said conveyor surface,

a shaft concentrically disposed in said shell,

a back plate made of magnetic material fixed to said shaft,

and a plurality of pole assemblies fixed to said back plate and extending radially outwardly therefrom and terminating adjacent the inner periphery of said shell,

each said pole assembly comprising at least one stack of magnetic units, each unit having both a greater length and width than thickness and disposed with its length generally parallel to said shaft,

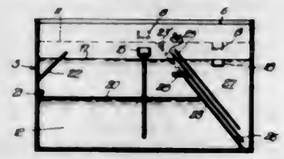
said magnetic units having opposite major faces and being arranged with said major faces in face to face relationship within a respective stack,

said units within a given assembly having permanent magnetization in the same direction through the thickness dimension,

said direction of magnetization corresponding to magnetization in a direction substantially normal to the opposite major faces defining said thickness dimension.

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**3,168,465**
**ANAEROBIC-AEROBIC SEWAGE TREATMENT AND APPARATUS THEREFOR**
**Leon S. Kraus, 1001 W. Moss Ave., Peoria, Ill., and Edwin B. Falls, Jr., 207 Twin Oaks Court, East Peoria, Ill.**
**Filed May 31, 1960, Ser. No. 32,929**
**12 Claims. (Cl. 210—7)**

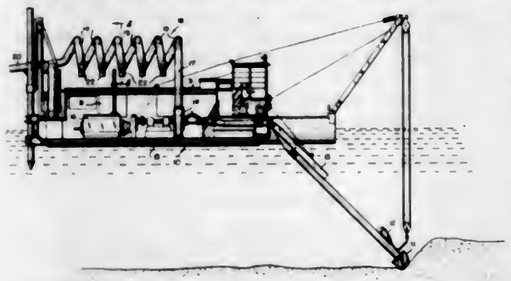


1. The method of treating sewage and industrial waste which comprises, introducing sewage or industrial waste influent adjacent the bottom of a compartment containing a bottom quiescent layer of anaerobic sludge in which anaerobic action is occurring and an aerated supernatant layer containing suspended activated sludge in which aerobic biological oxidation is occurring, allowing the introduced sewage or industrial waste to rise through said bottom layer into said supernatant layer, withdrawing liquid from said supernatant layer into a separate settling pocket, returning settled activated sludge from said settling pocket into liquid in said compartment, and withdrawing supernatant liquid from said settling pocket to compensate for influent introduced into said compartment, a portion of the air required for aeration of said supernatant layer being used to effect said return of settled activated sludge, said bottom layer of anaerobic sludge having a consistency appreciably greater than that of water and serving as a filter to mechanically separate solid matter from said influent as it rises therethrough.

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**3,168,466**
**SEPARATOR FOR METALS IN LIQUID SUSPENSION**
**John H. Milne, North Miami, Fla., assignor to Dredge Manufacturing Corp., a corporation of Florida**
**Filed Mar. 15, 1962, Ser. No. 179,933**
**1 Claim. (Cl. 210—94)**

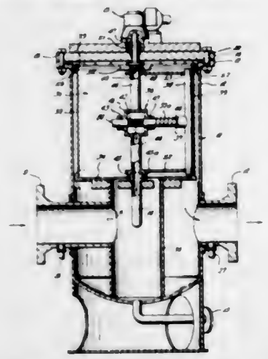
An apparatus of the character described comprising a horizontally extending hollow coil for accommodating the flow of a liquid-solid suspension therethrough and having a transverse slot formed in the outer side of the bottom portion of each convolution thereof, a transversely extending riffle having a curvular upper face mounted in said coil adjacent the liquid-solid suspension approach side of each of said slots, the highest portion of each of



said riffles being adjacent its associated slot, a valve for each of said slots mounted in said pipe, a transparent container removably mounted on the lowermost portion of each convolution of said coil with its interior in communication with its associated slot, and means for moving a body of liquid-suspended solids through said coil.

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**3,168,467**
**SELF-CLEANING STRAINERS**
**George W. Dreyer, P.O. Box 12034, Houston, Tex.**
**Filed July 20, 1962, Ser. No. 211,331**
**4 Claims. (Cl. 210—108)**

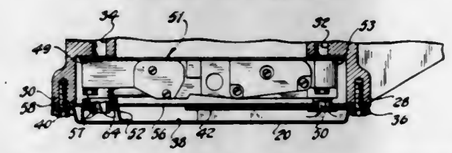


1. In combination with a strainer comprising a hollow body having an inlet and an outlet and a filter element within the body interposed between the inlet and outlet, a cleaning mechanism comprising a cleaning shoe having a suction opening on one side thereof, means movably mounting said shoe with said suction opening facing said element for sweeping movement along and in close proximity to that surface of the filter element which is exposed to said inlet in a cycle sequentially sweeping a predetermined area of said surface, means for withdrawing fluid through said shoe at a rate to sweep filtered deposits from said area of the filter element and clean the same without interrupting flow from said inlet to said outlet through said element, means for initiating said cycle and operation of said withdrawing means, means effective upon actuation of said initiating means for causing operation of said withdrawing means and the sweeping movement of said shoe through a complete cycle, said mounting means including a hollow arm on said shoe disposed transversely to and extending away from the surface of the filter element adjacent the shoe and having a lateral opening therein remote from said element and through which arm fluid is withdrawn by said withdrawing means, and a coupling having opposed openings embracing and slidably sealed to said arm on opposite sides of said lateral opening, the interior of said coupling being connected to said withdrawing means, whereby said shoe may move from and toward said element and, upon actuation of said withdrawing means, the pressure in said body upstream of said element will urge said shoe toward said element.

4. In combination with a strainer comprising a hollow body having an inlet and an outlet and a filter element within the body interposed between the inlet and outlet, a cleaning mechanism comprising a cleaning shoe having a suction opening on one side thereof, means movably mounting said shoe with said suction opening facing said element for sweeping movement along and in close proximity to that surface of said filter element which is exposed to said inlet in a cycle sequentially sweeping a predetermined area of said surface, means for withdrawing fluid through said shoe at a rate to sweep filtered deposits from said area of the filter element and clean the same without interrupting flow from said inlet to said outlet through said element, said withdrawing means including an automatic flow regulator controlled by the rate of flow through said withdrawing means for maintaining within predetermined limits the rate of fluid withdrawal whereby to insure a rate of withdrawal sufficient for cleaning of the filter element without such excessive rate of withdrawal as would tend to damage said element or inordinately reduce the efficiency of the filter, means for initiating said cycle and operation of said withdrawing means, and relief valve means for bypassing fluid from said body upstream of said element to said withdrawing means when the differential between the pressure within said body upstream of said element exceeds the pressure within said withdrawing means by a predetermined maximum.

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**3,168,468**
**FILTER ASSEMBLY FOR TRANSMISSIONS**
**Edwin F. Jagdmann, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed May 12, 1961, Ser. No. 109,690**
**1 Claim. (Cl. 210—168)**

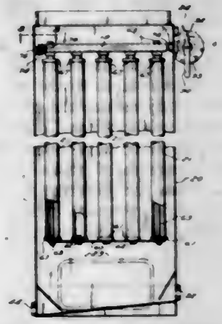


In a power transmission mechanism, a transmission casing, a fluid reservoir comprising a shallow pan disposed in a substantially horizontal plane, means for securing said pan to said casing, a fluid pressure pump powered by a rotary portion of said mechanism, a fluid intake conduit extending from the lower region of said pan to the intake side of said pump, a filter cloth extending across the upper region of said pan, the margin of said cloth being disposed between said pan and said casing and defining a gasket therebetween, a fluid pressure control system for said transmission mechanism, said pump being adapted to supply fluid to said system, the fluid discharge from said system being distributed to the upper surface of said cloth whereby filtering action takes place as the fluid is returned to the lower region of said pan under gravity, said intake conduit structure extending through said cloth adjacent one marginal portion thereof, baffle structure secured to the bottom of said pan defining a flow intake duct having an intake portion at a central region of said pan and a discharge portion connected to said intake conduit, said

duct comprising a main portion offset from the bottom of said pan and two marginal parts on opposed sides of said main portion, said marginal parts being secured to the bottom of said pan to define therewith said duct, said marginal parts extending from said marginal portion of said cloth to the central region of said pan, the vertical depth of said duct being substantially less in magnitude than the horizontal width thereof, the discharge portion of said duct that is connected to said intake conduit being closed at a location directly adjacent one side of said pan, said intake portion thereby being submerged in the fluid in said pan regardless of displacement of the plane of the surface of said fluid with respect to a horizontal reference line, the bottom of said pan being formed with raised bosses that are adapted to support said cloth.

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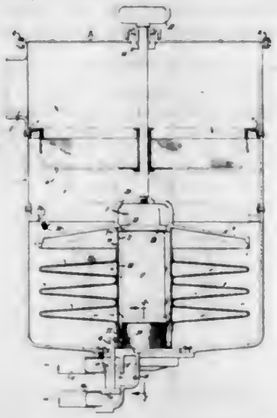
**3,168,469**
**DRY CLEANING SOLVENT PURIFYING APPARATUS**
**Nosbar S. Abdalian, 3767 Freemont Road, South Euclid, Ohio, and Robert V. Abdalian, 3159 Berkshire Road, Cleveland Heights, Ohio**
**Filed Jan. 17, 1961, Ser. No. 83,200**
**3 Claims. (Cl. 210—232)**



1. A dry cleaning filter assembly comprising:
(*a*) a tank having a plurality of side walls and a bottom defining a chamber, said tank including solvent inlet and reverse flushing outlet openings communicating with the chamber near said bottom;
(*b*) a main manifold and valve means connected to the tank and having a plurality of inlet openings, said main manifold and valve means having an outlet opening;
(*c*) an outlet conduit connected to the main manifold and valve means outlet opening;
(*d*) said tank including a plurality of supporting rails within said chamber and disposed on a side of the chamber opposite from said main manifold inlets;
(*e*) a plurality of elongated tubular bank manifolds within the chamber and each having an outlet at one end and a plurality of aligned inlet openings along a lower wall thereof, said bank manifolds being otherwise imperforate;
(*f*) each of said bank manifolds having its outlet removably connected to one of the main manifold inlets, each such removable connection including coacting tapered surfaces telescoped together, each of said bank manifolds being supported at one end by one of said rails;
(*g*) clamp and biasing means within said tank biasing each bank manifold tapered surface into a fluid tight connection with the coacting tapered surface of said main manifold and valve means;
(*h*) a plurality of banks of tubular filter elements each filter element connected to and depending from a bank manifold and within the chamber, each of said filter elements including filtering side walls, and each of said filter elements including an end opening connected to one of said bank manifold inlets;
(*i*) said main valve and manifold means having a sleeve with a set of aligned apertures, said valve and manifold having an operating position in which each of the apertures forms a fluid communication between one of the bank manifolds and the outlet conduit through said connections; and,
(*j*) said valve and manifold means sleeve also having a second set of staggered back flushing apertures and a plurality of back flushing positions, said valve and manifold means providing fluid communication between at least one but not all of said bank manifolds and said outlet conduit through at least one of said connections when in each of said back flushing positions.

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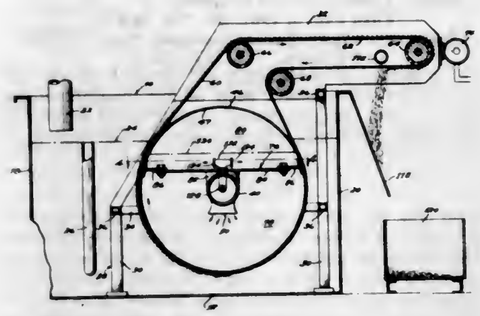
**3,168,470**
**SUBMERSIBLE MOTOR-PUMP AND FILTER STRUCTURE SYSTEM**
**Ralph A. Rhoda, Berkeley, Calif., assignor to Berkeley Pump Company, Berkeley, Calif., a corporation of California**
**Filed Jan. 19, 1959, Ser. No. 787,575**
**12 Claims. (Cl. 210—239)**



10. A submersible motor, pump and filter structure comprising a filter housing adapted for retaining a quantity of fluid and having a fluid inlet adjacent its top portion, a fluid outlet in its bottom surface, and a removable cover assembly; a removable tubular filter core having a plurality of hollow disk filter elements mounted concentrically thereon in axially superposed relation, said core being supported from the bottom surface of said housing and surmounting said fluid outlet; a submersible motor-pump assembly disposed at least partially within said tubular filter core and having a rotating pump member exposed to circumambient fluid adjacent said outlet for discharging fluid therethrough; a handle member connected to said filter core, extending through said removable cover assembly and being accessible from without said housing for axially moving said filter core; a first conduit for conducting water, a second conduit for conducting water, a valve means operative between first and second positions for selectively connecting either said first or second conduits to said outlet; and means operatively connecting said valve means to said filter core; whereby fluid may enter said housing through said inlet and be expelled through said outlet, said filter core and motor-pump assembly being conveniently nested and arranged in a compact filter housing; and whereby axial reciprocation of said filter core will operate said valve means causing a redirection of fluid flow from one of said conduits to the other.



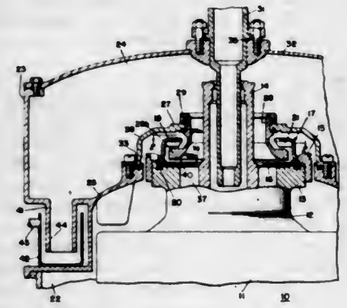
**3,168,471**
**FILTER APPARATUS**
**Gene Hirs, 17208 Greenview Road, Detroit, Mich.**
**Filed Oct. 16, 1961, Ser. No. 145,108**
**4 Claims. (Cl. 210—391)**



1. In the filter apparatus, a tank to which contaminated liquid to be filtered is delivered, means to maintain said liquid at a substantially constant level, supporting means, a drum rotatably mounted on said supporting means within said tank, said drum being partially submerged within the liquid and having only its cylindrical wall perforated, a wall located interiorly of said drum at a level below said level of liquid in said tank, and sealingly engaging the walls of said drum to subdivide the drum interior into upper and lower compartments, a suction pump having its intake in communication with said lower compartment interiorly of said drum, means for operating said pump, a continuous and liquid pervious filter belt extending completely around the lower compartment of said drum to filter solids from the contaminated liquid as the liquid passes radially from said tank through said belt and said perforated drum wall into said lower compartment, guide means above said drum guiding a loop portion of said belt laterally of the axis of rotation of said drum to a location external to said tank, and a manifold in communication with a source of fluid under pressure arranged above the lower side of said loop portion and directed downwardly thereonto to dislodge foreign matter from the lower portion of said loop portion.

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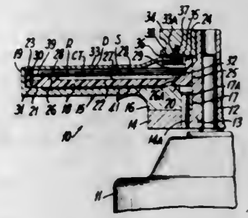
**3,168,472**
**CENTRIFUGE DISCHARGE MEANS**
**Harold C. Fitzsimmons, West Chester, Pa., assignor to Pennsalt Chemicals Corporation, a corporation of Pennsylvania**
**Filed June 15, 1961, Ser. No. 117,467**
**6 Claims. (Cl. 233—19)**



1. A centrifuge comprising
(*a*) a bowl mounted for rotation about an axis, the bowl having a liquid discharge opening with its margin disposed about the axis,
(*b*) an annular pocket on the outside of the bowl about the opening and facing toward the axis, the pocket having a remote wall spaced from the bowl,
(*c*) a stationary liquid discharge conduit mounted on the axis and having a tubular wall with a smooth interior and first and second ends, the first end having an annular flange with opposite faces extending outward therefrom and into the pocket, the annular flange being substantially thicker at its outer periphery than the tubular wall, the opposite faces on the annular flange being smooth, the face more remote from the bowl being disposed substantially radially of the axis, the face more proximate the bowl formed with a smooth inwardly rounded portion approaching the smooth interior of the tubular wall,
(*d*) vanes on the inside of the remote wall and having distal edges disposed substantially parallel to and closely confronting the said radial face of the flange, and
(*e*) a gas-tight sealed liquid-collection chamber surrounding and sealed to the second end of the conduit, whereby the discharging liquid passes smoothly from the bowl through the conduit and into the collection chamber, the smooth nature of the flange surfaces and the interior of the conduit and the sealed nature of the collection chamber serving to minimize foaming of the discharging liquid.

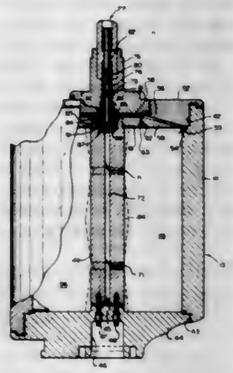
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**3,168,473**
**MICROHEMATOCRIT READER FOR CENTRIFUGES**
**George Goda and Marvin A. Asnes, New York, N.Y., assignors to Clay-Adams, Inc., New York, N.Y., a corporation of New York**
**Filed Dec. 4, 1961, Ser. No. 156,871**
**12 Claims. (Cl. 233—26)**



1. In a centrifuge having a flat, horizontally disposed rotatable head, a tray removably mounted on said head and rotatable relative thereto, and means for clamping said tray to said head for conjoint rotation, said tray including radially disposed grooved portions on the upper surface thereof for holding capillary tubes carrying blood samples, which samples stratify between the upper and lower ends thereof upon rotation of said head, said tray being transparent and the top surface of said head having radially spaced percentage scale markings thereon including 0% and 100% markings and markings intermediate the 0% and 100% markings visible through said tray whereby said tray may be rotated relative to said head to visually register the upper and lower ends of the blood sample in the tube with said 0% and 100% scale markings on said head and to provide a visual intermediate scale reading registering with the demarcation point of the strata of the blood sample in said tube.

3,168,474
## CENTRIFUGE APPARATUS
Richard C. Stallman, San Carlos, and Edward G. Pickels, Atherton, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Apr. 25, 1963, Ser. No. 275,563
1 Claim. (Cl. 233—33)



In combination, centrifuge apparatus comprising a rotor, said rotor including a hollow cylindrical bowl member adapted to be driven at a sufficiently high speed about an axis of rotation to cause radial expansion of the side wall thereof, means carried in said bowl member serving to subdivide said bowl member into a plurality of compartments extending generally lengthwise thereof, the last said means including a core member extending coaxially within said bowl member, means holding said core member with respect to said bowl member and serving to cause both said members to be rotated together, a plurality of planar vanes within said bowl member, the planes of said vanes intersecting to define said axis of rotation, and means supporting the vanes for limited movement radially of said axis and serving to allow said vanes to ride outwardly with the inner wall of the cylindrical bowl member and follow radial outward movement of said wall during centrifugation, means for introducing fluid into the compartments of the rotor and means for removing fluid from said compartments, and means serving to support and drive said bowl member normally for centrifugation at high speed on the order of at least 20,000 r.p.m., the number of compartments being at least substantially equal to the normal operating speed of rotation of said bowl member during centrifugation taken in thousands of revolutions per minute.

3,168,475
## WELL-WORKING FLUIDS
John W. Jordan, Michael J. Nevins, Robert O. Stearns, Jack C. Cowan, and Augustus Earl Beasley, Jr., all of Houston, Tex., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 15, 1961, Ser. No. 95,794
12 Claims. (Cl. 252—8.5)

1. In a process wherein an oil-base well-working fluid is introduced into a well wherein said fluid is subject to loss of oil by filtration, the step which comprises adding to said well-working fluid sufficient of a substituted ammonium humate in which at least one of the substituted radicals attached to the said ammonium is an alkyl radical having from 12 to 22 carbon atoms in a straight chain to effect a substantial lowering of said oil loss but insufficient to thicken said fluid so much as to render it no longer introduceable into said well.

3,168,476
## PROCESS FOR PRODUCING MAGNETIC MANGANESE-ZINC FERRITE WITH ISOPERM CHARACTER
Erich Moser and Erich Röss, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Feb. 3, 1961, Ser. No. 86,897
Claims priority, application Germany Mar. 14, 1960
8 Claims. (Cl. 252—62.5)

1. A method of producing a soft magnetic ferrite with isoperm character upon a basis of iron-manganese-zinc, with an initial permeability of $\mu_a \geq 2000$ and a ratio of the remanence induction $B_r$ to saturation induction $B_s$ of

$$\frac{B_r}{B_s} < 0.25$$

which does not contain more than a total of about 0.2% by weight of foreign substances, including at the most about 0.03% by weight silicic acid and at the most about 0.03% by weight of any other disturbing foreign substance, the initial substances being intermixed in proportions of mole percentages in a range with the following corner points in a three substance diagram:

(1) 50 mole percent $Fe_2O_3$
24 mole percent MnO
26 mole percent ZnO
(2) 52 mole percent $Fe_2O_3$
16 mole percent MnO
32 mole percent ZnO
(3) 57.5 mole percent $Fe_2O_3$
42.5 mole percent MnO.

comprising the steps of annealing the mixture at temperatures between about 850 and 950° C., thereafter grinding the annealed material, molding to the desired shape, sintering the molded material at temperatures between 1200° C. and 1350° C., and cooling the same in an inert gas atmosphere containing less than about 0.02 volume percent oxygen.

3,168,477
## DELACQUERING PROCESS
Leonard E. Swanson, Plainfield, and Harold P. Wilson, Metuchen, N.J., assignors to Vulcan Materials Company, Sewaren, N.J., a corporation of New Jersey
No Drawing. Filed July 17, 1961, Ser. No. 124,384
12 Claims. (Cl. 252—95)

1. A process for alkaline delacquering of tin plate having a resinous lacquer coating applied to the surface thereof which comprises applying to said coated surface a hot aqueous solution consisting essentially of about 20 to 200 grams per liter of an alkali metal hydroxide dissolved in water, a minor active amount of a hydrocarbon selected from the group consisting of naphthalene and $C_1$ to $C_4$ alkyl substituted naphthalenes, and about 0.25 to less than 2 grams per liter of a surface active agent which has wetting and emulsifying properties, which is not decomposed by the hot alkali metal hydroxide solution and which has a boiling point high enough so as not to distill off in the delacquering process.

8. A process for accelerating the delacquering during detinning of tin plate having a resinous lacquer coating applied to the surface thereof which comprises immersing said coated tin plate in a hot aqueous detinning solution consisting essentially of about 20 to 200 grams per liter of an alkali metal hydroxide dissolved in water, an oxidizing amount of an inorganic oxidizing agent selected from the group consisting of sodium nitrate, sodium nitrite, sodium nitrate-nitrite mixtures, sodium plumbate, sodium chlorate, sodium perchlorate and sodium permanganate, about 0.25 to less than 2 grams per liter of an alkali metal soap of a fatty acid of about 12 to 22 carbon atoms, and a minor active amount of a naphthalene hydrocarbon selected from the group consisting of naphthalene and $C_1$ to $C_4$ alkyl substituted naphthalenes.



3,168,478
## HIGHLY ALKALINE SURFACE ACTIVE COMPOSITIONS
Andrew Stefcik, Easton, Pa., and Fred E. Woodward, Plainfield, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 28, 1960, Ser. No. 45,799
8 Claims. (Cl. 252—135)

1. A highly alkaline surface active composition consisting essentially of

(1) a mixture of primary and secondary phosphate esters of $P_2O_5$ with a nonionic surface active agent having the molecular configuration of a condensation product of at least 1 mole of ethylene oxide, and up to an amount sufficient to provide said agent with about 95% by weight of combined ethylene oxide, with 1 mole of a compound containing about 6 to 150 carbon atoms and a reactive hydrogen atom and selected from the group consisting of phenol, alkyl phenols, aliphatic alcohols, fatty acids, fatty amines, fatty amides, rosin amines, long chain sulfonamides, long chain-substituted aryl sulfonamides, and high molecular weight mercaptans, in a ratio of 1 mole of $P_2O_5$ for each 2 to 4.5 hydroxy groups in said nonionic agent, and

(2) an alkaline reacting inorganic alkali metal substance selected from the group consisting of sodium and potassium hydroxides, silicates, tribasic phosphates, polyphosphates, carbonates, borates, sulfides and cyanides,

the amount by weight of component (2) being within the range of 1 part for each 0.002 to 25 parts of component (1) and sufficient to yield an aqueous solution having a pH of more than 12 when the combined concentration of components (1) and (2) in the solution is about 0.3% by weight.

3,168,479
## PROCESS FOR PRODUCING HIGH DENSITY NUCLEAR FUEL PARTICLES
Philippe D. S. St. Pierre, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Oct. 28, 1960, Ser. No. 65,611
2 Claims. (Cl. 252—301.1)

1. A process for producing particles at least 95 percent dense for use as an oxide nuclear fuel composed of a metal oxide selected from the group consisting of thorium oxide and thorium oxide-uranium oxide mixtures, said process comprising compacting a thermally decomposable compound of the metal to be used in the oxide fuel element under a pressure sufficient to form a green compact, heating the green compact in a reducing atmosphere to a temperature reducing the metal compound, and performing the heating at a rate causing the green compact to fragmentize due to internally induced stresses.

3,168,480
## ORGANIC MATERIAL STABILIZED WITH ORTHO-ALKYLPHENOL - SULFUR DICHLORIDE REACTION PRODUCT
Calvin J. Worrel, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 17, 1963, Ser. No. 288,524
9 Claims. (Cl. 252—404)

1. Organic material normally tending to undergo oxidative deterioration containing a small antioxidant quantity, from 0.001 to 5 percent, of a reddish-yellow polynuclear phenolic material; said phenolic material containing 2 to 5 phenolic nuclei wherein each phenolic nucleus is mono-orthoalkylated and contains one hydroxyl radical and one alkyl group of 3–8 carbon atoms ortho to said hydroxyl radical, said phenolic nuclei being linked together in a straight chain, each of said nuclei being linked to the adjacent nuclei through 1–6 sulfur atoms in sulphide linkages, said linkages being between carbon atoms of said nuclei selected from those carbon atoms ortho and para to said hydroxyl group, at least one of the terminal nuclei of said chain containing a chlorine atom, said phenolic material containing about 50 to 62 percent carbon, about 4.5 to 7.2 percent hydrogen, about 34 to 11 percent sulfur, and about 16 to 5 percent chlorine, said phenolic material having an average molecular weight of about 500 to 740, and said phenolic material being soluble in hydrocarbon mineral oil.

3,168,481
## REMOVAL OF NICKEL AND VANADIUM FROM SILICA BASED CRACKING CATALYSTS
Henry Erickson, Park Forest, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 30, 1960, Ser. No. 39,810
19 Claims. (Cl. 252—412)

1. In a method for treating a synthetic gel, silica-based catalyst which has been poisoned by contamination with vanadium due to use of said catalyst in cracking at elevated temperature a hydrocarbon feedstock containing vanadium, said cracking including a catalytic cracking zone and a catalyst regeneration zone between which the catalyst is cycled and in which cracking zone the catalyst becomes contaminated with vanadium of said hydrocarbon feedstock and in which regeneration zone carbon is oxidized at an elevated temperature and thereby removed from the catalyst, the steps comprising bleeding a portion of the vanadium-contaminated catalyst from the cracking system, contacting bled catalyst with an aqueous solution having a basic pH and containing ammonium ions sufficient to remove vanadium from the catalyst, and returning resulting devanadized catalyst to the cracking system, said ammonium ions being provided in the aqueous solution by a member selected from the group consisting of ammonium hydroxide, ammonium carbonate and methylamine.

3,168,482
## PROCESS FOR THE REMOVAL OF NICKEL, IRON, AND VANADIUM FROM A SILICA BASED CRACKING CATALYST
Arvin D. Anderson, Park Forest, Emmett H. Burk, Jr., Hazel Crest, Larry L. Simantel, Harvey, and Robert A. Sanford, Homewood, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 5, 1960, Ser. No. 47,598
16 Claims. (Cl. 252—415)

1. A method for removing nickel from a synthetic gel, silica-based catalyst which has been poisoned by contamination with nickel due to use of said catalyst in a cracking system producing gasoline and wherein catalyst is cycled between a cracking zone, in which the catalyst is contacted at an elevated temperature with a hydrocarbon feedstock heavier than gasoline containing said nickel contaminant which deposits on the catalyst, and a regeneration zone, in which carbon is oxidized and thereby removed from the catalyst, which comprises bleeding a portion of nickel contaminated catalyst from the cracking system, reducing a substantial amount of nickel to the elemental state by contact of bled catalyst at an elevated temperature of about 800–1600° F. with hydrogen, forming nickel carbonyl from elemental nickel and removing said carbonyl by contact of the catalyst with carbon monoxide at a substantially lower temperature and returning resulting denickelized catalyst to a cracking system.

3,168,483

## DIAZABICYCLOOCTANE-ALKYLENE OXIDE CATALYST COMPOSITIONS

Burton D. Beitchman, Drexel Hill, Pa., and William E. Erner, Wilmington, Del., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Jan. 17, 1961, Ser. No. 83,150
3 Claims. (Cl. 252—426)

1. A non-aqueous catalyst composition active in the presence of organic isocyanates, comprising the combination of diazabicyclooctane and at least one of the alkylene oxides having 2 to 4 carbon atoms in unreacted form in which the mole ratio of diazabicyclooctane to alkylene oxide is from 100 moles of diazabicyclooctane to 1 of alkylene oxide to 1 mole of diazabicyclooctane per 20 moles of alkylene oxide.

3,168,484

## PRODUCTION OF POLYMERIZATION CATALYST

Willem F. Engel, Pieter Krijger, and Simon Mostert, all of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 26, 1961, Ser. No. 105,543
Claims priority, application Netherlands, May 20, 1960, 251,822
6 Claims. (Cl. 252—429)

1. A process for the production of a fluidizable catalyst composition suitable for the polymerization of ethylenically unsaturated hydrocarbons which comprises contacting an aluminum alkyl compound with a compound selected from the group consisting of vanadium and titanium trihalides and mixtures thereof in the presence of a solid fluidized inert diluent, said aluminum alkyl compound and trihalides being contacted at a rate such that the free-flowing powder of the trihalides is continually preserved.

3,168,485

## REMOVAL OF METAL CONTAMINANTS FROM ACTIVATED CARBON

James O. Knobloch, Hobart, and Russell V. Malo, Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed June 27, 1960, Ser. No. 38,704
7 Claims. (Cl. 252—444)

1. A process for removing metals from activated carbon which comprises contacting activated carbon with a solution of a benzene polycarboxylic acid in a polar solvent.

3,168,486

## NON-AGGLOMERATING MIXED BED ION EXCHANGE RESINS AND PRODUCTS THEREOF

Hamish Small, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Sept. 4, 1956, Ser. No. 607,552, now Patent No. 2,961,417, dated Nov. 22, 1960. Divided and this application July 22, 1960, Ser. No. 44,570
2 Claims. (Cl. 260—2.1)

2. A strongly basic synthetic organic quaternary ammonium anion exchange resin, the surface anion exchanging sites of which have absorbed anionic moieties of a water-soluble resinous polymeric vinylaromatic sulfonic acid in amount sufficient substantially to neutralize surface charges of said anion exchange resin sites, said water-soluble resinous polymeric vinylaromatic sulfonic acid being of a molecular size such that it does not diffuse into the anion exchange resin particles.

3,168,487

## FRICTION COMPOSITION OF A RUBBER, CASHEW NUT SHELL RESIN AND LEAD SULPHIDE

Raymond E. Spokes, Ann Arbor, Mich., and Emil C. Keller, Mahwah, N.J., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Nov. 20, 1959, Ser. No. 854,512
2 Claims. (Cl. 260—3)

1. A composition brake shoe comprising a shoe body composed of a binder matrix comprising essentially a rubbery polymer of conjugated diene and cashew thermosetting resin and in which the resin predominates proportionally over rubber, and said shoe body including dispersed throughout the binder matrix thereof individual filler bodies composed of finely divided particles of lead sulphide bonded together and agglomerated by a binder of a rubbery polymer of conjugated diene and thermosetting cashew resin and in which the resin predominates proportionally over rubber, before said filler bodies are dispersed throughout the binder matrix, said filler bodies being present in an amount of about six to twelve percent by weight of the shoe.

3,168,488

## OIL-IN-WATER POLYEPOXIDE EMULSIONS

Harry J. Sommer, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 24, 1960, Ser. No. 51,538
10 Claims. (Cl. 260—18)

8. An oil-in-water emulsion consisting of

(A) 100 parts by weight of a dispersed phase consisting essentially of a homogeneous bituminous epoxide composition resulting from admixing in the liquid state

(1) a polyglycidyl polyether reaction product of 2,2-bis(4-hydroxyphenyl)propane and epichlorohydrin;

(2) polymer of 2 to 3 molecules of conjugated unsaturated fatty acids of 12 to 20 carbon atoms per molecule; and

(3) 20 to 99.5 parts by weight of fusible asphalt; said components (1) and (2) being present in the total amount of 0.5 to 80 parts by weight, the stoichiometric epoxide to carboxyl group ratio being between 1.4:1 and 1:1.4; and

(B) an aqueous dispersing phase consisting predominantly of 25 to 900 parts by weight of water; said emulsion comprising an emulsifying agent generated by reaction between said bituminous epoxide composition and 0.1 to 10 parts by weight of ammonia originally contained in said aqueous phase.

3,168,489

## PROCESS OF PRODUCING A FOUNDRY CORE COMPOSITION

Lloyd H. Brown, Crystal Lake, and David D. Watson, Barrington, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed July 11, 1960, Ser. No. 41,752
5 Claims. (Cl. 260—21)

1. A process of producing a foundry core composition comprising the steps of:

(*a*) Preparing a first package including a mixture of about 5 to 50 parts by weight of furfuryl alcohol and about 90 to 35 parts by weight of a stable non-polymerized aqueous mixture of urea, formaldehyde, and equilibrium products thereof, said aqueous mixture containing at most about 15% by weight of water;



(*b*) Preparing a second package including a mixture of about 1 to 3 parts by weight of an acidic catalyst, and sufficient urea so as to give a molar ratio of available urea to available formaldehyde in the range of about 1:1.5 to 1:2.5 when said first package and said second package are combined; and

(*c*) Admixing said first package, said second package and about 3,000 to 10,000 parts by weight of sand.

3,168,490

## FOUNDRY CORE BINDER AND PROCESS FOR PREPARATION THEREOF

Lloyd H. Brown, Crystal Lake, and David D. Watson, Barrington, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed July 11, 1960, Ser. No. 41,728
2 Claims. (Cl. 260—29.4)

1. A process for the preparation of a stable, liquid, resinous, foundry core binder comprising the steps of,

(*a*) forming a solution from an aqueous mixture of formaldehyde, urea and methylol ureas, said aqueous mixture containing at most about 15% by weight of water; and furfuryl alcohol; the molar ratio of total available urea to available formaldehyde in said solution being in the range of about 1:1.75 to 1:3.0, said furfuryl alcohol being present in said solution in such amount that it constitutes about 15 to 50% by weight of said solution;

(*b*) adjusting said solution to a pH in the range of about 5.0 to 6.5;

(*c*) then refluxing the adjusted solution at about 95° to 105° C. until the adjusted solution has a viscosity in the range of about 350 to 3000 centipoises if measured at 25° C.; and

(*d*) then adjusting the refluxed solution to a pH in the range of about 6.5 to 8.5.

3,168,491

## PRINTING PLATE COMPOSITIONS

Philip K. Isaacs, Brookline, Norman G. Tompkins, Melrose, Melvin Nimoy, Hyde Park, and Russell L. Haden, Jr., Lincoln, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Nov. 1, 1960, Ser. No. 66,434
15 Claims. (Cl. 260—31.6)

3. A composition of matter which comprises a polymeric material selected from the group consisting of polyvinyl chloride and copolymers of vinyl chloride copolymerized with up to about 50 percent of a polymerizable monomer selected from the group consisting of vinyl esters, dibutyl maleate and vinylidene chloride, about 0.015 to 0.05 part by weight of zinc oxide, about 0.015 to 0.03 part by weight of Portland cement, about 0.075 to 0.05 part by weight of polyethylene glycol 400 monooleate and about 0.5 to 2.25 parts by weight of a reaction product consisting of 95–50 percent of a nonresinous epoxy compound selected from the group consisting of epoxidized triglycerides and epoxidized esters of lower alkyl alcohols and fatty acids, and 5–50 percent of a polyimidazoline, said polyimidazoline being derived by reacting 8 moles of triethylene tetramine, 3 moles of sebacic acid, 1 mole of dimerized linoleic acid, and 4 moles of oleic acid, at a temperature ranging from about 150° C. to 220° C. and at a pressure of from 20 mm. to 760 mm. Hg while continuously removing the water of condensation, and proportions being based on the weight of the polymeric material.

3,168,492

## POLYPROPYLENE STABILIZED WITH 3,5-DI-TERT-BUTYL-4-HYDROXYBENZOIC ACID OR ANHYDRIDE

Marshall E. Doyle, Alameda, Gunter S. Jaffe, Oakland, Edgar J. Smutny, San Francisco, and Paul H. Williams, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 13, 1961, Ser. No. 88,601
3 Claims. (Cl. 260—45.85)

1. The plastic composition comprising polypropylene containing a stabilizing amount of a compound selected from the group consisting of 3,5-di-tert-butyl-4-hydroxybenzoic acid and 3,5-di-tert-buty-4-hydroxybenzoic acid anhydride.

3,168,493

## LIGHT STABILIZED POLYPROPYLENE CONTAINING DI-p-PHENOXYBENZENE

Galvin M. Coppinger, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 18, 1962, Ser. No. 167,173
1 Claim. (Cl. 260—45.95)

Compositions comprising a solid homopolymer of propylene and from 0.05 to 5% by weight of the polymer of di-p-phenoxybenzene, the composition also containing traces of a metal selected from Group IV–A of the Periodic Table.

3,168,494

## FURFURAL CROSSLINKED FURFURYL ALCOHOL RESIN

Ignatius Metil, Buffalo, N.Y., assignor to American Pipe & Construction Co., Monterey Park, Calif., a corporation of Delaware

No Drawing. Filed Nov. 9, 1959, Ser. No. 851,530
3 Claims. (Cl. 260—67)

3. A composition capable of being cured to a hard, set, final resin in an acidic environment comprising (*a*) a component consisting of a condensation homopolymer of furfuryl alcohol of a viscosity of 30 to 200 poises and formed by polymerizing furfuryl alcohol in an acidic environment free of furfural and (*b*) furfural, the amount of (*b*) being 10% to 400% of the weight of (*a*).

3,168,495

## PRODUCTION OF POLYOXYMETHYLENES FROM TRIOXANE

Heinrich Hopff and Hermann Metzler, both of Zurich, Switzerland, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt, Germany

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,900
Claims priority, application Germany, Aug. 17, 1960, D 34,032
2 Claims. (Cl. 260—67)

1. A method of polymerizing trioxane which comprises heating trioxane in contact with 0.01 to 5% based upon the quantity of trioxane of an oranic compound active as a halogenating agent selected from the group consisting of phenyl iodide chloride, halogen succinimide, perchloromethyl mercaptan and sodium-p-toluene sulfonchloramide to temperatures between 50 and 150° C.

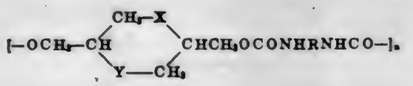
3,168,496

## TERTIARY NITROGEN CONTAINING COPOLYURETHANES FROM 1:4-BIS(HYDROXYMETHYL)-CYCLOHEXANE OR RELATED CYCLIC ETHER COMPOUNDS

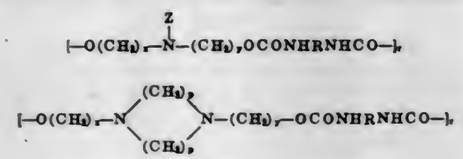
Roy McGillivray and Isaac Goodman, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 10, 1960, Ser. No. 61,387
Claims priority, application Great Britain, Oct. 26, 1959, 36,246/59
5 Claims. (Cl. 260—77.5)

1. Copolyurethanes consisting essentially of repeating units A of the formula



where X and Y are members of the group consisting of —O— and —$CH_2$—, R is a member of the group consisting of alkylene, arylene, cycloalkylene, and alkylarylene and *n* is a positive integer, and repeating units B of a formula selected from the group consisting of



where *p*, *q*, *r*, *x* and *y* are positive integers not including zero, *m* and *s* are integers and Z and X' are organic radicals.

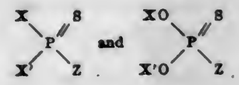
3,168,497

## CATALYST FOR POLYURETHANE PRODUCTION USING A TERTIARY AMINE AND A ZINC SALT OF A THIO ACID OF PHOSPHORUS

Harry James Twitchett, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 26, 1962, Ser. No. 175,813
Claims priority, application Great Britain, Mar. 6, 1961, 8,047/61
17 Claims. (Cl. 260—77.5)

1. Process for the manufacture of polyurethane materials by the interaction of organic polyisocyanates with hydroxyl group-containing polymers containing at least two isocyanate reactive groups per molecule in the presence of a catalyst combination comprising a tertiary amine and a zinc salt of a thio acid of phosphorus selected from the group consisting of thio acids of phosphorus of the formulae



wherein X and X' are selected from the group consisting of hydrocarbon radicals, hydrocarbon radicals interrupted by at least one oxygen atom, alkylene radicals in which X and X' are connected together and alkylene radicals in which X and X' are connected together and interrupted by at least one oxygen atom, and Z is a member of the group consisting of the hydroxyl and thiol.

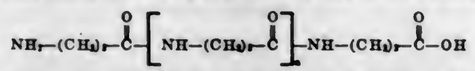
3,168,498

## AMINO ALCOHOL MODIFIED POLYAMIDES

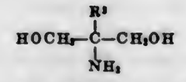
Wallace F. Runge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed June 10, 1960, Ser. No. 35,110
11 Claims. (Cl. 260—78)

9. As new compositions of matter water-insoluble, solid modified nylon polymers obtained by a process which comprises interacting polycaprolactam polymer of the formula



wherein *n* is an integer ranging from about 10 to 1,000 with an amino alcohol having the following general formula:



wherein $R^3$ is a member selected from the group consisting of hydroxyalkyl, alkyl and hydrogen in molar ratios of the polyamide to the amino alcohol of from about 200 to 1 to about 10 to 1 and at temperatures above 170° C. but below temperatures causing any substantial decomposition of the polymeric product and the reactants.

3,168,499

## PROCESS FOR ISOLATING CHLORINATED OR SULFOCHLORINATED POLYOLEFINS

Ludwig Orthner and Franz Landauer, Frankfurt am Main, Martin Reüter, Kronberg, Taunus, and Horst Herzberg, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 5, 1959, Ser. No. 811,005
Claims priority, application Germany May 10, 1958
10 Claims. (Cl. 260—79.3)

1. A process for the isolation of a member selected from the group consisting of chlorinated and sulfochlorinated polyolefins from solutions in the form of discrete particles, said polyolefins having a rubber to leather-like consistency at normal temperatures, which process comprises introducing a solution of a member selected from the group consisting of chlorinated and sulfochlorinated polyolefins in halogenated aliphatic hydrocarbons into water having a temperature within the range of 40° to 100° C. in the presence of water insoluble inorganic compounds of metals and semi-conductor metals selected from the group consisting of an oxide, hydroxide, carbonate, sulfate and a silicate of a metal selected from the group consisting of magnesium, barium, aluminum, titanium, lead and antimony, said compounds having a large surface, being at most faintly colored, solid and capable of swelling in water, and organic surface-active compounds free of potential salt-forming carboxyl groups selected from the group consisting of anionic, cationic and nonionic surfactants, while continuously distilling off the solvent and precipitating the polyolefin as discrete stable particles from the zone of precipitation.

3,168,500

## GELATION OF POLYACRYLAMIDE

Tzeng J. Suen, New Canaan, and Donald F. Rossler, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,406
5 Claims. (Cl. 260—80.3)

1. A process which comprises heating an aqueous solution of a water-soluble polymer of acrylamide which is substantially free from monomeric material with a water-soluble, free radical catalyst at a temperature of from about 45° C. to about 100° C. until said polymer is converted into a water-insoluble gel.

5. A cross-linked, water-insoluble homopolymer of acrylamide.



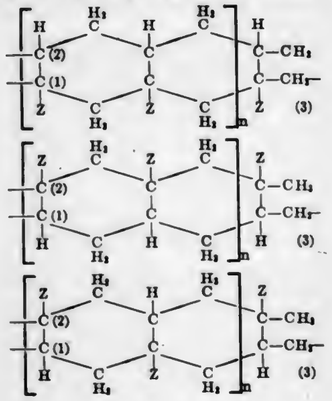
3,168,501

## CYCLIZED ALPHA OLEFIN COPOLYMERS AND PROCESS

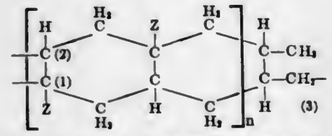
Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 27, 1959, Ser. No. 789,274
9 Claims. (Cl. 260—85.3)

1. Highly crystalline polymers consisting essentially of the recurring group A and recurring groups selected from the class consisting of groups D, E, F and G where A is a group of the formula —CHR—$CH_2$— wherein R is a radical selected from the group consisting of hydrogen and straight chain alkyl groups of 1 to 8 carbon atoms, and D, E, F and G are groups of the formula



and



respectively, wherein Z is a radical selected from the group consisting of methyl, ethyl, propyl, chlorine, fluorine, acetoxy, chloroacetoxy, butyroxy and cyano radicals, groups A constituting from 99% to 75% by weight of the total number of recurring groups, and groups from the class consisting of groups D, E, F and G constituting from 1% to 25% by weight of the recurring groups wherein *n* is an integer and the unsatisfied valence at position (3) is satisfied by attachment to a recurring group A, the unsatisfied valences at positions (1) and (2) are satisfied by attachment of a recurring group A and attachment of a hydrogen atom or by formation of a terminating double bond between the positions (1) and (2), said polymers having an inherent viscosity above 0.3 as measured at 0.1% solids at 150° C. in alpha-chloronaphthalene.

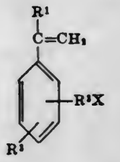
3,168,502

## POLYMER COMPOSED OF PHOSPHONIUM SALTS

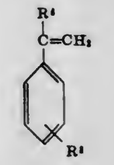
David R. Sexsmith, Stamford, Conn., and Everett J. Frazza, Yorktown Heights, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 9, 1961, Ser. No. 94,424
6 Claims. (Cl. 260—88.1)

1. A water-soluble linear chain cationic resinous composition comprising the quaternary phosphonium salt of a random copolymer of (*a*) from about 1 to about 25 mole percent of a compound of the general formula



wherein $R^1$ and $R^2$ are substituents selected from the group consisting of hydrogen, halogen, methyl and ethyl radicals, $R^3$ is a substituent selected from the group consisting of methylene and ethylene radicals, and X is a halogen atom, and (*b*) from about 75 to about 99 mole percent of a compound of the general formula

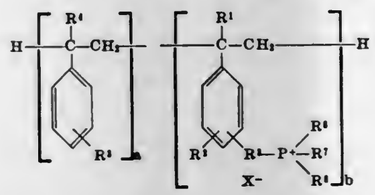


wherein $R^4$ is a substituent selected from the group consisting of hydrogen and methyl radicals and $R^5$ is a substituent selected from the group consisting of hydrogen, methyl, ethyl, propyl and halogen radicals with a phosphine selected from the group consisting of compounds of the formula



wherein $R^6$, $R^7$ and $R^8$ are substituents selected from the group consisting of alkyl radicals of 1–6 carbon atoms, cyanoethyl radicals, aryl radicals, alkaryl radicals and aralkyl radicals, said phosphine being attached to the copolymer on the $R^3$ substituent, said copolymer having a molecular weight of at least about 10,000.

4. A water-soluble copolymeric composition comprising only randomly recurring units of the formula



wherein $R^1$ and $R^2$ are substituents selected from the group consisting of hydrogen, halogen, methyl and ethyl radicals, $R^3$ is a substituent selected from the group consisting of methylene and ethylene radicals, $R^4$ is a substituent selected from the group consisting of hydrogen, and methyl radicals, $R^5$ is a substituent selected from the group consisting of hydrogen, methyl, ethyl, propyl and halogen radicals, $R^6$, $R^7$ and $R^8$ are substituents selected from the group consisting of alkyl radicals of 1–6 carbon atoms, cyanoethyl radicals, aryl radicals, alkaryl radicals, and aralkyl radicals, and X is a halogen atom, and the mole ratio of *a* to *b* is from about 99:1 to about 75:25, respectively, said composition having a molecular weight of at least about 10,000.

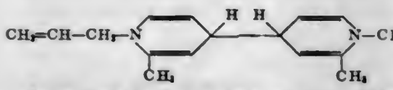
3,168,503

## NOVEL DIALKENYL HETEROCYCLIC AMINE COMPOUNDS AND THEIR POLYMERIZATION

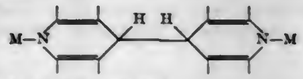
Walter E. Kramer, Niles, and Louis A. Joo, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Mar. 31, 1961, Ser. No. 99,721
16 Claims. (Cl. 260—88.3)

7.



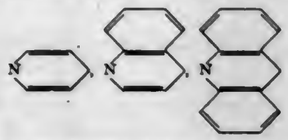
8. A method of preparing diamines which comprises reacting a $C_3$–$C_{20}$ alkenyl monohalide with a compound of the formula:



where M is an alkali metal and



represents a radical selected from the group consisting of



and lower alkyl-substituted derivatives thereof, at a temperature in the range from about 0° C. to the reflux temperature of the alkenyl halide.

3,168,504

## PROCESS FOR POLYMERIZATION OF OLEFINS

Leon B. Gordon and Truman P. Moore, Jr., Tulsa, Okla., assignors, by mesne assignments, to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 27, 1958, Ser. No. 724,262
2 Claims. (Cl. 260—93.7)

1. In a process for the polymerization of olefin hydrocarbons, the improvement which comprises contacting a feed comprising predominantly an olefinic hydrocarbon having from 2 to 3 carbon atoms per molecule under polymerization conditions with a catalyst consisting essentially of vanadium pentoxide, a silicon tetrahalide and a trialkyl aluminum compound, the amount of said catalyst being in the range of about 0.01 to about 10 weight percent based on the olefins in said feed.

3,168,505

## PROCESS FOR WORKING UP POLYOLEFINS

Herbert Kreuter, Eschborn, Taunus, Claus Heuck, Hofheim, Taunus, Siegfried Sommer, Frankfurt am Main, and Siegfried Wagener, Sulzbach, Taunus, Germany, assignors, by mesne assignments, to Hercules Powder Company Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 15, 1960, Ser. No. 15,048
Claims priority, application Germany, Mar. 25, 1959, F 28,030
6 Claims. (Cl. 260—93.7)

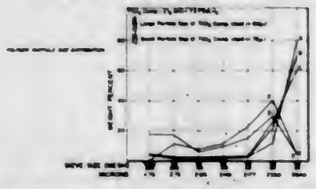
1. In a process for purifying polyolefins obtained by the polymerization of an olefin of 2–12 carbon atoms in a hydrocarbon dispersant employing as the catalyst a compound of a metal of Groups IVB–VIB of the Periodic Table and an organic compound of a metal selected from the group consisting of alkali metals, alkaline earth metals, zinc, and earth metals, the improvement comprising (1) adding to the polymerization reaction mixture containing the polyolefin an aliphatic alcohol selected from the group consisting of isopropanol and butanol, (2) removing the major quantity of the dispersant by filtration, (3) suspending the separated polymer in desalted water containing 0.05–1 weight percent of an inorganic alkali metal phosphate, selected from the group consisting of sodium pyrophosphate and disodium hydrogen phosphate, (4) introducing steam into the resulting aqueous polymer suspension until the dispersant ceases to distill over and (5) separating polymer from the resulting slurry, thereby recovering a polymer containing a small amount of alkali metal phosphate adhering to the surface thereof.

3,168,506

## PROCESS FOR POLYMERIZING PROPYLENE WHEREIN THE TITANIUM HALIDE PARTICLE SIZE IS AT LEAST 150 MICRONS

Donald F. Hoeg, Rockville, and Abner Bartlett Stryker, Jr., West Severna Park, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed July 6, 1961, Ser. No. 122,233
6 Claims. (Cl. 260—93.7)



1. In the process which comprises polymerizing liquid propylene to a normally solid polymer in a polymerization zone at a temperature in the range 20 to 90° C., and a pressure in the range 150 to 690 p.s.i.a., in the presence of a catalyst consisting essentially of a $TiCl_3$ composition and diethyl aluminum chloride, said $TiCl_3$ composition having the formula $3TiCl_3.AlCl_3$, the improvement in which the said $TiCl_3$ composition has a particle size of at least about 150 microns with exclusion of particles of a size less than 150 microns, whereby large discrete platelets of polymer are produced and fouling in said zone is substantially eliminated.

3,168,507

## PROCESS FOR POLYMERIZATION OF BUTADIENE IN AQUEOUS MEDIA

Thomas M. Shryne, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 6, 1962, Ser. No. 214,813
6 Claims. (Cl. 260—94.3)

1. In the emulsion polymerization of butadiene, wherein the polymerization system comprises a polymerization catalyzing amount of a rhodium catalyst of the group consisting of hydrated mineral acid salts of rhodium and complexes of $Rh^+$ (I) with diolefin hydrocarbons, nitric oxide and carbon monoxide, an anionic emulsifying agent and water, the improvement comprising polymerizing butadiene in said system in the presence of formic acid at a pH of 1.5–4.5 and at a temperature of 0–150° C., said acid being present in an amount between about 0.01 and about 10 mols per mol of rhodium catalyst.

3,168,508

## PROCESS FOR POLYMERIZATION OF BUTADIENE IN AQUEOUS MEDIA

Alfred J. Canale, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 21, 1962, Ser. No. 218,430
6 Claims. (Cl. 260—94.3)

1. The process for the polymerization of butadiene in an aqueous medium which comprises conducting the polymerization in the presence of a catalyst of the group consisting of ruthenium salts of mineral acids and their complexes with compound of the group consisting of cyclic diene hydrocarbons, trihydrocarbyl phosphines, trihydrocarbyl arsines, and trihydrocarbyl stibines, the complexes containing a mol ratio of salt to complexing compound between about 1:1 and 1:10, the polymerization being conducted in the further presence of 0.01–10 mol of hypophosphorous acid per mol of salt at a temperature of 0–150° C.

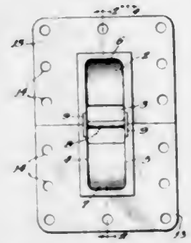


3,168,509

## METHOD OF CONTROLLING ORIENTATION OF EXTRUDED GRAPHITE CRYSTALLITES

Leslie H. Juel, Lewiston, N.Y., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 9, 1961, Ser. No. 88,067
5 Claims. (Cl. 264—108)



3. A process for producing a green, rectangular cross-sectioned carbonaceous bar having lamellae disposed in a plurality of superimposed planes a high percentage of which planes are substantially mutually parallel which comprises extruding a mixture of binder and carbonaceous particles in substantially platelet form through an extrusion die having a substantially rectangular inlet and a substantially rectangular outlet, the breadth of the inlet being substantially the same as the breadth of the outlet and the height of the inlet being from about 2 to about 5 times greater than the height of the outlet, said die having two substantially parallel walls and two converging walls which are adapted to compress the mixture as it passes therebetween from the inlet to the outlet.

3,168,510

## FATTY AMINE DERIVATIVES OF PROTEINS

John J. Krajewski, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Feb. 2, 1961, Ser. No. 86,576
7 Claims. (Cl. 260—117)

1. A water-soluble; high viscosity amine salt of a protein, said protein selected from the group consisting of gelatin and animal glue; and said amine having the structure



wherein R is an alkyl radical of about 6 to 20 carbon atoms, and R′ and R″ are selected from a group consisting of hydrogen and alkyl radicals having not more than about 4 carbon atoms.

5. As a composition of matter, an amide of an aliphatic monoamine and a protein, said monoamine having the structure



wherein R is an alkyl radical of about 6 to 20 carbon atoms, and R′ is selected from the group consisting of hydrogen and alkyl radicals having not more than about 4 carbon atoms, said protein being selected from the group consisting of gelatin and animal glue.

3,168,511

## SULFONATED LIGNIN-CONTAINING PROCESS AND PRODUCT

Ellis Gray King and Carl Adolphson, Bellingham, Wash., assignors, by mesne assignments, to Georgia-Pacific Corporation, Bellingham, Wash., a corporation of Georgia

No Drawing. Filed Mar. 31, 1960, Ser. No. 18,818
35 Claims. (Cl. 260—124)

1. A process for producing water soluble products from sulfonated lignin-containing material comprising the steps of heating a sulfonated lignin-containing material in an aqueous solution under alkaline conditions to thereby form an alkaline treated, water soluble sulfonated lignin-containing product and forming a salt of said sulfonated lignin-containing material, said salt containing a metal ion selected from the group consisting of iron, chromium, copper, aluminum and mixtures thereof.

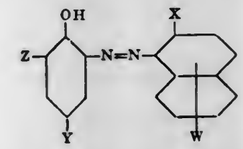
3,168,512

## CHROMIFEROUS AZO DYESTUFFS CONTAINING AN 8-HYDROXYQUINOLINE RADICAL

Arthur Buehler, Rheinfelden, Switzerland, and Gerhard Back, Loerrach, Germany, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

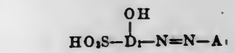
No Drawing. Filed Apr. 10, 1961, Ser. No. 101,667
Claims priority, application Switzerland, Apr. 11, 1960, 4,078/60; Mar. 16, 1961, 3,179/61
8 Claims. (Cl. 260—146)

1. A complex chromium compound containing one atom of chromium in complex union with substantially one molecule of a member selected from the group consisting of 8-hydroxyquinoline and 8-hydroxyquinoline-7-sulfonic acid and with substantially one molecule of the monoazo dyestuff sulfonic acid corresponding to the formula



in which Z is a member selected from the group consisting of hydrogen, chlorine, nitro and sulfonic acid, Y is a member selected from the group consisting of chlorine and nitro, X is a member selected from the group consisting of hydroxyl and primary amino and W is a member selected from the group consisting of hydrogen and sulfonic acid.

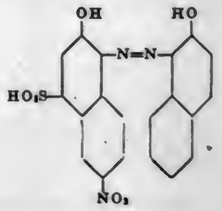
2. A complex chromium compound containing one atom of chromium in complex union with substantially one molecule of the 8-hydroxyquinoline and with substantially one molecule of the monoazo dyestuff of the formula



in which $D_1$ represents the radical of naphthalene bound to the azo linkage in vicinal position to the hydroxyl group and $A_1$ is the radical of pyrazolone bound to the azo linkage in 4-position.

3. The complex chromium compound containing one atom of chromium bound in complex union with substantially one molecule of 8-hydroxyquinoline and with

substantially one molecule of the monoazo dyestuff of the formula:

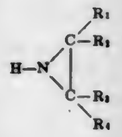


3,168,513
DERIVATIVE OF 2'-DEOXY-5-FLUOROURIDINE
Robert Duschinsky, Essex Fells, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 2, 1962, Ser. No. 176,892
4 Claims. (Cl. 260—211.5)

1. 5-fluoro-2'-deoxy-3',5'-di-O-acetyluridine.

3,168,514
PROCESS FOR THE PREPARATION OF AZIRIDINE PHOSPHORYLDIFLUORIDES
William C. Preusse, Naperville, Ill., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,615
3 Claims. (Cl. 260—239)

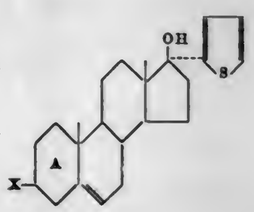
1. A process for preparing 1-aziridinyl phosphoryldifluorides which comprises reacting pyrophosphoryltetrafluoride with a compound having the formula



wherein $R_1$, $R_2$, $R_3$ and $R_4$ are selected from the class consisting of hydrogen, alkyl having 1–4 carbon atoms, and phenyl.

3,168,515
3-SUBSTITUTED-17α-THIENYL- AND -17α-THIAZOLYL-17β-HYDROXY-ANDROSTENES
Taichiro Komeno, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,913
Claims priority, application Japan, Apr. 26, 1962, 37/17,086
5 Claims. (Cl. 260—239.5)

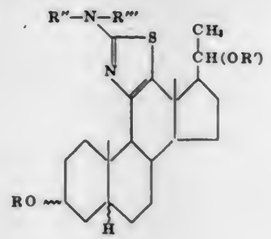
1. A compound of the formula



the substituent X being selected from the group consisting of 3,3-lower alkylenedioxy-, 3,3-di-(lower)alkoxy-, 3-lower alkoxy- and 3-lower alkanoyloxy-, the ring A including a double bond in the 3,4-position in the case of the 3-lower alkoxy- and 3-lower alkanoyloxy-substituents.

3,168,516
2'-DI(LOWER)ALKYLAMINOTHIAZOLO[4',5'-11,12]-PREGN-11-ENE-3,20-DIOL AND 3,20-DI(LOWER)-ALKANOATE THEREOF
Junichi Kawanami, Toyonaka-shi, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed May 27, 1963, Ser. No. 283,583
Claims priority, application Japan, June 4, 1962, 37/23,070
7 Claims. (Cl. 260—239.5)

1. A compound of the formula:



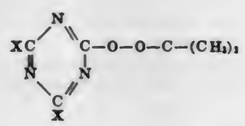
wherein R and R' each is a member selected from the group consisting of hydrogen and lower alkanoyl and R'' and R''' each is lower alkyl.

3,168,517
NOVEL 2-PHENYLAMINO-4,5-BENZO-6H-1,3-THIAZINE DERIVATIVES
Otto Behner, Cologne-Stammheim, Hans Henecka, Wuppertal-Elberfeld, Friedrich Hoffmeister, Wuppertal-Vohwinkel, Horst Kreiskott, Wuppertal-Elberfeld, Werner Meiser, Wuppertal-Vohwinkel, and Hans Werner Schubert and Wolfgang Wirth, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 5, 1963, Ser. No. 293,188
Claims priority, application Germany July 5, 1962
5 Claims. (Cl. 260—243)

1. A chemical compound selected from the group consisting of 2-(2,6-dimethylphenylamino)-4,5-benzo-6H-1,3-thiazine; 2 - (2 - methyl-5-chlorophenylamino)-6H-4,5-benzo-1,3-thiazine and their hydrochloride salts.

3,168,518
ALKYL PEROXY TRIAZINES
James B. Harrison, 205 Hamilton Ave., Elyria, Ohio, and Orville L. Magell, 81 Danbury Lane, Buffalo, N.Y.
No Drawing. Filed Jan. 23, 1964, Ser. No. 339,592
4 Claims. (Cl. 260—248)

1. The triazine

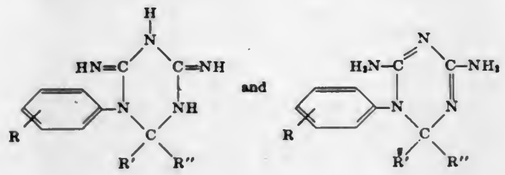


where X is a radical selected from the group consisting of chlorine and t-butylperoxy.



3,168,519
1-ALKYLPHENYL-2,2-DI LOWER ALKYL-4,6-DI-IMINO-HEXAHYDRO-s-TRIAZINES
Daniel Elmer Nagy, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut
No Drawing. Filed Oct. 17, 1961, Ser. No. 145,768
6 Claims. (Cl. 260—249.9)

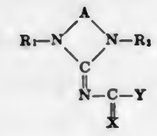
1. A compound selected from the group consisting of those of the formulae:



and acid addition salts thereof wherein R represents a substituent selected from the group consisting of a higher alkyl and an alkanoyl; R' represents a substituent selected from the group consisting of hydrogen and methyl and R'' represents a substituent selected from the group consisting of lower alkyl and hydroxyl lower alkyl.

3,168,520
2-IMINO-1,3-DISUBSTITUTED HEXAHYDRO-PYRIMIDINES AND IMIDAZOLIDINES
Alois Kleemann, Basel, and Jakob Bindler, Riehen, near Basel, Switzerland, assignors, by mesne assignments, to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware
No Drawing. Filed July 27, 1962, Ser. No. 213,045
Claims priority, application Switzerland, Aug. 5, 1960, 8,950/60; Sept. 9, 1960, 10,206/60; July 12, 1961, 8,182/61
9 Claims. (Cl. 260—256.4)

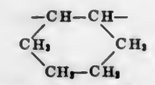
1. A compound of the formula



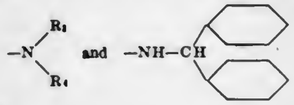
wherein A is a member selected from the group consisting of

$-CH_2-CH_2-$, $-CH_2-CH_2-CH_2-$, $-CH_2-CH(CH_3)-$

and



X is a member selected from the group consisting of O and S,
Y is a member selected from the group consisting of



and each of
$R_1$, $R_2$, $R_3$ and $R_4$ taken independently of each other is a member selected from the group consisting of hydrogen,
alkyl with maximally 12 carbon atoms,
cyclohexyl, lower alkyl-cyclohexyl, lower alkoxy-cyclohexyl, and

$$\text{Aryl-(—Z—)}_{n-1}\text{—}$$

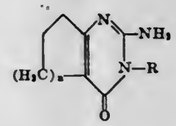
wherein Z is an alkylene radical with from 1 to 2 carbon atoms, *n* is an integer ranging from 1 to 2, and
Aryl is a member selected from the group consisting of unsubstituted, chlorine-substituted, alkyl-substituted and alkoxy-substituted phenyl and naphthyl, the last mentioned alkyl and alkoxy having maximally 12 carbon atoms,
$R_3$ and $R_4$ taken together is

$$-(CH_2)_m-$$

wherein m is an integer ranging from 4 to 5.

3,168,521
3-ALKYLATED-2-AMINO-5,6-POLYMETHYLENE-4(3H)-PYRIMIDINONES
Hans A. Wagner, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed June 3, 1963, Ser. No. 284,829
7 Claims. (Cl. 260—256.4)

1. A compound of the formula



wherein R represents a member of the group consisting of radicals of the formulas

—alkylene—OH —$CH_2C{\equiv}CH$

in which the alkylene radical called for contains more than 1 and fewer than 4 carbon atoms and *n* represents a positive integer less than 3.

3,168,522
N-ARYL-N'-ARALKYL-DIAZA CYCLOALKANES
George de Stevens, Woodland Park, Summit, and Robert Paul Mull, Florham Park, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,405
29 Claims. (Cl. 260—268)

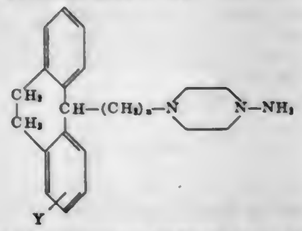
1. A member selected from the group consisting of an N-(x-lower alkoxy-x-monocyclic carbocyclic aryl-lower alkyl)-N'-monocyclic aryl-diaza-cycloalkane, in which lower alkoxy and monocyclic carbocyclic aryl substitute the same carbon atom and are separated from the nitrogen atom of the diaza-cycloalkane portion by two to four carbon atoms, and in which the diaza-cycloalkane portion has from six to eight ring members, and its two nitrogen atoms are separated from one another by from two to three carbon atoms of alkylene radicals having from two to seven carbon atoms, and in which monocyclic carbocyclic aryl is a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl and (trifluoromethyl)-phenyl, and monocyclic aryl is a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl and pyridyl, acid addition salts thereof, N-oxides thereof, acid addition salts of N-oxides thereof, and lower alkyl quaternary ammonium compounds thereof.

### 3,168,523
### 1-AMINO-4-DIBENZOCYCLOHEPTENYL-PIPERAZINES

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,951
3 Claims. (Cl. 260—268)

1. A compound of the formula



wherein *n* is a whole number between 0 and 1 inclusive and Y is selected from the group consisting of hydrogen, methyl, and chlorine.

### 3,168,524
### CATALYTIC DEHYDROGENATION OF ALKYL PYRIDINES

John E. Mahan, Stanley D. Turk, and Ralph P. Williams, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 14, 1959, Ser. No. 859,150
5 Claims. (Cl. 260—290)

1. A method of dehydrogenating an alkylpyridine which comprises charging to a dehydrogenation zone vapors of said alkylpyridine mixed with steam and a catalyst comprising a mixture of chromium oxide, iron oxide and a potassium compound, of which mixture 40 to 45 weight percent is chromium oxide, 3 to 7 weight percent is iron oxide and 50 to 55 weight percent is at least one potassium compound (calculated as $K_2CO_3$) selected from the group consisting of KOH, $K_2O$ and $K_2CO_3$, and passing said vapors in said zone into contact with said catalyst at a temperature within the range of 1000 to 1400° F.

### 3,168,525
### PROCESS FOR MAKING OXAZOLIDONES

Manuel M. Balzer, Dayton, Ohio, assignor to S. B. Penick and Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1960, Ser. No. 24,250
8 Claims. (Cl. 260—307)

1. A process for preparing a 5-substituted-methyl-2-oxazolidone having a hydrogen atom attached to the nitrogen atom of the oxazolidine ring, wherein the 5-substituent is selected from the group consisting of phenoxy, lower-alkylphenoxy, lower-alkoxyphenoxy, halophenoxy and naphthyloxy, which includes the steps: reacting with an acylating agent selected from the group consisting of lower-alkanoic acid chlorides and anhydrides, a 3-substituted-1-chloro-2-carbamyloxy-propane whose carbamyl nitrogen atom is unsubstituted, wherein the 3-substituent corresponds to the aforesaid 5-substituent, to produce the corresponding 3-substituted-1-chloro-2-(N-acylcarbamyloxy)-propane; and treating said acylcarbamyloxy-propane with an alkali metal hydroxide to yield the aforesaid 5-substituted-methyl-2-oxazolidone.

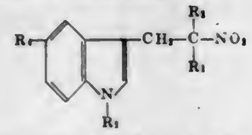
5. A process which comprises the step of converting an N - acyl - 1-halo-2-carbamyloxy-3-substituted propane wherein the nitrogen atom of the carbamyl group bears a hydrogen atom in addition to the acyl group and the 3-substituent is selected from the group consisting of phenoxy, lower-alkylphenoxy, lower-alkoxyphenoxy, halophenoxy and naphthyloxy, to a 5-substituted-methyl-2-oxazolidone wherein the 5-substituent corresponds to the aforesaid 3-substituent and the nitrogen atom of the oxazolidine ring bears a hydrogen atom by reaction with an alkali metal hydroxide.

### 3,168,526
### DERIVATIVES OF 3-(2-NITROETHYL)-INDOLE

Richard V. Heinzelman, Kalamazoo Township, Kalamazoo County, Jacob Szmuszkovicz, Portage Township, Kalamazoo County, and William C. Anthony, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 20, 1960, Ser. No. 23,359
4 Claims. (Cl. 260—319)

1. A compound of the formula:



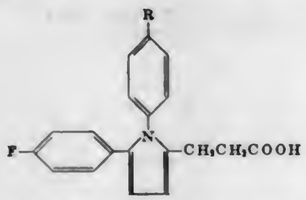
wherein $R_1$ represents alkyl of one to four carbon atoms, inclusive, $R_2$ and $R_3$ are selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, and $R_4$ is selected from the group consisting of alkoxy of up to 8 carbon atoms and benzyloxy of up to 15 carbon atoms and selected from the group consisting of benzyloxy, benzhydryloxy, alkylbenzyloxy, halobenzyloxy and alkoxybenzyloxy.

### 3,168,527
### 1-ARYL-5-(p-FLUOROPHENYL)-PYRROLE-2-PROPIONIC ACID COMPOUNDS

Franklin W. Short, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed June 14, 1962, Ser. No. 202,390
7 Claims. (Cl. 260—326.3)

1. A member of the class consisting of compounds of the formula



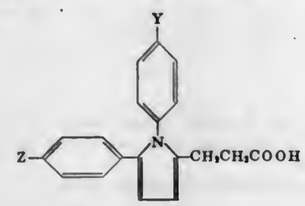
non-toxic salts of said compounds and lower alkyl esters of said compounds; where R is a member of the class consisting of lower alkyl, lower alkoxy and fluorine.

### 3,168,528
### 1-(p-NITROPHENYL) AND 1-(p-CYANOPHENYL)-5-ARYLPYRROLE - 2 - PROPIONIC ACID COMPOUNDS

Franklin W. Short, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed June 14, 1962, Ser. No. 202,392
8 Claims. (Cl. 260—326.3)

1. A member of the class consisting of compounds of the formula





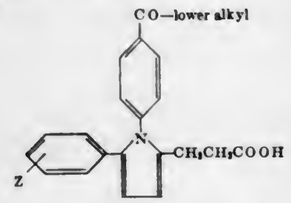
non-toxic salts of said compounds and lower alkyl esters of said compounds; where Y is a member of the class consisting of nitro and cyano and Z is a member of the class consisting of hydrogen and halogen.

### 3,168,529
### 1-(p-LOWER ALKANOYLPHENYL)-5-ARYLPYRROLE-2-PROPIONIC ACID COMPOUNDS

Franklin W. Short, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed June 14, 1962, Ser. No. 202,393
7 Claims. (Cl. 260—326.3)

1. A member of the class consisting of compounds of the formula



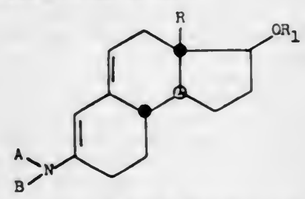
non-toxic salts of said compounds and lower alkyl esters of said compounds; where Z is a member of the class consisting of hydrogen, halogen, lower alkyl, lower alkoxy and lower alkylthio.

### 3,168,530
### PROCESS FOR THE PRODUCTION OF 4,5-SECO STEROIDS AND INTERMEDIATES

Gerard Nomine, Noisy-le-Sec, Julien Warnant, Neuilly-sur-Seine, Robert Bucourt, Clichy-sous-Bois, Michel Vignau, Neuilly-sur-Seine, Jean Jolly, Clichy-sous-Bois, and Andre Pierdet, Noisy-le-Sec, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,310
Claims priority, application France, Jan. 22, 1960, 816,402; May 18, 1960, 827,567; July 8, 1960, 832,449
13 Claims. (Cl. 260—326.3)

1. An enamine of the formula:



wherein R represents a radical selected from the group consisting of alkyl having from 1 to 18 carbon atoms, alkenyl having from 2 to 6 carbon atoms and phenylalkoxyalkyl having from 8 to 18 carbon atoms, $R_1$ represents a member selected from the group consisting of hydrogen and the acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms selected from the group consisting of alkanoic, alkenoic, cycloalkylalkanoic, hexahydroterephthalic, phenoxyacetic and phenylalkanoic acids, A and B are selected from the group consisting of alkyl having from 1 to 8 carbon atoms, alkenyl having from 3 to 8 carbon atoms, alkylol having from 2 to 8 carbon atoms and taken together with the nitrogen atom from a member selected from the group consisting of pyrrolidino, piperidino, α-pipecolino, β-pipecolino, γ-pipecolino and morpholino.

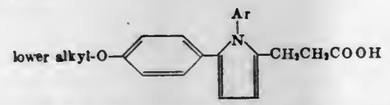
2. $\Delta^{1(9),7(8)}$ - 3 - methyl - 7 - pyrrolidino - 3,4 - [-benzoyloxy-cyclopentano-(2',1')]-hexahydronaphthalene.

### 3,168,531
### 1-ARYL-5-(p-LOWER ALKOXYPHENYL)-PYRROLE-2-PROPIONIC ACID COMPOUNDS

Franklin Willard Short, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed June 12, 1963, Ser. No. 287,211
6 Claims. (Cl. 260—326.3)

1. A member of the class consisting of compounds of the formula



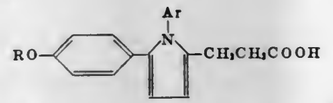
non-toxic salts of said compounds and lower alkyl esters of said compounds; where Ar is a member of the class consisting of o-tolyl, 3-chloro-o-tolyl, 6-chloro-o-tolyl, 2,6-xylyl, o-methoxyphenyl, p-fluorophenyl, 2,5-difluorophenyl, o-methylthiophenyl, 4-fluoro-m-tolyl, α-naphthyl, and o-fluorophenyl.

### 3,168,532
### 1,5-DIARYLPYRROLE-2-PROPIONIC ACID COMPOUNDS

Franklin Willard Short, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed June 12, 1963, Ser. No. 287,212
5 Claims. (Cl. 260—326.3)

1. A member of the class consisting of compounds of the formula



non-toxic salts of said compounds and lower alkyl esters of said compounds; where R is a member of the class consisting of hydrogen and hydrocarbon acyl radicals of fewer than 9 carbon atoms and Ar is a member of the class consisting α-naphthyl, o-methoxyphenyl, o-methylthiophenyl, and substituted phenyl radicals of the formula



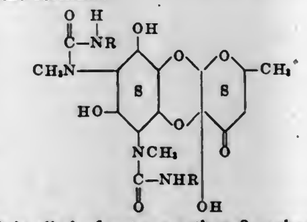
where X is selected from among methyl and halogen and Y is selected from the group consisting of hydrogen, methyl and halogen.

### 3,168,533
### CARBAMOYL DERIVATIVES OF ACTINOSPECTACIN

Paul F. Wiley, Texas Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,932
2 Claims. (Cl. 260—340.3)

1. N,N' - bis(alkylcarbamoyl)actinospectacin, a compound of the formula:



(I)

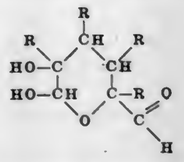
wherein R is alkyl of not more than 8 carbon atoms.

### 3,168,534
### HYDROXYLATION PRODUCTS OF DIHYDROPYRAN DERIVATIVES AND THEIR HYDROGENATION TO TETRAHYDROXY ALKANES

George B. Payne, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

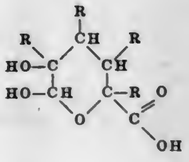
No Drawing. Filed Dec. 28, 1961, Ser. No. 162,923
15 Claims. (Cl. 260—345.7)

1. A polyhydroxycyclic ether-substituted aldehyde of the formula



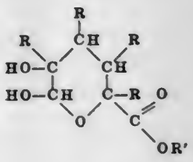
wherein each R represents a member of the group consisting of hydrogen and lower alkyl.

2. A polyhydroxycyclic ether-substituted formic acid of the formula



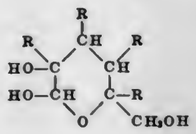
wherein each R represents a member of the group consisting of hydrogen and lower alkyl.

3. A polyhydroxycyclic ether-substituted formate of the formula



wherein each R represents a member of the group consisting of hydrogen and lower alkyl and R′ is a member of the group consisting of aliphatic saturated hydrocarbon of 1 to 18 carbon atoms and aliphatic mono-olefinic hydrocarbon of 1 to 18 carbon atoms.

4. A polyhydroxycyclic ether-substituted methanol of the formula



wherein each R represents a member of the group consisting of hydrogen and lower alkyl.

9. A process for producing a tetra-hydroxy substituted alkane which comprises hydroxylating 3,4-dihydro-1,2-pyran-2-carboxaldehyde having attached to the ring only said formyl group and members of the group consisting of hydrogen and lower alkyl groups by reaction with hydrogen peroxide and hydrogenating the hydroxylation product by reaction with hydrogen at about 30° to about 250° C. in the presence of a hydrogenation catalyst.

### 3,168,535
### PREPARATION OF CRYSTALLINE VITAMIN $D_3$ AND VITAMIN $D_3$ BENZOATE

Kekhusroo R. Bharucha, Toronto, Ontario, and Frank M. Martin, Rexdale, Ontario, Canada, assignors to Canada Packers Limited, Toronto, Ontario, Canada

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,972
19 Claims. (Cl. 260—397.2)

1. Vitamin $D_3$ benzoate in the form of a colorless crystalline solid characterized by melting within the range of 104–109° C., by a specific rotation $[\alpha]_D^{28}$ +104°±4° in chloroform, and the following light absorption properties in isooctane:

$\lambda_{max.}$ 222 mμ ($E^{1\%}_{1cm.}$ ca. 498), $\lambda_{max.}$ 227–228 mμ ($E^{1\%}_{1cm.}$ ca. 490), $\lambda_{max.}$ 266 mμ ($E^{1\%}_{1cm.}$ ca. 402)

2. A process for the production of crystalline vitamin $D_3$ benzoate comprising: esterifying vitamin $D_3$ material in organic solvent medium with a reagent providing a benzoyl group to provide a reaction mixture containing vitamin $D_3$ benzoate, separating vitamin $D_3$ benzoate from the reaction mixture by crystallization from a solvent, purifying the separated vitamin $D_3$ benzoate by chromatography and crystallizing the purified vitamin $D_3$ benzoate from a solvent.

### 3,168,536
### 6,16α-DIMETHYL STEROIDS

David Neville Kirk, Vladimir Petrow, and David Morton Williamson, all of London, England, assignors to The British Drug Houses Limited, London, England, a British company

No Drawing. Filed Mar. 3, 1959, Ser. No. 796,762
Claims priority, application Great Britain, Mar. 7, 1958, 7,451/58
2 Claims. (Cl. 260—397.3)

1. 6:16α-dimethylpregnenolone.
2. 6α:16α-dimethylprogesterone.

### 3,168,537
### PROCESS FOR THE MANUFACTURE OF 16-ALKYLIDENE - 17α - ALKANOYLOXYPROGESTERONES

Eugene P. Oliveto, Glen Ridge, and Elliot L. Shapiro, Cedar Grove, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 30, 1962, Ser. No. 220,572
5 Claims. (Cl. 260—397.4)

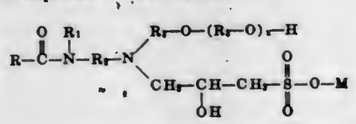
1. In the process of preparing a 16-alkylidene-17α-lower alkanoyloxypregnane, the step which comprises reacting a 16-alkyl-16,17-oxidopregnane with an acid-acid anhydride mixture of the group consisting of an anhydride of a lower alkanoic acid having up to 8 carbon atoms with a strong organic acid and a lower alkanoic acid having up to 8 carbon atoms with an anhydride of a strong organic acid wherein the $pK_A$ of said strong acid is at most equal to the $pK_A$ of said lower alkanoic acid.

### 3,168,538
### AMIDE SULFONATE SURFACE ACTIVE AGENTS

Hans S. Mannheimer, 23 Haines Cove Drive, Toms River, N.J.

No Drawing. Filed June 30, 1961, Ser. No. 120,949
4 Claims. (Cl. 260—401)

1. A compound of the formula:



wherein R is a hydrocarbon radical of 4–18 carbon atoms; $R_1$ is selected from the group consisting of hydrogen, alkyl radicals of 1–6 carbon atoms, hydroxy alkyl radicals of 2–6 carbon atoms and alkylene oxide adducts of said hydroxy alkyl radicals; $R_2$ is selected from the class consisting of alkylene and hydroxy alkyene groups of 2–6 carbon atoms and alkylene oxide adducts of said hydroxy alkylene groups; said adducts containing 1–15 moles of alkylene oxide of 2–4 carbon atoms per hydroxy group; $R_3$ is an alkylene group of 2–4 carbon atoms; $x$ is 1–15 and M is selected from the class consisting of hydrogen and alkali metals.



### 3,168,539
### PROCESS FOR PREPARING SILICEOUS AMINO COMPOUNDS

Frederick J. Ihde, Jr., Mountain Lakes, and Francis J. Licata, West Caldwell, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1961, Ser. No. 86,323
12 Claims. (Cl. 260—404)

1. In a process for preparing a siliceous amino compound by reacting (1) a material selected from the class consisting of water dispersible partial amide salts, water soluble partial amide salts, water dispersible amine acid addition salts, water soluble amine acid addition salts, imidazoline salts, oxazoline salts, water dispersible quaternary ammonium salts, and water soluble quaternary ammonium salts with at least a stoichiometric amount of (2) at least one water soluble silicate salt selected from the class consisting of sodium silicates, potassium silicates, and ammonium silicates, the step comprising the addition of at least one silicate derivative selected from the class consisting of fluosilicic acid and water soluble fluosilicate salts, said silicate derivative being present at the time of formation of the siliceous amino compound.

12. A process according to claim 1, wherein said partial amide salt is a salt of the monoamide of hydrogenated tallow fatty acids and aminoethylethanolamine.

### 3,168,540
### PROCESS FOR PREPARATION OF WATER-INSOLUBLE METAL SOAPS

Karl Culemeyer, Pinneberg, Germany, assignor to Th. Goldschmidt Aktiengesellschaft, Essen, Germany, a corporation of Germany

No Drawing. Filed Aug. 27, 1962, Ser. No. 219,724
Claims priority, application Germany Sept. 1, 1961
4 Claims. (Cl. 260—414)

1. A process for the preparation of a metal soap which comprises passing an ammonia water-emulsified, molten fatty acid into an aqueous suspension of a metal carbonate containing ammonia, the metal of which is selected from the group consisting of aluminum, lead, and zinc, and separating the metal soap from the reaction mixture.

### 3,168,541
### FERROUS GLUTAMATE

Millice Floyd Hobbs, Monte Sereno, Calif., assignor to International Minerals & Chemical Corporation, a corporation of New York

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,737
6 Claims. (Cl. 260—439)

1. The method of the production of ferrous monoglutamate which comprises reacting in aqueous solution a ferrous salt with a glutamic acid material selected from the group consisting of glutamic acid and glutamic acid salts at a pH below about 7.0 to form ferrous monoglutamate, increasing the concentration of ferrous monoglutamate in said aqueous solution at an elevated temperature, cooling said aqueous solution to a temperature below the crystallization temperature of said ferrous monoglutamate in said aqueous solution to precipitate crystals of ferrous monoglutamate from said solution and recovering ferrous monoglutamate crystals therefrom.

### 3,168,542
### PROCESS FOR SEPARATING MIXTURES OF CHLOROSILANES

Lloyd H. Shaffer, Snyder, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 15, 1957, Ser. No. 659,204
23 Claims. (Cl. 260—448.2)

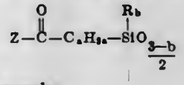
1. A process for separating a chlorosilane mixture containing a first chlorosilane part and a second chlorosilane part, the first chlorosilane part being more readily hydrolyzable than the second chlorosilane part, said process comprising bringing said chlorosilane mixture into intimate reactive contact with not less than 0.5 mole of water per mole of the first chlorosilane part, reacting said chlorosilane mixture and water for a period of time less than that required to completely hydrolyze all chlorosilanes in said mixture thereby forming a hydrolyzed chlorosilane part and an unhydrolyzed chlorosilane part, and separating the unhydrolyzed and hydrolyzed chlorosilane parts.

### 3,168,543
### ORGANOSILOXANE-POLYOXYALKYLENE ETHER COPOLYMERS

William T. Black, White Plains, Donald L. Bailey, Snyder, and Victor B. Jex, Clarence, N.Y., assignors to Union Carbide Corporation, a corporation of New York

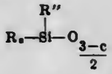
No Drawing. Filed Oct. 10, 1960, Ser. No. 61,356
13 Claims. (Cl. 260—448.2)

1. A copolymer of (A) a copolymeric organosiloxane, said organosiloxane comprising both units of the formula:



(I)

and units of the formula:

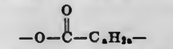


(II)

wherein R is a member of the class consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, R″ is a member of the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, carboxyalkyl radicals and carboalkoxyalkyl radicals, Z is a member of the class consisting of hydroxyl groups, halogen and alkoxy groups, ($a$) is an integer of from 2 to 10, ($b$) is an integer of from 0 to 2 and ($c$) is an integer of from 0 to 2, said copolymeric organosiloxane containing at least 0.1 mol percent of units represented by Formula I above and up to 99.9 mol percent of units represented by Formula II above, and (B) a polyoxyalkylene ether of the formula:

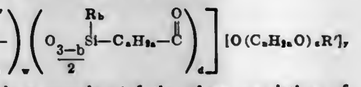
$$HO(C_nH_{2n}O)_xR'$$

wherein R′ is a member of the class consisting of hydrogen, alkyl, aryl and alkoxyaryl groups, ($n$) is an integer of from 2 to 8 and ($x$) is an integer of at least 5, wherein a carbon atom of said polyoxyalkylene ether is interconnected to a silicon atom of said organosiloxane through an ester linkage having the formula



13. An organosiloxane-polyoxyalkylene ether copolymer selected from the class consisting of:

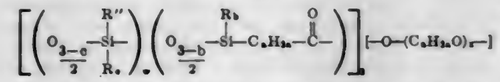
(A) copolymers having the formula:



wherein R is a member of the class consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, R′ is a member

of the class consisting of hydrogen alkyl groups, aryl groups and alkoxy alkyl groups, R'' is a member of the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, carboxyalkyl radicals, and carboalkoxyalkyl radicals, (*a*) is an integer of from 2 to 10, *b* is an integer of from 0 to 2, (*c*) is an integer of from 0 to 2, (*n*) is an integer of from 2 to 8, (*x*) is an integer of at least 5, *d* is an integer of at least 1, *w* is an integer, the sum of (*d*+*w*) being at least 2, and *y* is an integer having a value equal to (*d*) and

(B) copolymers of the formula:



wherein R, R'', (*a*), (*b*), (*c*), (*n*), (*w*) and (*x*) are as above-defined.

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**3,168,544**

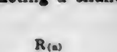
## PREPARATION OF CYANOALKYLSILANES

**Victor B. Jex, Clarence, N.Y., assignor to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Aug. 23, 1961, Ser. No. 133,317**

**3 Claims. (Cl. 260—448.2)**

1. A process for reacting a silane, represented by the formula:



where R represents a member of the group consisting of hydrogen and a hydrocarbyl group, X represents a hydrolyzable group from the class consisting of halogen and hydrocarbyloxy groups and *n* represents a whole number having a value of from 0 to 2, with an acyclic aliphatic mono-olefinic nitrile composed of carbon, hydrogen and nitrilo nitrogen having an aliphatic unsaturated grouping



which is at least one carbon atom removed from the cyano group thereof to produce a cyanoalkylsilane by the addition of a silyl group to the olefinic carbon atom of said mono-olefinic nitrile further removed from the cyano group thereof and by the addition of a hydrogen atom to the olefinic carbon atom of said mono-olefinic nitrile closer to the cyano group thereof which comprises forming a mixture of said silane, said mono-olefinic nitrile, and a platinum metal, heating said mixture to a temperature sufficiently elevated to cause said silane and nitrile to react to produce a cyanoalkylsilane by the addition of a silyl group to the olefinic carbon atom further removed from the cyano group of the starting nitrile and by the addition of a hydrogen atom to the olefinic carbon atom closer to the cyano group of the starting nitrile.

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**3,168,545**

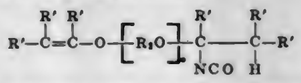
## SUBSTITUTED 1-ISOCYANATO-ETHOXY COMPOUNDS

**James L. Harper, Laurel, Md., assignor to W. R. Grace & Co., a corporation of Connecticut**

**No Drawing. Filed Sept. 27, 1962, Ser. No. 228,780**

**2 Claims. (Cl. 260—453)**

1. A compound of the formula



wherein R' is selected from the group consisting of hydrogen and alkyl having from about 1 to about 20 carbon atoms; *o* has a value of from about 1 to 100; and $R_3$ is selected from the group consisting of alkylene having from about 1 to about 20 carbon atoms and phenylene.

**3,168,546**

## ORGANIC AMMONIUM SULFITE ESTER COMPOUNDS AND METHOD OF PREPARATION

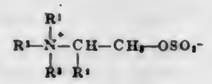
**Albert Ballauf, Cologne-Stammheim, Werner Blank, Dormagen, Dietrich Glablech, Leverkusen, and Martin Wandel, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed Dec. 29, 1960, Ser. No. 79,139**

**Claims priority, application Germany, Jan. 7, 1960, F 30,242, F 30,243; Apr. 29, 1960, F 31,120; Sept. 1, 1960, F 32,017**

**5 Claims. (Cl. 260—456)**

1. An organic ammonium compound having the formula



in which

$R^1$ is a member of the group consisting of alkyl members containing up to 18 carbon atoms, hydroxyalkyl members containing up to 18 carbon atoms, and members having the formula $H(OCH_2CH_2)_n$— in which *n* is an integer from 1 to 7, cyclohexyl, and benzyl,

$R^2$ and $R^3$ are each a member of the group consisting of hydrogen and the foregoing members represented by $R^1$,

$R^4$ is a member of the group consisting of hydrogen, methyl, hydroxymethyl, and phenyl, and compounds having the foregoing formula in which

the members $R^1$, $R^2$ and $R^3$ together with the nitrogen atom are a member of the group consisting of piperidino, piperazino, and morpholino.

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**3,168,547**

## METHOD OF SULFATING ALCOHOLS

**Albin F. Turbak, New Providence, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**

**No Drawing. Filed Apr. 1, 1959, Ser. No. 803,354**

**3 Claims. (Cl. 260—459)**

1. The method which comprises reacting an organic compound selected from the group consisting of alcohols and phenols containing from 1 to 35 carbon atoms per molecule with a composition of matter consisting essentially of a combination of sulfur trioxide derived from a member of the group consisting of sulfur trioxide, chlorosulfonic acid and oleum with a trialkyl phosphate wherein each alkyl group contains 1 to 18 carbon atoms, said composition constituting a sulfur trioxide-trialkyl phosphate complex containing from one to three moles of sulfur trioxide per mole of trialkyl phosphate, at temperatures of from −20 to 100° C. to form the sulfuric ester of the said organic compound without appreciable charring thereof and recovering the sulfuric ester product from the reaction mixture.

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**3,168,548**

## PROCESS FOR PREPARATION OF 1-HYDROXYMETHYL - 4 - PHOSPHA-3,5,8-TRIOXABICYCLO-[2.2.2]OCTANE-4-SULFIDE

**Rudi F. W. Rätz, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia**

**No Drawing. Filed June 26, 1962, Ser. No. 205,205**

**3 Claims. (Cl. 260—461)**

1. A process for the preparation of 1-hydroxymethyl-4-phospha-3,5,8-trioxabicyclo[2.2.2]octane - 4 - sulfide which comprises reacting pentaerythritol with thiophosphoryl chloride at a temperature in the range of 100° to 200° C.



**3,168,549**

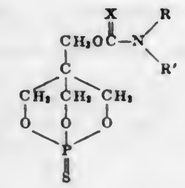
## BICYCLIC PHOSPHORUS-CONTAINING CARBAMATES

**Rudi F. W. Rätz, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia**

**No Drawing. Filed Nov. 23, 1962, Ser. No. 239,824**

**12 Claims. (Cl. 260—461)**

1. An organic phosphorus compound having the structural formula:



wherein

X is selected from the class consisting of oxygen and sulfur, and

wherein R is selected from the class consisting of hydrogen, alkyl having 1–18 carbon atoms, phenyl, tolyl, and cyclohexyl, and

wherein R' is selected from the class consisting of hydro, alkyl having 1–18 carbon atoms, cyclohexyl, phenyl, tolyl, naphthyl, nitrated phenyl, halogenated phenyl, phenyl having a lower alkoxy substituent, phenylsulfonyl, tolylsulfonyl and lower alkylsulfonyl.

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**3,168,550**

## ALIPHATIC AND ALICYCLIC NITRILES

**Jack H. Blumenthal, Oakhurst, N.J., assignor to International Flavors & Fragrances Inc., New York, N.Y., a corporation of New York**

**Filed May 26, 1961, Ser. No. 112,916**

**7 Claims. (Cl. 260—464)**

1. A composition of matter selected from the group consisting of (*a*) 5,9-dimethyl-4,8-decadienyl nitrile monosubstituted in the 2 position by a methyl; (*b*) 5,9-dimethyl-4,8-decadienyl nitrile disubstituted in the 2 position by methyl groups; (*c*) a mixture of alpha, beta and gamma cyclogeranyl acetonitrile; and (*d*) a mixture of alpha and gamma cyclogeranyl isobutyronitrile.

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**3,168,551**

## 1-ACYL-2-TRICYANOVINYLARYLHYDRAZINES AND PRODUCTION THEREOF

**John Richard Roland, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Feb. 9, 1962, Ser. No. 172,109**

**9 Claims. (Cl. 260—465)**

1. 1-acyl-2-tricyanovinylarylhydrazines having the formula

(Acyl)-NH—NH-(arylene)-C(CN)=C(CN)$_2$

wherein the tricyanovinyl group is in the 4-position relative to the hydrazino group in the 1-position of a benzene ring, acyl is an organic radical of no more than 18 carbon atoms and is derived from an acid of the group consisting of carboxylic acids and organic sulfonic acids by removal of the acid hydroxyl group therefrom, and arylene is a radical of not more than 14 carbon atoms and of not more than 3 fused benzene rings having not more than 2 substituents and those selected from the group consisting of chlorine, bromine, lower alkyl, aryl and lower alkoxy.

**3,168,552**

## 3-(2-ISOPENTENYL) - 4 - HYDROXY BENZOIC ACID AND DERIVATIVES AND PREPARATION THEREOF

**Herman Hoeksema, Kalamazoo Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan**

**No Drawing. Filed Dec. 5, 1955, Ser. No. 550,817**

**9 Claims. (Cl. 260—473)**

1. A compound selected from the group consisting of 3-(γ,γ-dimethylallyl)-4-hydroxybenzoic acid and 3-(γ,γ-dimethylallyl)-4-acetoxybenzoic acid.

4. Ethyl 3-(γ,γ-dimethylallyl)4-hydroxybenzoate.

6. A process for making 3-(3-methyl-2-butenyl)-4-hydroxybenzoic acid which comprises (1) heating streptonivicin with acetic anhydride to form 3-(3-methyl-2-butenyl)-4-acetoxybenzoic acid, and (2) hydrolyzing the acetoxy group to form 3-(3-methyl-2-butenyl)-4-hydroxybenzoic acid.

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**3,168,553**

## REACTIONS OF OLEFINS WITH CARBON MONOXIDE

**Lynn H. Slaugh, Pleasant Hill, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Aug. 25, 1961, Ser. No. 133,810**

**6 Claims. (Cl. 260—497)**

1. In the process for the production of carbonyl compounds wherein a mono-olefinic hydrocarbon having from two to twenty carbon atoms to the molecule is reacted with carbon monoxide and an active hydrogen-containing compound having an acid dissociation constant no greater than $10^{-3}$ selected from the group consisting of unsbstituted aliphatic alcohols, primary and secondary alkyl amines, and unsubstituted aliphatic monocarboxylic acids, in the presence of a Group VIII*b* transition metal carbonyl catalyst, the improvement consisting essentially of effecting said reaction in liquid phase, at a temperature of from about 75 to about 250° C., a pressure of from about 800 to about 3,000 p.s.i., and employing as said catalyst a complex catalyst consisting essentially of a member of the group consisting of cobalt, ruthenium, rhodium, and iridium in complex combination with carbon monoxide and a tri-alkylphosphine.

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**3,168,554**

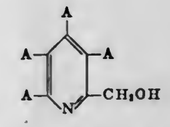
## STABILIZERS FOR PERACIDS

**Benjamin Phillips, Charleston, Samuel W. Tinsley, South Charleston, and Paul S. Starcher, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed May 26, 1960, Ser. No. 31,797**

**4 Claims. (Cl. 260—502)**

1. A stabilized organic peracid selected from the group consisting of perbenzoic acid, monoperphthalic acid, and the unsubstituted aliphatic monocarboxylic peracids having from 2 to 4 carbon atoms, wherein said organic peracid contains a small amount of a pyridine-2-methanol of the formula:



wherein A represents a member of the group consisting of hydrogen and X, and wherein X represents a member selected from the group consisting of carboxylic acid groups and hydroxymethyl groups, provided that only one A represents an X.

3,168,555
## PRODUCTION OF ALKYL SULFONATES
Everett Clippinger, San Rafael, and Richard G. McKee, Berkeley, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Jan. 4, 1960, Ser. No. 47
2 Claims. (Cl. 260—513)

1. Process for the preparation of an alkyl sulfonate which comprises adding a 2–5 molar solution of a bisulfite salt to a primary normal 1-olefin of 5–20 carbon atoms in the presence of cumene hydroperoxide and a water-alcohol mutual solvent, said alcohol being selected from the group consisting of methanol, ethanol, and n-propanol, the amount of cumene hydroperoxide ranging from about 0.002 to 0.006 mol per mol of olefin, maintaining the temperature in the range 30° C. to 70° C., and the bisulfite ion concentration of 0.1 to 0.2 molar during reaction, and continuing the reaction until bisulfite salt has been added in an amount at least sufficient to react with all of the olefin.

3,168,556
## POLYHALOCYCLOALKENYL DERIVATIVES OF ABIETIC ACID
John P. Luvisi, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Nov. 8, 1961, Ser. No. 150,890
5 Claims. (Cl. 260—514.5)

1. A polyhalocycloalkenyl derivative of abietic acid resulting from the condensation of abietic acid at a temperature of from about 100° C. to about 200° C. with a halogen-containing unsaturated hydrocarbon selected from the group consisting of polychloro-butadiene, polybromo-butadiene, polychloro-alkylbutadiene, polybromo-alkylbutadiene, polychlorocyclopentadiene, polybromocyclopentadiene, polychlorocyclohexadiene and polybromocyclohexadiene.

3,168,557
## HALOGENATED BENZYLAMINE-4-CARBOXYLIC ACIDS
Edward W. Pietrusza, Morris Township, Morris County, and Jack R. Pedersen, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 2, 1962, Ser. No. 184,546
10 Claims. (Cl. 260—518)

1. Halogenated 4-aminomethylbenzoyl compounds of the structural formula



wherein X represents a halogen atom and *n* represents a cardinal number from 1 to 4 inclusive and A represents a substituent of the group consisting of hydroxyl and chloride.

3,168,558
## ORNITHINE SYNTHESIS
George A. Kurhajec, Orinda, Richard J. Windgassen, Oakland, and George W. Hearne, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 7, 1962, Ser. No. 177,963
3 Claims. (Cl. 260—534)

1. The process for the production of ornithine which comprises the steps of:

(1) treating alpha-aminoglutaronitrile with carbon dioxide and ammonia in the liquid phase at a temperature from about 30° C. to about 100° C. to give 4-cyano-2-ureidobutyramide and 5-(2-cyanoethyl)hydantoin;

(2) treating 4-cyano-2-ureidobutyramide and 5-(2-cyanoethyl)hydantoin with ammonia, hydrogen and Raney nickel in the liquid phase at a temperature from about 40° C. to about 140° C. to give 3-ureidopiperidone;

(3) hydrolyzing 3-ureidopiperidone to give ornithine.

3,168,559
## MIXED ANHYDRIDES OF AN AMINOCARBOXYLIC ACID AND AN ALKYL SUBSTITUTED BORIC ACID
Konrad Lang, Friedrich Schubert, and Karl Nützel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 23, 1960, Ser. No. 38,394
Claims priority, application Germany June 27, 1959
16 Claims. (Cl. 260—545)

1. The mixed anhydride of an amino carboxylic acid selected from the group consisting of amino alkyl carboxylic acids containing up to six carbon atoms and amino aryl carboxylic acids containing up to eight carbon atoms, with an organic substituted boric acid selected from the group consisting of dialkyl borinic acids, the alkyl radicals of which contain up to thirteen carbon atoms, diaryl borinic acids, the aryl radicals of which contain up to ten carbon atoms, dicycloalkyl borinic acids, the cycloalkyl radicals of which contain up to six carbon atoms, alkyl boronic acids, the alkyl group of which contains up to thirteen carbon atoms, aryl boronic acids, the aryl radical of which contains up to ten carbon atoms, and cycloalkyl boronic acids, the cycloalkyl radical of which contains up to six carbon atoms.

3,168,560
## DI(ALKOXYALKYL)THIOUREA
William W. Levis, Jr., Wyandotte, and Eugene A. Welpert, Taylor, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Nov. 9, 1961, Ser. No. 151,174
10 Claims. (Cl. 260—552)

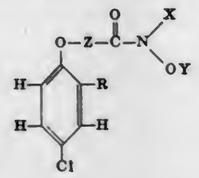
1. Compounds of the formula:

$$[R(OCH_2CHR')_nNH]_2CS$$

wherein R is an alkyl radical of from 1 to 4, inclusive, carbon atoms and R' is a radical selected from the group consisting of hydrogen, methyl and ethyl radicals and *n* is an integer selected from the group consisting of 1 and 2.

3,168,561
## N-ALKOXY 2-ALKYL-4-CHLOROPHENOXYACETAMIDES FOR THE CONTROL OF PESTS
Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Nov. 20, 1962, Ser. No. 239,070
10 Claims. (Cl. 260—559)

1. A compound of the formula



wherein R is unsubstituted lower alkyl, X is selected from the group consisting of hydrogen and alkyl of from one to ten carbon atoms, Y is alkyl of from one to ten carbon atoms, and Z is unsubstituted alkylene of from one to four carbon atoms.



3,168,562
## SUBSTITUTED BENZYLGUANIDINES
Eric Walton and Graham Keith Ruffell, both of London, England, and Eugene Grivsky and John Ruxton Wood, both of Tuckahoe, N.Y., assignors to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York
No Drawing. Filed Dec. 20, 1960, Ser. No. 77,032
Claims priority, application Great Britain, Dec. 23, 1959, 43,702/59; Dec. 29, 1959, 44,161/59; May 24, 1960, 18,368/60; June 24, 1960, 22,143/60; July 7, 1960, 23,789/60
8 Claims. (Cl. 260—564)

1. A benzylguanidine selected from the class consisting of N-benzyl-N',N''-dimethylguanidine, N - 2,4 - dichlorobenzylguanidine, N,N'-dimethyl-N''-3-methylbenzylguanidine, N-2-chlorobenzyl-N',N''-dimethylguanidine, N,N'-dimethyl-N''-2-methylbenzylguanidine, N-3-chlorobenzyl-N',N'' - dimethylguanidine, N-2-chlorobenzyl-N'-methylguanidine and N-ethyl-N'-methyl-N''-2-methylbenzylguanidine and salts of said benzylguanidines with therapeutically acceptable acids.

3,168,563
## 1,4-BIS(BENZYLAMINOMETHYL) CYCLOHEXANES
Leslie G. Humber, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 25, 1962, Ser. No. 168,828
Filed Jan. 25, 1962, Ser. No. 168,828
15 Claims. (Cl. 260—570.5)

1. A compound selected from the group consisting of bases of the formula:



wherein R is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, halogen, di(lower alkyl)-amino, and acetamido, and acid addition salts of said bases with pharmacologically-acceptable acids.

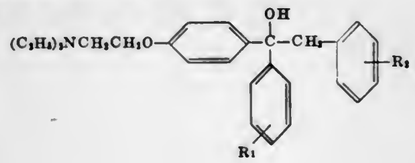
2. 1,4-bis-(benzylaminomethyl)-cyclohexane.

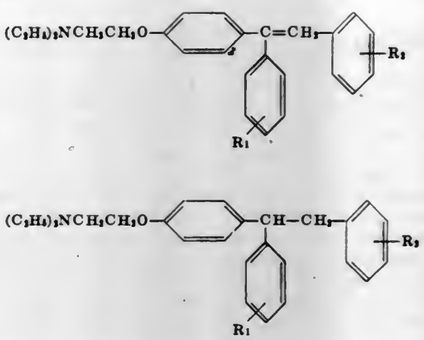
3,168,564
## AMINOSPIRO[3.3]HEPTANE DERIVATIVES
Leslie G. Humber, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 12, 1963, Ser. No. 264,722
3 Claims. (Cl. 260—570.5)

1. A compound selected from the group which consists of 2,5-bis(o-chlorobenzylaminomethyl)-spiro[3.3]heptane and its dihydrochloride salt.

3,168,565
## TRIFLUOROMETHYL DERIVATIVES OF AMINO TRIARYLETHANOLS, -ETHANES, AND -ETHYLENES
Frank Patrick Palopoli and Vernon John Feil, Cincinnati, Ohio, assignors to Richardson-Merrell Inc., a corporation of Delaware
No Drawing. Filed Nov. 20, 1959, Ser. No. 854,270
9 Claims. (Cl. 260—570.7)

1. Compounds of the group consisting of those having the general formulas





in which one of the groups represented by $R_1$ and $R_2$ is a trifluoromethyl group and the other is selected from the group consisting of lower alkyl, chloro and lower alkoxy.

3,168,566
## PROCESS FOR RACEMIZING α-PHENYL AND α-NAPHTHYL ETHYLAMINES
Ira Loter, East Paterson, N.J., and Morris Dunkel, Kew Gardens, and Howard C. Klein, Brooklyn, N.Y., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 1, 1961, Ser. No. 135,439
9 Claims. (Cl. 260—570.8)

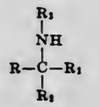
1. A process for the racemization of an optical isomer selected from the group consisting of

d-α-phenylethylamine
l-α-phenylethylamine
d-α-(α-naphthyl)-ethylamine
l-α-(α-naphthyl)-ethylamine
d-α-(β-naphthyl)-ethylamine
l-α-(β-naphthyl)-ethylamine

which comprises heating said optical isomer with an alkali metal as a racemization catalyst in an inert atmosphere at temperatures between 60° C. and the boiling point of said optical isomer with the proviso that when said optical isomer is a solid, said optical isomer is heated at temperatures between the melting point and boiling point of said optical isomer, said heating being carried out for a period of from about 10 minutes to about 100 hours, said alkali metal being present in amounts sufficient to racemize said optical isomer.

3,168,567
## HINDERED ALKYL AND ALKYLENE SECONDARY AMINES
Nelson R. Easton, Indianapolis, and George F. Hennion, South Bend, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed Feb. 29, 1960, Ser. No. 11,438
6 Claims. (Cl. 260—583)

1. A compound selected from the group consisting of a free base and its salts formed with nontoxic pharmaceutically acceptable acids, said free base being represented by the following formula:



wherein R is a radical of the group consisting of methyl and ethyl, $R_1$ is a radical of the group consisting of ethyl and vinyl, $R_2$ is a radical of the group consisting of methyl, ethyl and isopropyl, and $R_3$ is a radical of the group consisting of ethyl, isopropyl, t-butyl and t-amyl, the sum of the carbon atoms in R, $R_1$, $R_2$ and $R_3$ being greater than 6.

### 3,168,568
### PROCESS FOR PRODUCING UNSYMMETRICAL DIMETHYLHYDRAZINE

Charles C. Clark, Kenmore, and Ralph E. Morningstar, Niagara Falls, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 17, 1954, Ser. No. 416,948
9 Claims. (Cl. 260—583)

1. A method for the preparation of a compound of the formula $RR'NNH_2$ which comprises reacting monochloroamine and RR'NH in aqueous solution at 10° to 60° C. to form $RR'NNH_2$, the molar ratio of RR'NH to monochloroamine being within the range 2:1 to 8:1, R being an alkyl radical having from one to five carbon atoms and R' being selected from the group consisting of hydrogen and alkyl radicals having from one to five carbon atoms.

### 3,168,569
### METHOD OF BLEACHING POLYALKYLENE ETHERS

Paul Magnus Torkel Matell, Molndal, Sweden, assignor to Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a corporation of Sweden

No Drawing. Filed Feb. 1, 1960, Ser. No. 5,641
2 Claims. (Cl. 260—584)

1. A method of bleaching a polyalkylene ether of the formula $H(OR)_nX$ wherein R is selected from the group consisting of ethylene and propylene, *n* is an integer greater than 1 and less than 80, and X is a residue of a compound containing a reactive hydrogen atom selected from the group consisting of water, ethanol nonylphenol, lauryl alcohol, tallow fatty alcohol, oleyl and cetyl alcohol and oleylamine, said method comprising treating the ether with 0.1 to 5% by weight of an alkali weight borohydride at a temperature of from 25–150° C.

### 3,168,570
### PREPARATION OF KETONES

David W. Marshall, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed July 24, 1961, Ser. No. 125,996
5 Claims. (Cl. 260—593)

1. A process of preparing ketones which comprises reacting an aluminum trialkyl having alkyl groups containing about 2 to 30 carbon atoms with carbon dioxide at a temperature of about 200° to 300° C., a pressure of about 3,500 to 10,000 p.s.i.g. and for a period of about 50 to 100 hours, hydrolyzing the reaction mixture, and separating the ketones from the hydrolyzed reaction mixture.

### 3,168,571
### KETONE PURIFICATION WITH BISULFITE WASHED ION EXCHANGE RESINS

Chauncey R. Hare, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,396
4 Claims. (Cl. 260—593)

1. A method for purifying lower alkyl ketones which have been prepared by the decomposition of ar(lower alkyl) hydroperoxides, which comprises contacting said ketones with a strongly basic ion exchange resin having bisulfite anions adsorbed thereon.

### 3,168,572
### PRODUCTION OF ALPHA,BETA-UNSATURATED CARBONYLIC COMPOUNDS

Hervey H. Voge, Berkeley, and Warren E. Armstrong, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 6, 1961, Ser. No. 143,434
2 Claims. (Cl. 260—604)

1. The process for the oxidative conversion of an olefin selected from the group consisting of propylene and isobutylene to an alpha-beta-unsaturated aldehyde selected from the group consisting of acrolein and methacrolein which consists essentially of reacting said olefin with oxygen, at a temperature of from about 375 to about 450° C., in the presence of a catalyst consisting essentially of an oxide of a metal selected from the group consisting of molybdenum and tungsten in combination with from about 5 to about 25% by weight of the total catalyst of tellurium dioxide, and maintaining the tellurium dioxide content of said catalyst within said range of from about 5 to about 25% by weight of said total catalyst throughout the course of the reaction.

### 3,168,573
### STABILIZED FORMALDEHYDE SOLUTIONS

George N. Butter, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed June 2, 1961, Ser. No. 114,323
6 Claims. (Cl. 260—606)

1. An aqueous formaldehyde solution comprising aqueous formaldehyde and a sufficient amount of a compound having the following general formula:

$$(R)_2—N—C—(CH_2OH)_2$$

where R is lower alkyl to stabilize said solution against deposition of polymerized material from the solution.

### 3,168,574
### ISOMERIZATION OF BIS(HYDROCARBON OR SUBSTITUTED ARYLTHIO)ETHYLENE

Jack Hensel, Leewood, Kans., assignor to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 14, 1960, Ser. No. 42,760
4 Claims. (Cl. 260—609)

1. The method of converting the cis isomer of a bis lower alkylthio ethylene having the formula: lower alkyl —S—CH=CH—S— lower alkyl to the trans isomer consisting of heating said cis isomer to between 125° C. and the boiling point of the cis isomer until at least 75% of the cis isomer present is converted to the trans isomer.

### 3,168,575
### REARRANGEMENT OF ALLYLIC ETHERS

Thomas J. Prosser, Sherwood Park, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 23, 1960, Ser. No. 51,300
7 Claims. (Cl. 260—615)

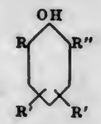
1. The process of making α,β-unsaturated ethers which comprises contacting an allylic ether selected from the class consisting of allyl and methallyl ethers of pentaerythritol, pentaerythritol isopropylidene ketal, 1,4-dihydroxybutane, 1,5-dihydroxypentane, and cetyl alcohol, with a catalytic amount of a strongly basic compound of an alkali metal in a homogeneous reaction mixture at a temperature ranging from about 100° to 250° C., whereby the allylic groups of said allylic ether are rearranged to α,β-unsaturated groups selected from the class consisting of propenyl and isobutenyl groups.

### 3,168,576
### PURIFICATION OF ALKYL PHENOL OXIDATION INHIBITORS

James L. Jezl, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

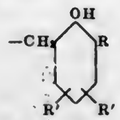
No Drawing. Filed Dec. 10, 1959, Ser. No. 858,566
9 Claims. (Cl. 260—619)

1. Process for treating alkyl phenol corresponding to the formula:





where R is a tertiary alkyl radical having 4 to 6 carbon atoms, each R' is selected from the group consisting of hydrogen and alkyl radicals having 1 to 6 carbon atoms, and R'' is selected from the group consisting of tertiary alkyl radicals having 4 to 6 carbon atoms and radicals having the formula:



where R and R' are as hereinabove specified and containing small amounts of impurities comprising alkylated phenols having lesser number of substitutents in ortho position; which process comprises essentially contacting said mixture in liquid phase with an epoxide in an amount sufficient to selectively react the epoxide only with said impurities at a temperature between room temperature and 200° F.

### 3,168,577
### PRODUCTION OF ALKYL PHENOLS

Robert Weinstein, Flushing, N.Y., and Ira M. Rose, Millburn, and William R. Christian, Newark, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 28, 1961, Ser. No. 98,792
4 Claims. (Cl. 260—624)

1. In a process for the production of stabilized alkyl phenols by the reaction of phenol with an alkylating agent in the presence of boron trifluoride, the steps which comprise neutralizing the boron trifluoride contained in the resulting crude reaction product mixture with an aqueous solution of ammonium hydroxide, said solution containing from about 15 percent to about 30 percent by weight of ammonia, based upon the total weight of said aqueous ammonium hydroxide solution, said aqueous solution of ammonium hydroxide being added to said reaction product mixture in an amount sufficient to raise the pH of said reaction product mixture to at least about 6 and thereafter removing the resulting precipitate from said neutralized solution.

### 3,168,578
### PROCESS FOR PRODUCTION OF ALKYL PHENOLS OF IMPROVED COLOR

James Z. Ginos, Fort Lee, Ira M. Rose, Millburn, and William R. Christian, Newark, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 30, 1961, Ser. No. 99,343
4 Claims. (Cl. 260—624)

1. In a process of reacting phenol with an alkylating agent in the presence of an alkylation catalyst to obtain alkyl phenols of improved color, the steps comprising mixing together phenol, alkylation catalyst and from about 0.05% to about 2.00% by weight, based on the total weight of said phenol and said alkylating agent, of at least one color inhibiting agent selected from the group consisting of hypophosphorous acid, sodium hypophosphite and calcium hypophosphite, introducing said alkylating agent to the resulting mixture, reacting said phenol and said alkylating agent and thereafter recovering a substantially color free alkyl phenol.

### 3,168,579
### PRODUCTION OF POLYOLS FROM SUBSTITUTED ALDEHYDES

George A. Boswell, Jr., Hayward, Calif., and Rupert C. Morris, Manchester, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 14, 1960, Ser. No. 62,529
6 Claims. (Cl. 260—635)

1. In a process for converting an aqueous solution alpha-hydroxy aliphatic aldehyde of 3 to 6 carbon atoms per molecule composed of carbon, hydrogen, and hydroxy and aldehyde oxygen atoms to the corresponding polyol in which a hydrogenation step is carried out in the presence of a solid hydrogenation catalyst at about 20° to about 300° C. under hydrogen pressure of about 50 to about 5000 p.s.i.g., the improvement, whereby the effective life of the catalyst is extended, of reacting a freshly prepared clear aqueous solution of said alpha-hydroxyaldehyde before formation of undissolved polymer of said aldehyde therein, with an aliphatic, saturated unsubstituted alcohol of 1 to 6 carbon atoms per molecule to produce the hemiacetal of said alpha-hydroxyaldehyde and said alcohol having a solubility in the hydrogenation mixture of at least 0.1 gram per 100 grams of liquid mixture and carrying out the said hydrogenation with the resulting aqueous solution of said hemiacetal.

### 3,168,580
### TRIS-HALOMETHYL TRIMETHYL BENZENES

Chester E. Adams, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Aug. 26, 1960, Ser. No. 52,034
5 Claims. (Cl. 260—651)

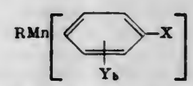
1. Tris-halomethyl trimethyl benzene, wherein the halo is selected from the class consisting of bromo and chloro.

### 3,168,581
### PRODUCTION OF CYCLIC DIENES

Roy L. Pruett, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 21, 1962, Ser. No. 218,439
7 Claims. (Cl. 260—666)

3. A process which comprises contacting a conjugated alkadiene containing from 4 to 12 carbon atoms with from about 0.1 to about 25 weight percent, based on the weight of said alkadiene, of a (cyclopentadienyl)manganese (polyphenyl) compound characterized by the following formula:



wherein R is selected from the group consisting of cyclopentadienyl and alkylcyclopentadienyl; wherein X is selected from the group consisting of phenyl and alkylphenyl; wherein Y is selected from the group consisting of alkyl, phenyl, alkylphenyl, and phenylalkyl; and wherein *b* is an integer having a value of from zero to 4; at a temperature in the range of from about 50° C. to about 200° C.; and for a period of time sufficient to dimerize said alkadiene.

### 3,168,582
### BUTADIENYLMAGNESIUM CHLORIDE

Carl Albert Aufdermarsh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 4, 1962, Ser. No. 184,949
3 Claims. (Cl. 260—665)

1. The compound 1,3-butadien-2-ylmagnesium chloride.

### 3,168,583
### SELECTIVE DEETHYLATION PROCESS

Stephen M. Kovach, Highland, Ind., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,763
3 Claims. (Cl. 260—672)

1. A process for selectively cracking a polymethylbenzene feedstock consisting essentially of polymethylbenzene containing 2 to 5 methyl groups on the benzene ring, which methyl groups are the only alkyl substituents, and about 10 to 50% by weight of ethyl-substituted benzenes to reduce the ethyl-substituted benzene content of the

feedstock which process consists essentially in contacting said feedstock with a catalyst consisting essentially of chromia and boria on alumina, in the presence of hydrogen at a temperature of about 400 to 1100° F.

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**3,168,584**
**MANUFACTURE OF AROMATIC HYDROCARBONS**
**Maxwell Nager, Pasadena, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Jan. 17, 1963, Ser. No. 252,051**
**10 Claims. (Cl. 260—673)**

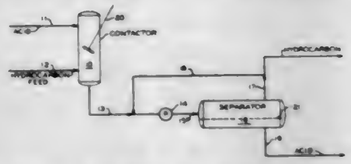
1. A process for the selective conversion of $C_3$ to $C_5$ acyclic hydrocarbons represented by the formula $C_nH_{2n}$ to $C_nH_{2n+2}$ to a product containing a major percentage of aromatic hydrocarbon which comprises intimately contacting said acyclic hydrocarbon at a temperature of from about 800° F.–1100° F. for 0.1 to 5 seconds with an essentially homogeneous molten salt composition consisting essentially of a substantial proportion of alkali metal iodide and a minor proportion of alkali metal base, while intimately contacting the molten salt with an amount of oxygen to give from about 10% to 50% conversion of the hydrocarbon, the molar ratio of said oxygen to said acyclic hydrocarbon being from about 0.25 to about 0.5.

3. A process for the preparation of a product containing a major percentage of para-xylene which comprises intimately contacting $C_4H_8$ to $C_4H_{10}$ hydrocarbon at a temperature of about 800°–1100° F. for 0.1 to 5 seconds with an essentialy homogeneous molten salt composition consisting essentially of a major proportion of lithium iodide and a minor proportion of lithium hydroxide, while intimately contacting the molten salt with an amount of oxygen to give from 30% to 40% conversion of the hydrocarbon the molar ratio of said oxygen to said hydrocarbon being from about 0.25 to about 0.5.

6. A process for the preparation of dimethyl naphthalene which comprises intimately contacting an equimolar mixture of a $C_4$-hydrocarbon having a ratio of hydrogen to carbon of at least 2 and at least 1 xylene isomer, at a temperature of about 800°–1100° F. for 0.1 to 5 seconds with an essentially homogeneous molten salt composition consisting essentially of a major proportion of lithium iodide and a minor proportion of lithium hydroxide, while intimately contacting the molten salt with an amount of oxygen to give from about 10% to about 50% conversion of the hydrocarbon, the molar ratio of said oxygen to said mixture being from about 0.25 to about 0.5.

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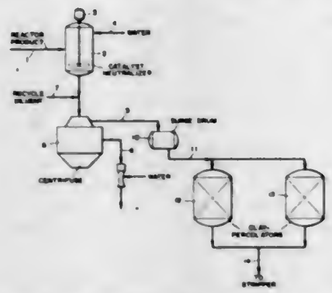
**3,168,585**
**SEPARATION OF A DISPERSED LIQUID HYDROCARBON PHASE FROM AN IMMISCIBLE LIQUID PHASE**
**William C. McCarthy, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed May 26, 1961, Ser. No. 112,920**
**6 Claims. (Cl. 260—677)**




5. A process of separating tertiary amylenes from a hydrocarbon mixture containing said tertiary amylenes and other $C_5$ hydrocarbons which comprises contacting said mixture with an aqueous sulfuric acid in an absorption zone, said aqueous sulfuric acid having an acid concentration in the range of 50–70 weight percent, maintaining the temperature of said absorption zone below 100° F., passing a second mixture comprised of immiscible hydrocarbon and sulfuric acid phases from said absorption zone to a contact zone, contacting said second mixture in said contact zone with a portion of said immiscible liquid hydrocarbon withdrawn from a separation zone sufficient to produce a third liquid mixture comprised of a sulfuric acid phase dispersed in an immiscible hydrocarbon phase, passing said third mixture from said contact zone to said separation zone, withdrawing from said separation zone said immiscible liquid hydrocarbon, and withdrawing from said separation zone a sulfuric acid phase containing absorbed tertiary amylenes.

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**3,168,586**
**TREATMENT OF POLYMERS PRODUCED BY AKALI-METAL CATALYZED POLYMERIZATION**
**Neville Leverne Cull, Baker, and Joseph Earl Landry, Jr., Harry Edwin Robson, and Raymond Carroll Lohman, Baton Rouge, La., and Murray Nadler, Morristown, and Herschel T. White, Montclair, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Aug. 7, 1962, Ser. No. 215,419**
**5 Claims. (Cl. 260—680)**



1. In a process for polymerizing conjugated diolefins in the presence of an alkali metal catalyst, polymerization solvent and ether promoter in which the polymerization solvent and ether promoter are separated from the product and recycled to the polymerization step, the method for separating the alkali metal catalyst from the solution of polymer in polymerization solvent and ether promoter, the improvement which comprises contacting the solution of polymer in polymerization solvent and ether promoter with 1.1 to 2.0 moles of water per mole of alkali metal in said polymer solution at a temperature between 50 and 60° C. for a period of time between 15 and 30 minutes to convert the alkali metal to alkali metal hydroxide, diluting the polymer solution to 15–20 wt. percent NVM with the recycle mixture of polymerization solvent and ether promoter, heating the dilute product to a temperature between 40 and 70° C. for from five minutes to two hours, and separating the alkali metal hydroxide from the diluted polymer solution.

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**3,168,587**
**METHOD OF DEHYDROGENATION**
**Glenn O. Michaels, Park Forest, and James W. Gambell, South Holland, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Apr. 27, 1962, Ser. No. 190,800**
**6 Claims. (Cl. 260—683.3)**

1. In the dehydrogenation of aliphatic hydrocarbons of 4 to 8 carbon atoms by introduction into a reactor containing a catalyst consisting essentially of catalytic amounts of a platinum group metal on a non-acidic solid refractory support, said reactor being maintained under dehydrogenation conditions including a temperature



of about 800 to 1300° F., a method of maintaining the activity of said catalyst which comprises providing in the reactor about 0.01 to 10 mole percent of oxygen.

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**3,168,588**
**POLYMERIZED ETHYLENE LUBRICATING OILS FROM ALKANOL MODIFIED CATALYSTS**
**Herschel T. White, Montclair, and Arthur W. Langer, Jr., Watchung, Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**No Drawing. Filed Sept. 14, 1960, Ser. No. 55,845**
**11 Claims. (Cl. 260—683.15)**

1. In a method of preparing a hydrocarbon oil having a molecular weight in the range of 80 to 2000, said oil being suitable for lubricating purposes which comprises polymerizing an ethylene-containing gas in the presence of a catalyst consisting of a halide of a transition metal selected from the group consisting of titanium, zirconium, and vanadium and an aluminum alkyl compound having the formula $AlR_nX_{3-n}$, $n$ representing a number of at least 1 but less than 2 in the presence of a halogenated aromatic hydrocarbon diluent, at a pressure of 0–50 p.s.i.g., the improvement which comprises utilizing a minor amount of a $C_1$–$C_8$ alkanol as a catalyst modifier, said alkanol being present in an amount such that the ratio of alkanol to the alkyl of the aluminum alkyl after reduction of the transition metal halide is not greater than 0.5/1.

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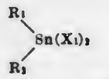
**3,168,589**
**ORGANOBORON HALIDE POLYMERIZATION CATALYSTS**
**Donald R. Witt, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**No Drawing. Filed May 16, 1961, Ser. No. 110,344**
**10 Claims. (Cl. 260—683.15)**

1. A process for the production of liquid polymers of propylene and higher olefins which comprises contacting at least one of said olefins at a temperature in the range of 150 to 475° F. with a catalyst composite consisting essentially of an alkylboron difluoride supported on an activated inorganic metal oxide material selected from the group consisting of alumina and silica-alumina, and recovering the polymer produced.

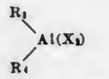
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**3,168,590**
**PROCESS FOR OLEFIN POLYMERIZATION**
**Joseph R. Kenton, Tulsa, Okla., and Leon M. Adams, San Antonio, Tex., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana**
**No Drawing. Filed Oct. 31, 1961, Ser. No. 148,843**
**2 Claims. (Cl. 260—683.15)**

1. The process for the dimerization and trimerization of olefins, which process comprises contacting olefins selected from the class consisting of ethylene, propylene, and mixtures thereof at temperatures in the range of about 25 to 190° C. and pressures in the range of about atmospheric to 1500 p.s.i.g. with a catalyst consisting essentially of the liquid formed as the product of reacting from about 1 to 5 mols of a dialkyl dihalostannane having the general formula:



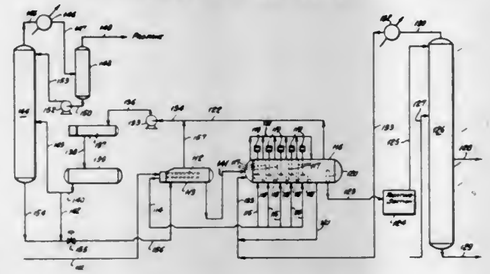
per mol of a dialkyl aluminum halide of the general formula:



wherein $R_1$ and $R_2$ are alkyl radicals having from 3 to 5 carbon atoms per radical, $X_1$ is selected from the class consisting of chlorine and bromine, $R_3$ and $R_4$ are alkyl radicals having from 2 to 5 carbon atoms per radicals, $X_2$ is selected from the class consisting of chlorine and bromine, said liquid being immiscible at temperatures below about 120° C. in dry saturated hydrocarbon solvents, for a period sufficient to produce dimers and trimers of said olefins as the predominant reaction product thereof.

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**3,168,591**
**ALKYLATION PROCESS**
**David K. Beavon, Lockport, Ill., and Frank A. Clauson, Haddonfield, N.J., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**
**Continuation of application Ser. No. 812,492, May 11, 1959. This application Nov. 9, 1962, Ser. No. 238,318**
**5 Claims. (Cl. 260—683.62)**



1. In a catalytic alkylation process wherein isobutane and olefin-based alkylatable material are reacted in an alkylation zone in the liquid phase in the presence of a non-volatile alkylation catalyst under alkylating conditions, isobutane is the preponderant hydrocarbon in the reaction mixture, and the materials fed to said alkylation zone contain propane and normal butane diluents, the improvement which comprises:

(1) evaporating lower boiling components including part of the isobutane and virtually all of the propane and lighter hydrocarbons from the hydrocarbon portion of the alkylation reaction mixture under conditions effective for refrigerating the alkylation zone, thereby providing a depropanized body of remaining liquid hydrocarbons and an isobutane-rich vapor containing propane,

(2) condensing said isobutane rich vapor forming an isobutane-rich condensate,

(3) passing at least a portion of said isobutane-rich condensate to said alkylation zone,

(4) passing said remaining liquid into a distillation zone at the top of said distillation zone, said feed comprising reflux in said distillation zone,

(5) withdrawing distillate comprising isobutane from said distillation zone,

(6) passing at least a portion of said distillate to said alkylation zone,

(7) withdrawing a liquid stream comprising normal butane as a side stream from said distillation zone, and

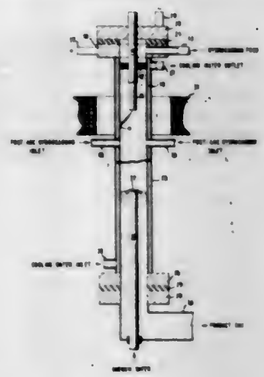
(8) withdrawing debutanized liquid comprising product alkylate as bottoms from said distillation zone.

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**3,168,592**
**MANUFACTURE OF ACETYLENE BY TWO STAGE PYROLYSIS UNDER REDUCED PRESSURE WITH THE FIRST STAGE PYROLYSIS CONDUCTED IN A ROTATING ARC**
**Mario T. Cichelli and William Schotte, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed July 19, 1962, Ser. No. 210,890**
**10 Claims. (Cl. 260—679)**

1. A process for the manufacture of acetylene in a reactor, which process comprises

(*a*) passing a feed of gaseous hydrocarbon of 1–3 carbon atoms through a rotating electric arc having a frequency of rotation in excess of 2000 rev./sec. at a rate sufficient to pyrolyze said hydrocarbon to acetylene and produce hot reaction gases having a temperature in excess of 1700° C.;



(*b*) admixing with said hot reaction gases leaving said electric arc a second gaseous hydrocarbon which has a molecular weight higher than the molecular weight of said feed hydrocarbon but not higher than about 150 at a rate sufficient to pyrolyze said second hydrocarbon to acetylene and produce a mixture of hot gaseous reaction products having a temperature at least about 200° C. below the temperature of the hot reaction gases leaving the electric arc but not below 1300° C.;

(*c*) maintaining the pressure in the reactor at less than 500 mm. Hg during said pyrolyses;

(*d*) quenching the mixture of hot gaseous reaction products to a temperature below about 300° C.; and

(*e*) employing a residence time from arc to quench of less than 0.01 second.

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**3,168,593**

**SHOCK-RESISTANT COMPOSITIONS PREPARED BY POLYMERIZING STYRENE AND ACRYLONITRILE WITH POLYBUTADIENE**

**George H. Fremon and William N. Stoops, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York**

**Filed Jan. 15, 1953, Ser. No. 331,439**
**4 Claims. (Cl. 260—880)**

1. Process for forming synthetic resins which comprises emulsifying butadiene as essentially the sole monomeric material in water containing an emulsifying agent and a free radical-type catalyst, polymerizing the butadiene at a temperature below about 60° C. to form a polymer having a specific viscosity above about 0.3, adding to the polymeric latex thus formed a mixture of styrene and acrylonitrile and polymerizing the styrene and acrylonitrile in the presence of the butadiene polymer to form a synthetic resin having as its ultimate composition from 23% to 41% of butadiene, from 29% to 67% of styrene, and from 10% to 30% of acrylonitrile, said synthetic resin having a brittle temperature below −20° C. and a stiffness modulus at 30° C. of at least 50,000 p.s.i.

4. A synthetic resin having a brittle temperature below −20° C. and a stiffness modulus at 30° C. of at least 50,000 p.s.i., said resin being a polymer of a mixture of styrene and acrylonitrile polymerized in the presence of a polybutadiene homopolymer previously polymerized at a temperature below 60° C., the ultimate composition of said resin being from 23 percent to 41 percent of butadiene, from 10 percent to 30 percent of acrylonitrile, and from 29 percent to 67 percent of styrene.

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**3,168,594**

**MIXTURES OF POLYVINYL CHLORIDE AND COPOLYMERS OF VINYL CHLORIDE AND ALKYL VINYL ETHERS**

**Yuji Hoshi and Mitsuo Onozuka, both of Nakoso, Japan, assignors to Kureha Kasei Co., Ltd., Tokyo, Japan, a corporation of Japan**

**Filed Sept. 12, 1960, Ser. No. 55,272**
**Claims priority, application Japan, Sept. 16, 1959, 34/29,736; Feb. 17, 1960, 35/5,158**
**5 Claims. (Cl. 260—899)**

1. A polyvinyl chloride composition having improved processing characteristics without impairing the impact resistance, resistance to low temperature brittleness and resistance to heat deformation, which consists essentially of from 5 to 99.5% by weight of polyvinyl chloride and from 95 to 0.5% by weight of a copolymer of vinyl chloride with an alkyl vinyl ether and in which the said copolymer consists essentially of from 60 to 99.5% by weight of vinyl chloride and from 40 to 0.5% by weight of alkyl vinyl ether, an alkyl group in the alkyl vinyl ether containing not less than 8 and not more than 18 carbon atoms.

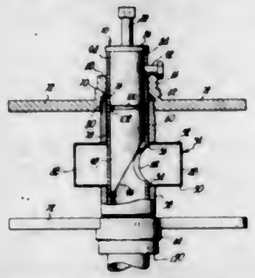
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**3,168,595**

**DIFFUSER UNIT FOR WASTE PRODUCTS TREATMENT APPARATUS**

**Gary W. Kibbee, Kansas City, Kans., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey**

**Filed Sept. 18, 1961, Ser. No. 138,872**
**10 Claims. (Cl. 261—24)**



1. A diffuser unit for introducing a treatment fluid into the substantially liquid waste products contained within a waste disposal tank, said diffuser unit comprising a manifold adapted to be mounted on said tank adjacent the top thereof in spaced relationship above the upper level of said liquid waste products and to be operably coupled with a source of treatment fluid under pressure, said manifold having a pair of generally vertically aligned openings therein; an elongated conduit vertically slidably disposed within said openings and projecting outwardly from said manifold in opposed directions, and upper and lower means in engagement with said conduit for sealing said openings, said conduit being slidable in contact with said sealing means from an upper retracted position out of the waste products downwardly into a lower operative position within said waste products, said conduit having an aperture adjacent the normally uppermost end thereof, said aperture being disposed between said upper and lower sealing means in fluid communication with said manifold only when said conduit is in said operative position; and a perforated diffuser head secured to said conduit at the normally lowermost end thereof and disposed in fluid communication therewith, said diffuser head being shiftable with said conduit and being disposed adjacent the bottom of said tank when said conduit is in said operative position and being disposed out of said waste products when said conduit is in said retracted position, whereby fluid is delivered to the waste products through the perforation in said diffuser head when the conduit is in said operative position and said diffuser is in an easily accessible location when the conduit is in said retracted position.



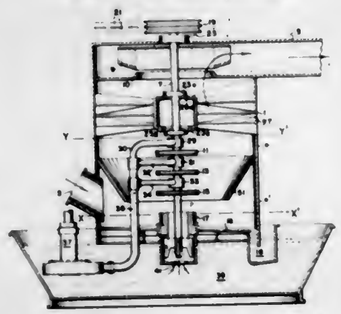
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**3,168,596**

**GAS WASHING SYSTEMS PROVIDING HIGH VELOCITY SPRAY PATTERN OF LIQUID DROPLETS**

**Robert M. Jamison, Detroit, Mich., assignor to Ajem Laboratories, Incorporated, Livonia, Mich.**

**Filed Jan. 5, 1961, Ser. No. 80,822**
**8 Claims. (Cl. 261—29)**



1. A multiple disk centrifugal gas washer which comprises a central shaft, a plurality of substantially flat spaced disks affixed to said shaft with top and bottom surfaces substantially normal to the axis of the shaft, means for rotating the shaft at high speed, a housing surrounding the shaft and disks but spaced therefrom to define a path for flow of the gas over the peripheral edges of said disks, means for flowing gas into said housing, along said path and out of the housing, means for supplying wash liquid to the top and bottom surfaces of said disks, generally radially directed vane means on each of said surfaces of said disks extending from near said shaft to adjacent the peripheries of said disks and differing in form between certain of said surfaces for breaking up the liquid into droplets and for accelerating and slinging said droplets from said disks substantially in the plane thereof at sufficiently high speeds to cause nearly all said droplets to traverse said flow of gas and to reach said housing.

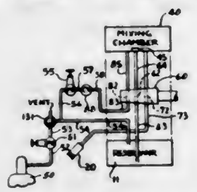
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**3,168,597**

**FOUNTAIN TYPE WHIPPED CREAM MAKER**

**Peter A. Nilsen, Villa Park, and Theodore R. Schulz, Prospect Heights, Ill., assignors, by mesne assignments, to Nilsen Mfg. Co., Haines City, Fla., a corporation of Florida**

**Filed Nov. 2, 1960, Ser. No. 66,772**
**3 Claims. (Cl. 261—50)**



1. A device for making and dispensing individual metered portions of whipped cream suitable for installation in a soda fountain comprising in combination a valve body, a reservoir for liquid cream secured to the underside of the valve body, a mixing chamber on said valve body, means for positively applying gas at a high pressure to said reservoir so that the liquid cream therein tends to be forced upwardly into the valve body, conduit means including a first valve port for positively applying aerating gas to the mixing chamber at a lower pressure which is sufficient to aerate liquid cream, a mixing spray head in the mixing chamber, conduit means including a second valve port for connecting the reservoir to the spray head, the differential pressure between the pressure in the reservoir and the pressure in the mixing chamber being sufficient to produce high velocity discharge of liquid cream through the spray head and into the mixing chamber for intimate mixture with the aerating gas in the latter accompanied by a build up of pressure in the mixing chamber until the pressure tends to equalize the pressure in the reservoir to cut off further flow of liquid cream, the volume of the mixing chamber being sufficiently small so that such equalization occurs with an amount of cream in the mixing chamber corresponding to a single serving, a discharge nozzle on said valve body, conduit means including a third valve port in said valve body for connecting the mixing chamber to the nozzle so that the pressurized aerated cream is free to escape from the mixing chamber and to expand in said nozzle into whipped form until the aerated cream in the mixing chamber is substantially fully discharged as a single serving, and operating means for opening said valve ports including an operating handle movable between a start limit position in which the second port is opened for flow of liquid cream to the mixing chamber and a second limit position in which the third port is opened for discharge of cream through the nozzle, the first port being so arranged as to be opened at midrange for recharging of the mixing chamber with gas as the operating handle is moved back to its start position.

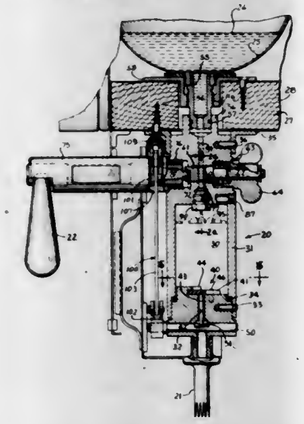
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**3,168,598**

**APPARATUS FOR MAKING WHIPPED CREAM**

**Peter A. Nilsen, Villa Park, and Theodore R. Schulz, Prospect Heights, Ill., assignors, by mesne assignments, to Nilsen Mfg. Co., Haines City, Fla., a corporation of Florida**

**Filed Nov. 2, 1960, Ser. No. 66,748**
**2 Claims. (Cl. 261—51)**



1. An apparatus for saturating liquid cream with pressurized aerating gas and for discharging it to the atmosphere in whipped form in predetermined individual sized servings comprising, in combination, an enclosed mixing chamber of relatively small volume, means including an aerating pressure supply line having a first pressure regulating valve for conducting aerating gas into the mixing chamber with the same in an empty state so that said mixing chamber is filled with a charge of aerat-

ing gas at a predetermined pressure sufficient to produce aeration of liquid cream injected into the mixing chamber, a fixed spray head in said mixing chamber capable of producing a high velocity spray of droplets, an enclosed reservoir of liquid cream, conduit means including a main "on-off" valve for interconnecting the reservoir and the spray head, means including a second supply line having a second pressure regulating valve for conducting pressurized gas into said reservoir at a pressure which is substantially higher than the pressure in the low pressure line to create a pressure differential between the reservoir and the mixing chamber so that liquid cream is sprayed into the aerating gas in said mixing chamber at high velocity and in finely divided form accompanied by impingement of the spray upon the cream collecting in the mixing chamber for violent turbulence and foaming of the cream into semi-whipped form until the total volume of the sprayed cream increases to the point where the resultant increase in pressure in the mixing chamber approaches the pressure in the reservoir to terminate the flow of cream into said mixing chamber with the result that a predetermined metered batch of aerated cream proportional to the difference between said first and second pressures is deposited in the mixing chamber, and a discharge valve having an adjacent expansion nozzle at the mixing chamber together with means for unseating said discharge valve for permitting throttled and complete escape of the predetermined individual sized serving of pressurized aerated cream from the mixing chamber for expansion of the cream into whipped form in the nozzle as it strikes the atmosphere.

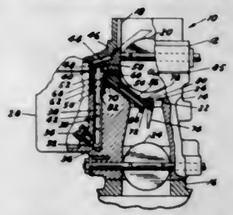
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**3,168,599**

## CARBURETOR MAIN FUEL NOZZLE

**Frederick J. Marsee, Hazel Park, Neil M. Romeo, St. Clair Shores, and John Dirda, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan**

**Filed July 16, 1962, Ser. No. 209,823**
**3 Claims. (Cl. 261—65)**



1. Carburetor, comprising assembled upper and lower body portions; a main fuel metering system including a main well chamber and a main well tube, an induction passage having a venturi and throttle plate therein, and a main fuel nozzle having a hollow mounting portion inserted in and forming a part of said main well chamber, a stem extending from a point adjacent the top of said main well chamber to substantially the center of said venturi, a plurality of downwardly extending protrusions, a bridge-like portion formed between the tops of said protrusions and the end of said stem positioned in said induction passage, and a vertical passage formed through said bridge-like portion.

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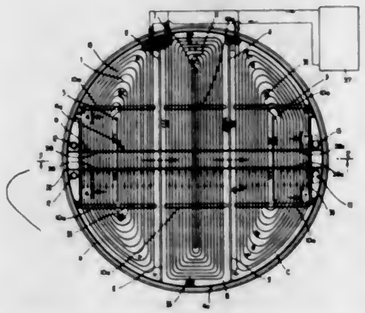
**3,168,600**

## PLATE COLUMN

**Georges Martin, Sannois, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France**

**Filed Jan. 18, 1961, Ser. No. 83,485**
**Claims priority, application France Feb. 3, 1960**
**9 Claims. (Cl. 261—140)**

1. In apparatus having a horizontal plate multi-perforated over its main extent and adapted to retain a substantial depth of liquid thereon as the liquid travels generally across the plate, means forming a liquid retaining rim about the plate, the improved plate which comprises means for introducing liquid to the plate at a first location in a zone of the plate, means for discharging liquid from the said zone of the plate at a second location in said zone, the first and second locations being substantially spaced from each other along the direction of general flow of the liquid across the plate, an upstanding baffle on the plate extending generally transversely of such direction of general travel and between the first and second locations, the baffle spanning a substantial portion of the width of said zone but having its ends spaced substantial distances from the edges of the plate, a heat exchange tube coiled around the baffle so as to lie generally within the liquid on said zone of the plate, the turns of the tube being disposed so as to be generally distributed over said zone of the plate, the portions of the coil both upstream and downstream of the baffle lying generally parallel to each other and to the



broad extent of the baffle, liquid channeling means lying generally along the direction from the feeding means to the discharge means, the channeling means comprising a trough having first and second parts disposed generally normal to the baffle, opening means extending through said plate and overlying the length of said first and second trough parts, said first trough part extending from the liquid feeding means to the baffle and having a depth which decreases from the liquid feeding means to the baffle, and said second trough part extending from the baffle to the liquid discharging means and having a depth which increases from the baffle to the liquid discharging means, said trough causing the liquid delivered to the inlet end of the trough by the feeding means to spread out and flow laterally on the upstream side of the baffle generally parallel thereto and causing the liquid, after it has flowed around the ends of the baffle and inwardly on the downstream side of the baffle, to be recombined in the exit end of the trough before flowing into the discharge means.

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**3,168,601**

## PROCESS FOR THE PRODUCTION OF PLUTONIUM OXIDE-CONTAINING NUCLEAR FUEL COMPACTS

**Philippe D. S. St. Pierre, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed Oct. 28, 1960, Ser. No. 65,610**
**6 Claims. (Cl. 264—21)**

1. A process for the production of an oxide nuclear fuel compact composed of a metal oxide selected from the group consisting of plutonium oxide, thorium oxide-plutonium oxide mixtures, plutonium oxide-uranium oxide mixtures and plutonium oxide-uranium oxide-thorium oxide mixtures having at least 95 percent density which comprises, compacting a thermally decomposable compound of the metal to be used in the oxide fuel element under a pressure of ½ to 5 tons per square inch to



form a compact, placing the compact in a furnace in an atmosphere of hydrogen, heating said compact up to 700° C. to decompose the metal compound, controlling said heating at a rate less than a value in the range of from about 25° C. to about 100° C. per hour and bearing an inverse relation to the compacting pressure, continuing the heating to a sintering temperature at least equal to a temperature in the range of 1500° C. to 1700° C. and bearing an inverse relation to said compacting pressure, and allowing the compact to cool in hydrogen.

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**3,168,602**

## BAKING TAR BONDED BRICK

**Ben Davies and Ernest P. Weaver, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania**

**No Drawing. Filed May 8, 1963, Ser. No. 279,012**
**11 Claims. (Cl. 264—29)**

1. In the method of baking a previously formed tar bonded refractory shape, the improvement comprising heating said shape at a rate of about 25° to 100° F. per hour to a temperature within the range of about 400° to 1000° F. to bake said shape while retaining vapors from said tar in contact therewith.

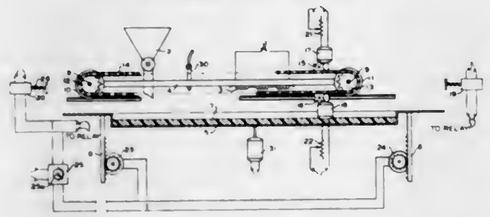
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**3,168,603**

## METHOD AND APPARATUS FOR PREPARING SHEETS OF THERMORESPONSIVE PLASTIC PARTICULATE MATERIAL

**Charles L. Seefluth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Oct. 2, 1961, Ser. No. 142,410**
**19 Claims. (Cl. 264—69)**



1. A method for forming a sheet of thermoresponsive plastic particulate material which comprises laying down a plurality of substantially monogranular layers of said material in successive layers and after the laying of each layer, passing a source of heat over the just-laid-down layer to cause the plastic particles to fuse and to solidify with each other and the earlier-laid particles.

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**3,168,604**

## PROCESS OF AND APPARATUS FOR MAKING SPIRALLY CORRUGATED RUBBER TUBING USING AXIALLY EXTENSIBLE HELIX

**Vance M. Kramer, Perrysburg, and Lawrence W. Carlton, North Baltimore, Ohio (both % Crushproof Tubing Co., McComb, Ohio)**

**Filed Nov. 22, 1960, Ser. No. 71,077**
**8 Claims. (Cl. 264—100)**



1. The process of making a corrugated rubber tube which comprises

supporting an elongated raw rubber tube blank in substantially cylindrical form,

positioning about and in circumferentially confining relation to the supported tube a resilient helical coil former,

axially stretching the former, to space its convolutions axially along the supported tube,

distending the tube radially and engaging and assembling it with the stretched former to provide an elongated assembly of the tube and the former in which portions of the tube located between adjacent convolutions of the former are bowed outwardly and constitute embryonic corrugations and in which tension in the stretched former imparts axial forces to the distended tube and tends to shorten the assembly axially,

augmenting said forces by an axial thrust applied to at least one end of the distended and engaged tube to axially and progressively collapse the assembled tube and former simultaneously and in unison while they are supported on the mandrel to develop said embryonic corrugations into full corrugations located between the convolutions of the helical coil former, axially extending the collapsed tube to withdraw its corrugations from between the convolutions of the former, separating the former from the tube, recollapsing and reforming the corrugations in the tube and treating the recollapsed tube to set the corrugations.

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## ERRATUM

For Class 264—108 see:
Patent No. 3,168,509

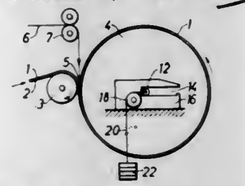
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**3,168,605**

## PROCESS FOR THE PRODUCTION OF WEBS OF ELASTIC SYNTHETIC RESINS

**Konrad Ellegast, Leichlingen, and Ulrich Knipp, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**Filed Oct. 3, 1963, Ser. No. 313,507**
**4 Claims. (Cl. 264—166)**



1. A process for the production of continuous webs of elastic synthetic resins which comprises passing a conveyor belt about a guide roller in close proximity to a winding cylinder to thereby form a laterally defined gap therebetween, pouring a liquid synthetic resinous composition into said gap, causing said liquid composition to solidify immediately below the point of introduction between said conveyor belt and winding cylinder and winding said conveyor belt including said solidified resinous composition about said winding cylinder.

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**3,168,606**

## COIL FORMING METHOD AND APPARATUS

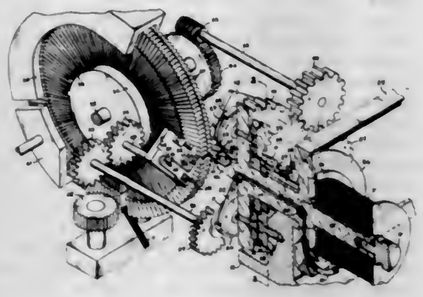
**John E. Burbank, Stamford, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut**

**Filed Dec. 26, 1961, Ser. No. 161,960**
**3 Claims. (Cl. 264—281)**

1. A method of forming coils from a thermo-plastic filament comprising

(*a*) positively feeding from a bodily rotating source of supply and pushing through a guide rotating about the same axis as said source of supply, an amount

of filament equal to one complete convolution of the coil to be formed upon each complete rotation of said guide, whereby the filament freely assumes the shape of a helix as it emerges from the guide;



(*b*) catching and holding each convolution as it emerges from the guide by a device having coil receiving recesses moving across the path of the coiling filament; and,

(*c*) subjecting a series of such convolutions to heat so as to set them in the desired shape.

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**3,168,607**
**METHODS OF HEAT TREATING ARTICLES**
**Ben Greene, Braefoot Farm, Fossoway, Kinross-Shire, Scotland**
**Filed Dec. 28, 1960, Ser. No. 78,958**
**5 Claims. (Cl. 266—5)**



1. A furnace for heat treating metal articles comprising in combination, a furnace chamber which is pressure and vacuum tight, a refractory bounded closed path within the furnace chamber including a refrigerator, a refractory bounded closed path within the furnace chamber including heating means for heating inert gas to a temperature of at least 1000° C., means to select either closed path, a pump for circulating gases through the selected path, means to selectively introduce a source of inert gas under pressure of over 20 pounds per square inch absolute, and means for selectively producing a vacuum in the chamber.

**3,168,608**
**ALUMINUM TYPE DEOXIDIZER WEIGHTED TO SUBMERGE IT IN MOLTEN METAL**
**James J. Bowden, Box 127, Cortland, Ohio**
**Filed Sept. 17, 1962, Ser. No. 224,182**
**14 Claims. (Cl. 266—34)**



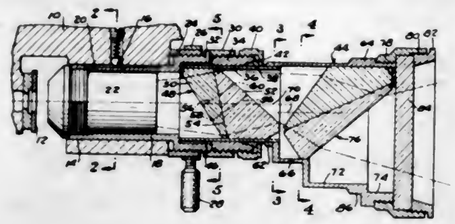
1. A weighted aluminum type deoxidizer to submerge the aluminum in the molten ferrous metal to be deoxidized, comprising a solid aluminum ingot firmly secured to a steel rod, a substantial portion of this said rod extending above the surface of the aluminum ingot and pierced by a series of horizontal holes at spaced vertical distances, a steel billet extending above the upper surface of the aluminum ingot, which billet has a vertical opening centrally positioned throughout its length and into which the said steel rod projects, and extending through the thickness of the said billet there are horizontally positioned holes vertically spaced from one another, at least the lower series of horizontal holes in said billet being capable of being brought into alignment with the holes in the steel rod, keys inserted through several aligned holes in the billet and in the steel rod for holding the aluminum ingot to the said steel billet, means on the respective keys to prevent their disengagement, a steel ingot larger in total surface area than the said aluminum ingot and being several times the weight of the latter and positioned in the approximate upper half of the entire deoxidizer structure, the steel ingot having a vertical passageway centrally positioned and extending throughout its height, there being a plurality of horizontally positioned, vertically spaced holes extending the entire thickness of the steel ingot, the billet extending up into the said vertical passageway of the steel ingot, metal keys extending through a plurality of the horizontal holes in the steel ingot and the aligned horizontal holes in the billet for securing the billet to the steel ingot, means on these respective keys to prevent their disengagement, mechanical means at the top of and affixed to the steel ingot for fastening it to a hoisting mechanism, whereby the entire unit of the structural parts recited can be lifted and moved.

# ELECTRICAL

**3,168,609**
**MOUNTED ANAMORPHIC PRISM SYSTEM**
**Harry Sidney Newcomer, P.O. Box 340, Cape May, N.J.**
**Original application Oct. 13, 1955, Ser. No. 540,182, now Patent No. 2,866,383, dated Dec. 30, 1958. Divided and this application Oct. 2, 1958, Ser. No. 764,900**
**2 Claims. (Cl. 88—57)**

1. A mounted anamorphic prism system comprising a pair of cemented achromatic prisms inclined at substantial angles to the axis of the mount and disposed in opposite directions thereto in which at least one prism of the pair is edged cylindrically along an axial distance greater than the approximate radius of the cylinder to fit into a straight cylindrical sleeve of the mount and be held therein against tilting and is further cemented therein

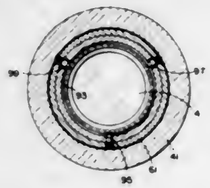




in a fixed position determined solely by the cement bond between the cylindrical edge and the inner wall of the sleeve.

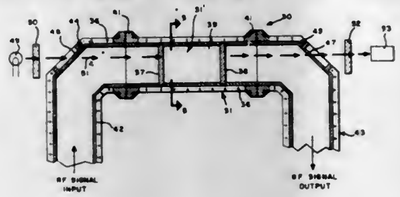
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**3,168,610**
**ZOOM LENS MOUNT**
**George Kende, Rochester, N.Y., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**Filed May 12, 1960, Ser. No. 28,568**
**2 Claims. (Cl. 88—57)**



1. A lens mount construction for mounting a plurality of components of a continuously variable focal length lens, the lens components including a first, a second, a third, and a fourth lens component optically alined in order from front to rear, said first and third lens components being movable while said second and fourth components are stationary, said lens mount comprising a stationary barrel having a rearmost flange in which is mounted said fourth lens component, a forwardly extending stationary tube secured to said flange, a sliding tube mounted between said stationary barrel and tube on a bearing surface at the front of said barrel and another bearing surface at the rear of said sliding tube, both of said bearing surfaces being of relatively limited axial extent and each having an axial length no greater than a relatively small fraction of the maximum axial movement of said sliding tube, said first lens component being mounted near the front of said sliding tube and said second lens component being mounted at the front of said stationary tube, a mounting ring in which said third lens component is supported, said mounting ring being disposed within said stationary tube for axial movement and having a slightly smaller diameter than that of said tube, a circumferential groove in said mounting ring, said stationary tube having three axially extending slots, and at least three radial studs fastened to the rear end of said sliding tube and each extending through one of said slots into said mounting ring groove for suspending said mounting ring at a circumferential clearance from said stationary tube, said sliding tube being movable axially forwardly and rearwardly to change the magnification of the variable focal length lens, all but one of said slots in said stationary tube being oversize with respect to the diameter of the studs passing therethrough and being normally out of engagement with their respective studs, the other stud slidably engaging its respective slot to guide the movement of said sliding tube in an axial path, the ends of said slots serving as stops to limit the sliding movement in a forward direction.

**3,168,611**
**LIGHT MODULATOR USING IMPROVED KERR CELL**
**Lewis H. Strauss, Baltimore County, Md., assignor to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland**
**Filed May 7, 1962, Ser. No. 192,941**
**4 Claims. (Cl. 88—61)**



1. A light modulator comprising:

a section of waveguide through which electromagnetic waves are propagated;

means for effecting passage of a light beam through said section in the direction of propagation;

a light source for producing a light beam;

polarizing means in the path of said beam for plane polarizing the same prior to its passage through said section;

analyzer means in the path of said beam for analyzing the same after its passage through said section;

said polarizing means and analyzer being oriented at right angles so that said analyzer means normally extinguishes the light beam after its passage through said section;

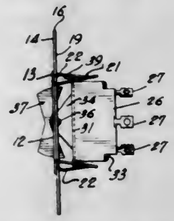
a Kerr cell in said section through which said beam passes for causing its plane of polarization to rotate in proportion to the transverse electric field of said electromagnetic waves whereby said analyzer effects passage of a light beam modulated by the electric field of said waves;

electrodes on said Kerr cell; and

means to produce across said electrodes a D.C. potential that creates a non-varying transverse electric field for causing a preselected rotation of the plane of polarization of said beam, upon which, rotation due to the transverse electric field of said waves is superimposed.

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**3,168,612**
**MOUNTING ADAPTERS FOR SWITCH CASES**
**Wesley T. Sorenson, West Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut**
**Filed Oct. 10, 1962, Ser. No. 229,652**
**9 Claims. (Cl. 174—57)**

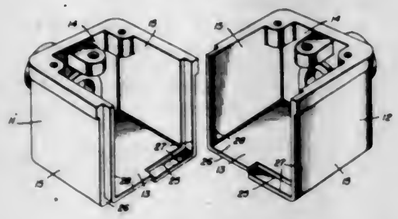


2. An adapter for attaching a switch case to a mounting plate having an aperture therein, comprising a member made of a unitary piece of sheet metal, said member being blanked to form a pair of rearwardly extending spaced apart brackets, at least one spring element blanked from each bracket and extending outwardly from the rear end of said bracket and forwardly toward said plate, the forward ends of said spring elements engaging a pair of op-

posing edges of said aperture by snap action to maintain said adapter in position on said plate, and a plurality of spaced apart notches in each bracket formed at varying distances from the inner end thereof, said notches being selectively engageable by a switch case to be suspended between said brackets in a desired location relative to said mounting plate, said spring elements urging said respective brackets towards each other to ensure engagement of said switch case therebetween.

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**3,168,613**
**INSULATED WIRING BOX MADE OF SELECTIVELY USEABLE MOLDED SECTIONS OF THERMOPLASTIC MATERIAL UNITED BY SOLVENT WELDING TO FORM A UNITARY BOX**
**Lewis E. Palmer, Washington, W. Va., assignor to Union Insulating Company, Parkersburg, W. Va., a corporation of West Virginia**
**Filed May 8, 1963, Ser. No. 278,943**
**2 Claims. (Cl. 174—65)**



1. An insulated open-topped electrical wiring box of generally rectangular configuration, comprising a pair of complementary sections each of which is formed of a thermoplastic material and includes a bottom wall, an end wall containing at least one means adapted for connection with an electric conductor, and a pair of opposed side walls connected at one end with said end wall, each of said sections being provided, at its open end and on one side of the central plane perpendicular to the bottom wall, with a right-angled extension including first and second portions extending longitudinally of said section from one of said side walls and the adjacent portion of said bottom wall, respectively, the right-angled extension of each of said sections extending into a corresponding right-angled recess contained in the free extremity of one side wall and the adjacent portion of the bottom wall of the other section, the surfaces of said right-angled extensions being permanently bonded to the walls of the recesses received thereby, whereby said sections are rigidly connected to form said open-topped electrical wiring box.

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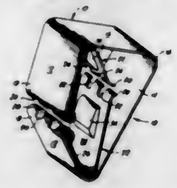
**3,168,614**
**ARMORED CABLE CONNECTION**
**Paul S. Munn, Melrose, Mass., and Charles K. Hutchins, Jr., Greenland, and Maurice J. Ross, Summersworth, N.H., assignors to Simplex Wire and Cable Company**
**Filed Jan. 16, 1962, Ser. No. 166,719**
**4 Claims. (Cl. 174—70)**



2. In combination:
(*a*) an armored cable including
(*b*) a conductor, and
(*c*) a plurality of armor wires laid thereabout; and
(*d*) a device according to claim 1, in which
(*e*) said conductor extends through one end of said housing and said lateral aperture,
(*f*) the alignment of said corresponding lateral edges of said bosses corresponds to the lay of said armor wires, and
(*g*) said armor wires are laid about said housing spaced by said bosses thereby exposing said aperture.

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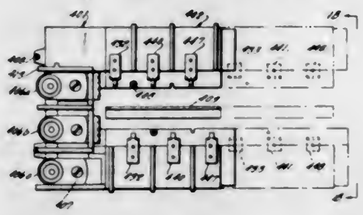
**3,168,615**
**CLIP FOR CONNECTING ELECTRICAL CONDUCTORS**
**Rodney V. Owen, 3224 SE. 19th, and Josef Peroutka, 100 NE. 11th, both of Oklahoma City, Okla.**
**Filed Oct. 15, 1962, Ser. No. 230,319**
**14 Claims. (Cl. 174—84)**



1. A clip for joining a pair of insulated, generally cylindrical, electrical conductors to each other and removing a portion of the insulation therefrom comprising:
(*a*) an elongated band bent about transverse, longitudinally spaced bend lines to a quadrilateral configuration with said quadrilateral having two pairs of adjacent sides of substantially equal length, said quadrilateral being open at one of its corners with the opposite ends of said elongated band defining the opening into said quadrilateral, said opposite ends each having two transversely spaced slots therein with the slots in opposite ends mating upon convergence of said ends into contact with each other to form circular apertures of slightly smaller diameter than said electrical conductors; and
(*b*) flexible, extensible means within said quadrilateral and having opposed cutting edges for gripping said conductors at a point spaced inwardly from the open corner of said quadrilateral and responsive to opposing compressive forces exerted upon the two corners of said quadrilateral adjacent said open corner for converging said cutting edges and moving said converged cutting edges away from the ends of said band whereby said conductors are held stationary in the slots in said ends and said cutting edges strip the insulation from said conductors in moving away from said ends.

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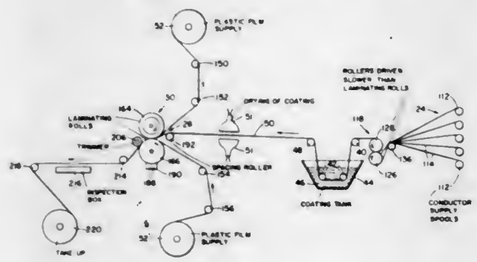
**3,168,616**
**SEQUENCED PHASED PANEL**
**Russell S. Davis, Detroit, and Ralph C. Clement, Mount Clemens, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Apr. 8, 1964, Ser. No. 358,344**
**10 Claims. (Cl. 174—99)**



1. A multi-phase panel interior of the type described comprised of a main lug molding, a first and second side channel molding, and a first, second and third conductor assembly; said first, second and third conductor assemblies each being comprised of a cross conductor with wire grip adapter connectors and two side conductors each with connector straps; said cross conductor and said side conductors of said first conductor assembly all lying in a single first plane; said cross conductor and said side conductors of said second conductor assembly all lying in a single second plane; said cross conductor and said side conductors of said third conductor assembly all lying in a single third plane; said first and second side channel molding being of identical construction; said first and second side channel moldings and said main lug molding each being constructed with a first, second and third channel; said first channels of said first and second side channel molding and of said main lug molding lying in a single first plane; said second channels of said first and second side channel molding and of said main lug molding lying in a single second plane; said third channels of said first and second side channel molding and of said main lug molding lying in a single third plane; said first, second and third channels being in flat parallel relation with each other and adapted to receive said first, second and third conductor assemblies, respectively; a second extension at one end of each of said second channels extending beyond the corresponding end of both said first and third channels; a first and third extension at the other end of said first and third channels respectively extending beyond the corresponding end of said second channel; said first and second side channel molding interlocked to said main lug molding by having said second extension secured between said first and third extensions.

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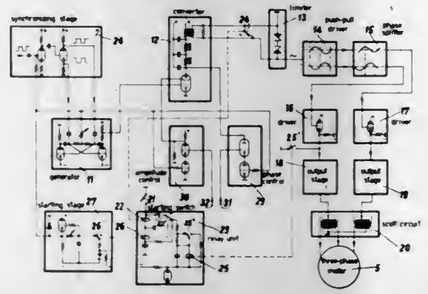
**3,168,617**
**ELECTRIC CABLES AND METHOD OF MAKING THE SAME**
**Herman W. Richter, Victor, N.Y., assignor to Tape Cable Electronics, Inc., Rochester, N.Y., a corporation of New York**
**Filed Aug. 27, 1962, Ser. No. 224,270**
**8 Claims. (Cl. 174—117)**




1. A method of making a flexible, ribbon-like, multiple-conductor, electric cable of indeterminate length and having a plurality of parallel, accurately spaced, ribbon-like, metallic conductors enclosed in a flexible, plastic envelope, said method comprising:
(*a*) leading said conductors through a longitudinal path so that said conductors are coplanar, parallel, and spaced from each other;
(*b*) applying longitudinal tension in excess of yield strength to said conductors for elongating said conductors to stretch-straighten said conductors;
(*c*) guiding said stretch-straightened conductors in an accurately controlled, predetermined, coplanar, parallel, spaced relation relative to each other;
(*d*) enclosing said stretch-staightened, accurately spaced conductors between confronting surface portions of a ribbon-like, flexible, electrical insulating, plastic envelope;
(*e*) securing said confronting surface portions to each other and to said conductors to form said cable; and
(*f*) all of such steps being taken in continuous order.

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**3,168,618**
**APPARATUS FOR RECORDING SIGNALS AND FOR REPRODUCING SIGNALS RECORDED ON A MAGNETIZABLE TAPE**
**Richard Sondermeyer, Darmstadt, Germany, assignor to Fernseh G.m.b.H-Darmstadt, Darmstadt, Germany**
**Filed Aug. 28, 1961, Ser. No. 134,424**
**Claims priority, application Germany, Aug. 30, 1960, F 31,998**
**17 Claims. (Cl. 178—6.6)**



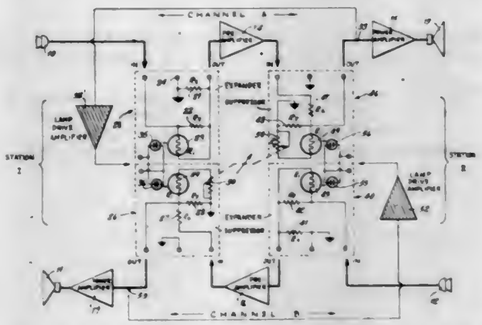
1. In an apparatus of the type set forth, in combination, a rotatable member; motor means for rotating said rotatable member at a predetermined speed when an alternating voltage of predetermined frequency is applied to said motor means, said motor means requiring for starting an alternating voltage supply at a frequency substantially lower than said predetermined frequency; current supplying means having a voltage output at a frequency steplessly variable at least between said starting frequency and said predetermined frequency; synchronizing means for maintaining said output voltage of said current supplying means at said predetermined frequency when operatively connected to said current supplying means; means for raising the frequency of said output voltage of said current supplying means steplessly from said starting frequency to at least said predetermined frequency; and means for operatively connecting said synchronizing means with said current supplying means automatically substantially when the output voltage thereof reaches said predetermined frequency, so as to maintain thereafter said output voltage constantly at said predetermined frequency and thereby maintain also said predetermined speed of said motor means constant.

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**3,168,619**
**TWO-WAY AUDIO COMMUNICATION**
**Stevens H. Harrison, Brooklyn, N.Y., assignor to Bankers Trust Company, New York, N.Y., a corporation of New York**
**Filed July 13, 1962, Ser. No. 209,498**
**18 Claims. (Cl. 179—1)**

1. In a two-way audio communication system, in combination, first and second communication channels between two stations, said first channel having a transmitting transducer connected thereto at a first station and a reproducing transducer connected thereto at a second station, and said second channel having a transmitting transducer connected thereto at said second station and a reproducing transducer connected thereto at said first station, expander means connected in the first channel, including a light-dependent resistor and arranged to respond to change of ilumination on said resistor for increasing the gain of said first channel suppressor means connected in the second channel, including a light-dependent

resistor and arranged to respond to change of illumination on said last-mentioned resistor for reducing the gain of said second channel, and means connected to the first



channel and including illuminating means, for changing illumination of said light-dependent resistors, to operate said expander means and suppressor means, in response to audio communication signals in said first channel.

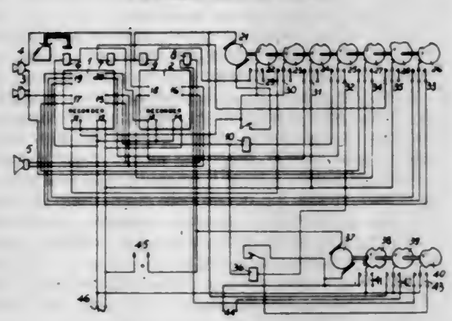
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**3,168,620**

## ELECTROMECHANICAL DEVICE FOR RECORDING AND REPRODUCING TELEPHONE MESSAGES RECEIVED IN THE ABSENCE OF THE SUBSCRIBER

**Arnaldo Piovesan, % Guido Modiana, via Meravigli 16, Milan, Italy**

**Filed Sept. 5, 1961, Ser. No. 137,710**
**Claims priority, application Italy, Dec. 31, 1960, 643,198**
**1 Claim. (Cl. 179—6)**



An electromechanical device for reproducing conventional messages and for recording telephone messages upon a telephone call in the absence of the subscriber and for reproducing the recorded messages over a telephone line in response to an order signal received over the same telephone line, comprising:

a first magnetic recorder for answering a recorded conventional phrase upon an external telephone call;

a second magnetic recorder for recording incoming external messages and reproducing them over a telephone line in predetermined time intervals upon an order signal received over the telephone line;

a first microphone connected to said first magnetic recorder and adapted to pick-up the acoustic signals from the telephone bell;

a second microphone connected to said second magnetic recorder and adapted to pick-up the messages transmitted over the telephone line upon the telephone call;

a loud speaker alternatively connectable to said first and said second magnetic recorder;

an electromagnet for raising the fork rest of the telephone apparatus;

a first rewinding relay to switch the rewinding of said first magnetic recorder;

a second rewinding relay to switch the rewinding of said second magneitc recorder;

a recording relay for switching the recording operation of said second magnetic recorder;

a signal relay connected with said first magnetic recorder and responsive to a calling signal transmitted thereto from an amplifier of said first magnetic recorder upon the ringing of the telephone bell picked-up by said first microphone and transmitted to said amplifier;

a first timing motor, said signal relay when energized controlling the start of said timing motor;

a first cam shaft connected with said first timing motor;

a first plurality of micro-switches actuated by said first cam shaft and controlling the pre-setting sequences of the magnetic recorders for reproducing the conventional message and for recording the messages received over the telephone line;

a second timing motor;

a second cam shaft connecting with said timing motor;

a second plurality of micro-switches actuated by said second cam shaft and controlling the pre-setting sequences for reproducing the recorded messages upon the receipt of an order signal at a predetermined time interval over the telephone line;

a play-back relay for closing the feed circuit of said second timing motor;

normally open clock-work actuated contact means for closing the feed circuit of said second timing motor at predetermined time intervals and responsive to an order signal, mechanically actuated second contact means for closing the feed circuit of said second timing motor when said second recorder is completely rewound.

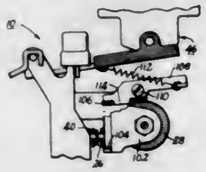
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**3,168,621**

## REMOTE DICTATION APPARATUS

**Frederick W. Roberts, Fairfield, Douglas E. Taylor, Westport, and Joseph A. Rescsanski, Trumbull, Conn., assignors to Dictaphone Corporation, Bridgeport, Conn.**

**Filed Sept. 14, 1961, Ser. No. 138,176**
**7 Claims. (Cl. 179—6)**



1. A remotely-operated dictation system which includes centrally-located recording and control apparatus, a plurality of remote dictator's instruments each including a microphone, circuit means providing communication paths between said microphones and said recording apparatus, on-off switch means at each instrument and operable when in the "on" position to complete the respective communication path to said recording apparatus; privacy means at each instrument and effective, in response to the completion of a communication path to one of said instruments, to prevent the completion of communication paths to the other of said instruments; and privacy lock-in means at each instrument under the control of the on-off switch means at the corresponding instrument, each of said lock-in means including means connected to the privacy means at the corresponding one of said other instruments and operable by said on-off switch means to maintain that privacy means in effective condition as long as the on-off switch at said corresponding instrument is in "on" position.



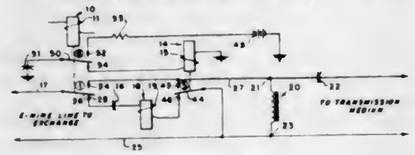
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**3,168,622**

## DIAL PULSE REPEATER

**Peter G. Smee, Lynchburg, Va., assignor to General Electric Company, a corporation of New York**

**Filed Mar. 16, 1959, Ser. No. 799,508**
**8 Claims. (Cl. 179—16)**



1. A circuit comprising first relay means having a release time such that its deenergization substantially corresponds to the end of a pulse of electrical energy applied thereto said first relay means including first and second contacts and armature means operative therebetween, second relay means connected to said second contact and having a release time such that its deenergization occurs at a time after the electrical energy applied thereto is terminated, a source of unidirectional current, means for storing electrical energy, said armature being moved against said first contact for connecting said storing means into circuit with said source to charge said storing means upon energization of said first relay, said armature being moved against said second contact upon deenergization of said first relay means for removing the storing means from the circuit with the unidirectional current source and placing it in circuit with the second relay means to apply the stored electrical energy to the second relay means thereby energizing the latter, the application of a train of pulses having widths shorter than the release time of said second relay means repeatedly causing said storage means to be placed into and removed from circuit with the unidirectional current source, said second relay means remaining energized substantially throughout the whole duration of said pulse train.

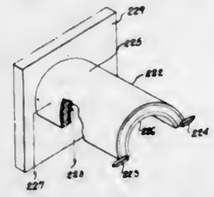
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**3,168,623**

## PIEZOELECTRIC TRANSDUCER

**Lucien A. Petermann, Geneva, Switzerland, assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey**

**Original application Oct. 13, 1954, Ser. No. 461,979, now Patent No. 2,928,069, dated Mar. 8, 1960. Divided and this application Nov. 18, 1959, Ser. No. 853,931**
**31 Claims. (Cl. 179—100.41)**



16. A transducer comprising an electro-mechanically sensitive body, said body being a partial hollow cylinder of piezo-electric ceramic with inner concave and outer convex substantially cylindrical surfaces, substantially straight parallel side edges and substantially arcuate ends, an electrode on the inner concave surface, an electrode on the outer convex surface, said body being polarized radially between the electrodes, said body being mechanically displaced in a flexural mode upon the application of an electrical signal to the electrodes.

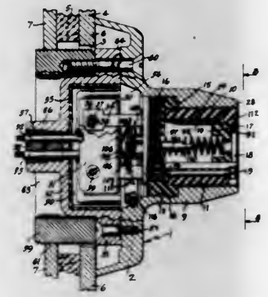
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**3,168,624**

## EXPLOSION PROOF DEAD FRONT ELECTRICAL RECEPTACLE HAVING MICROSWITCH MEANS

**Joseph F. Healy, Westport, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut**

**Filed Feb. 13, 1961, Ser. No. 88,872**
**4 Claims. (Cl. 200—51.09)**



1. In combination, a wall having an opening; a closed outlet box of an electrical supply wiring system mounted in said wall provided with a front wall having a threaded opening in alignment with the wall opening; a receptacle including a body member secured to the wall to cover the first opening and provided with a chamber; an insulating structure mounted in said chamber; stationary receptacle contacts mounted in said insulating structure adapted for engagement with the contacts of an attachment plug cap inserted in said insulating structure; microswitch means mounted at the rear side of said insulating structure and electrically connected with the receptacle contacts to control current supply thereto; operating means for said microswitch means operable by turning movements of a plug cap inserted into the receptacle; a backing member provided with a chamber enclosing the microswitch means; means securing said backing member to said body member with the backing member and body member providing a sealed chamber enclosing the microswitch means and its operating means; a mounting block in the form of an adjusting ring rigidly secured to the back of said body member and backing member and having a threaded portion arranged to be threadedly secured in said threaded opening in the outlet box.

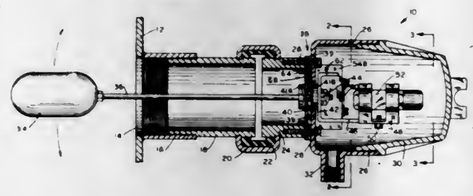
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**3,168,625**

## FLOAT SWITCH WITH EXPLOSION-PROOF CHAMBER

**Ralph W. Hill, 2163 S. Sandusky, Tulsa, Okla.**

**Filed Aug. 8, 1962, Ser. No. 215,706**
**3 Claims. (Cl. 200—84)**



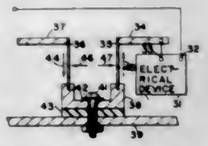
1. An explosion proof float switch comprising, in combination:

a closed explosion-proof chamber having an opening in one wall thereof;

a diaphragm member supported to said wall of said closed chamber, closing the said opening therein;
a rod extending through said opening in said closed chamber and through said diaphragm member, said rod pivotally and sealably supported by said diaphragm member;
a float member affixed to said rod exteriorly of said closed chamber;
a switch means supported within said chamber actuated by pivotation of said rod;
a shield flange substantially perpendicularly supported to said rod within said closed chamber in near proximity to said opening, said shield flange of an area larger than the area of said opening, said shield flange sealably engageable with said wall of said closed chamber around the total periphery of said opening therein when the pressure in said chamber arises.

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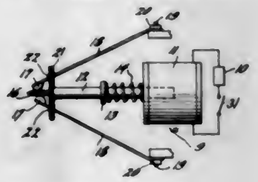
**3,168,626**
**ELECTRODYNAMICALLY OPERATED CIRCUIT PROTECTIVE DEVICE**
**Richard M. Patrick, Winchester, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware**
**Filed Aug. 1, 1960, Ser. No. 46,444**
**9 Claims. (Cl. 200—87)**




1. In combination with an electrical device to be protected the combination comprising: current conducting means having a substantially flat surface forming a part of the electrical circuit for supplying current to said electrical device; a substantially flat electrically conducting member in insulated and overlapping relationship with said current conducting means, means serially connected therewith to establish current flow in opposite directions through said member and said current conducting means to develop a mutual repulsion therebetween; and means for fixedly maintaining the ends of said electrically conducting member in said insulated and overlapping relationship with said current-conducting means, said electrically conducting member having a cross section to cause it to rupture before heating sufficient to weaken said electrically conducting member occurs when said mutual repulsion exceeds a predetermined amount.

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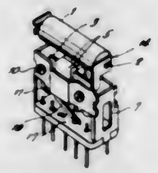
**3,168,627**
**RELAY WITH POSITIVELY DRIVEN CONTACTS**
**James H. Gilley, Swepsonville, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 7, 1962, Ser. No. 178,001**
**1 Claim. (Cl. 200—87)**



A relay comprising,
a housing,
a coil mounted on said housing,
an armature having a collar secured thereto and mounted to be moved within said coil,
a spring acting between said collar and housing for biasing said armature out of said coil,
a pair of terminals affixed to said housing in spaced opposition to each other,
a pair of initially flexed spring contact arms having one end mounted on said terminals and arranged to have the free ends oppositely inclined toward each other,
a pair of contact elements attached to the free ends of said contact arms,
a plate connected to the armature having inclined diametrically opposed cam slots formed therein through which said spring contact arms pass and rendered effective by the movement of said armature for engaging and applying a continuously progressive force on the contact arms,
a sheet of insulation material having one end thereof centrally affixed to the plate and the armature, and having the other end thereof sharply tapered to a point, and positioned between said contact elements for precluding said contact elements from snapping into contact with each other, and
means for energizing said coil to move the armature to withdraw the tapered end portion of said sheet from between said contact elements and for driving the plate to apply the continuously progressive force on the contact arms during withdrawal to force the contact elements into engagement with the tapered end portion and after withdrawal to positively hold said contact elements in their contacted position.

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**3,168,628**
**MINIATURE SYMMETRICAL CONTACT POLARIZED RELAY**
**Takashi Okamoto, Tokyo, and Atsushi Ishii, Kawasaki, Japan, assignors to Fuji Tsushinki Seizo Kabushiki Kaisha, Kawasaki, Japan, a corporation of Japan**
**Filed Jan. 3, 1963, Ser. No. 249,263**
**Claims priority, application Japan, Jan. 16, 1962, 37/3,205**
**9 Claims. (Cl. 200—93)**



1. A polarized relay comprising magnetic excitation means, an elongated permanent-magnet armature having contacts at each end, spring means pivotally supporting the armature at its center and biasing the armature into a central position, a yoke assembly supporting said excitation means and said spring means and having two magnetizable yoke pieces extending along the armature on opposite sides thereof and spaced therefrom.

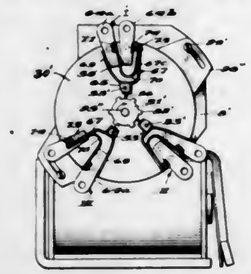
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**3,168,629**
**ELECTROMAGNETICALLY ACTUATED CAM-OPERATED ROTARY MULTI-SWITCH RELAY**
**Charles C. Roberts, Rte. 5, Frederick, Md., and Francis R. Moran, Bollinger Road, R.F.D. 6, Westminster, Md.**
**Filed June 16, 1961, Ser. No. 117,736**
**4 Claims. (Cl. 200—104)**

1. A relay mechanism comprising, in combination, motor means having an armature, a rotary cam having radially extending sharp-edged abutment means thereon, said rotary cam being rotatable by said motor means when energized, a plurality of electrical circuit-controlling terminal elements having fixed, spaced contact means thereon arcuately positioned and radially spaced outwardly of said



rotary cam, contact means pivotally mounted intermediate said rotary cam and said arcuately positioned circuit-controlling terminal elements and movable in a first direction by engagement with said sharp-edged cam-abutment means, spring means biasing said pivotally mounted contact means in the opposite direction, said pivotally mounted contact means being alternately engageable and disengageable with said fixed, spaced contact means of said circuit-controlling terminals respectively by said sharp-edged cam-abutment means and said biasing spring means, said motor means comprising a supporting frame means having spaced parallelly extending arms, an electromagnet mounted between and in alignment with said frame arms, the pole end of said electromagnet being disposed adjacent one end of said frame arms, a knife-edged bearing formed on one of said frame arms at said one end thereof, a bellcrank armature pivotally mounted on said bearing and having one of its arms disposed in cooperative relation to



the pole end of said electromagnet, the ends of said one arm of said frame means being offset to prevent endwise displacement of said bellcrank armature, a U-shaped bracket having its bight portion rigidly secured on said one of said frame arms in the plane of said electromagnet and armature, the other arm of said bellcrank armature extending in overlying relation to said bight portion, and so constructed and arranged as to lie in engagement therewith when said electromagnet is de-energized, spring means engaging said other armature arm and mounted on said frame means intermediate said knife-edged bearing and said U-shaped bracket mounting and biasing said other armature arm into its bight engaging position, said other armature arm having a spring-biased detent thereon, a shaft mounted on said U-shaped bracket having a ratchet wheel secured thereon and rotatable by said detent means when said electromagnet is energized, said rotary cam being fixedly secured on a projection of said shaft.

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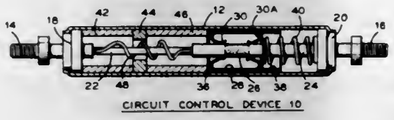
**3,168,630**
**ROTARY DISCS AND STEP BY STEP DRIVE THEREFOR**
**Walter Holzer, Drosteweg 19, Meersburg (Bodensee), Germany**
**Filed Nov. 21, 1962, Ser. No. 239,194**
**Claims priority, application Germany, Nov. 28, 1961, H 44,237**
**5 Claims. (Cl. 200—105)**



1. A device for operating the program of a fully automatic washing machine comprising, a rotary control disc, one face of said disc having spaced concentric cam tracks, electric contacts scanning said tracks, the other face of said disc having integral concentrically arranged ratchet tooth-like projections, means rotating said disc in step-by-step movement, said means comprising an oscillating lever pivoted at one end and the other end having driving engagement with said tooth-like projections, and means oscillating said lever wherein said other end of said lever engages behind one of said tooth-like projections during each oscillation and rotates said disc step-by-step in one direction, and latch means preventing rotation of the disc in the other direction.

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**3,168,631**
**THERMAL CIRCUIT INTERRUPTING DEVICE HAVING COLLINEAR SPACED CONDUCTORS**
**Leonard Milton, Lake Success, and John S. Lory, Syosset, N.Y., assignors to The Filtron Company, Inc.**
**Filed Mar. 28, 1960, Ser. No. 18,041**
**3 Claims. (Cl. 200—122)**



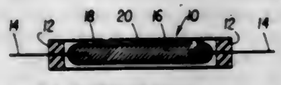

1. A circuit-interrupting device comprising
an elongated cylindrical housing;
a closure co-axially supported on the housing at each end of said housing;
a feed-through terminal co-axially supported on each closure;
a first electrical conductor electrically insulated from and supported on one of said closures and electrically connected to the associated terminal;
a second electrical conductor electrically insulated from and supported on the second of said closure and electrically connected to the associated terminal;
an insulating spacer disposed between and secured to the first conductor and the second conductor, with all said three elements disposed and secured in linear axial alignment to constitute a fixed rigid linear structure supported between said two terminals;
a conducting bridging member dimensioned to bridge the insulating spacer and to engage the two electrical conductors when said bridging member is in operative position, and movable axially to a non-operating position to disengage one of said electrical conductors;
a compression spring normally compressed and positioned to impress an axial displacing force on said bridging member tending to move said bridging member from operative to non-operative position;
thermally-responsive detent means disposed to be normally effective in the line of movement of said bridging member to counteract the displacing force of said compression spring and to hold said conducting bridging member in operative position; and
means for thermally acting on said detent means to render said detent means ineffective to counteract said spring means, and thereupon to permit said spring means to move said bridging member from operative to non-operative position.

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**3,168,632**
**BALLAST DISCONNECT DEVICE HAVING A COATING OF FLUX MATERIAL**
**Joseph G. Baran, Northbrook, and Albert E. Feinberg, Chicago, Ill., assignors to Advance Transformer Co., Chicago, Ill., a corporation of Illinois**
**Filed Oct. 31, 1961, Ser. No. 148,918**
**4 Claims. (Cl. 200—131)**

1. In a ballast which is energized from a source of A.C. current for igniting at least one gaseous discharge device

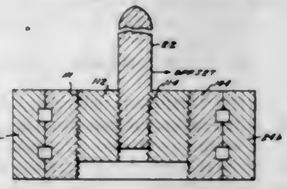
and said ballast has an energizing circuit which is required to be opened when the operating temperature of the ballast exceeds a prescribed value, a disconnect device connected in the energizing circuit instantaneously to open said circuit when said temperature value is exceeded comprising, a solid metal link formed of solder metal mate-



rial selected to melt when said temperature value is exceeded to open said circuit and having an exterior, relatively thin, sheath coating of fluxing material in intimate contact with the link so as to dissipate oxides accumulating on perimetric surface areas of the metal link and prevent the melted metal from holding together so that said circuit will be opened instantaneously.

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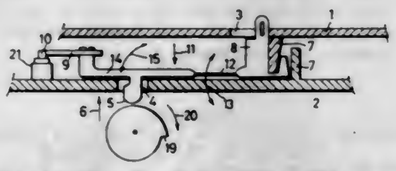
**3,168,633**
**MOUNTING BLOCK FOR ADJUSTABLE CONTACT ROD**
**Elmer T. Eberhard, Glendale, Calif., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Feb. 13, 1961, Ser. No. 88,859**
**5 Claims. (Cl. 200—166)**



1. In combination, a mounting block and a bayonet type contact; said bayonet type contact being movable within an interrupter chamber; a threaded insert for said mounting block; said mounting block having a threaded opening threadably receiving said threaded insert; said threaded insert having a threaded opening therein; said threaded opening in said threaded insert receiving one end of said bayonet type contact; the axis of said threaded opening being laterally displaced from the axis of said threaded insert, whereby said bayonet type contact can be laterally adjusted with respect to said mounting block by rotating said insert within said mounting block.

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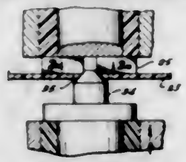
**3,168,634**
**ELECTRICAL CONTACT DEVICE**
**Walter Holzer, Drosteweg 19, Meersburg (Bodensee), Baden, Germany**
**Filed June 25, 1962, Ser. No. 204,950**
**Claims priority, application Germany, June 27, 1961, H 42,966**
**4 Claims. (Cl. 200—166)**



1. In combination a contact member and means for operating said contact member, said contact member comprising a thin flat resilient bar having one end portion anchored in fixed position and the other end portion carrying a contact, the intermediate and contact portions of the bar being movable edgewise in the plane of the side edges of the bar, the portion of the bar adjacent the anchored end having spaced alternate 90° twists defining therebetween a spring-like bendable portion having its edgewise flat surface at right angles to the edgewise flat surface of the intermediate portion, and rotary cam means acting upon the intermediate portion to move the said movable portion in said plane about said bendable portion.

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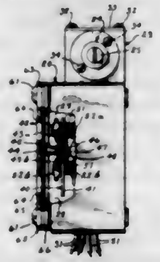
**3,168,635**
**ASSEMBLY OF ELEMENTS FOR MAKING INTERMITTENT ELECTRICAL CONTACT**
**Jack P. Gebhart, Long Beach, Calif., assignor to Chalco Engineering Corporation, Gardena, Calif., a corporation of California**
**Filed Dec. 31, 1962, Ser. No. 248,791**
**7 Claims. (Cl. 200—166)**



1. An electrical contact assembly comprising a fixed element and a movable element adapted to be intermittently brought into contact with said fixed element, one of said elements having at least one knife edge contacting surface and the other of said elements having a tapered surface for contacting said knife edge surface, said fixed element being a plate having cross notches therein to form a plurality of parallel knife edge surfaces concentrically positioned.

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**3,168,636**
**ILLUMINATED ELECTRICAL SWITCH**
**Woodrow A. De Smidt, Whitefish Bay, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin**
**Filed June 2, 1961, Ser. No. 114,362**
**3 Claims. (Cl. 200—167)**

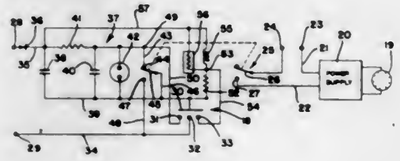


1. An electrical switch, comprising the combination of:
a housing defining a cavity;
a contact assembly positioned within said cavity and having at least two pairs of opposed stationary contacts, a movable bridging contact adapted for alternative movement to opposed positions for electrically connecting respective pairs of said stationary contacts, and a pair of exposed line terminals mounted on the external surface of said assembly and electrically connected to said stationary contacts;
an indicator lamp assembly positioned within said cavity and electrically connected to said line terminals, said indicator assembly including a supporting base having peripheral dimensions less than the internal peripheral dimensions of said cavity, said base having a first surface facing said terminals and a second surface opposite said first surface, at least two indicating lamp circuits supported by said supporting base and mounted on said second surface, at least two pairs of resilient conductive contacts disposed on the first surface and respectively in electrical connection with each of said lamp circuits and each of said line terminals;
an observation cover for said switch secured on said housing and over said indicating circuits;
and means coacting with said cover and said supporting base for maintaining said resilient contacts in biased engagement with respective ones of said terminals.



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**3,168,637**
**MICROWAVE OVEN CONTROL**
**John T. Lamb, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio**
**Filed June 14, 1962, Ser. No. 202,540**
**8 Claims. (Cl. 219—10.55)**

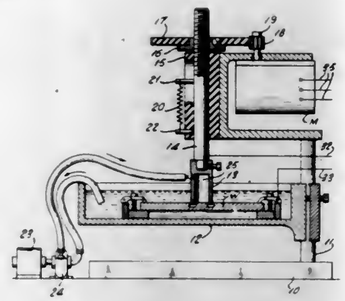


1. In an electronic heater including an enclosure within which articles to be heated are located, power tube means for generating the energy needed for such heating of the articles within the enclosure and including filament means having a predetermined elevated operating temperature, control means for regulating the application of the energy output of said power tube means to the enclosure for the heating of the articles therein, said control means being thus operative to establish an article-heating period, and circuit means for heating of said filament means to the operating temperature thereof, said circuit means comprising switching means for connection of the circuit means to a conventional available source of energy, actuator means for closing said switching means to effect such connection and consequent energization of the circuit means for heating of the filament means to said predetermined operating temperature, such heating of the filament means conditioning the power tube means for operation by said control means to effect the heating of the articles in the enclosure, and holding means for holding said switching means closed to maintain the heating of the filament means for a fixed period of time greater than the article-heating period established by the operation of said control means in regulating the energy output of the power tube to the enclosure.

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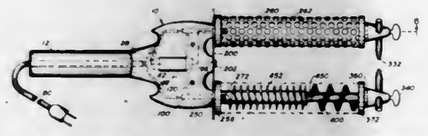
**3,168,638**
**METHOD OF ELECTRO-DISCHARGE MACHINING AND FLUIDS FOR USE THEREIN**
**Milton J. Riddles, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio**
**Filed June 19, 1962, Ser. No. 203,611**
**5 Claims. (Cl. 219—69)**

4. The method of electro-discharge machining which comprises passing high frequency electrical discharges of short duration from an electrode to a work piece to be machined while said electrode and work piece are immersed in a machining fluid essentially composed of an aqueous solution of ethylene glycol of the formula $HOCH_2(CH_2OCH_2)_nCH_2OH$ wherein $n$ is selected from 0 and the positive integers and a monohydroxy compound of the formula ROH wherein R is a hydrocarbon radical having 4 to 12 carbon atoms, said solution containing from 35% to 70% by volume of said glycol and from 2.5% to 35% by volume of said monohydroxy compound.



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**3,168,639**
**CARBON ARC TORCH**
**Paul C. Scott, 5117 Nicholas, Omaha, Nebr.**
**Filed Dec. 2, 1963, Ser. No. 327,313**
**6 Claims. (Cl. 219—139)**



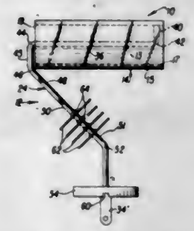
1. A welding machine having spaced parallel composite shafts, means at the forward ends of such composite shafts for supporting electrodes in positions disposed transversely to said composite shafts and extending downwardly therefrom, a housing portion disposed rearwardly of said composite shafts, elongated rotating members forming rearward end portions of said composite shafts respectively, said rotating members extending through the forward end of said housing and extending into said housing in spaced apart parallelism with each other, rotation control members each connected to a respective one of said rotating members and extending transversely thereto inwardly of said housing, a manually operable rotation control member mounted in said housing, means rotatably mounting said rotation control member with respect to said housing for rotation about an axis disposed transversely to said composite shafts, a forward end of said control member having recess means therein receiving inward ends of said rotation control members, whereby upon a rotation of said control member, the inner ends of said rotation control members can be moved upwardly or downwardly whereby this causes a rotation of said rotating members and also of said composite shafts for the selective spacing of lower ends of said electrodes, and means for conducting current to said electrodes from a power source.

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**3,168,640**
**LABORATORY BURNER**
**Sol Roy Rosenthal, 230 E. Delaware Place, Chicago 11, Ill.**
**Filed Nov. 13, 1962, Ser. No. 236,852**
**18 Claims. (Cl. 219—242)**

1. A spatterproof visual laboratory burner or the like producing concentrated high temperatures which comprises a heating element including a heater arm section, and a heat-resistant transparent mantle enclosing said arm section and supported thereby, said mantle including a tubular wall and said arm section being disposed against said wall and extending therealong for substantially the entire length of the wall for supporting the wall and for

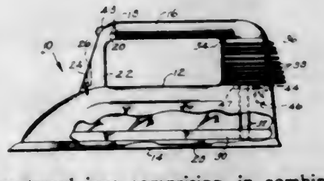
directing heat inwardly from the wall towards the center of the mantle to produce concentrated high temperatures in the center of the mantle, said mantle having an access



opening leading to the center thereof whereby an instrument may be inserted in the center thereof adjacent to said arm section.

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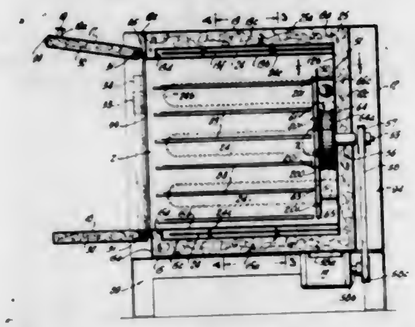
**3,168,641**
**CORDLESS TRAVEL IRON**
**Dorothy H. Hanusiak, 14 High View Terrace, Hamden, Conn.**
**Filed July 22, 1963, Ser. No. 296,549**
**1 Claim. (Cl. 219—250)**



A cordless travel iron comprising, in combination, a hollow metallic shell, a sole plate forming a lower side of said metallic shell, a heating element carried by said shell providing a means for heating said sole plate, insulator means within said shell providing a means for directing the heat from said heating element downwardly to said sole plate, a handle carried by said shell providing handle grip means for said travel iron, a rechargeable battery pack carried by said shell providing self power for said travel iron, a plug carried by said shell providing a means for inserting an electric cord for recharging said battery pack, a slide switch providing make and break means for an electric circuit between said battery pack and said heating element, an upright member externally secured to the forward end of said shell of said travel iron by means of a threaded screw, said sliding switch being slidably received within the upper extremity of said upright member, an opening in the upper end of said upright member, said handle having a projection, said upright member slidably receiving said projection of said handle, said handle being provided with a rectangular opening in the rear for receiving said battery pack, said handle being secured to the upper surface of said shell, said rechargeable battery pack being frictionally and slidably received within said opening in said handle and being covered with an aluminum covering having a plurality of parallel, spaced apart cooling fins providing means for dissipating heat to prevent the destruction of said rechargeable battery pack, said cooling fins extending rearwardly of said shell and in combination with the rear of said shell providing support means for said travel iron when stood upon its end, a plurality of contact buttons, electrical conductors between said heating element and said plurality of contact buttons, electrical conductors between said plug and said contact buttons providing a means for recharging said rechargeable battery pack, said contact buttons, said conductors and said plug being secured within an insulator block within said shell to prevent short circuiting and said insulator means comprising a flat asbestos sheet over said sole plate and an air space above said asbestos sheet separating said asbestos sheet and the upper side of said shell.

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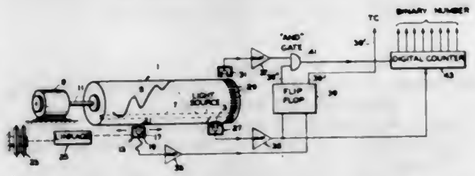
**3,168,642**
**ELECTRICALLY HEATED FORCED AIR CIRCULATION OVEN**
**Joseph Savio, Floral Park, N.Y., assignor, by mesne assignments, to Market Forge Company, Everett, Mass., a corporation of Massachusetts**
**Filed Jan. 24, 1963, Ser. No. 253,625**
**3 Claims. (Cl. 219—400)**



1. In a electric oven of the type described, a chamber having a rear wall and a peripheral side wall, a baffle plate in said chamber adjacent and parallel to said rear wall and spaced from said peripheral wall and having a relatively large central opening, a blower behind said baffle operative to cause air to flow rearwardly through said central opening and to counterflow around said baffle plate and forwardly, means releasably supporting racks in said chamber in horizontal spaced relation with each rack extending across said chamber, each rack adapted to receive food thereon for cooking, at least one rack positioned for food thereon to oppose and be aligned with said central opening, and a horizontal bar on said baffle across said central opening and opposing said food, said bar sized and shaped to block and reduce air flow over said food.

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**3,168,643**
**ENCODER**
**Arthur S. Robinson, South Huntington, N.Y., assignor to The Bendix Corporation, a corporation of Delaware**
**Original application Apr. 15, 1959, Ser. No. 806,625. Divided and this application Jan. 2, 1964, Ser. No. 335,126**
**20 Claims. (Cl. 235—61.6)**

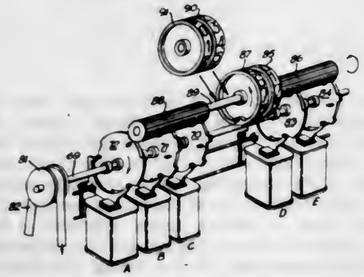



3. A function encoder comprising a member having reference, increment, and function intelligence thereon, the function intelligence comprising a graph varying in accordance with a condition according to a preselected function, pick-up means for scanning the reference and function intelligence and providing reference and function signals and including a part movable along the graph in response to the condition to scan the graph at a point corresponding to the condition to vary the interval between the signals in accordance with the condition, and pick-up means for scanning the increment intelligence to provide an output for measuring the interval between the signals.



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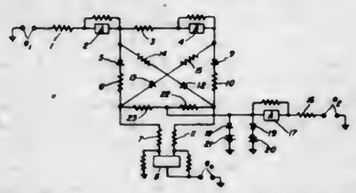
**3,168,644**
**MACHINE FOR SELECTING AND COUNTING SHEETS**
**Frank Albert Richardson, Welwyn Garden City, Stanley William Middleditch, Little Heath, Potters Bar, and Reginald Leslie Walker, Wanstead, London, England, assignors to De la Rue Instruments Limited, London, England, a corporation of the United Kingdom**
**Filed May 22, 1961, Ser. No. 111,635**
**Claims priority, application Great Britain, June 9, 1960, 20,384/60**
**6 Claims. (Cl. 235—92)**



1. In a machine for the high speed handling of paper sheets, such as bank notes, the combination of a single sheet removing and delivering unit comprising means for removing sheets one by one from a stack of sheets presented thereto, and a roller system for receiving and conveying sheets so removed; a sheet carrier unit comprising a carriage including a plurality of separate compartments for respectively supporting a plurality of separate stacks of sheets of different classifications, and means mounting said carriage for movement; operating means for moving said carriage to present selected individual ones of said compartments to said sheet removing means; means for controlling the operation of said operating means to effect positioning of a selected compartment for sequential removal and feeding of sheets therefrom; counting means comprising a plurality of counters corresponding respectively to said compartments; separate electric circuits for respectively individually energizing said counters; and means controlled by said controlling means and responsive to passage of single sheets for selectively closing said electric circuits one at a time to energize the counter appropriate to the compartment selected for presentation of the stack of sheets therein to said sheet removing means.

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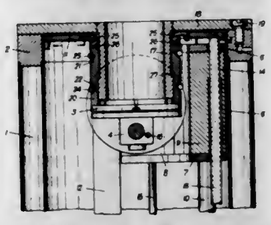
**3,168,645**
**QUANTIZED-ANALOGUE MULTIPLIER**
**Charles V. Jakowatz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Oct. 6, 1960, Ser. No. 60,991**
**10 Claims. (Cl. 235—194)**



9. A multiplier comprising a pair of input terminals, means providing an input signal in opposite polarity sense to said input terminals, a pair of output terminals, a circuit including a diode between each input terminal and each output terminal forming a serial loop wherein each diode is oriented with the same polarity around the loop, means for quantizing a second signal, a common terminal for receiving said second signal as quantized, a pair of resistances coupling said common terminal to each of said output terminals, and differentially responsive means coupled to said output terminals for delivering a portion of said input signal with a relative polarity dependent upon the relative polarity of said second signal.

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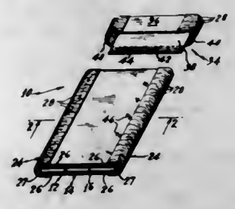
**3,168,646**
**DEVICE FOR VARYING THE SPATIAL POSITION OF SPECIMENS IN ELECTRON MICROSCOPES**
**Siegfried Büsch, Graz, Rudolf Hatschek, Vienna, and Franz Pischinger, Graz, Austria, assignors to Hans List, Graz, Austria**
**Filed Mar. 20, 1962, Ser. No. 181,062**
**Claims priority, application Austria, Apr. 13, 1961, A 2,957/61**
**2 Claims. (Cl. 250—49.5)**



1. A device for adjusting and altering the spatial position of articles, in particular of specimens in a treatment chamber for irradiation or vacuum-coating for electron microscopy, comprising a specimen carrier receiving the article to be treated and mounted to be displaceable and rotatable around at least two axes, a cooled body provided within the area of displacement of the said specimen carrier, the latter may be brought into a heat-conductive contact with the cooled body, the said cooled body comprises a tube, ring segments mounted on said tube to be displaceable thereon in an axial direction and flexible means for maintaining the said ring segments in position on the said tube.

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**3,168,647**
**FILM HOLDERS FOR STRIP FILM**
**Alan S. Kollock, New Hyde Park, N.Y., assignor to General Magnaplate Corporation, Belleville, N.J., a corporation of New Jersey**
**Filed Aug. 3, 1961, Ser. No. 129,143**
**14 Claims. (Cl. 250—68)**



5. A holder for a length of film comprising a pair of longitudinally extending, flat flexible and relatively movable sheet members, each of said members being in lengthwise overlying relation with the other, the adjacent surfaces of said members being of opaque paper, and tape means connected to said sheet members to connect the same together light-tightly along the transverse edges of their lengths, said connecting means being flexible and

yieldable to enable said sheet members to flex and move lengthwise and widthwise relative to each other without distorting the surfaces thereof.

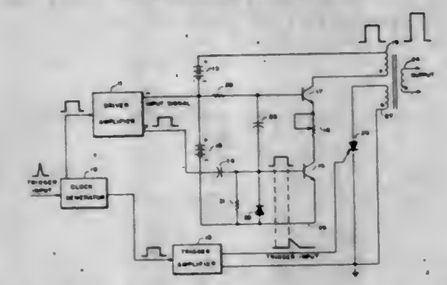
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**3,168,648**

**PULSE GENERATOR EMPLOYING CASCADE CONNECTED TRANSISTORS FOR SWITCHING DIRECT CURRENT POWER SOURCES ACROSS OUTPUT TRANSFORMERS**

**Elmer B. Clausen, Snyder, N.Y., and Henry Guckel, Urbana, Ill., assignors to Sylvania Electric Products Inc., a corporation of Delaware**

**Filed Mar. 11, 1960, Ser. No. 14,289**
**1 Claim. (Cl. 307—88.5)**



An electronic pulse generator comprising, in combination, an output pulse transformer having at least one secondary and one primary winding, at least first and second transistors each having collector, emitter, and base electrodes, said transistors being serially connected, with the emitter of the first connected through a variable impedance element to the collector of the second transistor, and the collector of said first transistor connected to one terminal of said primary winding, first and second substantially equal potential sources of direct current power serially connected between the other terminal of said prilector terminal of said first transistor and the emitter terminal of said second transistor whereby the potential mary winding and the emitter electrode of said second transistor, a first bias control resistor connected between the base electrode of said first transistor and the junction of said first and second sources of direct current power, a second bias control resistor connected between the emitter and base electrodes of said second transistor, a source of input signal pulses connected to the base electrode of said second transistor, said pulse generator being operative in response to an input signal pulse to apply a potential substantially equal to the sum of the potentials of said first and second power sources across said primary winding and in the absence of an input signal pulse to apply a potential substantially equal to the sum of the potentials of said first and second power sources across the colat the emitter of said first transistor and the collector of said second transistor approximates zero, and a capacitor connected between the base electrode of said second transistor and the base electrode of said first transistor.

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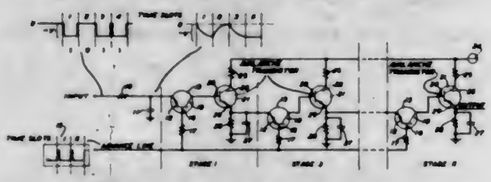
**3,168,649**

**SHIFT REGISTER EMPLOYING BISTABLE MULTIREGION SEMICONDUCTIVE DEVICES**

**Stanley T. Meyers, East Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Aug. 5, 1960, Ser. No. 47,760**
**6 Claims. (Cl. 307—88.5)**

1. A shift register comprising, in combination, a plurality of registers each comprising, a three terminal bistable multiregion device having an emitter electrode, a collector electrode, a base electrode, a predetermined collector-emitter breakdown voltage, and means to supply a collector-emitter voltage in excess of said breakdown voltage, a source of two state input signals comprising pulses and spaces to be registered, direct current coupled switching means to inject a forward biasing current into the base of a first of said multiregion semiconductive devices in response to a first state of said input signal, whereby said first device switches into its high collector-emitter current state and remains there even after removal of said forward biasing current, feedback means to inject a reverse biasing current into the base of said first device in response to a second state of said input signal, whereby



said semiconductive device switches back into its low collector-emitter current state, direct current coupled switching means connected between the emitter electrode of each preceding semiconductive device and the base electrode of the succeeding device, means to enable each of said switching means at predetermined spaced intervals, and means to inject a current indicative of the state of the immediately preceding one of said devices into its immediately succeeding device during said intervals to cause the succeeding device to assume the state which existed at the preceding device.

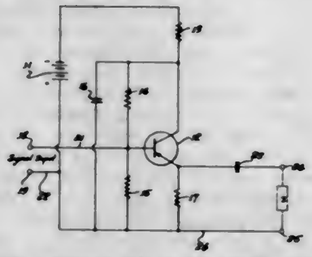
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**3,168,650**

**LOW NOISE TRANSISTOR CIRCUIT**

**David Sheffet, Altadena, Calif., assignor to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware**

**Filed Aug. 15, 1960, Ser. No. 49,718**
**4 Claims. (Cl. 307—88.5)**



2. A low noise transistor emitter follower circuit comprising in combination: a transistor having a base element, an emitter element and a collector element; first and second electrical leads adapted for the connection thereacross of a source of electrical input signals, said first electrical lead being connected to the base element of said transistor, said second electrical lead being connected to a point of common potential; a source of direct current potential resistively coupled between the collector element of said transistor and said point of common potential; a first resistor connected between the collector element of said transistor and the base element of said transistor; a second resistor connected between the base element of said transistor and said point of common potential, the resistance values of said first and second resistors being selected to set the operating potential levels of the collector and base elements of said transistor at predetermined values; third and fourth electrical leads adapted for the connection thereacross of the input circuit of a following stage having a predetermined input impedance, said third electrical lead being electrically coupled to the emitter element of said



transistor, said fourth electrical lead being connected to said point of common potential; and a third resistor connected between the emitter element of said transistor and said point of common potential, the resistance value of said third resistor being at least fifty times as great as said predetermined input impedance of said following stage.

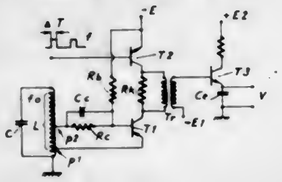
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**3,168,651**

**ARRANGEMENT FOR FREQUENCY CONTROL**

**Gyorgy Szarvas, Stuvsta, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden**

**Filed Sept. 19, 1960, Ser. No. 57,080**
**Claims priority, application Sweden, June 13, 1960, 5,759/60**
**1 Claim. (Cl. 307—88.5)**



An arrangement for indicating deviations of frequency of a pulse-formed electric signal, said arrangement comprising an oscillator tuned to a predetermined control frequency and working in class C, a source of electric energy for the oscillator, means for indicating the oscillating condition of the oscillator, first circuit means connecting said oscillator to said source of energy to transmit electric energy from said source to said oscillator to compensate for oscillating losses of the oscillator to a degree which is determined by the phase relationship of the oscillations to the pulse occurrence, a gate circuit having current-conducting elements included in said first circuit means and a control element, and second circuit means for feeding said pulse-formed electric signal to the control element of said gate circuit, said gate circuit permitting transmission of electric energy from said source of energy to the oscillator only during time intervals in which pulses appear in said pulse-formed electric signal, whereby the frequency deviations of the pulse-formed electric signal are indicated by phase comparison between said pulses and the oscillations of the oscillator.

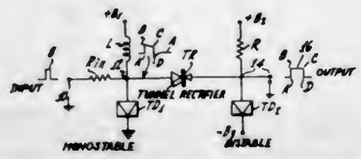
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**3,168,652**

**MONOSTABLE TUNNEL DIODE CIRCUIT COUPLED THROUGH TUNNEL RECTIFIER TO BISTABLE TUNNEL DIODE CIRCUIT**

**Melvin M. Kaufman, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware**

**Filed Nov. 2, 1960, Ser. No. 66,802**
**5 Claims. (Cl. 307—88.5)**




1. A two-stage monostable circuit comprising a first tunnel diode biased to operate in a monostable manner, a second tunnel diode biased to operate in a bistable manner, a tunnel rectifier coupling said first and second tunnel diodes, means to apply an input trigger pulse to said first tunnel diode, and means to derive an output pulse from said second tunnel diode.

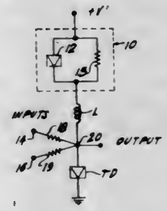
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**3,168,653**

**TUNNEL DIODE CIRCUIT WITH REDUCED RECOVERY TIME**

**Hanoch Ur, Camden, N.J., assignor to Radio Corporation of America, a corporation of Delaware**

**Filed Mar. 21, 1961, Ser. No. 97,204**
**11 Claims. (Cl. 307—88.5)**




11. The combination of a first tunnel diode having a current-voltage characteristic including a negative resistance region, means providing shunt resistance across said negative resistance diode in an amount which translates said negative resistance region to a high-impedance substantially constant-current region, a second tunnel diode having a positive resistance region, and means to quiescently bias said negative resistance diodes so that the constant-current region of said first resistance-shunted diode intersects the positive resistance region of said second diode.

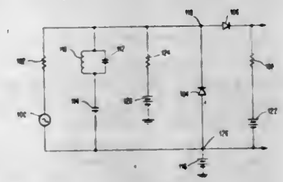
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**3,168,654**

**HIGH FREQUENCY PULSE GENERATOR EMPLOYING DIODE EXHIBITING CHARGE STORAGE OR ENHANCEMENT**

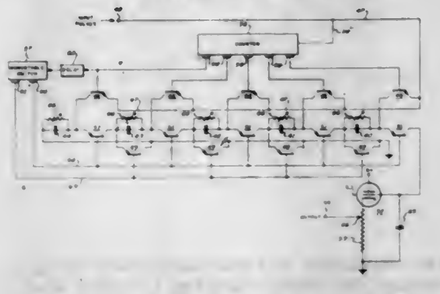
**Thomas Kenneth Lewis, Glenolden, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed Nov. 14, 1961, Ser. No. 152,338**
**5 Claims. (Cl. 307—88.5)**



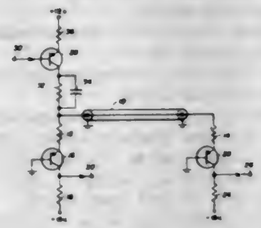
1. A pulse generator comprising,
a sinusoidal input source,
a tank circuit connected in parallel with said source for storing energy therein,
selectively bilaterally conducting means connected in parallel with said source,
said bilaterally conducting means operative to conduct current in a first direction during one half cycle of an input signal and to further conduct current in the opposite direction during a portion of the opposite half-cycle of said input signal,
said further conduction being characterized by the recombination of minority charge carriers in said bilaterally conducting means,
a unilaterally conducting device connected to said bilaterally conducting means and which is reverse biased and non-conducting when said bilaterally conducting means is conducting and which conducts when said bilaterally conducting device is not conducting,
said tank circuit operative to supply energy when said unilaterally conducting device conducts,
and output means for receiving the energy signal supplied by said unilaterally conducting device.

3,168,655
PULSE AVERAGING DEVICE
Joseph R. Vadus, Carle Place, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of New York
Filed Apr. 20, 1962, Ser. No. 189,190
4 Claims. (Cl. 307—88.5)



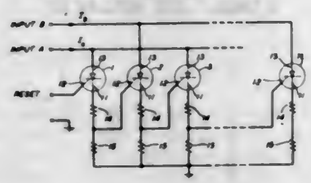
4. A device for producing an output signal representing continuously the average amplitude of a succession of input pulses, said device comprising a plurality of capacitors equalling the number of said input pulses, a plurality of first switching means coupled to receive said input pulses for applying each said input pulse to a respective one of said capacitors, each said first switching means being actuated in response to a respective one of said input pulses, an impedance means having a plurality of taps equalling said number of input pulses, a plurality of second switching means coupled to receive said input pulses for connecting respective ones of said capacitors in series circuit with each other across said impedance means, each said second switching means being actuated in response to a respective one of said input pulses, an output terminal, and a plurality of third switching means coupled to receive said input pulses for sequentially connecting said output terminal to each of said taps, each said third switching means being actuated in response to a respective one of said input pulses.

3,168,656
TRANSMISSION LINE CIRCUIT HAVING TERMINATION IMPEDANCE WHICH INCLUDES EMITTER JUNCTION OF TRANSISTOR
John R. Kobbe, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed June 18, 1962, Ser. No. 203,144
9 Claims. (Cl. 307—88.5)



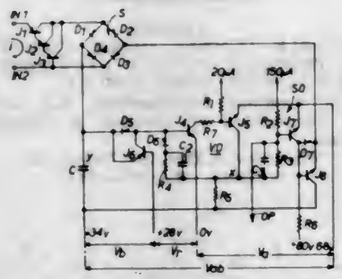
1. A transmission line circuit for transmitting electrical signals, comprising:
a transmission line having a substantially uniform characteristic impedance;
termination means for an end of said line providing a terminating impedance substantially equal to said characteristic impedance so that signal current flows through said terminating impedance, said termination means including at least one transistor having its emitter junction forming at least part of said terminating impedance;
means connecting the emitter and base of said transistor between said end of said line and ground so that substantially all of said signal current flows through said emitter junction; and
a means connecting the collector of said transistor to an output terminal.

3,168,657
PULSE DISTRIBUTOR UTILIZING ONE BISTABLE DEVICE PER STAGE
George W. Wells, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 12, 1962, Ser. No. 223,160
3 Claims. (Cl. 307—88.5)



1. A stepping switch comprising, in combination, a plurality of bistable semiconductor devices arranged in a linear array, each device having an anode, a cathode and a gate electrode, the serial combination of a load impedance and a resistance connected between the cathode of each device and a common junction, reset means connected to the gate electrode of the first device of said array, the gate electrodes of each remaining device connected to the junction formed by the connection of said load impedance and said resistance of the next preceding device, and means for providing low magnitude memory current and high magnitude drive current to the anodes of each of said devices in a time sequence corresponding to their position in said array.

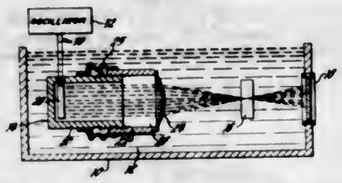
3,168,658
DIRECT CURRENT INTEGRATING CIRCUITS
Richard Carlile Marshall, Harpenden, England, assignor to George Kent Limited, London, England, a corporation of the United Kingdom
Filed Mar. 22, 1963, Ser. No. 267,271
Claims priority, application Great Britain, Mar. 27, 1962, 11,632/62
15 Claims. (Cl. 307—88.5)



1. A direct current integrating circuit comprising reversible switch means for applying an input current to a fixed value capacitance, voltage detecting means arranged repeatedly to sense the charge voltage on the capacitance and means controlled by the detecting means for operating the reversible switch means initially to apply the input current to charge the capacitance up to a predetermined reference level and subsequently to apply the input current in reverse direction to discharge the capacitance down to a predetermined second reference level before commencement of a following charge-discharge cycle, the switch operating means being arranged to initiate an output pulse to mark each charge-discharge cycle.

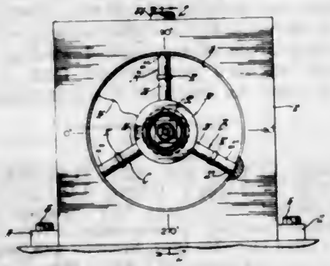


3,168,659
VARIABLE FOCUS TRANSDUCER
Willard W. Bayre, West Orange, N.J., and Norman W. Schubring, Hazel Park, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 11, 1960, Ser. No. 1,665
1 Claim. (Cl. 310—8.3)



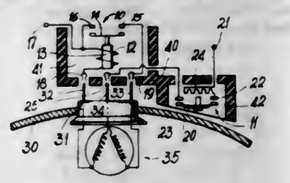
Apparatus for focusing a beam of ultrasonic energy toward a target comprising a cylindrical housing having an open end and a closed end, a first liquid surrounding the housing, a transducer disposed within the housing for directing a beam of ultrasonic energy axially through the housing toward the open end, a ring member mounted on the open end of the housing and axially movable with respect thereto, sealing means engagingly disposed about the juncture between the housing and the ring member for providing a fluid tight seal therebetween, said sealing means being flexible to permit axial displacement between the housing and ring member, a flexible membrane mounted on the ring member to close off the open end of the housing, a target disposed in the first liquid and spaced from the membrane, and a second liquid located within the housing and having a sonic propagation velocity differing from that of the first liquid whereby the membrane defines an interface between the first and second liquids having a curvature which is variable in accordance with the axial displacement of the ring member with respect to the housing.

3,168,660
THREE PHASE PIEZOELECTRIC GENERATOR
Craig Marks, Grosse Pointe Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 14, 1962, Ser. No. 179,687
7 Claims. (Cl. 310—8.7)



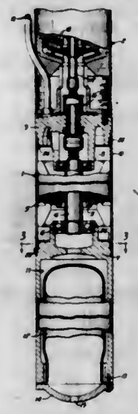
1. A high frequency polyphase electric generator comprising a housing having an aperture formed therein, a mass-spring system located in said aperture, said system comprising a plurality of piezoelectric elements circumferentially spaced in said aperture, each element having first and second electrical terminals, the first terminal of at least one pair of elements being connected together, the second terminal of each element constituting output terminals of the generator, and a force applier coupled to said elements for sequentially compressing the latter at a frequency in the resonant frequency range of the system whereby a constant high frequency polyphase voltage is developed at said output terminals.

3,168,661
STARTING RELAY AND PROTECTOR DEVICE FOR ELECTRIC MOTORS
Vincenzo Rini, Milan, Italy, assignor, by mesne assignments, to AMF Overseas Corporation, Vernier, Geneva, Switzerland
Filed Nov. 23, 1960, Ser. No. 71,287
Claims priority, application Italy, Nov. 28, 1959, 620,500
4 Claims. (Cl. 310—68)



1. In a starting relay and protector unit for an electric motor having a motor casing and plug means on the motor casing, in combination, a housing comprising a first chamber having a transverse wall facing said plug means and being formed with socket means for receiving said plug means of said motor, said first chamber being open on the side thereof remote from said motor casing, and a second chamber having a transverse wall and side walls extending from said transverse wall of said second chamber toward said motor into close proximity to the outer surface thereof and said second chamber being open at the side adjacent to said motor casing; a starting relay in said first chamber; a heat responsive switch in said second chamber, whereby said starting relay is protected from the heat radiation of said motor while said heat responsive switch is subjected to said heat radiation.

3,168,662
SEAL FOR SUBMERSIBLE MOTORS
Clinton A. Boyd, Tulsa, Okla., assignor to Sta-Rite Products, Inc., Delavan, Wis., a corporation of Wisconsin
Filed Mar. 3, 1961, Ser. No. 93,192
4 Claims. (Cl. 310—86)

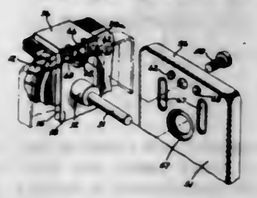


1. In a submersible motor-pump unit, a support member having an outer peripheral surface and having a first annular surface disposed axially adjacent said outer surface and having a diameter less than the diameter of said outer surface and said support member having a second annular surface disposed axially adjacent said first annu-

lar surface and having a diameter substantially less than said first annular surface, a thin-walled hollow shell having an end portion disposed in tight contiguous relation with said first annular surface and the inner wall of said shell being spaced radially outward from said second annular surface to provide a clearance therebetween, and a layer of a cured thermosetting resin disposed in the clearance and serving to bond the shell to said support member and the joint between the shell and said first annular surface being free of said resin.

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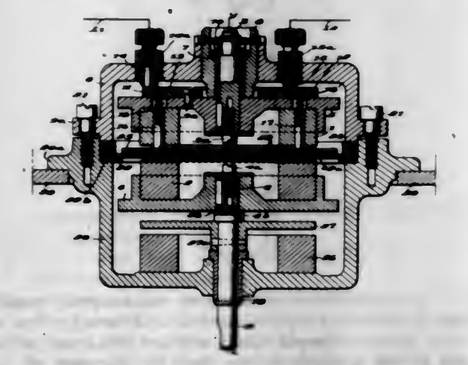
3,168,663
## DYNAMOELECTRIC MACHINE
Joseph E. Baclawski, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Dec. 17, 1962, Ser. No. 245,218
6 Claims. (Cl. 310—90)



1. A dynamoelectric machine comprising a stator, a shaft, a rotor fixedly attached to said shaft, at least one bearing journaling said shaft, frame means mounting each bearing on said stator, and a lubricant reservoir assembly for supplying lubricant to the journal surface of each bearing, said assembly including a casing, lubricant impregnated material disposed within said casing adjacent said bearing for feeding lubricant to the journal surface thereof, means attaching said assembly to said frame means, the wall of said casing adjacent said frame means being formed with spaced apart protuberances in contact with said frame means on either side of said attaching means, and a groove formed in said frame means adjacent the attaching means, with the groove being disposed between said bearing and said attaching means and between said protuberances and said attaching means.

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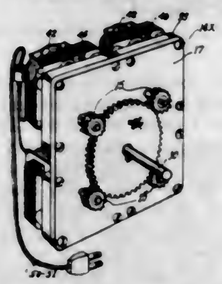
3,168,664
## SEALED ELECTRIC MOTOR
Edouard Bost, Boulogne-sur-Seine, France, assignor to Cie Electro-Mecanique, Paris, France, a corporation of France
Filed Mar. 13, 1962, Ser. No. 179,447
Claims priority, application France, Mar. 30, 1961, 857,326
9 Claims. (Cl. 310—104)



1. In a sealed electric motor in which the armature is disk-like and stationary and the inductor field is parallel to the axis and produced by two rotating inductors mounted on two different shafts whose axes are aligned, the casing of said motor further including a partition hermetically separating each said inductor and its associated shaft and said armature being secured to said partition, the improvement wherein the outer peripheral portion of said partition is thicker than the entire central portion thereof to which said armature is secured and said partition includes an expansion junction between the said central and outer portions thereof.

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3,168,665
## MULTIPLE ROTOR INDUCTION MOTOR UNIT
Frank Holper, Palatine, Ill., assignor to Molon Motor & Coil Corp., Rolling Meadows, Ill., a corporation of Illinois
Filed Jan. 2, 1962, Ser. No. 163,815
4 Claims. (Cl. 310—112)



1. A motor power unit comprising, in cooperative combination: a main output gear; a plurality of intermediate gear systems each including an output gear drivingly meshing with said main output gear, electric motor means of the inductive, squirrel-cage, shaded-pole type including a plurality of rotors, stator means and an energizing winding for each said rotor; a driving pinion rotated by each rotor, each said pinion being shiftable into and out of driving engagement with a corresponding gear means constituting a part of a corresponding one of the aforesaid intermediate gear systems; together with electromagnetically-actuated means including the appertaining rotor actuated in a linear displacement responsive to energization and deenergization of the appertaining stator means for moving a corresponding one of said pinions into and out of driving cooperation with the corresponding intermediate gear means substantially in synchrony with the exertion and cessation of electromagnetic force on the appertaining rotor resulting from energization and deenergization of the appertaining stator means as aforesaid by the corresponding winding; and an operating circuit connecting said windings in a predetermined electrical configuration from a common source of supply for energization simultaneously.

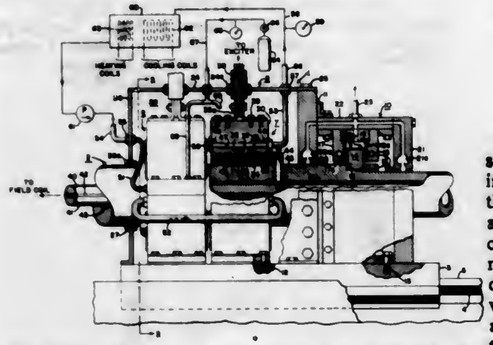
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3,168,666
## DYNAMOELECTRIC MACHINE ELECTRICAL COLLECTOR ASSEMBLY USING LIQUID METAL
Lloyd P. Grobel, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1962, Ser. No. 246,944
5 Claims. (Cl. 310—219)

1. A liquid metal collector comprising:
a rotating shaft subject to axial movements,
a collector rotor comprising a cylindrical conductive ring disposed on the shaft to rotate therewith and also insulated therefrom, said ring defining a radially extending V-shaped flange,
a conductive collector stator disposed about said rotor and defining a bore having a circumferential V-shaped trough forming close clearances with said flange.



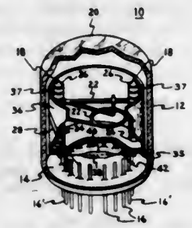
a quantity of electrically-conductive liquid metal disposed between the flange and trough and held in the radially outermost portions of the trough by pumping action of the flange,
sealing means for preventing leakage of said liquid metal axially between the rotor and stator,



said stator defining a liquid reservoir in a lower portion thereof disposed radially inward of the liquid metal level when the rotor is at a selected speed and communicating with said trough,
first conductor means electrically connected to the stator,
second insulated conductor means disposed in said shaft and electrically connected to the collector rotor, whereby current flow may be established from the first conductor means to the second conductor means through the liquid metal, and
thrust bearing means arranged to maintain the clearance between said V-shaped flange and trough substantially constant when the shaft moves in an axial direction.

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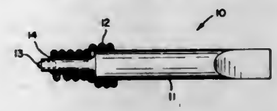
3,168,667
## INDICATOR TUBE
George A. Kupsky, Plainfield, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 31, 1962, Ser. No. 199,127
5 Claims. (Cl. 313—109.5)



1. A gaseous cold cathode glow tube including an envelope having a viewing window, a plurality of cathode electrodes in the form of characters and an anode electrode spaced apart within said envelope, each said cathode electrode being adapted to glow when a voltage is applied between it and said anode, and a filling in said envelope of an ionizable gas selected from the group consisting of argon and neon, said filling being at a pressure capable of sustaining cathode glow along the surface of said cathode electrodes, and including a substance for inhibiting sputtering from said cathode electrodes, said substance comprising an organic polymer which is inert with respect to the components of the tube and provides some vapor at tube operating temperatures, said vapor operating to reduce cathode sputtering by absorbing energy from the ions of said gas.

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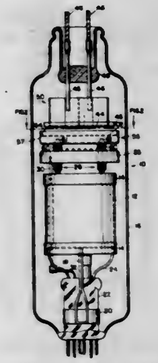
3,168,668
## HIGH PRESSURE MERCURY VAPOR LAMP
Edward F. Rexer, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 3, 1961, Ser. No. 100,333
3 Claims. (Cl. 313—184)



1. A high pressure mercury vapor lamp comprising a sealed envelope containing an ionizable medium including an inert starting gas and mercury in a quantity such that when vaporized the pressure will be greater than one atmosphere, a refractory metal anode, and a cathode comprising a tungsten rod member having a tip of rhenium metal projecting beyond said tungsten and inserted a short distance into said tungsten, a coil of thoriated tungsten wound about said tungsten rod near the arc end thereof, and a tantalum foil inserted between said coil and said tungsten rod.

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3,168,669
## GRID SHIELD FOR GAS-FILLED DISCHARGE TUBES
William L. Vroom, Newark, N.J., assignor to General Signal Corporation, a corporation of New York
Filed Feb. 7, 1962, Ser. No. 171,699
6 Claims. (Cl. 313—191)



1. In a grid controlled gas-filled discharge tube having an anode and a cathode assembly positioned one above the other in spaced relation along the longitudinal axis of the tube envelope, said anode having a plane surface extending substantially normal to said longitudinal axis, and a grid supported by the cathode assembly spacedly mounted between said cathode and the plane surface of the anode, the combination of a grid shield comprising a generally circular sheet metal member having substantially parallel spaced planar surfaces extending substantially parallel to the plane surface of the anode and being interconnected at their peripheral edges by a generally circular flange portion, each of said parallel surfaces having a central opening positioned to provide communication between the cathode assembly and the plane surface of the anode, and means connecting one of the planar surfaces at a plurality of angularly spaced points intermediate the flange portion and the peripheral edge of its central opening to the cathode assembly to fix rigidly said grid shield in spaced relation above the grid and below the plane surface of the anode.

### 3,168,670
### FILAMENT SUPPORTS FOR ELECTRIC INCANDESCENT LAMPS

Victor A. Levand, Jr., Lyndhurst, Ohio, assignor to General Electric Company, a corporation of New York

Filed Mar. 23, 1961, Ser. No. 97,803
2 Claims. (Cl. 313—274)

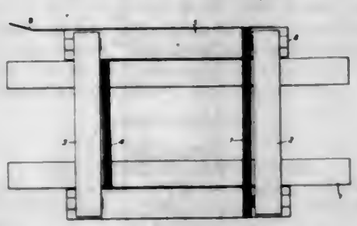


1. In an electric lamp comprising a tubular envelope having a helically coiled wire filament extending axially thereof and supported intermediate its ends from the inner wall of said envelope by at least one support member, said support member comprising a wire having an outer coiled turn portion engageable with the inner wall of said envelope and connecting with a central coiled portion engaging the filament coil, said central coiled portion including primary helical turns concentric with and located between turns of said filament coil and terminating in secondary helical locking turns of opposite helical sense tightly overlying said turns of the filament coil and said primary helical turns.

### 3,168,671
### ELECTRONIC VALVES AND GRID STRUCTURES THEREFOR

Frederick Harold Reynolds, Kenton, Harrow, England, assignor to Her Majesty's Postmaster General, London, England

Filed Jan. 12, 1961, Ser. No. 82,284
Claims priority, application Great Britain, Jan. 14, 1960, 1,439/60
12 Claims. (Cl. 313—350)



1. A unitary frame grid structure for an electronic valve comprising in combination:

(*a*) a frame having in planar parallel alignment two inner control grid support rods and two outer screen grid support rods, and plural common bracing members located adjacent to respective ends of the control and screen grid rods to space and support said control grid rods in planar parallel alignment with each other as well as in planar parallel alignment with said outer screen grid support rods,

(*b*) a control grid helix stretched around said inner rods under a tension sufficient to maintain said helix on said inner rods,

(*c*) a screen grid helix stretched around said outer rods under a tension sufficient to maintain said helix on said outer rods,

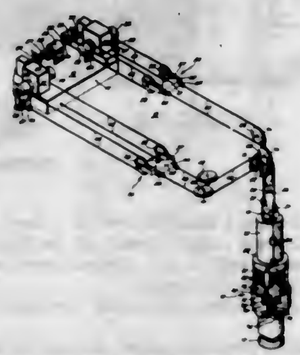
(*d*) the said bracing members extending transversely of and engaging solely with the sides of the control and screen grid rods to maintain the control grid rods in the said planar parallel alignment with each other and with the screen grid rods, and to rigidly brace the said control and screen grid rods against the loading imposed on them by the said tensioned control and screen grid helices, and

(*e*) the structure so intervening between the said control grid and screen grid helices comprising insulating material for electrically insulating the said grid helices from each other.

### 3,168,672
### ELECTRODE POSITIONING MEANS

James Wright Moore and Robert F. Edgar, both of Pittsburgh, Pa., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Aug. 8, 1961, Ser. No. 130,139
2 Claims. (Cl. 314—69)



1. In an electric arc furnace having an electrode, the combination of a reversible electric motor having first and second output shafts, an electrode clamp for releasably engaging said electrode, a first cable assembly operatively connected to said electrode and having a first input shaft, a second cable assembly operatively connected to said electrode and having a second input shaft, a first clutch operatively connecting said first motor output shaft to said first input shaft and a second clutch operatively connecting said second motor output shaft to said second input shaft, said first and second cable assemblies being moved in an electrode raising direction upon the rotation of said motor in a first direction and an electrode lowering direction upon rotation of said motor in an opposite direction, and means for selectively breaking each of said first and second input shafts, so that said electrode and holder may be moved independently of each other upon the actuation of the clutch connected to one of said shaft means and upon the breaking thereof.

### 3,168,673
### ELECTRODE POSITIONING MEANS

Robert F. Edgar, Pittsburgh, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Aug. 8, 1961, Ser. No. 130,140
2 Claims. (Cl. 314—69)

1. In an electric arc furnace having an electrode, the combination of a reversible electric motor, first and second shaft means, an electrode clamp for releasably engaging said electrode, a first cable assembly connecting said first shaft means and to said electrode, a second cable assembly connecting said second shaft means and to said clamp, each of said cable assemblies including drum means connected to its respective shaft means and a movable and a fixed sheave, each of said cable assemblies also including one cable extending around said movable sheave and having one end fixed and the other end wound around said drum and a second cable extending from said movable sheave around said fixed sheave to its respective point of connection with said electrode and said clamp, differential gear means having an input coupled to said motor and a pair of outputs which are each connected to a different one of said first and second shaft means, said differential gear means being constructed and arranged to simultaneously rotate each of said output shafts in the same direction, said first and second cable assemblies being moved in an electrode raising direction upon rotation of said motor in a first direction and in an electrode lowering direction upon rotation of said



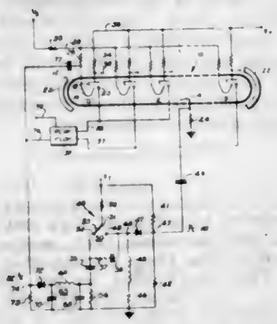


motor in an opposite direction, and a brake connected to each of said first and second shaft means for selectively locking the same, said differential gear means also being constructed and arranged to individually rotate one of said output shafts when the other is locked, so that said electrode and said holder may be moved independently of each other relative to said furnace.

### 3,168,674
### MAGNETRON BEAM TUBE CIRCUIT

Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Mar. 8, 1960, Ser. No. 13,476
3 Claims. (Cl. 315—8.5)

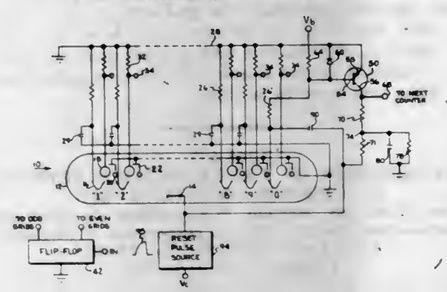


1. A circuit for clearing and resetting an electron beam in a magnetron beam switching tube including an electron beam switching tube having a cathode and a plurality of groups of electrodes; each group including a target electrode which receives an electron beam and produces an output signal therefrom, a spade electrode which holds an electron beam on its associated target electrode, and a switching electrode which serves to switch an electron beam from one group of electrodes to the next; and magnet means for providing a longitudinal magnetic field for said electrodes; a first circuit loop for generating a first pulse; a second circuit loop for generating a second pulse; a common coupling impedance between said circuit loops, said first and second circuit loops including only resistive, capacitive and inductive elements; first output means coupled between said first circuit loop and the cathode of said tube; and second output means coupled between said second circuit loop and one of the groups of electrodes in said tube.

### 3,168,675
### COUNTER USING BEAM SWITCHING TUBE WITH MEANS FOR DISABLING CARRY SIGNAL GENERATING MEANS DURING REST

Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 19, 1962, Ser. No. 238,475
7 Claims. (Cl. 315—8.5)




1. A counter circuit including an electron beam switching tube having a cathode and a plurality of groups of electrodes; each group including a target electrode which receives an electron beam and produces an output signal therefrom, a spade electrode which holds an electron beam on its associated target electrode, and a switching electrode which serves to switch an electron beam from one group of electrodes to the next;

said cathode being connected to a source of reference potential, said spade electrodes being connected through resistive paths to a source of reference potential, said target electrodes being coupled through resistive paths to a source of reference potential, and said switching electrodes being connected to a source of switching signals;

one of the positions being selected both for the transmission of a carry pulse at the end of a counting cycle and for the resetting of an electron beam after a beam has been cleared and it is desired to initiate a new counting cycle;

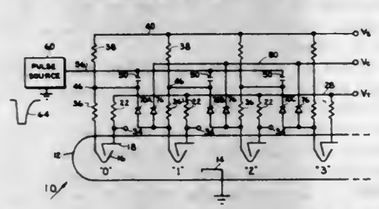
signal generating means coupled to said one position for generating a carry pulse when an electron beam registers a count in said one position;

and means coupled to said signal generating means for disabling said signal generating means during a pulse resetting operation.

### 3,168,676
### BEAM SWITCHING TUBE COUNTING CIRCUIT WITH SINGLE-ENDED DRIVE

Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 31, 1962, Ser. No. 248,600
4 Claims. (Cl. 315—8.5)




1. A counter circuit including an electron beam switching tube having a cathode and a plurality of groups of

electrodes; each group comprising a tube position to which an electron beam can flow from said cathode and including a target electrode which receives an electron beam and produces an output signal therefrom, and a spade electrode which holds an electron beam on its associated target electrode;

first means coupling said spade and target electrodes to operating potentials;

second means coupling each spade electrode to the next leading spade electrode; and

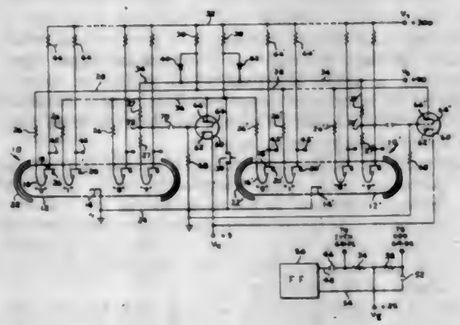
a signal input line coupled to each spade electrode;

said second means including a differentiating circuit;

the operating potentials and said second means being such that when an electron beam flows to a tube position, only the next leading spade electrode which is coupled thereto is able to receive an input signal from said input signal line.

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**3,168,677**
**TRANSMISSION OF CARRY SIGNALS BETWEEN ELECTRONIC COUNTER TUBES**
**Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Apr. 7, 1960, Ser. No. 20,681**
**6 Claims. (Cl. 315—8.6)**



4. A counter circuit including an electron beam switching tube operable as a counting tube and having a cathode and a plurality of groups of electrodes;

each group of electrodes including a target electrode which receives an electron beam and produces an output signal therefrom, a spade electrode which holds an electron beam on its associated target electrode, and a switching electrode which serves to switch an electron beam from one group of electrodes to the next;

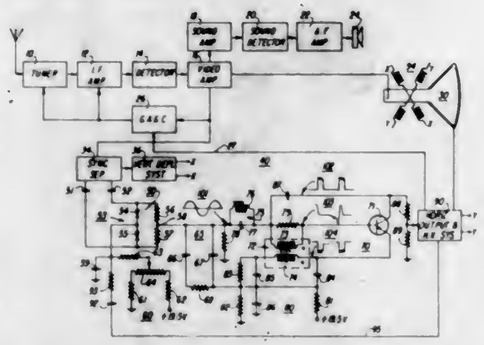
said groups of electrodes comprising positions to which an electron beam may flow with one position being selected to transmit a carry pulse to another counting device;

electrical pulse producing means having an input and an output and having its input coupled to the spade electrode at said one position so that it can be energized thereby and caused to generate a carry pulse at its output,

the output of said pulse producing means being coupled to the spade electrodes in a plurality of groups of electrodes in said tube;

the couplings being such that when said pulse producing means transmits a carry pulse from its output to another counting device, it also applies said carry pulse to the spade electrodes in said plurality of groups of electrodes in said tube and thereby prevents an electron beam from forming at any position in said tube.

**3,168,678**
**TRANSISTOR DEFLECTION CIRCUIT WITH TEMPERATURE STABILIZED BLOCKING OSCILLATOR**
**Albert W. Massman, Wheaton, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois**
**Filed May 8, 1961, Ser. No. 108,379**
**5 Claims. (Cl. 315—27)**



1. In a deflection system for a cathode ray tube; a blocking oscillator for producing output pulses at a predetermined frequency and including a transistor having input, output and common electrodes, a direct current bias network connected to said common electrode of said transistor for energizing the same and including means for determining the frequency of said output pulses, input circuit means for applying a direct current bias voltage to said input electrode to control the frequency of said oscillator, transformer means regeneratively coupling said input and said common electrodes to sustain oscillations, an output load circuit connected to said output electrode for utilizing the output signals therefrom, said input circuit means including a resonant ringing circuit for developing a signal at the predetermined frequency and stabilizing the control frequency of said oscillator, and feedback means including a capacitor coupled to said output electrode and said ringing circuit for feeding back energy to said ringing circuit in regenerative phase to stabilize said oscillator with respect to variations in operating voltage and ambient temperature.

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**3,168,679**
**INTENSITY CONTROL COMPENSATION CIRCUIT FOR USE IN A CATHODE RAY OSCILLOSCOPE**
**John R. Kobbe, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon**
**Filed May 8, 1961, Ser. No. 108,322**
**11 Claims. (Cl. 315—30)**

1. An electrical control circuit for an electron beam display device having a cathode and a control grid, said circuit comprising:

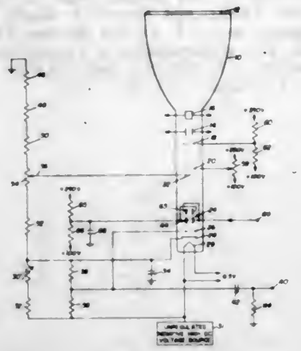
a source of unregulated voltage having internal resistance,

means including a series resistance circuit having a plurality of resistors in series with each other and with said source for applying different voltages from said source to said cathode and said grid, and

means for varying the control grid voltage and for maintaining the cathode voltage substantially constant in spite of variations of the voltage of said voltage source due to variations of current flow through the internal resistance of said source to thus change the intensity of the light image formed by the electron beam emitted by said cathode without substantially affecting other operating characteristics of said display device,



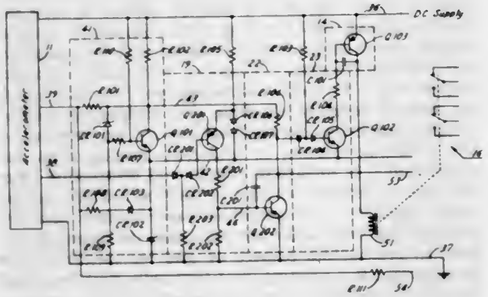
the last named means including means for varying the value of resistance of one of said resistors of said



series circuit, which is connected between said cathode and said voltage source.

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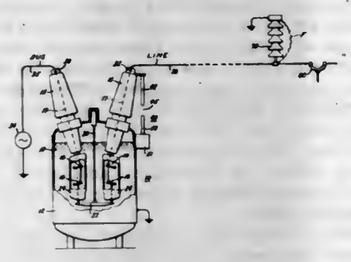
**3,168,680**
**SWITCHING DEVICE**
**Harold D. Morris, Orinda, Calif., assignor to Systron-Donner Corporation, Concord, Calif., a corporation of California**
**Filed Sept. 2, 1960, Ser. No. 53,719**
**17 Claims. (Cl. 317—5)**



12. In a switching device, a servo accelerometer including means for supplying a restoring current, a decision circuit connected to the accelerometer and comprising first and second diodes, means connecting the output of the accelerometer to the first diode, a transistor having base, emitter and collector elements, means connecting the base element to the second diode, means for biasing the transistor to place a predetermined reference voltage on the base of the transistor, means for forming a path for current flow from the first and second diodes, the diodes facing in opposite directions so that current can flow only in one diode at a time, an integrator circuit connected to the decision circuit, the integrator circuit consisting of a transistor having base, collector and emitter elements, a capacitor connected between the collector and base elements of the last named transistor, means connecting the base element of said last named transistor to the collector of the transistor in the decision circuit, and zero comparator means connected to the integrator circuit, the zero comparator means comprising first and second diodes, the diodes facing in opposite directions so that the current can only flow in one diode at a time, means for establishing current flow through the diodes, means for applying said reference voltage to one of the diodes, and means for connecting the other of the diodes to the collector of said last named transistor, and switching means connected to the zero comparator.

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**3,168,681**
**PROTECTIVE ARRANGEMENT FOR AN ELECTRIC CIRCUIT BREAKER**
**Walter R. Wilson, Wallingford, Pa., assignor to General Electric Company, a corporation of New York**
**Filed Sept. 4, 1962, Ser. No. 221,152**
**15 Claims. (Cl. 317—9)**



1. In combination with an electric circuit breaker having a bus terminal and a line terminal,

(*a*) a gap device located externally of said circuit breaker and electrically connected between said line terminal and ground,

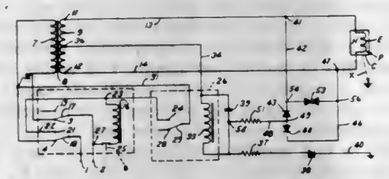
(*b*) said gap device normally having a sparkover voltage at a first predetermined level that is greater than the peak value of switching surges typically encountered at said line terminal,

(*c*) control means for varying the sparkover voltage of said gap device and operable to reduce the sparkover voltage of said gap device to a second predetermined level upon initiation of an opening operation of said circuit breaker,

(*d*) said second predetermined level being sufficiently low that when the circuit breaker is open any impulse voltages reaching said line terminal that are high enough to spark over said gap device will be limited in voltage by such sparkover to values which, in general, will be insufficient to cause an electric breakdown internally of said circuit breaker between said line terminal and said bus terminal, even during the portion of the reduced dielectric strength period beginning about ½ cycle after the interruption of currents near the maximum rating of said circuit breaker.

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**3,168,682**
**SUPERVISORY SYSTEM**
**Aston L. Moore and Charles R. Moore, both of 220 Hammond Place, South Bend, Ind.**
**Filed Feb. 10, 1961, Ser. No. 88,489**
**8 Claims. (Cl. 317—18)**



1. An automatic protective circuit for de-energizing an electric power circuit upon the appearance of a leakage therefrom to a return path, comprising in combination:

first electrically emergizable means for de-energizing said power circuit upon energization of said first electrically energizable means;

a circuit including second electrically energizable means adapted for energizing said first electrically enerigizable means when said second electrically energizable means is energized;

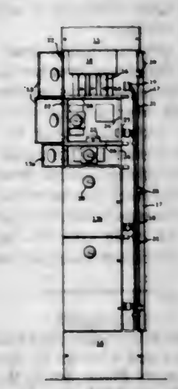
continuously energized initial energizing means connected to partially energize said second electrically energizable means, said initial energizing means being regulated so as to provide energization of said second electrically energizable means of a magnitude less than that required to effect a response thereby, said initial energizing means including first circuitry comprising first rectifying means connecting said power circuit to said second electrically energizable means so that current flows through said second electrically energizable means in only one direction;

second circuitry including second rectifying means connecting said second electrically enerizable means to said return path, said second rectifying means being so sensed with respect to said first rectifying means as to provide an arithmetical addition of the currents supplied thereby to said second electrically energizable means;

whereby an electrically conductive path appearing between said power circuit and said return path will effect further energization of said second energizable means which in turn will effect energization of said first electrically energizable means and result in opening of said power circuit.

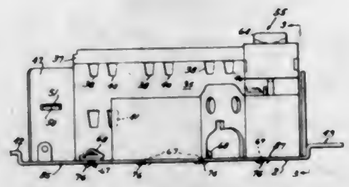
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**3,168,683**
**CONTROL UNIT STRUCTURE**
**Robert W. Brokaw, Roanoke, Va., assignor to General Electric Company, a corporation of New York**
**Filed Oct. 2, 1961, Ser. No. 142,340**
**4 Claims. (Cl. 317—119)**



1. An electrical control unit structure comprising a modular enclosure having an opening for inserting a control unit, said enclosure including a first group of receptacles and a second group of receptacles, distribution wiring attached to one of said groups, said wiring being arranged in a predetermined space within said enclosure, a control unit adapted to be contained in said enclosure including electrical control apparatus and having input connectors to said apparatus for coacting with said first group and output connectors from said apparatus for coacting with said second group, means for detachably fastening said control unit in said enclosure so that all said connectors make electrical contact with all said receptacles simultaneously, a pair of hinged closures covering said opening, one said closure covering said unit and the other said closure covering said wiring space, and a member on said unit providing a commn stop for said closures.

**3,168,684**
**NON-INTERCHANGEABLE MEANS FOR CIRCUIT BREAKER PANELBOARDS**
**Charles W. Parmenter, East Detroit, John A. Herrmann, Grosse Pointe Farms, and Russell S. Davis, Detroit, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Dec. 13, 1961, Ser. No. 159,078**
**13 Claims. (Cl. 317—119)**



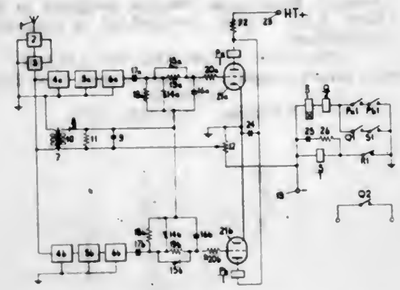
1. A circuit breaker defeater system comprising a panelboard to cooperate with a plurality of circuit breakers, a first of said circuit breakers having a higher current rating than a second of said circuit breakers, said panelboard including a forward surface and a rear surface, a bus conductor, a means for securely attaching said circuit breakers to said panelboard in front of said forward surface, and a first circuit breaker position locating means, said panelboard having a first opening therein constructed to receive a blocking means and operatively positioned with respect to said first position locating means so that when said blocking means is inserted in said first opening said blocking means will prevent said first circuit breaker from being securely attached to said panelboard forward surface at a location defined by said first locating means, said blocking means including a circuit breaker obstructing member, and an attaching member, said attaching member having a rearwardly extending portion and a forwardly extending portion, said attaching member securely attaching said obstructing member to said panelboard forward surface by the insertion of said attaching member in said first opening from said panelboard rear surface to engage said obstructing member, said rearward portion of said attaching member being disposed at said panelboard rear surface, said first opening and rearwardly portion being dimensionally related to prevent the passage of said rearwardly portion through said first opening, said forwardly portion of said attaching member projecting forward of said panelboard forward surface in alignment with a hole in said obstructing member and disposed within the volume defined by said obstructing member providing a relatively inaccessible defeater means from said forward surface, said forwardly portion being shaped to engage the cooperating recess of a special tool.

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**3,168,685**
**RECEIVERS FOR USE IN ELECTRIC SIGNALLING SYSTEMS**
**Philip Howard Beet, Sheffield, England, assignor to The General Electric Company Limited, London, England**
**Filed Apr. 3, 1962, Ser. No. 184,817**
**Claims priority, application Great Britain, Apr. 7, 1961, 12,589/61**
**7 Claims. (Cl. 317—138)**

1. A receiver for use in an electric signalling system, including: first means responsive to the reception of a plurality of series of pulses of alternating current which is of a different specified frequency for each series, said first means being operative to provide a plurality of signals respectively corresponding to the different series of pulses, the magnitude of each signal increasing and decreasing relatively slowly in response respectively to the beginning and end of the relevant series of pulses; second means for performing an operation in response to the simultaneous occurrence of all the signals with magnitudes respectively exceeding predetermined levels; and

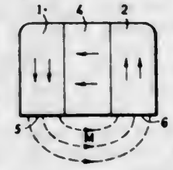




third means for inhibiting the operation of the second means during the reception of a series of pulses of alternating current of any of the specified frequencies.

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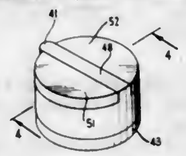
**3,168,686**
**PERMANENT MAGNET**
**Hewson Nicholas Graham King, Newdigate, and Bernard Thomas Murphy, Salfords, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed Nov. 9, 1959, Ser. No. 851,770**
**Claims priority, application Great Britain, Dec. 24, 1958, 41,654/58**
**17 Claims. (Cl. 317—201)**



1. A permanent magnet comprising a body having three adjoining and aligned permanent magnet portions forming along one face of the magnet a substantially continuous surface, the outer two magnet portions being magnetized in substantially opposite directions substantially orthogonally to the said one face, the center magnet portion being magnetized in a direction substantially at right angles to the magnetizing directions of the outer magnet portions and in a plane substantially parallel to the plane defined by the magnetizing directions of said outer two magnet portions, the magnet producing a strong, useful external field adjacent the said one face.

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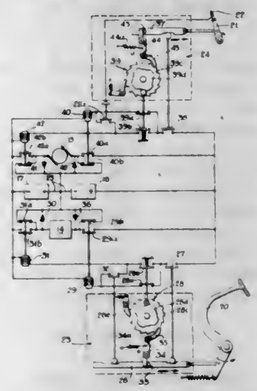
**3,168,687**
**PACKAGED SEMICONDUCTOR ASSEMBLIES HAVING EXPOSED ELECTRODES**
**William B. Warren, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed Dec. 22, 1959, Ser. No. 861,276**
**5 Claims. (Cl. 317—234)**



1. A diode semiconductor device package comprising in combination: first and second spaced electrodes one of which is magnetic and the other of which is nonmagnetic; a semiconductor crystal bonded to said first electrode and in electrically conducting contact therewith; a regrown crystal region on said crystal on the surface thereof opposite said first electrode; an electrical connection connected to said regrown region and connected to said second electrode; an insulating material surrounding the crystal and forming with said electrodes an hermetically sealed package for the crystal.

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**3,168,688**
**BATTERY FED PLURAL MOTOR CONTROL SYSTEM FOR AN INDUSTRIAL TRUCK**
**George H. Roggenkamp, Palos Heights, Ill., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio**
**Filed Dec. 7, 1962, Ser. No. 243,136**
**6 Claims. (Cl. 318—17)**



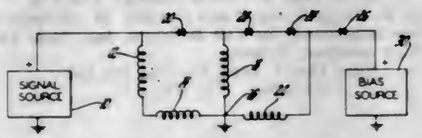
1. An industrial truck comprising,
an electric traction motor for driving said truck,
two batteries connected in series and mounted on said truck for supplying electric power to said electric traction motor,
movable controller means,
means operative by initial movement of said controller means in one direction to connect one of said batteries across said traction motor and on a successive operation of said controller means to connect the other of said batteries across said traction motor while the two batteries remain connected in series, whereby a different battery is used for low voltage, low speed operation of the traction motor on successive operations of said controller means to prevent substantial unequal discharge of said batteries and at the same time the sum of the voltages of the two batteries is available for operation of other electrically operated means on said truck when only one battery is connected across the traction motor, and
means operative by continued further movement of said controller means in said one direction to connect both batteries in series across said traction motor to provide high voltage, high speed operation of said traction motor.

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**3,168,689**
**ELECTRICAL GAUGE**
**Robert B. Gelenius, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 8, 1962, Ser. No. 193,145**
**7 Claims. (Cl. 318—23)**

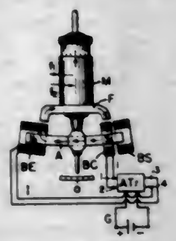
3. An electrical indicator for angularly displacing a magnetic armature in response to changing conditions at

a remote point, the indicator comprising a plurality of deflecting coils having the magnetic axes thereof intersecting and angularly spaced to define a magnetic plane, an angular extremity of the magnetic plane being defined by the magnetic axis of one of the plurality of coils, a source of direct voltage signals having a variable magnitude indicative of the changing conditions, a plurality of switching means interconnecting the plurality of coils and the signal source, the switching means being normally open circuited but responsive to the magnitude of the signal voltage to connect the coils individually to the signal source in sequence according to progressively increasing predetermined magnitudes of signal voltage thereby producing variable electromagnetic fields along the respective magnetic axes in the magnetic plane, a bias source of constant magnitude direct voltage, switching means interconnecting the bias source and said one of the plurality of coils, the last mentioned switching means being normally conductive to connect the bias source to said one coil but responsive to the signal voltage magnitude to disconnect the bias source at a predetermined magnitude of signal voltage, the magnetic armature being rotatably mounted in magnetic proximity to the plurality of coils and responsive to the electromagnetic fields to be aligned with the resultant thereof.




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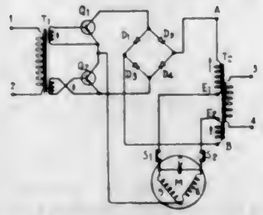
**3,168,690**
**CLOCK POWER-DEVICE**
**Marius Jean Lavet and Jacques Jean Gustave Dietsch, Paris, France, assignors to Societe Anonyme des Etablissements Leon Hatot, Paris, France, a corporation of France**
**Filed Aug. 31, 1954, Ser. No. 453,392**
**Claims priority, application France, Sept. 17, 1953, 654,809, Patent 1,090,564**
**8 Claims. (Cl. 318—127)**



1. In an electromagnetic impulse power device of the type including at least one movable permanent magnet, the construction comprising an isochronal pendulum, a bipolar bar-like magnet transversely carried by said isochronal pendulum, an electronic amplifier of the transistor type having input and output terminals, a source of electric power feeding said electronic amplifier, a first stationary coil surrounding said bipolar magnet and connected to the input terminals of said electronic amplifier and positioned with respect to said bipolar magnet to set up induced control currents under the action of the movement of said permanent magnet relative to said first coil, and a second coil surrounding said permanent bipolar magnet and adapted to impart successive driving impulses to said permanent bipolar magnet, said second coil being connected to the output terminals of said electronic amplifier.

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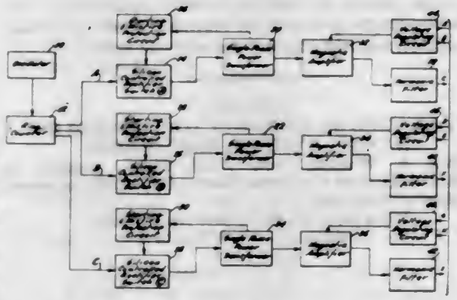
**3,168,691**
**TRANSISTORIZED SERVO AMPLIFIER**
**Erik Herbert Olofsson, Johanneshov, and Lars Eric Jansson, Bandhagen, Sweden, assignors to Regulator A.G., Glarus, Switzerland, a company of Switzerland**
**Filed Nov. 23, 1962, Ser. No. 239,566**
**Claims priority, application Switzerland, Nov. 23, 1961, 11,660/61**
**8 Claims. (Cl. 318—207)**



1. Transistorized servo amplifier comprising: an input transformer, two secondary windings on said transformer, a first transistor and a second transistor, a lead connecting the collector of said first transistor to the emitter of said second transistor, said windings being connected each to the base and the emitter of a separate one of said transistors in such a manner as to feed them in opposition, a bridge circuit having four branches, a rectifier inserted in each of said branches, the terminals of a first diagonal of said bridge being connected to the emitter of the first transistor and to the collector of the second transistor, respectively, the rectifiers having their directions of conductivity coinciding with the directions of conductivity of the transistors, a current supply transformer, two secondary windings on said transformer, a load comprising two windings, said load windings being at their one ends connected together and to said lead connecting the transistors, said load windings being each in series with a separate one of said last-mentioned secondary windings connected to opposite terminals of a second diagonal of said rectifier bridge.

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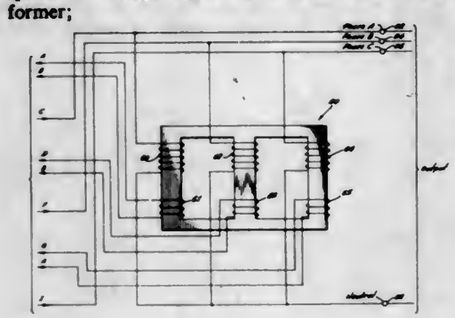
**3,168,692**
**STATIC INVERTER**
**Manfred Lilienstein, Rolling Hills, Calif., assignor to American Electronics, Inc., Los Angeles, Calif., a corporation of California**
**Filed Mar. 1, 1961, Ser. No. 92,706**
**2 Claims. (Cl. 321—5)**



1. An electric translating system for transmitting energy from a direct suply circuit to an alternating load circuit comprising:
(1) an oscillator circuit adapted to convert direct current supply into pulse output;
(2) ring counter means adapted to receive said pulses and supply a control signal for a plurality of phases in rotation;



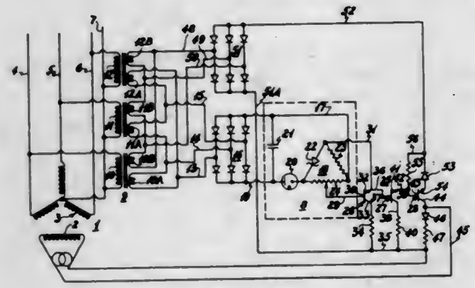
(3) rectifier means for each said phase;
(4) a single phase transformer connected to receive the output from said rectifier, said transformer having a tertiary winding, a battery connected through converter means to said tertiary winding to damp spikes of voltage appearing in said power transformer;



(5) a protective circuit having a cut-out switch to stop operation of said rectifier means, said switch having a closed position, relay means operable to close said switch, said switch movable to a cut-out position when said relay means is deenergized, a starting source of power to energize said relay and close said switch, said relay means connected to said transformer tertiary winding for permanent holding power, whereby said switch will maintain said rectifier means in operation only in the event alternating current is available from said power transformer;
(6) a magnetic amplifier connected to receiver power from the secondary of said power transformer;
(7) a harmonic filter connected to said magnetic amplifier; and
(8) a combination phase and voltage regulator in the form of an output transformer having a plurality of legs corresponding to the number of said phases, a primary winding connected from each phase output from said magnetic amplifier, and a secondary from each leg operable through control means to a control winding of a saturable core voltage throttle of said magnetic amplifier.

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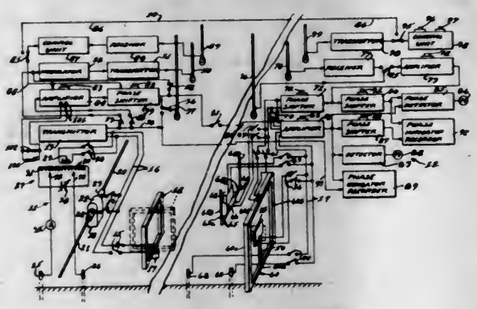
**3,168,693**
**TRANSISTORIZED VOLTAGE REGULATOR**
**obert C. Eckenfelder, Teaneck, N.J., assignor to The Bendix Corporation, a corporation of Delaware**
**Filed Dec. 29, 1958, Ser. No. 783,484**
**15 Claims. (Cl. 322—28)**



1. A votage regulator for an alternating current generator having an excitation winding and output windings, comprising a reference bridge, means including a full wave rectifier for connecting the reference bridge to the output of said generator, said means providing an input voltage to said bridge having a D.C. component and a ripple component, means for shaping the ripple voltage to a saw-toothed approximation, said bridge being proportioned so that an increase in output voltage of said generator over a predetermined value gives a decrease in output from said bridge and a decrease in output voltage of said generator under said predetermined value gives an increase in output from said bridge, the output of said bridge being a saw-toothed approximation with an average D.C. level inversely proportional to said generator output voltage, a three stage transistor amplifier with each stage designed to be slightly overdriven, means connecting the output of said bridge to the input of said amplifier.

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**3,168,694**
**GEOPHYSICAL SURVEY SYSTEMS USING POLARIZED ELECTROMAGNETIC WAVES**
**Donald W. Slattery, Rte. 2, Box 195B, Loveland, Colo.**
**Filed July 24, 1961, Ser. No. 126,115**
**8 Claims. (Cl. 324—6)**



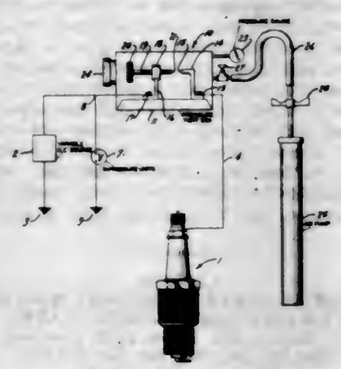
4. In a geophysical survey system, transmitter and receiver sections located at horizontally spaced points relative to the earth's surface, said receiver section including an antenna and amplifier and detector means coupled to said antenna, said transmitter section including a transmitter, at least one main antenna coupled to said transmitter and arranged to transmit horizontally polarized waves into the earth, and means for neutralizing the effect of waves transmitted from said main transmitting antenna to said receiving antenna including an auxiliary transmitting antenna arranged to emanate vertically polarized waves, amplifier and phase shifter means in said transmitter section arranged to apply a signal from said transmitter to said auxiliary antenna, and means for adjusting said amplifier and phase shifter means to produce a minimum output from said receiver detector means.

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**3,168,695**
**PRESSURE MEASURING DEVICE WITH AN AUXILIARY SPARK GAP IN A PRESSURE-TYPE CONTAINER**
**Elisha N. Fales, P.O. Box 4896, Washington, D.C.**
**Filed Sept. 9, 1960, Ser. No. 54,945**
**2 Claims. (Cl. 324—33)**

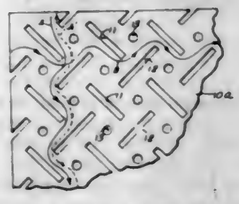
1. A pressure measuring device including a source of high voltage direct current adapted to be connected through a circuit to the spark plug of a cylinder in an internal combustion engine, a voltage measuring device in said circuit, said voltage measuring device being calibrated in pressure units so as to indicate the value of the voltage required to induce flash-over in the spark plug in terms of pressure in said cylinder, said voltage measuring device being calibrated to read correct pressure for said spark plug having a predetermined gap, an auxiliary gap in said circuit in series with said spark plug gap, said

auxiliary gap enclosed in a pressure-tight container, means for increasing the pressure in said pressure-tight container, and said auxiliary gap adapted to be adjusted to complement said spark plug gap so as to compensate for variations from said predetermined gap to insure proper reading of said pressure calibrated voltage measuring device across both gaps.



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**3,168,696**
**MAGNETIC FLUX DIRECTING CYLINDRICAL CORE HAVING A PLURALITY OF SERIALLY ARRANGED INTERRUPTIONS**
**Erick O. Schonstedt, 9170 Brookville Road, Silver Spring, Md.**
**Filed June 26, 1962, Ser. No. 205,322**
**7 Claims. (Cl. 324—43)**

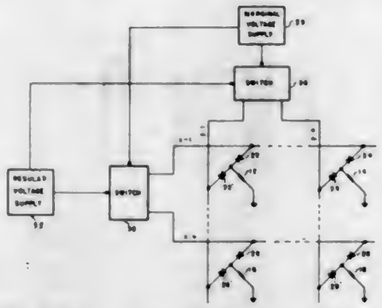


1. A magnetic core comprising a hollow cylinder of permeable magnetic material, said cylinder being of one piece construction and having a plurality of spaced surface interruptions arranged in two separate series of diagonal rows, respectively extending around said cylinder in substantially diametrically opposite directions, the interruptions in the rows of each series being interposed between adjacent spaced interruptions in corresponding rows of the other series, in spaced, angular relation thereto, defining therewith, on the surface of said cylinder, the respective boundaries of two sets of staggered, intersecting paths for the fluxes respectively produced by a longitudinal and an annular magnetic field, the interruptions of each row of each series lying substantially crosswise to the direction of travel of said fluxes along respective paths, to divert said fluxes and prevent the flux produced by a longitudinal magnetic field from intersecting at substantially right angles, the flux produced by an annular magnetic field, at any point on said cylinder.

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**3,168,697**
**METHOD AND APPARATUS FOR TESTING MARGINAL FAILURE OF ELECTRONIC SYSTEMS**
**Watts S. Humphrey, Jr., Chappaqua, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed Nov. 17, 1960, Ser. No. 70,060**
**6 Claims. (Cl. 324—73)**

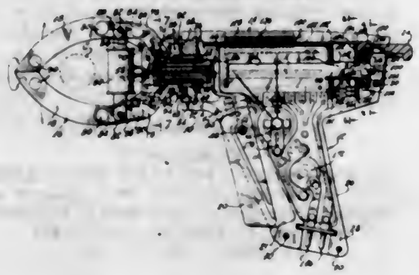
1. A method of testing electronic equipment for marginal performance of its component units which includes the steps of: connecting all of the units to be tested to a source of regular operating potential; while said units are so connected, connecting an $x$-coordinate group of said units to a source of marginal operating potential of a magnitude differing from said regular operating potential; then, disconnecting the units of said group from regular operating potential; checking the performance of said equipment while said group is so operating with



marginal potential and recording unsatisfactory performance; similarly connecting, disconnecting, checking and recording for other $x$-coordinate groups of said units; similarly connecting, disconnecting, checking and recording for individual $y$-coordinate groups of said units; and, noting units at the intersection of $x$- and $y$-coordinate groups for which unsatisfactory performance has been recorded.

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**3,168,698**
**ELECTRICAL CLAMP-ON METER WITH SWIVEL CONNECTED TONGS**
**Robert B. Goody, Tenafly, N.J., and David H. Dabney, Peekskill, N.Y., assignors to Federal Pacific Electric Company, a corporation of Delaware**
**Filed June 27, 1960, Ser. No. 39,161**
**4 Claims. (Cl. 324—127)**

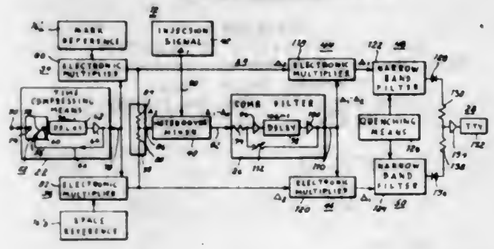


1. An alternating current measuring instrument, comprising a combined casing and hand-grip unit and a head unit, the head unit including an induction coil and a magnetic core structure through said coil, said magnetic core structure including a pair of tongs relatively movable between open and closed positions for encircling a test conductor, said casing and hand-grip unit containing an alternating current measuring circuit connected to said coil and responsive to the current flow in the test conductor, said measuring circuit including an electrical indicating meter, a swivel connection between said head unit and said combined casing and hand-grip unit, and manual operating means for said tongs including spring means normally biasing the tongs closed, a trigger movably mounted in said combined unit, and mechanical coupling means between said tongs and said trigger for providing an operating connection from said trigger to said tongs for opening the tongs against the bias of said spring means despite swivel movement of said head unit relative to said combined casing and hand-grip unit.



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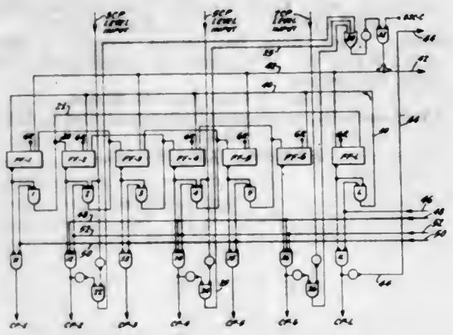
**3,168,699**
**COMMUNICATION TECHNIQUE FOR MULTIPATH DISTORTION**
**David E. Sunstein, Bala-Cynwyd, and Bernard D. Steinberg, Wyndmoor, Pa., assignors to General Atronics Corporation, Bala-Cynwyd, Pa., a corporation of Pennsylvania**
**Filed June 10, 1959, Ser. No. 819,374**
**17 Claims. (Cl. 325—472)**



1. Signal processing apparatus comprising a source of signals, signal time compressing means receiving signals from said source, and a signal processing circuit including a comb filter means, said signal processing circuit receiving signals from said compressing means and delivering an output signal; said comb filter means comprising a signal delay element having an input lead and an output lead and a positive feedback loop for delivering a predetermined portion of the signal on the output lead of said element to its input lead.

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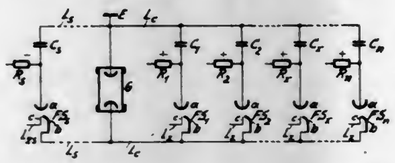
**3,168,700**
**SEQUENTIAL PULSE GENERATOR EMPLOYING PLURALITY OF CASCADED CIRCUITS COUPLED THROUGH SHIFT GATES AND HAVING INDIVIDUAL OUTPUT GATES**
**William J. Gesek, Moorestown, and James H. Bragdon, Cherry Hill, N.J., assignors to Radio Corporation of America, a corporation of Delaware**
**Filed Mar. 20, 1963, Ser. No. 266,751**
**10 Claims. (Cl. 328—62)**



1. Means for generating a controllable number of sequential clock pulses, comprising
- a plurality of cascaded circuits and a last circuit, each of said circuits having an output lead,
- a first oscillation-controlled means coupled to said cascaded circuits to cause successive clock pulse outputs from said cascaded circuits,
- a second oscillation-controlled means coupled to said last circuit, and
- transfer gate means responsive to outputs of said cascaded circuits and to a pulse number determining input signal to stop said first oscillation-controlled means and activate said second oscillation-controlled means.

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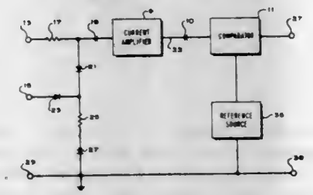
**3,168,701**
**SHOCK-CURRENT GENERATOR EMPLOYING MEANS TO EFFECT SIMULTANEOUS DISCHARGE OF PLURAL STORAGE DEVICES**
**Rudolf Foltzik and Egon Zemann, Berlin-Siemensstadt, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany**
**Filed Nov. 30, 1960, Ser. No. 72,616**
**Claims priority, application Germany Dec. 2, 1959**
**10 Claims. (Cl. 328—67)**



1. A shock-current generator, comprising a multiplicity of surge-current sources, load terminals to which said current sources are connected in parallel relation to each other with the same respective voltage polarities, normally open current control means having respective spark gaps interposed between said respective current sources and said terminals and having ignition means for simultaneously igniting said spark gaps to simultaneously switch said current sources onto said load terminals to jointly produce a shock current when a load is connected to said terminals, a voltage source connected across said load terminals, said control means comprising switching means interposed between said voltage source and said terminals for impressing the voltage of said voltage source across said terminals when said current sources are being switched onto said terminals, said voltage source having at said terminals a voltage polarity opposed to that of said current sources.

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**3,168,702**
**VOLTAGE COMPARATOR**
**David S. Cochran, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California**
**Filed July 30, 1962, Ser. No. 213,271**
**1 Claim. (Cl. 328—150)**

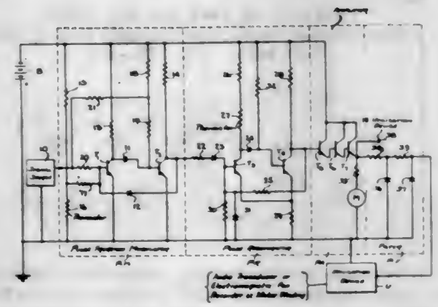


A circuit for comparing first and second signals, the circuit comprising a first input for receiving a first signal and a second input for receiving a second signal, a pair of diodes serially connected in conduction opposition, a current source connected to a point between said diodes, means connecting the first input to one of said diodes, means connecting the second input to the other of said diodes, a current amplifier, capacitive means connecting the input of said amplifier and said one of the diodes, a signal comparator connected to the output of said amplifier, and a source of reference signal connected to said

comparator, said comparator producing an output signal when the signal applied thereto from said amplifier bears a predetermined relationship to said reference signal.

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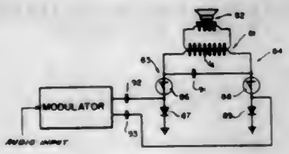
**3,168,703**
**SWITCHING TYPE AMPLIFIERS FOR BOTH A.C. AND D.C. SIGNALS**
**Manfred E. Clynes, Orangeburg, N.Y., assignor, by mesne assignments, to Technical Measurement Corporation, North Haven, Conn., a corporation of Delaware**
**Filed Feb. 8, 1961, Ser. No. 87,901**
**9 Claims. (Cl. 330—10)**



1. A broad-band amplifying system for a signal of varying amplitude and providing signal gain down to direct-current comprising means responsive to amplitude variations in the incoming signal to generate primary pulses having a repetition rate which varies as a function of the amplitude of said signal, means responsive to said primary pulses to produce standardized pulses with the identical repetition rate but with a constant pulse amplitude and duration, switching amplifier means to amplify said standardized pulses, and means responsive solely to the direct-current component in said standardized pulses to recreate said signal in amplified form.

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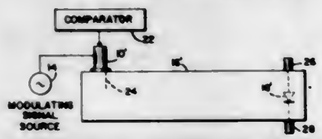
**3,168,704**
**MULTIVIBRATOR AMPLIFIER WITH TIME DELAY MODULATING AUDIO INPUT**
**James F. Gibbons, Palo Alto, Calif., assignor to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio**
**Filed Mar. 6, 1961, Ser. No. 93,577**
**3 Claims. (Cl. 330—10)**




1. An amplifier comprising a converter circuit having first and second current paths, each of said paths including a semiconductor switching device of the type having a first stable state in which the device presents a relatively high impedance and a second stable state in which the device presents a relatively low impedance, said device being switched from the first to the second stable state in response to a predetermined voltage applied across the same and from its second to its first state when the current through the device is below a predetermined value, means for applying a voltage across said semiconductor switching devices which is greater than the predetermined switching voltage for at least one of said switching devices, a commutating capacitor connected between said first and second current paths, a load circuit connected to said current paths, modulating means connected to receive a varying voltage input signal to be amplified and form a first pulse train having a substantially constant frequency to be applied to one path of the converter circuit and a second pulse train in which the pulses are delayed with respect to the first pulses an amount proportional to the input signal voltage of the signal to be amplified, and means for applying the pulses to the converter circuit to control switching of the switching device in at least one of said legs from the first to the second state in response to the pulses applied thereto, said load circuit serving to recover the amplified input signal from the converter.

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**3,168,705**
**SIGNAL DELAYING APPARATUS**
**Shiro Okamura, 2–26 Shiroganedaimachi, Shiba, Minatoku, Tokyo, Japan**
**Filed Aug. 1, 1962, Ser. No. 214,089**
**11 Claims. (Cl. 330—10)**



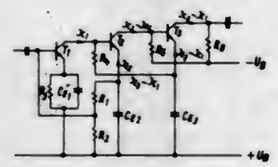

1. A signal delaying apparatus comprising means for modulating a first wave with said signal, high frequency transmitting means for receiving said modulated wave and including delay means for delaying the passage of said wave therethrough, said transmitting means comprising a hollow waveguide, means for demodulating said modulated wave after transmission through said waveguide, characterized in that said waveguide has at least one cut-off frequency, said cut-off frequency being near to the frequency of said modulated wave, the travel of the wave through said waveguide being delayed in accordance with the formula

$$\frac{1}{\sqrt{1-(\lambda/\lambda_c)^2}}$$

where $\lambda$ is the wavelength of said first wave and $\lambda_c$ is the wavelength of said cutoff frequency.

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**3,168,706**
**MULTI-STAGE TRANSISTOR AMPLIFIER WITH OPERATING POINT STABILIZATION**
**Theodor Brenig, Bern, Switzerland, assignor to Hasler A.G., Werke für Telephonie und Präzisionsmechanik, Bern, Switzerland**
**Filed Oct. 3, 1960, Ser. No. 59,896**
**Claims priority, application Switzerland, Oct. 2, 1959, 78,924**
**3 Claims. (Cl. 330—18)**



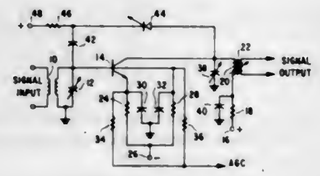
1. In a transistor amplifier arrangement having an input and an output and at least three stages each including one transistor, in combination, means for coupling the input with the base of the transistor of the first stage; means for coupling the output with the collector of the transistor of the final stage; a source of direct current supply having a first and second terminal; means for directly coupling the collector of the transistor of each stage to the base of the transistor of the next following stage,



respectively; means for connecting the emitter of the transistor of said first stage to said first terminal of said source; a resistive voltage divider network including two resistors connected in series between the emitter of the transistor of said second stage and said first terminal of said source, the junction point between said two resistors being connected with the base of said transistor of said first stage; a plurality of resistance means respectively coupling directly the collector of the transistor of the individual stages to the emitter of the transistor of the respectively second following stage; a first resistor connected between said second terminal of said source and the collector of said transistor of said final stage; a second resistor connected between said second terminal of said source and the base of said transistor of said final stage.

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**3,168,707**
**BYPASS ARRANGEMENT FOR INCREASING CIRCUIT RELIABILITY**
**Matthew Levitt, Buffalo, and Robert W. Whitney, Orchard Park, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed Dec. 27, 1961, Ser. No. 162,479**
**4 Claims. (Cl. 330—21)**

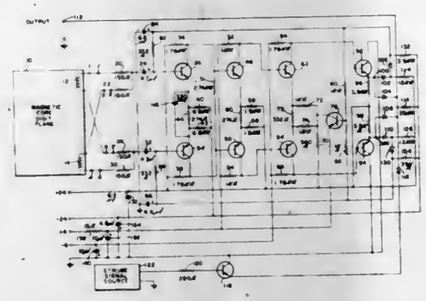



1. In combination with a multi-stage circuit of cascade-connected similar signal circuit stages each including an input circuit, an output circuit, signal processing means connected between said input and output circuits, and a first source of direct current potential connected to said output circuit, an alternating current by-pass circuit for at least one of said stages which comprises: a voltage-variable capacitor and another capacitor serially connected between a first point in the output circuit of the stage and a second point in said input circuit, and a second source of direct current potential connected to the junction of said capacitors, said second source being of a value to bias said voltage-variable capacitor relative to the potential at said first point during normal operation of the stage to have a capacitance of a value which offers a high impedance at the frequency of operation to thereby limit alternating current feedback from said first point to said second point through said bypass circuit, and to bias said voltage-variable capacitor relative to the potential at said first point upon a change in the latter potential attendant a failure in said signal processing means to cause it to function as a diode to thereby provide a low impedance signal path through said bypass circuit for coupling the signal around the faulty signal processing means of the stage.

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**3,168,708**
**DIFFERENTIAL AMPLIFIER CIRCUIT FOR MAGNETIC MEMORY SENSING**
**Raymond Stuart-Williams, Pacific Palisades, Ben T. Goda, Gardena, and Gordon B. Barrus, El Segundo, Calif., assignors to Ampex Corporation, Culver City, Calif., a corporation of California**
**Filed Apr. 28, 1961, Ser. No. 106,393**
**8 Claims. (Cl. 330—22)**

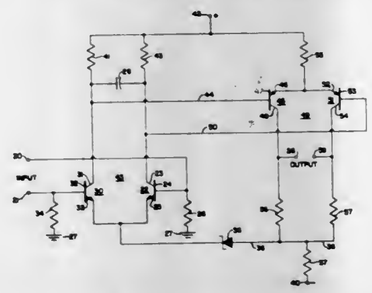
8. In a differential amplifier of the type having a plurality of amplification stages, an input and an output, the improvement comprising at least one low-pass feedback path between said input and output, said feedback path including an emitter-follower stage comprising a transistor having emitter, base, and collector electrodes, a source of operating potential having two opposite potential output terminals and a ground potential terminal, means respectively connecting said transistor collector and emitter to said opposite potential output terminals of said source of operating potential, a first and second diode having their anodes connected together to form a junction, means connecting the cathode of said first diode



to the emitter of said transistor, means connecting the cathode of said second diode to said amplifier input, a first resistor connected between one of said source of operating potential output terminals and said junction, a second resistor connected between the other of said source of operating potential output terminals and the cathode of said second diode, and a capacitor connected between the cathode of said second diode and said ground potential terminal.

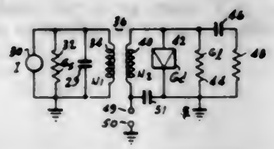
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**3,168,709**
**STABILIZED TRANSISTOR DIFFERENCE AMPLIFIER**
**Daniel J. Sikorra, Champlin, Minn., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Dec. 14, 1960, Ser. No. 75,762**
**7 Claims. (Cl. 330—30)**



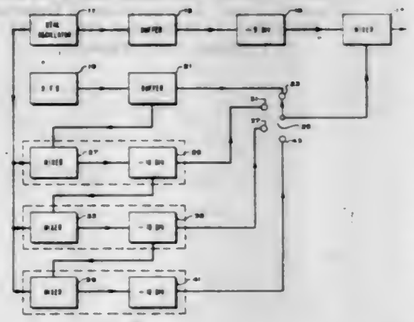

2. Apparatus of the class described comprising: a first and second direct coupled difference amplifiers, said second difference amplifier having an impedance in series with the D.C. output thereof so that the quiescent operating current of said second amplifier flows through said impedance; and voltage regulating means connecting the D.C. output of said first difference amplifier to said impedance so that the quiescent operating current of said first amplifier also flows through said impedance, said regulating means further holding the voltage across said impedance constant so that the operating points of said first and second amplifiers remain stable.

**3,168,710**
**NEGATIVE RESISTANCE AMPLIFIER WITH OSCILLATION SUPPRESSION CIRCUIT**
**John B. Schultz, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed Feb. 29, 1960, Ser. No. 11,903**
**7 Claims. (Cl. 330—34)**



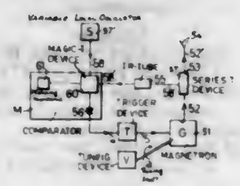
6. A negative resistance circuit comprising in combination a negative resistance diode, means providing a biasing circuit for biasing said diode to exhibit a negative resistance, and a frequency responsive circuit including the series combination of a capacitor and a resistor connected in parallel with said diode, said capacitor exhibiting throughout a predetermined band of frequencies a reactance which in combination with the resistance of said resistor presents an impedance which is substantially greater than the absolute value of minimum negative resistance of said diode and a reactance at frequencies higher than said predetermined band which in combination with the resistance of said resistor presents an impedance which is lower than the absolute value of minimum negative resistance of said diode, said resistor having a resistance value less than the absolute value of the minimum negative resistance of said diode.

**3,168,711**
**BEAT-FREQUENCY OSCILLATOR**
**Richard David Crawford, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California**
**Filed Mar. 2, 1962, Ser. No. 176,964**
**4 Claims. (Cl. 331—39)**



4. In a beat-frequency oscillator designed to produce output frequencies in a plurality of ranges defined by successive powers of $n$, $n$ being an integer greater than one: means to produce first and second frequencies, said first frequency being exactly $(n\pm1)$ times greater than said second frequency, means to produce a third frequency, a plurality of stages each comprising a mixer and an $n$-divider connected to the output of said mixer, means to apply the output of said first frequency source to an input terminal of each of said mixers, means to apply the output of said third frequency source to the other input terminal of the mixer of the first of said stages, means to apply to the input terminal of the mixer of a succeeding stage the output frequency of the divider of the preceding stage, an output mixer, and means including a range switch to apply to said output mixer said second frequency and another frequency selected from the output of one of the dividers from said stages.

**3,168,712**
**APPARATUS FOR CONTROLLING THE FREQUENCY OF A VARIABLE FREQUENCY MAGNETRON**
**Nils Erik Backmark, Enskede, Sweden, assignor, by mesne assignments, to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Continuation of application Ser. No. 593,192, June 22, 1956. This application May 18, 1961, Ser. No. 116,638**
**Claims priority, application Sweden, June 23, 1955, 5,917/55; Mar. 6, 1956, 2,176/56**
**4 Claims. (Cl. 331—87)**



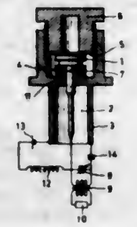
1. An apparatus for transmitting pulses of high frequency energy of predetermined frequency within a predetermined frequency range, comprising, in combination,
normally non-oscillating magnetron means activatable to oscillate and generate high frequency energy, including a variable resonator system for determining the oscillation frequency of said magnetron means within said frequency range;
actuating means for actuating said resonator system for continuously varying said oscillation frequency within said frequency range;
local oscillator means for generating a signal of a predetermined frequency within said frequency range and having output means for said signal;
a transmission line between said resonator system and said local oscillator means for connecting said resonator system as a passive load to said output means of said local oscillator means;
high frequency energy detector means connected to said transmission line at a point between said resonator system and said local oscillator means for detecting the amount of energy of said signal reflected from said resonator system and for producing a control pulse in response to a pronounced change in said amount of reflected energy, when the resonance frequency of said resonator system coincides with said predetermined frequency of said signal; and
triggering means connected between said magnetron means and said detector means for activating said magnetron means to oscillate and generate a pulse of high frequency energy, when said control pulse from said detector means is received by said triggering means.

**3,168,713**
**ARRANGEMENTS FOR AVOIDING HIGH-FREQUENCY STRAY OSCILLATIONS IN ACTIVE TWO-TERMINAL ELEMENTS**
**Theodorus Jozef van Kessel, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed May 16, 1962, Ser. No. 195,201**
**Claims priority, application Netherlands, July 7, 1961, 266,797**
**7 Claims. (Cl. 331—105)**

1. An arrangement for avoiding undesired high-frequency stray oscillations comprising: an active two-terminal element with two electrodes, said element having a static current-voltage characteristic curve a portion of

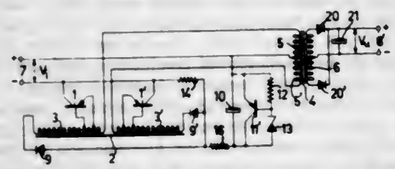


which exhibits a negative resistance and an operating point lying on the negative-resistance portion, a resonant circuit electrically connected across said element, a source of voltage supply having one terminal coupled to one of said electrodes and another terminal coupled to the other of



said electrodes for establishing operation in said negative-resistance portion, and a ring of non-conductive ferromagnetic material having ferrite as a major constitutent, said ring being in close physical proximity to at least one electrode of said element.

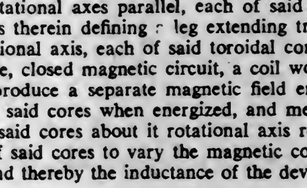
**3,168,714**
**STABILIZATION OF A TRANSISTOR OSCILLATOR BY MEANS OF AN OVERFLOW CIRCUIT WITH REDUCED POWER LOSS**
**Hugo Georg Bruijning, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed Mar. 31, 1961, Ser. No. 99,934**
**Claims priority, application Netherlands, Apr. 25, 1960, 250,873**
**9 Claims. (Cl. 331—113)**



1. An oscillator including at least one junction transistor, said transistor having base, emitter and collector electrodes, a first circuit including a source of D.C. supply voltage, said first circuit being connected between said emitter and collector electrodes, a second circuit connected to said base electrode, regenerative feedback means intercoupling said first and second circuits, and an overflow circuit including a rectifier coupled to said second circuit, said overflow circuit being arranged to by-pass the peaks of forward pulses fed back to said base electrode by said feedback means and corresponding to an amplitude of the oscillations exceeding a desired value, a threshold voltage source connected in the overflow circuit, said threshold voltage source having a polarity to bias said rectifier in the reverse direction, transforming means coupled to said base circuit and acting to step-up the amplitude of the oscillations applied to the base electrode by the feedback means and to apply these stepped-up feedback oscillations to said overflow circuit.

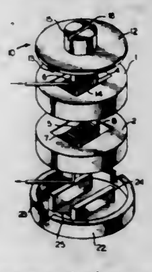
**3,168,715**
**TRIFILAR WOUND HYBRID TRANSFORMER**
**John L. Woodworth, Lynchburg, Va., assignor to General Electric Company, a corporation of New York**
**Filed June 27, 1962, Ser. No. 205,773**
**3 Claims. (Cl. 333—11)**

1. A hybrid circuit arrangement having three pairs of terminals, comprising, in combination, a differential transformer having a center-tapped primary winding providing two primary winding sections and a secondary winding having a first and a second secondary winding section serially connected, each of said primary winding sections and said first secondary winding section having the same number of turns and wound on said core in trifilar relationship whereby the coupling between said winding is maximized, said second secondary winding section being distributed uniformly around said center-tapped primary winding and the first secondary winding section, said secondary winding being terminated at the first of said pairs of terminals by a characteristic impedance of Z, a two-terminal balancing network having one terminal thereof connected to the center-tap of said primary winding and



having a characteristic impedance of $Z/2$, the second of said pairs of terminals being connected to one end of said primary winding and to the other terminal of said balancing network, the third of said pairs of terminals being connected to the opposite end of said primary winding and to said other terminal of said balancing network, said differential transformer having a transformation ratio between said secondary winding and each section of said center-tapped primary winding greater than unity and such that an impedance of Z is thereby determined between each pair of terminals of said hybrid circuit arrangement.

**3,168,716**
**VARIABLE INDUCTOR**
**Istvan Szalay, Lynchburg, Va., assignor to General Electric Company, a corporation of New York**
**Filed Oct. 31, 1961, Ser. No. 148,980**
**5 Claims. (Cl. 336—120)**



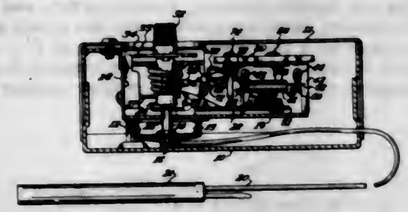
1. A variable inductance device comprising at least two toroidal shaped magnetic cores in superposed relation with their rotational axes parallel, each of said cores having openings therein defining a leg extending transversely to its rotational axis, each of said toroidal cores defining a complete, closed magnetic circuit, a coil wound on each leg to produce a separate magnetic field entirely within each of said cores when energized, and means to rotate one of said cores about it rotational axis relative to the other of said cores to vary the magnetic coupling of the cores and thereby the inductance of the device.

**3,168,717**
**CONTROL APPARATUS**
**Joseph A. Francis, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Aug. 5, 1963, Ser. No. 299,875**
**3 Claims. (Cl. 338—31)**

3. In a temperature controller,
a base member,

an operator attached to said base member having an output indicative of space temperature,

a first lever pivotally supported on said base member, said lever being connected to said operator to respond to said output to provide a clockwise movement of said first lever upon said increase in temperature,



a second lever pivotally attached to said base member,

an adjustable throttling range connection means connecting one end of said first lever and one end of said second lever, a metal ball, said connection means comprising a member attached to one of said levers for supporting said metal ball, said member being movable to reposition said metal ball to provide an adjustable, low friction contact between said levers,

an elongated bobbin having a resistance winding wound thereon,

means mounting said bobbin on said base,

and a wiper blade connected to said second lever, said wiper blade engaging said resistance winding on said bobbin to provide an electrical output indicative of the space temperature.

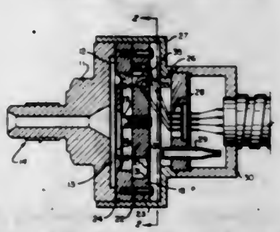
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**3,168,718**

## ELECTRIC PRESSURE TRANSDUCER

**David P. Swartz, Neil L. Sarasohn, and Lewis M. Duckor, Sunnyvale, Calif., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware**

**Filed Nov. 9, 1962, Ser. No. 236,592**
**12 Claims. (Cl. 338—42)**



1. A pressure transducer comprising a closed chamber, a diaphragm forming a wall of said chamber, a constrained beam, means for moving said beam in response to movement of said diaphragm, means for concentrating the strain at a predetermined portion of said beam at least one strain gauge mounted directly on said predetermined portion of said constrained beam to give a change in an electrical circuit parameter indicative of the change in strain of said beam at said predetermined portion.

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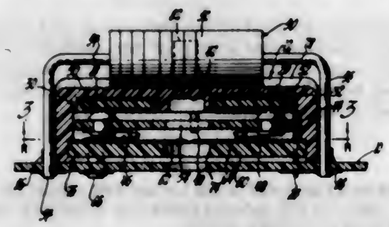
**3,168,719**

## RHEOSTAT ASSEMBLY

**Richard W. Bemmann and Werner F. Schultz, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Nov. 5, 1962, Ser. No. 235,450**
**4 Claims. (Cl. 338—165)**

1. In a rheostat assembly, the combination comprising a non-conductive cup shaped housing member, first and second resistance elements, the inner surface of the housing member including first and second spaced non-conductive retaining means respectively contoured to conform with the contour of the first and second resistance elements, the first and second resistance elements being mounted within the housing member by the first and second retaining means, respectively, so that the contours of the resistance elements and the contours of the respective retaining means are in alignment to thereby retain the resistance elements in spaced relationship with respect to each other, a non-conductive rotor member having first and second spaced contacts mounted on one side thereof and first and second spaced resilient electrical wiper arms mounted on the other side thereof, the first and second wiper arms being electrically connected with the first and second contacts, respectively, the rotor mem-



ber being rotatably mounted within the housing member adjacent the resistance elements with the first and second contacts in slidable engagement with the first and second resistance elements, respectively, a non-conductive cover member disposed adjacent the rotor member and including first and second spaced conductive portions, first and second terminal means electrically connected with the first and second resistance elements, respectively, and third and fourth terminal means electrically connected with the first and second conductive portions, respectively, of the cover member, fastening means on the housing member urging the cover member toward the rotor with the first and second resilient wiper arms in respective engagement with the first and second conductive portions so as to respectively urge the first and second contacts into engagement with the first and second resistance elements.

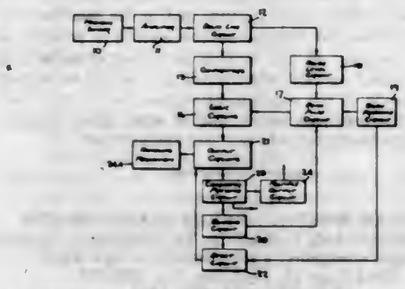
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**3,168,720**

## CHARACTER READER

**Alton B. Eckert, Jr., Port Chester, N.Y., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware**

**Filed Apr. 8, 1960, Ser. No. 20,948**
**23 Claims. (Cl. 340—146.3)**



1. Apparatus capable of recognizing any one of a group of characters each of which has a distinctive configuration comprising first means for scanning any one of said characters to produce an electrical wave form representative of the configuration thereof, second means responsive to said wave form to derive simultaneous samples therefrom at a plurality of points spaced from each other along the time axis of the said wave form, third means for comparing said simultaneous samples one with another to produce a plurality of difference signals, and fourth means coupled to said third means to produce a truth pulse in response to a predetermined combination of difference signals which distinguishes the wave form of the character being scanned from the others in said group.



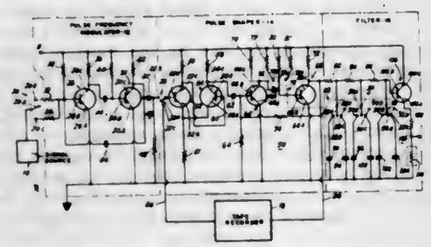
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**3,168,721**

## INFORMATION TRANSFER SYSTEMS

**Manfred E. Clynes, Orangeburg, N.Y., assignor, by mesne assignments, to Technical Measurement Corporation, North Haven, Conn., a corporation of Delaware**

**Filed July 27, 1959, Ser. No. 829,694**
**17 Claims. (Cl. 340—167)**



1. A transfer system for information represented by an input signal of varying amplitude comprising: a variable repetition rate pulse generating means, said generating means being modulated by said input signal to generate input pulses having a repetition rate which varies as a function of the amplitude of said input signal, means triggered by said input pulses to produce a first train of standardized pulses of constant duration and amplitude and having a repetition rate corresponding to that of said input pulses, means to convey said first train of standardized pulses through a medium which distorts said standardized pulses, means to detect said conveyed pulses to provide incoming pulses, means triggered by said incoming pulses to produce a second train of standardized pulses of constant amplitude and duration and having a repetition rate corresponding to that of said incoming pulses, and means to average said second train of standardized pulses to develop an output signal whose amplitude varies as a function of the repetition rate of the pulses in said second train.

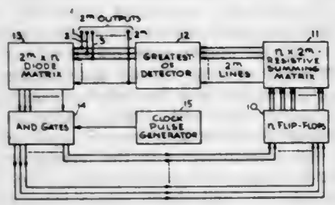
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**3,168,722**

## ELECTRONIC COMMUTATOR WITH REDUNDANT COUNTING ELEMENTS

**Ray W. Sanders, Los Angeles, Calif., assignor to Space-General Corporation, Glendale, Calif.**

**Filed Mar. 21, 1961, Ser. No. 97,283**
**6 Claims. (Cl. 340—172)**




1. An electronic commutator comprising:

a number of output terminals to be sequentially energized;

a coding matrix connected to the output terminals to be energized simultaneously with the energization of any of the output terminals;

said coding matrix including a plurality of diodes associated with each of the output terminals of the commutator to generate a different code on a number of parallel matrix output conductors for each output terminal of the commutator;

the number of parallel output conductors and code positions of the matrix being greater than the minimum number required to produce a different code for each commutator output terminal;

a second matrix for resistively summing the output of the parallel output conductors of the coding matrix;

the second matrix including a plurality of resistors cross-connecting between selected parallel conductors from the first matrix and a number of output lines from the second matrix equal to the number of output terminals of the commutator;

the resistors in said second matrix cross-connected to produce a maximum summed signal level on a different one of the output conductors for each different code;

and means connected between said second matrix and the commutator output terminal for comparing the summed signal levels on each of the lines from the second matrix;

said last means operative to energize one only of the commutator output terminals and one coding matrix line corresponding to the maximum summed signal from said second matrix.

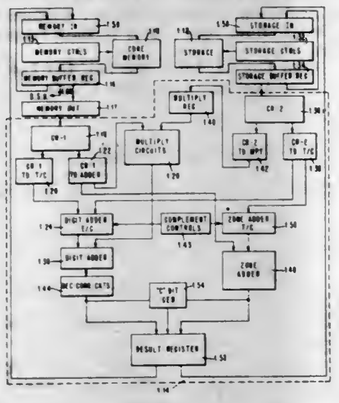
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**3,168,723**

## DATA COMPRESSION APPARATUS

**Warren C. Foin, Buchanan, Ralph A. Gregory, Endwell, and Frank B. Hartman and Richard A. Trachy, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed June 21, 1960, Ser. No. 37,798**
**2 Claims. (Cl. 340—172.5)**



1. In a data processing system of the type wherein data is processed in accordance with instructions, each instruction comprising a plurality of character manifestations including an operations part, a first address part, and a second address part; and wherein said data comprises character manifestations, each character including adjacent zone and numeric portions; a data expansion device comprising:

a memory means for storing a plurality of character manifestations in a plurality of addressable memory locations, each location including a zone part and a

numeric part, the numeric portions of said character manifestations expressing a number of orders of a first value stored in said numeric parts, the zone portions of said charatcer manifestations expressing a plurality of orders of a second value stored in said zone parts;

a storage means for storing numeric portions of character manifestations in a plurality of addressable storage locations, each location having at least a numeric part;

memory address means responsive to the first address part of said instructions and operable upon said memory means for gaining access to the character manifestations stored in said addressable memory locations;

storage address means responsive to the second address part of said instructions and operable upon said storage means for gaining access to addressable storage locations for storing character manifestations therein;

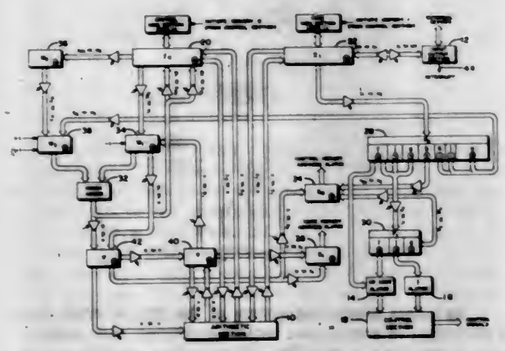
retrieval means responsive to the operation part of said instruction for concurrently removing from said memory means zone and numeric portions of character manifestations stored in the addressable memory locations excessed by said memory address means and said storage address means, respectively;

numeric transfer means responsive to said retrieval means for returning said numeric portions to said numeric parts of said memory means, each numeric portion being returned to the same addressable memory location from which it was removed;

and zone transfer means responsive to said retrieval means for directing said zone portions to numeric parts of addressable storage locations in said storage means, so as to leave said memory means with said first value stored therein and transfer said second value from said zone parts of said memory means into numeric parts of said storage means.

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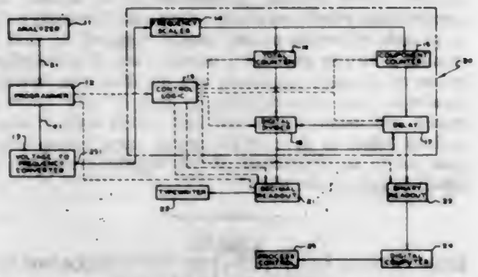
**3,168,724**
**COMPUTING DEVICE INCORPORATING INTERRUPTIBLE REPEAT INSTRUCTION**
**Duane H. Anderson, Roseville, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Jan. 22, 1962, Ser. No. 167,728**
**6 Claims. (Cl. 340—172.5)**



5. In a digital computer operating from an internally stored program of machine instruction words with said program including a repeat instruction, the combination comprising: first and second addressable memory means for storing program instruction words and operands, the memory accessing time of the first memory means being no greater than one-third that of the second memory means; a function register connected to receive instruction words in program sequence from said first memory means; an operand processing section; a storage register adapted to receive and temporarily store the memory address of the next sequential program instruction during the normal course of program execution; signal translating means connected to said function register for producing electrical signals unique to the particular instruction words stored in said function register; sensing means connected to receive electrical signals from said translator for sensing a repeat instruction word; control signal generating means responsively enabled by the output from said sensing means for effecting the storage of the address of the next sequential program instruction contained in said storage register at a first predetermined location in said first memory means; means responsive to an output signal from said control signal generating means for obtaining a repeat count value from a preselected storage location in said first memory and placing it in said storage register; means including said control signal generating means and said operand processing section for repetitively executing computer operations specified by the function code of said repeat instruction word; means for altering the repeat count value by a predetermined value for each of said repetitive execution; and further circuit means included in said control signal generating means responsive to a computer interrupt signal for transferring the current repeat count value from said storage register to said second preselected location in said first memory means and for transferring the address of the next sequential program instruction decremented by one from said preselected memory location to said storage register, whereby upon cessation of the computer interrupt signal, the repetitive operation is reinitiated at the same juncture at which it had been interrupted.

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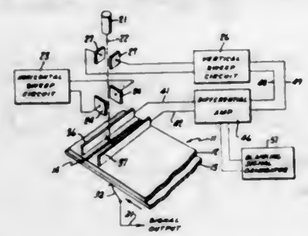
**3,168,725**
**ELECTRICAL MEASURING APPARATUS**
**Harold M. Neer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Feb. 20, 1962, Ser. No. 174,614**
**11 Claims. (Cl. 340—172.5)**



6. Apparatus for recording the output of an analyzer for a plurality of analyses wherein the analyzer output for each analysis comprises a plurality of component signals in sequence, each of said component signals being representative of a component of a material being analyzed; comprising first converting means for converting each of said component signals to a series of pulses; a first counter; means for applying the output of said first converting means to an input of said first counter; an "and" circuit; means for applying the output of said first counter to a first input of said "and" circuit; means for transmitting a first gating pulse to a second input of said first "and" circuit corresponding to the termination of each series of pulses; second converting means for converting the output of said "and circuit into a form suitable for controlling an automatic recording means; an automatic recording means; and means for applying the output of said second converting means to an input of said automatic recording means.



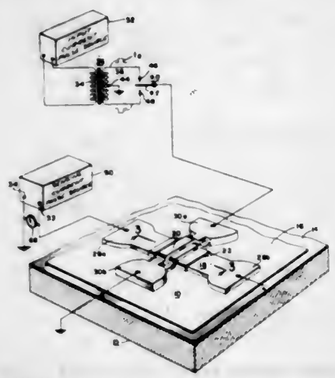
**3,168,726**
**APPARATUS FOR THERMOPLASTIC READOUT**
**Emil V. Boblett, Los Altos Hills, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California**
**Filed Jan. 6, 1961, Ser. No. 81,010**
**13 Claims. (Cl. 340—173)**



12. In a readout system for information recorded on a thermoplastic medium in the form of an irregular topography, the combination comprising: a means for producing a beam of electrons; means for impinging the beam in a scanning motion on a line along the irregular topography of the medium to develop a signal related to said topography; and means for sensing said signal whereby the information recorded in the form of an irregular topography is translated into a readout signal.

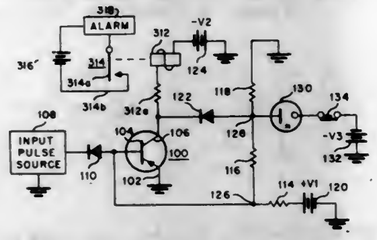
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**3,168,727**
**SUPERCONDUCTIVE STORAGE CIRCUIT WITH PERSISTENT CIRCULATING CURRENT**
**Frederick W. Schmidlin, Redondo Beach, Arthur J. Learn, Inglewood, and Rueben S. Spriggs, Manhattan Beach, Calif., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Feb. 23, 1960, Ser. No. 10,213**
**8 Claims. (Cl. 340—173.1)**



1. A storage arrangement comprising: a single elongated superconductive thin-film member having two elongated integral portions of substantially different thickness dimensions arranged in side-by-side contact with each other along their entire respective lengths, the thinner portion having a lower critical current than the thicker portion, and means connected to spaced ends of said member to apply a current pulse of magnitude sufficient to transform said thinner portion to the resistive state but insufficient to transform said thicker portion, whereby at the termination of said current pulse, a persistent circulating current flows in said member in opposite directions along the lengths of said two portions.

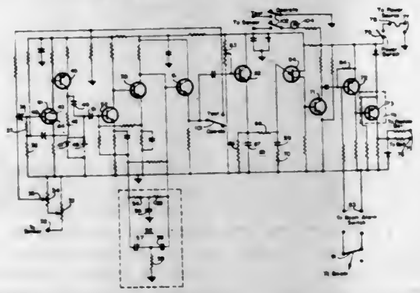
**3,168,728**
**BISTABLE INDICATING DEVICE**
**Nachum Porath, Tel-Aviv, Israel, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Aug. 11, 1960, Ser. No. 48,977**
**6 Claims. (Cl. 340—252)**




1. In combination, transistor means, said transistor means being normally biased in cutoff condition, glow tube means coupled to said transistor means, said glow tube being normally biased in cutoff condition, means for supplying an input signal to said transistor means in order to switch said transistor means to its conductive condition whereby a potential may be applied to said glow tube means such that said glow tube means is fired, feedback means coupled between said transistor means and said glow tube means to maintain each of said transistor means and said flow tube means in the conductive condition, and switching means for extinguishing said glow tube means so that said feedback means is altered whereby said transistor means may be restored to its cutoff condition.

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**3,168,729**
**PROXIMITY ALARM**
**Herman W. Volberg, El Cajon, Calif., assignor to Crane Products Manufacturing Company, Inc., Las Vegas, Nev., a corporation of Nevada**
**Filed Nov. 30, 1962, Ser. No. 241,226**
**9 Claims. (Cl. 340—258)**

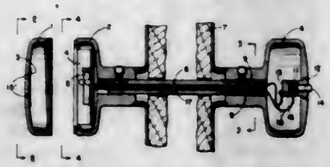


1. An alarm system for indicating more than one dangerous condition in the operation of vehicles which have movable projections therefrom, an alarm, normally conductive means for energizing said alarm when the conduction thereof is interrupted, first switch means for intermittently interrupting the conduction through said normally conductive means, means for controlling the operation of said first switch means in response to a first condition comprising the reception by said system of radiated electrical oscillations of greater than a preselected amplitude, second switch means for continuously interrupting the conduction through said normally conductive means, and means for controlling the operation of said second switch means in response to a second condition comprising movements of said vehicle and its projections to indicate to the operator of said vehicle when either dangerous condition exists.

### 3,168,730
### DOOR KNOB CONTAINED ELECTRIC SIGNAL STRUCTURE

Fred A. Baldinelli, 135 Atherton St., Milton, Mass., assignor of thirty-five percent to Anthony Galluccio, Cambridge, Mass., and ten percent to Rocco Shelzi, Woburn, Mass.

Filed May 23, 1963, Ser. No. 282,813
2 Claims. (Cl. 340—392)

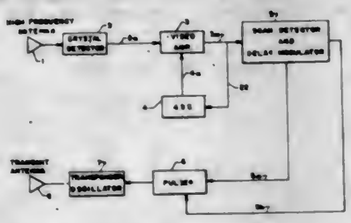


1. A signalling assembly for a door comprising a shank which is hollow from end to end, an outer knob mounted on the outer end of said shank and an inner knob mounted on the inner end of said shank, said knobs being hollow, the inner knob having a removable part for access to the interior, batteries and a vibrator audible sound producing means mounted within the inner knob, a push button switch mounted in the outer knob, and wires operatively connecting said push button switch, batteries, and vibrator audible sound producing means, said wires extending through the hollow shank.

### 3,168,731
### CROSS-BAND BEACON

Lionel Shub, Buffalo, and Richard B. Rupp, Lockport, N.Y., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.

Filed Aug. 21, 1961, Ser. No. 132,770
21 Claims. (Cl. 343—6.8)



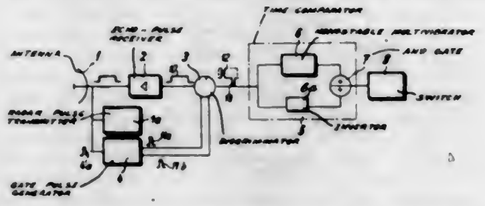
1. A beacon transponder for receiving scan-modulated radar pulses and for transmitting a pair of reply pulses synchronized with each of the received radar pulses, comprising pulse receiving and demodulating means for receiving said radar pulses and for recovering the scan modulation from the received radar pulses; transmitter means; pulser means for pulsing said transmitter means to transmit a first reply pulse in response to each radar pulse received; and modulator means coupled to said demodulating means to receive said scan modulation and coupled to said transmitter means to transmit a second reply pulse delayed from the first reply pulse by an interval proportional to the scan-modulation of each radar pulse received.

### 3,168,732
### DEVICE IN SEARCHING AND TRACKING RADAR SYSTEMS FOR AUTOMATICALLY INITIATING THE TRACKING OPERATION

Max Bretscher, Zurich, Switzerland, assignor to Albiswerk Zurich A.G., Zurich, Switzerland, a Swiss corporation

Filed May 18, 1960, Ser. No. 29,971
Claims priority, application Switzerland, May 22, 1959, 73,525
2 Claims. (Cl. 343—7.3)

1. Device for automatically switching from searching to target-tracking operation in radar systems, comprising a radar transmitter and receiver to provide radar echo signals from a target, a gate-pulse generator connected to said transmitter and having an output of two gating pulses of constant mutual time spacing and of periodically variable delay relative to the echo-producing transmitter pulses, discriminator means connected to said receiver and said gate pulse generator for furnishing a gating pulse upon coincidence of the respective time edges of said echo

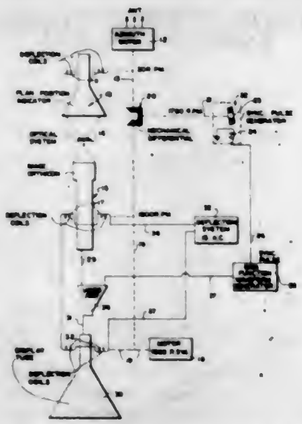


signal with respective gating pulses, time comparator means having a coincidence gate and connected to said discriminator means for issuing a switching signal only when the interval between coincidence pulses remains below a given time limit, and transfer relay means connected to said coincidence gate for automatically switching from searching to tracking in response to occurrence of said switching signal.

### 3,168,733
### CATHODE RAY TUBE DISPLAY SYSTEMS

Robert A. Frykland, deceased, late of Dedham, Mass., by Dorothy H. Frykland, administratrix, Dedham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed May 25, 1961, Ser. No. 112,736
8 Claims. (Cl. 343—11)



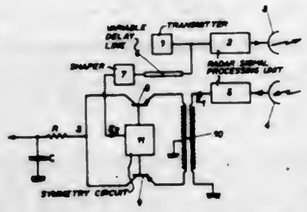
1. A bright display system, comprising a plan position indicator means operative as a short-term memory system and including a first cathode ray tube provided with low-speed deflection means, constant sensitivity re-scanning means for re-scanning the picture appearing on said plan position indicator means to produce in the output thereof signals corresponding to the picture on said first cathode ray tube, re-display means including a second cathode ray tube having a display means of short persistence and greater brightness than said first-mentioned display means to display thereon said signals, means for applying the signals from said re-scanning means to said second-mentioned cathode ray tube, and gain adjusting means operative on the signals in said last-mentioned means for obtaining an essentially level output signal on said re-display means.



### 3,168,734
### APPARATUS FOR CORRELATION IN RADAR INSTALLATIONS

André Adamsbaum, Boulogne-Billancourt, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France

Filed Apr. 6, 1962, Ser. No. 188,920
Claims priority, application France, Apr. 6, 1961, P.V. 857,962
2 Claims. (Cl. 343—12)

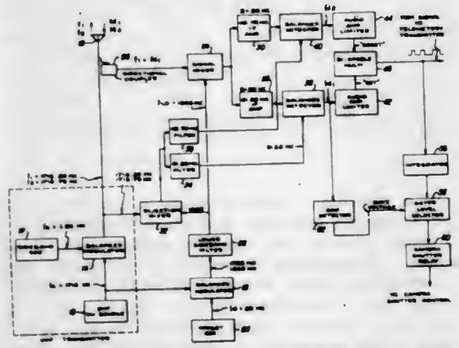


1. Correlation apparatus for use in radar or like installation having a transmitter for producing a pulsed signal which may be reflected as an echo from a remote object and a reciever for amplifying the echo signals, comprising in combination, means for deriving a reference signal from the transmitter, delay means coupled to the reference signal means for artificially delaying said reference signal in conformity with the natural delay encountered by the echo due to twice the distance of a reflecting remote object, shaping means for converting the delayed reference signal at said delay means to impulses of rectangular form, means providing from the rectangular impulses signals of opposite polarity and changing sign in synchronism with the reference signal, circuit means multiplying the signals produced by the last mentioned means with the echo signal from the receiver, and means integrating the signal produced by the multiplier.

### 3,168,735
### DOUBLE SIDEBAND-SUPPRESSED CARRIER DOPPLER DISTANCE MEASURING SYSTEM

Victor F. Cartwright, Fullerton, Calif., assignor to Traid Corporation, Encino, Calif., a corporation of California

Filed Sept. 19, 1962, Ser. No. 224,658
19 Claims. (Cl. 343—12)

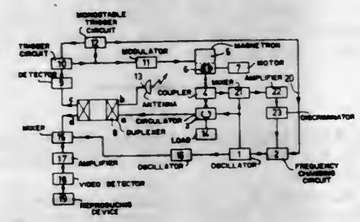


17. A system for measuring the distance between two relatively moving objects, comprising, at one of said objects, a transmitter having a UHF carrier wave source modulated by the output of a sideband oscillator to provide two symmetrical UHF sidebands having a fixed frequency difference, the carrier being suppressed whereby said UHF sidebands are the transmitted signals, receiver circuit means for receiving said UHF sidebands after reflection from the other of said objects and also said UHF sidebands directly in attenuated form without the reflection from said other object and for detecting the two Doppler frequency components of the reflected signals, and phase sensitive circuit means coupled to the output of said receiver circuit means for generating an output signal which varies directly with variations in phase difference between said Doppler frequency components, said phase difference being directly proportional to the distance between said objects.

### 3,168,736
### RADAR TRANSCEIVER DEVICE

Nils Erik Gustav Backmark, Farsta, Florian Sellberg Djursholm, Hans Olof Evert Arkhammar and Torbjoern Joergensen, Stockholm, and Jan Pieter Oscar Klnberg, Bromma, Sweden, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 12, 1960, Ser. No. 1,957
Claims priority, application Sweden, Jan. 12, 1959, 251/59, 252/59, 253/59
8 Claims. (Cl. 343—17.1)

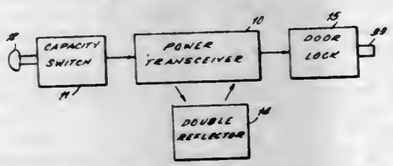


1. A radar system comprising a source of first high frequency oscillations having tuned oscillation frequency determining means, a modulator connected to energize said source of first oscillations, means connected to said tuned means for continuously varying the tuning frequency thereof, a source of second oscillations, means connected to compare the frequency of said second oscillations with the unexcited resonant frequency of said tuned means to derive a signal when a predetermined relationship exists between said unexcited resonant frequency and the frequency of said second oscillations, means for applying said signal to said modulator to momentarily energize said source of first oscillations, means for transmitting said first oscillations, means for changing the frequency of said second oscillations, and means responsive to said signal connected to said frequency changing means for changing the frequency of said second oscillations only during a predetermined time subsequent the energization of said source of first oscillations.

### 3,168,737
### RADIO CONTROLLED LOCK

Richard Weinstein, Huntington, N.Y., assignor, by mesne assignments, to Commercial Factors, Ltd., Montreal, Quebec, Canada

Filed Nov. 7, 1962, Ser. No. 235,982
8 Claims. (Cl. 343—225)




1. A radio control system for operating a distant electromechanical transducer comprising a power transceiver circuit including; a first transmitter circuit for generating and broadcasting alternating current power at a first frequency and a second transmitter circuit for generating

and broadcasting alternating current power at a second frequency; a portable double reflector in close proximity to said transmitter circuits for receiving said power during a broadcast time interval and for re-radiating a portion of the power after the end of the time interval; a radio receiver in said transceiver for receiving said re-radiated power after the end of the time interval; said radio receiver including a first broadly tuned circuit for receiving both the first and second of said frequencies from the double reflector, an amplifying means, a rectifier connected to the broadly tuned circuit for rectifying the received waves, a second tuned circuit connected to the rectifier responsive to current pulses having a frequency equal to the difference between said first and second frequencies, and a coupling means connected to the rectifier for applying said current pulses to said transducer; a source of operating power; switching means for alternately switching said source of operating power to said transmitter circuits during the broadcast time intervals and for switching said power source to the radio receiver at the end of each of said time intervals and means for initiating operation of said switching means at essentially the same time as said double reflector is brought in close proximity to said transmitter circuit.

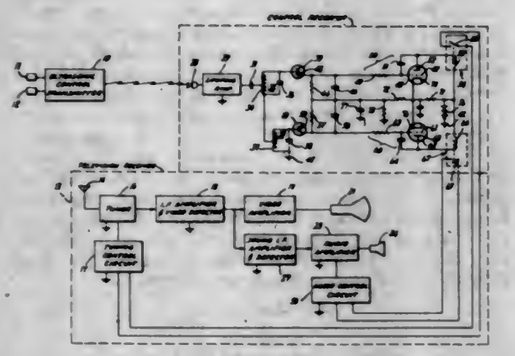
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**3,168,738**

## SELECTIVE-FREQUENCY REMOTE CONTROL SYSTEM HAVING SPURIOUS NOISE SIGNAL SUPPRESSION

Allan R. Curll, Jr., Ardmore, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 6, 1961, Ser. No. 115,225
7 Claims. (Cl. 343—228)



1. A remote control receiver responsive to any one of a plurality of transmitted control signals of different frequency and comprising, signal receiving means responsive to control signals of different frequencies, frequency selective circuits coupled to the said signal receiving means and operable to produce control voltages in response to signals of the frequency to which the frequency selective circuits are tuned, control circuits, diode detectors individually coupling the said frequency selective circuits to the said control circuits, a source of back-bias potential connected to the said diode detectors and back-biasing the same, and means responsive to current flow in the control circuit controlling the said back-bias potential on the said diode detectors in accordance with the magnitude of the flow of current in the said control circuits, the said back-bias on the diode detectors increasing with increased current flow in the said control circuits.

**3,168,739**

## TIMING REGULATORS

Gunnar Ivar Fredholm, Forfattarvagen 44, Bromma, Sweden

Filed Feb. 25, 1960, Ser. No. 10,905
Claims priority, application Sweden, Mar. 5, 1959, 2,125/59
7 Claims. (Cl. 346—74)



1. A timing device for supervision of defined junctures, comprising one main conveyor and at least two auxiliary conveyors, said conveyors being arranged to run at different and constant speeds side by side, the main conveyor being arranged to run at higher speed than the auxiliary conveyors, means for driving said auxiliary conveyors at predetermined and different speeds, means for marking a point on each of the auxiliary conveyors at one and the same moment, means for transferring said marks to the main conveyor after a given time period and stationary means arranged in the path of said two marks of the main conveyor adapted to be influenced by said marks.

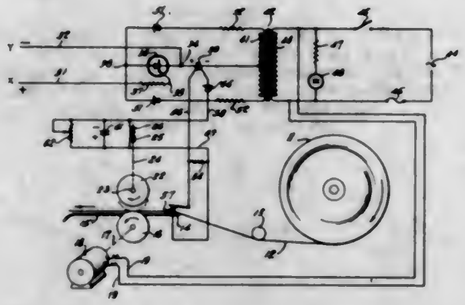
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**3,168,740**

## IMPULSE RECORDER

Robert C. La Borde, Bronxville, N.Y., assignor to Automatic Impulse Recording Corporation, New York, N.Y., a corporation of New York

Filed Aug. 13, 1962, Ser. No. 216,542
15 Claims. (Cl. 346—74)



9. A recording system including a recording medium and a medium transport mechanism, comprising a pair of input terminals for receiving signal pulses, a power supply, a transformer connected to said power supply, a controlled rectifier including an anode, a cathode and a gate, one of said terminals connected to said cathode, the other of said terminals connected to said gate, said anode being connected to both ends of the secondary winding of said transformer, a diode connected between each end of said secondary winding and said anode, a condenser connected between said cathode and the center tap of said secondary winding, a circuit connected to said condenser, said condenser circuit including means for actuating said transport mechanism, and means for impressing information upon said medium, said actuating and impressing operations taking place simultaneously in response to the pulses impressed upon said terminals which cause the firing of said rectifier.



**3,168,741**

## DECORATIVE EYEGLASS LENS MOUNT

Austin B. Belgard, 3226 Sprucewood, Wilmette, Ill.

Filed Apr. 4, 1961, Ser. No. 100,650
5 Claims. (Cl. 351—51)



1. A pair of lightweight eyeglasses comprising a frame having nose and temple pieces and having a pair of arm portions, each of said arm portions having at least one apertured lug, a pair of transparent plastic lenses secured to said frame in front of said arm portions and in front of the lugs thereof, each of said lenses having at least one aperture in register with the aperture of a lug directly therebehind, and head-providing connecting elements extending through said apertures and securing said lenses to said lugs, each of said lenses having peripheral portions thereof coated with a pigmented plastic material, said pigmented plastic material being fused to said plastic lenses and defining simulated frame portions therefor, and a sheath of plastic material fused to each of said lenses within the aperture thereof and securely anchoring said connecting element within the aperture of said lens, the heads of said connecting elements being disposed on the front sides of said lenses and being covered by the pigmented plastic material fused to said lenses.

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**3,168,742**

## PRODUCTION OF ANIMATED PICTURES

Jack Dean Chambers, 143 Wardour St., London, England

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,335
Claims priority, application Great Britain, Dec. 19, 1960, 43,613/60; Mar. 30, 1961, 11,839/61
10 Claims. (Cl. 352—50)

1. A process for producing animated picture sequences in recorded form the steps comprising:

making a set of original drawings representing a unit movement of a picture element, said set comprising representations of the picture element in successive positions in the unit movement;

making a plurality of identical sets of decalcomanias from said set of original drawings;

applying decalcomanias of at least one set to individual supporting sheets to produce images at desired locations on the sheets; and

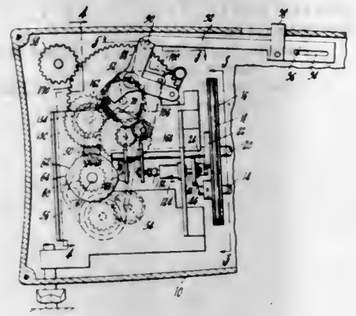
assembling said sheets in the order determined by the sequence of successive positions in the unit movement so that the images on the sheets reproduce the unit movement.

**3,168,743**

## MOTION PICTURE APPARATUS WITH VARIABLE FILM CLAW SPEED

Israel Nesson, Brighton, Mass., assignor to Keystone Camera Company, Inc., Boston, Mass., a corporation of Massachusetts

Filed Apr. 19, 1963, Ser. No. 274,235
14 Claims. (Cl. 352—180)



1. Motion picture apparatus comprising in combination an image aperture,

claw means for engaging perforations in the film for moving film past said image aperture with intermittent motion,

said claw means being movable between first and second operative positions,

control means to move said claw means between said first and second operative positions,

shutter means disposed adjacent said image aperture,

shutter drive means for operating said shutter at a predetermined rate for periodically allowing the transmission of light to said film,

first claw drive means directly coupled to said shutter drive means for imparting motion to said claw means for advancing said film past said image aperture with intermittent motion at a first rate in synchronism with said predetermined rate when said claw means is in said first operative position,

and second claw drive means directly coupled to said shutter drive means and operative in conjunction with said first claw drive means when said claw means is in said second position to periodically move said claw means into film perforation engaging position for advancing said film past said image aperture at a second rate that is a fraction of said first rate while maintaining synchronism with said predetermined rate.

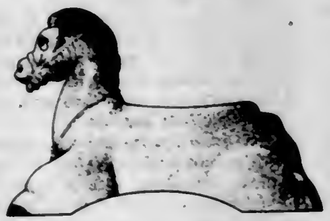
# DESIGNS

## FEBRUARY 2, 1965

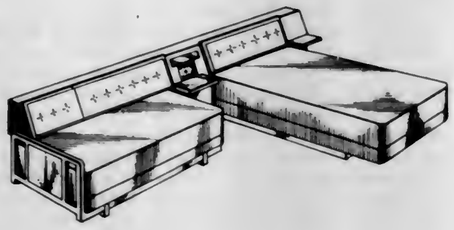
**200,189**
**COMBINED HOLDER FOR TOOTHBRUSHES, TOOTH PASTE TUBE, SOAP CAKE AND WATER GLASS**
Jerome Margolin, 67—22 152nd St., Kew Garden Hills, N.Y.
Filed Jan. 20, 1964, Ser. No. 78,258
Term of patent 3½ years
(Cl. D4—3)



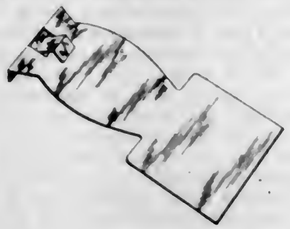
**200,190**
**CHILD'S TRAINING CHAIR**
Amedeo Di Russo and Louis Ernest Charpentier, Leominster, Mass., assignors to Sportsmen's Plastics, Inc., Leominster, Mass., a corporation of Massachusetts
Filed May 19, 1964, Ser. No. 80,068
Term of patent 14 years
(Cl. D4—5)



**200,191**
**COMBINED TWIN SOFA BED AND TABLE UNIT**
David Bendell, 7240 SW. 125th St., Miami, Fla.
Filed May 27, 1964, Ser. No. 80,451
Term of patent 14 years
(Cl. D5—4)



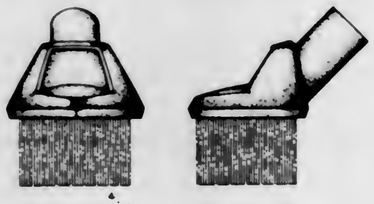
**200,192**
**BOOKMARK**
Edwin A. Ross, New York, N.Y., assignor to Lawrence Ross, Baldwin, N.Y.
Filed Nov. 22, 1963, Ser. No. 77,546
Term of patent 14 years
(Cl. D6—2)



**200,193**
**CARPET SHAMPOOING MACHINE**
Harold Perrett, Ware, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Dec. 23, 1963, Ser. No. 77,887
Claims priority, application Great Britain July 2, 1963
Term of patent 14 years
(Cl. D9—2)



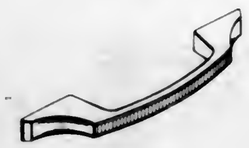
**200,194**
**VACUUM CLEANER BRUSH ATTACHMENT OR THE LIKE**
George H. Frost, Ashland, Ohio, assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Mar. 25, 1964, Ser. No. 79,184
Term of patent 14 years
(Cl. D9—2)







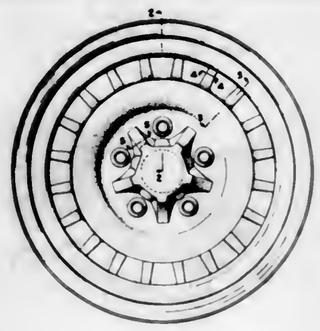
**200,195**
**PULL**
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed May 4, 1964, Ser. No. 79,808
Term of patent 14 years
(Cl. D10—8)



**200,196**
**DRAWER PULL**
Anthony J. Carsello, Hollywood, Calif., assignor to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California
Filed June 23, 1964, Ser. No. 80,535
Term of patent 14 years
(Cl. D10—8)



**200,197**
**WHEEL**
Ronald M. Logghe, Roseville, Mich., assignor to Motor Wheel Corporation, Lansing, Mich., a corporation of Michigan
Filed Feb. 13, 1964, Ser. No. 78,620
Term of patent 14 years
(Cl. D14—30)



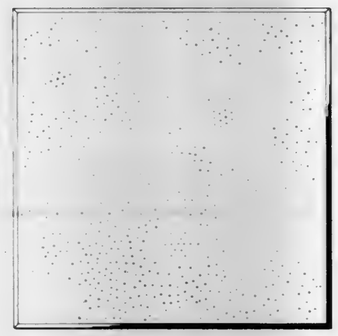
**200,198**
**STRAP FASTENER**
Ilmar J. Vilcins, Oak Park, and Hobart P. Young, Winnetka, Ill., assignors to Signode Steel Strapping Company, a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 74,660
Term of patent 14 years
(Cl. D17—5)



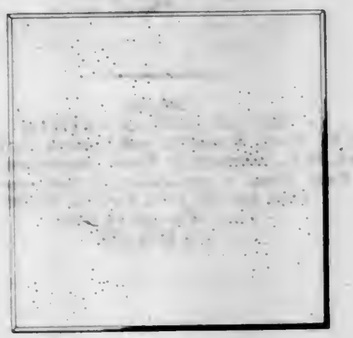
**200,199**
**TILE OR SIMILAR ARTICLE**
Philip M. Brody, Scarsdale, and Frederic H. Rahr, New York, N.Y., assignors to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Jan. 24, 1963, Ser. No. 73,305
Term of patent 14 years
(Cl. D18—2)



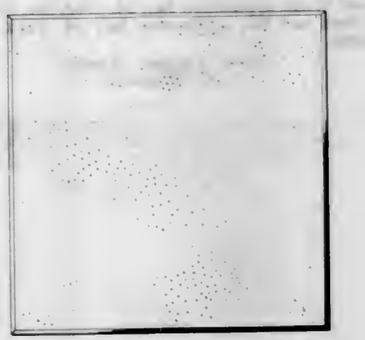
**200,200**
**TILE OR SIMILAR ARTICLE**
Philip M. Brody, Scarsdale, and Frederic H. Rahr, New York, N.Y., assignors to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Original design application Jan. 24, 1963, Ser. No. 73,305. Divided and this application July 31, 1964, Ser. No. 81,096
Term of patent 14 years
(Cl. D18—2)



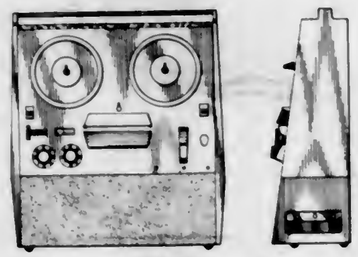
**200,201**
**TILE OR SIMILAR ARTICLE**
Philip M. Brody, Scarsdale, and Frederic H. Rahr, New York, N.Y., assignors to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Original design application Jan. 24, 1963, Ser. No. 73,305. Divided and this application July 31, 1964, Ser. No. 81,097
Term of patent 14 years
(Cl. D18—2)



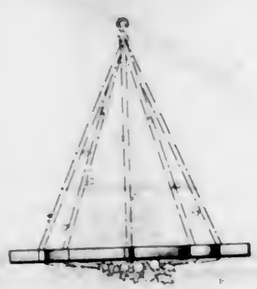
**200,202**
**TILE OR SIMILAR ARTICLE**
Philip M. Brody, Scarsdale, and Frederic H. Rahr, New York, N.Y., assignors to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Original design application Jan. 24, 1963, Ser. No. 73,305. Divided and this application July 31, 1964, Ser. No. 81,098
Term of patent 14 years
(Cl. D18—2)



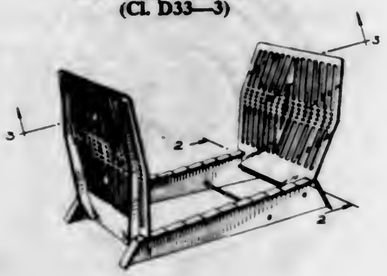
**200,203**
**PORTABLE TAPE RECORDER OR SIMILAR ARTICLE**
Paul Belokin, Jr., Berwyn, Ill., assignor to Webcor, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 4, 1963, Ser. No. 77,664
Term of patent 14 years
(Cl. D26—14)



**200,204**
**CHRISTMAS DECORATION OR SIMILAR ARTICLE**
Valda L. Pitzer, 7860 S. Causeway Blvd., St. Petersburg, Fla.
Filed Jan. 2, 1963, Ser. No. 73,033
Term of patent 14 years
(Cl. D29—1)



**200,205**
**RECORD RACK**
Lewis Davis, 114–116 Charing Cross Road, London, England
Filed Nov. 1, 1963, Ser. No. 77,234
Term of patent 7 years
(Cl. D33—3)





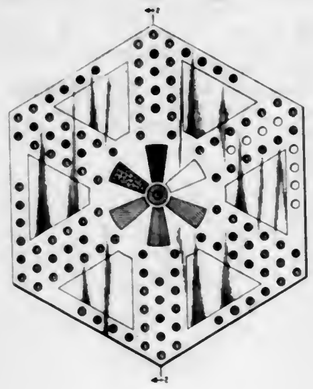

**200,206**
**CABINET OR SIMILAR ARTICLE**
George A. Arkwright, 6708 New Hope Drive, Springfield, Va.
Filed Oct. 31, 1962, Ser. No. 72,323
Term of patent 14 years
(Cl. D33—19)



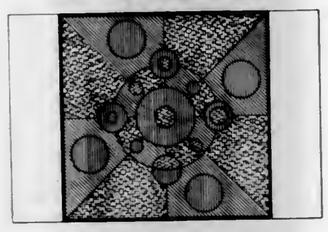
**200,207**
**ESKIMO GIRL DOLL**
Thomas Dam, Gjol, pr. Aabroby, Denmark, assignor to Dam Things Establishment, Vaduz, Liechtenstein
Filed Apr. 6, 1964, Ser. No. 79,355
Term of patent 14 years
(Cl. D34—4)



**200,208**
**GAMEBOARD**
Albert K. Newton, 3517 Azalea Ave. NE., Canton, Ohio
Filed Jan. 21, 1964, Ser. No. 78,298
Term of patent 14 years
(Cl. D34—5)



**200,209**
**GAMEBOARD**
Victor S. Stedman, 6 Blair St., Worcester, Mass.
Filed May 15, 1964, Ser. No. 80,040
Term of patent 3½ years
(Cl. D34—5)



**200,210**
**MUSICAL TOY**
William R. Allen, 2029 N. Kenmore Ave., Los Angeles, Calif.
Filed Aug. 17, 1964, Ser. No. 81,308
Term of patent 14 years
(Cl. D34—15)



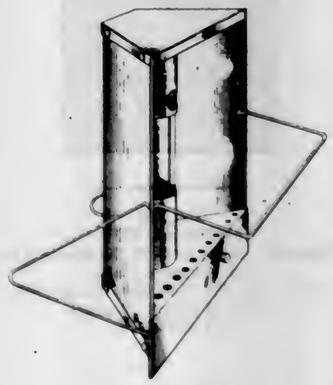
**200,211**
**HOLDER FOR COCKTAIL OLIVES OR THE LIKE**
James H. Ogg, North Hollywood, Calif., assignor to Zoo-Piks, a partnership consisting of James H. Ogg and Jerold F. Drucker, North Hollywood, Calif.
Filed July 22, 1964, Ser. No. 80,968
Term of patent 14 years
(Cl. D44—29)



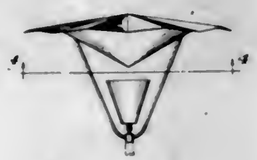
**200,212**
**STOCKING**
Curt Seifart, Charlotte, and Avery D. May, Shelby, N.C., assignors to Hudson Hosiery Company, Charlotte, N.C., a corporation of North Carolina
Filed May 13, 1964, Ser. No. 79,965
Term of patent 14 years
(Cl. D47—7)



**200,213**
**SUN LAMP**
William J. Lommel, Covington, Ky., assignor to Institutum Divi Thomae Foundation, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 26, 1961, Ser. No. 68,052
Term of patent 3½ years
(Cl. D48—20)



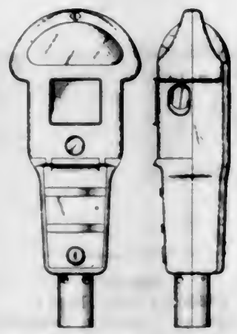
**200,214**
**LIGHT FIXTURE**
Peter Simon, 1255 W. Chippewa River Road, Midland, Mich.
Original design application Apr. 4, 1963, Ser. No. 74,303. Divided and this application June 22, 1964, Ser. No. 80,771
Term of patent 14 years
(Cl. D48—31)



**200,215**
**STAND FOR AN AMUSEMENT MACHINE OR THE LIKE**
John Richard Heywood, Rosebery, New South Wales, Australia, assignor to Ainsworth Consolidated Industries Pty. Ltd., Rosebery, New South Wales, Australia, a company incorporated of Australia
Filed Aug. 13, 1962, Ser. No. 71,253
Claims priority, application Australia, Mar. 27, 1962, 43,248
Term of patent 3½ years
(Cl. D52—3)



**200,216**
**PARKING METER CASING**
Robert Broussard, 748 Luton Drive, Glendale, Calif.
Filed Apr. 22, 1963, Ser. No. 74,536
Term of patent 3½ years
(Cl. D52—3)



**200,217**
**UNIVERSAL HEAD MACHINE SCREW OR SIMILAR ARTICLE**
Lawrence M. Curtiss, Mountainside, N.J., assignor to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Jan. 31, 1964, Ser. No. 78,454
Term of patent 14 years
(Cl. D54—9)

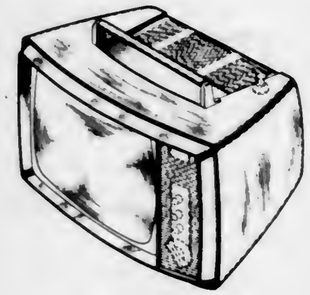


**200,218**
**UNIVERSAL HEAD MACHINE SCREW OR SIMILAR ARTICLE**
Lawrence M. Curtiss, Mountainside, N.J., assignor to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed June 4, 1964, Ser. No. 80,285
Term of patent 14 years
(Cl. D54—9)

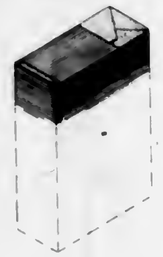




**200,219**
**TELEVISION RECEIVER**
Frank M. Grunwald, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 18, 1963, Ser. No. 73,593
Term of patent 3½ years
(Cl. D56—4)



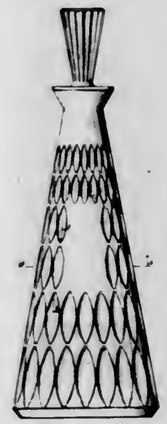
**200,220**
**CIGARETTE PACKAGE**
Bernard J. Tamarin, Whitemarsh, Pa.
(W. Valley Green Road and Hunt Lane, Flourtown, Pa.)
Filed Jan. 10, 1963, Ser. No. 73,132
Term of patent 14 years
(Cl. D58—2)



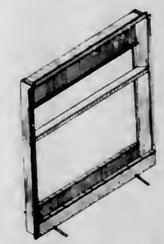
**200,221**
**JUG**
Walter P. Conway, New York, N.Y., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Filed Oct. 23, 1963, Ser. No. 77,113
Term of patent 14 years
(Cl. D58—5)



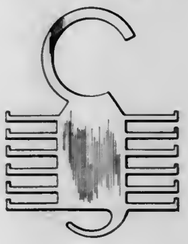
**200,222**
**DECANTER**
Ernest L. Du Pree, New York, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 73,063
Term of patent 14 years
(Cl. D58—8)



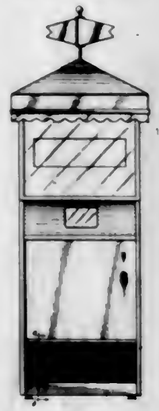
**200,223**
**MOUNT FOR AIR CONDITIONERS**
Charles Leslie McCrea and David B. Cross, both of 514–516 2nd St. NW., Washington, D.C.
Filed Jan. 15, 1964, Ser. No. 78,207
Term of patent 7 years
(Cl. D62—4)



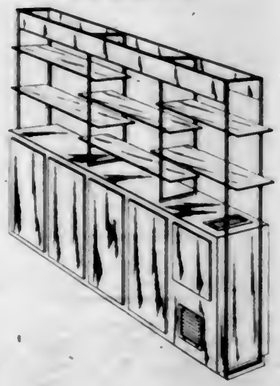
**200,224**
**NECKTIE HANGER**
Ben B. Manaster, Chicago, Ill., assignor to Crest Specialty, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 14, 1964, Ser. No. 79,492
Term of patent 7 years
(Cl. D80—8)



**200,225**
**MOTION PICTURE EXHIBITOR CABINET**
**E. Burton Benjamin, Highland Park, Ill., assignor to Urban Industries, Inc., Louisville, Ky., a corporation of Kentucky**
**Filed Sept. 5, 1962, Ser. No. 71,568**
**Term of patent 3½ years**
**(Cl. D80—11)**



**200,226**
**REFRIGERATED CABINET AND DISPLAY SHELF UNIT**
**Herman Zaslovsky, 30 Massepequa Ave., Massepequa, N.Y., and Harry Rosenfeld, 818 E. Chester St., Long Beach, N.Y.**
**Filed Oct. 17, 1963, Ser. No. 77,021**
**Term of patent 3½ years**
**(Cl. D80—11)**



**200,227**
**SAUNA STOVE**
**Henry P. Glass, Chicago, Ill., assignor to Welded Products, Inc., Grand Haven, Mich., a corporation of Michigan**
**Filed Aug. 2, 1963, Ser. No. 76,086**
**Term of patent 14 years**
**(Cl. D81—20)**



**200,228**
**LOOM YARN BEAM STAND**
**William N. Conway, North Grafton, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine**
**Filed May 13, 1964, Ser. No. 79,972**
**Term of patent 14 years**
**(Cl. D92—15)**



# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 2ND DAY OF FEBRUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bradt, Lynn, and J. G. Dorrance, to S. I. Handling Systems Inc. Tow truck system. Re. 25,723, 2–2–65, Cl. 104—88.
Dorrance, John G.: *See*—
Bradt, Lynn, and Dorrance. Re. 25,723.
S. I. Handling Systems Inc.: *See*—
Bradt, Lynn, and Dorrance. Re. 25,723.

# LIST OF PLANT PATENTEES

Fischer, Carl H., to Selected Glads, Inc. Gladiolus plant. 2,470, 2–2–65, Cl. 85.
Selected Glads, Inc.: *See*—
Fischer, Carl H. 2,470.
Silva, William E. Blackberry plant. 2,469, 2–2–65, Cl. 46.
Tiret, Horace M. Fuchsia plant. 2,468, 2–2–65, Cl. 84.

# LIST OF DESIGN PATENTEES

Ainsworth Consolidated Industries Pty., Ltd.: *See*—
Heywood, John R. 200,215.
Ajax Hardware Mfg. Corp., Industry: *See*—
Carsello, Anthony J. 200,196.
Allen, William R. Musical toy. 200,210, 2–2–65, Cl. D34—15.
Amerock Corp.: *See*—
Clayton, La Verne E. 200,195.
Arkwright, George A. Cabinet or similar article. 200,206, 2–2–65, Cl. D33—19.
Belokin, Paul, Jr., to Webcor, Inc. Portable tape recorder or similar article. 200,203, 2–2–65, Cl. D26—14.
Bemis Bro. Bag Co.: *See*—
Conway, Walter P. 200,221.
Bendell, David. Combined twin sofa bed and table unit. 200,191, 2–2–65, Cl. D5—4.
Benjamin, E. Burton, to Urban Industries, Inc. Motion picture exhibitor cabinet. 200,225, 2–2–65, Cl. D80—11.
Brody, Philip M., and F. H. Rahr, to Wood Conversion Co. Tile or similar article. 200,199, 2–2–65, Cl. D18—2.
Brody, Philip M., and F. H. Rahr, to Wood Conversion Co. Tile or similar article. 200,200, 2–2–65, Cl. D18—2.
Brody, Philip M., and F. H. Rahr, to Wood Conversion Co. Tile or similar article. 200,201, 2–2–65, Cl. D18—2.
Brody, Philip M., and F. H. Rahr, to Wood Conversion Co. Tile or similar article. 200,202, 2–2–65, Cl. D18—2.
Broussard, Robert. Parking meter casing. 200,216, 2–2–65, Cl. D52—3.
Carsello, Anthony J., to Ajax Hardware Mfg. Corp., Industry. Drawer pull. 200,196, 2–2–65, Cl. D10—8.
Charpentier, Louis E.: *See*—
Di Russo, Amedeo, and Charpentier. 200,190.
Clayton, La Verne E., to Amerock Corp. Pull. 200,195, 2–2–65, Cl. D10—8.
Conway, Walter P., to Bemis Bro. Bag Co. Jug. 200,221, 2–2–65, Cl. D58—5.
Conway, William H., to Draper Corp. Loom yarn beam stand. 200,228, 2–2–65, Cl. D92—15.
Crest Specialty, Inc.: *See*—
Manaster, Ben B. 200,224.
Cross, David B.: *See*—
McCrea, Charles L., and Cross. 200,223.
Curtiss, Lawrence M., to The Thomas & Betts Co., Inc. Universal head machine screw or similar article. 200,217, 2–2–65, Cl. D64—9.
Curtiss, Lawrence M., to The Thomas & Betts Co., Inc. Universal head machine screw or similar article. 200,218, 2–2–65, Cl. D54—9.
Dam Things Establishment: *See*—
Dam, Thomas. 200,207.
Dam, Thomas, to Dam Things Establishment. Eskimo girl doll. 200,207, 2–2–65, Cl. D34—4.
Davis, Lewis. Record rack. 200,205, 2–2–65, Cl. D33—3.
Di Russo, Amedeo, and L. E. Charpentier, to Sportmen's Plastics, Inc. Child's training chair. 200,190, 2–2–65, Cl. D4—5.
Draper Corp.: *See*—
Conway, William H. 200,228.
Du Pree, Ernest L., to Schenley Industries, Inc. Decanter. 200,222, 2–2–65, Cl. D58—8.
Frost, George H., to Westinghouse Electric Corp. Vacuum cleaner brush attachment or the like. 200,194, 2–2–65, Cl. D9—2.
General Electric Co.: *See*—
Grunwald, Frank M. 200,219.
Glass, Henry P., to Welded Products, Inc. Suana stove. 200,227, 2–2–65, Cl. D81—20.
Grunwald, Frank M., to General Electric Co. Television receiver. 200,219, 2–2–65, Cl. D56—4.
Heywood, John R., to Ainsworth Consolidated Industries Pty., Ltd. Stand for an amusement machine or the like. 200,215, 2–2–65, Cl. D52—3.
Hudson Hosiery Co.: *See*—
Selfart, Curt, and May. 200,212.
Institutum Divi Thomae Foundation: *See*—
Lommel, William J. 200,213.
Lever Bros. Co.: *See*—
Perrett, Harold. 200,193.
Logghe, Ronald M., to Motor Wheel Corp. Wheel. 200,197, 2–2–65, Cl. D14—30.
Lommel, William J., to Institutum Divi Thomae Foundation. Sun lamp. 200,213, 2–2–65, Cl. D48—20.
Manaster, Ben B., to Crest Specialty, Inc. Necktie hanger. 200,224, 2–2–65, Cl. D80—8.
Margolin, Jerome. Combined holder for toothbrushes, tooth paste tube, soap cake and water glass. 200,189, 2–2–65, Cl. D4—3.
May, Avery D.: *See*—
Selfart, Curt, and May. 200,212.
McCrea, Charles L., and D. B. Cross. Mount for air conditioners. 200,223, 2–2–65, Cl. D62—4.
Motor Wheel Corp.: *See*—
Logghe, Ronald M. 200,197.
Newton, Albert K. Gameboard. 200,208, 2–2–65, Cl. D34—5.
Ogg, James H., to Zoo-Piks. Holder for cocktail olives or the like. 200,211, 2–2–65, Cl. D44—29.
Perrett, Harold, to Lever Bros. Co. Carpet shampooing machine. 200,193, 2–2–65, Cl. D9—2.
Pitzer, Valda L. Christmas decoration or similar article. 200,204, 2–2–65, Cl. D29—1.
Rahr, Frederic H.: *See*—
Brody, Philip M., and Rahr. 200,199.
Brody, Philip M., and Rahr. 200,200.
Brody, Philip M., and Rahr. 200,201.
Brody, Philip M., and Rahr. 200,202.
Rosenfeld, Harry: *See*—
Zaslovsky, Herman, and Rosenfeld. 200,226.
Ross, Edwin A., to L. Ross. Bookmark. 200,192, 2–2–65, Cl. D6—2.
Schenley Industries, Inc.: *See*—
Du Pree, Ernest L. 200,222.
Selfart, Curt, and A. D. May, to Hudson Hosiery Co. Stocking. 200,212, 2–2–65, Cl. D47—7.
Signode Steel Strapping Co.: *See*—
Vilcins, Ilmar J., and Young. 200,198.
Simon, Peter. Light fixture. 200,214, 2–2–65, Cl. D48—31.
Sportmen's Plastics, Inc.: *See*—
Di Russo, Amedeo, and Charpentier. 200,190.
Stedman, Victor S. Gameboard. 200,209, 2–2–65, Cl. D34—5.
Tamarin, Bernard J. Cigarette package. 200,220, 2–2–65, Cl. D58—2.
Thomas & Betts Co., Inc., The: *See*—
Curtiss, Lawrence M. 200,217.
Curtiss, Lawrence M. 200,218.
Urban Industries, Inc.: *See*—
Benjamin, E. Burton. 200,225.
Vilcins, Ilmar J., and H. P. Young, to Signode Steel Strapping Co. Strap fastener. 200,198, 2–2–65, Cl. D17—5.
Webcor, Inc.: *See*—
Belokin, Paul, Jr. 200,203.
Welded Products, Inc.: *See*—
Glass, Henry P. 200,227.
Westinghouse Electric Corp.: *See*—
Frost, George H. 200,194.
Wood Conversion Co.: *See*—
Brody, Philip M., and Rahr. 200,199.
Brody, Philip M., and Rahr. 200,200.
Brody, Philip M., and Rahr. 200,201.
Brody, Philip M., and Rahr. 200,202.
Young, Hobart P.: *See*—
Vilcins, Ilmar J., and Young. 200,198.
Zaslovsky, Herman, and H. Rosenfeld. Refrigerated cabinet and display shelf-unit. 200,226, 2–2–65, Cl. D80—11.
Zoo-Piks: *See*—
Ogg, James H. 200,211.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 2ND DAY OF FEBRUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Vapor: *See*—
Ignell, Rolf L. 3,168,233.
AMP Inc.: *See*—
Fuller, Glenwood A. 3,168,366.
Abbott, John A., to FMC Corp. Means for and method of prestressing concrete. 3,167,882, 2–2–65, Cl. 50—128.
Abbott Machine Co., Inc.: *See*—
Perry, Winthrop L. 3,168,257.
Abdalian, Noubar S. and R. V. Dry cleaning solvent purifying apparatus. 3,168,469, 2–2–65, Cl. 210—232.
Abdalian, Robert V.: *See*—
Abdalian, Noubar S. and R. V. 3,168,469.
Abe, Fujio, and J. V. Cauthen, to Burlington Industries, Inc. Stretch control of material in a textile processor. 3,167,848, 2–2–65, Cl. 28—28.
Accumulateurs Fixes et de Traction (Societe Anonyme) Societe des: *See*—
Jammet, Jean F. 3,168,420.
Acim Paper Corp.: *See*—
Heyman, Moses D. 3,168,434.
Acme Visible Records, Inc.: *See*—
Toms, Lloyd M. 3,167,873.
Adams, Chester E., to Standard Oil Co. Tris-halomethyl trimethyl benzenes. 3,168,580, 2–2–65, Cl. 260—651.
Adams, Donald R. Abrasives. 3,168,387, 2–2–65, Cl. 51—295.
Adams, Leon M.: *See*—
Kenton, Joseph R., and Adams. 3,168,590.
Adams, Norman C.: *See*—
Wilson, Porter C., and Adams. 3,167,782.
Adamsbaum, Andre, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Apparatus for correlation in radar installations. 3,168,734, 2–2–65, Cl. 343—12.
Adler, Haroid. Combination film projector and printing apparatus. 3,167,996, 2–2–65, Cl. 88—24.
Adolphson, Carl: *See*—
King, Ellis G., and Adolphson. 3,168,511.
Advance Transformer Co.: *See*—
Baran, Joseph G., and Feinberg. 3,168,632.
Agfa Aktiengesellschaft: *See*—
Himmelmann, Wolfgang, Mader, Posse, and Ulrich. 3,168,403.
Ahearn, Joseph D., to Universal Instruments Corp. Transistor clincher. 3,167,779, 2–2–65, Cl. 1—210.
Air Products and Chemicals, Inc.: *See*—
Beitchman, Burton D., and Erner. 3,168,483.
Mills, George A. 3,168,368.
Aircraft Armaments, Inc.: *See*—
Strauss, Lewis H. 3,168,611.
Ajem Laboratories, Inc.: *See*—
Jamison, Robert M. 3,168,596.
Albiswerk Zurich A.G.: *See*—
Bretscher, Max. 3,168,732.
Alexandrescu, Alexander M. Hydraulic coupling. 3,167,917, 2–2–65, Cl. 60—54.
Alexandrescu, Alexander M. Fluid coupling. 3,167,918, 2–2–65, Cl. 60—54.
Alkon Products Corp.: *See*—
Aslan, Wilfred. 3,168,014.
Allegretti, John E., and J. Lago, to Merck & Co., Inc. Process of flushing unwanted residue from a vapor deposition system in which silicon is being deposited. 3,168,422, 2–2–65, Cl. 148—175.
Allen-Bradley Co.: *See*—
De Smidt, Woodrow A. 3,168,636.
Alley, Harry R., J. H. Wernig, and L. N. Williams, to General Motors Corp. Vinyl weatherstrip. 3,167,827, 2–2–65, Cl. 20—69.
Allied Chemical Corp.: *See*—
Pietrusza, Edward W., and Pedersen. 3,168,557.
Allinquant, Fernand S. Air bleeding device for shock absorbers mounted in a substantially horizontal position. 3,168,169, 2–2–65, Cl. 188—100.
Allinquant, Fernand S. Pistons and in particular to pistons used in oleo-pneumatic suspension systems. 3,168,301, 2–2–65, Cl. 267—64.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Lindheim, Thor. 3,168,443.
Alloyd Electronics: *See*—
Payne, Paul R., Jr. 3,168,418.
Almasi, Stephen. Apparatus for cutting and applying a disc to a base. 3,168,430, 2–2–65, Cl. 156—520.
Alvarez, Alfonso, to Asco Window Corp. Dual-vent window. 3,168,172, 2–2–65, Cl. 189—72.
American Baseball Cap, Inc.: *See*—
Wolfe, Lindsay. 3,167,783.
American Bosch Arma Corp.: *See*—
Scotto, Dominick P. 3,167,962.
American Brake Shoe Co.: *See*—
Creedle, Fred W. 3,168,166.
Spokes, Raymond E., and Keller. 3,168,487.
American Chain & Cable Co., Inc.: *See*—
Peterson, Vincent C. J., and Layton. 3,167,903.
Silberger, Marvin E. 3,167,967.
American Cyanamid Co.: *See*—
Maresh, Charles, and Sundberg. 3,168,378.
Nagy, Daniel E. 3,168,519.
Sexsmith, David R., and Frazza. 3,168,502.
Suen, Tzeng J., and Rossler. 3,168,500.
American Electronics, Inc.: *See*—
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American Enka Corp.: *See*—
Gonsalves, Conrad J. 3,167,847.
American Home Products Corp.: *See*—
Humber, Leslie G. 3,168,563.
Humber, Leslie G. 3,168,564.
American Pipe & Construction Co.: *See*—
Metil, Ignatius. 3,168,494.
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Anderson, Arvin D., and R. A. Sanford, to Sinclair Research, Inc. Cracking a metal-contaminated residual oil. 3,168,459, 2–2–65, Cl. 208—57.
Anderson, Duane H., to Sperry Rand Corp. Computing device incorporating interruptible repeat instruction. 3,168,724, 2–2–65, Cl. 340—172.5.
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Anderson, Robert W., to Norton Co. Wafering machine. 3,168,087, 2–2–65, Cl. 125—16.
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Baran, Joseph G., and A. E. Feinberg, to Advance Transformer Co. Ballast disconnect device having a coating of flux material. 3,168,632, 2–2–65, Cl. 200—131.
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Barker, Lyle M., to Phelps Dodge Corp. Recovery of mineral values from ore. 3,168,396, 2–2–65, Cl. 75—108.
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Barts, Fred H. Divisible food carton. 3,168,234, 2–2–65, Cl. 229—51.
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Baschet, Francois P. M. Musical instrument with mechanical radiating means. 3,167,994, 2–2–65, Cl. 84—404.
Bateson, Norman E., to Pullman Inc. Container loading equaliser. 3,168,054, 2–2–65, Cl. 105—366.
Bauer, Alfred F., to National Lead Co. Engine block assembly. 3,168,081, 2–2–65, Cl. 123—41.74.
Baumann, Hans D., to Worthington Corp. Reversible pneumatic actuator. 3,168,011, 2–2–65, Cl. 92—59.
Bayre, Willard W., and N. W. Schubring, to General Motors Corp. Variable focus transducer. 3,168,659, 2–2–65, Cl. 310—8.3.
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Beaver, Arnold R. Random access-serial tape data storage system. 3,168,232, 2–2–65, Cl. 226—119.
Beaver, Garth H., and G. K. Greminger, Jr., to The Dow Chemical Co. Bibulous ion permeable membranes. 3,168,421, 2–2–65, Cl. 136—146.
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Stallman, Richard C., and Pickels. 3,168,474.
Williams, Fred G., Jr. 3,168,377.
Beckman, John H., W. Haumann, R. J. Berta, and P. L. Murphy, to Union Carbide Corp. Cryogenic storage apparatus. 3,167,933, 2–2–65, Cl. 62—371.
Bedol, Marshall T., to The Marshallan Mfg. Co. Convertible folding snack table and bed-tray. 3,168,061, 2–2–65, Cl. 108—116.
Beers, George L. Fishing devices. 3,167,879, 2–2–65, Cl. 43—44.96.
Beet, Philip H., to The General Electric Co. Ltd. Receivers for use in electric signalling systems. 3,168,685, 2–2–65, Cl. 317—138.
Behner, Otto, H. Henecka, F. Hoffmeister, H. Kreiskott, W. Meiser, H. W. Schubert, and W. Wirth, to Farbenfabriken Bayer Aktiengesellschaft. Novel 2-phenylamino-4,5-benzo-6H-1,3-thiazine derivatives. 3,168,517, 2–2–65, Cl. 260—243.
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Beitchman, Burton D., and W. E. Erner, to Air Products and Chemicals, Inc. Diazabicyclooctane-alkylene oxide catalyst compositions. 3,168,483, 2–2–65, Cl. 252—426.
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Shub, Lionel, and Rupp. 3,168,731.
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Volk, Emil A., Jr. 3,168,106.
Bengtsson, Sigurd W. Locking devices. 3,167,835, 2–2–65, Cl. 24—230.
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Welles, Donald P., Jr., and Hill. 3,167,860.
Bessiere, Pierre Etienne, to Societe Anonyme pour l'Exploitation des Procedes Chimiques et Physiques. Pumps, and in particular fuel injection pumps having opposed pistons and a rotary distributing element. 3,168,042, 2–2–65, Cl. 103—2.
Best, John L. Rotary apparatus for clearing furrows. 3,167,899, 2–2–65, Cl. 56—25.4.
Bharucha, Kekhusroo R., and F. M. Martin, to Canada Packers Ltd. Preparation of crystalline vitamin D₂ and vitamin D₃ benzoate. 3,168,535, 2–2–65, Cl. 260—397.2.
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Billen, Peter, to The Loewy Engineering Co. Ltd. Discard disposal means for metal extrusion presses. 3,168,195, 2–2–65, Cl. 207—1.

Billhardt, Donald F., to Lockheed Aircraft Corp. Self-contained welding torch. 3,168,090, 2–2–65, Cl. 126—263.

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Black, Edward L. Saline-to-potable water conversion system and method. 3,168,450, 2–2–65, Cl. 202—48.

Black, William T., D. L. Bailey, and V. B. Jex, to Union Carbide Corp. Organosiloxane-polyoxyalkylene ether copolymers. 3,168,543, 2–2–65, Cl. 260—448.2.

Blackie, Ian, to Formica Ltd. Coating of materials with polymers. 3,168,426, 2–2–65, Cl. 156—306.

Blackmer, John, and H. W. Vogt, to Eastman Kodak Co. Rapid processing of photographic color materials. 3,168,400, 2–2–65, Cl. 96—22.

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Bliss, Theron L. Hay pelletizing machine. 3,168,057, 2–2–65, Cl. 107—14.

Block, Leo, R. E. von Berg, and I. Rasovich, to Freightliner Corp. Refrigeration system. 3,167,930, 2–2–65, Cl. 62—190.

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Blumenthal, Jack H., to International Flavors & Fragrances Inc. Aliphatic and alicyclic nitriles. 3,168,550, 2–2–65, Cl. 260—464.

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Bookman, Abe C. Amusement device. 3,168,315, 2–2–65, Cl. 273—145.

Boonshaft, Julius C., to Robertshaw Controls Co. Strain gage differential pressure transmitter. 3,167,963, 2–2–65, Cl. 73—398.

Booth, Francis M., and W. M. Kane, to Frank M. Booth, Inc. Damper blade and assembly. 3,168,028, 2–2–65, Cl. 98—110.

Booth, Frank M., Inc.: *See*—
Booth, Francis M., and Kane. 3,168,028.

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Bossart, Paul N., and R. J. King, to Westinghouse Air Brake Co. Train identification systems. 3,168,268, 2–2–65, Cl. 246—2.

Bost, Edouard, to Cie Electro-Mecanique. Sealed electric motor. 3,168,664, 2–2–65, Cl. 310—104.

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Bounds, William E., E. S. Morris, and C. A. Sundstrom, to William E. Bounds Associates. Pepper mill. 3,168,256, 2–2–65, Cl. 241—168.

Bounds, William E., Associates: *See*—
Bounds, William E., Morris, and Sundstrom. 3,168,256.

Bowden, James J. Aluminum type deoxidizer weighted to submerge it in molten metal. 3,168,608, 2–2–65, Cl. 266—34.

Boyd, Clinton A., to Sta-Rite Products, Inc. Seal for submersible motors. 3,168,662, 2–2–65, Cl. 310—86.

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Bradley, Elihu F., J. J. Rausch, J. B. McAndrew, and C. R. Simcoe, to United Aircraft Corp. Columbium base alloys. 3,168,380, 2–2–65, Cl. 29—194.

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Braun, Dieter. Slitting machine for incising the edges of flexible workpieces. 3,167,983, 2–2–65, Cl. 83—4.

Breazeale, James H. Dispenser for ice cream cones. 3,168,214. 2–2–65, Cl. 221—119.

Brenig, Theodor, to Hasler A.G. Werke fur Telephonie und Praxisions-mechanik. Multi-stage transistor amplifier with operating point stabilization. 3,168,706, 2–2–65, Cl. 330—18.

Bretscher, Max, to Albiswerk Zurich A.G. Device in searching and tracking radar systems for automatically initiating the tracking operation. 3,168,732, 2–2–65, Cl. 343—7.3.

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Kirk, David N., Petrow, and Williamson. 3,168,536.
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Broderick, Frank W. Transfer roll. 3,167,850, 2–2–65, Cl. 29—121.

Brodi, Edward J., H. L. Dobrikin, and V. Mastis, to Berg Airlectro Products Co. Manual release structure. 3,167,973, 2–2–65, Cl. 74—547.

Broerman, Arthur B., and B. O. Ayers, to Phillips Petroleum Co. Chromatographic method and apparatus. 3,167,946, 2–2–65, Cl. 73—23.1.

Brokaw, Robert W., to General Electric Co. Control unit structure. 3,168,683, 2–2–65, Cl. 317—119.

Brookins, Roy G., and R. E. Hiler. Dust cover. 3,168,209, 2–2–65, Cl. 220—24.

Brooks, Melvin H. Sound therapy device. 3,167,871, 2–2–65, Cl. 35—35.

Brough, John R., to Inland Steel Co. Furnace pipe insulation and method. 3,168,297, 2–2–65, Cl. 263—6.

Brown, Belden B. Foldable yoke life preserver. 3,167,794. 2–2–65, Cl. 9—338.

Brown, Lloyd H., and D. D. Watson, to The Quaker Oats Co. Process of producing a foundry core composition. 3,168,489; 2–2–65, Cl. 260—21.

Brown, Lloyd H., and D. D. Watson, to The Quaker Oats Co. Foundry core binder and process for preparation thereof. 3,168,490, 2–2–65, Cl. 260—29.4.

Bruijning, Hugo G., to North American Philips Co., Inc. Stabilized transistor oscillator by means of an overflow circuit with reduced power loss. 3,168,714, 2–2–65, Cl. 331—113.

Brummelkamp, Reindert. Surgical resection instrument and accessory. 3,168,096, 2–2–65, Cl. 128—334.

Bruneau, Jean P., to The Harshaw Chemical Co. Praseodymium-cerium yellow. 3,168,410, 2–2–65, Cl. 106—299.

Brunner, Walter H.: *See*—
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Brunner, Walter H., and A. Halasz, to Clairol Inc. Compositions and methods of dyeing human hair with nitro-*p*-phenylenediamines. 3,168,442, 2–2–65, Cl. 167—88.

Bryson, James G., to Carrier Corp. Cabinet construction. 3,167,931, 2–2–65, Cl. 62—273.

Buchanan, Lucian F. Internal combustion engine exhaust valve assembly. 3,168,083, 2–2–65, Cl. 123—84.

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Somlyody, Arpad. 3,168,677.

Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
Walton, Eric, Ruffell, Grivsky, and Wood. 3,168,562.

Büsch, Siegfried, R. Hatschek, and F. Pischinger, to H. List. Device for varying the spatial position of specimens in electron microscopes. 3,168,646, 2–2–65, Cl. 250—49.5.

Buske, Alfred, to Karl Schmidt G.m.b.H. Bearing. 3,168,358, 2–2–65, Cl. 308—37.

Butter, George N., to Commercial Solvents Corp. Stabilized formaldehyde solutions. 3,168,573, 2–2–65, Cl. 260—606.

Büttner, Artur, to Schnellpressenfabrik Aktiengesellschaft Heidelberg. Platen printing machines. 3,168,039, 2–2–65, Cl. 101—287.

Cabernoch, Louis J., to Curtis-Electro Lighting, Inc. Flexible fixture suspension. 3,168,252, 2–2–65, Cl. 240—78.

Cady, Robert S., to Scovill Mfg. Co. Process of packaging wire. 3,168,259, 2–2–65, Cl. 242—83.

California Pellet Mill Co.: *See*—
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California Research Corp.: *See*—
Clippinger, Everett, and McKee. 3,168,555.
Hare, Chauncey R. 3,168,571.

Cal-Val Research & Development Corp.: *See*—
Bligard, Erling J., and Racca. 3,168,270.





Cambria Spring Co.: *See*—
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Campbell, Thomas W.: *See*—
Watal, Ernest J., Campbell, Zuroweste, and Tomashot. 3,167,826.

Canada Packers Ltd.: *See*—
Bharucha, Kekhusroo R., and Martin. 3,168,535.

Canale, Alfred J., to Shell Oil Co. Process for polymerization of butadiene in aqueous media. 3,168,508, 2–2–65, Cl. 260—94.3.

Capers, Claude V. Canister with built-in measuring dispenser. 3,168,223, 2–2–65, Cl. 222—158.

Capowich, George, S. F. Latters, and P. A. Meck, to United Aircraft Corp. Blade sealing means. 3,168,144, 2–2–65, Cl. 170—159.

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Cardiosonics Medical Instruments Corp.: *See*—
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Kramer, Vance M., and Carlton. 3,168,604.

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Lynch, Paul J., and Taylor. 3,167,927.
Smith, John F. D. 3,168,137.

Carrigan, Tracy, to FMC Corp. Chemical distributing machine. 3,168,238, 2–2–65, Cl. 230—274.

Carroll, William L. Pattern wheel control system. 3,167,937, 2–2–65, Cl. 66—50.

Carruthers, J. H., & Co. Ltd.: *See*—
Cowan, William G. 3,167,851.

Carter, Nelson. Movable vehicle head lamps. 3,168,251, 2–2–65, Cl. 240—62.51.

Cartwright, Victor F., to Traid Corp. Double sideband-suppressed carrier doppler distance measuring system. 3,168,735, 2–2–65, Cl. 343—12.

Caterpillar Tractor Co.: *See*—
Burris, Richard A. 3,168,302.
Henderson, Rex D. 3,168,079.

Cauthen, John V.: *See*—
Abe, Fujio G., and Cauthen. 3,167,848.

Chabert, Jacques, and M. Remillieux, to Electricite de France (Service National). Device for the correction of river beds. 3,167,922, 2–2–65, Cl. 61—2.

Chalco Engineering Corp.: *See*—
Gebhart, Jack P. 3,168,635.

Chambers, Jack D. Production of animated pictures. 3,168,742, 2–2–65, Cl. 352—50.

Chambers, Worthy L., and G. R. Wolter, to Sunbeam Corp. Hair drier improvements. 3,168,382, 2–2–65, Cl. 34—99.

Chappell, Frank A., and D. C. Tappin, to L. Oertling Ltd. Balances for fine weighing. 3,168,154, 2–2–65, Cl. 177—251.

Chemagro Corp.: *See*—
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Chemetron Corp.: *See*—
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Chicago Machinery Laboratory, Inc.: *See*—
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Chierici, Osvaldo: *See*—
Smith, James T., and Chierici. 3,168,201.

Chittenden, Windsor N. Spring collet chuck with collet releasing means. 3,168,325, 2–2–65, Cl. 279—51.

Chorkey, William J. Adjustable hydraulic shock absorber. 3,168,168, 2–2–65, Cl. 188—96.

Chou, Albert S.: *See*—
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Chouinge, Leslie C., to Automotive Products Co. Ltd. Fluid pressure operated servo-devices for hydraulic systems, particularly braking systems for vehicles. 3,167,921, 2–2–65, Cl. 60—54.6.

Christian, William R.: *See*—
Weinstein, Robert, Rose, and Christian. 3,168,577.
Glnos, James Z., Rose, and Christian. 3,168,578.

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Ciba Ltd.: *See*—
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Cichelli, Mario T., and W. Schotte, to E. I. du Pont de Nemours and Co. Manufacture of acetylene by two stage pyrolysis under reduced pressure with the first stage pyrolysis conducted in a rotating arc. 3,168,592, 2–2–65, Cl. 260—679.

Cie Electro-Mecanique: *See*—
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Cincinnati Milling Machine Co., The: *See*—
Nashold, Robert W., Baldwin, and Mitchell. 3,168,001.
Riddles, Milton J. 3,168,638.
Seidel, William B. 3,167,894.

Cisco, Richard L., and R. H. Blanchard. Level control valve. 3,168,105, 2–2–65, Cl. 137—386.

Clairol Inc.: *See*—
Bil, Milos Z., and Brunner. 3,168,441.
Brunner, Walter H., and Halasz. 3,168,442.

Clancey, James T.: *See*—
Phinney, John A., Clancey, Regan, and Wasp. 3,168,350.

Clark, Charles C., and R. E. Morningstar, to Olin Mathieson Chemical Corp. Process for producing unsymmetrical dimethylhydrazine. 3,168,568, 2–2–65, Cl. 260—583.

Clark, Thomas R. and W. J., to Philco Corp. Cabinet structure. 3,167,821, 2–2–65, Cl. 20—35.

Clark, William J.: *See*—
Clark, Thomas R. and W. J. 3,167,821.

Clary, Harry E., and P. L. Bailey, to Thompson Ramo Wooldridge, Inc. Noise filter. 3,168,162, 2–2–65, Cl. 181—59.

Clausen, Elmer B., and H. Guckel, to Sylvania Electric Products Inc. Pulse generator employing cascade connected transistors for switching direct current power sources across output transformers. 3,168,648, 2–2–65, Cl. 307—88.5.

Clauson, Frank A.: *See*—
Beavon, David K., and Clauson. 3,168,591.

Claussen, Ole H., to E. I. du Pont de Nemours and Co. Bulk yarn process and apparatus. 3,167,845, 2–2–65, Cl. 28—1.

Clay-Adams Inc.: *See*—
Goda, George, and Asnes. 3,168,473.

Clement, Ralph C.: *See*—
Davis, Russell S., and Clement. 3,168,616.

Clements, Warner W. Remotely controllable lock set. 3,167,942, 2–2–65, Cl. 70—148.

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Clippinger, Everett, and R. G. McKee, to California Research Corp. Production of alkyl sulfonates. 3,168,555, 2–2–65, Cl. 260—513.

Clynes, Manfred E., to Technical Measurement Corp. Switching type amplifier for both A.C. and D.C. signals. 3,168,703, 2–2–65, Cl. 330—10.

Clynes, Manfred E., to Technical Measurement Corp. Information transfer systems. 3,168,721, 2–2–65, Cl. 340—167.

Cochran, David S., to Hewlett-Packard Co. Voltage comparator. 3,168,702, 2–2–65, Cl. 328—150.

Cockerell, Christopher S., to Hovercraft Development Ltd. Vehicles for travelling over land and/or water. 3,168,155, 2–2–65, Cl. 180—7.

Coes, Loring, Jr., and E. Milias, to Norton Co. Grinding machine. 3,167,891, 2–2–65, Cl. 51—165.

Cole, Burrel C., 50% to C. H. Williams. Top roll assembly for fiber attenuating apparatus. 3,167,820, 2–2–65, Cl. 19—253.

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Shapiro, Paul, Collings, and Counts. 3,168,455.

Collins, Lloyd E. Portable feeding stations for cattle. 3,168,071, 2–2–65, Cl. 119—53.

Colombo, Enzo: *See*—
Hess, Walter, Colombo, and Olsson. 3,167,829.

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Commercial Factors, Ltd.: *See*—
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Commercial Solvents Corp.: *See*—
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Warnery, Edmond P. 3,168,273.

Concast Ag.: *See*—
Hess, Walter, Colombo, and Olsson. 3,167,829.

Condon, James J. Arrangement for positioning sheet material for cutting. 3,168,304, 2–2–65, Cl. 269—304.

Connealy, Hugh M. Pivoted valve mounting assembly. 3,167,787, 2–2–65, Cl. 4—58.

Consolidated Packaging Machinery Corp.: *See*—
Young, William J. 3,168,186.

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Phinney, John A., Clancey, Regan, and Wasp. 3,168,350.

Continental Can Co.: *See*—
Weiss, Arthur J. 3,168,194.

Continental Oil Co.: *See*—
Marshall, David W. 3,158,570.

Cook, Arnold M., and D. L. Mahoney, to Norton Co. Tunnel kiln and method of operation. 3,168,298, 2–2–65, Cl. 263—28.

Cooper, Frederick J. Signaling device for mail box and the like. 3,168,239, 2–2–65, Cl. 232—35.

Cooper, Frederick W., to G.K.N. Screws & Fasteners Ltd. Dies for rotary die thread rolling machines. 3,167,979, 2–2–65, Cl. 80—7.

Cope, Geoffrey W., to Symington Wayne Corp. Coupler locking mechanism. 3,168,202, 2–2–65, Cl. 213—146.

Copper, Robert L., to United States Steel Corp. Kickout device. 3,168,183, 2–2–65, Cl. 198—20.

Coppick, Sydney: *See*—
Ferrigan, James J., Jr., and Coppick. 3,168,433.

Copplinger, Galvin M., to Shell Oil Co. Light stabilized polypropylene containing di-p-phenoxybenzene. 3,168,493, 2–2–65, Cl. 260—45.95.

Corbett, Herbert O., to National Distillers and Chemical Corp. Apparatus for forming blown tubular films. 3,167,814, 2–2–65, Cl. 18—14.

Cornell Machine Co., The: *See*—
Voses, George S. 3,168,289.

Costanza, Louis J.: *See*—
Roberts, James J., and Costanza. 3,168,345.

Counts, Herbert L. Animal trap. 3,167,880, 2–2–65, Cl. 43—93.

Counts, Thomas O.: *See*—
Shapiro, Paul, Collings, and Counts. 3,168,455.

Cowan, Jack C.: *See*—
Jordan, John W., Nevins, Sterns, Cowan, and Beasley. 3,168,475.

Cowan, William G., to J. H. Carruthers & Co. Ltd. Method of making box-section structural elements. 3,167,851, 2–2–65, Cl. 29—155.

Cowley, Harold R., to Stothert & Pitt, Ltd. Pan type concrete mixers. 3,168,296, 2–2–65, Cl. 259—178.

Crane Co.: *See*—
Yates, James L. 3,168,281.

Crane Products Mfg. Co., Inc.: *See*—
Volberg, Herman W. 3,168,729.
Crawford, Harry M., to Esso Research and Engineering Co. Gas detector and analyzer. 3,167,947, 2–2–65, Cl. 73—23.1.
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Crawford, Richard D., to Hewlett-Packard Co. Beat-frequency oscillator. 3,168,711, 2–2–65, Cl. 331—39.
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Creedle, Fred W., to American Brake Shoe Co. Railroad car retarders. 3,168,166, 2–2–65, Cl. 188—62.
Creuels, Frans H., to Stamicarbon N.V. Resilient check valve. 3,168,107, 2–2–65, Cl. 137—525.
Crippen, Elverton J., Jr., deceased (E. Crippen, administratrix). Drill pointing machine. 3,167,887, 2–2–65, Cl. 51—55.
Crippen, Evelyn: *See*—
Crippen, Elverton J., Jr. 3,167,887.
Crocker, Theodore R.: *See*—
Davenport, Granger, Helmall, and Crocker. 3,168,005.
Cross, Ralph C., to Gerber Products Co. Filler. 3,168,122, 2–2–65, Cl. 141—147.
Culemeyer, Karl, to Goldschmidt, Th., Aktiengesellschaft. Process for preparation of water-insoluble metal soaps. 3,168,540, 2–2–65, Cl. 260—414.
Cull, Neville L., J. E. Landry, Jr., H. E. Robson, R. C. Lohman, M. Nadler, and H. T. White, to Esso Research and Engineering Co. Treatment of polymers produced by alkali-metal catalyzed polymerization. 3,168,586, 2–2–65, Cl. 260—680.
Cunningham, Arthur R. Replaceable tube insert for a pelleting machine. 3,168,038, 2–2–65, Cl. 107—14.
Curll, Allan R., Jr., to Philco Corp. Selective-frequency remote control system for television receivers having spurious noise signal suppression. 3,168,738, 2–2–65, Cl. 343—228.
Curtis, Robert J.: *See*—
Winner, Norman T., and Lindsey. 3,167,875.
Curtis-Electro Lighting, Inc.: *See*—
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Cusic, John W., and P. Yonan, to G. D. Searle & Co. 1-amino-4-dibenzocycloheptenylpiperazines. 3,168,523, 2–2–65, Cl. 260—268.
Cutter Laboratories, Inc.: *See*—
Hink, John H., Jr., and McDonald. 3,168,447.
Cypser, Frank J. Loading apparatus for caulking gun. 3,168,120, 2–2–65, Cl. 141—27.
Czulak, Joseph, to Commonwealth Scientific and Industrial Research Organization. Method and apparatus for manufacturing cheddar, cheshire or like cheese. 3,167,862, 2–2–65, Cl. 31—49.
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Goody, Robert B., and Dabney. 3,168,698.
Daffron, Guy M., to G. H. Moore. Telescopic landing net. 3,167,878, 2–2–65, Cl. 43—12.
Dahlgren, Harold P. Means for dampening lithographic offset printing plates. 3,168,037, 2–2–65, Cl. 101—148.
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Barenyi, Bela. 3,168,344.
Lamm, Heinz. 3,168,078.
Wilfert, Karl. 3,167,974.
Dale, James W., to Monsanto Co. Rocket propellant system. 3,167,908, 2–2–65, Cl. 60—35.4.
Davenport, Granger, C. E. Helmall, and T. R. Crocker, to Norton Co. Shaping machine. 3,168,005, 2–2–65, Cl. 90—40.
Davies, Ben, and E. P. Weaver, to Harbison-Walker Refractories Co. Baking tar bonded brick. 3,168,602, 2–2–65, Cl. 264—29.
Davis, Edward R. Automatic ball retrieving device. 3,168,312, 2–2–65, Cl. 273—26.
Davis, Russell S.: *See*—
Parmenter, Charles W., Herrmann, and Davis. 3,168,684.
Davis, Russell S., and R. C. Clement, to I-T-E Circuit Breaker Co. Sequenced phased panel. 3,168,616, 2–2–65, Cl. 174—99.
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Walther, William D. 3,168,167.
Debe, Anthony. Method of making a derivative of salicyclic acid. 3,168,452, 2–2–65, Cl. 204—44.
Debe, Anthony. Zinc cyanide plating bath. 3,168,453, 2–2–65, Cl. 204—44.
Debe, Anthony, L. B. Portzer, deceased; M. R. Portzer, executrix. Method of making catalytic agent for plating bath. 3,168,454, 2–2–65, Cl. 204—44.
Deckel, Friedrich W.: *See*—
Muller, Johann, and Lanzanberger. 3,168,003.
Deckel, Hans: *See*—
Müller, Johann, and Lanzanberger. 3,168,003.
Decot, Harold T., and N. S. Derrah, to United Shoe Machinery Corp. Fastener packages. 3,167,778, 2–2–65, Cl. 1—56.
Defiandre, René, to Derefa Etablissement pour le Developpement Recherches et Fabrications Industrielles, Societe dite. Balance compensating devices. 3,168,000, 2–2–65, Cl. 90—11.
Dega, Robert L., and E. H. McDonald, to General Motors Corp. Apparatus and method for testing seal quality. 3,167,964, 2–2–65, Cl. 73—432.
DeGon, Kenneth C., to General Refineries, Inc. Dispenser. 3,168,213, 2–2–65, Cl. 221—96.
De la Rue Instruments Ltd.: *See*—
Richardson Frank A., Middleditch, and Walker. 3,168,644.
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Toyokura, Tomitaro, and Kida. 3,168,048.
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Defiandre, René. 3,168,000.
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Decot, Harold T., and Derrah. 3,167,778.
Deschenes, Harvey. Clothes hamper. 3,168,271, 2–2–65, Cl. 248—129.
De Smidt, Woodrow A., to Allen-Bradley Co. Illuminated electrical switch. 3,168,636, 2–2–65, Cl. 200—167.
De Stevens, George, and R. P. Mull, to Ciba Corp. N-aryl-N'-aralkyl-diaza cycloalkanes. 3,168,522, 2–2–65, Cl. 260—268.
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Hopff, Heinrich, and Metzler. 3,168,495.
Meyer-Simon, Eugen, and Frey. 3,168,374.
De Villiers, Joseph E. Rotary engines. 3,168,082, 2–2–65, Cl. 123—44.
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Galloway, Arthur L. 3,168,437.
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Roberts, Frederick W., Taylor, and Reescanski. 3,168,621.
Diener, Rudolf, to A. G. Eldima. Electromagnetically operated temperature regulating system. 3,168,242, 2–2–65, Cl. 236—75.
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Lavet, Marius J., and Dietsch. 3,168,690.
Dillon, Ralph R., to W. C. Dillon & Co., Inc. Mechanical force gauge. 3,167,953, 2–2–65, Cl. 73—141.
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Dillon, Ralph R. 3,167,953.
Dilworth, Thomas B., and J. W. Tharp, to General Motors Corp. Traction motor gear case. 3,167,969, 2–2–65, Cl. 74—467.
Dinter, Konrad, and P. Wentzel, to Telefunken Aktiengesellschaft. Weighing system. 3,168,153, 2–2–65, Cl. 177—133.
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Marsee, Frederick J., Romeo, and Dirda. 3,168,599.
Dobrikin, Harold L.: *See*—
Brodi, Edward J., Dobrikin, and Mastis. 3,167,973.
Dock, Nils. A. Arborgh, and G. Wilhelmsson, to Svenska Flaktfabriken, Aktiebolaget. Arrangement for plants for paint spraying of continuously moving objects. 3,168,029, 2–2–65, Cl. 98—115.
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Gross, Daniel D. 3,168,131.
Dorl, Francis J. L. Tapered ball bearing. 3,168,360, 2–2–65, Cl. 308—193.
Dormia, Enrico, to Porges S.A. Needle holder having a rotating clamp for surgical sutures. 3,168,097, 2–2–65, Cl. 128—340.
Dorn, Ronald V., and R. R. Logan, 30% to R. R. Logan, 70% to R. V. Dorn. Apparatus for sealing envelopes. 3,168,428, 2–2–65, Cl. 156—442.
Dornier-Werke G.m.b.H.: *See*—
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Dorrell, George W., and F. G. Tunnell, to The Plessey Co. Ltd. Variable-ratio hydrostatic drives. 3,168,295, 2–2–65, Cl. 259—177.
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Dow Chemical Co., The: *See*—
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Latterner, Michael P., and Rosek. 3,168,080.
Nagle, Floyd B., and Roche. 3,168,427.
Palfey, Albert J. 3,167,823.
Small, Hamish. 3,168,486.
Wallace, Theodore C. 3,168,290.
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Tyler, Stanley R., Hunt, and Bootle. 3,168,102.
Dowty Hydraulic Units Ltd.: *See*—
Kempson, Bertram C. 3,167,907.
Doyle, Marshall E., G. S. Jaffe, E. J. Smutny, and P. H. Williams, to Shell Oil Co. Polypropylene stabilized with 3,5-di tert butyl-4-hydroxybenzoic acid or anhydride. 3,168,492, 2–2–65 Cl. 260—45.85.
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Hollmann, Hans E. 3,167,958.
Dreyer, George W. Self-cleaning strainers. 3,168,467, 2–2–65, Cl. 210—108.
Dryden, Eva. Combination mop head holder and brush holder. 3,167,798, 2–2–65, Cl. 15—115.
Dubied, Edouard, et Cie. (Societe Anonyme): *See*—
Seiler, Fritz. 3,167,938.
Duckor, Lewis M.: *See*—
Swartz, David P., Sarasohn, and Duckor. 3,168,718.
Dunkel, Morris: *See*—
Loter, Ira, Dunkel, and Klein. 3,168,566.
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Gurney, William A., Stubbs, and Hollins. 3,168,367.
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Aufdermarsh, Carl A. 3,168,582.
Cichelli, Mario T., and Schotte. 3,168,592.
Claussen, Ole H. 3,167,845.
McGraw, William J. 3,168,404.
Roland, John R. 3,168,551.
Tocker, Stanley. 3,168,501.
Durand, Francois. Device for transmitting motion to a gear. 3,167,975, 2–2–65, Cl. 74—665.
Durgin, Douglas C., to Monroe International Corp. Detent mechanism. 3,167,972, 2–2–65, Cl. 74—527.
Durham, Edwin, and H. G. Stallkamp, to The Babcock & Wilcox Co. Forced flow water cooled hood. 3,168,073, 2–2–65, Cl. 122—7.





Duschinsky, Robert, to Hoffmann-La Roche Inc. Derivative of 2'-deoxy-5-fluorouridine. 3,168,513, 2–2–65, Cl. 260—211.5.
Dynapower Systems Corp.: *See*—
Kendall, William D., and Yarger. 3,168,098.
Dziedzic, Harry R., to Scully-Jones and Co. Chucking device for machine tool spindle and tool holder for use therewith. 3,168,322, 2–2–65, Cl. 279—4.
Dziura, Walter H., to Scovill Mfg. Co. Quick detachable hose coupling. 3,168,333, 2–2–65, Cl. 285—35.
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Blackmer, John, and Vogt. 3,168,400.
Easton, Nelson R., and G. F. Hennion, to Eli Lilly and Co. Hindered alkyl and alkylene secondary amines. 3,168,567, 2–2–65, Cl. 260—583.
Eberhard, Elmer T., to I-T-E Circuit Breaker Co. Mounting block for adjustable contact rod. 3,168,633, 2–2–65, Cl. 200—166.
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Eckenfelder, Robert C., to The Bendix Corp. Transistorized voltage regulator. 3,168,693, 2–2–65, Cl. 322—28.
Eckert, Alton B., Jr., to Pitney-Bowes, Inc. Character reader. 3,168,720, 2–2–65, Cl. 340—146.3.
Eckert, John S., to The United States Stoneware Co. Blending apparatus and process. 3,168,293, 2–2–65, Cl. 259—81.
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Moore, James W., and Edgar. 3,168,672.
Edgar, Robert F., to McGraw-Edison Co. Electrode positioning means. 3,168,673, 2–2–65, Cl. 314—69.
Edwards, Eric W. Dispensing apparatus for horizontally disposed articles. 3,168,212, 2–2–65, Cl. 221—39.
Edwards, O. M., Co., Inc., The: *See*—
Hergonson, Robert W. 3,167,797.
Egler, Vernon C., and H. R. Morgan, to The Kendall Co. Method of filling suture package. 3,167,895, 2–2–65, Cl. 53—35.
Ellerman, George E., to Pittsburgh Plate Glass Co. Silane forming size and glass fiber strands treated therewith for resin reinforcement. 3,168,389, 2–2–65, Cl. 65—3.
Eisenpresser, George, and H. Gunther, to National Die and Button Mold Co., Inc. Means for making covered belt buckles. 3,167,849, 2–2–65, Cl. 29—3.
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Diener, Rudolf. 3,168,242.
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Chabert, Jacques, and Remillieux. 3,167,922.
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Swearingen, Judson S. 3,167,928.
Elevator Specialties Corp.: *See*—
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Elfving, Thore M. Thermoelectric cooling device. 3,167,925, 2–2–65, Cl. 62—3.
Elfving, Thore M. Core material. 3,168,432, 2–2–65, Cl. 161—69.
Elliegast, Konrad, and U. Knipp, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of webs of elastic synthetic resins. 3,168,605, 2–2–65, Cl. 264—166.
Elrick Industries, Inc.: *See*—
Ross, White. 3,167,818.
Elsasser, Johann F. Process for printing upon fabric or the like with at least one printing stencil. 3,168,036, 2–2–65, Cl. 101—129.
Engel, Willem F., P. Krijger, and S. Mostert, to Shell Oil Co. Production of polymerization catalyst. 3,168,484, 2–2–65, Cl. 252—429.
Engels, Eugene O. Dough stretching apparatus. 3,168,056, 2–2–65, Cl. 107—9.
Engineer, Homi B. Scraping devices. 3,167,801, 2–2–65, Cl. 15—236.
Engquist, Arne, to Bahco, Aktiebolaget. Torque limiting devices. 3,167,936, 2–2–65, Cl. 64—29.
Erickson, Gerald T. and R., to Snap Pac Corp. Can carrier clip forming machine. 3,167,815, 2–2–65, Cl. 18—19.
Erickson, Gustav F., to National Rejectors, Inc. Money-handling devices. 3,168,180, 2–2–65, Cl. 194—101.
Erickson, Henry, to Sinclair Research Inc. Catalyst demetallization. 3,168,462, 2–2–65, Cl. 208—120.
Erickson, Henry, to Sinclair Research, Inc. Removal of nickel and vanadium from silica based cracking catalyst. 3,168,481, 2–2–65, Cl. 252—412.
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Moritz, Karsten H., Moser, and Estopinal. 3,168,386.
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Worrel, Calvin J. 3,168,480.
Eurotec Establishment: *See*—
Harder, Karl M. 3,168,196.
Evans, Robert J., to Aurora Equipment Co. Cabinet structure with shelf attaching and supporting means. 3,168,365, 2–2–65, Cl. 312—351.
Everest, Julian T., and R. B. Page, to Hovercraft Development Ltd. Vehicles for traveling over a surface. 3,168,069, 2–2–65, Cl. 115—1.
Eynon, Llewellyn. Trailer hitch. 3,168,332, 2–2–65, Cl. 280—423.
FMC Corp.: *See*—
Abbott, John A. 3,167,882.
Carrigan, Tracy. 3,168,238.
Gibson, Donald L. 3,168,354.
Fahrenbach, Wolfgang B., to Roto-Stamp Corp. Stamp dispensing machine. 3,168,230, 2–2–65, Cl. 225—16.
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Miaskoff, Leonard, and Warner. 3,168,038.
Fales, Elisha N. Pressure measuring device with an auxiliary spark gap in a pressure-type container. 3,168,695, 2–2–65, Cl. 324—33.
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Kraus, Leon S., and Fall. 3,168,465.
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Farkas, Frank E., and R. F. Trask, to The Mettle Corp. Pneumatic testing device for air filters. 3,167,948, 2–2–65, Cl. 73—38.
Farley, Arthur C., to Atco Corp. Pallet stacking device. 3,168,060, 2–2–65, Cl. 108—53.
Farmer, Cecil. Method of winding armature cores directly from spooled supplies. 3,167,853, 2–2–65, Cl. 29—155.57.
Faul, Thomas L., and C. W. Witthols; to Lone Star Boat Co. Boat hull design. 3,167,792, 2–2–65, Cl. 9—6.
Faulkner, Douglas S., to Rylands Bros. Ltd. Machines for securing a wire or like tie or strap around a coil or bundle. 3,168,032, 2–2–65, Cl. 100—12.
Fawick, Thomas L. Double chain and sprocket coupling. 3,167,935, 2–2–65, Cl. 64—19.
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Sondermeyer, Richard. 3,168,618.
Ferrigan, James J., Jr., and S. Coppick, to Scott Paper Co. Sulfite cooking of wood. 3,168,433, 2–2–65, Cl. 162—86.
Ferris, Edward G. Aerial-drop device. 3,168,267, 2–2–65, Cl. 244—138.
Ferris, James J., and O. C. Mayer, to Eries Mfg. Co. Permanent magnetic separator. 3,168,464, 2–2–65, Cl. 209—223.
Filtron Co., Inc., The: *See*—
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Finnegan, Walter D., and M. J. Finlayson, to Kaiser Aluminum & Chemical Corp. Aluminum alloy and article. 3,168,381, 2–2–65, Cl. 29—197.5.
Fisher, Ernest W., to Westinghouse Air Brake Co. Track instruments. 3,168,269, 2–2–65, Cl. 246—249.
Fisher, James L. Hoist mechanism. 3,168,284, 2–2–65, Cl. 254—8.
Fitzsimmons, Harold C., to Pennsalt Chemicals Corp. Centrifuge discharge means. 3,168,472, 2–2–65, Cl. 233—19.
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Fleissner, Heinz, to Fleissner G.m.b.H., Firma. Process and apparatus for wet-treating fibrous materials. 3,168,414, 2–2–65, Cl. 117—102.
Fleming, James E., and R. L. Matlock. Wheel cooling means. 3,168,348, 2–2–65, Cl. 301—6.
Fleury, Claude G. Arrangement for controlling the movement of a machine part. 3,167,920, 2–2–65, Cl. 60—54.5.
Foin, Warren C., R. A. Gregory, F. B. Hartman, and R. A. Trachy, to International Business Machines Corp. Data compression apparatus. 3,168,723, 2–2–65, Cl. 340—172.5.
Foitzik, Rudolf, and E. Zemann, to Siemens-Schuckertwerke Aktiengesellschaft. Shock-current generator employing means to effect simultaneous discharge of plural storage devices. 3,168,701, 2–2–65, Cl. 328—67.
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Jagdmann, Edwin F. 3,168,468.
Price, William R., and Foxwell. 3,168,146.
Formica Ltd.: *See*—
Blackie, Ian. 3,168,426.
Foster Wheeler Corp.: *See*—
Zoschak, Robert J. 3,168,133.
Foxwell, William J.: *See*—
Price, William R., and Foxwell. 3,168,146.
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Sexsmith, David R., and Frazza. 3,168,502.
Fredholm, Gunnar I. Timing regulators. 3,168,739, 2–2–65, Cl. 346—74.
Frei, Arthur, to J. Bobst and Son S.A. Device for folding a flap of a cardboard blank. 3,168,017, 2–2–65, Cl. 93—49.
Freightliner Corp.: *See*—
Block, Leo, Von Berg, and Rasovich. 3,167,930.

Fremon, George H., and W. N. Stoops, to Union Carbide Corp. Shock-resistant compositions prepared by polymerizing styrene and acrylonitrile with polybutadiene. 3,168,593, 2–2–65, Cl. 260—880.

Fresard, Marcel, and F. Bucher, to Mefina S.A. Embroidery appliance adapted to be attached to a sewing machine. 3,168,064, 2–2–65, Cl. 112—102.

Frey, Artur: *See*—
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Froede, Walter, to NSU Motorenwerke Aktiengesellschaft, and Wankel G.m.b.H. Rotary combustion engine. 3,168,077, 2–2–65, Cl. 123—8.

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Fryklund, Robert A. 3,168,733.

Fryklund, Robert A., deceased, by D. H. Fryklund, administratrix, to Raytheon Co. Cathode ray tube display systems. 3,168,733, 2–2–65, Cl. 343—11.

Fuji Tsushinki Seizo Kabushiki Kaisha: *See*—
Okamoto, Takashi, and Ishii. 3,168,628.

Fukata, Masao, and Y. Sato, to Kokusai Denki Kabushiki Kaisha. Timekeeper corrected by electric time signals. 3,167,906, 2–2–65, Cl. 58—35.

Fuller, Glenwood A., to AMP Inc. Electrical connector assembly. 3,168,366, 2–2–65, Cl. 339—220.

Funk, Gilbert R., and R. E. Holtgrieve, to Waukesha Foundry Co. Metering device with opaqueness responsive shutoff. 3,168,218, 2–2–65, Cl. 222—23.

Furrow, Clarence L., to Phillips Petroleum Co. Polymeric carboxylic acids by irradiation. 3,168,456, 2–2–65, Cl. 204—154.

G.K.N. Screws & Fastners Ltd.: *See*—
Cooper, Frederick W. 3,167,979.

Gaare, Melvin A., 50% to A. E. Wilson. Laminated sheet metal nut. 3,168,171, 2–2–65, Cl. 189—34.

Gale, Ferdinando, to Dorr-Oliver Inc. Purification of sugar juice. 3,168,419, 2–2–65, Cl. 127—50.

Gallistel, Albert F., to General Mills, Inc. Manually operated hydraulic actuator control having feel-back. 3,168,203, 2–2–65, Cl. 214—1.

Galloway, Arthur L., to Diamond Alkali Co. Stabilized granular gypsum-pesticidal composition and method of preparation. 3,168,437, 2–2–65, Cl. 167—42.

Galluccio, Anthony: *See*—
Baldinelli, Fred A. 3,168,730.

Galvin, Samuel N., to Ingersoll-Rand Co. Glass transfer apparatus. 3,168,184, 2–2–65, Cl. 198—20.

Gambell, James W.: *See*—
Michaels, Glenn O., and Gambell. 3,168,587.

Gamble, John A.: Particular head and seat cooperation for faucet valves. 3,168,283, 2–2–65, Cl. 251—333.

Gamlen, Harry. Viscosimeter. 3,167,950, 2–2–65, Cl. 73—56.

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Garrett Corp., The: *See*—
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Gause, Bruce R., to Carl N. Swenson Co., Inc. Crypt form. 3,167,839, 2–2–65, Cl. 25—130.

Gauthier, William K. Abdominal retractor device. 3,168,093, 2–2–65, Cl. 128—20.

Gebhart, Jack P., to Chalco Engineering Corp. Assembly of elements for making intermittent electrical contact. 3,168,635, 2–2–65, Cl. 200—166.

Gebrüder Boehringer Gesellschaft bit beschrankter Haftung Maschinenfabrik und Eisengiesserei: *See*—
Krudewig, Johannes, and Sick. 3,168,051.

Gegner, John E. Device for the removal of material from tubes. 3,168,220, 2–2–65, Cl. 222—98.

Geigy Chemical Corp.: *See*—
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Gelenius, Robert B., to General Motors Corp. Electrical gauge. 3,168,689, 2–2–65, Cl. 318—23.

General Aniline & Film Corp.: *See*—
Maatroianni, Emilio G. 3,168,027.
Stefcik, Andrew, and Woodward. 3,168,478.

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Sunstein, David E., and Steinberg. 3,168,699.

General Dynamics Corp.: *See*—
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Kamm, Lawrence J. 3,168,263.

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Lawrence, Frank L. 3,168,336.

General Electric Co.: *See*—
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Brokaw, Robert W. 3,168,683.
Grobel, Lloyd P. 3,168,666.
Jakowatz, Charles V. 3,168,645.
Levand, Victor A., Jr. 3,168,670.
St Pierre, Philippe D. S. 3,168,371.
St. Pierre, Philippe D. S. 3,168,479.
St. Pierre, Philippe D. S. 3,168,601.
Smee, Peter G. 3,168,622.
Szalay, Istvan. 3,168,716.
Wilson, Walter R. 3,168,681.
Wingler, William C. 3,167,904.
Woodworth, John L. 3,168,715.

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Ingram, David J. 3,168,444.

General Foods Corp.: *See*—
Mosby, Raymond J. 3,168,406.
Underwood, Roland H., and Mitchell. 3,168,226.

General Magnaplate Corp.: *See*—
Kollock, Alan S. 3,168,647.

General Mills, Inc.: *See*—
Gallistel, Albert F. 3,168,203.
Germann, George E. 3,168,059.
Hainer, William H. 3,168,261.

General Motors Corp.: *See*—
Alley, Harry R., Wernig, and Williams. 3,167,827.
Bayre, Willard W., and Schubring. 3,168,659.
Bemmann, Richard W., and Schultz. 3,168,719.
Dega, Robert L., and McDonald. 3,167,964.
Dilworth, Thomas B., and Tharp. 3,167,969.
Gelenius, Robert B. 3,168,689.
Madsen, James B. 3,167,985.
Maletzke, Arnold J. 3,168,349.
Marks, Craig. 3,168,660.
Peterson, Frederick J. 3,167,965.
Rel, Charles W., Jr. 3,168,346.
Schaad, Theodore A. 3,167,807.
Schafer, Vernon E., Jr. 3,167,854.
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General Refineries, Inc.: *See*—
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General Signal Corp.: *See*—
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Georgia-Pacific Corp.: *See*—
King, Ellis G., and Adolphson. 3,168,511.

Gerber Products Co.: *See*—
Cross, Ralph C. 3,168,122.

Germain, Jacques E. Wire coil holder. 3,168,262, 2–2–65, Cl. 242—129.

Germann, George E., to General Mills, Inc. Product dispensing device. 3,168,059, 2–2–65, Cl. 107—14.

Gesek, William J., and J. H. Bragdon, to Radio Corp. of America. Sequential pulse generator employing plurality of cascaded circuits coupled through shift gates and having individual output gates. 3,168,700, 2–2–65, Cl. 328—62.

Glammaria, John J., and H. D. Norris, to Socony Mobil Oil Co. Motor fuels. 3,168,385, 2–2–65, Cl. 44—56.

Giannini Controls Corp., Inc.: *See*—
Klose, Alfred J. 3,167,955.

Giardini, Dante S., and R. N. Roney, to The Sheffield Corp. Apparatus for cleaning grinding wheels. 3,167,893, 2–2–65, Cl. 51—262.

Gibbons, James F., to Clevite Corp. Multivibrator amplifier with time delay modulating audio input. 3,168,704, 2–2–65, Cl. 330—10.

Gibson, Donald L., to FMC Corp. Pin joint for links of endless tracks. 3,168,354, 2–2–65, Cl. 305—14.

Gilley, James H., to Western Electric Co., Inc. Relay with positively driven contacts. 3,168,627, 2–2–65, Cl. 200—87.

Gilmartin, Francis P. Die clicker conductive blocks. 3,167,990, 2–2–65, Cl. 83—658.

Ginos, James Z., I. M. Rose, and W. R. Christian, to Nopco Chemical Co. Process for production of alkyl phenols of improved color. 3,168,578, 2–2–65, Cl. 260—624.

Giovinazzo, Joe L., to Cambria Spring Co. Auxiliary spring for automotive vehicles. 3,168,300, 2–2–65, Cl. 267—48.

Glabisch, Dietrich: *See*—
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Morano, Patrick J. 3,168,099.

Glicksman, Milton, to Multi-Flex Seals, Inc. Composite washer construction. 3,168,321, 2–2–65, Cl. 277—180.

Gloor, Paul, to The Whellabrator Corp. Apparatus for surface treatment of metal coils. 3,167,885, 2–2–65, Cl. 51—15.

Goda, Ben T.: *See*—
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Goda, George, and M. A. Aanes, to Clay-Adams Inc. Microhematocrit reader for centrifuges. 3,168,473, 2–2–65, Cl. 233—26.

Goldschmidt, H., & Associates, Inc.: *See*—
Goldschmidt, Hans. 3,168,329.

Goldschmidt, Hans, to H. Goldschmidt & Associates, Inc. Utility cart. 3,168,329, 2–2–65, Cl. 280—36.

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Goldstein, Herman B., R. J. Peltier, and M. A. Silvestri, to Sun Chemical Corp. Textile finishing composition, application process and resulting product. 3,168,415, 2–2–65, Cl. 117—139.4.

Gonsalves, Conrad J., to American Enka Corp. Treatment of multi-filament yarn. 3,167,847, 2–2–65, Cl. 28—1.

Goodman, Frank. Keyhole obstructing locking devices. 3,167,945, 2–2–65, Cl. 70—428.

Goodman, Isaac: *See*—
McGillivray, Roy, and Goodman. 3,168,496.

Goodnow, John M.: *See*—
Littmann, David, and Goodnow. 3,168,160.

Goody, Robert B., and D. H. Dabney, to Federal Pacific Electric Co. Electrical clamp-on meter with swivel connected tongs. 3,168,698, 2–2–65, Cl. 324—127.

Gorand, Alfred J., to Sun Oil Co. Control process in the recovery of naphthalene from alkylnaphthalene by distillation. 3,168,451, 2–2–65, Cl. 202—39.5.

Gordon, Donald B.: *See*—
Laake, George A., and Gordon. 3,168,068.

Gordon, Donald H.: *See*—
Martin, Perry S., and Gordon. 3,168,088.

Gordon, Leon B., and T. P. Moote, Jr., to Standard Oil Co. Process for polymerisation of olefins. 3,168,504, 2–2–65, Cl. 260—93.7.

Gospodar, Reinhard. Heating systems for motor vehicles. 3,168,244, 2–2–65, Cl. 237—12.3.

Grace, W. R., & Co.: *See*—
Harper, James L. 3,168,545.
Hoeg, Donald F., and Stryker. 3,168,506.
Isaacs, Philip K., Tompkins, Nimoy, and Haden. 3,168,491.
Reese, Stanton L., and Runion. 3,168,369.

Grad, Adolf R., to The Oilgear Co. Hydraulic motor with tachometer shaft. 3,168,009, 2–2–65, Cl. 91—198.





Grafiex, Inc.: *See*—
Padelt, Johannes G., and Hurlburt. 3,168,025.

Graig, Waldemar. Surface watercraft. 3,168,067, 2–2–65, Cl. 114—66.5.

Grasen, Alfred E., to Platecraft of America, Inc. Apparatus for producing composite electroplated articles. 3,168,457, 2–2–65, Cl. 204—212.

Great Lakes Carbon Corp.: *See*—
Juel, Leslie H. 3,168,509.
Kennedy, Harvey T., Crawford, and Hancock. 3,168,139.

Greaves, Melvin J., T. Werner, and R. E. Tousalin, to Kaiser Steel Corp. Material cooling apparatus. 3,168,384, 2–2–65, Cl. 34—168.

Green, Sherwood. Mobile platform incorporating elevationally adjustable conveyor. 3,168,205, 2–2–65, Cl. 214—84.

Greene, Ben. Methods of heat treating articles. 3,168,607, 2–2–65, Cl. 266—5.

Greene, Percy W., to Barbour Corp. Method of making beaded shoe welting. 3,167,795, 2–2–65, Cl. 12—146.

Gregory, Ralph A.: *See*—
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Beaver, Garth H., and Greminger. 3,168,421.

Grey, Jerry. Calorimetric probe. 3,167,956, 2–2–65, Cl. 73—190.

Grivsky, Eugene: *See*—
Walton, Eric, Ruffell, Grivsky, and Wood. 3,168,562.

Grobel, Lloyd P. to General Electric Co. Dynamoelectric machine electrical collector assembly using liquid metal. 3,168,666, 2–2–65, Cl. 310—219.

Gronberg, Anton B. Harvesters. 3,167,898, 2–2–65, Cl. 56—23.

Grondin, Stanley T. Holder for boxed cleansing tissues. 3,168,275, 2–2–65, Cl. 248—205.

Gross, Daniel D., ⅓ each to M. L. Tolmach, G. Dominich, and A. Levey. Fuel burner nozzle. 3,168,131, 2–2–65, Cl. 158—76.

Guckel, Henry: *See*—
Clausen, Elmer B., and Guckel. 3,168,648.

Gulton Industriess, Inc.: *See*—
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Gunkel, Wesley W., and L. L. Anstee. Bean harvesting attachment. 3,168,145, 2–2–65, Cl. 171—61.

Gunther, Henry: *See*—
Eisenpresser, George, and Gunther. 3,167,849.

Gurney, William A., A. J. Stubbs, and P. H. Hollins, to Dunlop Rubber Co. Ltd. Mechanical oscillation recording device. 3,168,367, 2–2–65, Cl. 346—7.

Guske, James A., to Radiant Mfg. Corp. Portable projection screen. 3,168,134, 2–2–65, Cl. 160—24.

Hackl, Joseph J. Bookbinding corner press. 3,168,429, 2–2–65, Cl. 156—492.

Haden, Russell L., Jr.: *See*—
Isaacs, Philip K., Tompkins, Nimoy, and Haden. 3,168,491.

Hagie Mfg. Co.: *See*—
Johnson, Cyril R. 3,168,331.

Hainer, William H., to General Mills, Inc. Cable winding mechanism. 3,168,261, 2–2–65, Cl. 242—86.51.

Halasz, Alexander: *See*—
Brunner, Walter H., and Halasz. 3,168,442.

Halpern, Alfred, to Synergistics, Inc. Vasodilation by nitric acid ester derivatives of nicotinic acid. 3,168,438, 2–2–65, Cl. 167—65.

Hancock, James T., Jr.: *See*—
Kennedy, Harvey T., Crawford, and Hancock. 3,168,139.

Hansa, John R.: *See*—
Melcer, Irving, and Hansa. 3,168,448.

Hansen, Edward F. Liquid-solid separating apparatus. 3,168,033, 2–2–65, Cl. 100—179.

Hensen, Hans C. Record size sensing apparatus for tone arm positioning. 3,168,317, 2–2–65, Cl. 274—10.

Hanusiak, Dorothy H. Cordless travel iron. 3,168,641, 2–2–65, Cl. 219—250.

Harbison-Walker Refractories Co.: *See*—
Davies, Ben, and Weaver. 3,168,602.

Harder, Karl M., to Eurotec Establishment. Electrical measuring and sorting apparatus. 3,168,196, 2–2–65, Cl. 209—90.

Hardman, James A. Volume displacement means with sleeve valve control. 3,168,047, 2–2–65, Cl. 103—57.

Hare, Chauncey R., to California Research Corp. Ketone purification with bisulfite washed ion exchange resins. 3,168,571, 2–2–65, Cl. 260—593.

Harlow, Joy E.: *See*—
Bellows, Paul M., and Harlow. 3,168,255.

Harmon, Donald E. Measuring device. 3,168,023, 2–2–65, Cl. 95—11.

Harper, James L., to W. R. Grace & Co. Substituted 1-isocyanatoethoxy compounds. 3,168,545, 2–2–65, Cl. 260—453.

Harper, Toby B. Knotter mechanisms. 3,168,342, 2–2–65, Cl. 289—2.

Harris-Intertype Corp.: *See*—
Norton, Robert K. 3,168,040.

Harrison, Charles D., to General Dynamics Corp. Lapping device. 3,167,886, 2–2–65, Cl. 51—26.

Harrison, James B., and O. L. Magell. Alkyl peroxy triazines. 3,168,518, 2–2–65, Cl. 260—248.

Harrison, Lee, and W. R. O'Leary, Jr. Method of and machine for making used bricks. 3,168,413, 2–2–65, Cl. 117—62.

Harrison, Stevens H., to Bankers Trust Co. Two-way audio communication. 3,168,619, 2–2–65, Cl. 179—1.

Harrison, William B., Jr. Apparatus for associating related sheets from separate stacks. 3,168,306, 2–2–65, Cl. 270—58.

Harshaw Chemical Co., The: *See*—
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Hartlapp, Gerhard, W. Bielenberg, H. Kribbe, K. Beltz, and F. Thomas, to Knapsack-Griesheim Aktiengesellschaft. Process for the manufacture of alkali metal phosphates. 3,168,373, 2–2–65, Cl. 23—106.

Hartman, Frank B.: *See*—
Foin, Warren C., Gregory, Hartman, and Trachy. 3,168,723.

Hasler A.G. Werke fur Telephonie und Praxisionsmechanik: *See*—
Brenig, Theodor. 3,168,706.

Hasumura, Tadashi. Mixing apparatus wherein magnets are utilised. 3,168,294, 2–2–65, Cl. 259—108.

Hatot, Leon, Societe Anonyme des Etablissements: *See*—
Lavet, Marius J., and Dietsch. 3,168,690.

Hatschek, Rudolf: *See*—
Busch, Siegfried, Hatschek, and Pischinger. 3,168,646.

Haumann, Wilfried: *See*—
Beckman, John H., Haumann, Berta, and Murphy. 3,167,933.

Haveg Industries, Inc.: *See*—
Noland, Robert L., and Weber. 3,168,207.
Smith, Robert E., Jr., and Gardner. 3,168,417.

Hawthorn Co., division of Kellowood Co.: *See*—
Porter, James C. 3,168,101.

Hazelett, Richard and R. W., to Hazelett Strip-Casting Corp. Continuous metal casting apparatus. 3,167,830, 2–2–65, Cl. 22—57.4.

Hazelett, Robert W.: *See*—
Hazelett, Richard and R. W. 3,167,830.

Hazelett Strip-Casting Corp.: *See*—
Hazelett, Richard and R. W. 3,167,830.

Healy, Joseph F., to Harvey Hubbell, Inc. Explosion proof dead front electrical receptacle having microswitch means. 3,168,624, 2–2–65, Cl. 200—51.09.

Hearne, George W.: *See*—
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Hedegaard, Kristen, to G. M. Pfaff, AG. Needle-positioning mechanism for power-driven sewing machines and the like. 3,168,066, 2–2–65, Cl. 112—219.

Heifetz, Sidney T. Plate holder. 3,168,229, 2–2–65, Cl. 224—45.

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Heinzelman, Richard V., J. Szmuszkovicz, and W. C. Anthony, to The Upjohn Co. Derivatives of 3-(2-nitroethyl)-indole. 3,168,526, 2–2–65, Cl. 260—319.

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Henderson, Rex D., to Caterpillar Tractor Co. Precombustion chamber with means to improve air flow pattern. 3,168,079, 2–2–65, Cl. 123—32.

Henecka, Hans: *See*—
Behner, Otto, Henecka, Hoffmeister, Kreiskott, Meiser, Schubert, and Wirth. 3,168,517.

Hennion, George F.: *See*—
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Henry, Scott P., to Combustion Engineering, Inc. Apparatus for bending tube panels and the like. 3,168,129, 2–2–65, Cl. 153—24.

Hensel, Jack, to Chemagro Corp. Isomerization of bis (hydrocarbon or substituted arylthio) ethylene. 3,168,574, 2–2–65, Cl. 260—609.

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Parmenter, Charles W., Herrmann, and Davis. 3,168,684.

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Hess, Walter, E. Colombo, and E. Olsson; to Concast Ag. Apparatus for continuous casting of metal. 3,167,829, 2–2–65, Cl. 22—57.2.

Hetzel, Max, to Bulova Watch Co., Inc. Motion transformers for electronically controlled timepiece. 3,167,905, 2–2–65, Cl. 58—23.

Heuck, Claus: *See*—
Kreuter, Herbert, Heuck, Sommer, and Wagner. 3,168,505.

Hewlett-Packard Co.: *See*—
Cochran, David S. 3,168,702.
Crawford, Richard D. 3,168,711.

Heyman, Moses D., to Acim Paper Corp. Paper-backed mica. 3,168,434, 2–2–65, Cl. 162—124.

Hickey, Gladys B. Invalid bed seat. 3,167,790, 2–2–65, Cl. 5—332.

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Brookins, Roy G., and Hiler. 3,168,209.

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Hill, Leslie F., Sr. Two way shopping cart. 3,168,328, 2–2–65, Cl. 280—36.

Hill, Ralph W. Float switch with explosion-proof chamber. 3,168,625, 2–2–65, Cl. 200—84.

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Himmelmann, Wolfgang, H. Mader, R. F. Posse, and H. Ulrich, to Agfa Aktiengesellschaft. Flocculated gelatine emulsions containing sulphonated copolymers of styrene. 3,168,403, 2–2–65, Cl. 96—114.

Hink, John H., Jr., and J. K. McDonald, to Cutter Laboratories, Inc. Method of preparing stable human profibrinolysin and fibrinolysin. 3,168,447, 2–2–65, Cl. 195—66.

Hirs, Gene. Filter apparatus. 3,168,471, 2–2–65, Cl. 210—391.

Hitachi Wire & Cable Ltd.: *See*—
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Hobbs, Millice F., to International Minerals & Chemical Corp. Ferrous glutamate. 3,168,541, 2–2–65, Cl. 260—439.

Hoeg, Donald F., and A. B. Stryker, Jr., to W. R. Grace & Co. Process for polymerizing propylene wherein the titanium halide particle size is at least 150 microns. 3,168,506, 2–2–65, Cl. 260—93.7.

Hoeksema, Herman, to The Upjohn Co. 3-(2-Isopentenyl)-4-hydroxy benzoic acid and derivatives and preparation thereof. 3,168,552, 2–2–65, Cl. 260—473.

Hoffman, Robert G., to Simplex Forms Systems, Inc. Concrete form locking means. 3,167,840, 2–2–65, Cl. 25—131.

Hofmann, Fritz, to Otto Construction Corp. Oven construction. 3,167,883, 2–2–65, Cl. 50—531.

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Hoffmeister, Friedrich: *See*—
Behner, Otto, Henecka, Hoffmeister, Kreiskott, Meiser, Schubert, and Wirth. 3,168,517.

Hogan, Lester L. Automatic powder duster. 3,167,806, 2–2–65, Cl. 15—602.

Holland, Theron M. Clamp-type rimmed can holder. 3,167,832, 2–2–65, Cl. 24—81.

Hollenbeck, Clifford M., and R. W. Brandstetter, to Wisconsin-Zinn Malting Co. Process of producing malt and products produced thereby. 3,168,449, 2–2–65, Cl. 195—70.

Holley Carburetor Co.: *See*—
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Hollins, Peter H.: *See*—
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Hollmann, Hans E., to Dresser Industries, Inc. Devices for minimizing the effects of friction. 3,167,958, 2–2–65, Cl. 73—231.

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Holman, James O., to D. R. Holman. Wire twisting device. 3,168,118, 2–2–65, Cl. 140—118.

Holper, Frank, to Molon Motor & Coil Corp. Multiple rotor induction motor unit. 3,168,665, 2–2–65, Cl. 310—112.

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Funk, Gilbert R., and Holtgrieve. 3,168,218.

Holzer, Walter. Rotary discs and step by step drive therefor. 3,168,630, 2–2–65, Cl. 200—105.

Holzer, Walter. Electrical contact device. 3,168,634, 2–2–65, Cl. 200—166.

Honda, Yutaka: *See*—
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Honeywell Inc.: *See*—
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Koch, Robert B., and Keller. 3,167,961.
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Sikorra, Daniel J. 3,168,709.
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Hooke, Elizabeth J.: *See*—
Skrimshire, Gerald E. H., and Hooke. 3,168,407.

Hopff, Heinrich, and H. Metzler, to Deutsche Gold- und Silber-Scheideanstalt Vormals Roessler. Production of polyoxymethylenes from trioxane. 3,168,495, 2–2–65, Cl. 260—67.

Hopkins, Frank L., and R. H. Ayres, to Bemis Bro. Bag Co. Automatic bag top forming and sewing apparatus. 3,167,897, 2–2–65, Cl. 53—139.

Horowitz, Charles, to Berg Airlectro Products Co. Fluid pressure control system and valve therefor. 3,168,353, 2–2–65, Cl. 303—13.

Hoshi, Yuji, and M. Onosuka, to Kureha Kasei Co., Ltd. Mixture of polyvinyl chloride and copolymers of vinyl chloride and alkyl vinyl ethers. 3,168,594, 2–2–65, Cl. 260—899.

House, Kenneth R.: *See*—
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Hovercraft Development Ltd.: *See*—
Cockerell, Christopher S. 3,168,155.
Everest, Julian T., and Page. 3,168,069.

Howard, Jack E., and L. A. Kaplan, to International Fabric Molders, Inc. Apparatus for making brassieres and other garments. 3,167,816, 2–2–65, Cl. 18—19.

Howard, Norman B.: *See*—
Martin, James B., and Howard. 3,168,405.

Howard, William E. Sucker rod coupling. 3,168,340, 2–2–65, Cl. 287—119.

Hubbell, Harvey, Inc.: *See*—
Healy, Joseph F. 3,168,624.

Huber, Wernhard: *See*—
Zuppinger, Paul, and Huber. 3,167,805.

Hughes Aircraft Co.: *See*—
Warren, William B. 3,168,687.

Humber, Leslie G., to American Home Products Corp. 1,4-bis (benzylaminomethyl) cyclohexanes. 3,168,563, 2–2–65, Cl. 260—570.5.

Humber, Leslie G., to American Home Products Corp. Amino spiro[3,3]heptane derivatives. 3,168,564, 2–2–65, Cl. 260—570.5.

Humphrey, Watts S., Jr., to Sylvania Electric Products, Inc. Method and apparatus for testing marginal failure of electronic systems. 3,168,697, 2–2–65, Cl. 324—73.

Hunt, Edgar G.: *See*—
Tyler, Stanley R., Hunt, and Bootle. 3,168,102.

Huriburt, Arthur F.: *See*—
Padelt, Johannes G., and Huriburt. 3,168,025.

Hutchins, Charles K., Jr.: *See*—
Munn, Paul S., Hutchins, and Ross. 3,168,614.

Hutchisson, Clarence L., Jr. Security guard for windows. 3,167,828, 2–2–65, Cl. 20—71.

Hyde, Richard E.: *See*—
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Hydromation Engineering Co.: *See*—
Schuricht, Henry A., and Whitfield. 3,168,177.

I-T-E Circuit Breaker Co.: *See*—
Davis, Russell S., and Clement. 3,168,616.
Eberhard, Elmer T. 3,168,633.
Parmenter, Charles W., Herrmann, and Davis. 3,168,684.

Igarasi, Seiai: *See*—
Omura, Einosuke, Ogata, Sugino, Igarasi, Yoneda, Nakao, and Suhara. 3,168,446.

Ignell, Rolf L., to AB Vapor. Dispensing means in a package. 3,168,233, 2–2–65, Cl. 229—17.

Ihde, Frederick J., Jr., and F. J. Licata, to Nopco Chemical Co. Process for preparing siliceous amino compounds. 3,168,539, 2–2–65, Cl. 260—404.

Ikawa, Yukio: *See*—
Takahashi, Shuichiro, Honda, Maekawa, Ikawa, and Yamamori. 3,168,399.

Illinois Tool Works Inc.: *See*—
Wanderer, Herbert J. 3,168,222.

Imon, Sadami. Needle bed and a transfer needle in a flat type knitting machine. 3,167,939, 2–2–65, Cl. 66—96.

Imperial Chemical Industries Ltd.: *See*—
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Industrial Nucleonics Corp.: *See*—
Jacobs, Robert L. 3,167,986.

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Kennell, Earle D. 3,168,324.
Steadle, John M., Jr. 3,168,128.
Stoker, Robert J., and Board. 3,168,138.

Ingram, David J., to The General Electric Co. Ltd. Servicing apparatus for gas cooled thermal reactors. 3,168,444, 2–2–65, Cl. 176—32.

Inland Steel Co.: *See*—
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Institut Francais du Petrole des Carburants et Lubrifiants: *See*—
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International Business Machines Corp.: *See*—
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International Fabric Molders, Inc.: *See*—
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International Flavors & Fragrances Inc.: *See*—
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Interstate Engineering Corp.: *See*—
Pratt, Edmund C., House, Smith, and Phillips. 3,167,802.

Isaacs, Philip K., N. G. Tompkins, M. Nimoy, and R. L. Haden, Jr., to W. R. Grace & Co. Printing plate compositions. 3,168,491, 2–2–65, Cl. 260—31.6.

Ishii, Atsushi: *See*—
Okamoto, Takashi, and Ishii. 3,168,628.

Iwnicki, Kurt, and D. B. Miller, to British Nylon Spinners Ltd. Apparatus and method for crimping yarn. 3,167,846, 2–2–65, Cl. 28—1.

Jablonski, Richard J., to Burroughs Corp. Read-in mechanism for settable type wheels. 3,168,035, 2–2–65, Cl. 101—110.

Jackson, George W., to Utah Hydro Corp. Controlled draft device for combustion heaters for enclosed vehicular structures. 3,168,091, 2–2–65, Cl. 126—307.

Jacobi, Arno M., to Walter Jacobi & Sons, Inc. Apparatus for finishing wood and the like. 3,167,889, 2–2–65, Cl. 51—141.

Jacobi, Walter, & Sons, Inc.: *See*—
Jacobi, Arno M. 3,167,889.

Jacobs, Robert L., to Industrial Nucleonics Corp. Automatic cutting device. 3,167,986, 2–2–65, Cl. 83—160.

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Jaffe, Gunter S.: *See*—
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Jagdmann, Edwin F., to Ford Motor Co. Filter assembly for transmissions. 3,168,468, 2–2–65, Cl. 210—168.

Jakowatz, Charles V., to General Electric Co. Quantized-analogue multiplier. 3,168,645, 2–2–65, Cl. 235—194.

Jamison, Robert M., to Ajem Laboratories, Inc. Gas washing systems providing high velocity spray pattern of liquid droplets. 3,168,596, 2–2–65, Cl. 261—29.

Jammet, Jean F., to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Leak-resistant electrochemical cell and process for manufacturing the same. 3,168,420, 2–2–65, Cl. 136—133.

Janicich, Vojin K.: *See*—
Schoeffler, William A., Janicich, and Lazich. 3,168,158.

Jansson, Lars E.: *See*—
Olofsson, Erik H., and Jansson. 3,168,691.

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Jenkin, William C., to Union Carbide Corp. Gas plated metal shell molds and patterns. 3,167,831, 2–2–65, Cl. 22—136.

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Black, William T., Bailey, and Jex. 3,168,543.

Jex, Victor B., to Union Carbide Corp. Preparation of cyanoalkylsilanes. 3,168,544, 2–2–65, Cl. 260—448.2.

Jesl, James L., to Sun Oil Co. Purification of alkyl phenol oxidation inhibitors. 3,168,576, 2–2–65, Cl. 260—619.





Joergensen, Torbjoern: *See*—
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Johnson, Arthur R., to Royal McBee Corp. Type action. 3,168,181, 2–2–65, Cl. 197—17.

Johnson, Arthur F. Purification of aluminum. 3,168,394, 2–2–65, Cl. 75—68.

Johnson, Cyril R., to Hagie Mfg. Co. Vehicle frame. 3,168,331, 2–2–65, Cl. 280—106.5.

Johnson, Emil M. Point-presser, sleeve-board combination. 3,167,872, 2–2–65, Cl. 38—135.

Johnson, Glenn D.: *See*—
Watkins, Bruce J., and Johnson. 3,168,142.

Johnson, Glenn D., to Shell Oil Co. Flexible pipe joint. 3,168,334, 2–2–65, Cl. 285—55.

Johnson, Glenn D., and B. J. Watkins, to Shell Oil Co. Wellhead assembly. 3,168,337, 2–2–65, Cl. 285—133.

Johnson, Ivan B. D., to S. Smith & Sons (England) Ltd. Capacitive liquid level device with compensator. 3,167,959, 2–2–65, Cl. 73—304.

Johnson, Jerome E. Concealable trouser support. 3,167,786, 2–2–65, Cl. 2—327.

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Jones, Cecil D.: *See*—
Thom, Wenzel W. 3,168,170.

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Jordan, John W., M. J. Nevins, R. O. Sterns, J. C. Cowan, and A. E. Beasley, Jr., to National Lead Co. Well-working fluids. 3,168,475, 2–2–65, Cl. 252—8.5.

Joschoko, Raymond C., to Vendomatic Sales, Inc. Beverage mixing device. 3,168,292, 2–2–65, Cl. 259—9.

Juel, Leslie H., to Great Lakes Carbon Corp. Method of controlling orientation of extruded graphite crystallites. 3,168,509, 2–2–65, Cl. 264—108.

Jungeling, Friedhelm G., to Staatsbedrijf Artillerie-Inrichtingen. Trigger mechanism for a firearm. 3,167,877, 2–2–65, Cl. 42—69.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
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Kaiser Aluminum & Chemical Corp.: *See*—
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Kamm, Lawrence J., to General Dynamics Corp. Gravity gradient satellite orientation system. 3,168,263, 2–2–65, Cl. 244—1.

Kamp, Frank X. Fire extinguisher attachment for containers of pressurized liquids. 3,168,219, 2–2–65, Cl. 222—82.

Kane Engineering Laboratories: *See*—
Latshaw, Donald W., Jr., and Bostwick. 3,168,282.

Kane, William M.: *See*—
Booth, Francis M., and Kane. 3,168,028.

Kaplan, Donald J.: *See*—
McClocklin, Samuel B., and Kaplan. 3,168,034.

Kaplan, Lewis A.: *See*—
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Kappler, Gilbert O. Device for removing irregularities from a ground covering. 3,168,150, 2–2–65, Cl. 172—371.

Kaufman, Melvin M., to Radio Corp. of America. Monostable tunnel diode circuit coupled through tunnel rectifier to bistable tunnel diode circuit. 3,168,652, 2–2–65, Cl. 307—88.5.

Kavanagh, Charles H., to L. C. Lillibridge. Cultivator rake. 3,168,151, 2–2–65, Cl. 172—372.

Kawanami, Junichi, to Shionogi & Co., Ltd. 2'-di(lower)-alkylaminothiazolo[4',5'-11,12]pregn-11-ene-3,20-diol and 3,20-di(lower)alkanoate thereof. 3,168,516, 2–2–65, Cl. 260—239.5.

Kayser-Roth Corp.: *See*—
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Keats, John R., to Borg-Warner Corp. Buoy. 3,167,793, 2–2–65, Cl. 9—8.

Keefe, James T., to California Pellet Mill Co. Extrusion mill and feeder means therefor. 3,167,813, 2–2–65, Cl. 18—12.

Kehr, Abraham B. Method and apparatus for placing sealed-in inserts on packaging material. 3,168,016, 2–2–65, Cl. 93—8.

Kelin, Howard C.: *See*—
Loter, Ira, Dunkel, and Kelin. 3,168,566.

Keller, Emil C.: *See*—
Spokes, Raymond E., and Keller. 3,168,487.

Keller, Roger P.: *See*—
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Kelsey-Hayes Co.: *See*—
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Stelzer, William. 3,168,352.

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Kendall Co., The: *See*—
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Kendall, William D., and F. A. Yarger, to Dynapower Systems Corp. Electrotherapeutic treatment head. 3,168,098, 2–2–65, Cl. 128—404.

Kende, George, to Minnesota Mining and Mfg. Co. Zoom lens mount. 3,168,610, 2–2–65, Cl. 88—57.

Kennedy, Harvey T., P. B. Crawford, and J. T. Hancock, Jr., to Great Lakes Carbon Corp. Converting drilling muds to slurries suitable for cementing oil and gas wells. 3,168,139, 2–2–65, Cl. 166—29.

Kennell, Earle D., to Ingersoll-Rand Co. Chuck. 3,168,324, 2–2–65, Cl. 279—19.7.

Kent, George, Ltd.: *See*—
Marshall, Richard C. 3,168,658.

Kenton, Joseph R., and L. M. Adams, to Standard Oil Co. Process for olefin polymerization. 3,168,590, 2–2–65, Cl. 260—683.15.

Kern Chemical Corp.: *See*—
Kern, Norman E. 3,167,981.

Kern, Norman E., to Kern Chemical Corp. Tweezers. 3,167,981, 2–2–65, Cl. 81—43.

Keystone Camera Co., Inc.: *See*—
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Keystone Railway Equipment Co.: *See*—
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Kibbee, Gary W., to Union Tank Car Co. Diffuser unit for waste products treatment apparatus. 3,168,595, 2–2–65, Cl. 261—24.

Kida, Kazuo: *See*—
Toyokura, Tomitaro, and Kida. 3,168,048.

Kiely, William M., to Elevator Specialties Corp. Elevator photo-cell by-pass control. 3,168,164, 2–2–65, Cl. 187—29.

Kilboy, Lambert J., to United States Steel Corp. Method for preparing the fuel component of agglomerator-feed mix. 3,168,254, 2–2–65, Cl. 241—19.

Kimball, Alton. Safety device for hydraulic brakes. 3,167,919, 2–2–65, Cl. 60—54.5.

Kinberg, Jan P. O.: *See*—
Backman, Nils E. G., Sellberg, Arkhammar, Joergensen, and Kinberg. 3,168,736.

King, Ellis G., and C. Adolphson to Georgia-Pacific Corp. Sulfonated lignin-containing process and product. 3,168,511, 2–2–65, Cl. 260—124.

King, Hewson N. G., and B. T. Murphy, to North American Philips Co., Inc. Permanent magnet. 3,168,686, 2–2–65, 317—201.

King, Robert J.: *See*—
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Kirk, David N., V. Petrow, and D. M. Williamson, to The British Drug Houses Ltd. 6,16a-dimethyl steroids. 3,168,536, 2–2–65, Cl. 260—397.3.

Kirton, Joseph M. Latch operated clutch for stapling machine. 3,168,174, 2–2–65, Cl. 192—28.

Kitagawa, Yuji, to Kabushiki Kaisha Hitachi Seisakusho. Operation monitoring system for multiflow turbines. 3,167,952, 2–2–65, Cl. 73—116.

Kittelson, Arhtur L. Device for rolling up canvas hose. 3,168,260, 2–2–65, Cl. 242—86.

Kleemann, Alois, and J. Bindler, to Geigy Chemical Corp. 2-imino-1,3-disubstituted hexahydropyrimidines and imidazolidines. 3,168,520, 2–2–65, Cl. 260—256.4.

Klinger, Hughlin E. Temperature mixing and diverting valve for domestic plumbing fixtures. 3,168,112, 2–2–65, Cl. 137—625.17.

Klinger, Hughlin E. Domestic water mixing and diverting valve assembly. 3,168,109, 2–2–65, Cl. 137—597.

Klose, Alfred J., to Giannini Controls Corp., Inc. Pitch and yaw indicator and the like. 3,167,955, 2–2–65, Cl. 73—180.

Knapp Mills Inc.: *See*—
Knapp, Victor E., and Ritchey. 3,167,858.

Knapp, Victor E., and N. F. Ritchey, to Knapp Mills Inc. Process of lead cladding. 3,167,858, 2–2–65, Cl. 29—487.

Knapsack-Griesheim Aktiengesellschaft: *See*—
Hartlapp, Gerhard, Bielenberg, Kribbe, Beltz, and Thomas. 3,168,373

Knebel, Oliver P. Tool. 3,167,861, 2–2–65, Cl. 30—294.

Knipp, Ulrich: *See*—
Ellegast, Konrad, and Knipp. 3,168,605.

Knobloch, James O., and R. V. Malo, to Standard Oil Co. Removal of metal contaminants from activated carbon. 3,168,485, 2–2–65, Cl. 252—444.

Knoedler, Fred E. and R. L., to Knoedler Manufactures, Inc. Blending auger. 3,168,291, 2–2–65, Cl. 259—9.

Knoedler Manufactures, Inc.: *See*—
Knoedler, Fred E. and R. L. 3,168,291.

Knoedler, Robert L.: *See*—
Knoedler, Fred E. and R. L. 3,168,291.

Kobbe, John R., to Tektronix, Inc. Transmission line circuit having termination impedance which includes emitter junction of transistor. 3,168,656, 2–2–65, Cl. 307—88.5.

Kobbe, John R., to Tektronix, Inc. Intensity control compensation circuit for use in a cathode ray oscilloscope. 3,168,679, 2–2–65, Cl. 315—30.

Koch, Robert B., and R. P. Keller, to Honeywell Inc. Condition responsive devices. 3,167,961, 2–2–65, Cl. 73—356.

Kochaver, Theodore M., to United States Steel Corp. Pipe line vent. 3,168,103, 2–2–65, Cl. 137—202.

Koffler, Sol. Collapsible handle. 3,168,173, 2–2–65, Cl. 190—58.

Kokusai Denki Kabushiki Kaisha: *See*—
Fukata, Masao, and Sato. 3,167,906.

Kollock, Alan S., to General Magnaplate Corp. Film holders for strip film. 3,168,647, 2–2–65, Cl. 250—68.

Komeno, Taichiro, to Shionogi & Co., Ltd. 3-substituted-17α-thienyl- and 17α-thiazoiyl-17β-hydroxy-androstenes. 3,168,515, 2–2–65, Cl. 260—239.5.

Komorowski, Alexander F. and H. A. Ellipsograph. 3,167,863, 2–2–65, Cl. 33—30.

Komorowski, Henry A.: *See*—
Komorowski, Alexander F. and H. A. 3,167,863.

Konopka, Leo J. Saw and miter guide. 3,168,126, 2–2–65, Cl. 143—6.

Kovach, Stephen M., to Sinclair Research, Inc. Selective dethylation process. 3,168,583, 2–2–65, Cl. 260—672.

Krajewski, John J., to Swift & Co. Fatty amine derivatives of proteins. 3,168,510, 2–2–65, Cl. 260—117.

Kramer, Vance M., and L. W. Carlton. Process of and apparatus for making spirally corrugated rubber tubing using axially extensible helix. 3,168,604, 2–2–65, Cl. 264—100.

Kramer, Walter E., and L. A. Joo, to The Pure Oil Co. Novel dialkenyl heterocyclic amine compounds and their polymerization. 3,168,503, 2–2–65, Cl. 260—88.3.

Kraus, Edmund J.: *See*—
Kraus, Robert A. and E. J. 3,167,811.

Kraus, Leon S., and E. B. Fall, Jr. Anaerobic-aerobic sewage treatment and apparatus therefor. 3,168,465, 2–2–65, Cl. 210—7.

Kraus, Robert A., and E. J. Apparatus for forming thin wall articles of manufacture from expandable fusible plastic. 3,167,811, 2–2–65, Cl. 18—5.

Krauss-Maffei Aktiengesellschaft: *See*—
Von Bennigsen, Gerd. 3,167,812.

Kreiskott, Horst: *See*—
Behner, Otto, Henecka, Hoffmeister, Kreiskott, Meiser, Schubert, and Wirth. 3,168,517.

Krenz, William R., to Buffalo Weaving and Belting Co. Harness mechanism for looms. 3,168,116, 2–2–65, Cl. 139—57.

Kreuter, Herbert, C. Heuck, S. Sommer, and S. Wagner, to Hercules Powder Co. Inc. Process for working up polyolefins. 3,168,505, 2–2–65, Cl. 260—93.7.

Kribbe, Harri: *See*—
Hartlaup Gerhard, Bielenberg, Kribbe, Beltz, and Thomas. 3,168,373.

Kriegistein, Walter, and B. Reiss, to Siemens-Schuckertwerke Aktiengesellschaft. Method of producing monocrystalline wafers from the vaporous phase with alternative cooling and intermediate holding steps. 3,168,423, 2–2–65, Cl. 148—175.

Krijger, Pieter: *See*—
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Krudewig, Johannes, and H. Sick, to Gebrüder Boehringer Gesellschaft mit beschrankter Haftung Maschinenfabrik und Eisengiesserei. Rotary fluid-pressure machine. 3,168,051, 2–2–65, Cl. 103—202.

Kuellmar, Adolph G.: *See*—
Vander Hyde, Edward, McLaughlin, and Kuellmar. 3,168,055.

Kuhner, Max H., and E. C. Miller, to Riley Stoker Corp. Waste liquor furnace. 3,168,074, 2–2–65, Cl. 122—235.

Kupsky, George A., to Burroughs Corp. Indicater tube. 3,168,667, 2–2–65, Cl. 313—109.5.

Kureha Kasei Co., Ltd.: *See*—
Hoshi, Yuji, and Onosuka. 3,168,594.

Kurbajec, George A., R. J. Windgassen, and G. W. Hearne, to Shell Oil Co. Ornithine synthesis. 3,168,558, 2–2–65, Cl. 260—534.

Kury, Josef, to J. Bobst and Son S.A. Device for the fixing of the tool of a platen press against the upper bed. 3,167,992, 2–2–65, Cl. 83—700.

Kwik Lock Forms Co.: *See*—
Pauli, Frank G., Jr. 3,167,842.

La Borde, Robert C., to Automatic Impulse Recording Corp. Impulse recorder. 3,168,740, 2–2–65, Cl. 346—74.

Lachance, Armand A.: *See*—
Lachance, Gerald J. 3,168,327.

Lachance, Gerald J., to A. A. Lachance. Folding seat construction for nesting grocery carts. 3,168,327, 2–2–65, Cl. 280—33.99.

Lago, James: *See*—
Allegretti, John E., and Lago. 3,168,422.

Laing, Nikolaus. Piston pump. 3,168,050, 2–2–65, Cl. 103—161.

Lalli, Romeo A. Method of making stretch die and method of stretching article thereon. 3,167,976, 2–2–65, Cl. 76—107.

La Londe, Fred J. Cymbal supports. 3,167,995, 2–2–65, Cl. 84—421.

Lamb, John T., to The Tappan Co. Microwave oven control. 3,168,637, 2–2–65, Cl. 219—10.55.

Lamberton, Ralph E., O. R. Lowther, and R. A. Redding, to The Jaeger Machine Co. Oil scavenging system for a rotary compressor. 3,168,236, 2–2–65, Cl. 230—207.

Lamm, Heins, to Daimler-Benz Aktiengesellschaft. Rotary piston combustion engine system. 3,168,078, 2–2–65, Cl. 123—8.

Lan-Elec Ltd.: *See*—
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Landauer, Franz: *See*—
Orthner, Ludwig, Landauer, Reuter, and Hersberg. 3,168,499.

Landry, Joseph E., Jr.: *See*—
Cull, Neville L., Landry, Robson, Lohman, Nadler, and White. 3,168,586.

Lang, Konrad, F. Schubert, and K. Nützel, to Farbenfabriken Bayer Aktiengesellschaft. Mixed anhydrides of an aminocarboxylic acid and an alkyl substituted boric acid. 3,168,559, 2–2–65, Cl. 260—545.

Lange, Edward H. Spirit level. 3,167,864, 2–2–65, Cl. 33—63.

Langer, Arthur W., Jr.: *See*—
White, Herschel T., and Langer. 3,168,588.

Lansenberger, Horst: *See*—
Müller, Johann, and Lansenberger. 3,168,003.

Larkin, Robert B., to Mills Products, Inc. Oven door window unit. 3,168,089, 2–2–65, Cl. 126—200.

Larson, Robert L., to Parker Metal Goods Co. Tubular display stand having removable article supports. 3,168,200, 2–2–65, Cl. 211—177.

La Salle Steel Co.: *See*—
Zavodny, George, Jr., Breyer, and Nachtman. 3,168,004.

Lasko, George A., and D. B. Gordon. Batten for sails. 3,168,068, 2–2–65, Cl. 114—102.

Latshaw, Donald W., Jr., and R. E. Bostwick, to Kane Engineering Laboratories. All metal valve with particular head and seat construction. 3,168,282, 2–2–65, Cl. 251—333.

Latterner, Michael P., and T. F. Rosek, to The Dow Chemical Co. Boiling cooling system. 3,168,080, 2–2–65, Cl. 123—41.26.

Lavet, Marius J., and J. J. G. Dietsch, to Societe Anonyme des Etablissements Leon Hatot. Clock power-device. 3,168,690, 2–2–65, Cl. 318—127.

Lawrence, Frank L., to Gearmatic Co., Ltd. Joint and lock mechanism for telescoping spar. 3,168,336, 2–2–65, Cl. 285—81.

Lawrence, Frank L., to Gearmatic Co., Ltd. Joint and lock mechanism for telescoping spar. 3,168,336, 2–2–65, Cl. 285—81.

Layne, Richard C. Dockboard unit. 3,167,796, 2–2–65, Cl. 14—71.

Layton, Charles H.: *See*—
Peterson, Vincent C. J., and Layton. 3,167,903.

Lasich, Radovan P.: *See*—
Schoeffler, William A., Janicich, and Lasich. 3,168,158.

Lea, Lawrence N. Phonograph apparatus. 3,168,318, 2–2–65, Cl. 274—14.

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Lebourg, Maurice P., to Schlumberger Well Surveying Corp. Orienting means for perforating apparatus. 3,168,141, 2–2–65, Cl. 166—55.1.

Ledwith, Walter A., to United Aircraft Corp. Thrust control for solid rocket. 3,167,912, 2–2–65, Cl. 60—35.55.

Lee, William F. Door jamb setter. 3,168,305, 2–2–65, Cl. 269—321.

Lees-Bradner Co., The: *See*—
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Lehman, Leon M., and S. Manne, to Sinclair Research, Inc. Catalytic conversion of heavy oils to gasoline. 3,168,460, 2–2–65, Cl. 208—67.

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Barut, Chat M., and Lehr. 3,168,375.

LeMay, Dan B., W. E. Parker, C. H. Paul, A. Silver, P. G. Stein, and H. J. Wood, to The Garrett Corp. Mass flow rate sensor for compressors. 3,167,954, 2–2–65, Cl. 73—168.

Lenkey, Andrew, to Beckman Instruments, Inc. Fraction collector. 3,168,124, 2–2–65, Cl. 141—284.

Less, Louis L., to One-In-Hand Tie Co. Neckwear for supporting an ornament. 3,167,784, 2–2–65, Cl. 2—150.

Levand, Victor A., Jr., to General Electric Co. Filament supports for electric incandescent lamps. 3,168,670, 2–2–65, Cl. 313—274.

Levene, Martin L., to Radio Corp. of America. Electrostatic printing. 3,168,021, 2–2–65, Cl. 95—1.7.

Levey, Al: *See*—
Gross, Daniel D. 3,168,131.

Levis, William W., Jr., and E. A. Weipert, to Wyandotte Chemicals Corp. Di(alkoxyalkyl)thiourea. 3,168,560, 2–2–65, Cl. 260—552.

Levitt, Matthew, and R. W. Whitney, to Sylvania Electric Products Inc. Bypass arrangement for increasing circuit reliability. 3,168,707, 2–2–65, Cl. 330—21.

Lewis, Delbert L. Upholstering tool. 3,168,228, 2–2–65, Cl. 223—102.

Lewis, Thomas K., to Sperry Rand Corp. High frequency pulse generator employing diode exhibiting charge storage or enhancement. 3,168,654, 2–2–65, Cl. 307—88.5.

Licata, Francis J.: *See*—
Ihde, Frederick J., Jr., and Licata. 3,168,539.

Liebing, Howard C.: *See*—
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Limbacher, Willard P., and R. F. Yackel, to Tompkins Brothers Co., Inc. Knitting machines. 3,167,940, 2–2–65, Cl. 66—151.

Limberger, Walter, to Lumoprint Zindler K.G. Apparatus for producing photocopies. 3,168,022, 2–2–65, Cl. 95—1.7.

Limberger, Walter, to Lumoprint Zindler KG. Apparatus for preparing photocopies. 3,168,026, 2–2–65, Cl. 95—75.

Lindenberg, Hans-Georg, and R. Seyberlich, to Varta Aktiengesellschaft. Handle support for a storage battery container. 3,167,808, 2–2–65, Cl. 16—125.

Lindheim, Thor, to Allmanna Svenska Elektriska Aktiebolaget. Charging machine for fuel exchanging in a nuclear reactor. 3,168,443, 2–2–65, Cl. 176—30.

Lindsey, Elton: *See*—
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Littmann, David, and J. M. Goodnow, to Cardiosonics Medical Instrument Co. Stethoscope. 3,168,160, 2–2–65, Cl. 181—24.

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Loewy Engineering Co. Ltd., The: *See*—
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Lohman, Raymond C.: *See*—
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Lohr, Albert, and A. Feiner. Barrage construction. 3,167,923, 2–2–65, Cl. 61—31.

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Lory, John S.: *See*—
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Loter, Ira, M. Dunkel, and H. C. Klein, to Nopco Chemical Co. Process for racemising α-phenyl and α-naphthyl ethylamines. 3,168,566, 2–2–65, Cl. 260—570.8.

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Limberger, Walter. 3,168,026.

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Luxembourgeoise de Brevets et de Participations: *See*—
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Lynn, Bernard S. Jet aircraft runway having anti-skid properties when wet. 3,168,019, 2–2–65, Cl. 94—5.

Lytle, Joseph L. Three-piece puzzle. 3,168,316, 2–2–65, Cl. 273—156.

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Mader, Helmut: *See*—
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Madsen, James B., to General Motors Corp. Steel rule die stripping device. 3,167,985, 2–2–65, Cl. 83—139.

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Marcel, John M. Folding mobile shelter. 3,168,343, 2–2–65, Cl. 296—27.

Marcoux, Henri. Straddle row cultivator. 3,168,148, 2–2–65, Cl. 172—42.

Maresh, Charles, and O. E. Sundberg (deceased, by G. Sundberg, executrix), to American Cyanamid Co. Process for aanlysis of organic compounds. 3,168,378, 2–2–65, Cl. 23—230.

Marion, Thomas E., and R. L. Morse, to Universal Machine Co., Inc. Feeding mechanism for filling machine. 3,168,216, 2–2–65, Cl. 221—299.

Market Forge Co.: *See*—
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Marks, Craig, to General Motors Corp. Three phase piezoelectric generator. 3,168,660, 2–2–65, Cl. 310—6.7.

Marsee, Frederick J., N. M. Romeo, and J. Dirda, to Holley Carburetor Co. Carburetor main fuel nozzle. 3,168,599, 2–2–65, Cl. 261—65.

Marshall, David W., to Continental Oil Co. Preparation of ketones. 3,168,570, 2–2–65, Cl. 260—593.

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Martin, Gustav J., to William H. Rorer, Inc. Composition comprising N - (3',4'-dimethoxyphenylethyl-2,6-diketopiperazine and 2 - methyl - 3-ortho-tolyl-4 (3H)quinazolinone. 3,168,439, 2–2–65, Cl. 167—65.

Martin, James B., and N. B. Howard, to The Procter & Gamble Co. Culinary composition containing edible acidic lipid anhydrides. 3,168,405, 2–2–65, Cl. 99—91.

Martin, Joseph L., to Ric-Wil Inc. Insulated pipe anchor. 3,168,114, 2–2–65, Cl. 138—105.

Martin, Perry S., and D. H. Gordon, to Virginia Metalcrafters, Inc. Thermostatically controlled heating apparatus. 3,168,088, 2–2–65, Cl. 126—77.

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Masuda, Senichi, to Onoda Cement Co. Itd. Method of grinding quicklime. 3,168,253, 2–2–65, Cl. 241—16.

Matell, Paul M. T., to Mo Och Domsjo Aktiebolag. Method of bleaching polyalkylene ethers. 3,168,569, 2–2–65, Cl. 260—584.

Matheny, Francis M., to Pipe Linings. Pipelining machine. 3,167,837, 2–2–65, Cl. 25—38.

Mathis, Richard J. Plumbing trap. 3,168,104, 2–2–65, Cl. 137—247.51.

Matlock, Roy L.: *See*—
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McCarthy, William C., to Phillips Petroleum Co. Separation of a dispersed liquid hydrocarbon phase from an immiscible liquid phase. 3,168,585, 2–2–65, Cl. 260—677.

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McGillivray, Roy, and I. Goodman, to Imperial Chemical Industries Ltd. Tertiary nitrogen containing copolyurethanes from 1 : 4-bis (hydroxymethyl)cyclohexane or related cyclic ether compounds. 3,168,496, 2–2–65, Cl. 260—77.5.

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McJohnson, Otis S. Mixing valve. 3,168,113, 2–2–65, Cl. 137—636.1.

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McManama, Charles E. Supporting device for hand carriable sawmill having a rectangular guide rail carriage mountable upon the log. 3,168,127, 2–2–65, Cl. 143—19.

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Melcer, Irving, and J. R. Hansa, to Wilson & Co., Inc. Process of preparing a lipolytic enzyme composition. 3,168,448, 2–2–65, Cl. 195—66.

Mellen, William F. Two-way plow. 3,168,149, 2–2–65, Cl. 172—226.

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Meyer, Curtis E., to The Upjohn Co. Stable vitamin composition. 3,168,440, 2–2–65, Cl. 167—81.

Meyers, Stanley T., to Bell Telephone Laboratories, Inc. Shift register employing bistable multiregion semiconductive devices. 3,168,649, 2–2–65, Cl. 307—88.5.

Meyer-Simon, Eugen, and A. Frey, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Production of zirconium compounds from alkali metal-zirconium silicates. 3,168,374, 2–2–65, Cl. 23—117.

Miaskoff, Leonard, and F. L. Warner, to Fairchild Camera and Instrument Corp. Drum latching mechanism for printing press. 3,168,038, 2–2–65, Cl. 101—233.

Michaels, Glenn O., and J. W. Gambell, to Sinclair Research, Inc. Method of dehydrogenation. 3,168,587, 2–2–65, Cl. 260—683.3.

Middleditch, Stanley W.: *See*—
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Miesiak, Conrad E., to Holley Carburetor Co. Temperature probe. 3,167,960, 2–2–65, Cl. 73—349.

Millas, Emmanuel: *See*—
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Miller, Boyd C. Seal for tunnel kilns. 3,168,299, 2–2–65, Cl. 263—28.

Miller, Bruce D., and R. L. Smith, to Chemetron Corp. Valve arrangement for receptacle filling machines. 3,168,225, 2–2–65, Cl. 222—380.

Miller, David B.: *See*—
Iwnicki, Kurt, and Miller. 3,167,846.

Miller, Earle C.: *See*—
Kuhner, Max H., and Miller. 3,168,074.

Miller, Howard C., to Morton Salt Co. Apparatus and method of producing brine. 3,168,379, 2–2–65, Cl. 23—312.

Miller, Norman T. Rotary cutter assembly. 3,167,991, 2–2–65, Cl. 83—662.

Mills, George A., to Air Products and Chemicals, Inc. Method of treating exhaust gases of internal combustion engines. 3,168,368, 2–2–65, Cl. 23—2.

Mills Products, Inc.: *See*—
Larkin, Robert B. 3,168,089.

Milne, John H., to Dredge Mfg. Corp. Separator for metals in liquid suspension. 3,168,466, 2–2–65, Cl. 210—94.

Milroy, John M., Jr. Handgun. 3,167,876, 2–2–65, Cl. 42—7.

Milton, Leonard, and J. S. Lory, to The Filtron Co., Inc. Thermal circuit interrupting device having collinear spaced conductors. 3,168,631, 2–2–65, Cl. 200—122.

Minnesota Mining and Mfg. Co.: *See*—
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Branibar, Nick G. 3,168,402.
Kende, George. 3,168,610.

Miroux, Jean, to Association des Ouvriers en Instruments de Precision. Control of conveyors. 3,168,053, 2–2–65, Cl. 104—88.

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Underwood, Roland H., and Mitchell. 3,168,226.

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Nashold, Robert W., Baldwin, and Mitchell. 3,168,001.

Mitsubishi Atomic Power Industries, Inc.: *See*—
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Mitsubishi Denki Kabushiki-Kaisha: *See*—
Takahashi, Shuichiro, Honda, Maekawa, Ikawa, and Yamamori. 3,168,399.

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Matell, Paul M. T. 3,168,569.

Moen, Alfred M. Method of installing faucet. 3,167,855. 2–2–65, Cl. 29—157.

Moldenhauer, Erwin F. Incinerator. 3,168,063, 2–2–65, Cl. 110—18.

Mole, Cecil J.: *See*—
Wepfer, William M., and Mole. 3,167,926.

Molino, Ottavio. Ski binding. 3,168,326, 2–2–65, Cl. 280—11.35.

Molins Machine Co. Ltd.: *See*—
Williamson, David T. N. 3,168,013.

Molon Motor & Coil Corp.: *See*—
Holper, Frank. 3,168,665.

Mono Pumps Africa (Proprietary) Ltd.: *See*—
Taylor, Alan, and Payne. 3,168,049.

Monroe International Corp.: *See*—
Durgin, Douglas C. 3,167,972.

Monsanto Co.: *See*—
Chupp, John P. 3,168,436.
Dale, James W. 3,167,908.

Monsour, James R. Artist's kit. 3,168,363, 2–2–65, Cl. 312—231.

Montean, John, Jr., to The Lees-Bradner Co. Vibration damping means for driven shafts. 3,167,999, 2–2–65, Cl. 90—4.

Moore, Aston L. and C. R. Supervisory system. 3,168,682, 2–2–65, Cl. 317—18.

Moore, Charles R.: *See*—
Moore, Aston L. and C. R. 3,168,682.

Moore, George H.: *See*—
Daffron, Guy M. 3,167,878.

Moore, James W., and R. F. Edgar, to McGraw-Edison Co. Electrode positioning means. 3,168,672, 2–2–65, Cl. 314—69.

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Moran, Francis R.: *See*—
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Morano, Patrick J., to Glamorise Foundations, Inc. Torso molding undergarments. 3,168,099, 2–2–65, Cl. 128—547.

Morgan, Harold R.: *See*—
Egler, Vernon C., and Morgan. 3,167,895.

Moritz, Karsten H., J. F. Moser, Jr., and E. J. Estopinal, Jr., to Esso Research and Engineering Co. Catalysed gasification of hydrocarbons to hydrogen and carbon monoxide. 3,168,386, 2–2–65, Cl. 48—212.

Morley, Jack N.: *See*—
Nicholson, Garnet K., and Morley. 3,168,192.

Mornigkeit, Fritz, deceased, by H. Mornigkeit, administrator, to Westfalia Dinnendahl Groppel Aktiengesellschaft. Journalling device for supporting rollers. 3,168,357, 2–2–65, Cl. 308—15.

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Mornigkeit, Fritz. 3,168,357.

Morningstar, Ralph E.: *See*—
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Morris, Elmer S.: *See*—
Bounds, William E., Morris, and Sundstrom. 3,168,256.

Morris, Harold D., to Systron-Donner Corp. Switching device. 3,168,680, 2–2–65, Cl. 317—5.

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Marion, Thomas E., and Morse. 3,168,216.

Morton Salt Co.: *See*—
Miller, Howard C. 3,168,379.

Moser, Erich, and E. Röss, to Siemens & Halske Aktiengesellschaft. Process for producing magnetic manganese-zinc ferrite with isoperm character. 3,168,476, 2–2–65, Cl. 252—62.5.

Moser, John F., Jr.: *See*—
Moritz, Karsten H., Moser, and Estopinal. 3,168,386.

Moshy, Raymond J., to General Foods Corp. Process for treating soybean flour to improve its flavor. 3,168,406, 2–2–65, Cl. 99—99.

Mostert, Simon: *See*—
Engel, Willem F., Krijger, and Mostert. 3,168,484.

Motorola, Inc.: *See*—
Massman, Albert W. 3,168,678.

Mount Hope Machine Co., Inc.: *See*—
Robertson, John D., and McCleary. 3,167,843.

Mueller Co.: *See*—
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Mueller, Frank H., to Mueller Co. Rotary plug valve. 3,168,280. 2–2–65, Cl. 251—217.

Mueller, Lawrence E., to Burroughs Corp. Machine for cutting, forming and inserting leads of electrical components. 3,167,780, 2–2–65, Cl. 1—322.

Muhlberg, Erhard, and S. Meurer, to Maschinenfabrik Augsburg-Nurnberg A.G. Continuous flow combustion cycle. 3,167,913, 2–2–65, Cl. 60—39.02.

Mull, Robert P.: *See*—
De Stevens, George, and Mull. 3,168,522.

Müller, Johann, and H. Lanzenberger, to H. and F. W. Deckel. Universal machine tool. 3,168,003, 2–2–65, Cl. 90—13.1.

Multi-Flex Seals, Inc.: *See*—
Glicksman, Milton. 3,168,321.

Munchbach, George E.: *See*—
Walton, Richard R., and Munchbach. 3,168,307.
Walton, Richard R., and Munchbach. 3,168,308.

Mundo, Louis J. Washing brushes. 3,167,800, 2–2–65, Cl. 15—179.

Munn, Paul S., C. K. Hutchins, Jr., and M. J. Ross, to Simplex Wire and Cable Co. Armored cable connection. 3,168,614, 2–2–65, Cl. 174—70.

Murakoshi, Masahiko: *See*—
Nagumo, Tadashi, and Murakoshi. 3,168,372.

Murphy, Bernard T.: *See*—
King, Hewson N. G., and Murphy. 3,168,686.

Murphy Door Bed Co., Inc., The: *See*—
Murphy, William K., and Mercier. 3,167,788.

Murphy, Patrick L.: *See*—
Beckman, John H., Haumann, Berta, and Murphy. 3,167,933.

Murphy, William K., and G. J. Mercier, to The Murphy Door Bed Co., Inc. Convertible sofa. 3,167,788, 2–2–65, Cl. 5—17.

Murphy, William W., to The Torrington Co. Combined radial and dual thrust bearing for shafts. 3,168,359, 2–2–65, Cl. 308—174.

Musgrave, John M. Fountain valve. 3,168,246, 2–2–65, Cl. 239—22.

NSU Motorenwerke Aktiengesellschaft: *See*—
Froede, Walter. 3,168,077.
Paschke, Hanns-Dieter. 3,168,237.

Nachtman, Elliot S.: *See*—
Zavodny, George, Jr., Breyer, and Nachtman. 3,168,004.

Nadler, Murray: *See*—
Cull, Neville L., Landry, Robson, Lohman, Nadler, and White. 3,168,586.

Nager, Maxwell, to Shell Oil Co. Manufacture of aromatic hydrocarbons. 3,168,584, 2–2–65, Cl. 260—673.

Nagle, Floyd B., and A. F. Roche, to The Dow Chemical Co. Adhesives for vinyl aromatic resins. 3,168,427, 2–2–65, Cl. 156—307.

Nagumo, Tadashi, and M. Murakoshi, to Asahi Kasei Kogyo Kabushiki Kaisha. Method for the recovery of gallium from alunite. 3,168,372, 2–2–65, Cl. 23—19.

Nagy, Daniel E., to American Cyanamid Co. 1-alkylphenyl-2,2 di lower alkyl-4,6-diiminohexahydro-s-triazines. 3,168,519, 2–2–65, Cl. 260—249.9.

Naito, Yoshiharu. Shiftable stack assembly. 3,168,361, 2–2–65, Cl. 312—199.

Nakao, Yoshio: *See*—
Omura, Einosuke, Ogata, Sugino, Igarasi, Yoneda, Nakao, and Suhara. 3,168,446.

Nashold, Robert W., H. J. Baldwin, and V. L. Mitchell, to The Cincinnati Milling Machine Co. Headstock spindle adjustment mechanism for spiral milling machine. 3,168,001, 2–2–65, Cl. 90—11.48.

National Die and Button Mold Co., Inc.: *See*—
Eisenpresser, George, and Gunther. 3,167,849.

National Distillers and Chemical Corp.: *See*—
Corbett, Herbert O. 3,167,814.

National Homes Corp.: *See*—
Washington, George D. 3,168,206.

National Lead Co.: *See*—
Bauer, Alfred F. 3,168,081.
Jordan, John W., Nevins, Sterns, Cowan, and Beasley. 3,168,475.

National Rejectors, Inc.: *See*—
Erickson, Gustav F. 3,168,180.

Naumann, Bert A. Lubricating attachment for electric razors and the like. 3,167,804, 2–2–65, Cl. 15—563.





Neely, Elbert E., to Pittsburgh Plate Glass Co. Process for the purification of liquid chlorine. 3,168,376, 2–2–65, Cl. 23—219.

Neer, Harold M., to Phillips Petroleum Co. Electrical measuring apparatus. 3,168,725, 2–2–65, Cl. 340—172.5.

Nesson, Israel, to Keystone Camera Co., Inc. Motion picture apparatus with variable film claw speed. 3,168,743, 2–2–65, Cl. 352—180.

Nevada Electronics Inc.: *See*—
Tiedemann, Harry F. 3,168,179.

Nevins, Michael J.: *See*—
Jordan, John W., Nevins, Sterns, Cowan, and Beasley. 3,168,475.

Newcomer, Harry S. Mounted anamorphic prism system. 3,168,609, 2–2–65, Cl. 88—57.

Nicholson, Garnet K., and J. N. Morley, to Union Carbide Corp. Pilfer proof display box. 3,168,192, 2–2–65, Cl. 206—45.24.

Nickelfabriksaktiebolaget Gottfrid Carlsson, Eskilstuna: *See*—
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Nienstedt, Heins. Apparatus for transferring logs and like objects. 3,168,190, 2–2–65, Cl. 198—218.

Nilsen Mfg. Co.: *See*—
Nilsen, Peter A., and Lindved. 3,168,217.
Nilsen, Peter A., and Schuls. 3,168,597.
Nilsen, Peter A., and Schuls. 3,168,598.

Nilsen, Peter A., and P. H. Lindved, to Nilsen Mfg. Co. Cream whipping and dispensing device for fountains. 3,168,217, 2–2–65, Cl. 222—4.

Nilsen, Peter A., and T. R. Schuls, to Nilsen Mfg. Co. Fountain type whipped cream maker. 3,168,597, 2–2–65, Cl. 261—50.

Nilsen, Peter A., and T. R. Schuls, to Nilsen Mfg. Co. Apparatus for making whipped cream. 3,168,598, 2–2–65, Cl. 261—51.

Nimoy, Melvin: *See*—
Isaacs, Phillip K., Tompkins, Nimoy, and Haden. 3,168,491.

Nitta, Masakiyo. Pencil. 3,168,072, 2–2–65, Cl. 120—83.

Noland, Robert L., and W. O. Weber, to Haveg Industries, Inc. Blow molding. 3,168,207, 2–2–65, Cl. 215—1.

Nomine, Gerard, J. Warnant, R. Bucourt, M. Vignau, J. Jolly, and A. Pierdet, to Roussel-UCLAF, S.A. Process for the production of 4,5-seco steroids and intermediates. 3,168,530, 2–2–65, Cl. 260—326.3.

Nopco Chemical Co.: *See*—
Ginos, James Z., Rose, and Christian. 3,168,578.
Ibde, Frederick J., Jr., and Licata. 3,168,539.
Loter, Ira, Dunkel, and Klein. 3,168,566.
Weinstein, Robert, Rose, and Christian. 3,168,577.

Nord-Aviation Societe Nationale de Constructions Aeronautiques: *See*—
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Norris, Henry D.: *See*—
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North American Philips Co., Inc.: *See*—
Backmark, Nils E. 3,168,712.
Backmark, Nils E. G., Sellberg, Arkhammar, Joergensen, and Kinberg. 3,168,736.
Bruijning, Hugo G. 3,168,714.
King, Hewson N. G., and Murphy. 3,168,686.
Van Kessel, Theodorus J. 3,168,713.

Norton, Charles J., and F. H. Poettmann, to The Marathon Oil Co. Solvent extraction with a furfural-furfuryl alcohol-water solvent. 3,168,463, 2–2–65, Cl. 208—323.

Norton Co.: *See*—
Anderson, Robert W. 3,168,087.
Coes, Loring, Jr., and Millas. 3,167,891.
Cook, Arnold M., and Mahoney. 3,168,298.
Davenport, Granger, Heimall, and Crocker. 3,168,005.

Norton, Robert K., to Harris-Intertype Corp. Plate clamp registering mechanism. 3,168,040, 2–2–65, Cl. 101—415.1.

Nutzel, Karl: *See*—
Lang, Konrad, Schubert, and Nutzel. 3,168,559.

Oertling, L., Ltd.: *See*—
Chappell, Frank A., and Tappin. 3,168,154.

Ogata, Koichi: *See*—
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Ogden, Ralph P. Hydro-mechanical vehicle seat suspension. 3,168,278, 2–2–65, Cl. 248—377.

Oilgear Co., The: *See*—
Bennett, Robert N. 3,168,006.
Grad, Adolf R. 3,168,009.
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Okamoto, Takashi, and A. Ishii, to Fuji Tsushinki Seizo Kabushiki Kaisha. Miniature symmetrical contact polarized relay. 3,168,628, 2–2–65, Cl. 200—93.

Okamura, Shiro. Signal delaying apparatus. 3,168,705, 2–2–65, Cl. 330—10.

O'Leary, William R., Jr.: *See*—
Harrison, Lee, and O'Leary. 3,168,413.

Olin Mathieson Chemical Corp.: *See*—
Clark, Charles C., and Morningstar. 3,168,568.
Preusse, William C. 3,168,514.
Ratz, Rudi F. W. 3,168,548.
Ratz, Rudi F. W. 3,168,549.
Wellisch, Eric. 3,168,409.

Oliveto, Eugene P., and E. L. Shapiro, to Schering Corp. Process for the manufacture of 16-alkylidene-17a-alkanoyloxyprogesterones. 3,168,537, 2–2–65, Cl. 260—397.4.

Olofsson, Erik H., and L. E. Jansson, to Regulator A.G. Transistorised servo amplifier. 3,168,691, 2–2–65, Cl. 318—207.

O'Loughlin, Francis A.: *See*—
Schwester, Daniel P., and O'Loughlin. 3,168,119.

Olsen, Oscar, and R. J. Boyer, to The Babcock & Wilcox Co. Superheater for a vapor generator. 3,168,076, 2–2–65, Cl. 122—510.

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Omura, Einosuke, K. Ogata, Y. Sugino, S. Igarasi, M. Yoneda, Y. Nakao, and I. Suhara, to Takeda Pharmaceutical Industries, Ltd. Production of 5'-nucleotides and of nucleosides. 3,168,446, 2–2–65, Cl. 195—28.

O'Neal, Cothburn M. Voting machine. 3,168,240, 2–2–65, Cl. 235—54.

One-In-Hand Tie Co.: *See*—
Less, Louis L. 3,167,784.

Onoda Cement Co. Ltd.: *See*—
Masuda, Senichi. 3,168,253.

Onozuka, Mitsuo: *See*—
Hoshi, Yuji, and Onozuka. 3,168,594.

Orthner, Ludwig, F. Landauer, M. Reüter, and H. Herzberg, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for isolating chlorinated or sulfochlorinated polyolefins. 3,168,499, 2–2–65, Cl. 260—79.3.

Osmond, Olive D. Doll manikin with detachable components. 3,168,227, 2–2–65, Cl. 223—66.

Otto Construction Corp.: *See*—
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Overseas Corp.: *See*—
Rini, Vincenzo. 3,168,661.

Owatonna Tool Co.: *See*—
McClocklin, Samuel B., and Kaplan. 3,168,034.

Owen, Rodney V., and J. Peroutka. Clip for connecting insulated electrical conductors. 3,168,615, 2–2–65, Cl. 174—84.

Owens-Corning Fiberglas Corp.: *See*—
Smith, Roy E., and Shalko. 3,167,902.

Paasche, Jens A. Airbrush mechanism. 3,168,250, 2–2–65, Cl. 239—300.

Padelt, Johannes G., and A. F. Hurlburt, to Grafiex, Inc. Photographic camera. 3,168,025, 2–2–65, Cl. 95—31.

Page, Reginald B.: *See*—
Everest, Julian T., and Page. 3,168,069.

Palfey, Albert J., to The Dow Chemical Co. Panel mounting structure. 3,167,823, 2–2–65, Cl. 20—56.5.

Palmer, Lewis E., to Union Insulating Co. Insulated wiring box made of selectively useable molded sections of thermoplastic material united by solvent welding to form a unitary box. 3,168,613, 2–2–65, Cl. 174—65.

Palopoli, Frank P., and V. J. Feil, to Richardson-Merrell Inc. Trifluoromethyl derivatives of amino triarylethanols, ethanes and ethylenes. 3,168,565, 2–2–65, Cl. 260—570.7.

Parke, Davis & Co.: *See*—
Short, Franklin W. 3,168,527.
Short, Franklin W. 3,168,528.
Short, Franklin W. 3,168,529.
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Short, Franklin W. 3,168,532.

Parker, Allen J. Vent means for bottles and jugs. 3,168,221, 2–2–65, Cl. 222—484.

Parker Bros., Inc.: *See*—
Sinden, Frank W. 3,168,311.

Parker Metal Goods Co.: *See*—
Larson, Robert L. 3,168,200.

Parker, Wilton E.: *See*—
LeMay, Dan B., Parker, Paul, Silver, Stein, and Wood. 3,167,954.

Parmenter, Charles W., J. A. Herrmann, and R. S. Davis, to I-T-E Circuit Breaker Co. Non-interchangeable means for circuit breaker panelboards. 3,168,664, 2–2–65, Cl. 317—119.

Parola, Jean, to Institut Francais du Petrole des Carburants et Lubrifiants. Well drilling apparatus. 3,168,287, 2–2–65, Cl. 254—175.7.

Paschke, Hanns-Dieter, to NSU Motorenwerke Aktiengesellschaft and Wankel G.m.b.H. Rotor cooling arrangement for rotary mechanisms. 3,168,237, 2–2–65, Cl. 230—210.

Pate, Clyde L. Plunger and valve assembly. 3,168,052, 2–2–65, Cl. 103—225.

Patrick, Ernest G., to Robbins Aviation, Inc. Fluid valve. 3,168,108, 2–2–65, Cl. 137—542.

Patrick, Richard M., to Avco Corp. Electrodynamically operated circuit protective device. 3,168,628, 2–2–65, Cl. 200—87.

Paul, Carlton H.: *See*—
LeMay, Dan B., Parker, Paul, Silver, Stein, and Wood. 3,167,954.

Paull, Frank G., Jr., to Kwik Lock Forms Co. Spreader bar and tie rod arrangement for concrete wall forms. 3,167,842. 2–2–65, Cl. 25—131.

Paulsen, Jean-Félix, to Luxembourgeoise de Brevets et de Participations. Packing for use between two parts coaxially surrounding each other. 3,168,319, 2–2–65, Cl. 277—25.

Payne, George B., to Shell Oil Co. Hydroxylation products of dihydropyran derivatives and their hydrogenation to tetrahydroxy alkanes. 3,168,534, 2–2–65, Cl. 260—345.7.

Payne, Paul R., Jr., to Alloyd Electronics. Device for monitoring and controlling evaporation rate in vacuum deposition. 3,168,418, 2–2–65, Cl. 118—7.

Payne, Stanley A. E.: *See*—
Taylor, Alan, and Payne. 3,168,049.

Pedersen, Jack R.: *See*—
Pietrusza, Edward W., and Pedersen. 3,168,557.

Pellerino, Ernest, A. Martorelli, and H. Blank. Automatic machines for filling bottles, cans and the like. 3,168,123, 2–2–65, Cl. 141—147.

Peltier, Raymond J.: *See*—
Goldstein, Herman B., Peltier, and Silvestri. 3,168,415.

Penick, S. B., and Co.: *See*—
Baizer, Manuel M. 3,168,525.

Pennsalt Chemicals Corp.: *See*—
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Perkins, Warren E., to Union Carbide Corp. Thermally insulated bulk storage container. 3,168,362, 2–2–65, Cl. 312—214.

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Owen, Rodney V., and Peroutka. 3,168,615.
Perry, Winthrop L., to Abbott Machine Co., Inc. Winding machine. 3,168,257, 2–2–65, Cl. 242—35.5.
Petermann, Lucien A., to Gulton Industries, Inc. Piesoelectric transducer. 3,168,623, 2–2–65, Cl. 179—100.4.
Peters, Byron M. Lawn edger. 3,168,147, 2–2–65, Cl. 172—15.
Petersen, Gerd: *See*—
Ziegler, Albert, and Petersen. 3,168,445.
Peterson, Frederick J., to General Motors Corp. Accelerometer. 3,167,965, 2–2–65, Cl. 73—492.
Peterson, Vincent C. J., and C. H. Layton, to American Chain & Cable Co., Inc. Bridles. 3,167,903, 2–2–65, Cl. 57—145.
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Kirk, David N., Petrow, and Williamson. 3,168,536.
Petter, Noel A., to Standard Paper Box Corp. Paperboard bottle carrier with reinforced partitions. 3,168,211, 2–2–65, Cl. 220—113.
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Hedegaard, Kristen. 3,168,066.
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Phelps Dodge Corp.: *See*—
Barker, Lyle M. 3,168,396.
Philco Corp.: *See*—
Clark, Thomas R. and W. J. 3,167,821.
Curll, Allan R., Jr. 3,168,738.
Phillips, Benjamin, S. W. Tinsley, and P. S. Starcher, to Union Carbide Corp. Stabilizers for peracids. 3,168,554, 2–2–65, Cl. 260—502.
Phillips, Dennis G.: *See*—
Pratt, Edmund C., House, Smith, and Phillips. 3,167,802.
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Stone, Samuel E., and Phillips. 3,168,178.
Phillips, Lyle C., to Henderson Mfg. Co. Control system for a material spreader machine. 3,167,915, 2–2–65, Cl. 60—52.
Phillips Petroleum Co.: *See*—
Broerman, Arthur B., and Ayers. 3,167,946.
Furrow, Clarence L. 3,168,456.
Loewen, Bruno F. 3,168,383.
Mahan, John E., Turk, and Williams. 3,168,524.
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# CLASSIFICATION OF PATENTS

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| 174 | 3,167,785 | 179.5 | 3,167,867 | 116 | 3,167,952 | 99 | 3,168,406 | 625.17: | 3,168,112 | | 3,168,171 |
| 327 | 3,167,786 | 185 | 3,167,868 | 141 | 3,167,953 | 100– 12 | 3,168,032 | 625.3 | 3,168,111 | 72 | 3,168,172 |
| 4– 58 | 3,167,787 | 201 | 3,167,869 | 168 | 3,167,954 | 179 | 3,168,033 | 636.1 | 3,168,113 | 190– 58 | 3,168,173 |
| 5– 17 | 3,167,788 | 211 | 3,167,870 | 180 | 3,167,955 | 214 | 3,168,034 | 138–105 | 3,168,114 | 192– 28 | 3,168,174 |
| 81 | 3,167,789 | 34– 99 | 3,168,382 | 190 | 3,167,956 | 101–110 | 3,168,035 | 139– 24 | 3,168,115 | 84 | 3,168,175 |
| 332 | 3,167,790 | 137 | 3,168,383 | 193 | 3,167,957 | 129 | 3,168,036 | 57 | 3,168,116 | | 3,168,176 |
| 9– 2 | 3,167,791 | 168 | 3,168,384 | 231 | 3,167,958 | 148 | 3,168,037 | 140–102.5 | 3,168,117 | 193– 25 | 3,168,177 |
| 6 | 3,167,792 | 35– 35 | 3,167,871 | 304 | 3,167,959 | 233 | 3,168,038 | 118 | 3,168,118 | 194– 1 | 3,168,178 |
| 8 | 3,167,793 | 38–135 | 3,167,872 | 349 | 3,167,960 | 287 | 3,168,039 | 123.6 | 3,168,119 | 98 | 3,168,179 |
| 338 | 3,167,794 | 40–124 | 3,167,873 | 356 | 3,167,961 | 415.1 | 3,168,040 | 141– 27 | 3,168,120 | 101 | 3,168,180 |
| 12–146 | 3,167,795 | 145 | 3,167,874 | 398 | 3,167,963 | 103– 1 | 3,168,041 | 141 | 3,168,121 | 195– 28 | 3,168,446 |
| 14– 71 | 3,167,796 | 42– 1 | 3,167,875 | 432 | 3,167,964 | 2 | 3,168,042 | 147 | 3,168,122 | 66 | 3,168,447 |
| 15– 3 | 3,167,797 | 7 | 3,167,876 | 490 | 3,167,962 | 41 | 3,168,044 | | 3,168,123 | | 3,168,448 |
| 115 | 3,167,798 | 69 | 3,167,877 | 492 | 3,167,965 | 44 | 3,168,045 | 284 | 3,168,124 | 70 | 3,168,449 |
| 176 | 3,167,799 | 43– 12 | 3,167,878 | 497 | 3,167,966 | 50 | 3,168,046 | 346 | 3,168,125 | 197– 17 | 3,168,181 |
| 179 | 3,167,800 | 44.96: | 3,167,879 | 74–411 | 3,167,967 | 57 | 3,168,047 | 143– 6 | 3,168,126 | 55 | 3,168,182 |
| 236 | 3,167,801 | 93 | 3,167,880 | 424.8 | 3,167,968 | 89 | 3,168,048 | 19 | 3,168,127 | 198– 20 | 3,168,183 |
| 383 | 3,167,802 | 44– 56 | 3,168,385 | 467 | 3,167,969 | 117 | 3,168,049 | 144– 32 | 3,168,128 | | 3,168,184 |
| 528 | 3,167,803 | 46– 47 | 3,167,881 | 472 | 3,167,970 | 120 | 3,168,043 | 148–175 | 3,168,422 | 33 | 3,168,185 |
| 563 | 3,167,804 | 48–212 | 3,168,386 | 493 | 3,167,971 | 161 | 3,168,050 | | 3,168,423 | | 3,168,186 |
| 568 | 3,167,805 | 50–128 | 3,167,882 | 527 | 3,167,972 | 202 | 3,168,051 | 153– 24 | 3,168,129 | 85 | 3,168,187 |
| 602 | 3,167,806 | 531 | 3,167,883 | 547 | 3,167,973 | 225 | 3,168,052 | 156–244 | 3,168,424 | 113 | 3,168,188 |
| 16– 85 | 3,167,807 | 51– 3 | 3,167,884 | 552 | 3,167,974 | 104– 88 | RE.25,723 | 293 | 3,168,425 | 128 | 3,168,189 |
| 125 | 3,167,808 | 15 | 3,167,885 | 665 | 3,167,975 | | 3,168,053 | 306 | 3,168,426 | 218 | 3,168,190 |
| 17– 1 | 3,167,809 | 26 | 3,167,886 | 75– 5 | 3,168,393 | 105–366 | 3,168,054 | 307 | 3,168,427 | 200– 51.09: | 3,168,624 |
| 18– 2 | 3,167,810 | 55 | 3,167,887 | 68 | 3,168,394 | 376 | 3,168,055 | 442 | 3,168,428 | 84 | 3,168,625 |
| 5 | 3,167,811 | 59 | 3,167,888 | 69 | 3,168,395 | 106– 15 | 3,168,407 | 492 | 3,168,429 | 87 | 3,168,626 |
| 12 | 3,167,812 | 141 | 3,167,889 | 108 | 3,168,396 | 128 | 3,168,408 | 520 | 3,168,430 | | 3,168,627 |
| | 3,167,813 | 164 | 3,167,890 | 128 | 3,168,397 | 168 | 3,168,409 | 157– 1.28: | 3,168,130 | 93 | 3,168,628 |
| 14 | 3,167,814 | 165 | 3,167,891 | 130.5 | 3,168,398 | 299 | 3,168,410 | 158– 76 | 3,168,131 | 104 | 3,168,629 |
| 19 | 3,167,815 | 168 | 3,167,892 | 208 | 3,168,399 | 107– 9 | 3,168,056 | 94 | 3,168,132 | 105 | 3,168,630 |
| | 3,167,816 | 262 | 3,167,893 | 76–107 | 3,167,976 | 14 | 3,168,057 | 115 | 3,168,133 | 122 | 3,168,631 |
| 34 | 3,167,817 | 268 | 3,167,894 | 77– 5 | 3,167,977 | | 3,168,058 | 159– 37 | 3,168,431 | 131 | 3,168,632 |
| 43 | 3,167,818 | 295 | 3,168,387 | 78– 96 | 3,167,978 | | 3,168,059 | 160– 24 | 3,168,134 | 166 | 3,168,633 |
| 19– .25: | 3,167,819 | 53– 35 | 3,167,895 | 80– 7 | 3,167,979 | 108– 53 | 3,168,060 | 229 | 3,168,135 | | 3,168,634 |
| 253 | 3,167,820 | | 3,167,896 | 18 | 3,167,980 | 116 | 3,168,061 | 161– 69 | 3,168,432 | | 3,168,635 |
| 20– 35 | 3,167,821 | 139 | 3,167,897 | 81– 43 | 3,167,981 | 110– 1 | 3,168,062 | 162– 86 | 3,168,433 | 167 | 3,168,636 |
| 52 | 3,167,822 | 56– 23 | 3,167,898 | 82– 4 | 3,167,982 | 18 | 3,168,063 | 124 | 3,168,434 | 202– 39.5 | 3,168,451 |
| 56.5 | 3,167,823 | 25.4 | 3,167,899 | 83– 4 | 3,167,983 | 112–102 | 3,168,064 | 348 | 3,168,435 | 48 | 3,168,450 |
| 69 | 3,167,824 | 377 | 3,167,900 | 34 | 3,167,984 | 105 | 3,168,065 | 165– 70 | 3,168,136 | 204– 44 | 3,168,452 |
| | 3,167,825 | 57– 34 | 3,167,901 | 139 | 3,167,985 | 219 | 3,168,066 | 110 | 3,168,137 | | 3,168,453 |
| | 3,167,826 | 58.83: | 3,167,902 | 160 | 3,167,986 | 114– 66.5 | 3,168,067 | 119 | 3,168,138 | | 3,168,454 |
| | 3,167,827 | 145 | 3,167,903 | 268 | 3,167,987 | 102 | 3,168,068 | 166– 29 | 3,168,139 | 147 | 3,168,455 |
| 71 | 3,167,828 | 58– 22.7 | 3,167,904 | 422 | 3,167,988 | 115– 1 | 3,168,069 | 46 | 3,168,140 | 154 | 3,168,456 |
| 22– 57.2 | 3,167,829 | 23 | 3,167,905 | 449 | 3,167,989 | 116– 28 | 3,168,070 | 55.1 | 3,168,141 | 212 | 3,168,457 |
| 57.4 | 3,167,830 | 35 | 3,167,906 | 658 | 3,167,990 | 117– 26 | 3,168,411 | 66.5 | 3,168,142 | 237 | 3,168,458 |
| 136 | 3,167,831 | 60– 19 | 3,167,907 | 662 | 3,167,991 | 33 | 3,168,412 | | 3,168,143 | 206– 8 | 3,168,191 |
| 23– 2 | 3,168,368 | 35.4 | 3,167,908 | 700 | 3,167,992 | 62 | 3,168,413 | 167– 30 | 3,168,436 | 45.24: | 3,168,192 |
| 14.5 | 3,168,369 | 35.54: | 3,167,911 | 84–240 | 3,167,993 | 102 | 3,168,414 | 42 | 3,168,437 | 56 | 3,168,193 |
| | 3,168,370 | 35.55: | 3,167,912 | 404 | 3,167,994 | 139.4 | 3,168,415 | 65 | 3,168,438 | 65 | 3,168,194 |
| | 3,168,371 | 35.6 | 3,167,909 | 421 | 3,167,995 | 139.5 | 3,168,416 | | 3,168,439 | 207– 1 | 3,168,195 |
| 19 | 3,168,372 | | 3,167,910 | 88– 24 | 3,167,996 | 213 | 3,168,417 | 81 | 3,168,440 | 208– 57 | 3,168,459 |
| 106 | 3,168,373 | 39.02: | 3,167,913 | | 3,167,997 | 118– 7 | 3,168,418 | 88 | 3,168,441 | 67 | 3,168,460 |
| 117 | 3,168,374 | 39.51: | 3,167,914 | 26 | 3,167,998 | 119– 53 | 3,168,071 | | 3,168,442 | 89 | 3,168,461 |
| 135 | 3,168,375 | 52 | 3,167,915 | 57 | 3,168,609 | 120– 83 | 3,168,072 | 170–159 | 3,168,144 | 120 | 3,168,462 |
| 219 | 3,168,376 | 53 | 3,167,916 | | 3,168,610 | 122– 7 | 3,168,073 | 171– 61 | 3,168,145 | 323 | 3,168,463 |
| 230 | 3,168,377 | 54 | 3,167,917 | 61 | 3,168,611 | 235 | 3,168,074 | 172– 7 | 3,168,146 | 209– 90 | 3,168,196 |
| | 3,168,378 | | 3,167,918 | 90– 4 | 3,167,999 | 451 | 3,168,075 | 15 | 3,168,147 | 223 | 3,168,464 |
| 312 | 3,168,379 | 54.5 | 3,167,919 | 11 | 3,168,000 | 510 | 3,168,076 | 42 | 3,168,148 | 210– 7 | 3,168,465 |
| 24– 81 | 3,167,832 | | 3,167,920 | 11.48: | 3,168,001 | 123– 8 | 3,168,077 | 226 | 3,168,149 | 94 | 3,168,466 |
| 158 | 3,167,833 | 54.6 | 3,167,921 | 12 | 3,168,002 | | 3,168,078 | 371 | 3,168,150 | 108 | 3,168,467 |
| 205.1 | 3,167,834 | 61– 2 | 3,167,922 | 13.1 | 3,168,003 | 32 | 3,168,079 | 372 | 3,168,151 | 168 | 3,168,468 |
| 230 | 3,167,835 | 31 | 3,167,923 | 24 | 3,168,004 | 41.26: | 3,168,080 | 174– 57 | 3,168,612 | 232 | 3,168,469 |
| 265 | 3,167,836 | 53.72: | 3,167,924 | 40 | 3,168,005 | 41.74: | 3,168,081 | 65 | 3,168,613 | 239 | 3,168,470 |
| 25– 38 | 3,167,837 | 62– 3 | 3,167,925 | 91–176 | 3,168,006 | 44 | 3,168,082 | 70 | 3,168,614 | 391 | 3,168,471 |
| 130 | 3,167,838 | | 3,167,926 | | 3,168,007 | 84 | 3,168,083 | 84 | 3,168,615 | 211– 13 | 3,168,197 |
| | 3,167,839 | 56 | 3,167,927 | 178 | 3,168,008 | 119 | 3,168,084 | 99 | 3,168,616 | 49 | 3,168,198 |
| 131 | 3,167,840 | 85 | 3,167,928 | 198 | 3,168,009 | 141 | 3,168,085 | 117 | 3,168,617 | 150 | 3,168,199 |
| | 3,167,841 | 101 | 3,167,929 | 420 | 3,168,010 | 148 | 3,168,086 | 175–234 | 3,168,152 | 177 | 3,168,200 |
| | 3,167,842 | 190 | 3,167,930 | 92– 59 | 3,168,011 | 125– 16 | 3,168,087 | 176– 30 | 3,168,443 | 213– 8 | 3,168,201 |
| 26– 51.4 | 3,167,843 | 273 | 3,167,931 | 90 | 3,168,012 | 126– 77 | 3,168,088 | 32 | 3,168,444 | 146 | 3,168,202 |
| 27– 1 | 3,167,844 | 354 | 3,167,932 | 112 | 3,168,013 | 200 | 3,168,089 | 38 | 3,168,445 | 214– 1 | 3,168,203 |
| 28– 1 | 3,167,845 | 371 | 3,167,933 | 118 | 3,168,014 | 263 | 3,168,090 | 177–133 | 3,168,153 | 6 | 3,168,204 |
| | 3,167,846 | 64– 7 | 3,167,934 | 245 | 3,168,015 | 307 | 3,168,091 | 251 | 3,168,154 | 84 | 3,168,205 |
| | 3,167,847 | 19 | 3,167,935 | 93– 8 | 3,168,016 | 127– 50 | 3,168,419 | 178– 6.6 | 3,168,618 | 512 | 3,168,206 |
| 28 | 3,167,848 | 29 | 3,167,936 | 49 | 3,168,017 | 128– 1.2 | 3,168,092 | 179– 1 | 3,168,619 | 215– 1 | 3,168,207 |
| 29– 3 | 3,167,849 | 65– 1 | 3,168,388 | 51 | 3,168,018 | 20 | 3,168,093 | 6 | 3,168,620 | 40 | 3,168,208 |
| 121 | 3,167,850 | 3 | 3,168,389 | 94– 5 | 3,168,019 | 75 | 3,168,094 | | 3,168,621 | 219– 10.55: | 3,168,637 |
| 155 | 3,167,851 | 11 | 3,168,390 | 8 | 3,168,020 | 81 | 3,168,095 | 16 | 3,168,622 | 69 | 3,168,638 |
| 155.55: | 3,167,852 | 107 | 3,168,391 | 95– 1.7 | 3,168,021 | 334 | 3,168,096 | 100.41: | 3,168,623 | 139 | 3,168,639 |
| 155.57: | 3,167,853 | 66– 50 | 3,167,937 | | 3,168,022 | 340 | 3,168,097 | 180– 7 | 3,168,155 | 242 | 3,168,640 |
| 156.4 | 3,167,854 | 70 | 3,167,938 | 11 | 3,168,023 | 404 | 3,168,098 | 19 | 3,168,156 | 250 | 3,168,641 |
| 157 | 3,167,855 | 96 | 3,167,939 | | 3,168,024 | 547 | 3,168,099 | 65 | 3,168,157 | 400 | 3,168,642 |
| 194 | 3,168,380 | 151 | 3,167,940 | 31 | 3,168,025 | 134–137 | 3,168,100 | 82 | 3,168,158 | 220– 24 | 3,168,209 |
| 197.5 | 3,168,381 | 202 | 3,167,941 | 75 | 3,168,026 | 135– 1 | 3,168,101 | 181– 23 | 3,168,159 | 89 | 3,168,210 |
| 413 | 3,167,856 | 70–148 | 3,167,942 | 77.5 | 3,168,027 | 136–133 | 3,168,420 | 24 | 3,168,160 | 113 | 3,168,211 |
| 474.1 | 3,167,857 | 358 | 3,167,943 | 96– 22 | 3,168,400 | 146 | 3,168,421 | 59 | 3,168,162 | 221– 39 | 3,168,212 |
| 487 | 3,167,858 | 382 | 3,167,944 | 33 | 3,168,401 | 137– 18 | 3,168,102 | 182–142 | 3,168,163 | 96 | 3,168,213 |
| 539 | 3,167,859 | 428 | 3,167,945 | 83 | 3,168,402 | 202 | 3,168,103 | 184– 24 | 3,168,161 | 119 | 3,168,214 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 221–264 | 3,168,215 | 248–205 | 3,168,275 | 260–243 | 3,168,517 | 260–666 | 3,168,581 | 285–55 | 3,168,334 | 317–9 | 3,168,681 |
| 299 | 3,168,216 | 206 | 3,168,276 | 248 | 3,168,518 | 672 | 3,168,583 | 70 | 3,168,335 | 18 | 3,168,682 |
| 222–4 | 3,168,217 | 226 | 3,168,277 | 249.9 | 3,168,519 | 673 | 3,168,584 | 81 | 3,168,336 | 119 | 3,168,683 |
| 23 | 3,168,218 | 377 | 3,168,278 | 256.4 | 3,168,520 | 677 | 3,168,585 | 133 | 3,168,337 | | 3,168,684 |
| 82 | 3,168,219 | 250–49.5 | 3,168,646 | | 3,168,521 | 679 | 3,168,592 | 287–52 | 3,168,338 | 138 | 3,168,685 |
| 98 | 3,168,220 | 68 | 3,168,647 | 268 | 3,168,522 | 680 | 3,168,586 | 87 | 3,168,339 | 201 | 3,168,686 |
| 109 | 3,168,221 | 251–181 | 3,168,279 | | 3,168,523 | 683.15 | 3,168,588 | 119 | 3,168,340 | 234 | 3,168,687 |
| 142.1 | 3,168,222 | 217 | 3,168,280 | 290 | 3,168,524 | | 3,168,589 | | 3,168,341 | 318–17 | 3,168,688 |
| 158 | 3,168,223 | 327 | 3,168,281 | 307 | 3,168,525 | | 3,168,590 | 289–2 | 3,168,342 | 23 | 3,168,689 |
| 181 | 3,168,224 | 333 | 3,168,282 | 319 | 3,168,526 | 683.3 | 3,168,587 | 296–27 | 3,168,343 | 127 | 3,168,690 |
| 380 | 3,168,225 | | 3,168,283 | 326.3 | 3,168,527 | 683.62 | 3,168,591 | 28 | 3,168,344 | 207 | 3,168,691 |
| 472 | 3,168,226 | 252–8.5 | 3,168,475 | | 3,168,528 | 880 | 3,168,593 | 100 | 3,168,345 | 321–5 | 3,168,692 |
| 223–66 | 3,168,227 | 62.5 | 3,168,476 | | 3,168,529 | 899 | 3,168,594 | 297–113 | 3,168,346 | 322–28 | 3,168,693 |
| 102 | 3,168,228 | 95 | 3,168,477 | | 3,168,530 | 261–24 | 3,168,595 | 442 | 3,168,347 | 324–6 | 3,168,694 |
| 224–45 | 3,168,229 | 135 | 3,168,478 | | 3,168,531 | 29 | 3,168,596 | 301–6 | 3,168,348 | 33 | 3,168,695 |
| 225–16 | 3,168,230 | 301.1 | 3,168,479 | | 3,168,532 | 50 | 3,168,597 | 37 | 3,168,349 | 43 | 3,168,696 |
| 72 | 3,168,231 | 404 | 3,168,480 | 340.3 | 3,168,533 | 51 | 3,168,598 | 302–14 | 3,168,350 | 73 | 3,168,697 |
| 226–119 | 3,168,232 | 412 | 3,168,481 | 345.7 | 3,168,534 | 65 | 3,168,599 | 303–6 | 3,168,351 | 127 | 3,168,698 |
| 229–17 | 3,168,233 | 415 | 3,168,482 | 397.2 | 3,168,535 | 140 | 3,168,600 | 7 | 3,168,352 | 325–472 | 3,168,699 |
| 51 | 3,168,234 | 426 | 3,168,483 | 397.3 | 3,168,536 | 263–6 | 3,168,297 | 13 | 3,168,353 | 328–62 | 3,168,700 |
| 230–120 | 3,168,235 | 429 | 3,168,484 | 397.4 | 3,168,537 | 28 | 3,168,298 | 305–14 | 3,168,354 | 67 | 3,168,701 |
| 207 | 3,168,236 | 444 | 3,168,485 | 401 | 3,168,538 | | 3,168,299 | 307–88.5 | 3,168,648 | 150 | 3,168,702 |
| 210 | 3,168,237 | 254–8 | 3,168,284 | 404 | 3,168,539 | 264–21 | 3,168,601 | | 3,168,649 | 330–10 | 3,168,703 |
| 274 | 3,168,238 | 131 | 3,168,285 | 414 | 3,168,540 | 29 | 3,168,602 | | 3,168,650 | | 3,168,704 |
| 232–35 | 3,168,239 | 134 | 3,168,286 | 439 | 3,168,541 | 69 | 3,168,603 | | 3,168,651 | | 3,168,705 |
| 233–19 | 3,168,472 | 175.7 | 3,168,287 | 448.2 | 3,168,542 | 100 | 3,168,604 | | 3,168,652 | 18 | 3,168,706 |
| 26 | 3,168,473 | 256–64 | 3,168,288 | | 3,168,543 | 108 | 3,168,509 | | 3,168,653 | 21 | 3,168,707 |
| 33 | 3,168,474 | 259–3 | 3,168,289 | | 3,168,544 | 166 | 3,168,605 | | 3,168,654 | 22 | 3,168,708 |
| 235–54 | 3,168,240 | 8 | 3,168,290 | 453 | 3,168,545 | 281 | 3,168,606 | | 3,168,655 | 30 | 3,168,709 |
| 61.6 | 3,168,643 | 9 | 3,168,291 | 456 | 3,168,546 | 266–5 | 3,168,607 | | 3,168,656 | 34 | 3,168,710 |
| 92 | 3,168,644 | | 3,168,292 | 459 | 3,168,547 | 34 | 3,168,608 | | 3,168,657 | 331–39 | 3,168,711 |
| 130 | 3,168,241 | 81 | 3,168,293 | 461 | 3,168,548 | 267–48 | 3,168,300 | | 3,168,658 | 87 | 3,168,712 |
| 194 | 3,168,645 | 108 | 3,168,294 | | 3,168,549 | 64 | 3,168,301 | 308–3 | 3,168,355 | 105 | 3,168,713 |
| 236–75 | 3,168,242 | 177 | 3,168,295 | 464 | 3,168,550 | | 3,168,302 | 6 | 3,168,356 | 113 | 3,168,714 |
| 237–8 | 3,168,243 | 178 | 3,168,296 | 465 | 3,168,551 | 268–19 | 3,168,303 | 15 | 3,168,357 | 333–11 | 3,168,715 |
| 12.3 | 3,168,244 | 260–2.1 | 3,168,486 | 473 | 3,168,552 | 269–304 | 3,168,304 | 37 | 3,168,358 | 336–120 | 3,168,716 |
| 238–327 | 3,168,245 | 3 | 3,168,487 | 497 | 3,168,553 | 321 | 3,168,305 | 174 | 3,168,359 | 338–31 | 3,168,717 |
| 239–22 | 3,168,246 | 18 | 3,168,488 | 502 | 3,168,554 | 270–58 | 3,168,306 | 193 | 3,168,360 | 42 | 3,168,718 |
| 127 | 3,168,247 | 21 | 3,168,489 | 513 | 3,168,555 | 271–26 | 3,168,307 | 310–8.3 | 3,168,659 | 165 | 3,168,719 |
| 195 | 3,168,248 | 29.4 | 3,168,490 | 514.5 | 3,168,556 | 27 | 3,168,308 | 8.7 | 3,168,660 | 339–220 | 3,168,366 |
| 242 | 3,168,249 | 31.6 | 3,168,491 | 518 | 3,168,557 | 58 | 3,168,309 | 68 | 3,168,661 | 340–146.3 | 3,168,720 |
| 300 | 3,168,250 | 45.85 | 3,168,492 | 534 | 3,168,558 | 272–54 | 3,168,310 | 86 | 3,168,662 | 167 | 3,168,721 |
| 240–62.51 | 3,168,251 | 45.95 | 3,168,493 | 545 | 3,168,559 | 273–1 | 3,168,311 | 90 | 3,168,663 | 172 | 3,168,722 |
| 78 | 3,168,252 | 67 | 3,168,494 | 552 | 3,168,560 | 26 | 3,168,312 | 104 | 3,168,664 | 172.5 | 3,168,723 |
| 241–16 | 3,168,253 | | 3,168,495 | 559 | 3,168,561 | 106.5 | 3,168,313 | 112 | 3,168,665 | | 3,168,724 |
| 19 | 3,168,254 | 77.5 | 3,168,496 | 564 | 3,168,562 | 134 | 3,168,314 | 219 | 3,168,666 | | 3,168,725 |
| 46 | 3,168,255 | | 3,168,497 | 570.5 | 3,168,563 | 145 | 3,168,315 | 312–199 | 3,168,361 | 173 | 3,168,726 |
| 168 | 3,168,256 | 78 | 3,168,498 | | 3,168,564 | 156 | 3,168,316 | 214 | 3,168,362 | 173.1 | 3,168,727 |
| 242–35.5 | 3,168,257 | 79.3 | 3,168,499 | 570.7 | 3,168,565 | 274–10 | 3,168,317 | 231 | 3,168,363 | 252 | 3,168,728 |
| 55.42 | 3,168,258 | 80.3 | 3,168,500 | 570.8 | 3,168,566 | 14 | 3,168,318 | 297 | 3,168,364 | 258 | 3,168,729 |
| 83 | 3,168,259 | 85.3 | 3,168,501 | 583 | 3,168,567 | 277–25 | 3,168,319 | 351 | 3,168,365 | 392 | 3,168,730 |
| 86 | 3,168,260 | 88.1 | 3,168,502 | | 3,168,568 | 110 | 3,168,320 | 313–109.5 | 3,168,667 | 343–6.8 | 3,168,731 |
| 86.51 | 3,168,261 | 88.3 | 3,168,503 | 584 | 3,168,569 | 180 | 3,168,321 | 184 | 3,168,668 | 7.3 | 3,168,732 |
| 129 | 3,168,262 | 93.7 | 3,168,504 | 593 | 3,168,570 | 279–4 | 3,168,322 | 191 | 3,168,669 | 11 | 3,168,733 |
| 244–1 | 3,168,263 | | 3,168,505 | | 3,168,571 | | 3,168,323 | 274 | 3,168,670 | 12 | 3,168,734 |
| 14 | 3,168,264 | | 3,168,506 | 604 | 3,168,572 | 19.7 | 3,168,324 | 350 | 3,168,671 | | 3,168,735 |
| 76 | 3,168,265 | 94.3 | 3,168,507 | 606 | 3,168,573 | 51 | 3,168,325 | 314–69 | 3,168,672 | 17.1 | 3,168,736 |
| 138 | 3,168,266 | | 3,168,508 | 609 | 3,168,574 | 280–11.35 | 3,168,326 | | 3,168,673 | 225 | 3,168,737 |
| | 3,168,267 | 117 | 3,168,510 | 615 | 3,168,575 | 33.99 | 3,168,327 | 315–8.5 | 3,168,674 | 228 | 3,168,738 |
| 246–2 | 3,168,268 | 124 | 3,168,511 | 619 | 3,168,576 | 36 | 3,168,328 | | 3,168,675 | 346–7 | 3,168,367 |
| 249 | 3,168,269 | 146 | 3,168,512 | 624 | 3,168,577 | | 3,168,329 | | 3,168,676 | 74 | 3,168,739 |
| 248–5 | 3,168,270 | 211.5 | 3,168,513 | | 3,168,578 | 47.37 | 3,168,330 | 8.6 | 3,168,677 | | 3,168,740 |
| 129 | 3,168,271 | 239 | 3,168,514 | 635 | 3,168,579 | 106.5 | 3,168,331 | 27 | 3,168,678 | 351–51 | 3,168,741 |
| 139 | 3,168,272 | 239.5 | 3,168,515 | 651 | 3,168,580 | 423 | 3,168,332 | 30 | 3,168,679 | 352–50 | 3,168,742 |
| 157 | 3,168,273 | | 3,168,516 | 665 | 3,168,582 | 285–35 | 3,168,333 | 317–5 | 3,168,680 | 180 | 3,168,743 |
| 176 | 3,168,274 | | | | | | | | | | |


## CLASSIFICATION OF DESIGNS


| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D 4–3 | 200,189 | D10–8 | 200,196 | D26–14 | 200,203 | D34–15 | 200,210 | D54–9 | 200,217 | D62–4 | 200,223 |
| 5 | 200,190 | D14–30 | 200,197 | D29–1 | 200,204 | D44–29 | 200,211 | | 200,218 | D80–8 | 200,224 |
| D 5–4 | 200,191 | D17–5 | 200,198 | D33–3 | 200,205 | D47–7 | 200,212 | D56–4 | 200,219 | 11 | 200,225 |
| D 6–2 | 200,192 | D18–2 | 200,199 | 19 | 200,206 | D48–20 | 200,213 | D58–2 | 200,220 | | 200,226 |
| D 9–2 | 200,193 | | 200,200 | D34–4 | 200,207 | 31 | 200,214 | 5 | 200,221 | D81–20 | 200,227 |
| | 200,194 | | 200,201 | 5 | 200,208 | D52–3 | 200,215 | 8 | 200,222 | D92–15 | 200,228 |
| D10–8 | 200,195 | | 200,202 | | 200,209 | | 200,216 | | | | |


## CLASSIFICATION OF PLANTS


| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P.–46 | 2,469 | P.–84 | 2,468 | P.–85 | 2,470 | | | | | | |



# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

February 2, 1965 Volume 811 Number 1


# TRADEMARKS

## NOTICES

### Service by Publication

A petition to cancel the registration identified below having been filed, and the notice of such proceeding sent by registered mail to registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrant listed herein, his assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Western Skiing, Inc., Los Angeles, Calif., Reg. No. 435,589, Canc. No. 8374.

EDWIN L. REYNOLDS,
*First Assistant Commissioner of Patents.*

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 95,900** (CHEVROLET), Chevrolet Motor Company, Automobiles, motor-vehicles, and parts thereof; **Reg. No. 190,028** (CHEVROLET AND DESIGN), General Motors Corporation, same; **Reg. No. 216,070** (CHEVROLET), same, Automobiles; **Reg. No. 288,418** (CHEVROLET AND DESIGN), Chevrolet Motor Company, Combined automobile polish and cleaner in liquid form; **Reg. No. 570,912** (OK AND DESIGN), General Motors Corporation, Used automobiles and trucks; **Reg. No. 647,235** (CHEVROLET), same, Maintenance and repair service for automotive vehicles, parts, and accessories; **Reg. No. 647,236** (CHEVROLET AND DESIGN), same; **Reg. No. 745,083** (CHEVY), same, Automobiles, filed Apr. 10, 1964, D.C., M.D. Fla. (Tampa), Doc. 64–83–T, *General Motors Corporation* v. *OK Auto Sales, Inc. et al.* Final consent decree; defendants enjoined on or after Jan. 31, 1965 (notice Oct. 14, 1964).

**Reg. No. 190,028.** (See Reg. No. 95,990.)

**Reg. No. 216,070.** (See Reg. No. 95,990.)

**Reg. No. 246,665** (BRIGHT STAR BRIGHT STAR BATTERY CO. ETC. AND DESIGN), Bright Star Battery Company, Electric batteries—viz, A and B batteries; **Reg. No. 247,941** (DESIGN OF STAR IN CIRCLE), same, Electric batteries—viz, flashlight batteries, radio and wireless batteries, dry cells, etc.; **Reg. No. 362,599** (BRIGHT STAR AND DESIGN), same, Dry cell batteries and flashlight casings; **Reg. No. 575,640**, same, Photoflash battery and bulb tester; **Reg. No. 707,501**, same, Bright Star Industries, same; **Reg. No. 714,670** (BRIGHT STAR AND DESIGN OF STAR), same, Dry cell batteries, radio batteries, ignition batteries, etc., filed Oct. 29, 1964, D.C., S.D.N.Y., Doc. 64/3317, *Bright Star Industries, Incorporated* v. *Star-Lite Electronics Corp. et ano.*

**Reg. No. 247,941.** (See Reg. No. 246,665.)

## CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1964

| | |
|---|---|
| Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] | 15,450 |
| Date of oldest new application | June 1, 1964 |
| Date of oldest amended application | May 4, 1964 |

**J. H. MERCHANT, Director, Trademark Examining Operation**

| TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application: New | Oldest Application: Amended |
|---|---|---|
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44 | 6-16-64 | 6-1-64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 6-1-64 | 5-4-64 |
| Renewals (All Classes) | 12-11-64 | 12-10-64 |
| Sec. 12 (c) Publications (All Classes) | 12-14-64 | ..... |

Applications filed during the month of December 1964—2,135

| | |
|---|---|
| Registrations Issued | 400—No. 784,203 to No. 784,602 |
| Renewals Issued | 44 |


The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

**Reg. No. 326,418.** (See Reg. No. 95,990.)

**Reg. No. 365,331** (NEWS-WEEK AND DESIGN), News-Week, Inc., Weekly magazine; **Reg. No. 385,859** (NEWS WEEK THE MAGAZINE OF NEWS SIGNIFICANCE), Weekly Publications, Inc., same; **Reg. No. 663,656** (NEWS-WEEK), same; **Reg. No. 663,657** (NEWSWEEK AND DESIGN), same; **Reg. No. 663,659**, same; **Reg. No. 640,346**, same, filed Oct. 29, 1964, D.C., Dist. of Columbia, Doc. 2676–64, *Newsweek, Inc.* v. *Newsweek Publishers, Inc. et al.*

**Reg. No. 362,589.** (See Reg. No. 246,665.)

**Reg. No. 385,859.** (See Reg. No. 305,331.)

**Reg. No. 570,913.** (See Reg. No. 95,990.)

**Reg. No. 575,640.** (See Reg. No. 246,665.)

**Reg. No. 663,656.** (See Reg. No. 305,331.)

**Reg. No. 663,657.** (See Reg. No. 305,331.)

**Reg. No. 663,659.** (See Reg. No. 305,331.)

**Reg. No. 640,346.** (See Reg. No. 305,331.)

**Reg. No. 647,235.** (See Reg. No. 95,990.)

**Reg. No. 647,236.** (See Reg. No. 95,990.)

**Reg. No. 707,501.** (See Reg. No. 246,665.)

**Reg. No. 714,670.** (See Reg. No. 246,665.)

**Reg. No. 745,683.** (See Reg. No. 95,990.)

# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 154,011. **Chesley Industries, Inc.**, Southfield, Mich. Filed Sept. 27, 1962.

**CHESLEY**

**Class 2—Receptacles**

For Display Devices—Namely, Racks and Baskets.
First use Feb. 1, 1949.

**Class 19—Vehicles**

For Carts for Storing and Displaying Retail Merchandise.
First use Feb. 1, 1949.

**Class 32—Furniture and Upholstery**

For Shelves.
First use November 1957.

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SN 163,015. **Wolf Corporation**, Fort Wayne, Ind. Filed Feb. 18, 1963.

**SOF-TEX**

**Class 24—Laundry Appliances and Machines**

For Ironing Board Pads and Padding, and Press Table Pads.

**Class 32—Furniture and Upholstery**

For Mattresses and Upholstered Furniture.

First use Dec. 19, 1962.

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SN 170,135. **Wah Chang Corporation**, New York, N.Y. Filed May 31, 1963.

WAH CHANG

**Class 6—Chemicals and Chemical Compositions**

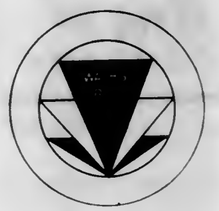
For Chemicals—Namely, Ore Concentrates and Compounds Having as an Ingredient Thereof a Metal, Namely, Tungsten, Molybdenum, Columbium, Tantalum, Zirconium, Hafnium, Tin and Tintanium.

**Class 14—Metals and Metal Castings and Forgings**

For Metals—Namely, Tungsten, Molybdenum, Columbium, Tantalum, Zirconium, Hafnium, Tin and Alloys Thereof.

First use Apr. 20, 1962.

SN 170,226. **Ruhrchemie Aktiengesellschaft**, Oberhausen-Holten, Germany. Filed June 8, 1963.



Priority claimed under Sec. 44(d) on German application filed Dec. 15, 1962; Reg. No. 771,513, dated Mar. 15, 1963. The term "Wachs," which is German for "wax" is disclaimed apart from the mark.

**Class 4—Abrasives and Polishing Materials**

For Floor Polishing Waxes Produced of Petroleum Waxes.

**Class 15—Oils and Greases**

For Petroleum Waxes.

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SN 173,427. **Century Wheels, Inc.**, Highland Park, Ill. Filed July 22, 1963.




**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Tools for Use in Connection With Brake Drum Repair, Installation and Replacement.

**Class 26—Measuring and Scientific Appliances**

For Brake Drum Gauges.

First use May 4, 1963.

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SN 181,497. **Ruhrchemie Aktiengesellschaft**, Oberhausen-Holten, Germany. Filed Nov. 19, 1963.

RCH-Wax-R21

Priority claimed under Sec. 44(d) on German application filed June 1, 1963; Reg. No. 776,574, dated Aug. 28, 1963.

**Reg. No. 288,418.** (See Reg. No. 95,990.)

**Reg. No. 305,331** (NEWS-WEEK AND DESIGN), News-Week, Inc., Weekly magazine; **Reg. No. 385,859** (NEWS WEEK THE MAGAZINE OF NEWS SIGNIFICANCE), Weekly Publications, Inc., same; **Reg. No. 603,656** (NEWS-WEEK), same; **Reg. No. 603,657** (NEWSWEEK AND DESIGN), same; **Reg. No. 603,659**, same; **Reg. No. 640,346**, same, filed Oct. 29, 1964, D.C., Dist. of Columbia, Doc. 2676–64, *Newsweek, Inc.* v. *Newsweek Publishers, Inc. et al.*

**Reg. No. 362,599.** (See Reg. No. 246,665.)

**Reg. No. 385,859.** (See Reg. No. 305,331.)

**Reg. No. 570,912.** (See Reg. No. 95,990.)

**Reg. No. 575,640.** (See Reg. No. 246,665.)

**Reg. No. 603,656.** (See Reg. No. 305,331.)

**Reg. No. 603,657.** (See Reg. No. 305,331.)

**Reg. No. 603,659.** (See Reg. No. 305,331.)

**Reg. No. 640,346.** (See Reg. No. 305,331.)

**Reg. No. 647,235.** (See Reg. No. 95,990.)

**Reg. No. 647,236.** (See Reg. No. 95,990.)

**Reg. No. 707,501.** (See Reg. No. 246,665.)

**Reg. No. 714,670.** (See Reg. No. 246,665.)

**Reg. No. 745,683.** (See Reg. No. 95,990.)

**Class 4—Abrasives and Polishing Materials**

For Shoe Polishing Waxes Produced of Petroleum Waxes.

**Class 15—Oils and Greases**

For Petroleum Waxes.

---

SN 189,890. The Fullwell Motor Products Co., Cleveland, Ohio. Filed Mar. 30, 1964.

FMP COMPANY

No claim is made to the word "Company" apart from the mark as shown.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Screws and Nuts, Fender and Door Molding Clips, and License Plate Bolts and Nuts.
First use on or about June 10, 1963.

**Class 19—Vehicles**

For Mirrors for Automobiles and Coil Spring Booster Stabilizers.
First use on or about June 18, 1963.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Signal Lights, Switches, Vehicle Directional Lamps and Signal Lamps.
First use on or about June 20, 1963.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Automatic Transmission Parts, Retaining Ring Assortments, Trunnion Repair Kits, and Muffler Clamps.
First use on or about June 10, 1963.

**Class 25—Locks and Safes**

For Key Blanks.
First use on or about June 12, 1963.

**Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires**

For Gaskets, Seals and Seal Kits.
First use on or about June 15, 1963.

---

SN 191,035. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed Apr. 14, 1964.



Owner of Reg. No. 765,230, 769,043, and 779,591.

**Class 4—Abrasives and Polishing Materials**

For Furniture Wax.
First use in or about January 1964.

**Class 5—Adhesives**

For Sealing Wax Used To Seal Letters and Documents.
First use in or about January 1964.

**Class 51—Cosmetics and Toilet Preparations**

For After Shave Lotion, Bubble Bath, Cologne, Perfumed Spray, Personal Deodorant, Hand Cream, Sachet, Talcum, and Toilet Water.
First use on or about June 30, 1954, on toilet water.

**Class 52—Detergents and Soaps**

For Facial Soap, Hair Shampoo, and Laundry Soap.
First use on or about June 30, 1952, on facial soap.

---

SN 194,485. Golden Shield Corporation, Batavia, N.Y. Filed May 28, 1964.

## ASTROTONE

Owner of Reg. No. 778,099.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Television Receiving Sets.

**Class 36—Musical Instruments and Supplies**

For Phonographs.

First use May 25, 1964.

---

SN 194,800. Lewis D. Hall, d.b.a. Andar Company, Palo Alto, Calif. Filed June 3, 1964.

## ORBITRON

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Vacuum Pumps.

**Class 26—Measuring and Scientific Appliances**

For Vacuum Gauges.

First use May 1, 1964.

---

SN 197,348. Topp Import & Export, Inc., Miami, Fla. Filed July 7, 1964.

## FIESTA

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Radios.

**Class 36—Musical Instruments and Supplies**

For Tape Recorders.

First use Feb. 5, 1964.

---

SN 197,802. Waterloo Idea Companies, Waterloo, Iowa. Filed July 13, 1964.

WICO *"means dependable performance"*

**Class 2—Receptacles**

For Compartmented Trays for Temporary Storage of Pocket Articles, Wooden Salad Serving Pieces, Trays and Ice Buckets.



**Class 8—Smokers' Articles, Not Including Tobacco Products**

For Cigarette Lighters on Wooden Bases, Ash Trays in Decorative and Ornamental Bases, Desk Pieces in the Form of Lighter and Clock Items on a Single Base, Combination Lighter, Ash Tray Units, Smokers' Sets Including Cigarette Holder and Cigarette Lighter, and Ashtrays.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Sterling Silver Knives, Forks, Spoons, Cake Breakers and Servers, Jelly Spreaders, Salt and Pepper Mill Sets and Bottle Openers.

**Class 28—Jewelry and Precious-Metal Ware**

For Sterling Silver Pieces—Namely, Carving Sets, Cheese Slicers and Spreaders, Cigarette Urns and Letter Openers.

**Class 33—Glassware**

For Silver Banded Crystal—Namely, Beverage Glasses, Salt and Pepper Sets, Cocktail Sets, Beverage Servers, Cream and Sugar Sets, Bowls, Dishes, Trays, Oil and Vinegar Sets, Condiment Sets, Relish Servers, Casseroles, Coffee Carafes, Cups, Cordial Glasses, Punch Bowl Sets, Bridge Set Units Which Include Glass Ash Trays and Beverage Glasses, and Also Plain Glassware Items—Namely, Tumblers, Jiggers, Jars, Decanters, Cocktail Glasses, Mugs, Salt and Pepper Shakers, Sugar and Creamer Sets and Cups.

**Class 46—Foods and Ingredients of Foods**

For Cheese, Cheese Spreads, Fruit Cakes, Fruit Preserves, Smoked Oysters, Anchovies, Shelled Nuts, Spices, Dried Fruit, Sundae Toppings of a Flavored Syrup and Fudge Nature, Unpopped Popcorn, Cookies, Salted Nuts, Mixed Nuts, Fresh Fruits, Glazed Fruits, Prepared Fish in Jars and Cans, Candy, Jelly, Frozen Turkeys, and Appetizers Consisting of Pretzel Pieces, Cheese Curls, Parched Corn, Mexican Pumpkin Seeds, and Bacon Rinds.

First use June 1, 1964; Dec. 26, 1962, as to "Wico" and design.

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# SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

## Class 1—Raw or Partly Prepared Materials

SN 193,232. L. Teweles Seed Co., Milwaukee, Wis. Filed May 11, 1964.

## SUGHAGE

For Grass Seed.
First use May 5, 1964.

---

SN 195,804. Plastic Materials & Polymers, Inc. of New England, Slatersville, R.I. Filed June 16, 1964.

## STRIP-GRIP

For Extruded Plastic Rods of Indefinite Length Used for Manufacturing Tool Handles.
First use Apr. 20, 1964.

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SN 198,001. Supergene Seeds, Inc., Lincoln, Nebr. Filed July 16, 1964.

SuperGene

For Agricultural Seeds Such as Corn and Milo.
First use Apr. 29, 1964.

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SN 199,048. The Fullers' Earth Union Limited, Redhill, Surrey, England. Filed Aug. 3, 1964.

## LAPONITE

Owner of British Reg. No. 850,324, dated June 13, 1963.
For Hydrous Magnesium Silicate Clays.

SN 199,356. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Aug. 6, 1964.

## HEVEATUF

Owner of Reg. No. 293,904.
For Chemically Modified Natural Rubber.
First use May 14, 1964.

---

SN 199,733. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Aug. 12, 1964.

## RIB-A-TUF

For Synthetic Rubber for Use in the Manufacture of Resilient Vehicle Tires and Tire Tread Rubber.
First use Aug. 3, 1964.

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## Class 2—Receptacles

SN 169,423. Carling Brewing Company Incorporated, d.b.a. Carling Brewing Company, Cleveland, Ohio. Filed May 22, 1963.

## TAB OPEN

For Container Having an Integral Opening Device Provided Therefor, Which Container Is Used for a Beverage—Namely, Beer.
First use May 1, 1963.

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SN 178,578. Auto-Pak Incorporated, Chicago, Ill. Filed Oct. 9, 1963.

AP

For Plastic Containers Having Removable Tops Used for Food Packaging.
First use on or about July 10, 1963.

SN 188,429. Diamond National Corporation, New York, N.Y. Filed Mar. 11, 1964.

## FRUITAINER

Owner of Reg. No. 575,655.
For Pulp Trays Without Hinged Covers.
First use Nov. 18, 1963.

---

SN 189,081. KVP Sutherland Paper Company, Kalamazoo, Mich. Filed Mar. 19, 1964.

## LUNCHPAK

For Paper and Paperboard Trays for Use in Packaging Food Products.
First use Mar. 11, 1964.

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SN 191,829. Barlow Manufacturing Company, Inc., Amsterdam, N.Y. Filed Apr. 23, 1964.

## DEKADRUM

For Shipping Drum-Type Containers Fabricated From Metal and Textile Materials.
First use Aug. 9, 1963.

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SN 193,814. Republic Container Corp., Jersey City, N.J. Filed May 19, 1964.

REP Cote

For Folding Boxes, Set-Up Boxes, Cartons, and Point-of-Purchase Display Containers, All Made of Corrugated Board or Chip Board.
First use August 1963.

---

SN 193,815. Republic Container Corp., Jersey City, N.J. Filed May 19, 1964.

REP Gard

For Folding Boxes, Set-Up Boxes, Cartons, and Point-of-Purchase Display Containers, All Made of Corrugated Board or Chip Board.
First use August 1963.

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SN 195,049. American Can Company, Easton, Pa. Filed June 8, 1964.

## TOP BANANA

For Disposable Plastic Dishes.
First use Apr. 18, 1964.

---

SN 195,069. Crown Zellerbach Corporation, San Francisco, Calif. Filed June 8, 1964.

## CROWNFIBRE

For Spiral Wound Cans Made From Paper.
First use Apr. 24, 1964.

SN 195,500. Bemis Bro. Bag Company, Minneapolis, Minn. Filed June 12, 1964.

PANEL PAK

Owner of Reg. Nos. 679,809 and 710,877.
For Paper Bags.
First use Apr. 15, 1959.

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SN 196,497. Billy J. Blundell, Oklahoma City, Okla. Filed June 26, 1964.

## DELKIDS

For Coasters.
First use Apr. 7, 1964.

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SN 199,711. Ernest D. Clark, Worcester, Mass. Filed July 29, 1964.

PERFECTPAK

For Cartons and Shipping Boxes and Cases.
First use on or about July 7, 1949.

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### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 197,514. Snap-On Tools Corporation, Kenosha, Wis. Filed July 9, 1964.

## SNAP-ON

For Traveling Cases, Catalogue Cases, Kit Bags, Protective Cases for Carrying Pocket Articles, and Cases of the Hand Carrying Type for Holding Items for Display and Precise Arrangements, Pocket Books and Portfolios.
First use during 1929.

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### Class 4 — Abrasives and Polishing Materials

SN 195,970. James H. Rhodes & Company, Chicago, Ill. Filed June 18, 1964.

## BEAVER

Owner of Reg. No. 342,244.
For Nylon Floor Pads for Use in Cleaning and Polishing Floors and Nylon Pads and Pad Forming Material for General Cleaning and Scouring Purposes Impregnated With Resins and Abrasive Particles.
First use June 20, 1961.

---

SN 197,521. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed July 9, 1964.

## PARAGON

For Floor Polish.
First use July 30, 1962.



SN 197,694. Star Chemical Co., Inc., Westchester, Ill. Filed July 16, 1964.

## PENTHOUSE

For Liquid Furniture Polish.
First use May 28, 1964.

---

SN 198,219. Rexall Drug and Chemical Company, d.b.a. United Cotton Products Co., Los Angeles, Calif. Filed July 20, 1964.

## REX•CUT

For Abrasives—Namely, Sanding Discs and Grinding Wheels.
First use Apr. 14, 1964.

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### Class 5 — Adhesives

SN 197,313. Nashua Corporation, Nashua, N.H. Filed July 7, 1964.

## RHINO-PLY

Owner of Reg. No. 123,471.
For Gummed Package Sealing Tapes.
First use at least as early as June 18, 1964.

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### Class 6 — Chemicals and Chemical Compositions

SN 192,278. Gestetner Limited, London, England. Filed Apr. 29, 1964.

## GESTETNER

Owner of British Reg. Nos. 836,342, 836,343, and 836,344, dated June 29, 1962.
For Chemical Products Used in Printing and Duplicating—Namely, Acids and Solutions of Etching Fluids for Use in the Fountains of Duplicating Apparatus and on Metal Plates; Plate Gum Desensitisers and Developers, Erasing Fluid, Correcting Fluid for Stencils and Print Solutions for Making Plates Receptive to Printing Inks.

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SN 199,064. The Hubbard-Hall Chemical Company, Waterbury, Conn. Filed Aug. 3, 1964.

## alban

For Swimming Pool Algaecide.
First use June 1960.

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SN 199,404. Shell Oil Company, New York, N.Y. Filed Aug. 6, 1964.

## ATALAN

For Insecticide.
First use July 20, 1964.

SN 199,440. Arkansas Co., Inc., Newark, N.J. Filed Aug. 7, 1964.

## PARAPON

Owner of Reg. No. 326,817.
For Sulfated Fatty Esters Useful as Dispersing and Levelling Agents for Dyes.
First use January 1935.

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SN 199,441. Arkansas Co., Inc., Newark, N.J. Filed Aug. 7, 1964.

## ANTHOMINE

Owner of Reg. No. 441,716.
For Dyeing Assistant and Levelling Agent for Wool and Wool Combinations Including Amino Fatty Acid Condensation Products and Nonionic Fatty Esters.
First use January 1948.

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SN 199,442. Arkansas Co., Inc., Newark, N.J. Filed Aug. 7, 1964.

## PARAMINE

Owner of Reg. No. 366,233.
For Amido Fatty Acid Condensation Product Serving as a Cationic Softener for Textile Fibers.
First use Jan. 15, 1936.

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SN 199,525. American Cyanamid Company, Wayne, N.J. Filed Aug. 10, 1964.

## AQUASOL

Owner of Reg. No. 192,050.
For Soluble Sulphonated Oil To Assist in Securing Softness and Luster of Finish and a Greater Penetration of Dyestuffs on Textile and Leather.
First use Mar. 1, 1921.

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### Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 189,895. Seymour M. Gluck, Far Rockaway, N.Y. Filed Mar. 30, 1964.

## COFFIN NAILS

Owner of Reg. Nos. 777,210, 778,664, and others.
For Cigarette Cases, Specifically, a Novelty Cigarette Case With Nails or Pictures of Nails Permanently Affixed, Applied, Embossed, or Inscribed on Its Surface.
First use Oct. 2, 1963.

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SN 202,434. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## CENTENNIAL

For Smokers' Pipes.
First use 1946.

SN 202,441. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## STEMBITER

For Smokers' Pipes.
First use 1937.

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SN 202,443. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## "600" SYNCRO-LOK

Owner of Reg. Nos. 690,397 and 431,467.
For Smokers' Pipes.
First use May 1958.

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SN 202,444. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## SIGNET

For Smokers' Pipes.
First use June 1955.

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SN 202,445. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## SETTER

For Smokers' Pipes.
First use June 1960.

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SN 202,447. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## PUG

For Smokers' Pipes.
First use December 1960.

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SN 202,448. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## AIROGRATE

For Smokers' Pipes.
First use May 1956.

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SN 202,449. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## SILHOUETTE

For Smokers' Pipes.
First use 1946.

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SN 202,451. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## PRESENTATION

For Smokers' Pipes.
First use June 1957.

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SN 202,452. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## ENVOY

For Smokers' Pipes.
First use June 12, 1964.

SN 202,455. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## CHINRESTER

For Smokers' Pipes.
First use 1927.

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SN 202,456. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## CHECKER

For Smokers' Pipes.
First use December 1958.

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SN 202,457. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## NINETY-FIVER

For Smokers' Pipes.
First use 1946.

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SN 202,458. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## MANDARIN

For Smokers' Pipes.
First use May 1958.

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SN 202,459. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## FINE LINE

For Smokers' Pipes.
First use 1961.

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SN 202,460. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## "500" SYNCRO-LOK

Owner of Reg. Nos. 690,397 and 431,467.
For Smokers' Pipes.
First use May 1957.

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SN 202,462. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## V.F.Q.

For Smokers' Pipes.
First use 1945.

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SN 202,463. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## TUCKAWAY

For Smokers' Pipes.
First use 1947.

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SN 202,464. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

## THORN

For Smokers' Pipes.
First use 1948.



SN 202,569. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

## Gold Crest

For Smokers' Pipes.
First use 1951.

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SN 202,573. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

## SPARTAN

For Smokers' Pipes.
First use January 1964.

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SN 202,574. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

## VARSITY

For Smokers' Pipes.
First use January 1951.

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SN 202,579. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

## CONNOISSEUR

For Smokers' Pipes.
First use 1946.

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SN 202,580. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

## Crest

For Smokers' Pipes.
First use 1950.

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### Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 191,346. AMP Incorporated, Harrisburg, Pa. Filed Apr. 17, 1964.

## AMP

Owner of Reg. Nos. 405,714, 747,195, and others.
For Explosive Cartridges for Use With Powder-Actuated Tools.
First use Apr. 10, 1964.

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SN 202,325. Stoeger Arms Corporation, South Hackensack, N.J. Filed Sept. 21, 1964.

## STOEGER

For Firearms, Gun Parts and Gun Attachments.
First use Sept. 1, 1928.



### Class 11 — Inks and Inking Materials

SN 192,279. Gestetner Limited, London, England. Filed Apr. 29, 1964.

## GESTETNER

Owner of British Reg. Nos. 836,343 and 836,344, dated June 29, 1962.
For Printing Inks, Inks for Engraving and Leather, Duplicating Inks, Writing and Ruling Inks, Brush Inks, Stamp Pad Inks, Developing Inks, Varnishes for Thinning Printing Inks To Make Them Easier in Working, Carbon Paper Ribbon, and Carbon Paper.

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### Class 12 — Construction Materials

SN 153,683. Kenneth H. Ripnen, d.b.a. Glowing Ceilings Company, New York, N.Y. Filed Sept. 21, 1962.

## GLOWING CEILING

Applicant makes no claim to the word "Ceiling" apart from the mark shown.
For Ceiling Systems Comprising Perforated Translucent Panels and Metal Supports and Fasteners Sold as a Unit.
First use Aug. 20, 1962.

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SN 161,812. National Gypsum Company, Buffalo, N.Y. Filed June 19, 1963.

## WOODROCK

For Asbestos-Cement Building Boards, Including Clapboards, Panels, Battens, and Trim.
First use Aug. 4, 1961.

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SN 183,421. Lexsuco, Inc., Solon, Ohio. Filed Dec. 23, 1963.

## LEXCEL

For Panels for Use in the Building or Construction Field and in Allied Fields.
First use Oct. 31, 1963.

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SN 183,897. Electro Refractories & Abrasives Corporation, Buffalo, N.Y. Filed Jan. 2, 1964.

## NONGRO

For Refractories, Specifically Fire Brick, Slabs, Tiles, Blocks, Furnace Linings, Hearths, Muffles, Tubes, and Posts.
First use June 9, 1942.

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SN 184,648. Preco Chemical Corporation, Westbury, N.Y. Filed Jan. 15, 1964.

## JEWEL-TEX

For Decorative Concrete Blocks and Ingredients Therefor.
First use Dec. 19, 1963.

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SN 187,252. Component Engineering Co., Lake Oswego, Oreg. Filed Feb. 24, 1964.

## TRUELINE TRUSS

Applicant disclaims the word "Truss."
For Wooden Trusses.
First use Aug. 1, 1963.

SN 187,394. Paolo Capoferri and Giuseppe Capoferri, d.b.a. Fulget dei Fratelli Capoferri, Bergamo, Italy. Filed Feb. 25, 1964.

## SILIPOL

Owner of Italian Reg. No. 163,122, dated Dec. 10, 1963.
For Building Material of Marble and Granite Composition—viz., Linings for Walls, Ceilings, and Floors; Tiles, Slabs, and Slates.

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SN 188,928. Syro Steel Company, Girard, Ohio. Filed Mar. 17, 1964.

## STEELBIN

For Pre-Fabricated Gravity-Type Retaining Walls.
First use Feb. 10, 1964.

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SN 188,953. The Cambridge Tile Manufacturing Company, Cincinnati, Ohio. Filed Mar. 18, 1964.

## CAM KOTE

Applicant makes no claim to the exclusive right to the use of the word "Kote" separate and apart from the mark as shown. Owner of Reg. Nos. 349,073, 764,922, and others.
For Ceramic Tile Floor and Joint Sealer.
First use Mar. 2, 1964.

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SN 192,903. Doughboy Industries, Inc., New Richmond, Wis. Filed May 7, 1964.

AMERICAN Coronado

Owner of Reg. Nos. 759,044 and 759,046.
For Swimming Pools.
First use Jan. 2, 1964.

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SN 193,494. Peachtree Doors, Inc., Atlanta, Ga. Filed May 14, 1964.

## CHROMALUME

For Bath Enclosures of the Type Including Doors and Mounting Frames and Being More or Less Permanently Attached to the Building Structure.
First use Apr. 22, 1964.

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SN 197,001. Weyerhaeuser Company, Tacoma, Wash. Filed July 2, 1964.

## THRIFTITE

For Lumber.
First use Jan. 28, 1959.

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SN 197,002. Weyerhaeuser Company, Tacoma, Wash. Filed July 2, 1964.

## SPECIAL-TITE

For Lumber.
First use Jan. 7, 1959.

SN 197,157. National Gypsum Company, Buffalo, N.Y. Filed July 29, 1964.

## KAL-KORE

Owner of Reg. No. 749,297.
For Gypsum Board for Use as Plaster Base.
First use Apr. 26, 1962.

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SN 197,159. National Gypsum Company, Buffalo, N.Y. Filed July 6, 1964.

## KAL-MESH

Owner of Reg. No. 749,297.
For Reinforcing Tape for Concealed Joints in Wall Construction.
First use May 17, 1962.

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SN 197,160. National Gypsum Company, Buffalo, N.Y. Filed July 29, 1964.

## SUPER-KAL

Owner of Reg. No. 749,297.
For Gypsum Plaster.
First use Apr. 21, 1964.

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SN 197,706. Granite City Steel Company, Granite City, Ill. Filed July 13, 1964.

## HERCULES

Owner of Reg. No. 770,578.
For Corrugated Galvanized Steel Sheets.
First use October 1961.

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SN 197,818. Butler Manufacturing Company, Kansas City, Mo. Filed July 14, 1964.

BUTLER

Owner of Reg. Nos. 528,706, 722,960, and others.
For Fabricated Metal Buildings, Hangars, Shelters, Header Houses, Walkways and Parts Thereof; Preformed Metal Panels for Buildings and Signs; and Translucent Plastic Panels for Use as Windows, Walls, Roofs, Partitions and the Like.
First use in or about 1916 on fabricated metal buildings and parts thereof.

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SN 198,156. General Refractories Company, Philadelphia, Pa. Filed July 20, 1964.

X-LOK

Owner of Reg. No. 414,590.
For Refractory Brick for Furnace Arches.
First use June 29, 1963.

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SN 198,159. Globe Roofing Products Co., Inc., Chicago, Ill. Filed July 20, 1964.

## PERMA-STEEL

For Clapboard Siding.
First use June 8, 1964.



SN 198,311. American Brick Company, Inc., Detroit, Mich. Filed July 22, 1964.

ambriCo

For Brick Veneering and Facings.
First use Jan. 25, 1960.

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## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 131,483. Wood B. Hedgepeth, Atlanta, Ga. Filed Nov. 7, 1961.

## FRY-O-MATIC

For Deep Fat Fryers for Industrial and Commercial Use.
First use in or about June 1957.

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SN 165,416. Dura-Ware Co., New York, N.Y. Filed Mar. 26, 1963.

CRUSADER

For Aluminum Cooking Utensils.
First use Mar. 1, 1960.

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SN 194,258. Tendler Products, Inc., St. Louis, Mo. Filed May 25, 1964.

T-P

For Hollow Wall Anchors for Hanging Mirrors, Drapery Rods, Decorations, Pictures, Fixtures, and the Like.
First use Mar. 26, 1964.

SN 198,485. Magna-Cook Corp. of America, Belleville, N.J. Filed July 24, 1964.

MAGNA-COOK

For Holloware and Cooking Utensils—Namely, Pots and Pans.
First use June 10, 1964.

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## Class 14—Metals and Metal Castings and Forgings

SN 169,911. Curtiss-Wright Corporation, Buffalo, N.Y. Filed May 29, 1963.

ISO-PROCESS STEEL

The word "Steel" is disclaimed apart from the mark as shown.
For Extruded, Cast and Forged Steel Shapes.
First use Mar. 8, 1963.

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SN 189,007. National Steel Corporation, Pittsburgh, Pa. Filed Mar. 18, 1964.

## WEIRFOIL

Owner of Reg. Nos. 414,611, 737,015, and others.
For Steel Foil.
First use on or about Feb. 7, 1964.

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SN 194,611. Hastings & Co., Inc., Philadelphia, Pa. Filed June 1, 1964.

## METALITE

For Metalized Hot Press Stamping Material.
First use October 1956.

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SN 204,955. Bauer Equipment & Supply Company, Chicago, Ill. Filed Oct. 28, 1964.

## BESCO

For Heat Resistant and Abrasion Resistant Ferrous Castings Such as Replacement Parts for Crushers, Pulverizers and Grinding Mills, Pipe and Fittings, Bucket Elevators and Drag Conveyors, Replacement Wearing Parts for Track-Laying Type Tractors, Shovels and Drag Lines, Metal Liners for Chutes and Hoppers, and Heat Resistant Grates for Material Coolers.
First use May 31, 1960.

## Class 15—Oils and Greases

SN 113,635. Gastown, Inc. of Delaware, Cleveland, Ohio, assignee of Gastown, Inc., Cleveland, Ohio. Filed Feb. 14, 1961.

### NO-ICE-ATAL

For Gasoline Additives Sold Only in the Form of Gasoline Containing the Same.
First use Dec. 22, 1960.

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SN 189,802. George W. Pickering Company, Salem, Mass. Filed Mar. 27, 1964.

Clearative

For Additive for Fuel Oils That Aids Combustion and Inhibits Corrosion.
First use on or about Jan. 15, 1963.

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SN 191,754. Eastman Kodak Company, Rochester, N.Y. Filed Apr. 22, 1964.

### MYVACENE

Owner of Reg. Nos. 416,826, 767,000, and others.
For Lubricating and Sealing Compounds.
First use Apr. 3, 1964.

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SN 202,835. Signal Oil and Gas Company, Los Angeles, Calif. Filed Sept. 28, 1964.

HANCOCK

Owner of Reg. Nos. 213,522, 276,862, and 303,972.
For Petroleum and Petroleum Products—Namely, Gasoline, Kerosene, Fuel Oil, Lubricating Oils, and Lubricating Greases.
First use July 31, 1956.

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SN 202,978. The Andersons, Maumee, Ohio. Filed Sept. 30, 1964.

The Andersons

For Oil and Grease.
First use February 1953.

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SN 204,018. The Standard Oil Company, Cleveland, Ohio. Filed Oct. 14, 1964.

### FACTOLITH

Owner of Reg. No. 190,708.
For Industrial Grease.
First use Sept. 23, 1964.

SN 204,171. Kenrich Chemicals, Inc., Bayonne, N.J. Filed Oct. 16, 1964.

### EPEX

For Aromatic Hydrocarbons for Processing of Synthetic Resins.
First use Sept. 9, 1964.

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## Class 16—Protective and Decorative Coatings

SN 160,083. Hal T. Wells, Los Angeles, Calif. Filed Jan. 2, 1963.

### GUN-TEX

For Synthetic Resinous Compositions for Decorative Protective Coating of Exterior Building Wall Surfaces.
First use 1948.

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SN 182,907. Union Carbide Corporation, New York, N.Y. Filed Dec. 12, 1963.

### UCAR

Owner of Reg. Nos. 696,264 and 699,274.
For Latexes for Use in Coating Compositions.
First use on or about July 17, 1963.

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SN 184,034. Conversion Chemical Corporation, Rockville, Conn. Filed Jan. 6, 1964.

### TINTAC

For Organic Coating Materials for Forming Protective Films Upon Metal Parts—Namely, Aqueous Solutions and Aqueous Lacquer Emulsions of Synthetic Resins for Industrial Finishing of Metals.
First use on or before June 10, 1959.

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SN 185,310. Metasurf Corporation, Detroit, Mich. Filed Jan. 24, 1964.

### METAFLOAT

For Alkaline Compound for Use as an Additive in Water Curtain Spray Booths To Prevent the Adherence of Paint.
First use October 1952.

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SN 193,326. Canrad Precision Industries, Inc., New York, N.Y. Filed May 13, 1964.

### SPOT-LITE

For Luminescent Paints for Marking Surfaces Such as Elevators, Signs, Machinery, and the Like.
First use Apr. 3, 1963.

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SN 198,493. Quaker Chemical Corporation, Conshohocken, Pa. Filed July 24, 1964.

### FERROCOTE

Owner of Reg. No. 411,822.
For Rust Preventative of Oil, Grease, Varnish-Like, and Waxy Character, Applied as Films on Metals.
First use January 1936.



## Class 17—Tobacco Products

SN 178,757. Nat Sherman, d.b.a. Nat Sherman Co., New York, N.Y. Filed Oct. 10, 1963.

Cigarettellos

For Cigarettes.
First use Nov. 18, 1958.

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SN 187,079. Cigarette Manufacturing Company "Ethnos," G.A. Kerauls, S.A., Piraeus, Greece. Filed Feb. 20, 1964.

Aroma

The drawing is lined for gold, but color is not claimed as a feature of the mark. Owner of Greek Reg. No. 16,409, dated Apr. 10, 1946.
For Cigarettes.

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SN 200,902. The Bloch Brothers Tobacco Co., d.b.a. Mail Pouch Tobacco Co. and Kentucky Club, Wheeling, W. Va. Filed Aug. 31, 1964.

### PT

For Cigarettes.
First use Aug. 7, 1964.

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## Class 18—Medicines and Pharmaceutical Preparations

SN 193,075. Jack N. Singleton, d.b.a. Singleton & Sons, Wichita Falls, Tex. Filed Apr. 13, 1964.

ROYAL CORN RCR REMOVER

The words "Corn Remover" are disclaimed apart from the mark as shown.
For Medicinal Preparation To Be Applied Externally to Corns, Calluses and Warts on the Human Body for the Removal Thereof.
First use Mar. 28, 1936.

SN 193,466. Hamilton Pharmacal Company, Inc., Hamilton, N.Y. Filed May 14, 1964.

HP

For Veterinary Antibiotics for Intramammary Infusion of Cattle, Water-In-Oil Emulsion Used as a Vehicle for Veterinary Intra-Uterine Infusion, Dextrose and Buffered Dextrose for Intravenous, Intramuscular and Subcutaneous Veterinary Infusion, Calcium Compositions for Intravenous, Intramuscular and Subcutaneous Veterinary Infusion, Small Animal Vitamin-Mineral Supplement Tablets, and Small Animal Geriatric Tablets.
First use on or about Jan. 1, 1950.

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SN 195,460. Stiefel Laboratories, Inc., Oak Hill, N.Y. Filed June 11, 1964.

### ICHTHO-CORT

For Pharmaceutical Preparation Consisting of Tar-Steroid Anti-Eczematous Lotion.
First use Feb. 7, 1964.

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SN 199,619. Savage Laboratories, Inc., Houston, Tex. Filed Aug. 10, 1964.

### SPANESTRIN

For Oral Estrogenic Hormone for Use in Treating Estrogen Deficiencies in Women.
First use July 30, 1956.

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SN 199,703. Sterling Drug Inc., New York, N.Y. Filed Aug. 11, 1964.

### TRANCO-GESIC

Owner of Reg. Nos. 662,486 and 698,881.
For Preparation With Skeletal Muscle Relaxant, Tranquilising and Analgesic Properties.
First use July 24, 1964; July 9, 1962, in a different form.

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SN 201,912. American Cyanamid Company, Wayne, N.J. Filed Sept. 15, 1964.

### POLLIGENS

Owner of Reg. No. 410,919.
For Pollen Antigens for Use in the Treatment of Hay Fever.
First use Nov. 17, 1943.

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SN 202,528. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Sept. 23, 1964.

### GELULIDE

For Antacid Adsorbent.
First use on or about May 1, 1960.

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SN 202,619. The Purdue Frederick Company, Yonkers, N.Y. Filed Sept. 24, 1964.

### CYCLOCAP

For Preparation To Help Premenstrual Tension.
First use Sept. 16, 1964.

SN 202,997. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 30, 1964.

## BODIOL

For Analgesic Preparation.
First use Sept. 16, 1964.

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## Class 19—Vehicles

SN 196,788. Iso S.p.A. Automotoveicoli, Bresso, Milan, Italy. Filed June 30, 1964.

Iso

The mark consists of the letters "Iso" (stylised).
For Motor Vehicles—Namely, Automobiles, Motor Scooters, Three-Wheeled Vehicles, and Trucks, and Replacement Parts Therefor.
First use at least as early as 1951; in commerce 1953.

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SN 197,108. Ford Motor Company, Dearborn, Mich. Filed July 6, 1964.

## BRONCO

For Motor Trucks.
First use Apr. 28, 1964.

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SN 197,416. Nevil Enterprises, Inc., Buffalo, N.Y. Filed July 8, 1964.

## PEDACRAFT

For Paddle Boats.
First use January 1964..

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## Class 21—Electrical Apparatus, Machines, and Supplies

SN 121,909. Don-Lan Electronics, Inc., Santa Monica, Calif. Filed June 13, 1961.



For Waveguide Switches Operating at High Frequencies in the Range of Kilomegacycles.
First use Jan. 16, 1961.

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SN 151,723. Channel Master Corporation, Ellenville, N.Y. Filed Aug. 23, 1962.

## TELSTAR

For Antenna Signal Amplifiers for Domestic Use in Television Broadcast Reception.
First use Aug. 7, 1962.

SN 162,953. The Interstate Sanitation Company, Detroit, Mich. Filed Feb. 18, 1963.

## QUICKIE DRYER

The word "Dryer" is disclaimed per se.
For Combination Heater and Blower Air Dryer for Commercial, Institutional, and Industrial Wash Rooms and Shower Rooms for Drying the Hands and Face.
First use Feb. 2, 1954.

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SN 180,759. Radiant Lamp Corporation, Newark, N.J. Filed Nov. 8, 1963.

MERCO ® MATIC

For Mercury Vapor Lamps.
First use Sept. 10, 1963.

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SN 181,934. Litton Precision Products, Inc., San Carlos, Calif., assignee of U.S. Engineering Company, Inc., Van Nuys, Calif. Filed Nov. 26, 1963.

## UNIJAK

For Electrical Connectors.
First use on or about Oct. 1, 1962.

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SN 183,419. Lanier Electronic Laboratory, Inc., Atlanta, Ga. Filed Dec. 23, 1963.

## CONFERENCE MASTER

For Small Portable Sound Systems, Each Consisting of a Battery Powered Loudspeaker and Microphone and Related Equipment.
First use on or about Dec. 2, 1963.

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SN 186,846. Greenbriar Manufacturing Company, Inc., Cleveland, Ohio. Filed Feb. 17, 1964.

wonder wand

For Portable Electric Lights for Use in Factories, Garages, and the Construction Industry.
First use Mar. 1, 1963.

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SN 190,167. Federal Sign and Signal Corporation, Blue Island, Ill. Filed Apr. 2, 1964.

ten-ten

For Alert Radio Receivers.
First use Mar. 9, 1964.

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SN 193,404. J. C. Penney Company, New York, N.Y. Filed May 13, 1964.

## PENNCREST

Owner of Reg. Nos. 763,821 and 774,448.
For Electric Mixers, Blenders, Ice Crushers, Irons, Toasters, Oven Broilers, Cooker-Fryers, Waffle Baker-Sandwich-Grill Combinations, and Can Opener-Knife Sharpener Combinations.
First use Mar. 17, 1964, on mixers.



SN 194,768. Abrams Company, d.b.a. Abrams Lighting, Philadelphia, Pa. Filed June 8, 1964.

## FAR-A-GLO

For Electrical Lighting Fixtures, Incandescent and Fluorescent.
First use Dec. 15, 1956.

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SN 194,811. Marathon Battery Company, Wausau, Wis. Filed June 8, 1964.

## AMP-PILE

For Batteries.
First use May 18, 1964.

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SN 195,487. Applied Electro Mechanics, Inc., Alexandria, Va. Filed June 5, 1964.



For Electronic Equipment—Namely, Electronic Amplifiers.
First use May 25, 1964.

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SN 195,866. Kordaway Company, Inc., Los Angeles, Calif. Filed June 17, 1964.

## KORDAWAY

For Spring Attachments for Use on Electrical Appliance Cords To Prevent the Cords From Snarling or Twisting.
First use in or about August 1946.

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SN 196,225. AB Rifa, Bromma, Sweden. Filed June 23, 1964.

Rifa

Owner of Swedish Reg. No. 63,710, dated Dec. 5, 1947.
For Capacitors for Use in Connection With Radio and Telephony Equipment.
First use Dec. 5, 1947; in commerce 1956.

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SN 196,307. The Pittman Corporation, Sellersville, Pa. Filed June 23, 1964.

## PITTMAN

For Electric Motors Particularly Adapted for Miniature Hobbies.
First use May 1937.

SN 196,429. Celco, Mahwah, N.J. Filed June 25, 1964.

## CELCO

For Components for the Control of Electron and Ion Beams and Specifically Deflection Yokes, Focus Coils, Astigmatic Correctors, Centering Coils, Beam Alignment Coils, Pin Cushion Correctors, Image Orthicon Yokes, Vidicon Yokes, Micropositioners, Positioners, X-Y Amplifiers, Linearity Correctors, Current Regulators, Shields, Power Supplies, Rotating Yokes, Image Dissector Yokes, Ion Beam Coils, and Transformers.
First use Nov. 30, 1950.

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## Class 22—Games, Toys, and Sporting Goods

SN 194,085. United States Rubber Company, New York, N.Y. Filed May 22, 1964.

## ROYAL QUEEN

Owner of Reg. Nos. 149,273, 752,184, and others.
For Golf Balls.
First use on or about Jan. 30, 1964.

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## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 169,986. Stowe-Woodward, Inc., Newton Upper Falls, Mass. Filed May 29, 1963.

## PRE PRESS

For Rubber Covered Rolls and Rubber Covering for Rolls, Which Rolls are Used in Machinery—Namely, Paper-Making Machinery.
First use Apr. 10, 1963.

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SN 171,362. C. P. Leek & Sons, Inc., Egg Harbor City, N.J. Filed June 19, 1963.

## PACER

Owner of Reg. Nos. 704,203 and 760,263.
For Inboard Marine Engines.
First use June 3, 1963.

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SN 172,215. National Automotive Parts Association, Chicago, Ill. Filed July 1, 1963.

## N·A·P·A-HI-TORQUE

The term "Hi-Torque" is disclaimed apart from the mark shown, such disclaimer being made without prejudice to any rights established in said term as a result of continued use by applicant. Owner of Reg. Nos. 530,417, 571,129, and others.
For Power Tools—Namely, Saws, Grinders, Drills, Impact Wrenches, Sanders, Polishers, and Air Hammers.
First use Feb. 7, 1963.

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SN 175,423. McDonough Co., d.b.a. O. Ames Co., Parkersburg, W. Va. Filed Aug. 20, 1963.

## LAWN-GROOM

For Self-Cleaning Flare-Tined Dual-Use Rake and Hoe Hand Tools.
First use on or about Aug. 29, 1962.

SN 181,745. Barber-Green Company, Aurora, Ill. Filed Nov. 22, 1963.

## BATCHPAC

For Asphalt Batch Plant Towers.
First use Oct. 17, 1963.

SN 182,559. American Metallurgical Products Company, Pittsburgh, Pa. Filed Dec. 9, 1963.

## baclar

For Preshaped Mold Liners for Metal Founding and the Like Containing Releasable Fluorine and/or Chlorine.
First use May 29, 1963.

SN 182,631. Thomas M. Madden, East Grand Forks, Minn. Filed Dec. 9, 1963.

## THOMAS MITCHELL

"Thomas Mitchell" is the first and middle name of the applicant.
For Soil Agitator Plows.
First use Mar. 1, 1963.

SN 182,639. Mr. Robot, Inc., Bala Cynwyd, Pa. Filed Dec. 9, 1963.

## MR. ROBOT

For Car Washing Equipment.
First use Nov. 20, 1963.

SN 184,472. Industrial Components, Inc., Detroit, Mich. Filed Jan. 13, 1964.

## DYNA/RATED

For Clutch-Brake Cycling Drive Units, Clutches, Couplings, Variable Speed Drives, Speed Changing Devices, and Machine Cycle Sequence Controls.
First use Jan. 31, 1962.

SN 184,524. Sta-Rite Products, Inc., Delavan, Wis. Filed Jan. 13, 1964.

## PERFECTION

For Milking Equipment—Namely, Wash Tanks, Automatic Washers, Lid Washers, Vacuum Gravity Washers, Releasers, Line Traps, Vacuum Pumps, Transfer and Pumping Stations, Milk-House Panels, Air Flow Meters, Pulsator Storage Platforms and Parts Thereof.
First use 1923.

SN 185,209. General Motors Corporation, Detroit, Mich. Filed Jan. 23, 1964.

## ACURAD

For Die Casting Machines.
First use July 11, 1963.

SN 186,786. Stanley Home Products, Inc., Westfield, Mass. Filed Feb. 14, 1964.

## QUICK & EASY

For Hand Operated Applicators for Applying Wax to Floors.
First use Jan. 16, 1959.

SN 186,840. Gardner-Denver Company, Quincy, Ill. Filed Feb. 17, 1964.

## ELECTRA-SCREW

For Axial-Flow Gas and Air Compressors Having Intermeshing Helical Rotors.
First use Jan. 22, 1964.

SN 187,695. Sunnen Products Company, St. Louis, Mo. Filed Feb. 28, 1964.

## SUNALOY

For Parts for Honing Machines and the Like—Namely, Guide Shoes for Use Thereon.
First use Jan. 30, 1964.

SN 188,820. United Process Machinery Company, Santa Monica, Calif. Filed Mar. 16, 1964.

## UREFROTH

For Pressurized Tanks, Hoses Connected to Such Tanks, and a Dispensing Gun Connected to the Hose for Dispensing Polyurethane Foam.
First use on or before July 1, 1963.

SN 189,396. Textile Machine Works, Reading, Pa. Filed Mar. 23, 1964.

## AROLOK

For Needles for Knitting Machines.
First use Mar. 2, 1964.

SN 189,476. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Mar. 24, 1964.

## THE RANCHER

For Stainless Steel Knives, Forks, and Spoons, and Pocket Knives and Hunting Knives.
First use Feb. 13, 1964.

SN 190,784. Binks Manufacturing Company, Chicago, Ill. Filed Apr. 10, 1964.

## LO-BOY

For Air Compressors.
First use Feb. 25, 1964.

SN 193,297. The Shaw-Walker Company, Muskegon, Mich. Filed May 12, 1964.

## SORT-MATIC MULTI-GROOVER

The term "Multi-Groover," is disclaimed.
For Office Machines for Grooving Cards.
First use Apr. 1, 1964.

SN 195,723. Scully Signal Company, Melrose, Mass. Filed June 15, 1964.

## SCULMAR

Owner of Reg. Nos. 536,186, 733,745, and others.
For Pumps for Moving Liquid Through Pipes.
First use Apr. 28, 1964.



SN 195,891. Perfect Circle Corporation, Hagerstown, Ind. Filed June 17, 1964.




Owner of Reg. Nos. 317,230, 748,753, and others.
For Pistons, Piston Pins and Bushings; Bearings and Bearing Shims; Valves, Valve Guides, Valve Springs and Inserts, Valve Seat Inserts, Valve Lifters, Valve Keys and Valve Roto-Mechanisms for Internal Combustion Engines; Cylinder Sleeve Assemblies and Cylinder Sleeves for Internal Combustion Engines; and Water Pumps and Parts for Internal Combustion Engines.
First use on or about Apr. 8, 1964.

SN 196,581. Aero-Motive Manufacturing Company, Kalamazoo, Mich. Filed June 29, 1964.

## POW-R-MITE

Owner of Reg. No. 688,704.
For Automatic Take-Up Reels, Activated by Spring or Motor, for Hose, Cord or Electrical Conduit and Cable.
First use Feb. 18, 1964.

SN 198,081. The A. J. Sackett & Sons Company, Baltimore, Md. Filed July 17, 1964.

## FLEX-O-FLO

For Bulk Blend Systems—Namely, Horizontal Flow Type Dry Bulk Blend Plant for Manufacturing and Processing Plant Foods and Fertilizers.
First use Apr. 2, 1964.

SN 199,361. Fleischer Manufacturing, Inc., Columbus, Nebr. Filed Aug. 6, 1964.




The drawing is lined for the color red, but the mark is not to be so limited thereby.
For Farm Equipment—Namely, Tractor and Industrial Seats, Field Shellers, Till Planter Attachments, 4- and 6-Row Till Planter Units, Planter Markers, Gate Controls, and Chain Detachers.
First use July 31, 1957.

SN 200,519. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Aug. 24, 1964.

## TOPPER

For Pumps, Especially Adapted To Circulate Cleaning Solutions for Industrial Operations.
First use Feb. 1, 1963.

SN 200,944. Lambert Incorporated, d.b.a. Hunter Industries, Dayton, Ohio. Filed Aug. 31, 1964.

## YUKON

For Snow Throwers.
First use Oct. 24, 1963.

SN 202,058. Auto Transmissions Limited, Coventry, England. Filed Sept. 17, 1964.




The word "Overdrive" is disclaimed apart from the mark as shown. Owner of British Reg. No. B823,337, dated July 22, 1961.
For Overdrive Gearings for the Engines of Land Vehicles and Parts Included in Such Gearings.

SN 202,294. Milprint, Inc., Milwaukee, Wis. Filed Sept. 21, 1964.

## PRESS-I-DENT

For Imprinters.
First use July 6, 1964.

SN 202,326. Stoeger Arms Corporation, South Hackensack, N.J. Filed Sept. 21, 1964.

## STOEGER

For Knives, Knife Blades, and Hatchets.
First use June 1, 1925.

SN 202,507. Roto-Finish Company, Kalamazoo, Mich. Filed Sept. 23, 1964.

## SPIRATRON

Owner of Reg. No. 691,240.
For Deburring, Cleaning, Descaling, Burnishing, Finishing, and Polishing Apparatus.
First use Sept. 8, 1964.

SN 202,892. Aktiebolaget Bofors, Bofors, Sweden. Filed Sept. 29, 1964.

## BODEX

Owner of Swedish Reg. No. 108,315, dated Jan. 8, 1964.
For Replaceable Tips for Use With Machine Tools, Tool Holders With Reversible Tips, Cutting Tools With Replaceable Bits for Use With Machine Tools, Throw-Away Tips for Machine Tools and Tip Holders.
First use Nov. 15, 1962; in commerce Oct. 14, 1963.

SN 202,964. Southern Saw Service, Inc., d.b.a. Atlanta Saw Company, Atlanta, Ga. Filed Sept. 29, 1964.




For Band Saw Blades.
First use on or about Sept. 10, 1964.

SN 203,324. The Pandjiris Weldment Co., St. Louis, Mo. Filed Oct. 5, 1964.

MISSOURI MULE

For Turning Rolls for Rotating Workpieces.
First use Sept. 25, 1964.

SN 203,405. Kuhn-Verpackungsmaschinen GmbH, Baden-Baden-Oos, Germany. Filed Oct. 6, 1964.

SOMAPAC

Owner of German Reg. No. 782,154, dated Jan. 7, 1964.
For Packaging Machinery.

SN 203,434. The Sheffer Corporation, Cincinnati, Ohio. Filed Oct. 6, 1964.

SHEFFER

For Fluid Power Devices—Namely, Hydraulic and Pneumatic Cylinders, Valves, Pumps, and Intensifiers.
First use September 1943.

SN 203,435. The Sheffer Corporation, Cincinnati, Ohio. Filed Oct. 6, 1964.

SHEFFER POWR-PAK

For Self Contained Unit Comprising a Hydraulic Cylinder or Air Cylinder With Integral Power Unit and Automatic Valving.
First use Dec. 3, 1958.

SN 204,136. Clary Corporation, San Gabriel, Calif. Filed Oct. 16, 1964.

CLARY

For Woodworking Machines, Printing Presses and Collators.
First use on or about Oct. 10, 1963.

SN 204,164. Merle J. Heider, d.b.a. Jet Company, Humboldt, Iowa. Filed Oct. 16, 1964.

JET

For Fence Building Equipment—Namely, Fence Post Drivers and Fence Wire Rollers.
First use July 1957.

SN 204,943. ALD, Inc., Chicago, Ill. Filed Oct. 28, 1964.

ALDFORM

Owner of Reg. Nos. 641,032, 665,715, and others.
For Garment Finishing Machines.
First use Aug. 10, 1964.

SN 205,590. Island Equipment Corp., Hialeah, Fla. Filed Nov. 5, 1964.

ISLAND
WHEN QUALITY COUNTS

The words "When Quality Counts" are disclaimed apart from the mark. Owner of Reg. No. 426,820.
For Conveying Apparatus and Parts Thereof—Namely, Belt Conveyors, Gravity Conveyors, Conveyor Unscramblers, and Conveyor Power Units.
First use Sept. 5, 1963.

SN 205,689. Charles E. Hess, d.b.a. C. E. Hess Enterprises, Powell, Ohio. Filed Nov. 6, 1964.

HUSSLER

For Hand-Operated Tools—Namely, Screw Starters, Magnetic Pick-Ups and Scribes.
First use Oct. 23, 1964.

## Class 24 — Laundry Appliances and Machines

SN 204,565. W. T. Grant Company, New York, N.Y. Filed Oct. 22, 1964.

Bradford

Owner of Reg. Nos. 767,649 and 775,673.
For Electric Clothes Washers and Dryers.
First use February 1961.

## Class 26 — Measuring and Scientific Appliances

SN 194,150. Dundee Laboratories, Inc., Omaha, Nebr. Filed May 25, 1964.

The drawing is lined for blue, which is claimed as a feature of the mark.
For Medical Diagnostic Device To Determine Urinary Infection Comprising a Paper Tab and a Medium Tray.
First use Aug. 15, 1963.



SN 194,151. Dundee Laboratories, Inc., Omaha, Nebr. Filed May 25, 1964.

uri-tab

For Medical Diagnostic Piece of Equipment Designed To Determine Urinary Infection, Said Device Comprising a Paper Tab and a Medium Tray.
First use Sept. 30, 1963.

## Class 28 — Jewelry and Precious-Metal Ware

SN 183,354. Alan Jewelry, Inc., Providence, R.I. Filed Dec. 23, 1963.

RIO DEL ORO

The word "Oro" is disclaimed apart from the mark as shown.
For Costume Jewelry.
First use Dec. 6, 1963.

SN 197,203. Textron Inc., Providence, R.I. Filed July 6, 1964.

QUEEN OF FASHION

No claim is made to the word "Fashion" apart from the remainder of the mark.
For Expansion Bracelets, Including Watch Bracelets.
First use June 18, 1964.

SN 198,383. Textron Inc., Providence, R.I. Filed July 22, 1964.

QUEEN OF ELEGANCE

For Expansion Bracelets, Including Watch Bracelets.
First use June 18, 1964.

SN 200,575. David Karp Company, Inc., New York, N.Y. Filed Aug. 25, 1964.

HUG-ME

For Jewelry—Namely, Finger Rings.
First use Apr. 29, 1964.

## Class 29 — Brooms, Brushes, and Dusters

SN 205,167. Craftsman Brush Company, Inc., Brooklyn, N.Y. Filed Oct. 30, 1964.

ULTISSIMA

For Basting Brushes, Floor Scrubbing Brushes, Dish Mops, Toilet Bowl Brushes, Venetian Blind Brushes, Stove and Appliance Brushes, Vegetable Brushes, Lint Brushes, Shoe Brushes and Shoe Polish Applicators, Bath Brushes, Dish Washing Brushes and Sponges, Nail Brushes, Upholstery Brushes, Percolator Brushes, Radiator Brushes, and Bottle Brushes.
First use Oct. 6, 1964.

## Class 30 — Crockery, Earthenware, and Porcelain

SN 196,735. Stetson Corporation, Lincoln, Ill. Filed June 29, 1964.

STETSON

For Dinnerware Formed of Earthenware Materials.
First use Mar. 8, 1963.

## Class 31 — Filters and Refrigerators

SN 162,113. Rellumit Inter S.a.r.L., La Garenne-Colombes (Seine), France. Filed Feb. 5, 1963.

"RELLUMIT"

For Filters, Filter Systems, Separating Equipment.
First use Oct. 12, 1962; in commerce Oct. 12, 1962.

SN 173,916. Ideal-O-Matic, Inc., Columbus, Ohio. Filed July 29, 1963.

IDEAL-O-MATIC

For Coin Operated, Refrigerated Vending Machines for Dispensing Beverages.
First use Feb. 3, 1962.

SN 181,800. H. Reeve Angel & Co., Inc., Clifton, N.J. Filed Nov. 22, 1963.

Scientifica

For Ion Exchange Materials.
First use on or about Sept. 1, 1963.

SN 182,748. Standard Electric Company, Inc., San Antonio, Tex. Filed Dec. 9, 1963.

PERMALIFE

For Air Filter Media of Glass Fibers, Sold in Bulk, in Rolls, in Pads and in Frames.
First use Nov. 16, 1960.

SN 193,777. Fogel Refrigerator Company, Philadelphia, Pa. Filed May 19, 1964.

Fogel

For Commercial Refrigerators and Freezers.
First use Oct. 1, 1946; at least as early as 1910 as to "Fogel" in a different form.

SN 196,007. B & M Filter Sales & Service, Inc., Houston, Tex. Filed June 19, 1964.

B & M

For Air Filters.
First use at least as early as Jan. 1, 1963.

SN 196,008. B & M Filter Sales & Service, Inc., Houston, Tex. Filed June 19, 1964.

## DUST-CHECK

For Filters for Filtering Dust and Other Foreign Particles From Gases (Including Air) Passed Therethrough.
First use at least as early as Jan. 1, 1963.

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SN 196,493. Aquionics, Inc., Buffalo, N.Y. Filed June 26, 1964.



The mark consists of an upper portion having alternate aqua-green and white stripes and a lower portion which is of solid aqua-green. Three black circles are located near the bottom of the top striped portion and two white circles are located near the top of the solid bottom portion.
For Water Softening Equipment.
First use Mar. 2, 1964.

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SN 198,025. Buan-O-Matic Corporation, Springfield, Ill. Filed July 17, 1964.

## BUNN

Owner of Reg. Nos. 694,904 and 760,363.
For Filters for Coffee Brewing Equipment.
First use Jan. 27, 1964.

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SN 198,393. Albany Felt Company, Albany, N.Y. Filed July 23, 1964.

## AIR-SHAKE

For Filter Bag Housing, Filters, and Equipment for Purifying Air by Filtering Action.
First use in or about February 1963.

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SN 200,896. Auto-Ice Limited, London, England. Filed Aug. 31, 1964.

cub

Owner of British Reg. No. 858,262, dated Dec. 24, 1963.
For Ice Making Machines and Parts and Fittings Therefor.

## Class 32 — Furniture and Upholstery

SN 160,851. Displaycraft, Inc., Manchester, Conn. Filed Jan. 17, 1963.

SALES PAK

For Display Unit Used in Industrial Exhibits and Public Relations To Display a Plurality of Items.
First use on or before Sept. 1, 1962.

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SN 186,644. Restonic Corporation, Chicago, Ill. Filed Feb. 13, 1964.

Super Edge

For Mattresses and Box Springs.
First use January 1958.

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## Class 33 — Glassware

SN 195,405. Handels- en Industriële Ondernemingen Justin Heygele-Stella N.V., Maastricht, Netherlands. Filed June 11, 1964.

## WEDGE-LEDGE

For Watch Glasses.
First use Jan. 1, 1964; in commerce Jan. 1, 1964.

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SN 195,674. Indiana Glass Company, Dunkirk, Ind. Filed June 15, 1964.

## DU-ETTE

For Glass Flower Vases.
First use June 5, 1964.

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## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 162,174. The McKay Company, Pittsburgh, Pa. Filed Feb. 6, 1963.

## TUBE-ALLOY

Owner of Reg. No. 658,211.
For Welding Electrodes.
First use June 21, 1956.



SN 170,284. Ban-Aire, Inc., Columbus, Ohio. Filed June 4, 1963.




No claim is made to any representation of the goods appearing on the drawing apart from the mark in its entirety.
For Deodorising Devices Installed in Cold Air Ducts To Eliminate Unpleasant Odors From the Circulating Air.
First use May 10, 1963.

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SN 178,004. Jenaer Glaswerk Schott & Gen., Mainz, Germany. Filed Sept. 30, 1963.

## SCHOTT

For Glass Globes, Bulbs, Filters, Casings, Burners, and Burner Tubes for Use in Heating, Lighting, and Ventilating Apparatus.
First use 1894; in commerce 1894.

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SN 183,639. Upton Electric Furnace Company, Inc., Roseville, Mich. Filed Dec. 26, 1963.

## UPTON

For Metal Treating Furnaces.
First use as early as 1938.

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SN 187,025. Master Consolidated, Inc., Dayton, Ohio. Filed Feb. 19, 1964.

REDDY

For Portable Oil Heaters.
First use Nov. 14, 1963.

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SN 187,026. Master Consolidated, Inc., Dayton, Ohio. Filed Feb. 19, 1964.

QUEEN-B

For Portable Oil Heaters.
First use Sept. 6, 1962.

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SN 197,732. The Majestic Company, Inc., Huntington, Ind. Filed July 13, 1964.

## HARTHFRONT

For Metal Prefabricated Fireplaces.
First use June 19, 1964.

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SN 197,733. The Majestic Company, Inc., Huntington, Ind. Filed July 13, 1964.

## HARTHLINE

For Metal Prefabricated Fireplaces.
First use June 18, 1964.

SN 198,278. George Knobloch, d.b.a. Iron-Hide Sales Co., Matawan, N.J. Filed July 21, 1964.

## FLAME CHIEF

For Baffles and Combustion Chambers for Oil or Gas Fired Furnaces.
First use Aug. 1, 1952.

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SN 200,068. Caloric Corporation, Topton, Pa. Filed Aug. 18, 1964.

## CALORIC

For Gas Burning Cooking and Heating Stoves and Ranges.
First use in the year 1905.

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SN 202,207. Acme Welding Supply Co., Chicago, Ill. Filed Sept. 21, 1964.

## SPOTROL

For Electric Welding Control Equipment.
First use June 10, 1963.

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SN 202,261. Joseph Goder Sales, Inc., Chicago, Ill. Filed Sept. 21, 1964.

## CHUTE-O-MATIC

For Incinerators or Refuse Receptacles for Disposal of Refuse.
First use Sept. 2, 1964.

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SN 202,931. Joseph W. Harris, Jr., d.b.a. J. W. Harris Company, Cincinnati, Ohio. Filed Sept. 29, 1964.

## STAY-SILV

For Brazing Fluxes and Brazing Filler Alloys.
First use on or about Jan. 29, 1962.

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SN 203,174. Highside Chemicals Inc., Clifton, N.J. Filed Oct. 2, 1964.

## SOLDERLENE

For Soldering Flux.
First use Aug. 19, 1964.

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## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 194,091. United States Rubber Company, New York, N.Y. Filed May 22, 1964.

DRAKE

The vertical lines in the drawing represent the actual appearance of the mark and do not signify color.
For Pneumatic Tires.
First use Apr. 30, 1964.

SN 195,169. Stemco Manufacturing Company, Inc., Longview, Tex. Filed June 8, 1964.

## STEMCO

For Oil and Grease Seals, Gaskets, O-Rings, and Accessory Parts Thereof.
First use Dec. 31, 1952.

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SN 196,921. Tramco Manufacturing Corporation, New York, N.Y. Filed July 1, 1964.

## DURAPRENE

For Gaskets for Use in Automatic Transmissions for Automotive Vehicles.
First use March 1964.

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SN 197,433. Signal Oil and Gas Company, Los Angeles, Calif. Filed July 8, 1964.

## SUPER-TEST

For Vehicle Tires.
First use Apr. 30, 1964.

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SN 197,556. The General Tire & Rubber Company, Akron, Ohio. Filed July 10, 1964.

## DUAL SPORT

For Pneumatic Tires.
First use Mar. 13, 1964.

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SN 197,691. Forgedtrue Piston Corporation, Pasadena, Calif. Filed July 13, 1964.

## STEP SEAL

For Piston Rings for Use in Internal Combustion Engines for Motor Vehicles.
First use July 1963.

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### Class 36 — Musical Instruments and Supplies

SN 187,870. Janson Record Company, Inc., Belle Harbor, N.Y. Filed Mar. 3, 1964.

JANSON RECORDS

The word "Records" is disclaimed apart from the mark as used.
For Phonograph Records, and Phonograph Record Albums.
First use February 1964.

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SN 189,851. Apon Record Company, Inc., New York, N.Y. Filed Mar. 30, 1964.

## HARMONIA MUNDI

For Phonograph Records.
First use Jan. 2, 1963.

### Class 37 — Paper and Stationery

SN 35,640. The Dunleavy Company, Waltham, Mass. Filed Aug. 16, 1957.

## FILEX

For Filing Supplies—Namely, Folders, Guides, Cards, Indexes, and Tabs.
First use March 1923.

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SN 155,755. Clearwater Tissue Mills, Inc., Lewiston, Idaho, assignee of Swanee Paper Corporation, New York, N.Y. Filed Oct. 23, 1962.

## CLEARWATER

For Facial Tissues, Toilet Tissues, Paper Napkins, and Paper Towels.
First use Oct. 2, 1962.

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SN 161,413. The Mead Corporation, Dayton, Ohio. Filed Jan. 25, 1963.

## GLACIER

For Paper—Namely, Printing Papers.
First use as early as December 1933.

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SN 181,775. Hammermill Paper Company, Erie, Pa. Filed Nov. 22, 1963.

## HAMMERMILL LITE-OPAQUE

Applicant disclaims "Lite-Opaque" apart from the mark as shown. Owner of Reg. Nos. 137,793, 735,674, and others.
For Paper for Printing and Writing Purposes.
First use June 13, 1963.

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SN 185,339. Graphic Materials Corporation, Washington, D.C. Filed Jan. 24, 1964.

Grafix

For Graphic Materials.
First use Dec. 13, 1962.

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SN 190,005. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed Mar. 31, 1964.

## HERITAGE

For Tissue Paper Products—Namely, Towels, Napkins, Facial Tissue, and Toilet Tissue.
First use Mar. 20, 1964.

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SN 192,282. Gestetner Limited, London, England. Filed Apr. 29, 1964.

## GESTETNER

Owner of British Reg. No. 836,344, dated June 29, 1962.
For Duplicating Paper and Stencil Paper, Writing Instruments—Namely, Pens and Pencils and Ink and Pencil Erasers.



SN 199,132. Swingline, Inc., Long Island City, N.Y. Filed Aug. 3, 1964.

## GRIPEEZ

For Rubber Finger Tips.
First use Mar. 2, 1964.

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SN 204,291. Republic Container Corp., Jersey City, N.J. Filed Oct. 19, 1964.

REP Cote

For Corrguated Paper Board and Chip Board in Sheet or Web Form.
First use August 1963.

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### Class 38 — Prints and Publications

SN 192,991. Clinical Medicine Publications, Inc., Northfield, Ill. Filed May 8, 1964.

## CLINICAL MEDICINE

For Periodical Magazine.
First use January 1950.

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### Class 39 — Clothing

SN 137,592. Bressler Bros., Inc., Atlanta, Ga. Filed Feb. 9, 1962.

Career Originals by Donna Gay

The name "Donna Gay" is fictitious and does not refer to any known living person.
For Women's Industrial Uniforms.
First use Dec. 20, 1961.

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SN 138,561. Variety Supply Company, Clara City, Minn. Filed Feb. 23, 1962.

Gay Charm

For Lingerie, Slips, Panties, Sleepwear, Brassieres, and Foundation Garments for Women and Girls.
First use Apr. 26, 1960, on lingerie, sleepwear, and slips.

SN 145,894. Triumph Hosiery Mills, Inc., New York, N.Y. Filed May 31, 1962.

## PIN POINT

For Ladies' Hosiery.
First use January 1954.

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SN 148,794. Coed Collar Inc., Tuscaloosa, Ala. Filed July 11, 1962.

Winner

For Women's Sportswear—Namely, Suits, Skirts, Shirts, Blouses, Slacks, Shorts, Jackets, and Jumpers.
First use about Jan. 1, 1962.

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SN 154,498. Herbert Levine, Inc., New York, N.Y. Filed Oct. 4, 1962.

## "TONY THE SHOEMAKER"

For Women's and Misses' Shoes.
First use Sept. 26, 1962.

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SN 155,412. The Grove Company, St. Louis, Mo. Filed Oct. 18, 1962.

## BY TJ

For Shorts, Sweaters, Jackets, Slacks, Suits, and Coats.
First use August 1960.

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SN 160,342. Superba Cravats, Inc., Rochester, N.Y. Filed Jan. 7, 1963.

## PEDIGREE

For Neckties.
First use Dec. 19, 1962.

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SN 172,458. Barr Company, Los Angeles, Calif. Filed July 5, 1963.

B barr

For Men's Suits, Coats, and Slacks.
First use January 1951.

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SN 176,142. Allied Stores Corporation, d.b.a. The Bon Marche, Seattle, Wash. Filed Sept. 3, 1963.

## CHEZ BON

For Footwear.
First use May 28, 1963.

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SN 180,691. Venice Knitting Mills, Inc., Ozone Park, N.Y. Filed Nov. 7, 1963.

## METAXETTE

For Sweaters, Dresses, Shirts, and Pants.
First use on or about Nov. 1, 1963.

SN 180,722. Flexnit Company, Inc., New York, N.Y. Filed Nov. 8, 1963.

## TRIMLINE

For Girdles.
First use June 1, 1957.

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SN 180,985. W. S. Wormser Company, Chicago, Ill. Filed Nov. 12, 1963.

WORMSER

For Children's Pajamas and Dressing Robes.
First use 1948.

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SN 181,707. United States Rubber Company, New York, N.Y. Filed Nov. 21, 1963.

## RAINPALS JUNIOR

Applicant makes no claim to the word "Junior" apart from the mark as shown, and does not waive its common law rights. Owner of Reg. No. 581,992.
For Waterproof Over-The-Shoe Footwear.
First use 1954 or earlier.

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SN 183,608. Master Trouser Corporation, New York, N.Y. Filed Dec. 26, 1963.

The Master Slack

The word "Slack" is disclaimed separate and apart from the mark.
For Men's, Boys', and Women's Trousers and Slacks.
First use May 1, 1963.

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SN 192,213. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

## CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,571, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Wearing Apparel for Men, Women, and Children—Namely, Robes, Suits, Coats, Vests, Slacks, Shirts, Neckwear, Caps, Gloves, Hosiery, Lingerie and Undergarments, Pullovers and Cardigans, Blouses, Dresses, Housecoats, Pajamas, Jackets, and Layette Articles.

SN 194,182. Howard Stores Corporation, Brooklyn, N.Y. Filed May 25, 1964.

Adelphi by HOWARD

Owner of Reg. No. 648,216.
For Men's and Young Men's Suits, Top Coats, Overcoats, Slacks, and Shirts.
First use Mar. 21, 1963.

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SN 194,264. Wembley, Inc., New Orleans, La. Filed May 25, 1964.

## PERMA-GARD

Owner of Reg. No. 777,912.
For Neckwear.
First use Mar. 10, 1964.

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SN 194,383. Gateway Hosiery Mills, Incorporated, Chattanooga, Tenn. Filed May 27, 1964.

GOLD Stitch

The drawing is lined for the color gold.
For Infant's, Children's, Women's, and Men's Hosiery.
First use May 18, 1964.

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SN 194,962. Davidow Suits, Inc., New York, N.Y. Filed June 5, 1964.

## DAVAHNA

For Ladies' and Misses' Clothing—Namely, Suits, Jackets, Skirts, Dresses, Coats, Dress Ensembles, and Blouses.
First use in or about June 1930.

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SN 195,189. Wonderknit Corporation, New York, N.Y. Filed June 8, 1964.

## MISTER KNITS

The word "Knits" is disclaimed apart from the mark as a whole.
For Knitted Sweaters and Shirts for Men, Young Men, and Boys.
First use Feb. 2, 1964.

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SN 196,045. N.V. Jerseyfabriek Jan Van Tiel en Zonen, Amsterdam, Netherlands. Filed June 19, 1964.

Van Tiel

For Ladies' Outerwear Garments, in Particular, Dresses, Skirts, and Coats.
First use 1957; in commerce June 1960.



SN 196,246. C & D-Beeline, Inc., Bensenville, Ill. Filed June 23, 1964.

Beeline

Owner of Reg. No. 777,064.
For Clothing—Namely, Ladies' Skirts, Blouses, Suits, Sweaters, Jackets, Coats, Lingerie, Foundation Garments, Panties, Sleepwear, Lounging Jackets, Lounging Slacks, Robes, Lounging Skirts, Lounging Pajamas, Caps, Scarves, Gloves, Petticoats, and Hosiery; Children's Skirts, Blouses, Suits, Sweaters, Jackets, Coats, Panties, Sleepwear, Caps, Scarves, Gloves, Petticoats, and Hose; and Men's Sport Shirts, Shirts, Sweaters, Underwear, Sleepwear, Ties, Trousers, Jackets, Coats, and Hose.
First use January 1949.

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SN 197,538. Blue Bell, Inc., Greensboro, N.C. Filed July 10, 1964.

## NOBLE V. KEYS

"Noble V. Keys" is the name of a living individual whose consent is of record.
For Men's and Boys' Slacks and Shorts.
First use July 6, 1964.

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SN 197,557. Ed Gerrick, Inc., New York, N.Y. Filed July 10, 1964.

## SIZETTE

Owner of Reg. No. 431,519.
For Misses' Dresses, Suits, Coats, Jackets, Blouses, and Dress Ensembles.
First use November 1945.

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SN 198,320. Boss Manufacturing Company, Kewanee, Ill. Filed July 22, 1964.

## BIG BUD

For Work Gloves of Leather, Fabric, and a Combination of Leather and Fabric.
First use Dec. 8, 1961.

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SN 198,324. Boss Manufacturing Company, Kewanee, Ill. Filed July 22, 1964.

## LITTLE BUD

For Work Gloves of Leather, Fabric, and a Combination of Leather and Fabric.
First use Dec. 8, 1961.

## Class 40—Fancy Goods, Furnishings, and Notions

SN 194,478. Saul E. Fisher, Buckhannon, W. Va. Filed May 28, 1964.

sEFCo

For Plume for Band Musicians' Caps or Other Uniform Headgear.
First use Aug. 21, 1962.

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## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 133,501. Slip Covers Unlimited, Inc., Boston, Mass. Filed Dec. 6, 1961.

## CONTOUR

For Decorative Cut and Finished Edge Fringed and Unfringed Pieces Formed and Cut From Woven Fabrics of Elastic Yarns and Cotton Which May Be Used as Decorative Covers for Furniture, Tables, and Pianos.
First use Aug. 1, 1961.

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SN 180,959. Rockland Bleach and Dye Works, Inc., Baltimore, Md. Filed Nov. 12, 1963.

## ROC-LONIZED

Owner of Reg. No. 763,593.
For Piece Goods Having an Insulating Finish Applied Thereto Resulting From Special Treatment Making Them Resistant to the Transmission of Heat and Cold, Improving Their Drapability, Hand and Tensile Strength, and Increasing Their Opacity and Crease-Resistance.
First use May 17, 1963.

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SN 185,477. Aladdin Knit Mills, Inc., Bessemer City, N.C. Filed Jan. 28, 1964.

## NF-100

For Knitted Fabrics Treated for Shrinkage Control, Wrinkle Resistance, and Color Fastness.
First use Jan. 1, 1963.

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SN 188,478. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 11, 1964.

## WONDERLUXE

Owner of Reg. Nos. 628,771, 763,601, and others.
For Fabrics of Cotton and Synthetic Fibers and Combinations Thereof.
First use Mar. 4, 1964.

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SN 189,745. Vertipile, Inc., Lowell, Mass. Filed Mar. 26, 1964.

## VERTI-PLUSH

For Upholstery Fabrics.
First use Feb. 29, 1964.

SN 189,746. Vertipile, Inc., Lowell, Mass. Filed Mar. 26, 1964.

## VERTI-SUEDE

For Upholstery Fabrics.
First use Feb. 29, 1964.

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SN 192,214. Societe Rhovyl, Paris, France. Filed Apr. 28, 1964.

## CLEVYL

Priority claimed under Sec. 44(d) on French Reg. No. 517,511, dated Nov. 28, 1963 (Paris); Natl. Inst. No. 215,439.
For Synthetic Fabrics Used in Making Outer and Under Garments, Laces and Embroideries, Curtains and Draperies, Bed and Table Covers, Rugs and Carpets, and Textile Fabrics for Making Into Tents, Awnings, Nets, Umbrellas, and Parasols.

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SN 194,153. Dyersburg Cotton Products, Inc., Dyersburg, Tenn. Filed May 25, 1964.

## Rivi

For Knitted Fleece (Pile) Fabric.
First use in or about March 1964.

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SN 197,800. Virginia Mills, Inc., Swepsonville, N.C. Filed July 13, 1964.

## ON DOT DELIVERY

For Piece Goods Made of Rayon and Cotton.
First use June 23, 1964.

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SN 197,805. J. F. Zucker Co., Inc., New York, N.Y. Filed July 13, 1964.

## *Fifth Avenue Originals*

For Bath Towels, Hand Towels, Wash Cloths, Sheets, and Pillow Cases.
First use Apr. 20, 1959.

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SN 197,827. Fieldcrest Mills, Inc., Spray, N.C. Filed July 14, 1964.

## Däneau

For Textile Rugs and Carpeting.
First use May 30, 1964.

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SN 198,048. House Beautiful Curtains, Inc., New York, N.Y. Filed July 17, 1964.

## CALI-FASHIONS

For Curtains, Bedspreads, Draperies, and Pillows.
First use June 23, 1964.

SN 198,101. United Merchants and Manufacturers, Inc., New York, N.Y. Filed July 17, 1964.

## ROYAL CHARTER COLLECTION

For Fabrics Adapted To Be Made Up Into Slip Covers, Draperies, Bedspreads, and Curtains.
First use on or about June 30, 1964.

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### Class 43 — Thread and Yarn

SN 187,489. Glen Raven Cotton Mills, Inc., Glen Raven, N.C. Filed Feb. 26, 1964.

## GLEN-CRYL

For Yarn.
First use Dec. 6, 1963.

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SN 191,255. Compagnie Francaise de Bonneterie, Societe Anonyme, Paris, France. Filed Apr. 16, 1964.

## Saïda

The word "Saida" has no meaning in any language. Owner of French Reg. No. 497,006, dated June 15, 1961 (Seine); Natl. Inst. No. 166,447.
For Yarns and Thread.

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SN 191,256. Compagnie Francaise de Bonneterie, Societe Anonyme, Paris, France. Filed Apr. 16, 1964.

## LES AIRELLES

The words "Les Airelles" are the French equivalent of "Huckleberry" or "Cranberry." Owner of French Reg. No. 496,184, dated May 12, 1961 (Seine); Natl. Inst. No. 164,174.
For Knitting Yarns.

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### Class 44 — Dental, Medical, and Surgical Appliances

SN 162,418. The H. C. Cook Company, Ansonia, Conn. Filed Feb. 11, 1963.

## BATH-PAC

For Manicure Kit—Namely, Nail Clipper, Tweezers, Toe Nail Clipper, Nail File, and Emery Boards.
First use on or before July 25, 1962.



SN 180,814. Acme Protection Equipment Co., South Haven, Mich., by change of name and assignment from Acme Protection Equipment Company, South Haven, Mich. Filed Nov. 12, 1963.

## ALL PURPOSE

For Gas Mask Canisters and Gas Masks Designed for Use by Fire-Fighting Personnel.
First use during or before 1938.

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SN 190,632. Medical Sterile Products, Inc., Rincon, Puerto Rico. Filed Apr. 8, 1964.




Applicant disclaims the caduceus design apart from the mark as shown.
For Scalpels, Scalpel Blades, and Scalpel Handles.
First use Jan. 27, 1964.

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SN 193,538. The H. C. Cook Company, Ansonia, Conn. Filed May 15, 1964.

## VALET-PAC

For Grooming Kit Comprised of a Case of Flexible Material, Nail Clipper, File, and Cuticle Pusher.
First use on or before Nov. 12, 1963.

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SN 197,366. Corbin-Farnsworth, Inc., Palo Alto, Calif. Filed July 8, 1964.

## SCOPETTE

For Cardioscope (Medical Oscilloscope) and Accessories.
First use in or about March 1961.

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SN 197,799. Vico Products, Montebello, Calif. Filed July 13, 1964.

## ULTRA SAUNA

Applicant makes no claim to the word "Sauna" alone.
For Sauna Bath Heating Units and Sauna Rooms.
First use Aug. 2, 1963.

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SN 199,153. Zenith Radio Corporation, Chicago, Ill. Filed Aug. 3, 1964.

## MICRO-LITHIC

For Electronic Hearing Aids.
First use at least as early as Mar. 26, 1964.

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SN 200,113. Orthion, Inc., Newport Beach, Calif. Filed Aug. 18, 1964.

## ORTHION

For Orthopedic Couches.
First use on or about Oct. 19, 1963.

SN 201,811. Chase Instruments Corp., Long Island City, N.Y. Filed Sept. 14, 1964.

## SANIDUR

For Clinical Thermometers.
First use Apr. 16, 1964.

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### Class 46 — Foods and Ingredients of Foods

SN 191,856. Adolph Goldmark & Sons Corporation, New York, N.Y. Filed Apr. 23, 1964.

## ROYAL KERRY

Without prejudice to applicant's common law rights and for the purposes of this application only, applicant disclaims the geographical term "Kerry" except in conjunction with the rest of the mark.
For Candy.
First use Oct. 28, 1963.

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SN 192,007. Orchard Hill Farms Candy Company, Chicago, Ill., assignee of Chesterton Candy Company, Chicago, Ill. Filed Apr. 27, 1964.

## MERRY MIX

Applicant disclaims the word "Mix" apart from the mark shown.
For Hard Candies.
First use Apr. 1, 1964.

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SN 192,443. Western Farmers Association, Seattle, Wash. Filed Apr. 30, 1964.

## CHIRPS

For Freshly Battered Fried Chicken Skins.
First use Mar. 13, 1964.

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SN 193,603. American Bakers Cooperative, Inc., Teaneck, N.J. Filed May 18, 1964.

## WORLD FARE

For Breads.
First use on or about Apr. 22, 1964.

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SN 194,272. Airline Foods Corporation, Westfield, N.Y. Filed May 26, 1964.

## AIRLINE

For Fruit Juice Beverages of Various Flavors for Food Purposes.
First use on or about Nov. 3, 1911.

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SN 198,280. J. Langrall & Bro., Inc., Baltimore, Md. Filed July 21, 1964.

## CORONATION

For Canned Vegetables.
First use June 24, 1964.

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SN 198,281. J. Langrall & Bro., Inc., Baltimore, Md. Filed July 21, 1964.

## PRIDE OF THE CHESAPEAKE

For Canned Vegetables.
First use June 24, 1964.

## Class 51 — Cosmetics and Toilet Preparations

SN 191,368. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 17, 1964.

### MISS SPRAY NET

Applicant disclaims "Spray" apart from the mark as shown.
Owner of Reg. No. 568,466.
For Hair Spray.
First use on or about Nov. 6, 1963.

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SN 192,963. West Texas Wholesale of Amarillo, d.b.a. West Texas Wholesale Company, Amarillo, Tex. Filed May 7, 1964.

### EMPHASIS

For Hair Spray.
First use Mar. 1, 1964.

## Class 52 — Detergents and Soaps

SN 186,370. MacDermid of Bristol, Inc., Bristol, Conn. Filed Feb. 10, 1964.

### FERRODEX

For Metal Cleaning Compounds in the Nature of Alkaline Soaks for Use in Cleaning Metals by Electrolysis.
First use Aug. 30, 1948.

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SN 195,854. Enos Corporation, Chicago, Ill. Filed June 17, 1964.

### FLUSH BRITE

For Cleaning Tablets for Use in Toilet Tanks.
First use Sept. 1, 1961.

# SERVICE MARKS

## Class 100 — Miscellaneous

SN 193,045. Restaurant Systems of Oregon, Ltd., Portland, Oreg. Filed May 8, 1964.




For Restaurant Services.
First use June 1960.

# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

## Class 1 — Raw or Partly Prepared Materials

784,203. UCET. Union Carbide Corporation. SN 189,121. Pub. 11–17–64. Filed 3–19–64.

784,204. TRULON. Thompson Chemical Company. SN 190,038. Pub. 11–17–64. Filed 3–31–64.

784,205 WICASET. Wica Chemicals, Incorporated. SN 190,469. Pub. 11–17–64. Filed 4–6–64.

784,206. DRAFTACOVER. Monsanto Canada Limited. SN 190,533. Pub. 11–17–64. Filed 4–7–64.

## Class 2 — Receptacles

784,207. CARRIER BOX AND DESIGN. Imperial Packaging Corporation. SN 176,000. Pub. 11–17–64. Filed 8–29–63.

784,208. VENTLOK. Bemis Bro. Bag Company. SN 176,877. Pub. 11–17–64. Filed 9–13–63.

784,209. SOUTHERN. Southern Can Company. SN 180,132. Pub. 11–17–64. Filed 10–30–63.

784,210. PEAK-PAC. Peak-Pac Corporation. SN 182,540. Pub. 11–17–64. Filed 11–18–63.

784,211. APEX. White Consolidated Industries, Inc., by change of name from White Sewing Machine Corporation. SN 186,297. Pub. 11–17–64. Filed 2–7–64.

784,212. BUTCH-R-BOY. Lion Packaging Products Co., Inc. SN 187,767. Pub. 11–17–64. Filed 3–2–64.

784,213. TRIAD AND DESIGN. Triad Plastics Products, Inc. SN 188,304. Pub. 11–17–64. Filed 3–9–64.

784,214. PLYWALL. Nooter Corporation. SN 192,510. Pub. 11–17–64. Filed 5–1–64.

784,215. HEDWIN AND DESIGN. Hedwin Corporation. SN 195,102. Pub. 11–17–64. Filed 6–8–64.

784,216. CLEAN AS A WHISTLE AND DESIGN. Pabst Brewing Company. SN 199,306. Pub. 11–17–64. Filed 8–5–64.

## Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

784,217. DUPLI KEY FILE AND DESIGN. David J. Forman. SN 181,538. Pub. 11–17–64. Filed 11–20–63.

784,218. COSMO-PAK. Atlantic Products Corporation. SN 184,022. Pub. 11–17–64. Filed 1–6–64.

## Class 4 — Abrasives and Polishing Materials

784,219. RED-E-RUB. R. O. Dahlstrom, d.b.a. R. O. "Rub" Dahlstrom & Sons. SN 193,457. Pub. 11–17–64. Filed 5–14–64.

784,220. PEACOCK. Vangard Chemical Corporation. SN 193,828. Pub. 11–17–64. Filed 5–19–64.

## Class 5 — Adhesives

784,221. FORMULA T–308. Allegheny Steel Corporation. SN 179,010. Pub. 11–17–64. Filed 10–15–63.

784,222. "DURA-MASK." Harrison Auto Paint Shop, Inc. SN 179,042. Pub. 11–17–64. Filed 10–15–63.

784,223. CP262. Corrosion Products, Inc. SN 179,699. Pub. 11–17–64. Filed 10–24–63.

784,224. AE. Adhesive Engineering Company. SN 193,601. Pub. 11–17–64. Filed 5–18–64.

784,225. MAGIC GARTER. Magic Garter Company, Inc. SN 194,055. Pub. 11–17–64. Filed 5–22–64.

## Class 6 — Chemicals and Chemical Compositions

784,226. PELLOIDS. Foseco International Limited. SN 162,725. Pub. 11–17–64. Filed 2–14–63.

784,227. BUTOXONE SB. Chipman Chemical Company, Inc. SN 177,229. Pub. 11–24–64. Filed 9–18–63.

784,228. ROURE. Roure-Dupont, Inc. SN 176,749. Pub. 11–17–64. Filed 9–11–63.

784,229. BUTOXONE. Chipman Chemical Company, Inc. SN 177,230. Pub. 11–17–64. Filed 9–18–63.

784,230. GROW. Grow Solvent Company, Inc. SN 177,630. Pub. 11–17–64. Filed 9–24–63.

784,231. HEVIWATER. The Dow Chemical Company. SN 178,425. Pub. 11–17–64. Filed 10–7–63.

784,232. EZEFLO. The Dow Chemical Company. SN 178,426. Pub. 11–17–64. Filed 10–7–63.

784,233. GRAVINDEX. Ortho Pharmaceutical Corporation. SN 179,351. Pub. 11–17–64. Filed 10–18–63.

784,234. LOXSIT. Wyandotte Chemicals Corporation. SN 179,378. Pub. 11–17–64. Filed 10–18–63.

784,235. STREPLATE. William T. Sakai, d.b.a. Medica Media. SN 180,962. Pub. 11–17–64. Filed 11–12–63.

784,236. KANCEL. Syncro-Mist Controls, Inc. SN 182,844. Pub. 11–17–64. Filed 12–11–63.

784,237. TUPERSAN. E. I. du Pont de Nemours and Company. SN 187,263. Pub. 9–15–64. Filed 2–24–64.

784,238. BUG-A-BYE. West Chemical Products, Inc. SN 188,689. Pub. 11–17–64. Filed 3–13–64.

784,239. YELLOW HAMMER AND DESIGN. Champion Chemicals, Inc. SN 188,957. Pub. 11–17–64. Filed 3–18–64.

784,240. KNIGHTSET. Checkmate Chemicals, Inc. SN 189,438. Pub. 11–17–64. Filed 3–24–64.

784,241. MIGRASSIST. The Tanatex Chemical Corporation. SN 190,837. Pub. 11–17–64. Filed 4–10–64.

784,242. IRONEES. The Ironees Company. MULTIPLE CLASS (Classes 6 and 52). SN 191,396. Pub. 11–17–64. Filed 4–17–64.

## Class 7 — Cordage

784,243. 300 FS. Broderick & Bascom Rope Company. SN 171,083. Pub. 11–17–64. Filed 6–17–63.

784,244. BONETTE. Chicago Printed String Co. SN 192,989. Pub. 11–17–64. Filed 5–8–64.

## Class 8 — Smokers' Articles, Not Including Tobacco Products

784,245. BLACK KNIGHT. Lane Limited. SN 195,796. Pub. 11–17–64. Filed 6–16–64.

## Class 10 — Fertilizers

784,246. BREA. Collier Carbon and Chemical Corporation. SN 183,034. Pub. 11–17–64. Filed 12–16–63.

784,247. AGRI-TONE. American Agricultural Chemical Company. SN 183,196. Pub. 11–17–64. Filed 12–18–63.

784,248. IRON-GRO. The Eagle-Picher Company. SN 189,451. Pub. 7–28–64. Filed 3–24–64.

## Class 12 — Construction Materials

784,249. ROBUST. Service Industries. SN 175,882. Pub. 11–17–64. Filed 8–27–63.

784,250. FIBERWEL. Continental Copper & Steel Industries, Inc. MULTIPLE CLASS (Classes 12, 19, and 22). SN 186,602. Pub. 11–17–64. Filed 2–13–64.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

784,251. SAF-T-CLIMB. Air Space Devices, Inc. SN 133,520. Pub. 11–17–64. Filed 12–7–61.

784,252. SCOOP-VENT. Taco, Inc., by change of name from Taco Heaters, Incorporated. SN 152,255. Pub. 11–17–64. Filed 8–30–62.

784,253. BONGUSTO AND DESIGN. Aurelio Porciani, d.b.a. Ettore Porciana & Figlio. SN 160,005. Pub. 11–17–64. Filed S.R. 12–31–62; Am. P.R. 1–30–64.

784,254. MISCELLANEOUS DESIGN. Kings Point Machinery. MULTIPLE CLASS (Classes 13, 23, and 34). SN 170,839. Pub. 11–17–64. Filed 6–12–63.

784,255. SHAKEPROOF FASTENING RESEARCH ETC. Illinois Tool Works Inc. SN 173,844. Pub. 11–17–64. Filed 7–26–63.

784,256. SERMETO. The Weatherhead Company. SN 182,851. Pub. 11–17–64. Filed 12–11–63.

784,257. TOPIC. The Stafford Specialty Products, Incorporated. SN 184,263. Pub. 11–17–64. Filed 1–8–64.

784,258. APEX. White Consolidated Industries, Inc., by change of name from White Sewing Machine Corporation. SN 186,298. Pub. 11–17–64. Filed 2–7–64.

784,259. THE RED NYLON RING OF RELIABILITY AND DESIGN. Elastic Stop Nut Corporation of America. SN 191,527. Pub. 11–17–64. Filed 4–20–64.

784,260. PASCO. Parker Trading Company. SN 195,701. Pub. 11–17–64. Filed 6–15–64.

784,261. MAXIFLOW. Manning, Maxwell & Moore, Incorporated. SN 195,950. Pub. 11–17–64. Filed 6–18–64.

784,262. LUCKY 7. Stephen A. Young Corporation. SN 196,075. Pub. 11–17–64. Filed 6–19–64.

784,263. P AND DESIGN. The Bishop and Babcock Corporation. SN 196,105. Pub. 11–17–64. Filed 6–22–64.

784,264. SIM-PLI'-CI-TY. Florida Pipe & Foundry Co. SN 196,136. Pub. 11–17–64. Filed 6–22–64.

784,265. H-P. H-P Products, Inc. SN 196,152. Pub. 11–17–64. Filed 6–22–64.

784,266. H AND DESIGN. American Metal Climax, Inc., d.b.a. Hunter Engineering Co. SN 197,243. Pub. 11–17–64. Filed 7–7–64.

## Class 14 — Metals and Metal Castings and Forgings

784,267. "BLUE DOT" AND DESIGN. Chase Brass & Copper Co., Incorporated. SN 179,613. Pub. 11–17–64. Filed 10–23–63.

784,268. COLUMBIA ARMOR-TOUGH ETC. AND DESIGN. Columbia Steel Casting Co., Inc. SN 185,196. Pub. 11–17–64. Filed 1–23–64.

784,269. H AND DESIGN. American Metal Climax, Inc., d.b.a. Hunter Engineering Co. SN 197,242. Pub. 11–17–64. Filed 7–7–64.

## Class 15 — Oils and Greases

784,270. HONEY LITE AND DESIGN. Western Beeswax Candle Co., Ltd. SN 163,092. Pub. 11–17–64. Filed 2–19–63.

784,271. HOLIDAY. Erickson Petroleum Corporation. SN 164,025. Pub. 11–17–64. Filed 3–6–63.

784,272. HOLIDAY AND DESIGN. Erickson Petroleum Corporation. SN 164,026. Pub. 11–17–64. Filed 3–6–63.

784,273. "C# 362" GREASE. Randall's United Petroleum Company, Inc. SN 182,834. Pub. 11–17–64. Filed 12–11–63.

784,274. SOHISPIN. The Standard Oil Company. SN 194,427. Pub. 11–17–64. Filed 5–27–64.

784,275. SOHISTOK. The Standard Oil Company. SN 194,428. Pub. 11–17–64. Filed 5–27–64.

784,276. SOHILIFT. The Standard Oil Company. SN 194,430. Pub. 11–17–64. Filed 5–27–64.

784,277. FACTOIL. The Standard Oil Company. SN 194,431. Pub. 11–17–64. Filed 5–27–64.

784,278. SOHITEK. The Standard Oil Company. SN 194,434. Pub. 11–17–64. Filed 5–27–64.

784,279. SOHIMIL. The Standard Oil Company. SN 194,435. Pub. 11–17–64. Filed 5–27–64.

784,280. SOHIFILM. The Standard Oil Company. SN 194,436. Pub. 11–17–64. Filed 5–27–64.

784,281. SOHITRAK. The Standard Oil Company. SN 195,559. Pub. 11–17–64. Filed 6–12–64.

784,282. STANJUR. The Standard Oil Company. SN 195,561. Pub. 11–17–64. Filed 6–12–64.

784,283. COOLTEX. Texaco Inc. SN 197,440. Pub. 11–17–64. Filed 7–8–64.

## Class 16 — Protective and Decorative Coatings

784,284. ACRI/GARD. Detroit Graphite Company, Inc. SN 183,668. Pub. 11–17–64. Filed 12–27–63.

784,285. BOOTH-TROL. Detrex Chemical Industries, Inc. SN 184,706. Pub. 11–17–64. Filed 1–16–64.

784,286. CHEVRON. Standard Oil Company of California. SN 185,727. Pub. 11–17–64. Filed 1–30–64.

784,287. LEOLAC. Ultra Adhesives, Inc. SN 188,819. Pub. 11–17–64. Filed 3–16–64.

## Class 17 — Tobacco Products

784,288. PURE PLEASURE AND DESIGN. Smokers' Haven, Inc. SN 194,836. Pub. 11–17–64. Filed 6–3–64.

784,289. DAPPER. Garcia y Vega, Inc. SN 195,220. Pub. 11–17–64. Filed 6–9–64.

784,290. ACHIEVEMENT. Lane Limited. SN 195,305. Pub. 11–17–64. Filed 6–10–64.



784,291. MELBOURNE. Lane Limited. SN 195,306. Pub. 11–17–64. Filed 6–10–64.

784,292. COMPACTO. Bayuk Cigars Incorporated. SN 196,103. Pub. 11–17–64. Filed 6–22–64.

784,293. NASSORD. John Cotton Limited. SN 196,112. Pub. 11–17–64. Filed 6–22–64.

784,294. CORNELI. John Cotton Limited. SN 196,113. Pub. 11–17–64. Filed 6–22–64.

784,295. CONWEY. John Cotton Limited. SN 196,114. Pub. 11–17–64. Filed 6–22–64.

784,296. CULVERT. John Cotton Limited. SN 196,116. Pub. 11–17–64. Filed 6–22–64.

784,297. CAMDRON. John Cotton Limited. SN 196,117. Pub. 11–17–64. Filed 6–22–64.

784,298. KIK. John Cotton Limited. SN 196,118. Pub. 11–17–64. Filed 6–22–64.

784,299. ERIK. P. Lorillard Company. SN 196,454. Pub. 11–17–64. Filed 6–25–64.

784,300. CROWN AND SHIELD (DESIGN). Societe de Financement Industriel, Commercial et Agricole—S.O.F.I.C.A.L. SN 197,786. Pub. 11–17–64. Filed 7–13–64.

784,301. PHASE III. R. J. Reynolds Tobacco Company. SN 198,894. Pub. 11–17–64. Filed 7–30–64.

784,302. VAPOSORB. R. J. Reynolds Tobacco Company. SN 198,896. Pub. 11–17–64. Filed 7–30–64.

## Class 18 — Medicines and Pharmaceutical Preparations

784,303. CEDARDINE. William M. McLendon, d.b.a. Cedardine Products. SN 163,380. Pub. 9–29–64. Filed 2–25–63.

784,304. FUNGIDEX. Norden Laboratories, Inc. SN 172,398. Pub. 11–17–64. Filed 7–3–63.

784,305. DURAC. Menley & James Laboratories, Ltd. SN 176,666. Pub. 11–17–64. Filed 9–10–63.

784,306. KWIK. Kwik Veterinary Products, Inc. SN 179,430. Pub. 11–17–64. Filed 10–21–63.

784,307. ALL BETTER. American Home Products Corporation. SN 182,148. Pub. 11–17–64. Filed 12–2–63.

784,308. HANDY-BAND. Colgate-Palmolive Company. SN 182,709. Pub. 11–17–64. Filed 12–10–63.

784,309. SULLA. A. H. Robins Company, Inc. SN 183,720. Pub. 11–17–64. Filed 12–30–63.

784,310. FLAVONNE. Dawe's Laboratories, Inc. SN 186,820. Pub. 11–17–64. Filed 2–17–64.

784,311. CON-DE AND DESIGN. Concentrates Development Co. SN 190,063. Pub. 11–17–64. Filed 4–1–64.

784,312. FINTAN. Aktiebolaget Astra, Apotekarnes Kemiska Fabriker. SN 190,476. Pub. 11–17–64. Filed 4–7–64.

784,313. TISSUVAX. The Dow Chemical Company. SN 195,072. Pub. 11–17–64. Filed 6–8–64.

784,314. LEXAR. Neisler Laboratories, Inc. SN 195,235. Pub. 11–17–64. Filed 6–9–64.

## Class 19 — Vehicles

784,250. (See Class 12 for this trademark.)

784,315. TRAILEX. Trailex, Inc. SN 180,690. Pub. 11–17–64. Filed 11–7–63.

784,316. CANADA GEESE (DESIGN). Dura Corporation, d.b.a. Page & Page Co. SN 187,918. Pub. 11–17–64. Filed 3–4–64.

## Class 21 — Electrical Apparatus, Machines, and Supplies

784,317. G (DISTINCTIVELY DISPLAYED). Gotham Lighting Corp. SN 149,387. Pub. 11–17–64. Filed 7–19–62.

784,318. ACTON AND DESIGN. Acton Laboratories, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 162,396. Pub. 11–17–64. Filed 2–11–63.

784,319. THERMO-FLAG. The Staver Company, Inc. SN 167,055. Pub. 11–17–64. Filed 4–18–63.

784,320. THERMO-FLUE. The Staver Company, Inc. SN 167,056. Pub. 11–17–64. Filed 4–18–63.

784,321. THERMO-SINK. The Staver Company, Inc. SN 167,057. Pub. 11–17–64. Filed 4–18–63.

784,322. THERMO-VANE. The Staver Company, Inc. SN 167,058. Pub. 11–17–64. Filed 4–18–63.

784,323. TELSTAR. Far Eastern Commerce Corporation. SN 167,716. Pub. 11–17–64. Filed 4–29–63.

784,324. RP REDI-POWER. Ross Products, Inc. SN 174,143. Pub. 9–22–64. Filed 7–29–63.

784,325. ISOPROBE. Monroe Electronics, Inc. SN 175,358. Pub. 11–17–64. Filed 8–16–63.

784,326. FS AND DESIGN. Fuji Denki Seiso Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd. MULTIPLE CLASS (Classes 21 and 26). SN 177,052. Pub. 11–17–64. Filed 9–16–63.

784,327. FUJI DENKI. Fuji Denki Seiso Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd. MULTIPLE CLASS (Classes 21 and 26). SN 177,054. Pub. 11–17–64. Filed 9–16–63.

784,328. FUJI. Fuji Denki Seiso Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd. MULTIPLE CLASS (Classes 21 and 26). SN 177,055. Pub. 11–17–64. Filed 9–16–63.

784,329. ERIE WHERE IMAGINATION CREATES VALUE IN ELECTRONICS AND DESIGN. Erie Technological Products, Inc. SN 178,392. Pub. 11–17–64. Filed 10–4–63.

784,330. MONTEK. Model Engineering and Manufacturing Corporation. SN 178,945. Pub. 11–17–64. Filed 10–14–63.

784,331. ALCRON. Alcron, Inc. SN 180,163. Pub. 11–17–64. Filed 10–31–63.

784,332. DEWALD. Vernitron Corporation. SN 184,859. Pub. 11–17–64. Filed 1–17–64.

784,333. MWUL. Fairchild Camera and Instrument Corporation. SN 186,242. Pub. 11–17–64. Filed 2–7–64.

784,334. ARISTOCRAT. Rival Manufacturing Company. SN 186,896. Pub. 11–17–64. Filed 2–17–64.

784,335. SHAW. Thompson-Starrett Company, Inc. SN 187,539. Pub. 11–17–64. Filed 2–26–64.

784,336. TEL-A-LERT. Sensatronics, Inc. SN 188,585. Pub. 11–17–64. Filed 3–12–64.

784,337. NEI AND DESIGN. New England Instrument Company. SN 190,417. Pub. 11–17–64. Filed 4–6–64.

784,338. VERTICAP. Illinois Tool Works Inc. SN 190,520. Pub. 11–17–64. Filed 4–7–64.

784,339. BRETFORD. Bretford Manufacturing, Inc. SN 190,867. Pub. 11–17–64. Filed 4–13–64.

784,340. ALPHA-VU. Channel Master Corporation. SN 190,877. Pub. 11–17–64. Filed 4–13–64.

784,341. KAPPA-VU. Channel Master Corporation. SN 190,879. Pub. 11–17–64. Filed 4–13–64.

784,342. MISCELLANEOUS DESIGN. Hav-Tek Designers Inc. SN 191,102. Pub. 11–17–64. Filed 4–10–64.

784,343. SELECTRA. Sunbeam Lighting Company. SN 193,587. Pub. 11–17–64. Filed 5–15–64.

784,344. UTILOGIC. Signetics Corporation. SN 197,434. Pub. 11–17–64. Filed 7–8–64.

784,345. DYNATRON. Scovill Manufacturing Company. SN 198,592. Pub. 11–17–64. Filed 7–27–64.

## Class 22 — Games, Toys, and Sporting Goods

784,250. (See Class 12 for this trademark.)

784,346. CUTIE PIE. Jolly Toys, Inc. SN 177,176. Pub. 11–17–64. Filed 9–17–63.

784,347. PEWEE THE WOOD PECKER. L. K. Hecht Co., Inc. SN 184,274. Pub. 11–17–64. Filed 1–7–64.

784,348. TOURISMO. Volkswagen of America, Inc. SN 186,485. Pub. 11–17–64. Filed 2–11–64.

784,349. BID 'N' BUY. Bruce J. Johnson. SN 187,019. Pub. 11–17–64. Filed 2–19–64.

784,350. CENTER LINE AND DESIGN. Advance Casting Corporation. SN 187,060. Pub. 11–17–64. Filed 2–20–64.

784,351. LIVLON. Momoi Company, Inc. SN 188,127. Pub. 11–17–64. Filed 3–6–64.

784,352. PRESENTATION SERIES. Louis Marx & Co. Inc. SN 188,254. Pub. 11–17–64. Filed 3–9–64.

784,353. PORT-A-CORT. Richard D. Bottorff. SN 189,865. Pub. 11–17–64. Filed 3–30–64.

784,354. PAK-O-FUN. J. Halpern Company. SN 190,080. Pub. 11–17–64. Filed 4–1–64.

784,355. KLIK POOL. Jaymar Specialty Company. SN 190,521. Pub. 11–17–64. Filed 4–7–64.

784,356. KANGAROO AND DESIGN. Flex Products, Inc. SN 190,605. Pub. 11–17–64. Filed 4–8–64.

784,357. BLABBER MOUTH. Gudebrod Bros. Silk Co., Inc. SN 190,607. Pub. 11–17–64. Filed 4–8–64.

784,358. BASSPIRIN. Gudebrod Bros. Silk Co., Inc. SN 190,608. Pub. 11–17–64. Filed 4–8–64.

784,359. NIMBLE NOSE. Gudebrod Bros. Silk Co., Inc. SN 190,609. Pub. 11–17–64. Filed 4–8–64.

784,360. BUMP 'N' GRIND. Gudebrod Bros. Silk Co., Inc. SN 190,610. Pub. 11–17–64. Filed 4–8–64.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

784,254. (See Class 13 for this trademark.)

784,361. RADIKON. Projecting AB. SN 148,533. Pub. 11–17–64. Filed 7–6–62.

784,362. SNAP-LOK. Moestype Corporation. SN 157,634. Pub. 11–17–64. Filed 11–20–62.

784,363. THREE CHAMBER SYSTEM SWK AND DESIGN. Seits-Werke G.m.b.H. SN 160,446. Pub. 11–17–64. Filed 1–9–63.

784,364. HENSCHEL. Henschel-Werke Aktiengesellschaft. SN 169,374. Pub. 11–17–64. Filed 5–21–63.

784,365. TECNOMA AND DESIGN. Societe Pour la Diffusion de Techniques Nouvelles et de Machinisme Agricole. SN 169,776. Pub. 11–17–64. Filed 5–27–63.

784,366. MULTI-BENDER. Niagara Machine & Tool Works. SN 171,693. Pub. 11–17–64. Filed 6–24–63.

784,367. VIBRA-FLOW. Link-Belt Company. SN 173,660. Pub. 11–17–64. Filed 7–24–63.

784,368. AMER-O-MATIC. American Truck Washing and Detergent Co., d.b.a. American Truck and Bus Washing Equipment Company. SN 178,519. Pub. 11–17–64. Filed 10–8–63.

784,369. DD2. Bendix-Westinghouse Automotive Air Brake Company. SN 178,580. Pub. 11–17–64. Filed 10–9–63.

784,370. SD3. Bendix-Westinghouse Automotive Air Brake Company. SN 178,581. Pub. 11–17–64. Filed 10–9–63.

784,371. KOTER-KING. Stewart-Warner Corporation. SN 178,988. Pub. 11–17–64. Filed 10–14–63.

784,372. ENDOLUBE. Emerson Electric Co., by change of name from The Emerson Electric Manufacturing Company. SN 179,523. Pub. 11–17–64. Filed 10–22–63.

784,373. WINDO ZIPPER. Red Devil Tools. SN 182,354. Pub. 11–17–64. Filed 12–4–63.

784,374. MERCO BOWL. Dorr-Oliver Incorporated. SN 182,409. Pub. 11–17–64. Filed 12–5–63.

784,375. GENERAL METALS. American Steel Foundries Incorporated. SN 187,383. Pub. 11–17–64. Filed 2–25–64.

784,376. THE WHITE GLOVE LINE. The Huffman-Wolfe Company. SN 189,703. Pub. 11–17–64. Filed 3–26–64.

784,377. TWIN-BLO. Garret H. Vandermolen, d.b.a. Vandermolen Export Co. SN 193,736. Pub. 11–17–64. Filed 5–15–64.

784,378. FEITSEW. The Feit Company, Inc. SN 194,042. Pub. 11–17–64. Filed 5–22–64.

784,379. P AND DESIGN. Patterson Industries, Inc. SN 194,213. Pub. 11–17–64. Filed 5–25–64.

784,380. AMPACT. AMP Incorporated. SN 195,265. Pub. 11–17–64. Filed 6–10–64.

784,381. HI-BOY. Hahn, Inc. SN 195,404. Pub. 11–17–64. Filed 6–11–64.

784,382. SPARTAN HEAD (DESIGN). Conco Engineering Works, Inc. SN 195,647. Pub. 11–17–64. Filed 6–15–64.

784,383. DRYJECTOR. Midland-Ross Corporation. SN 195,690. Pub. 11–17–64. Filed 6–15–64.

784,384. ALKIRK. Alkirk Inc. SN 195,755. Pub. 11–17–64. Filed 6–16–64.

784,385. PILOT PULL. Alkirk Inc. SN 195,756. Pub. 11–17–64. Filed 6–16–64.

784,386. GREENLEE AND DESIGN. Greenlee Bros. & Co. SN 195,783. Pub. 11–17–64. Filed 6–16–64.

784,387. B & T. Greenlee Bros. & Co. SN 195,784. Pub. 11–17–64. Filed 6–16–64.

784,388. PERMALIFE. Jeffrey Galion Manufacturing Company. SN 195,790. Pub. 11–17–64. Filed 6–16–64.

784,389. KM AND DESIGN. Krauss-Maffei Aktiengesellschaft. SN 195,795. Pub. 11–17–64. Filed 6–16–64.

784,390. CAPSUL-PAC. Precision Automotive Components Company. SN 196,058. Pub. 11–17–64. Filed 6–19–64.

784,391. STERLOK. Firth Sterling, Inc. SN 196,135. Pub. 11–17–64. Filed 6–22–64.

784,392. START-ALL. Goodall Manufacturing Corporation. SN 196,144. Pub. 11–17–64. Filed 6–22–64.

784,393. CLEAN-ALL. Goodall Manufacturing Corporation. SN 196,145. Pub. 11–17–64. Filed 6–22–64.

784,394. PRESS-ALL. Goodall Manufacturing Corporation. SN 196,146. Pub. 11–17–64. Filed 6–22–64.

784,395. ANGSTROMATIC. H & H Machine Tool Co., Inc. SN 196,149. Pub. 11–17–64. Filed 6–22–64.

784,396. OETIKER AND DESIGN. Hans Oetiker. SN 197,319. Pub. 11–17–64. Filed 7–7–64.

784,397. CCC (DESIGN). Carmel Chemical Corporation. SN 197,670. Pub. 11–17–64. Filed 7–13–64.

784,398. POUCHOMATIC. The Monarch Marking System Company. SN 197,744. Pub. 11–17–64. Filed 7–13–64.

## Class 24 — Laundry Appliances and Machines

784,399. OWL INC. AND DESIGN. Owl, Inc. SN 198,370. Pub. 11–17–64. Filed 7–22–64.

## Class 25 — Locks and Safes

784,400. KESO. Keso Ltd. SN 179,545. Pub. 11–17–64. Filed 10–22–63.

## Class 26 — Measuring and Scientific Appliances

784,318. (See Class 21 for this trademark.)

784,326. (See Class 21 for this trademark.)

784,327. (See Class 21 for this trademark.)

784,328. (See Class 21 for this trademark.)



784,401. SONNE. Chicago Aerial Industries, Inc. SN 112,949. Pub. 11–17–64. Filed 2–2–61.

784,402. STOPOMATIC. Burleigh Brooks Inc. SN 160,745. Pub. 11–17–64. Filed 1–16–63.

784,403. CUSTOM CONTACTS AND DESIGN. Richard B. Hunt, d.b.a. Custom Contacts. SN 165,134. Pub. 11–17–64. Filed 3–21–63.

784,404. MAISCH. Tuthill Pump Company. SN 173,067. Pub. 11–17–64. Filed 7–15–63.

784,405. VIBRA-FLOW. Link-Belt Company. SN 173,661. Pub. 11–17–64. Filed 7–24–63.

784,406. ZEITFUCHS. Cannon Instrument Company. SN 176,775. Pub. 11–17–64. Filed 9–12–63.

784,407. EVERITE. John P. Squier, d.b.a. John P. Squier Company. SN 178,142. Pub. 11–17–64. Filed 10–1–63.

784,408. VERI-PAN. Eastman Kodak Company. SN 178,267. Pub. 11–17–64. Filed 10–3–63.

784,409. MONOROCK. Tacoma Millwork Supply Co. SN 178,307. Pub. 11–17–64. Filed 10–3–63.

784,410. FEMTOMETER. The Victoreen Instrument Company. SN 178,839. Pub. 11–17–64. Filed 10–11–63.

784,411. MONTEK. Model Engineering and Manufacturing Corporation. SN 178,946. Pub. 11–17–64. Filed 10–14–63.

784,412. CHROMAFLEX. Kontes Glass Company. SN 181,985. Pub. 11–17–64. Filed 11–27–63.

784,413. KIMAX–34. Owens-Illinois Glass Company. SN 184,174. Pub. 11–17–64. Filed 1–7–64.

784,414. TEMPETTE. Techne (Cambridge) Limited. SN 184,414. Pub. 11–17–64. Filed 12–30–63.

784,415. ELECTRO-GUARD AND DESIGN. Buck Engineering Company, Inc. SN 186,438. Pub. 11–17–64. Filed 2–11–64.

784,416. COPY KING. Sears, Roebuck and Co. SN 186,899. Pub. 11–17–64. Filed 2–17–64.

784,417. SUPERFAX. Eaton Paper Corporation. SN 190,796. Pub. 11–17–64. Filed 4–10–64.

784,418. WEATHERMATIC. Telsco Industries. SN 191,456. Pub. 11–17–64. Filed 4–17–64.

784,419. FFR FLUID-FLOW READING AND DESIGN. Soroban Engineering, Inc. SN 191,804. Pub. 11–17–64. Filed 4–22–64.

784,420. CARDINAL-MATIC. Cardinal Scale Manufacturing Company. SN 192,559. Pub. 11–17–64. Filed 5–4–64.

784,421. ITW AND DESIGN. Illinois Tool Works Inc. SN 192,829. Pub. 11–17–64. Filed 5–6–64.

784,422. AIRGUIDE. Airguide Instrument Company. SN 192,872. Pub. 11–17–64. Filed 5–7–64.

784,423. TRU-TOE. Bear Manufacturing Company. SN 192,982. Pub. 11–17–64. Filed 5–8–64.

## Class 27 — Horological Instruments

784,424. DIASHOCK. Kabushiki Kaisha Hattori Tokeiten. SN 182,089. Pub. 11–17–64. Filed 11–29–63.

784,425. GOLDFEATHER. Kabushiki Kaisha Hattori Tokeiten. SN 182,090. Pub. 11–17–64. Filed 11–29–63.

784,426. THE STARTIME. Sunbeam Corporation. SN 185,252. Pub. 11–17–64. Filed 1–23–64.

784,427. CONDOR. Everbrite Watch Co., Inc. SN 193,647. Pub. 11–17–64. Filed 5–18–64.

784,428. AQUATRON. Bulova Watch Company, Inc. SN 200,817. Pub. 11–17–64. Filed 8–28–64.

784,429. FANFARE. Sunbeam Corporation. SN 201,059. Pub. 11–17–64. Filed 9–1–64.

784,430. DONAR. Amida S.A. (Amida Limited). SN 201,174. Pub. 11–17–64. Filed 9–3–64.

784,431. MICROMATIC. Elgin National Watch Company. SN 201,404. Pub. 11–17–64. Filed 9–8–64.



## Class 28 — Jewelry and Precious-Metal Ware

784,432. PEARL WARDROBE. Coro Incorporated of Rhode Island. SN 193,942. Pub. 11–17–64. Filed 5–21–64.

784,433. VARGAS. Vargas Manufacturing Co. SN 196,213. Pub. 11–17–64. Filed 6–22–64.

784,434. C–14K–L. Continental Charms, Inc. SN 196,507. Pub. 11–17–64. Filed 6–26–64.

784,435. AMFLEX. American Stay Company. SN 197,246. Pub. 11–17–64. Filed 7–7–64.

## Class 29 — Brooms, Brushes, and Dusters

784,436. MR. DUSTY AND DESIGN. Wilhela Cushman, d.b.a. Willa Cee Products. SN 178,678. Pub. 11–17–64. Filed 10–10–63.

784,437. BUFFERINO. James D. Gainsley, d.b.a. Bufferino Company. SN 194,874. Pub. 11–17–64. Filed 6–4–64.

## Class 32 — Furniture and Upholstery

784,438. MULTIFORM. Mauser Kommandit-Gesellschaft. SN 140,469. Pub. 11–17–64. Filed 3–22–62.

784,439. LOCK 1776 AND DESIGN. Albert M. Lock & Son, Inc. SN 176,546. Pub. 11–17–64. Filed 9–9–63.

784,440. GINGHER ETC. AND DESIGN. Gingher Manufacturing Company, Inc. SN 186,248. Pub. 11–17–64. Filed 2–7–64.

784,441. SLEEPMORE. National Sleep Products, Inc. SN 190,741. Pub. 11–17–64. Filed 4–9–64.

784,442. SHADY SAM. Shady Sam, Inc. SN 192,639. Pub. 11–17–64. Filed 5–4–64.

784,443. MAIL-A-STAND. Ad-Lithograph, Inc. SN 194,100. Pub. 11–17–64. Filed 5–20–64.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

784,254. (See Class 13 for this trademark.)

784,444. BI AND DESIGN. Brule Incinerator Corporation, assignee of Goder Incinerator Corporation. SN 153,402. Pub. 11–17–64. Filed 9–18–62.

784,445. MICROFLO. Eutectic Welding Alloys Corporation. SN 191,375. Pub. 9–29–64. Filed 4–17–64.

784,446. ACO-LITER AND DESIGN. Gordon E. Mycue. SN 195,695. Pub. 11–17–64. Filed 6–15–64.

784,447. DIXLOK. The Joseph Dixon Crucible Company. SN 196,642. Pub. 11–17–64. Filed 6–29–64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

784,448. LEXINGTON. Dunlop Tire and Rubber Corporation. SN 177,508. Pub. 11–17–64. Filed 9–23–63.

784,449. STERLING SPIROFLEX. Sterling Packing & Gasket Company, Inc. SN 180,242. Pub. 11–17–64. Filed 10–31–63.

784,450. ZEBRA LINING AND DESIGN. United Manufacturing Company. SN 191,332. Pub. 11–17–64. Filed 4–16–64.

## Class 36 — Musical Instruments and Supplies

784,451. SPECIAL T. Specialty Distributing Co., Inc. SN 176,041. Pub. 11–17–64. Filed 8–29–63.

784,452. ARC. Arc Sound Limited. SN 176,272. Pub. 11–17–64. Filed 7–19–63.

784,453. GUIDED-FINGERS. Dampp-Chaser, Inc. SN 179,124. Pub. 11–17–64. Filed 10–16–63.

784,454. TONE-O-MATIC. V-M Corporation. SN 189,123. Pub. 11–17–64. Filed 3–19–64.

## Class 37 — Paper and Stationery

784,455. YOUR DAY. Windsong, Inc. SN 185,093. Pub. 11–17–64. Filed 1–21–64.

784,456. COPYTHERM. Nashua Corporation. SN 186,743. Pub. 11–17–64. Filed 2–14–64.

784,457. STYLE-RITER. The Carter's Ink Company. SN 190,591. Pub. 11–17–64. Filed 4–8–64.

784,458. PAINT-CRAYS. School House Products, Inc. SN 190,648. Pub. 11–17–64. Filed 4–8–64.

784,459. INVERNESS. Whiting & Company, Inc. SN 190,681. Pub. 11–17–64. Filed 4–8–64.

784,460. OETIKER AND DESIGN. Hans Oetiker. SN 197,320. Pub. 11–17–64. Filed 1–9–64.

## Class 38 — Prints and Publications

784,461. SLIDE-A-RULE AND DESIGN. Marjorie H. Duncan, d.b.a. Slide-A-Rule Co. SN 185,877. Pub. 11–17–64. Filed 2–3–64.

784,462. CENTURY AMERICAN PICTURES STEM PRODUCTIONS AND DESIGN. Stanley Hurst Smith. SN 186,649. Pub. 11–17–64. Filed 2–13–64.

784,463. P AND DESIGN. James R. Tyson, d.b.a. Pegasus Press. SN 188,698. Pub. 11–17–64. Filed 3–16–64.

784,464. HUACHUCA HERALD AND DESIGN. Harvey H. Richards, Jr., and/or Lois A. Richards (joint owners). SN 188,800. Pub. 11–17–64. Filed 3–16–64.

784,465. VENTURE THE TRAVELER'S WORLD AND DESIGN. Cowles Magazines and Broadcasting, Inc. SN 189,685. Pub. 11–17–64. Filed 3–26–64.

784,466. VENTURE THE TRAVELER'S WORLD. Cowles Magazines and Broadcasting, Inc. SN 189,686. Pub. 11–17–64. Filed 3–26–64.

784,467. WISHBONE AND GLOBE DESIGN. Cowles Magazines and Broadcasting, Inc. SN 189,687. Pub. 11–17–64. Filed 3–26–64.

784,468. MUSICALL AND DESIGN. Musicall, Inc. SN 189,718. Pub. 11–17–64. Filed 3–26–64.

## Class 39 — Clothing

784,469. TWINKLE CRAFT AND DESIGN. Empire Manufacturing & Distributing Company, Inc. SN 124,534. Pub. 11–17–64. Filed 7–24–61.

784,470. STREAMLINE AND DESIGN. Charles Weiss & Sons, Inc. SN 146,692. Pub. 11–17–64. Filed 6–11–62.

784,471. LEATHER GUARD. International Shoe Company. SN 164,730. Pub. 11–17–64. Filed 3–15–63.

784,472. DUNBROOKE. Dunhill Shirt Company. SN 167,761. Pub. 11–17–64. Filed 4–22–63.

784,473. WITTY BROTHERS AND DESIGN. Witty Bros., Inc. SN 170,580. Pub. 11–17–64. Filed 6–7–63.

784,474. FABREL. Lansdale Clothes, Incorporated. SN 177,061. Pub. 11–17–64. Filed 9–16–63.

784,475. CADETTE GIRL SCOUT. Girl Scouts of the United States of America. SN 178,388. Pub. 11–17–64. Filed 10–4–63.

784,476. CADETTE AND DESIGN. Girl Scouts of the United States of America. SN 178,389. Pub. 11–17–64. Filed 10–4–63.

784,477. APEX. White Consolidated Industries, Inc., by change of name from White Sewing Machine Corporation. SN 186,299. Pub. 11–17–64. Filed 2–7–64.

784,478. MR. SID. A. Schreter & Sons Co., Inc. SN 189,627. Pub. 11–17–64. Filed 3–25–64.

784,479. LIVING. H. Daroff & Sons, Inc. SN 192,273. Pub. 11–17–64. Filed 4–29–64.

784,480. BARE DEVIL. Maidenform, Inc. SN 192,303. Pub. 11–17–64. Filed 4–29–64.

784,481. DAVIS CUP AND DESIGN. Davis Cup Apparel Limited. SN 192,574. Pub. 11–17–64. Filed 5–4–64.

784,482. CORNER HOUSE AND DESIGN. Janed, Inc. SN 192,599. Pub. 11–17–64. Filed 5–4–64.

784,483. BRASS RINGER. United States Rubber Company. SN 192,642. Pub. 11–17–64. Filed 5–4–64.

784,484. DUOFOLD AND DESIGN. Duofold, Inc. SN 192,905. Pub. 11–17–64. Filed 5–7–64.

## Class 40 — Fancy Goods, Furnishings, and Notions

784,485. SOBICO AND DESIGN. Velcrotex Societe Anonyme. SN 194,542. Pub. 11–17–64. Filed 5–28–64.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

784,486. NAP GUARD/SUPER LOFT. Pepperell Manufacturing Company. SN 174,706. Pub. 11–17–64. Filed 8–8–63.

784,487. PEXLOCK. Pextile Corporation of America. SN 174,905. Pub. 11–17–64. Filed 8–12–63.

784,488. TUFFCORE. Toscony, Inc. SN 175,222. Pub. 11–17–64. Filed 8–16–63.

784,489. SUNNI CANE. Milton C. Blum, Inc. SN 176,879. Pub. 11–17–64. Filed 9–13–63.

784,490. ROYALWEAVE. Royalmetal Corporation. SN 179,266. Pub. 11–17–64. Filed 10–17–63.

784,491. ELEGANZA. Gloversville-Continental Mills, Inc. SN 183,261. Pub. 11–17–64. Filed 12–19–63.

784,492. THERMO-FAB. American Finishing Company. SN 183,724. Pub. 11–17–64. Filed 12–30–63.

784,493. DUBLINK. Abaco Fabrics Corp. SN 183,863. Pub. 11–17–64. Filed 1–2–64.

784,494. WINCAMA. Blue Ridge Textile Company, Inc. SN 185,557. Pub. 11–17–64. Filed 1–29–64.

784,495. SHRINK NIX AND DESIGN. United Elastic Corporation. SN 186,580. Pub. 11–17–64. Filed 2–12–64.

784,496. MONOSTRETCH AND DESIGN. United Elastic Corporation. SN 186,981. Pub. 11–17–64. Filed 2–18–64.

784,497. LETHAKIN. C. Haedke & Co., Inc. SN 187,393. Pub. 11–17–64. Filed 2–25–64.

784,498. SPRINGFIELD. Chatham Manufacturing Company. SN 187,911. Pub. 11–17–64. Filed 3–4–64.

784,499. DAN SPAN. Dan River Mills, Incorporated. SN 189,874. Pub. 10–20–64. Filed 3–30–64.

784,500. ROMAINE. E. T. Barwick Mills, Inc. SN 191,744. Pub. 11–17–64. Filed 4–22–64.

784,501. RIVERWHIP. Dan River Mills, Incorporated. SN 191,840. Pub. 11–17–64. Filed 4–23–64.

784,502. CLEANPATH. Cabin Crafts, Inc. SN 192,266. Pub. 11–17–64. Filed 4–29–64.

784,503. SUEDORA. Deering Milliken, Inc. SN 192,373. Pub. 11–17–64. Filed 4–30–64.

784,504. RABBIT HEAD (DESIGN). HMH Publishing Co., Inc. SN 192,592. Pub. 11–17–64. Filed 5–4–64.



784,505. FEATHER-FLUFF. J. P. Stevens & Co., Inc. SN 192,640. Pub. 11–17–64. Filed 5–4–64.

784,506. WILLIAMSBURG. Williamsburg Restoration, Incorporated. SN 192,652. Pub. 11–17–64. Filed 5–4–64.

784,507. 4CWXX ETC. AND DESIGN. Williamsburg Restoration, Incorporated. SN 192,653. Pub. 11–17–64. Filed 5–4–64.

784,508. THE SOFTEST TOUCH OF ALL! M. Lowenstein & Sons, Inc. SN 192,919. Pub. 11–17–64. Filed 5–7–64.

784,509. DEBUT. Sparks, Inc. SN 192,954. Pub. 11–17–64. Filed 5–7–64.

784,510. VENTNOR. Crompton Company. SN 192,996. Pub. 11–17–64. Filed 5–8–64.

784,511. RIATA. Crompton Company. SN 192,997. Pub. 11–17–64. Filed 5–8–64.

784,512. CANSPAN. Canton Cotton Mills. SN 193,104. Pub. 11–10–64. Filed 5–11–64.

784,513. INTA-LINING. Ardsley Curtain Co., Inc. SN 193,255. Pub. 11–17–64. Filed 5–12–64.

## Class 43 — Thread and Yarn

784,514. REVONAH. Revonah Spinning Mills. SN 186,894. Pub. 11–17–64. Filed 2–17–64.

784,515. "DUNDEE." Emile Bernat & Sons Company. SN 187,919. Pub. 11–17–64. Filed 3–4–64.

784,516. CANDISHEEN. Melrose Yarn Co., Inc. SN 189,603. Pub. 11–17–64. Filed 3–25–64.

784,517. FAIRHAVEN. Brunswick Worsted Mills, Inc. SN 192,470. Pub. 11–17–64. Filed 5–1–64.

784,518. MONTESSA. Emile Bernat & Sons Co. SN 192,549. Pub. 11–17–64. Filed 5–4–64.

784,519. FIBER 60. FMC Corporation. SN 192,813. Pub. 11–17–64. Filed 5–6–64.

784,520. SPANLILE. Sellers Manufacturing Company, Inc. SN 193,050. Pub. 11–17–64. Filed 5–8–64.

## Class 44 — Dental, Medical, and Surgical Appliances

784,521. TWIST-FLEX. Unitek Corporation. SN 153,350. Pub. 11–17–64. Filed 9–17–62.

784,522. "ROLL BACK THE YEARS" AND DESIGN. Eugenie Haagen. SN 156,293. Pub. 11–17–64. Filed 10–31–62.

784,523. SILVA. Silva Inc. SN 182,367. Pub. 11–17–64. Filed 12–4–63.

784,524. LITTLE ANGEL AND DESIGN. Alan Jay-Claro-lyte Company. SN 183,353. Pub. 11–17–64. Filed 12–23–63.

784,525. NAILAID. Millers Forge Mfg. Corp. SN 184,828. Pub. 11–17–64. Filed 1–17–64.

784,526. EKOLINE 20. Smith Kline & French Laboratories. SN 187,692. Pub. 11–17–64. Filed 2–28–64.

784,527. AQUA-MATIC. C. R. Bard, Inc. SN 193,321. Pub. 10–27–64. Filed 5–13–64.

784,528. ZIMALOY. Zimmer Manufacturing Company. SN 195,033. Pub. 11–17–64. Filed 6–5–64.

## Class 46 — Foods and Ingredients of Foods

784,529. ICEYTEA. Manfred Kombrecht, d.b.a. Ceytea Import G.m.b.H. & Co. SN 142,952. Pub. 11–17–64. Filed 4–24–62.

784,530. JOTS. E. J. Brach & Sons. SN 155,129. Pub. 11–17–64. Filed 10–15–62.

784,531. DIXIE LILY. Dixie Lily Milling Co. SN 155,390. Pub. 11–17–64. Filed 10–18–62.

784,532. DIXIE LILY ETC. AND DESIGN. Dixie Lily Milling Co. SN 155,391. Pub. 11–17–64. Filed 10–18–62.

784,533. TWICE ON SUNDAE. Thomas Carvel. SN 162,232. Pub. 11–17–64. Filed 2–7–63.

784,534. BONIATILLO. Superfrut International Inc. SN 163,428. Pub. 11–17–64. Filed 2–25–63.

784,535. PEANUT-FROSS. Sokol & Company. SN 173,975. Pub. 11–17–64. Filed 7–29–63.

784,536. BAKER'S CHAMPION. General Foods Corporation. SN 176,366. Pub. 11–17–64. Filed 9–5–63.

784,537. KERNEL-FRESH. General Foods Corporation. SN 178,909. Pub. 11–17–64. Filed 10–14–63.

784,538. NICKERSON FARMS AND DESIGN. I. J. Nickerson, d.b.a. Nickerson Farms. SN 180,605. Pub. 11–17–64. Filed 11–6–63.

784,539. QUEEN-BEE HONEY AND DESIGN. I. J. Nickerson, d.b.a. Nickerson Farms. SN 180,606. Pub. 11–17–64. Filed 11–6–63.

784,540. FRUIT MOLD SUPREME. General Foods Corporation. SN 182,325. Pub. 11–17–64. Filed 12–4–63.

784,541. WHITE STAR. Ralston Purina Company. SN 183,923. Pub. 11–17–64. Filed 1–2–64.

784,542. WHITE STAR AND DESIGN. Ralston Purina Company. SN 183,924. Pub. 11–17–64. Filed 1–2–64.

784,543. ABBEY GARDEN. Abbey Garden, Inc. SN 183,947. Pub. 11–17–64. Filed 1–3–64.

784,544. ECONOMY-WISE. The Mar-Gold Corporation. SN 184,638. Pub. 9–15–64. Filed 1–15–64.

784,545. FANCIFUL GIRAFFE (DESIGN). The Chunky Corporation. SN 184,887. Pub. 11–17–64. Filed 1–20–64.

784,546. SOUR QUEEN. Sue Ann Food Products Corporation, d.b.a. Sunnyhill Farm Products. SN 185,452. Pub. 11–17–64. Filed 1–27–64.

784,547. BARACHOIS. Pecheurs Unis de Quebec–Quebec United Fishermen. SN 185,928. Pub. 11–17–64. Filed 2–3–64.

784,548. NORD-OST. Frank Ryser Co. SN 186,648. Pub. 11–17–64. Filed 2–13–64.

784,549. HOO-RAYS. National Biscuit Company. SN 187,682. Pub. 11–17–64. Filed 2–28–64.

784,550. HONI-BAKE. Food Technology, Inc. SN 189,570. Pub. 11–17–64. Filed 3–25–64.

784,551. HONI-FLAKE. Food Technology, Inc. SN 189,571. Pub. 11–17–64. Filed 3–25–64.

784,552. B BROUGHTON AND DESIGN. Broughton's Farm Dairy, Inc. SN 191,122. Pub. 11–17–64. Filed 4–15–64.

784,553. STEINN CHEESE AND DESIGN. Frank Ryser Co. SN 191,799. Pub. 11–17–64. Filed 4–22–64.

## Class 47 — Wines

784,554. PRINCE OF DENMARK AND DESIGN. Svendborg Vinkompagni A.m.b.A. SN 179,923. Pub. 11–17–64. Filed 10–28–63.

784,555. FETE DU COCHELET. Champagne Taittinger Compagnie Commerciale & Viticole Champenoise. SN 180,840. Pub. 11–17–64. Filed 11–12–63.

784,556. CUVEE DES COTEAUX. Champagne Taittinger Compagnie Commerciale & Viticole Champenoise. SN 180,841. Pub. 11–17–64. Filed 11–12–63.

784,557. RIO DE ORO. Continental Beverages, Inc. SN 187,478. Pub. 11–17–64. Filed 2–26–64.

## Class 49 — Distilled Alcoholic Liquors

784,558. SNO SHOE. Ed. Phillips & Sons Co. SN 167,315. Pub. 11–17–64. Filed 4–22–63.

784,559. OLD REPEATER. Old Stanley Distillery, Inc., d.b.a. Old Repeater Distillery. SN 186,634. Pub. 11–17–64. Filed 2–13–64.

784,560. CREST (DESIGN). J. & G. Oldfield Limited. SN 188,882. Pub. 11–17–64. Filed 3–17–64.

784,561. CANADIAN TRAPPER. Foreign Vintages, Inc. SN 189,065. Pub. 11–17–64. Filed 3–19–64.

784,562. PAUL REVERE. Distillers Corporation (S.A.) Limited. SN 189,277. Pub. 11–17–64. Filed 3–23–64.

784,563. MACTAGGART'S ETC. AND DESIGN. Parrott & Co. SN 189,833. Pub. 11–17–64. Filed 4–17–64.

784,564. GLEN NIVEN. Douglas MacNiven & Co., Limited. SN 189,883. Pub. 11–17–64. Filed 3–30–64.

## Class 50 — Merchandise Not Otherwise Classified

784,565. PAR AND DESIGN. California Metal Enameling Company. SN 180,835. Pub. 11–17–64. Filed 11–12–63.

784,566. ETERNAL FLAME. Coggins Granite Industries, Inc. SN 183,315. Pub. 11–17–64. Filed 12–20–63.

784,567. MISCELLANEOUS DESIGN. Dymo Industries, Inc. SN 189,885. Pub. 11–17–64. Filed 3–30–64.

784,568. REGENCY. Sternco Industries, Inc. SN 197,998. Pub. 11–17–64. Filed 7–16–64.

## Class 51 — Cosmetics and Toilet Preparations

784,569. R & G. Roger & Gallet S.A., assignee of Roger & Gallet. SN 165,174. Pub. 11–17–64. Filed 3–21–63.

784,570. ROURE DUPONT AND DESIGN. Roure-Dupont, Inc. SN 172,340. Pub. 11–17–64. Filed 7–2–63.

784,571. DREAM MAKE-UP. The Andrew Jergens Company. SN 184,196. Pub. 9–29–64. Filed 1–8–64.

784,572. BUT NATURALLY. Lehn & Fink Products Corporation. SN 186,177. Pub. 11–17–64. Filed 2–6–64.

784,573. RVP. Paul B. Elder Company. SN 187,266. Pub. 11–17–64. Filed 2–24–64.

784,574. EILEEN FORD. Ford Model Agency, Incorporated. SN 187,269. Pub. 11–17–64. Filed 2–24–64.

784,575. KELDERMA. L. H. Kellogg Chemical Company. SN 189,321. Pub. 11–17–64. Filed 3–23–64.

784,576. TENDER TOUCH. Helene Curtis Industries, Inc. SN 190,163. Pub. 11–17–64. Filed 4–2–64.

784,577. COLORATURA. Lehn & Fink Products Corporation. SN 191,303. Pub. 11–17–64. Filed 4–16–64.

## Class 52 — Detergents and Soaps

784,242. (See Class 6 for this trademark.)

784,578. LIQUID POWER. Lehn & Fink Products Corporation. SN 180,747. Pub. 11–17–64. Filed 11–8–63.

784,579. UNIT SUDZ. Martens Chemical Corp. SN 186,178. Pub. 11–17–64. Filed 2–6–64.

784,580. CARBOSTRIP. Purex Corporation, Ltd., d.b.a. Turco Products, Inc. SN 187,885. Pub. 11–17–64. Filed 3–3–64.

784,581. WESTGRIP. West Chemical Products, Inc. SN 188,688. Pub. 11–17–64. Filed 3–13–64.

784,582. SEBUTONE. Foster-Milburn Company. SN 194,044. Pub. 9–29–64. Filed 5–22–64.

# Service Marks

## Class 100 — Miscellaneous

784,583. CPC AND DESIGN. The College Placement Council, Inc. SN 185,271. Pub. 11–17–64. Filed 1–24–64.

784,584. FLYING EGRET (DESIGN). National Audubon Society, Inc. SN 186,962. Pub. 11–17–64. Filed 2–18–64.

## Class 106 — Material Treatment

784,585. MCLS AND DESIGN. Medical Contact Lens Service, Inc., assignee of Vue Optical Products, Inc. SN 161,926. Pub. 10–20–64. Filed 2–1–63.

784,586. HL (DESIGN). Barry J. Brose, d.b.a. Highland Laboratories. SN 186,512. Pub. 11–17–64. Filed 2–12–64.

## Class 107 — Education and Entertainment

784,587. FP AND DESIGN. Famous Artists Schools, Inc. SN 183,168. Pub. 11–17–64. Filed 12–17–63.

784,588. THE APOLLOS. Robert E. Baumann, d.b.a. The Apollos. SN 186,509. Pub. 11–17–64. Filed 2–12–64.

# Certification Mark

## Class A — Goods

784,589. ASA ETC. AND DESIGN. The American Sunbathing Association, Inc. SN 187,986. Pub. 11–17–64. Filed 2–10–64.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 2 — Receptacles

784,590. Texas Plastics, Inc., Elsa, Tex. SN 190,219. Filed P.R. 4–2–64; Am. S.R. 11–16–64.

**POLY-VENT**

For Polyethylene Bags for Packaging Produce.
First use October 1963.

## Class 21 — Electrical Apparatus, Machines, and Supplies

784,591. Electro-Trace Corporation, Westport, Conn. SN 157,891. Filed P.R. 11–26–62; Am. S.R. 11–17–64.

**ELECTROWRAP**

For Strips of Material Adapted To Be Wrapped Aroupd Pipes So as To Heat Such Pipes by Electrical Resistance Heating Techniques.
First use Nov. 5, 1962.



## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

784,592. Applied Power Industries, Inc., Milwaukee, Wis. SN 184,006. Filed P.R. 12–14–61; Am. S.R. 11–27–64.

**SPLIT FLOW**

For Fluid Pumps.
First use Nov. 30, 1961.

784,593. Finishine Laboratories, Inc., Syracuse, N.Y. SN 189,066. Filed P.R. 3–5–62; Am. S.R. 11–25–64.

**MULTISPRAY**

For Portable Paint Sprayers and Parts Thereof.
First use July 21, 1961.

784,594. Harpers International, Inc., New York, N.Y. SN 184,234. Filed P.R. 1–8–64; Am. S.R. 12–1–64.

**HARPERS**

For Carpenters' and Mechanics' Hand Tools.
First use Dec. 12, 1962.

784,595. Goldblatt Bros., Inc., Chicago, Ill. SN 197,486. Filed P.R. 7–9–64; Am. S.R. 11–19–64.

**STURDEE**

For Gasoline Powered Lawn Mowers.
First use February 1962.

## Class 26 — Measuring and Scientific Appliances

784,596. Hi-Speed Checkweigher Co., Inc., Ithaca, N.Y. SN 181,085. Filed P.R. 11–18–63; Am. S.R. 10–5–64.

**HI-SPEED**

For Automatic Weighing Equipment Including Automatic Checkweighers and Material Handling Systems.
First use on or about Apr. 8, 1953.

## Class 32 — Furniture and Upholstery

784,597. Joanna Western Mills Company, Chicago, Ill. SN 190,732. Filed P.R. 4–9–64; Am. S.R. 11–20–64.

**SHADE TOPPER**

For Valances for Window Shades.
First use Nov. 15, 1963.

## Class 37 — Paper and Stationery

784,598. Wilson Jones Company, Chicago, Ill. SN 178,853. Filed P.R. 10–4–63; Am. S.R. 12–2–64.

**TAX SAVERS**

For Combination Diary and Expanding File.
First use Dec. 10, 1962.

## Class 39 — Clothing

784,599. Warm-Wear, Inc., Kansas City, Mo. SN 170,006. Filed P.R. 5–29–63; Am. S.R. 6–3–64.

**Warmwear**

For Men's, Women's, and Children's Underwear and Caps.
First use March 1959.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

784,600. Carolyn Chenilles, Inc., New York, N.Y. SN 178,528. Filed P.R. 10–8–63; Am. S.R. 10–29–64.

**CLING-TITE**

For Covers for Use Around the Household—Namely, Furniture Throw Covers.
First use Sept. 16, 1963.

## Class 44 — Dental, Medical, and Surgical Appliances

784,601. American Seating Company, Grand Rapids, Mich. SN 193,917. Filed P.R. 5–21–64; Am. S.R. 11–23–64.

**POWERLIFT**

For Electrically-Operated Hospital Beds.
First use in or before August 1963.

784,602. Rexall Drug and Chemical Company, Los Angeles, Calif. SN 201,633. Filed 8–31–64.




For Pacifiers.
First use June 13, 1963.

# TRADEMARK REGISTRATIONS RENEWED

183,750. BERGENTHALER. Cl. 46. 5–6–24.
183,751. BRE-DENZER. Cl. 46. 5–6–24.
188,952. WHITE SHOWERS. Cl. 13. 9–9–24.
192,741. GOTHAM INVISIBLES. Cl. 39. 12–9–24.
192,797. HORACE GREELY AND DESIGN. Cl. 46. 12–9–24.
192,889. REVOLVO. Cl. 32. 12–16–24.
192,900. TRIM. Cl. 52. 12–16–24.
193,214. DRUM MAJOR. Cl. 36. 12–23–24.
193,674. GMC. Cl. 19. 1–6–25.
194,011. SPHINX. Cl. 5. 1–13–25.
194,357. HARRISON COOLED. Cl. 19. 1–20–25.
194,519. GUIDE. Cl. 21. 1–27–25.
195,100. DESIGN OF SCALES AND A KEYSTONE. Cl. 23. 2–17–25.
195,832. WHITE FROST. Cl. 46. 3–3–25.
196,417. BLUE BIRD AND DESIGN. Cl. 46. 3–17–25.
196,878. KROMIK. Cl. 16. 3–31–25.
197,244. TENACITY. Cl. 37. 4–14–25.
197,405. PADS-IT. Cl. 5. 4–14–25.
197,910. MEYER METAL AND DESIGN. Cl. 50. 4–28–25.
197,958. GOLDEN REY. Cl. 46. 4–28–25.
197,981. EX. Cl. 39. 4–28–25.
198,541. THE TEXACO STAR. Cl. 38. 5–19–25.
198,595. PEROXINE. Cl. 52. 5–19–25.
198,680. GOLDEN STAR AND DESIGN. Cl. 16. 5–26–25.
198,799. DEODO. Cl. 51. 5–26–25.
198,819. TALCAROME. Cl. 51. 5–26–25.
410,584. RACO. Cl. 14. 12–5–44.
410,633. HYDENSEL. Cl. 37. 12–5–44.
410,708. A PAIR OF HUMAN FEET. Cl. 39. 12–12–44.
411,212. FANCY FREE. Cl. 51. 1–9–45.
411,408. SHINDIGS. Cl. 39. 1–16–45.
411,430. PESISTICIDE. Cl. 6. 1–16–45.
411,431. PESISTO. Cl. 6. 1–16–45.
411,432. PESISTOL. Cl. 6. 1–16–45.
411,685. HONEYMOON. Cl. 39. 1–30–45.
412,669. DIAMOND BRAND AND DESIGN. Cl. 7. 3–20–45.
412,685. PECTO-KALIN. Cl. 18. 3–20–45.
413,307. POINTEX. Cl. 33. 4–17–45.
413,309. LINEX. Cl. 33. 4–17–45.
413,423. SPOTNAILS. Cl. 13. 4–24–45.
413,489. LADY LENNOX. Cl. 51. 4–24–45.
413,562. WEAREVER PACEMAKER AND DESIGN. Cl. 37. 5–1–45.
413,605. JEROME B. RICE SEED CO. Cl. 1. 5–1–45.
414,045. ROTOROLLED. Cl. 14. 5–22–45.

# TRADEMARK REGISTRATIONS CANCELED

**Section 8**

*The following registrations issued Dec. 16, 1958*

671,037. DELDISILK. Cl. 1.
671,038. PAK-A-LYT. Cl. 1.
671,041. STYROWOOD. Cl. 1.
671,042. CHUCK WAGON ETC. AND DESIGN. Cl. 1.
671,044. HALOID XEROX ETC. AND DESIGN. Cl. 1.
671,045. HALOID XEROX. Cl. 1.
671,047. CLOVERIT. Cl. 1.
671,048. RPC AND DESIGN. Cl. 2.
671,053. BUGATROL. Cl. 6.
671,058. AULA LAC AND DESIGN. Cl. 6.
671,063. SPRAY KING AND DESIGN. Cl. 6.
671,081. SIERRA. Cl. 13.
671,083. SINTOMETAL. Cl. 14.
671,086. UOP DRIACIN AND DESIGN. Cl. 15.
671,096. GOODWILL. Cl. 17.
671,098. EVANS. Cl. 18.
671,103. COSASTATIN. Cl. 18.
671,104. TRICO ZEMA AND DESIGN. Cl. 18.
671,111. NORISDRINE. Cl. 18.
671,122. BELDTHERM. Cl. 21.
671,123. SOOTY. Cl. 22.
671,124. DUPLI-BRIDGE. Cl. 22.
671,130. EMPIRE AND DESIGN. Cl. 22.
671,135. REDY-RACK. Cl. 23.
671,138. BANDOMATIC. Cl. 23.
671,139. SNO-SWEEP. Cl. 23.
671,146. DELUXE STEEL KING AND DESIGN. Cl. 23.
671,147. TUR HELIX ETC. AND DESIGN. Cl. 23.
671,152. CARBONITE. Cl. 23.
671,156. WEED-O-VATOR. Cl. 23.
671,163. CHLORO-GUARD. Cl. 23.
671,164. ICE-SCALATOR. Cl. 23.
671,167. CITCO STIX. Cl. 23.
671,169. SUPER FRUITEX. Cl. 24.
671,174. VARIO-DIAGON. Cl. 26.
671,180. BALLET-LOK. Cl. 28.
671,188. TIP-TOP. Cl. 31.
671,190. CORRELAIRE. Cl. 32.
671,192. DAW-LUXE. Cl. 32.
671,193. HICHIN POST. Cl. 32.
671,200. MAGNANTE. Cl. 36.
671,203. OFFICIAL MICKEY MOUSE CLUB AND DESIGN. Cl. 36.
671,206. STACO AND DESIGN. Cl. 37.
671,209. RAY-DIANT AND DESIGN. Cl. 37.
671,224. SCIENCE PERSPECTIVES. Cl. 38.
671,226. STAMPOLOG. Cl. 38.
671,228. SCREEN STAR. Cl. 39.
671,230. SCOOTER COAT LANSON ETC. AND DESIGN. Cl. 39.
671,236. KIT'S. Cl. 39.
671,237. POPLINYL. Cl. 39.
671,249. THAMES. Cl. 39.
671,253. HUSSCO. Cl. 39.
671,257. VIYELLON. Cl. 39.
671,263. EVERTRIM. Cl. 42.
671,264. THRIFT FASHIONS. Cl. 42.
671,265. GUILD GROUP. Cl. 42.
671,266. REDSTONE. Cl. 42.
671,267. FAILLOROY. Cl. 42.
671,269. PERLEE WHIRL. Cl. 42.
671,272. REPRESENTATION OF LABORATORY TECHNICIAN ETC. Cl. 44.
671,273. OLO. Cl. 44.
671,277. POTAGRAIN. Cl. 46.
671,279. WARREN'S AND DESIGN. Cl. 46.
671,281. PRIME PAK ETC. AND DESIGN. Cl. 46.
671,284. TOMASCIO. Cl. 46.
671,285. HEART OF MILK. Cl. 46.
671,286. CUMBERLAND VALLEY CV AND DESIGN. Cl. 46.
671,290. GRAND RIVER ORCHARDS. Cl. 46.
671,291. EXPLORER. Cl. 46.
671,294. EHLERS B AND DESIGN. Cl. 46.
671,296. IT'S-A-DILLY. Cl. 46.
671,312. ROBINSON CRUSOE. Cl. 50.
671,316. CREME N. Cl. 51.
671,318. KIDDIE-COMB. Cl. 51.
671,323. SIMONE MOUNIER. Cl. 52.
671,324. BOYCE-ITE. Cl. 52.
671,327. POLO-METRIC PROSTHETICS. Cl. 100.
671,329. WESTERN HILLS. Cl. 100.
671,330. TRIBO-NETICS. Cl. 100.
671,336. DEVICE INCLUDING THE LETTERS NA$P PROMINENTLY DISPLAYED. Cl. 102.
671,341. B.E.M. Cl. 103.
671,344. TOWN AND DESIGN. Cl. 107.
671,347. SPARKLE SHEEN. Cl. 7.
671,348. TINSEL SHEEN. Cl. 7.
671,349. SELF-FLASHING. Cl. 12.
671,355. LO-CAL-RIE SCHAFER'S AND DESIGN. Cl. 46.
671,356. STEPHANSON'S AND DESIGN. Cl. 46.
671,357. SAVE-A-TAPE. Cl. 101.

**Section 18**

698,743. E-Z PAPER PAK AND DESIGN. Cl. 2.



# REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

**The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.**

## Class 1 — Raw or Partly Prepared Materials

411,394. Jan. 16, 1945. United States Rubber Company, New York, N.Y. Pub. by registrant.

FLOTOFOAM

For Foamed Elastomeric Material in Semi-Finished Form for Further Use in Manufacturing.

## Class 4 — Abrasives and Polishing Materials

193,837. Jan. 6, 1925. A. P. Munning & Co., New York, N.Y. Pub. by Hanson-Van Winkle-Munning Company, Matawan, N.J.

TRIPLEX

For Buff Wheels.

## Class 8 — Smokers' Artides, Not Including Tobacco Products

187,715. Aug. 12, 1924. Samuel Gordon, New York, N.Y. Pub. by Lane Limited, New York, N.Y.

HOUSE OF LORDS

For Pipes, Cigar and Cigarette Holders, Pouch Tobacco Bags, Humidors, and Cigar and Cigarette Cases.

## Class 9 — Explosives, Firearms, Equipments, and Projectiles

436,169. Jan. 27, 1948. The Poly Choke Company, Incorporated, Tariffville, Conn. Pub. by registrant.

POLY CHOKE

For Barrel Choking Devices for Firearms.

## Class 10 — Fertilizers

288,323. Oct. 27, 1931. The Rogers & Hubbard Company, Portland, Conn. Pub. by The Hubbard-Hall Chemical Company, Waterbury, Conn.

GRO-FAST

For Plant Food.

## Class 12 — Construction Materials

410,176. Nov. 14, 1944. The Tile-Tex Company, Chicago Heights, Ill. Pub. by The Flintkote Company, New York, N.Y.

TUFF-TEX

For Floor Tile.

## Class 16 — Protective and Decorative Coatings

369,995. Aug. 8, 1939. Karl A. Millar, d.b.a. Millar & Company, Chicago, Ill. Pub. by De Soto Chemical Coatings, Inc., Chicago, Ill.

NO-KRODE

For Metal Primer.

## Class 21 — Electrical Apparatus, Machines, and Supplies

444,794. Feb. 16, 1954. Shurhit Products, Inc., Waukegan, Ill., assignor to Reconstruction Finance Corporation, Chicago, Ill. Pub. by Borg-Warner Corporation, Chicago, Ill.

Shurhit

For Coils, Contacts, Springs, Condensers, Ignition Switches and Cables, etc.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

204,588. Oct. 20, 1925. American Grinder Mfg. Co., Milwaukee, Wis. Pub. by Applied Power Industries, Inc., Milwaukee, Wis.

BLACKHAWK

For Water Circulating Pumps.

363,809. Jan. 10, 1939. American Machine & Foundry Company, New York, N.Y. Pub. by registrant.

AMF

For Tobacco Machinery and Parts Thereof, Particularly Cigarette Making Machinery and Attachments Therefor, Cigarette Tippers, Printers, Sealers, Pasters, Cutoffs, Collectors; Cigarette Tobacco Feeds; Bakery Machinery and Parts Thereof, Particularly Bread Wrappers and Attachments Thereto; Bread Package Sealers, Bread Slicers and Slicer Blades, Dough Dividers and Rounders, Roll Machines, Pan Cleaning and Greasing Machines, Flour Handling Equipment, Including Flour Storing and/or Conveying Machinery, Flour Sifters, Industrial Mixers and Bowl Handling Equipment for Said Mixers, Industrial Powdered Material Handling and Sifting Equipment; Apparel Machinery, Particularly Necktie Tie Sewing Machines and Necktie Folding Machines; Drilling and Tapping Machinery, Particularly Drill Chucks, Tapping Attachments, and Tap Chucks; Wrapping Machinery and Packing Machinery, Including Machinery for Wrapping and/or Packing, Cigars, Cigarettes, Bread, and Other Articles of Suitable Size and Shape, and Cartons Containing Edible and Other Materials, and Parts of All of the Foregoing Machinery and Mechanism.

443,260. Aug. 23, 1949. The Rapids-Standard Company, Inc., Grand Rapids, Mich. Pub. by registrant.

PRESS-VEYOR

For Electrically Operated, Heavy Duty, Portable, Endless Belt Conveyors Designed Primarily for Use on Industrial Conveying Jobs.

## Class 30 — Crockery, Earthenware, and Porcelain

410,283. Nov. 21, 1944. Sarah S. Fletcher, d.b.a. The Blue Wave, Kennebunk, Maine, assignor to Norman K. Wiggin and Anne B. Wiggin, d.b.a. The Blue Wave, Kennebunk, Maine. Pub. by Norman K. Wiggin and Anne B. Wigging, d.b.a. The Blue Wave, Kennebunk, Maine.




For Ceramic Vases and Tableware.

## Class 31 — Filters and Refrigerators

356,830. May 10, 1938. Commercial Filters Corporation, Melrose, Mass. Pub. by registrant.

Fulflo

For Filters.

## Class 38 — Prints and Publications

189,745. Sept. 23, 1924. The Tribune Company, Chicago, Ill. Pub. by registrant.

MOON MULLINS

For Series of Cartoons.

189,747. Sept. 23, 1924. The Tribune Company, Chicago, Ill. Pub. by registrant.

SMITTY

For Series of Cartoons.

## Class 39 — Clothing

307,096. Oct. 17, 1933. Arnold, Constable & Co., Inc., New York, N.Y. Pub. by Arnold Constable Corporation, New York, N.Y.

Unawares

For Corsets, Brassieres, Girdles and Lingerie—Namely, Bloomers, Vests, Bandeaux, etc.

412,506. Mar. 13, 1945. A. Schreter & Sons, Inc., Baltimore, Md. Pub. by A. Schreter & Sons Co., Inc., Baltimore, Md.

Smoothie

For Men's and Women's Handkerchiefs and Mufflers.

## Class 43 — Thread and Yarn

25,669. Dec. 18, 1894. J. & J. Baldwin, Halifax, England. Pub. by Patons & Baldwins Limited, Darlington, England.

J & J. BALDWIN
BEE HIVE
TRADE MARK
B B
HALIFAX.

For Yarns of Wool and Worsted.



25,674. Dec. 18, 1894. J. & J. Baldwin, Halifax, England. Pub. by Patons & Baldwins Limited, Darlington, England.

BEE-HIVE

For Yarns of Wool and Worsted.

## Class 47 — Wines

324,473. May 21, 1935. Maison F. Chauvenet, S.A., Nuits-Saint-Georges, France. Pub. by Societe Commerciale des Bourgognes de Marque F. Chavenet, Nuits-Saint-Georges, France.

RED CAP

For Wines.

## Class 49 — Distilled Alcoholic Liquors

410,046. Nov. 7, 1944. Indalecio Nunes, Guadalajara, Mexico. Pub. by registrant.

El Viejito

For Tequila.

## Class 51 — Cosmetics and Toilet Preparations

112,554. Sept. 12, 1916. Peptoline Chemical Co., Bessemer, Ala. Pub. by James Alfred Martin, d.b.a. Silko New Improved Products Company, Birmingham, Ala.

SILKO
P.C.C.
QUININE
HAIR-DRESSING

For Hair-Dressing Ointment.

410,511. Nov. 28, 1944. The S. S. White Dental Manufacturing Company, Philadelphia, Pa. Pub. by registrant.

ORALINE

For Tooth Paste, Mouth Wash and Tooth Powder.

## Class 52 — Detergents and Soaps

409,840. Oct. 24, 1944. The Pennsylvania Salt Manufacturing Company, Philadelphia, Pa. Pub. by Pennsalt Chemicals Corporation, Philadelphia, Pa.

PHOSPHOSIL

For Metal Cleaners Comprising a Compound of Phosphorus.

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AMP Inc., Harrisburg, Pa. 784,380, pub. 11–17–64. Cl. 23.
Abaco Fabrics Corp., New York, N.Y. 784,493, pub. 11–17–64. Cl. 42.
Abbey Garden Inc., New York, N.Y. 784,543, pub. 11–17–64. Cl. 46.
Abbott Laboratories, North Chicago, Ill. 671,111, canc. Cl. 18.
Acme Chemical Co.: *See*—
Remmers Soap Co., The.
Acton Laboratories, Inc., Acton, Mass. 784,318, pub. 11–17–64. Multiple Class (Classes 21 and 26).
Adhesive Engineering Co., San Carlos, Calif. 784,224, pub. 11–17–64. Cl. 5.
Ad-Lithograph, Inc., Pittsburgh, Pa. 784,443, pub. 11–17–64. Cl. 32.
Advance Casting Corp., Santa Monica, Calif. 784,350, pub. 11–17–64. Cl. 22.
Air Space Devices, Inc., Burbank, Calif. 784,251, pub. 11–17–64. Cl. 13.
Airguide Instrument Co., Chicago, Ill. 784,422, pub. 11–17–64. Cl. 26.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. 784,312, pub. 11–17–64. Cl. 18.
Alan Jay-Clarolyte Co., Roselle Park, N.J. 784,524, pub. 11–17–64. Cl. 44.
Alcron, Inc., New York, N.Y. 784,331, pub. 11–17–64. Cl. 21.
Alkirk Inc., Seattle, Wash. 784,384–5, pub. 11–17–64. Cl. 23.
Allegheny Steel Corp., Bryn Mawr, Pa. 784,221, pub. 11–17–64. Cl. 5.
American Agricultural Chemical Co., New York, N.Y. 784,247, pub. 11–17–64. Cl. 10.
American Finishing Co., Memphis, Tenn. 784,492, pub. 11–17–64. Cl. 42.
American Grinder Mfg. Co., by Applied Power Industries, Inc., Milwaukee, Wis. 204,588, 12(c) pub. 2–2–65. Cl. 23.
American Home Products Corp., New York, N.Y. 784,307, pub. 11–17–64. Cl. 18.
American Machine & Foundry Co., New York, N.Y. 363,809, 12(c) pub. 2–2–65. Cl. 23.
American Metal Climax, Inc., d.b.a. Hunter Engineering Co., New York, N.Y. 784,266, pub. 11–17–64. Cl. 18.
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American Saint Gobain Corp.: *See*—
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American Seating Co., Grand Rapids, Mich. 784,601. Cl. 44.
American Stay Co., Malden, Mass. 784,435, pub. 11–17–64. Cl. 28.
American Steel Foundries Inc., Chicago, Ill. 784,375, pub. 11–17–64. Cl. 23.
American Sunbathing Association, Inc., The, Mays Landing, N.J. 784,589, pub. 11–17–64. Cl. A.
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American Truck Washing and Detergent, Co., d.b.a. American Truck and Bus Washing Equipment Co., Kansas City, Mo. 784,368, pub. 11–17–64. Cl. 23.
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Applied Power Industries, Inc., Milwaukee, Wis. 784,592. Cl. 23.
Arabol Mfg. Co., The, to The Borden Co., New York, N.Y. 194,011, ren. 2–2–65. Cl. 5.
Arc Sound Ltd., Scarboro, Ontario, Canada. 784,452, pub. 11–17–64. Cl. 36.
Architectural Porcelain Constructors, Oakland, Calif. 671,349, canc. Cl. 12.
Ardsley Curtain Co., Inc., New York, N.Y. 784,513, pub. 11–17–64. Cl. 42.
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Baldwin, J. & J., Halifax, England, by Patons & Baldwins Ltd., Darlington, England. 25,674, 12(c) pub. 2–2–65. Cl. 43.
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Barwick, E. T., Mills, Inc., Chamblee, Ga. 784,500, pub. 11–17–64. Cl. 42.
Baumann, Robert E., d.b.a. The Apollos, West Sacramento, Calif. 784,588, pub. 11–17–64. Cl. 107.
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Bear Mfg. Co., Rock Island, Ill. 784,423, pub. 11–17–64. Cl. 26.
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Bernat, Emile, & Sons Co., Uxbridge, Mass. 784,518, pub. 11–17–64. Cl. 43.
Bishop and Babcock Corp., The, Toledo, Ohio. 784,263, pub. 11–17–64. Cl. 13.
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Blum, Milton C., Inc., New York, N.Y. 784,489, pub. 11–17–64. Cl. 42.
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Bottorff, Richard D., Mishawaka, Ind. 784,353, pub. 11–17–64. Cl. 22.
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Boyce, Leonard D., St. Louis, Mo. 671,324, canc. Cl. 52.
Brach, E. J., & Sons, Chicago, Ill. 784,530, pub. 11–17–64. Cl. 46.
Bretford Mfg., Inc., Schiller Park, Ill. 784,339, pub. 11–17–64. Cl. 21.
Broderick & Bascom Rope Co., St. Louis, Mo. 784,243, pub. 11–17–64. Cl. 7.
Brooks, Burleigh, Inc., Englewood, N.J. 784,402, pub. 11–17–64. Cl. 26.
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Brose, Barry J., d.b.a. Highland Laboratories, San Francisco, Calif. 784,586, pub. 11–17–64. Cl. 106.
Broughton's Farm Dairy, Inc., Marietta, Ohio. 784,552, pub. 11–17–64. Cl. 46.
Brown & Williamson Tobacco Corp., Louisville, Ky. 671,096, canc. Cl. 17.
Brule Incinerator Corp., from Goder Incinerator Corp., Blue Island, Ill. 784,444, pub. 11–17–64. Cl. 34.
Brunswick Worsted Mills, Inc., Moosup, Conn. 784,517, pub. 11–17–64. Cl. 43.
Buck Engineering Co., Inc., Freehold, N.J. 784,415, pub. 11–17–64. Cl. 26.
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Cabin Crafts, Inc., Dalton, Ga. 784,502, pub. 11–17–64. Cl. 42.
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California Metal Enameling Co., Los Angeles, Calif. 784,565, pub. 11–17–64. Cl. 50.
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Cannon Instrument Co., State College, Pa. 784,406, pub. 11–17–64. Cl. 26.
Canton Cotton Mills, Canton, Ga. 784,512, pub. 11–10–64. Cl. 42.
Cardinal Scale Mfg. Co., Webb City, Mo. 784,420, pub. 11–17–64. Cl. 26.
Carmel Chemical Corp., Westfield, Ind. 784,397, pub. 11–17–64. Cl. 23.
Carolyn Chenilles, Inc., New York, N.Y. 784,600. Cl. 42.
Carter's Ink Co., The, Cambridge, Mass. 784,457, pub. 11–17–64. Cl. 37.
Carvel, Thomas, Yonkers, N.Y. 784,533, pub. 11–17–64. Cl. 46.
Catty, H. D., Corp. of N.Y., Norwalk, Conn. 671,209, canc. Cl. 37.

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Chadbourn Gotham, Inc.: *See*—
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Champagne Taittinger Compagnie Commerciale & Viticole Champenoise, Reims (Marne), France. 784,555–6, pub. 11–17–64. Cl. 47.
Champion Chemicals, Inc., Odessa, Tex. 784,239, pub. 11–17–64. Cl. 6.
Channel Master Corp., Ellenville, N.Y. 784,340–1, pub. 11–17–64. Cl. 21.
Charles of the Ritz, Inc., New York, N.Y. 671,323, canc. Cl. 52.
Chase Brass & Copper Co., Inc., Waterbury, Conn. 784,267, pub. 11–17–64. Cl. 14.
Chatham Mfg. Co., Elkin, N.C. 784,498, pub. 11–17–64. Cl. 42.
Chauvenet, Maison F., S.A., by Societe Commerciale des Bourgognes de Marque F. Chauvenet, Nuits-St. Georges, France. 324,473, 12(c) pub. 2–2–65. Cl. 47.
Checkmate Chemicals, Inc., Greenville, S.C. 784,240, pub. 11–17–64. Cl. 6.
Chicago Aerial Industries, Inc., Barrington, Ill. 784,401, pub. 11–17–64. Cl. 26.
Chicago Printed String Co., Chicago, Ill. 784,244, pub. 11–17–64. Cl. 7.
Chipman Chemical Co., Inc., Burlingame, Calif. 784,227, pub. 11–24–64. Cl. 6.
Chipman Chemical Co., Inc., Burlingame, Calif. 784,229, pub. 11–17–64. Cl. 6.
Chunky Corp., The, Brooklyn, N.Y. 784,545, pub. 11–17–64. Cl. 46.
Cleveland Industrial Tool Co., Inc., Chardon, Ohio. 671,167, canc. Cl. 23.
Coggins Granite Industries, Inc., Elberton, Ga. 784,566, pub. 11–17–64. Cl. 50.
Colgate-Palmolive Co., New York, N.Y. 784,308, pub. 11–17–64. Cl. 18.
College Placement Council, Inc., The, Bethlehem, Pa. 784,583, pub. 11–17–64. Cl. 100.
Collier Carbon and Chemical Corp., Los Angeles, Calif. 784,246, pub. 11–17–64. Cl. 10.
Colorado Milling & Elevator Co., The, Denver, Colo. 192,797, ren. 2–2–65. Cl. 46.
Columbia Steel Casting Co., Inc., Portland, Oreg. 784,268, pub. 11–17–64. Cl. 14.
Commercial Filters Corp., Melrose, Mass. 356,830, 12(c) pub. 2–2–65. Cl. 51.
Commercial Paste Co., The, Columbus, Ohio. 197,405, ren. 2–2–65. Cl. 5.
Concentrates Development Co., Oakland, Calif. 784,311, pub. 11–17–64. Cl. 18.
Conco Engineering Works, Inc., Mendota, Ill. 784,382, pub. 11–17–64. Cl. 23.
Continental Beverages, Inc., Winter Haven, Fla. 784,557, pub. 11–17–64. Cl. 47.
Continental Charms, Inc., New York, N.Y. 784,434, pub. 11–17–64. Cl. 28.
Continental Copper & Steel Industries, Inc., New York, N.Y. 784,250, pub. 11–17–64. Multiple Class (Classes 12, 19, and 22).
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Cotton, John, Ltd., Edinburgh, Scotland. 784,293–8, pub. 11–17–64. Cl. 17.
Cowles Magazines and Broadcasting, Inc., New York, N.Y. 784,465–7, pub. 11–17–64. Cl. 38.
Cox, Charles E., d.b.a. Cox Dental Laboratory, Oakland, Calif. 671,327, canc. Cl. 100.
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Crompton Co., New York, N.Y. 784,510–1, pub. 11–17–64. Cl. 42.
Curtis, Helene, Industries, Inc., Chicago, Ill. 784,576, pub. 11–17–64. Cl. 51.
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Dahlstrom, R. O., d.b.a. R. O. "Rub" Dahlstrom & Sons, Milaca, Minn. 784,219, pub. 11–17–64. Cl. 4.
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Daroff, H., & Sons, Inc., Philadelphia, Pa. 784,479, pub. 11–17–64. Cl. 39.
Davis Cup Apparel Ltd., London, England. 784,481, pub. 11–17–64. Cl. 39.
Dawe's Laboratories, Inc., Chicago, Ill. 784,310, pub. 11–17–64. Cl. 18.
Daw-Wood Products, Inc., Clifton, N.J. 671,192, canc. Cl. 32.
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Du Pont de Nemours, E. I., and Co., Wilmington, Del. 784,237, pub. 9–15–64. Cl. 6.
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Eagle-Picher Co., The, Cincinnati, Ohio. 784,248, pub. 7–28–64. Cl. 10.
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Empire Mfg. & Distributing Co., Denver, Colo. 784,469, pub. 11–17–64. Cl. 39.
Erickson Petroleum Corp., Minneapolis, Minn. 784,271–2, pub. 11–17–64. Cl. 15.
Erie Technological Products, Inc., Erie, Pa. 784,329, pub. 11–17–64. Cl. 21.
Eutectic Welding Alloys Corp., Flushing, N.Y. 784,445, pub. 9–29–64. Cl. 34.
Everbrite Watch Co., Inc., New York, N.Y. 784,427, pub. 11–17–64. Cl. 27.
Excelsior Accordions, Inc., New York, N.Y. 671,200, canc. Cl. 36.
FMC Corp., Philadelphia, Pa. 784,519, pub. 11–17–64. Cl. 43.
Fairchild Camera and Instrument Corp., Mountain View, Calif. 784,333, pub. 11–17–64. Cl. 21.
Famous Artists Schools, Inc., New York, N.Y. 784,587, pub. 11–17–64. Cl. 107.
Far Eastern Commerce Corp., New York, N.Y. 784,323, pub. 11–17–64. Cl. 21.
Felt Co., Inc., The, New York, N.Y. 784,378, pub. 11–17–64. Cl. 23.
Finishine Laboratories, Inc., Syracuse, N.Y. 784,593. Cl. 23.
Firth Sterling, Inc., Pittsburgh, Pa. 784,391, pub. 11–17–64. Cl. 23.
Fletcher, Sarah S., d.b.a. The Blue Wave, to Norman K. and Anne B. Wiggin, d.b.a. The Blue Wave, by Norman K. and Anne B. Wiggin, d.b.a. The Blue Wave, Kennebunk, Maine. 410,283, 12(c) pub. 2–2–65. Cl. 30.
Flex Products, Inc., Detroit, Mich. 784,356, pub. 11–17–64. Cl. 22.
Flintkote Co., The: *See*—
Tile-Tex Co., The.
Florida Pipe & Foundry Co., Haines City, Fla. 784,264, pub. 11–17–64. Cl. 13.
Food Technology, Inc., Chicago, Ill. 784,550–1, pub. 11–17–64. Cl. 46.
Ford Model Agency, Inc., New York, N.Y. 784,574, pub. 11–17–64. Cl. 51.
Foreign Vintages, Inc., New York, N.Y. 784,561, pub. 11–17–64. Cl. 49.
Forman, David J., Hartsdale, N.Y. 784,217, pub. 11–17–64. Cl. 3.
Foseco International Ltd., Birmingham, England. 784,226, pub. 11–17–64. Cl. 6.





Foster-Milburn Co., Buffalo, N.Y. 784,582, pub. 9–29–64. Cl. 52.
Frick-Gallagher Mfg. Co.: *See*—
Wellston Mfg. Co., The.
Fuji Denki Seizo Kabushiki Kaisha, d.b.a. Fuji Electric Mfg. Co., Ltd., Kawasaki, Japan. 784,326–8, pub. 11–17–64. Multiple Class (Classes 21 and 26).
Fuji Electric Mfg. Co., Ltd.: *See*
Fuji Denki Seizo Kabushiki Kaisha.
Fuller, D. B., & Co. Inc.: *See*—
Stevens, J. P., & Co. Inc.
Gainsley, James D., d.b.a. Bufferino Co., St. Louis Park, Minn. 784,437, pub. 11–17–64. Cl. 29.
Garcia y Vega, Inc., New York, N.Y. 784,289, pub. 11–17–64. Cl. 17.
Geigy Chemical Corp., from Aula Chemicals, Inc., Ardsley, N.Y. 671,058, canc. Cl. 6.
General Foods Corp., White Plains, N.Y. 784,536–7, pub. 11–17–64. Cl. 46.
General Foods Corp., White Plains, N.Y. 784,540, pub. 11–17–64. Cl. 46.
General Motors Corp., Detroit, Mich. 193,674, ren. 2–2–65. Cl. 19.
General Motors Corp.: *See*—
Harrison Radiator Corp.
Guide Motor Lamps Mfg. Co., The.
Gingher Mfg. Co., Inc., Scranton, Pa. 784,440, pub. 11–17–64. Cl. 32.
Girl Scouts of the United States of America, New York, N.Y. 784,475–6, pub. 11–17–64. Cl. 39.
Gloversville-Continental Mills, Inc., Gloversville, N.Y. 784,491, pub. 11–17–64. Cl. 42.
Goder Incinerator Corp.: *See*—
Brule Incinerator Corp.
Goldblatt Bros., Inc., Chicago, Ill. 784,595. Cl. 23.
Golden Star Polish Mfg. Co., Kansas City, Mo. 198,680, ren. 2–2–65. Cl. 16.
Goodall Mfg. Corp., Minneapolis, Minn. 784,392–4, pub. 11–17–64. Cl. 23.
Gordon, Samuel, by Lane Ltd., New York, N.Y. 187,715, 12(c) pub. 2–2–65. Cl. 8.
Gotham Silk Hosiery Co. Inc., New York, N.Y., to Chadbourn Gotham, Inc., Charlotte, N.C. 192,741, ren. 2–2–65. Cl. 39.
Gotham Lighting Corp., Long Island City, N.Y. 784,317, pub. 11–17–64. Cl. 21.
Grand River Orchards, Inc., Geneva, Ohio. 671,290, canc. Cl. 46.
Greenlee Bros. & Co., Rockford, Ill. 784,386–7, pub. 11–17–64. Cl. 23.
Grow Solvent Co., Inc., Detroit, Mich. 784,230, pub. 11–17–64. Cl. 6.
Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 784,357–60, pub. 11–17–64. Cl. 22.
Guide Motor Lamps Mfg. Co., The, Cleveland, Ohio, to General Motors Corp., Detroit, Mich. 194,519, ren. 2–2–65. Cl. 21.
Guise, Harry, Inc., New York, N.Y. 671,180, canc. Cl. 28.
H & H Machine Tool Co., Inc., Dayton, Ohio. 784,395, pub. 11–17–64. Cl. 23.
HMH Publishing Co., Inc., Chicago, Ill. 784,504, pub. 11–17–64. Cl. 42.
H-P Products, Inc., Louisville, Ohio. 784,265, pub. 11–17–64. Cl. 13.
Haagen, Eugenie, New York, N.Y. 784,522, pub. 11–17–64. Cl. 44.
Haedke, C., & Co., Inc., New York, N.Y. 784,497, pub. 11–17–64. Cl. 42.
Hahn, Dr. Carl, K.G. Dusseldorf, Germany. 671,273, canc. Cl. 44.
Hahn, Inc., Evansville, Ind. 784,381, pub. 11–17–64. Cl. 23.
Hallmark Cards, Inc., Kansas City, Mo. 671,347–8, canc. Cl. 7.
Haloid Co., The: *See*—
Haloid Xerox Inc.
Haloid Xerox Inc., from The Haloid Co., Rochester, N.Y. 671,044–5, canc. Cl. 1.
Halpern, J., Co., Pittsburgh, Pa. 784,354, pub. 11–17–64. Cl. 22.
Hammermill Paper Co., Erie, Pa. 698,743, canc. Cl. 2.
Hanson-Van Winkle-Munning Co.: *See*—
Munning, A. P., & Co.
Harpers International, Inc., New York, N.Y. 784,594. Cl. 25.
Harris Sales Corp., Woodstown, N.J. 671,344, canc. Cl. 107.
Harrison Auto Paint Shop, Inc., Los Angeles, Calif. 784,222, pub. 11–17–64. Cl. 5.
Harrison Radiator Corp., to General Motors Corp., Detroit, Mich. 194,357, ren. 2–2–65. Cl. 19.
Hav-Tek Designers Inc., Endicott, N.Y. 784,342, pub. 11–17–64. Cl. 21.
Hecht, L. K., Co., Inc., New York, N.Y. 784,347, pub. 11–17–64. Cl. 22.
Hedwin Corp., New York, N.Y. 784,215, pub. 11–17–64. Cl. 2.
Heintz, James C., Co., The, Cleveland, Ohio. 671,138, canc. Cl. 23.
Henschel-Werke Aktiengesellschaft, Kassel, Germany. 784,364, pub. 11–17–64. Cl. 23.
Hensoldt, M., & Sohne, Optische Werke A.-G., Wetzlar, Germany. 671,174, canc. Cl. 26.
Highland Laboratories: *See*—
Brose, Barry J.
Hi-Speed Checkweigher Co., Inc., Ithaca, N.Y. 784,596. Cl. 26.
Hohner, M., Inc., Hicksville, N.Y. 193,214, ren. 2–2–65. Cl. 36.
Holeproof Hosiery Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 197,981, ren. 2–2–65. Cl. 39.
Hollins, William, & Co. Ltd., Nottingham, England. 671,257, canc. Cl. 39.
Hubbard-Hall Chemical Co., The: *See*—
Rogers & Hubbard Co., The.
Huffman-Wolfe Co., The, Columbus, Ohio. 784,376, pub. 11–17–64. Cl. 23.
Humble Oil & Refining Co.: *See*—
Scientific Products Inc.
Hunt, Richard B., d.b.a. Custom Contacts, San Francisco, Calif. 784,403, pub. 11–17–64. Cl. 26.
Hunter Engineering Co.: *See*—
American Metal Climax, Inc.
Hussco Shoe Co., New York, N.Y. 671,253, canc. Cl. 39.
Illinois Tool Works Inc., Chicago, Ill. 784,255, pub. 11–17–64. Cl. 13.
Illinois Tool Works Inc., Chicago, Ill. 784,388, pub. 11–17–64. Cl. 21.
Illinois Tool Works Inc., Chicago, Ill. 784,421, pub. 11–17–64. Cl. 26.
Imperial Packaging Corp., Baltimore, Md. 784,207, pub. 11–17–64. Cl. 2.
International Shoe Co., St. Louis, Mo. 784,471, pub. 11–17–64. Cl. 39.
Ironees Co., The, Philadelphia, Pa. 784,242, pub. 11–17–64. Multiple Class (Classes 6 and 52).
It's-A-Dilly Co., The, Potsdam, N.Y. 671,296, canc. Cl. 46.
Janed, Inc., Quakertown, Pa. 784,482, pub. 11–17–64. Cl. 39.
Jaymar Specialty Co., Brooklyn, N.Y. 784,355, pub. 11–17–64. Cl. 22.
Jeffrey Gallon Mfg. Co., Columbus, Ohio. 784,388, pub. 11–17–64. Cl. 23.
Jergens, Andrew, Co., The, Cincinnati, Ohio. 784,571, pub. 9–29–64. Cl. 51.
Joanna Western Mills Co., Chicago, Ill. 784,597. Cl. 32.
John, B. P., Furniture Corp., Portland, Oreg. 671,190, canc. Cl. 32.
Johnson, Bruce J., Shawnee Mission, Kans. 784,349, pub. 11–17–64. Cl. 22.
Jolly Toys, Inc., New York, N.Y. 784,346, pub. 11–17–64. Cl. 22.
Kabushiki Kaisha Hattori Tokeiten, Chuo-ku, Tokyo, Japan. 784,424–5, pub. 11–17–64. Cl. 27.
Kahn, David, Inc., North Bergen, N.J. 413,562, ren. 2–2–65. Cl. 37.
Karagheusian, A. & M., Inc., New York, N.Y. 671,264–5, canc. Cl. 42.
Kayser-Roth Corp.: *See*—
Holeproof Hosiery Co.
Kellogg, L. H., Chemical Co., Minneapolis, Minn. 784,575, pub. 11–17–64. Cl. 51.
Ken Camp Mfg. Outfitter: *See*—
Ply Clothing Co.
Keso Ltd., Richterswil, Zurich, Switzerland. 784,400, pub. 11–17–64. Cl. 25.
Kings Point Machinery, San Francisco, Calif. 784,254, pub. 11–17–64. Multiple Class (Classes 13, 23, and 34).
Kit's Mfg. Co.: *See*—
Dickstein, George.
Kolodney, Neil, Brooklyn, N.Y. 671,269, canc. Cl. 42.
Kombrecht, Manfred, d.b.a. Ceytea Import G.m.b.H. & Co., Hamburg, Germany. 784,529, pub. 11–17–64. Cl. 46.
Kontes Glass Co., Vineland, N.J. 784,412, pub. 11–17–64. Cl. 26.
Krauss-Maffei Aktiengesellschaft, Munich-Allach, Germany. 784,389, pub. 11–17–64. Cl. 23.
Kwik Veterinary Products, Inc., East Aurora, N.Y. 784,306, pub. 11–17–64. Cl. 18.
Lady Lennox Co.: *See*—
Siebras, Norman W.
Lane Ltd.: *See*—
Gordon, Samuel.
Lane Ltd., New York, N.Y. 784,245, pub. 11–17–64. Cl. 8.
Lane Ltd., New York, N.Y. 784,290–1, pub. 11–17–64. Cl. 17.
Lansdale Clothes, Inc., New York, N.Y. 784,474, pub. 11–17–64. Cl. 39.
Lanson Rainwear Corp., New York, N.Y. 671,230, canc. Cl. 39.
Leaf Brands, Inc., Chicago, Ill. 671,291, canc. Cl. 46.
Lehn & Fink Products Corp., Bloomfield, N.J. 784,572, pub. 11–17–64. Cl. 51.
Lehn & Fink Products Corp., New York, N.Y. 784,577–8, pub. 11–17–64. Cl. 51.
Lemmon Pharmacal Co.: *See*—
Barlow-Maney Laboratories.
Levy, William M., d.b.a. Moreno Textiles Co., New York, N.Y. 671,266, canc. Cl. 42.
Library of Science, Inc., New York, N.Y. 671,224, canc. Cl. 38.
Link-Belt Co., Chicago, Ill. 784,367, pub. 11–17–64. Cl. 23.
Link-Belt Co., Chicago, Ill. 784,405, pub. 11–17–64. Cl. 26.
Lion Packaging Products Co., Inc., Hicksville, N.Y. 784,212, pub. 11–17–64. Cl. 2.
Lock, Albert M., & Son, Inc., Boston, Mass. 784,439, pub. 11–17–64. Cl. 32.
Lorillard, P., Co., New York, N.Y. 784,299, pub. 11–17–64. Cl. 17.
Lowenstein, M., & Sons, Inc., New York, N.Y. 784,508, pub. 11–17–64. Cl. 42.
Lucky Tiger Mfg. Co., Kansas City, Mo. 671,318, canc. Cl. 51.
Macks, Elmer F., d.b.a. Tribo-Netics Laboratories, Vermilion, Ohio. 671,330, canc. Cl. 100.
MacNiven, Douglas, & Co., Ltd., Leith, Scotland. 784,564, pub. 11–17–64. Cl. 49.
Magic Garter Co., Inc., Torrance, Calif. 784,225, pub. 11–17–64. Cl. 5.
Maidenform, Inc., New York, N.Y. 784,480, pub. 11–17–64. Cl. 39.
Manning, Maxwell & Moore, Inc., Stratford, Conn. 784,261, pub. 11–17–64. Cl. 13.

Mar-Gold Corp., The, Atlanta, Ga. 784,544, pub. 9–15–64. Cl. 46.
Martens Chemical Corp., College Point, N.Y. 784,579, pub. 11–17–64. Cl. 52.
Martin, James A.: *See*—
Peptoline Chemical Co.
Marx, Louis, & Co. Inc., New York, N.Y. 784,352, pub. 11–17–64. Cl. 22.
Mauser Kommandit-Gesellschaft, Koln-Ehrenfeld, Germany. 784,438, pub. 11–17–64. Cl. 32.
McKenzie Milling Co., McKenzie, to Model Mill Co., Inc., Nashville, Tenn. 195,832, ren. 2–2–65. Cl. 46.
McLendon, William M., d.b.a. Cedardine Products, Atlanta, Ga. 784,303, pub. 9–29–64. Cl. 18.
Medica Media: *See*—
Sakai, William T.
Medical Contact Lens Service, Inc., from Vue Optical Products, Inc., Milwaukee, Wis. 784,585, pub. 10–20–64. Cl. 106.
Melrose Yarn Co., Inc., Brooklyn, N.Y. 784,516, pub. 11–17–64. Cl. 43.
Menley & James Laboratories, Ltd., Philadelphia, Pa. 784,305, pub. 11–17–64. Cl. 18.
Merck & Co., Inc.: *See*—
Mulford, H. K., Co.
Meyer, N. S., Inc., New York, N.Y. 197,910, ren. 2–2–65. Cl. 50.
Midland-Ross Corp., Highland Park, N.J. 784,383, pub. 11–17–64. Cl. 23.
Milar & Co.: *See*—
Milar, Karl A.
Milar, Karl A., d.b.a. Milar & Co., by De Soto Chemical Coatings, Inc., Chicago, Ill. 369,995, 12(c) pub. 2–2–65. Cl. 16.
Miles Dental Laboratories, Inc., Cleveland, Ohio. 671,272, canc. Cl. 44.
Millers Forge Mfg. Corp., New York, N.Y. 784,525, pub. 11–17–64. Cl. 44.
Model Engineering and Mfg. Corp., Salt Lake City, Utah. 784,330, pub. 11–17–64. Cl. 21.
Model Engineering and Mfg. Corp., Salt Lake City, Utah. 784,411, pub. 11–17–64. Cl. 26.
Model Mill Co., Inc.: *See*—
McKenzie Milling Co.
Momoi Co., Inc., Long Beach, Calif. 784,351, pub. 11–17–64. Cl. 22.
Monarch Marking System Co., The, Dayton, Ohio. 784,398, pub. 11–17–64. Cl. 23.
Monroe Electronics, Inc., Middleport, N.Y. 784,325, pub. 11–17–64. Cl. 21.
Monsanto Canada Ltd., La Salle, Quebec, Canada. 784,206, pub. 11–17–64. Cl. 1.
Moreno Textiles Co.: *See*—
Levy, William M.
Mosinee Paper Mills Co., Mosinee, Wis. 410,633, ren. 2–2–65. Cl. 37.
Mosstype Corp., Waldwick, N.J. 784,362, pub. 11–17–64. Cl. 23.
Mottola, Frank, Los Angeles, Calif. 671,083, canc. Cl. 14.
Mulford, H. K., Co., Philadelphia, Pa., to Merck & Co., Inc., d.b.a. Quinton Co., Rahway, N.J. 198,799, ren. 2–2–65. Cl. 51.
Munning, A. P., & Co., New York, N.Y., by Hanson-Van Winkle-Munning Co., Matawan, N.J. 193,837, 12(c) pub. 2–2–65. Cl. 4.
Murray Corp. of America, The, Detroit, Mich. 671,188, canc. Cl. 31.
Musicall, Inc., New York, N.Y. 784,468, pub. 11–17–64. Cl. 33.
Mycue, Gordon E., Corcoran, Minn. 784,446, pub. 11–17–64. Cl. 34.
Nashua Corp., Nashua, N.H. 784,456, pub. 11–17–64. Cl. 37.
National Audubon Society, Inc., New York, N.Y. 784,584, pub. 11–17–64. Cl. 100.
National Biscuit Co., New York, N.Y. 784,549, pub. 11–17–64. Cl. 46.
National Casualty Co., Detroit, Mich. 671,336, canc. Cl. 102.
National Sleep Products, Inc., Detroit, Mich. 784,441, pub. 11–17–64. Cl. 32.
Neisler Laboratories, Inc., Decatur, Ill. 784,314, pub. 11–17–64. Cl. 18.
Neisner Brothers, Inc., Rochester, N.Y. 671,228, canc. Cl. 39.
New England Instrument Co., Natick, Mass. 784,337, pub. 11–17–64. Cl. 21.
Niagara Machine & Tool Works, Buffalo, N.Y. 784,366, pub. 11–17–64. Cl. 23.
Nickerson Farms: *See*—
Nickerson, L. J.
Nickerson, L. J., d.b.a. Nickerson Farms, Eldon, Mo. 784,538–9, pub. 11–17–64. Cl. 46.
Nonemaker, C. M., Chambersburg, Pa. 671,286, canc. Cl. 46.
Nooter Corp., St. Louis, Mo. 784,214, pub. 11–17–64. Cl. 2.
Norden Laboratories, Inc., Lincoln, Nebr. 784,304, pub. 11–17–64. Cl. 18.
Norwich Mills, Inc., Norwich, N.Y. 671,249, canc. Cl. 39.
Nunez, Indalecio, Guadalajara, Mexico. 410,046, 12(c) pub. 2–2–65. Cl. 49.
Ortho Pharmaceutical Corp., Raritan, N.J. 784,233, pub. 11–17–64. Cl. 6.
Oetiker, Hans, Horgen, Switzerland. 784,396, pub. 11–17–64. Cl. 23.
Oetiker, Hans, Horgen, Switzerland. 784,460, pub. 11–17–64. Cl. 37.
Old Repeater Distillery: *See*—
Old Stanley Distillery, Inc.
Old Stanley Distillery, Inc., d.b.a. Old Repeater Distillery, Stanley, Ky. 784,559, pub. 11–17–64. Cl. 49.
Oldfield, J. & G., Ltd., Worcester, England. 784,560, pub. 11–17–64. Cl. 49.
One Hour Martinizing: *See*—
Wolfe, Charles S.
Owens-Illinois Glass Co., Toledo, Ohio. 784,413, pub. 11–17–64. Cl. 26.
Owl, Inc., Chicago, Ill. 784,399, pub. 11–17–64. Cl. 24.
Pabst Brewing Co., Milwaukee, Wis. 784,216, pub. 11–17–64. Cl. 2.
Pacific Wholesale Grocery Co., to S. E. Rykoff & Co., Los Angeles, Calif. 197,958, ren. 2–2–65. Cl. 46.
Page & Page Co.: *See*—
Dura Corp.
Parker Trading Co., San Francisco, Calif. 784,260, pub. 11–17–64. Cl. 13.
Parrott & Co., San Francisco, Calif. 784,563, pub. 11–17–64. Cl. 49.
Patons & Baldwins Ltd.: *See*—
Baldwin, J. & J.
Patterson Industries, Inc., East Liverpool, Ohio. 784,379, pub. 11–17–64. Cl. 23.
Paul, Maurice G., Jr., Philadelphia, Pa. 671,124, canc. Cl. 22.
Payot, Dr. N. G., Societe Anonyme Laboratoires du, Colombes, Seine, France. 671,316, canc. Cl. 51.
Peak-Pac Corp., Dearborn, Mich. 784,210, pub. 11–17–64. Cl. 2.
Pecheurs Unis de Quebec-Quebec United Fishermen, Montreal, Quebec, Canada. 784,547, pub. 11–17–64. Cl. 46.
Pegasus Press: *See*—
Tyson, James R.
Pennsalt Chemicals Corp.: *See*—
Pennsylvania Salt Mfg. Co., The.
Pennsylvania Salt Mfg. Co., The, by Pennsalt Chemicals Corp., Philadelphia, Pa. 409,840, 12(c) pub. 2–2–65. Cl. 52.
Pentagon Hosiery Co., Inc.: *See*—
Stuart, Harry T., Co. Inc.
Pepperell Mfg. Co., New York, N.Y. 784,486, pub. 11–17–64. Cl. 42.
Peptoline Chemical Co., Bessemer, Ala., by James A. Martin, d.b.a. Silko New Improved Products Co., Birmingham, Ala. 112,554, 12(c) pub. 2–2–65. Cl. 51.
Peshastin Fruit Growers Association, Peshastin, Wash. 196,417, ren. 2–2–65. Cl. 46.
Pextile Corp. of America, Greensboro, N.C. 784,487, pub. 11–17–64. Cl. 42.
Pfizer, Chas., & Co., Inc., Brooklyn, N.Y. 671,103, canc. Cl. 18.
Phillips, Ed., & Sons Co., Minneapolis, Minn. 784,558, pub. 11–17–64. Cl. 49.
Ply Clothing Co., d.b.a. Ken Camp Mfg. Outfitter, Seattle, Wash. 671,156, canc. Cl. 23.
Poly Choke Co., Inc., The, Tariffville, Conn. 436,169, 12(c) pub. 2–2–65. Cl. 9.
Poplars, Inc., The, d.b.a. The Poplars, East Lansing, Mich. 671,279, canc. Cl. 46.
Poplars, The: *See*—
Poplars, Inc., The.
Porciani, Aurelio, d.b.a. Ettore Porciani & Figlio, Pistoia, Italy. 784,253, pub. 11–17–64. Cl. 18.
Porciani, Ettore, & Figlio: *See*—
Porciani, Aurelio.
Porter, H. K., Co., Inc.: *See*—
Disston, Henry, & Sons, Inc.
Potagrain Foods Refining Corp., New York, N.Y. 671,277, canc. Cl. 46.
Pour La Diffusion de Techniques Nouvelles et de Machinisme Agricole, Societe, Epernay, Marne, France. 784,365, pub. 11–17–64. Cl. 23.
Precision Automotive Components Co., Bailwin, Mo. 784,390, pub. 11–17–64. Cl. 23.
Prime Pak, Los Angeles, Calif. 671,281, canc. Cl. 46.
Projecting AB, Stockholm, Sweden. 784,361, pub. 11–17–64. Cl. 23.
Purex Corp., Ltd., d.b.a. Turco Products, Inc., Wilmington, Calif. 784,580, pub. 11–17–64. Cl. 52.
Quaker Oats Co., The, Chicago, Ill., 671,042, canc. Cl. 1.
Quality Chemical Products Co., Forest Park, Ill. 671,063, canc. Cl. 6.
Quinton Co.: *See*—
Mulford, H. K., Co.
Ralston Purina Co., St. Louis, Mo. 784,541–2, pub. 11–17–64. Cl. 46.
Randall's United Petroleum Co., Inc., Los Angeles, Calif. 784,273, pub. 11–17–64. Cl. 15.
Rapids-Standard Co., Inc., The, Grand Rapids, Mich. 443,260, 12(c) pub. 2–2–65. Cl. 23.
Reconstruction Finance Corp.: *See*—
Shurhit Products, Inc.
Red Devil Tools, Union, N.J. 784,373, pub. 11–17–64. Cl. 23.
Reid-Avery Co., Baltimore, Md. 410,584, ren. 2–2–65. Cl. 14.
Remmers Soap Co., The, to The Remmers-Graham Co., Cincinnati, Ohio, to Acme Chemical Co., Milwaukee, Wis. 198,595, ren. 2–2–65. Cl. 52.
Remmers-Graham Co., The: *See*—
Remmers Soap Co., The.
Revonah Spinning Mills, Hanover, Pa. 784,514, pub. 11–17–64. Cl. 43.
Rexall Drug and Chemical Co., Los Angeles, Calif. 784,602. Cl. 44.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 784,301–2, pub. 11–17–64. Cl. 17.
Richards, Harvey H., Jr., and/or Lois A. Richards, Sierra Vista, Ariz. 784,464, pub. 11–17–64. Cl. 38.
Richards, Lois A.: *See*—
Richards, Harvey H., Jr., and/or Lois A. Richards.
Rival Mfg. Co., Kansas City, Mo. 784,334, pub. 11–17–64. Cl. 21.
Robins, A. H., Co., Inc., Richmond, Va. 784,309, pub. 11–17–64. Cl. 18.





Roger & Gallet: *See*—
Roger & Gallet S.A.
Roger & Gallet S.A., Paris, France, from Roger & Gallet, New York, N.Y. 784,569, pub. 11–17–64. Cl. 51.
Rogers, A. C. Martinelli, Plastic Corp., West Warren, Mass. 671,048, canc. Cl. 2.
Rogers & Hubbard Co., The, Portland, by The Hubbard-Hall Chemical Co., Waterbury, Conn. 288,323, 12(c) pub. 2–2–65. Cl. 10.
Ross Products, Inc., New York, N.Y. 784,324, pub. 9–22–64. Cl. 21.
Roure-Dupont, Inc., New York, N.Y. 784,228, pub. 11–17–64. Cl. 6.
Roure-Dupont, Inc., New York, N.Y. 784,570, pub. 11–17–64. Cl. 51.
Roux Laboratories, Inc.: *See*—
Seron Perfumers.
Royalmetal Corp., New York, N.Y. 784,490, pub. 11–17–64. Cl. 42.
Rykoff, S. E., & Co.: *See*—
Pacific Wholesale Grocery Co.
Ryser, Frank, Co., Chicago, Ill. 784,548, pub. 11–17–64. Cl. 46.
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Safeway Stores, Inc., Oakland, Calif. 671,357, canc. Cl. 101.
Sakai, William T., d.b.a. Medica Media, Palo Alto, Calif. 784,235, pub. 11–17–64. Cl. 6.
Schafer's Bakeries, Detroit, Mich. 671,355, canc. Cl. 46.
School House Products, Inc., New York, N.Y. 784,458, pub. 11–17–64. Cl. 37.
Schreter, A., & Sons Co., Inc.: *See*—
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Schreter, A., & Sons Co., Inc., Baltimore, Md. 784,478, pub. 11–17–64. Cl. 39.
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Scientific Products Inc., Chicago, Ill., to Humble Oil & Refining Co., Houston, Tex. 192,900, ren. 2–2–65. Cl. 52.
Scott, O. M., and Sons Co., Marysville, Ohio. 671,047, canc. Cl. 1.
Scovill Mfg. Co., Waterbury, Conn. 784,345, pub. 11–17–64. Cl. 21.
Sears, Roebuck and Co., Chicago, Ill. 784,416, pub. 11–17–64. Cl. 26.
Seitz-Werke G.m.b.H., Bad Kreuznach, Germany. 784,363, pub. 11–17–64. Cl. 23.
Sellers Mfg. Co., Inc., Saxapahaw, N.C. 784,520, pub. 11–17–64. Cl. 43.
Sensatronics, Inc., Davenport, Iowa. 784,336, pub. 11–17–64. Cl. 21.
Seron Perfumers, to Roux Laboratories, Inc., New York, N.Y. 411,212, ren. 2–2–65. Cl. 51.
Service Industries, Philadelphia, Pa. 784,249, pub. 11–17–64. Cl. 12.
Shady Sam, Inc., Oak Park, Mich. 784,442, pub. 11–17–64. Cl. 32.
Sherwin-Williams Co., The, Cleveland, Ohio. 198,878, ren. 2–2–65. Cl. 16.
Shurhit Products, Inc., to Reconstruction Finance Corp., Waukegan, by Borg-Warner Corp., Chicago, Ill. 444,794, 12(c) pub. 2–2–65. Cl. 21.
Siebras, Norman W., d.b.a. Lady Lennox Co., to Lady Lennox Co., Memphis, Tenn. 413,489, ren. 2–2–65. Cl. 51.
Sierra Engineering Co., Sierra Madre, Calif. 671,081, canc. Cl. 13.
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Silko New Improved Products Co.: *See*—
Peptoline Chemical Co.
Silva Inc., La Porte, Ind. 784,523, pub. 11–17–64. Cl. 44.
Slide-A-Rule-Co.: *See*—
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Smith Kline & French Laboratories, Philadelphia, Pa. 784,526, pub. 11–17–64. Cl. 44.
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Chauvenet, Maison F., S.A.
Societe de Financement Industriel Commercial et Agricole-S.O.F.I.C.A.L., Paris, France. 784,300, pub. 11–17–64. Cl. 17.
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Soroban Engineering, Inc., Melbourne, Fla. 784,419, pub. 11–17–64. Cl. 26.
Southern Can Co., Tallapoosa, Ga. 784,209, pub. 11–17–64. Cl. 2.
Sparks, Inc., Dalton, Ga. 784,509, pub. 11–17–64. Cl. 42.
Specialty Distributing Co., Inc., Atlanta, Ga. 784,451, pub. 11–17–64. Cl. 36.
Spotnails, Inc., Rolling Meadows, Ill. 413,423, ren. 2–2–65. Cl. 13.
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Stafford Specialty Products, Inc., The, Stafford Springs, Conn. 784,257, pub. 11–17–64. Cl. 13.
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Starbrand Corp., Fort Wayne, Ind. 671,139, canc. Cl. 23.
Stationers Specialty Corp., New York, N.Y. 671,206, canc. Cl. 37.
Staver Co., Inc., The, Bay Shore, N.Y. 784,319–22, pub. 11–17–64. Cl. 21.
Stephanson's, Washington, D.C. 671,356, canc. Cl. 46.
Sterling Packing & Gasket Co., Inc., Houston, Tex. 784,449, pub. 11–17–64. Cl. 35.
Sternco Industries, Inc., Allendale, N.J. 784,568, pub. 11–17–64. Cl. 50.
Stevens' Fireplace Log Corp., Oakland, Calif. 671,088, canc. Cl. 1.
Stevens, J. P., & Co. Inc., from D. B. Fuller & Co. Inc., New York, N.Y. 671,267, canc. Cl. 42.
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Stewart-Warner Corp., Chicago, Ill. 784,371, pub. 11–17–64. Cl. 23.
Stuart, Harry T., Co. Inc., New York, N.Y., to Pentagon Hosiery Co., Inc., Reading, Pa. 411,685, ren. 2–2–65. Cl. 39.
Sue Ann Food Products Corp., d.b.a. Sunnyhill Farm Products, Chicago, Ill. 784,546, pub. 11–17–64. Cl. 46.
Sullivan, Matthew, d.b.a. Sullivan Products Co., Willow Grove, Pa. 671,041, canc. Cl. 1.
Sullivan Products Co.: *See*—
Sullivan, Matthew.
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Sunbeam Lighting Co., Los Angeles, Calif. 784,343, pub. 11–17–64. Cl. 21.
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Sutton, Michael, d.b.a. Trimfit Pillowcase Co., Beverly Hills, Calif. 671,263, canc. Cl. 42.
Svendborg Vinkompagni A.m.b.A., Svendborg, Denmark. 784,554, pub. 11–17–64. Cl. 47.
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Taco Heaters, Inc.: *See*—
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Tacoma Millwork Supply Co., Tacoma, Wash. 784,409, pub. 11–17–64. Cl. 26.
Tanatex Chemical Corp., The, Lyndhurst, N.J. 784,241, pub. 11–17–64. Cl. 6.
Techne (Cambridge) Ltd., Duxford, England. 784,414, pub. 11–17–64. Cl. 26.
Telsco Industries, Dallas, Tex. 784,418, pub. 11–17–64. Cl. 26.
Tenacity Mfg. Co., The, Cincinnati, Ohio. 197,244, ren. 2–2–65. Cl. 37.
Texaco Inc.: *See*—
Texas Co., The.
Texaco Inc., New York, N.Y. 784,283, pub. 11–17–64. Cl. 15.
Texas Co., The, Houston, Tex., and New York, N.Y., to Texaco Inc., New York, N.Y. 198,541, ren. 2–2–65. Cl. 38.
Texas Plastics, Inc., Elsa, Tex. 784,590. Cl. 2.
Thompson Chemical Co., Pawtucket, R.I. 784,204, pub. 11–17–64. Cl. 1.
Thompson-Starrett Co., Inc., New York, N.Y. 784,335, pub. 11–17–64. Cl. 21.
Tile-Tex Co., The, Chicago Heights, Ill., by The Flintkote Co., New York, N.Y. 410,176, 12(c) pub. 2–2–65. Cl. 12.
Timken Roller Bearing Co., The, Canton, Ohio. 414,045, ren. 2–2–65. Cl. 14.
Tober-Saifer Shoe Co., St. Louis, Mo. 411,408, ren. 2–2–65. Cl. 39.
Toscony, Inc., Passaic, N.J. 784,488, pub. 11–17–64. Cl. 42.
Trailex, Inc., Canfield, Ohio. 784,315, pub. 11–17–64. Cl. 19.
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Tribo-Netics Laboratories: *See*—
Macks, Elmer F.
Tribune Co., The, Chicago, Ill. 189,745, 12(c) pub. 2–2–65. Cl. 38.
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Trimfit Pillowcase Co.: *See*—
Sutton, Michael.
Tri-Pak Machinery Service, Inc., Harlingen, Tex. 671,163–4, canc. Cl. 23.
Turco Products, Inc.: *See*—
Purex Corp., Ltd.
Tuthill Pump Co., Chicago, Ill. 784,404, pub. 11–17–64. Cl. 26.
Tyson, James R., d.b.a. Pegasus Press, New York, N.Y. 784,463, pub. 11–17–64. Cl. 38.
Ultra Adhesives, Inc., Paterson, N.J. 784,287, pub. 11–17–64. Cl. 16.
Union Carbide Corp., New York, N.Y. 784,203, pub. 11–17–64. Cl. 1.
United Elastic Corp., Easthampton, Mass. 784,495–6, pub. 11–17–64. Cl. 42.
United Mfg. Co., Wheeling, W. Va. 784,450, pub. 11–17–64. Cl. 35.
U.S. Nature Products Corp., New York, N.Y. 671,098, canc. Cl. 18.
United States Rubber Co., New York, N.Y. 411,394, 12(c) pub. 2–2–65. Cl. 1.
United States Rubber Co., New York, N.Y. 784,483, pub. 11–17–64. Cl. 39.
Unitek Corp., Monrovia, Calif. 784,521, pub. 11–17–64. Cl. 44.
Universal Oil Products Co., Des Plaines, Ill. 671,086, canc. Cl. 15.

Ungerer & Co., New York, N.Y. 198,819, ren. 2-2-65. Cl. 51.
V-M Corp., Benton Harbor, Mich. 784,454, pub. 11-17-64. Cl. 36.
Van Brode Milling Co., Inc., Clinton, Mass. 671,312, canc. Cl. 50.
Vandermolen Export Co.: *See*— Vandermolen, Garret H.
Vandermolen, Garret H., d.b.a. Vandermolen Export Co., North Caldwell, N.J. 784,377, pub. 11-17-64. Cl. 23.
Vangard Chemical Corp., St. Louis, Mo. 784,220, pub. 11-17-64. Cl. 4.
Vargas Mfg. Co., Providence, R.I. 784,433, pub. 11-17-64. Cl. 28.
Velcrotex Societe Anonyme, Aubonne, Vaud, Switzerland. 784,485, pub. 11-17-64. Cl. 40.
Veno Products Co.: *See*— Bousquet, Roland J.
Vermont Cheese Products, Inc., Newark, N.J. 671,284, canc. Cl. 46.
Vernitron Corp., Farmingdale, N.Y. 784,332, pub. 11-17-64. Cl. 21.
Victoreen Instrument Co., The, Cleveland, Ohio. 784,410, pub. 11-17-64. Cl. 26.
Volkswagen of America, Inc., Englewood Cliffs, N.J. 784,348, pub. 11-17-64. Cl. 22.
Vue Optical Products, Inc.: *See*— Medical Contact Lens Service, Inc.
Wallace, William B., d.b.a. William Wallace Co., Kilgore, Tex. 671,193, canc. Cl. 32.
Wallace, William, Co.: *See*— Wallace, William B.
Warm-Wear, Inc., Kansas City, Mo. 784,509. Cl. 39.
Weatherhead Co., The, Cleveland, Ohio. 784,256, pub. 11-17-64. Cl. 13.
Weiss, Charles, & Sons, Inc., New York, N.Y. 784,470, pub. 11-17-64. Cl. 39.
Wellston Mfg. Co., The, to The Frick-Gallagher Mfg. Co., Wellston, Ohio. 192,889, ren. 2-2-65. Cl. 32.
West Chemical Products, Inc., Long Island City, N.Y. 784,238, pub. 11-17-64. Cl. 6.
West Chemical Products, Inc., Long Island City, N.Y. 784,581, pub. 11-17-64. Cl. 52.
Western Beeswax Candle Co., Ltd., Creston, British Columbia, Canada. 784,270, pub. 11-17-64. Cl. 15.
Western Hills Hotel, Inc., The, d.b.a. The Western Hills Hotel, Fort Worth, Tex. 671,329, canc. Cl. 100.
Western Hills Hotel, The: *See*— Western Hills Hotel, Inc., The.
White Consolidated Industries, Inc., from White Sewing Machine Corp., Lakewood, Ohio. 784,211, pub. 11-17-64. Cl. 2.
White Consolidated Industries, Inc., from White Sewing Machine Corp., Lakewood, Ohio. 784,258, pub. 11-17-64. Cl. 13.
White Consolidated Industries, Inc., from White Sewing Machine Corp., Lakewood, Ohio. 784,477, pub. 11-17-64. Cl. 39.
White, S. S., Dental Mfg. Co., The, Philadelphia, Pa. 410,511, 12(c) pub. 2-2-65. Cl. 51.
White Sewing Machine Corp.: *See*— White Consolidated Industries, Inc.
White Showers, Inc., Lansing, Mich. 188,952, ren. 2-2-65. Cl. 13.
Whiting & Co., Inc., Holyoke, Mass. 784,459, pub. 11-17-64. Cl. 37.
Wica Chemicals, Inc., Charlotte, N.C. 784,205, pub. 11-17-64. Cl. 1.
Wiggin, Anne B.: *See*— Fletcher, Sarah S.
Wiggin, Norman K.: *See*— Fletcher, Sarah S.
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Windsong, Inc., Minneapolis, Minn. 784,455, pub. 11-17-64. Cl. 37.
Witty Bros., Inc., New York, N.Y. 784,473, pub. 11-17-64. Cl. 39.
Wolfe, Charles S., d.b.a. One Hour Martinizing, Stamford, Conn. 671,341, canc. Cl. 103.
World Wide Sports, Inc., New York, N.Y. 671,226, canc. Cl. 38.
Wyandotte Chemicals Corp., Wyandotte, Mich. 784,234, pub. 11-17-64. Cl. 6.
Yetter, Lloyd E., Colchester, Ill. 671,135, canc. Cl. 23.
Young, Stephen A., Corp., Flora, Ind. 784,262, pub. 11-17-64. Cl. 13.
Zimmer Mfg. Co., Warsaw, Ind. 784,528, pub. 11-17-64. Cl. 44.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
February 9, 1965 Volume 811 Number 2

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of December 1964

| | |
|---|---|
| Examiner affirmed | 308 |
| Examiner affirmed in part | 49 |
| Examiner reversed | 77 |
| Total | 434 |

### Disclaimers

3,019,714.—*Sidney Teiser* and *Walter R. Sassaman*, Rochester, N.Y. CHARGING AND DEVELOPING APPARATUS FOR ELECTROSTATIC PRINTING. Patent dated Feb. 6, 1962. Disclaimer filed Oct. 22, 1964, by the assignee, *Magnefax Corporation*.

Hereby enters this disclaimer to claims 1 and 4 of said patent.

3,122,679.—*Edward J. Kinlan*, Pacoima, *Hubert H. Hoeltje*, Canoga Park, and *Neil O. Regan*, Glendale, Calif. TRANSISTOR MOUNTING PAD. Patent dated Feb. 25, 1964. Disclaimer filed Nov. 2, 1964, by the assignee of 33⅓%, *Collins Radio Company*.

Hereby enters this disclaimer to the sole claim of said patent.

### Citation of Publications and Foreign Patents

*Foreign Patents*

In accordance with Rule 107, for each foreign patent cited, there should be indicated the number of sheets of drawing and pages of specification and also the sheet number(s) and page number(s) specifically relied upon if less than the entire disclosure is used. Because it is essential to conserve space in the Examiner's file of applications and to minimize the cost to applicant under the automatic supply of references cited, whenever the total number of sheets and pages in any foreign patent exceeds ten, the Examiner should keep the total relied on as near to ten as possible. Applicants who desire a copy of the complete foreign patent or of the portion not "relied on" must order it, not through the automatic supply system, but in the usual manner.

*Publications*

Publications such as German allowed applications and Netherlands printed specifications should be similarly handled. With other publications such as books, periodicals and catalogues, the specific pages relied upon should be cited. If the copy relied upon is located only in the Group making the action (there is no call number), the additional information, "Copy in Group —" should be given.

Jan. 4, 1965.

RICHARD A. WAHL,
*Acting Superintendent,*
*Patent Examining Corps.*

### Patents Available for Licensing or Sale

Des. 189,681. SUGAR BOWL. Paul P. Miano, Box 246, Garyville, La.

3,136,275. SEED DRILLING MACHINES. Mrs. Prabha Dattatrya Parkhe, Maharasbtra, India. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

Great Western Drilling Company is prepared to grant non-exclusive licenses under the following patent to responsible parties on uniform reasonable terms.

Applications for license under the following patent may be addressed to: Great Western Drilling Company, Box 1659, Midland, Tex.

3,150,085. METHOD OF DRILLING A WELL THROUGH A SUBSURFACE FORMATION EMPLOYING AN OIL-IN-WATER EMULSION DRILLING FLUID.

General Electric Company is prepared to grant non-exclusive licenses under the following 2 patents upon reasonable terms to domestic manufacturers.

Applications for license may be addressed to: Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,033,914. PRINTED CIRCUIT BOARDS.

3,079,533. PROTECTIVE RELAY.

### New Applications Received During December 1964

| | |
|---|---|
| Patents | 7,905 |
| Designs | 405 |
| Plant Patents | 12 |
| Reissues | 18 |
| Total | 8,340 |

### Issue—February 9, 1965

| | | | |
|---|---|---|---|
| Patents | 505—No. | 3,168,744 to No. | 3,169,248, incl. |
| Designs | 59—No. | 200,229 to No. | 200,287, incl. |
| Reissues | 4—No. | 25,724 to No. | 25,727, incl. |
| Total | 568 | | |

# TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

## Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

PART 3—FORMS FOR PATENT CASES

*Forms and Rules of Practice*

The following amended rules of practice and illustrative forms are adopted pursuant to Public Law 88-292, March 26, 1964, 78 Stat. 171, thus prescribing the documents presently required to be filed in the Patent Office under oath which may be subscribed to by a written declaration in the indicated form in lieu of the oath otherwise required.

In the Federal Register of June 24, 1964, proposed amended § 1.65 and a proposed § 1.68 as well as an illustrative form (3.11(a)) for this purpose were published and intention was stated to conform other affected rules and forms to effect the purpose of Public Law 88-292.

Interested persons were invited to submit their comments or suggestions on the proposals, and full and careful consideration has been given to all the material submitted.

Use of the declaration in the prescribed instances may be by any applicant, foreign or domestic. The provisions of § 1.66 of the rules relating to oaths remain in effect with respect to oaths when oaths are used, but this rule is not applicable to a declaration when used as an alternative to an oath. When a declaration is used, the ribboning procedure is not necessary, nor is it necessary to appear before an official in connection with the making of a declaration.

Suggestions were made that the rules allow the declaration to be made separately, apart from the other parts of the application. Except in the case of the declaration not accompanying an already accepted application (form 3.13(a)), and in the case of the supplemental declaration for amendment presenting claims for material disclosed but not originally claimed (form 3.14(a)), the declaration, like the oath, is an integral part of the application in accordance with section III of Title 35 of the United States Code, and 37 CFR 1.51 and shall be maintained together therewith.

Further suggestions were made that the use of the declaration be extended even further than was proposed. Amendments herein adopted would allow the declaration to be used as part of the original application for a patent involving designs, plants, and other patentable inventions; for reissue patents; when claiming matter originally shown or described but not originally claimed; or when filing a divisional or continuing application. Experience in these areas may very well provide a basis for more extended use of declarations in the future but, as an initial matter, the use will be limited to these listed instances.

These amended rules shall take effect on the date of this publication. Declarations, executed on and after that date, in proper form, will be accepted in the prescribed instances in lieu of the oath heretofore required.

The text of the new rule, amendments to existing rules, and illustrative forms follow:

Sections 1.41, 1.42, 1.43, 1.45, 1.47, 1.51, 1.52, 1.57, 1.61, 1.67, 1.76, 1.153, 1.162, and 1.175 are amended by inserting the words "or declaration" after the word "oath" wherever it occurs, including occurrences in the title of a section.

Paragraph (c) of § 1.52 is amended by inserting the phrase ", or declaration made," after the phrase "signed and sworn to".

Paragraph (a) of § 1.172 is amended by inserting the phrase ", or declaration made," after the phrase "sworn to" in the two occurrences of this latter phrase.

The caption "THE OATH", preceding § 1.65 is amended to read "STATEMENT; OATH OR DECLARATION".

Section 1.65 is amended to read as follows:

§ 1.65 *Statement of applicant.*

(a)(1) The applicant, if the inventor, must state that he verily believes himself to be the original and first inventor or discoverer of the process, machine, manufacture composition of matter, or improvement thereof, for which he solicits a patent; that he does not know and does not believe that the same was ever known or used before his invention or discovery thereof, and shall state of what country he is a citizen and where he resides and whether he is a sole or joint inventor of the invention claimed in his application. In every original application the applicant must distinctly state that to the best of his knowledge and belief the invention has not been in public use or on sale in the United States more than one year prior to his application or patented or described in any printed publication in any country before his invention or more than one year prior to his application, or patented in any foreign country prior to the date of his application on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application in this country. He shall state whether or not any application for patent on the same invention has been filed in any foreign country, either by himself, or by his legal representatives or assigns. If any such application has been filed, the applicant shall name the country in which the earliest such application was filed, and shall give the day, month, and year of its filing; he shall also identify by country and by day, month, and year of filing, every such foreign application filed more than twelve months before the filing of the application in this country. (2) This statement (i) must be subscribed to by the applicant, and (ii) must either (a) be sworn to (or affirmed) as provided in § 1.66, or (b) include the personal declaration of the applicant as prescribed in § 1.68. See § 1.153 for design cases and § 1.162 for plant cases.

(b) If the application is made as provided in §§ 1.42, 1.43, or 1.47, the applicant shall state his relationship to the inventor and, upon information and belief, the facts which the inventor is required by this section to state.

(c) An additional statement may be required if the application has not been filed in the Patent Office within a reasonable time after execution of the original statement.

A new § 1.68 is included to read as follows:

§ 1.68 *Declaration in lieu of application oath.*

(a) The applicant may, in lieu of making an oath or affirmation in the manner provided by § 1.66, set forth in the body of the statement required from him by § 1.65 his written declaration that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true, if, and only if, the applicant is, on the same paper, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardise the validity of the application or any patent issuing thereon.

(b) A written declaration by the applicant satisfying the foregoing conditions, may also be used in lieu of an oath when presenting a claim for matter not originally claimed (§ 1.67), when applying for a reissue patent (§§ 1.171 and 1.172), when applying for a patent for a design (§§ 1.151 and 1.153), and when applying for a patent for a plant (§§ 1.161 and 1.162).

Form 3.11a, an alternative to form 3.11, *Oath to accompany application for patent*, follows:

3.11a *Declaration to accompany application for patent.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances. The petition and specification precede the declaration.)

(1) _____, the above-named petitioner__ declare__ that _____ citizen__ of the United States (2) and resident__ of (3) _____ that _____ verily believe__ (4) _____ to be the original, first, and (5) _____ inventor__ of the improvement in (6) _____ described and claimed in the annexed specification; that (7) _____ do__ not know and do__ not believe that the same was ever known or used before (8) _____ invention thereof, or patented or described in any printed publication in any country before (8) _____ invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States or an application filed by (9) _____ or (8) _____ legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said invention has been filed by (9) _____ or (8) _____ representatives or assigns in any country foreign to the United States, except as follows: (10) _____.

The undersigned petitioner__ declare__ further that all statements made herein of (8) _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon.

Inventor's full name or names (11) _____

_____
(Signature)

Date _____.

Notes: See §§ 1.65 and 1.68.

(1) Name of inventor; if the invention is joint, the names of all the joint inventors.



(2) If the applicant be an alien, state of what foreign country he is a citizen or subject.

(3) Give city and State, or if a foreign resident, city and country, of residence. If more than one inventor give residence of each inventor if different. Street address need not be given here as it appears elsewhere.

(4) "Himself" in the case of a sole inventor; "themselves" in the case of joint inventors.

(5) "Sole" in the case of a sole inventor; "joint" in the case of joint inventors.

(6) Title of the invention.

(7) "He" in the case of a sole inventor; "they" in the case of joint inventors.

(8) "His" in the case of a sole inventor; "their" in the case of joint inventors.

(9) "Him" in the case of a sole inventor; "them" in the case of joint inventors.

(10) If no application has been filed in a foreign country strike out the words "except as follows:". If one or more applications have been filed in foreign countries, the first application and each application more than twelve months old (six months in design cases) must be recited. The country and date of filing the foreign application must be given and the number of the application or other identifying data may also be stated. The claim for priority under 35 U.S.C. 119 (see § 1.55) may be made here. The following examples illustrate various situations.

(a) Only one prior foreign application filed: state "in (country) on (date)." If the right of priority is also claimed add "the right of priority of which application is claimed."

(b) More than one prior foreign application: state "in (country) on (date) and in other countries on subsequent dates." The country and date do not need to be recited except for the first filed application and each application more than twelve months old (six months in design cases).

(11) All petitioners are to sign (see section 1.41).

Form 3.12a, an alternative to form 3.12, *Oath to accompany application for patent, by an administrator (or executor)*, follows:

3.12a *Declaration to accompany application for patent by an administrator (or executor).*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, the above-named petitioner, declares that he is a citizen of the United States of America and a resident of _____, that he is the administrator of the estate (or executor of the last will and testament) of C _____ D _____, deceased, late a citizen of the United States and resident of _____, that he verily believes the said C _____ D _____ to be the original, first and sole inventor of the improvement in _____ described and claimed in the foregoing specification; that he does not know and does not believe that the same was ever known or used before the invention thereof by the said C _____ D _____, or patented or described in any printed publication in any country before the said invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by the said C _____ D _____ or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said invention has been filed by the said C _____ D _____ or his representatives or assigns in any country foreign to the United States except as follows: _____.

The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise the validity of the application or any patent issuing thereon. Inventor's full name or names _____

_____
(Signature)

Date _____.

Form 3.13a, an alternative to form 3.13, *Oath not accompanying application*, follows:

3.13a *Declaration not accompanying application.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

A _____ B _____, declares that he is a citizen of the United States of America and resident of _____, that on _____, 19____, he filed application for patent Serial No. _____ in the United States Patent Office, that he verily believes himself to be the original, first and sole inventor of the improvement in _____ described and claimed in the specification of said application for patent; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to the date of said application, or in public use or on sale in the United States more than one year prior to the date of said application; that said invention has not been patented before the date of said application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to the date of said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon. Inventor's full name or names _____

_____
(Signature)

Date _____.

Form 3.14a, an alternative to form 3.14, *Supplemental oath for amendment presenting claims for matter disclosed but not originally claimed*, follows:

3.14a *Supplemental declaration for amendment presenting claims for matter disclosed but not originally claimed.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

_____, whose application for Letters Patent for an improvement in _____, Serial No. _____, was filed in the United States Patent Office on or about the _____ day of _____, 19__, declares that the subject matter of the foregoing (1) amendment was part of his invention, was invented before he filed his original application, above identified, for such invention; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year before his application, or in public use or on sale in the United States more than one year before the date of his application, that said invention has not been patented in any foreign country before the date of his application on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application in the United States, and has not been abandoned.

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Inventor's full name or names _____

_____
(Signature)

Date _____.

NOTE: (1) If the supplemental declaration does not accompany the amendment, the amendment should be identified. See § 1.67.

Form 3.16a, an alternative to form 3.16, *Combined petition, oath, and specification (single signature form); sole inventor*, follows:

3.16a *Combined petition, declaration and specification (single signature form); sole inventor.*

(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)

[TITLE OF INVENTION]

[SPECIFICATION]

I, _____, declare that I am a citizen of _____, residing at _____; that I have read the foregoing specification and claims and I verily believe I am the original, first, and sole inventor of the invention in _____ described and claimed therein; that I do not know and do not believe that this invention was ever known or used before my invention thereof, or patented or described in any printed publication in any country before my invention thereof, or more than one year prior to this application; or in public use or on sale in the United States more than one year prior to this application; that this invention has not been patented in any country foreign to the United States on an application filed by me or my legal representatives or assigns more than twelve months before this application; and that no application for patent on this invention has been filed by me or my representatives or assigns in any country foreign to the United States, except as follows:

And I hereby appoint _____, Registration No. _____, my attorney (or agent) to prosecute this application and to transact all business to the Patent Office connected therewith.

Wherefore I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specification and claims, declaration, power of attorney, and this petition.

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardise

the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____.
Post office address: _____

NOTE: This form may be executed only when attached to a complete application as the last page thereof.

Form 3.17a, an alternative to form 3.17, *Oath in division or continuing application*, follows:

3.17a *Declaration in division or continuing application.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
[This form of declaration may be used with an application disclosing and claiming only subject matter disclosed in a prior copending application of the same inventor.]
_____; the above-named petitioner declares that he is a citizen of the United States and resident of _____ that he verily believes himself to be the original, first, and sole inventor of the improvements in _____ described and claimed in the foregoing specification, that this application discloses and claims only subject matter disclosed in his pending application, Serial No. _____, filed _____; that he does not know and does not believe that the said invention was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to said application, or in public use or on sale in the United States more than one year prior to said application; that said invention has not been patented before the date of said application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows: _____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____.

The title to form 3.18 is amended to read: "*Oath in copending application containing additional subject matter*, and a form 3.18a, alternative to form 3.18 follows:

3.18a *Declaration in copending application containing additional subject matter.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
[This form of declaration may be used with an application disclosing and claiming subject matter disclosed in a prior copending application of the same inventor and also disclosing additional subject matter.]
_____, the above-named petitioner, declares that he is a citizen of the United States and resident of _____ that he verily believes him self to be the original, first and sole inventor of the improvement in _____ described and claimed in the foregoing specification; that this application in part discloses and claims subject matter disclosed in his earlier filed pending application, Serial No. _____, filed _____; that, as to the subject matter of this application which is common to said earlier application, he does not know and does not believe that the same was ever known or used before his invention thereof or patented or described in any printed publication in any country before his invention thereof or more than one year prior to said earlier application, or in public use or on sale in the United States more than one year prior to said earlier application; that said common subject matter has not been patented before the date of said earlier application in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to said application; and that no application for patent on said invention has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows _____; that, as to the subject matter of this application which is not common to said earlier application, he does not know and does not believe that the same was ever known or used before his invention thereof or patented or described in any printed publication in any country before his invention thereof or more than one year prior to the date of this application, or in public use or on sale in the United States more than one year prior to the date of this application, and that said subject matter has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to the date of this application; and that no application for patent on said invention has been filed by him or his representatives or asigns in any country foreign to the United States, except as follows: _____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____.

The parenthetical material reading "(The specification and oath follow the petition.)" following form 3.21 is amended to read: "(The specification and oath, or declaration, follow the petition.)"

Form 3.23a, an alternative to form 3.23, *Design patent application, oath*, follows:

3.23a *Design patent application; declaration.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
_____, the above-named petitioner__, declare__ that _____ citizen__ of _____ and resident__ of _____, that _____ verily believe__ to be the original, first and _____ inventor__ of the design for _____ described and claimed in the foregoing specification; that _____ do__ not know and do__ not believe that the same was ever known or used before _____ invention thereof, or patented or described in any printed publication in any country before _____ invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said design has not been patented in any country foreign to the United States on an application filed by _____ or _____ legal representatives or assigns more than six months prior to this application; and that no application for patent on said design has been filed by _____ or _____ representatives or assigns in any country foreign to the United States, except as follows: _____

The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____.
Post Office address _____

NOTE: See applicable notes under form 3.11(a).

The parenthetical material reading "(The specification and oath follow the petition.)" following form 3.25 is amended to read: "(The specification and oath, or declaration, follow the petition)".

Form 3.26a, an alternative to form 3.26, *Plant patent application, oath*, follows:

3.26a *Plant patent application, declaration.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
A _____ B _____, the above-named petitioner declares that he is a citizen of the United States of America and resident of _____ that he verily believes himself to be the original, first and sole inventor of the new and distinct variety of _____ described and claimed in the foregoing specification; that he has asexually reproduced the said new and distinct variety; that he does not know and does not believe that the same was ever known or used before his invention thereof, or patented or described in any printed publication in any country before his invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said new and distinct variety of plant has been filed by him or his representatives or assigns in any country foreign to the United States, except as follows:
The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____.
Post office address _____

Form 3.31a, an alternative to form 3.31, *Reissue application, oath; by the inventor*, follows:

3.31a *Reissue application, declaration; by the inventor.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
_____, the above-named petitioner, declares that he is a citizen of the United States of America, and a resident of _____ in the State of _____; that he verily



believes him self to be the original, first, and sole inventor of the invention described and claimed in Letters Patent No. _____ and in the foregoing specification and for which improvement he solicits a patent; that he does not know and does not believe that said improvement was ever known or used before his invention thereof, that (continue with the allegations and facts required by §1.175) _____
The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____.
Post office address _____

Form 3.32a, an alternative to form 3.32, *Reissue application, oath; by assignee*, follows:

3.32a *Reissue application, declaration; by assignee.*
(Sections 1.65 and 1.68 provide for a declaration in lieu or in place of an oath in certain instances.)
A _____ B _____, the above-named petitioner, says that he is a citizen of the United States and resident of _____ in the State of _____; that the entire title of Letters Patent No. _____, for _____, granted on _____ to C _____ D _____ is vested in him; that he verily believes the said C _____ D _____ to be the original, first and sole inventor of the invention described and claimed in the aforesaid Letters Patent and in the foregoing specification; that he does not know and does not believe that said invention was ever known or used before the invention thereof by the said C _____ D _____; that (continue with the allegations and facts required by §1.175) _____
The undersigned petitioner__ declare__ further that all statements made herein of _____ own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.
Inventor's full name or names _____
_____
(Signature)

Date _____.
Post office address _____

NOTE: May be used only when the reissue application does not seek to enlarge the claims of the original patent.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6; P.L. 88-292, 78 Stat. 171)

EDWARD J. BRENNER,
*Commissioner of Patents.*

Approved:
J. HERBERT HOLLOMON,
*Assistant Secretary for Science and Technology.*

[F.R. Doc. 64-13368; Filed, Dec. 28, 1964; 8:51 a.m.]

*Published in 29 F.R. 18502-18506, Dec. 29, 1964*

## Patents Available for Licensing

General Signal Corporation is prepared to grant non-exclusive licenses under the following 50 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patents may be addressed to: General Railway Signal Company, a Unit of General Signal Corporation, Attention Manager, Patent Department, P.O. Box 600, Rochester, N.Y., 14602.

| | |
|---|---|
| 2,570,868. | BROKEN-DOWN JOINT PROTECTION IN CODED TRACK CIRCUIT SIGNALING SYSTEMS. |
| 2,576,479. | CENTRALIZED TRAFFIC CONTROLLING SYSTEMS. |
| 2,576,849. | LIGHT SIGNALS FOR RAILROADS. |
| 2,581,084. | DRAGGING EQUIPMENT DETECTOR FOR RAILROADS. |
| 2,581,108. | DRAGGING EQUIPMENT DETECTOR SIGNALING SYSTEM FOR RAILROADS. |
| 2,582,089. | RAILWAY TRAFFIC CONTROLLING SYSTEMS. |
| 2,584,719. | RAILWAY SWITCH POINT CONNECTIONS. |
| 2,584,739. | CENTRALIZED TRAFFIC CONTROLLING SYSTEMS. |
| 2,588,005. | APPROACH CONTROL IN CODED TRACK CIRCUIT SIGNALLING SYSTEMS. |
| 2,588,044. | RECTIFIED ALTERNATING CURRENT TYPE CODED TRACK CIRCUIT SIGNALING SYSTEMS. |
| 2,592,788. | WIRE TERMINAL AND INSULATING SLEEVES. |
| 2,597,707. | TIGHTENING AND FASTENING MEANS FOR CASING COVERS. |
| 2,597,785. | LATCHING MEANS FOR ELECTRIC MOTOR SHAFTS. |
| 2,604,581. | SWITCH CONTROL FOR TRAILABLE TRACK SWITCHES. |
| 2,605,390. | CODED TRACK CIRCUIT SIGNALING SYSTEMS. |
| 2,605,391. | CODED TRACK CIRCUIT SIGNALING SYSTEM FOR RAILROADS. |
| 2,615,124. | SWITCH AND SIGNAL CONTROL SYSTEM FOR RAILROADS. |
| 2,617,014. | TRAFFIC DIRECTION CONTROL FOR CODED TRACK CIRCUIT SIGNALING SYSTEMS. |
| 2,617,846. | SHELF MOUNTED PLUG COUPLED DETACHABLE TYPE RELAY. |
| 2,619,529. | ALTERNATE ROUTE SYSTEM FOR CENTRALIZED TRAFFIC CONTROL. |
| 2,626,314. | CODE COMMUNICATION SYSTEM. |
| 2,626,383. | STATION REGISTRATION IN CENTRALIZED TRAFFIC CONTROL SYSTEMS FOR RAILROADS. |
| 2,628,050. | WALL HANGER FOR ELECTRICAL DEVICES. |
| 2,629,088. | CENTRALIZED TRAFFIC CONTROLLING SYSTEM FOR RAILROADS. |
| 2,632,844. | AUTOMATIC TRAIN CONTROL SYSTEM FOR RAILROADS HAVING CODED AND NON-CODED TRACK CIRCUIT TERRITORY. |
| 2,635,180. | CODED TRACK CIRCUIT SIGNALING SYSTEM FOR RAILROADS. |
| 2,635,181. | CODED TRACK CIRCUIT SIGNALING SYSTEM. |
| 2,635,182. | CENTRALIZED TRAFFIC CONTROLLING SYSTEM FOR RAILROADS HAVING TRACK OBSTRUCTION DETECTING MEANS. |
| 2,644,120. | RAILWAY SWITCH MACHINE CONTROLLER. |
| 2,649,536. | SWITCH AND SIGNAL CONTROL SYSTEM. |
| 2,650,295. | CODED TRACK CIRCUIT SIGNALING SYSTEM. |
| 2,651,711. | CENTRALIZED TRAFFIC CONTROLLING SYSTEMS FOR RAILROADS. |
| 2,651,712. | CODED TRACK CIRCUIT WITH MEANS TO NEUTRALIZE THE INDUCTIVE KICK-BACK FROM TRACK RAILS. |
| 2,651,734. | FREQUENCY GENERATOR. |
| 2,651,772. | SPEED INDICATING AND RECORDING DEVICE. |
| 2,654,831. | RAILWAY SIGNALING SYSTEM. |
| 2,659,812. | SWITCH MACHINE. |
| 2,662,167. | HIGHWAY CROSSING GATE CONTROL SYSTEM. |
| 2,662,971. | CODED TRACK CIRCUIT SIGNALING SYSTEM. |
| 2,668,231. | CODED TRACK CIRCUIT SIGNALING SYSTEM. |
| 2,671,164. | SWITCH AND SIGNAL CONTROL SYSTEM FOR RAILROADS. |
| 2,678,410. | LIGHTNING RELIEF GAPS FOR RELAYS. |
| 2,679,034. | CODE INTEGRITY CHECK FOR CENTRALIZED TRAFFIC CONTROL SYSTEMS. |
| 2,682,586. | ELECTROMAGNETIC RELAY. |
| 2,690,238. | CAR RETARDER CONTROL SYSTEM. |
| 2,693,525. | INDUCTIVE CONTROL SYSTEM. |
| 2,700,727. | BLOCK SIGNALLING SYSTEM FOR SINGLE TRACK RAILROADS. |
| 2,700,728. | AUTOMATIC SWITCH CONTROL SYSTEM FOR CLASSIFICATION YARDS. |
| 2,703,839. | CODED TRACK CIRCUIT SIGNALING SYSTEM. |
| 2,719,911. | TRAIN SPEED CONTROL SYSTEM. |

# ADDRESS OF COMMISSIONER EDWARD J. BRENNER

## Before the Professional Staff of the Patent Office, Departmental Auditorium, Department of Labor Building, Monday, January 25, 1965

[811 O. G. 299]

I would like to discuss with you this afternoon the highlights of a number of current and future programs in the Office relating to our patent examining operations. Incidentally, copies of my talk this afternoon will be made available to each of you as soon as they can be reproduced.

First, I believe you will be interested in hearing about the current status of our new patent examining program. Our latest best estimate is that we will dispose of approximately 9,500 cases during January which, as far as I know, is an all-time monthly record for the Patent Office. This would bring our total disposals for the first seven months of fiscal 1965 to approximately 57,000, which is equivalent to an annual rate of nearly 100,000 disposals per year. This progress to date would indicate that with the exceptionally high volume of disposals expected to continue at least through April, we should at least equal or exceed the estimate of 102,500 disposals for fiscal 1965 made by the Group Supervisors last summer. I would like to sincerely compliment each of you who has had a direct or indirect part in helping the Office accomplish these fine results to date. I believe we should also express our appreciation to the many applicants and patent practitioners whose cooperation has also contributed substantially to helping us achieve these results.

I know you will also be interested in learning that I have received in the past several months many fine compliments from applicants and patent practitioners with respect to the excellent work you have been doing and the fine cooperation you have shown to these applicants and patent practitioners. I would like to give you a few specific examples of such comments which I have received from patent practitioners. One attorney from a Midwest pharmaceutical company wrote:

> "The purpose of this letter is to give you one specific indication of a member of your staff making such cooperation possible. I refer to the action of Mr. S. in suggesting modifications to rejected claims in Final Rejection ——. If the kind of action which we have received from Mr. S. is any indication at all of the future work product of the Examining Divisions, there is no doubt in my mind that your program will succeed."

The manager of the patent department of an Eastern engineering company wrote:

> "I would like to take this opportunity to commend Supervisory Examiner P. and Examiners S. and B. of this same group for the cooperation which they gave to attorneys in my department in connection with the examination of a number of applications. . . . Several interviews were held and during these helpful suggestions were made by the Examiners such that the attorneys handling these applications could know what was considered allowable and could amend the applications to put them in condition for allowance. This cooperative spirit was extremely helpful to us and is appreciated greatly. It is believed that this type of cooperation will do much to alleviate the problem which our patent system faces concerning the large work load of the Patent Office. . . ."

An attorney from a large Midwest chemical company wrote:

> "Let me cite an example of this cooperation. Last week Examiner P. telephoned on his personal initiative to clarify two minor points which remained after my response to the first Office action. . . . I heartily commend this initiative and cooperation."

For my part, I would like to personally extend my own compliments to each of you for this fine record of cooperation.

I would also like to mention today several other goals I believe we should be seeking to attain. As you know, in my June 8, 1964 talk, I stated that I hoped we would be able to indicate allowable claims or allowable subject matter in at least 50% of our first actions on the merits. Our current surveys indicate that we are now doing this in nearly 40% of such first actions in the entire Corps. One Operation has done this in about 50% of such actions over a three-month period. I think that this indicates excellent progress to date. I hope that it will be possible in the immediate future, by more careful attention to this matter, to raise this to our goal of 50% or more of the first action for the entire Corps.

Also, I hope that, as we move toward the point where all examiners give that thorough first action which is the foundation of all our improved procedures, the proportion of final rejections in which new art must be cited will steadily decline. More particularly, with better first actions and increased cooperation of applicants and patent practitioners, we should be able to reduce this proportion to below 25% in the near future, and I hope eventually to a goal of 10% or less.

Another goal I believe we should try to attain through the cooperative efforts of the Office and the applicants and patent practitioners, is to increase significantly the proportion of our cases disposed of by allowance or abandonment before they reach the second action final rejection stage. More specifically, I believe we should try to increase this proportion from the 30% figure of the past up to approximately 50%. Again, I believe that we can reach this goal and still maintain adequate quality, if every individual examiner in every case makes that thorough first action which is the shortest road to sound disposals.

As you may know, President Johnson has directed that each Department and agency concentrate its efforts on the *essential* matters involved in its particular mission. In our case, I believe this means we should make sure that we concentrate our efforts in patent examining on the truly essential matters and to simultaneously

minimize or eliminate our efforts on other matters which may have played a part in the examination process in the past, but which are not really critical in today's circumstances. In this connection, I wish to request that we concentrate our efforts in examination in the future particularly on three main points, namely (1) "Is the invention, as defined by the claims, patentable over the prior art?" (2) "Is the specification sufficiently clear that the inventive concept and utility of the invention can *reasonably* be understood by a person skilled in the art?" and (3) "Are the claims sufficiently definite so that one can *reasonably* determine whether or not the claims are infringed?" These, I believe, are the key points on which our examination should be concentrated.

Thus the scope of the claims should be limited primarily by (1) the prior art and (2) a reasonable basis on our part for holding that the claims are so broad that a person *skilled* in the art would consider them to be obviously an unreasonable extension of the inventive concept. Further, if the invention and its utility can be *reasonably* understood upon a reading of the specification, we should not ordinarily make rejections on account of inadequate disclosure or lack of utility. I wish to emphasize here that we keep in mind throughout the examination that the specification is addressed to the man *skilled* in the art. It is also our responsibility to make sure that the wording of the claims is sufficiently definite to *reasonably* determine infringement, but we should refrain from rejecting claims merely because we would prefer a different choice of wording. It should be primarily the applicant's responsibility to select the proper wording of the claim, except to the extent that the selection of words makes the claim indefinite. We plan to continue our studies directed towards minimizing so-called "formal" or "technical" rejections, in order that we may concentrate a greater share of our examination effort on the more essential matters discussed above. A part of our future efforts in this area will involve a careful review of our Rules of Practice, the Manual of Patent Examining Procedures and the curriculum of the Patent Office Academy to make sure that they reflect this approach.

We also plan to initiate in the near future several additional procedural changes. First, we plan to establish a new procedure for making applications "special." It should be pointed out initially that this new procedure would be strictly optional on the part of the applicant. More particularly, an applicant could request to take advantage of this new "special" procedure in the event his application has been awaiting action for six months or more. Under the new "special" procedure, the examiner would give a thorough first action on the merits, setting a four-month period for response on the part of the applicant. The first action would be based on the *claimed* invention, as under the new "special" procedure the applicant would be expected to claim his invention properly prior to requesting "special" action. The applicant would be encouraged to hold an interview with the examiner during this four-month period to resolve finally all issues in the case, once a formal response had been made, or a written copy of any proposed amendment was made available to the examiner for review prior to the interview. However, no amendments to the claims requiring a new search or raising new issues would be permitted at any time after issuance of the first Office action. Upon receiving the first response from the applicant, the examiner would then either issue a notice of allowance or issue a final rejection setting a thirty-day period for response by the applicant. No personal interview would be permitted after final rejection, nor would any further action be issued by the examiner except, of course, in the case of appeal or in a case where a notice of allowance would be issued if an amendment were filed cancelling all rejected claims.

A more detailed announcement of this new "special" procedure will be published in the near future. It is our plan to initially try out the new "special" procedure on a trial basis to determine whether it will work to the mutual advantage of applicants and the Office. Thus, we plan to limit the cases to be handled under this new procedure on a trial basis to the first 100 requests for each Group, which will give us a test sample of 3100 applications. It should be noted that this new "special" procedure, if adopted on a regular basis, will make it possible for an applicant to obtain a United States patent within 18 months or less from the filing date of his application. If the new "special" procedure works out successfully, we are considering the possibility of eliminating in the future the requirement that the application be pending for at least six months. In this possible future case, it should be noted that it would be possible for an applicant to obtain a United States patent within one year or less of his filing date.

We have also been considering what steps might be taken to assist the Board of Appeals in maintaining their work on a current basis in view of the increased number of appeals being filed as a result of the higher throughput of cases resulting from the new examining program. As a result of discussions with the Board of Appeals on this matter, we have decided that, effective immediately, the Board will render a *per curiam* decision in every appeal where this type of decision is feasible. A *per curiam* decision, of course, is a decision where the Board would simply indicate that it holds either for the examiner or the applicant. We estimate that we will be able to use this type of decision in a substantial proportion of the appeals.

We have also been giving particularly careful consideration to examiner turnover. It is our goal here to reduce turnover from the approximate 15 to 20% per year figure of the past to about 10 to 12%. The heart of this program, of course, involves our efforts directed at increasing the professional responsibility and status of examiners and increasing the attractiveness of a career in the Patent Office. We have also studied carefully the proposal that we have new examiners sign a written employment commitment as several other bureaus of the Government have been doing. However, we have decided against adopting this procedure in the Patent Office, at least for the foreseeable future. Instead, we plan to emphasize in our recruiting that we are primarily seeking candidates who are interested in making a career in the Patent Office. For example, we plan to emphasize this specifically in our offer letters to examiner candidates. We feel that to be fair to our career employees in the Office, to other qualified and deserving candidates on the Civil Service registers who are interested in becoming career examiners, and to the future of the United States Patent Office and Patent System, we should make every effort to employ people who, at the time of employment, are interested in making a career in the Patent Office. In particular, we do not think it is fair to employ examiners who, at the time of employment, are planning to stay with the Office for only a year or two.



We have also been studying very carefully the organization, grade structure, lines of responsibility and promotional opportunities in the Patent Examining Corps, and have decided to initiate the following changes. First, we have decided to change the title of our present Group Supervisors to Group Managers, since we feel that this will more appropriately designate their future responsibilities. Secondly, we have decided to increase the number of Supervisory Primary Examiners. Thus, in the course of the next several months we plan to designate a significant number of non-supervisory Primary Examiners as acting *Supervisory* Primary Examiners. More particularly, we plan to establish in the near future art units *averaging* about 10 to 12 examiners each, which will be headed up by present Supervisory Primary Examiners and the new acting Supervisory Primary Examiners. It is our further plan that when a particular acting Supervisory Primary Examiner has demonstrated that he can effectively perform the duties of a Supervisory Primary Examiner, he will be made a regular Supervisory Primary Examiner.

The Group Managers in the future will have greater authority, responsibility and accountability for their Group's operations. More particularly, each Group Manager will be responsible for administering the budget assigned to him to cover his Group's operations. He will thus have the primary responsibility, for example, for determining the need for and the optimum balance examiners, patent aids, and clerical personnel, as well as the optimum use of overtime, dictating machines, and the like, to accomplish his assigned mission. In turn the Group Manager will be held *fully accountable* for the costs and productivity of his Group. Similarly, each Operation Director in the future will be responsible for administering the budget assigned to him for his Operation and will be held *fully accountable* for the costs and productivity of his Operation.

Under the new organizational arrangement, the Supervisory Primary Examiner will hold a very key position. He will be responsible for the prompt and effective continuing utilization of improved procedures, such as maximum use of "compact prosecution" techniques, examiner initiation of personal or telephone interviews wherever a saving of time appears possible, and the technical training of examiners to higher competence. He will also be responsible for seeing that his art unit meets the goals established for his unit by making sure his unit's efforts are concentrated on the essential, and by working closely with his examiners to guide and assist them to use their time effectively. This will increase the opportunity for individual examiners to develop and advance in the Office as well as to assure that the Office meets its goals.

Thus, under the new organizational setup, the Superintendent, Directors, and Group Managers will have the responsibility of seeing that our dollars are spent in the optimum manner and the Supervisory Primary Examiners will have the responsibility of seeing that our examiners' time is spent in the optimum manner. It is our plan to work out the detailed arrangements necessary to establish this new organizational setup during the next several months so that we will be fully operational on the new basis prior to the beginning of fiscal 1966, i.e., July 1, 1965. We plan no further changes in the management or supervisory structure of the Patent Examining Corps for the foreseeable future.

The establishment of the full use of the Supervisory Primary Examiner position in the Corps will therefore make it possible for an individual examiner to advance in the Corps below the Group Manager level to Grade 15 by becoming either a Supervisory Primary Examiner or an individual Primary Examiner under our Civil Service classification standards for non-supervisory examiners. Thus, I think we have arrived at a point where the organization, lines of responsibility, grade structure and promotional opportunities in the Corps have been worked out on a reasonable, fair and effective basis for the future. This comes, I believe, at a most opportune time. As you know, both the Presidential Commission, if established, and the Senate Subcommittee on Patents, Trademarks and Copyrights will be carefully studying the U.S. Patent System. I am sure they will be watching most closely the operations of the United States Patent Office during the next year or so. Our accomplishments in fiscal 1965 will undoubtedly be of great interest to them. However, our accomplishments in fiscal 1966 will probably be of even greater significance since we will be operating that year without the boost given to our productivity in fiscal 1965 as a result of working on the older cases. We should therefore make sure that our efforts during the remainder of this fiscal year lay a sound foundation for our operations in fiscal 1966 so that our accomplishments in 1966 will make a significant contribution towards our long range goal of disposing of an average of 100,000 cases per year for the fiscal years 1965–1970. I am sure we all share the feeling that we want to make a good showing during the next several years by meeting the goals we have set, which I believe we can accomplish if everyone does his part.

Thank you.

# PATENT EXAMINING CORPS

## H. B. WHITMORE, Superintendent

## CONDITION OF PATENT APPLICATIONS AS OF JANUARY 1, 1965

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 7-20-62 | 4- 9-56 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 11-30-62 | 6-14-57 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 12-31-56 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 8- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 9-18-62 | 12-28-56 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-20-62 | 1- 3-56 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 3-28-57 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 11-19-62 | 3- 2-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 5- 1-53 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-19-62 | 2-25-58 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 5-16-57 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 7-19-57 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-28-62 | 12-14-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 4-14-59 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 206,227 |
| Total number of Design applications pending | 5,784 |
| Total number of applications awaiting action (excluding Designs) | 141,524 |
| Total number of Design applications awaiting action | 2,717 |
| Date of oldest new application awaiting action | July 5, 1962 |
| Date of oldest amended application awaiting action | May 1, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during February 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,435,187 to 2,436,781, inclusive

Plant Patents ..... Numbers 783 to 785, inclusive

| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner... Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids. | 5-23-63 | 2-11-63 |
| METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner..... Metal Bending, Drawing, Etruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 7-29-59 |
| MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner..... Special Article Making; Assembling, Tool and Implement Making; and Metal Working. | 10-23-62 | 3- 2-60 |
| MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner.. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders. | 2- 5-63 | 9-25-58 |
| HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner..... Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling. | 1-16-63 | 4-20-60 |
| FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner..... Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing. | 2- 1-63 | 8-28-59 |
| POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner..... Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3-23-63 | 5-12-60 |
| HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner..... Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination. | 3- 1-63 | 5-19-59 |
| **GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner..... Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working. | 7- 8-63 | 12-28-59 |
| CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner..... Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 8-28-58 |
| PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12-31-62 | 7-23-57 |
| TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner..... Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-14-63 | 12-10-59 |
| TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner..... Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 3- 6-63 | 10-16-58 |
| FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner..... Furniture; Supports; Cabinet Structures; Receptacles; Baggage. | 4-18-63 | 11- 5-60 |
| PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner..... Printing; Typewriters; Stationery; Material Treatment. | 7-17-62 | 8-14-59 |
| PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisory Examiner..... Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner..... Industrial Arts; Household, Personal and Fine Arts. | 3- 9-64 | 9-26-61 |



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE WILLIAM M. HAINES, JR. AND EDWIN PAUL CARTER

*No. 7257. Decided December 10, 1946*

[— CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—REFERENCES—NON-ANALOGOUS ART—APPELLANTS' TEACHING BROADENS FIELD OF APPLICABLE ART.

Upon considering the patentability of claims to a method for making power transmission belts including the step of impregnating a fibrous material with a degassed liquid polymer in a vacuum mold, wherein the Examiner and Board relied upon a secondary reference to Tognola to show that degassing a liquid polymerized plastic prior to insertion into a vacuum mold was old, and considering appellants' contention that Tognola relates to a non-analogous art, *Held* that "* * * we find it impossible to reconcile appellants' present position that Tognola contains no suggestion that the strands of the coil were 'impregnated,' because Tognola's copper wires 'obviously cannot be impregnated,' with the portion of appellants' specification previously referred to and in which it is asserted 'that the elastomer material will attain a very high degree of impregnation with many types of wire * * * and is not dependent upon the properties of the tensile section itself to obtain the desired result' "; that "It is the appellants' own teaching that broadens the field of applicable art"; that "Both appellants and Tognola seek the filling of an evacuated chamber containing wire to be 'impregnated' with a viscous polymerized plastic"; and that "It seems to us that this fact alone makes the Tognola teachings most pertinent to a person of ordinary skill in this art."

2. SAME—PARTICULAR SUBJECT MATTER—METHOD OF MAKING POWER TRANSMISSION BELTS.

The refusal of certain claims to a method of making power transmission belts, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 739,829.

AFFIRMED.

*C. Willard Hayes* (*Raymond Fink* of counsel) *Cushman, Darby & Cushman*, for appellant.

*Clarence W. Moore* (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

Appellants' claimed method for making power transmission belts is not identically disclosed or described in the art relied upon to support the rejection. The issue before us thus arises under 35 U.S.C. 103 and requires a determination of whether the differences between the claimed method and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in the art of manufacturing power transmission belts.

Appellants' specification [1] describes the method which is claimed in appealed claims 13, 16 and 20, of which claim 13 is representative. Claim 13 reads as follows:

13. A method for making power transmission belts comprising the steps of: supporting an untreated fibrous material within a vacuum chamber having a cavity defining the desired contour of the belt, evacuating the cavity and introducing a degassed liquid elastomer therethrough under influence of vacuum

[1] Application Serial No. 739,829, filed June 4, 1958.

so as to completely impregnate the fibrous material, and followed by curing then fabricating the resultant product to form a plurality of flexible, unitary belt members.

Appellant's specification states:

Essentially, the invention may be seen to consist of the substantially complete permeation of the tensile section by means of introducing a specially prepared liquid elastomer material under vacuum and pressure, if desired, wherein exceedingly close control is utilized in the removal of entrapped fluids from the materials and mold prior to casting to obtain the desired adherence and uniting of the reinforcing section within the body. • • •

The specification also states:

• • • it has been found that the elastomer material will attain a very high degree of impregnation with many types of *wire*, or textile fibers and yarns, such as dacron, cotton, nylon, rayon, fortisan and others, and is *not dependent upon the properties of the tensile section* itself to obtain the desired result. [Emphasis added.]

The rejection is based on three references:

Tognola, 2,477,273, July 26, 1949.
Fenner (British), 430,035, June 12, 1935.
Continental (British), 744,907, February 15, 1956.

We agree with the Board that:

The basic reference, the patent to Continental, discloses a method of making transmission belts utilizing the same types of molds, materials and techniques utilized by appellants, with the exception that the plastic material is not introduced under the influence of a vacuum. • • •

We also agree with the position stated by appellants in their brief here that:

• • • the Continental patent discloses nothing but the pouring of viscous elastomer material into the open upper end of an annular mold. Apparently the patentee assumed that the material would, under the influence of gravity, displace the air in the mold and give reasonably satisfactory mold filling, with some measure of penetration of the "reinforcing insertion." There is no suggestion of performing this operation under the influence of vacuum. The only basis upon which the use of vacuum could be supplied to the Continental method in rejecting appellants' claims would be that the use of vacuum for the purpose and as claimed "would have been obvious at the time the invention was made to a person having ordinary skill in the art • • •."

• • • • • • • •

However, we think Fenner made it obvious to one of ordinary skill in this art to utilize a vacuum to enhance the impregnation of textile materials in a woven belt by a latex coating. Certainly, Fenner discloses the desirability of removing all air from the interstices of the threads which form the fabric that reinforces the belting and also the removal of air from the woven belt. In both instances a vacuum is utlized when coating with latex to provide complete impregnation.

Appellants contend that the disclosures of Continental and Fenner do not make it obvious to a person of ordinary skill in this art to degassify the elastomeric materials prior to their introduction into the molding chamber. While this may be true, we think a person of ordinary skill in this art would, in view of the Tognola reference, consider this step to be an obvious one. Tognola utilizes a polymerized plastic which is described as having a viscosity at 75° to 80° F. "of about that of heavy lubricating oil." He degasses the plastic prior to insertion in the mold and introduces the plastic into the mold under the influence of vacuum.

Appellants assert that Tognola relates to a non-analogous art, stating in their brief:

It was Tognola's purpose to fill the container or casing, including the spaces



*between* the strands of the coil, but there is no suggestion in the patent that the strands themselves were impregnated.

[1] While we appreciate this asserted difference, we find it impossible to reconcile appellants' present position that Tognola contains no suggestion that the strands of the coil were "impregnated," because Tognola's copper wires "obviously cannot be impregnated," with the portion of appellants' specification previously referred to and in which it is asserted "that the elastomer material will attain a very high degree of impregnation with many types of wire * * * and is not dependent upon the properties of the tensile section itself to obtain the desired result."

Appellants asserted distinction over Tognola to the effect that "molding is not involved—merely filling containers. The containers and their contents are never subsequently separated," is not persuasive. "Molding" is involved in Continental and the containers and their contents are there "subsequently separated."

The authorities cited by appellants in support of their present position involve quite different fact situations. We do not find them appropriate in supporting appellants' argument that since the Tognola teachings are found in a specifically different art they would not be obvious to a person of ordinary skill in the art of making power transmission belts. It is appellants' own teaching that broadens the field of applicable art. Both appellants and Tognola seek the filling of an evacuated chamber containing wire to be "impregnated" with a viscous polymerized plastic. It seems to us that this fact alone makes the Tognola teachings most pertinent to a person of ordinary skill in this art.

Appealed claim 16 is specific to the method as applied to a positive drive (tooth type) power transmission belt. Appealed claim 20 is specific to the use of a liquid polyurethane elastomer material. We do not consider these or other noted verbal differences in the claims to be significant as defining an invention which can be said as a whole to have been unobvious to a person of ordinary skill in this art at the time appellants made their disclosed invention.

For the foregoing reasons, we agree with the Board that:

In considering the Continental patent we cannot overlook the fact that the patentee desires penetration of the fibers. He states that this is attained. • • • Since he does not utilize vacuum, he does not attain the degree of penetration attained by appellants. However, one skilled in the art would have the knowledge obtained from the Fenner and Tognola patents that a more complete penetration could be obtained by the use of vacuum. Under these circumstances, we are not persuaded that appellants' method represents an unobvious variation over the prior art which we can recognize as providing a patentable improvement.

[2] The decision is affirmed.

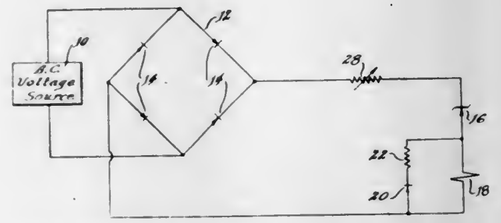
AFFIRMED.

# ABBREVIATURES OF APPLICATIONS

Published at the request of the applicant or owner in accordance with Notice of July 28, 1964, 804 O.G. 813. The abbreviatures are identified by serial number of the applications and arranged in chronological order. The heading of each abbreviature of application published herein indicates the number of pages of specification, including claims, and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and photocopies of them, or any part thereof, may be purchased for 30 cents a page.

105,823. **RAPID TRANSFER SWITCHING DEVICE.** Walter Dalos, Richland, Washington, assignor to the United States of America as represented by the United States Atomic Energy Commission. Filed April 26, 1961. Published February 9, 1965. Class 317—156. 1 sheet of drawings. 4 pages of specification.

Fig-2




2. A transfer switching device responsive to an A.-C. voltage comprising a full-wave rectification bridge connected across said A.-C. voltage; a first variable impedance; a Zener diode; a relay having a coil; said first variable impedance, Zener diode, and coil of said relay being in series connection across the output of said bridge; a germanium diode; a second impedance in series connection with said germanium diode and both in shunt connection across the coil of said relay; the coil of said relay being responsive to the reverse current of said Zener diode.

# REISSUES

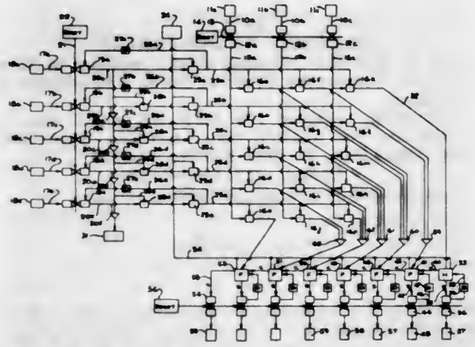
## FEBRUARY 9, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

### 25,724
### ELECTRONIC GANG SWITCHING SYSTEM

Wendell S. Miller, 1341 Comstock Ave., Los Angeles 24, Calif.

Original No. 3,015,443, dated Jan. 2, 1962, Ser. No. 23,724, Apr. 21, 1960. Application for reissue Aug. 3, 1962, Ser. No. 215,227
20 Claims. (Cl. 235—164)



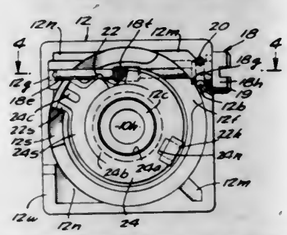
1. Computer apparatus comprising an ordered series of input conductors, means for supplying electrical input signals to a plurality of said input conductors simultaneously and in any of several different combinations of the different input conductors, an ordered series of separately energizable control conductors, an array of logical "and" circuits each responsive to one of said input conductors and one of said control conductors and each operable to produce a predetermined output signal in response to a predetermined combination of input and control signals from the associated input conductor and control conductor but not in response to only one of said signals, a plurality of read-out circuits actuable by different sets of said "and" circuits, each of said read-out circuits being actuable by any one of the "and" circuits in an associated set thereof which may be defined as including a first "and" circuit actuable by one of said input conductors and one of said control conductors, and as including all and only such other "and" circuits as are actuable respectively by pairs of conductors including an input conductor which is a predetermined number beyond said one input conductor in said first mentioned series and a control conductor which is the same number beyond said one control conductor in said second mentioned series, and scanning circuitry for controlling the transmission of signals from said control conductors to the "and" circuits and operable to pass said signals from the control conductors in a predetermined sequence of the control conductors, said scanning circuitry including disabling means operable to prevent the transmission of a signal from each of said control conductors to the "and" circuits responsive thereto as long as any preceding control conductor in said sequence is connected to the "and" circuits for transmission of a signal thereto, said disabling means being automatically operable to pass a signal from a particular control conductor when the preceding control conductors are no longer connected to the "and" circuits, and said scanning circuitry including means for ceasing the transmission of a signal from each control conductor to the "and" circuits after the "and" circuits have been actuated thereby.

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### 25,725
### POTENTIOMETERS

Robert L. Ferrell and Wilbur T. Hardison, Riverside, Calif., assignors to Bourns, Inc.

Original No. 3,105,217, dated Sept. 24, 1963, Ser. No. 183,855, Mar. 30, 1962. Application for reissue June 16, 1964, Ser. No. 386,472
19 Claims. (Cl. 338—174)



1. A wormscrew-adjusted potentiometer comprising:

first means, comprising a box-like housing having first and second principal portions, said housing portions providing opposite generally parallel faces, and structural means providing an unobstructed aperture through the housing from face to face thereof, said structural means being generally tubular in form and comprising a portion providing a cylindrical bearing surface, said first and second principal portions being constructed and arranged to interfit to provide in said housing an interior chamber, and said structural means being rigidly held in place between said faces, whereby said housing has a centrally-located mounting hole therethrough for the reception of mounting means;

second means, comprising adjustable potentiometric means disposed in said housing around said structural means and comprising means mounted for rotation on said cylindrical bearing surface, and said second means comprising terminal means for said potentiometric means;

and third means, comprising wormscrew means supported by said housing and exposed for rotation by means exterior of said housing, said wormscrew means being constructed and arranged with a wormscrew thread in driving engagement with said second means for effecting adjustment thereof in response to rotation of said wormscrew means.

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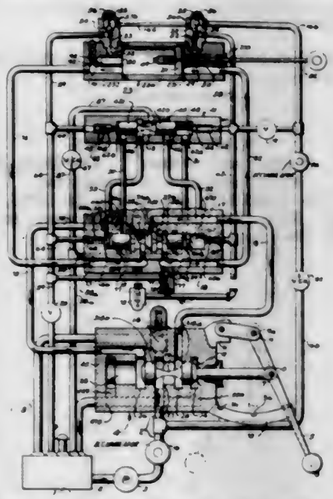
### 25,726
### HYDRAULIC ENGINE

Lorin Lefevre, 2908 1st Ave. N., Great Falls, Mont.

Original No. 3,090,364, dated May 21, 1963, Ser. No. 47,127, Mar. 28, 1960, which is a continuation of Ser. No. 470,155, Nov. 21, 1954. Application for reissue Mar. 5, 1964, Ser. No. 364,871
11 Claims. (Cl. 91—12)

1. A fluid reciprocating engine comprising a power cylinder, a fluid powered piston dividing said cylinder into forward and rearward chambers and adapted to reciprocate longitudinally rearward and forward along a longitudinal path within said cylinder, pressure reversing valve means connected to the forward and rearward chambers

of said cylinder and adapted to alternately apply pressure to the forward and rearward ends of said chamber for moving said piston alternately forward and rearward along said cylinder, said pressure reversing means comprising a housing and a spool, said housing having a longitudinal bore, said spool being contained within said bore and



movable longitudinally therein for alternately supplying and exhausting fluid to said cylinder chambers, each end of said spool together with said housing defining opposing valve actuating chambers, reversing valve actuation means mounted on said cylinder and actuated by said power piston to alternately supply pressure to said valve actuation chambers at the end of the power piston movement in either its forward or rearward direction to shift said spool whereby said pressure reversing valve means will apply pressure to said forward cylinder chamber at the end of the forward movement of said piston to move said piston rearwardly, and will apply pressure to said rearward cylinder chamber at the end of the rearward movement to move said piston forwardly to thereby enable the piston to reciprocate forwardly and rearwardly along its longitudinal path continuously and automatically, exhaust valve means actuated by said valve actuation means for simultaneously exhausting the valve actuation chamber opposite that being supplied by said valve actuation means, fluid pump means for providing fluid under pressure to said reversing valve means and said valve actuation means, and main control means for interrupting communication between said pump and reversing valve means.

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**25,727**
**ORGANOSILOXANE ETHERS**
**Loren A. Haluska, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan**
**No Drawing. Original No. 2,846,458, dated Aug. 5, 1958, Ser. No. 622,011, Nov. 14, 1956. Application for reissue Nov. 30, 1959, Ser. No. 856,324**
**4 Claims. (Cl. 260—448.2)**

1. A siloxane of the unit formula

$$R'''(OR'')_nOR'SiO_{\frac{3-a}{2}}^{R_a}$$

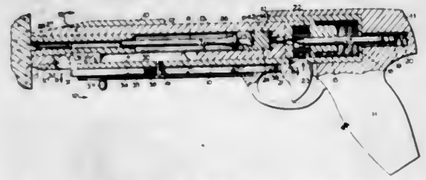
in which R is a monovalent hydrocarbon radical, R' is an alkylene radical, R'' is an alkylene radical of at least 2 carbon atoms, n is an integer of at least 1, R''' is selected from the group consisting of hydrogen, saturated hydrocarbon radicals and aryl hydrocarbon radicals and a has a value from 0 to 2 inclusive.

# PATENTS

## GRANTED FEBRUARY 9, 1965

## GENERAL AND MECHANICAL

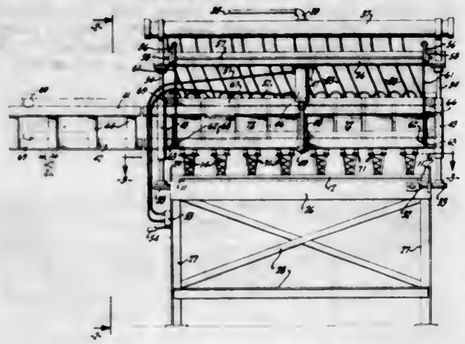
**3,168,744**
**EXPLOSIVELY-ACTUATED STUD-DRIVING TOOL**
**Robert C. Kvavle, Hillsboro, Oreg., assignor to Omark Industries, Inc., and Ammo Products, Inc., Portland, Oreg., both corporations of Oregon**
**Filed Feb. 1, 1963, Ser. No. 255,589**
**8 Claims. (Cl. 1—44.5)**



1. In a device of the character described for explosively-driving a stud or the like, a gun barrel, a piston and a ram slidably mounted in said barrel, said ram having a shank portion for impingement against the stud being driven and an inner specially formed head terminating in a partially spherically shaped detent, said piston having an open slot with a bottom pocket corresponding to said detent for removably receiving said ram head, a portion of said ram head opposite said detent engaging said gun barrel and holding said detent in said piston slot pocket, whereby said ram head and said piston remain interlocked as long as they are contained within said barrel, said shank of said ram being of less hardness than said head portion and said piston, said ram head and said piston slot so shaped that thrust on said head by said piston will be exerted axially through said ram, and a guide in said barrel for said shank of said ram, said guide having a bore of reduced diameter for slidably receiving said shank of said ram.

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**3,168,745**
**MACHINE FOR ATTACHING BEDSPRINGS TO FRAME**
**Thomas F. Winters, San Rafael, Calif. (% Sterling Mattress Co., 1919 Bryant St., San Francisco 10, Calif.)**
**Filed Oct. 29, 1962, Ser. No. 233,684**
**9 Claims. (Cl. 1—150)**



1. In a machine for assembling a plurality of coil springs on a bedspring frame, support means for supporting said bedspring frame, a carriage, retractable means for moving said carriage between first and second positions away from and in proximity to said support means respectively, a plurality of fluid pressure actuated staple driving machines on said carriage positioned to position and support a plurality of coil springs in first position of said carriage and to staple each said coil spring to a bedspring frame on said support means in second position of said carriage and means for energizing said staple driving machine.

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**3,168,746**
**WORK PANTS WITH KNEE PROTECTORS**
**Robert D. Smith, 2742 Tremont Ave., Bronx, N.Y.**
**Filed Apr. 11, 1963, Ser. No. 272,359**
**3 Claims. (Cl. 2—24)**



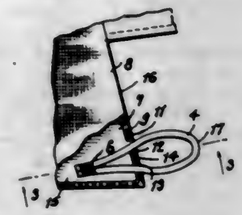
3. In a garment the combination of a work pants having leg portions, and each leg portion having a knee protector for protecting a wearer's knees, said protector having selectively adjustable means for providing maximum comfort, said knee protector comprising a rectangular panel attached at its edges to said leg portion to form a pocket therebetween, one of said edges having an unattached center portion forming an opening to said pocket, a plurality of pad elements in said pocket, said pad elements being of generally square configuration, any edge of which is longer than said pocket opening, whereby said pad element cannot unintentionally egress from said pocket, one of pad elements having a bevelled central opening for receiving a wearer's knee cap therein, said pocket including a plurality of rectangular horizontal platforms thereacross, said platforms being attached on three edges to the inner side of said panel, said platforms each being attached at different levels on said panel to form selectively a bottom support for said pad elements.

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**3,168,747**
**SHIRT FASTENING MEANS**
**Alvin Rothman, Fresh Meadows, N.Y., assignor to Phillips-Van Heusen Corporation, New York, N.Y., a corporation of New York**
**Filed July 11, 1963, Ser. No. 294,428**
**2 Claims. (Cl. 2—128)**

1. A shirt and a fastener therefor, said shirt comprising front parts adapted to be in overlapping relationship, at least one of said front parts being composed of a plurality of fabric layers connected together by stitching along an edge thereof which is adapted to lie in overlapping relationship to said other front part, said stitching being interrupted at two spaced points along said edge, said interrupted stitching thereby defining two spaced openings along said edge between said fabric layers, said openings being separated by a stitched edge portion, an elastic

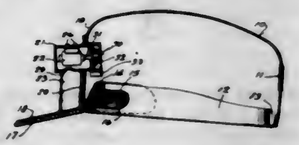
loop comprising two leg portions and a bight portion, one of said leg portions of said loop being inserted between said fabric layers through one of said openings, the other said leg portion of said loop being inserted between said fabric layers through the other of said openings, means securing said leg portions together between said fabric



layers to form a closed loop around the said stitched edge portion between said openings, said stitched edge portion forming a stop means to limit the extension or retraction of said loop, said closed loop thereby forming a fastener for said front part and being adapted to engage a cooperating fastener on the other front part.

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**3,168,748**
**HAT WITH POWER COOLING**
**Wayne Limberg, P.O. Box 525, Osseo, Wis.**
**Filed June 8, 1961, Ser. No. 115,681**
**7 Claims. (Cl. 2—171.3)**



1. A hat comprising the combination with a crown, of means including a circumferentially extending sweat band conected to the bottom of the crown and adapted to be located at the level of the wearer's forehead for supporting the crown, said sweat band being connected at its lower margin with the bottom of the crown and the crown adapted to extend free of the wearer's head above the lower margin of the sweat band, the crown being provided with an air inlet port and an air outlet port above the level of the sweat band, and a motor driven fan connected with one of said ports for circulating air through the crown, and means for cooling air circulated through said crown and including a reservoir pad interposed between the crown and an upper portion of the sweat band, the air inlet port with which the crown is provided including means for directing incoming air onto said pad for evaporation of water therefrom.

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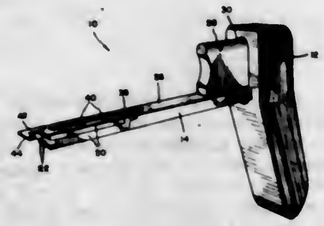
**3,168,749**
**FABRIC HEM**
**Abram Cala, 43 Rue du Pont de Creteil, Saint-Maur, France**
**Filed Feb. 15, 1963, Ser. No. 258,884**
**2 Claims. (Cl. 2—243)**



1. A fabric garment having a hem defined by a first portion of the fabric folded over upon itself along a line equidistant from a first edge thereof to define said hem, the hem being affixed by an elongated tape of flexible sheet material having a first portion which is coextensive with the fabric from the fold line of the hem to the edge of the fabric and a second portion which extends beyond the edge of the fabric, said portion of said tape which is coextensive with said fabric being coated with an adhesive on the side of said tape facing said fabric and being adhered to said fabric throughout said coextensive area, said portion of said tape which extends beyond said fabric edge being coated with an adhesive on the opposite side of said tape from said first adhesive coating and adhered to the portion of the fabric laterally adjacent said folded portion throughout substantially the entire length of said folded over portion to define a facing.

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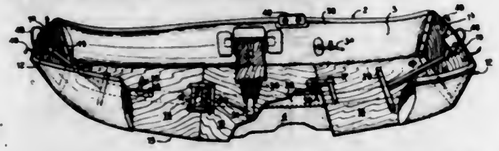
**3,168,750**
**WIRE INSERTING AND CUTTING DEVICE**
**Albert F. Gattiker, Jr., Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Jan. 17, 1963, Ser. No. 252,183**
**8 Claims. (Cl. 7—14.1)**



1. A tool comprising:
(*a*) a supporting member having an open end recess in one end thereof to receive and releasably house a connector with a wire extending therethrough, and a groove in the one end for receiving the wire;
(*b*) a cutting member having an opening in one end thereof for passing an end to be cut of the wire, and a cutting edge adjacent the opening;
(*c*) the members being connected and reciprocal to one another;
(*d*) means for biasing the members relative to one another to position the opening and cutting edge beyond the one end of the supporting member; and
(*e*) means for moving the members relative to one another against the biasing means moving the cutting edge across the one end of the supporting member and through the wire in the opening for cutting.

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**3,168,751**
**PNEUMATIC BOAT**
**Jean Pierre Cavaignac, Le Vesinet, and Jean-Francois Lafleche and Henri Joseph Jean, Paris, France, assignors to Etablissements Hutchinson (Compagnie Nationale du Caoutchouc), Paris, France, a corporation of France**
**Filed Apr. 5, 1962, Ser. No. 185,357**
**Claims priority, application France, June 1, 1961, 863,680**
**11 Claims. (Cl. 9—2)**



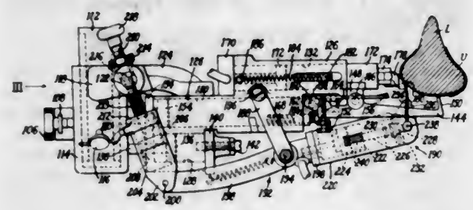
1. A pneumatic boat comprising in combination: a rigid prow board and a rigid stern board, the boards



being upwardly divergent and extending transversely of the boat and both having a four-sided general shape in a plane transverse to the boat and both having an extent transversely of the boat which is less than the overall width of a flexible unit; said flexible unit composed of a watertight material and having transversely extending prow and stern end portions, two lateral portions constituting the lateral longitudinally extending walls of the boat, inflatable cavities in the lateral portions and a middle portion interconnecting the lateral portions in a watertight manner and constituting the bottom of the boat, the lateral portions extending upwardly from the middle portion and having outer faces which are convergent in plan toward the prow board and stern board; and means securing said prow and stern boards respectively to the prow and stern end portions of the flexible unit, the prow and stern end portions of the flexible unit having a general shape in a transverse plane of the boat which corresponds to the shape of three of the sides of the four-sided prow board and stern board respectively.

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**3,168,752**
**MACHINES FOR SHAPING UPPERS OVER LASTS**
**Robert C. Quarmby, Leicester, England, assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey**
**Filed Jan. 29, 1963, Ser. No. 254,690**
**Claims priority, application Great Britain, Feb. 17, 1962, 6,217/62**
**6 Claims. (Cl. 12—10.1)**

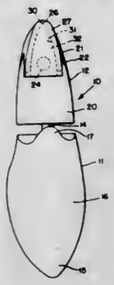


1. In a machine for shaping uppers over lasts, said machine having ball lasting devices at opposite sides of a last supported in said machine, individual mounting means on which each of said devices is movable widthwise of a last for wiping an upper over the ball region of the last bottom, and means for individually adjusting each mounting means to position its associated device heightwise and lengthwise relative to said ball region of the last, the improvement comprising: a pair of shank lasting units each individually carried by one of said mounting means so as to maintain a predetermined relation to said devices, each unit comprising a wiper for wiping the upper over the shank portion of the last bottom, and means for rotatably adjusting each unit relative to its associated mounting means about an axis extending generally widthwise of the last for aligning the wiper with the slope of the shank area of the last bottom.

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**3,168,753**
**SHOE DISPLAY TREE**
**John C. Bass, Pittsford, N.Y., assignor to Rochester Shoe Tree Co., Inc., Rochester, N.Y., a corporation of New York**
**Filed Mar. 15, 1963, Ser. No. 265,541**
**8 Claims. (Cl. 12—115.6)**

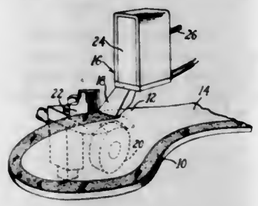
1. A shoe tree comprising a forward portion and a pivotally connected heel portion, said heel portion being formed with a flat, exterior display surface thereon, an imperforate transparent member for engagement over said surface portion, and means for holding said member over said surface portion, said member being formed with a recess extending inwardly from one edge thereof



to confront said surface portion and formed to removably receive a display card therein.

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**3,168,754**
**METHOD OF ATTACHING AN OUTSOLE AND A SHOE BOTTOM BY USING AN ADHESIVE**
**Conrad Rossitto, Andover, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey**
**Filed June 30, 1961, Ser. No. 121,118**
**5 Claims. (Cl. 12—142)**



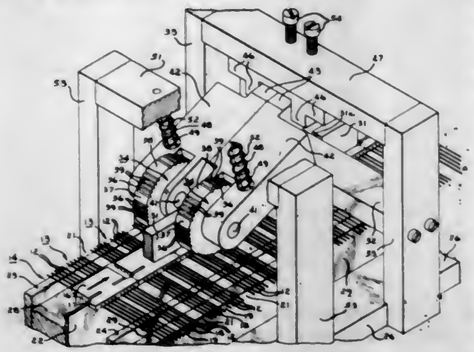
1. The process of hot melt cement attaching an outsole and a shoe bottom which comprises depositing substantially solvent-free thermoplastic synthetic polymer resin adhesive in molten condition on the outsole only as a discrete ribbon at least lightly adherent upon marginal surface portions of the outsole and cooling the ribbon to render it self-supporting, subsequently heating the ribbon and the portions of the outsole underlying it to restore the adhesive to molten fluid condition for wetting engagement with surfaces to be bonded and to prepare the underlying sole area for permanent adhesive attachment, concurrently heating the bottom portion of the shoe to which the outsole is to be attached, then bringing the shoe bottom and outsole together with the ribbon of molten adhesive between them and exerting pressure to force the adhesive into wetting engagement with the heated surfaces of both the outsole and shoe bottom, and finally cooling the adhesive to establish rapidly a strong permanent sole attaching bond between the outsole and the shoe bottom.

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**3,168,755**
**ARTICLE CLEANING APPARATUS**
**Glenn E. Miller, Omaha, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed July 9, 1963, Ser. No. 293,706**
**7 Claims. (Cl. 15—93)**

1. In combination with apparatus in which articles are advanced in succession along a predetermined path, mechanism for removing residue material from between spaced portions of the articles which comprises:
a substantially cylindrical gear member mounted for rotation adjacent the predetermined path of the

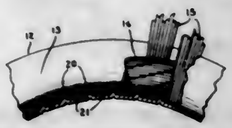
articles for continuous engagement with the advancing articles; and



peripherally spaced teeth on said gear member arranged to receive the portions of the articles therebetween continuously and in close fitting relationship so that as the articles are advanced the gear member is rotated by the portions and said teeth move into the spaces between the portions to eject the residue material therefrom.

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**3,168,756**
**CYLINDRICAL BROOM**
**Benjamin Koback, Portland, Oreg., assignor to Ben-Ko-Matic, Inc., Portland, Oreg., a corporation of Oregon**
**Filed Mar. 2, 1964, Ser. No. 348,678**
**4 Claims. (Cl. 15—182)**



1. A broom comprising a rope, a cylindrical core having a helical groove adapted to receive bristles, said groove having a rounded base complementing the curvature of the rope and flat sides joining with upper margins of said rounded base, transverse ridges in the base of said groove defining hollows between the ridges, said ridges extending upwardly into said upper margins of said base to adjacent the joinder of the sides of the groove with said base, and bristles in said groove, said rope also being lodged in said groove and clamping over a portion of the circumference thereof said bristles in said groove with the bristles distributed between said ridges and directed transversely of the channel sides by said ends of said ridges.

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**3,168,757**
**NON-TRIP NON-SKID FLOOR MAT ASSEMBLY AND A MAT HOLDER THEREFOR**
**Troy C. Preston, Mount Carroll, and Justin J. Wetzler, Evanston, Ill., assignors to F. W. Means & Co., Chicago, Ill., a corporation of Illinois**
**Continuation of application Ser. No. 287,126, June 11, 1963. This application July 13, 1964, Ser. No. 382,419**
**6 Claims. (Cl. 15—217)**

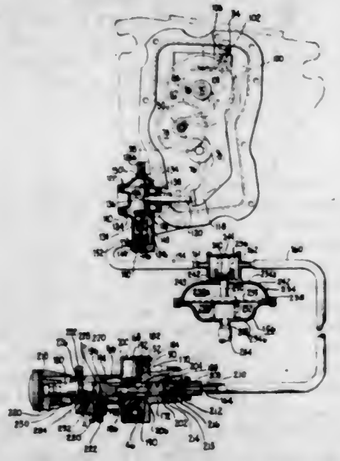
1. A non-skid non-trip flush floor mat assembly comprising in combination: a mat holder of flexible tacky plastic sheet material and forming a main flat sheet base portion of substantially rectangular shape having side and end edges, at least the two end edges being defined by the sheet material folded back in a sharp conformation to define a pair of lie flat ear sheets extending reversely over the base of the holder, each of said ear sheets terminating in a free edge located parallel to and a predetermined distance inboard from the end edge, each ear sheet having a line of score at its bottom face parallel to the end edge and adjacent the free edge of the ear sheet to define a concave down normal dihedral angle, the mat holder further having pad means on its upper face terminating in an edge outboard of but ad-



jacent to the free edge of each ear sheet and having substantially the thickness of the ear sheet; and, a tufted rug-like element of substantially rectangular conformation having side edges within the confines of the side edges of the mat holder and end edges within the confines of the ear sheets, respectively, the rug-like element overlying the mat holder in the regions inboard the ear sheets and in the regions overlaid by the ear sheets being sandwiched between the ear sheets and the base.

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**3,168,758**
**WINDSHIELD WIPER SYSTEM**
**John R. Oishei, Buffalo, and Raymond A. Deibel, Cheektowaga, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.**
**Filed Nov. 29, 1963, Ser. No. 326,953**
**10 Claims. (Cl. 15—250.12)**



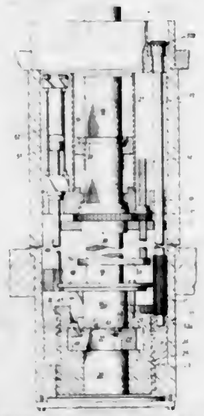
1. In a windshield wiper system for selectively producing intermittent dwell wiper opertaion for use on motor vehicles comprising a power unit including a motor and transmission for transferring the output of said motor to a windshield wiper; the combination comprising a torque transmitting mechanism adapted to be driven by the output shaft of said motor, cyclic timing means actuated by said torque transmitting mechanism, said cyclic timing means including time delay means for controlling the duration of the period of said cyclic timing means, circuit interrupting means responsive to said cyclic timing means for controlling energization of said power unit to provide intermittent dwell operation and a manually operable control including a park position and an intermittent dwell position having a single reversible mode of movement for selectively parking the wiper, effecting intermittent dwell



operation and varying the dwell period of intermittent dwell operation.

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**3,168,759**
**CORE PUNCH AND BOTTOM STOP THEREFOR**
**Jerome Paul Johannigman, St. Louis, Mo., assignor to The Cincinnati Shaper Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed Jan. 17, 1963, Ser. No. 252,154**
**5 Claims. (Cl. 18—16.7)**



1. In a compacting press having a die, a core punch and a fixed bottom punch, and a fluid piston secured to said core punch and operating in a fluid cylinder, and means for supplying fluid pressure to said cylinder selectively above said piston to eject said core punch from said die, and below said piston to project it thereinto; an adjustable positive bottom stop to stop said piston intermediate its stroke, to hold said core punch in a desired projected position during the compacting and external ejection operations on a workpiece, and means to release said bottom stop upon completion of external ejection, to permit said piston to complete its stroke, whereby said core punch may be ejected from said workpiece by fluid pressure above said piston.

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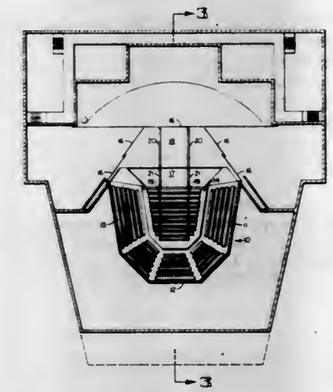
**3,168,760**
**PARAMAGNETIC TEXTILE ROLL COVERINGS**
**Robert S. Olcott, Manor Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania**
**Filed Apr. 10, 1961, Ser. No. 101,801**
**8 Claims. (Cl. 19—272)**



1. In a fiber drafting mechanism the combination comprising a fiber handling top roll and an underlying metal bottom roll cooperating therewith, said top roll comprising longitudinally spaced magnetic pole pieces of opposite polarity having opposing end portions, a cylindrical sleeve of nonmagnetic material telescoped on said opposing end portions of said longitudinally spaced magnetic pole pieces, a magnet contained in said sleeve in engagement with said pole pieces, elastomeric roll covers mounted on said pole pieces adjacent opposite ends thereof, said roll covers having powdered ferromagnetic material homogeneously dispersed throughout their bodies to provide a path for magnetic flux between said underlying metal bottom roll and said pole pieces, said underlying metal bottom roll having fluted portions thereon positioned in rotatable contact with said roll covers, said elastomeric roll covers being fabricated from a composition comprising a synthetic elastomer and about 200 to 600 parts by weight of finely divided ferromagnetic powder per 100 parts by weight of said elastomer, the particles of said ferromagnetic powder having an average particle size in the range of from about .3 micron to 100 mesh U.S. Standard.

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**3,168,761**
**COMBINED AXIAL THEATER AND ARENA**
**Herbert Graf, Restelbergstrasse 79, Zurich, Switzerland**
**Filed Oct. 27, 1961, Ser. No. 148,272**
**2 Claims. (Cl. 20—1.12)**



1. A combination theater and arena comprising a structure having a group of permanent seats arranged around three sides thereof in the form of a horseshoe, a stage area at the fourth side thereof, and a seat structure movable alternatively into positions (1) overlying said stage area and (2) confronting said stage area and disposed centrally of said group of permanent seats,

(*a*) said movable seat structure comprising a frame, a seating platform mounted on the frame, seats carried by the seating platform and wheel means for supporting the frame,

(*b*) the movement of said movable seat structure between said positions (1) and (2) being substantially in line with the centerline of the horseshoe, and

(*c*) said movable seat structure including means for tilting said seating platform first one way and then the other into alternative oppositely inclined positions for viewing the stage from one direction and the central performing area from the opposite direction,

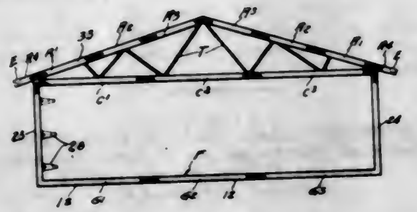
by virtue of all of which the structure can be converted from a theater having full orchestra seating with all seats generally confronting a stage at one side of the structure to an arena having a central performing area substantially surrounded by seats on all sides with all seats confronting said central performing area, with provision for favorable viewing from the movable seat structure in the alternative opposed directions without turning the seat structure bodily around.

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**3,168,762**
**FOLDABLE MOBILE BUILDING**
**Forrest W. Laidler, Imlay City, Mich. (58400 Romeo Plank, Washington, Mich.)**
**Filed Nov. 13, 1961, Ser. No. 151,647**
**7 Claims. (Cl. 20—2)**

1. In a foldable, portable home of the class described including, a foldable, sectional floor, comprising a plu-

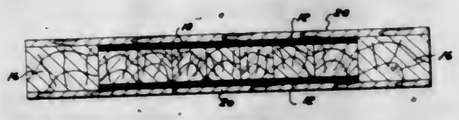
rality of floor sections hingedly interconnected, side walls rigidly secured to the outer edges of the outer side floor sections, end walls hingedly secured to one end of each side wall, gable sections on the upper edges of the end walls and hingedly connected thereto; said end walls and



gable sections being swingable inwardly against such side walls, a sectional ceiling, comprising a plurality of ceiling sections flexibly interconnected with the outer edges of the outer side ceiling sections hingedly secured to the upper edges of the side walls, and a sectional, foldable roof structure mounted on said side walls.

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**3,168,763**
**SOLID CORE DOOR**
William B. Gilbert, Detroit, Mich., assignor to Lifetime Door Co. of Mich., a corporation of Michigan
Filed Mar. 13, 1962, Ser. No. 179,358
4 Claims. (Cl. 20—35)

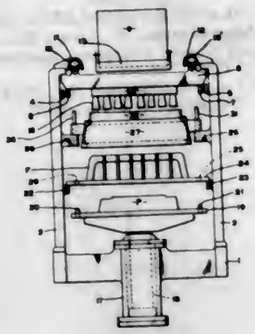


1. A panel construction including:
a hollow frame;
a core having outer dimensions complementary to the inner dimensions of the frame disposed within said frame,
said core being composed of
a solid planar rectangular inner member having a thickness less than that of the frame, and
a pair of compressible rectangular sheets fixed to the opposite faces of the inner member, said sheets having such uncompressed thickness sufficient to bring the total thickness of the core to a dimension which exceeds the thickness of the frame,
and a pair of outer panels having outer dimensions similar to the frame abutting the faces of the frame and the core so as to compress the core.

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**3,168,764**
**FOUNDRY MOLDING MACHINE AND METHOD OF MOLDING**
Leon F. Miller, Rocky River, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed July 9, 1958, Ser. No. 747,474
43 Claims. (Cl. 22—36)

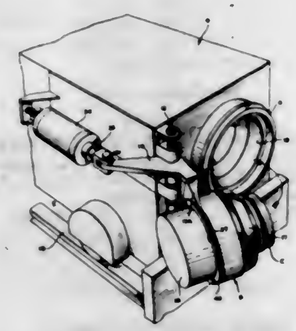
1. In a foundry molding machine having a vertically reciprocable squeeze table adapted to support a flask and pattern thereon, and a squeeze head adapted to engage and squeeze sand within such flask when said table is elevated; a skeleton flask on said table having large closely spaced openings in its sides, a girdle frame adapted temporarily to enclose said flask on said table for filling with molding sand, and lateral squeeze means within said girdle frame operative to squeeze sand against side faces of such pattern within said flask.



22. The method of forming a mold which comprises blowing molding sand into a box containing a pattern, then squeezing such sand circumferentially inwardly against the sides of such pattern, withdrawing the resultant mold and pattern from such box, and drawing such pattern from such mold.

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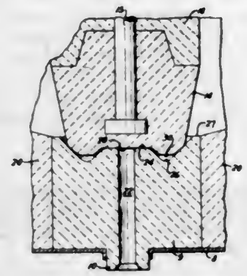
**3,168,765**
**AUTOMATIC CORE SETTERS FOR CENTRIFUGAL PIPE CASTING MACHINES**
Gerd O. Bernhardt, Pointe Claire, Quebec, Canada, assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada
Filed June 8, 1962, Ser. No. 201,078
Claims priority, application Canada, Mar. 21, 1962, 844,807
3 Claims. (Cl. 22—65)



1. In a centrifugal pipe casting machine employing a rotatable mold within a travelling carriage, a movable bell core holder adapted to carry a bell core and swingably mounted on a hinge fixed to said carriage to one side thereof adjacent the end of the carriage, the axis of said hinge lying in a plane extending at right angles to the longitudinal axis of said mold, controllable means for moving said holder to position said core operatively within one end of said mold for commencement of a casting operation and for moving said holder away from said mold after completion of casting to permit axial withdrawal of the cast pipe from the mold, said bell core holder having radially shiftable means supporting said core for centering said core accurately within the open end of the mold.



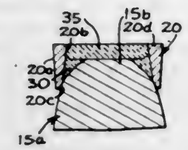
**3,168,766**
**POURING NOZZLE AND STOPPER**
George J. Hornick, 1743 Etruria St., East Liverpool, Ohio
Filed May 13, 1963, Ser. No. 279,905
2 Claims. (Cl. 22—85)



1. In a metal ladle for receiving molten metal and having a pouring opening in its bottom, a refractory floor in the ladle provided with a vertical pouring passage extending upwardly through it from said opening, and a vertically movable circular refractory stopper in the ladle coaxial with said passage, said refractory floor being provided with an annular depression concentric with the passage and having an inner side wall and a downwardly and inwardly inclined outer side wall, said inner wall merging at its top into a substantially flat ledge encircling the upper end of said passage below the level of the top of said outer wall, the bottom of the stopper being provided with a circular recess having a substantially flat top wall normally seated on said flat ledge, the side wall of said recess extending downwardly around said inner wall of the depression and spaced therefrom, and the portion of the stopper encircling said recess normally seating on said outer wall.

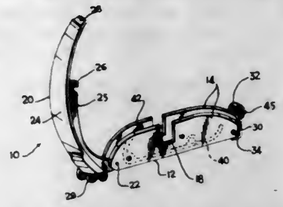
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**3,168,767**
**METHOD OF AND PRODUCT FOR REBUILDING TAMPERS ON COMPACTION ROLLERS**
Kenneth V. Lutz, 10081 Carmen Road, Cupertino, Calif.
Filed Apr. 1, 1963, Ser. No. 269,680
1 Claim. (Cl. 22—203)



A method of recasting a worn tamper of a compaction roller comprising the steps of disposing a tamper ring around the free end of a worn tamper with a tapered inner wall of the tamper ring in engagement with the worn tamper, said tamper ring being arranged to form an enclosure around the free end of said worn tamper with an annular flange of the tamper ring spaced from and communicating with the exposed surface of said free end of said worn tamper, permanently securing said tamper ring to said worn tamper with a welding alloy, and filling the space between said worn tamper and said tamper ring with a hard wear resistant metallic filler material in a molten state until the exposed surface of said filler material is substantially even with said annular flange, whereby after said filler material cools a recast tamper is formed from said worn tamper, said tamper ring and said filler material.

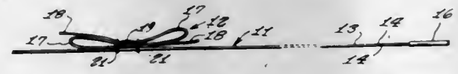
**3,168,768**
**JEWELRY CLASP**
Ernst Bohlinger, 31—15 21st Ave., Astoria, N.Y., and Samuel Friedman, 556 Ave. Z, Brooklyn, N.Y.
Filed May 27, 1963, Ser. No. 283,281
1 Claim. (Cl. 24—116)



A jewelry clasp of the character described comprising an elongated narrow channel-shaped cradle having a pair of spaced parallel vertically disposed side walls with the lower ends thereof connected together by an integral horizontally disposed bottom wall, each of said side walls being provided with a centrally disposed notch which extends downwardly from the upper edge thereof, said notches being disposed in axial alignment with each other; a cover plate which is adapted to engage the upper edges of said side walls to thereby close the open upper end of said cradle, means pivotally connecting said cover plate to said cradle adjacent one end thereof for back and forth movement between open and closed position, a detent member which is pivotally connected to said cradle adjacent the opposite end thereof and is operative to releasably latch said cover plate in closing position, spring means by which said cover plate is yieldingly biased to open position and said detent member is yieldingly biased to latching position; a centrally disposed longitudinally extending rib which is secured to the inner surface of said cover plate and extends downwardly therefrom into said cradle between the said side walls thereof when said cover plate is in cradle closing position, said rib being provided with a notch which extends inwardly from the free edge of said rib and is disposed in axial alignment with the said notches in said side walls when said cover plate is in cradle closing position, said aligned notches providing a closed aperture in which a jewelry element is adapted to be removably secured when said cover plate is in closing position.

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**3,168,769**
**LACE FOR SHOES AND OTHER ARTICLES**
Robert D. Smith, 2742 E. Tremont Ave., Bronx, N.Y.
Filed Apr. 11, 1963, Ser. No. 272,360
1 Claim. (Cl. 24—140)

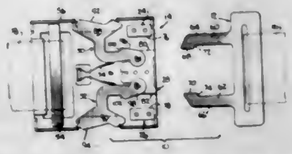


In a lace for shoes or the like, the combination of a length of flat lacing, said lacing having shielded tips at each opposite end to aid the introduction of said tips into the lacing openings of a shoe or the like, said lacing having a flexible bow at the midpoint between the opposite longitudinal ends of said lacing for preventing longitudinal movement of said lace through lacing holes of a shoe, said bow being on one side of said flat lacing and being affixed to said lacing by a pair of rows of stitching, each of said rows of stitching extending transversely across said lacing at positions between the said midpoint and one of said longitudinal ends, said bow comprising a folded length of lacing having a loop and a terminal end on each side of a central knot, said stitching extending on each side of said knot, each of said loops being in

longitudinal alignment with said lacing and said loops extending unattached over said lacing for the purpose of covering an adjacent said lacing opening of a shoe.

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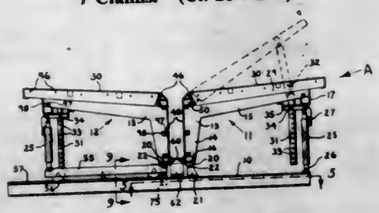
**3,168,770**
**QUICK RELEASE BUCKLE**
**Charles John, Jr., Astoria, and Jules A. Kaufman, Bronx, N.Y., assignors, by mesne assignments, to Phillips-Van Heusen Corporation, New York, N.Y., a corporation of New York**
**Filed Jan. 25, 1963, Ser. No. 253,792**
**2 Claims. (Cl. 24—230)**



1. A quick release buckle comprising, a latch element consisting of a plate adapted to be connected to a first safety belt portion, said latch element having two substantially parallel leg portions projecting from it, said leg portions having latching engagement surfaces near their ends, a latch-retaining assembly including a base plate and a closure plate thereover, said plates defining a shallow substantially rectangular housing into which the leg portions on the latch element are inserted through an open entrance end of the housing, the base plate having a loop engaged by a second belt portion, the base plate having a separating element mounted on it adjacent to said open end, which separating element is disposed between the leg portions when such leg portions are positioned in the housing, said separating element having arcuate recesses in its opposite edges, a pair of pawls disposed in the housing, each pawl having a rounded nose at one end fitted in one of the recesses and permitting pivotal movement of the pawl, each pawl having a notch for engagement by one of the latching surfaces on the legs, each pawl having an integral finger piece, each pawl being generally L-shaped in configuration, the housing having apertures through which said finger pieces are accessible, and a wish-bone type spring fitted on the base plate and having legs engaging the pawls and pivotally biasing them away from one another.

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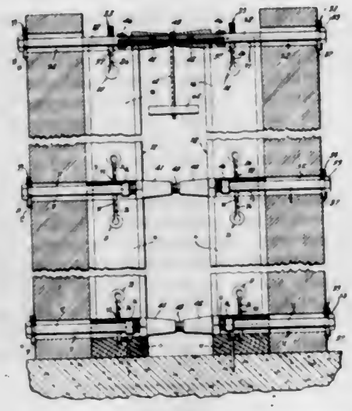
**3,168,771**
**ADJUSTABLE WING T FORM**
**Alfred T. Nelson, 13366 SW. Knaus Road, Lake Oswego, Oreg.**
**Filed Jan. 28, 1963, Ser. No. 254,305**
**7 Claims. (Cl. 25—121)**



1. A wing T concrete form comprising a pair of frames of inverted L-shape having confronting spaced apart vertical legs for molding the vertical web portion of a T-shaped beam and having oppositely disposed transverse legs for molding the wing portions of the T, means for pivoting said frames about the lower ends of their vertical legs for breaking the frames away from a molded beam, means supporting one of said frames for movement laterally toward and away from the other frame, and transversely extending adjustable angle wing forms pivotally connected at their inner edges with said L-frames; said wing form pivotal connections each comprising a form plate on said vertical leg having a backturned flange forming a corner along the upper edge of the plate, a form plate on said wing form having a backturned flange forming a corner along the inner edge of the plate, a rubber seal strip between said flanges, spring clamps clamping said corners of said plates against opposite sides of said seal strip for relative pivotal movement, and a bolt clamp securing said L-frame and said wing form together in adjusted angular position.

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**3,168,772**
**FORM SYSTEM FOR CONCRETE CONSTRUCTION**
**John R. Williams, Hayward, Calif., assignor to Utah Construction & Mining Co., San Francisco, Calif., a corporation of Delaware**
**Filed Oct. 10, 1963, Ser. No. 315,172**
**14 Claims. (Cl. 25—131)**



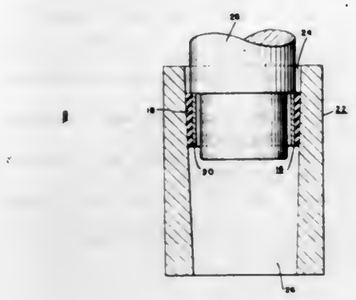
1. In a concrete form system of the character described in which spaced walls have tie rod assemblies extending across and cooperating with the spaced walls, the combination of at least two panels abutting along one edge, each panel comprising a rectangular body having external first and second spaced, substantially parallel faces and a corner slot at each corner between said faces, the slots of abutting panels extending towards one another and in registered relation, a locking element including a generally flat body disposed in said slots, means on the panels positioned at the slots to cooperate with said panels and said locking element to lock the panels to one another via the locking element, and said panels being cut-out at each of said corners for accommodating a tie rod assembly extending between the spaced walls and beyond said panels.

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**3,168,773**
**METHOD OF MANUFACTURING A DRIVE ROLLER FOR A DOMESTIC APPLIANCE**
**William A. Frye, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 30, 1961, Ser. No. 148,531**
**4 Claims. (Cl. 29—148.4)**

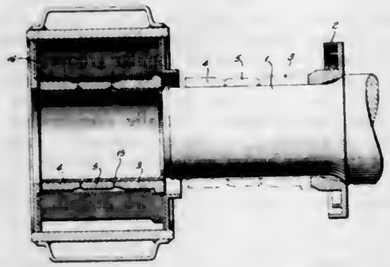
1. A method of manufacturing a drive roller comprising the sequential steps of forming a thin generally cylindrical metallic insert, molding a resilient urethane tire on the outer peripheral surface of said insert, sizing said drive roller by radially squeezing said insert and said tire in a manner to surpass the elastic limit of said insert and said tire to reduce permanently the diameter of said insert and said tire thereby to set up permanent compressive stresses in the outer surface of said tire, and pressing said reduced diameter insert onto a roller hub.





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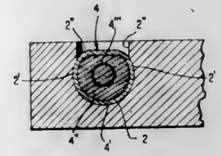
**3,168,774**
**ARRANGEMENT FOR AND METHOD OF FACILITATING THE HANDLING AND FITTING OF ANTIFRICTION BEARINGS CAPABLE OF BEING DISMANTLED**
**Wilhelm Völkening, Dittelbrunn, Germany, assignor to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany**
**Filed Nov. 29, 1961, Ser. No. 155,547**
**Claims priority, application Germany, Dec. 1, 1960, K 42,296**
**14 Claims. (Cl. 29—148.4)**



14. A method for mounting dismountable antifriction bearing assemblies, comprising the steps of providing a first sleeve means the outer diameter of which corresponds substantially to the inner diameter of inner race members of the bearing assembly, arranging said inner race members on said first sleeve means, providing a second sleeve means the outer diameter of which corresponds substantially to the outer diameter of said inner race members, arranging outer race members of the bearing assembly with roller means on their inner side on said second sleeve means, providing a housing means the inner diameter of which corresponds substantially to the outer diameter of said outer race members, surrounding said outer race members with said housing means and covering the front faces of said outer race members, in order to protect said outer race members and said roller means, arranging said inner race members with said first sleeve means coaxially with and adjacent to said axle, stripping said inner race members onto said axle, withdrawing said second sleeve means from said outer race members and disposing said outer race means with said roller means and said housing means on said inner race means.

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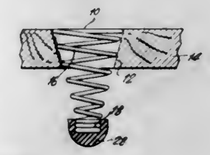
**3,168,775**
**METHOD OF SECURING AN ELECTRICAL HEATER TO A HEAT EXCHANGER**
**Walter A. Churchill, 4 Hillcrest Road, Danvers, Mass.**
**Filed June 17, 1964, Ser. No. 375,793**
**2 Claims. (Cl. 29—155.63)**



1. The method of securing a cylindrical electrical heater to a base plate of a heat exchanger, said electrical heater comprising resistance wire means and insulation means therefor enclosed by a tubular metallic casing, said base plate being made of cast aluminum alloy and having top and bottom parallel faces, a groove in said plate opening into one of said faces, said groove being of a width substantially equal to the diameter of said cylindrical electrical heater, the thickness of said plate between said parallel faces being substantially greater than the depth of said groove, said method including the first step of removing surface portions of said groove by undercutting opposite walls of said groove to form oppositely disposed cutaway portions merging with the bottom portion of said groove, the second step of introducing said cylindrical electrical heater into said groove through the open side thereof and disposing said heater along said bottom portion of said groove intermedate said cut-away portions, the third step of applying successive hammer blows to the upwardly facing portion of said casing of said heater for a distance along the length thereof corresponding to the length of said groove to force the side portions and the bottom portions of said casing of said heater into intimate and continuous contact with said cut-away portions and said bottom portion respectively of said groove.

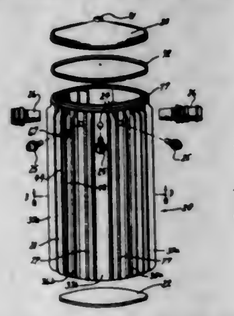
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**3,168,776**
**PROCESS OF FORMING A VALVE MEMBER**
**Gilbert Schwartzman, Scarsdale, N.Y., assignor to Glidomatic Corporation, Yonkers, N.Y.**
**Filed May 11, 1960, Ser. No. 28,403**
**1 Claim. (Cl. 29—157.1)**



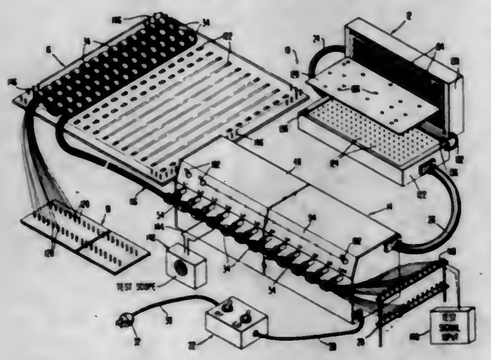
A process of forming a valve member comprising the steps of forming a helical coil spring having a plurality of coils closely adjacent each other at one end thereof, dipping said end of said coil spring in a thick and syrupy latex solution, then slowly removing said end from said solution to form an imperforate coating on said coil spring closing said end thereof, thereafter successively dipping said end of said coil spring into said solution and successively slowly removing said end from said solution to form a solid substantially hemispherical member on said coil spring.

3,168,777
METHOD OF MAKING DISTRIBUTION TRANSFORMER CASINGS
Ernst J. De Ridder and William B. McMullin, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed June 7, 1960, Ser. No. 34,429
10 Claims. (Cl. 29—157.3)



1. The method of producing a distribution transformer tank comprising the steps of forming a substantially cylindrical hollow body by extrusion, said body having a plurality of longitudinally disposed and outwardly extending heat exchanger elements formed integrally with adjacent portions of said body and extending to opposed ends of said body and having a plurality of longitudinally disposed and inwardly extending mounting brackets formed integrally with adjacent portions of said body, securing a bottom member to one of said ends of said body, directly attaching a transformer or the like to said mounting brackets with fastening means, and detachably securing a cover member to the other end of said body.

3,168,778
MAGNETIC CORE MEMORY ASSEMBLING APPARATUS
Philip E. Shafer, Holmes, Eugene T. Walendziewicz, Philadelphia, Joseph W. Bird, King of Prussia, and Charles Woolard, Paoli, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 27, 1962, Ser. No. 182,900
8 Claims. (Cl. 29—203)

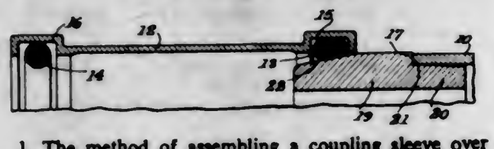


1. Magnetic core memory plane apparatus comprising,
(*a*) means mounting a plurality of magnetic core members for movement in two opposite directions normal to said mounting means;
(*b*) means operably associated with said mounting means for effecting said movement;
(*c*) means controlling said last means in a manner to axially align the bores of said cores, and,
(*d*) selection means operably interconnecting said controlling means and said core moving means for effecting selective alignment of certain ones of said plurality of magnetic cores.

2. Magnetic core memory plane apparatus comprising,
(*a*) means mounting a plurality of magnetic core members in a row in spaced apart side by side relation for movement in two opposite directions normal to said mounting means,
(*b*) means operably associated with said mounting means for effecting movement thereof,
(*c*) means controlling said last means in a manner to axially align the bores of said cores, and,
(*d*) selection means operably interconnecting said controlling means and said core moving means for effecting selective alignment of certain ones of said plurality of magnetic cores.

ERRATUM
For Class 29—433 see:
Patent No. 3,168,792

3,168,779
METHOD OF ASSEMBLING PIPE COUPLINGS
Edward H. Schnutack, 1816 N. Stanley, Los Angeles, Calif.
Filed Apr. 6, 1964, Ser. No. 358,149
4 Claims. (Cl. 29—450)



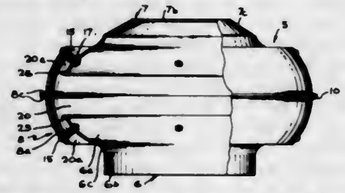
1. The method of assembling a coupling sleeve over the adjacent ends of two pipes, the sleeve being provided with two annular gaskets that are disposed in inwardly open and longitudinally spaced annular grooves and are adapted to seal around the respective pipes, said method consisting in first expanding the inner diameter of one gasket while simultaneously radially compressing the same into its groove and then expanding the inner diameter of the other gasket while simultaneously radially compressing the same into its groove while retaining the initial longitudinal spacing of the two gaskets, inserting the end of one pipe into the first-expanded gasket and then into the other gasket so that said one pipe maintains both longitudinally spaced gaskets expanded, placing the end of the other pipe in abutment against the mentioned end of the first pipe, and, finally, moving the sleeve together with the longitudinally spaced gaskets with their increased inner diameter and radial compression into said grooves relatively to the abutted pipes to slidingly retract the first pipe from engagement by said other gasket and slidingly project said other pipe through the latter gasket to bring the abutted ends of the two pipes to a position intermediate the gaskets.

3,168,780
METHOD OF MAKING ROOF VENTILATOR
George M. Breidert, Granada Hills, Calif., assignor to The G. C. Breidert Co., San Fernando, Calif., a corporation of California
Filed Nov. 26, 1962, Ser. No. 240,085
1 Claim. (Cl. 29—455)

The method of making a roof ventilator which comprises the steps of:
(*a*) Forming two duplicate dish-shaped members,
(*b*) removing the medial portion of one of said members whereby to provide a central opening therethrough,

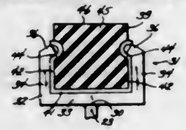


(*c*) forming the part of said last mentioned member bounding said opening into a cylindrical shape,
(*d*) forming two duplicate annular elements of concavo-convex cross section, each having a radially disposed annular edge flange,



(*e*) securing said flanges together whereby to form said annular elements into a single baffle member of substantially concavo-convex cross-section,
(*f*) arranging said first mentioned members in vertically spaced, opposed relationship whereby to provide an air outlet therebetween,
(*g*) arranging said baffle member in radially spaced surrounding relationship to said first mentioned members, whereby to provide an air passageway therebetween, and
(*h*) securing said members in said relationship.

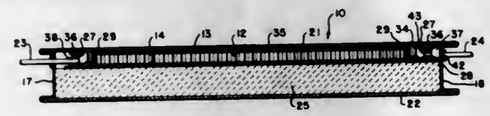
3,168,781
METHOD OF FORMING WING PULLEY BELT GRIPPING DEVICE
Franklin Van Gorp, Pella, Iowa, assignor to Van Gorp Manufacturing, Inc., Pella, Iowa, a corporation of Iowa
Original application Feb. 1, 1960, Ser. No. 5,831, now Patent No. 3,046,805, dated July 31, 1962. Divided and this application Apr. 25, 1962, Ser. No. 196,022
4 Claims. (Cl. 29—469)



1. The method of forming a belt gripping device for a pulley having radially extended wings each of which has an elongated substantially flat face, comprising the steps, forming an elongated, flat rectangular bar into a U-shape in cross section having a base and side walls, securing the outer side of the base of said formed bar to a respective wing face in longitudinal alignment therewith, forming an elongated, flat rectangular strip into a U-shape in cross section having a base and side walls, seating an elongated bar of resilient material into said formed strip on the base thereof so that a portion of said resilient bar protrudes above the side walls of said formed strip, embedding the side walls of said formed strip into opposite sides of said resilient bar, inserting the base and side walls of said formed strip into said formed bar, and clamping said formed bar side walls into engagement with said formed strip side walls while said resilient bar is retained by said formed strip, whereby to securely hold said formed strip.

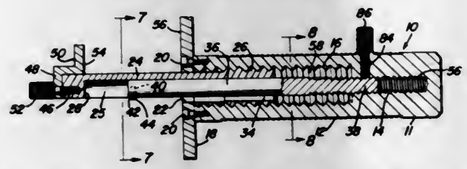
3,168,782
METHOD AND APPARATUS FOR FABRICATING COMPOSITE STRUCTURES
Joe F. Cochran, Fort Worth, Tex., assignor to General Dynamics Corporation (Convair Division), San Diego, Calif., a corporation of Delaware
Continuation of abandoned application Ser. No. 738,366, May 28, 1958. This application May 17, 1962, Ser. No. 195,524
12 Claims. (Cl. 29—471.1)

1. Brazing apparatus for use in brazing metallic parts together, said brazing apparatus comprising an enclosure of airtight character for receiving metallic parts to be brazed, a supply line extending into the interior of said enclosure, a vacuum line communicating with the interior of said enclosure for use in drawing inert gas therethrough and producing a vacuum condition therein, said enclosure having at least one flexible wall portion adapted to exert a holding force upon said metallic parts upon production of a vacuum condition within said enclosure, and gas permeable means cooperable with said flexible wall within said enclosure defining a closed compartment having gas inlet and gas outlet apertures located in substantial opposition to each other for containing the metallic parts to be brazed, a space within said enclosure surrounding said gas permeable means, said supply line communicating through said gas inlet aperture with the interior of said closed compartment for introduction of insert gas thereinto, said vacuum line having communication with said space within the enclosure surrounding said gas permeable means for drawing said inert gas from said closed compartment through the gas outlet aperture thereof and through said space to the exterior of said enclosure and for withdrawing gaseous contaminants present in said space.



10. The method of braze-bonding metallic parts together to form a structural member comprising installing said metallic component parts in assembled relationship and with interposed brazing material in an open-top brazing vessel, placing gas permeable wall means having gas inlet and gas outlet apertures located in substantial opposition to each other within said vessel in circumscribing relationship to said assembled metallic component parts to define a compartment for said metallic component parts and a space surrounding said wall means, extending a supply line into said compartment through said gas inlet aperture, communicating a vacuum line with said space, fixedly attaching a flexible cover to close said open-top of said brazing vessel to effect an air-tight construction and to close said compartment containing said metallic component parts. placing said brazing vessel with its contents in a furnace, supplying an inert gas through said supply line to said compartment, applying a vacuum through said vacuum line to said space to flow said inert gas through said compartment for exit through said gas outlet aperture and to remove gaseous contaminants present in said vessel, and heating and cooling said metallic component parts thereby to braze them together.

3,168,783
CENTER GAUGE
William B. Morehead, 2917 Buckley Ave., Lake Worth, Fla.
Filed Mar. 12, 1964, Ser. No. 351,356
7 Claims. (Cl. 33—42)

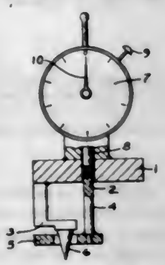


1. A center gauge comprising elongated handle means, a longitudinal threaded bore formed in said handle means having one end thereof opening outwardly of said handle means, said handle means defining a threaded counter-

bore in said one end of said bore, a sleeve member externally threaded on one end portion and threadedly engaged in said counterbore with the other end portion of said sleeve member projecting outwardly of said one end of said handle means, a shank member slidably disposed in said sleeve member and externally threaded on one end portion and threadedly engaged in said bore with its other end portion projecting outwardly of said one end of said handle means, coacting means defined by said members preventing relative rotation therebetween, index means carried by said other end portion of said members, one of said members having twice the number of threads per unit of length on its threaded end portion than the other of said members.

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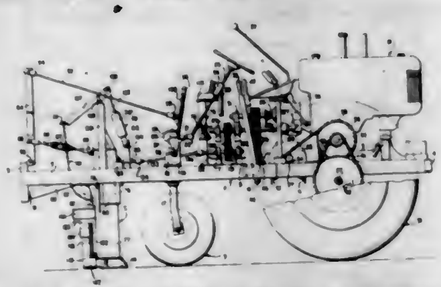
**3,168,784**
**COATING THICKNESS MEASURING DEVICE**
**Joseph W. Morrissey, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York**
**Filed Feb. 26, 1962, Ser. No. 175,455**
**1 Claim. (Cl. 33—172)**



Apparatus for measuring the thickness of a particulate coating on a dense substrate comprising a base having an aperture extending therethrough, a stylus in fixed relationship to said base and projecting therefrom, a rod extending at least partially through the aperture in said base and having at its lower end a collar surrounding the point of said stylus and means affixed to said base to measure the movement of said rod relative to said base as the collar is displaced relative to the stylus.

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**3,168,785**
**DITCHING MACHINE HAVING FLOATINGLY MOUNTED CUTTING HEAD**
**George H. Davis, 624 W. St. Peter St., New Iberia, La.**
**Filed Mar. 30, 1962, Ser. No. 183,959**
**3 Claims. (Cl. 37—92)**

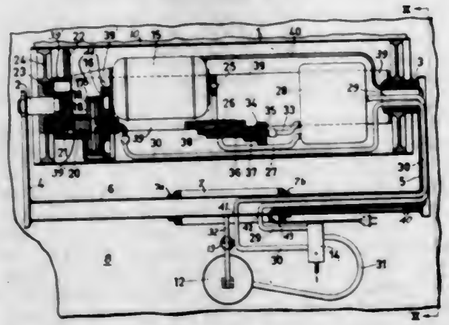


1. In a ditching machine, a frame; means supporting said frame for movement over the ground; a cutting head extending vertically from said frame downwardly to a ditching level and having a cutting device facing in the direction of movement of said machine when a ditch is being cut; and means mounting said cutting head floatingly on said frame and comprising vertically extending guide means on said frame engageable by said cutting head for maintaining said cutting head against excessive movement laterally of said frame but with sufficient clearance between said guide means and said cutting head to permit limited lateral floating of said cutting head relatively to said frame, and means connected to said cutting head and to said frame in front of said cutting head with reference to the direction of ditching movement of said machine and being subjected to tension in operation for pulling said cutting head along with said frame.

2. In a ditching machine, a frame; two drivable wheels journalled on said frame respectively on opposite sides thereof, one of said drivable wheels having a relatively smooth circumferential surface and the other of said drivable wheels being a spike wheel comprising a hub and a plurality of radial spikes the outer ends of which are ground engageable; a third wheel journalled on said frame and spaced fore-and-aft thereof from said drivable wheels; an auxiliary wheel having a relatively smooth circumference; means mounting said auxiliary wheel on said frame for movements selectively to a raised position clear of the ground, enabling said drivable wheels and said third wheel to engage the ground, and to a lowered position in which said auxiliary wheel engages the ground on the side of said machine adjacent said spike wheel whereby to lift that side of the machine and said spike wheel to disengage the latter from the ground, the machine then being supported for transport by said drivable wheel having the relatively smooth circumferential surface, said third wheel, and said auxiliary wheel.

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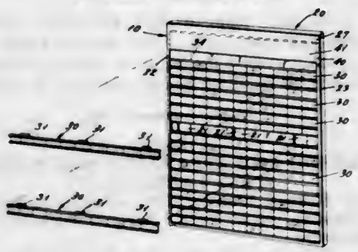
**3,168,786**
**IRONING MACHINE**
**Tore Berg, Limnas Gard, Guldsmedshyttan, Sweden**
**Filed Sept. 26, 1962, Ser. No. 226,320**
**Claims priority, application Sweden Sept. 26, 1961**
**6 Claims. (Cl. 38—59)**



1. An ironing machine comprising, in combination, a base; supports secured on said base; a pair of relatively shiftable ironing elements supported by said supports, respectively, and consisting essentially of a rotatable ironing roll, a motor drivingly connected to rotate said roll, and of an ironing shoe; a source of pressure fluid, a pressure fluid operated mechanism for shifting one of said ironing elements toward the other, said pressure fluid operated mechanism providing the pressure required for ironing, a fluid pump, means mounting said motor and said pump inside said roll, means drivingly connecting said pump with said motor to be driven thereby for providing pressure fluid, said pressure fluid operated mechanism including a servomotor mounted outside said roll in operative connection with one of said relatively shiftable ironing elements and to said base, a conduit supplying pressure fluid from said pump to said servomotor and a two position valve to alternately supply and release the pressure fluid to and from said servomotor.



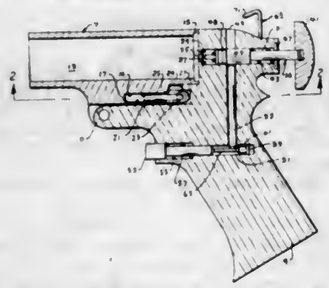
**3,168,787**
**DISPLAY BOARD**
**Milt Surrey, 60 Fern Drive, Roslyn, N.Y.**
**Filed Oct. 5, 1962, Ser. No. 228,544**
**4 Claims. (Cl. 40—65)**



1. A display board comprising, in combination, an integrally formed backing support defining a volume constructed to receice a plurality of individual panels; said volume being bounded by longitudinally extending end channels, a bottom chanel, and a top channel; all of said channels forwardly projecting from a planar surface of said backing support to restrictively confine said panels to within said volume defined thereby; each of said panels adapted to receive indicia means; magnetic means individually affixing each of said panels to said backing structure; each of said panels extending across the width of said backing structure; said end channels maintaining said plurality of panels in respective alignment along the length of said backing structure; said magnetic means constructed to permit the removal of selected ones of said panels from said backing structure, the other of said panels being maintained in position, adjacent ones of said individual panels being slidable as a group along said backing support while still being retained within said volume; the uppermost region of said display board including a bar extending across the width of said backing support; said top channel being of an extent corresponding to the extent of said bar, and defining a top volume portion sufficient to contain said bar; means biasing said bar downward against the upper edge of an adjacent panel for progressively moving said bar out of said top volume portion; said top bar having a first position substantially within said top volume portion corresponding to said adjacent panel being next to the lowermost extension of said top channel, and a second position substantially out of said top volume portion corresponding to said adjacent panel being displaced from the lowermost extension of said top channel.

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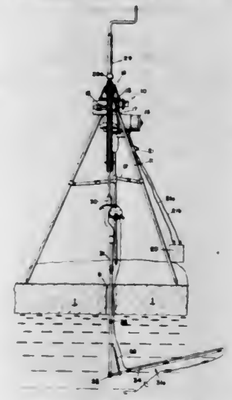
**3,168,788**
**SIGNAL PISTOL**
**Marshall G. Coulter, 118 Park St., Tecumseh, Mich.**
**Filed Apr. 5, 1963, Ser. No. 270,996**
**4 Claims. (Cl. 42—1)**



1. A signal pistol adapted to fire a signal flare, comprising:
a barrel having a flare chamber therein;
a handle pivotally connected to said barrel;
a firing pin passage in said handle having a spring loaded firing pin therein extending rearwardly and outwardly therefrom, said firing pin having a cocking knob on its rearward end external of said handle, and also having a cocking groove thereon which provides a cam wall that is movable inside said firing pin passage;
a trigger passage in said handle below said firing pin passage and having a trigger spring therein;
a trigger disposed in said trigger passage against said spring, which urges said trigger forwardly out of said trigger passage;
a first step on said trigger, and a lower second step ahead of said first step on said trigger;
a locking pin passage in said handle extending between said firing pin passage and said trigger passage;
a floating locking pin slidably positioned in said locking pin passage; and
a cam surface on the top of said locking pin engageable with the cocking groove cam wall on the firing pin;
the device being cocked by pulling the cocking knob back until the cocking groove cam wall in the firing pin overlies the top of the locking pin, at which point the trigger spring moves the first trigger step under the bottom of the locking pin and engages the cam surface on the top end of the locking pin with the cocking groove cam wall; and
the device is fired by moving the trigger in toward the handle, which action moves the second step beneath the bottom of the locking pin in place of the first step and enables the spring loaded firing pin to move the locking pin out of the cocking groove.

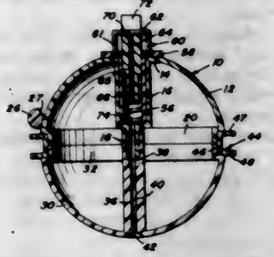
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**3,168,789**
**FISHING RIG FOR ICE FISHING**
**Louis L. Gednalske, Dell Rapids, S. Dak.**
**Filed Oct. 16, 1962, Ser. No. 230,894**
**3 Claims. (Cl. 43—19.2)**



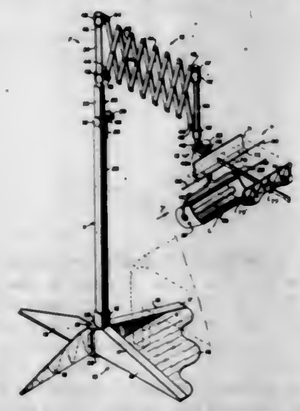
1. A fishing rig comprising a fishing rod having a large end and a tip, a tripod, a frame attached to the apex of the tripod, the same having mounted thereon a gear box, an electric motor and a semi-circular sleeve, a drive rod section rotatably mounted in the sleeve for rotation therein, means for retaining the drive rod section within the sleeve, and a gear on the rod section intermeshing with the gear in said gear box, said rod section having at its upper end a hand crank and at its lower end a socket in which the large end of said fishing rod is connected, said fishing rod having said tip at the end removed from the large end of the fishing rod and which is hingedly connected to the large end and a tension spring normally retaining the fishing rod at right angles to the large end of the rod.

**3,168,790**
**BOBBER WITH LINE ATTACHING AND STORING MEANS**
Norman S. Creasey, 1 Lake St., Amesbury, Mass.
Filed Sept. 5, 1963, Ser. No. 306,778
7 Claims. (Cl. 43—43.11)



3. A fishing float which can be selectively used as a slip float on the one hand and as a locked float on the other hand comprising: a buoyant body having a main passage extending therethrough from top to bottom, a spring-biased projectible and retractible plunger slidingly and rotatably mounted in an upper portion of said passage, said plunger having an auxiliary line passage aligned with said main passage, the upper end of said plunger being spring-projected to a position above the top of said body and constituting a manually set line locking and, alternatively, line releasing and freeing latch, and a latch holddown and setting member fixed atop said body immediately above and bridging said passage and latch and with which said latch is adjustably engageable, whereby when the latch is set in a first position relative to said member the line is allowed to pass freely through said passages to provide a slip float, and when alternatively set in a second position relative to said member can grippingly clasp the line between itself and said member to provide a locked float.

**3,168,791**
**BOOK HOLDER**
Donald W. Nutting, P.O. Box 1136, Boulder, Colo.
Original application Aug. 28, 1961, Ser. No. 135,102, now Patent No. 3,091,886, dated June 4, 1963. Divided and this application May 24, 1963, Ser. No. 282,919
6 Claims. (Cl. 248—188.1)



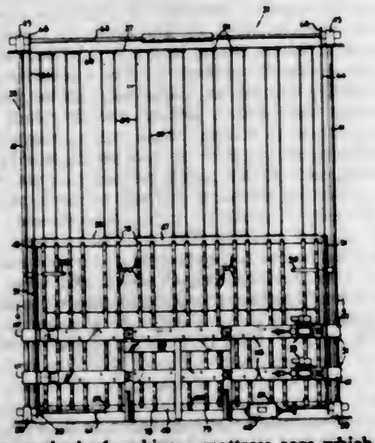
1. A base for a bookholder frame of the type which includes a lower outer, upright tube, an inner tube telescopically mounted therein, means to hold the inner tube at a selected extended position above the outer tube, and means at the upper end of the the tube adapted to hold a book frame, wherein said base comprises:

(*a*) a socket means adapted to hold the bottom of the outer tube,

(*b*) a pair of complementary arms rigidly outstanding from the socket means substantially at right angles; and,

(*c*) a flat floor plate of rigid, sheet-like material between the arms and at the bottom edges thereof, adapted to receive the leg of an article of furniture, or the like, to facilitate holding the base in place.

**3,168,792**
**METHOD AND APPARATUS FOR MAKING SPRING ASSEMBLIES**
Walter Stumpf, Munster, Ind., assignor to Simmons Company, New York, N.Y., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,350
8 Claims. (Cl. 29—433)



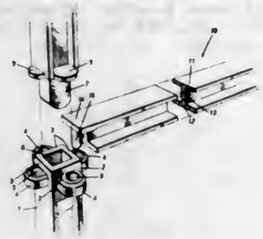
1. The method of making a mattress core which comprises assembling and supporting in juxtaposed position a series of nested rows of integrally connected closed textile pockets each containing a double-ended wire coil spring so that the opposite end turns of each of said springs are respectively poistioned in two spaced parallel planes representing the top and bottom faces of an assembly, and compressing said assembly in a direction transverse to said rows and generally perpendicular to the axes of said coil springs and inserting spaced connectors of predetermined lengths having heads at each end through said assembly transversely to said rows and intermediate said planes, so that upon release of said compression said connectors hold said rows together with substantially equal force whereby uniformity of the dimensions of the core is assured.

**3,168,793**
**CONSTRUCTION TOY MEANS FOR LOCKING A HORIZONTAL I-BEAM BETWEEN TWO DETACHABLY JOINED VERTICAL COLUMN MEMBERS**
Henry Gibson, Toronto, Ontario, Canada, assignor to Kelton Corporation Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Nov. 20, 1961, Ser. No. 153,367
2 Claims. (Cl. 46—28)

1. A toy constructional set comprising a plurality of post members of rectangular form at their ends each having a projection at one end and a socket for the reception of a corresponding projection on the other end, whereby said posts are adapted to be assembled in end to end forming relation, said post members having a lug with an opening therethrough on each outward face of the rectangularly formed end adjacent said socket and a

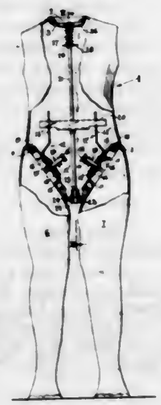


plurality of I-beam members each with the web and one flange recessed at each end, a pin secured to the underside of the projecting other flange of said I-beam member at each end, said pin being spaced from said web and the end of each said projecting other flange being adapted to contact the outward face of a post member on which said lug is formed when said pin on the underside of said



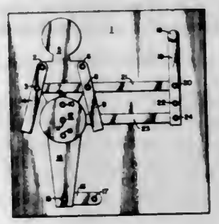
projecting other flange is positioned within the lug opening whereby said pin and said lug with said opening provide a connection for said post and I-beam members to assemble same as a toy constructional set, and said projecting flange and the corresponding outward face of said post when assembled provide a means for interlocking and preventing the rotation of said pin in said opening of said lug.

**3,168,794**
**DOLL WALKER UNIT**
Robert Gardel, 11 Riverside Drive, New York, N.Y.
Filed July 5, 1960, Ser. No. 40,655
6 Claims. (Cl. 46—149)



1. A doll and walking mechanism therefor comprising, a hollow doll body having circular leg openings and an upper portion, legs journaled in said leg openings, each leg having a substantially circular aperture in its upper end, and walking mechanism having some elements mounted on each of said legs and some elements mounted on said body, the elements mounted on each leg including a base part in the form of a metal disc extending across the circular aperture, projections integral with said disc and extending through the aperture to engage the leg and fix the disc thereto, a lever rotatably secured to said base part for rotation about the axis of rotation of the leg and extending upward into the doll body, and means for frictionally resisting relative rotation of said lever and said base part, and the elements mounted on the body including a rocker engaging the upwardly extending parts of the levers and an axle on which the rocker is mounted.

**3,168,795**
**TWISTING DOLL**
Thurman W. Garriss, Lillington, N.C.
Filed Jan. 28, 1963, Ser. No. 254,365
1 Claim. (Cl. 46—139)



A twisting doll constructed of cardboard, plastic, or other suitable material comprising in combination a frame structure, a sectional doll, said sectional doll having a top, middle, and bottom section, said top section of said doll simulating the upper part of the doll's body being secured to said frame structure, the bottom part of said top section being connected with moveable means to the top part of the said middle section, the bottom part of said middle section being connected with moveable means to the top part of said bottom section, the bottom part of said bottom section being connected with moveable means to one end of a lever, the other end of said lever extending outward and being connected with moveable means to said frame structure, right and left arms being connected with moveable means to right and left shoulders on said top section of said doll, said moveable means for said arms allowing arm movement backward and forward across the front of said doll, means for spacing the arm of the doll from the doll's shoulder lying between each arm and shoulder in the said arm and shoulder connection, one end of a lever being connected with moveable means to one arm at or near the elbow, the other end of said lever being connected with moveable means to the other arm at or near the elbow and ending at said other arm, one end of a second lever being attached with moveable means to the other arm at or near the point of contact with said first lever, said second lever extending in an outward position, the other end of said second lever being attached with moveable means to a third lever, such connection being at or near the center of said third lever, one end of said third lever being provided with a knob, the other end of said third lever being connected with moveable means to one end of a fourth lever, the other end of said fourth lever being attached with moveable means to the said middle section of doll, said latter attachment being at or near the center of said middle section, said described lever arrangements being provided with a pivoting point by connecting the third described lever with moveable means to the frame structure, said connection being between the point of contact of the said second and said fourth levers with the said third lever.

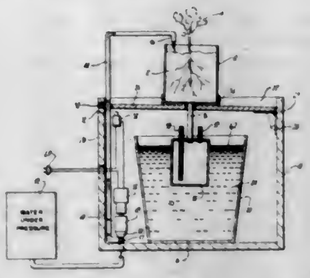
**3,168,796**
**INOCULATION OF LEGUMES**
James R. Scott and Harley R. Bumgarner, Columbus, Ohio, assignors to Agricultural Laboratories, Inc., Columbus, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 19, 1962, Ser. No. 180,827
12 Claims. (Cl. 47—1)

1. A legume inoculant powder adapted to be stored for lengthy periods and yet remain effective as an inoculant for legumes, comprising an intimately blended mixture of a substantially moisture-free finely-divided mass of dormant bacteria of the genus Rhizobium, said dormant bacteria being of the type formed by sublimation of frozen water therefrom and the mass thereof being such that it contains no more water than up to about 5% by

weight, a nutrient selected from the group consisting of mono-saccharides and di-saccharides, and finely-divided substantially moisture-free non-hygroscopic non-toxic chemically-inert carrier particles smaller than about 40 microns to which said dormant bacteria cling, the amount of said bacteria per avoirdupois ounce of said carrier particles being between 5 and 400 milligrams.

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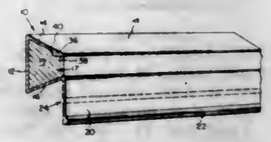
**3,168,797**
**AUTOMATIC WATERING DEVICE**
**Frank Z. Patassy, San Francisco, Calif., assignor to International Agricultural Services, Inc., San Francisco, Calif., a corporation of California**
**Filed May 2, 1963, Ser. No. 277,501**
**3 Claims. (Cl. 47—38)**



1. In an automatic watering device, a receptacle containing a body of liquid, float means within said body of liquid, platform means supported on said float means for movements above the level of liquid in said receptacle, said platform means being adapted to support a test sample including soil, said float means being provided with conduit means extending from a position just above the lower interior surface of the float to an exterior position above the liquid level in the receptacle whereby water can be introduced into the float to vary its buoyancy in accordance with variations in weight of the test sample, a source of water, additional conduit means leading from said source of water to said test sample, valve means interrupting the flow of water through said additional conduit means, and actuating means responsive to varying vertical positions of said movable platform to control the operation of said valve means, whereby said valve means is operable in response to variations in the weight of said test sample corresponding to variations in its moisture content.

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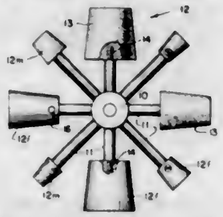
**3,168,798**
**REGLET CONSTRUCTION**
**Edward T. Berg, 275 Santa Clara Ave., San Francisco, Calif.**
**Filed Feb. 7, 1963, Ser. No. 256,987**
**2 Claims. (Cl. 50—47)**



1. A reglet construction comprising a channel having converging top and bottom flanges arranged to form at their converged ends an opening for the reception of a flashing, a console formed along the end of said top flange on the inside thereof and arranged to present a horizontal surface to the end of said bottom flange and to form an inwardly directed shoulder, and a lip depending from the end of said bottom flange and having a longitudinally extending bead provided along its bottom edge on the same side as said channel opening.

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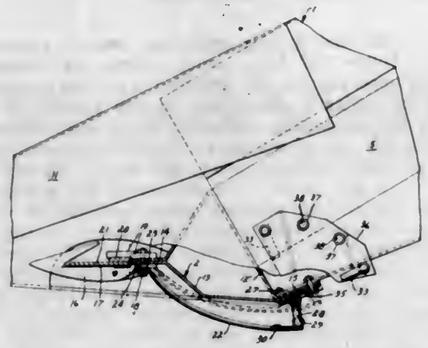
**3,168,799**
**TOOL FOR POLISHING PIPE FITTINGS AND THE LIKE**
**Sanders R. Johnson, Lakehurst, Windham, Maine**
**Filed Apr. 23, 1963, Ser. No. 275,016**
**6 Claims. (Cl. 51—392)**



1. A tool for finishing and polishing the mating end surfaces of tubular fittings in quick easy uniform and precise manner and to effect a complete cleaning and standard dimensioning of and without risk of overpolishing said fitings preparatory to their solder jointing, comprising a rigid hub, a plurality of pairs of rigid arms mounted to extend radially of said hub, tapering annular bases carried by said radial arms, said bases formed as frustums of cones, oppositely extending pairs of said arms carrying male and female bases, said male and female bases presenting outside and inside work engaging surfaces variously dimensioned and uniformly tapered to standard specifications, the tube conditioning length and the taper of said bases being such that in the various standard sizes the taper of said bases is uniformly about 0.002 inch over said tube conditioning length, and polishing adaptor means carried on said base surfaces whereby upon the rotative application to said end surfaces of the appropriate bases of said tool said end surfaces are completely cleaned, fully polished, uniformly tapered, and standard dimensioned for matched interfitting and tight solder jointing of said tubular fittings.

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**3,168,800**
**ADJUSTABLE SKID SHOE FOR SWATHERS AND THE LIKE**
**Gorden H. Dyrdahl, Owatonna, Minn., assignor to Owatonna Manufacturing Company, Inc., Owatonna, Minn., a corporation of Minnesota**
**Filed Nov. 9, 1962, Ser. No. 236,533**
**6 Claims. (Cl. 56—210)**



1. An attachment for harvesting implements of the type involving, a frame adapted for movement over a field, and mower structure on the front end of said frame and including a mower bar fixedly mounted on the frame and a cooperating sickle bar, said attachment comprising;

(*a*) a ground engaging shoe element adapted to underlie said frame,

(*b*) means on the front end of said shoe element for mounting the same to said mower structure for generally vertical swinging movements of the shoe element toward and away from said frame,

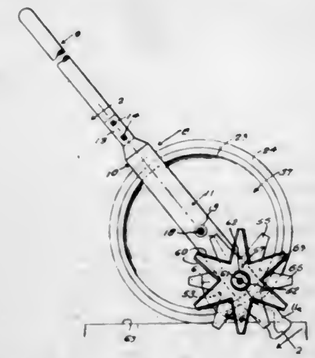
(*c*) crank means adapted to be connected to said frame and operatively coupled to the rear end portion of said shoe element for imparting said swinging movements to said shoe element,

(*d*) and crank engaging means for releasably locking said shoe element in different desired positions of swinging movements thereof.



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**3,168,801**
**LAWN EDGE TRIMMER**
**Albert J. Eternod, 1618 Nero St., Metairie, La.**
**Filed Oct. 26, 1962, Ser. No. 233,354**
**1 Claim. (Cl. 56—256)**



A lawn edge trimmer comprising a handle having a fork at one end thereof, a traction wheel journaled in said fork, a hollow shaft journaled in one arm of the fork, a second shaft extending through and journaled in said hollow shaft, gearing connecting the hollow shaft and second shaft to the traction wheel for rotation of said shafts in opposite directions relative to one another when the traction wheel is revolved, a circular cutting blade fixed to said hollow shaft and disposed on the outer side of said fork arm, and a second circular cutting blade fixed to said second shaft and disposed on the outer side of said first mentioned cutting blade, said fork arm extending to beyond the peripheries of said blades and traction wheel to provide a wheel guide and grass deflector.

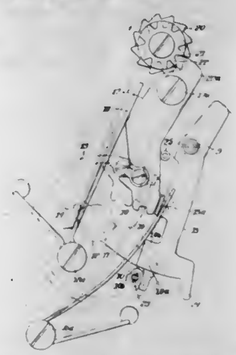
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**3,168,802**
**SYNTHETIC PAPER YARN**
**William F. Linke and Walter F. Reynolds, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed Nov. 27, 1962, Ser. No. 240,428**
**1 Claim. (Cl. 57—140)**

A continuous textile yarn consisting essentially of a heat-set twisted paper ribbon of heat-bonded fibrillated water-laid polyacrylonitrile papermaking fibers, the diameter of said yarn being less than about 1/10 of the width of said ribbon.

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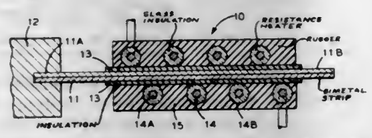
**3,168,803**
**TIME MEASURING INSTRUMENT**
**Tatsuya Ishiwara, Sugano-machi, Ichikawa-shi, Koichi Ogawa, Mitaka-shi, Tokyo-to, and Shojiro Komaki and Yoshio Yamamoto, Koiwa-machi, Edogawa-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Daini Seikosha, Tokyo-to, Japan, a joint-stock company of Japan**
**Filed Feb. 18, 1963, Ser. No. 259,343**
**Claims priority, application Japan, Feb. 20, 1962, 37/6,411; Sept. 4, 1962, 37/37,379, 37/37,380**
**4 Claims. (Cl. 58—79)**



1. A device for starting and stopping a stop watch having a base plate, balance staff and a balance wheel fixed thereon, comprising a heart-shaped cam fixed on said balance staff adjacent said balance wheel, a pin projecting laterally from said balance wheel adjacent the high point of said cam, a first lever for controlling the stopping and releasing of said balance wheel, said lever having a first face engageble with said cam and a second face engageable by said pin and being pivoted on said base plate for pivotal movement from a first position for engagement of said first face with said cam and engagement of said second face by said pin to stop said balance wheel and a second position in which said lever is retracted, a first spring biasing said lever to said first position, a second lever for actuating said first lever, said second lever being engageable with said first lever and being pivotally mounted on said base plate for movement between a first position in which it is retracted and a second position in which it engages said first lever to move said first lever to said second position to release said balance wheel, a second spring biasing said second lever to said second position, said second spring being stronger than said first spring, and means for manually moving said second lever to said first position against the force of said second spring, thereby permitting said first lever to be moved to its first position by said first spring to stop said balance wheel.

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**3,168,804**
**HEATER CONSTRUCTION AND METHOD OF MAKING SAME**
**Frederic R. Quinn, Red Hook, N.Y., assignor to Zyrotron Industries, Inc., Red Hook, N.Y.**
**Filed Feb. 12, 1963, Ser. No. 257,991**
**16 Claims. (Cl. 60—23)**

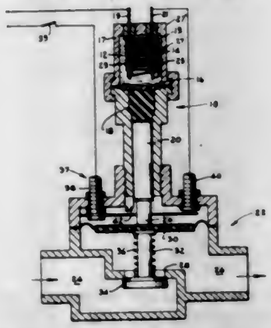



1. An article of manufacture comprising a bimetal strip, a thin coating of insulation covering said strip, a resistance heater, a coating of insulation covering said

heater, said coating covering said heater including a binder formed of the same material forming the coating of said strip, said coated heater being wound about said coated strip, and a resilient layer of insulation covering said strip and heater wound thereon, so that the ends of said strip project beyond the layer of said resilient insulation.

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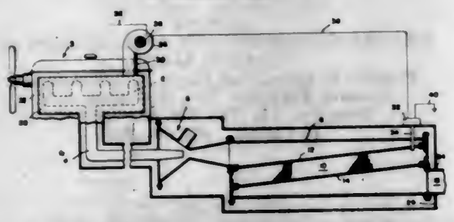
3,168,805
THERMAL POWER ELEMENT
Jack Esmond Fleury, Detroit, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed May 3, 1963, Ser. No. 277,797
5 Claims. (Cl. 60—25)



1. In a heat-actuated power element having a chamber-forming casing, a loaded power member extending from said casing, and a thermal expansion substance within the chamber: the improvement comprising the thermal expansion substance filling only a predetermined fractional portion of the chamber in a liquid condition when the power element is below its operating temperature range; the power member having a loading which prevents substantial power member motion until the chamber pressure reaches a predetermined value; and the expansion liquid substance having an expansion up to its critical temperature which produces a chamber pressure less than said predetermined pressure, whereby substantial motion is produced only as the critical temperature is approached.

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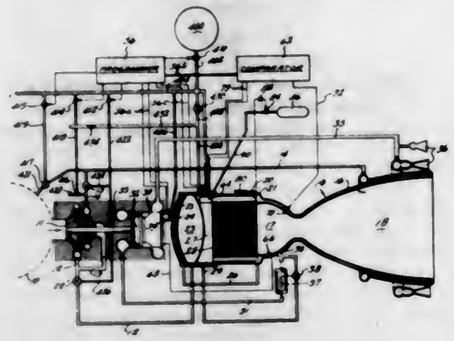
3,168,806
APPARATUS FOR IMPROVING THE PURIFICATION OF EXHAUST GASES FROM AN INTERNAL COMBUSTION ENGINE
Willard R. Calvert, Ridley Park, Pa., assignor to Oxy-Catalyst, Inc., Berwyn, Pa., a corporation of Pennsylvania
Filed May 3, 1962, Ser. No. 192,112
3 Claims. (Cl. 60—31)



1. In combination with an internal combustion engine having an exhaust system including a catalytic exhaust purifier having a catalyst bed and connected to the engine by an exhaust pipe and a manifold and means to supply air to the exhaust gases upstream of the exhaust purifier, the improvement comprising a casing surrounding and spaced from at least a portion of the exhaust system to insulate said portion during the heating up of the catalyst bed by the sensible heat of the exhaust gases from the engine and means responsive to a predetermined minimum temperature of the catalyst bed to circulate cooling air between said casing and said portion of the exhaust system.

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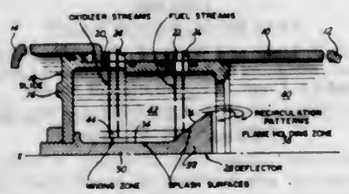
3,168,807
NUCLEAR ROCKET FLOW CONTROL
Walter A. Ledwith, Glastonbury, Trent H. Holmes, Rocky Hill, and Robert H. Shaw and Russell A. Thompson, East Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 8, 1961, Ser. No. 131,707
12 Claims. (Cl. 60—35.3)



1. In a propellant flow and control system for a rocket engine having a thrust chamber and a cooling jacket surrounding said thrust chamber, a source of propellant, means for pumping said propellant including a two-stage pump, means for driving said pumping means, means for delivering a first part of said propellant from said second stage of said pumping means to said cooling jacket, means communicating with said cooling jacket to receive said first part therefrom, means for delivering a second part of said propellant from said first stage of said pumping means to said receiving means to mix said first and second parts, means including heating means for delivering said mixture to said thrust chamber at an increased temperature, means for bleeding a part of said mixture upstream of said heating means, means for bleeding a part of said mixture from said thrust chamber, and means for mixing said bled parts and delivering said mixture of bled parts to said pump driving means to power said pump driving means.

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3,168,808
COMBUSTION IMPROVEMENT DEVICE
Joseph J. Lovingham, Madison, and Henry A. Jatczak, Roseland, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 8, 1961, Ser. No. 94,396
5 Claims. (Cl. 60—35.6)

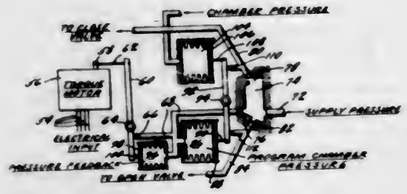



1. In combination with a combustion chamber having a head, an exhaust nozzle, and axially spaced propellant injection orifices formed in its wall, a deflector mounted in the head concentrically of said chamber, said deflector extending rearwardly from the head and toward the nozzle and having cylindrical and conical portions respectively in alignment with the spaced propellant orifices to intercept and deflect propellant streams radially injected into the chamber toward said head to effect a mixing thereof before their flow toward the nozzle.



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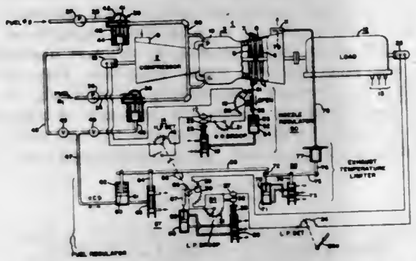
3,168,809
THRUST CONTROL
Trent H. Holmes, Rocky Hill, and Charles A. Glenn, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 27, 1961, Ser. No. 106,095
1 Claim. (Cl. 60—35.6)




In a rocket engine having a nozzle, a combustion chamber, pumping means for delivering a propellant to said chamber, a turbine for driving said pumping means, valve means for varying the flow through said turbine, control means for controlling said valve means including an actuator connected to said valve means and being movable in opposite directions and having actuating chambers on opposite sides thereof which are selectively pressurizable to cause said actuator to move in opposite directions, first conduit means for supplying fluid to a first of said actuating chambers, second conduit means for supplying fluid to a second of said actuating chambers, means for supplying pressurized fluid to said first and second conduit means, said first and second conduit means each having a fixed and a variable area restriction therein positioned so that the pressure of said fluid therein is determined by the area of said variable area orifices, third conduit means communicating with said fluid supply means and including a fixed and varaible area orifice, first bellows means responsive to the pressure in said combustion chamber, reference combustion chamber pressure signal means, a first pivot beam responsive to said signal means to vary the area of said third conduit variable area orifice to establish a reference combustion chamber pressure in said third conduit, second bellows means responsive to said reference combustion chamber pressure in said third conduit means, and comparator means including a centrally pivoted beam whose opposite ends are positioned to form a part of said variable area orifices in said first and second conduit means, respectively, and whose opposite ends also attach to said first and second bellows, respectively, so that said pivot beam is pivoted in response to the difference between said reference combustion chamber pressure and said combustion chamber pressure to vary the areas of said first and second conduit means variable area orifices to regulate the pressure of the fluid in said first and second conduit means and hence the pressure of the fluid in said actuating chambers to regulate the position of said actuator and valve means, and a feedback bellows responsive to said reference combustion chamber pressure in said third conduit and positioned to reposition said first pivot beam.

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3,168,810
TWO SHAFT GAS TURBINE CONTROL SYSTEM
Jacob B. Gratzemeyer and Neal E. Starkey, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 29, 1962, Ser. No. 220,179
12 Claims. (Cl. 60—39.16)



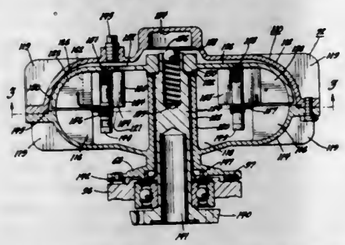
1. In a control system for a gas turbine power plant having a compressor-combustor-turbine unit and a load-turbine unit, the compressor-turbine rotor discharging motive fluid through an adjustable nozzle to the load-turbine rotor, said rotors being mechanically independent, the combination of:

first means responsive to the speed of the compressor-turbine rotor for varying the adjustable nozzle in accordance with a speed setting, and,

second means responsive to the speed of the load turbine for regulating the supply of fuel to the combustion system and simultaneously regulating the set speed of said first means.

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3,168,811
HYDRAULIC COUPLING
Ernest W. Upton, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,263
1 Claim. (Cl. 60—54)

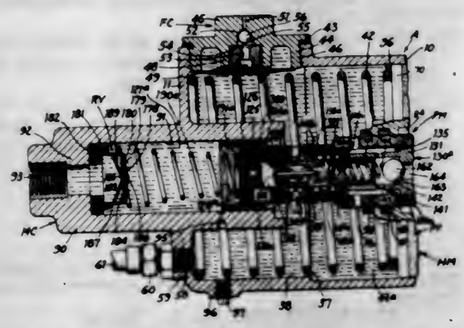


In combination with a motor operable at high and low predetermined speeds, a fluid coupling including means forming a housing mounted for rotation about a substantially vertical axis and adapted to contain a fluid in a lower portion thereof, said lower portion of said housing having driven blade means, impeller means in an upper portion of said housing drivably connected to said motor and including substantially radial drive blade means rotatable relative to said driven blade means about said substantially vertical axis, said impeller means having means extending into said lower portion to initiate movement of said fluid into said upper portion to establish a fluid connection between said housing and said impeller means when said impeller means is rotating, and means on said impeller means above the fluid in said lower portion when said impeller means is not rotating and snap-actingly responsive to a speed of said motor between said high and low predetermined speeds for altering said fluid connection in a manner to reduce substantially instantaneously the power requirements of said fluid cou-

pling on said motor, said snap actingly responsive means including a vertically pivoted vane having a trailing end engageable with said drive blade means as a substantially radial extension thereof and a weighted leading end angled from said trailing end in the direction of impeller means rotation when said trailing end is in engagement with said drive blade means and means for yieldably pivotally biasing said vane about its pivot to a position wherein said trailing edge is in substantial engagement with said drive blade means when said motor is operatng in said low predetermined speed; said vane snap-actingly pivoting to a position substantially perpendicular to said drive blade means in response to the action of centrifugal force on said weighted leading end thereof when said motor is operating in said high predetermined speed.

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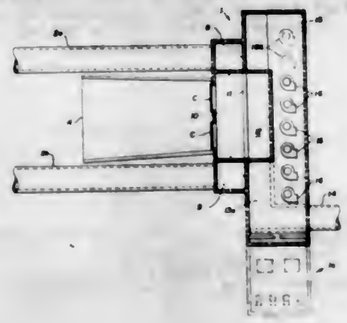
**3,168,812**
**HYDRAULIC THRUST-TRANSMITTING DEVICE**
**Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn, P.O. Box 275, Mountain Lake Park, Md.**
**Original application Mar. 19, 1958, Ser. No. 722,425, now Patent No. 3,046,746, dated July 31, 1962. Divided and this application July 25, 1962, Ser. No. 212,415**
**6 Claims. (Cl. 60—54.6)**



1. In a hydraulic thrust-transmitting device having a fluid supply chamber, and adapted for use in cooperation with a hollow member activatable to perform work in a thrust-transmitting direction and which is closed at one end and open at the other, said member being activatable under influence of a pair of cooperable actuatable members, with one of said pair of members being adapted to control the other member, the improvement which comprises: a piston reciprocable in the hollow of said work member under influence of said one of said pair of members; a variable volume hydraulic dashpot chamber provided between the closed end of said work member and confronting end of said piston; a valve chamber incorporated in the confronting end of said piston, and provided with an open end communicating with said dashpot chamber, and a closed end; fluid passageway means between said supply and valve chambers; valve means including an element movably mounted on the confronting end of said piston and biased thereagainst under spring-action to control fluid flow between said dashpot and valve chambers aforesaid; a valve seat defining the confronting end of said piston for said valve element to seat against; and a fluid flow metering port through a portion of said valve element interconnecting said dashpot and valve chambers, said port functioning when said valve element is seated during thrust-transmitting activation of said work member, to restrict excursion of fluid from said dashpot chamber into said valve chamber, and thereby enabling substantially unitary movemnet of said piston and work member under initial actuation of said one actuatable member until said work member encounters a resistance to movement of sufficient magnitude to induce relative actuation of said one actuatable member with respect to said work member to control actuation of the other acutatable member whereupon joint actuation of both actuatable members is effective to activate said work member to transmit additional thrust against said resistance.

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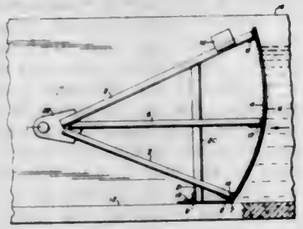
**3,168,813**
**REVERSING SYSTEM FOR CONDENSER CIRCULATING WATER**
**Paul J. Sockel, Reading, Pa., assignor to Gilbert Associates, Inc., Reading, Pa.**
**Filed Aug. 28, 1961, Ser. No. 134,455**
**7 Claims. (Cl. 61—1)**



1. A reversing system for a condenser circulating water system, comprising a pump chamber having pumping means and pump tube means for circulating cooling water from said pump chamber to the condenser, a water intake line and a water discharge line connecting a large body source of cooling water to said pump chamber, a plurality of gates between said lines and said pump chamber a reversing chamber having gates for by-passing the flow through said water intake and water discharge lines, a sealing chamber having a connection to a return line from the condenser, a weir connecting said reversing and sealing chamber to effect reversal of flow of water from said source through said intake and discharge lines, and relief discharge means comprising a surface discharge flume on one wall of said reversing chamber and including a gate leading from said reversing chamber to said flume through which circulating water is temporarily diverted during said reversal of flow so as to safeguard against shut-down which might occur from abnormal drawdown in said pump chamber during said reversal of flow.

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**3,168,814**
**AUTOMATIC WATER CONTROL GATE**
**George R. Hurlburt, Farmington, N. Mex., assignor to the United States of America as represented by the Secretary of the Interior**
**Filed Sept. 14, 1961, Ser. No. 138,027**
**2 Claims. (Cl. 61—25)**



1. A hydraulic gate structure automatically operable on a channel having a floor and spaced walls rising from said floor, to control the flow through said channel from



a body of water subject to fluctuations in flow, and maintain said water at a predetermined level, said gate comprising a bulkhead structure composed of a plurality of variously curved areas uniformly joined one to the other and convexly disposed against the upstream body of water, forming a continuously curved surface adapted to provide a barrier in the path of the flow from said body of water, a pivot means secured in said spaced walls downstream from said body of water, means supporting said bulkhead structure for angular displacements about the axis of said pivot means, and comprising bearing elements rotatably mounted on said pivot means, and radial extensions joining the said bulkhead structure to the bearing elements, said bulkhead structure being displaceable from a rest position wherein it substantially fully restrains the flow of said body of water, to activated positions wherein changes of the flow through said channel are obtained, said bulkhead structure at rest position placing a first center of curvature of a first of said curved areas above the axis of said pivot means and between the latter and the said bulkhead structure, a second center of curvature of a second of said curved areas between the said first center of curvature and said bulkhead structure, and below the axis of said pivot means, and situating a third plane area prolonging said bulkhead structure beyond said continuously curved surface, to locate a portion thereof to contact the said floor of the channel and extend a plane portion thereof rearwardly and upwardly downstream from the lower end of said curved surface, whereby said areas are adapted to receive upon a predetermined increase in the flow of said body of water raising the level thereof in the channel, increased upward pressure components which act to displace said bulkhead structure upwardly to expose thereby said plane portion of the third area to said upward pressure components of said body of water.

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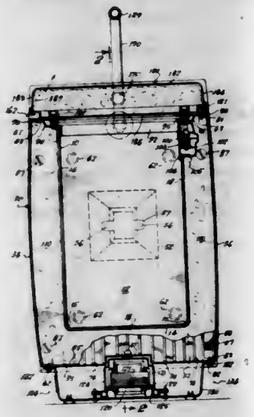
**3,168,815**
**ARCHED MINE GALLERY SUPPORT AND BEAM THEREFOR**
**Erwin Bleukle and Rudolf Seiz, Bochum, Germany, assignors, by mesne assignments, to Bochumer Eisenhutte Heintzmann & Co., Bochum, Germany**
**Filed Aug. 17, 1959, Ser. No. 834,250**
**Claims priority, application Austria, Aug. 16, 1958, A 5,735/58**
**15 Claims. (Cl. 61—45)**



10. In an arched mine gallery support, in combination, two substantially congruent trough-shaped beams, an end portion of one beam being nested in overlapping relationship in the end portion of the other beam and said beams being and yieldably connected at said end portions for sliding movement relative to each other, each of said beams comprising a pair of oppositely inclined side walls symmetrically arranged with respect to a longitudinal plane of symmetry and having a pair of outer longitudinal edge portions spaced farther from each other than a pair of inner longitudinal edge portions thereof, and a transverse web integral with and extending between said side walls substantially normal to said plane of symmetry and being spaced from said pair of inner edge portions a distance which, on the one hand, is greater than the thickness of said web and which, on the other hand, is smaller than half the distance of said pair of outer edge portions from said pair of inner edge portions so that said web forms with said side walls a deep and a shallow longitudinal channel separated by said web, the width between the inner faces of the side walls defining the deep channel and measured normal to said plane of symmetry at any distance from the web surface of the deep channel being greater than the width between the outer faces of the side walls measured normal to the plane of symmetry at the same respective distance used for the first-mentioned width but from the inner edge portions of said beam, said nested beam being supported on said web in said deep channel of said other beam, with the outer faces of the side walls of said nested beam spaced from the inner faces of said deep channel of the other beam.

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**3,168,816**
**THERMOELECTRIC REFRIGERATOR STRUCTURE**
**Gordon D. Petrie, Glendale, Calif. (3130 W. Voltaire Ave., North Phoenix, Ariz.)**
**Filed Dec. 30, 1963, Ser. No. 334,484**
**10 Claims. (Cl. 62—3)**



1. A thermoelectric refrigerator comprising the combination of

structure forming a generally rectangular inner case and an outer case spacedly enclosing the inner case, said cases being open on one side to provide access to the interior of the inner case,

means closing the space between the cases at said open side,

at least one vertical side of the inner case consisting essentially of a unitary thermally conductive cold plate having a central boss and a plurality of peripherally distributed bosses projecting from its outer face, the crest surfaces of said bosses being machined accurately to a common plane,

at least the side of the outer case which corresponds to said vertical side of the inner case consisting essentially of a unitary thermally conductive hot plate having a central boss and a plurality of peripherally distributed bosses projecting from its inner face, the crest surfaces of said bosses on the hot plate being machined accurately to a common plane and spacedly opposing the crest surfaces of respective cold plate bosses,

a thermoelectric module comprising an assembly of closely packed thermoelectric couples, the cold junc-

tions of the couples being arranged adjacent a flat module cold face, and the hot junctions of the couples being arranged adjacent a flat module hot face that is parallel to the cold face and accurately spaced therefrom by a predetermined module thickness, the couples of the module being electrically connected for simultaneous direct current energization,

means mounting the module with its hot and cold faces in electrically insulated and thermally conductive relation with the crest surfaces of the respective central bosses of the hot and cold plates,

spacing elements of solid, dimensionally stable, heat insulating material positioned between the crest surfaces of opposing peripheral bosses of the hot and cold plates, the thickness of said spacing elements being closely equal to said predetermined module thickness,

means forcibly urging the hot and cold plates toward each other at least adjacent each pair of corresponding peripheral bosses,

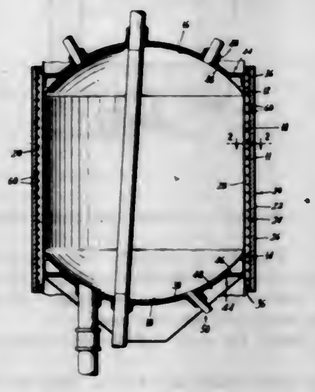
heat insulating material between the inner and outer case structures,

a door for releasably closing the open side of the cases,

and means for electrically energizing the module with direct current of a polarity to make the cold elements cold and the hot elements hot.

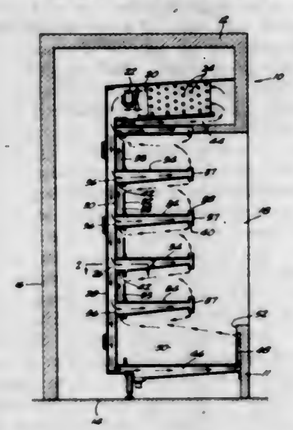
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**3,168,817**
**INSULATION APPARATUS**
**John H. Beckman and Ralph A. Trentham, Indianapolis, Ind., and Eugene F. Brenner, Williamsville, and Vladimir Hwoschinsky, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York**
**Filed Dec. 31, 1959, Ser. No. 863,285**
**13 Claims. (Cl. 62—45)**



1. In a self-propelled missile, a container for storing a low temperature vaporizable fluid comprising an elongated cylindrical portion which forms an integral section of the missile outer surface, a closure fastened to each end of said cylindrical portion, said end closure comprising an inner wall peripherally joined to the cylindrical portion, a composite insulating barrier contiguous with the outer surface of said wall and substantially conforming in shape thereto, said barrier comprising a pair of inner and outer spaced panel members being joined at the edges thereof to define an evacuated closure, insulating means disposed in said closure for spacing said inner and outer members and providing mutual support thereto.

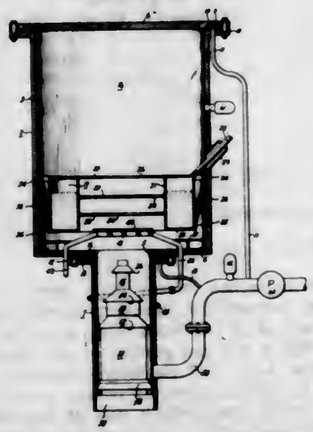
**3,168,818**
**MULTIPLE SHELF REFRIGERATED DISPLAY CABINET**
**Karl A. Weber, Los Angeles, Calif., assignor to Weber Showcase & Fixture Co., Inc., Los Angeles, Calif., a corporation of Delaware**
**Filed Aug. 27, 1962, Ser. No. 219,437**
**4 Claims. (Cl. 62—256)**



2. In a refrigerated showcase the combination of: a series of transverse hollow shelves, each shelf having an air inlet at its rearmost extremity and an air outlet solely at its forwardmost extremity, a blower, an air supply duct, duct means communicating said supply duct with each shelf, means at the forwardmost extremity of each shelf diverting air released therefrom above and below said shelves, return duct means adjacent the rearmost extremity of each shelf receiving said air and returning same to said blower.

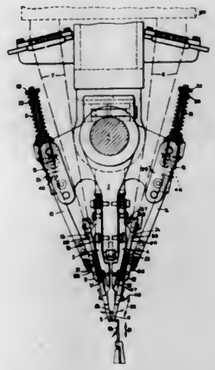
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**3,168,819**
**VACUUM SYSTEM**
**Donald J. Santeler, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Mar. 6, 1961, Ser. No. 93,770**
**4 Claims. (Cl. 62—268)**



1. In a trap for use in a vacuum system, the combination of wall means defining a chamber, means defining inlet and discharge openings for the chamber, a hollow heat exchange member located adjacent the wall means and having an opening to place the inlet opening in communication with the discharge opening, said hollow heat exchanger defining a chamber adapted to contain a refrigerant therein baffle means in heat exchange relation with said heat exchange member and optically sealing the opening in said heat exchange member, said baffle means and said heat exchange member supplying heat exchange surface exposed to said inlet opening having an area substantially as great as said inlet opening, a tapered thermal gradient barrier concentrically located between and engaging said defined heat exchange chamber member and said wall means to act as a seal therebetween, a tapered surface of said thermal gradient barrier substantially facing a surface thermally associated with said heat exchange member to condense thereon molecules reflected from the side of the thermal gradient barrier in communication with the inlet opening.





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**3,168,820**
**MEANS FOR ATTACHING REFRIGERANT TUBING IN REFRIGERATED SHOWCASES**
**Karl A. Weber, Los Angeles, Calif., assignor to Weber Showcase & Fixture Co., Inc., Los Angeles, Calif., a corporation of Delaware**
**Filed Apr. 11, 1960, Ser. No. 21,246**
**1 Claim. (Cl. 62—283)**



In a refrigerated showcase of the type wherein refrigerated air is circulated over the produce, the combination of a scavenger coil in the form of a refrigerant carrying tube to which moisture in the showcase will migrate and condense, a strap looped over to said tube and secured to a wall of said showcase, an element of non-heat conducting material surrounding said tube and isolating same from said strap and said wall.

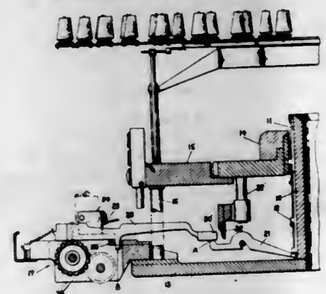
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**3,168,821**
**RESETTING MECHANISM FOR KNITTING MACHINES**
**Arno Zwingenberger, Marxgrun, Germany, assignor to Karl Liebrandt, Nalls-Oberklingensporn, Germany**
**Filed May 23, 1961, Ser. No. 112,035**
**Claims priority, application Germany, June 13, 1960, L 36,363**
**8 Claims. (Cl. 66—84)**

1. A resetting mechanism for returning thread guides of knitting machines from inoperative positions to their operative positions, said machines having a plurality of thread guides and a patterning mechanism for individually selecting and displacing said thread guides out of said operative positions, said mechanism comprising at least one elongated resetting member in simultaneous engagement with said thread guides, means for permanently exerting a resetting force on said member so that said resetting force acts through said member on said thread guides to urge the latter toward their operative positions, respectively, a thread guide which is displaced from said operative to its inoperative position by the patterning mechanism displacing said member in opposition to said means for exerting said resetting force, and means guiding said member for movement longitudinally of said thread guides.

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**3,168,822**
**KNITTING MACHINE STOP MOTION**
**George H. Noll, Philadelphia, Pa., assignor to Wildman Jacquard Co., Norristown, Pa., a corporation of Pennsylvania**
**Filed Feb. 4, 1963, Ser. No. 255,951**
**5 Claims. (Cl. 66—157)**



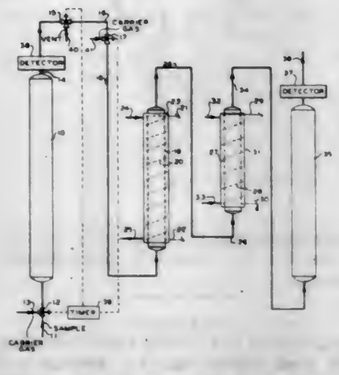
1. For a circular knitting machine having pattern mechanism which includes a rotatable pattern member and selecting levers movable to selected and non-selected positions according to the dictates of said pattern member and to other and non-operable positions upon faulty action of the pattern mechanism, a stop motion circuit for stopping the knitting machine including a part functioning upon indication from contact by a lever in non-operable position to complete the circuit and to stop the machine.

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**3,168,823**
**THERMOCHROMATOGRAPHIC METHOD AND APPARATUS FOR SEPARATION AND CONCENTRATION**
**Marvin E. Reinecke and Buell O. Ayers, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**
**Filed July 18, 1960, Ser. No. 43,536**
**10 Claims. (Cl. 73—23.1)**

10. A method of analyzing fluid mixtures which comprises introducing as a vapor a fluid mixture to be analyzed into the inlet of a first zone which contains a material that selectively retards passage therethrough of the constituents of said mixture, introducing a carrier gas into the inlet of said first zone, measuring a property of the effluent from said first zone which is representative of the composition thereof, passing only a portion of the effluent from said first zone to the inlet of a sec-

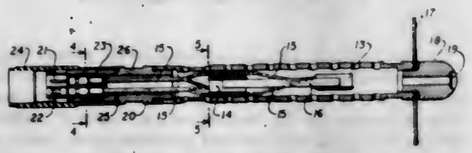
ond zone which contains a material that selectively retards passage therethrough of the constituents of said mixture, maintaining continuously a vapor phase containing a portion of said fluid mixture within said second zone upon the introduction of said portion of said first zone effluent thereto and until said second zone is heated, heating simultaneously all of said second zone rapidly,



thus passing an effluent from said second zone having a greater concentration of a constituent of interest than the concentration of said constituent of interest in the effluent in said portion of said effluent passed from said first zone to the inlet of said second zone, and measuring a property of said effluent from said second zone which is representative of the composition thereof.

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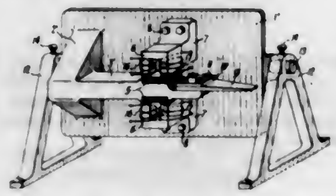
**3,168,824**
**AUDIBLE LEAK LOCATOR**
**James W. Florer, Santa Monica, George W. Gillemot, Venice, and Claude M. Davis, Santa Monica, Calif., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware**
**Filed Aug. 15, 1962, Ser. No. 217,071**
**1 Claim. (Cl. 73—40.5)**



An apparatus for locating a leak in a telephone cable laid in an underground conduit extending from one manhole to another, in which a pressure of air is maintained in the cable and therefore causes a hissing sound when air escapes from any leak in the cable, comprising a long slender probe containing a pair of microphones facing in opposite directions within the probe and having perforations around the circumference of the probe to carry sounds to both microphones, and having a circular disc of plastic material mounted near the front of the probe to maintain the probe centered in the conduit as the probe is advanced therein and preventing dirt from entering the perforations, a pair of terminals at the rear end of the probe connected to said microphones in parallel, a receiver located in one manhole and a handle containing a pair of wires connected to said receiver and to a pair of terminals in the handle, a series of connecting rods each having a pair of wires connected between terminals at each end of the rod, a plurality of said rods connectable together by means of said terminals to extend said probe into the conduit alongside a cable while maintaining the microphones connected to the receiver, until a hissing sound picked up by the microphones and reproduced in the receiver is at its loudest point, the number of rods connected between the probe and the handle indicating the distance from the manhole to the leak.

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**3,168,825**
**RESONANT VIBRATION FATIGUE TESTING APPARATUS**
**Miroslav Procházka, Prague, Czechoslovakia, assignor to Statni vyzkumny ustav tepelne techniky, Prague, Czechoslovakia**
**Filed Nov. 24, 1961, Ser. No. 154,668**
**Claims priority, application Czechoslovakia, Feb. 15, 1961, PV 898/61**
**6 Claims. (Cl. 73—67.4)**



1. A resonant vibration fatigue testing apparatus, comprising

(*a*) a plate member having a center of gravity, the thickness of said plate member being substantially smaller than the major dimensions of length and width thereof;

(*b*) connecting arm means projecting from said plate member in the direction of said thickness of the latter, said arm means being substantially rigid against torsion about an axis parallel to said thickness;

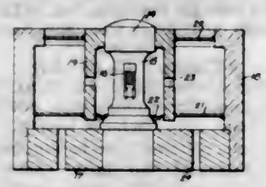
(*c*) an elongated flexure member having one lognitudinally terminal portion secured to said arm means and a free longitudinally terminal portion spaced from said one portion in the direction of one of said major dimensions;

(*d*) magnetic means for oscillating said free terminal portion in a plane spaced from said center of gravity in the direction of said thickness and substantially parallel to said major dimensions of said plate member; and

(*e*) means for mounting a specimen on said free terminal portion.

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**3,168,826**
**ATMOSPHERIC PRESSURE COMPENSATION OF LOAD CELLS**
**Jürgen Paetow, Pallaswiesenstrasse 34, Darmstadt, Germany**
**Filed Apr. 12, 1961, Ser. No. 102,570**
**3 Claims. (Cl. 73—141)**

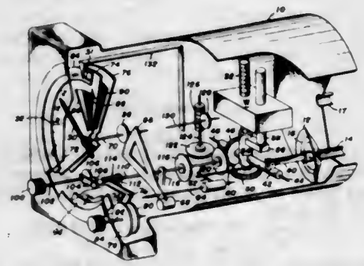


1. A force measuring device comprising an airtight housing, a force responsive element, means mounting said force responsive element in said housing with at least one part thereof fixed in relation to said housing, means extending from another part of the force responsive element to the exterior of the housing for transmitting forces to said element responsive to an applied load to be measured, means sealing the force transmitting means with said housing and thereby subjecting said other part of said element to ambient environmental pressure force in one direction, other means sealing said other part of said element with said housing and subjecting said other part of said force responsive element to an ambient environmental pressure force substantially equal in magnitude but opposite in direction to the other pressure force acting on the force responsive element, thereby to eliminate the effects of changes in said ambient environmental pressure on the force responsive element, the force transmitting means and force responsive element being in coaxial column formation and the opposing sealing means comprising annular diaphragms extending substantially radially with respect to the column axis for connection to the housing.



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**3,168,827**
**AIRPLANE TAKE-OFF PERFORMANCE INDICATOR**
**Frederick J. Bailey, Jr., Yorktown, and Joseph W. Wetmore, Hampton, Va., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**
**Filed Sept. 16, 1955, Ser. No. 534,901**
**8 Claims. (Cl. 73—178)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



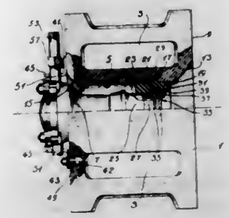
3. An airplane take-off performance instrument comprising a rock shaft adapted to be disposed substantially transversely of the take-off flight path of the airplane, a sleeve carried by said rock shaft transversely thereof, a shaft journaled in said sleeve, said shaft having a threaded end extending beyond said sleeve, a guide post parallel to and off-set from said shaft, means supporting said guide post on said sleeve, a mass having a bore receiving said guide post and a screw threaded hole for reception of the threaded end of said shaft, means supporting first indicating means, means to transmit motion of said rock shaft to said first indicating means, second indicating means, and means to rotate said shaft and to move said second indicating means simultaneously and in proportion, whereby said mass may be moved with respect to the axis of said rock shaft and said second indicating means will indicate the position thereof, and whereby acceleration of said instrument will be indicated by said first indicating means.

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**3,168,828**
**SPECIAL CONCRETE BLOCK FOR WATER METER**
**Robert Taylor, Burlington, Ontario, Canada, assignor to Firestone Tire and Rubber Company of Canada, Ltd., Hamilton, Ontario, Canada**
**Filed July 10, 1961, Ser. No. 123,166**
**2 Claims. (Cl. 73—201)**

1. A meter support and meter mounted thereon to be incorporated in the wall of a building with the meter disposed interiorly of the building and readable from the exterior of such building comprising in combination a block of molded building material providing an outside face to form an exterior portion of the building wall when incorporated in the structure of the building and an inside face for mounting a meter,

said outside face, the inner end of said collar supporting and fitting over said dial end of said meter,



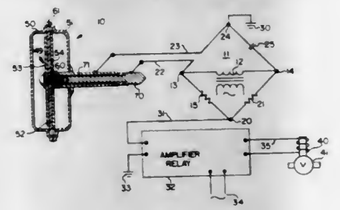
a meter having a dial at one end to register the meter reading, mounting means anchored to said inside face of said block, said mounting means being secured adjacent the end of said meter opposite said dial end to support said meter in spaced relation to the walls of said cavity, said meter being mounted on said inside face with said dial end projecting into said cavity,

a resilient collar mounted within said cavity adjacent said outside face, the inner end of said collar supporting and fitting over said dial end of said meter,

and window means mounted within said collar between said dial end of said meter and said outside face to close said cavity to the outside atmospheric elements.

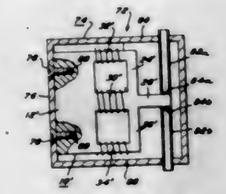
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**3,168,829**
**CONTROL APPARATUS**
**David E. Nelson, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Oct. 5, 1961, Ser. No. 143,070**
**3 Claims. (Cl. 73—336.5)**



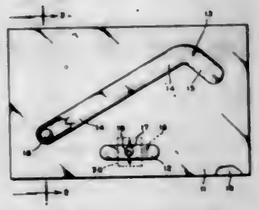
1. A humidity responsive element which varies in electrical capacitance with variations in humidity in the surrounding space comprising, a thin sheet of material which has a dielectric characteristic depending upon changes of moisture content and has a high electrical resistance characteristic unaffected by humidity changes, a thin coating of gold on each side of said sheet, said coating being sufficiently thin to permit moisture to reach said sheet from the surrounding space, a case comprising two half sections, said case having openings to permit moisture to pass to and from said case, means for attaching said half sections with said coated sheet therebetween so that said sheet is held around its periphery by a junction of said half sections, one side of said sheet having a portion of said coating cut away to not electrically contact said case, a capacitance responsive apparatus, and terminal means for connecting said coatings on each side of said sheet to said responsive apparatus so the capacitance between said coatings is indicative of the air humidity.

3,168,830
PRESSURE TRANSDUCER
Jacob Chass, Philadelphia, Pa., assignor to International Resistance Company, Philadelphia, Pa.
Filed Mar. 25, 1963, Ser. No. 267,423
5 Claims. (Cl. 73—398)



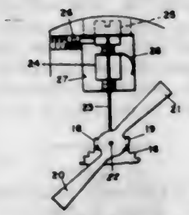
5. A pressure transducer comprising a casing, a substantially rectangular plate within said casing and secured at one side edge to a wall of the casing, said plate being of a magnetic material the permeability of which varies when the material is stressed, said plate having a pair of spaced openings therethrough adjacent the other side edge thereof, said openings forming three spaced parallel arms which are perpendicular to said other side edge of the plate and a pair of aligned legs extending along said other side edge of the other side edge and connecting the center arm to the outer arms, a moment arm projecting from the other side edge of the plate in alignment with the center arm, a pair of tubes, extending into the casing, each of said tubes having a closed end within the casing and an open end outside of the casing, the closed ends of said tubes engaging opposite sides of the moment arm, a separate secondary winding wound around each of the outer arms of the plate, and a primary winding wound around the center arms of the plate.

3,168,831
ACCELEROMETER OR DECELEROMETER
William Wagner, North Miami Beach, Fla., assignor to Watsco, Inc., Hialeah, Fla.
Filed Jan. 2, 1962, Ser. No. 163,476
1 Claim. (Cl. 73—492)



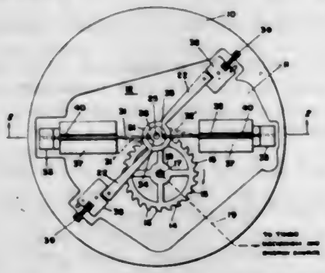
In a device for indicating acceleration or deceleration of a motor vehicle, a laminated structure comprising a support sheet, coated at least in part on one side with a pressure-sensitive adhesive for mounting on a side window or other part of a motor vehicle which occupies a generally vertical plane generally parallel with the longitudinal axis of the vehicle, a transparent plastic sheet having a pair of blisters formed therein, said plastic sheet being adhesively secured to the opposite side of said supporting sheet, said blisters being open to said supporting sheet and forming a pair of enclosures therewith, one of said blisters defining an elongated tube, the other blister defining a relatively short tube, the longitudinal axis of said short tube extending horizontally and containing level-indicating means, said elongated tube being disposed diagonally with respect to said relatively short tube, one end of the elongated tube being at a higher level than the opposite end thereof, said higher end having a portion bent horizontally therefrom, and a freely movable ball mounted in said elongated tube.

3,168,832
ESCAPEMENT MECHANISM
John F. Fazio, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 2, 1963, Ser. No. 270,125
1 Claim. (Cl. 74—1.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



In an escapement mechanism, the combination of
a gear,
a lever fixed to a pivoted shaft and bearing a pair of pallets arranged to engage the teeth of said gear,
a support,
a spring having one portion fixed to said shaft and another portion longitudinally spaced from said one portion and slidably received by said support,
means for adjusting said support laterally of said spring whereby the depth of engagement between said pallets may be adjusted to an optimum value, and
means for adjusting said support longitudinally of said spring for regulating the operating frequency of said escapement mechanism.

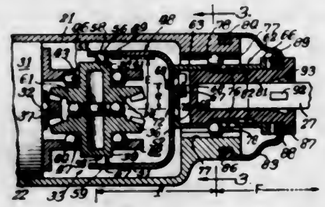
3,168,833
TIMING ESCAPEMENT MECHANISM
Dragolyoub Popovitch, Danville, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 26, 1963, Ser. No. 311,926
8 Claims. (Cl. 74—1.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A timing escapement mechanism for mechanical timers and the like adapted for movement about a predetermined axis in connection with a body in motion, comprising in combination, a frame element adapted to be carried by said body, an operating arbor pivoted in said frame element for oscillatory motion on an axis provided for alignment with said axis of movement, a rotary timing escapement wheel, means connected with said wheel transmitting rotational timing movement and control thereby externally of said mechanism, means providing a balanced escapement lever and pallet in connection with the arbor for oscillation about said pivot axis to control the escapement wheel and said timing movement, an escapement spring of the cantilever beam type having one end in motion-transmitting engagement with the arbor and extending radially therefrom to a fixed anchor point at its outer end in the frame element, and means movable along said spring between said outer end and the arbor in clamping engagement with an extended portion of its length for rigidly fixing the radially-outer end portion thereof and adjusting the length of the radially-inner free end portion of the spring for oscillation with the arbor at different timing rates.

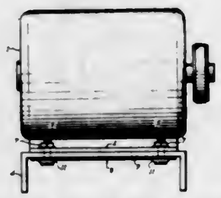


3,168,834
MOTION CONVERTING MECHANISM
Charles B. Smithson, 38 Country Club Place, Bloomington, Ill.
Filed Aug. 29, 1962, Ser. No. 220,238
20 Claims. (Cl. 74—23)



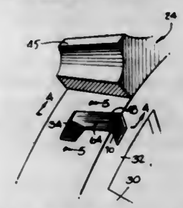
1. Motion converting means for use in a power driven tool or the like comprising, in combination, a rotatably driven gear element, a power take-off member having spaced end portions, means providing a swivel driving connection between one of said end portions and said gear element in eccentric relation to the axis of rotation of said gear element, means axially spaced from said gear element providing a swivel support for the other of said end portions, means mounting said swivel support for movement of said other end portion relative to said axis during rotation of said gear element, and movably supported means connected to said power take-off member at an intermediate portion thereof between said end portions for receiving and transmitting the resultant motion of said power take-off member.

3,168,835
TRANSMISSION BELT TENSION ADJUSTING MEANS
William Frank Nuss, Jr., P.O. Box 12132, Fort Worth, Tex.
Filed Mar. 4, 1963, Ser. No. 262,697
2 Claims. (Cl. 74—242.13)



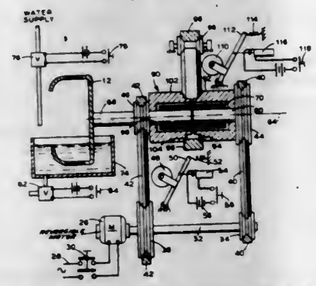
1. In combination with apparatus comprising a motor having a base, drive means including a belt driven by the motor, a bracket providing a support for the motor, and means adjustably securing the motor to the bracket including two pairs of bolts which are passed thru holes therefor in the bracket and thru slots in the base of the motor whereby the tension applied to the belt may be adjusted by loosening nuts applied to the bolts and adjusting the position of the motor relative to its support, the combination of rigid means secured by said nuts to the bolts of one pair, whereby it is removably clamped thereto, in the tightened positions of said nuts, and embraces the heads thereof to prevent the bolts from turning when the corresponding nuts are turned with a wrench to loosen them preparatory to adjustment of the position of the motor and when the nuts are tightened thereafter.

3,168,836
SPROCKET WITH A REPLACEABLE WEAR RIM FOR A CRAWLER TYPE VEHICLE
Frank A. Militana, 550 Monterey Ave., Pelham Manor, N.Y.
Filed Mar. 5, 1963, Ser. No. 262,943
15 Claims. (Cl. 74—243)



1. A sprocket for a crawler type vehicle, said sprocket including an outermost sprocket wear rim of a wear resistant metal, said sprocket rim having a large central opening and the radial thickness of the rim being slight in comparison to the diameter of the rim, said sprocket also including a core having a peripheral hoop on which the wear rim is circumferentially seated, each of said wear rim and hoop having cooperable detachable interengageable halves of driving means carried by the inner periphery of the wear rim and the outer periphery of the hoop respectively, said halves having radially disposed flat juxtaposed areas in abutting contact in oppositely rotating directions to form a two-way driving connection between said rim and hoop, and fastening means wholly disposed within the wear rim and the core and independent of said driving means detachably securing the wear rim to the core.

3,168,837
TWO-SPEED CLUTCHING AND REVERSING SYSTEM FOR WASHING MACHINE DRIVE
Harry Greenwald, 149—47 Powells Cove Blvd., Whitestone, Long Island, N.Y., assignor of one-third to Louis Wolff and one-third to Harry Silberglait, both of Brooklyn, N.Y.
Filed June 3, 1963, Ser. No. 284,972
5 Claims. (Cl. 74—368)



1. In a washing machine provided with a receptable for receiving clothes to be washed and a motor for supplying power to said receptacle through a drive shaft mechanically coupled to the receptacle;
a power transmission for transmitting driving power from the motor to said drive shaft, said transmission comprising
a high-speed driven pulley keyed to said drive shaft and said high-speed driven-pulley having a co-axial shaft extension co-axially rotatable with said high speed pulley;
a slow-speed driven pulley;
a shaft supporting said slow-speed driven pulley and embodying a co-axial shaft extension facing and co-axially aligned with the shaft extension of said high-speed pulley;

a helical spring clutch fitting over the two co-axial shaft extensions to establish a uni-directional forward driving connection from the slow-speed pulley to the high-speed pulley and to said drive shaft for the receptacle;

means constituting a first auxiliary half-pulley section secured to the slow-speed pulley and disposed co-axially and concentrically about the slow-speed pulley co-axial shaft extension;

means constituting a second auxiliary half-pulley section secured to the high speed pulley and disposed coaxially and concentrically about the high-speed pulley shaft extension, said first and said second half pulley sections being disposed to face each other and to define a pulley seat;

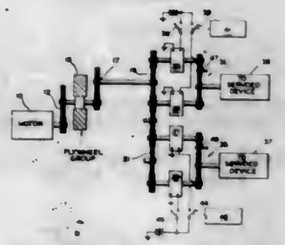
an idler pulley having a seat disposed co-operatively relative to said two half-pulley sections;

a belt normally loosely traversing said idler pulley seat and said seat defined by said two half-pulley sections;

and means for tightening said belt during backward rotation of said slow-speed pulley to enable said belt in such tightened condition to serve as a coupling between said two half-pulley sections to transmit backward driving power from the motor through said slow-speed pulley to the receptacle drive shaft.

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**3,168,838**
**MULTIPLEXED SERVO SYSTEMS WITH INERTIAL REACTION TORQUE COMPENSATION**
**Arthur Simon, Fair Lawn, and Gifford A. Weber, Wayne, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware**
**Filed Sept. 18, 1962, Ser. No. 224,362**
**1 Claim. (Cl. 74—388)**

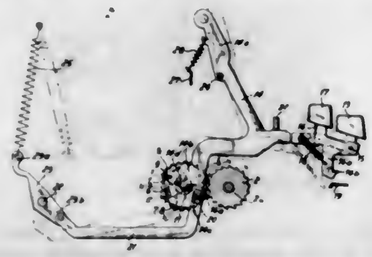


A multiplexed servo system comprising a motor, an inertial means driven by the motor, a plurality of servoed devices, means to drivingly connect the inertial means to the servoed devices, said connecting means including a plurality of parallel connected clutching means, said inertial means including a pair of flywheels, one of said flywheels being driven by the motor in one sense, a rotational reversing mechanism drivingly connecting the one flywheel to the other flywheel so that the other flywheel is driven in an opposite direction to that of the first-mentioned one flywheel, and said other flywheel being operatively connected through said connecting means to said servoed devices, and said flywheels being of equal size and so arranged as to be driven in counter rotating senses about the same shaft axis so as to reduce the resultant axial spin-vector substantially to zero.

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**3,168,839**
**ROTARY COUPLING ARRANGEMENT**
**Kurt Chvatlinsky, Wilhelmshaven, Germany, assignor to Olympia Werke AG., Wilhelmshaven, Germany**
**Filed Nov. 27, 1961, Ser. No. 155,105**
**Claims priority, application Germany, Nov. 28, 1960, O 7,741**
**19 Claims. (Cl. 74—435)**

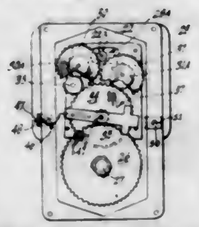
1. A rotary coupling arrangement comprising, in combination, a rotary drive means having an axis of rotation and an annular peripheral set of first teeth; a rotary driven means including a member having an axis of rotation and an annular peripheral portion located opposite said set of first teeth and including a set of flexible second teeth and recessed means so that said set of second teeth is interrupted, said axes being spaced from each other such a distance that in an inoperative angular position of said driven means said first teeth are located in said recessed means without meshing with said second teeth so that said driven means is not coupled to said drive means while in other angular positions said second teeth mesh with said first teeth and said driven means is coupled to



and rotated by said drive means, said driven means including two plates fixed to opposite sides of said member and having rigid teeth respectively located on said second teeth, and having edges located inwardly of the edges of said second teeth and extending substantially parallel to the same so that said first teeth mesh with said teeth of said plates when said second teeth of said member are substantially deformed by excess pressure between said first and second teeth; and operating means for turning said driven means out of said inoperative position so that said drive means rotates said driven means until said first teeth are located in said recessed means whereby said driven means cannot turn more than a single revolution.

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**3,168,840**
**STOP-START REVERSE MECHANISM**
**Bradlee W. Williams, Biltmore, Barrington, Ill., assignor to Comar Electric Company, Chicago, Ill., a corporation of Illinois**
**Filed Dec. 4, 1961, Ser. No. 156,849**
**14 Claims. (Cl. 74—472)**

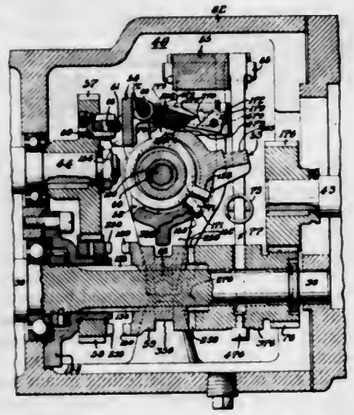


1. An automatic reversing mechanism comprising a gear system including output gear means and a driving pinion and means for rotating the same in a certain direction; reverse gear means including first and second reversing gears mounted on a carrier movable into opposite control positions to engage one or the other of the same in driving engagement with the said driving pinion; means for shifting the driving pinion axially into and out of a driving position in relation to said first and second reverse gears for driving engagement with one or the other thereof, depending upon the position of said carrier; carrier-moving means including means cooperable with a gear in said system for deriving power therefrom to throw the carrier into one or the other of said opposite positions thereof alternately in a direction to engage the same with said driving pinion when the latter is in said driving position, such driving engagement of the driving pinion and a reverse gear blocking completion of the carrier movement toward that one of said opposite positions toward which it has started to move; and means coacting with said carrier-moving means exerting a constant force on the carrier in a direction to cause the same to complete started movement toward one or the other of said opposite positions on withdrawal of the driving pinion by axial shift as aforesaid a predetermined distance, whereby on the next ensuing axial shift of the driving pinion into driving position it will drivingly engage the alternate one of the reverse gear means from that engaged in the last preceding driving action thereof.



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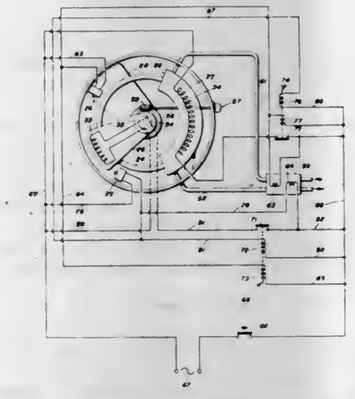
**3,168,841**
**HANDWHEEL DECLUTCH DEVICE**
**Samuel I. Caldwell, Drexel Hill, and Walter J. Denkowski, Huntingdon Valley, Pa., assignors to King of Prussia Research and Development Corporation, King of Prussia, Pa., a corporation of Pennsylvania**
**Filed May 25, 1961, Ser. No. 125,888**
**8 Claims. (Cl. 74—625)**



1. In combination; a rotatable shaft; a double clutch having first, second and third elements, said first clutch element surrounding said shaft and connectable to first drive means, said second clutch element surrounding said shaft and connectable to second drive means, said third clutch element surrounding said shaft and fixed angularly thereto but slidable axially therealong between said first and second clutch elements; a pivotal shift lever connected to said third clutch element and movable between a first normal position and a second shifted position; a holding pawl normally holding said shift lever in said first normal position, in which said first and third clutch elements are in engagement; a tripper lever normally abutting said shift lever; latching means for said tripper lever; a first torsion spring connected force-wise between said shift lever and said tripper lever; a second torsion spring connected force-wise between said tripper lever and a fixed stop; a drive pawl movable by the second drive means for moving the tripper lever out of its normal abutting relation with said shift lever and into latch position, the said movement of said drive pawl loading said first and second torsion springs and releasing said holding pawl after said first and second spring means have been loaded, thereby to allow said loaded first spring means to shift said shift lever to its shifted position, thereby to shift said third clutch element out of engagement with said first clutch member and into engagement with said second clutch element; and latch releasing means actuable by said first drive means for releasing said tripper lever thereby to allow said loaded second spring means to return said tripper lever and shift lever to normal position, thereby to shift said third clutch element out of engagement with said second clutch element and into engagement with said first clutch element.

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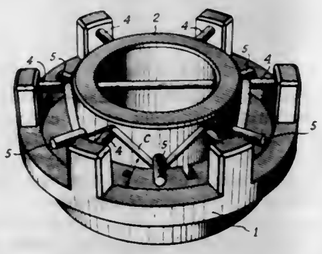
**3,168,842**
**INDEXING TABLE**
**Walter R. Haggstrom, Howard Ave., Westminster, Mass.**
**Filed Mar. 16, 1961, Ser. No. 96,292**
**12 Claims. (Cl. 74—822)**



1. An indexing table, comprising a base, a platen rotatably mounted on the base, a pneumatic actuator operatively connected between the base and the platen for relative rotation therebetween, the actuator including a body member having an annular bore, a piston slidably carried in the bore, and a curved piston rod connected to the piston.

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**3,168,843**
**METHOD FOR MAKING KNIVES OF UNDULATORY CONTOUR**
**Guy Cardinet and Edmond Faudemay, Annecy (Haute-Savole), France, assignors to Gillette France, Annecy (Haute-Savoie), France, a French society**
**Filed May 5, 1961, Ser. No. 108,182**
**Claims priority, application France, Feb. 10, 1961, 852,254**
**3 Claims. (Cl. 76—104)**



1. The method of making a circular knife of undulatory contour, comprising the steps of preforming a steel ring by bending it flatwise into an undulatory formation and thereby reducing its diameter, then securely holding the preformed ring between cylindrical clamping dies and shearing the edges of the ring in conformity to the thickness of the clamping dies.

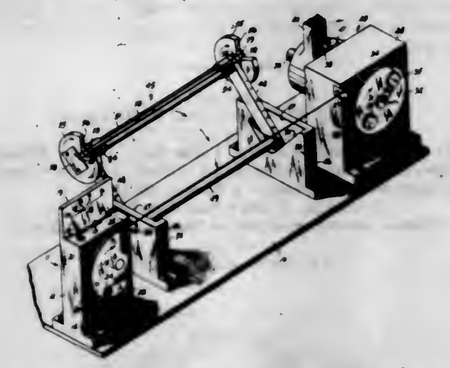
3,168,844
**METAL STRIP HANDLING APPARATUS**
Rudolf Müller, Neckarhausen, near Mannheim, and Lothar Vogtmann, Dahlbruch, Westphalia, Germany, assignors to Siemag Siegener Maschinenbau Gesellschaft mit b. Haftung, Dahlbruch, Westphalia, Germany, a corporation of Germany
Filed Oct. 8, 1962, Ser. No. 228,895
Claims priority, application Germany, Oct. 14, 1961, S 76,266
11 Claims. (Cl. 80—43)



1. A metal strip handling apparatus with at least one crop-and-cobble shear arranged between roughing and finishing trains and with a roller conveyor for carrying the stock from one train to the other

characterized by the fact that a roller element is located after the crop-and-cobble shear coextensively with a sheet metal receiver and guided on common tracks transverse of the roll pass and at the same time selectively movable into the path of the rolling stock to align the roller element with the roll pass during normal operation and to align the sheet metal receiver with the roll pass during emergency operation.

3,168,845
**APPARATUS FOR STRIPPING MEASURED LENGTHS OF INSULATION**
Frederick W. Kleiner, Leonia, George T. Kuwayama, Scotch Plains, and Frank Wahl, North Bergen, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 13, 1963, Ser. No. 323,299
4 Claims. (Cl. 81—9.51)



1. An apparatus for stripping measured lengths of insulation from wires of different gauges comprising:

a unit having an indicating means normally urged in one direction and requiring increasing force to move the indicating means increasing distances from a normal position in the opposite direction,

a member mounted on the unit adjacent the indicating means and having pre-tension marks disposed at predetermined spaced positions for wires of different known gauges,

a clamp for holding one end of an insulated wire mounted on the unit and operatively connected to the indicating means so that pulls of various forces on insulated wires of different gauges to pre-tension the wires will move the indicating means singly to the pre-tension marks,

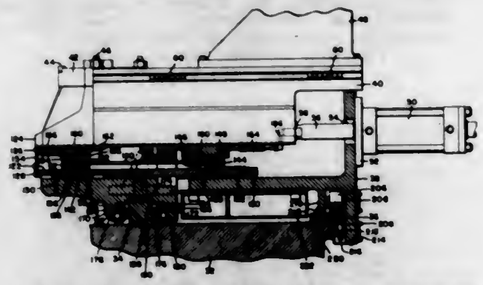
a holder for holding the other end of the wire,

an actuator for the holder to cause the holder to apply the force necessary to pre-tension the wire and locate it in a given line, and

cutters operable to make end cuts of insulation of the length of the pre-tensioned wire predetermined distances apart,

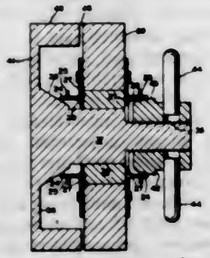
the actuator being adapted to apply additional force to the holder to stretch the wire to reduce its diameter to free the measured length of insulation from the wire and to break the wire to completely free the wire from the measured length of insulation.

3,168,846
**CONTOUR ROLL-TURNING LATHE**
Jack N. Binns, 4886 Oaklawn Drive, Cincinnati, Ohio
Filed Nov. 12, 1959, Ser. No. 852,377
15 Claims. (Cl. 82—2)



1. A tracer controlled roll lathe including an elongate bed with work supporting means thereon, elongate slides disposed parallel to the longitudinal axis of the lathe, a saddle mounted on said slides for endwise movement thereon in parallelism with the lathe axis, a cross-slide mounted on said saddle for transverse movement to the lathe axis, and rolling means interposed between adjacent surfaces of the moving elements to impart anti-friction characteristics thereto and wherein certain of said rolling means comprise continuously operative load carrying bearing balls and others of said rolling means being constructed to become functional as auxiliary load carriers upon imposition of excessive load upon the bearing balls.

3,168,847
**METHOD FOR SEVERING A COIL FORM WINDING ELEMENT**
George I. Roberts, 356 Concord Drive, Maywood, N.J.
Continuation of application Ser. No. 202,038, June 1, 1962, which is a continuation of application Ser. No. 506,564, May 6, 1955. This application Apr. 28, 1964, Ser. No. 364,885
7 Claims. (Cl. 83—13)



1. A method for severing a coil form winding element of a type including a pair of preformed end-turn forming members, and each of the members having lug portions removably retained on opposed respective end faces of the



apparatus in which the end-turn forming members include stored portions providing predetermined weakened zones to permit removal of the lug portions, a severing device including means for aligning the forming members therewith, and other means including first and second elements positioned at opposed respective end faces, comprising the steps for simultaneously engaging the lug portions of the pair of preformed end-turn forming members adjacent the scored portion, forcing the first and second elements toward the opposed respective end faces of the apparatus, and applying pressure through the first and second elements and adjacent the scored portions so as to effectively sever the forming members adjacent the scored portions and thereupon permit removal of the lug portions at the predetermined weakened zones.

3,168,848
**CUTTING MECHANISM FOR ROD-MAKING MACHINES**
Dietrich Bardenhagen, Hamburg-Lohbruegge, and Helmut Gerhardt Niemann, Hamburg, Germany, assignors to Hauni Werke Korber & Co., KG., Hamburg-Bergedorf, Germany
Filed Aug. 7, 1962, Ser. No. 215,347
Claims priority, application Germany, Aug. 10, 1961, H 43,376; July 21, 1962, H 46,437
6 Claims. (Cl. 83—174)



1. A cutting mechanism for cigarette rod-making machines or the like, comprising knife means, means for orbiting said knife means in a predetermined path, relatively fixedly mounted but freely rotatable work tool means adjacent to a portion of said path to temporarily cooperate with said knife means during each of its orbits for sharpening the same, and impeller blade means operatively associated with said work tool means for driving said work tool means by an air stream directed against said blade means.

3,168,849
**TOY PUNCH MACHINE**
George L. Zilg, Dunellen, and Joseph Wolyn, Linden, N.J., assignors to The Singer Company, a corporation of New Jersey
Filed Feb. 2, 1961, Ser. No. 86,647
4 Claims. (Cl. 83—628)

2. A toy reciprocating machine comprising in combination,

(A) a pair of mating half frames each comprising in turn,

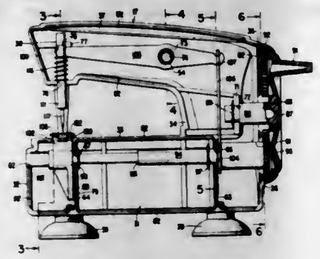
(1) a bed having a plurality of wall members each having a half bearing formed therein and a bar protruding from the face of two of said wall members and each of said bars having a curved end,

(2) an upright standard rising from each of said beds,

(3) an overhanging bracket arm secured to each of said standards,

(4) a head formed on the free end of each of said bracket arms,

(5) means for engaging said two half frames;



(B) operating mechanism comprising in combination,

(1) a handwheel rotatably carried by said mating half frames,

(2) a main cam shaft driven by said handwheel,

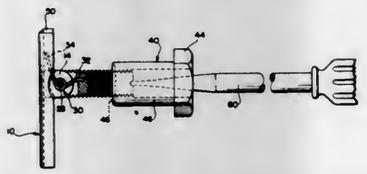
(3) a rocking lever rocked by said main cam shaft,

(4) a reciprocating member operated by said rocking lever,

(5) an eccentric formed on one end of said main cam shaft,

(6) a feed dog carried on said eccentric and having its lowermost end positioned between said curved ends whereby when said main cam shaft operates the rounded ends of said bars prevent sidewise movement of the lower end of said feed dog and thereby causes said feed dog to feed.

3,168,850
**TOGGLE BOLT**
Leonard S. Tennican, 6838 44th Place NE., Seattle 15, Wash.
Filed Aug. 26, 1960, Ser. No. 52,300
3 Claims. (Cl. 85—3)



3. A toggle bolt assembly comprising:

(1) a threaded bolt having a screw driver slot at its inner end;

(2) a toggle member pivotally secured to the outer end of said threaded bolt capable of moving from a position substantially parallel to the axis of said bolt to a position substantially perpendicular to the axis of said bolt;

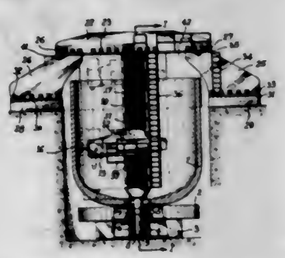
(3) a tubular sleeve member interiorly threaded to threadedly receive said bolt; said sleeve member being interiorly and annularly hollowed at the bolt-receiving end thereof to receive one end of said toggle member when the same is moved to a position parallel to the axis of said bolt, said sleeve member being longer than said threaded bolt; and

(4) means to bias said toggle member into a position substantially perpendicular to the axis of said bolt.

### 3,168,851
### MULTI-COMBINATION MACHINES FOR MACHINING WORKPIECES OF LARGE DIMENSION THAT HAVE A GENERAL FORM OF REVOLUTION

René Deflandre, Paris, France, assignor to Société dite: Derefa, Etablissement pour le Developpement, Recherches et Fabrications Industrielles, Vaduz, Liechtenstein

Filed Apr. 11, 1962, Ser. No. 186,754
Claims priority, application France, Apr. 18, 1961, 859,033
16 Claims. (Cl. 90—11)



1. A multi-combination machine for machining workpieces of large dimensions, comprising a non-removable rotary plate for rotatably supporting the workpiece, a removable machining unit constituted by a longitudinal member of large section, means for mounting at least one machining headstock on said longitudinal member for effecting machining operations, support means, a base or foundation for said machine, comprising means for securing said maching unit to said support means, a plurality of supporting elements mounted in spaced relation on said base or foundation outside the area occupied by said rotary plate and spaced exteriorly from a workpiece supported on said rotatable plate, and means for selectively connecting said support means to said supporting elements to support said removable machining unit in one of a given number of positions relative to said rotary plate.

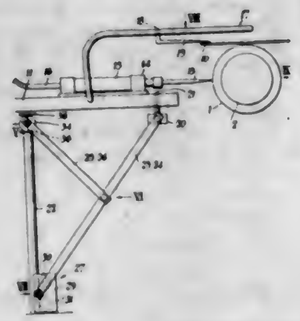
16. A multi-combination machine for machining workpieces of large dimensions, comprising a foundation constructed and arranged to constitute the main part of the machine and including a large pit, a rotary workpiece-carrying plate at the bottom of said pit, means at the bottom of said pit for rotatably supporting said plate for machining operations on the workpiece carried thereby, an elongated beam, means for supporting said beam on said foundation in or over said pit, a headstock slidably mounted on said beam, and a machining tool carried by said headstock.

### 3,168,852
### APPARATUS FOR USE IN MAKING AN ARTICLE FROM A BLOCK OF MATERIAL

George Macdonald Reid, Aldford House, Park St., London W.1, England

Filed Oct. 4, 1963, Ser. No. 314,049
8 Claims. (Cl. 90—13.1)

1. Apparatus for use in making an article from a block of material, comprising a rotatably mounted support device for supporting a block of material such that the block and the support device may be turned about an axis of rotation, a long carriage adjacent the support device having one end nearer the support device than the other end, a tool holder rotatably mounted at said one end of the carriage for holding a rod-shaped tool directed towards said axis, means coupled to the tool holder for rotating the tool holder about its own axis, a fixed structure adjacent said other end of the carriage and a pivotal connection between the fixed structure and said other end of the carriage such that the pivot axis is movable along a straight path towards and away from said axis of rotation and this permits the tool holder to be moved adjacent the support device in all the directions which are such



that the axis of the tool holder is always maintained in the same plane, which is a plane containing said rotational axis.

### 3,168,853
### HYDRAULIC CYLINDER DEVICE

Richard Prince, 1001 S. St. Marys, Sioux City, Iowa

Filed Oct. 8, 1962, Ser. No. 228,848
6 Claims. (Cl. 91—167)



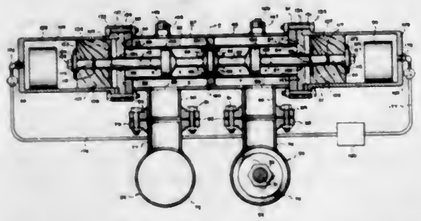
1. In a hydraulic cylinder,
an elongated hollow casing,
an elongated hollow tube mounted on the longitudinal axis of said casing and extending into said casing from one end thereof,
a slave piston slidably mounted on said tube,
a hollow piston rod slidably extending through the other end of said casing,
a master piston rigidly secured to the inner end of said piston rod,
the outer diameter of said tube being less than the inner diameter of said piston rod so that said rod can movably receive said tube,
a first hydraulic port in said one end of said casing in communication with the interior of said casing adjacent one side of said slave piston,
a second hydraulic port in said casing in communication with said tube,
a third hydraulic port in said other end of said casing and in communication with the interior of said casing,
a bore in one end of said casing,
a shoulder in said bore,
said tube extending partially into said bore in said one end of said casing and terminating adjacent said shoulder in said bore, said tube being flared adjacent said shoulder to prevent movement of the tube with respect to said casing,
said tube being flared adjacent the inner end of said bore to prevent movement of the tube with respect to said casing in a direction opposite to said first direction,
and a detachable plug in the outer end of said bore, the outer end of said bore having a greater diameter than the diameter of said tube.



### 3,168,854
### FEEDWORKS AND IMPROVEMENTS THEREIN

Jay C. Neilson, Arvada, Colo., assignor to Gardner Machines, Inc., Salt Lake City, Utah, a corporation of Utah

Filed May 22, 1963, Ser. No. 282,274
2 Claims. (Cl. 91—437)

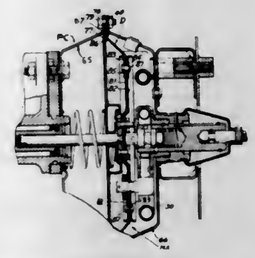


1. In a feedworks having a gun line, a return line disposed in communication with said gun line at a juncture therewith, a piston translationally disposed in said gun line, a reciprocable piston rod affixed to said piston and disposed within, journaled by, and extending beyond said gun line and adapted to reciprocate an external given mass, and means affixed to and disposed in communication with corresponding line portions of said gun cylinder and said return cylinder remote from said juncture for forcing liquid in said lines against said piston in opposite directions, alternately, for translating said piston; an improvement comprising a source of compressed gaseous media, and pneumatically controlled cushioning means coupled to said source and connected in automatically-shunting circuit relationship with said gun cylinder and said return cylinder at said line portions for automatically shunting in a metered manner fluid approaching one of said line portions of said gun and return lines into the extremity of the remaining line, to thereby cushion transient fluid response, and wherein said pneumatically controlled cushioning means includes a cylindrical body, a pair of pneumatic cylinders fixedly disposed on opposite sides of said body, a pair of pneumatic pistons operatively disposed in respective ones of said pneumatic cylinders, each of said pneumatic pistons including respective shafts protruding inwardly beyond said pneumatic cylinders, a metering tube fixedly disposed in spaced relationship with and coaxially disposed with respect to said body and said pneumatic pistons, a cushioning valve spool slideably disposed in said metering tube, said cushioning valve spool when in central position being proximate with the ends of both of said shafts, said cushioning valve spool including a central valve head and a pair of lobe heads disposed on respective sides of said valve head, said valve spool and said pneumatic cylinders forming chambers delineated thereby and by said valve head and head lobes, said metering tube including aperture means disposed in each of said chambers when said cushioning valve spool is in its central position, said valve head of said cushioning valve spool being dimensioned with respect to pneumatic piston travel for translational movement across said apertures means of said metering tube which is present between said valve head and said lobe heads when said valve spool is in a central position, partition means disposed between said cylindrical body and said metering tube at a region in line with the nominal position of said valve head of said cushion valve spool, said source being connected to said pneumatic cylinders, and said cylindrical body being provided apertures communicating with said respective ones of said line portions, said cushioning valve spool, pneumatic cylinders and pneumatic pistons being so constructed and arranged that translations of said cushioning valve spool produce corresponding translations of said piston shafts and said pneumatic pistons to which they are connected for urging at a particular time a particular one of said pneumatic pistons in a compression stroke.

### 3,168,855
### DETACHABLE MOUNTING MEANS FOR FLEXIBLE POWER-DIAPHRAGMS

Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn, P.O. Box 275, Mountain Lake Park, Md.

Original application Sept. 19, 1957, Ser. No. 684,946, now Patent No. 3,101,032, dated Aug. 20, 1963. Divided and this application Aug. 19, 1963, Ser. No. 303,086
3 Claims. (Cl. 92—99)



1. In a two-section walled enclosure supported as a unit on a fixed member, and having a flexible wall centrally attached to a plate movable therein, and means for attaching said wall to the plate, the improvement which comprises: a pair of cup-shaped shells having their open confronting ends flanged outwardly; a plurality of circumferentially spaced complemental holes through said shell flanges; a pair of juxtaposed metallic rings positioned between said shell flanges and processed with a corresponding number of holes complemental to those in the shell flanges; a corresponding number of fasteners projecting through the holes in the shell flanges and metallic rings to secure the shells and rings in a rigid metal-to-metal unitary assembly to produce said walled enclosure; an annular channel of substantially semicircular cross-section defining the inner marginal portion of each ring in confronting spaced relationship to one another to produce another annular channel of substantially circular cross-section, with the inner edge portions of said first-named channels terminating in laterally diverging annular flanges to provide a circular opening communicating with the other annular channel aforesaid; and an annular bead of larger cross-section than said other channel, defining the outer marginal peripheral portion of said flexible wall, and adapted to engage said other channel whereby the peripheral portion of said flexible wall is anchored adjacent the inner peripheries of said shell flanges under compression to effect an airtight seal therebetween upon unitary assembly of said shells and rings.

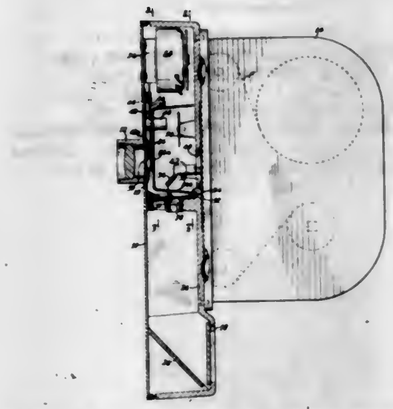
### 3,168,856
### CAMERA SHUTTERS

Alexander R. Norden, New York, and Paul S. Martin, Flushing, N.Y., assignors to American Foto Patrol Inc., a corporation of New York

Filed Apr. 11, 1961, Ser. No. 102,266
4 Claims. (Cl. 95—1.1)

1. A camera including a picture-taking optical system having a first shutter mechanism and a second optical system for projecting a data image adjacent to the image produced by said first optical system, said first shutter mechanism having a high-speed shutter and having reciprocating actuating means producing an exposure during its forward operating stroke, and a second shutter having a part engaged by a part of said first shutter mechanism and thereby held closed, said second shutter having

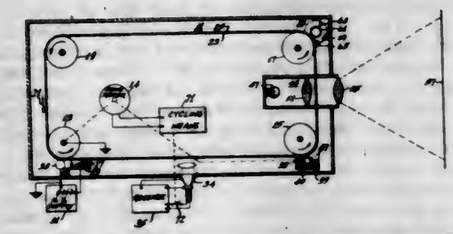
an opening spring and being released for spring-opening in response to movement of the mechanism of said first



shutter during said forward operating stroke, and being reclosed during the return stroke thereof.

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**3,168,857**
**ELECTROSTATIC PRINTING**
**Edgar Hutto, Jr., Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed May 1, 1961, Ser. No. 106,856**
**8 Claims. (Cl. 95—1.7)**



8. Reproduction apparatus comprising an elongated transparent member at least a surface thereof comprising an organic resinous material having dissolved therein a dye intermediate, said layer having a resistivity in darkness of at least $10^9$ ohm-centimeters and a resistivity when irradiated of at least two orders of magnitude less than said resistivity in darkness, means for applying a substantially uniform electrostatic charge to said layer, means for exposing said layer to a radiation image, means for applying a finely-divided developer substance to said layer to produce thereon a visible image and means for projecting light through said layer for producing a projected light image from said visible image.

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**3,168,858**
**PANORAMIC CAMERA**
**Maxwell S. Campbell, Elkins, N.H., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware**
**Filed July 27, 1962, Ser. No. 212,859**
**9 Claims. (Cl. 95—16)**

1. A panoramic camera for recording information on a web-like film, comprising:

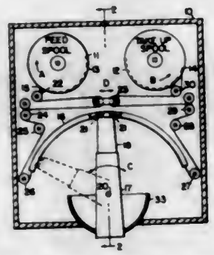
a stationary housing;

film supply means coupled to said housing for storing unexposed film;

film take-up means coupled to said housing for storing exposed film;

film support means for supporting film along its edges in an arcuate configuration between said supply and take-up means;

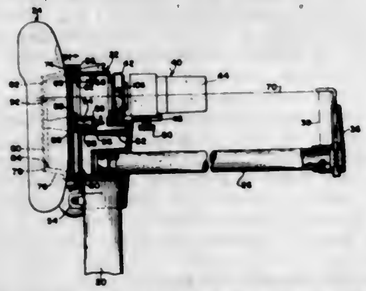
lens means defining a nodal axis, said lens means being pivotable about said nodal axis for collecting information and imaging said information in a focal plane and;



second support means coupled to said lens means and pivotable therewith for supporting a portion of said film independent of said first supporting means, said film portion being supported substantially in said focal plane whereby said information is imaged on said portion.

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**3,168,859**
**IDENTIFICATION CAMERA**
**Gifford M. Mast, Davenport, Iowa, assignor to Mast Development Co., Davenport, Iowa, a corporation of Iowa**
**Filed Dec. 12, 1961, Ser. No. 158,671**
**7 Claims. (Cl. 95—38)**

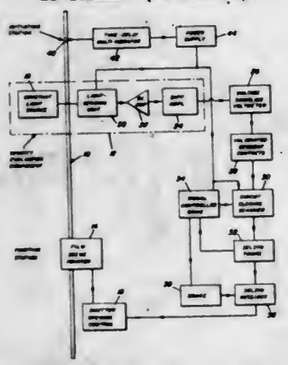


1. A camera, comprising: a body having a part including a film-exposing opening and a lens spaced in one direction from said opening along an optical axis and fixed against angular displacement relative to said opening; a film-carrying element closely spaced in the opposite direction from and adjoining said opening at a light-tight junction including relatively movable light-seal portions respectively on said element and part, said element having means for carrying a film in a film plane normal to said optical axis at said opening and of an area greater than that of said opening so that initially a first portion of such film plane is in register with said opening and at least a second portion is out of register with said opening; pivot means rotatably and removably mounting said element on the body on a pivot axis normal to the film plane and offset from the optical axis and intermediate said film plane portions and enabling selective turning of said element about said pivot axis between a first postion in which said first and second film plane portions are respectively in and out of register with said opening and a second position in which said second and first film plane portions are respectively in and out of register with said opening; said pivot means including a shaft on the pivot axis and fixed to the element and a bore in the body coaxially slidably and rotatably receiving the shaft, said shaft terminating within the body and axially short of the lens; disengageable lock means carried by the body independently of the lens and normally cooperative with the shaft to hold the shaft and element against separation from the body and lens while permitting turning of the shaft and element relative to the body and lens, said lock means including an internal part within the body and selectively movable into and out of locking engagement with the shaft and an exterior control part manually accessible from outside the body and connected to and for operating said internal part; and partition means operative to close off from light whichever film plane portion is out of register with said opening.



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**3,168,860**
**AUTOMATIC EXPOSURE CONTROLLED FILM PRINTER**
**Joseph L. De Clerk, 673 W. Front St., Red Bank, N.J.; Edward P. Kennedy, deceased, late of West End, N.J., by W. Robert Warwick, administrator, 434 Broadway, Long Branch, N.J.; and Domenic L. La Banca, 28 Girard Ave., West Long Branch, N.J.**
**Filed Mar. 29, 1962, Ser. No. 195,014**
**15 Claims. (Cl. 95—75)**



1. In combination with a printer for individual image frames on a strip of film continuously fed between an evaluation station and a printing station, said printer having exposure varying mechanism positionable at a plurality of settings; an exposure control system for obtaining prints of uniform density from image frames of varying opacity comprising, opacity evaluation means operative only in response to passage of an image frame therethrough during a sampling cycle for producing an output signal at an energy level reflecting the relative opacity of said image frame, scanning means operatively connected to said exposure varying mechanism for continuous variation thereof between said plurality of settings during said sampling cycle, signal responsive means operatively interconnecting said opacity evaluation means and scanning means to disable operation of said scanning means at one of said plurality of settings of the exposure varying mechanism predetermined by the energy level of the output signal received from the opacity evaluation means, and holding means operatively connected to said scanning means and rendered operative by said output signal disabling operation of the scanning means to hold the exposure varying mechanism at said predetermined setting until another image frame approaches the evaluation station.

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**3,168,861**
**VENTING DEVICES**
**Thomas A. Miller, 3425 Quadra St., Vancouver, British Columbia, Canada**
**Filed Mar. 12, 1963, Ser. No. 264,563**
**8 Claims. (Cl. 98—76)**

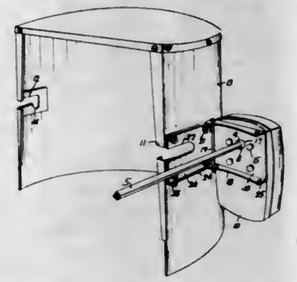
1. A vent device comprising a vertical casing forming a vertical passage, a casing connected to said vertical casing and forming a horizontal passage extending across the lower end of the vertical passage and in communication therewith, said horizontal passage being open at both ends thereof, said vertical casing having an opening in a side wall thereof above the horizontal



passage, a pipe having a lower end and an upper end opening into said casing opening, and a deflector in the horizontal passage adapted to direct some of the air travelling in either direction through said passage upwardly in the vertical passage past the opening of the casing.

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**3,168,862**
**SWING-OUT MOTOR MOUNTING FOR OUTDOOR GRILLS**
**Leon C. Clouser, Jr., Freeport, Ill., assignor to Structo Manufacturing Company, Freeport, Ill., a corporation of Illinois**
**Filed Apr. 5, 1962, Ser. No. 185,455**
**4 Claims. (Cl. 99—421)**

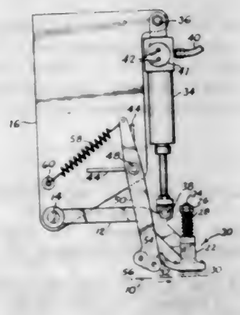


1. In combination, an upright open front heat enclosing hood for a grill brazier having upright side walls in which substantially horizontal slots are provided opening toward the front thereof, one of these slots being a bayonet slot with downwardly extending inner end adapted to retain a spit rod against displacement while turning in said inner end portion, a spit rod disposed substantially horizontally in said slots for support of meat to be grilled and having a handle on that portion received in the bayonet slot for manipulation of the rod from outside the hood, the other end of said spit rod being pointed for penetration of meat or fowl and also having a portion next to the point shaped for drive purposes, a motor for driving said spit rod having a spit driving mandrel detachably drivingly connectable with and supporting the last mentioned end of said rod, said connection making the motor rigid with the rod to be swingable by means of said rod from the handle end thereof, and a hinge hingedly supporting the motor on one side wall of the hood so as to be swingable from a spit rod operating position in closely spaced parallel relation to said side wall to a spit rod loading and unloading position swung away from said side wall, said hinge comprising two vertical plates pivotally connected at adjoining vertical edges on a vertical axis in a vertical plane in rearwardly spaced relation to the motor mandrel and the inner ends of the slots in the side walls of said hood, one of said plates being rigidly secured to the side wall of the

hood remote from the bayonet slot, and the other of said plates rigidly supporting the motor thereon, whereby when the spit rod is swung forwardly in a horizontal plane out of said slots the motor is swung by means of said rod and its handle away from the last named side wall of the hood to space the mandrel and rod outwardly relative thereto for easy removal and replacement of the pointed end of the rod relative to the mandrel spaced amply from the source of heat enclosed by said hood.

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**3,168,863**
**SELECTIVE INERTIA LUMBER MARKER**
**Robert C. McRae, 3421 N. 35th, Tacoma, Wash.**
**Filed Feb. 20, 1961, Ser. No. 90,369**
**4 Claims. (Cl. 101—43)**



1. Apparatus for marking moving articles which comprises a lever arm, means for pivotally mounting the inner end of the lever arm to a stationary support, drive means coupled to the lever arm intermediate its ends for reciprocating it between advanced and retracted positions, stop means associated with the drive means for abruptly arresting its advancing motion, a spring-retained inertia plunger mounted on the outer end of the arm, a printing die mounted on the plunger for momentary printing contact with articles toward which it is advanced by the drive means, and inking means positioned for movement by the lever arm for inking the printing die on each stroke thereof.

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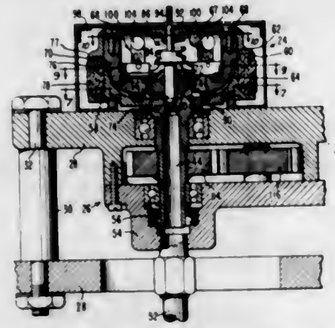
**3,168,864**
**LITHOGRAPHIC PRINTING PLATE AND METHOD OF PRODUCING AN IMAGE THEREON**
**Robert J. Brandl, Jr., St. Paul, and Edwin A. Grant, Jr., Maplewood, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**No Drawing. Filed Sept. 28, 1960, Ser. No. 58,902**
**15 Claims. (Cl. 101—149.2)**

2. In the method of producing an imaged lithographic master having visibly distinguishable ink-receptive areas corresponding to image areas of a differentially radiation-absorptive graphic original, the steps comprising: subjecting said original to brief intense irradiation through a thin radiation-transmissive heat-sensitive copy-sheet having in heat-conductive contact with said original a chemically reactive visibly heat-sensitive coating including at least one volatilizable reactant, the chemical reaction occurring within said coating on heating said sheet being responsible for the visible change, to provide in said copy-sheet a visible, strongly radiation-absorptive reproduction of said image areas, and subjecting the thus treated copy-sheet to further brief intense irradiation with said coating in heat-conductive contact with a lithographic plate having a heat-sensitive hydrophilic surface coating comprising particles of ink receptive, water repellent imaging material dispersed within a continuous phase of a hydrophilic binder and containing a second reactant which is visibly reactive with a said volatilizable reactant of said copy-sheet when the two reactants are heated together.

3. A lithographic printing plate adapted, on subjection to a heat-image, to provide a visibly imaged lithographic master; said plate comprising a base sheet and a visibly heat-sensitive chemically reactive layer, the chemical reaction occurring within said layer on heating said sheet being responsible for the visible change, and including a heat-sensitive layer forming the normally hydrophilic lithographic surface of said plate and comprising particles of ink receptive, water repellent imaging material dispersed within a continuous phase of a hydrophilic binder and forming an ink receptive image on the lithographic surface at areas subjected to said heat-image.

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**3,168,865**
**INK APPLICATOR**
**Robert Kelly, Clawson, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed May 16, 1962, Ser. No. 195,084**
**12 Claims. (Cl. 101—367)**

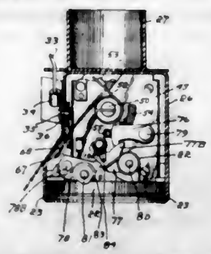


1. In an ink applicator, supporting means, an upright hollow shaft rotatably supported by said supporting means and having the lower end thereof in communication with a supply of ink, said shaft operable by the rotary action to lift ink along the inner surface of the shaft, a valve body affixed to the upper end of said shaft having an ink inlet in communication with said hollow shaft and having an ink outlet, a hollow inking roller mounted on said valve body for rotation therewith and having a passage establishing communication between said valve body outlet and the outer periphery of said roller, a normally closed valve member controlling said inlet, and weight means mounted for rotation with said shaft and operatively connected to and for actuating said valve member in response to the centrifugal force generated.

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**3,168,866**
**FUZES PROVIDED WITH MEANS FOR ELECTRICALLY CHECKING THE SAFETY**
**Albert T. Edmands, Dover, Mass., assignor, by mesne assignments, to Hesse-Eastern, Inc., Everett, Mass., a corporation of Delaware**
**Filed July 2, 1962, Ser. No. 206,662**
**6 Claims. (Cl. 102—76)**

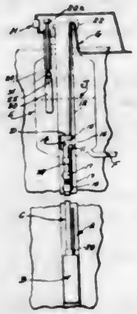
1. In a fuze for a projectile, a base, a member carried by said base for movement between first and second positions, said member including a detonator, means operative to explode said detonator when said member is in said second position, means to move said member from said first to said second position, releasable means to hold said rotor in said first position, an insulated contact engageable by and in electrical contact with said holding means when said holding means is in holding position, a cover attached to said base and in electrical contact therewith, and a connector carried by and extending through said cover and insulated therefrom, said connector and said contact being in engagement when said cover is attached to said base thereby to permit the checking as to the safety of said fuze by placing said fuze in a checking circuit including said housing and said connector.



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**3,168,867**
**WELL SYSTEM AND METHOD OF PRIMING**
**Howard A. Tubbs, 406 S. Elizabeth St., Whitewater, Wis.**
**Filed Oct. 16, 1962, Ser. No. 230,808**
**10 Claims. (Cl. 103—6)**

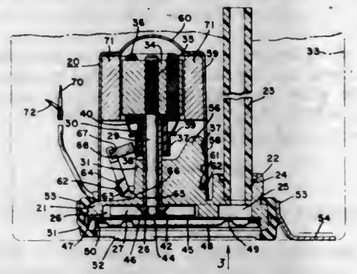


1. A water pumping and storing apparatus comprising: a hollow casing extending down into the ground to the source of water; a water feed pipe within the casing; a water and air storage tank, said tank having an inlet in communication with the feed pipe for receiving the water from the feed pipe; pumping apparatus connected with the feed pipe for pumping the water from the source through the feed pipe and into the storage tank; means connected with the feed pipe for admitting air into the storage tank during activation of the pumping apparatus and control means for expelling excessive air from the storage tank, said last means including a valve and a float connected with the valve for effecting opening and closing thereof in accordance with the water level within the tank, said float having a walled chamber with an opening in the wall establishing communication between the interior of the storage tank and the interior of the chamber, whereby the water within the storage tank enters the chamber to add weight to the float.

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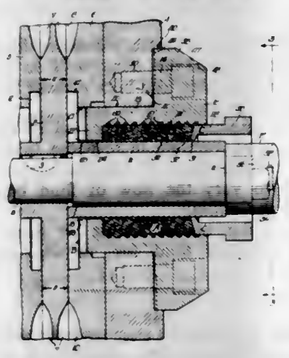
**3,168,868**
**PUMP DEVICE**
**Werner F. Schultz, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed June 11, 1962, Ser. No. 201,616**
**10 Claims. (Cl. 103—87)**

1. Structural arrangement comprising, a unitary body portion having a hub-like central projection as well as web means integral therewith, a cup-like cover portion adapted to interlock over said web means and carrying a motor stator means therein, brush means pivotally journalled outwardly from said hub-like central projection in space between said cover portion and web means, a rotor means disposed radially inwardly of said motor stator means and having a commutator axially on one side thereof toward said brush means, a mechanical load exemplified by an impeller powered during stator and rotor energization, a common shaft extending axially to opposite sides of said unitary body portion with said mechanical load carried adjacent to one side thereof and said rotor means on an opposite side remote therefrom, and a single bearing means press-fitted into said hub-like central projection of said unitary body portion which assures maintenance of proper alignment for both said mechanical load and motor rotor-stator means.



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**3,168,869**
**SEALING MEANS**
**Leonard J. Sieghartner, Coal Valley, Ill., assignor to Roy E. Roth Company, Rock Island, Ill., a corporation of Illinois**
**Filed Aug. 27, 1963, Ser. No. 304,781**
**7 Claims. (Cl. 103—96)**

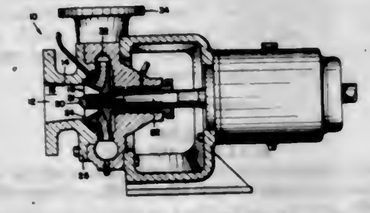


1. In combination, a pump casing having a pump cavity, a rotatable pump shaft having an impeller fixed thereon for rotation within said pump cavity and creating a pressure in said cavity, a sleeve surrounding said pump shaft and positioned endwise between said impeller and a shoulder on said pump shaft, a stuffing box surrounding said sleeve and passing through an opening in said pump casing and having at its inner end an inwardly extending annular flange with clearance between the inner periphery of said flange and said sleeve, screw means securing said stuffing box to said pump casing, said stuffing box having an annular bore spaced radially outwardly from said sleeve, a gland member having a smooth externally cylindrical portion entering the outer end of said bore and slidable longitudinally in said bore without rotation toward and away from said annular flange, the bore of said stuffing box having grooves with the sides of the grooves facing the impeller substantially ver-

tical to the axis of said shaft and with the sides of said grooves facing said gland member sloping at an angle of not more than 45° to the axis of the shaft, packing in said bore between said annular flange and the inner end of said gland member and within the bore of said stuffing box and about said sleeve and engaging the grooves in said bore, lug means on the outer end of said gland member extending outwardly of said cylindrical portion of said gland member, screws fixed in said stuffing box radially outwardly of said annular bore and passing through openings in said lug means, and nuts screwed on the outer ends of said screws and coacting with said lug means for adjusting the gland member inwardly without rotation to compress said packing between the inner end of said gland member and said flange.

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**3,168,870**
**CENTRIFUGAL PUMP WITH ADJUSTABLE CAPACITY**
**Hanns Hornschuch, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Dec. 12, 1962, Ser. No. 244,119**
**9 Claims. (Cl. 103—97)**

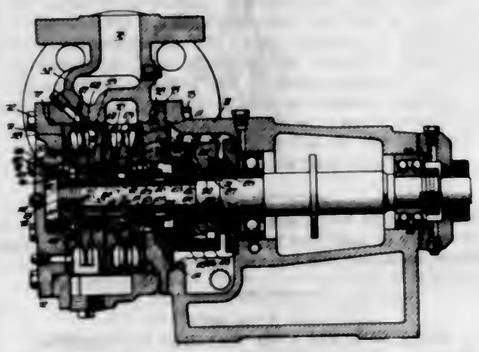


1. A variable capacity centrifugal pump comprising: (*a*) a housing defining a chamber having an outlet and a front wall with a central chamber inlet therethrough;
(*b*) impeller means rotatably disposed in the chamber and spaced from the front wall to define therebetween an annular feed back passage for fluid being pumped to the central inlet; and
(*c*) flexible annular means disposed in the feed back passage being variable in response to pressure fluid for controlling flow of fluid being pumped therethrough to vary the flow of fluid being pumped through the outlet;
(*d*) the annular means having an inlet adapted to receive pressure fluid for varying such annular means.

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**3,168,871**
**MEANS FOR CONTROLLING PRESSURE DROP BETWEEN ADJACENT CHAMBERS OF A PUMP OR FROM INSIDE OF PUMP CASE TO OUTSIDE ATMOSPHERE**
**Leonard J. Sieghartner, Coal Valley, Ill., assignor to Roy E. Roth Company, Rock Island, Ill., a corporation of Illinois**
**Filed July 10, 1962, Ser. No. 208,731**
**7 Claims. (Cl. 103—108)**

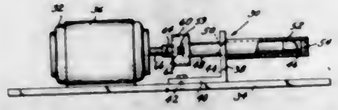
1. In a pump, in combination, a pump casing, a pump shaft rotatable within said casing, impeller means fixed for rotation with said shaft within said casing for pumping a fluid, an abutment member surrounding said shaft, a first stationary member surrounding said shaft on the side of said abutment member toward said impeller means, a stationary gland member surrounding said shaft on the other side of said abutment member, double seals cooperating with said abutment member on opposite sides thereof and with one of said seals cooperating with said first stationary member and the other seal cooperating with said gland member, a stationary seal bushing surrounding said shaft and fixed in said gland member and held against rotation, a circumferentially continuous carbon radially floating ring surrounding and closely fitting said shaft within the pump casing, means for holding said carbon floating ring against rotation while permitting rota-



tion of said shaft, and spring means acting between said abutment member and said carbon floating ring for holding said carbon floating ring in close contact with said stationary seal bushing.

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**3,168,872**
**POSITIVE DISPLACEMENT PISTON PUMP**
**Harry E. Pinkerton, P.O. Box 387, Mill Neck, N.Y.**
**Filed Jan. 23, 1963, Ser. No. 253,475**
**13 Claims. (Cl. 103—157)**

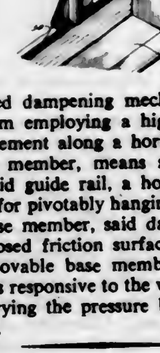


1. A single valveless reversible positive displacement pump comprising in combination: a cylinder having port means for pump fluid; a rotatable piston in said cylinder, said piston having an axis; duct means on said piston communicable with said port means for transfer of said fluid to and from the cylinder; drive means for said piston having an axis; means for permitting said piston to reciprocate in said cylinder while rotating, in a timed relation with respect to said port means; and means for reversing such timed relationship, said reversing means being operable to reverse the relative angularity between said axes to obtain fluid flow reversal.

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**3,168,873**
**HYDRAULIC UNLOADING AND CIRCULATING DEVICE**
**Leonard L. Huckaby, Rte. 2, Box 115, Santa Paula, Calif.**
**Filed June 7, 1963, Ser. No. 286,402**
**6 Claims. (Cl. 103—221)**

1. A hydraulic unloading and circulating device for insertion in a threaded joint in a well tool to equalize fluid pressure between the interior and exterior of said tool in response to a pulling force on said tool, comprising, in combination: a sleeve threaded to the lower threads of said joint; an inner cylinder partially telescoped within said sleeve, the upper end of said cylinder being coupled to the upper threads of said joint, said inner cylinder having a straight through central passage including a lateral port encompassed by said sleeve when said inner cylinder is telescoped within said sleeve to a first given position and exposed above said sleeve when said inner cylinder is pulled outwardly from said sleeve to a second position; and, a coupling for coupling the upper end of said cylinder to the upper threads of said joint, said coupling having left hand threads on its lower end, said cylinder having left hand threads on its upper end to receive said coupling, the upper end of said coupling having right hand threads to receive said upper threads of said joint whereby



the upper end of said straight through passage in said cylinder may be exposed by unthreading of said coupling therefrom upon rotation of the upper end of said tool in a right hand direction without loosening the remaining threaded joints in said device and tool.



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**3,168,874**
**DAMPER MECHANISM**
**John V. Atanasoff, Frederick, Md., assignor, by mesne assignments, to Cybernetics Inc., Frederick, Md., a corporation of Maryland**
**Filed Sept. 25, 1962, Ser. No. 225,985**
**11 Claims. (Cl. 104—89)**

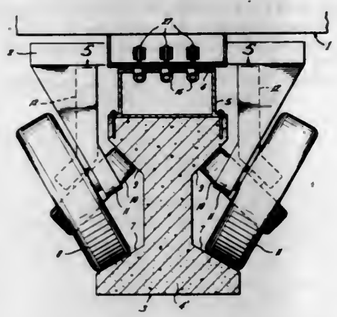


1. An improved dampening mechanism for use with a conveyor system employing a high-speed load carrier adapted for movement along a horizontal guide rail including: a base member, means supporting said base member from said guide rail, a horizontal load-support platform, means for pivotably hanging said platform from said movable base member, said dampening mechanism comprising: opposed friction surfaces connected respectively to said movable base member and said hanging means and means responsive to the weight of load on said platform for varying the pressure between said opposed friction surfaces.

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**3,168,875**
**JET SUSPENSION**
**Charles F. Reed, 6910 Fannin St., Houston 25, Tex.**
**Filed Apr. 18, 1963, Ser. No. 273,983**
**8 Claims. (Cl. 104—134)**

1. In combination, a hollow guide rail, ground supported means locating the rail in a fixed path, a mobile body having a rail tracking formation in coactive relation with the guide rail for guiding travel of the mobile body, pressure fluid supply means in communication with the interior of the hollow guide rail to charge the same with fluid under pressure, said rail throughout its length having fluid jetting orifices extended therethrough in directions to emit pressure fluid toward said body as a load sustaining fluid cushion, normally closed orifice valving means actuatable to open any particular orifice in response to



the presence adjacent thereto of said mobile body, actuating means for said valving means, said actuating means including magnet means carried by the body to present a magnetic field projected transversely thereof and along the rail and said valving means including magnetic field influenced shiftable elements fitted to the jetting orifices and responsive to pressure fluid within the rail to close such orifices and responsive to the influence of said magnetic field when the body is in traversing relation thereto to open such orifices.

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**3,168,876**
**FREIGHT TRANSPORTATION SYSTEMS**
**Deodat Clejan, Chicago, Ill., assignor to General American Transportation Corporation, a corporation of New York**
**Original application Nov. 9, 1961, Ser. No. 151,358, now Patent No. 3,102,646, dated Sept. 3, 1963. Divided and this application Sept. 26, 1962, Ser. No. 226,429**
**22 Claims. (Cl. 105—368)**

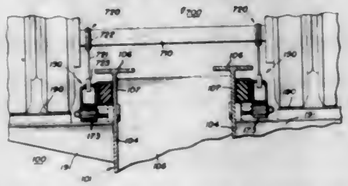


15. A railway car for transporting a freight container; said railway car comprising longitudinally spaced-apart running gears having rail wheels, an elongated longitudinally extending narrow beam bridging said running gears and lying between the planes of the inner sides of the rail wheels of said running gears, the top of said beam defining an elongated substantially horizontal narrow central platform for supporting a freight container, a pair of elongated longitudinally extending members, means for resiliently mounting said members respectively on the opposite outer sides of said beam for independent limited and cushioned longitudinal movements with respect thereto, said members being disposed in substantially parallel laterally spaced-apart relation and respectively positioned adjacent to and below the opposite outer side edges of said central platform and also lying between the planes of the inner sides of the rail wheels of said running gears, and a pair of attachment elements respectively carried by said members for respectively selectively connecting thereto a freight container mounted on said central platform for

longitudinal movements with respect thereto, whereby said resiliently mounted members afford the mounted and connected freight container protection against the transmission thereto of severe longitudinal shocks from said beam, said attachment elements being respectively positioned laterally outwardly beyond the opposite outer side edges of said central platform so as to be readily accessible from the exterior.

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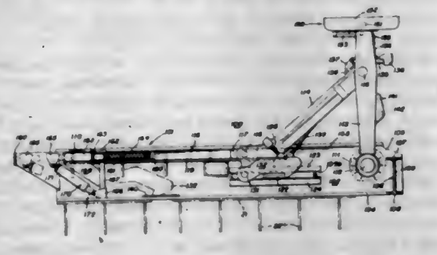
**3,168,877**
**FREIGHT TRANSPORTATION SYSTEMS**
**Deodat Clejan, Chicago, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York**
**Filed Nov. 29, 1962, Ser. No. 240,795**
**10 Claims. (Cl. 105—368)**



5. A railway car for transporting a freight carrier; said railway car comprising an elongated longitudinally extending frame, structure carried by said frame and defining on the top thereof an elongated longitudinally extending platform arranged in a substantially horizontal plane and adapted to support a freight carrier mounted thereon for longitudinal movements with respect thereto, an elongated longitudinally extending rail having a substantially channel-shape lateral cross-section and provided with a web and a pair of flanges, means for mounting said rail on one outer side of said frame for longitudinal movements with respect thereto and with the edges of the flanges thereof disposed adjacent to said frame, said rail projecting laterally outwardly beyond the adjacent outer side of said platform and readily accessible from the exterior, and a plurality of longitudinally spaced-apart shock-absorbers housed within said rail and connected in parallel relation between said frame and the web of said rail, said rail being selectively connectible to a freight carrier mounted on said platform for longitudinal movements with respect thereto, whereby said shock-absorbers are adapted to afford a freight carrier mounted on said platform and connected to said rail protection against the transmission thereto of severe longitudinal shocks from said frame.

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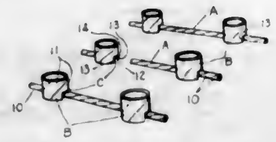
**3,168,878**
**HITCHES FOR ROAD SEMI-TRAILERS**
**Deodat Clejan, Chicago, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York**
**Filed July 10, 1963, Ser. No. 293,961**
**11 Claims. (Cl. 105—368)**



1. A hitch for a road semi-trailer comprising a pair of longitudinally extending and laterally spaced-apart supports, a standard, means for mounting the lower end of said standard upon said supports for pivotal movements with respect thereto and about an axis extending laterally of said supports, said standard being selectively pivotally movable with respect to said supports between a storage position and an erected position, said standard in its storage position being disposed between said supports and in its erected position being disposed principally from between said supports, an element extending laterally between said supports and mounted adjacent to the opposite ends thereof upon said supports for longitudinal sliding movements with respect thereto, said element being operatively connected to said standard, whereby said element is slid into first and second positions with respect to said supports in response to respective pivotal movements of said standard into its storage and erected positions, a latch bar extending laterally between said supports and mounted adjacent to the opposite ends thereof upon said supports for longitudinal sliding movements with respect thereto, the opposite ends of said latch bar respectively projecting through a pair of aligned longitudinally extending slots provided in said supports, a pair of longitudinally extending rails respectively resiliently mounted upon the outer sides of said supports for longitudinal movements with respect thereto, a pair of connections respectively arranged between the opposite ends of said latch bar and the adjacent ones of said rails, whereby said rails bias said latch bar into a normal position and resiliently cushion longitudinal sliding movements of said latch bar out of its normal position and with respect to said supports, latching mechanism having a set position connecting said standard to said latch bar and a trip position disconnecting said standard from said latch bar, means responsive to pivotal movement of said standard into its erected position for setting said latching mechanism, said standard in its erected position being biased by said connected latch bar into a normal upstanding attitude and being pivotable fore-and-aft with respect thereto longitudinally of said supports against the bias of said connected latch bar, means operative to trip said latching mechanism, said standard being biased into its storage position, whereby said standard is pivoted from its erected position back into its storage position in response to tripping of said latching mechanism with the result that said element is slid from its second position back into its first position, a buffer arranged between said supports and mounted thereon for longitudinal movements with respect thereto and disposed in the path of travel of said element, whereby said buffer is struck by said element in its sliding movement from its second position back into its first position, said buffer acting upon being struck by said element resiliently to absorb some of the kinetic energy possessed by said standard so as to prevent damage thereto in its pivotal movement from its erected position back into its storage position, and a fifth-wheel mechanism carried by the upper end of said standard and adapted to be disposed in the erected position of said standard below and in supporting relation with the front end of a cooperating road semi-trailer, said fifth-wheel mechanism also being selectively operative into a locked position connecting and holding a cooperating kingpin and into an unlocked position disconnecting and releasing a cooperating kingpin, said fifth-wheel mechanism and a supported and connected road semi-trailer being movable as a unit longitudinally of said supports effecting corresponding pivotal movement of said standard in its erected position fore-and-aft with respect to its normal upstanding attitude and longitudinally of said supports, whereby said connected rails limit and cushion the movements of the road semi-trailer longitudinally of said supports.



**3,168,879**
**PALLET STRUCTURE AND METHOD OF PALLETIZING**
**Alexander B. Clark, Jr., Box 2012, Hendersonville, N.C.**
**Filed Sept. 3, 1963, Ser. No. 306,107**
**3 Claims. (Cl. 108—55)**



1. A pallet assembly for shipping articles attached thereon by strapping including, a plurality of relatively small spaced tubular elements extending across a base dimension of the articles sought to be attached, and a plurality of spaced vertical relatively large hollow cylindrical members received upon the relatively small tubular elements, said relatively large cylindrical members having cut out portions therein to accommodate the relatively small tubular elements, whereby the strapping may be received by the relatively small tubular elements and passed upwardly around the large cylindrical members and over the articles forming a package.

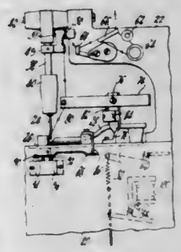
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**3,168,880**
**STANDS FOR SEWING MACHINE CABINETS**
**William Hofgesang, Avenel, and Edward W. Stanton, Cranford, N.J., assignor to The Singer Company, a corporation of New Jersey**
**Filed Sept. 25, 1962, Ser. No. 226,105**
**3 Claims. (Cl. 112—217.1)**



1. A stand for supporting the table portion of a sewing machine cabinet, said stand comprising a pair of tubular front legs, means connecting the said pair of front legs, a pair of tubular rear legs, means connecting said pair of rear legs, means for fastening the table portion of a sewing machine cabinet to said front and rear legs, a pair of tubular side brackets, means securing one of said front legs and one of said rear legs to one of said side brackets, means securing the other of said front legs and the other of said rear legs to the other side bracket, a treadle support bar connecting said two side brackets, a treadle carried by said treadle support bar, a band wheel, means rotatably supporting said band wheel from one of said side brackets, a brace having a semi-cylindrical arm secured to one of said side brackets, a pair of outreaching arms secured to said semi-cylindrical arm, a dress guard supported from said outreaching arms, and a treadle rod connecting said treadle to said band wheel.

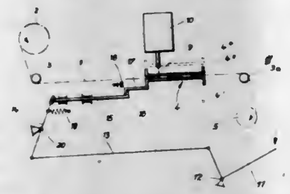
**3,168,881**
**SEWING MACHINE STOP MOTION**
**Joseph F. Morin, Westwood, Mass., assignor to The William Carter Company, Needham Heights, Mass., a corporation of Massachusetts**
**Filed Oct. 31, 1961, Ser. No. 149,095**
**10 Claims. (Cl. 112—219)**



1. A sewing machine stop motion for use in a high speed sewing machine having sewing mechanism including a reciprocating eye-pointed needle operative in high-speed repetitive cycles, and thread guiding means including a thread take-up having a thread guide located to provide a direct run of the needle thread from said thread guide passing through the needle eye to the work, which comprises a detector arm pivotally mounted on said machine to move generally in the direction of said run, a thread engaging element on said detector arm engaging and deflecting an intermediate portion of said run to form a transverse indent in said thread with the two legs thereof terminating respectively in said needle eye and in said thread guide, said arm being biased in a direction to urge said thread engaging element toward one end of said run, whereby the intermittent tightening of said run of thread in high-speed repetition with each needle reciprocation nudges said thread engaging element and detector arm to an intermediate running position tending toward that in which the legs of said indent are of equal length, and a machine stop device arranged to be actuated by the biased movement of said detector arm and thread engaging element toward one end of said run from said machine running position.

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**3,168,882**
**METHOD OF TENSIONING YARD GOODS TO BE EMBROIDERED**
**Josef Scholl, Krefeld, and Eduard Sarson, Willich, Germany, assignors to Maschinenfabrik Carl Zange Aktiengesellschaft, Krefeld, Germany**
**Filed Jan. 15, 1962, Ser. No. 166,741**
**Claims priority, application Germany, Jan. 17, 1961, M 47,707**
**1 Claim. (Cl. 112—266)**

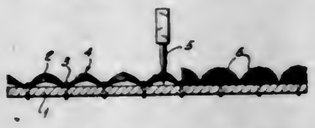


A method of embroidering successive adjacent sections of a web of yard good material rolled from a winding-off roller onto a winding-up roller by means of an embroidering frame and a punch card apparatus connected to the frame to control the movement thereof, which includes the steps of: tensioning the entire length of said web of material between said rollers, clamping a region of the tensioned web of material in said frame, releasing

the tension of said web of material between the frame and the rollers, engaging the frame with the punch card apparatus, embroidering an area of the clamped region while moving the frame under the control of the punch card apparatus, disengaging said punch card apparatus from the frame, again tensioning said material between said rollers, unclamping the frame from the material, displacing said embroidering frame in longitudinal direction of said web of material in a direction opposite to the direction of movement of the web of material from said winding-off to said winding-up roller and by the respective length of the respective repeat pattern being embroidered, clamping the new section of the web of material to be embroidered into said frame, and releasing the tension on the web of material between said frame and said rollers to allow for a movement of said frame by the length of the respective repeat pattern, again connecting the frame to the punch card apparatus, and embroidering another area of said web of material adjacent to the first mentioned area.

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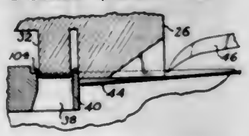
**3,168,883**
**VELVET-LIKE PILE PRODUCTS**
**Siegfried Ploch and Heinz Zschanke, Karl-Marx-Stadt, Germany, assignors to Forschungsinstitut fur Textiltechnologie, Karl-Marx-Stadt, Germany**
**Filed July 20, 1961, Ser. No. 125,443**
**2 Claims. (Cl. 112—411)**



1. A velvet-like ribbed fabric comprising a ground cloth and a plurality of velvet-like ribs secured to an exterior surface of said cloth, each of said ribs comprising a plurality of closely adjacent rounded tufts of fibers, the tufts of each rib being separate and sewn to said exterior surface by a longitudinal threaded seam, the tufts in each rib being aligned in a direction transverse to said ribs with the corresponding tufts of the adjacent ribs.

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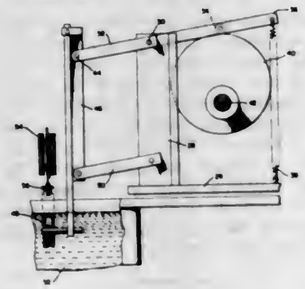
**3,168,884**
**DEVICE FOR PROTECTING DOOR EDGES, AND METHOD AND APPARATUS FOR FORMING SAME**
**Ivan A. Williams, deceased, late of Portland, Oreg., by Esther M. Williams, executrix, 4315 NE. 96th Ave., Portland, Oreg.**
**Filed June 9, 1960, Ser. No. 35,089**
**1 Claim. (Cl. 113—51)**




The method of forming an edge protecting device from a rectangular blank of bendable material of uniform thickness, comprising forcing the blank through a die opening of uniformly less peripheral dimension than the periphery of the blank by means of a die member whose peripheral dimension is uniformly less than the peripheral dimension of the die opening substantially by the thickness of the blank, thereby bending a peripheral section of the blank to form a body portion and an integral apron extending peripherally around the body portion perpendicularly from one side thereof, with the apron having the same thickness as the body portion, and continuing forcing the blank through the die opening sufficiently to cause extrusion of the excess material from the corner bends of the apron to form outwardly projecting prong members as integral extensions of the apron at the corners thereof, with each prong member diminishing in thickness outwardly from the apron and having outer edges which taper laterally outward and also converge substantially at a point.

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**3,168,885**
**METHOD AND APPARATUS FOR THE MANUFACTURE OF CAPACITORS**
**Felix S. Weiss, Chestnut Hill, Mass., assignor to Cornell-Dubilier Electric Corporation, South Plainfield, N.J., a corporation of Delaware**
**Filed Mar. 13, 1959, Ser. No. 799,378**
**14 Claims. (Cl. 113—126)**



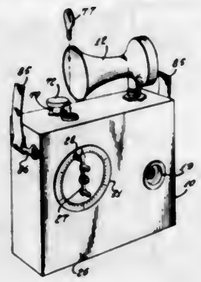
1. In fabrication apparatus for electrical components of the type having a body portion and terminal wires that extend in a common direction from said body portion, said apparatus being of the class wherein a web of conveyor material serves as an incrementally advanceable carrier for uniformly spaced pluralities of progressively formed subassemblies mounted thereon, an immersion coating device for effecting the successive application of liquid material to the body portion and the adjacent terminal-wire portions of said subassemblies comprising a reservoir for holding a relatively large quantity of liquid material, means for sequentially dependently positioning said subassemblies above said reservoir at a predetermined level with said body portion and the adjacent terminal-wire portions to which said liquid material is to be applied defining a pair of locations spaced apart a substantial extent in the vertical plane, and cyclicly operable ladle means for elevating relatively small contained portions of said liquid material above the surface of said reservoir and therebeyond to elevate the surface of the small contained portions of liquid material to the height necessary to effect immersion therein of said body portions and said adjacent terminal-wire portions of said subassemblies disposed intermediate said pair of spaced locations.

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**3,168,886**
**AUDIBLE TIME-CONTROLLED ALARM DEVICE**
**Charles E. Graham Reeves, Summit, N.J., assignor, by mesne assignments, to Falcon Alarm Company, Springfield, N.J., a partnership**
**Filed May 3, 1961, Ser. No. 107,393**
**8 Claims. (Cl. 116—24)**

1. An audible time-controlled alarm device comprising an audible fluid-responsive signal device, a pressurized fluid container, conduit means between the container and the signal device including a valve, a timer manually settable for any selected period, means automatically responsive to the operation of said timer (1) for opening said valve for a transient period near the end of the timer set period to operate said signal device to sound a preliminary alarm, (2) for closing said valve at the end of said transient period to cease the operation of said signal device, and (3) for again opening said valve at the end of the timer set period to again operate said signal device to sound a final alarm, and manually controllable means

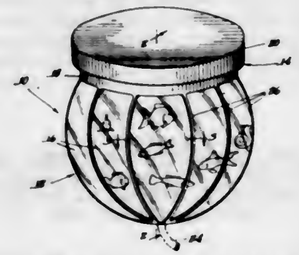




for rendering said valve opening and closing means inoperative after said preliminary alarm is sounded and before said final alarm is sounded.

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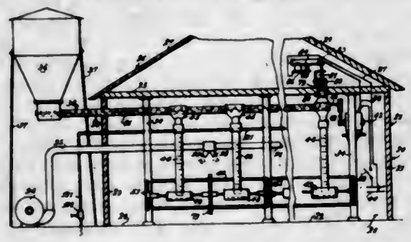
**3,168,887**
**SHIPPING AND STORAGE CONTAINER FOR AQUATIC LIFE**
**Bruce R. Bodell, 251 E. Chicago Ave., Chicago 11, Ill.**
**Filed June 14, 1963, Ser. No. 287,953**
**7 Claims. (Cl. 119—3)**



1. A receptacle for containing and shipping live aquatic life comprising a water impervious envelope having a thin, translucent film wall of silicone rubber with a low moisture vapor transmission rate and a relatively high oxygen and carbon dioxide permeability, said envelope being substantially filled with a mixture of water and aquatic life, and means for closing said envelope whereby water will not flow through the wall but oxygen and carbon dioxide will ingress and egress, respectively, to permit the aquatic life to exist without deterioration.

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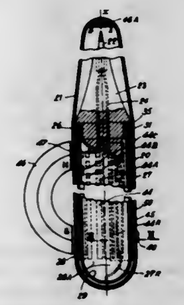
**3,168,888**
**METHOD OF FEEDING DAIRY COWS**
**Merrill S. Brodrick, 58 College Ave., Mansfield, Pa.**
**Filed July 17, 1962, Ser. No. 210,449**
**2 Claims. (Cl. 119—51)**



1. A method of dairy cow self-feeding to obtain optimum cow performance, comprising the steps of restraining the cow in an enclosed habitat area, providing the cow with an unlimited quantity of only one uniformly blended complete feed, which has a nutrient range of from about 6 to 18% crude protein, 1 to 5% fat, 40 to 80% T.D.N., and a nutritive ratio between 1:3.0 to 1:9.0, providing the feed in a feed dispenser, and permitting the cow random, unlimited access to the feed in the dispenser.

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**3,168,889**
**FOUNTAIN PEN**
**George A. Rubinsow, 420 Riverside Drive, New York 25, N.Y.**
**Filed Mar. 6, 1961, Ser. No. 107,875**
**15 Claims. (Cl. 120—46)**



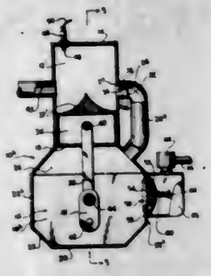
15. A fountain pen having a casing and an easily bendable substantially self-collapsible thin walled ink-receiver placed inside of said casing substantially adjacent to its inner surface and having a pen-holding member secured within an end thereof, said member having ink-channels therethrough, said ink-receiver having an open end hermetically sealed to said member and communicating with said channels, said ink-receiver being subdivided longitudinally into two substantially half parts, a first non-movable part and a second movable part, said first non-movable part being provided with attaching reinforcing means which hold it unmovably in respect to the adjacent part of the inner surface of said casing, said second movable part being provided with magnetically attractable means attached to it but not attached to said inner surface of said casing, whereby when a magnet is placed outside of said casing substantially along said second movable part, said second movable part will be moved to-and-fro by the force of said magnet thus exercizing respectively an action of pumping or of evacuating the ink into or from said ink-receiver.

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**3,168,890**
**FREE BREATHING TWO CYCLE INTERNAL COMBUSTION ENGINE**
**William F. Eilert, 80 Reed Ave., Pelham Manor, N.Y.**
**Filed Oct. 16, 1962, Ser. No. 230,829**
**1 Claim. (Cl. 123—73)**

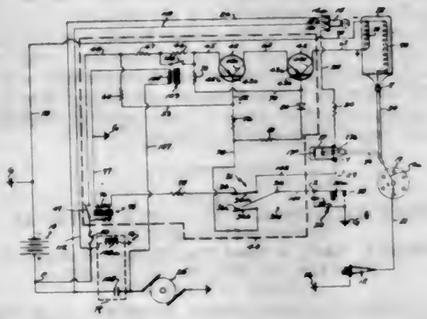
A two-cycle internal engine comprising a gas-tight crankcase, a cylinder mounted on said crankcase with the lower open end thereof disposed over a complementary opening in the top wall of said crankcase and the upper end thereof closed by a cylinder head; a rotatably mounted crankshaft having a crank disposed within said crankcase; a hollow piston, open at the lower end thereof and closed at the upper end thereof by a piston head, reciprocally mounted in said cylinder; a wrist pin carried by said piston, a connecting rod connected between said crank and said wrist pin; a check valve in the crankcase wall through which fuel is supplied to said crankcase; a fuel supply conduit connected between said

crankcase and an intake port in said cylinder through which fuel is supplied to said cylinder from said crankcase, a check valve disposed in said supply conduit; an exhaust conduit connected to a discharge port in said cylinder through which burnt gases are discharged from said cylinder; said intake and discharge ports being disposed in axial alignment with each other intermediate the upper and lower ends of said cylinder in position to be opened by said piston when said piston is in substantially mid-position on the downward stroke thereof; ignition means mounted in said cylinder head; the upper surface of said piston head comprising an inverted wedge having a transversely extending apex which is disposed perpendicular to the aligned axes of the said cylinder intake and discharge ports in vertically spaced relation to said piston head, and a pair of opposed concave side walls which extend downwardly and outwardly from said apex; the wedge-shaped upper surface of said piston head serving as a partition between the said intake and discharge ports of said cylinder to direct incoming gaseous fuel upwardly in said cylinder and the burnt gases downwardly and out through said discharge port into said exhaust conduit.



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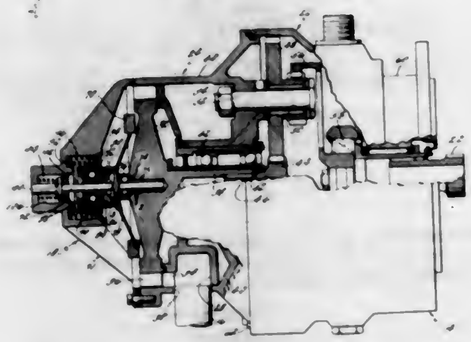
**3,168,891**
**TRANSISTOR IGNITION SYSTEM**
Peter Cook, 763 N. Elmwood, Wickliffe, Ohio
Filed Aug. 19, 1963, Ser. No. 302,982
7 Claims. (Cl. 123—148)



1. An ignition system for an internal combustion engine comprising a source of electrical energy, a distributor element connecting to the fuel igniting means for said engine, a primary firing signal generating means, a secondary firing signal generating means, conductor means for selectively connecting one of said generating means to said distributor element, and switch means connected to each of said signal generating means for selectively connecting one of said generating means to said energy source.

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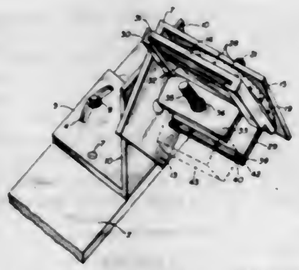
**3,168,892**
**STARTER CONTROL MECHANISM**
Raymond N. Quenneville, Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 28, 1961, Ser. No. 127,693
8 Claims. (Cl. 123—179)



1. Control apparatus comprising a rotor, means for rotating the rotor, control means for regulating the speed of the rotor, means responsive to the acceleration of said justing said acceleration responsive means, means responsive to said acceleration responsive means for further controlling said control means for scheduling the acceleration of said rotor as a function of a predetermined speed.

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**3,168,893**
**SEMIPRECIOUS STONE CUTTING VISE**
Frank O. Johnson, 1765 W. 15th St., Casper, Wyo.
Filed Dec. 26, 1962, Ser. No. 247,147
3 Claims. (Cl. 125—13)

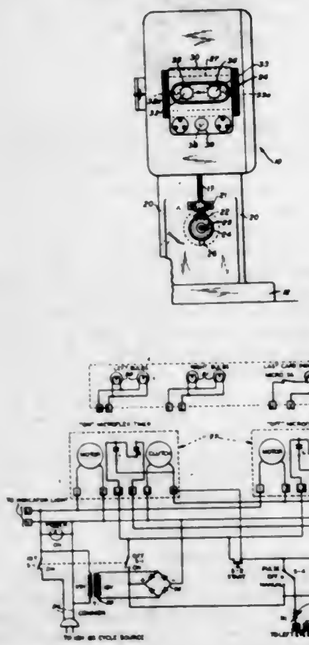


1. A vise carried by a planar supporting member comprising a right angled base brace including a planar surface portion abutting the supporting member and being capable of limited arcuate adjustment about a pivotal connection therewith, said base brace including a planar upper brace portion, a vise frame including a planar inner frame portion and a planar back frame portion at right angles to one another, said inner frame portion being selectively, rotatably connected with the upper brace portion of the base brace about a pivot bolt extending therethrough, a planar vise support plate abutting and adjustably secured to the back frame portion of the vise frame, workholding jaws carried by said support plate, said jaws being movable relative to one another in a plane parallel to the surface of said support plate, and said vise support plate being provided with integrally formed slide guides to support and guide one of said workholding jaws.



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**3,168,894**
**VISION TRAINER**
Harry Hollander 23 Burt Court, Valley Stream, N.Y.
Filed July 2, 1962, Ser. No. 206,677
5 Claims. (Cl. 128—76.5)

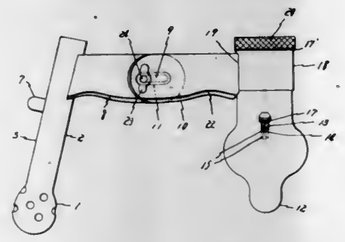


1. Vision training apparatus comprising a viewing box provided with eye holes, a shade against ambient illumination, lenses adjustable to compensate for astigmatic differences between the lenses and the eyes of a patient to be trained; a drum structure within the box rotatable on a horizontal axis by means controllable by the patient, the drum structure carrying peripherally a sequence of targets each designed to test particular optometrical properties; lights within the box for illuminating the targets; and means controllable by an optometrist for selectively illuminating each target brought into the patient's field of vision continuously or intermittently; for timing the periodicity of illumination, and for varying the intensity of illumination, said box containing at least one light for the left side and at least one light for the right side of the target in the patient's field of vision; and leads connecting the lights with the means controllable by the optometrist; and wherein the means are provided with a source of power; with two variable independent timers for the lights relating to the left and right sides of the target, with means for actuating the timers connected with the source; with two independent rheostats for the lights relating to the left and right sides of the target; and selective switching means for directly connecting both lights simultaneously with the source in series through one of the timers, for connecting both lights with the source with one light in series with one timer and the other light in series with the other timer, for connecting both lights with the source with one light in series with one rheostat and the other light in series with the other rheostat, and for connecting both lights with the source in series with one of the rheostats.



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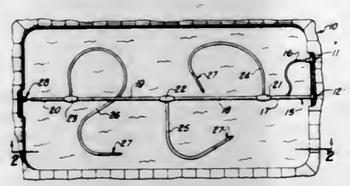
**3,168,895**
**THERAPEUTIC INSTRUMENT FOR APPLICATION OF HEAT AND COLD**
Motoharu Okuhara, 374 Tsubol, Mishima-cho, Mishima-gun, Osaka-fu, Japan
Filed Nov. 19, 1962, Ser. No. 238,534
5 Claims. (Cl. 128—399)



1. A therapeutic apparatus, comprising a hollow heat bulb, a hollow slender body on one end of which said heat bulb is mounted, means mounted within said slender body for heating said heat bulb, a heat bulb arm on one end of which said slender body is attached, a hollow cool bulb, a slender body on one end of which said cool bulb is mounted, and a cool bulb arm on one end of which said cool bulb slender body is mounted, the other ends of said arms being adjustable attachable to each other, whereby said arms can be positioned to bring said heat bulb and said cool bulb close together or spaced relatively far apart.

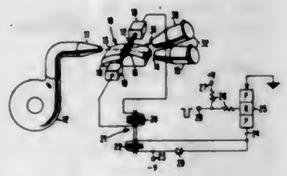
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**3,168,896**
**CLEANING DEVICE FOR SWIMMING POOLS**
Jack A. Berg, North Hollywood, Calif., assignor to Marine Swimming Pool Equipment Company, North Hollywood, Calif., a corporation of California
Filed Sept. 9, 1963, Ser. No. 307,529
7 Claims. (Cl. 134—167)



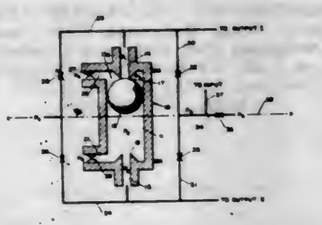
1. A device for automatically removing the sediment collected on the walls of a swimming pool having a vacuum outlet and a pressurized inlet, comprising a flexible hose including a first line and a second line, said first line having one end connected to said pressurized inlet so that water under pressure is discharged from its other end, said second line having one end connected to said vacuum outlet, a suction head connected to the other end of said second line, said suction head being immediately adjacent said first line and having a plurality of differently directed radial holes therein for exhausting water from said pool, said first line extending beyond said suction head so that the water discharging from said first line causes said first line and said suction head to move over the walls and floor of said pool whereby the sediment loosened from said walls and floor by said discharging water is removed from the region of the pool surrounding said suction head through the passageways thereof.

3,168,897
FLUID CONTROL APPARATUS
Lester R. Adams, Endwell, and Bernard J. Greenblott, Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 22, 1961, Ser. No. 161,709
7 Claims. (Cl. 137—81.5)



1. Fluid control apparatus to which pressurized fluid is supplied, comprising, in combination:
(*a*) nozzle means for directing said fluid as a stream toward a target area; and
(*b*) electrical spark-producing means adjacent said stream for diverting said stream from said target area.

3,168,898
BINARY FLIP-FLOP ELEMENT FOR PNEUMATIC DIGITAL COMPUTER
Frank Samet, New York, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed June 4, 1962, Ser. No. 199,671
6 Claims. (Cl. 137—119)



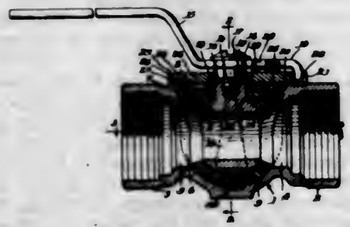
1. In combination with a bistable pneumatic element including a valve member shiftable between two stable, passage-closing positions by means of pressure changes at the respective outlets of the passages controlled by the valve member,
a pneumatic circuit comprising:
a pair of parallel branches having common inlet and outlet portions;
respective, identical, flow restrictions in said branches adapted to produce critical flow under all operating conditions of the circuit;
additional, respective, identical flow restrictions in said parallel branches downstream of the first-mentioned flow restrictions adapted selectively to produce critical and subcritical flow depending on operating conditions of the circuit;
respective flow connections between said passages and said parallel branches at respective points between the flow restrictions therein;
respective output pressure signal connections to said parallel branches at respective locations intermediate the downstream flow restriction and flow connection point of the corresponding passage; and
an input pressure signal connection to said common outlet portion.

3,168,899
MULTI-FUEL HEATER CONTROL VALVE
Jesse B. Mellett, Zionsville, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed May 3, 1961, Ser. No. 107,537
2 Claims. (Cl. 137—341)



1. In a heater control valve having a valve body through which a restricted flow passageway extends from an inlet port to an outlet port for transmitting high viscosity fuel from a fuel source at a rate dependent on the pressure drop across said restricted passageway and the fuel viscosity and wherein said inlet port is adapted to be controlled by a pressure regulator valve disposed in a chamber through which said fuel is adapted to pass and said outlet port is adapted to be controlled for permitting the passage of said fuel therethrough, the improvement comprising an electrically insulating body in said chamber, and a plurality of spaced apart electrically conductive serially connected bare strands of a heating element carried by said body and adapted to be submerged in the fuel in said chamber for direct contact with the fuel in said chamber, whereby said fuel is adapted to be directly heated by said element on energization of said heating element for lowering the viscosity of said fuel in order to maintain a desired pressure drop across said passageway.

3,168,900
BALL VALVE WITH FLEXIBLE BONNET
George E. Hansen, Elmwood Park, Carl R. Stone, Lombard, and Anton Kerszewski, Brookfield, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 23, 1962, Ser. No. 181,928
6 Claims. (Cl. 137—454.6)

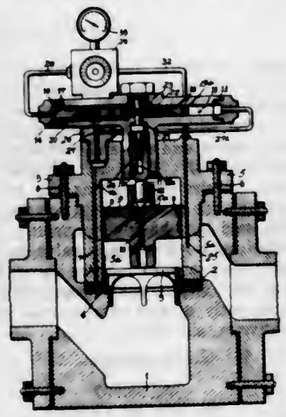


1. A ball valve comprising a casing with inlet and outlet ports and a substantially frusto-conical valve chamber therebetween;
a hollow flexible ported frusto-conical seat member with a spheroidal chamber and with an inner substantially rounded end wall non-rotatably mounted in said casing to cover a wall surface in a plurality of planes defining said valve chamber except for that ported portion thereof communicating with said ports constituting the inlet and outlet;
a spheroidal ported closure member rotatably slidable in fluid sealing relation within the spheroidal chamber of said seat member;
bonnet means cooperating with an upper open portion of the valve chamber of the casing to bear abuttingly against an upper outer transverse surface portion of said flexible seat member to effect a compression load against said seat member around said closure member;



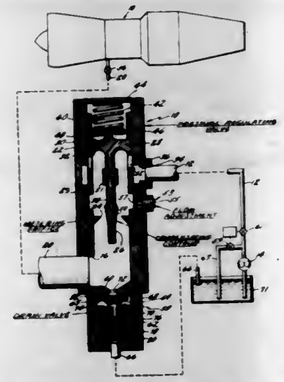
and plurality of sealing means between said bonnet means and said outer transverse surface of said seat member comprising a washer-like plate and a plurality of O-rings extending respectively in identical planes around inner and outer peripheral portions of said washer-like plate;
the said bonnet means bearing against said washer-like plate and O-rings and being flexible and resilient to a predetermined degree whereby to permit slight expansion of said seat member axially outward upon attachment and flexing of said bonnet means relative to said casing at annular portions thereof in inner and outer perimetral relation to said bonnet means, the said bonnet means deflecting within its elastic limit an amount sufficient to accommodate the volume of the said washer-like plate and seat member projecting beyond the surface defining the outer limits of said casing valve chamber.

3,168,901
LIQUID PRESSURE AUTOMATIC REGULATION VALVE
Eizaburo Murakami, 619–19 Osaki Honcho 3-chome, Shinagawa-ku, Tokyo, Japan
Filed Jan. 22, 1963, Ser. No. 253,094
Claims priority, application Japan, Feb. 3, 1962, 37/4,054
3 Claims. (Cl. 137—492)



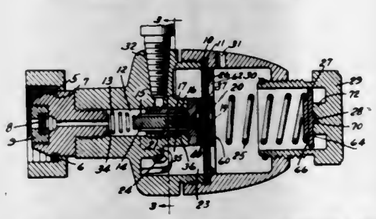
1. A valve for automatically regulating liquid pressure, said valve comprising a valve casing having an inlet and an outlet and a passage therethrough between the inlet and the outlet, a valve seat in said passageway, a main valve body movable toward and away from said seat for blocking the passage, rotatable valve body driving means coupled to said main valve body for moving said main valve body toward and away from said valve seat, a drive shaft coupled to said rotatable valve body driving means, a pinion on said drive shaft, a rack engaged by said pinion, a larger diameter piston-cylinder means at one end of said rack and adapted to engage said rack, a smaller diameter piston-cylinder means at the other end of said rack and adapted to engage said rack, an auxiliary valve having two control valves in opposed relation to each other and having a communicating chamber between them and into which said control valves open, said communicating chamber being connected to said larger diameter piston-cylinder means, means connecting the smaller piston-cylinder means and one end of one control valve to the inlet of said main valve casing, means connecting the one end of the other control valve to the outlet of said main valve casing, a Bourdon tube having one end fixed to the auxiliary valve, lever means connected to the other end of said Bourdon tube, control valve actuating means connected to said lever means, and said Bourdon tube being in communication with said main valve casing on only one side of said main valve body.

3,168,902
CONSTANT VOLUME FLOW CONTROL VALVE
David R. Pearl, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 136,045
11 Claims. (Cl. 137—501)



1. A valve adapted to control the flow of fluid at a constant value comprising a housing having an inlet and outlet, a fixed metering orifice disposed between the inlet and outlet, adjusting means including a movable member adapted to move in the valve for restricting fluid flow for maintaining the pressure drop across the orifice at a constant value, a contoured plug extending through said orifice and connected to said movable member and moveable in response to said adjusting means.

3,168,903
FLUID PRESSURE REGULATOR HAVING MEANS TO REDUCE HUM
David S. Pearl, 1344 NE. 13th Ave., Fort Lauderdale, Fla.
Filed Aug. 15, 1960, Ser. No. 49,517
12 Claims. (Cl. 137—505.42)

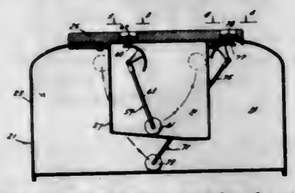


1. A fluid pressure regulator for regulating the fluid output pressure of a variable fluid pressure source, comprising, in combination, a casing, said casing having an inlet passage and an outlet passage, a valve between said inlet and outlet passages, a flexible diaphragm fixedly positioned within said casing, said valve including a movable carrier element, stem means for moving said carrier element upon movement of said diaphragm, said stem means being attached to said carrier element and being in abutting relationship with said diaphragm, an adapter body member positioned in said inlet passage at its downstream end, said carrier element being movably positioned for at least a portion of its length in said adapter body and slideably fitted therein and said stem means extend-

ing through and beyond said adapter body, a frustoconically shaped valve closing spring positioned in said inlet passage at its upstream end, said frustoconically shaped valve closing spring being attached at its top portion to said carrier element, the ratio of the outside diameter of the top of said spring to the outside diameter of the bottom of said spring to the axial length of said spring to the length of the portion of the carrier element positioned within said adapter body when said valve is in the closed position being about 1 to about 1.4 to about 2 to about 3.5, whereby a substantially constant predetermined fluid output pressure of the outlet fluid is obtained while hum is suppressed without any wear of any component element.

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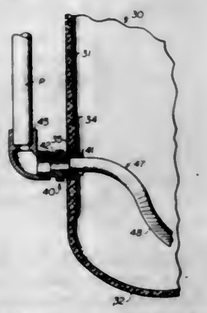
**3,168,904**
**DUAL COMPARTMENT GAS TANK**
Warren C. Conover, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,088
6 Claims. (Cl. 137—558)



1. A fuel tank comprising a chamber for storing a fuel-oil mixture and gauge means associated with said chamber for facilitating filling of said chamber with a fuel-oil mixture having a predetermined ratio of fuel and oil, said gauge means including marking means for indicating the quantity of fuel and the quantity of oil which will fill the available volume in said chamber with a fuel-oil mixture having said predetermined ratio of fuel and oil.

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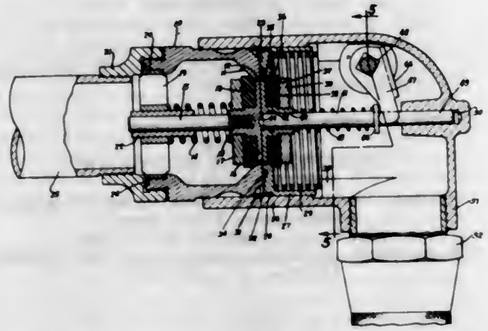
**3,168,905**
**PLASTIC FITTINGS**
Arthur J. Wiltshire, Cleveland, Ohio, assignor to Structural Fibers, Inc., Chardon, Ohio, a corporation of Ohio
Filed June 29, 1961, Ser. No. 120,698
1 Claim. (Cl. 137—599)



A water softener tank assembly comprising a fiber-reinforced plastic tank, said tank having a top wall, a bottom wall, and a cylindrical side wall, said side wall having a threaded hole formed therethrough, a pipe fitting having a male end threadedly engaged within said hole, said fitting being formed of plastic and having a lower modulus of elasticity than the material of said tank so that its male end will expand within said hole when subjected to internal fluid pressure, and such expansion will be restrained by the surrounding material of the tank to thereby maintain a fluid-tight connection, and a distributor tube, said tube having one end engaged within said male end of said fitting and having its other end extending downwardly within said tank to a position closely adjacent said bottom wall.

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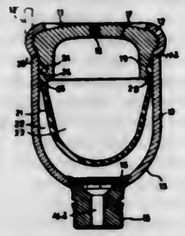
**3,168,906**
**DISCONNECTIBLE COUPLING**
Walter V. Brown, Minneapolis, Minn., assignor to Brown Steel Tank Company, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 4, 1963, Ser. No. 256,585
9 Claims. (Cl. 137—627.5)



1. A quick disconnect faucet comprising: a tubular member, a cup slidably mounted in said tubular member, a sliding gasket means between said cup and said tubular member, a stop within said tubular member, a spring compressed between said cup and said stop, and a second stop on the inside of said tubular member spaced from said first stop means and limiting the extent to which said spring may slide said cup with relation to said tubular member, said cup having an opening in its center bottom comprising a valve seat, a valve yieldingly engaging said valve seat, said valve being bored, a rod slidable in said valve bore, and means engaged with said rod and extending exteriorly of said tubular member for sliding said rod relative to said valve.

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**3,168,907**
**PRESSURE VESSEL**
Jean Mercier, 1185 Park Ave., New York, N.Y., and Jacques H. Mercier, New York, N.Y.; said Jacques H. Mercier assignor to Mercier Olaer Patent Corporation, Wilmington, Del., a corporation of Delaware
Filed May 17, 1962, Ser. No. 195,456
Claims priority, application France May 30, 1961
4 Claims. (Cl. 138—30)



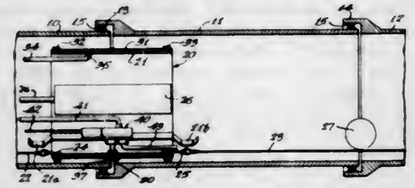
1. A pressure vessel comprising a rigid hollow container having an enlarged diameter mouth and having a port at the other end, a cover member adapted to be positioned in the mouth of said container, said cover member having a port therein, means securely to retain said cover member in place, a flexible separator of resilient deformable material positioned in said container and intervening between said ports, said separator having two



spaced annular beads near its periphery positioned on the side of the separator adjacent the port in the cover member, said cover member having a cylindrical portion extending into said container, said cylindrical portion having an annular groove on its outer surface adapted to receive the annular bead adjacent the periphery of the separator, the spacing between the depending portion and the adjacent wall surface of the container being such as to place said annular bead under lateral compression forming a seal between said depending portion and the adjacent wall of the container, the distance between said annular beads being such that when said first bead is under compression, the free end of the depending portion of said cover member will react against the second bead also maintaining the latter under compression and maintaining the intermediate zone between said annular beads under tension.

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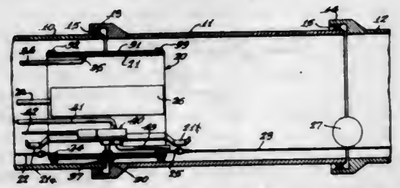
**3,168,908**
**MECHANISM FOR THE INTERNAL SEALING OF A PIPE LEAK**
James A. Zarbrigen, Evanston, and Jack C. Steinsberger, Highland Park, Ill., assignors, by mesne assignments, to The Penetryn System, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 1, 1959, Ser. No. 803,442
2 Claims. (Cl. 138—97)



1. A pipe leak sealing mechanism comprising an open-ended cylindrical casing of a size less than the pipe, oppositely extending tow cables for drawing the casing through the pipe, an air impervious inflatable skin mounted on the casing exterior with the ends of the skin sealed to the ends of the casing, a conduit passing through an open end of the casing adapted to supply a fluid under pressure to the space between the casing and the skin, injection means passing through the casing and the skin intermediate the ends of the skin, said injection means producing a void between the skin and the interior of the pipe, and means for directing a settable sealant through said injection means whereby the sealant may flow into said void and thence into the pipe leak.

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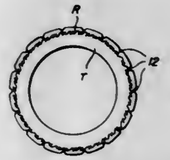
**3,168,909**
**METHOD FOR LOCATING AND SEALING PIPE LEAKS**
James A. Zarbrigen, Huron, S. Dak., and Jack C. Steinsberger, Deerfield, Ill., assignors to The Penetryn System, Inc., Cleveland, Ohio, a corporation of Ohio
Original application Apr. 1, 1959, Ser. No. 803,442. Divided and this application June 8, 1962, Ser. No. 201,146
12 Claims. (Cl. 138—97)



1. A method for internally sealing a pipe leak by means of a packer comprising moving the packer along the interior of the pipe until a target located a fixed distance ahead of the packer is at the leak; advancing the packer by an amount equal to said fixed distance to place the packer at the leak; isolating the leak from the remainder of the pipe; and injecting a settable material into the leak from the interior of the packer.

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**3,168,910**
**REINFORCED AUTOMOTIVE HEATER HOSE OR THE LIKE AND METHOD OF MAKING IT**
Frederick M. Galloway, Langhorne, and Robert H. Sinnamon, Huntingdon Valley, Pa., assignors to H. K. Porter Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed May 23, 1962, Ser. No. 197,156
6 Claims. (Cl. 138—137)



1. A hose comprising a unitary elastomeric tubular body, a yarn reinforcement embedded within and encased by said body, the latter having a plurality of circumferentially spaced inwardly directed longitudinal grooves, the reinforcement at isolated intervals defining spaced minute portions of said grooves at their apices, the body being integral within and without said reinforcement and extending through interstices therein.

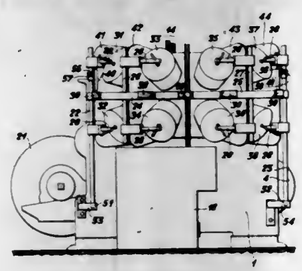
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**ERRATUM**

For Class 139—122 see:
Patent No. 3,169,248

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**3,168,911**
**LOOMS**
Erwin Pfarrwaller, Winterthur, and Luciano Conti, Oberwinterthur, Switzerland, assignors to Sulzer Freres, Societe Anonyme, Winterthur, Switzerland, a Swiss company
Filed Nov. 8, 1962, Ser. No. 236,370
Claims priority, application Switzerland Nov. 10, 1961
9 Claims. (Cl. 139—122)

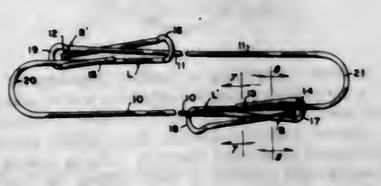


1. In combination with a loom which includes a frame for supporting a heddle, a reed, a shuttle, and warp and cloth beams, wherein movement of said heddle defines a shed for the insertion of a weft thread therethrough by transverse movement of the shuttle with respect to a plurality of warp threads extending intermediate the warp and cloth beams, a creel comprising two vertical hinge rods positioned adjacent to one side of said loom frame, a horizontal support rail rigidly connected to each of said

hinge rods and defining therewith a creel section, a plurality of supporting arms for mounting individually upon each arm a weft spool, said arms each being connected to one of said rails, a bearing cup connected to a lower portion of said loom frame for receiving the lower end of each of said hinge rods, a sleeve slidable upon an upper portion of each of said rods, a retaining bracket secured to the side of said loom frame to hold each of said sleeves, a respective set of said bearing cups, hinge rods, sleeves and retaining brackets comprising hinge elements permitting swinging movement of each of said creel sections toward an operating position with respect to the loom and away from said operating position to permit access to the loom, and means for interlocking said creel sections in adjoining relation when in said operating position.

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3,168,912
METHOD OF TYING KNOTS IN WIRES
Glen E. Marica, Denver, Colo. (Rte. 1, Box 336, Morrison, Colo.)
Filed Jan. 2, 1962, Ser. No. 163,678
10 Claims. (Cl. 140—101)



1. A method of joining the ends of two wires together, which wires are either parallel or in axial alignment, comprising forming a loop at an end of each wire by bending said wires adjacent their ends but in opposite directions; bending a portion of each said loop out of the plane of the respective loop but in opposite directions; superimposing one loop in the other loop so that the end of each loop is within the bight of the other loop and each wire is disposed in the bight of the loop of the other wire; and pulling said wires longitudinally and away from each other, so that the end of each loop is drawn through the bight of the other loop, with sufficient force to form a knot.

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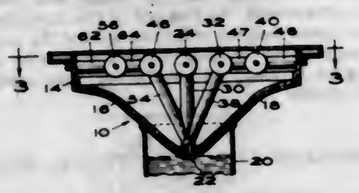
3,168,913
DISPENSER
Robert P. Eagles, 5915 Warwick Road, Richmond, Va.
Filed Feb. 3, 1964, Ser. No. 341,916
4 Claims. (Cl. 141—23)



1. A fluid dispenser comprising a cap portion adapted to be detachably secured to a container for said fluid, a transparent receptacle carried by said cap and adapted to project toward the bottom of said container, a piston slidably received in said container, an operator movably carried by said cap, and means connecting said operator to said piston whereby upon movement of said operator said piston is displaced to introduce or expel measured amounts of said fluid from said receptacle.

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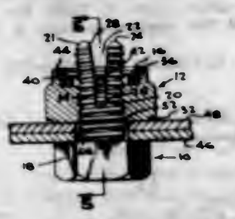
3,168,914
APPARATUS FOR PROVIDING HOT AND COLD BEVERAGES AND FOR SELECTIVELY DISPENSING SAME IN MOTOR VEHICLES
James R. Brown, 797 Belhaven Crescent, Burlington, Ontario, Canada
Filed May 18, 1962, Ser. No. 195,757
5 Claims. (Cl. 141—59)



1. A beverage dispenser for use in the dispensing of beverages into a receptacle for use in an automobile having an internal combustion engine with an intake manifold, said automobile having a dashboard, said dispenser comprising; a generally flat, plate-like housing adapted to be mounted on said dashboard; a dependent substantially semi-spherical dispensing head extending from the lower side of said housing contoured to fit within and sealably engage an upper portion of a said receptacle, and having a discharge opening therein; discharge tube means extending upwardly from said opening; vacuum pipe means in said housing adapted to communicate between said head and said intake manifold; a plurality of valves in said housing, and comprising parallel drillings formed in the plane thereof, valve seats in said drillings, closures for said valve seats, and rods extending from said closures to the exterior of one side of said housing; a first said valve interconnecting said discharge tube means and said vacuum pipe means; a plurality of liquid supply pipes extending into said housing; second said valves for each of said liquid supply pipes; a series of tubes interconnecting said second valves and said discharge tube means whereby, when a said receptacle is placed in sealing engagement with said head in registration with said opening, and said first valve is opened, a vacuum will be applied retaining said receptacle thereon and causing liquid flow therethrough as said second valves are selectively opened.

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3,168,915
SELF-LOCKING BOLT AND NUT
Charles Frank, 436 New Lots Ave., Brooklyn 7, N.Y.
Filed Mar. 6, 1962, Ser. No. 177,805
2 Claims. (Cl. 151—31)



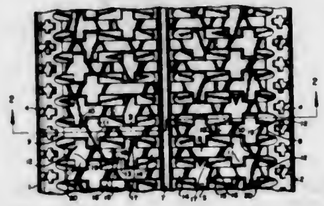
1. For use in combination, a bolt having a threaded shank with a reduced outer end, and a diametral, axially directed slot opening through said outer end, the walls of said slot being bevelled at at least one of the outer



corners thereof, and a nut having a threaded opening adapted to mate with said shank, and a first counterbore in surrounding relation to said opening, a ring loosely mounted in said first counterbore, in surrounding relation to said opening, and having a diametral cross member exceeding said slot in width, and substantially coextensive in depth with said ring, axially of the bolt, a second counterbore in surrounding relation to said first counterbore, and a ring received in said second counterbore, and overlying the outer edge of the first-mentioned ring, the outer edge of said nut being turned in overlapping relation to the second-mentioned ring.

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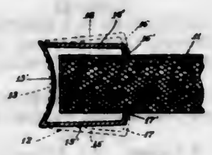
3,168,916
OVERLAPPING CROSSES IN TREADS FOR TIRES
Michael Tiborcz, 714 Market St., Akron, Ohio
Filed Aug. 30, 1963, Ser. No. 305,664
1 Claim. (Cl. 152—209)



A tire tread for mechanically driven vehicles, comprising longitudinally arranged transversely disposed alternately positioned pairs of long crosses and intervening groups of shorter aligned crosses, each of said long crosses being of the same overall length as adjacent pairs of said shorter crosses, the subtantially central portion of said longer cross and the adjacent portions of said shorter crosses, and certain of the arms of said crosses initially encircling depressed areas until said crosses have become relatively slightly worn away through normal use.

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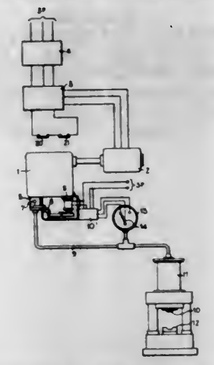
3,168,917
METHOD OF ATTACHING FRAMES TO AIR FILTERS AND THE LIKE
Fred L. Bartels, Madison, Wis., assignor to Research Products Corporation, Madison, Wis., a corporation of Wisconsin
Filed Aug. 2, 1960, Ser. No. 47,074
7 Claims. (Cl. 153—1)



1. The method of mounting a channel of semi-resilient readily deformable material having a web and two flanges extending therefrom onto an object having two sides terminating in an edge, said method comprising positioning said channel on said object with said web extending along said edge and said two flanges extending over the edge areas of said two sides, respectively; applying pressure to the outer surfaces of said two flanges to bend said flanges inwardly with permanent deformation of the material substantially to the desired position in relation to said sides of said object and at the same time to flex said web inwardly in the direction of said edge; and thereafter releasing said pressure to permit said web to unflex and thereby urge said flanges toward each other.

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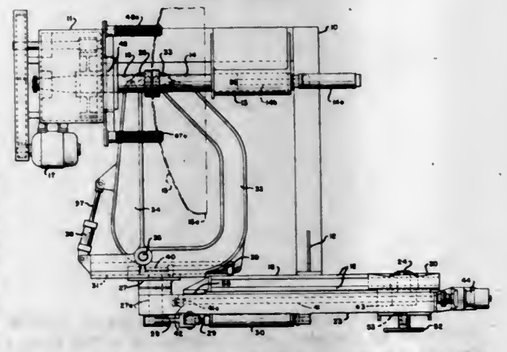
3,168,918
CRIMPING MACHINE
Kelvin Gordon Smith, Stretford, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed June 1, 1962, Ser. No. 199,370
Claims priority, application Great Britain, June 8, 1961, 20,765/61
3 Claims. (Cl. 153—1)



1. A power-operated crimping machine comprising a hydraulic ram, a die co-operating with said ram, surfaces on said ram and said die being shaped according to the configuration to be applied by crimpage to an assembly introduced between said ram and die, continuously operating pump means, driving means for said pump, a hydraulic pressure system, said pump means applying hydraulic pressure to said ram through said system, hydraulic valve means for controlling the hydraulic pressure introduced into said system, solenoid means for actuating said hydraulic valve means, a source of energizing current for said solenoid means, manually operated switching means controlling flow of said current to the solenoid means, adjustable switching means operable at the end of a crimping operation to effect a change in the condition of the solenoid means and thus the hydraulic valve means so as to release the hydraulic pressure on said ram, said adjustable switching means being adjustable so that it operates when the maximum permitted hydraulic pressure is being applied to the ram.

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3,168,919
FLANGING MACHINES
Milo Shutt, Alliance, Ohio, assignor to Union Industrial Company, Division of The Alliance Machine Co., a corporation of Ohio
Filed Aug. 13, 1962, Ser. No. 216,472
6 Claims. (Cl. 153—31)

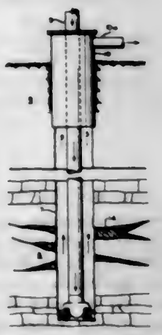


1. A flanging machine comprising means for holding and rotating a circular plate to be flanged about an axis,

roller means adapted to engage said plate on opposite sides thereof adjacent the axis, means for moving the rollers from the point adjacent the axis of the plate outwardly towards the edge thereof and means for selectively changing the axis of the rollers with respect to the plane of the plate whereby the plate is bent from its original plane to a plane parallel to the axis of the rollers.

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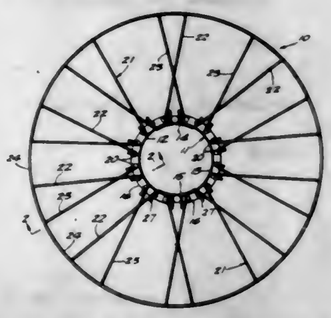
3,168,920
USE OF ASPHALT EMULSIONS FOR SEALING ZONES OF LOST CIRCULATION
Herbert M. Barrett, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 14, 1961, Ser. No. 159,326
7 Claims. (Cl. 166—5)



3. A method for decreasing the permeability of a zone of lost circulation located in a formation of undetermined composition and penetrated by a well bore comprising: placing in said zone a particulate solid having an electrical charge which serves as an emulsion breaker for an impermeabilizing fluid to be employed, the amount of said solid being sufficient to at least line said lost circulation zone to insure a substantial break of said fluid; injecting as said fluid an asphalt emulsion into said zone subsequent to said solid deposition until flow from the well bore is substantially equal to the volume of emulsion being introduced into said well bore.

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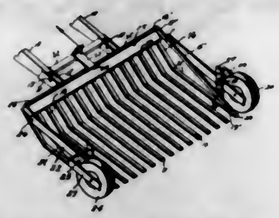
3,168,921
FREE FLOW WALL CLEANER
Luther J. Herndon and Jack B. Queen, both of Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,719
9 Claims. (Cl. 166—173)



1. In a well bore cleaner, the combination of: a collar adapted to be mounted on the exterior of a well pipe, a plurality of cleaner elements circumferentially spaced around and mounted on said collar, each said cleaner element being comprised of a relatively rigid material and having a loop portion extending outwardly from said collar, each said loop portion having a pair of arms projecting outwardly from said collar and a circumferentially extending arcuate portion joining the outermost extremities of said pair of arms, and the said arcuate portions of adjacent cleaner elements overlapping for a substantial arcuate distance to form substantially a full circle for engaging and cleaning the well bore.

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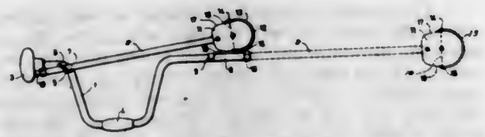
3,168,922
PICKER FOR TRACTOR FRONT END LOADER ARMS
David Varga, Reynaud, Saskatchewan, Canada
Filed Mar. 29, 1963, Ser. No. 268,988
1 Claim. (Cl. 171—63)



A picker attachment for front end loader arms of a tractor, said picker attachment comprising a basket-like body having an open front and including a transversely extending rear beam, a pair of side braces extending downwardly and forwardly from the ends of said rear beam to the sides of the open front of the body, means on said rear beam for attaching the same to loader arms of a tractor, and a pair of ground engaging wheel units provided at the opposite sides of said body, each of said wheel units comprising an arm disposed alongside the adjacent one of said braces, pivot means connecting the rear end of said arm to said one of the braces at a point adjacent said rear beam for swinging movement of the arm in a vertical plane, a fork provided at the front end of said arm, a travelling wheel rotatably mounted in said fork, an upstanding strut secured to the front end portion of said one of said braces and provided with a row of apertures, and a fastening element carried by said fork of said arm and receivable selectively in said apertures, whereby the position of the wheel unit relative to said body may be vertically adjusted.

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3,168,923
DEVICE IN ICE DRILLS
Anders Lind, Borget, Orsa, Sweden, assignor to Aktiebolaget Morsindustri, Mora, Sweden, a corporation of Sweden
Filed May 17, 1963, Ser. No. 281,123
Claims priority, application Sweden, May 18, 1962, 5,592/62
4 Claims. (Cl. 175—18)



1. A device in ice drills comprising a drilling crank and a drilling rod which are detachably secured to one another, characterized in that the drilling crank is provided with securing means for connecting the drilling rod to the drilling crank during transport, and storage, which means comprise a yoke and a hook arranged in such a way that, when the drilling rod is inserted through the yoke and moved to engagement wtih the hook, the drilling rod will enter into a twisting engagement with the yoke so that the inherent resiliency of the yoke and the drilling rod coact in holding the drilling rod into engagement with the hook.



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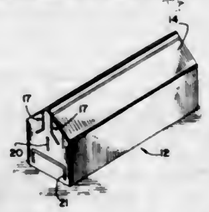
3,168,924
PLASTIC WELL SCREEN POINT
Louis W. Anderson, 749 61st Ave. S., St. Petersburg, Fla.
Filed May 10, 1963, Ser. No. 279,445
4 Claims. (Cl. 175—314)



1. A well screen comprising a rigid tubular main body of non-metallic plastic material formed with spaced transverse slots of substantial width and distributed over the major portion of the length of said body, a relatively coarse gauge reinforcing first plastic screen secured on said main body overlying said slots, a relatively fine gauge filtering second plastic screen secured over said first screen, a relatively coarse gauge protective third plastic screen secured over said second screen, said screens allowing substantially free flow therethrough and through the slots but substantially preventing the passage of particles of solid material, an annular screen casing of plastic material secured on the lower end portion of said main body, and a screen assembly extending transversely of the bore of and secured in said screen casing, said screen assembly comprising a coarse gauge plastic upper screen, a fine gauge plastic intermediate screen, and a coarse gauge plastic lower screen.

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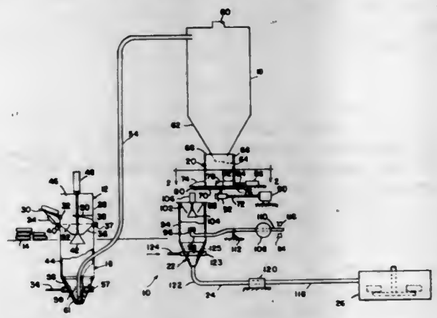
3,168,925
CUTTING INSERTS FOR ROCK DRILL BITS
Harry B. Gayley, Bound Brook, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 26, 1963, Ser. No. 275,911
9 Claims. (Cl. 175—410)



1. A cutting insert for rock drill bits comprising, a body having two adjacent inclined wall surfaces forming a cutting edge, a pair of closely spaced strip means embedded in said body, each strip means extending substantially the length of said cutting edge and extending from the inclined wall surfaces on opposite sides of said cutting edge inwardly from said cutting edge, a first alloy having a relatively high resistance to wear forming a portion of the body between the pair of strip means, a second alloy having a relatively low resistance to wear forming the portion of the body adjacent the remote sides of the pair of strip means, and another alloy having a resistance to wear intermediate said first and second alloys forming the remainder of said body.

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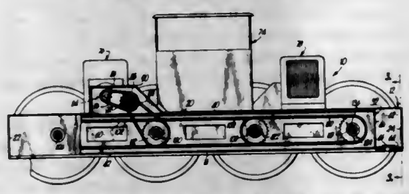
3,168,926
WEIGHING AND TRANSFER APPARATUS
Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed Feb. 18, 1963, Ser. No. 259,069
17 Claims. (Cl. 177—114)



1. Weighing and transfer apparatus comprising structure for opening individual sacks of finely divided material, a storage bin, means operably associated with the structure for opening sacks and the storage bin for transferring the material to the storage bin, weighing apparatus for weighing a predetermined weight of the material, structure operably associated with the storage bin and weighing apparatus for feeding the material from the storage bin into the weighing apparatus, a mixer for mixing granular material, means operably associated with the weighing apparatus and mixer for transferring the predetermined weight of material from the weighing apparatus to the mixer, physical properties testing apparatus for testing a physical property of a sample of the material in the mixer and developing a signal in accordance therewith, means for transferring a sample of the material in the mixer to the physical properties testing apparatus and means for controlling the weighing apparatus to vary the weight of the material weighed by the weighing apparatus in accordance with a first signal developed by the physical properties testing apparatus.

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3,168,927
VEHICLE HAVING BOX-LIKE FRAME
Fay Troy Garner, Rte. 2, Box 136, Berthoud, Colo.
Filed May 7, 1962, Ser. No. 192,769
7 Claims. (Cl. 180—6.48)

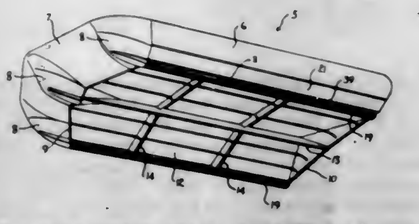


1. A vehicle comprising a frame having a pair of side plates, a pair of end plates, a base plate, and a top plate whereby to define an enclosed compartment; a pair of

box-like drive assembly housings removably carried within said compartment, each housing having an inner side wall, an outer side wall, a pair of opposed end walls, a top wall and a bottom wall, said inner side walls cooperating with said end plates, said base plate and top plate to define a central chamber, said outer side walls cooperating with corresponding side plates, said end plates and said base plate and top plate to define enclosed side areas; a set of driving and supporting wheels carried exteriorly of the frame on each side of the longitudinal axis of the vehicle, each wheel of each set having an axle, each axle extending inwardly through a corresponding side plate, side area, and outer side wall, and having its inner end journalled in the corresponding inner side wall of said housing; a source of power for each set of wheels, said source being coupled with one of the axles of its corresponding set of wheels; and means interconnecting each of the axles of each set of wheels whereby each set may be driven independently and in unison, said means being located within said housings.

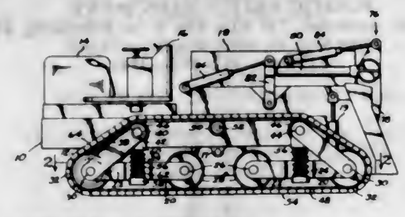
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**3,168,928**
**AIR CUSHION VEHICLE**
Olle Ljungström, Brevik, Lidingo, Sweden, assignor to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden
Filed Jan. 10, 1963, Ser. No. 250,568
7 Claims. (Cl. 180—7)



1. In an air cushion vehicle or the like having a narrow, elongated, downwardly opening fluid outlet lengthwise adjacent to one side of the vehicle:
(A) a rigid inner supporting structure;
(B) a resiliently flexible inner wall member extending lengthwise along said side of the vehicle, and secured along its upper edge portion to said supporting structure, said inner wall member being curved along its height so as to have an obliquely downwardly and inwardly extending portion near its bottom which is flexible upwardly;
(C) a resilient rail on said inner wall member, at the bottom thereof, providing a downwardly facing surface upon which the vehicle can rest;
(D) resilient means confined between the rail and the underside of the supporting structure yieldingly anchoring the rail and the bottom portion of the inner wall member to the supporting structure;
(E) an outer wall member secured to said supporting structure in spaced relation to said inner wall member, having a bottom portion which is inclined downwardly and inwardly so as to cooperate with the inner wall member in defining said fluid outlet, and which is resiliently yieldable so as to be capable of flexing along with the inner wall member and the rail; and
(F) means providing resilient connections between the outer member and the supporting structure at lengthwise spaced intervals along the outer wall member, by which the wall members are maintained in spaced apart slot defining relationship along their entire lengths despite localized flexing deformation of the rail and wall members.

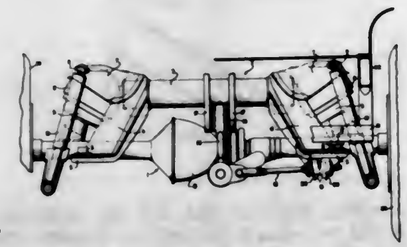
**3,168,929**
**DRIVE SUSPENSION FOR A TRACK LAYING VEHICLE**
Isaac J. Wardle, Pierce Park Lane, Rte. 3, Boise, Idaho
Original application Nov. 7, 1958, Ser. No. 772,528, now Patent No. 3,094,794, dated June 25, 1963. Divided and this application Nov. 13, 1962, Ser. No. 237,402
1 Claim. (Cl. 180—9.54)



a carry-all vehicle comprising:
(*a*) an elongated chassis;
(*b*) a power unit on the chassis;
(*c*) a plurality of truck members one disposed at each end of each side of the chassis and each including a rigid elongated frame extending longitudinally of the chassis and mounting a wheel at the opposite longitudinal ends thereof;
(*d*) a continuous track member operatively engaging the wheels on each side of the chassis;
(*e*) a pair of upwardly converging radius arms secured pivotally to each side of the chassis and connected pivotally one to each frame coaxial with the outer wheel thereon;
(*f*) resilient cushion means interengaging the chassis and each frame intermediate the ends of the latter for supporting the chassis resiliently on the truck members;
(*g*) the radius arms being proportioned and arranged to dispose the ground engaging portion of each track member in a substantially flat plane throughout the distance between the outermost wheels on each side of the chassis;
(*h*) interengaging drive means on the rotational axis of one of the wheels and the chassis pivot axis of the associated radius arm; and
(*i*) drive connecting means coupling the power unit to said drive means at the chassis pivot axis.

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**3,168,930**
**AUXILIARY FRAME, ESPECIALLY FOR MOTOR VEHICLES**
Friedrich H. van Wissen, Kirchheim (Teck), and Werner Stoklossa, Esslingen (Neckar), Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed July 18, 1961, Ser. No. 124,997
Claims priority, application Germany, July 20, 1960, D 33,816
10 Claims. (Cl. 180—73)

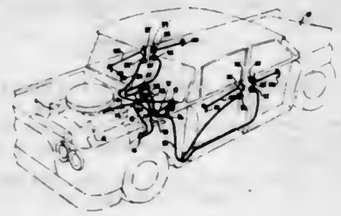


1. In a vehicle having at least one pair of oppositely disposed wheels, means for spring supporting said wheels including axle means and spring means, and a vehicle superstructure including a main frame and an auxiliary frame, the improvement consisting essentially of an auxiliary frame structure for supporting said axle means comprising a support member disposed above said axle means and extending in substantially the same direction as said axle means, separate fork-like support arm means secured to each end of said support member, each said fork-like support arm means extending downwardly and obliquely outwardly as seen in the vehicle longitudinal direction and forming at the respective end of said support member, as seen in side view, the leg portions of a triangle at the apex of which is arranged said support member, each said support arm means surrounding said axle means with said apex of the respective triangle being disposed above said axle means, and means for elastically supporting said auxiliary frame from said main frame comprising securing means extending in one of the vehicle tranverse and longitudinal directions, said securing means being provided on the free ends of each said support arm means and being disposed substantially in a plane extending through the base line of the respective triangle parallel to the road surface, said base line extending substantially longitudinally of the vehicle, and abutment means for said spring means arranged adjacent each said support arm means and rigidly secured to said support member, said spring abutment means being of substantially box-shaped construction and being so secured to said support member that the side portions thereof adjoin said support arm means.



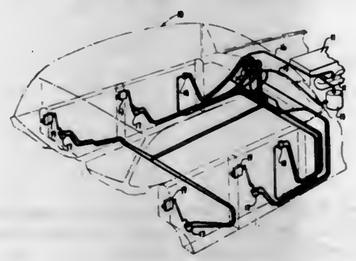
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**3,168,931**
**VEHICLE DOOR LOCKING SYSTEM**
John R. Olsbel, Buffalo, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Jan. 25, 1961, Ser. No. 84,935
8 Claims. (Cl. 180—82)



1. A door locking system for an automotive vehicle comprising a door in said vehicle, a latch lock operatively associated with said door, a fluid pressure motor, linkage means coupling said fluid pressure motor to said latch lock, a source of fluid pressure in said vehicle, first control means for automatically causing said source of fluid pressure to communicate with said fluid pressure motor to thereby effect locking of said latch lock solely in response to the movement of said vehicle, and second control means manually actuable in a first direction for effecting communication between said source of fluid pressure and said door locking motor to thereby effect manual remote locking of said latch lock when said vehicle is at a standstill, said second control means including self-contained pump means independent of said source of fluid pressure manually actuable in a second direction to produce pressurized fluid which is opposite in sign to the fluid under pressure at said source to thereby actuate said fluid pressure motor in a second direction which is opposite to said first direction to thereby effect remote unlocking of said latch lock.

**3,168,932**
**DOOR LOCKING SYSTEM**
Raymond A. Delbel, Cheektowaga, William C. Riester, Williamsville, and Raymond D. Page, Eggertsville, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Continuation of application Ser. No. 739,196, June 2, 1958. This application Aug. 26, 1963, Ser. No. 304,735
5 Claims. (Cl. 180—82)



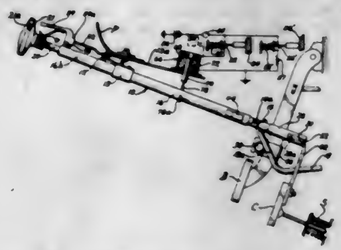
1. A valve for a vehicle door locking system comprising a housing, a diaphragm in said housing, means for biasing said diaphragm in a predetermined direction, first conduit means adapted to couple said housing to a fluid pressure source in said vehicle to cause said diaphragm to move against the force of said biasing means in response to the operation of said vehicle, an atmospheric vent in said housing, a common manifold chamber in said housing, second conduit means adapted to extend between said housing and a source of fluid pressure, a plurality of third conduit means adapted to extend between said manifold chamber and fluid pressure door locking motors, and poppet valve means in said housing adapted to be actuated by said diaphragm for selectively causing door locking motors to communicate with either said source of fluid pressure through said second and third conduit means and said common manifold chamber or causing said motors to communicate with said atmospheric vent through said manifold chamber and said third conduit means, said poppet valve means comprising a shaft adapted to be actuated by said diaphragm and first and second poppet valves mounted on said shaft for movement relative thereto, a first port in said common manifold chamber adapted to coact with said first poppet valve for selectively permitting communication between said atmospheric vent and said common manifold chamber, a second port in said common manifold chamber adapted to coact with said second poppet valve for selectively permitting communication between said source of fluid pressure and said common chamber, and means for causing said first and second poppet valves to operate sequentially in response to movement of said shaft to prevent cross-porting between said first and second ports.

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**3,168,933**
**THROTTLE CONTROL MECHANISM**
Robert Henry Thorner, 3410 W. Chicago Blvd., Detroit, Mich.
Filed June 20, 1961, Ser. No. 118,411
29 Claims. (Cl. 180—82.1)

1. In a control device for an automotive vehicle having an engine and control means for said engine, said vehicle also including a movable element always operated by the vehicle driver whenever said driver leaves the vehicle, the combination of; means to regulate the position of said control means for establishing and controlling vehicle speed independent of foot pressure on the control means by the vehicle driver, restraining lock-out means responsive to said movements of said element in one direction to automatically render said positioning means inoperative with respect to said control means, and safety

means operatively associated with said restraining means to maintain said positioning means in said inoperative status when said element is moved in a direction reverse



from said first-named direction, whereby the device is automatically rendered inoperative at least when one driver is replaced by another driver.

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3,168,934
ACOUSTIC APPARATUS
Donald R. Wilson, Santa Cruz, Calif., assignor to Pacific Plastronics, Inc., Santa Cruz, Calif., a corporation of California
Filed Jan. 20, 1964, Ser. No. 338,756
5 Claims. (Cl. 181—31)

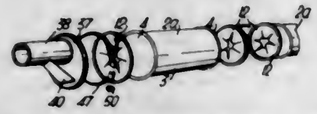


1. Acoustical apparatus comprising:
a pair of acoustical ducts of similar length, each having first and second ends;
a sound-receiving tip of elongated shape attached to said acoustical ducts, said tip having a longitudinal axis aligned with said ducts and having a pair of inlet ports disposed at opposite ends thereof along said axis;
a first passage in said tip extending transverse to said axis and connecting one inlet port and the first end of one of said ducts;
a second passage in said tip extending transverse to said axis and connecting the other inlet port and the first end of the other of said ducts;
the acoustical length of said one inlet port and first passage being equal to the acoustical length of said other inlet port and second passage; and
a transducer connected to the second end of said ducts for producing output signals related to the combination of acoustical signal appearing in said ducts.

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3,168,935
MUFFLERS OR SILENCERS
John Crowe and Kenneth Arthur Wallis, Wellington, Wellington, New Zealand, assignors to Upright Scaffold Limited, Christchurch, Canterbury, New Zealand, a corporation of New Zealand
Filed June 18, 1962, Ser. No. 203,174
24 Claims. (Cl. 181—42)

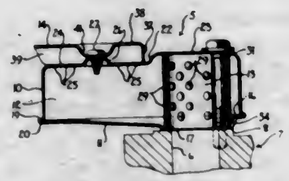
1. A muffler particularly adapted for use with the exhaust system of an internal combustion engine comprising, in combination:
at least one muffler element, said element comprising, in turn:
a barrel having flanges extending radially outwardly therefrom at the ends thereof;
an end-disc positioned at each of the ends of said barrel, each of said end-discs having:
a flange extending radially outwardly therefrom and being particularly adapted to mutually cooperatively engage a corresponding one of the flanges at the ends of said barrel;
inlet and outlet means positioned to structurally cooperate with each of the ends of said barrel for providing the exhaust gases of said exhaust system with ingress to and egress from said muffler element, said inlet and outlet means each comprising, in turn:



an end plate having a flange extending radially outwardly therefrom and being particularly adapted to mutually cooperatively engage the flange of a correspondingly structurally cooperatively associated one of said end-discs, and
a conduit extending axially from said end plate; and
connection means at opposite ends of the muffler element for engaging and structurally, operatively associating the flange of a barrel end, the flange of an end-disc and the flange of one of said inlet and outlet means in gas-tight axial mutual cooperative engagement with each other, said connection means comprising, in turn:
a radially expandable annulus having a groove of such dimensional extent in each of a plurality of directions as to render the aforesaid combination of radially outwardly extending flanges disposable therewithin and generally annularly encompassed thereby; whereby to render a plurality of muffler elements positionable in various combinations thereof depending upon the requisite needs of said internal combustion engine.

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3,168,936
MUFFLER FOR SMALL INTERNAL COMBUSTION ENGINES
Douglas Gordon, Hartford, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 25, 1962, Ser. No. 233,005
8 Claims. (Cl. 181—49)



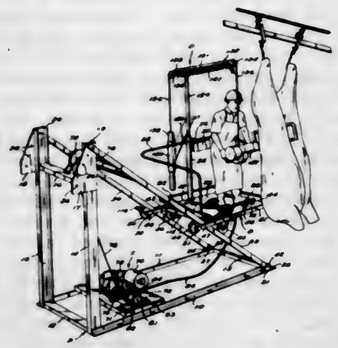
1. In a muffler of the character described:
(A) means defining an expansion chamber having front, rear and side walls and which has its front and rear walls spaced apart by a distance substantially less than their smallest dimension so as to be substantially shallow,
(1) the front wall of said expansion chamber having stepwise displaced forwardly and rearwardly offset portions connected by a step portion,
(2) the rear wall having an inlet port substantially in axial alignment with the forwardly offset portion of the front wall, and



(3) the rearwardly offset portion of the front wall being apertured to provide an outlet;
(B) baffle means in said expansion chamber, extending from the rear wall to the forwardly offset portion of the front wall and located adjacent to the inlet port, said baffle means cooperating with the stepwise offset of the front wall portions and with the axially displaced locations of the inlet port and outlet to compel gases flowing through the expansion chamber to undergo repeated changes in flow direction;
(C) means cooperable with the rearwardly offset front wall portion of the expansion chamber to define an outlet chamber which is communicated through said outlet with the expansion chamber, said last named means comprising a pan-like element having front and side wall portions and having a discharge port at one side thereof; and
(D) securement means fastening said pan-like element to the rearwardly offset wall portion of the expansion chamber with the rear edges of the side walls of the pan-like element engaging said rearwardly offset wall portion and with the discharge port spaced to one side of the outlet, said securement means providing for adjusting rotation of the pan-like element about an axis normal to the rearwardly offset wall portion and substantially centered with respect to said outlet, to a plurality of positions of the pan-like element, in each of which a side wall portion thereof cooperates with the step portion of the front wall of the expansion chamber to prevent rotation of the pan-like element out of such position, and in each of which positions of the pan-like element gases are compelled to undergo changes of direction in flowing from the outlet to the discharge port.

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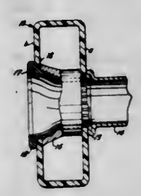
3,168,937
CONTROLLED DECLINE ELEVATOR WORK STATION APPARATUS FOR CARCASS SPLITTING AND THE LIKE
Lloyd H. Redford and Anthony M. Garcia, Cleveland, Ohio, assignors to Earl C. Gibbs, Inc., Cleveland, Ohio
Filed Oct. 21, 1963, Ser. No. 317,576
15 Claims. (Cl. 182—14)



1. A carcass splitting elevator work station machine comprising:
(*a*) an elevator support base having a rectangular horizontal base section and a rectangular vertical end section,
(*b*) elevator trackway rails adjustably mounted, obliquely to a horizontal plane, on the said elevator support base and secured thereto,
(*c*) an elevator work station provided with a horizontal work station platform for the operator and his tools,
(*d*) guard rails mounted on said platform,
(*e*) flanged trackway wheels adjustably mounted on said platform to receive said trackway rails for upward and downward movement thereon,
(*f*) a motor mounted on said support base for lifting said elevator work station,
(*g*) a hydraulic brake unit mounted on said support base for controlling the descending movement of said elevator work station,
(*h*) a cable drum mounted on said elevator support base horizontal section,
(*i*) said motor and hydraulic brake unit being connected to said cable drum,
(*j*) elevator control means mounted on said platform and connected to said motor and brake means,
(*k*) said elevator control means having a control bar having its ends pivotally mounted on the floor of said platform and a horizontal section spaced above the said floor and having a linkage connection with a hydraulic master brake cylinder and an electric power actuating switch mounted below the floor of said platform,
(*l*) a sheave affixed to the top of said vertical end section of said elevator support base,
(*m*) a cable passing over said sheave and connecting said elevator work station platform with the cable drum, and
(*n*) an overhead tool support apparatus mounted on said elevator platform.

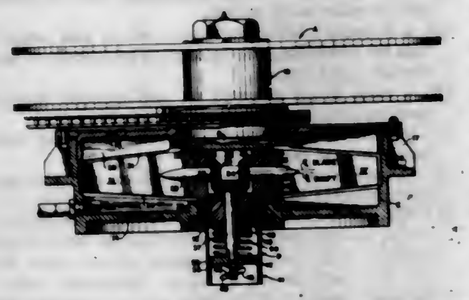
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3,168,938
LADDERS AND METHOD OF MAKING THE SAME
Raymond H. Shaver, Newark Valley, N.Y., assignor, by mesne assignments, to Harsco Corporation, a corporation of Delaware
Filed Jan. 4, 1963, Ser. No. 249,470
2 Claims. (Cl. 182—228)



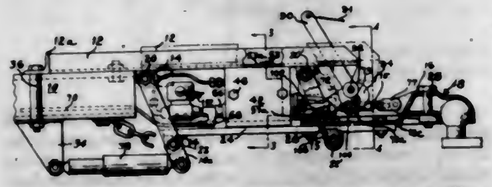
1. Ladder construction comprising a tubular side rail provided with opposed coaxial holes, one of said holes having a notched portion in its periphery, a rung having an end extending through said holes and engaging the hole defining edge surfaces thereof, said end of said rung being adjacent said notched hole, and a rail reinforcing tubular spacer mounted within the rail in continuous surface conforming relation to the peripheral surface of said rung end and arranged with its opposite end faces abutting opposed undeformed interior face portions of said rail which encircle said holes, said rung having a radially extending peripheral outer flange formed at its end and a radially extending peripheral inner flange longitudinally spaced therefrom, said outer flange being flared first outwardly and then inwardly and part of said outer flange projecting radially into said notch portion of said notched hole to lock said rung against rotation in said holes and said flanges being arranged opposite the ends of said spacer whereby the latter is effectively clamped by said flanges between opposed portions of the rail wall which define said holes.

3,168,939
ROTARY ENERGY ABSORBER UNIT DRAG CONTROL MEANS
Robert Joseph Haber, Wilmington, Del., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed June 14, 1963, Ser. No. 287,885
5 Claims. (Cl. 188—90)



1. An energy absorber unit for arresting aircraft and mobile objects on a runway, said unit comprising a liquid filled housing, a drag rotor in the housing, said rotor having a rotor shaft with an extension above the top exterior of the housing, rotor blades secured to said shaft inside the housing with their effective area work surfaces vertical with respect to the bottom of the housing, a drum mounted on the rotor shaft extension with a winding of nylon strip material thereon for connection with runway arresting means, and normally closed valve means mounted in each rotor blade of said drag rotor for controlling the effective drag area of the working face of each rotor blade by opening the valve means by liquid pressure in said liquid filled housing.

3,168,940
TRAILER BRAKE ACTUATOR
James O. Ross, Fort Myers, Fla., and Clement J. Smith, Vandalia, Ohio, assignors to Toledo Stamping & Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Continuation of application Ser. No. 826,821, July 13, 1959. This application Aug. 22, 1962, Ser. No. 218,794
1 Claim. (Cl. 188—112)



A hitch for connecting a towing vehicle to a trailing vehicle having a hydraulic brake, said hitch comprising a tongue member on said trailing vehicle, a tow bar member adapted to be mounted on the towing vehicle, means connecting said tow bar member and said tongue member to enable relative movement therebetween, shock absorber means mounted on one of said members and structurally connected to said other member to resist movement between said members both in directions toward one another and away from one another, a hydraulic cylinder having a piston therein, said cylinder being mounted on one of said members, said piston being movable in said cylinder and capable of supplying brake fluid under pressure to actuate the brake mechanism, piston rod means connected to said piston, link means for pivotally connecting said piston rod means directly to the other of said members tending to cause movement of said piston rod means at least equal to the movement of said members toward one another, said piston rod means being movable independently of said link means in a direction away from said link means, whereby said piston can be actuated through said piston rod means independently of said link means and independently of the relative movement of said two members, and emergency means for moving said piston to actuate said brake mechanism in the event of a break-away of said tow bar member, said emergency means including a lever, flexible means adapted to connect said lever to the towing vehicle independently of said tow bar member, means pivotally connecting said lever to the member on which said cylinder is mounted, flange means functionally integral with said piston rod means, said lever being positioned to contact said flange means directly and to actuate said piston rod means, the independent movement of said link means and said piston rod means enabling said piston rod means to move toward said cylinder independently of the relative movement of said two members, independently of said connecting means, and independently of said shock absorber means, when said lever is moved by said flexible means, a ratchet affixed to one of said lever and the member to which said lever is attached, a pawl affixed to the other of said lever and the member to which said lever is attached and engageable with said ratchet in all positions of said lever, and a spring engaged with the same one of said lever and the member as said pawl to urge said pawl toward said ratchet to prevent the return of said lever to its original position after being moved by said flexible means.

3,168,941
REPAIR KEY AND METHOD OF CLOSING CRACKS
Arch F. Southard, Jr., 233 W. 8th St., Bristow, Okla.
Filed Nov. 8, 1961, Ser. No. 151,094
4 Claims. (Cl. 189—36)



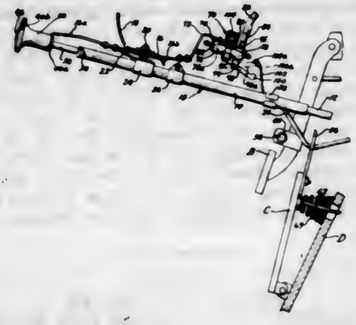
1. A connection for repairing a crack in a metal member comprising, a first bore forming a recessed socket in said metal member adjacent one edge of the crack, a second bore disposed in said metal member adjacent the opposite edge of the crack with said second bore being of greater depth than said first bore and inclined inwardly away from the crack, a recessed channel extending transverse of the crack and interconnecting said first and second bores and having a bottom wall inclined downwardly from said first to said second bore, a rigid key member having enlarged first and second substantially spherical end portions joined by a shank having a width substantially the same as the width of said recessed channel, said first spherical end portions disposed in said first bore, said shank disposed in said recessed channel and said second spherical end portion disposed in said second bore, and lug means threadedly engaging said second bore and adapted to move said second spherical end portion downwardly in said inclined bore away from said crack and pivot said first spherical portion in the socket formed by said first bore to thereby draw together the metal members on opposite sides of the crack.

3,168,942
THROTTLE CONTROL MECHANISM
Robert H. Thorner, 3410 W. Chicago Blvd., Detroit, Mich.
Filed Aug. 27, 1959, Ser. No. 836,419
42 Claims. (Cl. 192—3)

1. In a control device for an automotive vehicle having an engine, said vehicle having brake actuating means and

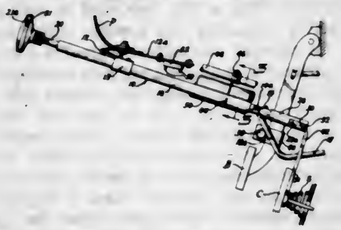


having engine control means normally urged toward the idle-speed position, the combination of, means including movable means for positioning said control means in any predetermined fixed position, release means operatively associated with said brake-actuating means to effectively inactivate said movable positioning means with respect to said control means after a predetermined movement of said brake-actuating means, said release means including means responsive to movements of said brake-actuating



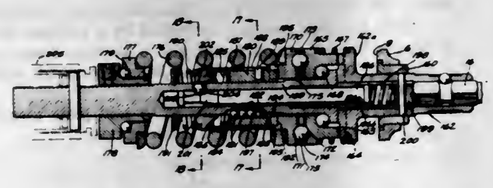
means to transmit forces therefrom to cause said inactivation of said movable means irrespective of a failure of any source of power in any part of the vehicle whenever the device is in operation to position said control means, and means to effect automatic operative engagement of said movable means and said control means after movement of said control means in an increase-speed direction to a fixed position thereof between that for idle and maximum speed at which fixed position said engagement is automatically effected.

3,168,943
THROTTLE CONTROL MECHANISM PROVIDING AUTOMATIC ENGAGEMENT AND SAFETY LOCKOUT
Robert H. Thorner, 8750 W. Chicago Blvd., Detroit, Mich.
Continuation of application Ser. No. 859,504, Dec. 14, 1959. This application Sept. 27, 1963, Ser. No. 312,143
34 Claims. (Cl. 192—3)



1. An accelerator positioning device for an automotive vehicle having an engine, and said vehicle including an element manually movable by the vehicle-driver said vehicle having brake actuating means and having engine control means for setting the speed of the vehicle, said control means including accelerator pedal means, and biasing means to urge said accelerator pedal means toward its idle-speed position, comprising in combination; a movable mechanism operatively connected to a supporting portion of said vehicle and including release means, said mechanism also including detent means automatically movable into abutting position with respect to said accelerator pedal means after advancement thereof to hold said control means in a fixed position reacting against said supporting portion as a result of said biasing means during operation of said control device, said detent means being disposed in relation to said accelerator pedal means during operation of said control device to prevent movements of said pedal means in a reduce-speed direction from its abutting position, but to permit completely unrestricted normal manual movements thereof in either direction at any position on the high-speed side of said abutting position, said mechanism including manually operated means to adjust the distance between said pedal means and said supporting portion for setting said pedal means in any desired fixed position, said brake-actuating means including means disposed to cooperate with said release means to move said movable mechanism including said detent means in a direction transverse to the direction of movement of said pedal means to an inactive position completely clear of the path of travel of said pedal means upon movements of said brake actuating means, whereby said pedal means can return to its idle position without any possible interference from said mechanism, restraining means operatively connected to said movable mechanism and operable as a result of said manual movement of said element to automatically cause relative movement of said detent means with respect to said accelerator pedal means in said transverse direction to an inoperative position completely clear of said path of travel of said accelerator pedal means, and manually releasable safety means operatively associated with said restraining means to maintain said mechanism in said inoperative status after said vehicle is again being driven until said safety means is consciously and deliberately released by the vehicle-driver.

3,168,944
TORQUE LIMITER HAVING OVERLOAD RELEASE CLUTCH FOR POWER-OPERATED SCREW DRIVER OR THE LIKE
Frank W. Livermont, Duarte, Calif.; Milford S. Zimmerman, executor of said Frank W. Livermont, deceased, assignor to Reed Roller Bit Company, Houston, Tex., a corporation of Texas
Filed Nov. 8, 1955, Ser. No. 545,735
8 Claims. (Cl. 192—56)

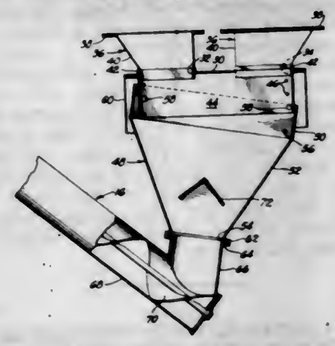


1. In a torque-limiting clutch device, the combination of: a rotary driving member, a coaxial rotary driven member, a compression spring, a collar mounted on one of the members and held against axial movement relative thereto, one end of the spring engaging said collar, a pair of coaxial disks mounted on said member, said disks having confronting faces each provided with a circumferential series of indentations, a plurality of balls interposed between said faces and engageable with said indentations, one of the disks being contacted by the other end of said spring, means mounting said disk for axial movement by the balls to compress the spring upon the torque load between said members exceeding a predetermined limit, manual clutch means including negative rake jaws on the other of the said members and on the other of said disks engageable through relative axial movement of said members, a torque transmitting clutch sleeve within the spring having clutch elements engageable with said axially movable disk, said clutch sleeve being movable axially by said disk to retracted position, latch means including a latching plunger mounted for axial movement within the other member and having a taper surface, ball elements mounted on said other member contacted by said taper surface

of said plunger and adapted to move outward to hold the clutch sleeve in retracted position while permitting said spring to return the axially movable disk to its initial position, thereby separating the clutch sleeve from the said disks, and means whereby the plunger is actuated by said relative axial movement of said members to move the ball elements outward.

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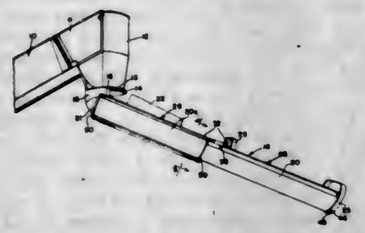
3,168,945
HOPPER STRUCTURE
Willard H. Gooding, Los Angeles, Calif., assignor to Western Velo & Cement Specialties Company, Los Angeles, Calif., a corporation of California
Original application May 29, 1959, Ser. No. 816,921, now Patent No. 3,085,674, dated Apr. 16, 1963. Divided and this application Feb. 13, 1963, Ser. No. 258,215
4 Claims. (Cl. 193—4)



1. An unloading structure which includes:
plate means containing openings which are spaced so as to correspond to the spacing of discharge openings on a railroad car, said plate means being adapted to be located between railroad rails in the area normally occupied by a railroad tie;
means for locating said plate means between railroad rails in the area normally occupied by a railroad tie;
a hopper having an open top and a bottom opening, said top of said hopper being located beneath said openings in said plate means;
and waterproofing means attached to said plate means and surrounding said top of said hopper.

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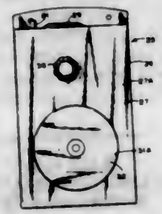
3,168,946
TELESCOPING DISCHARGE SPOUT
Lawrence H. Gay, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,293
3 Claims. (Cl. 193—6)



1. A spout device for use on the discharge end of a material conveyor and normally directed downwardly from the discharge end, comprising: a plurality of identical elongated U-shaped troughs opening upwardly and having laterally outwardly projecting edge flanges at opposite sides, with said troughs being adaptable for distortion whereby the troughs may be vertically stacked in nestled relation to one another; means connecting the upper end of the upper trough to the conveyor in material receiving relation thereto; a ring fixed to the lower end of each trough including a lower portion conforming to and underlying the trough and an overhead portion positioned above the trough reinforcing the respective end of the trough and minimizing the distortion at that end; a pair of upwardly projecting hanger structures on opposite sides of the troughs at the upper ends thereof including inwardly projecting portions overlying and engaging the respective flanges of the adjacent overlying trough and slidably engaged therewith to permit extension and retraction of the troughs and whereby said upper end of each trough may be disposed when in an extended position closely adjacent of the overlying trough and may distort sufficiently to accommodate the ring of the adjacent overlying trough and be disposed when in a retracted position closely adjacent the upper end of the adjacent overlying trough; and means between adjacent troughs limiting longitudinal extension between adjacent troughs.

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3,168,947
ROTARY COIN METER
Harry Greenwald, 149—47 Powells Cove Blvd., Whitestone, Long Island, N.Y., assignor of one-third to Louis Wolff and one-third to Harry Silberglitt, both of Brooklyn, N.Y.
Filed Aug. 8, 1962, Ser. No. 215,724
7 Claims. (Cl. 194—61)



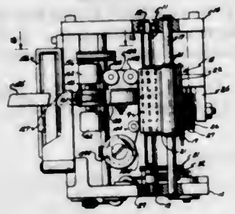
1. A coin meter comprising a housing having a coin slot formed in one end thereof, a coin carrier, said coin carrier including a hollow disc-like element, said element having a recess formed in the side surface of said element for accommodating a coin deposited in said slot, means for rotatably journaling said element within said housing so that the recessed side surface thereof is juxtapositioned closely adjacent a wall portion of said housing so that said wall portion cooperates with the recessed side surface to define the coin pocket open at one end only, ejecting means carried within the hollow of said element for rotation therewith, and means operative from without said housing for actuating said coin ejecting means within said element whereby said ejecting means is displaced to eject any coin deposited in said pocket when the open end of said coin pocket is disposed in alignment with said slot.

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3,168,948
PULLEY SELECTION MEANS IN ROTARY TYPE CARRIERS
Richard E. Busch, La Puente, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Feb. 25, 1963, Ser. No. 260,620
15 Claims. (Cl. 197—49)

1. Printing apparatus comprising a type member having a plurality of spaced type characters thereon, a printing device for obtaining a printing impression from any of said type characters, a first length of cable for moving said type member in one direction to position one of said type characters in alignment with said printing device, means operatively connecting said first cable length adjacent one end thereof to said type member, means anchoring said cable length adjacent the opposite end thereof, a second length of cable for moving said type member in an opposite direction to position another of said type characters in alignment with said printing device, means operatively connecting said second cable length adjacent one end thereof to said type member, means anchoring said second cable length adjacent the opposite end thereof, an eccentric pulley element, said first cable length being wrapped over an eccentric portion of said pulley element from one direction, said second cable length being wrapped

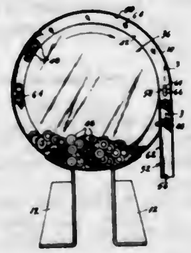




over said eccentric portion of said pulley element from another direction, and selectively operable means for rotating said pulley element into one position whereby to advance one of said cable lengths to position one of said type characters in cooperative relation with said printing device and to permit the other to retract, said last mentioned means being selectively operable to rotate said pulley element into a second position whereby to advance said other cable length to position another of said type characters in cooperative relation with said printing device and to permit said one cable length to retract.

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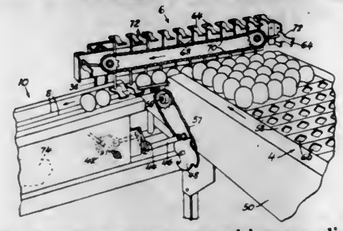
3,168,949
AUTOMATIC FEEDING APPARATUS FOR FLAT, CIRCULAR ARTICLES
Samuel S. Aidlin, New York, N.Y.
(2045 E. 22nd St., Brooklyn, N.Y.)
Filed Sept. 14, 1961, Ser. No. 138,178
2 Claims. (Cl. 198—30)



1. Automatic feeding apparatus for disc-shaped articles, comprising a hollow, open-top, cylindrical housing, means supporting said housing with its longitudinal axis at an angle to the vertical, a circular plate closely and freely disposed within said housing in inwardly spaced relation to said open top thereof and in a plane at right angles to said axis, a motor, means operatively connecting said plate with said motor for rotation within said housing in said plane, said plate having a peripheral marginal edge portion thereof of reduced thickness forming a recess in the upper surface thereof, said recess of a width equal at least to the diameter of an article to be fed and of a depth not exceeding the thickness of such article, the inner wall of said recess and the wall of said housing defining a circular track circumferentially spaced pin projections provided on the floor of said track, and a ramp set at an angle to the surface of said circular plate, said ramp having its lead end portion extending into said recess and substantially in contact with the floor thereof, in position to receive thereon articles moved by said plate and extending to the exterior of said housing and a longitudinally-extending cut-out formed in the lead end of said ramp to provide clearance for said pin projections.

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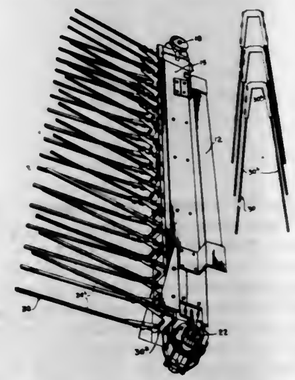
3,168,950
EGG HANDLING EQUIPMENT
Otto C. Niederer, Bear Tavern Road, and Herbert O. Niederer, Church Road, both of Titusville, N.J.
Original application Jan. 11, 1960, Ser. No. 1,741, now Patent No. 3,077,257, dated Feb. 12, 1963. Divided and this application Jan. 22, 1963, Ser. No. 253,086
2 Claims. (Cl. 198—32)



1. Egg handling means comprising an aligning conveyor, egg supplying means for supplying eggs to said aligning conveyor in successive rows and means for receiving eggs discharged from said aligning conveyor; said aligning conveyor comprising an endless chain, a pair of sprocket means supporting said chain substantially at right angles to said egg supplying means, means for rotating at least one of said sprocket means to cause movement of said chain, a plurality of posts secured to said chain at predetermined spaced intervals and extending substantially perpendicular to said chain, a plurality of plate members each secured to a respective one of said posts and projecting substantially perpendicular thereto, platform means positioned below the lower run of said plate members and extending parallel to said lower run to receive eggs from said egg supplying means and to support said eggs during movement of said eggs by said aligning conveyor.

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3,168,951
PRODUCT STORAGE MEANS FOR VENDING MACHINES
Joseph Gold, Old Bethpage, and Mark Levine, Bethpage, N.Y., assignors to Continental Vending Machine Corp., Westbury, N.Y.
Filed Dec. 18, 1962, Ser. No. 245,492
8 Claims. (Cl. 198—155)

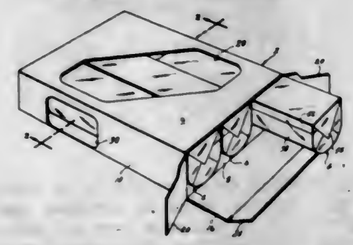


1. Product storage means for vending machines, comprising a conveyor having downward and upward runs

and open-frame shelves mounted on said conveyor, said shelves extending horizontally from the downward run of the conveyor to support products to be vended and hanging vertically from said upward run following vending of said products, said open-frame shelves being fork-shaped in plan view, the arms of the fork diverging in forward direction to permit of nesting one fork within the other when they hang vertically, one above the other, from the upward run of the conveyor.

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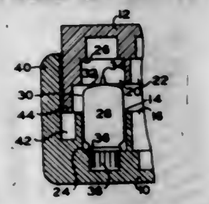
**3,168,952**
**CONTAINER ASSEMBLY**
**Charles E. Palmer, Somers, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Filed Oct. 26, 1962, Ser. No. 233,359**
**12 Claims. (Cl. 206—45.31)**



12. A container assembly comprising a carton of semi-rigid sheet material with front, rear, side and end wall panels, said carton having a window aperture in one of said front and rear wall panels; and a plurality of packages in said carton each comprising a tray of semi-rigid, transparent synthetic plastic sheet material having a substantially planar center panel, goods received in said tray and a cover of flexible transparent synthetic plastic sheet material, said packages having the center panel of their tray portions disposed adjacent said one wall panel of said carton with the window aperture therein and extending between said one wall panel and said goods providing protection therefor, said packages being snugly received between the several wall panels of said carton providing a tight-fitting and relatively rigid assembly.

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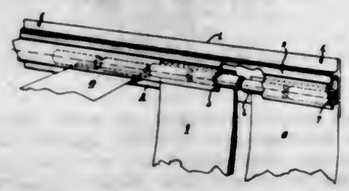
**3,168,953**
**ELECTRON TUBE PACKAGE**
**Kenner S. Omer, Jr., Owensboro, Ky., assignor to General Electric Company, a corporation of New York**
**Filed Aug. 30, 1961, Ser. No. 134,969**
**1 Claim. (Cl. 206—65)**




The combination comprising a plurality of electron tubes, each of said tubes comprising an envelope having a tube based stem from which pins project at one end and a protrusion on a domed opposite end of said envelope, and a package containing said tubes, said package comprising a molded base having a pattern of recesses each receiving one end of an electron tube, a molded cover having a pattern of recesses corresponding to and axially aligned with the recesses in the base, each cover recess receiving the opposite end of the tube placed in the corresponding recess in the base, said base member having a peripheral groove in its upper surface, said cover having a downwardly depending peripheral tongue telescopically received within said groove so that tubes of varying lengths may be enclosed within said package and said cover and base may be axially aligned, each of the recesses in the base nad cover having a portion of reduced cross-section forming a shoulder on which the tube base stem and domed opposite end respectively bear whereby the pins and the protrusion are maintained in spaced relation to the adjacent walls of the recesses.

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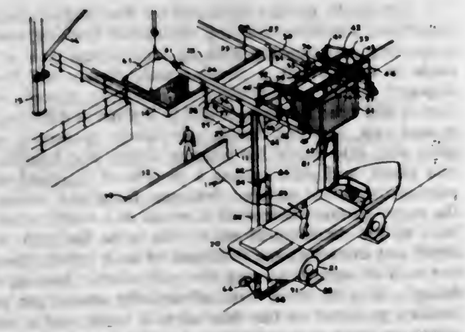
**3,168,954**
**HANGER FOR FLEXIBLE SHEET MATERIAL**
**Pieter von Herrmann, Schenectady, N.Y., assignor to Mohawk Precision Corporation, a corporation of New York**
**Filed Jan. 10, 1963, Ser. No. 250,581**
**11 Claims. (Cl. 211—50)**



1. A hanger for flexible sheet material comprising an elongated member adapted for mounting horizontally and having spaced downwardly convergent front and rear walls connected by a top wall to define an elongated recess having an open mouth at the bottom for the insertion of flexible sheet material, a plurality of separate unconnected wedging pieces disposed longitudinally inside the recess between front and rear walls, said top wall having a portion extending longitudinally along the length of the member and projecting inwardly between front and rear walls to longitudinally divide the upper portion of the recess and also projecting sufficiently to prevent any one of said wedging pieces from moving longitudinally along the recess past another wedging piece, whereby said wedging pieces function independently to grip various thicknesses of sheet material inserted between the wedging pieces and the wall without disturbing the functioning of other wedging pieces.

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**3,168,955**
**APPARATUS FOR LIGHTERING CARGO VESSELS**
**Richard W. Black, Williamsburg, Va., assignor to the United States of America as represented by the Secretary of the Army**
**Filed July 8, 1963, Ser. No. 293,565**
**5 Claims. (Cl. 214—13)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

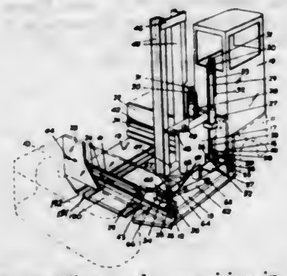


1. In combination with a cargo ship and an amphibious lighter, apparatus for transferring cargo from the ship's deck alongside a cargo hatch to a lighter alongside the ship comprising a pair of track rails extending across the deck of the ship from the hatch opening of the hold to a position beyond the adjacent gunwale of the ship, means supporting said rails from the ship's deck, columns extending down the corresponding side of the ship from said rails in spaced apart and parallel relationship to each other, stirrup means carried by said columns and vertically movable relative to the ship for engaging a lighter and holding the lighter in fixed position relative to the ship, said stirrup means being effective to release a loaded lighter for movement away from the ship, a carriage movable along said track rails from a position adjacent to the hatch opening to a position above a lighter held by said stirrup means, a cargo carrying spreader suspended from said carriage, power operated means for moving said carriage along said track rails, and power operated means for raising and lowering said spreader relative to said carriage whereby said spreader is enabled to pick up a cargo load from the deck, move the cargo load along said track rails and lower the cargo load into the associated lighter.



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**3,168,956**
**FORK LIFT TRUCKS**
**Gregory S. Jinks, Meriden, Ashfield Road, and David M. Jinks, 32 Briar Walk, Oadby, both of Leicester, England**
**Filed Dec. 1, 1960, Ser. No. 73,103**
**Claims priority, application Great Britain, Dec. 1, 1959, 40,787/59**
**8 Claims. (Cl. 214—75)**

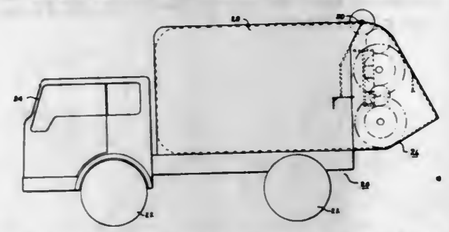


4. A load handling truck comprising in combination, front and rear frame members, front and rear load supporting platforms on said frame members, means bracing said platforms together at low level across their width and presenting a transverse recess between them, a travelling mast and control cabin, carriage means supporting said mast and control cabin for simultaneous movement said carriage means being movable transversely of the truck between said platforms, load handling means mounted for raising and lowering movement on said mast, and means for selectively projecting said load handling means laterally from either side of the truck between said front and rear platforms for picking up or depositing a load, said load handling means comprising a lifting fork mounted so as to be projected laterally from the truck at either side and withdrawn to within the contour of the truck, so that loads may be handled and lowered to rest on said front and rear platforms, and said control cabin having control means therein to control the movement of said carriage, said load handling means and said truck.

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**3,168,957**
**REFUSE LOADER AND COMPACTOR**
**David E. Wenger, South Bend, Ind.**
**(1707 E. 1st Place, Mesa, Ariz.)**
**Filed Nov. 8, 1961, Ser. No. 151,018**
**5 Claims. (Cl. 214—83.3)**

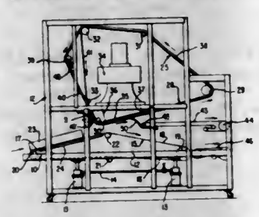
1. A refuse loader and compactor for a truck having a bed with a cover therefor, comprising an endgate pivoted to said cover, a pair of vertically spaced rotatable driving discs including an upper and a lower disc on each side of said endgate, a single pusher plate having an upper and a lower edge, rotatable means near said upper edge connecting said pusher plate to said upper driving discs in the same relative position on each side of said endgate, rotatable means near said lower edge connecting said pusher plate to said lower driving discs in the same relative position on each side of said endgate, said pusher plate, driving



discs, and first and second mentioned means being arranged to move said pusher plate in a circle while maintaining said pusher plate in a vertical position, a splash guard on said pusher plate near the upper edge thereof, a gear train for said driving discs, the initial drive gear of said train being spaced above said rotatable driving discs and on the same axis as the pivot of said endgate, shielding separating said endgate from said truck bed, and shielding for said gear train to protect it from the pressure of refuse.

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**3,168,958**
**TRANSFER MECHANISM FOR BREAD, ROLLS AND THE LIKE**
**Lewis G. Grossi, York, Pa., assignor to Alto Company, York, Pa., a partnership**
**Filed Oct. 5, 1962, Ser. No. 228,686**
**16 Claims. (Cl. 214—309)**



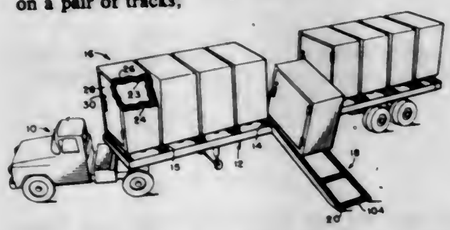
15. Apparatus for depanning and transferring bread loaves and the like comprising a first conveyer having an input portion for panned bread loaves and a downhill discharge portion for empty pans and an apex at the juncture of said portions over which said pans are adapted to tilt when their centers of gravity ride over said apex, a perforated conveyer above said apex and overlying said downhill portion in divergent relation thereto, and means to create a loaf lifting vacuum through said perforated conveyer near and above said apex and extending a predetermined distance downstream from said apex for lifting loaves from their pans as the latter ride over said apex and tilt downwardly onto said downhill portion, whereby abrupt separation of said loaves from said pans is effected.

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**3,168,959**
**CARGO TRANSPORTING SYSTEM**
**Coy N. Chandler, Howard W. Bryan, Jr., and Ray T. Roach, Nashville, Tenn., assignors to Avco Corporation, Nashville, Tenn., a corporation of Delaware**
**Filed Sept. 26, 1962, Ser. No. 226,231**
**3 Claims. (Cl. 214—517)**

3. In a cargo transporting system, the combination comprising:

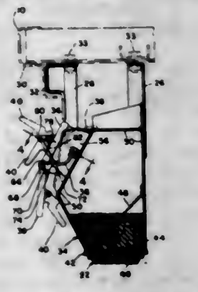
a cargo carrier having a rectangular flat-bed;
a plurality of rectangular wheeled cargo containers, the length of said cargo containers being substantially equal to the width of said rectangular flat-bed;
a pair of parallel tracks for supporting the wheels of each of said plurality of cargo containers, said pairs of tracks being mounted on said flat-bed and extending substantially entirely across the width thereof;
means for releasably rigidly securing each of said cargo containers from the bottom thereof to said flat-bed on a pair of tracks;



a portable ramp, said portable ramp having a length equal to approximately twice the width of said carrier, said ramp having a pair of tracks extending the entire length thereof;
means for securing one end of said ramp to said flat-bed with the tracks of said ramp in registry with any selected pair of tracks on said flat-bed;
a portable winch;
means for mounting said winch on said flat-bed on the side opposite said ramp, said winch having a cable attachable to said cargo container;
a pair of oppositely disposed pawl mechanisms mounted on opposite ends of said containers; and
a pair of pins removably supported on said flat-bed for engagement with each of said pawls, respectively.

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**3,168,960**
**CLOSURE FOR A RAIL SANDING APPARATUS**
**Albert G. Dean, Narberth, and Herbert T. Hermann, Southampton, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed July 25, 1962, Ser. No. 212,311**
**8 Claims. (Cl. 220—32)**



1. In sanding apparatus for sanding a rail under a wheel of a railway vehicle, the combination of: a sandbox adapted to be mounted on the railway vehicle and having a fill opening bounded by an annular edge; a cover hinged to said sandbox, said cover being movable between a closed position covering said fill opening and an open position allowing said to be placed in said sandbox, said cover having a circular body and a pair of concentric, axially-extending flanges defining therebetween an annular groove which opens towards said edge; an annular gasket seated in said groove and being engageable with said edge when said cover is closed to exclude from the sandbox external weather elements such as rain, snow and the like; a cover retaining spring pivoted on said sandbox; and a throwover lever pivotally mounted on said cover and being engageable with said spring for locking said cover in said closed position and applying to said gasket via said cover a sealing force.

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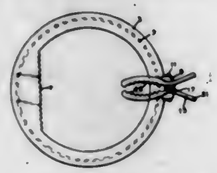
**3,168,961**
**HOLE PLUG**
**Cyril J. Yates, 101 Horseshoe Drive, Henderson, Ky.**
**Filed Feb. 15, 1962, Ser. No. 173,673**
**4 Claims. (Cl. 220—60)**



1. A closure plug of plastic material, for openings in sheet members, comprising a circular, domed head, with a planar, annular, peripheral zone on its under side, and an axially disposed, tubular shank extending from said under side, said shank having a bulbous, outer form, defined by a pair of substantially identical, frusto-pyramidal, surfaces arranged in base-to-base coincidence, said head having an annular channel in its said under side, extending from said shank to said annular zone.

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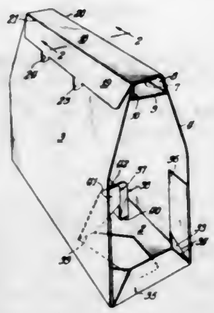
**3,168,962**
**BRUSH WIPER AND HOLDER**
**Julia Rawlins, Pottersville, N.Y., and Helen Yacevich, R.F.D. 3, Tamarac Road, Brunswick, N.Y.**
**Filed July 24, 1963, Ser. No. 297,323**
**1 Claim. (Cl. 220—90)**



A brush wiper and holder for use on and in conjunction with a paint can comprising a ring-like member, ears, a cross pin, holding clamps, a leaf spring and a helical compression spring; the ring-like member being suitably formed to render same emplaceable over and in abutting relationship with the open portion and side of the paint can, the ring-like member having an internal serrated edge integral therewith for purposes of removing from the paint brush excess or accumulated paint by wiping the paint brush against the internal serrated edge, the ears being upstanding from and integral with the ring-like member, the cross pin being carried by the upstanding ears, the holding clamps being carried by the cross pin and being disposed and arranged between the ears, the holding clamps having serrated portions to hold therebetween the handle portion of the paint brush, the leaf spring being imbedded in the handle portions of the holding clamps to constrain the serrated portions of the holding clamps into closed relationship with each other, the helical compression spring being arranged and disposed on the cross pin and in abutting relationship with the bight portions of the holding clamps to constrain the bight portions outwardly into abutting relationship with the ears, and knurling being formed on the surfaces of the ears and the bight portions of the holding clamps in abutting relationship with each other to permit positioning of the holding clamps in a plurality of positions.



**3,168,963**
**BOTTLE CARRIER**
**Richard S. Wolowicz, Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware**
**Filed Oct. 1, 1963, Ser. No. 312,906**
**6 Claims. (Cl. 220—112)**



1. A sleeve-type, wraparound, paperboard carrier for packaging a plurality of bottles, having upwardly tapered neck portions, arranged in a row, said carrier comprising:
(*a*) a generally rectangular bottom wall panel;
(*b*) a pair of opposed side wall panels hinged to and upstanding from opposed side edges of said bottom wall panel, and having upper portions inclined toward each other to conform generally to the neck portions of the bottles;
(*c*) a cushioning member carried by one of said side wall panels, extending longitudinally of the carrier between upper portions of said side wall panels, and including:
(i) a first narrow panel hinged to the upper edge of said one side wall panel and extending toward the other side wall panel over the upper extremities of said bottles;
(ii) a second narrow panel hinged to said first narrow panel and extending downwardly therefrom inwardly adjacent said other side wall panel;
(iii) a third narrow panel hinged to said second narrow panel and extending toward said one side wall panel in spaced relation to said first narrow panel;
(iv) a fourth narrow panel hinged to said third narrow panel and extending upwardly therefrom inwardly adjacent said one side wall panel to form with said one side wall panel and said other narrow panels an elongated tubular structure at the top of the carrier;
(*d*) at least one of said side wall panels having formed therein a finger opening located immediately below the third narrow panel of said cushioning member to permit the weight of the carrier to be supported by said cushioning member when the carrier is lifted;
(*e*) means for securing said other side wall panel to one of said tubular structure and said one side wall panel.

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**3,168,964**
**ARTICLE DISPENSING DEVICE**
**Ralph R. Davis, Rte. 4, Canton, Ga.**
**Filed Oct. 4, 1963, Ser. No. 314,007**
**4 Claims. (Cl. 221—88)**

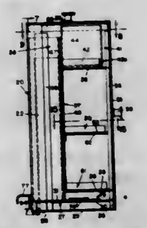
1. An article dispensing device comprising:
(*a*) a rack for supporting a plurality of articles,
(*b*) a plurality of uniformly vertically spaced slots in said rack,
(*c*) each slot having a bottom portion for supporting an article and an upper opening to permit the passage of said article therethrough,
(*d*) each slot sloping at substantially the same angle to the vertical,
(*e*) the bottom portion of each slot being above the opening of the next lower slot,
(*f*) an ejector member mounted for vertical movement on said rack and for successively engaging articles supported in said slots,



(*g*) means operable to elevate said ejector member through successive uniform increments, each increment substantially equal to the spacing between said slots, to lift and discharge from each slot one article at a time,
(*h*) means operable to hold said ejector member at a stationary elevated position on said rack after each article discharge, and
(*i*) means for rendering said elevating means and said holding means inoperative to lower said ejector member on said rack.

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**3,168,965**
**DENTAL FILM PACK DISPENSERS, AND THE LIKE**
**Irwin C. Rinn, Park Ridge, Ill., assignor to Rinn Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Sept. 22, 1961, Ser. No. 140,120**
**3 Claims. (Cl. 221—131)**

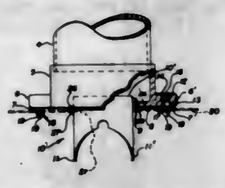


1. A dispenser for dispensing substantially flat film packs which comprise photosensitive sheets enclosed in flat envelopes of material opaque to wave lengths in the visible spectrum but transparent to X-radiation, said dispenser including a vertical channel element open at its lower end and comprising a vertical chute of size and contour to receive in telescoping fashion a vertical adapter to accommodate a vertical stack of film packs lying horizontal and flat on each other, means to support the lower ends of the side flanges of said channel element, the lower end of the web of the chanel element being at an elevation higher than the supported lower ends of the side flanges

of said vertical channel element to provide a first defined opening beneath the lower end of the web and between the side flanges of such channel element with the top of said opening higher than the supported lower ends of the side flanges of such channel element; a shell enclosing said chute and composed of material substantially opaque to stray X-radiation, a horizontal slotted second defined opening in the shell in horizontal alignment with the first defined opening, a horizontally movable slide element extending through the second defined opening of the shell and movable through said first defined opening, the slide element being of length such that when it is moved inwardly to bring its outer end in proximity to the second defined opening, the inner end of such slide element extends through the first defined opening to a position rearward of said opening; a U-shaped adapter of size and contour to telescopingly seat into the chute aforesaid, said adapter comprising a pair of shallow vertical channels in proximity to the opposing surfaces of the chute and with the front edge flanges of said shallow channels lying in a common vertical plane and constituting vertical abutments to define the front vertical corners of the stack of film packs accommodated within such adapter, and a vertical plate extending between said vertical channels to define the rear vertical enclosure for the stack of film packs accommodated within such adapter; horizontal flanges connected to the lower ends of the webs of the shallow vertical channels of the adapter and extending towards each other and providing lateral edge supports for the stack of film packs within such adapter, the lower ends of the front edge flanges of the shallow adapter channels being located at elevations high enough to permit horizontal delivery movement of the lowermost film pack, produced by out movement of the slide element; together with an upwardly extending film pack driving block secured to the slide element and of vertical dimension to engage against the rear edge of the lowermost film pack of the stack, the first defined opening being of vertical dimension sufficient to allow the film pack driving block to move through said first defined opening during back and forth movements of the slide element.

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3,168,966
DISPENSER ANCHORING SYSTEM
Joseph Wereble, North Arlington, N.J.
(834 Kearny Ave., Kearny, N.J.)
Filed Apr. 8, 1963, Ser. No. 271,287
1 Claim. (Cl. 222—90)

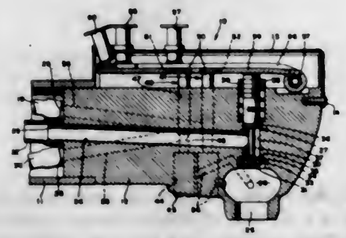


A powder dispenser anchorable to the wall of a membranous container, comprising,

- a hollow dispenser body having a bottom, and having an opening in said bottom for receiving powder from a container for dispensing powder through said dispenser,
- a hollow piercing and cutting member projecting outwardly from said bottom and disposed adjacent said opening and designed, when the body is rotated, to cut a hole in a container to permit passage therethrough of a powder into said body,
- a narrow continuous shoulder projecting from said bottom and disposed immediately adjacent and outside said opening and said piercing and cutting member, and having a continuous groove therein, and serving as a powder sealant,
- a pair of oppositely-disposed prongs, each having a round body, and terminating with piercing points, and projecting from the bottom of said dispenser outward of said groove, and
- a bulged portion disposed adjacent and above said points on said prongs, forming a barb therewith, and serving as a stop for resisting removal of said body once said barb has penetrated a wall of a container.

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3,168,967
BEVERAGE DISPENSER
Tony J. Giampa, 2970 W. Bellevue Ave., Los Angeles, Calif.
Filed Oct. 3, 1961, Ser. No. 142,564
5 Claims. (Cl. 222—129.1)



4. In a portable device for selectively dispensing a plurality of different syrups and mixing such syrups with charged water all supplied to the device under pressure, the combination of: a housing, a separate valve mounted in said housing for controlling the flow of each of the plural different syrups, a charged water valve mounted in said housing for controlling the flow of charged water, plural lever means mounted in said housing for selectively operating each of said syrup valves, means for operating said charged water valve upon actuation of one of said lever means for operating a selected syrup valve, a mixing chamber in said housing having an oval shape and a restricted outlet, said charged water valve communicating directly with said mixing chamber remote from said restricted outlet, means for causing the charged water to flow in contact with substantially the entire oval surface of said mixing chamber upon opening of said charged water valve, and passages extending between said mixing chamber and each of said syrup valves, each said passage opening into said mixing chamber on the major diameter portions of the oval surface thereof between the charged water inlet and the said restricted outlet.

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3,168,968
ELASTICALLY DEFORMABLE CONTAINER
Hans Krakowsky, Hamburg, Germany, assignor to Hans Schwarzkopf, Hamburg-Altona, Germany
Filed Nov. 19, 1963, Ser. No. 325,525
Claims priority, application Germany, Jan. 11, 1963, Sch 32,892
13 Claims. (Cl. 222—212)

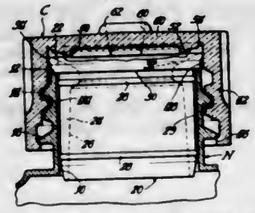
1. A refillable container for liquids, comprising a receptable defining a chamber and including an open-ended top portion through which a liquid may be admitted into or evacuated from said chamber; a cap secured to and including an end wall extending across the open end of said top portion, said end wall having a venting hole; and an elastically deformable diaphragm adjacent to the open end of said top portion in the interior of said cap and comprising an outlet extending through said end wall, said diaphragm having a first opening through which the liquid may flow from said chamber into said outlet or vice versa and a second opening, said end wall and said diaphragm defining between themselves a compartment which communicates with said chamber via said second opening and said diaphragm normally sealing said compartment from said venting hole, said diaphragm being deformable in response to depression of said outlet



in a direction toward said chamber whereby said compartment is free to communicate with the atmosphere via said venting hole.

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3,168,969
OFF-CENTER DISPENSING CLOSURE ARRANGEMENT
Frank J. Krieps, Elmhurst, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed June 19, 1963, Ser. No. 289,060
1 Claim. (Cl. 222—520)



A captive, pouring, closure arrangement for dispensing liquid from a container, comprising in combination:

- (*a*) a neck on the container, including:
  - (i) an external locking bead;
  - (ii) a central pouring throat; and
  - (iii) an outwardly facing, annular sealing surface on the free end of the neck inclined axially and radially outwardly from the throat; and
- (*b*) a one-piece, captive, closure cap threadably mounted on the neck for limited axial movement inwardly and outwardly relative to said neck to closed and open positions, respectively, and including:
  - (i) a generally flat end wall having integral skirt extending therefrom to define therewith a cavity for receiving the container neck;
  - (ii) an internal locking bead on the skirt adapted to cooperate with the neck locking bead to prevent the accidental removal of the cap from the container neck;
  - (iii) an inwardly facing annular, inclined sealing surface on the inside of said end wall disposed for engagement with said neck sealing surface, when the cap is in closed position, and
  - (iv) said end wall having extending axially therethrough a single, vertical pouring passageway, larger at one end than at the other, and being disposed in alignment with said cap and neck sealing surfaces, so that when the cap is in open position liquid can flow from the container throat between the respective sealing surfaces and out of the cap pouring passageway, and when the cap is in closed position the engagement between the respective sealing surfaces will effect a liquid tight seal therebetween and thereby prevent the flow of liquid from the neck throat to the cap passageway.

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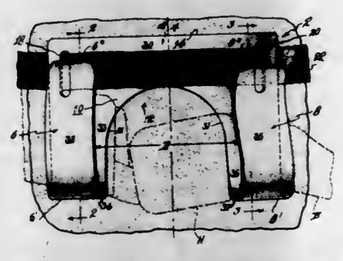
3,168,970
GARMENT HANGER HAVING SLIP PREVENTING MEANS
Harry W. Wilson, 2 Flower Road, Garden City, N.Y.
Filed Apr. 18, 1962, Ser. No. 188,427
3 Claims. (Cl. 223—92)



1. A garment hanger and slip preventing means installed upon said hanger, said hanger having a generally I-shaped cross-section, the vertical component of the I-shape being a vertically extending web and the upper and lower horizontal portions of the I-shape defining a pair of flanges which extend along the upper and lower edges of said vertical web, the upper flange of said hanger being adapted to support the shoulder portions of a garment, said upper flange being interrupted and separated to form two pairs of spaced end portions between which the shoulder straps of a garment may be hung, said slip preventing means comprising a generally channel-shaped member of relatively flexible material conforming to the contours of the hanger, said channel-shaped member having an upper yoke portion which extends its full length and rests against the upper flange portion of the hanger, a plurality of inwardly curved fingers formed along both side edges of said yoke, said fingers engaging the side and bottom edges of said upper flange to hold said channel-shaped member in place thereon, and a pocket portion formed at one end of said channel-shaped member, said pocket portion being slipped over one of said end portions of said upper flange of the hanger in order to prevent longitudinal displacement of said channel-shaped member relative to said flange.

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3,168,971
MEANS FOR SUPPORTING A BOW OR THE LIKE
William Goertzen, P.O. Box 27, Wasco, Calif.
Filed Aug. 30, 1961, Ser. No. 135,014
1 Claim. (Cl. 224—1)



A bow holder adapted to support a bow adjacent a sportsman's body whereby both of the sportsman's hands are free for use, said bow holder comprising:

- (*a*) an integral U-shaped plate member fabricated of resilient plastic;
- (*b*) said plate member having a continuous upper portion arched transversely of the vertical axis thereof to conform to the waist contour of a sportsman;

(*c*) a pair of U-shaped arms disposed at opposite ends of said upper portion and depending therefrom to define the lower portion of said plate member;
(*d*) each of said U-shaped arms being formed of an inner leg, an outer leg spaced therefrom and a bight portion connecting said inner and outer legs together;
(*e*) said inner legs being integrally affixed to said upper portion and said outer legs thus being spaced outwardly of said upper portion;
(*f*) said upper portion having spaced slots therein for coupling said bow holder to a belt disposed in surrounding relation to the sportsman's waist;
(*g*) said upper portion having a lateral extent sufficient that said U-shaped arms at the ends thereof are spaced apart by a distance at least substantially as great as the width of a sportsman's hand whereby said sportsman can facilely introduce and remove a bow from said holder while it is being worn in coupled relation to his belt;
(*h*) said outer legs being spaced from said inner legs by said bight portions to form bow receiving recesses at the base of said U-shaped arms;
(*i*) one of said bight portions having a length greater than the other of said bight portions whereby one of said recesses has a spacing which is greater in width than the other of said recesses to thus permit said bow to be accommodated with its portions of various thicknesses being properly received within the correspondingly sized recesses;
(*j*) said outer legs extending upward from said bight portions to a height at which the terminal ends thereon are disposed oppositely of said slots; and
(*k*) said outer legs curving inwardly above said bight portions and then curving outwardly at their terminal ends to permit said bow to be readily introduced into said holder and to be snugly retained therein due to the resiliency of the plastic of said arms which causes the inwardly curved portions of said outer legs to extend over said bow as said bow is resting within the recesses in said holder.

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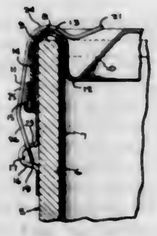
**3,168,972**
**PISTOL HOLSTER WITH LIMITING SWING CLUTCH**
Henry Parlante, 2706 Utopia Parkway, Flushing, N.Y., and Frank Parlante, 2072 Gerritsen Ave., Brooklyn, N.Y.
Filed Sept. 16, 1963, Ser. No. 308,981
2 Claims. (Cl. 224—2)



1. A swivel joint coupling for a rotatable pocket and stationary loop of a holster assembly, comprising a bolt having a shank with a flat head at one end of the shank, the other end of the shank being threaded, a nut engaged on said other end of the shank, a pair of circular plates having aligned central holes, said plates being disposed adjacent each other between said head and nut and with said shank passing through the central holes in the plates, one of said plates having an arcuate flange on the periphery thereof extending away from one side of the one plate toward the other plate to overlap the peripbery thereof, the other of said plates having another arcuate flange on the periphery thereof extending away from one side of said other plate toward the one plate to overlap the periphery thereof, the other side of the one plate having outwardly extending projections for engaging nonrotatably on said pocket, the other side of the other plate having outwardly extending projections for engaging nonrotatably on said loop, whereby turning movements of the one plate with respect to the other plate in opposite directions are limited by engagement of edges of the flanges of the plates in two extreme positions of rotation of the one plate with respect to the other plate, the one side of said one plate and the one side of the other plate both being concave so that the one sides of the plates contact each other only at their peripheries to minimize turning friction therebetween, the projections on the other side of each plate being a pair of bosses disposed in diametral alignment with the center of the arcuate flange thereon and with the central hole in the plate located between the bosses.

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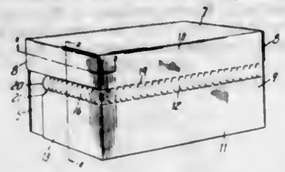
**3,168,973**
**COMBINATION DRUM AND FASTENING LUG**
Charles A. Uncapher, Chicago, Ill., and Harry E. Lesher, Van Wert, Ohio, assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed June 26, 1962, Ser. No. 205,448
12 Claims. (Cl. 229—47)



1. In combination, a drum including a body having an open end over which a cover is placeable and a metal chime telescoped over said end and extending a distance along said body, pairs of outwardly extending beads spaced circumferentially about the chime and formed from portions of said chime, the beads of each pair having spaced and opposed edges defining openings into interior recesses provided in said beads, a plurality of cover securing lugs, each lug being pivotally secured at one end thereof to said metal chime by a cooperating pair of said beads and having means at its other end for engaging over and securing a cover on the drum, said lugs each being generally of strap-like configuration with spaced edges and provided with an integral ear projecting from each edge at said one end thereof, and said ears being engaged in the recesses of a cooperating pair of said beads whereby the lugs may be swingingly moved between an inactive out-of-the-way position and active position presenting the other ends of the lugs in securing engagement over said cover when applied on said one end of the drum.



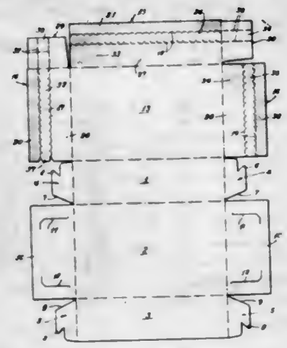
**3,168,974**
**COVERED CARTON**
Kenneth T. Buttery and Thomas Vander Lugt, Jr., Kalamazoo, Mich., assignors to KVP Sutherland Paper Company, Kalamazoo, Mich.
Filed Nov. 14, 1960, Ser. No. 68,940
8 Claims. (Cl. 229—51)



1. A carton formed of an integral blank cut and scored to provide a bottom, a rear wall, an inner front wall member, and inner end wall members, rear and front outer end wall members on the end edges of said rear wall and said inner front wall member disposed in overlapping relation to said inner end wall members, said rear wall, inner front wall member and inner end wall members being of uniform height, a cover hingedly connected to the upper edge of said rear wall and provided with end flaps, an outer front wall member on the swinging edge of said cover provided with end flaps disposed in overlapping relation to said outer end wall members, said cover end flaps being disposed in overlapping relation with respect to and secured to upper portions of said end flaps on said outer front wall member, said outer front wall membr and its said end flaps having vertically spaced fracturing scores extending throughout the length thereof, the upper of said fracturing scores being substantially aligned with the lower edges of said cover flaps, said outer front wall member being secured to said inner front wall member and its end flaps being in overlapping relation with and being secured to said rear outer end wall members below the lower of said fracturing scores.

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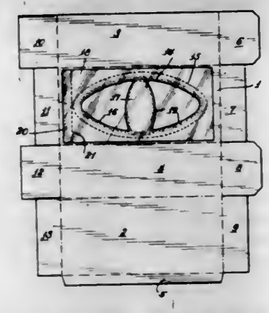
**3,168,975**
**CARTON HAVING TEAR STRIP IN COVER FLAPS**
Kenneth T. Buttery and Thomas Vander Lugt, Jr., Kalamazoo, Mich., assignors to KVP Sutherland Paper Company, Kalamazoo, Mich., a corporation of Delaware
Filed Sept. 11, 1963, Ser. No. 308,108
11 Claims. (Cl. 229—51)



1. A carton formed of an integral blank cut and scored to provide a bottom member, a rear wall member, and an inner front wall member, end flaps attached to said members, and means securing said end flaps together, a cover hingedly connected to the upper edge of said rear wall member and provided with cover flaps comprising outer end wall members and an outer front wall member, two of said cover flaps having terminal extensions affixed to an adjacent cover flap, said cover flaps and said terminal extensions each being provided with a pair of spaced-apart substantially parallel fracturing scores defining a tear strip, said cover flaps being secured to said end flaps and said inner front wall member below the lower of said fracturing scores, and the tear strips of said cover flaps being adhesively secured together in alignment by the tear strips of said terminal extensions.

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**3,168,976**
**DISPENSING CARTON WITH REMOVABLE PLASTIC WINDOW**
Henry L. Metzger, Castleton-on-Hudson, N.Y., assignor to KVP Sutherland Paper Company, Kalamazoo, Mich., a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,497
2 Claims. (Cl. 229—51)



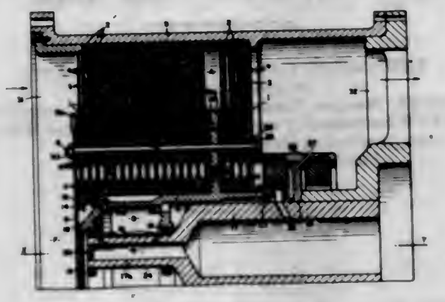
1. A dispensing carton comprising end and side panels and having a removable window in a panel thereof, said window comprising a removable frame the periphery of which is defined by a line of weakness, and having a central opening, a transparent film adhesively affixed to said frame and having one end thereof adhesively affixed to said panel external of the area of said frame adjacent a carton end, said film being provided with a line of weakness extending over the width thereof and separating the area at which said film is affixed to said panel from the line of weakness defining the periphery of said frame, whereby the desired contents may be loaded into said carton through said one end thereof without lifting and folding over the corners of said film and whereby, upon removal of said window, said film may be cleanly severed at said line of weakness without tearing or disfiguration of said carton.

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**3,168,977**
**TURBOMOLECULAR VACUUM PUMP**
Henri Louis Garnier, Courbevoie, Leonide Rubet, Louis Jacques Desroches, and Raymond Hippolyte Firmin Marchal, Paris, and Louis Paul Henri Meulien, Courbevoie, France, assignors, by mesne assignments, of one-half to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France, and one-half to Commissariat à l'Energie Atomique, Paris, France, a public corporation of France
Filed July 30, 1962, Ser. No. 213,414
Claims priority, application France, Jan. 23, 1962, 885,623
8 Claims. (Cl. 230—117)

1. A rotary high-vacuum pump of the "molecular" type comprising a generally cylindrical casing with a substantially vertical axis, a high-vacuum end section with a large-conductance suction orifice at the top of said casing, a preliminary-vacuum end section with a discharge orifice toward the bottom of said casing, a plurality of superposed, generally horizontal rotor discs housed within said casing intermediate said end sections and provided with gas molecule passages in a peripheral zone of said pump adjacent said casing, a driving shaft of substantially ver-

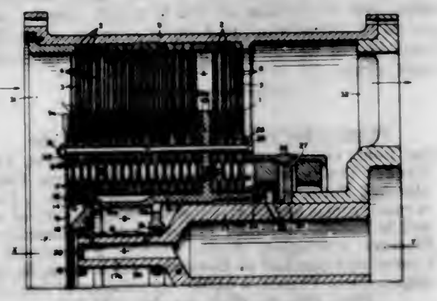
tical rotation axis connected with said rotor discs, bearing means for said shaft positioned in a central zone of said pump remote from said peripheral zone thereof, a lubricant container in a bottom central position with respect to said pump, means for sucking lubricant from said container and circulating said lubricant within said central zone of the pump to lubricate said bearing means, lubri-



cant passages in said central zone for the return of lubricant by gravity to said container, and means for fluid-tightly separating said container and said central zone of the pump wherein particles of lubricant circulate from said high-vacuum end section and at least the peripheral zone of the pump adjacent thereto wherein rarefied gas molecules circulate.

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3,168,978
TURBOMOLECULAR VACUUM PUMP
Henri Louis Garnier, Courbevoie, Leonide Rubet, Louis Jacques Desroches, and Raymond Hippolyte Firmin Marchal, Paris, and Jean Lutz, Antony, France, assignors, by direct and mesne assignments, of one-half to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France, and one-half to Commissariat à l'Energie Atomique, Paris, France, a public corporation of France
Filed July 30, 1962, Ser. No. 213,415
Claims priority, application France, Aug. 4, 1961, 870,093
15 Claims. (Cl. 230—118)



1. A rotary high-vacuum pump of the molecular type comprising a stationary part, a rotor, means for mechanically transmitting to said stationary part stresses originating from said rotor, a series of discs alternately secured to said stationary part and to said rotor and having apertures for the passage therethrough of gas molecules, a high-vacuum end section with a large-conductance suction orifice located on one side of said series of discs, a preliminary-vacuum end section with a discharge orifice located on the other side of said series of discs whereby the molecules of rarefied gas have from said suction orifice and through said apertures a mean path substantially without any bend and parallel to the rotation axis of the pump, and rotor support means excluding any lubricated bearing in said high-vacuum section.

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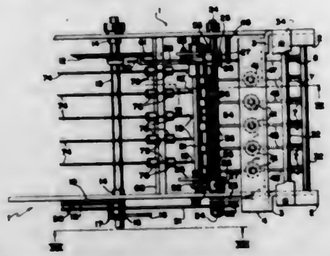
3,168,979
TRANSVERSE FLOW TYPE BLOWERS
Theodor Helmbold, Hedwigstrasse 4, Munich, Germany
Filed Mar. 20, 1961, Ser. No. 96,952
Claims priority, application Germany, Apr. 22, 1960, H 39,243
7 Claims. (Cl. 230—125)



1. A transverse flow type blower, comprising a casing, a drum shaped rotor disposed within said casing, and partition means positioned with respect to said rotor and casing so as to form opposing inlet and outlet channels, said rotor being rotatable in a predetermined direction to convey a fluid medium from said inlet channel to said outlet channel, the fluid flowing through said rotor normally forming a vortex between the center of said rotor and said partition means adjacent the periphery of said rotor, said partition means comprising a wall portion and a cylindrical body rotatably mounted between said wall portion and said rotor about an axis extending substantially parallel to the rotational axis of said rotor, said wall portion having a positionable member comprising means to provide a back flow fluid passage for permitting discharge fluid in said outlet channel to return to said inlet channel, and drive means for rotating said cylindrical body in the same direction as said predetermined direction, said cylindrical body being effective when rotated in said same direction to so deflect return fluid flowing through said back flow fluid passage as to oppose movement of the vortex in said rotor.

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3,168,980
SELECTOR
Roger A. Willyard and Clarence E. Adler, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed July 31, 1961, Ser. No. 128,184
16 Claims. (Cl. 235—1)



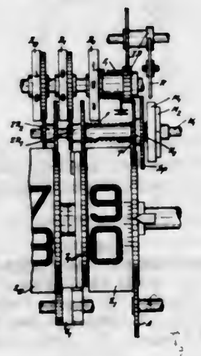
1. Sensing mechanism for reading step cams positionable according to measured values, in combination, fingers for sensing steps on the cams according to the positions of the cams, drive means for driving the fingers into and out of engagement with the cams including bell cranks mounted to be pivotable and movable in rectilinear paths, the positions of the bell cranks in such paths indicating the reading, and means for locking the bell cranks in such paths, the bell cranks driving the fingers out of



engagement with the cams after the bell cranks are locked in such paths, whereby the cams can be repositioned while the bell cranks are locked in such paths.

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3,168,981
PRINTING MECHANISM FOR FLUID METERS
Heinz Goy, Berlin-Tempelhof, and Horst Glaser, Berlin, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, a corporation of Germany
Filed July 11, 1961, Ser. No. 123,142
Claims priority, application Germany, Aug. 2, 1960, S 69,728
4 Claims. (Cl. 235—58)

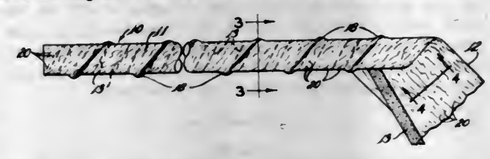


1. Apparatus for controlling the printing wheels of a printing mechanism associated with a measuring device, said apparatus having number indicating wheels including a units number indicating wheel, which are driven by the measuring device, and having number printing wheels cooperating with the respective number indicating wheels, and having a further fractions-printing wheel for cooperation with the units number indicating wheel, a rotatable auxiliary device selectively operatively connecting said units number indicating wheel with said fractions-printing wheel, means driven by said units number indicating wheel for steadily advancing the units number printing wheel cooperating therewith and for coincidently actuating said auxiliary device which is operative in initially idling motion to assume a position corresponding to the respective full number or fraction number position assumed by said units number indicating wheel, and means independently operable, in the event that the units number indicating wheel has been set to a fraction value, for operably connecting said auxiliary device to said fractions-printing wheel and for actuating said auxiliary device in reverse order of operation by an amount corresponding to the difference between the fractional position of the units number indicating wheel and the last attained full number thereof, thereby coincidently resetting the respective units number printing wheel to the full number attained last by the units number indicating wheel and simultaneously setting the fractions printing wheel in accordance with the fraction number attained by the units number indicating wheel, whereby said printing wheels are set for printing the measured units and fractions thereof.

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3,168,982
DRINKING STRAW
Harry E. Davis, 544 Vinita, Akron, Ohio
Filed Mar. 7, 1963, Ser. No. 263,620
3 Claims. (Cl. 239—33)

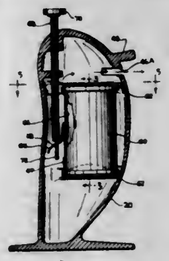
2. A drinking straw comprising a helically wound single initially flat strip of sheet material that has been first crinkled then formed with a rib during the winding process so that the finished straw is a generally cylindrical tube having at least one helical rib extending outwardly



from the surface of the straw and with a crinkled surface throughout.

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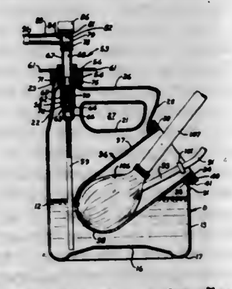
3,168,983
BIRTHDAY CAKE CANDLE EXTINGUISHER
Paul Bosak, New York, N.Y. (Rte. 1, Etna Green, Ind.)
Filed May 23, 1963, Ser. No. 282,709
7 Claims. (Cl. 239—211)



1. A candle extinguisher of the kind described comprising an elongated hollow bulbous body having a disc-shaped base for support on a horizontal supporting surface, the opposite end of the body being curved and having facial features simulating the face of a human being including a slot simulating a mouth, a can of compressed air inside the body, said can having a discharge opening, a removable strip normally closing said opening, said strip having a free end with a hole therein, and an elongated slidable rod inside the body with one end interlocked with the hole in said strip, the other end of the rod extending outwardly of the can and adapted to be pushed inwardly for stripping the closure strip off of the can to expose the opening whereby air escapes from the can out through the mouth of the body.

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3,168,984
CONTAINER AND APPARATUS FOR TOILET BOWL CLEANING FLUID
Leon M. Corning, Redwood City, Robert L. Friedenthal, San Mateo, and Robert E. Sarafan, San Francisco, Calif., assignors to Advance Chemical Company, San Francisco, Calif.
Filed Apr. 9, 1962, Ser. No. 186,172
5 Claims. (Cl. 239—333)

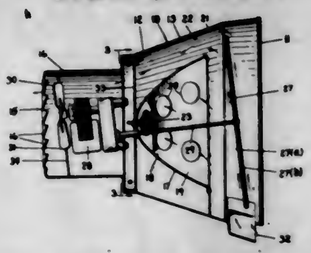


1. A container for the purpose described comprising a hollow body, an upwardly extending neck, a handle adja-

cent said neck and joined to said upper end of said neck, a finger-actuated pump on said neck, a long, flexible tube for the discharge of said pump, a spray nozzle on the outer end of said tube, said body formed with an aperture on one side, and a cup fitting through said aperture and disposed slanting downwardly within said body, said cup being secured at its outer end to said side.

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**3,168,985**
**TRANSMISSION POLARIZER**
John G. Troup, 1967 Victoria Park Ave., Scarborough, Ontario, Canada, and Thomas L. Joyce, 3177 Sheppard Ave. E., Agincourt, Ontario, Canada
Filed Aug. 31, 1962, Ser. No. 220,625
3 Claims. (Cl. 240—9.5)

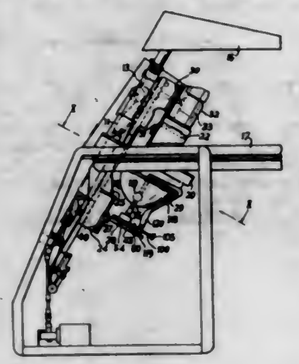


1. A polarized light transmitter, said transmitter comprising a casing, a transparent closure member in said casing adjacent one end thereof, a light-producing source and a perforate-concave light reflector, said light-producing source mounted within said reflector, a rotatable polarizing disc situated within said casing intermediate the concave side of said reflector and said closure member, a fan, motor means, means connecting said motor means to said fan, drive means connecting said motor means to said polarizing disc for rotating said polarizing disc, air intake vent means in said casing adjacent to said polarizing disc, air exhaust vent means in said casing, said fan being disposed adjacent said air exhaust vent means for forcing air out of said casing through said exhaust vent means and for drawing air into said casing through said air intake vent means; whereby the fan draws air through the intake vent means, over all of the surfaces of the disc and all of the surfaces of the reflector, and out through the air exhaust vent means.

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**3,168,986**
**MOUNTINGS FOR ADJUSTING THE LOCATION OF A SOURCE OF LIGHT IN AN OPTICAL PATH**
John Henry Jeffree, London, and Dennis Arthur Sutton, Hatfield, England, assignors to Caps (Research) Limited, Wembley, England
Filed Aug. 6, 1962, Ser. No. 215,824
Claims priority, application Great Britain, Aug. 4, 1961, 28,504/61
9 Claims. (Cl. 240—44.2)

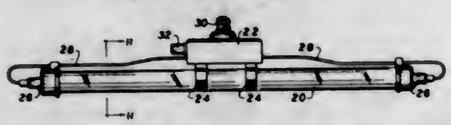
1. A microfilm enlarger, comprising a lamp having coaxial spaced electrical connections, a lamp supporting bracket, an element mounted on the bracket, contact means provided on the element and in engagement with one of the said electrical connections, a swing arm structure pivotally mounted on the bracket, further contact means carried on the swing arm structure remotely from the element and in engagement with the other of the said electrical connections, the swing arm structure being movable from an operative position in which the further contact means are positioned coaxial with the contact means on the element and are in engagement with the other of the said electrical connections to a withdrawn position in which the lamp can be removed from its supported position on the element, an image bed, an optical system defining an optical path along which light from the lamp is projected to form an image of the microfilm on the image bed, and first and second adjustment means for



adjusting the position of the element relative to the optical path in respective mutually perpendicular directions in a plane normal to the said optical path.

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**3,168,987**
**FIXTURE FOR FLUORESCENT LIGHTS AND THE LIKE**
Raymond A. Heisler, 122 Surrey Drive, Wayne, N.J.
Filed Jan. 17, 1963, Ser. No. 252,097
6 Claims. (Cl. 240—51.11)



1. In a moisture-resistant fixture for a fluorescent tube comprising a ballast container, a ballast insulated from and residing in said container, an electrical socket engaging means attached to and extending from said container, spring clips attached to the container and adapted to removably hold a tube intermediate its ends in spaced relationship to the container, a pair of flexible moisture-resistant wire conductors passing through the walls of and extending from said container, flexible moisture-resistant end caps mounted on the end of said wire conductors and adapted for mounting on the end of and to be supported by the fluorescent tube, a recess formed in said end cap, an insulating block removably mounted in said recess, a guideway formed in said block the guideway arranged to receive a contacting pin on the end of the fluorescent tube, pin contacting means in said block arranged to effect an electrical connection to said pin, a flexible contacting and sealing means defining an annular recess in the end cap and arranged to engage and hold the end of the tube in a manner to exclude moisture, and electrical conducting means to carry current from said socket engaging means to said pin contacting means.

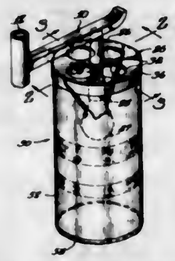
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**3,168,988**
**SHADES FOR LIGHTING FIXTURES AND TO THE MEANS FOR SUPPORTING SAME**
Norbert L. Kula, Chicago, Ill., assignor to The Stiffel Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 12, 1962, Ser. No. 223,193
1 Claim. (Cl. 240—108)

A shade for attachment to a light bulb which light bulb has a neck portion, said shade comprising a body portion and means for detachably securing said shade to the light bulb at said neck portion, said means comprising a pair of wire holders, each said wire holder having its



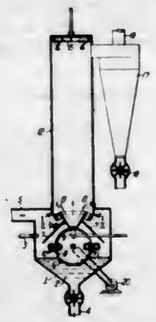
outer opposite ends attached to the shade, each said wire holder having outer opposite ends which extend vertically and continue downwardly and inwardly in straight lines to form sloping side sections and continue inwardly to form an arcuate shaped connecting section between said side sections, the outer opposite vertical ends of the side sections of one holder being secured to the shade and in contact with the outer opposite ends of the side sections



of the other holder, with the said side sections diverging gradually away from each other so that when viewed from an end the two side sections of the two holders form an inverted V-shape, said arcuate shaped connecting sections of said pair of holders engaging said light bulb adjacent said neck portion and above the maximum diameter of the light bulb so that said shade is supported by said light bulb.

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**3,168,989**
**PROCESS AND EQUIPMENT FOR THE PRODUCTION OF GRANULATED MATERIAL**
Otto Heinemann, Neubeckum, Germany, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 2, 1962, Ser. No. 191,911
12 Claims. (Cl. 241—3)

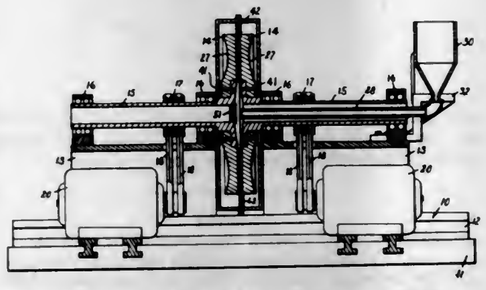


11. A process for producing desired size granules of a material, in which: a mud of liquid and particles smaller than said desired size is deposited as a thin film upon a carrier; a first gas is then blown into engagement with said film to break said film into portions and blow said portions from said carrier; a heated gas is blown to engage the first gas and portions of material to dry the material into discrete granules; and the granules are separated from said gases.

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**3,168,990**
**APPARATUS FOR DISINTEGRATING GRANULAR PARTICLES**
Richard S. Krieger, E 1908 Mallon, Spokane, Wash.
Filed Apr. 30, 1963, Ser. No. 276,742
3 Claims. (Cl. 241—248)

2. An apparatus for disintegrating solid particles of matter comprising:
a rigid support frame;
a pair of identical coaxial discs, each having a substantially flat face located in opposition to one another at closely adjacent positions;
a pair of shafts fixed respectively to said discs in a coaxial relationship thereto, the shafts being extended outwardly from said discs in opposite directions, one of said shafts being provided with a cylindrical axial bore throughout its length, said bore being extended axially through the disc fixed to said one shaft;
bearing means mounted on said frame rotatably journalling said shafts for rotation about a common axis relative to said frame;
feed means extending through the bore of said one shaft to the central area separating said discs, said feed means being adapted to direct particles to the center of said discs;



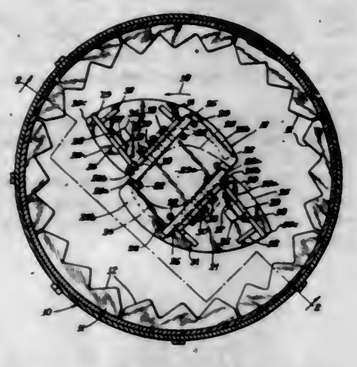
means on said frame structure operatively connected to said shafts adapted to rotate said discs relative to one another about their common axis at peripheral speeds sufficient to insure disintegration of particles located between the disc faces;
vaned fins formed on the outside surfaces of said discs adapted to effect a vacuum pressure at the periphery of said discs when rotated;
an enclosed housing encircling said discs and sealed tightly about the peripheries of said shafts;
an interior annular solid barrier fixed to said housing in a location aligned with the separation of said discs, said carrier being extended radially inward from said housing to a peripheral location adjacent said discs;
and a porous bag opening to the interior of said housing at the periphery thereof.

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**3,168,991**
**VERTICAL SHAFT ROCK CRUSHER WITH ABBREVIATED TABLE**
Donald E. Herman, Cedar Rapids, Iowa, assignor to Pettibone Mulliken Corporation, a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,101
9 Claims. (Cl. 241—275)

1. A crusher for material such as rock, slag and the like and for use with a power means, said crusher comprising in combination: a frame; a shaft journaled in said frame for rotation about an approximately vertical axis, said shaft adapted to be connected to said power means for rotation in a given direction; an approximately horizontal table mounted on said shaft for rotation therewith, said table having a central portion intersected by said axis, wall means extending upwardly from sides of said central portion and defining side openings therebetween, and peripheral portions at said openings extending outwardly from and forming extensions of said central portion, said wall means having a leading end when considered with respect to said direction of rotation; propelling means secured to the shaft for rotation therewith, said propelling means having an inner end adjacent the leading

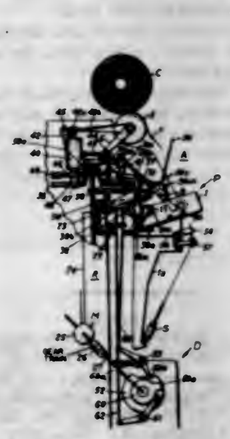
end of the wall means, said propelling means extending outwardly from the table and wall means to an outer end,



said propelling means having portions above and below the top of said portions of the table; and anvil means about the path of rotation of the propelling means.

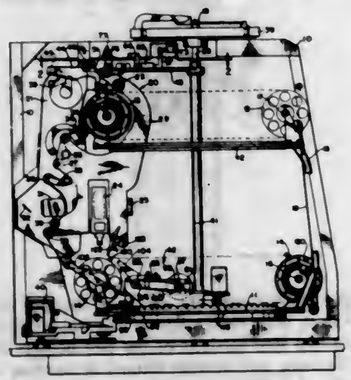
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3,168,992
AUTOMATIC CROSS WINDER INCLUDING YARN-PARAFFINING MEANS
Walter Zollinger, Horgen, Switzerland, assignor to Maschinenfabrik Schweiter A.G., Horgen, Switzerland
Filed Nov. 15, 1961, Ser. No. 152,412
Claims priority, application Switzerland Nov. 18, 1960
19 Claims. (Cl. 242—35.5)



19. In a paraffining device adapted to apply paraffin or the like to a yarn moving between a cop and a wind-up bobbin; an axially displaceable and rotatable shaft member adapted for carrying a block of paraffin, drive means for driving said shaft member, said drive means including gear means carried by said shaft member, said gear means being provided with an annular recess adapted to receive a locking lever, a pivotable locking lever engageable with said annular recess for locking said shaft member in a predetermined position when said paraffin block becomes worn to a critical extent, and displacing means engageable with said annular recess for axially displacing said shaft member into a position where said paraffin block is out of contact with said yarn.

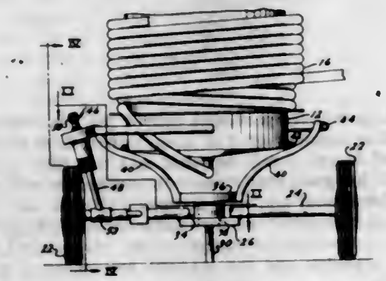
3,168,993
FILM SELECTING AND PROJECTING DEVICES
Frederic Mathieu, Paris, France, assignor to Compagnie d'Applications Mecaniques à l'Electronique au Cinema et à l'Atomistique (C.A.M.E.C.A.), Courbevoie, Seine, France, a corporation of France
Filed Apr. 25, 1962, Ser. No. 190,031
19 Claims. (Cl. 242—55.13)



1. In a strip rewinding mechanism for a reproducing machine of the type in which a plurality of film strips, tapes or the like are mounted on a single movable magazine, each strip extending from a supply reel to a takeup reel and in which a strip selected for reproduction is moved relative to a reproducer to a reproducing position by movement of the magazine, the improvement comprising a support mounted for movement along a path parallel and adjacent to the path of movement of the magazine, a rewinding drive means rotatably mounted on said support and selectively engageable with a supply reel, a support positioning means mounted on said support and engageable with the magazine to drive the support relative thereto and a single motor means for driving said rewinding drive means and said support positioning means.

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3,168,994
CART HAVING SELF WINDING REEL
Frederick G. J. Grise, Webb Road, New Braintree, Mass.
Filed Mar. 7, 1963, Ser. No. 263,604
5 Claims. (Cl. 242—86.6)

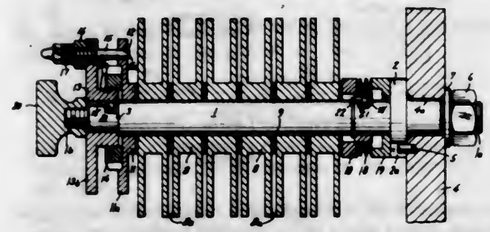


1. A cart having a vertically disposed reel rotatable about a vertical axis, said reel having secured thereto a circular rim of greater diameter than said reel, a pair of supporting wheels which rotate as the cart is moved, a rotatable driving member frictionally engaging the rim and one of said wheels to rotate the reel in response to movement of the cart, and an arm pivotally mounted about the axis of said one wheel and disposed between said wheels adjacent said one wheel, said driving member being rotatably mounted on said arm about an axis angled between said one wheel and said rim, said driving member having a portion of a given diameter engaging said rim and a second portion of lesser diameter engaging the side of said wheel.



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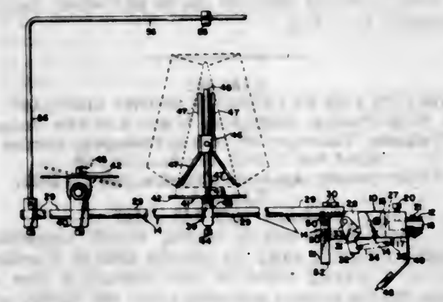
3,168,995
SPOOL SUPPORT FOR TEXTILE MACHINES
Max Ostermann, Hohenzollernstrasse 7, Wuppertal-Barmen, Germany
Filed Sept. 9, 1963, Ser. No. 307,544
10 Claims. (Cl. 242—129.8)



1. Spool support for a braiding machine or the like comprising, in combination, a shaft fixed at one end thereof to a support and having a free and opposite said one end; a plurality of spools rotatably mounted on said shaft adjacent each other; a friction coupling means arranged freely rotatable with respect to said fixed shaft between any two adjacent spools and frictionally engaging the same so as to transmit a moment imparted to one spool to the spools adjacent thereto, whereby when filaments wound on adjacent spools in opposite directions are pulled off, said spools will be respectively rotated in opposite directions and a braking moment will be imparted to each spool by the spools adjacent thereto; a pair of braking disc means on said shaft and respectively engaging the outermost of said plurality of spools on the sides thereof facing away from the spools adjacent thereto, said braking disc means being arranged coaxially on said shaft movably in longitudinal directoin thereof while being prevented from turning about said shaft axis; resilient means engaging one of said braking disc means and biased to press said braking disc means against the spool adjacent thereto; and adjusting means connected to the other of said braking disc means for adjusting the position thereof along said shaft, whereby the degree of stressing of said resilient means and therewith the braking moment imparted to each spool may be adjusted.

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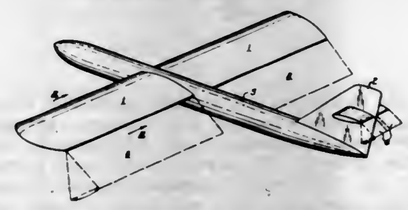
3,168,996
ADJUSTABLE HINGED BOBBIN ARM
Edward Vessen, Malverne, N.Y., assignor to Step-Motion Devices Corp., Plainview, N.Y.
Filed Dec. 1, 1961, Ser. No. 156,547
1 Claim. (Cl. 242—131)



A bobbin arm, comprising a support adapted to be mounted on a knitting machine bobbin table, an elongated arm pivotally connected at one end to said support for angular movement in a vertical plane, a multiposition latch connected between said support and said arm for locking said arm in selected angular positions in said vertical plane, a plurality of bobbins mounted in spaced relation on said arm, said bobbins being adjustably movable along said arm relative to each other, an inverted L-shaped bracket mounted on said arm for integral movement therewith, and a plurality of yarn guides being adjustably mounted on the horizontal component of said inverted L-shaped bracket for cooperation with the bobbins on the arm.

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3,168,997
BEATING JET-WING AIRCRAFT
Walter Selden Saunders, 8014 Bradley Blvd., Bethesda 14, Md.
Filed Feb. 1, 1961, Ser. No. 86,527
11 Claims. (Cl. 244—12)

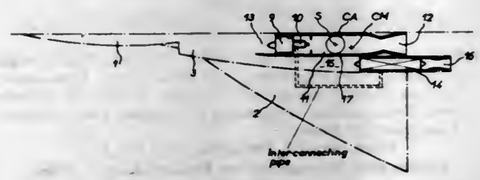


1. An aircraft comprising a body, a flexible membrane, and means for producing a beating jet sheet and means to support said membrane so that a portion coincides with said jet sheet.

4. A body means for producing a jet sheet emanating from within a trailing edge of said body, and means for flapping continuously said jet sheet with respect to said body said jet sheet being free from impingement upon any major structure rearwardly of said jet sheet.

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3,168,998
COMPOSITE JET ENGINE FOR AIRCRAFT HAVING A LARGE RANGE OF SPEED
Konrad Eichholtz, Daumazio-les-Lys, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed July 26, 1962, Ser. No. 212,663
Claims priority, application France, Aug. 4, 1961, 870,095
3 Claims. (Cl. 244—23)

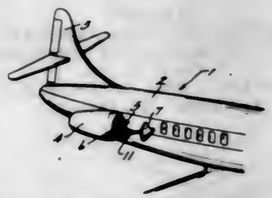



1. In a VTOL or STOL aircraft of the type having at least one downwardly directed lifting nozzle so positioned that the upward lift produced thereby passes through or near the center of gravity of the aircraft, a composite jet engine comprising two distinct jet propulsion channels, a compressed air generator positioned in one of said channels and located in a part of said aircraft extending to the rear of the center of gravity thereof, a turbine-driven fan positioned in the other of said channels and located in a part of said aircraft extending to the front of the center of gravity thereof, and an interconnection conduit extending between said channels for supplying compressed air from said generator to the turbine driving said fan, said lifting nozzle communicating with a part of said other channel

downstream of said fan and turbine, whereby said lifting nozzle is fed with at least a portion of the flow provided by said fan and turbine.

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3,168,999
GAS TURBINE INLET SHIELD
Robert Evans Warren, Marblehead, and Ely Scheri, Wakefield, Mass., assignors to General Electric Company, a corporation of New York
Filed Dec. 19, 1963, Ser. No. 331,657
9 Claims. (Cl. 244—53)

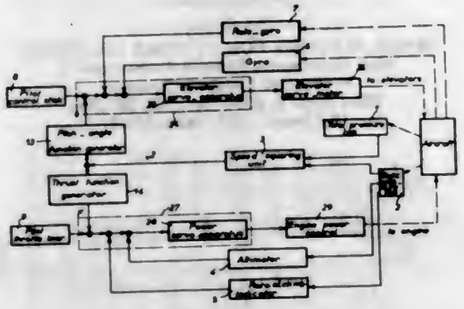


6. An aircraft gas turbine engine installation comprising an airframe, a recess in said airframe, a gas turbine engine mounted on said airframe, said engine having an air inlet opening at the forward end thereof, a protective shield, said shield being sequentially movable between a retracted position in which said shield is located within said recess, an intermediate position, and an extended position axially spaced a predetermined distance aligned with and from said inlet opening, both of said intermediate and extended positions being located in a common plane perpendicular to the direction of air flow to said inlet opening, said preselected distance being selected from within a range of distances from said opening, the endpoint of said range nearest to said opening being the nearest distance at which said shield may be positioned without obstructing the air flow to said opening and the endpoint of said range furthest from said opening being the furthest distance at which said shield may be positioned to effectively deflect foreign objects from said opening, and actuating means operatively connected to said shield for sequentially moving said shield between said positions, said shield thereby preventing damage to said engine by deflecting foreign objects from said inlet opening while permitting air to enter said opening when said shield is positioned in said extended position.

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3,169,000
AUTOMATIC ATTITUDE CONTROL DEVICE FOR V.T.O.L.
Adolphe Otto Gautier Ernst, Bois-le-Roi, Jean Paul Joseph Jardinier, Vitry-sur-Seine, and János Róna, Dammarie-les-Lys, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed July 26, 1961, Ser. No. 128,321
Claims priority, application France, Aug. 1, 1960, 834,660
3 Claims. (Cl. 244—76)

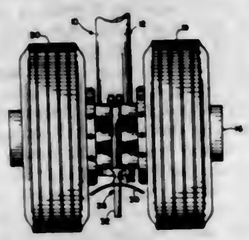
3. An automatic nose-lifting device for converting the attitude of a tail-sitter V.T.O.L. aircraft from substantially horizontal to substantially vertical while the engine thrust is progressively increased and the aircraft moves along a nearly horizontal path, said device comprising an aircraft speed squaring unit adapted for producing a first signal proportional to the square of the horizontal aircraft speed during said attitude conversion, means responsive to said first signal for generating a pitch-angle control signal which is related to said first signal in accordance with a predetermined law, further means responsive to said first signal for generating an engine thrust control signal which is related to said first signal in accordance with a further predetermined law, an aircraft elevator servo-apparatus responsive to said pitch-angle control signal for nose-lifting the aircraft accordingly, and



an engine thrust servo-apparatus responsive to said engine thrust control signal for varying the engine thrust accordingly.

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3,169,001
AIRCRAFT WHEEL SPRAY DRAG ALLEVIATOR
Walter B. Horne, Williamsburg, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 2, 1963, Ser. No. 327,565
11 Claims. (Cl. 244—103)
(Granted under Title 35, U.S. Code (1952), sec. 266)

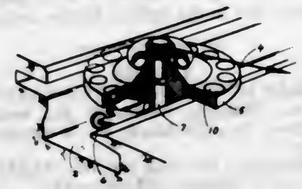


3. A device for reducing fluid drag on an aircraft bogie landing gear traveling on a slushy or rain-covered runway comprising: A main strut adapted to be connected to an air vehicle body; a support beam carried by said strut; tandem wheels rotatably mounted on said support beam; deflection means having a shape and being located adjacent said tandem wheels in a position whereby fluid spray thrown by one of said wheels is prevented from impinging against the vehicle, another of said wheels; or being redirected onto said one of said wheels thereby alleviating fluid drag.

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3,169,002
DEVICE FOR BRAKING LANDING AIRCRAFT
Per Borje Fonden, Hejdegatan 3, and Karl Ove Torgny Walander, Vasavagen 49, both of Linkoping, Sweden
Filed July 9, 1962, Ser. No. 208,268
Claims priority, application Sweden, July 10, 1961, 7,174/61
6 Claims. (Cl. 244—110)

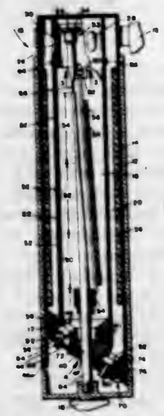
1. A device for braking landing aircraft comprising channels extending along the opposite sides of a landing runway, a braking device in each channel, a rope or similar flexible element extending across the runway and connected to each of the braking devices, each of said braking devices consisting of a wheel operative against a part of its channel to apply a braking force thereon, the channel having a groove in which the wheel travels, and



the wheel having brake shoes which are urged outwardly against the sides of the groove.

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3,169,003
EJECTION SEAT APPARATUS
Cecil A. Glass, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 18, 1963, Ser. No. 288,842
4 Claims. (Cl. 244—122)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In an ejection seat device of the type having a catapult tube having an open end and a closed bottom end, a cylindrical piston and motor unit to which an ejection seat is attached, said piston and motor unit having one of its ends telescopically extending into said catapult tube, the interior of said cylindrical unit forming a gas generator combustion chamber containing a propellant which burns to produce working gases to pressurize the catapult tube to impel the piston and motor unit and the ejection seat along the catapult tube, pressure responsive detent means locking the piston and motor unit in an initial position adjacent the bottom of the catapult tube and releasing same for travel along the catapult tube upon the gases in the catapult tube reaching a predetermined pressure, the improvements, in combination, comprising;

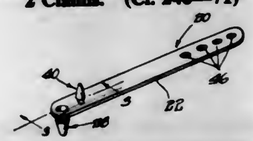
(*a*) said piston and motor unit having a closure wall at its end adjacent the bottom of the catapult tube, said closure wall having a first aperture communicating the gas generator combustion chamber and the interior of the catapult tube, said first aperture being circular and of predetermined cross sectional area,

(*b*) a metering rod having one of its ends affixed to the bottom of the catapult tube and extending through said first aperture and into the gas generator chamber,

(*c*) said first circular aperture and said metering rod cooperating to form a variably restricted metering orifice through which the working gases are delivered from the gas generator combustion chamber to the catapult tube, the orifice area of said variably restricted metering orifice being equal to the difference between the cross sectional area of said first circular aperture and the cross sectional area of the linear portion of the metering rod disposed in the first aperture, said piston and motor unit at the moment it is released by the detent means being impelled by said predetermined pressure of gas in the catapult tube, said metering rod being of varied circular cross sectional areas along its length that vary in accordance with a predetermined relationship to the distance from the bottom of the catapult tube, said predetermined relationship being chosen to provide predetermined variations in the rate at which the working gases in the catapult tube are augmented under travel of the piston and motor unit along the catapult tube to impell the ejection seat away from its initial position with a desired time gradient of instantaneous acceleration.

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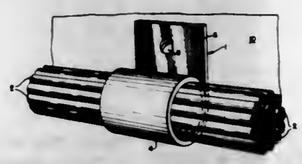
3,169,004
FLEXIBLE RETAINER WITH INTEGRAL FASTENING MEANS
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed July 3, 1961, Ser. No. 121,482
2 Claims. (Cl. 248—71)



2. In combination, a retainer and a support structure for said retainer and an article to be supported on said structure by said retainer, said support structure having an aperture formed therein, said retainer having a hollow lug integrally formed therein adjacent one end and an aperture formed therein in spaced relation to said lug, said lug having a first annular barb formed thereon larger than said support structure aperture and axially spaced on said lug from said retainer, said support structure aperture receiving said lug therethrough, said first annular barb locking said retainer to said support structure, said lug further having a second barb formed thereon in axially spaced relation to said first annular barb and larger than said retainer aperture, said retainer being reversely bent to form a loop receiving said article being supported, said lug being received through said retainer aperture to a point intermediate said first and second annular barbs whereby said second annular barb is interlocked with the apertured portion of said retainer.

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3,169,005
RESILIENT SHEET MATERIAL BRACKET TO SUPPORT WIRES
Irving D. Wallach, Cold Spring Harbor, N.Y., assignor to Duramark, Inc., Port Washington, N.Y., a corporation of New York
Filed May 17, 1963, Ser. No. 281,198
3 Claims. (Cl. 248—74)



1. A split sleeve bracket formed of a single plain rectangular sheet of resilient material, said bracket being

comprised of a leg portion entirely straight throughout its length and a loop portion, said loop portion having a free end in resilient contacting relation with said leg portion, a substantial length of said loop portion being in firm continuous contact with said leg portion at the region of contact formed at the juncture between the loop and leg portions.

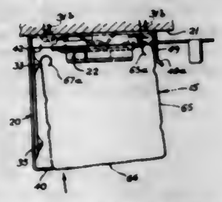
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**ERRATUM**

For Class 248—188.1 see:
Patent No. 3,168,791

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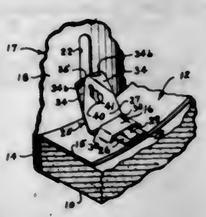
**3,169,006**
**VENETIAN BLIND INSTALLATION AND BRACKET THEREFOR**
Hans K. Lorentzen, Montclair, George Nehra, Teaneck, and Joseph A. Anderle, Clifton, N.J., assignors to Levolor Lorentzen, Inc., Hoboken, N.J., a corporation of New Jersey
Filed Feb. 1, 1963, Ser. No. 256,206
5 Claims. (Cl. 248—262)



1. An installation bracket for a Venetian blind head-channel that has inturned beads extending along the upper edges of the front and rear walls of the channel, said bracket comprising: a member attachable to a building and adapted to extend across the top of the channel, channel-securing means pivotally attached to said member, said pivotally-attached channel-securing means having a finger that is adapted to swing under the head that is at the front of the channel and having another finger that is adapted to swing under the bead that is at the rear of the channel, and said pivotally-attached channel-securing means having additional fingers adapted to swing into engagement with means on said member to transmit to said member the load imposed on the installation bracket by the channel.

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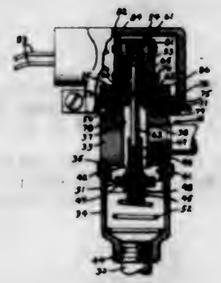
**3,169,007**
**MOUNTING MEANS**
William B. Duffy, Berkeley Heights, and Richard A. Hartman, Madison, N.J., assignors to United-Carr Incorporated, a corporation of Delaware
Filed May 14, 1963, Ser. No. 280,382
7 Claims. (Cl. 248—343)



1. A plaster ring to telescopically receive a lighting-fixture casing; and a plurality of spring dogs distributed about the ring, each dog being of sheet metal and having two legs at an obtuse angle to each other, one leg being attached to the ring, and the other leg projecting into the path of a lighting-fixture casing telescoped into the ring, said other leg having a V-shaped nose to grippingly engage a vertical slot in the lighting-fixture casing.

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**3,169,008**
**HEAT MOTOR OPERATED VALVE**
Robert A. Whitlock, Rockford, Ill., assignor to Aquamatic Inc., Rockford, Ill., a corporation of Illinois
Filed May 16, 1962, Ser. No. 195,181
7 Claims. (Cl. 251—11)



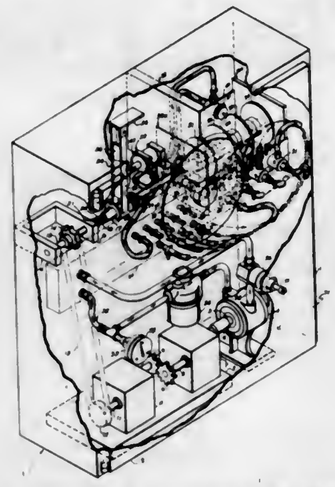
6. A valve comprising, a heat conducting metal valve body having a valve port at one side and a capsule seat at the other side and a flow chamber extending between said valve port and said capsule seat, said body having an inlet communicating with said valve port and an outlet communicating with said flow chamber intermediate said valve port and said capsule seat, a valve member for controlling flow through said port, means yieldably urging said valve member to a position closing said port, a heat motor capsule including a rigid annular heat conducting metal shell closed at one end and having a peripheral outwardly extending flange at the other end, a rigid plunger guide member attached to the flange on said shell and overlying said capsule seat, a plunger slidably mounted in said guide member and extending into said flow chamber into engagement with said valve member for moving the same, a thermally expansible material in said shell and a resilient member extending across said other end of the shell and engaging said plunger for transmitting pressure from the thermally expansible material to the plunger, means including an electrical heating element for heating the expansible material in the shell, means insulating said guide member from contact with the liquid in the chamber, a heat conducting metal ring member engaging said flange on said capsule and said casing for clamping the capsule thereto, said body having a relatively thinner walled portion around said flow chamber adjacent said seat and forming a part of a controlled heat conduction path between the shell and the main portion of the valve body for limiting the temperature rise of the capsule.

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**3,169,009**
**TIME CYCLE CONTROLLER**
Harold L. Johnson and Frank J. Barra, both of Oklahoma City, Okla., assignors to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Filed Aug. 4, 1961, Ser. No. 129,349
7 Claims. (Cl. 253—39)

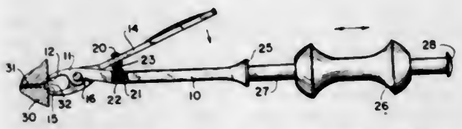
1. A time cycle controller comprising a gas driven motor, a plurality of cam assemblies, means connecting said motor to said cam assemblies to cause said cam assemblies to rotate, means controlling the speed of said gas driven motor, at least one of said cam assemblies comprising a pair of cam discs, said cam discs being movable with respect to each other to provide for cam adjustment, a cam follower for each of said cam assemblies, and actuation means associated with each cam follower.





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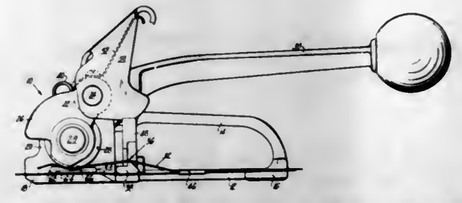
**3,169,010**
**NAIL PULLER**
Jasper Crawford, Jr., Rte. 1, Blackshear, Ga.
Filed Feb. 19, 1963, Ser. No. 259,559
1 Claim. (Cl. 254—19)



Apparatus for pulling nails comprising an elongated member having a slot therein extending from adjacent one end approximately midway the length of the elongated member, a first inwardly turned jaw located on said one end, an operating lever having a portion for manual manipulation located within said slot and extending substantially the length of such slot and pivotally mounted on said elongated member, a second jaw mounted on one end of said operating lever in opposed relation to said first jaw, spring means urging said opposed jaws away from each other, an enlarged portion forming a stop intermediate the ends of said elongated member, said elongated member having a cylindrical upper portion, an abutment on the free end of said upper portion, and a sliding hammer movably mounted on said upper portion intermediate said enlarged portion and said abutment whereby the impact force of said sliding hammer against said enlarged portion will drive said jaws into material containing a nail to be removed and thereafter said jaws will be moved beneath the nail head by movement of said operating lever and the impact force of the sliding hammer against said abutment will extract the nail, said spring means comprising an elongated pin having one end pivotally secured within the said slot and the other end extending through an elongated slot in the said operating lever and with an enlarged head of sufficient dimension to limit pivotal movement of the said operating lever away from the said elongated member, and spring means normally urging said operating lever away from the said elongated member.

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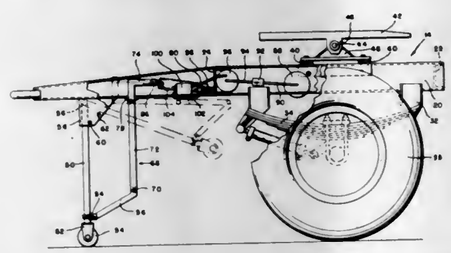
**3,169,011**
**FEEDING AND TENSIONING TOOL FOR STRAPPING AND THE LIKE**
Edward C. Rutty, Portland, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 10, 1963, Ser. No. 308,014
5 Claims. (Cl. 254—51)



1. A semirigid tensioner member of high surface lubrication for use with a feeder assembly for strapping and the like comprising an elongated body portion having a concave upper surface adapted to cooperate with a feeding and tensioning wheel of said feeder for movement of strapping therebetween, a substantially flat bottom surface adapted to cooperate with a stationary support to prevent movement of a portion of the strapping positioned therebetween, and a locating tongue portion integral with said body portion and having an aperture therein for properly locating and attaching said member within said feeder assembly.

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**3,169,012**
**LANDING GEAR FOR CONVERTER DOLLIES**
Robert M. Fagan, Seattle, Wash., assignor to F. L. & J. Manufacturing Co. Inc., Seattle, Wash., a corporation of Washington
Filed Mar. 1, 1962, Ser. No. 176,638
8 Claims. (Cl. 254—86)



3. A landing gear mechanism for converter dollies, comprising:

(*a*) an auxiliary air tank attached to the frame of said converter;

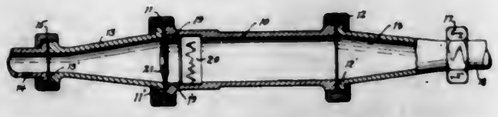
(*b*) an air line leading from the main air tank on said converter to said auxiliary air tank, said air line having a valve therein to permit flow of air from said main to said auxiliary tank and to prohibit air flow from said auxiliary to said main tank;

(*c*) a stiff leg pivotally attached to the underside of said frame forwardly of said auxiliary air tank for supporting the forward portion of said converter frame;

(*d*) a pneumatic cylinder pivotally secured to said converter frame and having a piston rod adapted to be connected to said stiff leg; and

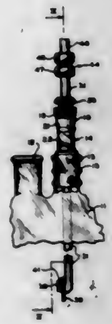
(*e*) control means including a valve for actuating said piston rod and air lines for directing air from said auxiliary air tank through said valve to said cylinder.

3,169,013
SONIC EMULSIFYING AND HOMOGENIZATION APPARATUS
John P. B. Jones, 10 Willard St. N., San Francisco, Calif. Substituted for abandoned application Ser. No. 842,475, Sept. 25, 1959. This application Jan. 14, 1963, Ser. No. 251,339
3 Claims. (Cl. 259—4)



1. In a continuous flow fluid homogenizing and/or emulsifying apparatus, the combination of a resonant chamber through which fluid to be treated may continuously flow, a closure at the intake end of said chamber having a flat fluid jet producing orifice for projecting a flat jet of fluid into said chamber, said chamber having diametrically opposed internal slots extending longitudinally therein disposed in the plane of said fluid jet, and an oscillator plate mounted in said chamber with its sides fitting loosely into the opposed slots of said chamber, whereby said oscillator plate will be presented edgewise to said fluid jet and function to produce cavitation in the fluid passing through said chamber.

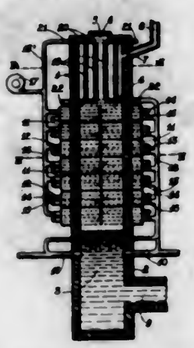
3,169,014
FLUID-TIGHT FLEXIBLE SUPPORT, SEAL AND KIT
Kenneth T. Wilson and Kenneth T. Wilson, Jr., both of 45 Eagle Rock Ave., Roseland, N.J.
Filed June 8, 1961, Ser. No. 115,807
14 Claims. (Cl. 259—107)



3. A fluid-tight assembly comprising a bearing device, a shaft rotatably passing through said device, resilient sealing means forming part of said device and peripherally engaging said shaft, a portion of said device being constricted inwardly, from an outwardly-opening annular groove, encircling said shaft and providing a seat receiving said sealing means encircled by its upper edge portion, a bushing receiving part of said bearing device, encircling said shaft and threaded to the adjacent portion of said device, and an annular portion, relatively narrow radially, projecting from said bushing engaging said sealing means along a line approximately midway between said shaft and said upper edge portion and adjustably exerting pressure thereon.

9. A fluid-tight assembly as recited in claim 3, wherein the lower end of said shaft is turned at an angle and an impeller is secured on said turned end portion.

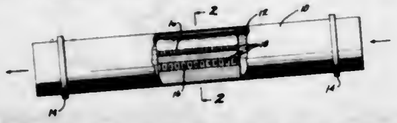
3,169,015
PROCESS AND APPARATUS FOR THE RECOVERY OF HEAT FROM FURNACES FOR WORKING GLASS AND SIMILAR PRODUCTS
Georges Henry, Jumet, Belgium, assignor to S. A. Glaverbel, Brussels, Belgium, a Belgian company
Filed Jan. 29, 1962, Ser. No. 169,448
Claims priority, application Belgium, Feb. 17, 1961, 477,663
7 Claims. (Cl. 263—29)



5. The process of recovering heat from a shaft furnace formed of a tubular wall composed throughout its extent of refractory material and provided at its lower end with a melting chamber and at its upper end with openings through which raw materials are fed into the shaft and fumes are removed from the shaft, the raw materials being preheated as they fall freely down through the shaft to the melting chamber by the fumes which rise from the bath of molten materials in the melting chamber and pass up through the shaft in countercurrent relation to the freely falling raw materials, comprising circulating cooling fluid over the entire area of said tubular wall between a first level situated slightly above the plane of the level of the bath of molten material at the lower end of the shaft, and a second level at which the fumes are removed from the shaft through one of said openings, the cooling fluid being circulated in separate streams over the exterior surface of said tubular wall throughout the entire area of the major portion of the height of the tubular refractory wall above the level of the bath and extending between said first level and a third level short of said second level and so that such streams of cooling fluid are in intimate heat exchange relation with the refractory material in such exterior surface area of said wall, and the cooling fluid being circulated in separate streams over the interior surface of the refractory material of said tubular wall throughout the entire area of such interior surface thereof between said third and second levels, the cooling fluid heated on the interior of said tubular wall being joined with the cooling fluid circulating on the exterior of said tubular wall at the upper end of said exterior surface area of said wall.

3,169,016
KILN
Oscar M. Wicken and Richard R. Schneider, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 2, 1963, Ser. No. 277,567
2 Claims. (Cl. 263—32)

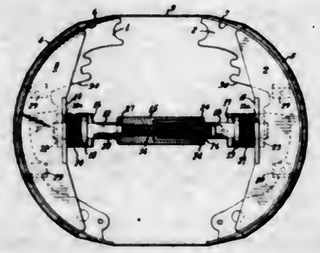
1. In a rotary kiln of the type including an inclined cylindrical shell having a refractory material lining and adapted to pass a load of fluent material into contact with a stream of hot combustion gases, means for lifting the fluent material and dropping it through the hot combustion gases comprising a plurality of refractory baffles extending at least an intermediate longitudinal portion of the shell, said baffles having an outer fillet-shaped section merging with the refractory lining in the cylindrical shell, an inner fillet-shaped section and an intermediate section extending between said inner and outer sections covering centrally thereof to provide independent support for said baffles, said intermediate section being formed of staggered tiers of refractory brick consisting at least in part of complementary tongue and groove brick in the



longitudinal direction of the kiln, said brick being so dimensioned in alternate tiers, that when the complementary tongues and grooves are aligned, natural apertures are provided along the length of each baffle to permit the fluent load material to be picked up by said baffles during rising thereof due to rotation of the shell and dropped through the apertures into contact with the counterflowing combustion gases.



3,169,017
BRAKE SHOE CLAMPING DEVICE
Sydney G. Tilden, Sr., Glen Cove, and Sydney G. Tilden, Jr., Glen Head, N.Y., assignors to The Permafuse Corp., Westbury, N.Y., a corporation of New York
Filed Nov. 13, 1962, Ser. No. 236,851
4 Claims. (Cl. 269—153)

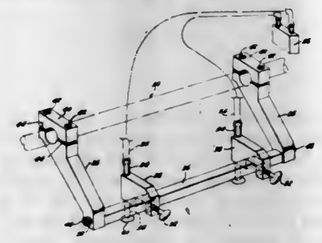


2. A pressure-maintaining spacer device for use in the method of bonding friction material to automobile brake shoes wherein a pair of brake shoes are assembled with friction material and an interposed layer of thermosetting cement and held within a restraining member under compression by pressure-applying members that abut the inner curved surfaces of said shoes and are initially forced outward against said surfaces by an assembly device, said pressure-maintaining spacer device being adapted to maintain said pressure-applying members forced outward after the assembly has been removed from the assembly device, said pressure-maintaining spacer device including a screw jack having relative rotatable portions and disposed between said pressure-applying members, compression spring means disposed between the said screw jack and said pressure-applying members and a locking collar having portions to engage the relatively movable portions of said screw jack and responsive to axial pressure for preventing relative rotation between the parts of said screw jack when said brake shoes are removed from said pressure-applying members.

3,169,018
FEEDING MECHANISM FOR PRINTING PRESS
Lyle E. Loper, 1150 N. Orange Drive, Hollywood, Calif.
Filed May 10, 1962, Ser. No. 193,807
8 Claims. (Cl. 271—27)

1. A converter kit for a printing press of the duplicator type wherein the horizontal motion bar of the press conventionally carries relatively long downwardly extending vacuum shoes and is actuated by cam means in opposition to relatively weak spring means for reciprocation through a generally upright arc with simultaneous oscillation about its axis, said kit including:

two relatively long arms adapted for mounting on said motion bar in downwardly extending position in substitution for said relatively long vacuum shoes to be simultaneously arcuately translated and swung by the motion bar;

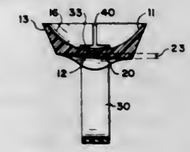


a transverse bar mounted on the ends of the two arms;

a pair of relatively short vacuum shoes mounted on said transverse bar for adjustment movement along the length of the bar and extending downward therefrom for connection to a vacuum-engendering means, each of said shoes being rotatable for tilt adjustment in a first plane perpendicular to the axis of the transverse bar and additionally rotatable for tilt adjustment in a second plane perpendicular to the first plane; and

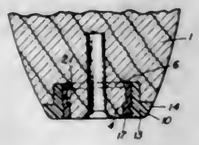
relatively heavy spring means to replace said relatively weak spring means to compensate for the additional load on the motion bar imposed by the two arms and the transverse bar.

3,169,019
BASEBALL CATCHING AND THROWING CUP FOR ATTACHMENT TO A BAT OR OTHER ARTICLE
Conrad Genjack, 724 E. 10th St., North Vancouver, British Columbia, Canada
Filed Apr. 3, 1961, Ser. No. 100,133
8 Claims. (Cl. 273—26)




6. Ball game apparatus comprising a shallow cup having a bottom and an annular wall, said wall having an annular rim, said bottom and wall being formed with a concave inner surface which radiates in a substantially continuous curve from a centre of said bottom to the annular rim of the cup, the depth of said cup being only sufficient to receive without gripping a small portion of a ball of the size of a standard baseball, said bottom having an outer surface formed with a large groove extending thereacross and opening outwardly therefrom suitable for receiving a baseball bat with said bat fitting in and extending along the groove, and gripping means outside the cup and secured to the bottom thereof adapted removably to hold said cup on a baseball bat fitting in said bottom groove for movement with the bat to catch a ball in the cup or to throw a ball from said cup.

**3,169,020**
**BOWLING PIN**
Richard A. Smith, Cornwall on the Hudson, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 16, 1960, Ser. No. 50,012
6 Claims. (Cl. 273—82)



6. In combination a bowling pin having its butt end provided with an undercut at the juncture of the bottom surface and the side surface of the pin forming thereby an outwardly projecting central core, a circumferential outward facing locking groove at the top of said core, said undercut extending into the body of the pin adjacent said core and forming a downwardly facing annular groove leading to said circumferential locking groove, an inner cylindrical ring member in said undercut substantially coextensive in length with said core and containing an upper integral flexible annular laterally deflected portion, said portion having a contour such that as deflected it enters said locking groove in the core, an annular base member of length substantially coextensive with said core comprising an annular skirt portion forming the junction for the bottom and side of the pin and, integral with said skirt portion, an upright collar portion encircling said core and extending into said annular groove, the top of said collar portion engaging and deflecting the flexible annular portion of the inner ring member into the outwardly facing locking groove of said core thereby locking both members in said undercut.

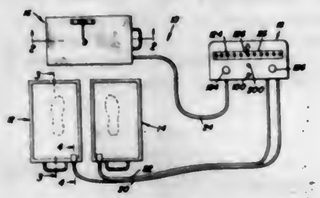
**3,169,021**
**GAME BOARD**
John Bolin, Jr., 344 Orange St., Newark, N.J.
Filed Jan. 6, 1961, Ser. No. 81,126
1 Claim. (Cl. 273—134)



A composite game board consisting of two elongate boards of different colors secured together facewise and having a plurality of linear series of holes extending depthwise through the composite board to receive a peg from either face, a single rotor journalled transversely in the board adjacent one end and having three faces, bearing respectively one, two and three indicia, said rotor having part of its periphery extending equally above and below the composite board and adapted for manual turning from one of its faces to another, and lifts on both faces of the composite board adjacent said rotor to support the latter for free turning.

**3,169,022**
**MEANS FOR INDICATING THE DISTRIBUTION OF A GOLFER'S WEIGHT AT THE INSTANT OF BALL IMPACT**
Elwood A. Kretzinger, 876 E. 12th St., Eugene, Oreg.
Filed Apr. 10, 1962, Ser. No. 186,481
16 Claims. (Cl. 273—183)

1. An impact-balance indicator for sportsman practice or the like comprising, static load responsive means for providing instantaneous indications of uneven weight distribution and means responsive to impact for rendering said static load responsive means non-responsive after impact while maintaining the instantaneous indication thereof at impact.



**3,169,023**
**PROTECTING RUBBER RING FOR PHONOGRAPH RECORDS**
Trino J. Rivas, Av. 2DA Y Transversal 7A 1, Altamira, Caracas, Venezuela
Filed Mar. 16, 1962, Ser. No. 180,202
1 Claim. (Cl. 274—42)



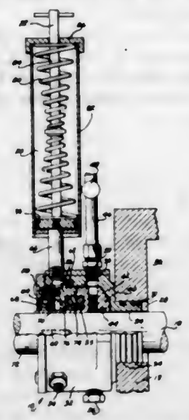
A protective device for a disk record having a circular body with grooves in opposite surfaces thereof near the periphery of the body, said device comprising an endless flexible band having a circumferential groove formed on its inner side to engage the periphery of the body, said band having ridges formed at free edges of the groove to engage in the grooves in opposite surfaces of the body, said band having a diameter inside said groove less than the diameter of the body, said band being sufficiently elastic to stretch to the diameter of the record for gripping the periphery of the body in tension when mounted thereon, said band having an outer annular edge formed with a circumferential groove defined between two other opposing external ridges, the external ridges being squeezable together to separate the ridges at the edges of the groove and facilitate mounting the band on the periphery of the body and demounting the band therefrom, said band having opposite sides formed with radially spaced circumferential grooves to increase flexibility of the band and to prevent lateral slippage of stacked records, said band having an axial thickness greater than the thickness of the body to provide annular projections at both sides of the periphery of the body of the record.

**3,169,024**
**SEAL ASSEMBLY FOR ROTATABLE SHAFT**
John Frank Johnson, 306 N. Harrison St., and Theodore H. Caldwell, P.O. Box 227, both of Ludington, Mich.
Filed May 17, 1961, Ser. No. 110,682
9 Claims. (Cl. 277—2)

1. A mechanical seal comprising: a rotatable shaft; a stationary outer housing; an inner housing concentric with said outer housing, said inner housing being fixed against rotation but being slidable axially of said shaft; a buffer member having an annular superficies formed thereon adapted to rotate in sealing engagement with a corresponding superficies of said inner housing; a pair of spaced opposed seal engaging areas formed on said inner housing and said buffer member respectively; and a resilient annular sealing member resiliently held in engagement with said seal engaging areas, said outer housing being filled with a sealing fluid under pressure outwardly of said resilient sealing member, and the radial



cross-section of said resilient sealing member being generally M-shaped so as to cause said resilient sealing member to engage said seal engaging areas more firmly whenever a pressure differential appears between the faces of said resilient sealing member.



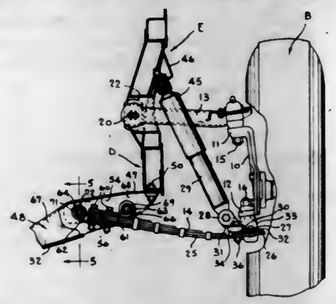
**3,169,025**
**MOLDED GASKET WITH PARTIALLY EXPOSED, EXPANDABLE AND CONTRACTIBLE METAL BEADED CHAIN**
John E. Borah, 815 Mishawaka Ave., Mishawaka, Ind.
Filed Jan. 22, 1962, Ser. No. 167,517
3 Claims. (Cl. 277—235)



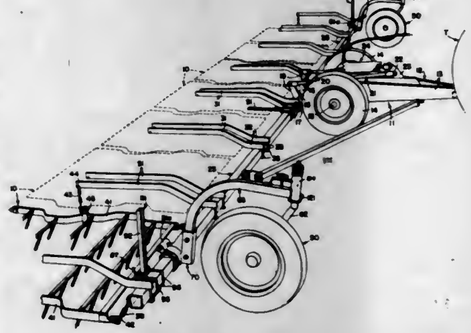
1. A gasket comprising a molded annular body portion of rubber-like material having internal and external walls, the internal wall defining the center opening of said body portion being substantially parallel with the axis of the opening, the external wall being tapered inwardly from one end to the other forming a relatively large flat annular end on a plane transverse to the axis of said opening and a relatively small annular end, and a continuous expandable and contractible chain disposed in the small end of said body portion and consisting of hollow spherical beads with diametrically disposed holes and wire-like stems connecting said beads and extending through said holes and having enlarged ends for preventing separation of said stems from the respective beads, said beads being equally spaced from one another and partially embedded in one end of said body portion, and said stems being fully embedded in said body portion with at least one of the enlarged ends of each stem being spaced from the portion of the bead defining one of the holes through which it passes.

**3,169,026**
**VEHICLE WHEEL SUSPENSION SYSTEM**
Clifford G. Seer, Bristol, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Nov. 14, 1962, Ser. No. 237,484
4 Claims. (Cl. 280—96.2)

1. Apparatus for suspending a vehicle body relative to its wheels comprising: a side wall forming part of the body and spaced from a wheel; a sill extending longitudinally of the body side wall and secure therewith; a beam extending transversely of the body side wall and being secured thereto; a wheel carrying steering knuckle; an upper non-resilient control arm pivotally mounted at its inner end to the body side wall and at its outer end to the upper end of the steering knuckle; a lower control arm in the form of a resilient leaf spring having its outer end secured to the steering knuckle, said spring having a first eye formed at its inner end and a second eye formed intermediate the outer end and the first eye; a bolt mounted on the beam and projecting through the second eye; a second bolt mounted on the beam and projecting through the first eye; means associated with the second bolt for adjusting the spring upwardly or downwardly relative to the beam about the axis of the first bolt, whereby to raise or lower the vehicle body relative to a wheel.



**3,169,027**
**HYDRAULIC WHEEL DRAWBAR WITH CASTER WHEELS**
Orey W. Oerman, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 7, 1962, Ser. No. 178,017
2 Claims. (Cl. 280—411)

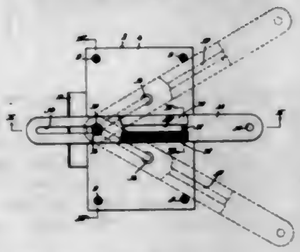


1. A wheeled drawbar for receiving implement units, comprising a wheeled cart having a main frame, a center bar rockably carried thereby for rocking movement about a transverse axis relative to said frame, a pair of outer bars of rectangular cross-sectional configuration, universal joint means connecting the outer ends of said center bar to the inner ends, respectively, of said outer bars, whereby the latter bars may be swung in either a generally fore-and-aft direction or in a vertical direction relative to said center bar when the latter is rocked to a position disposing one of the axes of each universal joint means in a vertical position and the other axis of each universal joint means in a generally horizontal position, a caster wheel for supporting the outer end of each of said outer bars, a supporting axle for each caster wheel including a generally vertical spindle, a support for said spindle includ-

ing sleeve means within which said spindle may rotate for castering, two bearing members having rectangular openings therein disposed about each of said outer bars, said bearing members having inwardly projecting sleeve portions having a cylindrical outer surface, a journal rockable on said sleeve portions and receiving said support arm, aligned apertured lug portions on each of said bearing members, first and second sleeve sections on said journal adapted to be selectively disposed in alignment with said apertured lug portions, and pin means insertable through said apertured portions and said sleeve sections to hold the standard in one of two selected positions.

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**3,169,028**
**TRAILER HITCH**
Morris Scrivner, 2925 Buchanan, North Kansas City, Mo.
Filed Dec. 3, 1962, Ser. No. 241,649
4 Claims. (Cl. 280—478)

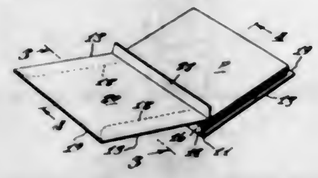


1. A trailer hitch comprising:
(*a*) a frame,
(*b*) means for attaching said frame rigidly to a towing vehicle,
(*c*) an elongated drawbar carried by said frame and extending horizontally forwardly and rearwardly with respect to the draft line of said hitch, said drawbar being both longitudinally and transversely movable with respect to said frame and having first and second elongated slots formed vertically therethrough in longitudially spaced apart relation, said drawbar extending rearwardly from said frame and being adapted to be connected at its rearward end to a trailer vehicle,
(*d*) a first vertical lock pin carried movably by said frame for vertical movement and engaging in said first slot to permit longitudinal movement of said drawbar and horizontal pivoting of said drawbar about said lock pin, said first lock pin and said first slot having cooperating surfaces which, in one position of said first lock pin, secures said drawbar against longitudinal movement, and
(*e*) a second vertical lock pin carried by said frame for vertical movement into and out of said second slot, whereby when engaged in said second slot to permit longitudinal movement of said drawbar but to prevent pivotal movement of said drawbar about said first lock pin.

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**3,169,029**
**IMITATED NORMAL HARD BOOK COVER**
Morris I. Margolis, Brewster, N.Y. (% F. M. Charlton Co., 443 W. 15th St., New York 11, N.Y.)
Filed May 18, 1962, Ser. No. 195,719
2 Claims. (Cl. 281—29)

1. A unitized paper book cover made of a single substantially rectangular sheet with parallel upper and lower edges, comprising:
(*a*) a U-shaped back panel having a pair of spaced binding portions to be connected to the pages of a book;
(*b*) folds on both sides of said back panel providing hinges;
(*c*) a pair of cover panels connected to said back panel by said hinges;
(*d*) each of said cover panels having an end edge fold spaced from one of said hinges providing an outer cover portion therebetween and an inner cover portion substantially equal in size to said outer cover portion;



(*e*) each outer cover portion having spaced fold lines alined with the upper and lower edges of the sheet;
(*f*) a pair of tabs connected to each outer cover portion by the spaced fold lines and folded back against the inner surface of the outer cover portion along such fold lines;
(*g*) the inner cover portions folded back along the end edge fold lines to the outer cover portions and the tabs connected thereto;
(*h*) the inner cover portions being cemented along their edges and spaced by the tabs from the outer cover portions to provide closed air pockets in the front and back book covers;
(*i*) a pair of fold lines each at the end of one of the inner cover portions spaced from one of the end edge fold lines and overlying one of the hinges; and
(*j*) a pair of tab panels connected by the fold lines overlying the hinges to said inner cover portions and being cemented to the binding portions within the U-shaped back panel.

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**3,169,030**
**RELEASABLE ATTACHMENT DEVICE**
Leander H. Lippincott, Middletown, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 26, 1961, Ser. No. 112,861
1 Claim. (Cl. 285—86)



A quick disconnect device having an axis and including cooperating inner and outer sleeves the adjacent ends of which are fitted one within the other, each of said sleeves having inner and outer surfaces, said inner surface of said outer sleeve having an inwardly projecting, square cornered shoulder spaced from the end thereof and further having an outwardly extending circumferential, square cornered groove of rectangular cross section positioned between said shoulder and said outer sleeve end and still further having cylindrical surfaces exteading between said shoulder and said groove and between said groove and said outer sleeve end, said outer surface of said inner sleeve having a square cornered, outwardly projecting rib abutting said outer sleeve shoulder to prevent axial motion between said sleeves in a first axial direction and with a substantially cylindrical outer surface of selected axial dimension to extend between said outer sleeve shoulder and said groove and of selected radial dimension to engage said outer sleeve cylindrical surface between said shoulder and said groove, and said outer surface of said inner sleeve further having a circumferential groove spaced from said rib so as to be located outside of said outer sleeve when said shoulder and said rib abut, a locking member in the form of a sleeve separate from said inner and outer sleeves and having flexible fingers formed with inner surfaces spaced from said inner sleeve outer surface and terminating at one end in a square cornered, outwardly and circumferentially extending flange of rectangular cross section received in and abutting said outer sleeve groove and also abutting said rib to prevent axial movement of said sleeves in the opposite axial direction from said first direction and further having a substantially cylindrical outer surface engaging said outer sleeve inner cylindrical surface between said groove and said outer sleeve end so that said flange takes the loading between said inner and outer sleeves in shear, a garter spring enveloping said locking member sleeve to bias said flexible fingers radially inwardly and hence out of said outer sleeve groove and a retaining ring extending between and abutting said inner sleeve outer surface and the inner surface of said locking member radially below said circumferentially extending flange of said locking member to retain said locking member flange within said groove and also abutting said rib to prevent motion of said retaining ring in said first axial direction and having fingers projecting therefrom having square cornered lugs engaging said inner sleeve circumferential groove to prevent motion of said retaining ring in said opposite axial direction.



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**3,169,031**
**CONDUCTOR BAR SPLICE AND METHOD OF MAKING THE SAME**
Charles F. Lamb, Cleveland, N.C., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed June 25, 1962, Ser. No. 204,873
3 Claims. (Cl. 287—2)

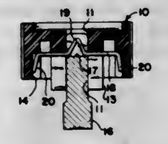


1. A splice for connecting the abutting ends of two similar conductor bars, each of said bars having two parallel extending flanges and a web perpendicular to and connecting said flanges, comprising a splice member having a hollow tubular shape with a cross-sectional configuration of substantially elliptical shape including flattened wall portion and extending longitudinally between the two parallel flanges of one of said bars and extending longitudinally between the parallel flanges of the abutting bar, a portion of the flattened walls of said member being in intimate retaining contact with the interior faces of the flanges of both bars for substantially the entire length of said member.

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**3,169,032**
**MEANS FOR ATTACHING A KNOB OR THE LIKE TO A SHAFT**
Sheldon Lee Pastor, Chicago, Ill., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Nov. 30, 1962, Ser. No. 241,189
3 Claims. (Cl. 287—53).

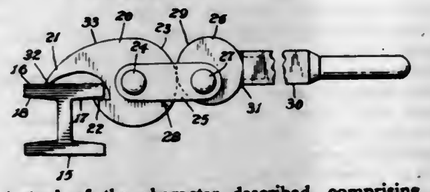
2. In combination, a shaft provided at one end with an axially extending generally diametric planar surface portion, a knob provided with a bore in which said one end of said shaft is slidably received and provided with an elongated recess extending across and communicating with said bore and having the ends of said recess terminating in end-walls extending axially relative to said bore, and a torsion member formed of wire stock circular in cross-section comprising an elongate main body portion having opposite end portions and a generally U-shaped offset central portion, said torsion member being disposed in said recess and bore with said opposite end portions resiliently engaging said end-walls, said end portions lying in a first plane and said offset central portion



being normally disposed in a second plane and urged toward said first plane by said one end of said shaft being positioned in said bore with said planar surface portion extending parallel to said elongate body portion such that said offset portion bears against said planar surface due to the torsional stress applied to said main body portion affording a driving and retaining connection between said shaft and said knob.

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**3,169,033**
**HANDLING TOOL**
William J. Chmiel, 511 W. 232nd St., New York, N.Y.
Filed Feb. 25, 1963, Ser. No. 260,766
3 Claims. (Cl. 294—15)



1. A tool of the character described, comprising a rotatable jaw having at one side thereof two opposed lips of which one is longer than the other and each having forward and rear ends, said lips adapted to receive a part of a work-piece therebetween and apply turning force to said work-piece, said longer lip providing a concave spiral surface toward the shorter lip with said spiral surface extending to and intersecting the shorter lip and constituting the rear end thereof, a handle, a clevis connecting said handle and jaw and with the jaw rotatable in the clevis, an actuator located at and opposed to an edge of said jaw at a side thereof away from said lips and fixed on said handle and at least in part within said clevis, said actuator being engageable with said jaw edge for applying rotative actuation in one direction only to said jaw in turning a work-piece, and said actuator being inherently releasable of its own volition from contact with said edge when rate of rotation of the jaw exceeds rate of movement of said actuator, and the forward end of said short lip adapted to function as a fulcrum against the work-piece and cause said spiral surface of said longer lip to swing away from said work-piece when the rate of rotation of the work-piece exceeds rate of rotation of said jaw, whereby double release from impelling backlash rotation by the work-piece upon the handle is afforded.

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**3,169,034**
**GRIPPING AND LIFTING DEVICE**
Robert Epstein, 33 Oakridge Lane, Albertson, N.Y.
Filed Jan. 18, 1963, Ser. No. 252,347
2 Claims. (Cl. 294—16)

1. A gripping and lifting device comprising a pair of elongated crossed handle members, means pivotally con-

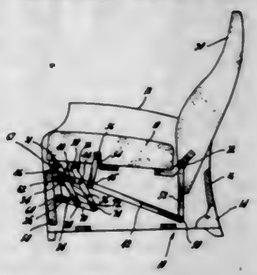
necting said members at their point of crossing, article gripping means, each handle member including a plate-like upper extremity including a diverging portion and a straight portion extending at an obtuse angle to the diverging portion, each handle member having an elongated slot extending longitudinally thereof along the upper extremity of the diverging portion and along the lower portion of the straight portion, said slots being aligned transversely, a handle extending across the space between said crossed handle members aligned with said slots, said handle having a shaft extending outwardly from each end thereof through one of said slots, and a head on each end of the



shaft, whereby upward lifting movement of said handle moves said upper extremities away from each other to cause said article gripping means to move toward each other and grip an article, and downward movement of said handle causes said upper extremities to move towards each other to move said article gripping means away from each other and release the article, said article gripping means comprising opposed plates, said plates constituting separate elements each attached to the lower end of a handle member, said plates having inwardly extending top, bottom and side flanges, the bottom flanges being serrated for gripping articles therebetween.

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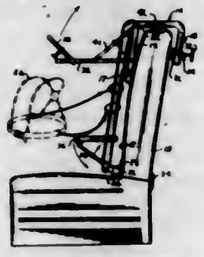
**3,169,035**
**LEG-REST CONTROL ARRANGEMENT FOR RECLINING CHAIRS**
**Peter S. Fletcher, 200 NW. 15th St., Delray Beach, Fla.**
**Filed Sept. 14, 1959, Ser. No. 839,961**
**10 Claims. (Cl. 297—85)**



1. A variable leg-rest control arrangement for use in a chair including a support, body-supporting means comprising a seat and a back-rest movably mounted on said support for movement between an upright sitting position and a reclined position, and a leg-rest, said leg-rest control arrangement including a double four-bar lazy tong linkage comprising a first pair of spaced links operatively mounted at one end of said leg-rest and a second pair of spaced links operatively mounted at one end on said seat, means connecting said pairs of spaced links for coordinated movement thereof, a control link connecting intermediate points on one of said pairs and constraining movement of the same to complete one of said four-bar linkages, a rigid element connecting the other pair of space linkages to complete the other four-bar linkage, the operative mount of said one of said pair of links including a pivotal connection of one link to the member on which it is mounted and a flexible connection between the other link of said one pair and the member on which it is mounted, said flexible coupling providing relative movement between the completed end of said one four-bar linkage and the member on which it is mounted.

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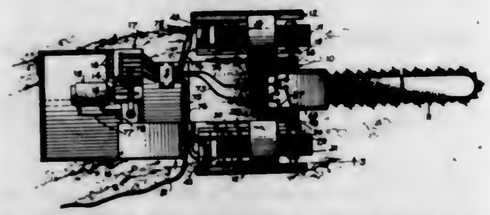
**3,169,036**
**INFANT'S CAR SEAT SUPPORT**
**Bertice Dale Spooner, Miami, Fla.**
**(1051 NE. 11th Ave., Gainesville, Fla.)**
**Filed Jan. 8, 1963, Ser. No. 250,086**
**5 Claims. (Cl. 297—256)**



1. An infant's support adapted to be hung over the back of a vehicle seat comprising: a U-shaped, tubular member bent back upon itself forming a spaced apart pair of downwardly extending legs and a downwardly extending closed end, said U-shaped member being adapted to be hung over a vehicle seat back with said legs extending downwardly over the front face of a seat back and the closed end extending downwardly along the back surface; a pair of downwardly extending fingers, each fastened to said U-shaped member intermediate a leg and said closed end, said fingers being short in comparison to said legs, and adapted to extend in overlying relation to the front face of a vehicle seat back maintaining said legs in spaced relation therefrom; a ring slidably mounted to each of said legs for connecting a child's harness thereto; and means including a tightening screw adjustable on the closed end of said U-shaped member to cooperate with said downwardly extending fingers for clamping said U-shaped member to a seat back.

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**3,169,037**
**SELF-PROPELLING ATTACHMENT FOR MINING APPARATUS**
**Charles E. Parsons, Richlands, Va., assignor to Yates & Parsons, Inc., Richlands, Va., a corporation of Virginia**
**Filed Aug. 10, 1962, Ser. No. 216,092**
**3 Claims. (Cl. 299—51)**



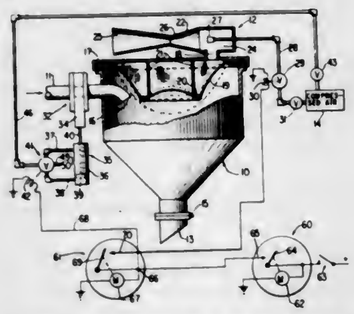
1. A self-propelling attachment for mining apparatus having a generally rectangular frame, a chain saw type cutter projecting from one end of said frame and a motor



on said frame for driving said cutter, said attachment comprising separate ground engaging running gear units for attachment to opposite sides of said frame, a hydraulic pump, clutch means for coupling said pump to said motor, a hydraulic fluid supply tank and manually operable hydraulic controls connected to said pump, fluid connection means connecting said tank to said pump, each of said running gear units comprising a base plate for attachment to said frame, a bracket extending outwardly from said plate, a hydraulic cylinder depending from said bracket and having a downwardly projecting piston rod, said hydraulic cylinder being connected to said pump through said hydraulic controls, an elongated bar pivotally mounted intermediate the length thereof on the lower end of said rod, front and rear stub axles mounted on said bar, front and rear ground engaging wheels rotatably mounted on said axles, a sprocket on each wheel, a chain connecting said sprockets for simultaneous rotation of said wheels, a drive sprocket on said rear wheel, a countershaft rotatably supported on said bar, a motor bracket mounted on said bar, a hydraulic motor mounted on said motor bracket, a chain connecting said countershaft and said drive sprocket, a chain connecting said hydraulic motor and said countershaft, whereby upon operation of said hydraulic motor said wheels will be simultaneously driven, a guide unit comprising a base portion slidably mounted on said plate for vertical movement and spaced parallel arms disposed on opposite sides of said cylinder, said arms being secured to said bar to guide the same during vertical movement and during pivotal movement about said pivotal mounting.

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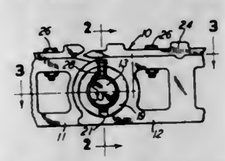
**3,169,038**
**FILTER CLEANER FOR PULVERIZED MATERIAL CONVEYING SYSTEM**
**Frank P. Pendleton, Montclair, N.J., assignor to Vac-U-Max, Belleville, N.J., a corporation of New Jersey**
**Filed Aug. 29, 1962, Ser. No. 220,272**
**9 Claims. (Cl. 302—59)**



1. In a system for conveying a dense stream of fluent particles of material, the combination of a closed receptacle for receiving a desired amount of the material, said receptacle having a side wall provided with an inlet near the upper end thereof for the material, a cover provided with an air outlet, and a valve controlled discharge opening at the bottom thereof adapted to be opened at will to discharge the entire contents of said receptacle; a filter bag having its periphery sealed to the underside of said cover to surround said air outlet and depending into said receptacle, said bag being formed of a flexible porous material to cause the same to be drawn upwardly by air leaving said outlet, said bag being positioned between said inlet and said outlet for preventing the material from entering said outlet; a frame extending downwardly from the underside of said cover for holding said bag downwardly within said receptacle and out of contact with said air outlet; vacuum creating means connected in fluid flow communication with said outlet and having a passageway in fluid flow communication with the atmosphere; a control device for rendering said vacuum creating means effective and for rendering said vacuum creating means ineffective and allowing the flow of air from the atmosphere to said receptacle outlet and through said filter bag and into said receptacle, and a valve for closing said receptacle inlet while said vacuum creating means are effective to provide a high vacuum within said receptacle, whereby, upon rendering said vacuum creating means ineffective and allowing the flow of air from the atmosphere to said receptacle outlet, the rush of air caused by the high vacuum in said receptacle drives the bag down to shake off material adhered thereto, rushes through said filter bag and is effective to remove material adhering to said filter bag.

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**3,169,039**
**TRACK CHAIN**
**Donald C. Baker and William E. Budd, Burlington, Iowa, assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin**
**Filed June 24, 1964, Ser. No. 379,435**
**5 Claims. (Cl. 305—58)**



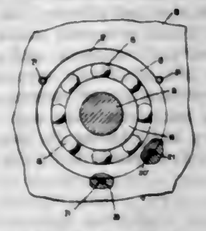
2. A track chain for a tractor or the like, comprising a plurality of links pivotally connected together and including master links, a master pin extending through said master links transverse to the length of said links, an end of said master pin having a hole therethrough axially oriented transverse to the axis of said master pin, a lock pin disposed in said hole and extending beyond said master pin for retaining the latter on said master links, one of said master links having an opening co-axial with said hole and receiving the extended end of said lock pin for retaining the orientation of the latter with respect to said master links, a smooth shank on said lock pin for sliding insertion and removal from said master pin at one side of the latter, one end of said lock pin having an enlargement at only said one side of said master pin to restrain said lock pin from passing through said hole to the other side of said master pin, and a member removably attached to said master links and extending across the axis of said lock pin at said one side of said master pin in a position to be closer to one end of said lock pin than the distance the other end of said lock pin extends beyond said master pin for abutting said lock pin upon movement of the latter toward said member and restraining said lock pin from moving out of said hole.

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**3,169,040**
**BEARING**
**Adelbert H. Ryon, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware**
**Filed Apr. 1, 1963, Ser. No. 269,241**
**6 Claims. (Cl. 308—236)**

1. In combination, an annular bearing member, support means comprising a supporting member for said bearing member, one of said members having at least one axially extending groove in the surface thereof forming a substantially cylindrical passage between confronting surfaces of said members, said groove having the open side thereof in the form of an axially extending slot in the surface of said one member adjacent the confronting surface of the other of said members, the width of said slot being less than the diameter of said passage, and an

elongated cylindrical resilient element of elastomeric material with a relaxed diameter appreciably greater than the diameter of said passage filling the latter and exerting



a radial pressure against the surface of said other member through said slot, whereby said element is under longitudinal tension within the passage and said members are frictionally restrained against relative rotation.

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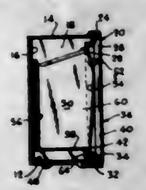
3,169,041

FRAMED KITCHENWARE

Abel E. Garner, New York, N.Y., assignor to Garner & Co., Inc., New York, N.Y.

Filed Feb. 4, 1963, Ser. No. 256,002

1 Claim. (Cl. 312—328)



A metal kitchen cabinet of the character described comprising an open front hollow rectangular body having top, bottom, rear and side walls; a rectangular frame having top and bottom horizontally disposed parallel outer flanges which are connected together at the ends thereof by vertically disposed parallel outer side flanges, each of said side flanges having a diverging inner flange which extends rearwardly from the forward edge thereof and terminates in a straight section parallel to said side flange, said top outer flange having a diverging inner flange which extends rearwardly from the forward edge thereof and terminates in a straight section parallel to said top flange, the upper ends of the said diverging inner flanges of said outer side flanges being connected by the said diverging inner flange of said top outer flange, said bottom outer flange having a diverging inner flange which extends rearwardly from the forward edge thereof and is connected between the lower ends of the said diverging inner flanges of said outer side flanges; the forward free ends of the top, bottom and side walls of said body being secured to the inner surfaces of the outer top, bottom and side flanges of said rectangular frame; a plurality of individual bins which are adapted to be mounted in said cabinet for tilting movement into and out thereof, each of said bins being open at the top thereof and having front, rear, side and bottom walls, each of said bins having a flange which extends from side to side thereof and projects downwardly from the bottom wall thereof rearwardly of the front wall thereof thereby providing a shoulder between the said bottom wall and said downwardly extending flange; the inner edge of the said diverging inner flange of the said outer bottom flange of said frame engaging said shoulders when side bins are mounted in said cabinet thereby providing a pivot about which said bins rock when tilted into and out of said cabinet.

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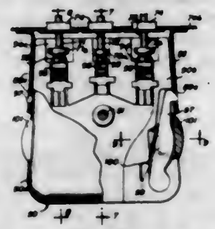
3,169,042

ELECTRIC CONNECTOR FOR REMOTELY CONTROLLED ELECTRIC HEATING AND COOKING VESSELS

Ivar Jepsen, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Original application June 11, 1956, Ser. No. 590,694, now Patent No. 3,098,918, dated July 23, 1963. Divided and this application June 20, 1962, Ser. No. 204,009

4 Claims. (Cl. 339—91)



1. An electric connector for use with a receptacle having a terminal, comprising a hollow insulating support member enclosing at least one electrically conductive compression spring each having a substantially sinusoidal shape with an electric contact surface near one end thereof, said support member defining an opening affording access to said contact surface, said spring being disposed in front of said opening and oriented so that its principal axis of compression extends through said opening, said spring connected to said member at a point remote from said contact surface so that the engagement between said contact surface and terminal causes said spring to bias said support member away from the receptacle, and manually releasing means on said member adapted to lock said member in engagement with the receptacle whereby said spring urges said contact surface into good electrical connection with the terminal and only a compressional force is exerted therebetween.

# CHEMICAL

3,169,043

CHROMYL ACETATE ASSISTED POLYPROPYLENE DYEING

Pierre Baumgartner, Asnieres, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, Seine-et-Oise, France

No Drawing. Filed May 16, 1962, Ser. No. 195,333

5 Claims. (Cl. 8—4)

1. A process for dyeing normally solid polypropylene, comprising the successive steps of (*a*) contacting said polypropylene with chromyl acetate and (*b*) contacting the resulting polypropylene with a dyestuff, said steps being carried out at a temperature lower than the decomposition temperature of said polypropylene.

3,169,044

DIHYDROGEN DODECAHYDRODODECABORATE AND METHOD FOR PRODUCING SAME

Henry C. Miller, Wilmington, Del., and Earl L. Muetterties, West Chester, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 20, 1960, Ser. No. 30,441

6 Claims. (Cl. 23—14)

1. Compounds having the formula

$$H_2B_{12}H_{12}\cdot nH_2O$$

where $n$ is a cardinal whole number of less than 5.

5. In a process for making dihydrogen dodecahydrododecaborate (2−), the step comprising reacting in solution a salt containing the dodecahydrododecaborate anion $B_{12}H_{12}^{=}$, said salt being selected from the class consisting of ammonium salts, alkali metal salts and alkaline earth metal salts with an acid having a pKa value less than that of the dihydrogen dodecahydrododecaborate (2−) and isolating the resulting acid.



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3,169,045

DODECAHYDRODODECABORATE COMPOUNDS

Henry C. Miller, Wilmington, Del., and Earl L. Muetterties, West Chester, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 20, 1960, Ser. No. 30,442

10 Claims. (Cl. 23—14)

1. Compounds having the formula

$$M_a(B_{12}H_{12})_b$$

wherein M is a cation having a total atomic weight of at least 5 and a valence of less than 5, and $a$ and $b$ vary from 1 to 3 and satisfy the following relation:

$$b=\frac{a\times\text{valence of M}}{2}$$

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3,169,046

METHOD OF WORKING-UP A SULFURIC-ACID MOTHER LIQUOR OBTAINED IN THE PRODUCTION OF TITANIUM DIOXIDE BY HYDROLYSIS

Walter Nespital, Leverkusen, Germany, assignor to Titangesellschaft mbH, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 8, 1962, Ser. No. 193,327

Claims priority, application Germany, May 12, 1961, T 20,150

5 Claims. (Cl. 23—202)

1. In the treatment of mother liquor produced during the production of titanium dioxide by digestion of titaniferous ore in sulfuric acid wherein it is desired to separate and recover the sulfate values and titanium dioxide from said mother liquor, the improvement which comprises:

(1) evaporating the said mother liquor to form a concentrated liquor containing from about 60–65% sulfuric acid,

(2) cooling said concentrated liquor to form and precipitate a salt mixture of low acid content,

(3) separating said salt mixture from said cooled concentrated liquor,

(4) dissolving said salt mixture in a hot dilute solution of titanium sulfate to form a first salt solution,

(5) cooling said first solution to form and precipitate the iron values as iron sulfate heptahydrate,

(6) separating the heptahydrate from said first salt solution,

(7) heating the residual filtrate of said first salt solution and adding it to additional salt mixture to dissolve the latter and form a second salt solution having an increased amount of titanium values over the amount contained in said first salt solution,

(8) cooling said second salt solution to form and precipitate iron values as iron sulfate heptahydrate,

(9) separating the heptahydrate from said cooled second salt solution,

(10) hydrolysing at least part of the residual filtrate of said second salt solution to form and precipitate titanium dioxide.

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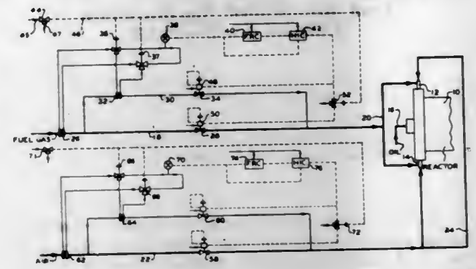
3,169,047

APPARATUS AND PROCESS FOR CONTROLLING THE GAS FLOW RATE TO A REACTOR

Carl L. Osburn, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 18, 1961, Ser. No. 138,664

13 Claims. (Cl. 23—209.4)



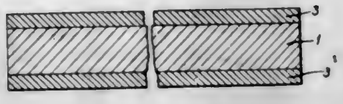
1. Apparatus for controlling a wide range of gas flow to a reactor comprising in combination; a high capacity main gas supply line having a first orifice flow meter therein and a first motor valve therein of relatively high flow capacity downstream of said first meter; a bypass line of lesser capacity in said main gas line around said first motor valve downstream of said first meter; a second orifice flow meter in said bypass line; a second motor valve of relatively low flow capacity in said bypass line downstream of said second meter; a first 3-way motor valve; a second 3-way motor valve; a differential pressure transmitter; a first signal transmission line leading from the high pressure side of said first meter to a first port of said first 3-way valve; a second signal transmission line leading from the high pressure side of said second meter to a second port in said first 3-way valve; a first signal receiving line leading from a third port in said first 3-way valve to said transmitter, whereby said transmitter may receive signals from the high pressure side of either aforesaid meter; a third signal transmission line leading from the low pressure side of said first meter to a first port in said second 3-way valve; a fourth signal transmission line leading from the low pressure side of said second meter to a second port in said 3-way valve; a second signal receiving line leading from a third port in said second 3-way valve to said transmitter, whereby said transmitter may receive signals from the low pressure side of either of aforesaid meters; reversible means for operating said first and second 3-way valves to alternately operatively connect said transmitter with the high and low pressure side of said first meter and with the high and low pressure side of said second meter; and a flow controller connected to receive a signal from said transmitter and with said first and second motor valves to transmit a signal thereto.

13. A method of gradually heating up a carbon black reactor after shut-down which comprises feeding separate streams of air and fuel gas in combustion-supporting proportions to form a mixture therein; burning said mixture; separately feeding each said stream to said reactor at increasing flow rates in a relatively low range thru a first motor valve of relatively low capacity in a by-pass line around a second motor valve of relatively high capacity in a main supply line until about the full flow capacity of said first valve has been reached; thereafter, while passing each said stream thru its respective by-pass at said full capacity, passing additional gas thru said second valve at gradually increasing flow rates from a relatively low to a relatively high rate until a desired total flow rate is reached and said reactor is heated to operating temperature; and thereafter feeding a suitable oil feed for carbon black formation to said reactor while at operating tempera-

ture along with combustion air so as to form carbon black.

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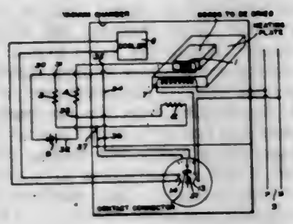
3,169,048
LOW-MELTING POINT COMPOSITE PRODUCT
Thomas E. McGlinn, Rehoboth, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 18, 1960, Ser. No. 15,938
6 Claims. (Cl. 29—183.5)



1. A low-melting point composite product useful for brazing, soldering and the like, comprising adhered portions of at least two different malleable metals, alloys of which are brittle, said metals being gold and aluminum in a weight ratio on the order of 92:8, said weight ratio of the metals corresponding to that of a low-melting point alloy of the metals, said low-melting point being below that of at least one of the metals.

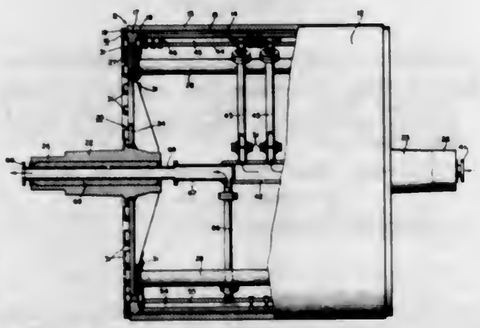
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3,169,049
CONTROL DEVICE FOR VACUUM FREEZE DRYING SYSTEMS
Louis R. Rey, St. Cloud, France, assignor, by mesne assignments, to Leybold-Anlagen Holding A.G., Zug, Switzerland
Filed Dec. 1, 1961, Ser. No. 156,259
Claims priority, application Germany Dec. 1, 1960
16 Claims. (Cl. 34—5)



1. A control device for a vacuum freeze drying system, comprising, in combination:
(*a*) means for heating goods to be dried in a vacuum freeze drying system;
(*b*) means for cooling goods to be dried in a vacuum freeze drying system;
(*c*) a source of energy for actuating said heating means and said cooling means when connected thereto; and
(*d*) measuring and controlling means connected with said heating means, said cooling means, and said source of energy for selectively connecting said heating means and said cooling means with said source of energy to selectively actuate them, said measuring and controlling means including
(1) a first temperature-responsive resistor adapted to be arranged in the goods to be dried,
(2) a second temperature-responsive resistor disposed in the immediate vicinity of said heating means, and
(3) further resistors having temperature-independent resistance characteristics, said resistors being connected together to form an electric bridge circuit of the Wheatstone type.

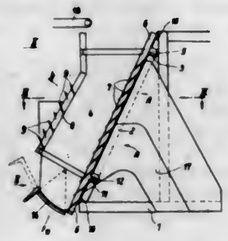
3,169,050
ROTARY CYLINDER DRYING DRUM WITH STRESS RELIEVING EXPANSION MEANS
Pieter J. Kroon, Swarthmore, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 25, 1961, Ser. No. 84,833
8 Claims. (Cl. 34—124)



5. In a dryer of the rotary cylinder type, an outer cylindrical shell, an inner co-axial shell radially spaced from the outer shell so as to provide therebetween a chamber for reception of a heating medium, rim means uniting the ends of said shells, a substantially rigid, unheated structure for supporting said shells for rotation about the common axis, said supporting structure comprising a journal at each end of the dryer, a ring member concentrically disposed within each of said rim means and having its periphery in close proximity to said rim means when said shells are unheated, and web means joining said ring members and said journals, means connecting said shells to said supporting structure and permitting radial expansion and contraction of said shells independently of said supporting structure, whereby radial expansion and contraction of said shells caused by heating and cooling of the shells does not stress the shells or the supporting structure, means for supplying a heating medium to said chamber, means for removing spent heating medium from said chamber and means insulating said supplying means and said removing means from said supporting structure.

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3,169,051
COOLING APPARATUS FOR HOT BULK MATERIALS
Arnold Möll, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Feb. 20, 1962, Ser. No. 174,463
Claims priority, application Germany, Mar. 21, 1961, M 48,465/61
1 Claim. (Cl. 34—174)



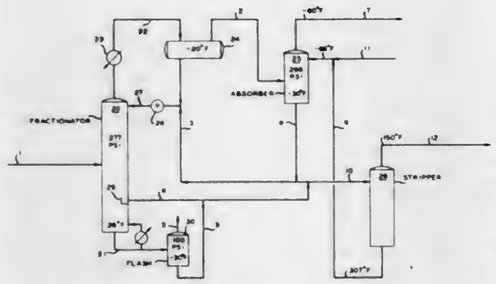
In an apparatus for the cooling of very hot bulk material such as sintered ore, said apparatus having a plurality



of spaced cooling containers each composed of inner and outer vertically inclined gas permeable walls supported by a framework, means for forcing cooling gas through said walls, means for charging hot material into the upper end of each container, and means for removing cooled material from the lower end of each container, the improvement comprising bearing pins fixed to said framework, and hooks secured to each container and loosely engaging said pins for hanging each container from the supporting framework for free thermal expansion in all directions and independent of said framework.

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3,169,052
LOW TEMPERATURE PURIFICATION OF ETHYLENE
Joseph W. Davison, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,493
7 Claims. (Cl. 62—20)



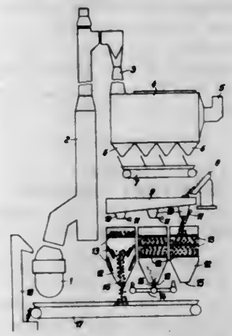
1. A method of separating ethylene from a stream containing it, ethane, and water as an impurity which comprises feeding said stream to a fractionation column being operated at a temperature at which hydrates of ethylene will form, producing and removing from said column an overhead stream consisting essentially of ethylene, contacting said overhead stream while still in said column with dimethylformamide at a point at which said hydrates would normally tend to form in the absence of said dimethylformamide in a manner and quantity sufficient to remove any water from said overhead stream, recovering said overhead stream and condensing at least a portion of the same, passing a portion of condensed ethylene into said column as reflux therefor, and removing a stream of dimethylformamide containing any water absorbed from said overhead stream at a level substantially below the place of said contacting of the DMF with said overhead stream.

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3,169,053
METHOD OF RENDERING FERTILIZER GRANULES NON-CAKING
Edgar W. Sawyer, Jr., Metuchen, and Homer A. Smith, Berkeley Heights, N.J., assignors to Minerals & Chemicals Philipp Corporation, a corporation of Maryland
No Drawing. Filed July 27, 1960, Ser. No. 45,525
4 Claims. (Cl. 71—64)

1. A method for treating fertilizer granules to prevent the tendency of said granules to cake on storage in humid atmospheres which comprises tumbling dry granules of hydroscopic fertilizer salt material having an available nitrogen analysis of at least 10 with from ½ to 2 percent by weight of kaolin clay, the particles of which had been coated with from 1 to 15 percent by weight of a sodium alkylaryl sulfonate having from 8 to 12 carbon atoms in the alkyl group until said coated clay adheres to the surface of said grandules.

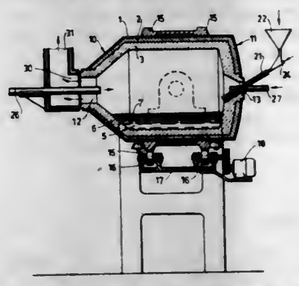
3,169,054
METHOD AND APPARATUS FOR USE OF FLY DUST FROM METALLURGICAL FURNACES
Hermann Werner, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Dec. 6, 1961, Ser. No. 157,469
Claims priority, application Germany, Jan. 19, 1961, M 47,734
2 Claims. (Cl. 75—3)



1. In the process of recycling dust containing from 6 to about 20% calcium oxide precipitated from waste gases back to a metallurgical furnace, the improvement comprising forming pellets of the dust mixed with from 8 to 12% water, blowing gas through a layer of pellets to dry said pellets at a gas temperature of from about 15 to 30° C. and at a slightly greater than atmospheric pressure of about 200 mm. to remove about from 1 to 2% of the water whereby the remaining water in said pellets hardens said pellets with the heat of the slaking reaction at a non-bursting pellet temperature of from about 40 to 55° C.

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3,169,055
PROCESS FOR PRODUCING PIG IRON IN ROTARY FURNACE
Erik Anders Åke Josefsson, Erik Axel Bengtsson, and Kurt Karl Axel Almqvist, Borlänge, Sweden, assignors to Stora Kopparbergs Bergslags Aktieboleg, a company of Sweden
Filed Oct. 9, 1962, Ser. No. 230,311
Claims priority, application Sweden, Oct. 12, 1961, 10,156
13 Claims. (Cl. 75—40)



1. A process for producing liquid pig iron from iron oxide material, including iron ore, and solid carbonaceous material in a rotary furnace rotating about a substantially horizontal axis, which comprises establishing and maintaining during the process a body of liquid slag and solid carbonaceous material having a strongly reducing potential relative to iron oxide and being substantially evenly distributed horizontally in the furnace thereby shielding pig iron which accumulates below said body from the gas space above said body; supplying a combustion gas richer

in oxygen than is air to the gas space above said body while maintaining the strongly reducing potential of said body, thereby oxidizing carbon monoxide evolved in the process to carbon dioxide and providing at least the main part of heat required for the process; successively supplying to said body raw materials comprising comminuted iron oxide material, including iron ore, and comminuted solid carbonaceous material; rotating the furnace at a velocity of more than 10 revolutions per minute to distribute said raw materials evenly over said body; supplying said raw materials in quantities, relative to the supply of gaseous oxygen, sufficient to reduce and carburize in said body substantially all of said iron oxide material into pig iron containing at least 2% by weight of carbon; and collecting pig iron formed in the process in a space beneath said body.

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3,169,056
RECOVERY PROCESS
Ralph J. Bertolacini, Chesterton, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Mar. 15, 1960, Ser. No. 15,035
5 Claims. (Cl. 75—83)

1. A method for separating noble metal from a refractory inorganic material, which comprises contacting a composite, comprising a noble metal at least a portion of which is in a form which is insoluble in acetylacetone and a refractory inorganic material which is soluble in acetylacetone, with liquid acetylacetone in a quantity sufficient to dissolve substantially all of said material therein, and separating the resulting solution of said material in acetylacetone from the undissolved residue, said residue comprising a noble metal in a form insoluble in acetylacetone.

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3,169,057
SEPARATION OF PLUTONIUM, URANIUM AND FISSION PRODUCTS FROM EACH OTHER
James B. Knighton, Joliet, and Robert K. Steunenberg, Naperville, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 29, 1962, Ser. No. 233,984
12 Claims. (Cl. 75—84.1)

1. A process of separating lanthanides and yttrium from actinides contained in neutron-bombarded nuclear uranium fuel, comprising contacting a molten halide flux solvent selected from the group consisting of magnesium halide, magnesium halide plus alkali metal halide and magnesium halide plus alkaline earth halide with a binary alloy solvent selected from the group consisting of magnesium-zinc and magnesium-cadmium in which the magnesium content is at least 18% by weight, one of said solvents containing said fuel, whereby the lanthanides and yttrium are preferentially taken up by the flux while the actinides are preferentially taken up by a metal phase; and separating the flux from the metal phase.

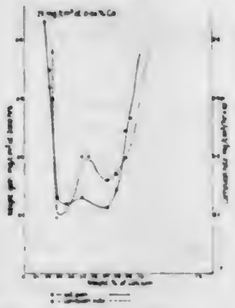
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3,169,058
DECARBURIZATION, DEOXIDATION, AND ALLOY ADDITION
Edward C. Nelson, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 18, 1960, Ser. No. 70,121
11 Claims. (Cl. 75—133)

1. A process for treating a molten iron-base melt and reducing alloy constituents from a molten slag in contact with a molten iron-base melt to cause an increase in the alloy constituents in said molten iron-base melt comprising providing a molten iron-base melt and a molten slag covering said iron-base melt said slag containing at least one oxidic alloying compound containing an element capable of alloying with said molten iron-base melt and introducing at least one inert gas selected from the group consisting of argon, xenon, krypton, neon, and helium into said iron-base melt and introducing a carbonaceous reducing agent into said melt; substantially decreasing the effective pressure of carbon oxide in the melt thereby causing a greater extent of reaction between said carbon and oxygen in said molten iron-base melt to cause reduction of said oxidic form of said alloying element from said slag and increasing the content of said alloy element in said molten iron-base melt.

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3,169,059
BERYLLIUM ALLOYS
Thomas Raine, Bramhall, and James Alan Robinson, Cheadle, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed July 22, 1963, Ser. No. 296,689
Claims priority, application Great Britain, Dec. 2, 1960, 41,576/60
2 Claims. (Cl. 75—150)



1. An alloy of calcium and beryllium consisting of 0.25% to .95%, of calcium, by weight, and the remainder beryllium except for unavoidable impurities.

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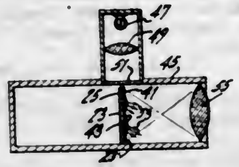
3,169,060
PHOTOCONDUCTIVE LAYERS FOR ELECTROPHOTOGRAPHIC PURPOSES
Helmut Hoegl, Wiesbaden, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed June 17, 1960, Ser. No. 36,748
Claims priority, application Germany July 3, 1959
15 Claims. (Cl. 96—1)

1. An electrophotographic reproduction material comprising a conductive support layer and a photoconductive insulating layer, the latter comprising a member of the group consisting of a dyestuff sensitizer and an activator for the photoconductor, and as substantially the sole photoconductor a compound selected from the group consisting of a substantially linear polymerized aromatic compound which compound has at least one non-aromatic double bond in a fused ring through which the compound is polymerized, and such a compound substituted by electron-releasing substituents.

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3,169,061
ELECTROSTATIC PRINTING
Kenneth Clifford Hudson, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 1, 1961, Ser. No. 106,897
8 Claims. (Cl. 96—1)

1. A method of image reproduction employing a thermoplastic transparent photoconductive layer having a resistivity in darkness at its softening temperature of at least $10^9$ ohm-centimeters and a resistivity when irradiated of at least two orders of magnitude less than said resistivity in darkness; said method comprising the steps of: producing a blanket electrostatic charge on said layer, directing an optical image incident upon said charged layer thereby producing on said layer a latent electrostatic image, forming on said layer a surface modulation image in response to deformation of a surface of said layer by the electrostatic forces of said electrostatic image illuminating an edge of said layer with light penetrating said edge to produce from said surface modulation image a pattern of light and shadow, removing said surface modulation image from said layer, and then repeating said steps on said layer.



3. Image reproduction apparatus employing a transparent thermoplastic photoconductive layer; said apparatus comprising means for applying a substantially uniform electrostatic charge to a surface of said layer, means for exposing said layer to a light image to produce thereon a latent electrostatic image, means for heating said layer to at least its softening temperature to produce surface modulations thereon in conformity with said electrostatic image and a source of illumination positioned and arranged with respect to the layer so that the light rays therefrom are transmitted at an edge of said layer with light penetrating said edge to produce thereon a pattern of light and shadow from said surface modulations.

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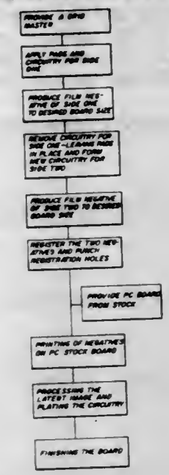
3,169,062
ELECTROPHOTOGRAPHIC REPRODUCTION PROCESS
Kurt Walter Klupfel, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed Mar. 21, 1962, Ser. No. 181,433
Claims priority, application Germany Mar. 23, 1961
10 Claims. (Cl. 96—1)

1. An electrophotographic reproduction process which comprises producing a latent resistance image in a first photoconductive insulator layer containing an inorganic photosemiconductor by exposure of the layer to a light image, then placing a supported second photoconductive insulator layer in surface contact with the first layer with the layers facing each other, electrostatically charging the second layer by applying an electrostatic charge to the support for the second layer on the side remote from the second layer and developing at least one of the latent electrostatic images produced.

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3,169,063
METHOD OF MAKING PRINTED CIRCUITS
Robert L. Johnston, Exton, and Wilbur E. Hess, Broomall, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 29, 1961, Ser. No. 120,669
4 Claims. (Cl. 96—27)

1. A method of obtaining registration between circuitry on both sides of a printed circuit board comprising the steps of: separately applying opaque pads and removable circuit lines for side one of the printed circuit board on a transparent grid master, photo-projection printing said grid master of side one, developing a negative of side one, removing the circuit lines only for side one, applying new circuit lines for side two utilizing the same pad locations, photo-projection printing said grid master of side two, developing a negative of side two, registering the negatives of sides one and two and punching registration holes through them, forming identically-spaced registration holes through the board, and registering the negatives on opposite sides of said board by aligning similarly positioned registration holes common to each.




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3,169,064
HEAT ERASABLE PHOTOSENSITIVE COATING AND PROCESS OF USING SAME
Marilyn Levy, Red Bank, N.J., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Nov. 5, 1963, Ser. No. 321,651
5 Claims. (Cl. 96—27)
(Granted under Title 35, U.S. Code (1952), sec. 266)

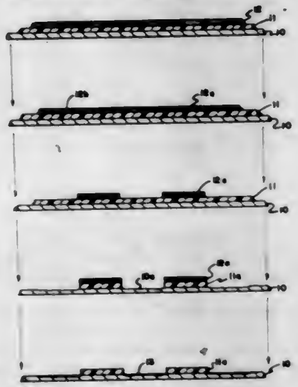
1. A method for photographic recording comprising preparing a direct printing out photosensitive coating containing phosphotungstic acid and polyvinyl butyral, applying the coating to a support to provide a printing element, exposing the coating to an ultraviolet image, utilizing the image thus printed upon the sensitive printing element and erasing the printed image by applying heat thereto.

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3,169,065
METHOD OF MAKING RESIST AND DEEP ETCH LITHOGRAPHIC PRINTING PLATES WITH FERRIC AMMONIUM COMPOUND SENSITIZED PLATES
Jack L. Sorkin and Dolor N. Adams, Cleveland Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Oct. 11, 1960, Ser. No. 61,843
18 Claims. (Cl. 96—33)

1. In a method of preparing a metal-surfaced printing plate wherein an aqueous etching solution is employed to remove portions of the metal surface of the plate in selected areas only, the steps comprising applying over the metal-surfaced plate a hydrophilic water-insoluble sub-layer non-reactive with and adherent to an after-applied coat of a light-sensitive system to hold in integral assembly such plate and after-applied coat while protecting the latter from direct contact with the metal plate, applying over the sub-layer such a coat comprising a water-soluble non-tanning ferric iron ammonium salt photochemically reducible by light to the ferrous state and a water-soluble organic film-forming resin susceptible to insolubilization by oxidation, such sub-layer being penetrable by the aqueous etching solution upon removal of such coat, exposing certain areas of the coat to light

to reduce the iron of the ferric iron ammonium salt to a ferrous form, reacting an oxidizer with the oxidation-susceptible film-forming resin in the presence of a water-soluble polycarboxylic acid and such ferrous iron thereby to insolubilize on the sub-layer only those areas of the film-forming resin exposed to light, said acid promoting the insolubilizing reaction, removing the unexposed areas of the light-sensitive coat to uncover the corresponding underlying areas of the sub-layer, applying an aqueous etching solution for the metal of the plate to both the exposed areas and the unexposed and uncovered areas of the plate to penetrate and remove said sub-layer and etch the metal of said plate in said uncovered areas only, said exposed insolubilized areas preventing etching of the metal and removal of the sub-layer in said areas.



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**3,169,066**
**PHOTOMECHANICAL METHOD OF PRODUCING PRINTING FORMS**
**Hans Hoerner, Munich-Unterhaching, Germany**
**Filed Jan. 11, 1960, Ser. No. 1,517**
**Claims priority, application Germany Jan. 12, 1959**
**2 Claims. (Cl. 96—35)**

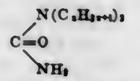


1. The method of making printing forms having a printing surface with deeply recessed portions having an inverted conical cross-section, which method comprises exposing a light sensitized laminated body to a light image, whereby those portions of the sensitized body exposed to light are hardened, said laminated body comprising a light sensitized first solid polymer layer having a printing surface and a reverse surface, and at least one layer of an unsensitized second solid polymer material, different from the polymer of said first layer, subjoined to said reverse surface; and subsequently developing said body by partially removing unhardened portions of said first polymer layer by repeatedly softening and abrading unhardened surface portions of the layer with a plurality of fine, flexible bristles moistened with a first softening agent which softens said first polymer but to which said second polymer is indifferent, whereby recessed portions are formed in said first polymer layer and raised printing elements having a truncated conical cross-section are defined between said recessed portions, and then removing portions of said layer of second polymer by repeatedly softening and abrading exposed portions of the layer with a plurality of fine, flexible bristles moistened with a second softening agent which softens said second polymer but to which said first polymer is indifferent, whereby said truncated conical recessed portions are extended from said first polymer layer into said second polymer.

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**3,169,067**
**HEAT DEVELOPABLE DIAZOTYPE MATERIAL COMPRISING AN UNSYMMETRICAL UREA AS THE BASE RELEASE AGENT**
**Elliot Berman, Braintree, Hollis E. French, Woburn, David S. Most, Peabody, Richard D. Murray, Roslindale, and Richard R. Roberts, Concord, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware**
**No Drawing. Filed Aug. 28, 1962, Ser. No. 220,081**
**5 Claims. (Cl. 96—91)**

1. A positive working, heat developable, light sensitive diazotype composition, comprising:
a support; and
a light sensitive layer thereon comprising
a light sensitive diazo compound,
an azo coupling compound,
an acidic stabilizing agent, and
a thermally activatable base release material in intimate admixture with said diazo compound, said coupling component and said stabilizing agent, said base release material having the general formula



where "$x$" is a number between 1 and 4.

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**3,169,068**
**PRESERVATIVE OF OXYGEN-LABILE SUBSTANCES, E.G., FOODS**
**Felix Bloch, Oakland, Calif., assignor to the United States of America as represented by the Secretary of Agriculture**
**No Drawing. Filed Sept. 12, 1962, Ser. No. 223,280**
**6 Claims. (Cl. 99—171)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. An oxygen scavenger composition comprising a bisulphite, an inert carrier having an extended surface, and a peroxide, said inert carrier and peroxide being present in amount effective to accelerate absorption of oxygen by the bisulphite.

3. A method of preserving a material which is adversely affected by contact with free oxygen which comprises sealing the material in a container together with the scavenger composition defined in claim 1.

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**3,169,069**
**PREPARATION OF PRE-COOKED FROZEN POULTRY PRODUCTS**
**Helen L. Hanson and Lorraine R. Fletcher, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture**
**No Drawing. Filed Apr. 24, 1961, Ser. No. 105,235**
**2 Claims. (Cl. 99—194)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. The method which comprises subjecting raw, solid, uncoated poultry pieces to cooking until tender, coating the cooked poultry pieces with a farinaceous substance, frying the coated, cooked poultry pieces in hot fat for a brief period of time sufficient only to develop a gold-brown coloration in the coating, cooling the fried product, freezing it and maintaining it in frozen storage, whereby said step of cooking the raw, solid, uncoated poultry pieces until tender enables said pieces to tightly retain the farinaceous coating thereon so that there is no loss of coating on subsequent handling of the product, said frozen product comprising cooked poultry pieces encased in an independently-cooked, tightly-adherent pellicle of farinaceous material which is resistant to flaking and peeling on subsequent handling.



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**3,169,070**
**METHOD FOR USE IN FREEZE-VACUUM DEHYDRATION OF MEAT**
**Ferdinand P. Mehrlich and Raymond R. Haugh, Cook County, Ill., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Apr. 5, 1961, Ser. No. 101,032**
**2 Claims. (Cl. 99—208)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. The method of freeze-vacuum drying meat by: slicing unfrozen meat into thin slices prior to drying; forcing said slices in unfrozen condition to assume a shape which is undulatory throughout their entire cross-section so as to form a plurality of reversely directed peaks thereacross on opposite sides thereof along which said meat is stretched so as to open up the same to facilitate escape of vaporized moisture therefrom and compressing at least portions of the meat slides between said oppositely directed peaks; freezing said meat while it is in the aforesaid form and compressed condition, and then subjecting said meat while in said frozen form to vacuum to freeze-dry the same; whereby when said frozen and compressed meat is subjected to said vacuum, at least part of the heat of sublimation of said moisture is supplied to said meat along the reverse sides of said peaks and the portions of said meats that are compressed.

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**3,169,071**
**COATING COMPOSITION**
**Harry Hochman, Woodland Hills, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**No Drawing. Filed June 6, 1961, Ser. No. 115,270**
**1 Claim. (Cl. 106—15)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

A preservative composition for impregnating wooden structures designed for installation in a marine environment consisting essentially of creosote and a bactericide for creosote-tolerant, creosote-attacking bacteria, said composition consisting of 90–99% creosote and 1–10% bactericidal agent selected from the group consisting of creosote soluble zinc oxinate, malachite green oxalate, and malachite green oxalate after trituration with sorbitan trioleate, an emulsifying agent.

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**3,169,072**
**CERAMIC BODIES AND THEIR PRODUCTION**
**Floyd A. Hummel, State College, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York**
**Filed Mar. 20, 1963, Ser. No. 266,579**
**12 Claims. (Cl. 106—39)**

1. As an article of manufacture, a mechanically strong, low porosity, low expansion ceramic body consisting essentially all of a single phase solid solution of $Mg_2SiO_4$ in $Zn_2SiO_4$ wherein the $Mg_2SiO_4$ is analytically present in an amount of about 0.5 to 42 mole percent and the remainder is substantially all $Zn_2SiO_4$.

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**3,169,073**
**HIGH SOLIDS PROTEIN-POLYMERIC DIALDEHYDE COATING COMPOSITIONS**
**Francis B. Weakley and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture**
**No Drawing. Filed Nov. 16, 1961, Ser. No. 152,951**
**1 Claim. (Cl. 106—139)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

A paper coating composition comprising 100 parts by weight of clay pigment, 12–14 parts by weight of casein, 0.25–1.0 part by weight of dialdehyde starch produced by essentially complete periodate oxidation of starch, 24–28 parts by weight of urea, 0.2 part of sodium hexametaphosphate, and water, said composition prior to application to paper having a total solids content of 65 to 70 percent and a Brookfield viscosity of about 29 to 80 poises at 25° C.

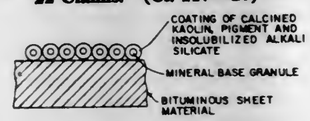
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**3,169,074**
**RUTILE TITANIUM DIOXIDE PIGMENTS AND PROCESS FOR THEIR PRODUCTION**
**Raymond G. Holbein, Thann, Haut-Rhin, France, assignor to Fabriques de Produits Chimiques de Thann et de Mulhouse, Thann, France, a corporation of France**
**No Drawing. Filed Aug. 29, 1961, Ser. No. 134,579**
**Claims priority, application France Aug. 31, 1960**
**20 Claims. (Cl. 106—300)**

4. Rutile $TiO_2$ pigments consisting essentially of $TiO_2$ particles of rutile crystal structure having the refractive index, hiding power and color stability characteristic of rutile pigments together with the whiteness and particle fineness characteristic of anatase pigments, said particles being a calcinate of a rutile-induced $TiO_2$ hydrolyzate and containing as produced about 0.6 to 1% of $Al_2O_3$, 0.1 to 0.25% of $P_2O_5$ and 0.25 to 0.7% of $K_2O$, all percentages based upon the weight of $TiO_2$ in the hydrolyzate.

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**3,169,075**
**MINERAL SURFACING GRANULES CONTAINING CALCINED CLAY**
**George W. Morrow, Jr., Evanston, and Norman B. Sackrison, Skokie, Ill., assignors to Central Commercial Company, Chicago, Ill., a corporation of Illinois**
**Filed Nov. 14, 1957, Ser. No. 696,313**
**22 Claims. (Cl. 117—27)**



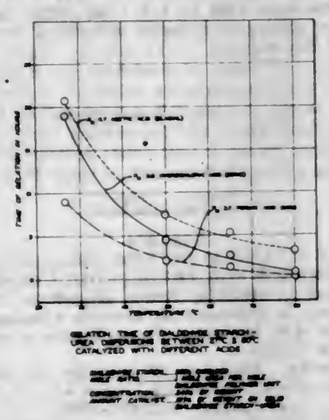

21. Decorative sheets adapted for use as a roofing material and comprising a bituminous sheet material surface coated on at least one side with an adherent layer of weather-resistant and bloom-resistant artificially colored granules comprising a mineral base granule having a well-bonded, substantially non-alkaline and water-insoluble surface coating comprising ingredients which are chemically essentially unreacted in said coating, said ingredients including an anhydrous aluminum silicate of an average particle size between approximately 1 and 40 microns, a pigment, and an inorganic bond, said bond consisting essentially of an insolubilized alkali silicate.

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**3,169,076**
**METHOD OF SIZING PAPER WITH DIALDEHYDE POLYSACCHARIDE-UREA RESIN AND THE PRODUCT THEREOF**
**Peter J. Borchert, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana**
**Filed May 11, 1960, Ser. No. 28,447**
**5 Claims. (Cl. 117—62.2)**

1. A process for imparting enhanced wet strength characteristics to paper which comprises treating paper

with about a 1% to 20% solids containing dispersion of a periodate oxidized polysaccharide-urea resin prepared according to the process comprising mixing a periodate oxidized polysaccharide and urea in an aqueous dispersion medium therefor at a hydrogen ion concentration in the range of from about pH 5 to pH 8 and at a temperature of from about 30° C. to 70° C. until complete dis-



persion of the reaction product thereof, drying said treated paper at a temperature between about 80° C. and 90° C. for a period of from about 5 to 30 minutes, acidifying with an aqueous solution of an acidic accelerator and drying at a temperature in the range of from about 80° C. to 120° C. for a period of from about 5 minutes to 30 minutes.

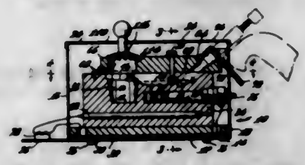
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**3,169,077**
**METHOD OF PRODUCING A YARN PACKAGE**
**Richard MacHenry, Prospect Park, and Harry E. Schwartz, Lester, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware**
**No Drawing. Filed Jan. 9, 1961, Ser. No. 81,258**
**9 Claims. (Cl. 117—66)**

1. A method for producing an improved yarn package comprising applying to a cellulosic yarn in the unwound state a homogeneous mixture comprising a $C_1$–$C_4$ alkanol in a major proportion based on the volume of the mixture, and a rubber latex adhesive comprising an aqueous dispersion containing from about 5 to about 50% by weight of a finely-divided rubber and an adhesion promoting amount of a heat-curable phenolic condensate, winding said yarn upon itself to form a package, and drying the package.

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**3,169,078**
**METHOD OF DISPENSING CEMENT AND MELTING POT FOR USE THEREWITH**
**Alan G. Baker, Plymouth, Mass., and Jacob S. Kamborian, 133 Forest Ave., West Newton, Mass.; said Baker assignor to said Kamborian**
**Filed Nov. 10, 1960, Ser. No. 68,546**
**19 Claims. (Cl. 117—104)**



1. The method of dispensing molten cement comprising the steps of providing a trough and a well with molten cement therein and a lip positioned between the trough and well having a higher elevation than the adjacent bottoms of the trough and well; applying heat to the trough and the well to maintain the cement molten; periodically picking up a supply of molten cement from the trough and applying it to a work part until the cement in the trough has been substantially depleted; placing solid cement in the well in sufficient quantity to cause substantially all the molten cement in the well to be displaced therefrom over the lip into the trough; resuming the periodical picking up of molten cement from the trough; and continuing to apply heat to the trough and the well to maintain the cement in the trough molten and to cause the solid cement in the well to melt.

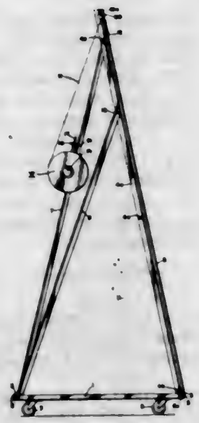
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**3,169,079**
**PROCESS FOR PRODUCING A POLYMER COATING**
**Thomas E. Ferington and Rajendra N. Chadha, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**
**No Drawing. Filed July 5, 1963, Ser. No. 293,204**
**8 Claims. (Cl. 117—124)**

1. In a process for forming a polymer coating of a nongaseous ester of acrylic acid which comprises coating a substrate with a polymerizable mixture consisting essentially of an ester of acrylic acid and 0.005–25 mole percent of the ester of acrylic acid of an aluminum alkyl compound, said aluminum alkyl compound being complexed in a 1:1 mole ratio with an ester of a mono-carboxylic acid, said acid containing 1–20 carbon atoms in a free oxygen containing gas, the improvement whereby yields are increased which comprises:
(*a*) initiating the polymerization by exposing the polymerizable mixture to oxygen, and thereafter
(*b*) before the polymerization is complete, excluding oxygen from the polymerizable mixture and
(*c*) permitting the polymerization to proceed to completion in the absence of oxygen.

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**3,169,080**
**COLLAPSIBLE UPRIGHT PASTING SURFACE**
**Charles Le Roy Hansen, 303 Edith Ave., Salt Lake City, Utah**
**Filed Jan. 7, 1963, Ser. No. 249,773**
**18 Claims. (Cl. 118—42)**

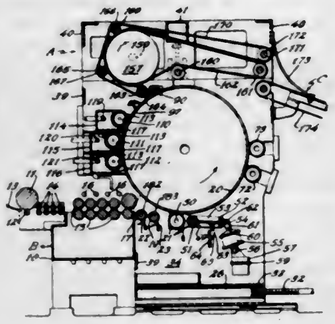


1. An upright pasting device, comprising a base; a pasting surface extending upwardly and inwardly of the base adjacent one side thereof; means for maintaining said pasting surface in said inclined position; means for removably and rotatably supporting a roll of material to be pasted in rear of the pasting surface and above said base whereby the web of said roll may be passed upwardly from the roll and over the top of the pasting surface and then down upon the front face of the pasting surface; a removable pressure roller gravitationally journaled at the top of the pasting surface and adapted to contact and to seat upon the upper edge of the pasting surface with the web of material interposed between the pressure roller and the pasting surface; said pasting surface having a horizontal web cutting slot therein adjacent and below the pressure roller; and measuring indicia disposed on and at each side of the pasting surface extending downwardly from the said slot.



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**3,169,081**
**CARTON COATING APPARATUS**
**Iver L. Nelson and Karl F. Halladin, Minneapolis, Minn., assignors to Waldorf Paper Products Co., St. Paul, Minn., a corporation of Minnesota**
**Filed May 14, 1959, Ser. No. 813,161**
**1 Claim. (Cl. 118—60)**

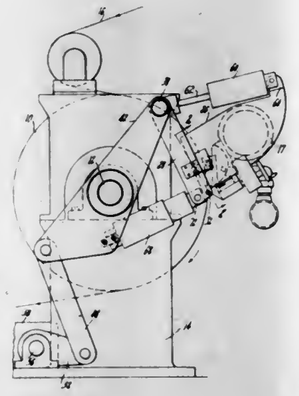


An apparatus for applying a high gloss surface on carton board sheets including a drum having a highly polished surface, a substantially horizontal shaft supporting said drum, a pressure roller substantially beneath said drum and cooperable with said drum to press the upper surface of said board against said drum, means for applying a coating to the upper board surface, means for maintaining said drum at a temperature below the melting point of said coating, means located at a point more than one hundred eighty degrees from said pressure roller in the direction of travel of said drum for stripping said blanks from the drum surface while the coated surface is lowermost, pulley means arranged on a substantially horizontal axis above the level of said drum, a first endless conveyor positioned to receive blanks stripped from said drum and guide said blanks about said pulley and to extend laterally therefrom, and a second endless conveyor extending about said pulley means engageable with the upper surfaces of the inverted blanks to guide them about said pulley means to extend laterally therefrom beneath said first conveyor and on which said blanks are carried after being reinverted to position the coated surface uppermost.

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**3,169,082**
**TRAILING BLADE COATER**
**Garo Krikorian, Worcester, Mass., assignor to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts**
**Filed May 28, 1962, Ser. No. 198,057**
**14 Claims. (Cl. 118—413)**

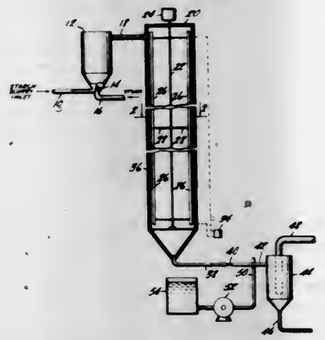
1. In a trailing blade type coater having a backing roll over which a traveling web to be coated is drawn in a downward direction, the combination of a color pond and doctor blade assembly including a color pond inclosure having an open face thereof positioned against and closed by said downwardly traveling backing roll and web, and a doctor blade having a web engaging edge secured to said color pond inclosure and providing a bottom closure for said open face against the web, and supporting means for said color pond and doctor blade assembly comprising



members to which said color pond inclosure and doctor blade are secured having pivotal bearing receiving portions beyond each edge of the web in substantial alignment with the edge of the doctor blade, and relatively stationary supporting elements providing bearing supports on which said color pond and doctor blade assembly is rotatably adjustable about an axis coinciding approximately with the web engaging edge of the doctor blade across the width of said web closely adjacent thereto.

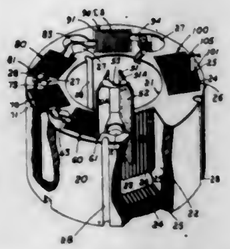
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**3,169,083**
**CONTINUOUS CONVERSION OF STARCH**
**Gerwin G. Taylor, Flossmoor, Ill., assignor to American Maize-Products Company, a corporation of Maine**
**Filed Mar. 9, 1961, Ser. No. 94,515**
**5 Claims. (Cl. 127—71)**



1. In the conversion of an acid catalyzed starch slurry in a vessel, the method which comprises the steps of flowing the starch slurry at cooking temperature and pressure through the vessel, mechanically agitating the slurry adjacent the walls of the vessel to disrupt laminar flow adjacent the walls without causing turbulence in the slurry and then discharging the slurry from the vessel.

3,169,084
## DEFERRED ACTION BATTERY
George M. L. Sommerman, Evanston, Ill., and Dale C. Gerber and Roy D. Livingston, North Canton, Ohio, assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 12, 1947, Ser. No. 768,194
11 Claims. (Cl. 136—90)



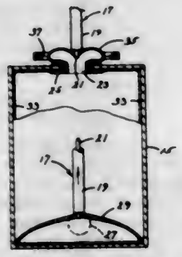
1. In a deferred action type battery including a dielectric housing, a plurality of cooperating electrodes mounted in said housing in face to face relation and separated to provide spaces for electrolyte therebetween, a supply of normally confined electrolyte normally separated from said electrodes and means for releasing said electrolyte, a plurality of entrance ports communicating between the supply of electrolyte and the spaces between the electrodes, means for discharging out of contact with the electrodes electrolyte which is in excess of that required to fill the spaces between the electrodes, an oveflow chamber in the housing for storing said excess electrolyte in communication with said discharging means to prevent flooding and consequent short-circuiting of the electrodes, said entrance ports being disposed at an end of the electrodes remote from the discharging means whereby to permit passage of the electrolyte throughout the area of the spaces between the electrodes.

3,169,085
## METHOD OF PRODUCING TITANIUM BASE STRIP
Jeremy R. Newman, 232 Vires Drive, Winterville, Ohio
Continuation of application Ser. No. 722,543, Mar. 19, 1958. This application Feb. 20, 1963, Ser. No. 271,830
5 Claims. (Cl. 148—11.5)



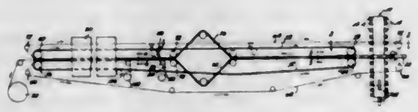
1. A process for manufacturing continuously rolled cold rolled strip of a metal selected from the group consisting of titanium, titanium-base alloys that have an all alpha room temperature structure, and titanium-base alloys that have a mixed alpha and beta room temperature structure, which comprises:
(*a*) hot rolling the said metal substantially in one direction so as to form a metal strip, subsequently
(*b*) heat treating said metal strip after hot rolling to a temperature of from near the beta transus of said metal to the melting point of said metal, and finally
(*c*) cold roll-softening anneal cycling said strip said softening anneal being at a temperature substantially below the heat treating temperature of step (*b*).

3,169,086
## METHOD OF MAKING LINED RECEPTACLES
William E. Meissner, Devon, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application July 14, 1959, Ser. No. 827,099. Divided and this application Jan. 26, 1961, Ser. No. 85,088
8 Claims. (Cl. 156—287)



1. A method of lining a receptacle having side walls which are adapted to be moved toward and away from each other for urging the receptacle into collapsed and erect positions, respectively, a closed end, and end flaps defining an opening at the opposite end thereof including the steps of treating the internal surface of the closed end of the receptacle to prevent adhesion of a tacky film-forming material thereto, suspending a gob of tacky plastic film-forming material within the receptacle and adjacent to the closed end thereof, delivering a gas under pressure into the gob of plastic film-forming material to expand the same into the form of a seamless envelope which engages with and covers the closed end of the receptacle, gradually moving the gob of plastic film-forming material toward the receptacle opening concomitantly with continued expansion thereof to progressively urge the expanding envelope of film-forming material into engagement with the receptacle side walls, allowing the expanded envelope of film-forming material to set and adbere to the receptacle walls, and severing the expanded envelope of film-forming material from the gob thereof outwardly of the receptacle opening, said lining being free of the closed end of the receptacle whereby the receptacle may be collapsed and erected without risk of lining rupture.

3,169,087
## APPARATUS FOR MAKING REINFORCED WEBS
David W. Van Ness, Oakland, and John V. Dickman, Paramus, N.J., assignors to Toscony, Inc., Passaic, N.J., a corporation of New Jersey
Filed June 29, 1962, Ser. No. 206,485
6 Claims. (Cl. 156—431)

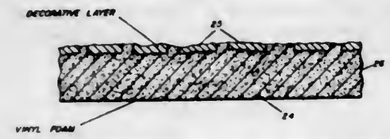


1. In an apparatus for making strand reinforced webs the combination of
a spinner ring rotatable in a vertical plane,
a plurality of planes of strand carrying spools on the ring,
a first pair of opposed endless belts having parallel reaches passing through the spinner ring about which the strands are wound as the spinner ring rotates,
means for rotating the ring,
means for advancing the parallel reaches of said first pair of opposed endless belts,



a fixed non-rotatable guide means positioned adjacent the spinner ring against which each strand in turn strikes as the ring rotates to lay the strands on the parallel reaches of said first pair of belts in equally spaced relation,
a second pair of opposed endless belt means having parallel reaches for gripping the strands adjacent to the parallel reaches of said first pair of opposed endless belts so as to move the strands into adjacent relationship to each other and all lying in the same plane,
means for advancing the parallel reaches of said second pair of opposed endless belts,
electrical heater means for cutting the strands where they are wound around said first pair of opposed endless belts after the strands have been gripped by said second pair of opposed endless belts,
movable endless Caterpillar chain means engaging behind said second pair of endless belts to assist said second pair of endless belts to hold the strands in fixed relationship thereto,
means for supplying warp threads to the strands to define a web,
means for applying a binder to the web, and
means for curing the binder.

3,169,088
## TEXTURED FOAM SURFACE COVERING
Paul C. Wetterau, Mountain Lakes, N.J., assignor to Congoleum-Nairn, Inc., Kearny, N.J., a corporation of New York
Original application Nov. 18, 1957, Ser. No. 697,226, now Patent No. 2,918,702, dated Dec. 29, 1959. Divided and this application Aug. 6, 1959, Ser. No. 832,017
3 Claims. (Cl. 161—114)




1. A resilient flexible decorative plastic sheet comprising a backing layer of fused vinyl chloride resinous composition foam integrally bonded to a decorative layer of vinyl chloride composition compatible with said vinyl chloride composition, said decorative layer having a wrinkled textured surface formed by areas of small protuberances of cellular structure which extend throughout the entire thickness of the decorative layer.

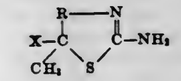
3,169,089
## FILAMENTS
William Burton Miller, Pearisburg, and Clarence Edward Bishop, Narrows, Va., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1960, Ser. No. 24,025
3 Claims. (Cl. 161—177)



1. Filamentary material having a four-leaf clover cross-section which is substantially uniform along the length of the filamentary material, said cross-section including four substantially smooth rounded lobes extending independently and substantially symmetrically from a central core, each of said lobes being narrowest where it is joined to said core and having its maximum width nearer to the outermost extremity of said lobe than to said core and continuously increasing in width from said narrowest portion to said maximum width, said lobes completely surrounding said core except for the narrow radial spaces, of lesser width than said lobes, between said lobes.

3,169,090
## THIAZOLINE ANALGESICS
Louis L. Skaletzky, Kalamazoo, and Robert J. Collins, Kalamazoo Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Jan. 23, 1961, Ser. No. 83,926
3 Claims. (Cl. 167—53)

1. A process for inducing a state of analgesia comprising the administration to an animal in a state of pain of a compound selected from the group consisting of compounds having the formula:



wherein R is a member selected from the group consisting of methylene, ethylene and ethylidene and X is a member selected from the group consisting of methyl and hydrogen and the salts of pharmacologically acceptable acids thereof.

3,169,091
## PROCESS FOR INHIBITING TUMORS WITH SUBSTITUTED PYRAZOLES
Philip N. Gordon, Old Lyme, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 4, 1961, Ser. No. 80,520
1 Claim. (Cl. 167—65)

A process for retarding the growth of malignant tumors which comprises administering to a malignant tumor bearing lower animal host a daily dose of from about 40 to about 120 mg./kg. of body weight of a compound selected from the group consisting of pyrazole-1-carboxamide, pyrazole-1-thiocarboxamide, pyrazole, 1-hydroxymethylpyrazole, 3,5-dimethylpyrazole-1-carboxamide and 3,5-dimethylpyrazole-1-thiocarboxamide.

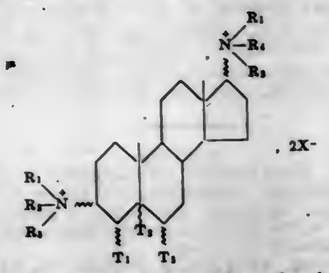
3,169,092
## STABILIZATION OF AMINES BY TARTRAZINE AND BISULFITE
Annmarie G. Petraglia, Bronx, and Lester C. Dick, Rye, N.Y., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 26, 1963, Ser. No. 311,640
4 Claims. (Cl. 167—65)

1. A dilute aqueous solution containing 0.1 to 2.5 percent by weight of a sympathomimetic amine of the group consisting of isoproterenol and 1-phenylephrine containing 0.02 to 0.2 percent by weight of tartrazine.

3,169,093
## 3,17-DIAMINO ANDROSTANE AND ANDROSTENE DERIVATIVES
Michael Davis, Upminster, England, assignor to May & Baker Limited, Essex, England, a British company
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,374
Claims priority, application Great Britain, Mar. 9, 1962, 9,262/62, 9,263/62; Aug. 17, 1962, 31,733/62, 31,734/62
22 Claims. (Cl. 167—65)

22. A sterile pharmaceutical composition which com-

prises, as active ingredient, at least one compound of the formula:



wherein $R_1$ is a member selected from the class consisting of alkyl and alkenyl of up to 6 carbon atoms, and benzyl, $R_2$, $R_3$, $R_4$, and $R_5$ represent, when taken singly, a member selected from the class consisting of alkyl of up to 6 carbon atoms, cyclohexyl, and benzyl, and the pairs $R_2$ and $R_3$, and $R_4$ and $R_5$, when taken together with the nitrogen to which they are attached, collectively represent a member selected from the class consisting of pyrrolidino, piperidino, morpholino, hexamethyleneimino, and N-ethoxycarbonylpiperazino, $T_1$, $T_2$ and $T_3$ when taken singly represent hydrogen atoms, and $T_1$ and $T_2$ when taken together, and $T_2$ and $T_3$ when taken together, represent a single bond, the remaining T symbols representing hydrogen, and X represents a non-toxic anion, in association with a liquid pharmaceutical carrier, the amount of active ingredient in the composition being about 0.01 to 5% by weight of the composition.

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3,169,094
METHOD OF PREPARING INTRAVENOUSLY INJECTABLE FAT EMULSIONS FREE FROM SIDE REACTIONS OR COMPLICATIONS
Arvid Johannes Wretlind, Tegnergatan 15, Stockholm, Sweden
No Drawing. Filed Aug. 22, 1961, Ser. No. 133,023
Claims priority, application Sweden, Aug. 26, 1960, 8,170/60
8 Claims. (Cl. 167—66)

5. An intravenously injectable fat emulsion free of undesirable side effects comprising an aqueous mixture of (*a*) soybean oil which has been produced by extraction with organic solvents under conditions to avoid oxidation at a temperature not exceeding 100° C. and (*b*) egg phosphatides which have been produced by successive extractions with alcohol and acetone and thereafter purified by treatment with petroleum ether under conditions to avoid oxidation thereof, said emulsion having a particle size of less than about four microns.

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3,169,095
SELF-PROPELLING POWDER-DISPENSING COMPOSITIONS
Charles G. Thiel, Chatsworth, and James G. Young, Granada Hills, Calif., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Oct. 30, 1962, Ser. No. 234,253
1 Claim. (Cl. 167—82)

The process of avoiding agglomeration in a self-propelling, powder-dispensing composition comprising a finely-divided powder suspended in a liquefied propellant having a vapor pressure of at least about 13 lbs. per square inch gauge at 70° F., and a liquid non-ionic surface-active agent having a hydrophile-lipophile balance of less than about 10 and being soluble in said liquefied propellant, said finely-divided powder being substantially insoluble in the mixture of propellant and surface-active agent, and when said finely-divided powder is water-soluble, said composition containing not more than about 300 parts per million of moisture, which comprises: the step of incorporating in said composition a quantity of a higher alkyl halide quaternary salt of pyridine sufficient to impart anti-agglomerating characteristics thereto.

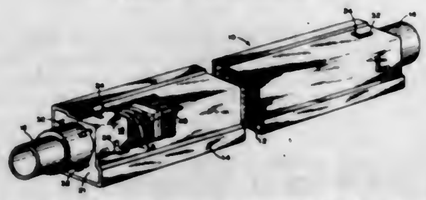
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3,169,096
PHOSPHATE DENTIFRICE
Julian R. Schlaeger, Chicago Heights, and Lowell E. Netherton, Park Forest, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application June 30, 1959, Ser. No. 823,822, now Patent No. 3,066,056, dated Nov. 27, 1962. Divided and this application Jan. 15, 1962, Ser. No. 166,394
2 Claims. (Cl. 167—93)

2. A stable dentifrice composition comprising: stabilized dicalcium phosphate dihydrate produced by a method which comprises first reacting a dilute solution of orthophosphoric acid with milk of lime to produce a reaction mixture having a pH of about 5–6.5, then adding about 0.40–0.8% by weight of a polyphosphoric acid having at least 40% by weight pyrophosphoric acid, then completing the neutralization of the reaction mixture with the addition of milk of lime until a pH of about 6.9–7.2 is reached, removing and drying the dicalcium phosphate dihydrate formed from the reaction mixture, then admixing about 0.6–1.2% by weight of finely divided calcium-sodium pyrophosphate with the pyrophosphoric acid-modified dicalcium phosphate dihydrate to produce said stabilized dicalcium phosphate dihydrate product, and recovering a stabilized improved dicalcium phosphate dihydrate product; water; and humectant from the group consisting of glycerin and sorbitol.

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3,169,097
FUEL ELEMENT END CLOSURE ASSEMBLY
Gilbert W. Meyers, Lynchburg, Va., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 25, 1959, Ser. No. 801,906
11 Claims. (Cl. 176—79)



1. In a fuel element having a rectangular tubular container, an end closure assembly for said container comprising a hollow reinforcing member removably located within and at the extremity of said container, said reinforcing member having an outer surface of a shape which conforms to the internal surface of said rectangular tubular container and having a cylindrical internal surface concentric with the longitudinal axis of said tubular container, openings through said reinforcing member, a cylindrical nozzle removably positioned within said reinforcing member, and means adapted to removably attach said cylindrical nozzle to said container through said openings in said reinforcing member.

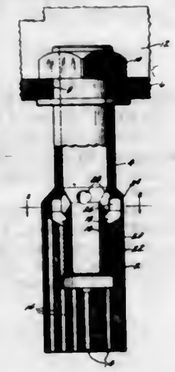
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3,169,098
REACTOR CORE ROD SUPPORT
Stanley L. Leavitt, Simsbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 12, 1961, Ser. No. 116,542
1 Claim. (Cl. 176—87)

An attachment by which cooling fluid is supplied to a reactor core rod, the latter having a plurality of rows of



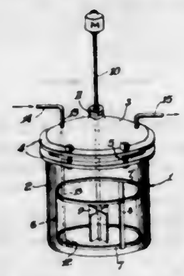
axially extending cooling passages therein and having an internally threaded, axially extending recess at the attachment end, said attachment including a hollow supporting tube terminating in two co-axial inner and outer sleeve elements integral with the hollow tube and in radially spaced relation to each other to define an annular chamber therebetween, said tube having transverse passages connecting the annular chamber to the hollow in-



terior of the tube, the inner sleeve extending beyond the outer sleeve and being externally threaded to engage in the internally threaded recess in the end of the core rod, the outer sleeve engaging the end of the core rod at its periphery, the annular chamber being in communication with the outer of the axially extending passages and the interior of the inner sleeve being in communication with the remainder of the axially extending passages.

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3,169,099
BIOSYNTHESIS OF WAXY ESTERS
John B. Davis, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,831
15 Claims. (Cl. 195—3)



1. A process for the production of a waxy ester from a hydrocarbon by a micro-organism which process comprises aerobically subjecting a long chain, even-numbered n-alkane to the metabolic action of nocardia in the presence of an aqueous mineral nutrient containing a source of nitrogen for said nocardia, which nutrient contains no more than about 0.3% by weight, based on the weight of said nutrient, of said nitrogen compounds; allowing the cells to grow and multiply and to convert the said hydrocarbon into products containing waxy ester; and concentrating the said waxy product.

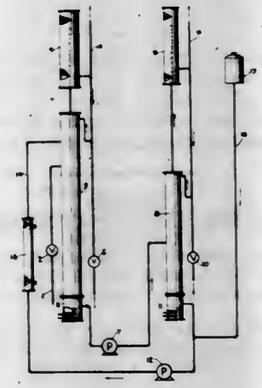
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3,169,100
PRODUCTION OF VITAMIN $B_{12}$-ACTIVITY COMPOSITIONS BY MICROMONOSPORA
Marvin J. Weinstein, East Brunswick, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 5, 1962, Ser. No. 242,377
14 Claims. (Cl. 195—80)

1. In a process for the manufacture of a composition of matter having vitamin $B_{12}$-activity, the combination of steps including cultivating a vitamin $B_{12}$-activity producing species of Micromonospora in an aqueous nutrient medium, said medium containing at least trace quantities of cobalt in an assimilable form, under aerobic conditions and separating the vitamin $B_{12}$-activity composition therefrom.

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3,169,101
PURIFICATION OF IMPURE PHENOLS BY DISTILLATION WITH AN ORGANIC SOLVENT
Jean Berthoux, Lyon, Rhone, France, assignor to Progil Societe Anonyme, Lyon, France, a corporation of France
Filed May 28, 1962, Ser. No. 200,595
Claims priority, application France, Apr. 2, 1957, 37,273
7 Claims. (Cl. 202—39.5)



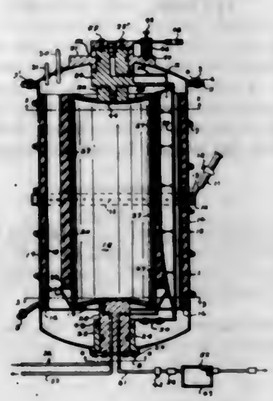
1. The process for the removal from phenol produced by the cleavage of cumene hydroperoxide, of impurities, including trace impurities the presence of which causes undesirable colour formation on chlorination and sulphonation of the phenol, which comprises mixing the impure phenol with a solvent boiling higher than phenol and selected from the group consisting of lower polyalkylene glycols, lower polyalkylene glycol monoalkyl ethers, and lower oxyalkylene derivatives of alkylenediamines all as hereinbefore defined, distilling from the mixture an overhead fraction containing impurities substantially free of phenol, distilling the residual mixture to recover phenol vapours substantially free of the said colour forming impurities, and condensing the phenol vapours to recover purified phenol.

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3,169,102
ZERO "G" DISTILLATION UNIT
Konrad Weiswurm, 313 Canova Lane, Dayton, Ohio
Filed Feb. 11, 1963, Ser. No. 257,802
3 Claims. (Cl. 202—64)
(Granted under Title 35, U.S. Code (1952), sec. 266)

3. The process of accomplishing the distillation of a liquid having a vapor pressure within a closed system by saturating by capillary action within the closed system a first sponge with the raw liquid, maintaining the first sponge at a temperature at which the liquid passes from

its liquid phase to its vapor phase within the closed system, maintaining a second sponge within the closed system in vapor communication with the first sponge at a temperature at which the vapor from the liquid in the first sponge changes from its vapor phase to its liquid phase,



saturating by capillary action the second sponge with the distillate of the liquid from the first sponge, pressing the distillate out of the second sponge into a distillate conducting gutter, and withdrawing the distillate from the gutter by applying a partial pressure to the closed system.

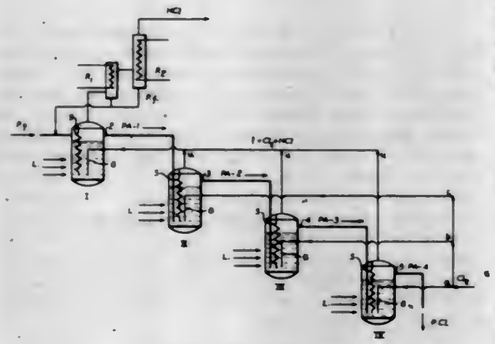
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**3,169,103**

## PROCESS FOR HALOGENATING ORGANIC COMPOUNDS

**Luigi Falcone and Francesco Scalari, Ferrara, Italy, assignors to Montecatini, Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy**

**Filed Oct. 24, 1961, Ser. No. 147,280**
**Claims priority, application Italy Oct. 27, 1960**
**7 Claims. (Cl. 204—158)**



1. A method for halogenating an organic peroxide to be used as a free radical generator, said method comprising treating fresh organic peroxide in a first reaction zone with a mixture of halogen and a hydrohalogenic acid to thereby form a reaction product comprising partially halogenated organic peroxide, and passing said reaction product to a second reaction zone and treating said reaction product with a halogen to thereby effect further halogenation thereof and to form a hydrohalogenic acid, each of said halogenations being carried out in the presence of luminous radiation.

**3,169,104**

## PRODUCTION OF POLYHALOALKYL SULFENYL CHLORIDES

**Harry A. Pacini, Richmond, and Attila E. Pavlath and William M. Foley, Jr., Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Nov. 24, 1961, Ser. No. 154,810**
**4 Claims. (Cl. 204—158)**

1. A process for preparing saturated polyhaloalkyl sulfenyl chlorides and sulfides comprising contacting sulfur dichloride and a halogenated olefin in the presence of ultraviolet light.

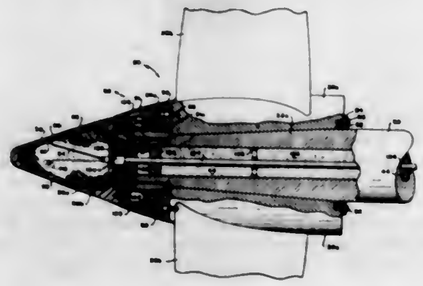
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**3,169,105**

## CORROSION-EROSION-CAVITATION PROTECTION FOR MARINE PROPELLERS

**Herman S. Preiser, North Springfield, and Frank E. Cook, Arlington, Va., assignors, by mesne assignments, to Esso Research and Engineering Company, Linden, N.J., a corporation of Delaware**

**Original application Nov. 10, 1958, Ser. No. 773,122, now Patent No. 3,049,479, dated Aug. 14, 1962. Divided and this application Mar. 9, 1962, Ser. No. 186,813**
**3 Claims. (Cl. 204—196)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. An underwater anode mounting for a ship's propeller comprising a hollow truncated conical metallic cap adapted for attachment to the propeller hub, a hollow conical cap attached to the said metallic cap and forming a streamlined continuation thereof, said conical cap being formed of a dielectric chlorine resistant material, and an electrochemically inert anode mounted on an exterior surface of the conical cap and formed to the contour of said conical cap.

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**3,169,106**

## HYDROGENATION CATALYST AND PROCESS

**Philip A. Lefrancois, Cranford, Joseph F. McMahon, Iselin, and Ernest Solomon, Montclair, N.J., assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware**

**No Drawing. Filed Aug. 20, 1959, Ser. No. 834,918**
**1 Claim. (Cl. 208—111)**

A process for the destructive hydrogenation of a hydrocarbon fraction boiling above the gasoline boiling range which comprises treating a catalyst comprising nickel oxide and between about 6 and about 20 weight percent of molybdenum oxide, and between about 0.2 and about 2 weight percent of cobalt oxide supported on a silica/alumina carrier containing between about 10 and about 30 weight percent alumina, the atom ratio of molybdenum to nickel being between about 1 and about 3, with hydrogen sulfide at an elevated temperature, and contacting said hydrocarbon fraction with said catalyst in the presence of a hydrogen-rich gas at a temperature between about 600° F. and about 925° F. such that conversion of said hydrocarbon fraction to lower boiling normally liquid product is effected.



**3,169,107**

## CATALYTIC HYDROCRACKING PROCESS WITH THE USE OF A CATALYST COMPOSITE COMPRISING PLATINUM OR PALLADIUM ON SILICA-ALUMINA

**Harry L. Coonradt, Woodbury, and William E. Garwood, Haddonfield, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York**

**Filed May 13, 1960, Ser. No. 28,984**
**5 Claims. (Cl. 208—111)**

1. A process for cracking a hydrocarbon charge which comprises contacting the same in the presence of hydrogen with a catalyst consisting essentially of 25 to 75 percent by weight silica, 0.05 to 10 percent by weight of a metal selected from the group consisting of platinum and palladium and remainder alumina, prepared by impregnation of the alumina component with said metal, mechanical admixture of the resulting impregnated product with the silica component in the form of a hydrogel, under conditions of intimate contact to effect chemical interaction between said silica and alumina components and thereafter drying and treating the resulting composite in a reducing atmosphere at a temperature in the approximate range of 450° to 1400° F.

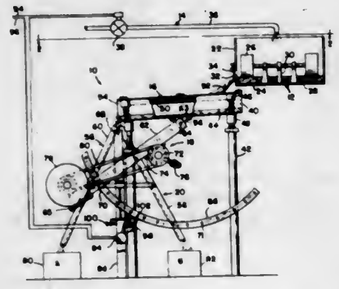
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**3,169,108**

## MECHANICAL VIBRATOR FOR MOLDABILITY CONTROLLER

**Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan**

**Filed Aug. 21, 1961, Ser. No. 132,903**
**3 Claims. (Cl. 209—275)**



2. A mechanical vibrator adapted to be used in a moldability controller comprising four substantially parallel spaced apart posts located to form a rectangle therebetween, one set of two adjacent posts being shorter than the other set of two adjacent posts, each post of each set of posts being substantially the same height, resilient means connected to the top of each of said posts, a substantially U-shaped trough having a screen over the open upper side thereof and extending longitudinally between the longer and shorter sets of posts connected to the resilient means for vibration thereon, a pair of elongated arcuate members extending longitudinally of said trough and secured at opposite sides of the trough to the longer and shorter posts on the respective sides of the trough, each of said arcuate members having a plurality of longitudinally spaced apart transversely aligned openings extending therethrough, a pivot mounting bearing secured to said trough at the center of curvature of said arcuate member on each side of said trough, an elongated vibrator arm on each side of said trough and pivotally secured to the pivot mounting bearing at one end, means for pivotally securing the vibrator arms adjacent the other end to the elongated arcuate members at different locations therealong longitudinally thereof and in transverse alignment with each other, said locations being defined by the transverse openings in the elongated arcuate members, a countershaft extending transversely of said trough, means for rotatably securing said countershaft to said vibrator arms adjacent said one end thereof, an eccentric weight secured to said countershaft for rotation therewith, motor means secured to at least one of the vibrator arms at the other end thereof and endless linear means extending between said motor means and countershaft for rotating said countershaft on actuation of said motor means.

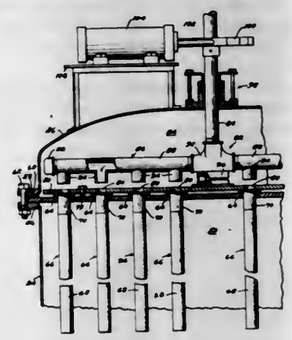
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**3,169,109**

## FILTER APPARATUS

**Gene Hirs, 17208 Greenview Road, Detroit, Mich.**

**Filed Apr. 16, 1962, Ser. No. 187,835**
**2 Claims. (Cl. 210—107)**



1. In a liquid filter apparatus having a container, means subdividing said container into a lower filter chamber and an upper outlet chamber, a plurality of hollow filter elements and means securing said elements in said container to depend into said lower chamber, said elements each having an upper open end exposed to said upper chamber, said elements being arranged in radially aligned rows about a common center and the corresponding elements in separate rows being equally spaced from said center, a liquid discharge head rotatably mounted within said outlet chamber, said head comprising a plurality of radial pipes, a vertical conduit to which said pipes are secured and means journalling said conduit for rotation about an axis coincident with said common center, each of said pipes having a plurality of downwardly directed liquid jet discharge means radially spaced apart along the length thereof so as to register with the elements therebeneath, means for supplying liquid to said conduit for flow therethrough and through said pipes to issue from said jets downwardly into said elements, and means for intermittently arcuately advancing said head into sequential registry with said rows of elements.

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**3,169,110**

## CONTROL VALVE MECHANISM FOR WATER TREATING DEVICE

**John Rudelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin**

**Filed Apr. 2, 1962, Ser. No. 184,257**
**6 Claims. (Cl. 210—191)**

6. In combination with a tank having an opening in its top and containing a bed of water treating material which must be regenerated from time to time by passing a regenerant fluid therethrough and then passing untreated water through the tank to rinse regenerant fluid out of the treating material and the tank:

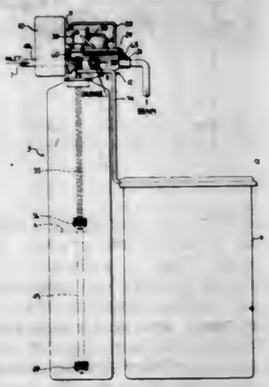
(A) a housing secured to the top of the tank to provide a cover closing said opening therein, said housing providing a valve body having

(1) an inlet port connectable with a source of untreated water,

(2) a service port connectable with a service system,
(3) a drain port,
(4) a regenerant port connectable with a source of regenerant fluid, and
(5) a bottom port directly communicating with the top of the tank through said opening therein, through which untreated water normally enters the tank for downflow passage through the bed of treating material therein;

(B) a first duct having an inlet connecting with the regenerant port and extending downwardly from the body and into the tank through the opening in its top, and terminating in an outlet above and close to the top of the bed of treating material, through which duct regenerant fluid can be introduced into the tank to flow downwardly through the bed of treating material therein;

(C) a second duct connected with the body and extending downwardly therefrom through said tank opening and into the tank, and terminating in an outlet near the bottom of the tank;



(D) five flow control valves in the body, each movable between open and closed positions;

(E) first passage means in the body to communicate the inlet port with the bottom body port under the control of a first one of said valves, and through which water to be treated flows into the top of the tank when said first valve is open;

(F) second passage means in the body to communicate the second duct with the service port under the control of a second one of said valves, and through which treated water entering the outlet of said second duct can flow to a service system when said second valve is open;

(G) third passage means in the body under the control of a third one of said valves, to communicate the second duct with the drain port when said third valve is open, to thereby enable regenerant fluid effluent to be discharged from the tank via said second duct, after passage of regenerant fluid down through the bed of treating material in the tank;

(H) fourth passage means in the body cooperating with said second passage means and its valve to communicate said second duct with the inlet port under the control of a fourth one of said valves, to enable untreated water to flow down through the second duct for upflow rinsing of regenerant fluid from the material bed at times when said second and fourth valves are open;

(I) and fifth passage means in the body to communicate said bottom body port with the drain port under the control of the fifth one of said valves, to enable rinse water flowing upwardly in the tank to be discharged to the drain port via said bottom body port when said fifth valve is open.

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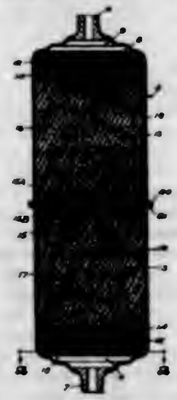
**3,169,111**
**DEWATERING SCREEN HAVING LIQUID FILM DISRUPTING BARRIER**
Colin G. Rose, 1587 E. Main St., Galesburg, Ill., and Herbert William Derrick, Jr., 358 Woodbridge Ave., Buffalo 14, N.Y.
Filed Feb. 8, 1960, Ser. No. 7,281
5 Claims. (Cl. 210—247)



1. A screening device comprising a plurality of elongate rod members mounted in a closely spaced substantially parallel relationship, said elongate rod members forming a screening surface composed of a plurality of elongate openings generally transverse to the direction of travel of material across said screening surface, said screening surface being tilted a plurality of crossbars for maintaining said rod members in said closely spaced substantially parallel relationship, a plurality of barrier members mounted adjacent the underneath sides of said rod members and extending transverse to the normal direction of travel of the material across said screening surface, said barrier members projecting downwardly from the underneath sides of said rod members so that liquid adhering to the bottom thereof and attempting to travel in said direction of travel is prevented from doing such.

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**3,169,112**
**DISPOSABLE FILTERS**
Roy A. Nelson, Lynnfield Center, Mass. (172 Cambridge St., Boston, Mass.)
Filed June 30, 1961, Ser. No. 121,227
3 Claims. (Cl. 210—266)



3. In a device for use as a filter for a fluid or as a muffler, a casing including two sections each having a necked port at one end and an outwardly disposed peripheral flange at the other end thereof, said flanges being locked together, one port being the filter inlet and the other port being the filter outlet, a perforate metal retainer adjacent to but spaced from each port and marginally supported by the appropriate one of said sections, a plurality of filtering layers between said retainers, said layers being held together between said retainers in



effective filtering relationship when said filters are locked together, said layers including, as the prinicipal medium, a predetermined thickness of activated carbon in the form of at least two layers, said carbon layers being compacted and the carbon particle sizes being such as to ensure that said compacted carbon layers are porous, and a pair of felt layers between said two carbon layers providing a flexible barrier between them in the zone of the joined flanges serving both to hold the activated carbon in place in assembly and to cause a spreading flow of the fluid at the outlet side of the carbon layer proximate to the inlet.

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**3,169,113**
**EMULSIFIER COMPOSITIONS AND USES THEREOF**
Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale and Richard E. Berkley, Houston, Tex., assignors to Nalco Chemical Company, a corporation of Delaware
No Drawing. Filed July 17, 1961, Ser. No. 124,387
18 Claims. (Cl. 252—8.55)

1. An emulsion with an acidic internal phase useful in fracturing and acidizing subterranean formations, said emulsion comprising a water-in-oil emulsion wherein the water phase contains 5–25% by weight of hydrochloric acid, the emulsion being emulsified by an emulsifying agent consisting essentially of a mixture selected from the group consisting of (I) (*a*) 15–80% by weight of a 9–18 carbon fatty acid salt of a partial amide of a polyalkylene polyamine with 2–6 carbon alkylene groups and 3–5 amino nitrogens in which at least two amino groups are amidified with 9–18 carbon monocarboxylic fatty acids and wherein there is at least one non-amidified amino group forming a salt with said acid, and (*b*) at least one of the members selected from the group consisting of 40–85% by weight of a 9–18 carbon monocarboxylic fatty acid polyester of a tri-lower alkylol amine, 10–40% by weight of a quaternary salt of an N,N-dihydroxyalkylated aliphatic monoamine of 12–18 carbons wherein the quaternizing agent is selected from the group consisting of benzyl chloride, lower alkyl chlorides and bromides, and di-lower alkyl sulfates, 25–75% by weight of a polyoxyethylated organic compound selected from the group consisting of monoalkyl phenols, di-alkyl phenols, 12–18 carbon aliphatic monoamines, and mixtures thereof, said polyoxyethylated compounds having an average of about 4–15 oxyethylene groups per molecule, 20–55% by weight of a tri-lower alkyl amine wherein the alkyl groups have 3–6 carbons, said percentages in said mixture being based on the total weight of said compounds of said mixture, and (II) (*a'*) 15–50% by weight of a 9–18 carbon monocarboxylic fatty acid salt of a partial amide of a polyalkylene polyamine with 2–6 carbon alkylene groups and 3–5 amino nitrogens in which at least two amino groups are amidified with 9–18 carbon monocarboxylic fatty acids and wherein there is at least one non-amidified amino group forming a salt with said acid and (*b'*) 50–85% by weight of a polyamide of an alkylene polyamine with 2–6 carbon alkylene groups and 2–5 amino nitrogens and a 9–18 carbon monocarboxylic fatty acid, said percentages for (*a'*) and (*b'*) being based on the total weight of (*a'*) and (*b'*).

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**3,169,114**
**LUBRICANTS**
Bill Mitacek and John P. Graham, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 3, 1961, Ser. No. 80,029
The portion of the term of the patent subsequent to Nov. 26, 1980, has been disclaimed and dedicated to the Public
8 Claims. (Cl. 252—59)

1. A soapless grease comprising lubricating oil and from 0.1 to 20 weight percent based on the total lubricant of polypropylene having a density between 0.890 and 0.920 gram per cubic centimeter at 25° C., said lubricant having been milled at a temperature in the range of 150 to 245° F.

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**3,169,115**
**MANGANESE ZINC FERRITE CONTAINING VANADIUM PENTOXIDE, SILICON DIOXIDE, AND INDIUM TRIOXIDE**
Tsuneo Akashi and Masao Tobita, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan
Filed Aug. 22, 1961, Ser. No. 134,046
Claims priority, application Japan, Aug. 25, 1960, 35/36,167
2 Claims. (Cl. 252—62.5)

1. A magnetic oxide material consisting essentially of a manganese zinc ferrite composition containing from 52.5 to 53.0 mol percent ferric oxide, from 25 to 30 mol percent manganese oxide and from 17 to 22.5 mol percent zinc oxide, having incorporated therein at least two oxide additives selected from the group consisting of from 0.005 to 0.17 mol percent vanadium pentoxide, from 0.005 to 0.11 mol percent silicon dioxide, and from 0.05 to 2.8 mol percent indium trioxide.

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**3,169,116**
**CORROSION INHIBITING COMPOSITIONS**
Maurice S. Baseman, 5890 Hobart St.; Keith C. Johnson, 3745 Brownsville Road; and Sherwin E. Baseman, 2212 Shady Ave., all of Pittsburgh, Pa.
No Drawing. Filed Feb. 2, 1960, Ser. No. 6,108
9 Claims. (Cl. 252—77)

8. A corrosion inhibited aqueous fluid composition suitable for use as a hydraulic fluid consisting essentially of (*a*) from 85 to 99.9 parts by weight of a fluid comprising a substantial proportion of an aqueous media and the balance being an oleaginous material and (*b*) from 15% to 0.1% by weight of the amine salt reaction product consisting essentially of from 9 to 25 parts by weight of caproic acid, from 91 to 75 parts by weight of caprylic acid, the total of caproic and caprylic acids being 100 parts, and from 80 to 135 parts by weight of at least one cyclic amine selected from the group consisting of cyclohexylamine and dicyclohexylamine.

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**3,169,117**
**NUCLEAR REACTOR FUEL PASTE COMPOSITION**
Robert W. Dickinson, Northridge, and Donald T. Eggen, Santa Susana, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed May 9, 1961, Ser. No. 108,880
3 Claims. (Cl. 252—301.1)

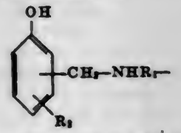
1. A nuclear reactor fuel in paste form comprising a liquid metal and at least one fissionable fuel composition selected from the class consisting of UC, PuC and ThC, said paste containing solid particles of said fuel composition packed to a density of from about 40 to about 60 volume percent of said paste.

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**3,169,118**
**COMPOSITIONS AND PROCESSES FOR BREAKING PETROLEUM EMULSIONS**
Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale and Alice W. Church, Houston, Tex., assignors to Nalco Chemical Company, a corporation of Delaware
No Drawing. Filed Oct. 31, 1960, Ser. No. 65,939
12 Claims. (Cl. 252—341)

1. In processes for breaking petroleum oil emulsions of the water-in-oil type, the improvement which comprises subjecting said emulsions to the action of organic, monocarboxylic acid esters of oxyalkylated alkyl phenol-form-

aldehyde-alkylene polyamine resins, said alkyl phenol being at least 75% difunctional alkyl phenol with the alkyl groups of the alkyl phenol having an average number of carbons in the range of 4–15, said resins having about 4–15 phenolic nuclei per molecule, said resins being oxyalkylated with lower alkylene oxides having 2–3 carbons at a weight ratio of alkylene oxide to resins between about 2:3 and 10:1, respectively, at least one hydroxyl group per resin molecule being esterified with said carboxylic acid, at least a portion of the alkylene polyamine groups in said resins being chemically combined internally in the structure of said phenol-formaldehyde-alkylene polyamine resins, said carboxylic acid having 2–36 carbons, the mol ratio of the phenol to the polyamine in said resin being in the range of 1:1 to 10:1, respectively, at least a part of the phenol and the polyamine being combined in the resin structure by the grouping



wherein $R_3$ is the alkyl group of the phenol and is in one of the positions ortho and para to the —OH group, and $R_1$ is the monovalent residue of the alkylene polyamine, said residue of the alkylene polyamine containing 2–6 carbon atoms per alkylene group and 1–9 amino groups, said resin being formed by the polycondensation of a mixture of said alkyl phenol, said formaldehyde, and said alkylene polyamine, the latter having two primary amino groups and 2–6 carbons per alkylene group.

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**3,169,119**
**POLYSULFIDE POLYURETHANES**
**Gerhard Daukert, Cologne-Flittard, and Hans Holtschmidt, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
No Drawing. Filed Mar. 28, 1961, Ser. No. 98,767
Claims priority, application Germany, Apr. 6, 1960, F 30,933
18 Claims. (Cl. 260—2.5)

7. A process for the preparation of a substantially nonporous polyurethane casting which comprises reacting an excess of an organic polyisocyanate in a first step with a polyhydroxyl compound having a molecular weight of from about 500 to about 10,000 and prepared by a process which comprises reacting an $\omega,\omega'$-dihydroxydialkyl polysulfide with formaldehyde, under substantially anhydrous conditions to prepare an isocyanato terminated prepolymer and subsequently mixing said isocyanato terminated prepolymer with an organic chain extending agent selected from the group consisting of polyhydric alcohols and organic primary amines and casting the resulting mixture in a mold.

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**3,169,120**
**COATING COMPOSITION OF VINYLIDENE FLUORIDE POLYMERS**
**Nicholas J. Capron, Chalfont, and Alkis Christofas, Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania**
No Drawing. Filed Feb. 5, 1960, Ser. No. 6,862
5 Claims. (Cl. 260—29.6)

1. Polymeric dispersions comprising vinylidene fluoride polymers selected from the group consisting of homopolymers and copolymers containing 95 mole percent or more of vinylidene fluoride and 5 mole percent or less of a halogenated ethylene having a particle size of 0.05 to 20 microns dispersed in an aqueous composition containing at least one water-miscible solvent selected from the group consisting of triethylphosphate, dimethyl-succinate, diethylsuccinate and tetraethylurea.

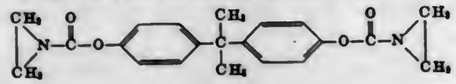
**3,169,121**
**CARBONATE-CARBOXYLATE COPOLYESTERS OF DIHYDRIC PHENOLS AND DIFUNCTIONAL CARBOXYLIC ACIDS**
**Eugene P. Goldberg, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York**
No Drawing. Filed Aug. 22, 1957, Ser. No. 679,743
18 Claims. (Cl. 260—47)

1. A high molecular weight, resinous, polymeric copolyester of a dihydric phenol, a dicarboxylic acid and carbonic acid.

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**3,169,122**
**BIS-PHENOL AZIRIDINECARBOXYLIC ESTERS**
**John H. Hennes, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
No Drawing. Filed Sept. 4, 1959, Ser. No. 838,066
4 Claims. (Cl. 260—47)

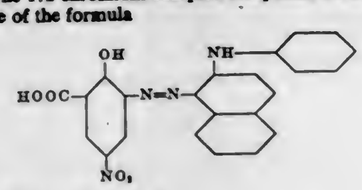
1. The compound having the formula



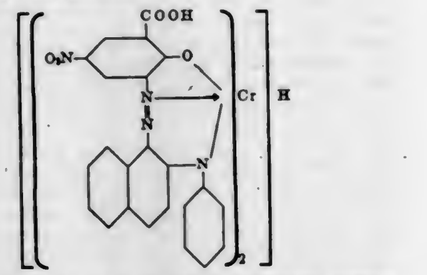
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**3,169,123**
**MONOAZO DYES FREE FROM SULFONIC ACID GROUPS**
**Reinhard Neier, Basel, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland**
No Drawing. Filed Mar. 22, 1962, Ser. No. 181,811
Claims priority, application Switzerland, Mar. 22, 1961, 3,384/61
8 Claims. (Cl. 260—145)

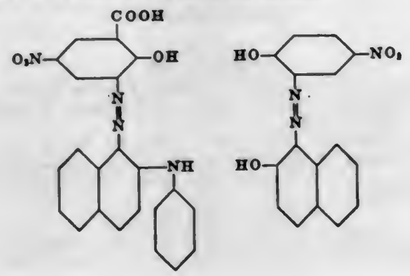
1. The 1:2 chromium complex compound of the monoazo dye of the formula



in the metal complex form

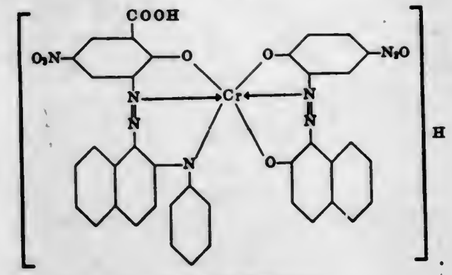


5. The 1:2 heterogeneous chromium mixed complex compound obtained from the mixture of one molecule of each of the monoazo dyes of the formula



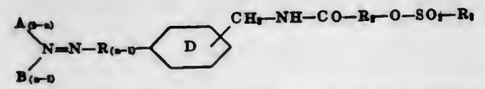


in the metal complex form



**3,169,124**
**MONOAZO REACTIVE DYES**
**Hans Iscber and Hans Siegrist, both of Basel, Switzerland, assignors to Sandoz Ltd. (A/K/A Sandoz AG.), Basel, Switzerland**
No Drawing. Filed Oct. 5, 1961, Ser. No. 143,059
Claims priority, application Switzerland, Oct. 6, 1960, 11,221/60
6 Claims. (Cl. 260—163)

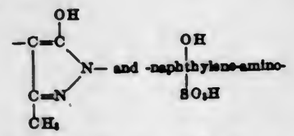
1. A monoazo dye of the formula



wherein A is a member selected from the group consisting of sulfo-hydroxynaphthyl and 1-sulfophenyl-5-pyrazolonyl,

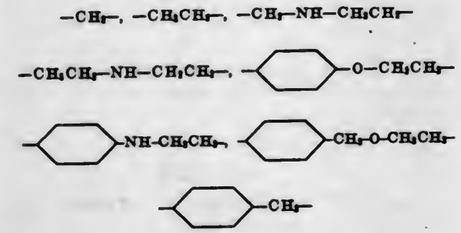
B is sulfophenyl,

R is a divalent radical selected from the group consisting of

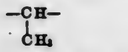


-amino- being bound to a different nucleus than —OH,

$R_3$ is a member selected from the group consisting of



and

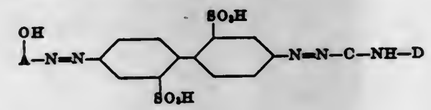


$R_3$ is a member selected from the group consisting of methyl, phenyl, methylphenyl, chlorophenyl and bromophenyl,

the nucleus D contains 1 to 3 substituents selected from the group consisting of methyl, methoxy, ethoxy and chlorine, the said $—CH_2—NH—CO—R_3—O—SO_2—R_3$ group being in ortho-position to one of the last-named substituents, and *n* is one of the integers 1 and 2.

**3,169,125**
**WATER-SOLUBLE DISAZO DYES CONTAINING REACTIVE GROUPS**
**Hans Iscber, Basel, and Carl Ryffel, Dornach, Solothurn, Switzerland, assignors to Sandoz Ltd. (A/K/A Sandoz AG.), Basel, Switzerland**
No Drawing. Filed Oct. 26, 1961, Ser. No. 147,724
Claims priority, application Switzerland, Oct. 28, 1960, 12,086/60
6 Claims. (Cl. 260—181)

1. Disazo dyestuff of the formula

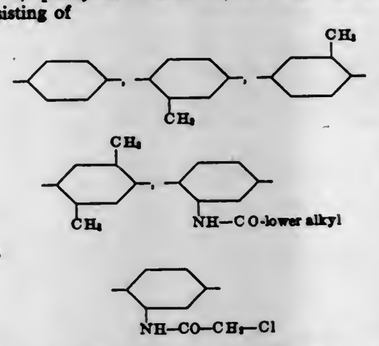


wherein



is the radical of a coupling component selected from the group consisting of 2-hydroxynaphthalene, 1-hydroxynaphthalene monosulfonic acid, 1-hydroxynaphthalene-disulfonic acid, 1-hydroxynaphthalene-trisulfonic acid, 2-hydroxy-naphthalene-monosulfonic acid, 2 - hydroxynaphthalene-disulfonic acid, 2-hydroxynaphthalene-trisulfonic acid, OH being in a position adjacent to the azo group,

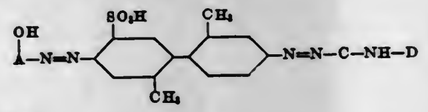
C is a 1,4-phenylene radical selected from the group consisting of



and

D is an acyl radical selected from the group consisting of halogenoacetyl, β-halogenopropionyl, propiolyl, methacrylyl, acrylyl, α-halogenoacrylyl, β-halogenoacrylyl, α - halogeno-crotonyl, β - halogeno-crotonyl, α-halogeno-β-carboxy-acrylyl, β-halogeno-β-carboxy-acrylyl and α,β-dihalogeno-β-carboxy-acrylyl, halogen having an atomic weight between 35 and 81.

2. Disazo dyestuff of the formula

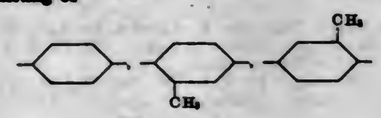


wherein

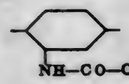


is the radical of a coupling component selected from the group consisting of 2-hydroxynaphthalene, 1-hydroxynaphthalene monosulfonic acid, 1-hydroxynaphthalene-disulfonic acid, 1-hydroxynaphthalene-trisulfonic acid, 2-hydroxy-naphthalene-monosulfonic acid, 2 - hydroxynaphthalene-disulfonic acid, 2-hydroxynaphthalene-trisulfonic acid, OH being in a position adjacent to the azo group,

C is a 1,4-phenylene radical selected from the group consisting of



and



and

D is an acyl radical selected from the group consisting of halogenoacetyl, β-halogenopropionyl, propiolyl, methacrylyl, acrylyl, α-halogenoacrylyl, β-halogenoacrylyl, α-halogeno-crotonyl, β-halogeno-crotonyl, α-halogeno-β-carboxy-acrylyl, β-halogeno-β-carboxy-acrylyl and α,β-dihalogeno-β-carboxy-acrylyl, halogen having an atomic weight between 35 and 81.

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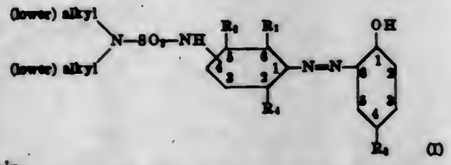
3,169,126

## MONOAZO DYESTUFFS CONTAINING AN AMINO-SULFONYL DIALKYLAMINO RADICAL

Ernest Merian, Bottmingen, Basel-Land, Switzerland, Bruno J. R. Nicolaus, Milan, Italy, and Otto Senn, Arlesheim, Basel-Land, and Walter Wehrli, Riehen, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed June 12, 1963, Ser. No. 287,222
Claims priority, application Switzerland, Aug. 13, 1959, 76,919/59
7 Claims. (Cl. 260—206)

1. Monoazo dyestuff of the formula



(I)

wherein

$R_1$ is a member selected from the group consisting of hydrogen, (lower)alkyl, fluorine, chlorine and bromine,

$R_2$ is a member selected from the group consisting of hydrogen, (lower)alkyl, (lower)alkoxy, chlorine and bromine,

$R_3$ is a member selected from the group consisting of alkyl of 1 to 5 carbons, (lower)alkoxy, (lower)acylamino, chlorine, bromine and fluorine, and

$R_4$ is a member selected from the group consisting of hydrogen, (lower)alkyl, chlorine and bromine.

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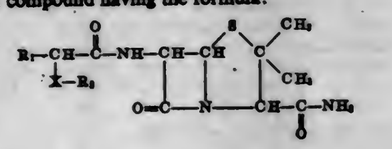
3,169,127

## DERIVATIVES OF PENICILLIN AMIDES

Thomas A. Sato, Groton, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1961, Ser. No. 157,334
14 Claims. (Cl. 260—239.1)

1. A compound having the formula:



wherein $R_1$ is selected from the group consisting of straight-chain and branched-chain alkyl radicals having from 1 to 6 carbon atoms; $R_2$ is selected from the group consisting of $R_1$ and $R_4$—X—$R_5$— wherein $R_5$ is selected from the group consisting of straight and branched-chain alkylene having from 2 to 3 carbon atoms; $R_4$ is selected from the group consisting of straight-chain and branched-chain alkyl having from 1 to 4 carbon atoms; and X is selected from the group consisting of oxygen and sulfur.

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3,169,128

## STEROIDAL 2β,3α-DIOL CYCLIC TRITHIOCARBONATE

Taichiro Komeno, Sumiyoshi-ku, Osaka-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,878
Claims priority, application Japan, Dec. 19, 1961, 36/46,267
6 Claims. (Cl. 260—239.5)

3. A 2β,3α-cyclic trithiocarbonate of a member selected from the group consisting of 5α-cholestane, 5α-cholanic acid, methyl 5α-cholanate, 25D-5α-spirostane, 5α-androstan-17β-ol 17-acetate, 5α-androstan-17β-ol 17-propionate, 5α-androstan-17-one, 5α-pregnane-11β,17α,21-triol 21-acetate, 5α-pregnan-20-one, 5α-pregnan-11β-ol-20-one, 5α-pregnane-11β,17α,21-triol-20-one, and 5α-pregnane-11β,17α,21-triol-20-one 21-acetate.

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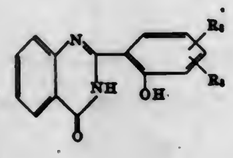
3,169,129

## 2-ORTHO-HYDROXY-PHENYL-4-(3H)-QUINAZOLINONES

John Leo Rodgers, Somerville, and Jerry Peter Millonig, Franklin Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 10, 1963, Ser. No. 279,631
7 Claims. (Cl. 260—251)

1. A compound of the formula



wherein $R_3$ and $R_4$ are selected from the group consisting of hydrogen, hydroxyl, halogen and 1–4 carbon alkyl and alkoxy.

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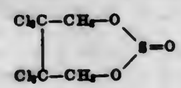
3,169,130

## 2,2,3,3-TETRACHLORO-1,4-BUTANEDIOL SULFITE

Max E. Childix and Robert W. Wynn, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 6, 1961, Ser. No. 80,990
1 Claim. (Cl. 260—327)

2,2,3,3-tetrachloro-1,4-butanediol sulfite having the following formula





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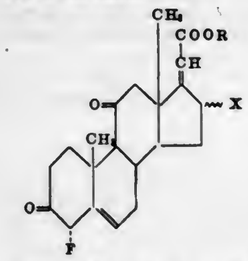
3,169,131

## PROCESS FOR THE PREPARATION OF 4-FLUORO-HYDROCORTISONE, 21-ACYLATES AND 16-SUBSTITUTED DERIVATIVES THEREOF, AND INTERMEDIATES PRODUCED IN THE PREPARATION THEREOF

Fred Kagan, Kalamazoo, and Barney J. Magerlein, Portage Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,183
14 Claims. (Cl. 260—397.1)

1. Compounds of the formula



wherein R is a lower-alkyl radical containing from one to eight carbon atoms, inclusive, and X is selected from the group consisting of hydrogen, methyl, fluorine and chlorine.

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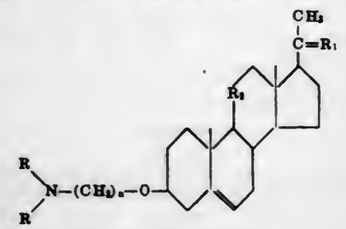
3,169,132

## 3-AMINOETHER PREGNANES

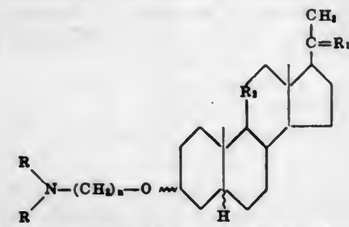
Robert D. Birkenmeyer, Daniel Lednicer, and Fred Kagan, Kalamazoo, and Barney J. Magerlein, Portage Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 7, 1961, Ser. No. 101,379
14 Claims. (Cl. 260—397.3)

1. Steroid compounds selected from the group consisting of compounds of the formulae:



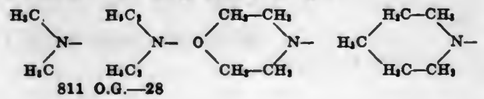
and



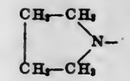
wherein *n* has a value of 2 to 3, inclusive, wherein



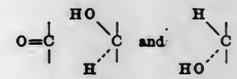
is selected from the group consisting of



and



wherein $R_1$ is selected from group consisting of ketonic oxygen and =N—OH and wherein $R_2$ is selected from the group consisting of



the N-oxides of these compounds, and the mineral acid salts of these compounds.

14. 3β - (3 - diethylaminopropylthio) - 5 - pregnene-11,20-dione N-oxide hydrochloride.

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3,169,133

## 3α-FLUOROANDROSTANES AND 15β-FLUOROGESTERONE

Donald E. Ayer, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 2, 1962, Ser. No. 207,050
4 Claims. (Cl. 260—397.3)

3. 15β-fluoroprogesterone.

4. 3α-fluoro-5α-androstan-17-one.

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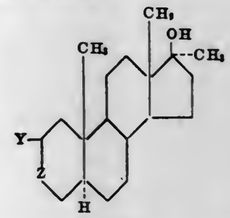
3,169,134

## 2,3-OXYGENATED-17α-METHYL-5α-ANDROSTAN-17β-OLS

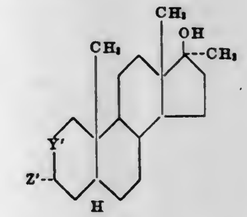
Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,797
8 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of compounds of the formula



wherein Y is selected from the group consisting of methoxy and (lower alkanoyl)oxy and Z is selected from the group consisting of α-hydroxymethylene and carbonyl; and compounds of the formula



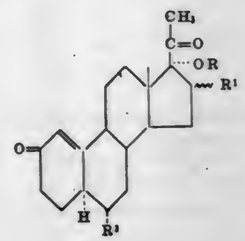
wherein Y′ is selected from the group consisting of β-hydroxymethylene and carbonyl and Z′ is selected from the group consisting of methoxy and (lower alkanoyl)oxy.

### 3,169,135
### 19-NOR-$\Delta^{1(10)}$-5α-PREGNEN-17α-OL-2,20-DIONE AND DERIVATIVES THEREOF

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

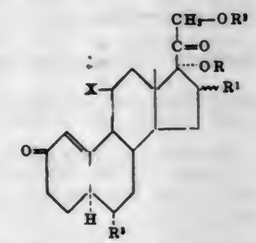
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,963
Claims priority, application Mexico, July 18, 1963, 73,087
20 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; $R^1$ is a member of the group consisting of hydrogen, α-methyl and β-methyl; and $R^2$ is selected from the group consisting of hydrogen and methyl.

7. A compound of the following formula:



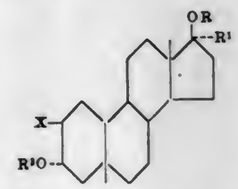
wherein R and $R^2$ are selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; $R^1$ is a member of the group consisting of hydrogen, α-methyl and β-methyl, $R^3$ is selected from the group consisting of hydrogen and methyl; and X is selected from the group consisting of hydrogen, a keto group and a β-hydroxyl group.

### 3,169,136
### 2β-HALO-17α-ALKENYL-19-NOR-ANDROSTANE-3α,17β-DIOLS

Albert Bowers and John Edwards, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Feb. 14, 1962, Ser. No. 173,135
3 Claims. (Cl. 260—397.5)

1. A compound of the following formula:



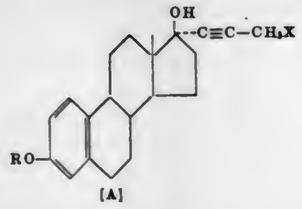
wherein $R^1$ is lower alkenyl; R and $R^2$ are selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; and X is a halogen atom.

### 3,169,137
### NOVEL 17α-AMINOALKYL AND AMINOALKYNYL 1,3,5(10)-ESTRATRIEN-17-OL-3-ETHERS

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

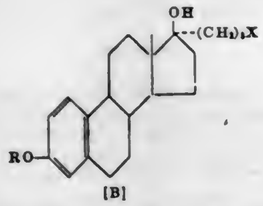
No Drawing. Filed May 7, 1963, Ser. No. 278,759
9 Claims. (Cl. 260—397.5)

1. A compound selected from the group consisting of those having one of the structural formulae:



[A]

and



[B]

wherein R represents a substituent selected from the group consisting of lower alkyl, and lower cycloalkyl of up to 7 carbon atoms, and X represents an amino substituent selected from the group consisting of dilower-alkylamino, morpholino, piperidino, pyrrolidino, and N-alkylpiperazino.

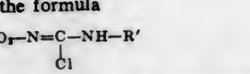
4. 17α - (3 - diethylamino - 1 - propynyl) - 3 - methoxy-estra-1,3,5(10)-trien-17-ol.

### 3,169,138
### 1-CHLORO-N-SULFONYL-FORMAMIDINES AND PROCESS FOR THEIR MANUFACTURE

Walter Aumüller, Kelkheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,404
Claims priority, application Germany, Feb. 24, 1962, F 36,120
11 Claims. (Cl. 260—397.7)

1. A compound of the formula



wherein R is a member selected from the group consisting of alkyl having 2–6 carbon atoms, cycloalkyl having 5–7 carbon atoms, and substituted phenyl having at most two substituents selected from the group consisting of alkyl having 1–4 carbon atoms, methoxy, halogen, and acetylamino, and R′ is a member selected from the group consisting of alkyl having 2–6 carbon atoms, cycloalkyl having 6–8 carbon atoms, cyclohexyl methyl, methyl cyclohexyl, isopropyl cyclohexyl, ω-methoxy propyl, allyl, and benzyl.

11. 1 - chloro - N - (4 - acetylamino - benzenesulfonyl) - N′-isobutyl-formamidine.



### 3,169,139
### HYDROXYLATION PROCESS FOR OLEFINIC HIGHER FATTY ACID AND FATTY ACID ESTER

Alfred A. D'Addieco, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 20, 1960, Ser. No. 3,488
7 Claims. (Cl. 260—406)

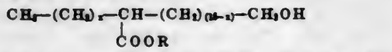
1. The method of hydroxylating an olefinic compound selected from the group consisting of olefinic higher fatty acids and esters thereof comprising reacting said olefin, hydrogen peroxide and at least 0.01 mole of a lower aliphatic acid per mole of hydrogen peroxide in the presence of a cation exchange resin in its hydrogen form, said resin being the sulfonated copolymer of a monovinyl aromatic compound having about 1 to 6% of a polyvinyl aromatic hydrocarbon, said reaction being carried out at about 40° to 90° C.

### 3,169,140
### CARBOXYLATED DERIVATIVES OF OLEYL ALCOHOL AND METHOD OF PREPARATION

Edward T. Roe, Chalfont, and Daniel Swern, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application June 20, 1960, Ser. No. 37,533. Divided and this application Jan. 22, 1962, Ser. No. 176,467
4 Claims. (Cl. 260—410.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A compound of the formula



wherein x is an integer from 6 to 9 and R is an alkyl radical.

### 3,169,141
### PROCESS FOR THE RECOVERY OF ORGANIC ISOCYANATES

Ehrenfried H. Kober, Hamden, and Wilhelm J. Schnabel, Branford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Sept. 18, 1962, Ser. No. 224,523
15 Claims. (Cl. 260—453)

1. A process for the recovery of an organic isocyanate from a crude reaction mixture containing said isocyanate which comprises admixing with said crude reaction mixture a liquid organic silane having a boiling point above the boiling point of said organic isocyanate, said liquid organic silane being selected from the group consisting of alkylsilane, arylsilane, arylalkylsilane, and mixtures thereof, and distilling said organic isocyanate from the resulting mixture at a temperature above the boiling point of said organic isocyanate and below the boiling point of said liquid organic silane.

### 3,169,142
### METHOD FOR SULFONATION AND SULFATION OF ORGANIC COMPOUNDS

Edward A. Knaggs, Deerfield, and Marvin L. Nussbaum, Skokie, Ill., assignors to Stepan Chemical Company, Chicago, Ill., a corporation of Delaware

Filed May 25, 1960, Ser. No. 31,707
10 Claims. (Cl. 260—457)

1. A continuous process for a reaction selected from the group consisting of sulfation and sulfonation between sulfur trioxide and a liquid organic compound selected from the group consisting of alcohols, olefines, fatty acid esters, and polycyclic and monocyclic hydrocarbons, which comprises forming a liquid film of the organic compound on a supporting and confining heat-exchange surface defining a reaction zone, forming in predetermined concentration a pressurized diluted reactant gaseous mixture of an inert gas and gaseous reactant sulfur trioxide containing a given proportion within the range of 5:1 to 50:1 inert gas to sulfur trioxide by volume, introducing said gaseous mixture into the confining reaction zone formed by the heat-exchange surface and impinging said gaseous mixture against said liquid film at a high velocity to induce marked turbulence therein and effect an exothermic reaction involving the aforesaid reaction, and removing at least a portion of the exothermic heat of reaction by heat-transfer through the heat-exchange surface while maintaining the film viscosity sufficiently low to permit said impinging gas to effect said marked turbulence, said liquid film being subjected to the aforesaid pressurized gaseous mixture within substantially 0.5 second.

### 3,169,143
### PREPARATION OF 2-AMINOETHYL HYDROGEN SULFATE

Gilbert Gavlin, Lincolnwood, and Kiyoshi Hattori, Chicago, Ill., assignors to The Richardson Company, Melrose Park, Ill., a corporation of Ohio

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,717
1 Claim. (Cl. 260—458)

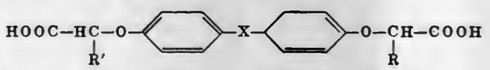
A process for making 2-aminoethyl hydrogen sulfate which comprises reacting gaseous sulfur trioxide with ethanolamine and heating the reaction product consisting of 2-aminoethyl hydrogen sulfate and N-(B-hydroxyethyl) sulfamic acid to convert said N-(B-hydroxyethyl) sulfamic acid to 2-aminoethyl hydrogen sulfate.

### 3,169,144
### ANTICHOLESTERINEMIC AND ANTILIPAEMIC AGENTS

Guido Cavallini and Elena Massarani, Milan, Italy, assignors, by mesne assignments, to Elena Massarani, Milan, Italy

No Drawing. Filed Sept. 30, 1960, Ser. No. 59,502
Claims priority, application Italy, Aug. 12, 1960, 14,356
6 Claims. (Cl. 260—520)

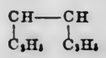
1. A chemical compound selected from the group consisting of (1) a compound of the formula:



in which X is selected from the group consisting of



and



and R and R′ each represents a lower hydrocarbon radical and (2) a salt thereof selected from the group consisting of alkali metal and alkaline earth metal salts.

### 3,169,145
### PREPARATION OF ALKYLDICHLOROBORANES

Edward Gipstein, New Britain, Conn., and Clark O. Miller, Willoughby Hills, Ohio, assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Aug. 29, 1958, Ser. No. 758,877
8 Claims. (Cl. 260—543)

1. A method for the preparation of an alkyldichloroborane which comprises reacting a monoolefin hydrocarbon and boron trichloride by passing a gaseous mixture thereof into contact with a catalyst which consists essentially of activated carbon at a temperature within the range from about 300° C. to 900° C., said monoolefin hydrocarbon being one containing from 2 to 5 carbon

atoms and the molar ratio of monoolefin hydrocarbon to boron trichloride introduced into the reaction zone being within the range from about 2:1 to 10:1.

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3,169,146

## 1-n-DODECYL-2-DICHLOROACETYLGUANIDINE

Arthur F. McKay, Beaconsfield, Quebec, Canada, assignor to Monsanto Canada Limited, La Salle, Quebec, Canada

No Drawing. Filed July 29, 1963, Ser. No. 298,449
1 Claim. (Cl. 260—561)

1. 1-n-dodecyl-2-dichloroacetylguanidine.

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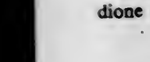
3,169,147

## 1,2-DIMETHYLCYCLOBUTENEDIONE AND METHOD OF PREPARATION

Alfred T. Blomquist and Richard A. Vierling, both of Ithaca, N.Y., assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,178
4 Claims. (Cl. 260—586)

1. A method for preparing 1,2-dimethylcyclobutenedione comprising blending



with an excess of polyphosphoric acid having a $P_2O_5$ content from about 77 to about 95% by weight, heating to a temperature of about 50° C. to about reflux temperature of the mixture and recovering



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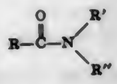
3,169,148

## METHOD OF PREPARING ORGANOBORON COMPOUNDS

Marvin M. Fein, Westfield, and Jack Bobinski, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 29, 1960, Ser. No. 59,457
4 Claims. (Cl. 260—606.5)

1. A method for the preparation of an organoboron compound useful as a fuel which comprises reacting a borane selected from the group consisting of bis(amido) decaboranes and bis(amido) alkyldecaboranes with an acetlyenic hydrocarbon containing from two to ten carbon atoms while the reactants are in admixture with an inert organic solvent, the bis(amido) decaboranes and bis(amido) alkyldecaboranes being the reaction products of a material selected from the group consisting of decaborane and a lower alkyl decaborane with an amide of the formula



wherein R is a radical selected from the group consisting of hydrogen, lower alkyl and lower alkenyl radicals, and R′ and R″ are radicals selected from the group consisting of hydrogen and lower alkyl radicals.

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3,169,149

## PREPARATION OF 2-2′-DIHYDROXYDIPHENYLS

William Derek Walsh, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 18, 1961, Ser. No. 138,603
Claims priority, application Great Britain, Oct. 3, 1960, 33,833/60
4 Claims. (Cl. 260—620)

1. A process for the preparation of 2-2′-dihydroxydiphenyl which comprises reacting dibenzofuran at elevated temperature and superatmospheric pressure with an aqueous solution of an alkali metal hydroxide and liberating the free dihydroxydiphenyl from the resulting alkali metal salt thereof.

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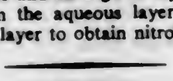
3,169,150

## PROCESS FOR RECOVERY OF BROMO-NITROALKANE

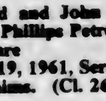
Gustave B. Bachman, West Lafayette, Ind., assignor to Purdue Research Foundation, a corporation of Indiana

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,173
3 Claims. (Cl. 260—646)

1. A process for the recovery of bromonitroalkane from the reaction product mixture containing the same and obtained by the reaction of a nitroalcohol having the formula:



wherein R is a member selected from the group consisting of alkyl and hydrogen; $R_1$ is selected from the group consisting of cycloalkyl and of the formula:



wherein $R_2$ is a member selected from the group consisting of alkyl, hydrogen and hydroxyalkyl with phosphorous tribromide in the presence of dimethylformamide which comprises contacting the reaction product mixture with water maintained at a temperature of about 5 to 50° C. to form an aqueous and an organic layer, separating the organic layer from the aqueous layer formed and distilling the organic layer to obtain nitrobromoalkane.

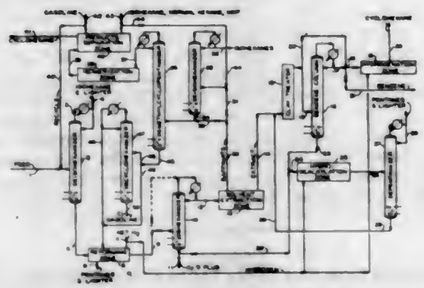
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3,169,151

## UP-GRADING A HYDROCARBON STREAM TO PRODUCE HIGH PURITY CYCLOHEXANE AND BENZENE

George E. Merryfield and John G. Allen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 19, 1961, Ser. No. 139,115
10 Claims. (Cl. 260—667)



1. A process for up-grading a hydrocarbon mixture containing $C_6$–$C_7$ hydrocarbons comprising reforming said mixture to produce a stream comprising paraffins, naphthenes, and aromatics including benzene; separating said stream comprising paraffins, naphthenes and aromatics including benzene by solvent extraction to produce an extract stream comprising aromatics and a raffinate stream comprising paraffins and naphthenes; withdrawing a first portion of said extract stream as a high-purity benzene product; hydrogenating a second portion of said extract stream to produce a high-purity cyclohexane product; fractionating said raffinate stream to produce a stream comprising methylcyclopentane and lighter and a stream comprising cyclohexane; returning at least a portion of said stream



comprising cyclohexane to said mixture; isomerizing said stream comprising methylcyclopentane and lighter; and separating from the resulting isomerizate a high-purity cyclohexane product.

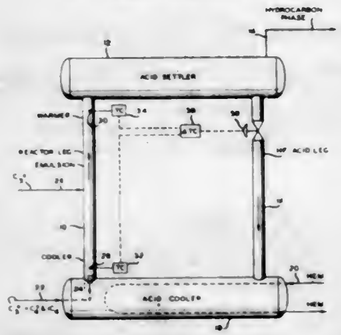
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3,169,152

## ALKYLATION PROCESS AND APPARATUS

Joe Van Pool and Dave G. Blaker, both of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 4, 1961, Ser. No. 129,405
11 Claims. (Cl. 260—683.48)




1. A process for alkylating an isoparaffin with at least two different olefins which comprises passing said isoparaffin in admixture with said olefins and HF acid in liquid phase under alkylating conditions thru a single elongated reaction zone free of indirect heat exchange means; introducing said acid in cooled condition relative to reactor outlet temperature to the upstream end of said zone at a temperature substantially below the temperature in said zone so as to effect direct heat exchange with the liquids therein; and maintaining a predetermined temperature differential between the inlet end and the outlet end of said zone by sensing the temperature in said zone adjacent the inlet and outlet ends thereof to obtain a temperature differential and regulating the volume of acid introduced to said zone in response to said temperature differential.

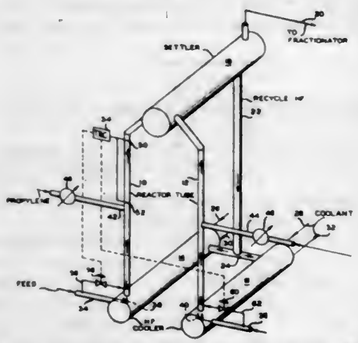
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3,169,153

## ALKYLATION PROCESS AND APPARATUS

Kenneth E. Walker and Thomas Hutson, Jr., both of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 15, 1961, Ser. No. 138,502
12 Claims. (Cl. 260—683.48)




1. A process for alkylating an isoparaffin with two olefins of different weights which comprises introducing said isoparaffin in sufficient quantity to react with both olefins and the heavier olefin along with HF acid in the liquid phase into the upstream end of an elongated reaction zone free of indirect heat exchange means under reaction conditions including a temperature in an optimum range for alkylating with said heavier olefin, whereby the temperature in said zone increases downstream; introducing the lighter olefin into said zone at a point substantially downstream of the point of introduction of said heavier olefin where the temperature therein is in an optimum range for alkylating with said lighter olefin; applying sufficient pressure in said zone to maintain reactants in liquid phase; and recovering alkylate from both alkylation reactions along with acid from the downstream end of said zone.

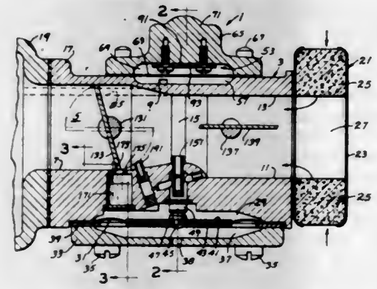
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3,169,154

## CARBURETOR

Charles L. Martin, St. Johns, and Morris C. Brown, St. Louis, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey

Filed Sept. 28, 1962, Ser. No. 227,029
3 Claims. (Cl. 261—41)

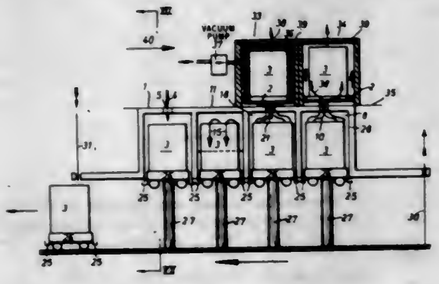


1. A carburetor comprising a body having a mixture conduit extending therethrough and a fuel chamber at one side of said body, a diaphragm closing said fuel chamber, means for delivering fuel to said chamber controlled by said diaphragm, said mixture conduit being formed to provide a venturi, a rotatable throttle shaft extending across said mixture conduit downstream from said venturi, a throttle on said shaft, a high speed fuel system comprising a first fuel well in said body located between said fuel chamber and mixture conduit, a high speed fuel passage connecting said well and said mixture conduit and a high speed nozzle in said high speed fuel passage at the throat of the venturi, a conduit, connecting said fuel chamber and first fuel well, means for metering the flow of fuel through said conduit to the fuel well, an acceleration system comprising separate passaging from said well to said mixture conduit including a second well and an accelerating nozzle having one end opening into the mixture conduit at a point at which said end of the accelerating nozzle is traversed by the periphery of the throttle when the throttle is moved from a closed to an open position and between said high speed nozzle and said throttle shaft, an air bleed passage into said first well and into said accelerating system from the mixture conduit upstream of said high speed nozzle, whereby air is bled into said first well and said accelerating system when said throttle is moved to a position to place the accelerating nozzle downstream of the throttle, and an independent idle fuel means including an idle port downstream from the high speed fuel nozzle and a separate idle fuel passage between said idle port and said fuel chamber for delivery of fuel from the fuel chamber to the mixture conduit when the throttle is at a closed idle position, and means for metering flow of fuel through said idle fuel passage.

### 3,169,155
### PROCESS AND AN APPARATUS FOR BAKING CERAMIC PRODUCTS

Leo Ostermaier, Ehingerstrasse 6, Biberach an der Riss, Wurttemberg, Germany

Filed Mar. 22, 1960, Ser. No. 16,790
Claims priority, application Germany June 6, 1959
2 Claims. (Cl. 264—66)

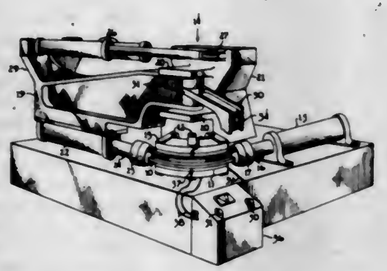


1. A method for baking and cooling bricks and ceramic products in kilns having a first predrying vault, said first predrying vault being under a vacuum and being surrounded by a gastight housing, a second predrying vault, a preheating vault, a prebaking vault, a baking vault and a cooling vault, said vaults being separate from each other, where the baking and cooling takes place in a total of four simultaneously occurring operations, said operations being preheating, prebaking, baking and cooling, comprising the step of preheating occurring in the preheating vault by means of the heated cooling air received from the cooling vault, the step of prebaking occurring in the prebaking vault by means of the gases received from the baking vault, said air and gases passing through once, the air and gas stream being blown from above downwardly, and the step of heating the first predrying vault by allowing heating gas from the prebaking chamber to enter into said gastight housing from below upwardly.

### 3,169,156
### APPARATUS FOR THE FORMING AND AGING OF TITANIUM ALLOYS

Robert E. Johnson, Fort Worth, Tex., and Richard J. McClintick, Columbus, Ohio, assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Filed Dec. 23, 1960, Ser. No. 78,117
6 Claims. (Cl. 266—2.5)

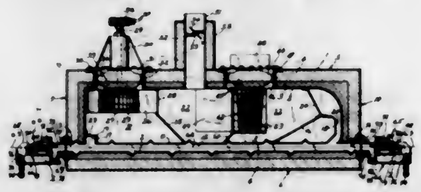


1. Apparatus for the simultaneous forming and aging of a metal workpiece comprising, in combination, a die of desired configuration having a pair of generally opposed heat receiving faces between whose corresponding edge margins extends a shaped forming face, means for forming said workpiece by forcing same against said die forming face and for maintaining said workpiece thereagainst, means for heating said die and the workpiece positioned thereagainst including a pair of manifold members each having at least one burner opening therein, said burner openings being disposed to direct flame at said opposed faces of said die and means for confining said flames to prevent contamination of the workpiece, and means for controlling the heating of said die by said heating means and thereby the temperature of the workpiece held against said die forming face.

### 3,169,157
### ANNEALING OVEN FOR CONTINUOUSLY MOVING WIRE

Edward H. Harris, Minneapolis, Minn., assignor to Acrometal Products, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed July 17, 1962, Ser. No. 210,348
6 Claims. (Cl. 266—3)



1. In a wire annealing oven,
(*a*) casing structure defining an elongated oven chamber having an inlet at one end and an outlet at its other end,
(*b*) means for heating and circulating a gaseous medium longitudinally through said oven chamber,
(*c*) sealing means at opposite ends of said oven chamber admitting passage of wire strands therethrough but sealing said inlet and outlet against admission of air into said oven chamber,
(*d*) said sealing means each comprising a pair of superposed resilient spongiose pads in face to face engagement,
(*e*) the engaging faces of the pads of each pair thereof being aligned substantially with the longitudinal axis of said oven chamber and adapted to receive and engage strands of wire therebetween for passage of such strands longitudinally through said oven chamber, and
(*f*) means including a manifold element for supporting said pads in said face to face engagement, for introducing liquid to said pads to cause saturation thereof, and for removing excess liquid from said sealing means.

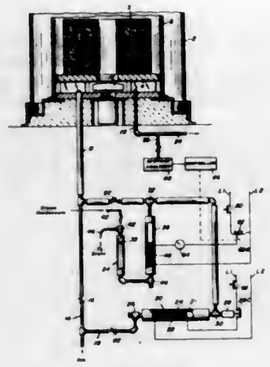
### 3,169,158
### APPARATUS FOR ANNEALING COILS OF STEEL STRIP

Robert W. Wigg, Bethel Park Borough, Pa., assignor to United States Steel Corporation, a corporation of New Jersey

Filed June 28, 1961, Ser. No. 120,343
6 Claims. (Cl. 266—5)

1. Apparatus for annealing coils of steel strip comprising means for supporting a coil of strip, a cover for enclosing said supported coil of strip, a conduit for delivering a heat treating atmosphere gas to the coil of strip within said cover, a U-tube having two substantially vertical legs and a connection between the lower ends of said legs, said vertical legs and said connection containing water, means connecting the upper end of the first of said legs to said conduit, means for supplying water to the second leg of said U-tube, and means for supplying heat to the water in the first of said legs to vaporize the same and cause it to rise into the atmosphere gas in said conduit.

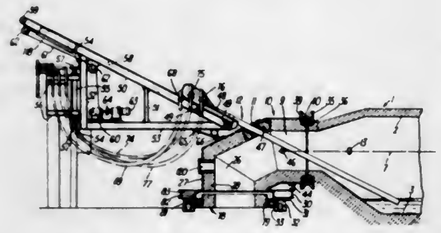




### 3,169,159
### OPEN-HEARTH FURNACE

Albert Jackson, Scunthorpe, England, assignor to The United Steel Companies Limited

Filed Feb. 18, 1959, Ser. No. 794,117
Claims priority, application Great Britain, Feb. 21, 1958, 5,750/58, 5,751/58, 5,752/58
4 Claims. (Cl. 266—34)



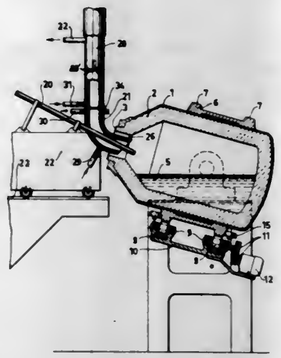
1. An open-hearth steel-making furnace comprising a tilting hearth with a hearth wall, and at each end an offtake comprising a steel casing and a refractory lining therefor defining a single circular port substantially coaxial with the tilting axis of the hearth, said casing and lining being formed with a passage leading to the port, an oxygen lance mounted to slide through the passage and port into the hearth, and burner means opening into the hearth through the hearth wall.

### 3,169,160
### MEANS FOR PROTECTING THE NOSE OF ROTARY FURNACES

Folke Karl Evald Johansson, Hallsjogarden, Borlange, Sweden, assignor to Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden, a company of Sweden

Filed Oct. 25, 1961, Ser. No. 147,500
Claims priority, application Sweden, Oct. 28, 1960, 10,408/60
6 Claims. (Cl. 266—36)

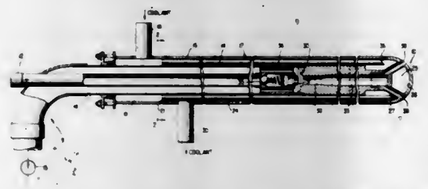
1. In a rotary furnace of the inclined type provided with an internally lined exhaust opening in one end wall and a tuyere inserted into said furnace for blowing in refining gas rich in oxygen, means different from said tuyere for protecting the lining of said exhaust opening comprising a shield inserted in said opening, there being provided a space between the shield and the lining of the exhaust opening, and means for sucking ambient atmosphere through said space, so as to shield off during at least a part of each revolution of the furnace the lining of said opening from at least the major part of the exhaust gases passing through said opening as well as from heat radiation from the surface of the melt in the furnace.



### 3,169,161
### OXYGEN-FUEL PROBE

Edward F. Kurzinski, Allentown, Pa., assignor, by mesne assignments, to Air Products and Chemicals, Inc., Trexlertown, Pa., a corporation of Delaware

Filed Apr. 5, 1961, Ser. No. 101,012
4 Claims. (Cl. 266—41)



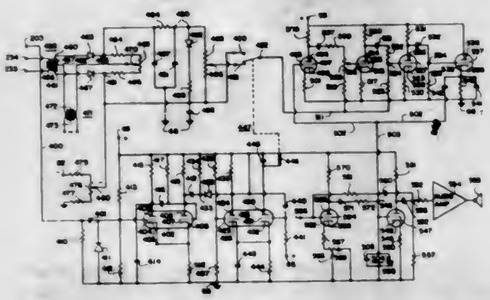
1. An oxy-fuel probe for premixing and introducing oxygen and fuel to the reaction zone in a metallurgical furnace comprising an elongated hollow outer tubular member in overlapping relationship with an elongated hollow inner tubular member; fluid inlet means, coolant inlet means, and coolant outlet means located at one end of the fluid transfer device and nozzle structure located at the opposite longitudinal end of the device; means located intermediate the elongated hollow outer tubular member and the hollow inner tubular member defining coolant inlet and coolant outlet passageway means connected to the coolant inlet and coolant outlet means respectively at one end of the device and communicating with the nozzle structure at the longitudinally opposite end of the device; conduit means within the hollow inner member dividing such member into an oxygen passageway means and a fuel passageway means; injector means longitudinally intermediate the fluid inlet means and the nozzle structure arranged and adapted to interconnect the oxygen and fuel passageway means, said injector means having a venturi throat and means for aspirating the fuel stream into the oxygen stream, so as to admix the same before entering the venturi throat and to develop the desired nozzle velocity; a plurality of fluid discharge ports defined by the nozzle structure; and an elongated delivery tube connecting the venturi throat with the discharge ports for completing internal premixing of the fuel and oxygen streams.

# ELECTRICAL

## 3,169,162
## SONAR SIMULATOR

William R. Kling, Temple City, Calif., assignor to Honeywell Inc., a corporation of Delaware

Filed July 6, 1962, Ser. No. 207,980
9 Claims. (Cl. 35—10.4)



1. A sonar simulator comprising:

means for generating a first signal having an amplitude indicative of own ship's range and a phase indicative of own ship's bearing;

means for generating a second signal having an amplitude indicative of target range and a phase indicative of target bearing;

means for algebraically summing said first and second signals to produce a third signal, said third signal having an amplitude indicative of the relative range of said target from said own ship and a phase indicative of the bearing of said target relative to said own ship;

rectifier means connected to receive said third signal, said rectifier means producing a D.C. output signal having a magnitude indicative of the relative range of said target from said own ship;

a video display device;

a sawtooth sweep voltage generator;

means connecting said sawtooth sweep voltage generator to said video display device;

a coincidence circuit having first and second inputs and an output;

and "and" gate having an output and at least a first and a second input;

means connecting the output of said coincidence circuit to the first input of said "and" gate;

means connecting the first input of said coincidence circuit so as to receive the D.C. output signal from said rectifier means;

means connecting the second input of said coincidence circuit to said sawtooth sweep voltage generator, said coincidence circuit producing an output which enables the first input of said "and" gate whenever the magnitude of the sawtooth sweep voltage exceeds the magnitude of the D.C. output signal of said rectifier means;

a trigger circuit connected to receive said third signal and operable to produce an output pulse indicative of the phase of said third signal;

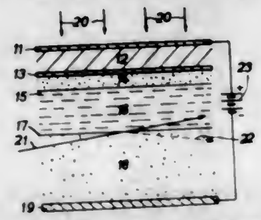
means connecting the "and" gate to said trigger circuit so that the second input of said "and" gate is enabled by the trigger circuit output pulse, said "and" gate producing a pulse at its output whenever all of its inputs are enabled; and

means responsive to the "and" gate output pulse for producing a target indication on said video display device.

## 3,169,163
## ELECTRO-OPTICAL LIGHT VALVE UTILIZING CHARGED PARTICLE MIGRATION

Heinrich Nassenstein, Opladen, Germany, assignor to Firma Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany

Filed Mar. 25, 1959, Ser. No. 801,955
Claims priority, application Germany, Oct. 19, 1957, F 24,221; Mar. 27, 1958, F 25,354
23 Claims. (Cl. 88—61)

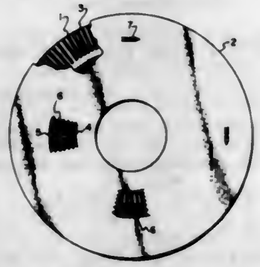


1. A device for varying a beam of light in accordance with variations of an electric field, comprising, in combination, a body of electrically conductive liquid containing medium including a component having an index of refraction different from that of the remainder of said liquid and having the characteristic of migrating in said liquid from one point thereof toward another point when said body of medium is exposed to an electric field whereby the concentration of said component is changed in at least a portion of said medium, said portion of said medium having a boundary surface adapted to be exposed to light; means for exposing said body to an electric field; and means for directing a beam of light at an obtuse incident angle against said boundary surface a portion of said body of conductive liquid containing medium the overall index of refraction of which portion changes due to a change of concentration of said component in said portion caused by migration of said component in said medium when said body is exposed to an electric field, whereby upon exposure of said body to an electric field the direction of said beam of light at the point of impingement on said boundary surface will be varied.

## 3,169,164
## RETICLE AND MASK COMBINATIONS FOR ELIMINATION OF CHOPPING OF BACKGROUND RADIATION

Monty M. Merlen, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Continuation of application Ser. No. 862,397, Dec. 29, 1959. This application Dec. 27, 1960, Ser. No. 78,772
9 Claims. (Cl. 88—61)



1. A movable reticle and mask combination comprising in combination,





(*a*) a reticle having a repetitive pattern of components of discrete and varied transmitting and opaque character for a predetermined wavelength range of optical radiation, the pattern having a predetermined pattern cycle length,

(*b*) a mask having at least one aperture window therein, the window having at least one pair of edges across which the pattern moves,

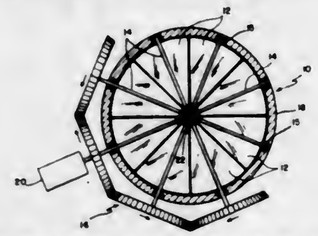
(*c*) each edge of the pair consisting of at least one segment oblique to the components of the reticle pattern as they move across the edge,

(*d*) all of the segments being of finite length and oblique to the pattern components, each segment making an angle with the pattern travel direction that is substantially the same at all points along the segment, and each segment having a length covering an integral number of pattern cycles, whereby total radiation from a uniform background through the aperture window does not change and, therefore, a uniform background is not chopped by the reticle.

## 3,169,165
## INFRARED COUNTERMEASURE SYSTEM USING RADIAL SHUTTER ARRAY FOR LIGHT MODULATION

Oliver W. Fix, St. John, Wash. (602 Ocean View Blvd., Vandenberg A.F. Base, Calif.)

Filed May 15, 1961, Ser. No. 110,277
2 Claims. (Cl. 88—61)
(Granted under Title 35, U.S. Code (1952), sec. 266)



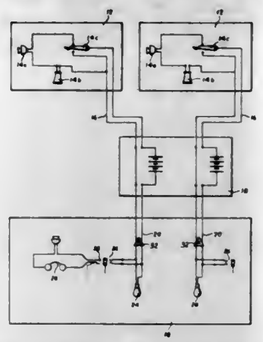
1. A light modulating device comprising an even-numbered plurality of sector-shaped shutters radially mounted about a central axis in such manner to form pairs of diametrically opposite shutters, a plurality of journalled shafts perpendicularly intercepting said central axis and each of the shafts being connected to diametrically opposite shutters, a fixed annular member concentric with the central axis and disposed in spaced relation to the peripheral boundary formed by the curved edges of the shutters, bearings in said annular member in which the shafts are rotatably mounted, an even-number of the shafts having corresponding ends extending outwardly of the outer periphery of said annular member, meshed gears mounted on said corresponding ends of the shafts for synchronous rotation, and motive means connected in driving relation with one of the gears for causing synchronous 360° rotation of the shutters.

## 3,169,166
## SOUND DETECTION SYSTEM AND ALARM SYSTEM

Ambrose J. Metz, 1917 Aldrich S., Minneapolis, Minn.

Filed Oct. 21, 1959, Ser. No. 847,801
2 Claims. (Cl. 179—5)

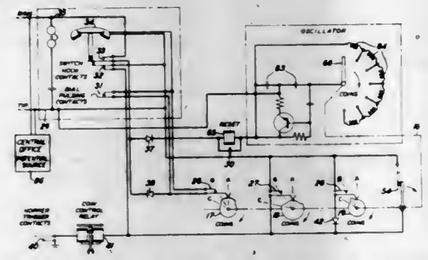
2. The method of detecting and identifying an intruder at a location having a conventional telephone equipment installed therein, said method comprising initially removing the telephone receiver and transmitter from the supporting base thereof and dialing an assigned number to establish a sound transmitting electric circuit through the central telephone exchange to a central monitoring office, amplifying at said monitoring office the signal transmitted from said telephone transmitter, actuating by an amplified signal of predetermined magnitude an indicator at said monitoring office to permit an operator to listen to the actual sounds being transmitted from the telephone transmitter.



## 3,169,167
## TELEPHONE PAY STATION

Walter D. Goodale, Jr., Summit, and William Pferd, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 13, 1956, Ser. No. 591,116
49 Claims. (Cl. 179—6.3)

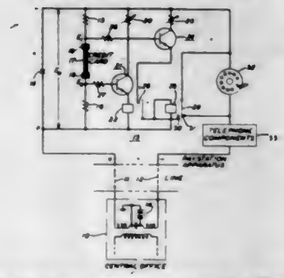


1. In a telephone pay station, a calling dial, normally closed contacts shunting said calling dial, totalizing means including a shaft rotatable in response to the deposit of coins for registering the amount of deposit, the degree of rotation of said shaft being proportional to the amount of deposit, rotatable means mounted on said shaft and adapted to rotate therewith, and control means actuated by said rotatable means at a predetermined degree of rotation for opening said normally closed contacts to enable said dial.

12. A telephone pay station connected by a line to a central office, totalizing means operable in response to the deposit of coins for registering various amounts of said deposit, and automatic signaling means responsive to a potential condition on said line from said central office and controlled by said totalizing means for applying a signal condition on said line to said central office representing said various amounts of deposit, said signal condition having variations that are periodic only.

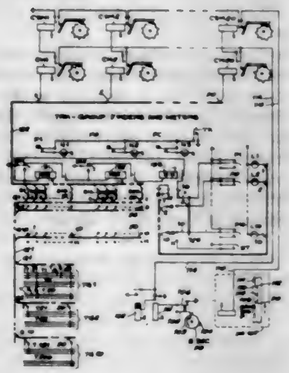
49. A telephone pay station connected by a line to a central office which includes control means, totalizing means operable in response to the deposit of coins for registering various amounts of deposit, and automatic signaling means responsive to said central office control means and said totalizing means for applying a signal condition on said line to said central office representing said various amounts of deposit.

**3,169,168**
**VALIDITY CHECKING CIRCUIT**
**Robert R. Capranica, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Aug. 24, 1960, Ser. No. 51,617**
**8 Claims. (Cl. 179—6.3)**



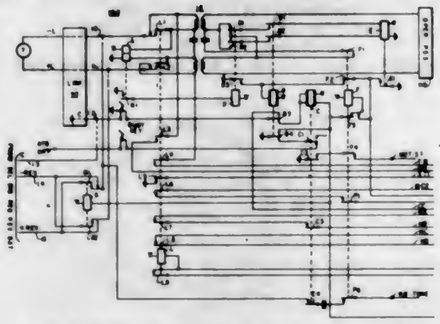
1. In a telephone system, a central office including a source of potential, a substation and a transmission line interconnecting said central office and said substation, said substation including means for deriving a substantially constant reference potential from said source of potential at said central office, a plurality of impedances serially connected across said reference potential deriving means, one of said impedances comprising means for receiving a credit card of material of controlled resistivity, a plurality of transistors, impedance means connecting the base electrodes of said transistors to various points between said serially connected impedances, current-responsive means connected in series with the collector-emitter path of each of said transistors and means responsive to one of said current-responsive devices for disabling one other of said current-responsive devices until said one device is operated.

**3,169,169**
**TRAFFIC OBSERVATION SYSTEM**
**Arthur T. Sigo, 2021 S. 5th Ave., Maywood, Ill.**
**Filed Nov. 21, 1960, Ser. No. 70,528**
**10 Claims. (Cl. 179—8)**



1. Service-observation equipment comprising a group of electroresponsive cumulative call meters so disposed that they are each observable by an observation operator, a trunk finder having observation access to groups of trunks employed in a connection-extending trunking system, the trunks each being arranged to have a busy marking potential applied thereto while in use in extending a connection, means for selecting and marking any said trunk group for observation, means responsive thereto for setting the trunk finder on the marked trunk group to operatively associate the cumulative call meters respectively with the trunks of such marked group and to maintain the trunk finder so set during a desired observation period, group-identifying means included in the foregoing structure for displaying to said observation operator the one of the said trunk groups on which said trunk finder is set, each cumulative call meter including meter-operating means controlled from any said trunk with which such cumulative call meter is operatively associated for cumulatively displaying the number of times such trunk has said busy marking potential applied thereto while such cumulative call meter is operatively associated therewith, and means included in the foregoing structure for displaying to said observation operator at any time while said finder is set on the trunks of any said trunk group which of the trunks of such group have said busy marking potential thereon and which of them do not.

**3,169,170**
**RECORDED MESSAGE SERVICE FOR TELEPHONE OPERATORS**
**Lester L. Smith, McHenry, Ill., assignor to Automatic Electric Laboratories, Inc., a corporation of Delaware**
**Filed Oct. 8, 1959, Ser. No. 845,187**
**2 Claims. (Cl. 179—27)**

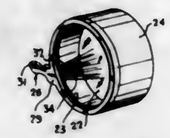


2. In a telephone system, a plurality of trunk circuits leading to an operator's position, means for extending connections to one of said trunk circuits from different lines, means associated with certain of said lines for applying a tone signal to said trunk circuit to identify the type of line, a message recorder having voice messages recorded thereon, a tone detector and a timer both common to said trunk circuits, means responsive to the extension of any connection to one of said trunk circuits for momentarily connecting said tone detector thereto, means in said tone detector operated only when said tone signal is present on said connection for starting said message recorder and connecting it to said trunk circuit and for disconnecting said tone detector from the trunk circuit, and means jointly controlled by said operator and by said timer for maintaining said recorder connected to said trunk circuit until a message is completely transmitted by said recorder and then disconnecting the recorder and timer from the trunk circuit.

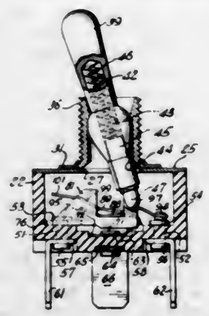
**3,169,171**
**DISPOSABLE SANITARY COVER FOR TELEPHONES**
**Allen M. Wachs, New York, and Albert Peck, Yonkers, N.Y. (both % Stephen R. Steinberg, 405 E. 63rd St., New York, N.Y.)**
**Filed July 17, 1962, Ser. No. 210,402**
**1 Claim. (Cl. 179—185)**

A sanitary cap for a mouthpiece or earpiece of a telephone transmitter or receiver respectively, said cap comprising a generally cylindrical body formed of thin, pliable inelastic sheet material, said body having a circular end wall and integral cylindrical side wall, said side wall having a flat bead secured to the free edge thereof, said bead extending less than 360° leaving a space around the edge, and an elastic insert in said space on said edge secured to spaced ends of the bead and to said edge, the circumference of said bead and insert being less than the circumference of said free edge, said insert having a projection extending radially outward of the end wall and defining a tab to facilitate mounting said body on and removing said body from the telephone mouthpiece or earpiece, said bead extending inwardly of the mouth of said body forming a shoulder at said mouth and an elastic ring in said body and contacting said shoulder.





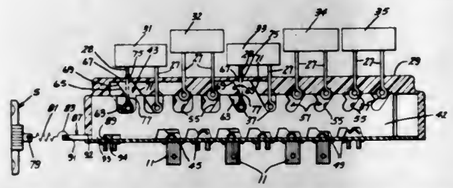
**3,169,172**
**SINGLE POLE PROGRESSIVE SWITCH FOR ELECTRICAL CIRCUITS**
**Hugo E. Hagberg, West Hartford, Conn., assignor to Carling Electric, Inc., West Hartford, Conn., a corporation of Connecticut**
**Filed July 13, 1961, Ser. No. 123,761**
**13 Claims. (Cl. 200—5)**



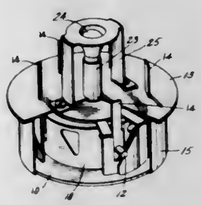
1. A progressive switch comprising a case, first and second spaced apart circuit elements in said case, a third circuit element in said case positioned intermediate said first and second elements, an electrically conductive yoke in said case connected to said first circuit element, said yoke extending into the region of but spaced apart from said third circuit element, a first electrically conductive circuit lever, a second electrically conductive circuit lever, both of said levers being pivotally mounted on said yoke, and means for pivotally moving said first and second levers, said first lever being movable into a position to make electrical connection with said third circuit element, said second lever being movable into a position to make electrical connection with said second element.

**3,169,173**
**PUSH-BUTTON SWITCH OPERABLE BY EXTERNAL ACTUATOR**
**Stewart A. Woodward, Stratford, Conn., assignor to General Electric Company, a corporation of New York**
**Filed Feb. 1, 1962, Ser. No. 170,382**
**5 Claims. (Cl. 200—5)**

1. In a push-button switch of the type arranged for actuation by an external device, a housing including an insulating base, contact means including at least one movable contact disposed on said housing, an elongated slider carried by said housing for reciprocating movement between first and second positions to actuate said movable contact, said slider being movable from said first to said second position by an external device, a pushrod mounted for reciprocating movement between an outer position and a depressed position in relation to said housing, and positive engaging means on said slider and said pushrod for moving said slider from said first position to said second position in response to depression of said pushrod and for depressing said pushrod in response to movement of said slider from said first to said second position by the external device.

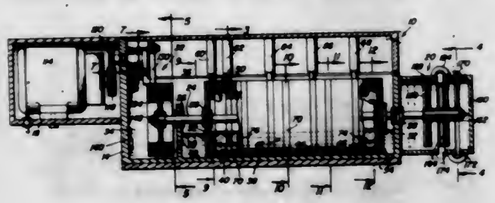


**3,169,174**
**PUSH-BUTTON SWITCH**
**Philip Hutt, Milford, Conn., assignor to General Electric Company, a corporation of New York**
**Continuation of application Ser. No. 722,411, Mar. 19, 1958. This application Dec. 31, 1962, Ser. No. 251,460**
**3 Claims. (Cl. 200—5)**



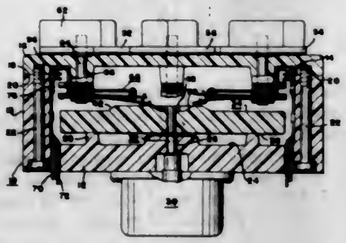
1. A push-button switch comprising a base plate, a plurality of push rods located at predetermined radial distances from a common radial center, a plurality of electrical circuit opening-and-closing elements radially positioned on said base plate, a top plate spaced from said base plate and fixedly positioned with respect thereto, said top plate defining a plurality of radially positioned apertures, said push rods reciprocally movable through said radial apertures in said top plate to actuate said circuit opening-and-closing elements, a pin projecting from each push rod toward the radial center of said push rods, a central inner column at the radial center of said push rods extending from said top plate toward said base plate, and a plurality of cylindrical slides of successively larger diameters having portions extending radially to said central inner column so as to be guided for rotation by said central inner column thereby to control the friction between said slides and between the slides and said column, said slides having a plurality of working surfaces diagonal to the direction of movement of said push rods, said working surfaces in said slides forming a plurality of groups in registration with each group having a push rod pin extending therethrough and engageable with said diagonal surfaces whereby said diagonal surfaces selectively control the motion of said push rods to form an interlock preventing more than one of said push rods at a time from being positioned at the limit of its movement in the direction of said base plate.

3,169,175
**PROGRAMMING SWITCH CONSTRUCTION**
Jack E. Johnson, 4310 Howard Ave., Sacramento, Calif.
Filed Jan. 24, 1962, Ser. No. 168,329
14 Claims. (Cl. 200—32)



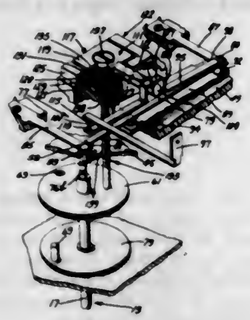
1. A program cycle switch assembly comprising, chamber means rotatable between a plurality of conducting and non-conducting positions, a plurality of control contact means mounted on the chamber means, gravity responsive conductive means disposed within said chamber means for establishing different conductive paths with said control contact means in each of said conducting positions of said chamber means, circuit establishing means mounted for continuous electrical contact with said control contact means to produce a predetermined control cycle and program control means rendered operative in said non-conducting positions of the chamber means to selectively displace said control contact means and said circuit establishing means relative to each other for changing said predetermined control cycle.

3,169,176
**INFINITE HEAT SWITCH FOR CONTROLLING A PLURALITY OF HEATING ELEMENTS**
Gene L. Fisher, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 7, 1960, Ser. No. 67,838
5 Claims. (Cl. 200—38)



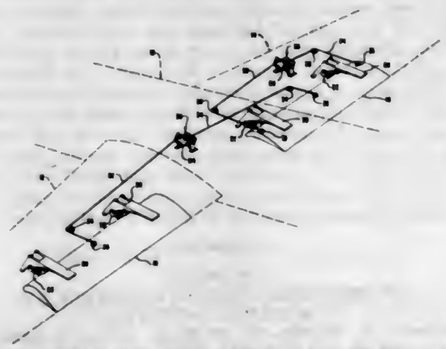
5. A pulsing switch comprising, means forming a casing, first and second switch means pivotally supported on the same side of said casing and including a first and second pair of contacts, first and second follower means for selectively respectively biasing one of said contacts in each of said first and second contact pairs into engagement with the other of said contacts in each of said first and second contact pairs, and single cam means journaled on the opposite side of said casing from said first and second switch means and rotatable relative to said first and second follower means on the same side thereof for actuating said first and second follower means in accordance with the pivotal position of said first and second follower means relative to said single cam means, said single cam means including an irregular disc having different arc lengths of follower means actuation at different radial distances from the axis of rotation of said single cam means.

3,169,177
**CAM OPERATED RANGE TIMER SWITCH**
Wladyslaw Stanley Zagorski, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed May 3, 1963, Ser. No. 277,863
8 Claims. (Cl. 200—38)



1. A timer comprising: a first switch means; means for actuating said first switch means including first and second manually adjustable control members, said control members each having a set position and an unset position; motor driven means for sequentially releasing said control members from their set positions thereby to provide time controlled actuation of said first switch means; means for locking said first switch means in one position unaffected by said motor driven means, said first control member positioning said first switch means in locked position; a second switch means, actuating means for operating said second switch means, said first control member engageable with said actuating means to actuate said second switch means to one position when said first switch means is locked in position by said locking means said second control member unlocking said first switch means and disengaging said actuating means from said first control member thereby to return said second switch means to its other position.

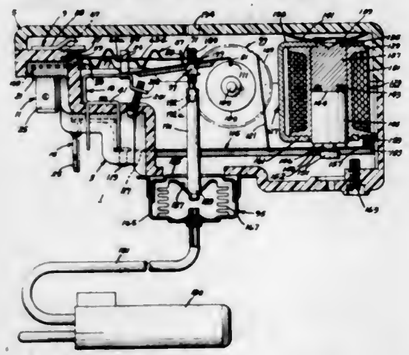
3,169,178
**ASYNCHRONOUS MOTION DETECTOR**
John S. Notchev, San Diego, Edgar S. Machacek, Del Mar, and Waldo J. Darracq and Jean A. Malthaner, San Diego, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Jan. 4, 1963, Ser. No. 249,516
5 Claims. (Cl. 200—61.46)



1. An asynchronous motion detector comprising:
a frame;
a transmission means journaled in said frame;
axially spaced rotatable elements coupled to said transmission means;
actuating means connected to said transmission means positioned intermediate said rotatable elements;
said actuating means having a cam surface;
a switch mounted on said frame operably connected to said cam surface;
said actuating means being responsive to rotative movement of said rotatable elements; and
said actuating means being activated upon detection of asynchronous motion occurring between said rotatable elements to actuate said switch and provide a control signal which eliminates the asynchronous motion.



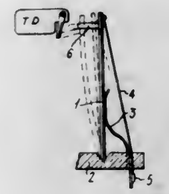
3,169,179
**REFRIGERATOR CONTROL DEVICE**
David C. Lennon, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed Mar. 28, 1961, Ser. No. 98,898
14 Claims. (Cl. 200—61.69)



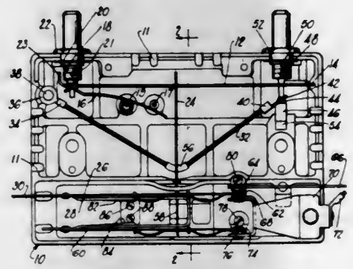
1. A refrigerator control comprising a switch movable between two operating positions, follower means for moving said switch between its operating positions, a unitary rotatable switch actuating member of tripartite construction, said member including a ratchet wheel portion, a hub portion with an axially extending peripheral interruption formed thereon, and an axle means, said portions being concentrically arranged for rotation upon said axle means, means for intermittently driving said switch actuating member, said ratchet wheel portion having a toothed periphery driven by said driving means thereby to rotate said actuating member, said hub portion being in continuous engagement with said follower means and arranged to actuate said follower means once during each revolution by coaction between said follower means and the interruption of said hub portion, whereby said unitary switch actuating member serves as a combination ratchet wheel, switch actuating element, and rotatable journal.

3,169,180
**HOT WIRE THERMAL TRIP OVERLOAD ELECTRIC DEVICE**
Henry James Chafer, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Sept. 12, 1961, Ser. No. 137,644
Claims priority, application Great Britain, Sept. 13, 1960, 31,517/60
5 Claims. (Cl. 200—116)

1. A thermal overload relay including a base, a member supported on said base for rotational movement relative thereto which is constituted over at least part of its length by at least two separate metallic portions having different thermal expansion characteristics, a tripping device adapted to be actuated by said member, resilient means to bias the member for angular movement in a direction such as to cause said tripping device to be actuated, at least one electrical conductor of small thermal mass secured to said member adjacent the free end thereof and serving normally to restrain said member in a non-actuating position, and terminal means for enabling current for actuating said relay to be passed through said conductor.

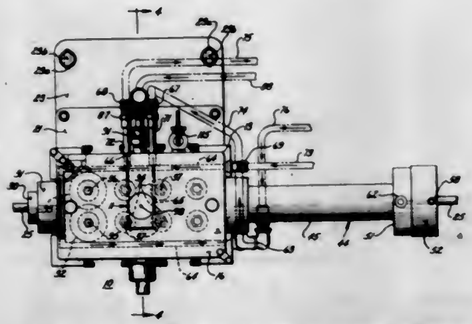


3,169,181
**TEMPERATURE AND HUMIDITY RESPONSIVE DEVICE HAVING HIGH SWITCHING LOAD CAPACITY**
Thomas K. Kjellman, Timonium, and Frank O. Watson, Baltimore, Md., assignors to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed Dec. 8, 1961, Ser. No. 158,060
15 Claims. (Cl. 200—138)



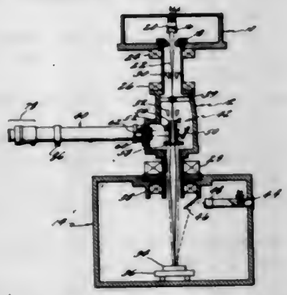
14. A temperature and humidity responsive switching device comprising:
a housing;
a bimetallic element supported in said housing;
an adjusting device attached to said housing and accessible outside of said housing abutting against said bimetallic element;
a humidity responsive element in said housing;
a second adjusting means operatively connected to said humidity responsive element;
tensioning means attached to said humidity responsive element;
a link movable in response to movement of said bimetallic element operative in substantially the same plane as said tensioning means;
a first movable switch member responsive to movement of said link;
a second movable switch member responsive to movement of said tensioning means;
and support means in said housing carrying a stationary switch member engageable with said movable switch members, said support means including bimetallic means movable in response to temperature changes resulting from opening and closing of said switch members to cause said stationary switch member to move in a plane normal to the direction of said movable switch members thereby shearing any welds between said switch members.

3,169,182
WELD BOX
Sterling A. Oakley, Lincolnwood, Ill., assignor to Oakley Industries Incorporated, Skokie, Ill., a corporation of Illinois
Filed Feb. 28, 1962, Ser. No. 176,192
9 Claims. (Cl. 219—60)



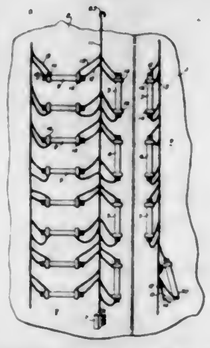
1. A welding apparatus for use in closing the seam in seamed tubing, comprising a housing defining a welding chamber within which a welding operation utilizing an inert gas-shielded arc is performed to close said seam, passageway means including aligned openings in opposed walls of said chamber through which a continuous length of said tubing may be moved, an electrode holder sleeve extending through said housing, an electrode holder including a welding electrode slidably extending through said sleeve in electric isolation therewith into said chamber, means for rapidly bringing said welding electrode into and out of welding position by the mere insertion and withdrawal thereof through said sleeve, means automatically connecting electric welding current to said electrode when it is in said welding position, and means for automatically supplying inert gas through said electrode holder to the welding area when said electrode is in said welding position.

3,169,183
OPTICAL VIEWING SYSTEM FOR ELECTRON BEAM MACHINE
Edward W. Radtke, Bloomfield, Conn., Charles F. Stearns, East Longmeadow, Mass., and Phillip E. Barnes, Granby, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 17, 1962, Ser. No. 231,189
14 Claims. (Cl. 219—121)



1. Apparatus for working materials with a highly energized beam comprising:
means for generating a highly energized beam,
a chamber containing at least a portion of said beam generating means,
means for positioning a work piece generally in the line of said beam,
means for focusing said beam on said work piece,
apertured reflecting means positioned in said chamber between said beam generator and said work piece and having the aperture therein aligned with the beam axis,
means located in the wall of said chamber for passing the image reflected by said reflecting means,
an objective lens located outside of said chamber adjacent to said image passing means and having its optical axis at an angle to the beam axis,
means aligned with the optical axis of said lens for magnifying the image of the work piece reflected by said reflecting means, and
means for illuminating the region of the work piece being worked by the beam.

3,169,184
HEATING AND CLAMPING APPARATUS
Earl F. Vye, 437 El Cajon Drive, San Jose, Calif.
Filed Nov. 29, 1962, Ser. No. 241,086
6 Claims. (Cl. 219—526)
(Granted under Title 35, U.S. Code (1952), sec. 266)



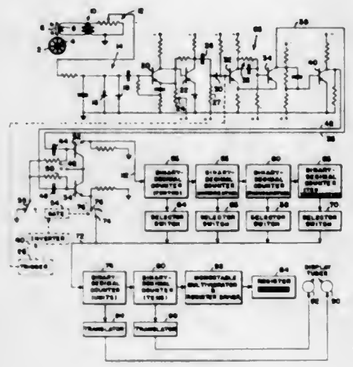
1. Clamping apparatus for securely holding strip heaters in fixed positions on a ferrous metal plate, comprising:
a non-ferrous U-shaped casing having a hollow web portion and downwardly-extending hollow open-bottomed legs, the web being provided with a non-ferrous threaded sleeve member,
a section of hard magnetic material surrounding said sleeve and filling said hollow web portion,
sections of soft magnetic material filling said hollow legs with magnetic face portions projecting into said open bottoms and with upper portions disposed flushly against the outer ends of said hard magnetic section, and
a threaded load arm mounted in said sleeve and extending downwardly from said casing web,
said casing legs being spaced for straddling said strip heater and said load arm having its lower end portion formed for insertibly engaging the heater straddled by the legs and securely clamping the heater against said ferrous metal plates.

3,169,185
TOTALIZER
Eugene Nines, Levittown, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed July 27, 1961, Ser. No. 127,370
6 Claims. (Cl. 235—160)

6. In combination, a plurality of counters in cascade adapted to receive a first series of pulses, each counter passing to the next succeeding counter pulses which are a predetermined submultiple of the pulses received by it, selective means individually connected to each of said counters to receive pulses therefrom and emit a number

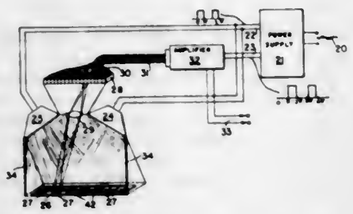


of pulses constituting a predetermined fraction of its received pulses, the fraction depending upon the selective condition thereof, means feeding the pulses from all of said selective means, such pulses constituting a second series, to a common terminal, and selective means feeding



additionally to said terminal a third series of pulses, noncoincident with those of said second series, controlled to bear an integral multiple relationship to the pulses of the first series, said multiple relationship including a unity relationship.

3,169,186
OPTICAL CODED DOCUMENT READER
John H. Howard, Media, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Original application Apr. 9, 1956, Ser. No. 577,143, now Patent No. 2,975,966, dated Mar. 21, 1961. Divided and this application July 7, 1960, Ser. No. 41,349
11 Claims. (Cl. 250—71)



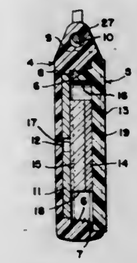
7. Apparatus for recognizing an article bearing markings in the form of long persistent luminescent material, said apparatus comprising: means for irradiating the luminescent material on said article, detector means to receive radiation from said luminescent material on said article, and means to control said irradiating means in a manner operable to establish predetermined time periods of irradiation of said luminescent material separated by time periods of non-irradiation of said material in order to enable said detector means to respond to the radiation from the long persistent luminescent material during the time periods of non-irradiation, said control means causing said irradiating means to be alternately energized and de-energized for appropriate time periods and further causing said detector means to respond to radiation from said long persistent luminescent material during said time periods of de-energization and in the absence of any additional irradiating source, said detector means being positioned in optical relation to the article and being operable to provide a distinctive output in response to the emission from said long persistent luminescent material borne by the article while the irradiating means is de-energized.

3,169,187
LOW ENERGY BETA RADIATION SYSTEM FOR FLUENT MATERIALS WITH PLURAL SCINTILLATION FIBERS IN HEXAGONAL ARRAY
Clinton A. Stone, South Holland, and Leonard Reiffel, Chicago, Ill., and Italo Filosofo, Padova, Italy, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 6, 1963, Ser. No. 256,781
2 Claims. (Cl. 250—71.5)



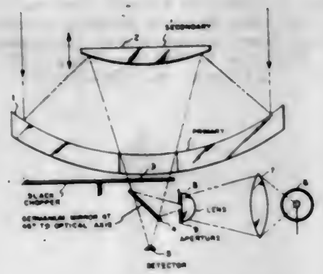
1. A radiation counter for measuring the radioactivity of a liquid or gas sample comprising a cylindrical container having glass end walls, a plurality of like solid cylindrical scintillating fibers formed into a closely packed array essentially hexagonal in cross section and disposed longitudinally within said container, the ends of said fibers being optically coupled and sealed to the end walls of said container, means for injecting said sample into said container between the interstices of said fibers along the length thereof, and means for detecting scintillations at the end walls of said container, which scintillations are a measure of the radioactivity of said sample.

3,169,188
CASE FOR PHOSPHOR GLASS DOSIMETER
Charles R. Horner and William F. Gray, Alexandria, Va., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 18, 1952, Ser. No. 305,098
17 Claims. (Cl. 250—83)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A dosimeter comprising a plastic cap member and a plastic base member removably joined together in watertight relationship with one another, a first lead plate mounted within said base member, a second lead plate mounted within said cap member, and an element responsive to photon radiation carried between said lead plates.

3,169,189
INFRARED THERMOGRAPH
Robert Bowling Barnes, Stamford, and Maggio Charles Banca and Nelson E. Engberg, Old Greenwich, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Apr. 11, 1963, Ser. No. 272,306
3 Claims. (Cl. 250—83.3)



1. In an infrared thermograph including an infrared detector, means for imaging the detector onto the plane of the scene to be thermographed, said imaging means including focusing optics and means for scanning the image of the detector across the scene to be thermographed in the form of a raster, the improvement which comprises,

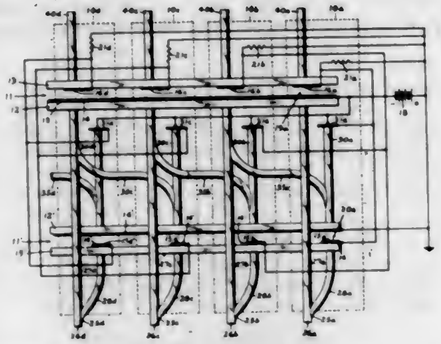
(a) a dichroic mirror on the optical axis and inclined thereto between the infrared detector and the scanning means, said mirror reflecting shorter radiations, including radiations in the visible spectrum, and passing longer wave infrared radiations,

(b) a source of visible light, means for producing a beam striking the inclined dichroic mirror at an angle to be reflected along the optical axis in the direction of the scanning means of the thermograph, said source being located the same distance from the dichroic mirror as the infrared detector and producing a beam of light having a divergence equal to the convergence of the infrared radiation striking the detector whereby when the light beam is focused to a sharp image in the plane of the scene to be thermographed the infrared detector is also sharply imaged, and

(c) means for periodically interrupting the infrared beam to the detector and producing radiation striking the detector from a reference source.

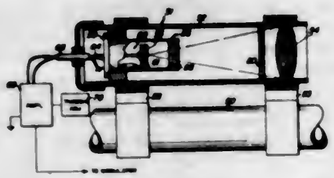
3,169,190
RADIATION ACTUATED BINARY COUNTER SYSTEM AND CIRCUITS THEREFOR
Thomas I. Rees, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 4, 1956, Ser. No. 557,381
17 Claims. (Cl. 250—209)

17. Apparatus comprising, a source of electroluminescent light adapted, when actuated by an input signal at a time when voltage is applied thereto, to become illuminated and to so remain only while said voltage exceeds a predetermined value, input signal means coupled to said source to actuate said source by at least every other one of successive input signals to become illuminated from an originally non-illuminated condition, and electric circuit means at least part of which is electrically coupled to said source to control the voltage applied thereto, said circuit means including a solid state photoconductor which is optically coupled to said source to receive light therefrom upon said source becoming illuminated, and which has a lagging electrical response to said light, and said circuit means being actuated by said lagging response to reduce said voltage below said value after said source



becomes illuminated to thereby restore said source to non-illuminated condition.

3,169,191
METHOD TO ADJUST PHOTOELECTRIC TELESCOPE TO RESPOND TO CONSTANT OBJECT SIZE
Phillip M. Knapp, Timonium, Md., assignor to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland
Filed Jan. 10, 1962, Ser. No. 165,434
2 Claims. (Cl. 250—211)



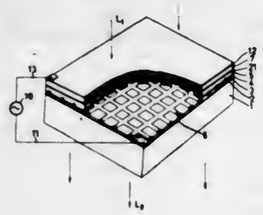
1. A method for maintaining object size substantially independent of range in a photoelectric telescope that includes an alloy junction photodiode for producing an output when light is focused on the sensitive area thereof, an amplifier for amplifying the output of said photodiode, and a sensitivity adjustment for the amplifier for preventing the latter from having an output except when the output of said photodiode exceeds the value of the sensitivity comprising the steps of: focusing light from a source of constant intensity on the sensitive area of the photodiode when located at two ranges and obtaining for each range the response of the photodiode as a function of displacement on said sensitive area of the image of said source from the center of said sensitive area, and adjusting the sensitivity of the amplifier until the ratio of the intervals of said displacement over which each response exceeds the sensitivity of said amplifier is inversely proportional to the ratio of the two ranges.

3,169,192
NEGATIVE PICTURE RADIATING APPARATUS
Tadao Kohashi, Kitakawachi-gun, Osaka, Japan, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 10, 1961, Ser. No. 109,055
Claims priority, application Japan, May 14, 1960, 35/24,542; June 30, 1960, 35/29,987
3 Claims. (Cl. 250—213)

1. A solid-state image intensifier comprising a first electrode, an electric-field-responsive luminescent layer



over the first electrode, a radiation-responsive photo-conductive layer over the luminescent layer, radiation-unresponsive impedance elements over the photo-conductive layer, a second electrode over the impedance elements, a third electrode comprising spaced electrically-conductive portions defining intervening spaces, the lower portions of said third electrode contacting the first electrode and the upper portions of said third electrode contacting the photo-conductive layer, said luminescent layer extending to the spaces between the electrically-conductive portions



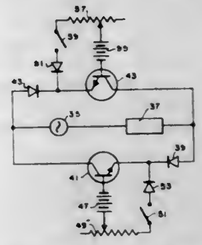
of the third electrode, said second electrode having portions at least overlying the spaces in the third electrode, and means for applying a potential between the first and second electrodes, said spaces in the third electrode having dimensions at which, when the photoconductive layer is unirradiated, an electric field penetrates through the said spaces and determines the luminescence of the underlying portion of the luminescent layer, the intensity of said penetrating field varying inversely with the irradiation intensity of the photo-conductive layer.

3,169,193
PHOTOSENSITIVE APPARATUS FOR SENSING THE ORIENTATION OF FINE MESH MATERIAL
John Martin Strang, Aaniesland, Glasgow, Scotland, assignor to Barr and Stroud Limited, Glasgow, Scotland, a British company
Filed Mar. 7, 1961, Ser. No. 93,897
Claims priority, application Great Britain, Mar. 26, 1960, 10,778/60
8 Claims. (Cl. 250—219)



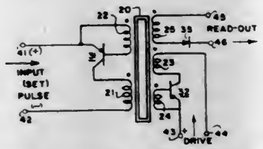
8. Apparatus for sensing the orientation of a web of mesh fabric during conveyance thereof along a processing feed path wherein the mesh fabric has sufficiently small openings to form a diffraction pattern from light transmitted therethrough, comprising a substantially point source of light, means for directing a beam of light from said source through the mesh fabric to form a diffraction pattern therefrom, means forming an enlarged diffractive image of said diffraction pattern at a selected image plane having a central maximum and at least a selected pair of maxima of corresponding order at angular positions about said central maximum which vary in determinable relation to the orientation of said fabric, and means for sensing said selected pair of maxima responsive to the angular positions thereof relative to selected reference positions therefor for generating signals indicative of the orientation of the fabric.

3,169,194
CURRENT CONTROL DEVICE
David W. Kermode, 107 Arondo, Ridgecrest, Calif.
Filed May 19, 1960, Ser. No. 30,389
4 Claims. (Cl. 307—18)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A current control device including first and second transistors, an A.C. potential source and a load, a first load circuit including said A.C. potential source, said load, the emitter and collector of said first transistor and a first diode to prevent current flow through the first load circuit in the conventional direction of current flow through said first transistor between its emitter and collector connected in series, a second load circuit including said A.C. potential source, said load, the emitter and collector of said second transistor and a second diode to prevent current flow through said second load circuit in the conventional direction of current flow through said second transistor between the emitter and collector connected in series, a first control circuit including current control means, a first D.C. potential source poled to generate a current flow through said first control circuit in a direction opposite to the conventional direction of current flow through said first transistor between its emitter and base, and the base and emitter of said first transistor connected in series, a second control circuit including current control means, a second D.C. potential source poled to generate a current flow through said second control circuit in a direction opposite to the conventional direction of current flow through said second transistor between the emitter and base, and the base and emitter of said second transistor connected in series, whereby the output of said A.C. potential source passes through said first load circuit during one polarity of its cycle and through said second load circuit during the other polarity.

3,169,195
MAGNETIC DELAY CIRCUITS FOR COMPUTER SYSTEMS
Tadashi Kikuchi, Sendai-shi, Japan, assignor to Tohoku Metal Industries, Ltd., Sendai, Japan, a corporation of Japan
Filed Dec. 27, 1960, Ser. No. 78,575
Claims priority, application Japan, Dec. 28, 1959, 34/40,867
6 Claims. (Cl. 307—88)

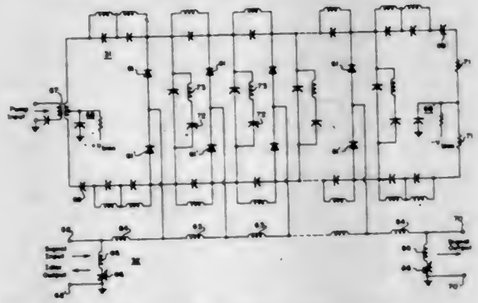



1. A computer magnetic delay circuit comprising a core of magnetic material having a high remanence characteristic relative to saturation, an input set and a drive-output set of windings on said core, a first transistor in circuit with said input winding set for building up an input pulse applied thereto to establish a first predeter-

mined saturated level of magnetization in said core, a second transistor in circuit with said drive-output winding set for building up a drive-pulse applied thereto to produce a second predetermined saturated level of magnetization in said core reversed to that established by said input pulse, and an output circuit associated with said drive-output winding set when the said drive-output circuit produces said core magnetization reversal in response to a drive pulse, a second input set winding on said core connected to said first transistor, said input set windings being connected to said first transistor and said core to drive said first transistor into cutoff when said core achieves said first predetermined state of saturation.

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**3,169,196**
**BACKWARD-WAVE PARAMETRIC AMPLIFIERS WITH WIDE-BAND TUNING**
**Seymour Okwit, Plainview, and Martin I. Grace, Flushing, N.Y., assignors to Cutler Hammer, Inc., Milwaukee, Wis., a corporation of Delaware**
**Filed Aug. 14, 1961, Ser. No. 131,400**
**10 Claims. (Cl. 307—88)**

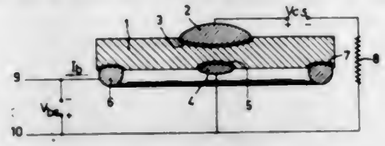


1. A backward-wave parametric amplifier which comprises a pair of transmission lines, distributed non-linear variable-reactance means coupling the transmission lines, and means for applying signal and pump frequencies in respective frequency bands to respective transmission lines to produce an idler frequency equal to the difference therebetween, said pump frequency being high compared to the signal frequency to produce an idler frequency which is higher than the signal frequency, said transmission lines having frequency-phase propagation characteristics producing an idler frequency group velocity opposite in direction to the signal frequency group velocity with the phase propagation constant at the idler frequency substantially equal to the algebraic difference of the phase propagation constants at the pump and signal frequencies, said frequency-phase propagation characteristics being predetermined to produce variations in the respective phase propagation constants which change in compensating directions in the respective signal and pump frequency bands to yield a substantially fixed idler phase propagation constant at an approximately fixed center frequency of the idler frequency passband.

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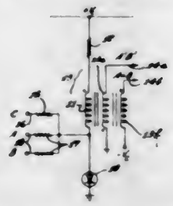
**3,169,197**
**SEMICONDUCTOR SWITCHING ARRANGEMENT WITH DEVICE USING DEPLETION LAYER TO INTERRUPT CURRENT PATH**
**Oscar Willem Memelink, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed Mar. 17, 1960, Ser. No. 15,692**
**Claims priority, application Netherlands, Apr. 28, 1959, 238,689**
**4 Claims. (Cl. 307—88.5)**

1. A circuit arrangement comprising a semi-conductor device including a high-resistance semi-conductive body, two spaced electrode connections of opposite-type conductivities to said body and defining with the intervening body portions a diode current path, a rectifying connection to said body and positioned so that when biased in the reverse direction, a depletion region is formed in said body originating at said rectifying connection and interrupting the said diode current path before punching-through to that one electrode of the said two electrodes whose conductivity-type is equivalent to said rectifying connection, means connected to the other electrode of the said two electrodes for maintaining it at a fixed potential at all times, means providing a voltage difference between the said other electrode and the said rectifying connection which biases the latter in the reverse direction thereby interrupting the diode current path, and means establishing a voltage difference between the said two electrodes including a voltage value above their breakdown voltage.



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**3,169,198**
**TUNNEL DIODE SYSTEMS FOR PULSE LOGIC**
**Bruce A. Kaufman, Los Angeles, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Filed Apr. 17, 1961, Ser. No. 103,558**
**11 Claims. (Cl. 307—88.5)**

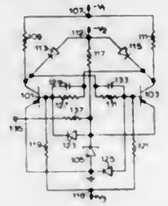


1. A pulse logic system comprising: circuit means including a tunnel diode which when triggered is effective to produce an output signal, clock means for producing clock pulses having a polarity for recurrently tending to trigger said tunnel diode, and means for receiving input signals and for selectively utilizing said input signals to therewith prevent triggering of said tunnel diode whereby a produced output signal represents a logical function defined by a Boolean equation in dependence upon occurrence of signals representing the true statuses of respective variables defined in said equation.

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**3,169,199**
**HIGH-SPEED TRANSISTOR SWITCHING CIRCUITS**
**Harry Putterman, Elizabeth, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware**
**Filed Nov. 1, 1962, Ser. No. 234,708**
**8 Claims. (Cl. 307—88.5)**

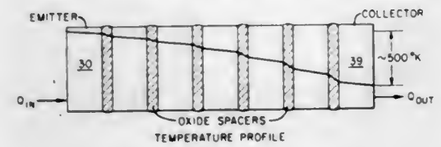
1. A flip-flop comprising a first amplifying circuit member having first, second and third electrodes and operative to control conduction between said first and second electrodes in response to the voltage between said first and third electrodes, a second amplifying circuit member having first, second and third electrodes and operative to control the conduction between said first and second electrodes in response to the voltage between said first and third electrodes, a source of D.C. power adapted to supply a D.C. voltage between first and second output terminals, a first resistance connected between the second electrode of said first amplifying circuit member and the first terminal of said source of D.C. power, a second resistance connected between the second electrode of said second amplifying circuit member and the first terminal of said source of D.C. power, a tunnel diode connected between the first electrode of said first amplifying circuit member and the second terminal of said source of D.C power, electrically conducting means connected between the first terminal of said second amplifying circuit member and the second terminal of said source of D.C. power, means driving the third terminal of said second amplifying circuit member with the voltage swings at the second terminal of said first amplifying circuit member, means driving the third electrode of said first amplifying circuit member with the voltage swings at the second electrode of said second amplifying circuit member, a back diode connected between the third electrode of said first amplifying circuit member and the second terminal of said source of D.C. power, a back diode connected between the third electrode of said second amplifying circuit member and the connection between said tunnel diode and the first electrode of said first amplifying circuit member, circuit means connecting said tunnel diode to have a low voltage stable state and a high voltage stable state, means including an input terminal for applying a trigger pulse to switch said tunnel diode alternately between said high voltage and low voltage states.





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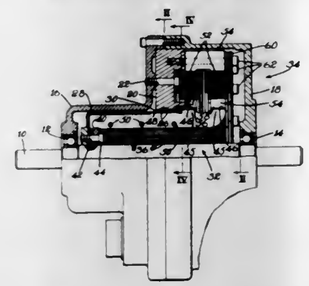
**3,169,200**
**THERMOTUNNEL CONVERTER**
**Fred N. Huffman, Baltimore, Md., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed June 22, 1962, Ser. No. 204,658**
**4 Claims. (Cl. 310—4)**




1. Apparatus for converting thermal energy into electrical energy comprising:
(1) at least one electron emissive surface;
(2) a second surface disposed closely adjacent thereto to define a gap of width less than 40 angstrom units between said surfaces;
(3) means for creating a temperature gradient between said surfaces, with said emissive surface the hotter to produce a flow of electrons to said second surface across said gap by means of the quantum mechanical tunnel effect; and
(4) means to thermally insulate said surfaces from each other across said gap.

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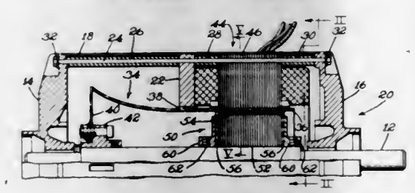
**3,169,201**
**ELECTROMAGNETIC HARMONIC DRIVE**
**Willard B. Spring, Topsfield, Donald F. Herdeg, Beverly, Herbert W. Proctor, Danvers, Gifford P. Scott, Beverly, and Norman R. Hussey, Amesbury, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey**
**Filed Feb. 15, 1963, Ser. No. 258,707**
**19 Claims. (Cl. 310—83)**



1. An actuating device comprising, in relatively rotatable and telescoping relation, an annular member and a flexible tubular member coaxial therewith, the flexible member being deflectable into elliptoidal shape for engagement in the localities of one of its axes and non-engagement at intermediate localities with said annular member, and wave generator input means for effecting said shape and for circumferentially propagating said localities of engagement whereby one of the members is rotatably driven with respect to the other, the wave generator input means including a plurality of magnetically responsive, radially acting elements distributed around the side of the flexible member remote from the annular member, and a stator consisting of a circular series of electromagnets for radially displacing said elements, the electromagnets being energizable sequentially to provide a plurality of substantially closed loops of flux to control the rotation of said driven member.

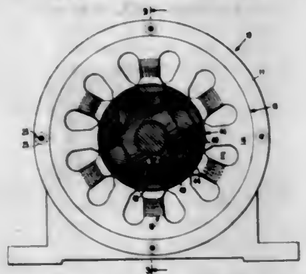
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**3,169,202**
**ELECTROMAGNETIC ACTUATORS HAVING CONTINUOUSLY ROTATING FIELD**
**Herbert W. Proctor, Danvers, Donald F. Herdeg, Beverly, Willard B. Spring, Topsfield, Hugh A. Robinson, Wenham, and Gifford P. Scott, Beverly, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey**
**Filed Feb. 15, 1963, Ser. No. 258,734**
**14 Claims. (Cl. 310—83)**



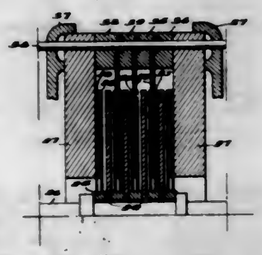
1. In an electromagnetic actuator, a reaction ring, stator means for providing a continuously rotating, phased sine wave flux field about the axis of the reaction ring, a radially deflectable tubular output member coaxial with the reaction ring, and armature means on the opposite side of said output member from said reaction ring and magnetically responsive to the flux field for radially deflecting the output member at spaced peripheral localities into operative engagement with the reaction ring whereby said spaced peripheral localities of engagement are progressed circumferentially to drive the output member.

3,169,203
SQUARE WAVE PULSE GENERATOR
Andrew J. Lavin, Union, and Wendell J. Wheeler, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 28, 1961, Ser. No. 98,885
9 Claims. (Cl. 310—156)



1. A square wave generator comprising: a stator having a predetermined number of arcuately spaced closed winding slots, each slot terminating at one end in close proximity to the inner periphery of said stator to provide a number of virtual stator teeth equal in number to said predetermined number of winding slots, said virtual stator teeth being separated by a sectional thickness which becomes magnetically saturated without shorting the magnetic fields of said virtual stator teeth; a rotatable rotor having polarized magnetic poles equal to half the number of virtual stator teeth, said poles having substantially the same width as said virtual stator teeth, the width of said poles and virtual stator teeth being substantially equal to one-half the pitch; and a number of coils equal to half the number of said virtual stator teeth, each coil threading a pair of winding slots so as to embrace a portion of the stator between said pair of winding slots whereby the magnetic circuit for the flux linking said coils has substantially the same reluctance of the magnetic circuit for the non-linking flux so that a voltage wave form with discontinuities is generated in each coil due to the time rate of change of flux linkages as said rotor and stator relatively rotate uniformly.

3,169,204
AXIAL AIR GAP MACHINES
Georges Morenco, Neuilly-sur-Seine, and Robert Dechet, Boulogne-sur-Seine, France, assignors to Normacem S.A., Paris, France, a body corporate of France
Filed June 10, 1960, Ser. No. 35,205
Claims priority, application France, July 31, 1959, 901,692, Patent 1,240,693
7 Claims. (Cl. 310—268)



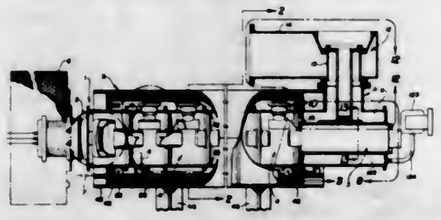
1. An axial air gap alternating current machine comprising a frame, a rotor shaft rotatably mounted in said frame, a plurality of axially-spaced annular stator elements of magnetic material arranged concentrically about said rotor shaft in axially spaced relation, a plurality of thin planar rotor disks arranged respectively intermediate said stator elements and spaced therefrom by planar air gaps, said rotor disks being secured to said rotor shaft, at least some of said stator elements each including on one face thereof a stator winding having thin flat coil sides secured to opposite faces of an insulation disk, each said insulation disk including at least one outer peripheral portion thereof extending radially outward beyond the periphery of said rotor disks and having at least one terminal of said stator winding on said outer peripheral portion located at an aperture extending axially through said outer peripheral portion, spacer sleeves located between the outer peripheral portions of adjacent insulation disks and aligned with the apertures in said outer peripheral portions, and a rod extending through said sleeves and outer peripheral portions for clamping said insulation disks together in parallel spaced relation as a unit.

3,169,205
FLUORESCENT LAMP MOUNT
Harold R. Kestner, Mayfield Heights, and Robert A. Kuebler, Cleveland Heights, Ohio, assignors to General Electric Company, a corporation of New York
Filed Apr. 5, 1961, Ser. No. 102,892
10 Claims. (Cl. 313—109)



7. A fluorescent lamp comprising an elongated tubular envelope internally coated with phosphor and having mounts sealed into the ends thereof, at least one of said mounts comprising a flared stem tube and an exhaust tube penetrating thereinto and forming a juncture therewith constituting a vitreous press, lead-in wires projecting through said press and supporting a filament within said lamp, and a blow-out aperture formed in one side of said press and communicating with said exhaust tube, said blowout aperture being flared outwardly and widened relative to the exhaust tube passage so that a gas jet issuing therefrom into said lamp at gas fill issues with reduced velocity and in a quai-axial direction relative to said envelope in order to avoid blowing phosphor off said envelope wall.

3,169,206
HIGH FREQUENCY TUBE METHOD AND APPARATUS
Richard B. Nelson, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 6, 1959, Ser. No. 832,402
10 Claims. (Cl. 315—5.39)

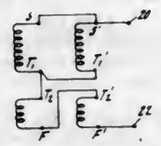


1. High frequency tube apparatus including, means for producing and directing a beam of charged particles over a predetermined beam path longitudinally of the tube, means for collecting the beam at the terminating end of the beam path, means forming an elongated vacuum envelope structure interposed and interconnecting said beam producing means and said beam collecting means in surrounding spatial relationship to said beam path therebetween, said elongated vacuum envelope being of generally hollow cylindrical form with generally uniform



outside dimensions and being composed of a plurality of metallic tubular segments of generally uniform outside transverse dimensions and made of material having greater strength and lower electrical conductivity than copper and joined end to end at gas tight seals therebetween, said gas tight seals being formed by outwardly directed annular mating flange portions carried at the joined ends of adjacent ones of said tubular segments, said flange portions having maximum transverse dimensions greater than the outside transverse dimensions of the immediately adjacent portions of said tubular segments such that said flange portions extend radially outwardly from the exterior surface of said tubular segments, said mating flange portions being sealed together in a gas tight manner, and the inside surfaces of a plurality of said tubular segments defining the inside walls of a plurality of cavity resonators successively spaced apart along the beam path in electromagnetic energy exchanging relationship with the beam passable therethrough, whereby said segmented vacuum envelope forms a composite rigid tube body and vacuum envelope structure having gas tight joints readily accessible from the exterior thereof facilitating repair and replacement of tube elements.

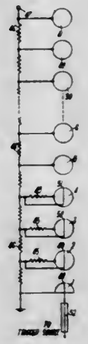
3,169,207
ELECTROMAGNETIC DEFLECTION YOKE HAVING INTERCONNECTED MULTIFILAR STRANDS
Maximilian J. Obert and Robert L. Barbin, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,535
8 Claims. (Cl. 315—27)



1. In an electromagnetic deflection yoke for a cathode ray tube, said yoke having a plurality of windings at least one of which comprises in combination:
a plurality of strands of wire multifilar wound in a plurality of winding turns, each strand of said one winding having a plurality of sections between the ends thereof to which independent electrical connections may be made, the sections of one strand having corresponding identical sections in all other strands;
means for connecting a first set of corresponding sections of said strands in parallel;
a pair of deflection current input terminals for said one winding; and
means for connecting said first set of corresponding parallel connected sections in series with another section of said one winding between said pair of deflection current input terminals to control the amount and distribution of the magnetic flux produced by said one winding.

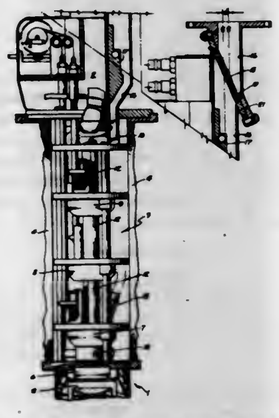
3,169,208
SEQUENCE SPARK GAP SYSTEM WITH PERFORATED GAP ELECTRODES
William Barrett Harrington, Grotton, Oldham, England, assignor to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed June 12, 1962, Ser. No. 201,926
Claims priority, application Great Britain, June 22, 1961, 22,546/61
10 Claims. (Cl. 315—36)

1. A sequence spark gap device comprising a stack of series connected spark gaps each having a pair of electrodes, said stack of spark gaps being adapted to be connected across a high voltage source with the electrodes of said spark gaps arranged in a single line, at least one spark gap at one end of said stack being provided with a trigger electrode, the electrodes of each of said spark gaps not provided with a trigger electrode including a



portion made of perforated metal to provide a path for ultra-violet radiation between each such spark gap and the preceding spark gap, and a plurality of series connected resistances connected across said stack of series connected spark gaps for determining the voltage across each of said spark gaps.

3,169,209
ELECTRON TUBE APPARATUS HAVING SLANTED OUTPUT WINDOW BETWEEN OFFSET WAVEGUIDES
Richard B. Nelson, Los Altos, Calif., assignor to Varian Associates, San Carlos, Calif., a corporation of California
Continuation of application Ser. No. 19,710, Apr. 4, 1960, now abandoned, which is a division under Rule 45(b) of application Ser. No. 546,624, Nov. 14, 1955, now Patent No. 2,939,036, dated May 31, 1960. This application May 1, 1963, Ser. No. 277,332
4 Claims. (Cl. 315—39.3)

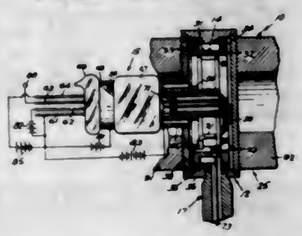


1. A high frequency electron tube apparatus including: means for forming and projecting a beam of electrons over an elongated beam path; means arranged along the beam path for electromagnetic interaction with the beam; means for abstracting high frequency wave energy from the beam for propagation to a suitable load; said abstracting means including a gastight wave permeable window assembly including, a first section of hollow waveguide having a first axial center line, a second section of hollow waveguide having a second axial center line, a third section

of hollow waveguide joining together said first and second sections of guide and forming a transition section between said first and second guides with the first and second center lines displaced from each other in the direction of the electric field lines, a platelike wave permeable gastight window member sealed across said third transition section of guide, said platelike window member being inclined in said transition guide with the plane of said platelike window being disposed at a substantial angle to the axial center lines of said first and second guides, and said transition section of guide having a height taken in the direction of the electric field vector in said guide which is greater than the height of said adjoining first and second sections of guide whereby said window assembly is rendered substantially reflectionless over a broad band of frequencies.

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**3,169,210**
**TRAVELING WAVE TUBE WITH NOTCHED INTERDIGITAL SLOW WAVE STRUCTURE**
**Roy A. Paananen, Needham, Mass., assignor to Raytheon Company, a corporation of Delaware**
**Filed May 5, 1958, Ser. No. 735,084**
**5 Claims. (Cl. 315—39.3)**

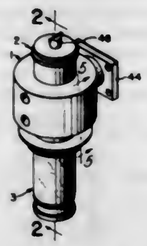


4. A traveling wave electron discharge device comprising an interdigital slow wave energy propagating structure producing in the region adjacent thereto fields of electromagnetic wave energy being propagated thereby, an electrode spaced from and substantially coextensive with said slow wave structure, and means for directing electrons in a beam along said region in energy exchanging relation with said fields of wave energy for collection by one end of said structure, said one end of said structure comprising a pair of elongated base members spaced from one another and a plurality of periodically spaced elements extending from respective oppositely disposed base members parallel to said region and having one extremity free, each of said elements having a step at said one extremity facing said beam and confined to a region adjacent said free extremity, said notch serving to position said free extremity further from said electrode than the remainder of said corresponding element as the free extremity thereof is approached.

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**3,169,211**
**MAGNETRON**
**Jerome Drexler, New Providence, Robert Angle, Scotch Plains, and Fred A. Foulner, Green Village, N.J., assignors to S-F-D Laboratories Inc., Union, N.J., a corporation of New Jersey**
**Filed Apr. 26, 1961, Ser. No. 105,715**
**17 Claims. (Cl. 315—39.77)**

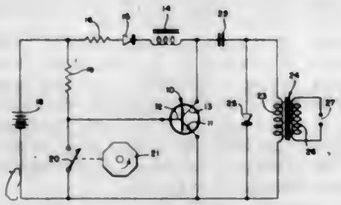
14. In a magnetron apparatus, a body portion, an outer cavity resonators sustaining a $TE_{0,1,1}$ mode of oscillation and having a cylindrical inner wall, a plurality of cavity resonators within said inner wall, means for locking the $\pi$ mode of oscillation of said plurality of cavity resonators to said $TE_{0,1,1}$ mode of said outer cavity resonator, said means including axial slots extending through said inner wall member at alternate ones of said inner cavity resonators, and vanes defining said inner cavity resonators, each of said vanes being approximately an electrical quarter wavelength long at the frequency of said outer cavity resonator, and a ring of lossy material disposed adjacent the ends of said slots for loading of unwanted modes of oscillation of said inner cavity resonators only, said unwanted modes being characterized by storage of energy in said slots, said ring of lossy material being disposed within an annular groove in the said body portion of the tube, said ring of lossy material loosely fitting within said



groove by having a thickness slightly less than the width of said groove when cold, and the cold clearance between said lossy ring and the outer ring encompasing side wall of said groove being dimensioned such that as the lossy ring is heated by absorption of energy, in use, the ring expands radially outwardly to make physical contact with the outer ring encompassing side wall of said groove to produce thermal conduction from said lossy ring to the body portion of the tube.

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**3,169,212**
**TRANSISTORIZED IGNITION SYSTEM**
**Robert K. Walters, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed July 31, 1961, Ser. No. 127,988**
**6 Claims. (Cl. 315—223)**

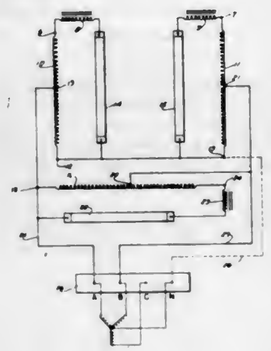


1. An electrical circuit comprising an inductor and a semiconductor switching means connected in series across a source, control means for periodically cycling said switching means between conductive and non-conductive conditions, a capacitor and a unidirectional device connected in series across said source and across said switching means, and output means shunting said unidirectional device.

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**3,169,213**
**FLUORESCENT LIGHTING METHOD AND MEANS**
**John Shaheen, 119 Farquhar St., Roslindale, Mass.**
**Filed July 19, 1962, Ser. No. 211,059**
**6 Claims. (Cl. 315—137)**

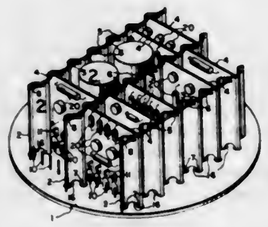
1. Lighting apparatus comprising: first, second, and third transformers; corresponding first, second, and third arc discharge lamps connected across the secondaries of said transformers; a generator having Y connected coils; electrical connections between the primary windings of said first and second transformers at one terminal thereof and the common terminal of said coils; electrical connections between the primary windings of said first and second transformers at the other terminals thereof and the other terminal respectively of first and second ones



of said coils, and electrical connections connecting the primary of said third transformer across said first and second ones of said coils.

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**3,169,214**
**MOUNTING DEVICE FOR CIRCUIT BOARDS**
**Richard M. Whitehorn, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California**
**Filed May 10, 1962, Ser. No. 193,710**
**6 Claims. (Cl. 317—99)**



1. An electronic assembly mounting system comprising: a mother board; at least one integral side mount structure formed as a plurality of zig-zag guide fences continuously disposed upon said mother board to receive a plurality of circuit boards laterally extending between adjacent guide fences; a plurality of tabs extending outwardly from said guide-fences, said mother board having apertures for receiving and securing said tabs therein to ensure a firm mounting of said guide-fences upon said mother board.

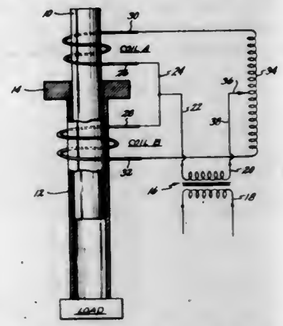
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**3,169,215**
**SOLENOID VALVE ACTUATOR**
**Philip Bliss, Newington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Dec. 18, 1962, Ser. No. 245,564**
**7 Claims. (Cl. 317—181)**

1. In a proportional solenoid, an axial flux concentrating core, two coils surrounding said core at axially spaced locations thereon, a conducting ring on said core between said coils, means for energizing each of said coils from an A.C. source to create respective repulsive forces on said



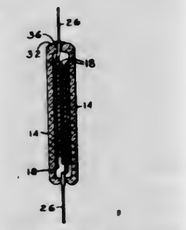
ring in opposite directions, means for operatively connecting said ring to a device to be actuated, and means to vary



the power input to one of said coils with respect to the other of said coils.

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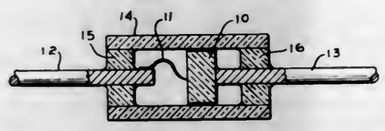
**3,169,216**
**CAPACITOR WITH COMPOSITE LEADS OF DIFFERENT METALS**
**Margaret M. Layton, Corning, Robert B. Randels, Painted Post, and George F. Stockdale, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York**
**Filed May 5, 1959, Ser. No. 811,186**
**5 Claims. (Cl. 317—261)**



1. A glass encapsulated capacitor comprising a capacitor element composed of electrodes separated by dielectric material and electrically conducting leads attached to the electrodes and extending outwardly through the glass encapsulation, each lead being a composite member composed of two distinct parts, one part being a metal that is essentially rigid, attached to the electrodes and fusion sealed directly to the encapsulating glass, and the second part being composed of a different metal that is flexible and integrally attached to the first part external of the glass encapsulation.

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**3,169,217**
**OPAQUE GLASS ENCLOSURE OF SPECIFIC COMPOSITION FOR SEMICONDUCTOR DEVICE**
**Robert H. Dalton, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York**
**Filed July 1, 1959, Ser. No. 824,369**
**3 Claims. (Cl. 317—234)**

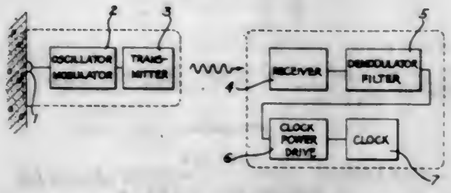


1. A sealing glass opaque to radiation with wave lengths of 0.2–2.0 microns and suitable for sealing to copper-sheathed nickel-iron wire, said glass consisting essentially

by weight as computed from the batch of 0–15% $Na_2O$, 0–20% $K_2O$, 12–20% $R_2O$, 1–10% CaO, 0–10%, MgO, 1–10% RO, 0–5% $Al_2O_3$, 2–5% cobalt oxide computed as $Co_3O_4$, 2–10% iron oxide computed as $Fe_2O_3$, 0.2–1.1% reduced sulfur computed as free sulfur, up to 3% reduced carbon computed as free carbon, and 65–76% $SiO_2$.

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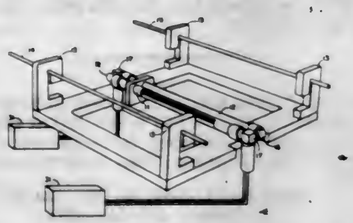
**3,169,218**
**DRIVING SYSTEM FOR ELECTRIC CLOCKS**
Robert Walter Reich, Rotackerstrasse 2, Freiburg im Breisgau, Germany
Filed Nov. 21, 1960, Ser. No. 70,736
Claims priority, application Germany, Nov. 26, 1959, R 26,799
11 Claims. (Cl. 318—16)




11. A driving system for electrically impelled clocks comprising: a transistorized blocking oscillator having terminal means adapted to be connected to the power line and continuously producing oscillations having a frequency well above said power frequency but being modulated therewith; an electromagnetic wave transmitter connected to and driven by said oscillator; a receiver circuit network associated with an electric clock and positioned remotely from the transmitter and including a receiver responsive to said electromagnetic waves; a rectifier connected to said receiver; a capacitor connected to said rectifier; impelling means for said clock including a D.C. operated driver coil connected to said capacitor and being supplied with energy only from said receiver through said rectifier; and means for periodically unidirectionally discharging said capacitor through said driver coil.

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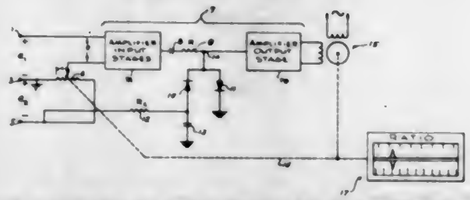
**3,169,219**
**OPEN WIRE DIRECTIONAL ELECTROMAGNETIC COUPLER**
Richard K. Royce, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 29, 1961, Ser. No. 120,801
8 Claims. (Cl. 324—95)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for wave energy analysis in a parallel two wire transmission line system, comprising:
first and second directional coupler means for coupling wave energy from respective wires in said system;
support means adapted to support said first and second directional couplers in juxtaposition, such that substantially all the wave energy coupled by each of said directional couplers is from its respective wire of said parallel wire system;
measuring means coupled to said first and second directional couplers for indicating the wave energy coupled thereby,
said first and second directional couplers with said measuring means being capable of discriminating between the forward and reflected wave energy in said system and providing an indication of one of same.

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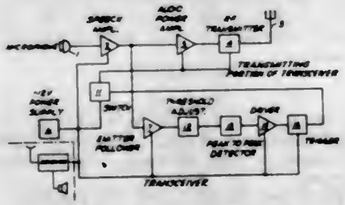
**3,169,220**
**SIGNAL RATIO MEASURING SYSTEM PROVIDING CONSTANT SERVO LOOP GAIN**
Andres O. Holdo, Pasadena, Calif., assignor to F. L. Moseley Co., a corporation of California
Filed Dec. 21, 1959, Ser. No. 860,774
3 Claims. (Cl. 324—140)




1. In a system for measuring the ratio between the magnitudes of first and second electrical signals the combination comprising an input circuit for receiving said electrical signals, said input circuit including adjustable balancing means for establishing a condition of balance between said first and second electrical signals, a servo amplifier coupled to said input circuit for receiving an electrical signal from said input circuit when a condition of unbalance exists between said first and second electrical signals, variable attenuator means whose impedance is a function of the current therethrough coupled to said servo amplifier to control the gain thereof, means energizing said variable attenuator means with a current whose magnitude varies in accordance with the variations in magnitude of said second electrical signal to vary the gain of the servo amplifier as a function of the second electrical signal and independently of any variations in magnitude of said first electrical signal, servo positioning means coupling said servo amplifier to said adjustable balancing means for establishing a condition of balance between said first and second electrical signals, and means coupled to said adjustable balancing means for indicating the ratio between said first and second electrical signals.

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**3,169,221**
**AUDIO ACTUATED SWITCH FOR TRANSCEIVER TRANSMITTER**
Armand J. Franchi, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 21, 1962, Ser. No. 174,752
6 Claims. (Cl. 325—15)

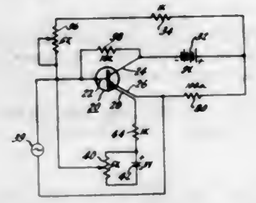



1. A transceiver comprising means for transmitting and receiving audio signals, said transmitting means comprising means responsive to said audio signal for modulating a carrier signal and transmitting said modulated signal power, means for supplying power to said transmitting means, switch control means comprising peak to peak detector means for providing a voltage responsive to the syllabic rate of said audio signal, driver means for amplifying said voltage, transistorized trigger means connected to said driver for providing a switch operating signal responsive to said amplifying voltage, and siwtching means operated responsive to said switch operating signal for connecting said power means to said transmitting means to supply operating power thereto, thereby causing transmission of said modulated signal.



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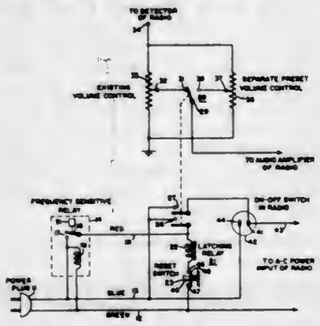
**3,169,222**
**DOUBLE-EMITTER TRANSISTOR CIRCUITS**
Leonard M. Krugman, Haddonfield, N.J., and Robert C. Graham, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Dec. 30, 1960, Ser. No. 79,850
10 Claims. (Cl. 325—319)



3. A semiconductor circuit comprising in combination a transistor having a first emitter electrode, a second emitter electrode, a base electrode and a collector electrode; an impedance element connected between said first emitter and base electrodes for developing a bias therebetween; means including said impedance element for connecting said first emitter, base and collector electrodes in an amplifier circuit configuration; means including said impedance element for direct current conductively connecting said collector electrode to said second emitter electrode; and control circuit means coupled to said second emitter electrode for controlling the magnitude of second emitter electrode current whereby a bias is developed across said impedance element to control the magnitude of current in said first emitter electrode.

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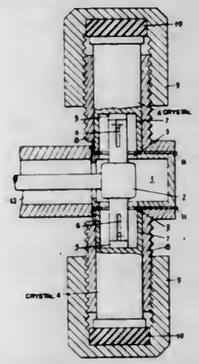
**3,169,223**
**APPARATUS FOR ENERGIZING RADIO RECEIVER IN RESPONSE TO POWER LINE ALARM SIGNAL**
Le Roy F. Hudson, Jr., Owensboro, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 10, 1960, Ser. No. 61,564
10 Claims. (Cl. 325—394)




1. An alarm arrangement for turning on a sound-producing utilization device in response to the occurrence of an alarm signal of predetermined frequency impressed across two wires of a utility service, said alarm arrangement comprising frequency sensitive actuating means responsive to the predetermined frequency of said alarm signal, means for connecting said actuating means across said two wires of the utility service for receiving said alarm signal, means connecting said actuating means to said utilization device for causing said utilization device to turn on when said actuating means responds to said alarm signal, adjustable volume control means adapted, when actuated, to establish the sound of said device at a desired volume as determined by pre-set adjustment of the volume control means, and means connecting said actuating means to actuate said adjustable volume control means when said actuating means responds to said alarm signal.

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**3,169,224**
**MICROWAVE MIXER**
Peter Charlton Butson, Harrow, England, assignor to The General Electric Company Limited, London, England
Filed July 20, 1961, Ser. No. 125,571
Claims priority, application, Great Britain, July 25, 1960, 25,881
3 Claims. (Cl. 325—446)



1. Microwave apparatus comprising: two signal sources arranged during operation to supply first and second signals which are to be mixed; a mixer including a waveguide having an input end to which both the first and second signals are supplied; a continuously conductive post positioned transversely across the waveguide; two crystals which are similar to one another and which are coupled in opposition to the two ends respectively of the post; and an output conductor which is connected to the post and which is positioned such that the dominant waveguide mode is not symmetrical about said output conductor; during operation the required output signal, which is substantially free of the signals being mixed, being supplied over said output conductor.

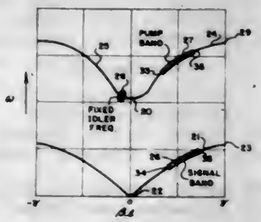
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**3,169,225**
**BACKWARD WAVE PARAMETRIC AMPLIFIER WITH FIXED IDLER FREQUENCY AND PHASE PROPAGATION CONSTANT**
Seymour Okwit, Plainview, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 10, 1962, Ser. No. 216,196
6 Claims. (Cl. 330—4.6)

1. A backward-wave parametric amplifier which comprises
(*a*) a signal-frequency transmission line having a forward-wave propagation characteristic,
(*b*) a pump-frequency transmission line having a band-pass forward-wave propagation characteristic,
(*c*) distributed non-linear variable-reactance means coupling the transmission lines,

(*d*) and means for applying signal and pump frequencies to respective transmission lines at the adjacent ends thereof to produce signal and pump frequency waves propagating in the same direction in the lines and produce an idler frequency,

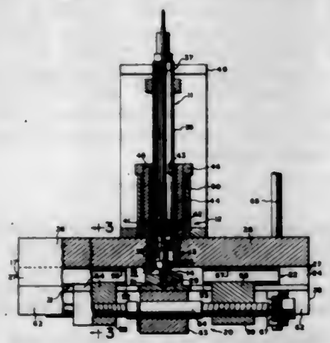
(*e*) said pump frequency being high compared to the signal frequency to produce an idler frequency equal to the difference therebetween which is higher than the signal frequency,




(*f*) said lines having frequency-phase characteristics yielding a phase propagation constant at said idler frequency substantially equal to the algebraic difference of the phase propagation constants at the pump and signal frequencies, said frequency-phase characteristics being predetermined to yield respective phase propagation constants which change in the same direction in respective signal and pump frequency bands with approximately a constant small difference therebetween to yield a small idler phase propagation constant at an approximately fixed center frequency of the idler frequency passband lying near the low-frequency cutoff region of the pump-frequency transmission line in which passband the idler frequency propagates in a direction opposite to the pump frequency.

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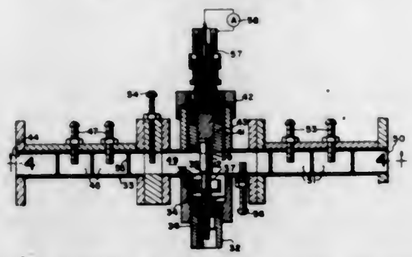
**3,169,226**
**BROADBAND CAVITY PARAMETRIC AMPLIFIER WITH TUNING**
**Henry T. Closson, Berkeley Heights, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey**
**Filed June 25, 1962, Ser. No. 204,960**
**7 Claims. (Cl. 330—4.9)**



1. An amplifier comprising: a first cavity resonator, a non-linear capacitance device having two end terminals and disposed in said cavity resonator substantially parallel to the electric field of the dominant mode of said cavity resonator, means for mounting said non-linear capacitance device within said cavity resonator, means connecting to one of said terminals of said capacitance device and protruding through an aperture in the wall of said cavity resonator to form a center conductor of a coaxial line, means for providing a low pass filter in said coaxial line, means for feeding low frequency energy into said first cavity resonator and non-linear capacitance device through said low pass filter, means for coupling high frequency pump energy into said cavity resonator and non-linear capacitance device, said first cavity resonator being resonant at a first high frequency to supply high frequency energy to said non-linear capacitance device, means providing a pair of spaced apart waveguide filters in said first cavity resonator straddling said non-linear capacitance device for defining therebetween a second cavity resonator which is tunable to a frequency lower than said first high frequency by movement of at least one of said waveguide filter means relative to the other whereby said first and second resonator frequencies can be tuned without mutual interference.

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**3,169,227**
**DIODE-CAVITY PARAMETRIC AMPLIFIER**
**Henry T. Closson, Union, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey**
**Filed Mar. 10, 1961, Ser. No. 94,929**
**2 Claims. (Cl. 330—4.9)**



1. An amplifier comprising: a cavity resonator, a varactor having two end terminals and disposed in said cavity resonator substantially parallel to the electric field of the dominant mode of said cavity resonator, means for mounting one of said terminals of said varactor from said cavity resonator, the other of said terminals protruding through an aperture in the wall of said cavity resonator to form a center conductor of a coaxial line for feeding signal wave energy to be amplified into said varactor, means for coupling high frequency pump energy into said cavity resonator and said varactor to produce an idler frequency component and to amplify the signal wave energy, means for forming a low pass filter in said coaxial line for trapping pump and idler power in said cavity resonator, broad pass band filter means coupled to said cavity resonator to define a broadband resonant idler circuit, means forming a broadbanding network coupled to said coaxial line for broadbanding said input coaxial line circuit, a D.C. circuit interconnecting the two end terminals of said varactor and including a high resistive element in series with said D.C. circuit for self-biasing of said varactor for D.C. voltage whereby said amplifier is rendered less responsive to random fluctuations in the amplitude of the pump energy.

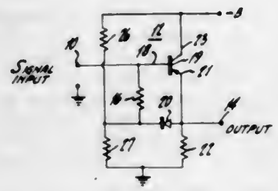
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**3,169,228**
**TRANSISTOR AMPLIFIER WITH DIODE FEEDBACK CIRCUIT**
**Joseph O. Sinniger, Smithtown, N.Y., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed June 26, 1961, Ser. No. 119,592**
**9 Claims. (Cl. 330—24)**

1. A signal translating circuit comprising a transistor having base, emitter and collector electrodes, an output



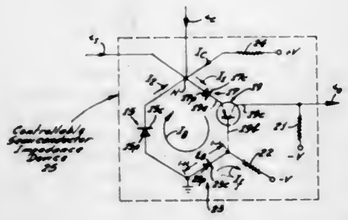
circuit connected between said emitter and collector electrodes being adapted to receive a source of energizing potential, said output circuit including an impedance element connected between said emitter electrode and a junction point, means including an impedance element




for applying an input signal between said base electrode and said junction point, and means for feeding back signals from said emitter electrode to said base electrode comprising a forward biased diode and said last mentioned impedance element connected between said emitter electrode and said base electrode.

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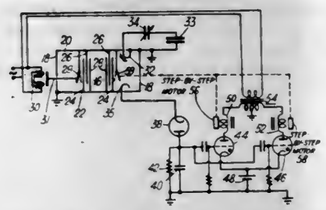
**3,169,229**
**AGC SYSTEM INCORPORATING CONTROLLABLE SEMICONDUCTOR SHUNT-TYPE ATTENUATOR**
**Eduardo T. Ulzurrun, Hollywood, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Filed Aug. 18, 1961, Ser. No. 132,389**
**14 Claims. (Cl. 330—24)**




1. A controllable semiconductor impedance device comprising at least two semiconductor diodes having non-linear voltage vs. current characteristics and being connected in series in a like-poled direction so as to form first and second parallel branches, each branch including one diode, means providing a first bias current flowing through said branches to provide a forward bias current for said diodes, means applying a second bias current to a node located between said branches and intermediate the two semiconductor diodes to establish an operating point for said device, said branches being connected so as to provide a return path for currents applied to said node, means for applying a control current to said node to vary the currents flowing in said diodes so as to vary the transfer impedance of said device, means for applying a signal current to said node by way of a path other than through either of said diodes, and means coupled to one of said branches for providing an output signal in response to the proportion of said signal current flowing in one of said diodes, the combined current vs. voltage characteristic of said two branches and said bias currents being chosen so that the transfer impedance of said impedance device varies in a predetermined manner in response to said control current.

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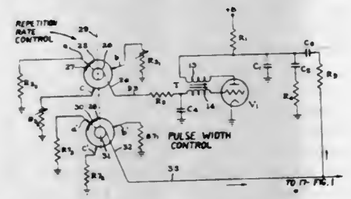
**3,169,230**
**DIELECTRIC HEATING APPARATUS WITH AUTOMATIC TUNABLE RESONANT CIRCUIT**
**Christopher Evan Mundell Tibbs, Earley, England, assignor to Radio Heaters Limited, Wokingham, England, a British company**
**Filed July 7, 1960, Ser. No. 41,307**
**Claims priority, application Great Britain, July 10, 1959, 23,809/59**
**8 Claims. (Cl. 331—9)**



1. Dielectric heating apparatus comprising: a radio frequency oscillator stage of high frequency stability; an output stage driven from said oscillator stage and having a tunable tank circuit; means which cyclically varies the resonant frequency of said tunable tank circuit about its mean frequency by a predetermined amount; and tuning means responsive to changes in the output levels of the tank circuit at the two extreme frequencies of said cyclic variation, resulting from the departure of the mean resonant frequency from the oscillator frequency, to adjust said tunable tank circuit so that its mean resonant frequency is restored in the direction of the oscillator frequency.

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**3,169,231**
**TELEMETERING CIRCUIT**
**James R. Cosby and Herbert K. Janssen, Baltimore County, Md., assignors to The Bendix Corporation, a corporation of Delaware**
**Original application Jan. 24, 1957, Ser. No. 636,065, now Patent No. 2,957,146, dated Oct. 18, 1960. Divided and this application May 24, 1960, Ser. No. 31,346**
**2 Claims. (Cl. 331—65)**

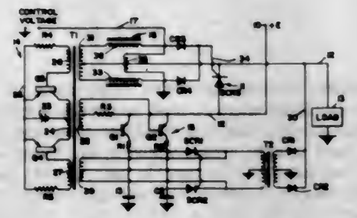



1. In a telemetering device, a measuring circuit including an audio oscillator provided with an electron discharge device having input and output electrodes coupled in positive feedback relation to generate sustained oscillations, a direct current leak circuit returning said input electrode to ground, said leak circuit including a plurality of variable resistance elements each responsive to variations in a condition to be measured, a first capacitor, and first switching means sequentially connecting said resistance elements in circuit with said capacitor thereby to determine the repetition rate of the oscillator as a function of changes in the condition being measured, a load resistor in the output electrode circuit of said electron discharge device, a pulse shaping network connected in said output electrode circuit for shaping the output pulses of the audio frequency oscillator into a substantially rectangular waveform, and differentiating means for differentiating said rectangular pulses, said differentiating means including a second capacitor, a plurality of impedances of fixed value and second switching means for

connecting a particular one of said impedances in circuit with said second capacitor to provide output pulses of a predetermined effective length depending upon the value of connected impedance, said second switching means being synchronized with said first switching means so that the effective output pulse length identifies each condition being measured.

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**3,169,232**
**CONTROLLED RECTIFIER CIRCUIT**
**Robert G. Engman, Los Alamitos, and Howard W. Collins, Long Beach, Calif., assignors to Crydom Laboratories, Incorporated, a corporation of California**
**Filed June 3, 1960, Ser. No. 33,805**
**1 Claim. (Cl. 332—9)**

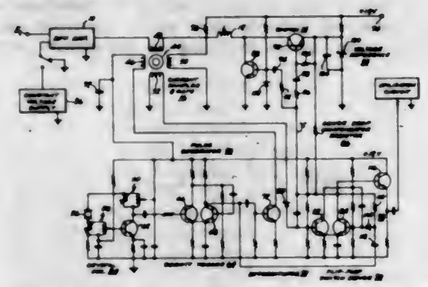


A controlled rectifier circuit having an input lead for connection to a D.-C. source and an output lead providing controlled D.-C. output power in accordance with said D.-C. source, comprising, in combination: a controlled rectifier means connected between said input lead and output lead; an auxiliary A.-C. power source; an "off" control means connected between said A.-C. power source and said controlled rectifer means for reversing the voltage across said controlled rectifier means thereby terminating passing of power through said controlled rectifier means at the end of each half cycle of said A.-C. power; and an "on" control means connected between said A.-C. source and said controlled rectifier means for initiating the passing of power through said controlled rectifier means at a point in time between the beginning of each half cycle of said A.-C. power and said end of each half cycle, said "on" control means including first and second switching means for initiating conduction of said controlled rectifier means to provide D.-C. pulses, said first and second switching means comprising magnetic reactors and a variable current carrying coil in flux coupling relationship with said reactors and connected to said D.-C. source for varying the point in time at which saturation switching of said reactors takes place whereby the leading edges of said D.-C. pulses are variable in time so that output power pulses are provided having pulse widths which are modulated by said D.-C. source to vary the average value of said controlled D.-C. output power on said output lead.

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**3,169,233**
**VOLTAGE TO FREQUENCY CONVERTER**
**Samuel A. Schwartz, 11490 Crest Ridge Drive, Los Altos, Calif.**
**Filed Dec. 17, 1962, Ser. No. 245,074**
**18 Claims. (Cl. 332—12)**

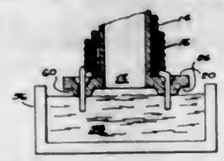
17. A voltage to frequency converter comprising:
an inductive means;
means for coupling a voltage input signal to said inductive means, for producing an inductive current denoting a charging period;
means for providing clock pulses;
means for developing a first waveform portion during the charging period of said inductance, measured over discrete time intervals defined by said clock pulses;
means for reversing the inductive current denoting a discharge period;



means for developing a second waveform portion during the discharge period of said inductance, measured by the interval between two clock pulses;
said waveform portions forming a complete cycle, a plurality of such cycles providing a frequency modulated signal related to the voltage input signal.

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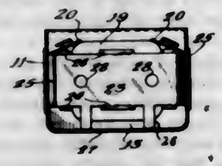
**3,169,234**
**COIL FORM, AND COILS AND TRANSFORMERS MOUNTED THERETO**
**John O. Ronsheim, Lombard, Ill., assignor to Coilcraft, Inc., Cary, Ill., a corporation of Illinois**
**Filed Aug. 17, 1959, Ser. No. 834,307**
**4 Claims. (Cl. 336—192)**



1. A circuit component comprising a coil form having a post and an insulating skirt at one end thereof made of a thermoplastic material having the general characteristics of nylon and polyethylene including having a melting point below the temperature of a tinning bath, said skirt having integral bosses on that side thereof away from said post, and an electrical winding about said post having free ends extending through said bosses and beyond said skirt, the portions of the ends of said winding beyond said skirt being tinned and the portions of said ends within said skirt being embedded in a solidified melt of said bosses, said embedment of said ends being at least a major means of securing said winding to said form.

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**3,169,235**
**HEAT DISSIPATING BALLAST CONSTRUCTION EMBODYING CORE CLAMP HAVING COPLANAR SPACER LUGS**
**Nicholas Ouletta, Melrose Park, Ill., assignor to Jefferson Electric Company, Bellwood, Ill., a corporation of Delaware**
**Filed Dec. 21, 1961, Ser. No. 161,178**
**4 Claims. (Cl. 336—210)**



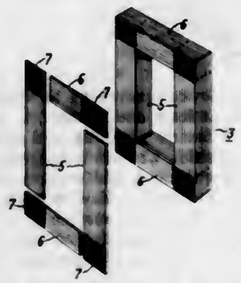
1. In a potted ballast for a gaseous discharge device, which ballast includes an elongate core structure com-



prising a plurality of lamination stacks, the combination of a casing in which said core structure is located, the plane of the laminations of said lamination stacks being disposed parallel to the bottom wall of said casing, a core clamp located at each end of said core structure and having clip portions engaging with said lamination stacks to maintain them in abutting engagement, and supporting legs formed integrally with said core clamps and providing edge engagement with the surface of said bottom wall for supporting said core structure in said casing during the potting operation, said legs extending in a direction perpendicular to the plane of laminations of said lamination stack, and being located substantially in the plane of the end surface of said lamination stack, and being spaced from each other to provide an opening therebetween for the flow of potting compound.

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**3,169,236**
**MAGNETIC CORE FOR ELECTRICAL INDUCTION APPARATUS WITH REDUCED MAGNETIC LOSSES**
**James M. McQuade, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York**
**Filed Apr. 17, 1961, Ser. No. 103,226**
**4 Claims. (Cl. 336—218)**

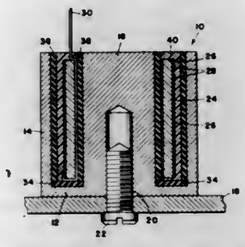


1. In an electrical transformer, a substantially rectangular magnetic core comprising a plurality of stacked laminations of grain-oriented silicon steel, the direction of orientation of the grains being substantially parallel to the long sides of said laminations, there being magnetic flux passing through said core when the transformer is in operation, said flux traveling in the direction of grain orientation through the major portion of said core, and said flux traveling in the cross-grain direction at the corners of said core, an electrical insulating coating consisting essentially of beta calcium orthosilicate bonded to the surface of said laminations only at the corners where flux travels in the cross grain direction, whereby core losses and magneto-strictive strains caused by flux traveling across the grain when said apparatus is energized are reduced.

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**3,169,237**
**ELECTRICAL RESISTOR DEVICE**
**Melvin A. Thom, 410 Ponce de Leon, Clearwater, Fla.**
**Continuation of application Ser. No. 772,368, Nov. 6, 1958. This application Jan. 4, 1963, Ser. No. 249,531**
**8 Claims. (Cl. 338—253)**

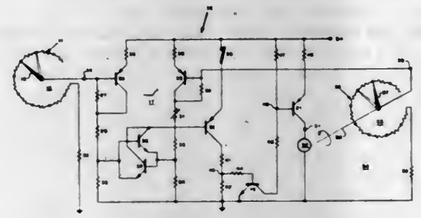
4. A compact, light-weight electrical resistor adapted to operate at a substantially fixed resistance value, said resistor comprising: a heat conductive metal housing formed with a flat bottom, a substantially solid, generally cylindrical, center post normal to and in thermally conductive relation with said bottom, and a solid outer wall in thermally conductive relation with said bottom and surrounding said post to define a recess between said post and said outer wall; a generally cylindrical, hollow, resistor coil housed in said recess and disposed so that each of the turns of said coil encircles said post; terminal leads extending from said coil; electrical insulating material wholly surrounding and enclosing said coil and filling the space in said recess thereabout; and means for



securing said housing bottom to a thermally conductive support for conducting and dissipating heat from said unit to said support, whereby said unit normally operates below a relatively low maximum temperature.

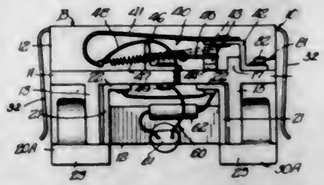
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**3,169,238**
**INDICATING SYSTEM**
**Samuel Pure, Rydal, Pa., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Dec. 1, 1959, Ser. No. 856,625**
**3 Claims. (Cl. 340—187)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



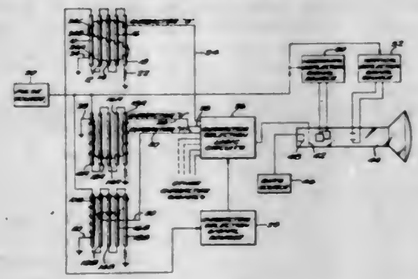
1. An indicating system comprising a bistable multivibrator having an input circuit and a pair of output circuits, an input terminal adapted to be coupled to a pulse source, a pair of multivibrator output terminals, circuit means coupling the input circuit of said multivibrator to said input terminal, circuit means respectively coupling the output circuits of said multivibrator to said multivibrator output terminals, a pulse counter including a counter tube provided with a plurality of anodes and a corresponding plurality of grids, circuit means respectively coupling said multivibrator output terminals to alternate counter tube grids, a plurality of resistors each having a pair of terminals and equal in number to said anodes, circuit means respectively connecting one terminal of each of said resistors to an anode, an output terminal, and circuit means connecting the other terminal of each of said resistors in common to said output terminal whereby the resistance at said output terminal is a function of the number of pulses from said pulse source, variable impedance means; and actuating means operable to vary the impedance of said variable impedance means; an error detector and servo amplifier system including a first input circuit coupled to said output terminal, a second input circuit coupled to said variable impedance means, and an output circuit; and means coupling said means, and an output circuit; and means coupling said actuating means to said output circuit whereby the impedance of said variable impedance means is varied in accordance with the resistance at said output terminal, and an indicator means coupled to said actuating means, to indicate the number of pulses from said pulse source.

3,169,239
**CIRCUIT BREAKING RECEPTACLE**
Robert E. Lacey, 5915 W. Bryn Mawr, Chicago, Ill.
Filed Oct. 30, 1961, Ser. No. 149,153
8 Claims. (Cl. 340—252)



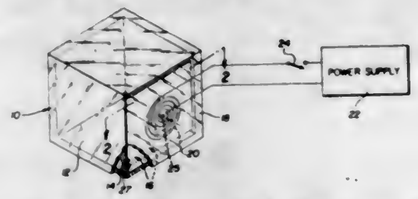
1. An electrical outlet comprising first means for connecting said outlet to a source of electric power, second means for connecting a power consuming electric appliance to said outlet, an electrical circuit connected between said first means and said second means to permit an electrical current flow therebetween, a bi-metallic conductive element in series in said circuit and responsive to current flow therethrough for causing corresponding deforming movements therein, a snap-action electrical switch operated by and connected in series with said element between said first and second means and being operative between a closed position and an opened position responsive to different positions of said element, said element normally being positioned to maintain said electrical switch closed and being flexed into an abnormal position responsive to a current flow in excess of a predetermined rate thereby to operate said electrical switch into said opened position and interrupt said excessive current flow therethrough, an electrical impedance and electrical signal means also connected in series with said element between said first and second means, the combined impedance of said electrical signal means and said electrical impedance being sufficiently high to cause a signal indication only when there is an interruption of the electrical circuit connection at said electrical switch, the activating current flow through the electrical signal means also flowing through said element when said switch is in open position and when said electrical appliance is connected to said outlet, whereby the bi-metallic conductive element is restrained in said abnormal position for an appreciable time and there is a time delay in re-closing said snap-action electrical switch.

3,169,240
**CHARACTER GENERATOR FOR CRT DISPLAY HAVING PARALLEL DELAY LINES**
Albert Macovski, Palo Alto, Calif., assignor to Stanford Research Institute, Palo Alto, Calif., a corporation of California
Filed Dec. 1, 1961, Ser. No. 156,362
5 Claims. (Cl. 340—324)



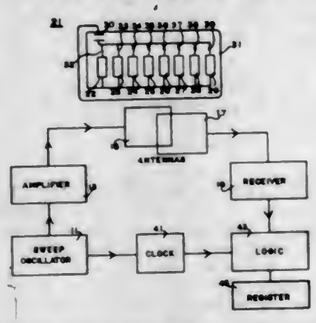
1. A character-signal generator comprising a plurality of delay-line sections connected in series with one another, a sensing winding inductively coupled to said plurality of delay-line sections at a plurality of locations in accordance with a predetermined pattern, said predetermined pattern being determined by disposing said delay-line sections in the form of a grid and disposing said sensing winding over said grid in the shape of a character for which signals are desired, and connecting said sensing winding to said delay-line sections at the locations established by the intersections of said sensing winding with said delay-line sections, and means for applying a pulse to one end of said delay-line sections, whereby signals are induced in said sensing winding having a spacing determined by said coupling pattern.

3,169,241
**SIGNALLING DEVICE**
William Ross Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif.
Filed Mar. 1, 1961, Ser. No. 92,691
2 Claims. (Cl. 340—373)




1. A signalling device comprising an enclosure having side portions and at least one window, a sheet of magnetizable material, means mounting said sheet for movement between a position wherein it conceals an identifying mark from view through said window and a position wherein it displays the mark to view through said window, a spiral coil mounted on the surface of a side portion of said enclosure which is adjacent to said window, the convolutions of said coil being substantially in a surface parallel with the side portion on which it is mounted, and means operable to energize said spiral coil to move said sheet from one to the other position thereof.

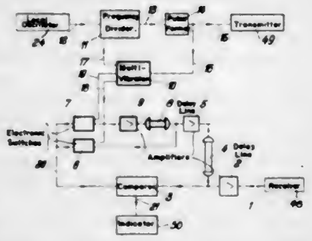
3,169,242
**IDENTIFICATION INTERROGATING SYSTEM**
Richard K. Davis and Francis M. Bailey, Roanoke, Va., assignors to General Electric Company, a corporation of New York
Filed Mar. 19, 1963, Ser. No. 266,403
15 Claims. (Cl. 343—6.5)




1. An identification interrogation system comprising a signal repeating device associated with each object to be identified having a plurality of selectively connected piezoelectric elements, each of a different preselected frequency response, and means for interrogating said signal repeating device to obtain a response of timed frequency identified signals.

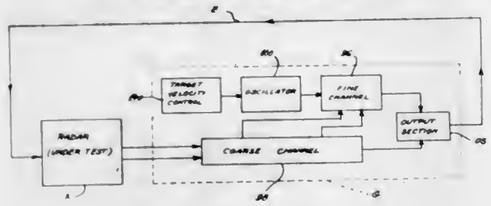


3,169,243
**VARYING REPETITION RATE PULSE ECHO SYSTEM**
Günther P. T. Kuhrdt, Ulm (Danube), Germany, assignor, by mesne assignments, to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Mar. 7, 1958, Ser. No. 719,880
Claims priority, application Germany, Mar. 9, 1957, T 13,334; Feb. 10, 1958, T 14,721
6 Claims. (Cl. 343—7.7)



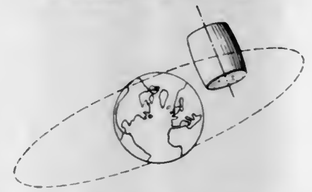

1. In pulse echo apparatus including a radio-frequency pulse transmitter, a receiver and an indicator displaying the position of echos on a trace, means for selecting display echos from moving targets while suppressing echos from fixed targets, comprising pulse train generating means for producing at least two trains of pulses, the pulses in each train being differently spaced in time and controlling the transmission of radio frequency pulses; a phase comparer connected to the indicator and to the receiver by a first path; two different delay lines connected between said receiver and said comparer by a second path; switching means connected between said delay lines and said comparer and selecting the delay line passing the echo pulses, said switching means being connected to said pulse train generating means to select the degree of delay of the echo pulses by switching the delay lines so that in each alternate condition the delay is equal in time to the interval between radiated pulses, the comparer comparing the phase of the pulses arriving via the first and second paths and initiating an indication on said trace where the phases are different.

3,169,244
**MOVING TARGET SIMULATOR**
Coy J. Scribner and Alfred Corbin, Mary Esther, Fla., assignors to Metric Systems Corporation, Fort Walton Beach, Fla., a corporation of Florida
Filed June 21, 1963, Ser. No. 289,688
3 Claims. (Cl. 343—17.7)



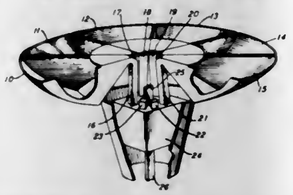

1. A moving target simulator for testing extended range radars, comprising a programmed pulse generator for producing an output train of "echo" pulses similar to an input train of radar signal pulses, but delayed in time, said generator including a fine channel and a coarse channel, said fine channel generating a precise train of delayed pulses at radar pulse repetition frequency, precise to a fraction of a microsecond, the zone position of a given output pulse being ambiguous; and said coarse channel generating an unambiguous delayed pulse train, capable of a plurality of zones of delay, with an accuracy of about ½ zone; and an output section combining said fine and coarse channels to produce a single unambiguous pulse train with the accuracy of the fine channel.

3,169,245
**PASSIVE REPEATERS FOR SATELLITE COMMUNICATION SYSTEMS**
Cassius C. Cutler, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 15, 1959, Ser. No. 813,565
3 Claims. (Cl. 343—18)



3. A passive repeater for a satellite communication system comprising a barrel shaped body having an exterior surface which reflects radio frequency energy launched in an orbit about the earth, said body being adapted for launching in orbit with an initial spin about its axis of greatest moment of inertia to fix the orientation thereof with respect to the plane of said orbit.

3,169,246
**ANTENNA ARRAY OF SAME DIRECTED HORN REFLECTOR UNITS SUPPORTED IN A SIDE-BY-SIDE MANNER**
John S. Cook, New Providence, and John N. Hines, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 15, 1963, Ser. No. 265,386
10 Claims. (Cl. 343—776)

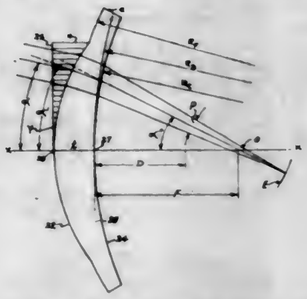


10. In combination
a plurality of horn-reflector antennas forming at least a portion of a generally circular array with the apexes of said antennas directed toward the center of said array and the apertures of said antennas directed in substantially the same direction, and
electrical coupling means connected to the apertures of said antennas.

3,169,247
**OPHTHALMIC ASPHERIC LENS SERIES**
John K. Davis, East Woodstock, Conn., and Henry G. Fernald, Winchester, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Dec. 9, 1959, Ser. No. 858,468
5 Claims. (Cl. 351—167)

1. A strongly convergent ophthalmic lens series for use by aphakic persons, and the like, and in which series each of the lenses thereof is of such similar optical design as to provide improved visual acuity at relatively wide fields of view including viewing angles of at least 30° relative to the optical axis of each respective lens

and for all fitting distances of between approximately 23.25 mm. and 27 mm. from the ocular vertex thereof, and wherein blurring of images, particularly through marginal portions of the lenses, is materially reduced by reducing the tangential power errors of said lenses at said 30° locations substantially to a minimum, and preferably slightly positive in value, while the sagittal power errors at the same locations are maintained negative and allowed to increase in numerical values as long as they do not exceed acceptable limits, said lens series comprising a plurality of strongly convergent lenses of such controlled optical design as to provide a uniformly graduated group of aspheric lenses for supplying spherical prescriptions in a range of dioptric powers from +7.00D to +16.00D, as well as to provide a uniformly graduated group of toric lenses comprising the spherical prescriptions of said +7.00D to +16.00D range combined with cylindrical prescriptions in a range of dioptric powers from near zero to −4.00D, and with the prescriptions of each range being divided into equal steps of diopters and equal fractions thereof, all of the lenses of said series having aspherically curved surfaces on the front sides thereof, and said aspherically curved front surfaces comprising curvatures of different front vertex powers, said aspheric front surfaces of different vertex powers being computed in accordance with a predetermined single common selected negative spherical base curve value for the ocular sides of the lenses of said series, in accordance with the different predetermined axial thicknesses required



for the lenses of different front curvatures and in accordance with the refractive index of the material of which the lenses are formed, so that said different front surface curvatures will have, in effect, at their respective optical axes front vertex power values which are so related to each other as to provide a predetermined substantially uniformly graduated series of power values each of which differs from the front vertex power values of adjacent lenses of said series by separate substantially equal steps, and with the value of each of said steps being selected from a range including fractions of a diopter up to but not exceeding one diopter, said single common negative spherical base curve value being selected from a dioptric range of from −2.00D to −5.00D, each of said lenses of different front vertex power values having its aspherically curved front surface so controlled in accordance with its front vertex power value, in accordance with the predetermined axial thickness required therefor, in accordance with said predetermined refractive index, and in accordance with said predetermined single common negative spherical base curve value, that when said different aspheric front surface curvatures are each actually combined, at the predetermined axial thicknesses required therefor, with spherical surfaces on the ocular sides thereof which are each of said single common negative spherical base curve value, a uniformly graduated group of finished lenses will be produced, with each lens thereof having at its optical axis substantially the true spherical prescriptive power value desired and at its 30° locations the minimum tangential power errors mentioned above, and when said different aspheric front surface curvatures are each actually combined with a single common negative spherical surface curvature of a given different negative spherical value on the ocular sides thereof, and which different spherical value is of a predetermined fraction of a diopter different in negative numerical value than that of said predetermined single common selected negative spherical base curve value, and at the different predetermined thicknesses required therefor, a second uniformly graduated group of finished lenses of intermediate prescriptive values will be provided, with each of the lenses thereof being of said predetermined fractional part of a diopter different in true spherical prescriptive power value at its optical axis than that of the corresponding finished lenses of said first-mentioned group, and will have at their 30° locations nearly the same minimum tangential power errors and sagittal power errors mentioned above, and with said minimum tangential power errors of the finished lenses of both of said groups of lenses being of numerical values near zero, while the sagittal power errors thereof at said 30° viewing angles are allowed to be of more negative values, but in no instance are said tangential power errors of any one of said finished lenses of either group allowed to be of a greater value than approximately +0.50D, and in no instance are the negative sagittal power errors of any one of said finished lenses allowed to exceed approximately −0.75D, and when said different aspheric front surface curvatures are provided with said spherical prescriptions on the ocular sides of the lenses combined with cylindrical prescriptions within said cylindrical range, and at the predetermined axial thicknesses required therefor, for providing toric lenses each having two different prescriptive curvatures along the cylindrical and spherical meridians thereof, the average of the tangential power errors at 30° points in the cylindrical meridian and in the spherical meridians of each resulting toric lens will be reduced to a minimum practical value while the average of the sagittal power errors at said 30° points in said meridians will be of materially more negative values, but in no instance will the average of the tangential power errors thereof be allowed to exceed approximately +0.50D and in no instance will the average of the sagittal power errors thereof be allowed to exceed approximately −0.75D.

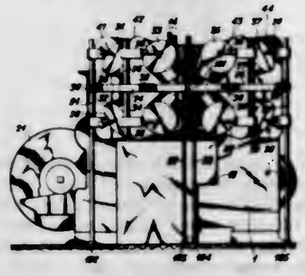
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**3,169,248**

## WEFT CREEL FOR LOOMS

**Luciano Cont, Oberwinterthur, Switzerland, assignor to Sulzer Freres, Societe Anonyme, Winterthur, Switzerland, a company of Switzerland**

**Filed Nov. 8, 1962, Ser. No. 236,368**
**Claims priority, application Switzerland, Nov. 10, 1961, 13,120/61**
**2 Claims. (Cl. 139—122)**

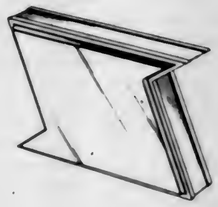


1. A loom comprising a frame and a creel attached to said frame, said creel having a plurality of structurally self-contained and self-supported creel sections, each of said creel sections including plural support members fastened together in fixed relative position, the support members associated with each said creel section including a plurality of vertical support rods and at least one generally horizontal rail interconnecting said support rods, each said creel section further including at least two bobbins mounted on said support members, said loom further comprising removable fastening means for individually securing each separate creel section to said loom frame, whereby each of said creel sections forms a self-contained integral structural unit and each of said creel sections along with the associated bobbins is individually detachable from and attachable to the loom frame.

# DESIGNS

FEBRUARY 9, 1965

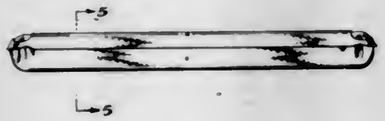
**200,229**
**OUTDOOR ADVERTISING SIGN OR SIMILAR ARTICLE**
Conrad J. Escalante, 1251 W. Gaylord St., Los Alamitos, Calif.
Filed Nov. 19, 1963, Ser. No. 77,501
Term of patent 14 years
(Cl. D1—12)



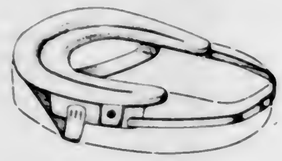
**200,230**
**FAUCET**
Harold O. Seltsam, Cleveland, Ohio, assignor to Tomlinson Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 5, 1963, Ser. No. 76,096
Term of patent 14 years
(Cl. D2—3)



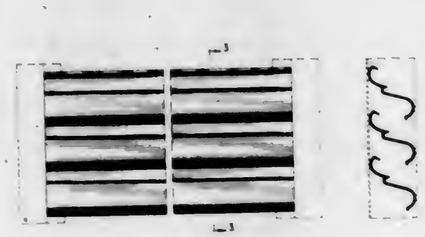
**200,231**
**SHOULDER STRAP PAD FOR A GOLF BAG OR SIMILAR ARTICLE**
Brian W. Lake, 4636 Seeboyar Ave., and Roger T. Williams, 4158 Josie Ave., both of Lakewood, Calif.
Filed Aug. 5, 1963, Ser. No. 76,112
Term of patent 14 years
(Cl. D3—26)



**200,232**
**CUSHION FOR A BEDPAN**
Hope E. Souza, 3423 Motor Ave., Los Angeles, Calif.
Filed July 10, 1964, Ser. No. 80,793
Term of patent 14 years
(Cl. D4—5)



**200,233**
**LOUVERED UNIT**
Robert H. Bishop, 808 W. Park St., Champaign, Ill.
Filed Nov. 7, 1963, Ser. No. 77,321
Term of patent 14 years
(Cl. D13—1)



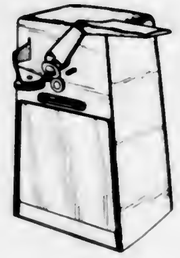
**200,234**
**GARTER BELT**
Harry W. Froehlich, Pacific Palisades, Calif., assignor to Charmfit of Hollywood, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 28, 1963, Ser. No. 77,160
Term of patent 14 years
(Cl. D20—2)



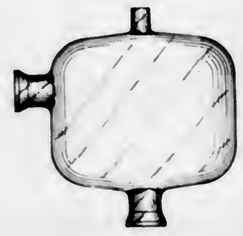




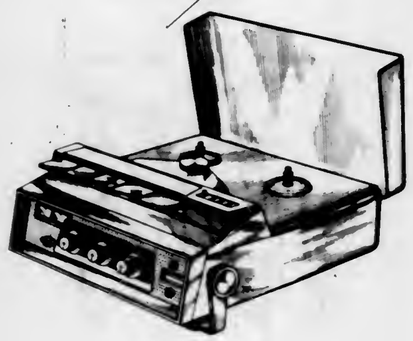
**200,235**
**CAN OPENER**
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 4, 1963, Ser. No. 74,288
Term of patent 14 years
(Cl. D22—2)



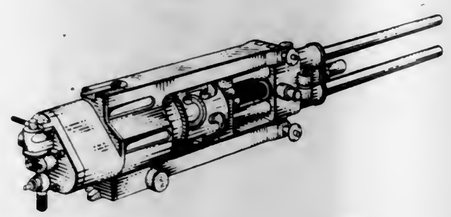
**200,236**
**RELEASER VESSEL FOR DAIRY EQUIPMENT**
Lloyd F. Bender, Hayward, Wis.
Filed Oct. 2, 1963, Ser. No. 76,832
Term of patent 3½ years
(Cl. D23—1)



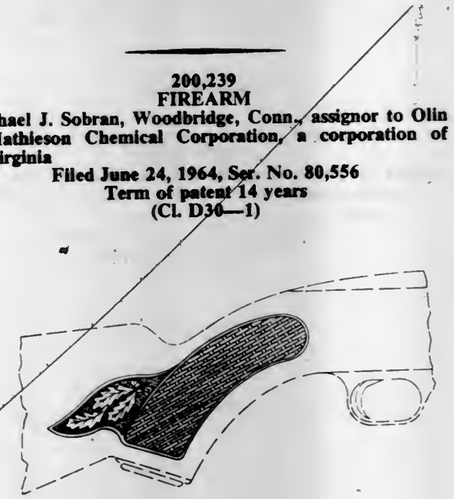
**200,237**
**MAGNETIC TAPE RECORDER**
Yoshio Yoshikawa, % Akai Electric Co., Ltd., 883 3-chome, Kohjiya-cho, Ohta-ku, Tokyo, Japan
Filed Mar. 11, 1964, Ser. No. 78,962
Term of patent 14 years
(Cl. D26—14)



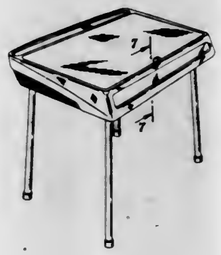
**200,238**
**AUTOMATIC GUN**
Thomas R. Stuelpnagel, Torrance, Robert E. Brix, Encino, Robert E. Hyslop, Sherman Oaks, and Robert G. Hunt and Leonard W. Price, Los Angeles, Calif., assignors to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed July 8, 1963, Ser. No. 75,693
Term of patent 14 years
(Cl. D30—1)



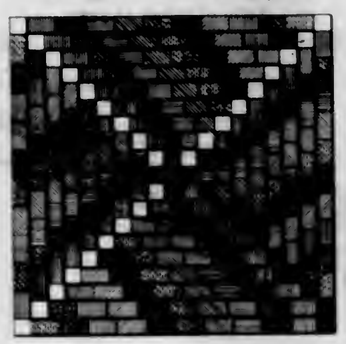
**200,239**
**FIREARM**
Michael J. Sobran, Woodbridge, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed June 24, 1964, Ser. No. 80,556
Term of patent 14 years
(Cl. D30—1)



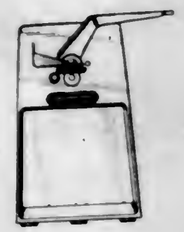
**200,240**
**DESK**
John A. Gale, 978 E. Shady Lane, Wayzata, Minn.
Filed May 25, 1964, Ser. No. 80,135
Term of patent 14 years
(Cl. D33—7)



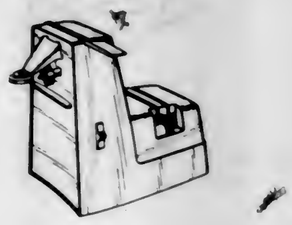
200,241
GAME BOARD
Sharon K. Philbin, 2642 NW. 12th, Oklahoma City, Okla.
Filed Dec. 23, 1963, Ser. No. 77,893
Term of patent 14 years
(Cl. D34—5)



200,242
COMBINED CAN OPENER AND KNIFE SHARPENER
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 4, 1963, Ser. No. 74,304
Term of patent 14 years
(Cl. D37—1)



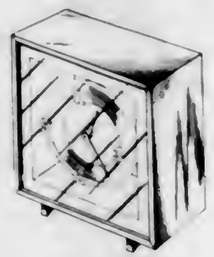
200,243
COMBINED CAN OPENER AND KNIFE SHARPENER
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 23, 1963, Ser. No. 77,905
Term of patent 14 years
(Cl. D37—1)



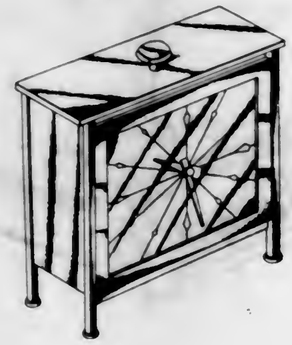
200,244
SNOW REMOVING BOARD
George H. Yates, 37 Hill St., Ellicott City, Md.
Filed July 23, 1963, Ser. No. 75,935
Term of patent 14 years
(Cl. D39—1)



200,245
CLOCK
Robert C. Shipley, Kalamazoo, Mich., assignor to R. C. Shipley Mfg. Co., Portage, Mich., a corporation of Michigan
Filed Jan. 2, 1964, Ser. No. 78,026
Term of patent 14 years
(Cl. D42—7)

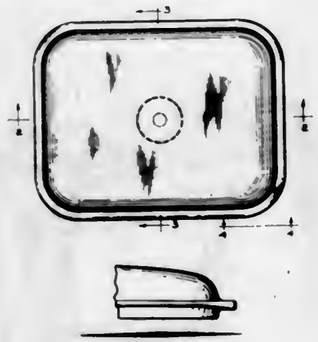


200,246
CLOCK
Monte L. Levin, Roslyn, N.Y., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 5, 1964, Ser. No. 78,533
Term of patent 14 years
(Cl. D42—7)

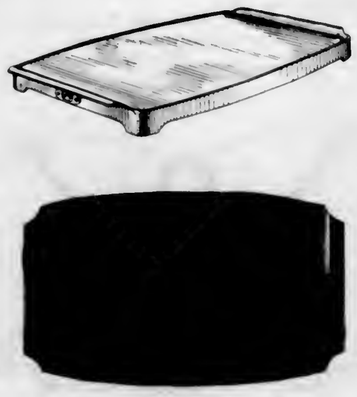




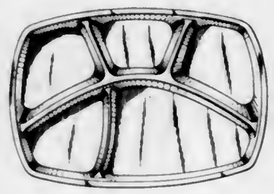
200,247
UTENSIL COVER OR SIMILAR ARTICLE
Wendell S. Blanding, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 25, 1962, Ser. No. 72,259
Term of patent 14 years
(Cl. D44—1)



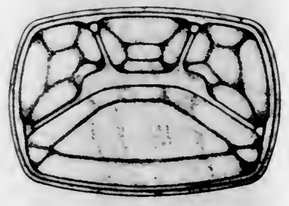
200,248
FOOD WARMING TRAY
Paul V. Vasile, Chicago, Ill., assignor to Akay Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 30, 1962, Ser. No. 68,571
Term of patent 14 years
(Cl. D44—10)



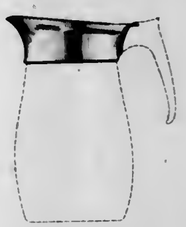
200,249
FOOD TRAY
David Hancock, % Applied Research & Development Corp., 210 E. Columbia St., Chippewa Falls, Wis.
Filed May 4, 1964, Ser. No. 79,793
Term of patent 14 years
(Cl. D44—10)



200,250
COVERED FOOD TRAY
David Hancock, % Applied Research & Development Corp., 210 E. Columbia St., Chippewa Falls, Wis.
Filed May 4, 1964, Ser. No. 79,794
Term of patent 14 years
(Cl. D44—10)



200,251
METALLIC COLLAR FOR BEVERAGE MAKERS OR THE LIKE
Jerry E. Wright, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 20, 1963, Ser. No. 75,453
Term of patent 14 years
(Cl. D44—26)



200,252
COMBINED BOTTLE OPENER AND FLEXIBLE TUBE ROLLING KEY
Harold Brown, 2236 S. Milwaukee St., Denver, Colo., assignor of one-third each to Morris Kaplan and Harold S. Tuft, both of Denver, Colo.
Filed Oct. 3, 1963, Ser. No. 76,857
Term of patent 7 years
(Cl. D44—29)



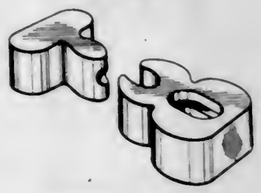
200,253
HANK YARN HOLDER
Wilfred J. Winn, 7611 W. 52nd St., Overland Park, Kans.
Filed May 7, 1964, Ser. No. 79,865
Term of patent 7 years
(Cl. D47—5)



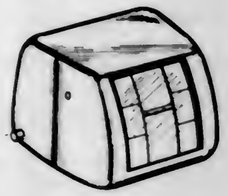
200,254
STEAM IRON
John E. Reed, Glen Ellyn, and Burton Kelly, Bellwood, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1962, Ser. No. 72,248
Term of patent 14 years
(Cl. D49—1)



200,255
CABINET DOOR LATCH
Orvel E. Bacon, 1289 Exeter, El Cajon, Calif.
Filed May 25, 1964, Ser. No. 80,126
Term of patent 7 years
(Cl. D50—5)



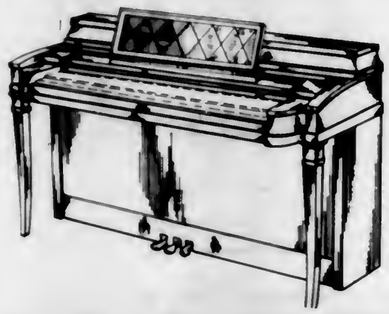
200,256
METER FOR MEASURING THE DECELERATION OF VEHICLES
Paul Vogt, Les Hauts-Geneveys, Neuchatel, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland
Filed Aug. 1, 1962, Ser. No. 71,129
Claims priority, application Switzerland, Feb. 3, 1962, 98,226/62
Term of patent 14 years
(Cl. D52—6)



200,257
WRENCH FOR NAIL POLISH BOTTLE CAPS
Edwin H. Holtz, Poland, Ohio, assignor to Turn-a-Cap Inc., Damascus, Ohio, a corporation of Ohio
Filed Nov. 6, 1963, Ser. No. 77,314
Term of patent 7 years
(Cl. D54—16)



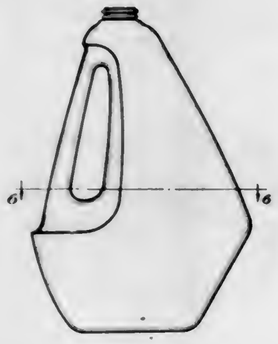
200,258
PIANO CASE
Wilbur M. Day, Kenwood, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 24, 1963, Ser. No. 76,700
Term of patent 14 years
(Cl. D56—9)



200,259
EYEGLASS FRAME OR THE LIKE
Alexander Kono, Woodside, N.Y., assignor to Kono Manufacturing Co. Inc., Woodside, N.Y., a corporation of New York
Filed Aug. 3, 1964, Ser. No. 81,123
Term of patent 14 years
(Cl. D57—1)

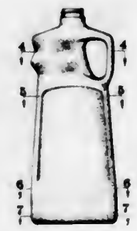


200,260
JUG
Thomas B. Craig, Midland, and Edgar F. Trombly, Grosse Pointe Farms, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 78,903
Term of patent 14 years
(Cl. D58—5)





200,261
JUG
John Brady Campbell, Paramus, N.J., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 15, 1964, Ser. No. 79,998
Term of patent 14 years
(Cl. D58—5)



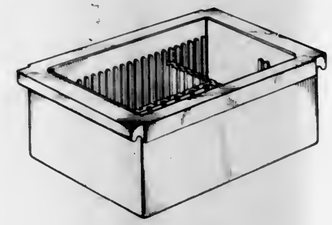
200,262
DECANTER
Walter T. Heintze, New Canaan, Conn., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 78,202
Term of patent 14 years
(Cl. D58—6)



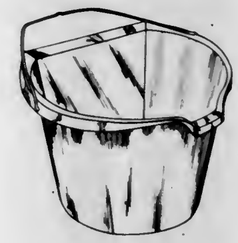
200,263
BOTTLE OR SIMILAR ARTICLE
Gordon K. Woodard, 14155 Magnolia Blvd., Apt. 354, Van Nuys, Calif.
Filed Feb. 21, 1964, Ser. No. 78,719
Term of patent 14 years
(Cl. D58—8)



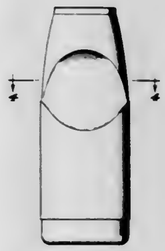
200,264
TOTE BOX
Melvin Tudor, 333 Old Courthouse Road, New Hyde Park, N.Y., and Leon Novet, 3203 Ocean Harbor Drive, Oceanside, N.Y.
Filed Aug. 8, 1963, Ser. No. 76,148
Term of patent 14 years
(Cl. D58—13)



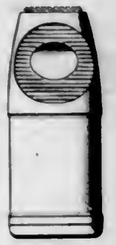
200,265
PAIL
French Eugene Smith, Akron, and Laurance F. Plaskan, West Richfield, Ohio, assignors to The Wooster Brush Company, Wooster, Ohio, a corporation of Ohio
Filed Aug. 22, 1963, Ser. No. 76,330
Term of patent 14 years
(Cl. D58—17)



200,266
DISPENSING CONTAINER
Charles G. Brown, Palos Verdes Estates, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed May 4, 1964, Ser. No. 79,809
Term of patent 14 years
(Cl. D58—17)



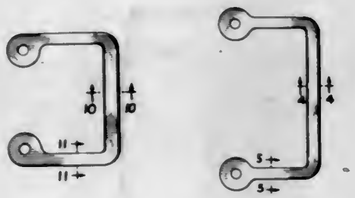
200,267
DISPENSING CAN OR SIMILAR ARTICLE
Robert J. France and Karl T. Davis, Long Beach, Calif., assignors to Parex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Sept. 1, 1964, Ser. No. 81,554
Term of patent 14 years
(Cl. D58—17)



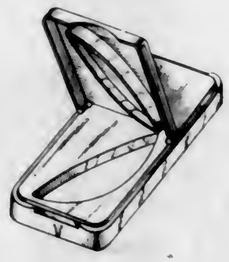
200,268
JAR
Arnold I. Lorenzen, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 8, 1963, Ser. No. 74,801
Term of patent 14 years
(Cl. D58—25)



200,269
PLASTIC HANDLE
Gerald T. Tracy, 3217 W. 47th Place, Chicago, Ill.
Filed Sept. 20, 1963, Ser. No. 76,657
Term of patent 14 years
(Cl. D58—26)



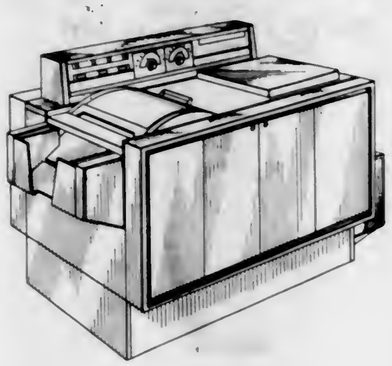

200,270
POWDER DISPENSER CLOSURE FOR VESSEL TOPS
Neil S. Waterman, 60 Bonner St., Stamford, Conn.
Filed Jan. 6, 1964, Ser. No. 78,078
Term of patent 14 years
(Cl. D58—26)



200,271
DISPENSING TOP FOR A PRESSURE CAN
Wallace H. Steinberg, Matawan, N.J., assignor to Johnson & Johnson
Filed Apr. 3, 1964, Ser. No. 79,335
Term of patent 14 years
(Cl. D58—26)

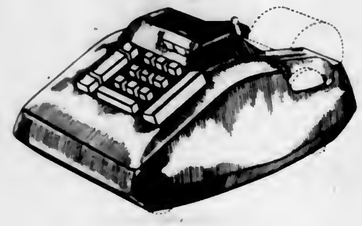


200,272
DOCUMENT REPRODUCING APPARATUS
James G. Balmer, Jr., Birmingham, and Robert F. Plantholt, Rochester, Mich., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 77,890
Term of patent 14 years
(Cl. D61—1)





200,273
ADDING MACHINE
John Cuccio, Westport, and Reginald R. Gallant, Bristol, Conn., assignors to Underwood Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 15, 1963, Ser. No. 76,990
Term of patent 14 years
(Cl. D64—11)



200,274
BOAT FENDER
Lawrence A. Loeb, 37 Trumbull St., New Haven, Conn.
Filed July 3, 1962, Ser. No. 70,791
Term of patent 14 years
(Cl. D71—1)



200,275
BOAT FENDER
Lawrence A. Loeb, 37 Trumbull St., New Haven, Conn.
Original design application July 3, 1962, Ser. No. 70,791. Divided and this application Feb. 5, 1964, Ser. No. 78,878
Term of patent 14 years
(Cl. D71—1)



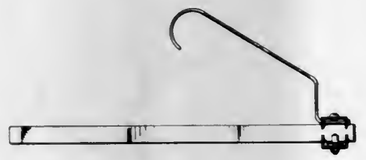
200,276
AIRPLANE
Irven H. Culver, Sunland, John B. Pitkin, Arcadia, and William H. Statler, Northridge, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed June 11, 1964, Ser. No. 80,363
Term of patent 14 years
(Cl. D71—1)



200,277
TAPE CUTTER
Dana Peterson, % New Products, P.O. Box 2141, San Diego, Calif.
Filed Jan. 22, 1964, Ser. No. 78,312
Term of patent 14 years
(Cl. D74—1)



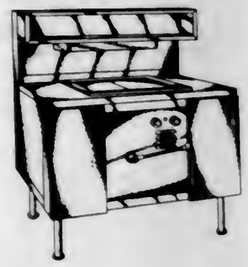
200,278
PANTS AND SKIRT HANGER
Herman P. Fruehauf, 1424 Madrona Drive, Seattle, Wash.
Filed Oct. 11, 1963, Ser. No. 76,945
Term of patent 14 years
(Cl. D80—8)



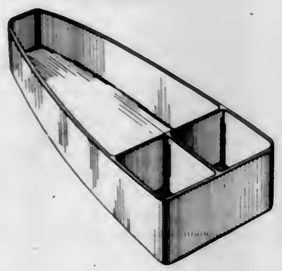
200,279
REFRIGERATED DISPLAY CASE
Arthur Perez and Roger W. Barr, Niles, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 30, 1963. Ser. No. 77,975
Term of patent 14 years
(Cl. D80—11)



200,280
FOOD BROILER
Thomas C. Payne, Rte. 1, Rockton, Ill.
Filed May 15, 1964, Ser. No. 80,003
Term of patent 14 years
(Cl. D81—10)



200,281
CATHETER TRAY
Herbert E. Turner, 1129 Carr, Memphis, Tenn.
Filed May 1, 1964, Ser. No. 79,766
Term of patent 14 years
(Cl. D83—1)



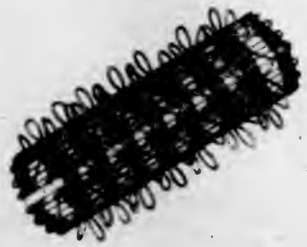
200,282
BABY NURSING BOTTLE
Gene H. Swanner, 3613 Cottonwood St., and Bob L. Fontaine, 5837 Riley Drive, both of Corpus Christi, Tex.
Filed Aug. 10, 1964, Ser. No. 81,224
Term of patent 14 years
(Cl. D83—8)



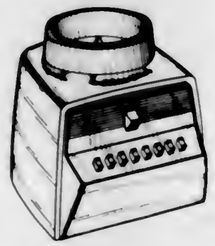
200,283
TAMPON APPLICATOR
Irvin J. Gershen, Springfield, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Sept. 11, 1963, Ser. No. 76,557
Term of patent 14 years
(Cl. D83—12)



200,284
HAIR CURLER
Jingo Natsukawa, 1904 Oaza Maibara, Sakata-gun, Shiga Prefecture, Sakata-gun, Japan
Filed Dec. 18, 1963, Ser. No. 77,849
Term of patent 14 years
(Cl. D86—10)

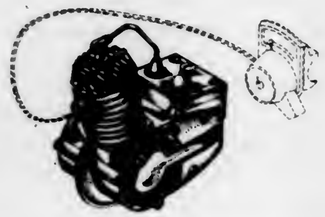


200,285
POWER UNIT FOR A BLENDER OR THE LIKE
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed July 7, 1964, Ser. No. 80,733
Term of patent 14 years
(Cl. D89—1)

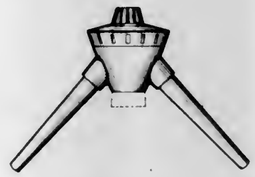




200,286
TOY MOTOR UNIT
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., a corporation of California
Filed Apr. 17, 1964, Ser. No. 79,557
Term of patent 14 years
(Cl. D90—1)



200,287
LAWN SPRINKLER HEAD
Ross E. Cornwell, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 13, 1962, Ser. No. 71,265
Term of patent 14 years
(Cl. D91—1)



# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 9TH DAY OF FEBRUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bourns, Inc.: *See*—
Ferrell, Robert L., and Hardison. Re. 25,725.
Dow Corning Corp.: *See*—
Haluska, Loren A. Re. 25,727.
Ferrell, Robert L., and W. T. Hardison, to Bourns, Inc. Potentiometers. Re. 25,725, 2–9–65, Cl. 338—174.
Haluska, Loren A., to Dow Corning Corp. Organosiloxane ethers. Re. 25,727, 2–9–65, Cl. 260—448.2.
Hardison, Wilbur T.: *See*—
Ferrell, Robert L., and Hardison. Re. 25,725.
Miller, Wendell S. Electronic gang switching system. Re. 25,724, 2–9–65, Cl. 235—164.
Lefevre, Lorin. Hydraulic engine. Re. 25,726, 2–9–65, Cl. 91—12.

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Bacon, Orvel E. Cabinet door latch. 200,255, 2–9–65, Cl. D50—5.
Baldwin, D. H., Co.: *See*—
Day, Wilbur M. 200,258.
Balmer, James G., Jr., and R. F. Plantholt, to Xerox Corp. Document reproducing apparatus. 200,272, 2–9–65, Cl. D61—1.
Barr, Roger W.: *See*—
Peres, Arthur, and Barr. 200,279.
Bender, Lloyd F. Releaser vessel for dairy equipment. 200,236, 2–9–65, Cl. D23—1.
Bishop, Robert H. Louvered unit. 200,233, 2–9–65, Cl. D13—1.
Blanding, Wendell S., to Corning Glass Works. Utensil cover or similar article. 200,247, 2–9–65, Cl. D44—1.
Brix, Robert E.: *See*—
Stuelpnagel, Thomas R., Brix, Hyslop, Hunt, and Price. 200,238.
Brown, Charles G., to Purex Corp., Ltd. Dispensing container. 200,266, 2–9–65, Cl. D58—17.
Brown, Harold, ½ each to M. Kaplan and H. S. Tuft. Combined bottle opener and flexible tube rolling key. 200,252, 2–9–65, Cl. D44—29.
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Charmfit of Hollywood, Inc.: *See*—
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Clark Equipment Co.: *See*—
Peres, Arthur, and Barr. 200,279.
Corning Glass Works: *See*—
Blanding, Wendell S. 200,247.
Wright, Jerry E. 200,251.
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Craig, Thomas B., and E. F. Trombly, to The Dow Chemical Co. Jug. 200,260, 2–9–65, Cl. D58—5.
Cuccio, John, and R. R. Gallant, to Underwood Corp. Adding machine. 200,273, 2–9–65, Cl. D64—11.
Culver, Irven H., J. B. Pitkin, and W. H. Statler, to Lockheed Aircraft Corp. Airplane. 200,276, 2–9–65, Cl. D71—1.
Davis, Karl T.: *See*—
France, Robert J., and Davis. 200,267.
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Craig, Thomas B., and Trombly. 200,260.
Ebauches S.A.: *See*—
Vogt, Paul. 200,256.
Escalante, Conrad J. Outdoor advertising sign or similar article. 200,229, 2–9–65, Cl. D1—12.
Fontainer, Bob L.: *See*—
Swanner, Gene H., and Fontainer. 200,282.
France, Robert J., and K. T. Davis, to Purex Corp., Ltd. Dispensing can or similar article. 200,267, 2–9–65, Cl. D58—17.
Froehlich, Harry W., to Charmfit of Hollywood, Inc. Garter belt. 200,234, 2–9–65, Cl. D20—2.
Fruehauf, Herman P. Pants and skirt hanger. 200,278, 2–9–65, Cl. D80—8.
Gale, John A. Desk. 200,240, 2–9–65, Cl. D33—7.
Gallant, Reginald R.: *See*—
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General Time Corp.: *See*—
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Hancock, David. Covered food tray. 200,250, 2–9–65, Cl. D44—10.
Heintze, Walter T., to Richardson-Merrell Inc. Decanter. 200,262, 2–9–65, Cl. D58—6.
Holtz, Edwin H., to Turn-A-Cap Inc. Wrench for nail polish bottle caps. 200,257, 2–9–65, Cl. D54—16.
Hughes Tool Co.: *See*—
Stuelpnagel, Thomas R., Brix, Hyslop, Hunt, and Price. 200,238.
Hunt, Robert G.: *See*—
Stuelpnagel, Thomas R., Brix, Hyslop, Hunt, and Price. 200,238.
Hyslop, Robert E.: *See*—
Stuelpnagel, Thomas R., Brix, Hyslop, Hunt, and Price. 200,238.
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Steinberg, Wallace H. 200,271.
Kaplan, Morris: *See*—
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Kelly, Burton: *See*—
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Kono, Alexander, to Kono Mfg. Co., Inc. Eyeglass frame or the like. 200,259, 2–9–65, Cl. D57—1.
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Lake, Brian W., and R. T. Williams. Shoulder strap pad for a golf bag or similar article. 200,231, 2–9–65, Cl. D3—26.
Levin, Monte L., to General Time Corp. Clock. 200,246, 2–9–65, Cl. D42—7.
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Loeb, Lawrence A. Boat fender. 200,275, 2–9–65, Cl. D71—1.
Lorensen, Arnold I., to Owens-Illinois Glass Co. Jar. 200,268, 2–9–65, Cl. D58—25.
Madl, Alfred W., to John Oster Mfg. Co. Can opener. 200,235, 2–9–65, Cl. D22—2.
Madl, Alfred W., to John Oster Mfg. Co. Combined can opener and knife sharpener. 200,242, 2–9–65, Cl. D37—1.
Madl, Alfred W., to John Oster Mfg. Co. Combined can opener and knife sharpener. 200,243, 2–9–65, Cl. D37—1.
Madl, Alfred W., to John Oster Mfg. Co. Power unit for a blender or the like. 200,285, 2–9–65, Cl. D89—1.
Mattel, Inc.: *See*—
Ryan, John W. 200,286.
Natsukawa, Jingo. Hair curler. 200,284, 2–9–65, Cl. D86—10.
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Vasile, Paul V. 200,248.
Olin Mathieson Chemical Corp.: *See*—
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Oster, John, Mfg. Co.: *See*—
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Madl, Alfred W. 200,242.
Madl, Alfred W. 200,243.
Madl, Alfred W. 200,285.
Owens-Illinois Glass Co.: *See*—
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Payne, Thomas C. Food broiler. 200,280, 2–9–65, Cl. D81—10.
Peres, Arthur, and R. W. Barr, to Clark Equipment Co. Refrigerated display case. 200,279, 2–9–65, Cl. D80—11.
Peterson, Dana. Tape cutter. 200,277, 2–9–65, Cl. D74—1.
Philbin, Sharon K. Game board. 200,241, 2–9–65, Cl. D34—5.
Pitkin, John B.: *See*—
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Plantholt, Robert F.: *See*—
Balmer, James G., Jr., and Plantholt. 200,272.
Price, Leonard W.: *See*—
Stuelpnagel, Thomas R., Brix, Hyslop, Hunt, and Price. 200,238.
Procter & Gamble Co., The: *See*—
Campbell, John B. 200,261.
Purex Corp., Ltd.: *See*—
Brown, Charles G. 200,266.
France, Robert J., and Davis. 200,267.
Reed, John E., and B. Kelly, to Sunbeam Corp. Steam iron. 200,254, 2–9–65, Cl. D49—1.
Richardson-Merrell Inc.: *See*—
Heintze, Walter T. 200,262.
Ryan, John W., to Mattel, Inc. Toy motor unit. 200,286, 2–9–65, Cl. D90—1.

Seltsam, Harold O., to Tomlinson Industries, Inc. Faucet. 200,230, 2–9–65, Cl. D2—3.
Shipley, R. C., Mfg. Co.: *See*—
Shipley, Robert C. 200,245.
Shipley, Robert C., to R. C. Shipley Mfg. Co. Clock. 200,245, 2–9–65, Cl. D42—7.
Smith, French E., and L. F. Plaskan, to The Wooster Brush Co. Pail. 200,265, 2–9–65, Cl. D58—17.
Sobran, Michael J., to Olin Mathieson Chemical Corp. Firearm. 200,239, 2–9–65, Cl. D30—1.
Sousa, Hope E. Cushion for a bedpan. 200,232, 2–9–65, Cl. D4—5.
Statler, William H.: *See*—
Culver, Irven H., Pitkin, and Statler. 200,276.
Steinberg, Wallace H., to Johnson & Johnson. Dispensing top for a pressure can. 200,271, 2–9–65, Cl. D58—26.
Stuelpnagel, Thomas R., R. E. Brix, R. E. Hyslop, R. G. Hunt, and L. W. Price, to Hughes Tool Co. Automatic gun. 200,238, 2–9–65, Cl. D30—1.
Sunbeam Corp.: *See*—
Cornwell, Rose E. 200,287.
Reed, John E., and Kelly. 200,254.
Swanner, Gene H., and B. L. Fontainer. Baby nursing bottle. 200,282, 2–9–65, Cl. D83—8.
Tomlinson Industries, Inc.: *See*—
Seltsam, Harold O. 200,230.
Tracy, Gerald T. Plastic handle. 200,269, 2–9–65, Cl. D58—26.
Tudor, Melvin, and L. Novet. Tote box. 200,264, 2–9–65, Cl. D58—13.
Tuft, Harold S.: *See*—
Brown, Harold. 200,252.
Turn-A-Cap Inc.: *See*—
Holtz, Edwin H. 200,257.
Turner, Herbert E. Catheter tray. 200,281, 2–9–65, Cl. D83—1.
Underwood Corp.: *See*—
Cuccio, John, and Gallant. 200,273.
Vasile, Paul V., to Okay Corp. Food warming tray. 200,248, 2–9–65, Cl. D44—10.
Vogt, Paul, to Ebauches S.A. Meter for measuring the deceleration of vehicles. 200,256, 2–9–65, Cl. D52—6.
Waterman, Neil S. Powder dispenser closure for vessel tops. 200,270, 2–9–65, Cl. D58—26.
Williams, Roger T.: *See*—
Lake, Brian W., and Williams. 200,231.
Winn, Wilfred J. Hank yarn holder. 200,253, 2–9–65, Cl. D47—5.
Woodard, Gordon K. Bottle or similar article. 200,263, 2–9–65, Cl. D58—8.
Wooster Brush Co., The: *See*—
Smith, French E., and Plaskan. 200,265.
Wright, Jerry E., to Corning Glass Works. Metallic collar for beverage makers or the like. 200,251, 2–9–65, Cl. D44—26.
Xerox Corp.: *See*—
Balmer, James G., Jr., and Plantholt. 200,272.
Yates, George H. Snow removing board. 200,244, 2–9–65, Cl. D39—1.
Yoshikawa, Yoshio. Magnetic tape recorder. 200,237, 2–9–65, Cl. D26—14.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 9TH DAY OF FEBRUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Martin, Charles L., and Brown. 3,169,154.
Acrometal Products, Inc.: *See*—
Harris, Edward H. 3,169,157.
Adams, Dolor N.: *See*—
Sorkin, Jack L., and Adams. 3,169,065.
Adams, Lester R., and B. J. Greenblott, to International Business Machines Corp. Fluid control apparatus. 3,168,897, 2–9–65, Cl. 137—81.5.
Adler, Clarence E.: *See*—
Willyard, Roger A., and Adler. 3,168,980.
Advance Chemical Co.: *See*—
Corning, Leon M., Friedenthal, and Sarafan. 3,168,984.
Agfa Aktiengesellschaft, Firma: *See*—
Nassenstein, Heinrich. 3,169,163.
Agricultural Laboratories, Inc.: *See*—
Scott, James R., and Bumgarner. 3,168,796.
Aidlin, Samuel S. Automatic feeding apparatus for flat, circular articles. 3,168,949, 2–9–65, Cl. 198—30.
Aiken, William R. Signalling device. 3,169,241, 2–9–65, Cl. 340—373.
Air Products and Chemicals, Inc.: *See*—
Kurzinski, Edward F. 3,169,161.
Aircraft Armaments, Inc.: *See*—
Knapp, Phillip M. 3,169,191.
Akashi, Tsuneo, and M. Tobita, to Nippon Electric Co. Ltd. Manganese zinc ferrite containing vanadium pentoxide, silicon dioxide, and indium trioxide. 3,169,115, 2–9–65, Cl. 252—62.5.
All American Engineering Co.: *See*—
Haber, Robert J. 3,168,939.
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Merryfield, George E., and Allen. 3,169,151.
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Almqvist, Kurt K. A.: *See*—
Josefsson, Erik A. Á., Bengtsson, and Almqvist. 3,169,055.
Alto Co.: *See*—
Grossi, Lewis G. 3,168,958.
American Cyanamid Co.: *See*—
Linke, William F., and Reynolds. 3,168,802.
Rodgers, John L., and Millonis. 3,169,129.
American Foto Patrol Inc.: *See*—
Norden, Alexander R., and Martin. 3,168,856.
American Home Products Corp.: *See*—
Wendt, Gerhard R., and Ledig. 3,169,137.
American Machine & Foundry Co.: *See*—
Smith, Richard A. 3,169,020.
American Maize-Products Co.: *See*—
Taylor, Gerwin G. 3,169,083.
American Motors Corp.: *See*—
Soer, Clifford G. 3,169,026.
American Optical Co.: *See*—
Davis, John K., and Fernald. 3,169,247.
American Radiator & Standard Sanitary Corp.: *See*—
Fleury, Jack E. 3,168,805.
Anderle, Joseph A.: *See*—
Lorentsen, Hans K., Neira, and Anderle. 3,169,006.
Anderson, Louis W. Plastic well screen point. 3,168,924, 2–9–65, Cl. 175—314.
Angle, Robert: *See*—
Drexler, Jerome, Angle, and Feulner. 3,169,211.
Aquamatic Inc.: *See*—
Whitlock, Robert A. 3,169,008.
Armstrong Cork Co.: *See*—
Olcott, Robert S. 3,168,760.
Associated Electrical Industries Ltd.: *See*—
Raine, Thomas, and Robinson. 3,169,059.
Chafer, Henry J. 3,169,180.
Smith, Kelvin G. 3,168,918.
Atanasoff, John V., to Cybernetics Inc. Damper mechanism. 3,168,874, 2–9–65, Cl. 104—89.
Aumuller, Walter, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. 1-chloro-N-sulfonylformamidines and process for their manufacture. 3,169,138, 2–9–65, Cl. 260—397.7.
Automatic Electric Laboratories, Inc.: *See*—
Florer, James W., Gillemot, and Davis. 3,168,824.
Smith, Lester L. 3,169,170.
Avco Corp.: *See*—
Chandler, Coy N., Bryan, and Roach. 3,168,959.
Ayer, Donald E., to The Upjohn Co. 3α-fluoroandrostanes and 15β-fluorogesterone. 3,169,133, 2–9–65, Cl. 260—397.3.
Ayers, Buell O.: *See*—
Reinecke, Marvin E., and Ayers. 3,168,823.
Azoplate Corp.: *See*—
Hoegl, Helmut. 3,169,060.
Klupfel, Kurt W. 3,169,062.
Baas, John C., to Rochester Shoe Tree Co., Inc. Shoe display tree. 3,168,753, 2–9–65, Cl. 12—115.6.
Babcock & Wilcox Co., The: *See*—
Meyers, Gilbert W. 3,169,097.
Bachman, Gustave B., to Purdue Research Foundation. Process for recovery of bromonitroalkane. 3,169,150, 2–9–65, Cl. 260—646.
Bailey, Francis M.: *See*—
Davis, Richard K., and Bailey. 3,169,242.
Bailey, Frederick J., Jr., and J. W. Wetmore, to United States of America, National Aeronautics and Space Administration. Airplane take-off performance indicator. 3,168,827, 2–9–65, Cl. 73—178.
Baker, Alan G., and J. S. Kamborian; said Baker assor. to said Kamborian. Method of dispensing cement and melting pot for use therewith. 3,169,078, 2–9–65, Cl. 117—104.
Baker, Donald C., and W. E. Budd, to J. I. Case Co. Track chain. 3,169,039, 2–9–65, Cl. 305—58.
Banca, Maggio C.: *See*—
Barnes, Robert B., Banca, and Engborg. 3,169,189.
Barbin, Robert L.: *See*—
Obert, Maximilian J., and Barbin. 3,169,207.
Bardenhagen, Dietrich, and H. G. Niemann, to Hauni Werke Korber & Co., KG. Cutting mechanism for rod-making machines. 3,168,848, 2–9–65, Cl. 83—174.
Barnes Engineering Co.: *See*—
Barnes, Robert B., Banca, and Engborg. 3,169,189.
Merlen, Monty M. 3,169,164.
Barnes, Philip E.: *See*—
Radtke, Edward W., Stearns, and Barnes. 3,169,183.
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Barr and Stroud Ltd.: *See*—
Strang, John M. 3,169,193.
Barra, Frank J.: *See*—
Johnson, Harold L., and Barra. 3,169,009.
Barrett, Herbert M., to Phillips Petroleum Co. Use of asphalt emulsions for sealing sones of lost circulation. 3,168,920, 2–9–65, Cl. 166—5.
Bartels, Fred L., to Research Products Corp. Method of attaching frames to air filters and the like. 3,168,917, 2–9–65, Cl. 153—1.
Baseman, Maurice S. and S. E., and K. C. Johnson. Corrosion inhibiting compositions. 3,169,116, 2–9–65, Cl. 252—77.
Baseman, Sherwin E.: *See*—
Baseman, Maurice S. and S. E., and Johnson. 3,169,116.
Baumgartner, Pierre, to Institut Francais du Petrole des Carburants et Lubrifiants. Chronyl acetate assisted polypropylene dyeing. 3,169,043, 2–9–65, Cl. 8—4.
Beckman, John H., R. A. Trentham, E. F. Bremer, and V. Hwoschinsky, to Union Carbide Corp. Insulation apparatus. 3,168,817, 2–9–65, Cl. 62—45.
Bell Telephone Laboratories, Inc.: *See*—
Capranica, Robert R. 3,169,168.
Cook, John S., and Hines. 3,169,246.
Cutler, Cassius C. 3,169,245.
Goodale, Walter D., Jr., and Pferd. 3,169,167.
Bella, John, Jr. Game board. 3,169,021, 2–9–65, Cl. 273—134.
Bendix Corp., The: *See*—
Cosby, James R., and Janssen. 3,169,231.
Kjellman, Thomas K., and Watson. 3,169,181.
Ryon, Adelbert H. 3,169,040.
Simon, Arthur, and Weber. 3,168,838.
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Josefsson, Erik A. Á., Bengtsson, and Almqvist. 3,169,055.
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Koback, Benjamin. 3,168,756.
Berg, Edward T. Reglet construction. 3,168,798, 2–9–65, Cl. 50—47.
Berg, Jack A., to Marine Swimming Pool Equipment Co. Cleaning device for swimming pools. 3,168,896, 2–9–65, Cl. 134—167.
Berg, Tore. Ironing machine. 3,168,786, 2–9–65, Cl. 38—59.
Bergen Laboratories, Inc.: *See*—
Preiser, Herman S., and Cook. 3,169,105.
Berkley, Richard E.: *See*—
Kirkpatrick, Willard H., Seale, and Berkley. 3,169,113.
Berman, Elliot, H. E. French, D. S. Most, R. D. Murray, and R. R. Roberts, to Itek Corp. Heat developable diazotype material comprising an unsymmetrical urea as the base release agent. 3,169,067, 2–9–65, Cl. 96—91.
Bernhardt, Gerd O., to Canada Iron Foundries Ltd. Automatic core setters for centrifugal pipe casting machines. 3,168,765, 2–9–65, Cl. 22—65.
Berthoux, Jean, to Progil Societe Anonyme. Purification of impure phenols by distillation with an organic solvent. 3,169,101, 2–9–65, Cl. 202—39.5.
Bertolacini, Ralph J., to Standard Oil Co. Recovery process. 3,169,056, 2–9–65, Cl. 75—83.
Binns, Jack N. Contour roll-turning lathe. 3,168,846, 2–9–65, Cl. 82—2.
Bird, Joseph W.: *See*—
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Birkenmeyer, Robert D., D. Lednicer, F. Kagan, and B. J. Magerlein, to The Upjohn Co. 3-aminoether pregnanes. 3,169,132, 2–9–65, Cl. 260—397.3.

Bishop, Clarence E.: *See*—
Miller, William B., and Bishop. 3,169,089.

Black, Richard W., to United States of America, Army. Apparatus for lightering cargo vessels. 3,168,955, 2–9–65, Cl. 214—13.

Black, Sivalls & Bryson, Inc.: *See*—
Johnson, Harold L., and Barra. 3,169,009.

Blaker, Dave G.: *See*—
Van Pool, Joe, and Blaker. 3,169,152.

Blenke, Erwin, and R. Seis, to Bochumer Eisenhutte Heintsmann Co. Arched mine gallery support and beam therefor. 3,168,815, 2–9–65, Cl. 61—45.

Bliss, Philip, to United Aircraft Corp. Solenoid valve actuator. 3,169,215, 2–9–65, Cl. 317—181.

Bloch, Felix, to United States of America, Agriculture. Preservative of oxygen-labile substances, e.g., foods. 3,169,068, 2–9–65, Cl. 99—171.

Blomquist, Alfred T., and R. A. Vierling, to The B. F. Goodrich Co. 1,2-dimethylcyclobutenedione and method of preparation. 3,169,147, 2–9–65, Cl. 260—586.

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Bochumer Eisenhutte Heintzmann Co.: *See*—
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Bodell, Bruce R. Shipping and storage container for aquatic life. 3,168,887, 2–9–65, Cl. 119—3.

Bohlinger, Ernst, and S. Friedman. Jewelry clasp. 3,168,768, 2–9–65, Cl. 24—116.

Borah, John E. Molded gasket with partially exposed, expandable and contractible metal beaded chain. 3,169,025, 2–9–65, Cl. 277—235.

Borchert, Peter J., to Miles Laboratories, Inc. Method of sising paper with dialdehyde polysaccharide-urea resin and the product thereof. 3,169,076, 2–9–65, Cl. 117—62.2.

Bosak, Paul. Birthday cake candle extinguisher. 3,168,983, 2–9–65, Cl. 239—211.

Bowers, Albert, and J. Edwards, to Syntex Corp. 2β-halo-17α-alkenyl-19-nor-androstane - 3α,17β - diols. 3,169,136, 2–9–65, Cl. 260—397.5.

Brandl, Robert J., Jr., and E. A. Grant, Jr., to Minnesota Mining and Mfg. Co. Lithographic printing plate and method of producing an image thereon. 3,168,864, 2–9–65, Cl. 101—149.2.

Breidert, G. C., Co., The: *See*—
Breidert, George M. 3,168,780.

Breidert, George M., to The G. C. Breidert Co. Method of making roof ventilator. 3,168,780, 2–9–65, Cl. 29—455.

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Beckman, John H., Trentham, Bremer, and Hwoschinsky. 3,168,817.

Briggs & Stratton Corp.: *See*—
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Brodrick, Merrill S. Method of feeding dairy cows. 3,168,888, 2–9–65, Cl. 119—51.

Brown, James R. Apparatus for providing hot and cold beverages and for selectively dispensing same in motor vehicles. 3,168,914, 2–9–65, Cl. 141—59.

Brown, Morris C.: *See*—
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Brown Steel Tank Co.: *See*—
Brown, Walter V. 3,168,906.

Brown, Walter V., to Brown Steel Tank Co. Disconnectible coupling. 3,168,906, 2–9–65, Cl. 137—627.5.

Bruner Corp.: *See*—
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Bryan, Howard W., Jr.: *See*—
Chandler, Coy N., Bryan, and Roach. 3,168,959.

Budd Co., The: *See*—
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Bumgarner, Harley R.: *See*—
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Burroughs Corp.: *See*—
Howard, John H. 3,169,186.
Johnston, Robert L., and Hess. 3,169,063.
Kelly, Robert. 3,168,865.
Shafer, Philip E., Walendziewicz, Bird, and Woolard. 3,168,778.

Busch, Richard E., to Clary Corp. Pulley selection means in rotary type carriers. 3,168,948, 2–9–65, Cl. 197—49.

Butson, Peter C., to The General Electric Co. Ltd. Microwave mixer. 3,169,224, 2–9–65, Cl. 325—446.

Buttery, Kenneth T., and T. Vander Lugt, Jr., to KVP Sutherland Paper Co. Covered carton. 3,168,974, 2–9–65, Cl. 229—51.

Buttery, Kenneth T., and T. Vander Lugt, Jr., to KVP Sutherland Paper Co. Carton having tear strip in cover flaps. 3,168,975, 2–9–65, Cl. 229—51.

Cala, Abram. Fabric hem. 3,168,749, 2–9–65, Cl. 2—243.

Caldwell, Samuel I., and W. J. Denkowski, to King of Prussia Research and Development Corp. Handwheel declutch device. 3,168,841, 2–9–65, Cl. 74—625.

Caldwell, Theodore H.: *See*—
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Calvert, Willard R., to Oxy-Catalyst, Inc. Apparatus for improving the purification of exhaust gases from an internal combustion engine. 3,168,806, 2–9–65, Cl. 60—31.

Campbell, Maxwell S., to Itek Corp. Panoramic camera. 3,168,858, 2–9–65, Cl. 95—16.

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Capranica, Robert R., to Bell Telephone Laboratories Inc. Validity checking circuit. 3,169,168, 2–9–65, Cl. 179—6.3.

Capron, Nicholas J., and A. Christofas, to Pennsalt Chemicals Corp. Coating composition of vinylidene fluoride polymers. 3,169,120, 2–9–65, Cl. 260—29.6.

Capa (Research) Ltd.: *See*—
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Baker, Donald C., and Budd. 3,169,039.

Cavaignac, Jean P., J.-F. Lafleche, and H. J. Jean, to Etablissements Hutchinson (Compagnie Nationale du Caoutchouc). Pneumatic boat. 3,168,751, 2–9–65, Cl. 9—2.

Cavallini, Guido, and E. Massarani, to E. Massarani. Anticholenterinemic and antilipaemic agents. 3,169,144, 2–9–65, Cl. 260—520.

Celanese Corp. of America: *See*—
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Central Commercial Co.: *See*—
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Chafer, Henry J., to Associated Electrical Industries Ltd. Hot wire thermal trip overload electric device. 3,169,180, 2–9–65, Cl. 200—116.

Chandler, Coy N., H. W. Bryan, Jr., and R. T. Roach, to Avco Corp. Cargo transporting system. 3,168,959, 2–9–65, Cl. 214—517.

Chass, Jacob, to International Resistance Co. Pressure transducer. 3,168,830, 2–9–65, Cl. 73—398.

Chiddix, Max E., and R. W. Wynn, to General Aniline & Film Corp. 2,2,3,3-tetrachloro-1,4-butanediol sulfite. 3,169,130, 2–9–65, Cl. 260—327.

Chmiel, William J. Handling tool. 3,169,033, 2–9–65, Cl. 294—15.

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Church, Alice W.: *See*—
Kirkpatrick, Willard H., Seale, and Church. 3,169,118.

Churchill, Walter A. Method of securing an electrical heater to a heat exchanger. 3,168,775, 2–9–65, Cl. 29—155.3.

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Cincinnati Shaper Co., The: *See*—
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Clark, Alexander B., Jr. Pallet structure and method of palletizing. 3,168,879, 2–9–65, Cl. 108—55.

Clary Corp.: *See*—
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Clejan, Deodat, to General American Transportation Corp. Freight transportation systems. 3,168,876, 2–9–65, Cl. 105—368.

Clejan, Deodat, to General American Transportation Corp. Freight transportation systems. 3,168,877, 2–9–65, Cl. 105—368.

Clejan, Deodat, to General American Transportation Corp. Hitches for road semi-trailers. 3,168,878, 2–9–65, Cl. 105—368.

Clouser, Leon C., Jr., to Structo Mfg. Co. Swing-out motor mounting for outdoor grills. 3,168,862, 2–9–65, Cl. 99—421.

Closson, Henry T., to S-F-D Laboratories, Inc. Broadband cavity parametric amplifier with tuning. 3,169,226, 2–9–65, Cl. 330—4.9.

Closson, Henry T., to S-F-D Laboratories, Inc. Diode-cavity parametric amplifier. 3,169,227, 2–9–65, Cl. 330—4.9.

Cochran, Joe F., to General Dynamics Corp. (Convair Division). Method and apparatus for fabricating composite structures. 3,168,782, 2–9–65, Cl. 29—471.1.

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Collins, Howard W.: *See*—
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Compagnie d'Applications Mechaniques a l'Electronique AU Cinema et a l'Atomistique (C.A.M.E.C.A.): *See*—
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Cont, Luciano: *See*—
Pfarrwaller, Erwin, and Cont. 3,168,911.

Cont, Luciano, to Sulser Freres, Societe Anonyme. Weft creel for looms. 3,169,248, 2–9–65, Cl. 139—122.

Container Corp. of America: *See*—
Krieps, Frank J. 3,168,969.

Container Corp. of America: *See*—
Wolowicz, Richard S. 3,168,963.

Continental Can Co., Inc.: *See*—
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Continental Vending Machine Corp.: *See*—
Gold, Joseph, and Levine. 3,168,951.

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Preiser, Herman S., and Cook. 3,169,105.

Cook, John S., and J. N. Hines, to Bell Telephone Laboratories, Inc. Antenna array of same directed horn reflector units supported in a side-by-side manner. 3,169,245, 2–9–65, Cl. 343—776.

Cook, Peter. Transistor ignition system. 3,168,891, 2–9–65, Cl. 123—148.





Coonradt, Harry L., and W. E. Garwood, to Socony Mobil Oil Co., Inc. Catalytic hydrocracking process with the use of a catalyst composite comprising platinum or palladium or silica-alumina. 3,169,107, 2–9–65, Cl. 208—111.

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Hummel, Floyd A. 3,169,072.
Layton, Margaret M., Randels, and Stockdale. 3,169,216.
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Corning, Leon M., R. L. Friedenthal, and R. E. Sarafan, to Advance Chemical Co. Container and apparatus for toilet bowl cleaning fluid. 3,168,984, 2–9–65, Cl. 239—333.

Cosby, James R., and H. K. Janssen, to The Bendix Corp. Telemetering circuit. 3,169,231, 2–9–65, Cl. 331—65.

Coulter, Marshall G. Signal pistol. 3,168,788, 2–9–65, Cl. 42—1.

Crane Co.: *See*—
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Crawford, Jasper, Jr. Nail puller. 3,169,010, 2–9–65, Cl. 254—19.

Creasey, Norman S. Bobber with line attaching and storing means. 3,168,790, 2–9–65, Cl. 43—43.11.

Crowe, John, and K. A. Wallis, to Upright Scaffold Ltd. Mufflers or silencers. 3,168,935, 2–9–65, Cl. 181—42.

Crydom Laboratories, Inc.: *See*—
Engman, Robert G., and Collins. 3,169,232.

Cutler, Cassius C., to Bell Telephone Laboratories, Inc. Passive repeaters for satellite communication systems. 3,169,245, 2–9–65, Cl. 343—18.

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Okwit, Seymour, and Grace. 3,169,196.

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D'Addieco, Alfred A., to E. I. du Pont de Nemours and Co. Hydroxylation process for olefinic higher fatty acid and fatty acid ester. 3,169,139, 2–9–65, Cl. 260—406.

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Dalton, Robert H., to Corning Glass Works. Opaque glass enclosure of specific composition for semiconductor device. 3,169,217, 2–9–65, Cl. 317—234.

Dankert, Gerhard, and H. Holtschmidt, to Farbenfabriken Bayer Aktiengesellschaft. Polysulfide polyurethanes. 3,169,119, 2–9–65, Cl. 260—2.5.

Darracq, Waldo J.: *See*—
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Davis, Claude M.: *See*—
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Davis, George H. Ditching machine having floatingly mounted cutting head. 3,168,785, 2–9–65, Cl. 37—92.

Davis, Harry E. Drinking straw. 3,168,982, 2–9–65, Cl. 239—33.

Davis, John B., to Socony Mobil Oil Co., Inc. Biosynthesis of waxy esters. 3,169,099, 2–9–65, Cl. 195—3.

Davis, John K., and H. G. Fernald, to American Optical Co. Ophthalmic aspheric lens series. 3,169,247, 2–9–65, Cl. 351—167.

Davis, Michael, to May & Baker Ltd. 3,17-diamino androstane and androstene derivatives. 3,169,093, 2–9–65, Cl. 167—65.

Davis, Ralph R. Article dispensing device. 3,168,964, 2–9–65, Cl. 221—68.

Davis, Richard K., and F. M. Bailey, to General Electric Co. Identification interrogating system. 3,169,242, 2–9–65, Cl. 343—6.5.

Davison, Joseph W., to Phillips Petroleum Co. Low temperature purification of ethylene. 3,169,052, 2–9–65, Cl. 62—20.

Dean, Albert G., and H. T. Hermann, to The Budd Co. Closure for a rail sanding apparatus. 3,168,960, 2–9–65, Cl. 220—32.

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De Clerk, Joseph L., E. P. Kennedy, deceased (W. R. Warwick, administrator), and D. L. La Banca. Automatic exposure controlled film printer. 3,168,860, 2–9–65, Cl. 95—75.

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Garnier, Henri L., Rubet, Desroches, Marchal, and Lutz. 3,168,978.

Dick, Lester C.: *See*—
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Dickinson, Robert W., and D. T. Eggen, to United States of America, Atomic Energy Commission. Nuclear reactor fuel paste composition. 3,169,117, 2–9–65, Cl. 252—301.1.

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Dietert, Harry W., to Harry W. Dietert Co. Weighing and transfer apparatus. 3,168,926, 2–9–65, Cl. 177—114.

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Dietert, Harry W. 3,168,926.
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Dietert, Harry W., to Harry W. Dietert Co. Mechanical vibrator for moldability controller. 3,169,108, 2–9–65, Cl. 209—275.

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Drexler, Jerome, R. Angle, and F. A. Feulner, to S-F-D Laboratories Inc. Magnetron. 3,169,211, 2–9–65, Cl. 315—39.77.

Duffy, William B., and R. A. Hartman, to United Carr Inc. Mounting means. 3,169,007, 2–9–65, Cl. 248—343.

Du Pont de Nemours, E. I., and Co.: *See*—
Miller, Henry C., and Muetterties. 3,169,044.
Miller, Henry C., and Muetterties. 3,169,045.
D'Addieco, Alfred A. 3,169,139.

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Dyrahl, Gorden H., to Owatonna Mfg. Co., Inc. Adjustable skid shoe for swathers and the like. 3,168,800, 2–9–65, Cl. 56—210.

Eagles, Robert P. Dispenser. 3,168,913, 2–9–65, Cl. 141—23.

Edmans, Albert T., to Hesse-Eastern, Inc. Fuzes provided with means for electrically checking the safety. 3,168,866, 2–9–65, Cl. 102—76.

Edwards, John: *See*—
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Eggen, Donald T.: *See*—
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Eichholtz, Konrad, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Composite jet engine for aircraft having a large range of speed. 3,168,998, 2–9–65, Cl. 244—23.

Ellert, William F. Free breathing two-cycle internal combustion engines. 3,168,890, 2–9–65, Cl. 123—721.

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Barnes, Robert B., Banca, and Engborg. 3,169,189.

Engman, Robert G., and H. W. Collins, to Crydom Laboratories, Inc. Controlled rectifier circuit. 3,169,232, 2–9–65, Cl. 332—9.

Epstein, Robert. Gripping and lifting device. 3,169,034, 2–9–65, Cl. 294—16.

Ernst, Adolphe O. G., J. P. J. Jardinier, and J. Róna, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Automatic attitude control device for V. T. O. L. 3,169,000, 2–9–65, Cl. 244—76.

Establissements Hutchinson (Compagnie Nationale du Caoutchouc): *See*—
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Eternod, Albert J. Lawn edge trimmer. 3,168,801, 2–9–65, Cl. 56—256.

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Falcone, Luigi, and F. Scalari, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process for halogenating organic compounds. 3,169,103, 2–9–65, Cl. 204—158.

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Fazio, John F., to United States of America, Army. Escapement mechanism. 3,168,832, 2–9–65, Cl. 74—1.5.

Fein, Marvin M., and J. Bobinski, to Thiokol Chemical Corp. Method of preparing organoboron compounds. 3,169,148, 2–9–65, Cl. 260—606.5.

Ferington, Thomas E., and R. N. Chadha, to W. R. Grace & Co. Process for producing a polymer coating 3,169,079, 2–9–65, Cl. 117—124.

Fernald, Henry G.: *See*—
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Feulner, Fred A.: *See*—
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Fischer and Porter Co.: *See*—
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Fisher, Gene L., to General Motors Corp. Infinite heat switch for controlling a plurality of heating elements. 3,169,176, 2–9–65, Cl. 200—38.

Fix, Oliver W. Infrared countermeasure system using radial shutter array for light modulation. 3,169,165, 2–9–65, Cl. 88—61.

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Fletcher, Peter S. Leg-rest control arrangement for reclining chairs. 3,169,035, 2–9–65, Cl. 297—85.
Fleury, Jack E., to American Radiator & Standard Sanitary Corp. Thermal power element. 3,168,805, 2–9–65, Cl. 60—25.
Florer, James W., G. W. Gillemot, and C. M. Davis, to Automatic Electric Laboratories, Inc. Audible leak locator. 3,168,824, 2–9–65, Cl. 73—40.5.
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Fonden, Per B., and K. O. T. Walander. Device for braking landing aircraft. 3,169,002, 2–9–65, Cl. 244—110.
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Franchi, Armand J., to International Telephone and Telegraph Corp. Audio actuated switch for transceiver transmitter. 3,169,221, 2–9–65, Cl. 325—15.
Frank, Charles. Self-locking bolt and nut. 3,168,915, 2–9–65, Cl. 151—31.
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Frye, William A., to General Motors Corp. Method of manufacturing a drive roller for a domestic appliance. 3,168,773, 2–9–65, Cl. 29—148.4.
Galloway, Frederick M., and R. H. Sinnamon, to H. K. Porter, Co., Inc. Reinforced automotive heater hose or the like and method of making it. 3,168,910, 2–9–65, Cl. 138—137.
Garcia, Anthony M.: *See*—
Redford, Lloyd H., and Garcia. 3,168,937.
Gardel, Robert. Doll walker unit. 3,168,794, 2–9–65, Cl. 46—149.
Gardner Machines, Inc.: *See*—
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Garner, Abel E., to Garner & Co., Inc. Framed kitchenware. 3,169,041, 2–9–65, Cl. 312—328.
Garner & Co., Inc.: *See*—
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Garner, Fay T. Vehicle having box-like frame. 3,168,927, 2–9–65, Cl. 180—6.48.
Garnier, Henri L., L. Rubet, L. J. Desroches, R. H. F. Marchal, and L. P. H. Neullen, ½ to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, and ½ to Commissariat a l'Energie Atomique. Turbomolecular vacuum pump. 3,168,977, 2–9–65, Cl. 230—117.
Garnier, Henri L., L. Rubet, L. J. Desroches, R. H. F. Marchal, and J. Lutz, ½ to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, and ½ to Commissariat a l'Energie Atomique. Turbomolecular vacuum pump. 3,168,978, 2–9–65, Cl. 230—118.
Garriss, Thurman W. Twisting doll. 3,168,795, 2–9–65, Cl. 46—139.
Garwood, William E.: *See*—
Coonradt, Harry L., and Garwood. 3,169,107.
Gattiker, Albert F., Jr., to Ingersoll-Rand Co. Wire inserting and cutting device. 3,168,750, 2–9–65, Cl. 7—14.1.
Gatsemeyer, Jacob B., and N. E. Starkey, to General Electric Co. Two shaft gas turbine control system. 3,168,810, 2–9–65, Cl. 60—39.16.
Gavlin, Gilbert, and K. Hattori, to The Richardson Co., Preparation of 2-aminoethyl hydrogen sulfate. 3,169,143, 2–9–65, Cl. 260—458.
Gay, Lawrence H., to Deere & Co. Telescoping discharge spout. 3,168,946, 2–9–65, Cl. 193—6.
Gayley, Harry B., to Ingersoll-Rand Co. Cutting inserts for rock drill bits. 3,168,925, 2–9–65, Cl. 175—410.
Gednalske, Louis L. Fishing rig for ice fishing. 3,168,789, 2–9–65, Cl. 43—19.2.
General American Transportation Corp.: *See*—
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Clejan, Deodat. 3,168,877.
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Hutt, Philip. 3,169,174.
Kestner, Harold R., and Kuebler. 3,169,205.
Lennon, David C. 3,169,179.
McQuade, James M. 3,169,236.
Omer, Kenner S., Jr. 3,168,953.
Santeler, Donald J. 3,168,819.
Warren, Robert E., and Scherl. 3,168,999.
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Zagorski, Wladyslaw S. 3,169,177.
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Schults, Werner F. 3,168,868.
Upton, Ernest W. 3,168,911.
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Samet, Frank. 3,168,898.
Genjack, Conrad. Baseball catching and throwing cup for attachment to a bat or other article. 3,169,019, 2–9–65, Cl. 273—26.
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Sommerman, George M. L., Gerber, and Livingston. 3,169,084.
Giampa, Tony J. Beverage dispenser. 3,168,967, 2–9–65, Cl. 222—129.1.
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Redford, Lloyd H., and Garcia. 3,168,937.
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Gilbert, William H., to Lifetime Door Co. Solid core door. 3,168,763, 2–9–65, Cl. 20—35.
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Florer, James W., Gillemot, and Davis. 3,168,824.
Gillette France: *See*—
Cardinet, Guy, and Faudemay. 3,168,843.
Gipstein, Edward, and C. O. Miller, to Olin Mathieson Chemical Corp. Preparation of alkyldichloroboranes. 3,169,145, 2–9–65, Cl. 260—643.
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Goldberg, Eugene P., to General Electric Co. Carbonate-carboxylate copolyesters of dihydric phenols and difunctional carboxylic acids. 3,169,121, 2–9–65, Cl. 260—47.
Goodale, Walter D., Jr., and W. Pferd, to Bell Telephone Laboratories, Inc. Telephone pay station. 3,169,167, 2–9–65, Cl. 179—6.3.
Gooding, Willard H., to Western Velo & Cement Specialties Co. Hopper structure. 3,168,945, 2–9–65, Cl. 193—4.
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Greenwald, Harry, ½ to L. Wolff, and ½ to H. Silberglait. Two-speed clutching and reversing system for washing machine drive. 3,168,837, 2–9–65, Cl. 74—368.
Greenwald, Harry, ½ to L. Wolff, and ½ to H. Silberglait. Rotary coin meter. 3,168,947, 2–9–65, Cl. 194—61.
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Grise, Frederick G. J. Cart having self winding reel. 3,168,994, 2–9–65, Cl. 242—86.6.
Grossi, Lewis G., to Alto Co. Transfer mechanism for bread, rolls and the like. 3,168,958, 2–9–65, Cl. 214—309.
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Haber, Robert J., to All American Engineering Co. Rotary energy absorber unit drag control means. 3,168,939, 2–9–65, Cl. 188—90.
Hagberg, Hugo E., to Carling Electric, Inc. Single pole progresive switch for electrical circuits. 3,169,172, 2–9–65, Cl. 200—5.
Haggstrom, Walter R. Indexing table. 3,168,842, 2–9–65, Cl. 74—822.
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Hanson, Helen L., and L. R. Fletcher, to United States of America, Agriculture. Preparation of pre-cooked frozen poultry products. 3,169,069, 2–9–65, Cl. 99—194.
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Wicken, Oscar M., and Schneider. 3,169,016.
Harrington, William B., to Ferranti, Ltd. Sequence spark gap system with perforated gap electrodes. 3,169,208, 2–9–65, Cl. 315—36.
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Heinemann, Otto, to Allis-Chalmers Mfg. Co. Process and equipment for the production of granulated material. 3,168,989, 2–9–65, Cl. 241—3.
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Helmbold, Theodor. Transverse flow type blowers. 3,168,979, 2–9–65, Cl. 230—125.
Hennes, John H., to The Dow Chemical Co. Bis-phenol aziridinecarboxylic esters. 3,169,122, 2–9–65, Cl. 260—47.
Henry, Georges, to Glaverbel S.A. Process and apparatus for the recovery of heat from furnaces for working glass and similar products. 3,169,015, 2–9–65, Cl. 263—29.
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Edmands, Albert T. 3,168,866.
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Hochman, Harry, to United States of America, Navy. Coating composition. 3,169,071, 2–9–65, Cl. 106—15.
Hoegl, Helmut, to Azoplate Corp. Photoconductive layers for electrophotographic purposes. 3,169,060, 2–9–65, Cl. 96—1.
Hoerner, Hans. Photomechanical method of producing printing forms. 3,169,066, 2–9–65, Cl. 96—35.
Hofgesand, William, and E. W. Stanton, to The Singer Co. Stands for sewing machine cabinets. 3,168,880, 2–9–65, Cl. 112—217.1.
Holbein, Raymond G., to Fabriques de Produits Chimiques de Thann et de Mulhouse. Rutile titanium dioxide pigments and process for their production. 3,169,074, 2–9–65, Cl. 106—300.
Holdo, Andrea O., to F. L. Moseley Co. Signal ratio measuring system providing constant servo loop gain. 3,169,220, 2–9–65, Cl. 324—140.
Hollander, Harry. Vision trainer. 3,168,894, 2–9–65, Cl. 128—76.5.
Holmes, Trent H., and C. A. Glenn, to United Aircraft Corp. Thrust control. 3,168,809, 2–9–65, Cl. 60—35.6.
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Nelson, David E. 3,168,829.
Horne, Walter B., to United States of America, National Aeronautics and Space Administration. Aircraft wheel spray drag alleviator. 3,169,001, 2–9–65, Cl. 244—103.
Horner, Charles R., and W. F. Gray, to United States of America, Navy. Case for phosphor glass dosimeter. 3,169,188, 2–9–65, Cl. 250—83.
Hornick, George J. Pouring nozzle and stopper. 3,168,766, 2–9–65, Cl. 22—85.
Hornschuch, Hanns, to Ingersoll-Rand Co. Centrifugal pump with adjustable capacity. 3,168,870, 2–9–65, Cl. 103—97.
Howard, John H., to Burroughs Corp. Optical coded document reader. 3,169,186, 2–9–65, Cl. 250—71.
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Hudson, Kenneth C., to Radio Corp. of America. Electrostatic printing. 3,169,061, 2–9–65, Cl. 96—1.
Hudson, Le Roy F., Jr., to General Electric Co. Apparatus for energizing radio receiver in response to power line alarm signal. 3,169,223, 2–9–65, Cl. 325—394.
Huffman, Fred N., to United States of America, Atomic Energy Commission. Thermotunnel converter. 3,169,200, 2–9–65, Cl. 310—4.
Hummel, Floyd A., to Corning Glass Works. Ceramic bodies and their production. 3,169,072, 2–9–65, Cl. 106—39.
Hurlburt, George R., to United States of America, Interior. Automatic water control gate. 3,168,814, 2–9–65, Cl. 61—25.
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Ishiwara, Tatsuya, K. Ogawa, S. Komaki, and Y. Yamamoto, to Kabushiki Kaisha Daini Seikosha. Time measuring instrument. 3,168,803, 2–9–65, Cl. 58—79.
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Jepson, Ivar, to Sunbeam Corp. Electric connector for remotely controlled electric heating and cooking vessels. 3,169,042, 2–9–65, Cl. 339—91.
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Jinks, Gregory S. and D. M. Fork lift trucks. 3,168,956, 2–9–65, Cl. 214—75.
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Johansson, Folke K. E., to Stora Kopparbergs Bergslags Aktiebolag. Means for protecting the nose of rotary furnaces. 3,169,160, 2–9–65, Cl. 266—36.
John, Charles, Jr., and J. A. Kaufman, to Phillips-Van Heusen Corp. Quick release buckle. 3,168,770, 2–9–65, Cl. 24—230.
Johnson, Frank O. Semiprecious stone cutting vise. 3,168,893, 2–9–65, Cl. 125—13.
Johnson, Harold L., and F. J. Barra, to Black, Sivalls & Bryson, Inc. Time cycle controller. 3,169,009, 2–9–65, Cl. 253—39.
Johnson, Jack E. Programming switch construction. 3,169,175, 2–9–65, Cl. 200—32.
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Johnson, Robert E., and R. J. McClintick, to General Dynamics Corp. Apparatus for the forming and sging of titanium alloys. 3,169,156, 2–9–65, Cl. 266—2.5.
Johnson, Sanders R. Tool for polishing pipe fittings and the like. 3,168,799, 2–9–65, Cl. 51—186.
Johnston, Robert L., and W. E. Hess, to Burroughs Corp. Method of making printed circuits. 3,169,063, 2–9–65, Cl. 96—27.
Jones, John P. B. Sonic emulsifying and homogenization apparatus. 3,169,013, 2–9–65, Cl. 259—4.
Josefsson, Erik A. Á., E. A. Bengtsson, and K. K. A. Almqvist, to Stora Kopparbergs Bergslags Aktiebolag. Process for producing pig iron in rotary furnace. 3,169,055, 2–9–65, Cl. 75—40.
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Kestner, Harold R., and R. A. Kuebler, to General Electric Co. Fluorescent lamp mount. 3,169,205, 2–9–65, Cl. 313—109.

Kikuchi, Tadashi, to Tohoku Metal Industries, Ltd. Magnetic delay circuits for computer systems. 3,169,195, 2–9–65, Cl. 307—88.

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Kirkpatrick, Willard H., V. L. Seale, and A. W. Church, to Nalco Chemical Co. Compositions and processes for breaking petroleum emulsions. 3,169,118, 2–9–65, Cl. 252—341.

Kjellman, Thomas K., and F. O. Watson, to The Bendix Corp. Temperature and humidity responsive device having high switching load capacity. 3,169,181, 2–9–65, Cl. 200—138.

Kleiner, Frederick W., G. T. Kuwayama, and F. Wahl, to Western Electric Co., Inc. Apparatus for stripping measured lengths of insulation. 3,168,845, 2–9–65, Cl. 81—9.51.

Klimstra, Paul D., to G. D. Searle & Co. 2,3-oxygenated-17a-methyl-5e-androstan-17β-ols. 3,169,134, 2–9–65, Cl. 260—397.4.

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Knaggs, Edward A., and M. L. Nussbaum, to Stepan Chemical Co. Method for sulfonation and sulfation of organic compounds. 3,169,142, 2–9–65, Cl. 260—457.

Knapp, Phillip M., to Aircraft Armaments, Inc. Method to adjust photoelectric telescope to respond to constant object size. 3,169,191, 2–9–65, Cl. 250—211.

Knighton, James B., and R. K. Steunenberg, to United States of America, Atomic Energy Commission. Separation of plutonium, uranium and fission products from each other. 3,169,057, 2–9–65, Cl. 75—84.1.

Koback, Benjamin, to Ben-Ko-Matic, Inc. Cylindrical broom. 3,168,756, 2–9–65, Cl. 15—182.

Kober, Ehrenfried H., and W. J. Schnabel, to Olin Mathieson Chemical Corp. Process for the recovery of organic isocyanates. 3,169,141, 2–9–65, Cl. 260—453.

Kohashi, Tadao, to North American Philips Co., Inc. Negative picture radiating apparatus. 3,169,192, 2–9–65, Cl. 250—213.

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Kretzinger, Elwood A. Means for indicating the distribution of a golfer's weight at the instant of ball impact. 3,169,022, 2–9–65, Cl. 273—183.

Krieger, Richard S. Apparatus for disintegrating granular particles. 3,168,900, 2–9–65, Cl. 241—248.

Krieps, Frank J., to Container Corp. of America. Off-center dispensing closure arrangement. 3,168,969, 2–9–65, Cl. 222—520.

Krikorian, Garo, to Rice Barton Corp. Trailing blade coater. 3,169,082, 2–9–65, Cl. 118—413.

Kroon, Pieter J., to Scott Paper Co. Rotary cylinder drying drum with stress relieving expansion means. 3,169,050, 2–9–65, Cl. 34—124.

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Kurzinski, Edward F., to Air Products and Chemicals, Inc. Oxygen-fuel probe. 3,169,161, 2–9–65, Cl. 266—41.

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Lamb, Charles F., to Grinnell Corp. Conductor bar splice and method of making the same. 3,169,031, 2–9–65, Cl. 287—2.

Lavin, Andrew J., and W. J. Wheeler, to International Business Machines Corp. Square wave pulse generator. 3,169,203, 2–9–65, Cl. 310—156.

Layton, Margaret M., R. B. Randels, and G. F. Stockdale, to Corning Glass Works. Capacitor with composite leads of different metals. 3,169,216, 2–9–65, Cl. 317—261.

Leavitt, Stanley L., to United Aircraft Corp. Reactor core rod support. 3,169,098, 2–9–65, Cl. 176—87.

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Prince, Richard. Hydraulic cylinder device. 3,168,853, 2-9-65, Cl. 91—167.
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| 60– 23 | 3,168,804 | 102– 76 | 3,168,866 | 314 | 3,168,924 | 51 | 3,168,974 | 543 | 3,169,145 | 210 | 3,169,235 |
| 25 | 3,168,805 | 103– 6 | 3,168,867 | 410 | 3,168,925 | | 3,168,975 | 561 | 3,169,146 | 218 | 3,169,236 |
| 31 | 3,168,806 | 87 | 3,168,868 | 176– 79 | 3,169,097 | | 3,168,976 | 586 | 3,169,147 | 338–174 | RE.25,725 |
| 35.3 | 3,168,807 | 96 | 3,168,869 | 87 | 3,169,098 | 230–117 | 3,168,977 | 606.5 | 3,169,148 | 253 | 3,169,237 |
| 35.6 | 3,168,808 | 97 | 3,168,870 | 177–114 | 3,168,926 | 118 | 3,168,978 | 620 | 3,169,149 | 339– 91 | 3,169,042 |
| | 3,168,809 | 108 | 3,168,871 | 179– 5 | 3,169,166 | 125 | 3,168,979 | 646 | 3,169,150 | 340–187 | 3,169,238 |
| 39.16: | 3,168,810 | 157 | 3,168,872 | 6.3 | 3,169,167 | 235– 1 | 3,168,980 | 667 | 3,169,151 | 252 | 3,169,239 |
| 54 | 3,168,811 | 221 | 3,168,873 | | 3,169,168 | 58 | 3,168,981 | 683.48: | 3,169,152 | 324 | 3,169,240 |
| 54.6 | 3,168,812 | 104– 89 | 3,168,874 | 8 | 3,169,169 | 160 | 3,169,185 | | 3,169,153 | 373 | 3,169,241 |
| 61– 1 | 3,168,813 | 134 | 3,168,875 | 27 | 3,169,170 | 164 | RE.25,724 | 261– 41 | 3,169,154 | 343– 6.5 | 3,169,242 |
| 25 | 3,168,814 | 105–368 | 3,168,876 | 185 | 3,169,171 | 239– 33 | 3,168,982 | 263– 29 | 3,169,015 | 7.7 | 3,169,243 |
| 45 | 3,168,815 | | 3,168,877 | 180– 6.48: | 3,168,927 | 211 | 3,168,983 | 32 | 3,169,016 | 17.7 | 3,169,244 |
| 62– 3 | 3,168,816 | | 3,168,878 | 7 | 3,168,928 | 333 | 3,168,984 | 264– 66 | 3,169,155 | 18 | 3,169,245 |
| 20 | 3,169,052 | 106– 15 | 3,169,071 | 9.54: | 3,168,929 | 240– 9.5 | 3,168,985 | 266– 2.5 | 3,169,156 | 776 | 3,169,246 |
| 45 | 3,168,817 | 39 | 3,169,072 | 73 | 3,168,930 | 44.2 | 3,168,986 | 3 | 3,169,157 | 351–167 | 3,169,247 |
| 256 | 3,168,818 | 139 | 3,169,073 | 82 | 3,168,931 | 51.11: | 3,168,987 | 5 | 3,169,158 | | |

## CLASSIFICATION OF DESIGNS

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D 1– 12 | 200,229 | D30– 1 | 200,239 | D44– 10 | 200,249 | D57– 1 | 200,259 | D58– 26 | 200,269 | D80– 11 | 200,279 |
| D 2– 3 | 200,230 | D33– 7 | 200,240 | | 200,250 | D58– 5 | 200,260 | | 200,270 | D81– 10 | 200,280 |
| D 3– 26 | 200,231 | D34– 5 | 200,241 | 26 | 200,251 | | 200,261 | | 200,271 | D83– 1 | 200,281 |
| D 4– 5 | 200,232 | D37– 1 | 200,242 | 29 | 200,252 | 6 | 200,262 | D61– 1 | 200,272 | 8 | 200,282 |
| D13– 1 | 200,233 | | 200,243 | D47– 5 | 200,253 | 8 | 200,263 | D64– 11 | 200,273 | 12 | 200,283 |
| D20– 2 | 200,234 | D39– 1 | 200,244 | D49– 1 | 200,254 | 13 | 200,264 | D71– 1 | 200,274 | D86– 10 | 200,284 |
| D22– 2 | 200,235 | D42– 7 | 200,245 | D50– 5 | 200,255 | 17 | 200,265 | | 200,275 | D89– 1 | 200,285 |
| D23– 1 | 200,236 | | 200,246 | D52– 6 | 200,256 | | 200,266 | | 200,276 | D90– 1 | 200,286 |
| D26– 14 | 200,237 | D44– 1 | 200,247 | D54– 16 | 200,257 | | 200,267 | D74– 1 | 200,277 | D91– 1 | 200,287 |
| D30– 1 | 200,238 | 10 | 200,248 | D56– 9 | 200,258 | 25 | 200,268 | D80– 8 | 200,278 | | |

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
February 9, 1965 Volume 811 Number 2

# TRADEMARKS

## NOTICES

**Service by Publication**

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known adress having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants, listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Preen Products, Minneapolis, Minn., Reg. No. 433,418, Canc. No. 8375.

Gordon Plastic Products Corp., assignee of Joseph M. Gordon, Lynn, Mass., Reg. No. 438,363, Canc. No. 8389.

EDWIN L. REYNOLDS,
*First Assistant Commissioner of Patents.*

## CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1964

| | |
|---|---|
| Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] | 15, 450 |
| Date of oldest new application | June 1, 1964 |
| Date of oldest amended application | May 4, 1964 |

**J. H. MERCHANT, Director, Trademark Examining Operation**

| TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application | |
|---|---|---|
| | New | Amended |
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44 | 6-16-64 | 6-1-64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 6-1-64 | 5-4-64 |
| Renewals (All Classes) | 12-11-64 | 12-10-64 |
| Sec. 12 (c) Publications (All Classes) | 12-14-64 | |

Applications filed during the month of December 1964—2,135

Registrations Issued ..... 383—No. 784,603 to No. 784,985
Renewals Issued ..... 42

For the quarter—October 1, 1964 through December 31, 1964

| | |
|---|---|
| Applications filed | 6379 |
| Registrations issued | 4611 |
| Renewals issued | 635 |
| Cancellations under Sec. 8 | 1202 |

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 172,136. Foote & Jenks, Inc., Jackson, Mich. Filed June 24, 1963.

### CLIPPER

Owner of Reg. No. 304,811.

**Class 45—Soft Drinks and Carbonated Waters**

For Natural and Imitation Flavors Used in the Preparation of Soft Drinks and Fountain Syrups.

**Class 46—Foods and Ingredients of Foods**

For Natural and Imitation Flavors Used for Food Purposes and in the Preparation of Food Beverages.

First use July 1, 1932.

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SN 173,426. Century Wheels, Inc., Highland Park, Ill. Filed July 22, 1963.

### CENTURY

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Tools for Use in Connection With Brake Drum Repair, Installation and Replacement.

**Class 26—Measuring and Scientific Appliances**

For Brake Drum Gauges.

First use May 4, 1963.

---

SN 182,492. Metal Flo Corporation, Rives Junction, Mich. Filed Dec. 6, 1963.

### METAL FLO

**Class 2—Receptacles**

For Containers, Cans, Container Assemblies, and Painted and Plated Metal Containers.

**Class 14—Metals and Metal Castings and Forgings**

For Deep Drawn, Formed and Finished Metal Parts—Namely, Tubes, Metal Stampings, and Painted or Plated Metal Stampings.

**Class 19—Vehicles**

For Descent Slowing Devices Consisting of a Rotochute Assembly Utilized To Control and Slow Down the Descent of a Sonobuoy and Orientate It for Water Entry.

First use Aug. 26, 1963.

---

SN 201,575. Ceara Products, Inc., Denver, Colo. Filed Sept. 10, 1964.

### CEARA

**Class 4—Abrasives and Polishing Materials**

For Waxes for Use on Automobiles, Furniture, Boats, and Airplanes.

First use Oct. 10, 1955.

**Class 15—Oils and Greases**

For Base Wax—e.g., Wax for Mold Release.

First use Oct. 13, 1958.

**Class 52—Detergents and Soaps**

For Pre-Wax Cleaners.

First use Oct. 10, 1955.

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## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 155,276. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company, Los Angeles, Calif. Filed Oct. 16, 1962.



For Synthetic Resins and Plastics.

First use Jan. 24, 1961.

SN 195,929. Conap, Inc., Allegany, N.Y. Filed June 18, 1964.

### CONATHANE

For Urethane Prepolymers Which Can Be Converted to Solid Elastomers by the Use of Other Chemicals.

First use on or about Dec. 26, 1962.

---

SN 196,483. Steinberg Bros., Inc., New York, N.Y. Filed June 25, 1964.

### CABRATAN

For Tanned Leather.

First use on or about May 15, 1964.





SN 196,569. Thiokol Chemical Corporation, Bristol, Pa. Filed June 26, 1964.

### THIOKOL

Owner of Reg. Nos. 273,883, 653,237, and 654,307.

For Polytetrafluoroethylene.

First use April 1964.

---

SN 196,576. Western Talc Company, Los Angeles, Calif. Filed June 26, 1964.

### SNOW GOOSE

For Talc Used as a Filler in the Manufacture of Paper, Paints, Ceramic and Rubber Products.

First use Feb. 4, 1953.

---

### Class 2—Receptacles

SN 129,628. Owens-Illinois Glass Company, Toledo, Ohio. Filed Oct. 10, 1961.

### LIBBEY

Owner of Reg. No. 54,172.

For Plastic Tableware.

First use June 8, 1960.

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SN 166,525. Automatic Poultry Feeder Company, Zeeland, Mich. Filed Apr. 11, 1963.

### STOR-VEY

For Bulk Feed Storage Bins for Animals.

First use on or about Mar. 19, 1963.

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SN 197,513. Snap-On Tools Corporation, Kenosha, Wis. Filed July 9, 1964.

### SNAP-ON

Owner of Reg. No. 662,736.

For Oil Cans, Carboard Mailing Containers, and Metal Plain and Drawer-Type Receptacles of All Kinds Used by Mechanics for Tools, Supplies and Equipment.

First use during 1929.

---

### Class 5—Adhesives

SN 195,362. Broadview Chemical Corporation, Broadview, Ill. Filed June 11, 1964.

### REDI-FORM

For Settable Sealant Compositions Having Adhesive Characteristics for Use in Forming Sealing Gaskets.

First use Apr. 29, 1964.

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### Class 6—Chemicals and Chemical Compositions

SN 181,338. Dr. Fernando Cuenca Villoro, Zaragona, Spain. Filed Nov. 18, 1963.

### ANFIVIRASA

Owner of Spanish Reg. No. 267,388, dated July 22, 1953.

For Proteinaceous Enzymatic Raw Material for Cellular Nutrition and Organic Development Preparations.

SN 194,854. American Cyanamid Company, Wayne, N.J. Filed June 4, 1964.

### WARBEX

Owner of Reg. No. 436,536.

For Grubicide and an Insecticide for Veterinary Use.

First use May 12, 1964.

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### Class 7—Cordage

SN 187,182. Eastman Kodak Company, Rochester, N.Y. Filed Feb. 21, 1964.

### EASTMAN

Owner of Reg. Nos. 298,573, 641,595, and others.

For Twine.

First use Dec. 24, 1963.

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### Class 8—Smokers' Artides, Not Including Tobacco Products

SN 202,461. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 23, 1964.

### AIR-CONTROL

For Smokers' Pipes.

First use January 1963.

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SN 202,570. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

### Jet Stream

For Smokers' Pipes.

First use January 1962.

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### Class 10—Fertilizers

SN 193,876. International Minerals & Chemical Corporation, Skokie, Ill. Filed May 20, 1964.



Owner of Reg. No. 722,118 and others.

For Fertilizers and Fertilizer Ingredients.

First use March 1960.

## Class 12 — Construction Materials

SN 171,591. Vida Mosaic Co., San Francisco, Calif. Filed June 21, 1963.

### PEBLON

For Mosaic Patterned Rigid and/or Flexible Sheets Used as Facing on Interior and Exterior Walls, Floors, and Other Surfaces.
First use Feb. 21, 1963.

---

SN 176,282. Crown Aluminum Industries Corporation, Pittsburgh, Pa. Filed Sept. 4, 1963.

### EONITE

For Aluminum Siding Provided With a Plastic Dispersion Finish Fused to the Siding.
First use Aug. 15, 1963.

---

SN 178,352. Johns-Manville Corporation, New York, N.Y. Filed Oct. 4, 1963.

### THERMO-CAP

For Light-Weight Granular Insulating Material for Application to Hot Ingots.
First use at least on or about Aug. 15, 1963.

---

SN 186,058. The Celotex Company, Chicago, Ill., assignee of The Celotex Corporation, Chicago, Ill. Filed Feb. 5, 1964.

### RESISTONE

For Acoustical Tile.
First use Jan. 24, 1964.

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SN 188,692. Witco Chemical Company, Inc., New York, N.Y. Filed Mar. 13, 1964.

### WITCOTOP

Owner of Reg. Nos. 765,753 and 769,017.
For Surface Sealer Composition for Application to Surfaces Such as Pavements, Driveways, Sidewalks, Parking Areas, and Playgrounds.
First use Aug. 1, 1963.

---

SN 191,330. The Sullivan Company, Memphis, Tenn. Filed Apr. 16, 1964.

### RUFSIT

Owner of Reg. No. 406,650.
For Retardant Coating for Treating the Surface of Unset Concrete or a Preparation in the Nature of a Treatment for New Concrete To Produce Rough Finishes or Bond, and for Application to Attachments That Are Later To Be Removed in Connection With General Farm Work.
First use Mar. 5, 1936.

---

SN 192,037. Hastings Aluminum Products, Inc., Hastings, Mich. Filed Apr. 27, 1964.

### SUSPEND-X

For Ceiling Panels.
First use May 17, 1963.

SN 192,075. Puget Sound Mfg. Company, Tacoma, Wash. Filed Apr. 27, 1964.

### WOODGLIDE

For Wooden Doors.
First use Apr. 16, 1963.

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SN 194,004. United States Mineral Wool Company, Stanhope, N.J. Filed May 21, 1964.

### TILE-LITE

For Ceiling Tiles Made of Acoustical Materials.
First use May 1, 1964.

---

SN 194,240. Russell Reinforced Plastics Corporation, Lindenhurst, N.Y. Filed May 25, 1964.

### Roundel TROPIGLAS

Owner of Reg. No. 608,186.
For Glass Fiber Reinforced, Plastic Panels and Slats Utilized in Wall Openings of Buildings, and Wall Sections or Partitions.
First use Oct. 14, 1963.

---

SN 194,443. United States Mineral Wool Company, Stanhope, N.J. Filed May 27, 1964.

### POWER-SHIELD

For Mineral Wool Fiber To Be Applied to Walls and Other Surfaces for Thermal Insulation.
First use May 25, 1964.

---

SN 197,215. Wakefield-Smeaton, Inc., Menomonee Falls, Wis. Filed July 6, 1964.

### CUSTOMDEK

For Precast Concrete Slabs or Panels.
First use Feb. 1, 1961.

---

SN 197,358. Bangkok Industries, Inc., Philadelphia, Pa. Filed July 8, 1964.

### KARPAWOOD

For Dimensional Lumber, Wooden Boards, Moldings, and Parquet Blocks Designed for Wood Flooring, and Wall Panelling.
First use Jan. 10, 1964.

---

SN 197,379. The Flintkote Company, New York, N.Y. Filed July 8, 1964.

### FLEXGOLD

Owner of Reg. Nos. 374,699 and 707,147.
For Vinyl Asbestos Floor Tile.
First use on or about Mar. 31, 1960.



SN 197,394. Johns-Manville Corporation, New York, N.Y. Filed July 8, 1964.

### ACOUSTI-SHELL

For Acoustical Panels.
First use on or about Dec. 28, 1961.

---

SN 197,421. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed July 8, 1964.

### AEROFLEX

For Fibrous Glass Insulation in the Form of a Mat or Bat Suitable for Use as a Duct Liner.
First use March 1964.

---

SN 197,487. Grossman Steel Stair Corporation, Bronx, N.Y. Filed July 9, 1964.

### V·I·P·S

For Interior Partitions for Buildings.
First use Apr. 22, 1964.

---

SN 198,231. Simpson Timber Company, Seattle, Wash. Filed July 20, 1964.

### V.I.*20

For Redwood Siding.
First use May 26, 1964.

---

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 188,446. The H. B. Ives Company, New Haven, Conn. Filed Mar. 11, 1964.

### SUPER-MITE

For Magnetic Catches.
First use Feb. 14, 1964.

---

SN 204,898. Flat Metal Manufacturing Co., Inc., Plainview, N.Y. Filed Oct. 27, 1964.

### SERVASINK

For Laundry Tray.
First use Apr. 6, 1964.

## Class 16 — Protective and Decorative Coatings

SN 178,366. Pennzoil Company, Oil City, Pa. Filed Oct. 4, 1963.

### PENNZ-GUARD

For Automotive Undercoating.
First use Aug. 19, 1963.

---

SN 179,800. Kristal Kraft, Inc., Palmetto, Fla. Filed Oct. 25, 1963.

### UNIPOXY

For Two-Component Metal Epoxy Base Liquid Coat Resin and Activator for Repairing, Patching, Rebuilding Boats, Masts, Docks, Vehicle Floors, Bodies and Fenders, Tanks, etc., and for Bonding, Joining or Reinforcing Wood to Wood, Metal to Metal, Concrete Block to Concrete Block, Marble Tile; and a Two-Component Laminating Epoxy Base Liquid Resin and Activator for Curing Resins, Used as a Protective Coating Having Bonding or Adhesion Properties for Use on Boats, Masts, Docks, Vehicle Floors, Bodies and Fenders, Tanks, Fiberglass, Plastic, and Pipes.
First use Sept. 22, 1956.
Subj. to Intf. with SN 178,367.

---

## Class 17 — Tobacco Products

SN 202,098. Philip Morris Incorporated, New York, N.Y. Filed Sept. 17, 1964.

### HANDSOME DAN

Owner of Reg. No. 412,452.
For Smoking Tobacco and Cigarettes.
First use September 1893.

---

## Class 18 — Medicines and Pharmaceutical Preparations

SN 148,728. E. Francis Hanlon, d.b.a. Hanlon Drug Products, Poughkeepsie, N.Y. Filed July 10, 1962.

### FERRONEED

For Preparation for Treatment of Iron Deficiency Anemias—Namely, a Ferrous Gluconate and Ascorbic Acid Capsule.
First use Aug. 1, 1953.

---

SN 152,737. American Cyanamid Company, Wayne, N.J. Filed Sept. 10, 1962.

### ACTIVAX

For Measles Vaccine.
First use Aug. 23, 1962.

SN 172,064. Nysco Laboratories, Inc., Long Island City, N.Y., by assignment and change of name from Nysco Laboratories, Inc., Long Island City, N.Y. Filed June 28, 1963.

## "HUMI-TEMP"

For Specially Formulated Medicament-Containing Tablets Designed To Resist Extremes of Temperature and Humidity.
First use Feb. 19, 1963.

---

SN 176,055. Dr. Fernando Cuenca Villoro, Zaragosa, Spain. Filed Aug. 29, 1963.

## ANFIVIRASA

Owner of Spanish Reg. No. 267,388, dated Mar. 14, 1953.
For Proteinaceous Enzymatic Preparation for Cellular Nutrition and Organic Development.

---

SN 183,147. American Home Products Corporation, New York, N.Y. Filed Dec. 17, 1963.

## C-D-M

For Injectable Veterinary Preparation for the Treatment of Calcium and Magnesium Deficiencies.
First use Jan. 8, 1955.

---

SN 184,505. Provident Pharmaceuticals, Incorporated, Chattanooga, Tenn. Filed Jan. 13, 1964.

## MEPTRAN

For Ethical Pharmaceutical Preparation for Use in the Management of Anxiety and Tension.
First use Dec. 19, 1963.

---

SN 189,443. Chemtests Products, Inc., Kansas City, Mo. Filed Mar. 23, 1964.

## SEPTOLINE

For Antiseptic Mouthwash.
First use June 1, 1904.

---

SN 190,808. International Pharmaceutical Corporation, Norristown, Pa. Filed Apr. 10, 1964.

## STABLOX

For Liquid Antifungal, Antibacterial Agent for Topical Use for the Treatment of Cuts, Burns, and Abrasions.
First use Apr. 1, 1964.

---

SN 199,560. Hollister-Stier Laboratories, Inc., Spokane, Wash. Filed Aug. 10, 1964.

## GAMATET

For Immune Globulin for Passive Immunization Against Tetanus.
First use in or before March 1964.

---

SN 200,552. Dairy Association Co., Inc., Lyndonville, Vt. Filed Aug. 25, 1964.

## GREEN MT.

For Hoof Softener and Grower.
First use approximately 1900.

---

SN 200,762. Lafayette Pharmacal, Inc., Lafayette, Ind. Filed Aug. 27, 1964.

## BRONCHOPAQUE

For Propyliodone Suspension for Bronchography.
First use February 1961.

SN 201,731. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Sept. 11, 1964.

## NIBAL

For Anabolic-Steroid Preparation.
First use Aug. 26, 1964.

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SN 201,805. Bye Bye Products, Inc., Prospect, Ky. Filed Sept. 14, 1964.




For Diaper Rash Ointment.
First use June 10, 1964.

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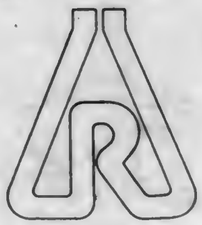
SN 201,950. Les Laboratoires Albert Rolland, Societe Anonyme, Paris, France. Filed Sept. 15, 1964.

## COLPOGYNON

Owner of French Reg. No. 507,859, dated Sept. 20, 1962 (Seine); Natl. Inst. No. 191,768.
For Hormonal Pharmaceutical Preparations.

---

SN 202,177. Rowell Laboratories, Inc., Baudette, Minn. Filed Sept. 18, 1964.



For Pharmaceutical Preparations.
First use Aug. 28, 1964.

---

SN 202,178. Rowell Laboratories, Inc., Baudette, Minn. Filed Sept. 18, 1964.

## VIO-BEC

For Therapeutic B-Complex With B-12 and C.
First use Feb. 7, 1947.

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SN 202,181. Sandoz, Inc., Hanover, N.J. Filed Sept. 18, 1964.

## PRORESID

For Anti-Cancer Preparation.
First use Aug. 27, 1964.

---

SN 202,626. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. Filed Sept. 24, 1964.

## OCTET

For Throat Lozenges.
First use Aug. 21, 1964.



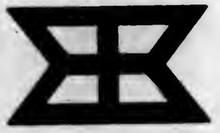
SN 202,733. B. F. Ascher & Company, Inc., Kansas City, Mo. Filed Sept. 28, 1964.

## BACNELO

For Medicinal Preparation for the Treatment of Skin Disorders.
First use Aug. 7, 1964.

---

SN 202,904. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Sept. 29, 1964.



For Medicinal Preparations for Human Use.
First use June 26, 1963.

---

SN 202,920. Drew Pharmacal Co., Inc., New York, N.Y. Filed Sept. 29, 1964.

## BRONKAID

For Antiasthmatic Preparation.
First use Aug. 4, 1964.

---

SN 202,933. Hudson Vitamin Products, Inc., New York, N.Y. Filed Sept. 29, 1964.

## REGUCIL

For Pharmaceutical Preparation for Relief of Constipation.
First use Sept. 18, 1964.

---

SN 202,998. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 30, 1964.

## SISOLAR

For Psychotropic Preparation.
First use Sept. 23, 1964.

---

SN 203,031. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. Filed Sept. 30, 1964.

## SINUREX

For Medicinal Preparation for Relief of Sinus Headaches.
First use Sept. 1, 1964.

---

SN 203,039. U.S. Ethicals Inc., Long Island City, N.Y. Filed Sept. 30, 1964.

## ETNATOL

Owner of Reg. Nos. 734,474, 771,412, and others.
For Pharmaceutical Preparation—Namely, a Tonic.
First use Apr. 1, 1964.

---

SN 205,837. The National Laboratories Corporation, Kansas City, Mo. Filed Nov. 9, 1964.

## DERMAGAN

For Medicines and Pharmaceutical Preparations—Namely, a Medicinal Preparation for Veterinary Use in Treating Burns, Wounds, and Injuries.
First use on or about Sept. 21, 1964.

SN 206,990. A. H. Robins Company, Inc., Richmond, Va. Filed Nov. 27, 1964.

## DOPRAM

For Respiratory Stimulant Medicinal Preparation.
First use Nov. 12, 1964.

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## Class 19—Vehicles

SN 182,081. Harding Glass Industries, Topeka, Kans. Filed Nov. 29, 1963.




The drawing is lined for red, but no claim is made to any particular color.
For Glass for Automobiles, Including Windshields and Windows.
First use during July 1963.

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SN 188,976. General Motors Corporation, Detroit, Mich. Filed Mar. 18, 1964.

## CALAIS

For Automobiles.
First use Feb. 28, 1964.

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## Class 20—Linoleum and Oiled Cloth

SN 188,838. Bayard Sales Corporation, Philadelphia, Pa. Filed Mar. 17, 1964.

Baltmark.

For Mosaic Tile.
First use Feb. 3, 1964.

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## Class 21—Electrical Apparatus, Machines, and Supplies

SN 146,581. Channel Master Corporation, Ellenville, N.Y. Filed June 11, 1962.

## TELSTAR

For Television Antennas for Domestic Use in Broadcast Reception, Parts Thereof and Accessories Therefor.
First use May 10, 1962.

SN 168,981. Radios Universal, S.A., Monterrey, Mexico. Filed May 13, 1963.

## TRANS-UNIVERSAL

For Table Radio Receivers, Portable Radio Receivers and Combined Radio-Phonographs Each as a Unit on the Same Chassis, With Radio Frequency and Audio Frequency Sections and Not as Separate Units Since Amplifiers, Power Amplifiers and Consoles Are Not Sold Separately.
First use Nov. 20, 1962; in commerce Nov. 20, 1962.

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SN 170,017. Consolidated Electronics Industries Corporation, New York, N.Y., assignee of The Alliance Manufacturing Company, Inc., Alliance, Ohio. Filed May 31, 1963.

## PUT ALLIANCE IN YOUR APPLIANCE

Owner of Reg. Nos. 509,394; 653,008, and others.
For Electric Motors and Drive Assemblies for Use in Connection Therewith.
First use Apr. 4, 1963.

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SN 186,054. Borg-Warner Corporation, Chicago, Ill. Filed Feb. 5, 1964.

## ACCUSPEDE

For Control Systems, Comprising a Variable Frequency Power Supply for Stopping, Starting and Regulating the Speed of Electric Motors.
First use on or prior to Dec. 31, 1963.

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SN 192,724. International Rectifier Corporation, El Segundo, Calif. Filed May 5, 1964.

## KLIP-SEL

Owner of Reg. No. 773,547.
For Voltage Surge Protectors Using Selenium Rectifiers.
First use Jan. 23, 1962.

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SN 196,739. Tennessee Stove Works, Inc., d.b.a. Modern Maid, Chattanooga, Tenn. Filed June 29, 1964.

## PERMACOIL

For Electric Heating Element for a Range Top.
First use June 17, 1964.

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SN 197,129. Insul-8-Corp., San Carlos, Calif. Filed July 6, 1964.

INSUL-8 RADI-8-BAR

Owner of Reg. Nos. 578,786, 771,151, and others.
For Electrically Heated Trolley Conductor Systems and Components Thereof for Conducting Electric Current to Mobile Machines.
First use on or about Apr. 20, 1964.

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SN 200,023. North American Electronics, Inc., West Lynn, Mass. Filed Aug. 17, 1964.

## EPIC

For Semi-Conductor Power Regulators.
First use May 1964.

SN 200,227. American Motors Corporation, Detroit, Mich. Filed Aug. 20, 1964.

## KELVINATOR

Owner of Reg. No. 142,652.
For Electric Water Heaters and Parts Thereof.
First use in or before 1940.

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## Class 22 — Games, Toys, and Sporting Goods

SN 149,524. Arkin Distributing Co., Detroit, Mich. Filed July 23, 1962.

A-OK

For Packaged or Bagged Toys in the Retail Price Range Under One Dollar ($1.00).
First use July 3, 1962.

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SN 168,610. Ideal Toy Corporation, Hollis, N.Y. Filed May 10, 1963.

mouse trap game

The term "Game" is disclaimed apart from the mark as shown.
For Three Dimensional Table Game and Accessories Therefor.
First use Mar. 28, 1963.

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SN 177,075. Duane E. Mitchell, d.b.a. Mitchell Products Mfg., Paso Robles, Calif. Filed Sept. 16, 1963.

## CRAZY CAGE

For Amusement and Exercising Device, Primarily for Children, Having a Platform With Hand Rails, Spring Mounted for Swaying Movement.
First use Aug. 25, 1963.

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SN 177,626. Gebr. Marklin & Cie, G.m.b.H., Goppingen, Wurttemberg, Germany, Filed Sept. 24, 1963.

Owner of German Reg. No. 769,443, dated Jan. 16, 1963.
For Land-, Water- and Aircraft Toys, Toy Trains, as Well as Accessories Thereto, Such as Miniature Buildings, Bridges, Electro-Motors, Steam-Engines, Signal Devices, Cranes and Other Construction Elements of the Heavy Industry in Toy Formation, Construction-Work Toys and Experimenting Kits.



SN 179,212. Dr. Ing. Rolf Hein, Tubingen, Germany. Filed Oct. 17, 1963.



Owner of German Reg. No. 620,006, dated May 7, 1952.
For Soap Bubble Chemical Solution for Game, Amusement and Advertising Purposes.

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SN 179,213. Dr. Ing. Rolf Hein, Tubingen, Germany. Filed Oct. 17, 1963.

## PUSTEFIX

Owner of German Reg. No. 612,870, dated Oct. 19, 1951.
For Soap Bubble Chemical Solution for Game, Amusement and Advertising Purposes.

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SN 180,877. General Services Company, Corvallis, Oreg. Filed Nov. 12, 1963.




For Device for Returning Basketballs From a Backboard to a Practicing Shooter on a Basketball Court.
First use at least as early as July 25, 1963.

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SN 188,827. Henry D. Whittlesey, d.b.a. Whittlesey, Powers & Cameron, Hayward, Calif. Filed Mar. 16, 1964.

## FALCON

For Snow Skis.
First use Nov. 11, 1960.
Subj. to Intf. with SN 201,783.

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SN 189,145. Clokey Productions, Inc., Glendora, Calif. Filed Mar. 20, 1964.

GUMBY
THE SUPER-FLEX

For Plastic Doll.
First use Dec. 8, 1963.



SN 189,404. U.S. Divers Co., Inc., Santa Ana, Calif. Filed Mar. 23, 1964.

## ROYAL MASTER

For Underwater Breathing Apparatus, Regulators, and the Like.
First use Mar. 1, 1964.

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SN 189,483. Le Trappeur, Inc., Westwood, Mass. Filed Mar. 24, 1964.

## STERIA

For Ski Boots.
First use Feb. 19, 1964.

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SN 191,503. Dewey O. Broberg, Jr., d.b.a. Du-Bro Products Co., Niles, Ill. Filed Apr. 20, 1964.

## DU-BRO

For Toy Model Vehicles and Devices for Use Therewith.
First use Jan. 20, 1962.

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SN 191,855. Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. Filed Apr. 23, 1964.

## MAGIC SPOON

The word "Spoon," for the goods recited, is disclaimed apart from the mark as shown.
For Toy Spoons.
First use Nov. 19, 1963.

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SN 191,868. Marvin M. Montgomery, Fairfield, Calif. Filed Apr. 23, 1964.

## LINDA LURE

No claim of exclusive right is made to "Lure" for the goods recited.
For Fishing Lures.
First use on or about Apr. 15, 1964.

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SN 193,993. A. G. Spalding & Bros. Inc., Chicopee, Mass. Filed May 21, 1964.

POWER TEMP

For Baseball and Softball Bats.
First use Sept. 1, 1962.

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SN 194,354. Constance B. Brewer, Chestnut Hill, Mass. Filed May 27, 1964.

## LITTERFREE

For Dolls.
First use May 25, 1964.

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SN 195,358. Anthony J. Antonious, Baltimore, Md. Filed June 11, 1964.

## SLAMMIT

For Golf Glove.
First use May 27, 1963.

SN 195,469. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed June 11, 1964.

## SLUGGER-NIK

For Dolls.
First use May 5, 1964.

SN 195,470. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed June 11, 1964.

## NO GOOD-NIK

For Dolls.
First use May 5, 1964.

SN 195,531. Kohner Bros., Inc., New York, N.Y. Filed June 12, 1964.

## BUSY DRIVER

For Toys.
First use May 5, 1964.

SN 195,553. The Selchow & Richter Company, Bay Shore, N.Y. Filed June 12, 1964.

## TOOT! TOOT!

For Accessories for Playing a Board Game.
First use Mar. 2, 1964.

SN 201,783. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed Sept. 14, 1964.

## FALCON

For Snow Skis and Parts Thereof.
First use Oct. 1, 1961.
Subj. to Intf. with SN 188,827.

SN 202,564. Eldon Industries, Inc., Hawthorne, Calif. Filed Sept. 24, 1964.

## SELECTRONIC

For Road Race Sets, Electrical Road Race Cars and Power Pack Units for Use With Such Sets and Cars.
First use on or about Feb. 27, 1963.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 163,638. Legend City, Inc., Phoenix, Ariz. Filed Feb. 28, 1963.




The drawing is lined for red, but color is not claimed as a feature of the mark.
For Knife and Fork Sets.
First use Feb. 4, 1963.

SN 185,813. National Automotive Parts Association, Chicago, Ill. Filed Jan. 29, 1964.

## SPARTA

For Hand Tools—Namely, Wrenches, Sockets, Wrench and Socket Drive and Extension Tools, Screwdrivers, and Pliers.
First use Dec. 26, 1963.

SN 187,281. Haines Dispenser Corporation, Green Bay, Wis. Filed Feb. 24, 1964.

## LIFT-O-MATIC

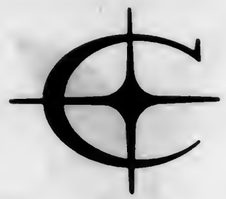
For Dish Dispensers.
First use May 21, 1963.

SN 187,429. Pioneer Saws Ltd., Peterborough, Ontario, Canada. Filed Feb. 25, 1964.

## SUREGUARD

For Saw Chain.
First use Aug. 23, 1963; in commerce Sept. 17, 1963.

SN 193,935. Carbidex Corporation, Wyandotte, Mich. Filed May 21, 1964.



For Stampings and Dies for Stampings.
First use on or about Aug. 30, 1963.

SN 195,254. Sundstrand Corporation, Rockford, Ill. Filed June 9, 1964.

## HYDROGEAR

For Hydraulic Pumps, Motors, and Transmissions.
First use Dec. 28, 1963.

SN 195,746. S. B. Whistler & Sons, Inc., Buffalo, N.Y. Filed June 15, 1964.

## ELASTI-SPRING

For Punch Stripper Device Usable With the Punch of a Punch and Die Assembly for Stripping a Workpiece From the Punch.
First use May 11, 1964.

SN 203,419. The Murray Company of Texas, Inc., d.b.a. Boston Gear Works, North Quincy, Mass. Filed Oct. 6, 1964.

## RIGHT-90

For Enclosed Gear Drive.
First use Sept. 21, 1964.



SN 203,515. The Murray Company of Texas, Inc., d.b.a. Boston Gear Works, North Quincy, Mass. Filed Oct. 7, 1964.

RIGHT-90

For Enclosed Gear Drive.
First use Sept. 21, 1964.

SN 204,060. Eversharp, Inc., Milford, Conn. Filed Oct. 15, 1964.

## SCHICK

Owner of Reg. Nos. 224,639, 737,096, and others.
For Safety Razors and Appurtenances Therefor—Namely, Safety Razor Blades, Devices for Inserting Blades Into Razors, and Razor Blade Dispensing Devices.
First use on or about June 17, 1926.

SN 205,287. Hagan Manufacturing Company, Delphos, Ohio. Filed Nov. 2, 1964.

## KOVERAGE KING

For Blower Apparatus for Insulation Material.
First use Sept. 24, 1964.

SN 205,824. Kanematsu New York, Inc., New York, N.Y. Filed Nov. 9, 1964.



For Stainless Steel Tableware.
First use September 1964.

## Class 25 — Locks and Safes

SN 201,225. Master Lock Company, Milwaukee, Wis. Filed Sept. 3, 1964.




Owner of Reg. Nos. 230,311 and 751,235.
For Padlocks.
First use July 20, 1964.

## Class 26 — Measuring and Scientific Appliances

SN 163,803. Bychrome Co., Columbus, Ohio. Filed Mar. 4, 1963.




For Film Screen Tints, Tray Rockers, Punch and Repeat Machines Used in the Graphic Arts Industry.
First use Aug. 15, 1955.

## Class 27 — Horological Instruments

SN 195,450. Schlup & Cie. A.G. (Schlup & Cie. S.A.) (Schlup & Co. Ltd.), Uhrenfabrik, Lengnau, Switzerland. Filed June 11, 1964.



RADO

Owner of Swiss Reg. No. 169,459, dated Mar. 11, 1958; and U.S. Reg. No. 503,926.
For Watches and Parts Thereof.
First use Apr. 12, 1958; in commerce Apr. 12, 1958.

## Class 28 — Jewelry and Precious-Metal Ware

SN 190,812. Levart Originals, Inc., New York, N.Y. Filed Apr. 10, 1964.



For Jewelry for Personal Wear.
First use on or about June 1, 1961.

SN 193,707. Sarah Coventry, Inc., Newark, N.Y. Filed May 18, 1964.

SC

Owner of Reg. Nos. 636,452 and 726,242.
For Costume Jewelry.
First use Oct. 7, 1953.

## Class 32 — Furniture and Upholstery

SN 172,794. E. G. Arts, Inc., Milwaukee, Wis. Filed July 11, 1963.



For Material Handling and Storage Equipment—Namely, Bar Stock Racks, Coil Racks, Steel Storage Racks, Portable Partitions, Skid and Pallet Racks, Tool Indexing and Storage Cribs, Cabinets, Stands, Shelves, and Lockers.
First use on or about Oct. 1, 1956, on racks, and stands.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 192,080. Roll-O-Sheets, Inc., St. Louis, Mo. Filed Apr. 27, 1964.

**PORTA-GUN**

For Hand Operated Hot Air Blowers.
First use Dec. 19, 1962.

SN 196,183. National Frost Protection Co., Inc., Burbank, Calif. Filed June 22, 1964.

"Tropic-Breeze"

For Wind Machines.
First use Dec. 14, 1940.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 195,880. Minnesota Rubber Company, Minneapolis, Minn. Filed June 17, 1964.




Owner of Reg. Nos. 685,141 and 685,948.
For Sealing Rings.
First use Feb. 21, 1964.

## Class 37 — Paper and Stationery

SN 194,375. East Texas Pulp and Paper Company, Silsbee, Tex. Filed May 27, 1964.

**TEXINDEX**

Owner of Reg. Nos. 637,744, 770,884, and others.
For Fine Printing Paper.
First use May 9, 1964.

SN 200,156. Champion Papers Inc., Knightsbridge, Hamilton, Ohio. Filed Aug. 19, 1964.

**DAILY MAIL**

Owner of Reg. No. 598,209.
For Paper, Including Printing Paper Such as and Including Mimeograph Paper, and Duplicator Paper.
First use at least as early as Oct. 31, 1963.

SN 204,292. Republic Container Corp., Jersey City, N.J. Filed Oct. 19, 1964.

REP Gard

For Corrugated Paper Board and Chip Board in Sheet or Web Form.
First use August 1963.

## Class 38 — Prints and Publications

SN 153,249. Brentano's Inc., New York, N.Y. Filed Sept. 17, 1962.

**BRENTANO'S**

For Books and Greeting Cards.
First use 1852.

SN 170,973. Atlantic Microfilm Corporation, Spring Valley, N.Y. Filed June 14, 1963.

**MICRO-FOLIO**

For Microfilm Photo Prints of Records, Particularly Medical Records and School Records.
First use on or about Apr. 1, 1963.

SN 173,203. Village House Publishers, Inc., Lathrup Village, Mich. Filed July 17, 1963.

HOME
the magazine of LIVING ideas

Applicant disclaims the phrase "The Magazine of Living Ideas" apart from the mark as a whole.
For Perodical Magazine.
First use on or about July 10, 1963.



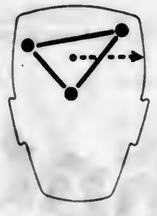
SN 185,060. Mico/Type, Inc., Hollywood, Calif. Filed Jan. 21, 1964.

**MICO/TYPE**

For Transfer Lettering Sheets Bearing Letters, Numbers, and Other Symbols.
First use Jan. 2, 1958.

SN 188,575. Process Equipment Manufacturers Association, New York, N.Y. Filed Mar. 12, 1964.

Value Rating System



Applicant disclaims exclusive use of the words "Value Rating System" apart from the mark as shown. It does, however, assert exclusive use of the head design as part of the mark.
For Brochure and Work Sheets.
First use Dec. 2, 1963.

SN 190,012. Justus Lawson and Lloyd Lawson (joint owners), Union City, N.J. Filed Mar. 31, 1964.

**SUMMONS SAVERS**

For Portfolios of Printed Signs for Use With Parked or Disabled Cars.
First use March 1964.

SN 191,897. American Agricultural Chemical Company, New York, N.Y. Filed Apr. 24, 1964.

**AGRI-FACTS**

For Bulletins Containing Agronomic Information.
First use Mar. 1, 1964.

SN 193,153. Genco Operating Inc., Westbury, N.Y. Filed May 11, 1964.

**NASSAU COUNTY TAX REDUCER**

The words "Nassau County" are disclaimed apart from the mark as shown.
For Newspaper Published From Time to Time.
First use Apr. 6, 1964.

SN 193,154. Genco Operating Inc., Westbury, N.Y. Filed May 11, 1964.

**THE FLORAL PARK TAX REDUCER**

The words "Floral Park" are disclaimed apart from the mark as shown.
For Weekly Newspaper.
First use Mar. 13, 1964.

SN 193,155. Genco Operating Inc., Westbury, N.Y. Filed May 11, 1964.

**SUFFOLK COUNTY TAX REDUCER**

The words "Suffolk County" are disclaimed apart from the mark as shown.
For Newspaper Published From Time to Time.
First use Apr. 6, 1964.

SN 199,232. Southern Airways, Inc., Atlanta, Ga. Filed Aug. 4, 1964.

THE Southernaire

For Publication or Bulletin Issued From Time to Time.
First use Mar. 23, 1943.

SN 199,381. McGraw-Hill, Inc., New York, N.Y. Filed Aug. 6, 1964.

**FLIP 'N' FUN**

For Children's Paperback Books.
First use July 31, 1964.

SN 199,408. The Sherwin-Williams Company, Cleveland, Ohio. Filed Aug. 6, 1964.

CHEMORANDUM

The drawing is lined for green, but this color is not claimed as a feature of the mark.
For Product Bulletin To Be Used From Time to Time Giving Physical and Chemical Data Concerning Various Products.
First use Mar. 23, 1964.

SN 199,880. The Catholic Press Society, Inc., Denver, Colo. Filed Aug. 14, 1964.

**DENVER CATHOLIC REGISTER**

Owner of Reg. No. 655,525, and others.
For Periodical Newspaper.
First use Mar. 17, 1900.

SN 200,318. The Board of Christian Education of the Presbyterian Church in the United States, d.b.a. John Knox Press, Richmond, Va. Filed Aug. 21, 1964.

CHIME

For Books.
First use June 11, 1964.

SN 200,471. Nostalgia, Inc., Franklin Square, N.Y. Filed Aug. 24, 1964.



No claim is made to the word "Press" apart from the mark as shown.
For Books.
First use July 1, 1964.

SN 200,699. The Board of Christian Education of the Presbyterian Church in the United States, d.b.a. John Knox Press, Richmond, Va. Filed Aug. 27, 1964.




For Books.
First use May 3, 1961.

## Class 39 — Clothing

SN 141,147. American Juniors Shoe Co., Inc., Lawrence, Mass. Filed Mar. 30, 1962.

**BEST STRIDE**

For Boys', Misses', and Children's Shoes.
First use Mar. 15, 1962.

SN 145,189. K and R Sportswear, Inc., New York, N.Y. Filed May 22, 1962.




For Children's Outerwear—Namely, Jackets, Pants, Coats, Caps, and Overalls.
First use May 6, 1959.

SN 152,443. A. Sagner's Son, Frederick, Md. Filed Sept. 4, 1962.

**MIRA-WEAVE**

For Men's Suits, Coats, and Slacks.
First use August 1961.

SN 153,713. Allied Stores Corporation, New York, N.Y. Filed Sept. 24, 1962.

*Almart*

Owner of Reg. No. 562,802.
For Ladies', Men's, Boys', and Girls' Hosiery, Footlets, Support Hosiery, Shoes and Slippers; Infants' Wear—Namely, Diapers, Knit Underwear, Sleepers and Waterproof Pants; Children's Wear—Namely, Blouses and Sweaters; and Men's and Boys' Wear—Namely, Shirts, Slacks and Underwear.
First use Feb. 13, 1962.

SN 172,874. Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany. Filed July 12, 1963.

**Conti VKL**

Owner of U.S. Reg. Nos. 652,057 and 654,514.
Shoe Soles, Sole Plates, Heels, Heel Plates (i.e., Lifts), and Corners.
First use Aug. 12, 1958; in commerce Aug. 12, 1958.

SN 175,824. Dwight S. Williams Co., Inc., New York, N.Y. Filed Aug. 26, 1963.




For Hosiery.
First use on or about July 11, 1961.

SN 176,373. The Juvenile Shoe Corporation of America, Aurora, Mo. Filed Sept. 5, 1963.




For Shoes.
First use May 14, 1963.

SN 178,341. F. F.-J. M. Fields, Inc., Boston, Mass. Filed Oct. 4, 1963.

**GLAMOUR FORM**

For Girdles and Brassieres.
First use Sept. 16, 1963.



SN 183,916. Melville Shoe Corporation, New York, N.Y. Filed Jan. 2, 1964.

**BEETLES**

For Men's, Women's, and Children's Shoes.
First use Dec. 31, 1963.
Subj. to Intf. with SN 188,021.

SN 183,985. Melville Shoe Corporation, New York, N.Y. Filed Jan. 3, 1964.

**BEATLES**

For Men's, Women's, and Children's Shoes.
First use Dec. 31, 1963.
Subj. to Intf. with SN 188,021.

SN 184,162. H. Sideney Klein, Brooklyn, N.Y. Filed Jan. 7, 1964.

**TRIXTEP.**

For Ladies' Shoes and Slippers.
First use June 1, 1963.

SN 184,526. Uniform Guild, Inc., New York, N.Y. Filed Jan. 13, 1964.

*Guild Uniform*

No exclusive claim, without, however, waiving any common-law or goodwill rights, is made to the word "Uniform" apart from the mark shown.
For Nurses', Beauticians', and Waitresses' Uniforms.
First use July 1936.

SN 188,021. Lucky Stride Shoes, Inc., Maysville, Ky. Filed Mar. 5, 1964.

**BEATLES**

For Shoes.
First use Dec. 30, 1963.
Subj. to Intf. with SN 183,916 and SN 183,985.

SN 192,732. Manchester Hosiery Mills, Manchester, N.H. Filed May 5, 1964.

*Ginny Lynn*

The name "Ginny Lynn" is fanciful.
For Hosiery.
First use Feb. 18, 1963.

SN 192,733. Manchester Hosiery Mills, Manchester, N.H. Filed May 5, 1964.

*Socks-Sation*

For Hosiery.
First use Feb. 7, 1964.

SN 196,279. John Jarrell, Inc., Atlanta, Ga. Filed June 23, 1964.

**Suffield**



For Men's Suits, Slacks, Sport Coats, and Play Shorts.
First use Jan. 2, 1964.

SN 196,285. The Mayer Company, Inc., New York, N.Y. Filed June 23, 1964.

*Butterfield 8*

For Hosiery.
First use on or about June 17, 1964.

## Class 40 — Fancy Goods, Furnishings, and Notions

SN 193,645. F. H. Enterprise, Inc., Seattle, Wash. Filed May 18, 1964.

**CHO CHO**

For Hairdressing Accessories—Namely, Unheated Roller-Type Hair Curlers, Pins, and Ornaments.
First use Feb. 22, 1964.

SN 198,032. Domar Buckle Manufacturing Corp., Linden, N.J. Filed July 17, 1964.




For Buckles and Ornaments for Men's, Ladies', and Children's Belts, Clothing Buckles, Belt Ornaments and Slides, Snap Hooks, Hook and Eye Buckles, and Buckle and Belt Accessories.
First use Sept. 15, 1948.

## Class 44—Dental, Medical, and Surgical Appliances

SN 187,405. Abraham J. Cooper, d.b.a. Dental Labs Aids Co., Brooklyn, N.Y. Filed Feb. 25, 1964.




The words "Die Aids" and "Dowel Aids" are disclaimed apart from the mark as shown.

For Dental Accessories—Namely, Dowels, Sockets, Pins, Articulator Forms, Used in Preparing Dental Restorations.

First use Jan. 18, 1964.

## Class 45—Soft Drinks and Carbonated Waters

SN 162,965. Marian Company, Chicago, Ill. Filed Feb. 18, 1963.

**FROZADE**

For Bases for Making a Commercial Slush Drink Dispensed From a Commercial Slush Machine; and a Soft Drink Flavoring Concentrate for Use in Flavoring Neutral Slush Dispensed From a Commercial Slush Machine.

First use Feb. 13, 1963.

SN 165,800. Marian Company, Chicago, Ill. Filed Apr. 1, 1963.

**FREEZADE**

For Bases for Making a Commercial Slush Drink Dispensed From a Commercial Slush Machine; and a Soft Drink Flavoring Concentrate for Use in Flavoring Neutral Slush Dispensed From a Commercial Slush Machine.

First use Mar. 21, 1963.

## Class 46—Foods and Ingredients of Foods

SN 120,568. Real Fresh Milk, Inc., Visalia, Calif. Filed May 22, 1961.

**REAL-FRESH**

Owner of Reg. No. 623,745.

For Canned Milk Products—Namely, Whole Fluid Milk, Chocolate Milk, Chocolate Flavored Milk Drink, Egg Nog Mix, Baby Formula, Whipping Cream (30%), Half and Half, Table Cream (18%), Milk Shake Mix, and Ice Cream Mix.

First use June 13, 1953, on milk.

SN 144,556. Swift & Company, Chicago, Ill. Filed May 14, 1962.

**FESTMAHL**

The English translation of the mark "Festmahl," is festive meal.

For Cooked Ham and Sausage.

First use on or about Feb. 20, 1962.

SN 153,602. Southern Enterprises, Inc., d.b.a. the Whopper-Burger Shop, Hopewell, Va. Filed Sept. 20, 1962.

**Whoppaburger**

For Sandwiches.

First use July 10, 1962.

SN 161,688. Dyersburg Frosen Foods Inc., Dyersburg, Tenn. Filed Jan. 30, 1963.




For Frosen Fresh Vegetables.

First use Aug. 31, 1962.

SN 172,211. Mead Johnson & Company, Evansville, Ind. Filed July 1, 1963.




For Dietary Canned Vegetable Stew With Meat Casserole.

First use on or prior to Apr. 20, 1963.

SN 173,517. Harold Sparling Co., Glendale, Calif. Filed July 22, 1963.




Applicant disclaims the exclusive right to the use of the words "Convenience Foods" apart from the mark as shown, retaining all of its common law rights.

For Prepared and Partially Prepared Frosen and Refrigerated Foods—Namely, Indian Rice, Barbecued Turkey, Smoked Turkey, and Turkey Pimento Casserole.

First use Aug. 25, 1961.



SN 175,231. Wileswood, Inc., d.b.a. Wileswood Country Store, Huron, Ohio. Filed Aug.16, 1963.

**WILESWOOD**

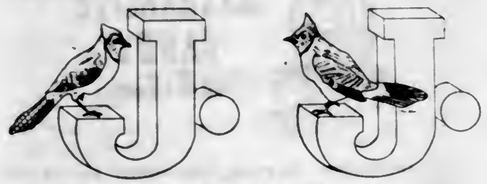
**COUNTRY STORE**

For Foods—Namely, Coffee, Spices, Food Flavorings, Maple and Fruit Syrup, Candies and Chocolate Bars.

First use July 18, 1963, on syrup.

Subj. to Intf. with SN 201,924.

SN 177,057. John J. Kovacevich, Arvin, Calif. Filed Sept. 16, 1963.



For Fresh Deciduous Fruits and Fresh Grapes.

First use at least as early as the year 1933.

SN 179,630. Graham Dene Limited, Burton-on-Trent, England. Filed Oct. 23, 1963.

**BARMENE**

Owner of British Reg. No. 765,246, dated May 6, 1957.

For Compound Yeast Extract for Food Purposes.

SN 183,349. Eskimo Pie Corporation, Richmond, Va. Filed Dec. 18, 1963.

**PARTYLAND**

For Frozen Desserts—Namely, Ice Cream, Frozen Custard, Ice Milk, Sherbet and Ices Either With or Without a Confectionery Coating.

First use Oct. 28, 1963.

SN 184,235. Harold D. Harvey, d.b.a. Highland Kitchens, Denver, Colo. Filed Jan. 8, 1964.




The representation of the loaf of bread and all wording except "Heather Anne" are disclaimed apart from the mark shown. The female figure shown does not represent a particular living individual.

For Frozen Bread Dough.

First use Aug. 13, 1963.

SN 184,738. Merck & Co., Inc., Rahway, N.J. Filed Jan. 16, 1964.

**MERTASTE-5**

For Food Flavoring Agent of a Chemical Nature.

First use on or about Dec. 2, 1963.

SN 187,744. General Mills, Inc., Minneapolis, Minn. Filed Mar. 2, 1964.




The drawing is lined for the color yellow, but no claim is made as to the color so named. Owner of Reg. Nos. 13,253, 695,013, and others.

For Wheat Flour.

First use on about Dec. 27, 1963; Dec. 10, 1962, as to the words "Gold Medal Wondra."

SN 190,286. J. R. Simplot Company, Reno, Nev., assignee of Ruby Company, Boise, Idaho. Filed Apr. 3, 1964.

**CAL-IDA**

Owner of Reg. No. 554,662.

For Processed Frosen Potatoes.

First use at least as early as January 1956.

SN 191,266. Empire Kosher Poultry, Inc., Mifflintown, Pa. Filed Apr. 16, 1964.

**NAOMI**

For Frosen, Ready To Cook, Poultry and Parts Thereof—Namely, Turkeys, Chickens, Chicken Breasts, Chicken Legs, and Chicken Wings.

First use Aug. 1, 1963.

SN 192,180. International Kitchens, Inc., White Plains, N.Y. Filed Apr. 28, 1964.

MARIA MIA



The words "Maria Mia" mean "my Maria."
For Cheese in Glass Jars.
First use Feb. 21, 1964.

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SN 193,842. Best Kosher Sausage Co., Chicago, Ill. Filed May 20, 1964.



The drawing is lined for the colors of brown, gold, blue, and red, but color is not a part of the mark. The colors are changed from time to time, the design remaining the same.
For Kosher Meat Products—Namely, Salami, Bologna, Frankfurters, Corned Beef, Breakfast Beef, Beef Tongue, Peppered Beef, Pastrami, and Knockwurst.
First use May 4, 1964.

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SN 193,940. Continental Enterprises, Inc., Twin Falls, Idaho. Filed May 21, 1964.

POLARICE

For Ice Cream Confections in Bar Form.
First use May 18, 1964.

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SN 194,045. Frosta Handelsgesellschaft m.b.H., Bremerhaven-F., Ostseite, Germany. Filed May 22, 1964.

FROSTA

For Frozen Food Products—Namely, Frozen Fish.
First use July 1961; in commerce April 1963.

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SN 194,165. Fairmont Foods Company, Omaha, Nebr. Filed May 25, 1964.

JOLLI-LOLLI

For Frozen Candy Products—Namely, An Ice Milk Bar With a Sucker Inside.
First use Apr. 28, 1964.

SN 194,596. General Mills, Inc., Minneapolis, Minn. Filed June 1, 1964.

POTATO BUDS

No claim of exclusive right is made to "Potato," said word being the name of the goods.
For Dehydrated Potatoes.
First use May 8, 1964.

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SN 194,783. Dairy Maid Confectionery Company, Philadelphia, Pa. Filed June 3, 1964.



The Original
ANTHRACITE CANDY
"Fuel for Energy"

Applicant disclaims the words "The Original" and the word "Candy."
For Candy.
First use at least as early as Feb. 6, 1964.

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SN 196,346. Byron's Incorporated, Gallatin, Tenn. Filed June 24, 1964.



BYRON'S
BAR-B-Q

Applicant disclaims the showing of the sandwich and the words "Frozen" and "Bar-B-Q" apart from the mark as shown.
Owner of Reg. No. 677,483.
Frozen Food Products—Namely, Pork Barbeque, Beef Barbeque, Beef and Gravy Meat Sauce, and Barbeque Sandwiches.
First use Mar. 1, 1956.

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SN 197,374. G. S. Dowdy Candy Company, Birmingham, Ala. Filed July 8, 1964.

TWEAKS

For Candy (Individually Wrapped Pieces).
First use May 1954.

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SN 197,915. A. E. Staley Manufacturing Company, Decatur, Ill. Filed July 15, 1964.




Owner of Reg. Nos. 407,331, 753,804, and others.
For Corn Oil for Salads and Cooking.
First use Mar. 3, 1964.



SN 197,916. A. E. Staley Manufacturing Company, Decatur, Ill. Filed July 15, 1964.

STALEYDEX

Owner of Reg. Nos. 753,575, 753,804, and others.
For Liquid Dextrose and Corn Syrup for Food Purposes.
First use Apr. 8, 1963.

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SN 197,918. Standard Meat Company, d.b.a. Benson Packing Company, Fort Worth, Tex. Filed July 15, 1964.

CUT-V-LETS

For Chopped and Cubed Veal Cutlets.
First use 1954.

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SN 197,970. Joe Lowe Corporation, Englewood, N.J. Filed July 16, 1964.

MERCURY

For Frozen Confections on Sticks.
First use June 30, 1964.

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SN 198,093. General Mills, Inc., Minneapolis, Minn., assignee of The Southwest Cracker Company, Wichita, Kans. Filed July 17, 1964.

GOLD MEDAL

Owner of Reg. No. 548,905.
For Cookies.
First use January 1908.

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SN 198,097. Tavener Rutledge Limited, Liverpool, England. Filed July 17, 1964.

MOJO

Owner of British Reg. No. 799,609, dated Dec. 28, 1959.
For Non-Medicated Confectionery (Candy).

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SN 198,240. Uncle Ben's, Inc., Houston, Tex. Filed July 20, 1964.

IOSEED

For Bird Food.
First use July 13, 1964.

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SN 198,241. Uncle Ben's, Inc., Houston, Tex. Filed July 20, 1964.

PREEN

For Bird Food.
First use July 13, 1964.

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SN 198,760, National Dairy Products Corporation, New York, N.Y. Filed July 29, 1964.

Sealtest

For Potato Chips.
First use on or about Aug. 19, 1963.

SN 199,242. Red V Coconut Products Ltd., Manila, Philippine Islands. Filed June 28, 1964.

RED V




The drawing is lined for the color red.
For Desiccated Coconut.
First use Oct. 1, 1930; in commerce Oct. 1, 1930.

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SN 201,706. Joe Lowe Corporation, Englewood, N.J. Filed Sept. 11, 1964.

JUPITER

For Frozen Confections on Sticks.
First use Aug. 13, 1964.

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SN 201,707. Joe Lowe Corporation, Englewood, N.J. Filed Sept. 11, 1964.

SATURN

For Frozen Confections on Sticks.
First use Aug. 13, 1964.

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SN 201,708. Joe Lowe Corporation, Englewood, N.J. Filed Sept. 11, 1964.

TITAN

For Frozen Confections on Sticks.
First use Aug. 13, 1964.

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SN 201,924. Chesterton Candy Company, d.b.a. Mrs. Leland's Kitchens, Chicago, Ill. Filed Sept. 15, 1964.

COUNTRY STORE BUTTER-STICKS

Applicant disclaims the words "Butter-Sticks" apart from the mark as shown.
For Butter Stick Candies.
First use Jan. 10, 1956.
Subj. to Intf. with SN 175,231.

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## Class 47 — Wines

SN 161,608. John Gross & Co., Baltimore, Md. Filed Jan. 29, 1963.

ROSALINDA

For Rosé Wine.
First use Jan. 19, 1957.

SN 192,585. E. & J. Gallo Winery, Modesto, Calif. Filed May 4, 1964.

MUSTANG

For Wines.
First use Apr. 15, 1964.

SN 192,913. John Harvey & Sons Limited, Bristol, England. Filed May 7, 1964.

BRISTOL FINO

No claim is made to the word "Fino" apart from the mark as shown. Owner of Reg. Nos. 300,796, 669,708, and others.
For Sherry Wines.
First use July 1957; in commerce July 1957.

SN 196,688. Mayfair Markets, Los Angeles, Calif. Filed June 29, 1964.

Royal Occasion

For Wines and Champagnes.
First use Oct. 23, 1961.

SN 196,828. Weibel, Incorporated, d.b.a. Mission Vintners, Mission San Jose, Calif. Filed June 30, 1964.

CHATEAU NAPOLEON

For Champagnes and Sparkling Wines.
First use Dec. 15, 1954.

## Class 49 — Distilled Alcoholic Liquors

SN 192,276. Findlater, Mackie, Todd & Co. Limited, London, England. Filed Apr. 29, 1964.

AULD BRIG

For Scotch Whisky.
First use in the year 1921; in commerce July 1949.

SN 196,484. W. A. Taylor & Company, New York, N.Y. Filed June 25, 1964.

GRAND AWARD

For Whiskey.
First use June 12, 1964.

SN 196,689. Mayfair Markets, Los Angeles, Calif. Filed June 29, 1964.

Royal Occasion

For Rum, Brandy, Whiskey, Canadian Whisky, Bourbon Whiskey, Irish Whiskey, Scotch Whisky, Gin, Vodka, and Creme de Menthe.
First use Oct. 23, 1961.

## Class 50 — Merchandise Not Otherwise Classified

SN 186,304. Wilson Sporting Goods Co., River Grove, Ill. Filed Feb. 7, 1964.

Wilson

For Shoe Trees, Athletic Equipment Hangers, Awards and Trophies.
First use 1917.

SN 187,157. Rowland Products, Incorporated, Kensington, Conn. Filed Feb. 20, 1964.

REFLEXITE

For Synthetic Plastic Sheet Material Used for Reflective and Decorative Purposes and Indicia Such as Numbers and Letters Formed Therefrom.
First use on or before June 1, 1951.

SN 189,413. Michael Rakoci Jr., d.b.a. Granite & Marble Wks., Farrell, Pa. Filed Mar. 2, 1964.

For Ages

For Granite Monuments.
First use Apr. 5, 1960.

SN 189,916. Mine Ventilation Systems, Inc., Madison, W. Va. Filed Mar. 30, 1964.

BURGESS

For Kit for Use in Barricading Sections of Underground Mines in Case of Emergencies, Including a Dustproof Container Containing Plastic Stoppings, Hatchets, and Fasteners.
First use July 1960.

SN 193,422. Tapeprinter, Inc., Beverly Hills, Calif. Filed May 13, 1964.

TAPE PRINTER

TP

For Embossable Pressure-Sensitive Tape Used for Labeling and Marking in Identification Systems.
First use Feb. 11, 1963.

SN 201,621. Charles H. Rowan, Dallas, Tex. Filed Sept. 10, 1964.

FLEX-I-MAGNET

For Sign Blanks.
First use July 1964.



SN 202,888. Pacific Stoneware, Inc., Portland, Oreg. Filed Sept. 28, 1964.

PEOPLE LOVERS

For Decorative Clay Mobile Sculptures.
First use Jan. 19, 1964.

SN 204,693. Minnesota Mining and Manufacturing Company. St. Paul, Minn. Filed Oct. 23, 1964.

SCOTCHTAC

For Sheet Material Containing an Adhesive for Use as a Floor Mat To Remove Dust and Dirt From Shoes.
First use Aug. 28, 1964.

## Class 51 — Cosmetics and Toilet Preparations

SN 158,052. The Borden Company, New York, N.Y. Filed Nov. 28, 1962.

Lamée

The French feminine adjective "Lamée" is defined as "trimmed with leaves of gold or silver."
For Skin Fragrance Preparation.
First use Oct. 26, 1962.

SN 174,624. Twin Gems, Inc., New York, N.Y. Filed Aug. 7, 1963.

SIRRAH

For Men's Lotion, Cologne and Talc.
First use Aug. 2, 1963.

SN 191,037. Consolidated Royal Chemical Corporation, Chicago, Ill. Filed Apr. 14, 1964.

LIQUINET

Owner of Reg. No. 554,454.
For Hair Spray.
First use Oct. 20, 1947.

SN 191,938. Laboratoires d'Expansion Scientifique, "Expanscience," Société Anonyme, Courbevoie, France. Filed Apr. 24, 1964.

MUSTELA

Owner of French Reg. No. 402,200, dated Apr. 13, 1950 (Seine); Natl. Inst. No. 470,641.
For Cosmetic Skin Lotions and Skin Creams.

SN 192,170. Gail Leather Products, Inc., New York, N.Y. Filed Apr. 28, 1964.

COACH

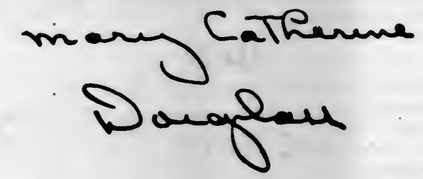
Owner of Reg. No. 751,493.
For Men's Toiletries—Namely, Cologne and After-Shave Lotion.
First use Apr. 20, 1964.

SN 192,897. Helene Curtis Industries, Inc., Chicago, Ill. Filed May 7, 1964.

SMOOTH AWAY

Owner of Reg. No. 769,287.
For Permanent Curl Relaxer Preparation.
First use on or about Mar. 26, 1964.

SN 197,268. Mary Catherine Douglass, Bridgeville, Del. Filed July 7, 1964.



The signature "Mary Catherine Douglass" appearing on the drawing is that of applicant.
For Scalp Preparation.
First use July 1963.

SN 197,432. St. Aubrey Associates, Inc., New York, N.Y. Filed July 8, 1964.

COATASHEEN

For Dog Grooming Preparation—Namely, Dog Coat Dressing.
First use June 2, 1964.

SN 197,699. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed July 13, 1964.

CONFORM

For Hair Spray.
First use June 30, 1964.

SN 197,700. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed July 13, 1964.

STRAIGHT TALK

For Hair Relaxer.
First use June 30, 1964.

SN 197,997. The Stephan Co., Fort Lauderdale, Fla. Filed July 16, 1964.

CO-MATE

For Hairdressing.
First use July 10, 1964.

## Class 52 — Detergents and Soaps

SN 181,414. Santa Pharmaceuticals, Incorporated, Buffalo, N.Y. Filed Nov. 18, 1963.

MARLA

For Contact Lens Cleaner for Removing Grease, Dirt, and Oil From Hands and Lenses, and a Surface Active Antiseptic Cleaning and Wetting Agent To Prepare a Contact Lens Surface for Insertion.
First use Jan. 10, 1961.

SN 193,112. Churchill Chemical Company, Galesburg, Ill. Filed May 11, 1964.

## DOLPHIN

For Concentrated Synthetic Detergents for Washing Cars Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs.
First use on or about July 1, 1963.

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SN 193,113. Churchill Chemical Company, Galesburg, Ill. Filed May 11, 1964.

## 4D-25

For Cleaning, Disinfecting, Deodorising, and Sanitising Preparation for Use on All Surfaces, Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs.
First use Sept. 1, 1960.

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SN 196,081. W. R. Grace & Co., Cambridge, Mass. Filed June 19, 1964.

## 45-11

For Liquid Emulsion Containing Both Cleaning and Sealing Compounds for Conditioning Floors.
First use 1954.

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SN 196,601. The Barcolene Company, Boston, Mass. Filed June 29, 1964.

## PLEXI VU

For Plastic Window Cleaner.
First use Mar. 31, 1964.

SN 197,072. Bruner Corporation, Milwaukee, Wis. Filed July 6, 1964.

## JET

Owner of Reg. No. 541,929.
For Composition for Cleaning Water Softening Equipment and Removing Rust Stains.
First use Feb. 12, 1964.

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SN 197,227. Gordon K. Woodard, Van Nuys, Calif. Filed July 6, 1964.

## SHOWER EZE

For Personal Cleansing Products—Namely, Soaps and Shampoos.
First use Mar. 24, 1964.

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SN 197,914. A. E. Staley Manufacturing Company, Decatur, Ill. Filed July 15, 1964.

## BRIGHT TOUCH

For Cleanser Impregnated Paper Towels.
First use June 4, 1964.

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SN 197,979. Peroxide & Specialties Co., San Francisco, Calif. Filed July 16, 1964.

## MATCHLESS

For Wig Cleaner.
First use June 4, 1964.

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# SERVICE MARKS

## Class 100 — Miscellaneous

SN 156,186. The Big A System, Inc., St. Louis, Mo., assignee of Samuel J. Temperato, d.b.a. The Big A System, St. Louis, Mo. Filed Oct. 29, 1962.

THE BIG A SYSTEM

The word "System" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 738,763 and 738,764.
For Drive-In Restaurant Services.
First use Aug. 30, 1961.

SN 171,160. Midwest Testing Laboratories, Inc., Madison Heights, Mich. Filed June 17, 1963.

MTL

For Services—Namely, Metallurgical, Chemical Analysis and Physical Testing.
First use Apr. 15, 1962.



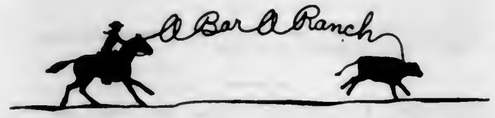
SN 172,190. Hilton Hotels Corporation, Chicago, Ill., by merger of Hilton Inns, Inc., Chicago, Ill. Filed July 1, 1963.

## HILTON INN

Applicant disclaims the word "Inn" separate and apart from the mark as shown. Owner of Reg. No. 732,263.
For Providing Lodging, Food, Beverages, and Entertainment in Motels.
First use prior to July 1, 1959.

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SN 183,579. The Gates Rubber Company, Denver, Colo. Filed Dec. 26, 1963.




The word "Ranch" is disclaimed except as used in connection with the trademark as shown.
For Dude and Working Ranch Services.
First use June 15, 1933.

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SN 194,342. The Atlantic Refining Company, Philadelphia, Pa. Filed May 27, 1964.

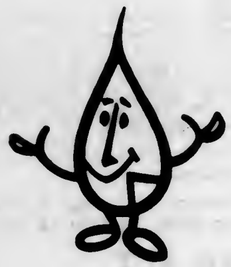



Owner of Reg. Nos. 761,082 and 761,742.
For Public Service Rendered by Broadcasting Information Regarding Traffic Patterns to Motorists so That the Latter May Select the Most Advantageous Route to Their Destination.
First use July 2, 1963.

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## Class 101 — Advertising and Business

SN 173,699. Lore Kates Sinchein, d.b.a. Droppo Associates, Springfield, Mass. Filed July 24, 1963.



DROPPO

For Advertising Laundry Services for Others.
First use Dec. 9, 1960.

SN 176,898. Diamond National Corporation, New York, N.Y. Filed Sept. 18, 1963.




For Printing and Lithographing Packaging and Advertising Materials for Others.
First use 1943.

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SN 182,990. Western Men, Inc., San Francisco, Calif. Filed Dec. 18, 1963.

## WESTERN MEN

Applicant's related company owns Reg. No. 702,384.
For Supplying Office Personnel on a Temporary Basis.
First use Feb. 18, 1963.

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SN 183,240. I. Amsterdam Co., Inc., New York, N.Y. Filed Dec. 19, 1963.

IACO

For Service of Representative of Manufacturers of Men's, Women's, and Children's Undergarments.
First use Oct. 30, 1963.

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SN 186,339. Dun & Bradstreet, Inc., New York, N.Y. Filed Feb. 10, 1964.

nco

For Business of Furnishing Credit Reports, the Collection of Past Due Accounts, and the Furnishing of Management Advisory Services and Business Information.
First use 1953.

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## Class 102 — Insurance and Financial

SN 176,077. Day and Zimmermann, Incorporated, Philadelphia, Pa. Filed Aug. 30, 1963.

## CORAL SYSTEM

The word "System" is disclaimed apart from the mark as shown.
For Real Estate Appraisal Services Performed by Electronic Data Processing.
First use Aug. 18, 1963.

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SN 181,824. ALD, Inc., d.b.a. CFA, Chicago, Ill. Filed Nov. 26, 1963.

## CFA

For Finance, Credit and Acceptance Company Services.
First use Nov. 8, 1963.

SN 184,871. Associates Investment Company, South Bend, Ind. Filed Jan. 20, 1964.




For Financial Services—Namely, Purchasing of Time Sales Contracts, Wholesale Financing of Products of All Types, Loan Services, Factoring, and Leasing of All Types of Chattels and Equipment.
First use Mar. 10, 1961.

SN 184,872. Associates Investment Company, South Bend, Ind. Filed Jan. 20, 1964.



For Financial Services—Namely, Purchasing of Time Sales Contracts, Wholesale Financing of Products of All Types, Loan Services, Factoring, and Leasing of All Types of Chattels and Equipment.
First use Mar. 10, 1961.

SN 193,026. The Midwest Life Insurance Company of Lincoln, Nebraska, Lincoln, Nebr. Filed May 8, 1964.



For Underwriting Life Insurance.
First use Oct. 1, 1963.

SN 193,937. City National Bank & Trust Co. of Rockford, Rockford, Ill. Filed May 21, 1964.




For Banking Services.
First use Feb. 1, 1964.

## Class 103 — Construction and Repair

SN 187,367. I. G. Wheeler & Sons, Inc., Pittsburgh, Pa. Filed Feb. 24, 1964.



For Water-Proofing and Preserving Corrugated Roofing.
First use on or about Apr. 1, 1963.

SN 187,368. I. G. Wheeler & Sons, Inc., Pittsburgh, Pa. Filed Feb. 24, 1964.

**CORBESTOS**

For Water-Proofing and Preserving Corrugated Roofing.
First use on or about Apr. 1, 1963.

## Class 105 — Transportation and Storage

SN 89,216. Transport Clearings of Twin Cities, Inc., St. Paul, Minn. Filed Jan. 18, 1960.

**TRANSPORT CLEARINGS**

For Purchasing, Acquiring and Collecting Freight Bills of Motor and Other Carriers and Collecting for Such Freight Bills From the Shipping Public, and for Collecting, Consolidating and Remittance of Freight Revenues Due Carriers From Other Carriers of Freight.
First use on or about Nov. 1, 1942.

SN 179,265. Rosenbluth Brothers Travel Agency, Philadelphia, Pa. Filed Oct. 17, 1963.




For Travel Agency Services Including the Planning of Tours; Provision of Information on Passports, Visas, Inoculation Requirements; Making of Hotel and Transportation Reservations; Arranging for Guide Services and Local Representation; Procuring of Tickets, Advice and Assistance for Special Interest Groups, and the Provision of Pre-Trip Film Showing and Lectures Relating to Such Trips.
First use Dec. 4, 1961.

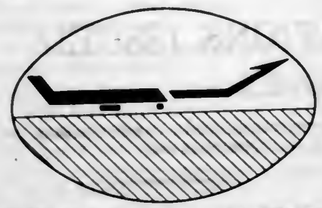
SN 179,554. Northwest Airlines, Inc., d.b.a. Northwest Orient Airlines, Minneapolis, Minn. Filed Oct. 22, 1963.

**POLAR JET**

The word "Jet" is disclaimed apart from the mark as shown.
For Transportation of Passengers, Cargo, and Mail by Air.
First use Oct. 1, 1963.



SN 187,547. Aero Performance, Inc., Manhasset, N.Y. Filed Feb. 27, 1964.



The lining on the drawing is a feature of the mark and not indicative of color.
For Services Rendered to Airlines, Airports, Manufacturers and Others in Connection With Air Transportation Enterprises Including Airport Performance Analysis, Computer Flight Training, and the Study and Preparation of Aircraft and Pilots' Manual Data.
First use Feb. 28, 1961.

## Class 107 — Education and Entertainment

SN 179,241. Arnold T. Koch, Jr., Fayetteville, N.Y. Filed Oct. 17, 1963.

**SALT CITY SIX**

For Entertainment Services in the Form of Popular Band Music.
First use March 1954.

SN 194,168. Connie B. Gay Broadcasting Corp., Washington, D.C. Filed May 25, 1964.

**"TIN PAN VALLEY"**

For Title of a Musical Program Presented on Radio.
First use Mar. 28, 1964.

# COLLECTIVE MEMBERSHIP MARKS

## Class 200

SN 182,752. The United States Figure Skating Association, Boston, Mass. Filed Dec. 10, 1963.




For Indicating Membership in the United States Figure Skating Association.
First use September 1960.

# CERTIFICATION MARKS

## Class A — Goods

SN 194,439. Supima Association of America, El Paso, Tex. Filed May 27, 1964.

**AmeriPima Blend**

The mark certifies that such blends conform to standards established by the applicant association as to fibre content, construction, workmanship, strength, quality, performance, appearance and texture.
For Finished Textile Products and Wearing Apparel Made From Blends Consisting of Half or More of Southwestern Extra-Long Staple Cotton and the Remainder Non-Cotton Natural and/or Synthetic Fibre.
First use May 18, 1964.

SN 195,238. National Woodwork Manufacturers Association, Inc., Chicago, Ill. Filed June 9, 1964.




The mark certifies millwork products water-repellent preservative treated in accordance with CS–63 and the NWMA seal of approval program.
For Water-Repellent Preservative Treated Millwork Products.
First use Jan. 14, 1964.

# TRADEMARK REGISTRATIONS ISSUED
## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

784,603. SWISTRAW. LeJeune W. Griffith, d.b.a. LeJeune. SN 158,067. Pub. 11–24–64. Filed 11–28–62.

784,604. SKAI AND DESIGN. Konrad Hornschuh Aktiengesellschaft Werk Weissbach. SN 158,350. Pub. 11–24–64. Filed 9–26–63.

784,605. SIRED BY GARRISON'S CORNISH CHAMPION AND DESIGN. Earl W. Garrison Inc. SN 158,528. Pub. 11–24–64. Filed 12–5–62.

784,606. RP AND DESIGN. Rafco Plastics, Inc. SN 161,560. Pub. 11–24–64. Filed 1–28–63.

784,607. DUCHESS–60. Pennsylvania Farm Bureau Cooperative Association. SN 168,530. Pub. 11–24–64. Filed 5–9–63.

784,608. PRINCESS–55. Pennsylvania Farm Bureau Cooperative Association. SN 168,531. Pub. 11–24–64. Filed 5–9–63.

784,609. NC AND DESIGN. Nebraska Hybrid Seed Growers Association. SN 170,548. Pub. 11–24–64. Filed 6–7–63.

784,610. KOHINOR. The Pantasote Company. SN 172,778. Pub. 11–24–64. Filed 7–10–63.

784,611. TOPCO. Topco Associates, Inc. SN 177,467. Pub. 11–24–64. Filed 9–20–63.

784,612. MASTERPIECE. The Lackawanna Leather Company. SN 183,076. Pub. 11–24–64. Filed 12–16–63.

784,613. HYDRAGLOS. J. M. Huber Corporation. SN 185,601. Pub. 9–22–64. Filed 1–29–64.

784,614. TEMPLAPLAST. CRO Engineering Co., Inc. SN 187,650. Pub. 11–24–64. Filed 2–28–64.

784,615. GEN-GRIP. General Latex and Chemical Corporation (of Ga.). SN 188,229. Pub. 11–24–64. Filed 3–9–64.

784,616. MASTER. Farmer Seed & Nursery Company. SN 190,685. Pub. 11–24–64. Filed 4–3–64.

784,617. ROVER. L. Teweles Seed Co. SN 192,099. Pub. 11–24–64. Filed 4–27–64.

784,618. THUNDERBIRD (DESIGN). Peterson Seed Company, Inc. SN 192,614. Pub. 11–24–64. Filed 5–4–64.

### Class 2 — Receptacles

784,619. FILMLOC. Michigan Carton Co. SN 145,105. Pub. 10–15–63. Filed 5–21–62.

784,620. FILMLOK. St. Regis Paper Company. SN 168,857. Pub. 10–15–63. Filed 5–14–63.

784,621. SEE-SAFE. Phillips Petroleum Company. SN 182,210. Pub. 11–24–64. Filed 12–2–63.

784,622. MISS PRINCESS. Tucker Manufacturing Corp. SN 182,376. Pub. 9–15–64. Filed 12–4–63.

784,623. ECONOMY. Aladdin Industries, Incorporated. SN 184,868. Pub. 11–24–64. Filed 1–20–64.

784,624. FREEZER-MAID AND DESIGN. Lake Erie Plastics, Inc. SN 186,729. Pub. 11–24–64. Filed 2–14–64.

784,625. REXALL. Rexall Drug and Chemical Company. SN 189,209. Pub. 11–24–64. Filed 3–20–64.

784,626. "HANDISPENSER." Top Value Enterprises, Inc. SN 189,636. Pub. 11–24–64. Filed 3–25–64.

784,627. WATER MASTER. H. D. Hudson Manufacturing Company. SN 190,085. Pub. 11–24–64. Filed 4–1–64.

784,628. PEP TRAYS. Premier Peat Moss Corporation. SN 195,446. Pub. 11–24–64. Filed 6–11–64.

784,629. PEP POTS. Premier Peat Moss Corporation. SN 195,447. Pub. 11–24–64. Filed 6–11–64.

784,630. FOTOVURE. Bruce Carton Company. SN 200,150. Pub. 11–24–64. Filed 8–19–64.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

784,631. JEWEL MESH. Philip Floria, Inc. SN 143,226. Pub. 11–24–64. Filed 4–27–62.

784,632. JACLYN U.S.A. Aetna Leather Novelty Co., Inc. SN 197,646. Pub. 11–24–64. Filed 7–13–64.

### Class 4 — Abrasives and Polishing Materials

784,633. DRI-LUBE. The Carborundum Company. SN 181,116. Pub. 11–24–64. Filed 11–14–63.

784,634. SABER. The Carborundum Company. SN 181,117. Pub. 11–24–64. Filed 11–14–63.

### Class 5 — Adhesives

784,635. VISCOSOL. Starch Products Limited. SN 127,433. Pub. 9–18–62. Filed 9–7–61.

784,636. CORR-A-PEL. Eastern Corrugated Container Corporation. SN 185,371. Pub. 11–24–64. Filed 1–27–64.

784,637. DAPPER DAN. Impact Container Corporation. SN 194,553. Pub. 11–24–64. Filed 5–29–64.

### Class 6 — Chemicals and Chemical Compositions

784,638. BTP AND DESIGN. British Titan Products Company Limited. SN 153,731. Pub. 11–24–64. Filed 9–24–62.

784,639. BB. The Brush Beryllium Company. SN 157,453. Pub. 11–24–64. Filed 11–19–62.

784,640. CERAX. Cornelius Wax Redning Corporation. SN 170,453. Pub. 7–7–64. Filed 6–6–63.

784,641. WEY AND DESIGN. Wey Aktiengesellschaft. MULTIPLE CLASS (Classes 6 and 12). SN 174,680. Pub. 11–24–64. Filed 8–7–63.

784,642. PILOT. Pilot Chemical Company. SN 177,086. Pub. 11–24–64. Filed 9–16–63.

784,643. HAPPY GAL. New England Chemical Supply Corp. SN 178,718. Pub. 11–24–64. Filed 10–10–63.

784,644. ZARPE. Fragrance Incorporated, d.b.a. Maison Zarpé. MULTIPLE CLASS (Classes 6 and 51). SN 179,890. Pub. 11–24–64. Filed 10–28–63.

784,645. HAY AND HEATHER. Fritzsche Brothers, Inc. SN 180,726. Pub. 11–24–64. Filed 11–8–63.

784,646. SELECTRON. Selectrons, Ltd. SN 191,320. Pub. 11–24–64. Filed 4–16–64.

784,647. BASAZOL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 191,483. Pub. 11–24–64. Filed 4–20–64.

784,648. BURKOTE. Burkart-Schier Chemical Company. SN 191,746. Pub. 11–24–64. Filed 4–22–64.

784,649. WOOLITE. American Home Products Corporation. SN 191,898. Pub. 11–24–64. Filed 4–24–64.





784,650. COMBITEST. Ames Company, Inc. SN 193,087. Pub. 11–24–64. Filed 5–11–64.

784,651. COMBI-TEST. Ames Company, Inc. SN 193,088. Pub. 11–24–64. Filed 5–11–64.

784,652. QUOLAC. Unibasic, Incorporated. SN 193,288. Pub. 11–24–64. Filed 5–11–64.

784,653. LHE. Selectrons, Ltd. SN 194,245. Pub. 11–24–64. Filed 5–25–64.

784,654. DOUBLE LUCKY. Valmor Products Company. SN 194,261. Pub. 11–24–64. Filed 5–25–64.

784,655. TX–15. Wyandotte Chemicals Corporation. SN 194,266. Pub. 11–24–64. Filed 5–25–64.

784,656. GIBCO AND DESIGN. Grand Island Biological Company. SN 194,296. Pub. 11–24–64. Filed 5–26–64.

784,657. GIBCO. Grand Island Biological Company. SN 194,297. Pub. 11–24–64. Filed 5–26–64.

### Class 8 — Smokers' Articles, Not Including Tobacco Products

784,658. COUNT-DOWN. Delcron Products, Inc. SN 190,068. Pub. 11–24–64. Filed 4–1–64.

784,659. SCANDIA. Peterson's Ltd., Inc. SN 197,424. Pub. 11–24–64. Filed 7–8–64.

### Class 9 — Explosives, Firearms, Equipments, and Projectiles

784,660. CLICK. Click Bookmatch Incorporated. SN 180,712. Pub. 11–24–64. Filed 11–8–63.

784,661. DRI-X AND DESIGN. Utah Research and Development Company. SN 185,830. Pub. 11–24–64. Filed 1–31–64.

784,662. LITE KING. Transamerican Match Corporation, assignee of Pacific Match Co. SN 186,637. Pub. 11–24–64. Filed 2–13–64.

### Class 10 — Fertilizers

784,663. NUTRO GOLF GREEN. Smith-Douglas Company, Inc. SN 174,803. Pub. 11–24–64. Filed 8–9–63.

784,664. ZINIRATE. Tennessee Corporation. SN 197,198. Pub. 11–24–64. Filed 7–6–64.

### Class 12 — Construction Materials

784,641. (See Class 6 for this trademark.)

784,665. SYN-CLAD. Young Door Company, Inc. SN 159,138. Pub. 11–24–64. Filed 12–13–62.

784,666. SUN BOSS AND DESIGN. John F. Kain, d.b.a. Sun Boss Company. SN 162,126. Pub. 11–24–64. Filed 2–4–63.

784,667. JAY-VOID. The Lawrence Paper Company, d.b.a. Jayhawk Fibre Form Co. SN 164,855. Pub. 11–24–64. Filed 3–18–63.

784,668. MOSERA. Vida Mosaic Co. SN 171,592. Pub. 11–24–64. Filed 6–21–63.

784,669. PAX-PANEL. Frank Paxton Lumber Company. SN 172,512. Pub. 11–24–64. Filed 7–5–63.

784,670. TRU-FORM. Tex-Tube, Inc. SN 178,062. Pub. 11–24–64. Filed 7–15–63.

784,671. DEKORA. S.A.D.I. S.p.A. SN 174,053. Pub. 11–24–64. Filed 7–30–63.

784,672. ACOUSTICRYLIC. National Gypsum Company. SN 174,115. Pub. 11–24–64. Filed 7–31–63.

784,673. MITSUBISHI. Mitsubishi Shoji Kaisha, Ltd. SN 174,686. Pub. 11–24–64. Filed 8–8–63.

784,674. UNI-STRUCTURE AND DESIGN. Continental Homes, Inc. SN 174,750. Pub. 10–6–64. Filed 8–9–63.

784,675. THREE DIAMOND DESIGN. Mitsubishi Shoji Kaisha, Ltd. SN 174,895. Pub. 11–24–64. Filed 8–12–63.

784,676. TERRAZ AND DESIGN. Terraz Epoxy Inc. SN 174,994. Pub. 11–24–64. Filed 8–13–63.

784,677. M MIAMI WINDOW THE SYMBOL OF EXCELLENCE AND DESIGN. Miami Window Corporation. SN 176,010. Pub. 11–24–64. Filed 8–29–63.

784,678. POREEN AND DESIGN. Poreen Corporation. SN 177,739. Pub. 11–24–64. Filed 9–5–63.

784,679. ASBESTOCEL. Johns-Manville Corporation. SN 177,792. Pub. 11–24–64. Filed 9–26–63.

784,680. RANCHBORD. Johns-Manville Corporation. SN 177,796. Pub. 11–24–64. Filed 9–26–63.

784,681. NYLACHRON. Al-Fab Aluminum Fabricators, Inc. SN 177,941. Pub. 11–24–64. Filed 9–30–63.

784,682. RAPI-TIES. The Dayton Sure Grip and Shore Company. SN 180,151. Pub. 11–24–64. Filed 10–10–63.

784,683. NORWIN. The D. S. Brown Company. SN 180,282. Pub. 11–24–64. Filed 11–1–63.

784,684. FDR. Formulate Development Research Corp. SN 183,539. Pub. 11–24–64. Filed 12–23–63.

784,685. INTERBUILD. Interbuild, Inc. SN 183,596. Pub. 11–24–64. Filed 12–26–63.

784,686. DIMUL. Electro Refractories & Abrasives Corporation. SN 183,899. Pub. 11–24–64. Filed 1–2–64.

784,687. SUBURB-A-PORT. Artcraft Awning Company. SN 187,066. Pub. 11–24–64. Filed 2–20–64.

784,688. SUBURB-A-ROLL. Artcraft Awning Company. SN 187,067. Pub. 11–24–64. Filed 2–20–64.

784,689. TOOTH-N-NAIL. Component Engineering Co. SN 187,251. Pub. 11–24–64. Filed 2–24–64.

784,690. DFPA ETC. AND DESIGN. American Plywood Association. SN 192,658. COLLECTIVE MARK. Pub. 11–24–64. Filed 5–5–64.

784,691. GALVABEAD. The Bostwick Steel Lath Company. SN 192,785. Pub. 11–24–64. Filed 5–6–64.

### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

784,692. TANDEM GRIP. Impact Extrusions, Incorporated. SN 160,290. Pub. 11–24–64. Filed 1–7–63.

784,693. SERVICEPTOR AND DESIGN. Arthur W. Swenson, Jr., d.b.a. Stern-Williams Co. SN 166,054. Pub. 11–24–64. Filed 4–3–63.

784,694. TRU-TEST ETC. AND DESIGN. Cotter & Company. SN 183,248. Pub. 11–24–64. Filed 12–19–63.

784,695. THERM-A-CREAMER AND DESIGN. Progressive Metal Equipment, Inc., d.b.a. Progressive Metal Equip't Inc., and Progressive Metal Equipment Incorporated. SN 191,208. Pub. 11–24–64. Filed 4–15–64.

784,696. SUPER MUDWONDER. Rockwell Manufacturing Corporation. SN 191,719. Pub. 11–24–64. Filed 4–21–64.

784,697. SAFETBLOW. Jet Electronics Corporation. SN 192,725. Pub. 11–24–64. Filed 5–5–64.

784,698. UNI-JOIN. Woodward Iron Company. SN 195,480. Pub. 11–24–64. Filed 6–11–64.

784,699. PIGGY-BACK DUSTPAN. Creative Sales, Inc. SN 196,508. Pub. 11–24–64. Filed 6–26–64.

784,700. DOVE-LOK. Nylok-Detroit Corporation. SN 196,706. Pub. 11–24–64. Filed 6–29–64.

784,701. TRUEFIN. Calumet & Hecla, Inc. SN 197,073. Pub. 11–24–64. Filed 7–6–64.

784,702. JB AND DESIGN. Jaybee Manufacturing Corporation. SN 197,131. Pub. 11–24–64. Filed 7–6–64.

784,703. SPOTBRADS. Spotnails, Inc. SN 197,789. Pub. 11–24–64. Filed 7–13–64.

784,704. TUBEMANSHIP. Calumet & Hecla, Inc. SN 198,403. Pub. 11–24–64. Filed 7–23–64.

## Class 14—Metals and Metal Castings and Forgings

784,705. CMC. Armco Steel Corporation. SN 181,949. Pub. 11–24–64. Filed 11–27–63.

## Class 15—Oils and Greases

784,706. EF ETC. AND DESIGN. Electrodim, Inc. MULTIPLE CLASS (Classes 15 and 21). SN 171,114. Pub. 11–24–64. Filed 6–17–63.

784,707. SUNDERCOAT. Sun Oil Company. SN 197,623. Pub. 11–24–64. Filed 7–10–64.

784,708. PINK AIR. American Petrofina Company of Texas. SN 197,651. Pub. 11–24–64. Filed 7–13–64.

## Class 16—Protective and Decorative Coatings

784,709. CALTEX AND DESIGN. California Texas Oil Corporation. SN 169,013. Pub. 11–24–64. Filed 5–16–63.

784,710. TRU-TEST ETC. AND DESIGN. Cotter & Company. SN 183,249. Pub. 11–24–64. Filed 12–19–63.

784,711. WEATHER-LIFE. Rockcote Paint Co. SN 191,954. Pub. 11–24–64. Filed 4–24–64.

## Class 17—Tobacco Products

784,712. BEWLAY. Peterson's Ltd. SN 194,069. Pub. 11–24–64. Filed 5–22–64.

784,713. BEACON. R. J. Reynolds Tobacco Company. SN 198,881. Pub. 11–24–64. Filed 7–30–64.

784,714. BISCAYNE. R. J. Reynolds Tobacco Company. SN 198,883. Pub. 11–24–64. Filed 7–30–64.

784,715. VANTAGE. R. J. Reynolds Tobacco Company. SN 198,885. Pub. 11–24–64. Filed 7–30–64.

784,716. PILOT. R. J. Reynolds Tobacco Company. SN 198,886. Pub. 11–24–64. Filed 7–30–64.

784,717. SYLVAN. R. J. Reynolds Tobacco Company. SN 198,887. Pub. 11–24–64. Filed 7–30–64.

784,718. MONITOR. R. J. Reynolds Tobacco Company. SN 198,888. Pub. 11–24–64. Filed 7–30–64.

784,719. GLENDALE. R. J. Reynolds Tobacco Company. SN 198,889. Pub. 11–24–64. Filed 7–30–64.

784,720. ARBOR. R. J. Reynolds Tobacco Company. SN 198,890. Pub. 11–24–64. Filed 7–30–64.

784,721. FORTI-FILTER. R. J. Reynolds Tobacco Company. SN 198,891. Pub. 11–24–64. Filed 7–30–64.

784,722. CHARBOND. R. J. Reynolds Tobacco Company. SN 198,893. Pub. 11–24–64. Filed 7–30–64.

784,723. VAPOPHASE. R. J. Reynolds Tobacco Company. SN 198,895. Pub. 11–24–64. Filed 7–30–64.

784,724. DALE. R. J. Reynolds Tobacco Company. SN 198,917. Pub. 11–24–64. Filed 7–30–64.

## Class 18—Medicines and Pharmaceutical Preparations

784,725. ISODRUFF. International Latex Corporation. SN 157,377. Pub. 11–24–64. Filed 11–16–62.

784,726. PHANTOSINE. Cooper, Tinsley Laboratories, Inc. SN 171,095. Pub. 11–24–64. Filed 6–17–63.

784,727. CERREDEX. The Upjohn Company. SN 171,819. Pub. 11–24–64. Filed 6–25–63.

784,728. PRO-DI. Marion Laboratories, Inc. (Delaware corporation), assignee of Marion Laboratories, Inc. (Missouri corporation). SN 182,348. Pub. 11–24–64. Filed 12–4–63.

784,729. TEMRIN. Cutter Laboratories, Inc. SN 183,382. Pub. 11–24–64. Filed 12–23–63.

784,730. GAMASTAN. Cutter Laboratories, Inc. SN 183,886. Pub. 11–24–64. Filed 1–2–64.

784,731. KEOXINE. Key Pharmaceuticals, Inc. SN 184,932. Pub. 11–24–64. Filed 1–20–64.

784,732. CMP FORMULAE. Madison C. Gray, d.b.a. West Anaheim Pharmacy and West Anaheim Pharmaceuticals. SN 186,354. Pub. 11–24–64. Filed 2–10–64.

784,733. NERV-AID. Keystone Laboratories, Inc. SN 188,547. Pub. 11–24–64. Filed 3–12–64.

784,734. RHINEPHRINE. International Pharmaceutical Corporation. SN 190,807. Pub. 11–24–64. Filed 4–10–64.

784,735. CHEMESTROGEN. Thomas E. Watson, d.b.a. T. E. Watson Co. SN 191,336. Pub. 11–24–64. Filed 4–16–64.

784,736. RIOPLUS. American Home Products Corporation. SN 193,525. Pub. 11–24–64. Filed 5–15–64.

784,737. MATROL. Eli Lilly and Company. SN 194,625. Pub. 11–24–64. Filed 6–1–64.

784,738. EAR-RITE. Lambert-Kay, Incorporated. SN 194,990. Pub. 11–24–64. Filed 6–5–64.

784,739. EYE-BRITE. Lambert-Kay, Incorporated. SN 194,991. Pub. 11–24–64. Filed 6–5–64.

784,740. SCOURBIOTIC. Olin Mathieson Chemical Corporation. SN 195,545. Pub. 11–24–64. Filed 6–12–64.

784,741. NEOLOID. American Cyanamid Company. SN 195,908. Pub. 11–24–64. Filed 6–18–64.

784,742. ANCYLOL. American Cyanamid Company. SN 195,909. Pub. 11–24–64. Filed 6–18–64.

784,743. BRIGHT STEP. Chesebrough-Pond's Inc. SN 196,621. Pub. 11–24–64. Filed 6–29–64.

784,744. HEALTHY STEPPER. Melville Shoe Corporation. SN 196,693. Pub. 11–24–64. Filed 6–29–64.

784,745. GRAVISTAT. Bristol-Myers Company. SN 197,065. Pub. 11–24–64. Filed 7–6–64.

784,746. COVIBOLIN. Organon Inc. SN 196,432. Pub. 12–1–64. Filed 7–23–64.

784,747. CLORELASE. Parke, Davis & Company. SN 197,843. Pub. 11–24–64. Filed 7–14–64.

784,748. ACRISTAN. Trigga Corporation, Limited. SN 197,858. Pub. 11–24–64. Filed 7–14–64.

784,749. EXTENDUR. American Cyanamid Company. SN 198,115. Pub. 11–24–64. Filed 7–20–64.

784,750. MISTA GRIN. American Cyanamid Company. SN 198,116. Pub. 11–24–64. Filed 7–20–64.

## Class 19—Vehicles

784,751. HUNTINGTON. Champion Home Builders Co. SN 180,181. Pub. 11–24–64. Filed 10–31–63.

784,752. GOPHER AND DESIGN. John M. Watson, d.b.a. Watson Manufacturing Company. SN 188,402. Pub. 11–24–64. Filed 3–10–64.

784,753. TEXTAR AND DESIGN. Textar G.m.b.H. SN 188,677. Pub. 11–24–64. Filed 3–13–64.

784,754. ZANELLA AND DESIGN. Zanella Hnos. y Cia, S.A. Com. Ind. Finan. e Inmob. SN 191,094. Pub. 11–24–64. Filed 4–14–64.

784,755. HI-CAP. The Fairbanks Company. SN 194,474. Pub. 11–24–64. Filed 5–28–64.

784,756. "500" AND DESIGN. The Firestone Tire & Rubber Company. SN 194,476. Pub. 11–24–64. Filed 5–28–64.

784,757. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 194,538. Pub. 11–24–64. Filed 5–28–64.



784,758. CONDOR. Kelson Engineering Company. SN 194,620. Pub. 11–24–64. Filed 6–1–64.

784,759. FLO-RATED. General Motors Corporation. SN 194,724. Pub. 11–24–64. Filed 6–2–64.

## Class 21—Electrical Apparatus, Machines, and Supplies

784,706. (See Class 15 for this trademark.)

784,760. SAXONY. Trane-Aire Electronics, Inc. SN 144,901. Pub. 5–28–63. Filed 5–17–62.

784,761. ROTOFLEX. Acton Laboratories, Inc. SN 162,060. Pub. 10–1–63. Filed 2–5–63.

784,762. ROTAFLEX. Allis-Chalmers Manufacturing Company. SN 163,100. Pub. 10–1–63. Filed 2–20–63.

784,763. YARDNEY PRIMER AND DESIGN. Yardney Electric Corp. SN 168,791. Pub. 11–24–64. Filed 5–13–63.

784,764. SYNCROCAM. Gilman Engineering & Manufacturing Co. SN 177,415. Pub. 6–9–64. Filed 9–20–63.

784,765. FLEXIFLOR. Flexiflor Electric Systems, Inc. SN 180,495. Pub. 11–24–64. Filed 11–5–63.

784,766. CONFORMALL. Holophane Company, Inc. SN 180,884. Pub. 11–24–64. Filed 11–12–63.

784,767. STRIP-A-WALL. Electro-King Corp. SN 182,258. Pub. 11–24–64. Filed 12–3–63.

784,768. FOSTER. Foster Electric Co., Ltd. SN 182,611. Pub. 11–24–64. Filed 12–9–63.

784,769. TRU-TEST ETC. AND DESIGN. Cotter & Company. SN 183,250. Pub. 11–24–64. Filed 12–19–63.

784,770. CLAUDE AND DESIGN. Claude Pax & Visseaux. SN 185,867. Pub. 11–24–64. Filed 2–3–64.

784,771. MISCELLANEOUS DESIGN. The First Electronics Corporation. SN 194,477. Pub. 11–24–64. Filed 5–28–64.

## Class 22—Games, Toys, and Sporting Goods

784,772. ABACA AND DESIGN. William R. McInturff. SN 166,283. Pub. 11–24–64. Filed 4–5–63.

784,773. BUMP A PEG. Gladen Enterprises, Inc. SN 166,705. Pub. 11–24–64. Filed 4–15–63.

784,774. WHIRLIGIG. Milton Bradley Company. SN 167,183. Pub. 11–24–64. Filed 4–19–63.

784,775. BIG ELI AND DESIGN. Eli Bridge Company, Inc. SN 187,738. Pub. 11–24–64. Filed 3–2–64.

784,776. PLAYBABY. Holland Hall Products, Inc. SN 187,752. Pub. 11–24–64. Filed 3–2–64.

784,777. SURF-N-SKI BY CHIPS. Chips Surf-N-Ski, Inc. SN 188,516. Pub. 11–24–64. Filed 3–12–64.

784,778. EAGLE. Eagle Rubber Co., Inc. SN 188,852. Pub. 11–24–64. Filed 3–17–64.

784,779. CHALLENGE THE YANKEES. Hassenfeld Bros., Inc. SN 190,725. Pub. 11–24–64. Filed 4–9–64.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

784,780. UAC AND DESIGN. Novo Industrial Corporation. SN 171,694. Pub. 6–23–64. Filed 6–24–63.

784,781. STICK-PICKER. Ralph A. Sloan, d.b.a. National Stick Picker Company. SN 174,124. Pub. 11–24–64. Filed 7–31–63.

784,782. ITALCREM. Italcrem, S.A. SN 180,402. Pub. 11–24–64. Filed 11–4–63.

784,783. TRU-TEST ETC. AND DESIGN Cotter & Company. SN 183,251. Pub. 11–24–64. Filed 12–19–63.

784,784. HYDROLUX. International Machinery Corporation N.V. SN 187,288. Pub. 11–24–64. Filed 2–24–64.

784,785. TEXTAR AND DESIGN. Textar G.m.b.H. SN 188,678. Pub. 11–24–64. Filed 3–13–64.

784,786. AMERICAN PROVINCIAL. Charles D. Briddell, Incorporated, d.b.a. Chas. D. Briddell, Inc. SN 188,845. Pub. 11–24–64. Filed 3–17–64.

784,787. KERNEL KUTTER. Kernel Kutter, Inc. SN 190,013. Pub. 11–24–64. Filed 3–31–64.

784,788. SPACEDRILL. Space Implements Co. SN 191,621. Pub. 11–24–64. Filed 4–20–64.

784,789. SWATH-KING. Transland Aircraft, Inc. SN 192,958. Pub. 11–24–64. Filed 5–7–64.

784,790. XPEDITER. Huntingdon Industries Incorporated. SN 196,524. Pub. 11–24–64. Filed 6–26–64.

784,791. TEMPLATURN. The Bullard Company. SN 196,611. Pub. 11–24–64. Filed 6–29–64.

784,792. TAM-O-SHANTER. Stonehill & Tree, Inc. SN 196,737. Pub. 11–24–64. Filed 6–29–64.

784,793. ABRASIJET. The Dow Chemical Company. SN 197,683. Pub. 11–24–64. Filed 7–13–64.

784,794. SWING GRIP. Ideal Industries, Inc. SN 197,958. Pub. 11–24–64. Filed 7–16–64.

784,795. TRU-GRIT ROTARY AND DESIGN. Wheel Trueing Tool Company. SN 198,014. Pub. 11–24–64. Filed 7–16–64.

784,796. RUBBERTHANE. Future Plastics, Incorporated. SN 198,037. Pub. 11–24–64. Filed 7–17–64.

784,797. BOAR. Ram Enterprises, d.b.a. Boar Equipment Company. SN 198,078. Pub. 11–24–64. Filed 7–17–64.

784,798. GLEANER. Allis-Chalmers Manufacturing Company. SN 198,251. Pub. 11–24–64. Filed 7–21–64.

784,799. CAPFIL. Ralph M. Fritts, d.b.a. Ralph M. Fritts Co. SN 198,267. Pub. 11–24–64. Filed 7–21–64.

784,800. S.O.S. DEFENDER AND DESIGN. Schwartz Brothers, Inc. SN 198,499. Pub. 11–24–64. Filed 7–24–64.

784,801. WELLINGTON. United Silver and Cutlery Company. SN 198,507. Pub. 11–24–64. Filed 7–24–64.

784,802. RETRAKTO. Porter Precision Products Co. SN 198,663. Pub. 11–24–64. Filed 7–28–64.

784,803. RAPIDAC. Rapidac Machine Corporation. SN 198,665. Pub. 11–24–64. Filed 7–28–64.

784,804. BIG SPIKE. Willman I. Miller, d.b.a. Wimco Distribution. SN 198,858. Pub. 11–24–64. Filed 7–30–64.

784,805. TRI-FREE-LIFT. The Knickerbocker Company. SN 199,286. Pub. 11–24–64. Filed 8–5–64.

784,806. TRILO. The Knickerbocker Company. SN 199,287. Pub. 11–24–64. Filed 8–5–64.

784,807. THERE'S A DIAMOND IN YOUR LIFE AND DESIGN. Koebel Diamond Tool Co. SN 199,288. Pub. 11–24–64. Filed 8–5–64.

## Class 24—Laundry Appliances and Machines

784,808. ITALCREM. Italcrem, S.A. SN 180,403. Pub. 11–24–64. Filed 11–4–63.

784,809. SJOSTROM. Sjöström Automations, Inc. SN 190,029. Pub. 11–24–64. Filed 3–31–64.

784,810. SELECTOR 300. Blackstone Corporation. SN 192,983. Pub. 11–24–64. Filed 5–8–64.

784,811. HAMILTON. Hamilton Manufacturing Company. SN 195,225. Pub. 11–24–64. Filed 6–9–64.

## Class 26—Measuring and Scientific Appliances

784,812. ZOOMEX. Cinematic Anstalt. SN 106,691. Pub. 12–11–62. Filed 10–19–60.

784,813. ABI AND DESIGN. American Electronics, Inc. SN 145,482. Pub. 4-14-64. Filed 5-25-62.

784,814. VOQUOTE. The Bunker-Ramo Corporation, by change of name from The Teleregister Corporation. SN 171,719. Pub. 11-24-64. Filed 6-24-63.

784,815. TELEVOX. The Bunker-Ramo Corporation, by change of name from The Teleregister Corporation. SN 171,720. Pub. 11-24-64. Filed 6-24-63.

784,816. EALING. The Ealing Corporation. SN 178,600. Pub. 11-24-64. Filed 10-9-63.

784,817. MICROVISION. The Bendix Corporation. SN 186,143. Pub. 11-24-64. Filed 2-6-64.

784,818. ROOTSMETER. Dresser Industries, Inc. SN 194,784. Pub. 11-24-64. Filed 6-3-64.

784,819. EAI. Electronic Associates, Inc. SN 195,212. Pub. 11-24-64. Filed 6-9-64.

## Class 28 — Jewelry and Precious-Metal Ware

784,820. SHIELDS LTD. Shields, Inc. SN 189,386. Pub. 11-24-64. Filed 3-23-64.

784,821. EL. Eugene Lanter. SN 191,057. Pub. 11-24-64. Filed 4-14-64.

784,822. MYSTERY PEARL. Coro Incorporated of Rhode Island. SN 196,252. Pub. 11-24-64. Filed 6-23-64.

784,823. LOOP-YEAR. Walter A. Dunn, d.b.a. Dunn Brothers. SN 200,169. Pub. 11-24-64. Filed 8-19-64.

784,824. INTERNATIONAL GOURMET COLLECTION. The International Silver Company. SN 200,726. Pub. 11-24-64. Filed 8-27-64.

## Class 29 — Brooms, Brushes, and Dusters

784,825. TEK. Johnson & Johnson, d.b.a. Tek-Hughes. SN 190,088. Pub. 11-24-64. Filed 4-1-64.

784,826. HANDS OFF. Osrow Products Company, Inc. SN 196,470. Pub. 11-24-64. Filed 6-25-64.

## Class 31 — Filters and Refrigerators

784,827. SNAP-"E"-CHILLER. Packers' Development Corporation. SN 163,755. Pub. 11-24-64. Filed 3-1-63.

784,828. CRYOGEM. North American Philips Company, Inc. SN 167,567. Pub. 11-24-64. Filed 4-25-63.

784,829. TRU-TEST ETC. AND DESIGN. Cotter & Company. SN 183,252. Pub. 11-24-64. Filed 12-19-63.

## Class 32 — Furniture and Upholstery

784,830. HEART OF DOWN. Globe Feather & Down Co. SN 170,308. Pub. 11-24-64. Filed 6-4-63.

784,831. ARISTOKRAFT. United Cabinet Corporation. SN 181,933. Pub. 11-24-64. Filed 11-26-63.

784,832. VALTRONIC. The Valtronic Corporation. SN 182,387. Pub. 11-24-64. Filed 12-4-63.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

784,833. SI ETC. AND DESIGN. Southern Industries, Inc. SN 184,982. Pub. 11-24-64. Filed 1-20-64.

784,834. TASK-LITE. T. S. Fleming, d.b.a. Task-Lite Co. SN 185,592. Pub. 11-24-64. Filed 1-29-64.

784,835. FLEXMASTER. Flexmaster Company Limited. SN 191,006. Pub. 9-22-64. Filed 2-13-64.

784,836. FLEX-O-MOUNT. Admiral Corporation. SN 198,111. Pub. 11-24-64. Filed 7-20-64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

784,837. POOL KING. Air Reduction Company, Incorporated. SN 181,601. Pub. 11-24-64. Filed 11-21-63.

784,838. CORDOVAN BONNEVILLE JET. Cordovan Associates, Incorporated. SN 193,756. Pub. 11-24-64. Filed 5-19-64.

784,839. JETZON. Hoffman Tire Co., Inc. SN 193,788. Pub. 11-24-64. Filed 5-19-64.

## Class 36 — Musical Instruments and Supplies

784,840. KLAVITRON. Joh. Mustad Aktiebolac. SN 178,456. Pub. 11-24-64. Filed 10-7-63.

784,841. SMALL TALK. Channel Master Corporation. SN 185,560. Pub. 11-24-64. Filed 1-29-64.

## Class 37 — Paper and Stationery

784,842. KARKRAFT. West Virginia Pulp and Paper Company. SN 140,608. Pub. 6-30-64. Filed 3-23-62.

784,843. ZUPACK AND DESIGN. Habra-Werk Wilhelm F. Ott. SN 141,297. Pub. 3-19-63. Filed 4-2-62.

784,844. FIBAR. Fibre Leather Mfg. Corp. SN 162,832. Pub. 11-24-64. Filed 2-15-63.

784,845. CHEMI SHEET. General Company Limited. SN 172,581. Pub. 11-24-64. Filed 7-8-63.

784,846. HUSKY. Weyerhaeuser Company, assignee of Crocker Hamilton Papers, Inc. SN 178,780. Pub. 11-24-64. Filed 10-11-63.

784,847. SCHICK. Eversharp, Inc., d.b.a. Schick Safety Razor Company. SN 185,989. Pub. 11-24-64. Filed 2-4-64.

784,848. EARLY AMERICAN. Gulf States Paper Corporation. SN 188,751. Pub. 11-24-64. Filed 3-16-64.

784,849. THRIFT FORM AND DESIGN. Systomatic Business Forms, Inc. SN 190,086. Pub. 11-24-64. Filed 3-31-64.

784,850. TENDER-Z. Crown Zellerbach Corporation. SN 190,897. Pub. 11-24-64. Filed 4-13-64.

784,851. NORMOUS. Joseph Shenker. SN 191,084. Pub. 11-24-64. Filed 4-14-64.

784,852. TRI-COLOR. David Kahn, Inc. SN 191,180. Pub. 11-24-64. Filed 4-15-64.

784,853. PRESIT. David Kahn, Inc. SN 191,182. Pub. 11-24-64. Filed 4-15-64.

784,854. FLAVORSEALD. Graham Paper Company. SN 191,282. Pub. 11-24-64. Filed 4-16-64.

784,855. PUSH-O-PUSH. David Kahn, Inc. SN 191,299. Pub. 11-24-64. Filed 4-16-64.

784,856. MISTER STRONG. AM Barber & Beauty Supply Co. SN 191,646. Pub. 11-24-64. Filed 4-21-64.

784,857. TECHBOARD. Natser Corporation, d.b.a. Acco Products. SN 194,066. Pub. 11-24-64. Filed 5-22-64.

784,858. FINDEX. Park Industries, Inc. SN 194,067. Pub. 11-24-64. Filed 5-22-64.

784,859. DUO-TONE. Marcal Paper Mills, Inc. SN 194,812. Pub. 11-24-64. Filed 6-3-64.

## Class 38 — Prints and Publications

784,860. XBX. Her Majesty the Queen in the right of Canada as represented by the Minister of National Defence. SN 147,926. Pub. 11-24-64. Filed 6-28-62.



784,861. 5BX. Her Majesty the Queen in the right of Canada as represented by the Minister of National Defence. SN 147,927. Pub. 11-24-64. Filed 6-28-62.

784,862. THE WALL STREET TRANSCRIPT. Wall Street Transcript Corporation. SN 171,831. Pub. 6-9-64. Filed 6-21-63.

784,863. AIRMARK. Chicago Aerial Industries, Inc. SN 175,388. Pub. 11-24-64. Filed 8-20-63.

784,864. AIR WEST. West Coast Airlines, Inc. SN 183,940. Pub. 11-24-64. Filed 1-2-64.

784,865. WORLDS OF TOMORROW. Galaxy Publishing Corp. SN 185,134. Pub. 11-24-64. Filed 1-22-64.

784,866. ROLLCHART SYSTEMS. Rollchart Inc. SN 189,210. Pub. 11-24-64. Filed 3-20-64.

784,867. NORTH AMERICAN REVIEW. Cornell College. SN 192,571. Pub. 11-24-64. Filed 5-4-64.

## Class 39 — Clothing

784,868. DIPLOMAT. Campus Sweater & Sportswear Company. SN 112,118. Pub. 3-20-62. Filed 1-19-61.

784,869. SEALECT AND DESIGN. Walter W. Moyer Company, Inc. SN 130,293. Pub. 11-24-64. Filed 10-19-61.

784,870. "FOR YOUNG FIRST LADIES" AND DESIGN. A. E. Alexander, Ltd. SN 137,484. Pub. 11-24-64. Filed 2-8-62.

784,871. FANTINI'S AND DESIGN. Fiorella's, Inc. SN 147,916. Pub. 3-12-63. Filed 6-28-62.

784,872. SNO MITS. Duracraft Corporation. SN 160,617. Pub. 11-24-64. Filed 1-14-63.

784,873. SINEW AND DESIGN. Punta Alegre Commodities Corporation, assignee of Sol Duchovnay & Sons. SN 161,102. Pub. 4-7-64. Filed 1-21-63.

784,874. BONDOR. Kayser Bondor Limited. SN 163,733. Pub. 11-24-64. Filed 3-1-63.

784,875. FIGURE BUILDER. Figure Builder Foundations, Inc. SN 174,657. Pub. 11-24-64. Filed 8-8-63.

784,876. FANCIFUL DESIGN OF A BOWLER. King Louie International, Inc. SN 177,528. Pub. 11-3-64. Filed 9-23-63.

784,877. CRIPU MILANO. Virginia Pucetta Antonioli and Cristina Greppi. SN 180,485. Pub. 11-24-64. Filed 11-5-63.

784,878. ETELL. Etell Fashions Ltd. SN 184,222. Pub. 9-1-64. Filed 1-8-64.

784,879. HANESPORT. P. H. Hanes Knitting Company. SN 184,626. Pub. 11-24-64. Filed 1-15-64.

784,880. ALUMITOP. Air Reduction Company, Incorporated. SN 187,459. Pub. 11-24-64. Filed 2-26-64.

784,881. HONOR GRADS BY SICELOFF. Siceloff Manufacturing Company, Inc. SN 188,670. Pub. 11-3-64. Filed 3-13-64.

784,882. TURBOLON. El. & El. Novelty Co. SN 189,061. Pub. 11-24-64. Filed 3-19-64.

784,883. PATRA PANTS. Standard Garments, Inc. SN 189,116. Pub. 11-3-64. Filed 3-19-64.

784,884. PEERAGE. Glen Oaks Sales Company, Inc. SN 189,166. Pub. 10-13-64. Filed 3-20-64.

784,885. SEA/LINE. West Products Corp. SN 190,771. Pub. 11-24-64. Filed 4-9-64.

784,886. DYNA PRO AND DESIGN. Boyertown Shoe Corp. SN 192,786. Pub. 11-24-64. Filed 5-6-64.

784,887. WALK MATES. The Colvis Company, d.b.a. Collins Department Stores. SN 192,895. Pub. 11-24-64. Filed 5-7-64.

784,888. BACHELOR'S BUTTONS. The Londontown Manufacturing Company. SN 193,881. Pub. 11-24-64. Filed 5-20-64.

## Class 43 — Thread and Yarn

784,889. NORSE SPUN YARN AND DESIGN. Bell Yarn Co., Inc. SN 137,890. Pub. 4-16-63. Filed 2-14-62.

## Class 44 — Dental, Medical, and Surgical Appliances

784,890. RR DESIGN. Rodana Research Corporation. SN 157,329. Pub. 11-24-64. Filed 11-15-62.

784,891. SANI-SPEC. Gene Burnett, d.b.a. Burnett Instrument Company. SN 162,074. Pub. 11-24-64. Filed 2-5-63.

784,892. NURSETTE. Mead Johnson & Company. SN 182,810. Pub. 11-24-64. Filed 12-11-63.

784,893. PEDI-SAGE. Pedi-Sage, Inc. SN 185,710. Pub. 11-24-64. Filed 1-30-64.

784,894. CREDO. Credo-Stahlwarenfabrik Gustav Kracht. SN 188,966. Pub. 11-24-64. Filed 3-18-64.

784,895. DAY-DIAL. Hankscraft Company. SN 193,667. Pub. 11-24-64. Filed 5-18-64.

784,896. COMPUTER. Electronic Development Company. SN 194,973. Pub. 11-24-64. Filed 6-5-64.

784,897. CHRON-A-COIL. Baxter Laboratories, Inc. SN 195,271. Pub. 11-24-64. Filed 6-10-64.

784,898. ETERNA. Ipco Hospital Supply Corporation. SN 195,300. Pub. 11-24-64. Filed 6-10-64.

784,899. AIR-PAK. Scott Aviation Corporation. SN 195,722. Pub. 11-24-64. Filed 6-15-64.

784,900. MICRO-SINK MS AND DESIGN. Othel M. Sink. SN 195,819. Pub. 11-24-64. Filed 6-16-64.

784,901. SOFT-GARD. Fuller Pharmaceutical Company. SN 196,443. Pub. 11-24-64. Filed 6-25-64.

784,902. CPC AND DESIGN. Pamplin-Cocherell Research & Development. SN 196,472. Pub. 11-24-64. Filed 6-25-64.

## Class 45 — Soft Drinks and Carbonated Waters

784,903. SUN DEW AND DESIGN. Sun Dew Corp. SN 102,280. Pub. 2-28-61. Filed 8-8-60.

784,904. MONTCLAIR FOODS. National Chemsearch Corporation of Texas. SN 186,963. Pub. 11-24-64. Filed 2-18-64.

## Class 46 — Foods and Ingredients of Foods

784,905. SELECT FOODS. Select Foods, Inc. SN 127,879. Pub. 11-24-64. Filed 9-14-61.

784,906. CHEF HOLDING A PLATTER (DESIGN). Tambellini Food Products Co., Inc., assignee of Bruno J. Tambellini. SN 165,184. Pub. 10-20-64. Filed 3-21-63.

784,907. RICE KRINKLES. General Foods Corporation. SN 172,817. Pub. 11-24-64. Filed 7-11-63.

784,908. IMO. Rod's Food Products, Inc. SN 178,741. Pub. 11-24-64. Filed 10-10-63.

784,909. ROUND AND DESIGN. Gordon Baking Company. SN 179,415. Pub. 11-24-64. Filed 10-21-63.

784,910. TREATMINTS ETC. AND DESIGN. Mark III Enterprises, Inc. SN 179,435. Pub. 11-24-64. Filed 10-21-63.

784,911. CATES. Chas. F. Cates & Sons, Inc. SN 179,994. Pub. 11-24-64. Filed 10-29-63.

784,912. KINTOKI AND DESIGN. Farmers' Rice Cooperative, by change of name from Farmers' Rice Growers Cooperative. SN 183,048. Pub. 11–24–64. Filed 12–16–63.

784,913. PACAMA. P.M.C. Company, Inc. SN 189,609. Pub. 11–24–64. Filed 3–25–64.

784,914. PEOPLE NIP. The Peoplenip Co., Inc. SN 189,935. Pub. 11–24–64. Filed 3–30–64.

784,915. CLABBER GIRL AND DESIGN. Hulman & Company. SN 190,806. Pub. 11–24–64. Filed 4–10–64.

784,916. GOLDEN INCA CORN. Ever-Tempting Products Corporation. SN 191,267. Pub. 11–3–64. Filed 4–16–64.

784,917. SAUCE-MASTER. Gravymaster Company, Inc. SN 192,174. Pub. 11–24–64. Filed 4–28–64.

784,918. LIQUI-COL. Leeben Color & Chemical Co., Inc. SN 193,183. Pub. 11–24–64. Filed 5–11–64.

784,919. HI-MARK AND DESIGN. Davis Beauchamp. SN 194,023. Pub. 11–24–64. Filed 5–22–64.

784,920. K MART. S. S. Kresge Company. SN 197,497. Pub. 11–24–64. Filed 7–9–64.

784,921. BOLO-BAR. Jack's Cookie Corporation. SN 197,585. Pub. 11–24–64. Filed 7–10–64.

784,922. BIG RED. The James G. Gill Company, Inc. SN 197,697. Pub. 11–24–64. Filed 7–13–64.

784,923. FOODPLAST. Foodplast Products, Inc. SN 197,881. Pub. 11–24–64. Filed 7–15–64.

## Class 47 — Wines

784,924. EMERALD DRY. Paul Masson, Inc., d.b.a. Paul Masson Vineyards. SN 153,186. Pub. 11–24–64. Filed 9–14–62.

## Class 48 — Malt Beverages and Liquors

784,925. MICKEYS AND DESIGN. Sterling Brewers, Inc., by assignment and change of name from Sterling Brewers, Inc. SN 189,391. Pub. 11–24–64. Filed 3–23–64.

## Class 49 — Distilled Alcoholic Liquors

784,926. WINNER'S CUP. Barton Distilling Company. SN 189,537. Pub. 11–24–64. Filed 3–26–64.

## Class 50 — Merchandise Not Otherwise Classified

784,927. SINGLE-STAGE. James Manufacturing Company, Inc., assignee of Rockwood & Co., d.b.a. James Mfg. Co. SN 172,240. Pub. 10–27–64. Filed 7–1–63.

784,928. WARNAWAY. Donald K. Skoro, d.b.a. Warnaway Equipment Company. SN 182,122. Pub. 11–24–64. Filed 11–29–63.

784,929. SAF-T-GUIDER. Frank E. Bird, Jr. SN 187,004. Pub. 11–24–64. Filed 2–19–64.

784,930. 7 11 AND DESIGN. Matthew Vincent Smith, d.b.a. 7–11 Sign Spot. SN 197,188. Pub. 11–24–64. Filed 7–6–64.

## Class 51 — Cosmetics and Toilet Preparations

784,644. (See Class 6 for this trademark.)

784,931. IFF. International Flavors & Fragrances Inc. SN 157,807. Pub. 8–18–64. Filed 11–23–62.

784,932. PYNNACLE HAIR STYLING CREME AND DESIGN. Edward Grossman, d.b.a. Treslure. SN 173,571. Pub. 11–24–64. Filed 7–23–63.

784,933. SO SILKY. Roux Laboratories, Inc. SN 175,880. Pub. 10–6–64. Filed 8–27–63.

784,934. JADE EAST. Swank, Inc. SN 178,653. Pub. 11–24–64. Filed 10–9–63.

784,935. ARTEZ WESTERLEY. Sophie Dolega Dziakiewics. SN 183,519. Pub. 11–24–64. Filed 11–22–63.

784,936. LE NOIR BAISER. Mrs. Rica Juliette Sebbah Baudecroux, for herself and as legal guardian of her minor children, Jean-Paul Baudecroux and Micheline-Rosemonde Baudecroux. SN 184,331. Pub. 11–24–64. Filed 12–27–63.

784,937. LE BAISER. Mrs. Rica Juliette Sebbah Baudecroux, for herself and as legal guardian of her minor children, Jean-Paul Baudecroux and Micheline-Rosemonde Baudecroux. SN 184,332. Pub. 11–24–64. Filed 12–27–63.

784,938. GOLDEN WONDER. Lehn & Fink Products Corporation, d.b.a. Tussy Cosmetics. SN 185,218. Pub. 11–24–64. Filed 1–23–64.

784,939. LE MANS. Clairol Incorporated. SN 185,568. Pub. 11–24–64. Filed 1–29–64.

784,940. LA PETITE. Aerosol Specialties, Inc. SN 185,843. Pub. 11–24–64. Filed 2–3–64.

784,941. SUFFRAGE. L'Oreal. SN 186,867. Pub. 11–24–64. Filed 2–17–64.

784,942. ÉPRIS. Parfums Corday, Inc. SN 187,089. Pub. 11–24–64. Filed 2–19–64.

784,943. RED VET PET. Paul B. Elder Company. SN 187,267. Pub. 11–24–64. Filed 2–24–64.

784,944. IN THE CLEAR. Lehn & Fink Products Corporation. SN 188,772. Pub. 11–24–64. Filed 3–16–64.

784,945. EL (MONOGRAM) WITHIN CIRCLE. Estee Lauder, Incorporated. SN 191,186. Pub. 11–24–64. Filed 4–15–64.

784,946. HYDRO-TONE. Estee Lauder, Incorporated. SN 191,187. Pub. 11–24–64. Filed 4–15–64.

784,947. LOVE-SET. Maradel Products, Inc. SN 191,191. Pub. 11–24–64. Filed 4–15–64.

784,948. WEATHER-SET. Maradel Products, Inc. SN 191,194. Pub. 11–24–64. Filed 4–15–64.

784,949. PROLOGUE. Bourjois, Inc. SN 191,246. Pub. 11–24–64. Filed 4–16–64.

784,950. EVOKE. Adams-Barclay Co. SN 192,453. Pub. 11–24–64. Filed 5–1–64.

784,951. EXULT. Adams-Barclay Co. SN 192,454. Pub. 11–24–64. Filed 5–1–64.

784,952. CAJOLE. Adams-Barclay Co. SN 192,455. Pub. 11–24–64. Filed 5–1–64.

784,953. SWEET ESCAPE. Adams-Barclay Co. SN 192,456. Pub. 11–24–64. Filed 5–1–64.

## Class 52 — Detergents and Soaps

784,954. ROURE DUPONT. Roure-Dupont, Inc. SN 172,342. Pub. 11–17–64. Filed 7–2–63.

784,955. STOUT. The Dow Chemical Company. SN 183,253. Pub. 11–24–64. Filed 12–19–63.

784,956. DISPATCH. The Dow Chemical Company. SN 183,255. Pub. 11–24–64. Filed 12–19–63.

784,957. MIST-MASTER. The Remus Sales Co. SN 189,015. Pub. 11–24–64. Filed 3–18–64.

784,958. ORO. S. M. Arnold, Inc. SN 190,856. Pub. 11–24–64. Filed 4–13–64.

784,959. CRAXEEN. B. & H. Co. SN 191,024. Pub. 11–24–64. Filed 4–14–64.



# Service Marks

## Class 100 — Miscellaneous

784,960. NATIONAL PARK SERVICE ETC. AND DESIGN. U.S. Department of the Interior. SN 141,999. Pub. 11–24–64. Filed 4–10–62.

784,961. JUMBO FOOD STORES AND DESIGN. Jumbo Food Stores, Inc. SN 185,603. Pub. 11–24–64. Filed 1–29–64.

## Class 101 — Advertising and Business

784,962. MD CLUB. Systems Programming Corporation. SN 176,689. Pub. 11–24–64. Filed 9–10–63.

## Class 102 — Insurance and Financial

784,963. PLAN IV. Federal Insurance Company. SN 128,998. Pub. 11–24–64. Filed 10–2–61.

784,964. NL ETC. AND DESIGN. Northern Life Insurance Company, d.b.a. Northern Life Insurance Co. SN 183,782. Pub. 11–24–64. Filed 12–30–63.

784,965. THREE-DIMENSIONAL TRIANGLE (DESIGN). South Shore National Bank. SN 185,949. Pub. 11–24–64. Filed 2–3–64.

## Class 103 — Construction and Repair

784,966. CONCUT. Concut, Inc. SN 186,816. Pub. 11–24–64. Filed 2–17–64.

## Class 105 — Transportation and Storage

784,967. LOOK AHEAD—LOOK SOUTH. Southern Railway Company. SN 169,663. Pub. 11–24–64. Filed 5–24–63.

784,968. BEACHCOMBER. American Export Isbrandtsen Lines, Inc., by change of name from American Export Lines, Inc. SN 175,233. Pub. 11–24–64. Filed 8–19–63.

784,969. SUNLANE. American Export Isbrandtsen Lines, Inc., by change of name from American Export Lines, Inc. SN 175,234. Pub. 11–24–64. Filed 8–19–63.

## Class 106 — Material Treatment

784,970. GASAJET. Bloom Air Cushion Corp. SN 162,068. Pub. 4–21–64. Filed 2–5–63.

784,971. GASAFY. Bloom Air Cushion Corp. SN 162,069. Pub. 4–21–64. Filed 2–5–63.

784,972. GASAFRAC. Bloom Air Cushion Corp. SN 162,070. Pub. 4–21–64. Filed 2–5–63.

784,973. GASASWAB. Bloom Air Cushion Corp. SN 162,071. Pub. 4–21–64. Filed 2–5–63.

784,974. GASADIZE. Bloom Air Cushion Corp. SN 163,918. Pub. 4–21–64. Filed 3–1–63.

784,975. LIFE-LINER. Graniteville Company. SN 182,422. Pub. 11–24–64. Filed 12–5–63.

## Class 107 — Education and Entertainment

784,976. JEAN GLENN. June Bedlington, d.b.a. Jean Glenn. SN 157,765. Pub. 11–24–64. Filed 11–23–62.

784,977. DEL AIRES. E. Edward Rockhold, d.b.a. The Del Aires. SN 174,911. Pub. 11–24–64. Filed 8–12–63.

784,978. CANDY CORNER. Claster Enterprises, Inc. SN 187,087. Pub. 11–24–64. Filed 2–20–64.

# Collective Membership Mark

## Class 200

784,979. COAT OF ARMS (DESIGN). Phi Delta Kappa. SN 186,191. Pub. 11–24–64. Filed 2–6–64.

784,980. PHI DELTA KAPPA. Phi Delta Kappa. SN 186,192. Pub. 11–24–64. Filed 2–6–64.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 16 — Protective and Decorative Coatings

784,981. Milton Bradley Company, Springfield, Mass. SN 161,800. Filed P.R. 1–24–63; Am. S.R. 11–27–64.

### SILK-TONE

For Poster Paints.
First use Jan. 7, 1963.

784,982. Milton Bradley Company, Springfield, Mass. SN 161,802. Filed P.R. 1–24–63; Am. S.R. 11–27–64.

### GLITTER-TONE

For Poster Paints.
First use Jan. 8, 1963.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

784,983. Brown Oil Tools, Inc., Houston, Tex. SN 203,714. Filed 10–12–64.

### CAM-LOK

For Well Tools, Such as Well Packers, Well Anchor Devices and Pipe Gripping Units.
First use Oct. 19, 1960.

## Class 31 — Filters and Refrigerators

784,984. Aluminum Refrigerator Door Co., Inc., Chicago, Ill. SN 182,236. Filed P.R. 12–3–63; Am. S.R. 12–1–64.

STA-CLEAR 3

For Heat-Insulating Glass, With Built-In Electric Heating Means, for Refrigerators.
First use on or about Oct. 21, 1963.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

784,985. Deering Milliken, Inc., New York, N.Y. SN 171,332. Filed P.R. 6–19–63; Am. S.R. 11–6–64.

LOOPETTE

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof.
First use May 22, 1963.

# TRADEMARK REGISTRATIONS RENEWED

25,036. OMEGA. Cl. 37. 7–24–1894.
25,285. SOCIETE. Cl. 46. 10–2–1894.
26,186. CERETANA AND DESIGN. Cl. 46. 3–5–1895.
190,719. KRODEPROOF. Cl. 16. 10–21–24.
190,985. SPIROFIN. Cl. 34. 10–28–24.
190,999. MANUFACTURED WEATHER. Cl. 34. 10–28–24.
191,011. PLATINUM-AMERICA. Cl. 39. 10–28–24.
191,312. DEXSTAR. Cl. 37. 11–4–24.
191,313. DEXSTAR AND DESIGN. Cl. 37. 11–4–24.
191,637. ROYAL CROWN AND DESIGN. Cl. 37. 11–11–24.
191,844. CELANESE. Cl. 39. 11–18–24.
193,072. ABSORBIT. Cl. 52. 12–16–24.
194,072. DESIGN OF GREEN TIP ON RIBBED PART OF HOSE. Cl. 39. 1–13–25.
194,200. MEND-RITE AND DESIGN. Cl. 35. 1–20–25.
194,314. HOT-GLO. Cl. 1. 1–20–25.
194,629. ACITITE. Cl. 12. 2–3–25.
197,274. CERTIFIED. Cl. 32. 4–14–25.
197,284. REUTER'S AND DESIGN. Cl. 52. 4–14–25.
197,837. SARTORIUS NO. 1. Cl. 6. 4–28–25.
197,917. VERTOSE. Cl. 46. 4–28–25.
198,126. CORONA. Cl. 18. 5–5–25.
198,310. BRONCHO. Cl. 46. 5–12–25.
409,056. KYPRIS. Cl. 51. 9–12–44.
410,177. H.R.E.I.A. AND DESIGN. Cl. 37. 11–14–44.
410,275. H.L.B. AND DESIGN. Cl. 37. 11–21–44.
410,276. H.R.E.I.A. Cl. 37. 11–21–44.
410,277. H.R.E.I.A. AND DESIGN. Cl. 37. 11–21–44.
410,278. H.R.E.I.A. AND DESIGN. Cl. 37. 11–21–44.
410,279. H.R.E.I.A. AND DESIGN LINED FOR GOLD. Cl. 37. 11–21–44.
410,670. VICTOR. Cl. 30. 12–12–44.
410,773. TORCHWELD. Cl. 13. 12–19–44.
410,930. PLAST-I-SHEEN. Cl. 16. 12–26–44.
411,087. RANDSEAL. Cl. 39. 1–2–45.
411,129. APRICOATING. Cl. 46. 1–2–45.
411,242. TYRNAZIN. Cl. 18. 1–9–45.
411,407. RANDSEAL. Cl. 42. 1–16–45.
411,709. REDMANIZED. Cl. 42. 1–30–45.
411,836. RANDTEX. Cl. 40. 2–6–45.
412,500. H.R.E.I.A. AND DESIGN LINED FOR RED. Cl. 38. 3–13–45.
412,579. RC AND DESIGN. Cl. 45. 3–13–45.
413,547. SULKY. Cl. 23. 5–1–45.
413,854. MILDOOM. Cl. 6. 5–15–45.

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### Section 8

*The following registrations issued Dec. 23, 1958*

671,368. "DIG." Cl. 3.
671,374. ISOCHLORTHION. Cl. 6.
671,376. HOME BEAUTIFUL. Cl. 6.
671,377. HY TEX. Cl. 6.
671,379. DESIGN OF MAN HOLDING A BOARD. Cl. 12.
671,381. BETTER LITES BL AND DESIGN. Cl. 12.
671,385. FENCE-O-SHADE. Cl. 12.
671,387. CARRIAGE TRADE. Cl. 12.
671,396. NIAGARA. Cl. 12.
671,397. POSITROL. Cl. 13.
671,399. S AND DESIGN. Cl. 13.
671,403. GREEN STRIPE. Cl. 14.
671,405. U-T AND DESIGN. Cl. 14.
671,406. UNITCAST AND DESIGN. Cl. 14.
671,408. ENERGICOLOR. Cl. 16.
671,409. FIRE-SHIELD. Cl. 16.
671,411. HTL-FT AND DESIGN. Cl. 17.
671,412. HFT AND DESIGN. Cl. 17.
671,418. EQUIVISOL. Cl. 18.
671,421. TRIT. Cl. 18.
671,425. TICOLENE. Cl. 18.
671,429. COSABIOTIC. Cl. 18.
671,436. PREDOCULON. Cl. 18.
671,438. TOFAZOLIDIN. Cl. 18.
671,441. PRE-CREATINE. Cl. 18.
671,442. RIVA-SPORT ETC. AND DESIGN. Cl. 19.
671,443. THERMO-JET. Cl. 19.
671,448. ICOFF. Cl. 19.
671,449. ALDENS. Cl. 19.
671,450. BOBCAT. Cl. 19.
671,451. SLEEPY HEAD CAREST AND DESIGN. Cl. 19.
671,455. STAAR. Cl. 21.
671,457. GEM. Cl. 21.
671,458. RICOLIT. Cl. 21.
671,461. VARIVAC AND DESIGN. Cl. 21.
671,462. FIXTVAC. Cl. 21.
671,463. TWINKLESTAR. Cl. 21.
671,466. CITSAFE. Cl. 21.
671,469. MVE. Cl. 21.
671,472. SONBLASTER. Cl. 21.
671,488. SEIDELHUBER. Cl. 21.
671,491. TAXOLOGY. Cl. 22.
671,492. TAXOLOGY ETC. AND DESIGN. Cl. 22.
671,495. MICRO BALLS AND DESIGN. Cl. 23.
671,496. RINSE-MISER. Cl. 23.
671,499. HI LO AND DESIGN. Cl. 23.
671,501. HOSPITAL. Cl. 23.
671,503. FORMASIL. Cl. 23.
671,504. ROTO RIDE. Cl. 23.
671,511. HI-DYNE. Cl. 23.
671,518. BA BAIRD ATOMIC AND DESIGN. Cl. 26.
671,519. FINGER TIP AND DESIGN. Cl. 26.
671,526. END-POINT. Cl. 26.
671,529. TATNALL AND DESIGN. Cl. 26.
671,534. WELD CHEK. Cl. 26.
671,536. VISI CHART. Cl. 26.
671,538. VIKING SLOANE. Cl. 29.
671,547. FORMAT. Cl. 32.
671,548. SIT-A-TABLE. Cl. 32.
671,549. FROS-T-AIRE. Cl. 34.
671,551. MAGIC CHIMNEY. Cl. 34.
671,555. SAFETY AIRLOCK. Cl. 35.
671,559. REC-OR-AID. Cl. 37.
671,561. OSMIROID R.M.T. Cl. 37.
671,564. NOVEL-ETTES. Cl. 37.
671,567. POST-MORTEM. Cl. 38.
671,577. ALLENE-CAROL. Cl. 39.
671,578. JOHN BARRY. Cl. 39.



671,580. OGLINO. Cl. 39.
671,582. SHOWER SONG. Cl. 39.
671,585. MR. MAC. Cl. 39.
671,586. AMPHIBIAN CHICKEN CHASER. Cl. 39.
671,588. GANNESS GOWNS. Cl. 39.
671,589. ARGO MALTESA AND DESIGN. Cl. 39.
671,592. 5 STAR ADMIRAL AND DESIGN. Cl. 39.
671,594. FRANDEL. Cl. 39.
671,595. WORLD WIDES AND DESIGN. Cl. 39.
671,598. JUNIORETTES. Cl. 39.
671,600. BOTILLA. Cl. 42.
671,601. FASHIONITE. Cl. 42.
671,602. SUNBEAM. Cl. 44.
671,605. GILLUM'S HICKORY MOUNTAIN. Cl. 46.
671,610. APPLE ANNIE AND DESIGN. Cl. 46.
671,611. BARBEQUE QUEEN AND DESIGN. Cl. 46.
671,613. EHLERS M AND DESIGN. Cl. 46.
671,614. EHLERS F AND DESIGN. Cl. 46.
671,615. EHLERS S AND DESIGN. Cl. 46.
671,616. EHLERS D AND DESIGN. Cl. 46.
671,617. EHLERS O AND DESIGN. Cl. 46.
671,622. HOME MARK. Cl. 50.
671,625. SIMONE MOUNIER. Cl. 51.
671,631. MERTONE. Cl. 52.
671,636. FELLINGERIZED. Cl. 103.
671,639. DUFFY'S. Cl. 106.
671,641. PORTIONIZED CUSTOM-CUTS AND DESIGN. Cl. 46.

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214,873. PRESTIGE. Cl. 46. 7–6–26.
220,366. NOCTAL. Cl. 6. 11–9–26.
246,634. PEDEES. Cl. 39. 9–11–28.
430,180. PEPPI AND DESIGN. Cl. 6. 6–10–47.
542,248. PEDEES. Cl. 39. 5–15–51.
576,461. MAGNAFLOW. Cl. 23. 6–23–53.
590,472. ALO-CREME. Cl. 18. 6–1–54.
678,316. CONDEX. Cl. 12. 5–12–59.
683,776. SENTOL. Cl. 52. 8–18–59.
714,491. SENTOL. Cl. 52. 4–25–61.

# TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

408,796. PETALDOWN. Cl. 42. 8–29–44. Everfast Fabrics, Inc., New York, N.Y. Corrected: In the certificate of correction dated October 27, 1964, in the heading, "1954" should be deleted and *1944* should be inserted.

425,106. DYNAMATIC. Cl. 26. 11–5–46. Dynamatic Corporation. Eaton Manufacturing Company, Cleveland, Ohio. Amended to appear:

DYNAMATIC

515,261. DYNAMATIC. Cl. 26. 9–20–49. Dynamatic Corporation. Eaton Manufacturing Company, Cleveland, Ohio. Amended to appear:

DYNAMATIC

668,074. NURSING HOME ADMINISTRATOR ETC. Cl. 38. 10–7–58. Nursing Home Administrator, Inc. McGraw-Hill, Inc., New York, N.Y. Amended: In the statement, column 2, after line 8, *No claim is made to the expression, "The Journal of Modern Nursing Home Management."* is inserted, and the drawing is amended to appear:

NURSING HOME ADMINISTRATOR

778,990. ALANODE. Cl. 21. 10–27–64. Alabama Metallurgical Corporation, Selma, Ala. Corrected: In the statement, column 1, line 1, "Alabama" second occurrence should be deleted and *Delaware* should be inserted.

# TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

200,766. HOT-GLO AND DESIGN. Cl. 1. United Fuel & Supply Company. 7–7–25. New Cert. Sec. 7(c) to Cliffs Dow Chemical Company, Marquette, Mich.

414,653. SIERRA SNOW. Cl. 46. A. D. Atterbury, d.b.a. A. D. Atterbury Company. 6–19–45. New Cert. Sec. 7(c) to Green Giant Company, Le Sueur, Minn.

426,355. VIBROTRON. Cl. 21. Frank Rieber, d.b.a. Rieber Research Laboratory. 12–24–46. New Cert. Sec. 7(c) to United Control Corporation, Redmond, Wash.

428,453. VIBRONIC. Cl. 21. Frank Rieber, d.b.a. Rieber Research Laboratory. 3–25–47. New Cert. Sec. 7(c) to United Control Corporation, Redmond, Wash.

437,645. WUNDA WEVE COTTON RUG. Cl. 42. Belrug Mill Inc. 3–30–48. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

566,981. WUNDA LOOM AND DESIGN. Cl. 42. Belrug Mills, Inc. 11–18–52. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

574,703. WUNDA LUXE AND DESIGN. Cl. 42. Belrug Mills of South Carolina, formerly having the corporate name of Belrug Mill, Inc. 5–19–53. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

579,716. CHARCOAL HOT-GLO AND DESIGN. Cl. 1. Ray Industries, Inc. 9–8–53. New Cert. Sec. 7(c) to Cliffs Dow Chemical Company, Marquette, Mich.

581,870. WUNDA CUSHION. Cl. 50. Belrug Mills of South Carolina, by change of name from Belrug Mill, Inc. 11–3–53. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

582,960. WUNDA CREST AND DESIGN. Cl. 42. Belrug Mills of South Carolina. 11–24–53. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

605,217. WUNDA PLUSH. Cl. 42. Belrug Mills of South Carolina. 4–26–55. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

608,388. WUNDA VELVET. Cl. 42. Belrug Mills of South Carolina. 7–5–55. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

619,133. WUNDA NYLON. Cl. 42. Belrug Mills of South Carolina. 1–10–56. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

629,606. WUNDA TWEED AND DESIGN. Cl. 42. Belrug Mills of South Carolina. 6–26–56. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

629,607. WUNDA ROYAL. Cl. 42. Belrug Mills of South Carolina. 6–26–56. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

630,567. STERLING. Cl. 46. Sacramento Freezers Inc. 7–10–56. New Cert. Sec. 7(c) to Green Giant Company, Le Sueur, Minn.

647,164. WUNDA WEVE CARPETS. Cl. 42. Belrug Mills of South Carolina. 6-18-57. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

662,166. HAULETTE. Cl. 19. Fayette Manufacturing Company. 5-27-58. New Cert. Sec. 7(c) to The Dayton Steel Foundry Company, Dayton, Ohio

691,458. HOT GLO AND DESIGN. Cl. 1. Ray Industries, Inc. 1-19-60. New Cert. Sec. 7(c) to Cliffs Dow Chemical Company, Marquette, Mich.

724,276. WUNDALON. Cl. 42. Wunda Weve Carpet Co. 11-21-61. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

740,983. OBLARTIC. Cl. 42. Wunda Weve Carpet Co. 11-20-62. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

740,984. CIRTIC. Cl. 42. Wunda Weve Carpet Co. 11-20-62. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

740,985. QUARTIC. Cl. 42. Wunda Weve Carpet Co. 11-20-62. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

740,986. TRITIC. Cl. 42. Wunda Weve Carpet Co. 11-20-62. New Cert. Sec. 7(c) to Wunda Weve Carpet Co., Inc., Greenville, S.C.

# INDEX OF REGISTRANTS

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(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)


Abbott Laboratories, North Chicago, Ill. 411,242, ren. 2-9-65. Cl. 18.

Acco Products: *See*—
Natser Corp.

Acton Laboratories, Inc., Acton, Mass. 784,761, pub. 10-1-63. Cl. 21.

Adams-Barclay Co., Chicago, Ill. 784,950-3, pub. 11-24-64. Cl. 51.

Admiral Corp., Chicago, Ill. 784,836, pub. 11-24-64. Cl. 34.

Admiral Sportswear, Inc., St. Louis, Mo. 671,592, canc. Cl. 39.

Aerosol Specialties, Inc., Bridgeport, Conn. 784,940, pub. 11-24-64. Cl. 51.

Aetna Leather Novelty Co., Inc., West New York, N.J. 784,632, pub. 11-24-64. Cl. 3.

Air Reduction Co., Inc., New York, N.Y. 784,837, pub. 11-24-64. Cl. 35.

Air Reduction Co., Inc., New York, N.Y. 784,880, pub. 11-24-64. Cl. 39.

Alabama Metallurgical Corp., Selma, Ala. 778,990, cor. Cl. 21.

Aladdin Industries, Inc., Chicago, Ill. 784,623, pub. 11-24-64. Cl. 2.

Aldens, Inc., Chicago, Ill. 671,449, canc. Cl. 19.

Alexander, A. E., Ltd., New York, N.Y. 784,870, pub. 11-24-64. Cl. 39.

Al-Fab Aluminum Fabricators, Inc., Chicago, Ill. 784,681, pub. 11-24-64. Cl. 12.

Allis-Chalmers Mfg. Co., Milwaukee, Wis. 784,762, pub. 10-1-63. Cl. 21.

Allis-Chalmers Mfg. Co., Milwaukee, Wis. 784,798, pub. 11-24-64. Cl. 23.

Aloe Creme Laboratories, Inc., Hollywood, Fla. 590,472, canc. Cl. 18.

Aluminum Refrigerator Door Co., Inc., Chicago, Ill. 784,984. Cl. 31.

American Burtonising Co. and Wallerstein Laboratories, New York, N.Y., to Baxter Laboratories, Inc., Morton Grove, Ill. 197,917, ren. 2-9-65. Cl. 46.

American Cellulose & Chemical Mfg. Co., Ltd., The, to Celanese Corp. of America, New York, N.Y. 191,844, ren. 2-9-65. Cl. 39.

American Cyanamid Co., Wayne, N.J. 784,741-2, pub. 11-24-64. Cl. 18.

American Cyanamid Co., Wayne, N.J. 784,749-50, pub. 11-24-64. Cl. 18.

American Electronics, Inc., Fullerton, Calif. 784,813, pub. 4-14-64. Cl. 26.

American Export Isbrandtsen Lines, Inc., from American Export Lines, Inc., New York, N.Y. 784,968-9, pub. 11-24-64. Cl. 105.

American Export Lines, Inc.: *See*—
American Export Isbrandtsen Lines, Inc.

American Home Products Corp., New York, N.Y. 784,649, pub. 11-24-64. Cl. 6.

American Home Products Corp., New York, N.Y. 784,736, pub. 11-24-64. Cl. 18.

American Petrofina Co. of Texas, Dallas, Tex. 784,708, pub. 11-24-64. Cl. 15.

American Plywood Association, Tacoma, Wash. 784,690, pub. 11-24-64. Cl. 12.

American Steriliser Co., Erie, Pa. 671,418, canc. Cl. 18.

Ames Co., Inc., Elkhart, Ind. 784,650-1, pub. 11-24-64. Cl. 6.

Andersen, Howard, d.b.a. Printed Supplies Co., Oconomowoc, Wis. 671,582, canc. Cl. 39.

Antonioli, Virginia Pucetta, and Cristina Greppi, Milan, Italy. 784,877, pub. 11-24-64. Cl. 39.

Apple Annie: *See*—
Honey-Klst Fruits, Inc.

Armco Steel Corp., Middletown, Ohio. 784,705, pub. 11-24-64. Cl. 14.

Arnold, S. M., Inc., St. Louis, Mo. 784,958, pub. 11-24-64. Cl. 52.

Artcraft Awning Co., St. Louis, Mo. 784,687-8, pub. 11-24-64. Cl. 12.

Atterbury, A. D., d.b.a. A. D. Atterbury Co., to Green Giant Co., Le Sueur, Minn. 414,653, new cert. Cl. 46.

Baudecroux, Micheline-Rosemonde: *See*—
Atterbury, A. D.

Avery, Morris A., d.b.a. Better Lites, Flint, Mich. 671,381, canc. Cl. 12.

B. & H. Co., Pekin, Ill. 784,959, pub. 11-24-64. Cl. 52.

Badger Furnace Pipe Co., Inc., Madison, Wis. 671,551, canc. Cl. 34.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 784,647, pub. 11-24-64. Cl. 6.

Baird-Atomic, Inc., Cambridge, Mass. 671,518, canc. Cl. 26.

Banner Shirt Corp., New York, N.Y. 671,578, canc. Cl. 39.

Barbeque Queen Food Systems, Inc., La Jolla, Calif. 671,611, canc. Cl. 46.

Barber, AM & Beauty Supply Co., Newark, N.J. 784,856, pub. 11-24-64. Cl. 37.

Barclay & Co., New York, N.Y., to Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 197,284, ren. 2-9-65. Cl. 52.

Barton Distilling Co., Chicago, Ill. 784,926, pub. 11-24-64. Cl. 49.

Baudecroux, Jean-Paul: *See*—
Baudecroux, Rica J. S., Mrs.

Baudecroux, Micheline-Rosemonde: *See*—
Baudecroux, Rica J. S., Mrs.

Baudecroux, Rica J. S., Mrs., for herself and as Legal Guardian of her minor children, Jean-Paul Baudecroux and Micheline-Rosemonde Baudecroux, Paris, France. 784,936-7, pub. 11-24-64. Cl. 51.

Baxter Laboratories, Inc.: *See*—
American Burtonising Co. and Wallerstein Laboratories.

Baxter Laboratories, Inc., Morton Grove, Ill. 784,897, pub. 11-24-64. Cl. 44.

Beauchamp, Davis, Calipatria, Calif. 784,919, pub. 11-24-64. Cl. 46.

Bedlington, June, d.b.a. Jean Glenn, Kansas City, Mo. 784,976, pub. 11-24-64. Cl. 107.

Bell Yarn Co., Inc., New York, N.Y. 784,889, pub. 4-16-63. Cl. 43.

Belrug Mill Inc., to Wunda Weve Carpet Co., Inc., Greenville, S.C. 437,645, new cert. Cl. 42.

Belrug Mills, Inc., to Wunda Weve Carpet Co., Inc., Greenville, S.C. 566,981, new cert. Cl. 42.

Belrug Mill, Inc.: *See*—
Belrug Mills of South Carolina.

Belrug Mills of South Carolina, formerly d.b.a. Belrug Mill, Inc., to Wunda Weve Carpet Co., Inc., Greenville, S.C. 574,703, new cert. Cl. 42.

Belrug Mills of South Carolina, from Belrug Mill, Inc., to Wunda Weve Carpet Co., Inc., Greenville, S.C. 581,870, new cert. Cl. 50.

Belrug Mills of South Carolina, to Wunda Weve Carpet Co., Inc., Greenville, S.C. 582,960, new cert. Cl. 42.

Belrug Mills of South Carolina, to Wunda Weve Carpet Co., Inc., Greenville, S.C. 605,217, new cert. Cl. 42.

Belrug Mills of South Carolina, to Wunda Weve Carpet Co., Inc., Greenville, S.C. 608,388, new cert. Cl. 42.

Belrug Mills of South Carolina, to Wunda Weve Carpet Co., Inc., Greenville, S.C. 619,133, new cert. Cl. 42.

Belrug Mills of South Carolina, to Wunda Weve Carpet Co., Inc., Greenville, S.C. 629,606-7, new cert. Cl. 42.

Belrug Mills of South Carolina, to Wunda Weve Carpet Co., Inc., Greenville, S.C. 647,164, new cert. Cl. 42.

Bendix Corp., The, Detroit, Mich. 784,817, pub. 11-24-64. Cl. 26.

Better Lites: *See*—
Avery, Morris A.

Birck-Fellinger, Inc., Chicago, Ill. 671,636, canc. Cl. 103.

Bird, Frank E., Jr., Coatesville, Pa. 784,929, pub. 11-24-64. Cl. 50.

Blackstone Corp., Jamestown, N.Y. 784,810, pub. 11-24-64. Cl. 24.

Bloom Air Cushion Corp., Bakersfield, Calif. 784,970-4, pub. 4-21-64. Cl. 106.

Boar Equipment Co.: *See*—
Ram Enterprises.

Bobcat Corp., from Cerc Mfg. Co., Wheeling, Ill. 671,450, canc. Cl. 19.

Bondor, Kayser, Ltd., Baldock, England. 784,874, pub. 11-24-64. Cl. 39.

Bostwick Steel Lath Co., The, Niles, Ohio. 784,691, pub. 11-24-64. Cl. 12.

Bourjois, Inc., New York, N.Y. 784,949, pub. 11-24-64. Cl. 51.

Boyertown Shoe Corp., Allentown, Pa. 784,886, pub. 11-24-64. Cl. 39.

Bozeman Milling Co., The, Bozeman, to Montana Flour Mills Co., Great Falls, Mont. 26,186, ren. 2-9-65. Cl. 46.

Bradley, Milton, Co., Springfield, Mass. 784,774, pub. 11-24-64. Cl. 22.

Bradley, Milton, Co., Springfield, Mass. 784,981-2. Cl. 16.

Brandt, Louis, & Frere, to Omega Louis Brandt & Frere, S.A., Bienne, Switzerland. 25,036, ren. 2-9-65. Cl. 27.

Brandt, Omega Louis, & Frere, S.A.: *See*—
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Briddell, Charles D., Inc., d.b.a. Chas. D. Briddell, Inc., Crisfield, Md. 784,786, pub. 11-24-64. Cl. 23.

Bristol-Myers Co., New York, N.Y. 784,745, pub. 11-24-64. Cl. 18.

British Titan Products Co. Ltd., Billingham, England. 784,638, pub. 11-24-64. Cl. 6.

Brown, D. S., Co., The, North Baltimore, Ohio. 784,683, pub. 11-24-64. Cl. 12.

Brown Oil Tools, Inc., Houston, Tex. 784,983. Cl. 23.

Bruce Carton Co., Memphis, Tenn. 784,630, pub. 11-24-64. Cl. 2.

Brush Beryllium Co., The, Cleveland, Ohio. 784,639, pub. 11-24-64. Cl. 6.

Bullard Co., The, Bridgeport, Conn. 784,791, pub. 11-24-64. Cl. 23.

Bunker-Ramo Corp., The, from The Teleregister Corp., Stamford, Conn. 784,814-15, pub. 11-24-64. Cl. 26.

Burkart-Schier Chemical Co., Chattanooga, Tenn. 784,648, pub. 11-24-64. Cl. 6.

Burnett, Gene, d.b.a. Burnett Instrument Co., Lawrence, Kans. 784,891, pub. 11-24-64. Cl. 44.

Burnett Instrument Co.: *See*—
Burnett, Gene.

CRO Engineering Co., Inc., Greendale, Wis. 784,614, pub. 11–24–64. Cl. 1.
Cadie Chemical Products, Inc., New York, N.Y. 671,538, canc. Cl. 29.
California Texas Oil Corp., New York, N.Y. 784,709, pub. 11–24–64. Cl. 16.
Calumet & Hecla, Inc., Allen Park, Mich. 784,701, pub. 11–24–64. Cl. 13.
Calumet & Hecla, Inc., Allen Park, Mich. 784,704, pub. 11–24–64. Cl. 13.
Campus Sweater & Sportswear Co., Cleveland, Ohio. 784,868, pub. 3–20–62. Cl. 39.
Carborundum Co., The, Niagara Falls, N.Y. 784,633–4, pub. 11–24–64. Cl. 4.
Carriage Trade Products Co.: *See*—
Ellis, Roy T.
Carrier Construction Co., Inc., Newark, N.J., to Carrier Corp., Syracuse, N.Y. 190,985, ren. 2–9–65. Cl. 34.
Carrier Corp.: *See*—
Carrier Construction Co., Inc.
Carrier Engineering Corp.
Carrier Engineering Corp., Newark, N.J., to Carrier Corp., Syracuse, N.Y. 190,999, ren. 2–9–65. Cl. 34.
Cates, Chas. F. & Sons, Inc., Faison, N.C. 784,911, pub. 11–24–64. Cl. 46.
Celanese Corp. of America: *See*—
American Cellulose & Chemical Mfg. Co., Ltd., The.
Cerc Mfg. Co.: *See*—
Bobcat Corp.
Champion Home Builders Co., Dryden, Mich. 784,731, pub. 11–24–64. Cl. 19.
Channel Master Corp., Ellenville, N.Y. 784,841, pub. 11–24–64. Cl. 36.
Charles of the Ritz, Inc., New York, N.Y. 671,625, canc. Cl. 51.
Chemtron Corp.: *See*—
National Cylinder Gas Co.
Chesebrough-Pond's Inc., New York, N.Y. 784,743, pub. 11–24–64. Cl. 18.
Chicago Aerial Industries, Inc., Barrington, Ill. 784,863, pub. 11–24–64. Cl. 38.
Chips Surf-N-Ski, Inc., Gurnee, Ill. 784,777, pub. 11–24–64. Cl. 22.
Cinematic Anstalt, Vaduz, Liechtenstein. 784,812, pub. 12–11–62. Cl. 26.
Clairol Inc., New York, N.Y. 784,939, pub. 11–24–64. Cl. 51.
Clark, John A., Holden, Mass. 671,686, canc. Cl. 39.
Claster Enterprises, Inc., Baltimore, Md. 784,978, pub. 11–24–64. Cl. 107.
Click Bookmatch Inc., Owings Mills, Md. 784,660, pub. 11–24–64. Cl. 9.
Cliffs Dow Chemical Co.: *See*—
United Fuel & Supply Co.
Ray Industries, Inc.
Club Razor Blade Mfg. Co., Newark, N.J. 671,501, canc. Cl. 23.
Cole, Paul M., Waukegan, Ill. 671,451, canc. Cl. 19.
Collins Department Stores: *See*—
Colvis Co., The.
Colorificio Italiano Max Meyer S.p.A., Milan, Italy. 671,408, canc. Cl. 16.
Colvis Co., The, d.b.a. Collins Department Stores, Charlotte, N.C. 784,887, pub. 11–24–64. Cl. 39.
Combustion Engineering, Inc., Chattanooga, Tenn. 671,399, canc. Cl. 13.
Component Engineering Co., Lake Oswego, Oreg. 784,689, pub. 11–24–64. Cl. 12.
Concut, Inc., El Monte, Calif. 784,966, pub. 11–24–64. Cl. 103.
Continental Homes, Inc., Boones Mill, Va. 784,674, pub. 10–6–64. Cl. 12.
Cooper, Tinsley Laboratories, Inc., Harrison, N.J. 784,726, pub. 11–24–64. Cl. 18.
Cordovan Associates, Inc., Dayton, Ohio. 784,838, pub. 11–24–64. Cl. 35.
Corinth Instruments Inc., Beverly Hills, Calif. 671,519, canc. Cl. 26.
Cornelius Wax Refining Corp., Linden, N.J. 784,640, pub. 7–7–64. Cl. 6.
Cornell College, Mount Vernon, Iowa. 784,867, pub. 11–24–64. Cl. 38.
Coro Inc. of Rhode Island, Providence, R.I. 784,822, pub. 11–24–64. Cl. 28.
Cotter & Co., Chicago, Ill. 784,694, pub. 11–24–64. Cl. 13.
Cotter & Co., Chicago, Ill. 784,710, pub. 11–24–64. Cl. 16.
Cotter & Co., Chicago, Ill. 784,769, pub. 11–24–64. Cl. 21.
Cotter & Co., Chicago, Ill. 784,783, pub. 11–24–64. Cl. 23.
Cotter & Co., Chicago, Ill. 784,829, pub. 11–24–64. Cl. 31.
Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 409,056, ren. 2–9–65. Cl. 51.
Creative Sales, Inc., Miami, Fla. 784,699, pub. 11–24–64. Cl. 13.
Credo-Stahlwarenfabrik Gustav Kracht, Solingen, Germany. 784,894, pub. 11–24–64. Cl. 44.
Crocker Hamilton Papers, Inc.: *See*—
Weyerhaeuser Co.
Crown Zellerbach Corp.: *See*—
Hampton Roads Paper Co.
Crown Zellerbach Corp., San Francisco, Calif. 784,850, pub. 11–24–64. Cl. 37.
Cutter Laboratories, Inc., Berkeley, Calif. 784,729–30, pub. 11–24–64. Cl. 18.
Dayton Steel Foundry Co., The: *See*—
Fayette Mfg. Co.
Dayton Sure Grip and Shore Co., The, Miamisburg, Ohio. 784,682, pub. 11–24–64. Cl. 12.
Deering Milliken, Inc., New York, N.Y. 784,985. Cl. 42.
Del Aires, The: *See*—
Rockhold, E. Edward.
Delcron Products, Inc., New York, N.Y. 784,658, pub. 11–24–64. Cl. 8.
Des Caves Et Des Producteurs Reunis De Roquefort, Societe Anonyme, Roquefort, France. 25,285, ren. 2–9–65. Cl. 46.
Detroit Harvester Co.: *See*—
Moto-Mower, Inc.
Dexter, C. H., & Sons, Inc., Windsor Locks, Conn. 191,312–3, ren. 2–9–65. Cl. 37.
Dietert, Harry W., Co., Detroit, Mich. 671,526, canc. Cl. 26.
Dow Chemical Co., The, Midland, Mich. 784,793, pub. 11–24–64. Cl. 23.
Dow Chemical Co., The, Midland, Mich. 784,955–6, pub. 11–24–64. Cl. 52.
Dresser Industries, Inc., Dallas, Tex. 784,818, pub. 11–24–64. Cl. 26.
Duchovnay, Sol, & Sons: *See*—
Punta Alegre Commodities Corp.
Duffy's Inc., Lubbock, Tex. 671,639, canc. Cl. 106.
Dunn Brothers: *See*—
Dunn, Walter A.
Dunn, Walter A., d.b.a. Dunn Brothers, Providence, R.I. 784,823, pub. 11–24–64. Cl. 28.
Duracraft Corp., Salt Lake City, Utah. 784,872, pub. 11–24–64. Cl. 39.
Dynamatic Corp., Eaton Mfg. Co., Cleveland, Ohio. 425,108. Am. 7(d). Cl. 26.
Dynamatic Corp., Eaton Mfg. Co., Cleveland, Ohio. 515,261. Am. 7(d). Cl. 26.
Dziakiewicz, Sophie D., Buenos Aires, Argentina. 784,935, pub. 11–24–64. Cl. 51.
Eagle Rubber Co., Inc., Ashland, Ohio. 784,778, pub. 11–24–64. Cl. 22.
Ealing Corp., The, Cambridge, Mass. 784,816, pub. 11–24–64. Cl. 26.
Eastern Corrugated Container Corp., Clifton, N.J. 784,636, pub. 11–24–64. Cl. 5.
Eaton Mfg. Co.: *See*—
Dynamatic Corp.
Economics Laboratory, Inc., to Economics Laboratory, Inc., St. Paul, Minn. 193,072, ren. 2–9–65. Cl. 52.
Ehlers, Albert, Inc., Brooklyn, N.Y. 671,613–17, canc. Cl. 46.
El & El Novelty Co., New York, N.Y. 784,882, pub. 11–24–64. Cl. 39.
Elder, Paul B., Co., Bryan, Ohio. 784,943, pub. 11–24–64. Cl. 51.
Electro Refractories & Abrasives Corp., Buffalo, N.Y. 784,686, pub. 11–24–64. Cl. 12.
Electrofilm, Inc., North Hollywood, Calif. 784,706, pub. 11–24–64. Multiple Class (Classes 15 and 21).
Electro-Kling Corp., Chicago, Ill. 784,767, pub. 11–24–64. Cl. 21.
Electronic Associates, Inc., Long Branch, N.J. 784,819, pub. 11–24–64. Cl. 26.
Electronic Development Co., Minneapolis, Minn. 784,896, pub. 11–24–64. Cl. 44.
Ell Bridge Co., Inc., Jacksonville, Ill. 784,775, pub. 11–24–64. Cl. 22.
Ellis, Roy T., d.b.a. Carriage Trade Products Co., Kettering, Ohio. 671,387, canc. Cl. 12.
Emile Regniers Co. (U.S.A.) Inc., New York, N.Y. 671,403, canc. Cl. 14.
Etell Fashions Ltd., New York, N.Y. 784,878, pub. 9–1–64. Cl. 39.
Everfast Fabrics, Inc., New York, N.Y. 408,796, cor. Cl. 42.
Eversharp, Inc., d.b.a. Schick Safety Razor Co., Culver City, Calif. 784,847, pub. 11–24–64. Cl. 37.
Ever-Tempting Products Corp., Carteret, N.J. 784,916, pub. 11–3–64. Cl. 46.
F & M Sales, Inc., Redondo Beach, Calif. 671,495, canc. Cl. 23.
Fairbanks Co., The, New York, N.Y. 784,755, pub. 11–24–64. Cl. 19.
Falco Products Co., Philadelphia, Pa. 671,548, canc. Cl. 32.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 671,374, canc. Cl. 6.
Farmer Seed & Nursery Co., Faribault, Minn. 784,616, pub. 11–24–64. Cl. 1.
Farmers' Rice Cooperative, from Farmers' Rice Growers Cooperative, San Francisco, Calif. 784,912, pub. 11–24–64. Cl. 46.
Farmers' Rice Growers Cooperative: *See*—
Farmers' Rice Cooperative.
Fashion-Art Footwear, Los Angeles, Calif. 671,598, canc. Cl. 39.
Fayette Mfg. Co., to The Dayton Steel Foundry Co., Dayton, Ohio. 662,166, new cert. Cl. 19.
Federal Insurance Co., New York, N.Y. 784,963, pub. 11–24–64. Cl. 102.
Fibre Leather Mfg. Corp., New Bedford, Mass. 784,844, pub. 11–24–64. Cl. 37.
Figure Builder Foundations, Inc., New York, N.Y. 784,875, pub. 11–24–64. Cl. 39.
Fiorella's, Inc., New York, N.Y. 784,871, pub. 3–12–63. Cl. 39.
Firestone Tire & Rubber Co., The, Akron, Ohio. 671,555, canc. Cl. 35.
Firestone Tire & Rubber Co., The, Akron, Ohio. 784,756, pub. 11–24–64. Cl. 19.
First Electronics Corp., The, Boston, Mass. 784,771, pub. 11–24–64. Cl. 21.
Fisher Governor Co., Marshalltown, Iowa. 671,397, canc. Cl. 13.
Fleming, T. S., d.b.a. Task-Lite Co., Jenkintown, Pa. 784,834, pub. 11–24–64. Cl. 34.
Flexidor Electrical Systems, Inc., Dayton, Ohio. 784,765, pub. 11–24–64. Cl. 21.





Flexmaster Co. Ltd., Toronto, Ontario, Canada. 784,835, pub. 9–22–64. Cl. 34.
Florin, Philip, Inc., New York, N.Y. 784,681, pub. 11–24–64. Cl. 3.
Foodplast Products, Inc., New York, N.Y. 784,923, pub. 11–24–64. Cl. 46.
Formulate Development Research Corp., New York, N.Y. 784,684, pub. 11–24–64. Cl. 12.
Foster Electric Co., Ltd., Mitaka-shi, Tokyo, Japan. 784,768, pub. 11–24–64. Cl. 21.
Fragrance Inc., d.b.a. Maison Zarpe, Oklahoma City, Okla. 784,644, pub. 11–24–64. Multiple Class (Classes 6 and 51).
Frandel Fashions, Inc., New York, N.Y. 671,594, canc. Cl. 39.
Fritts, Ralph M., d.b.a. Ralph M. Fritts Co., Overland Park, Kans. 784,799, pub. 11–24–64. Cl. 23.
Fritts, Ralph M., Co.: *See*—
Fritts, Ralph M.
Fritzsche Bros., Inc., New York, N.Y. 197,837, ren. 2–9–65. Cl. 6.
Fritzsche Bros., Inc., New York, N.Y. 198,126, ren. 2–9–65. Cl. 18.
Fritzsche Bros., Inc., New York, N.Y. 784,645, pub. 11–24–64. Cl. 6.
Fuld Bros., to Fuld Bros., Inc., Baltimore, Md. 410,930, ren. 2–9–65. Cl. 16.
Fuld Bros., Inc.: *See*—
Fuld Bros.
Fuld, Fred, Jr.: *See*—
Gloria Game Co., Inc.
Fuller, D. B., & Co., Inc.: *See*—
Stevens, J. P., & Co. Inc.
Fuller Pharmaceutical Co., Minneapolis, Minn. 784,901, pub. 11–24–64. Cl. 44.
Future Plastics, Inc., Gastonia, N.C. 784,796, pub. 11–24–64. Cl. 23.
Gagne Enterprises, Inc., Franklin Park, Ill. 678,316, canc. Cl. 12.
Galaxy Publishing Corp., New York, N.Y. 784,865, pub. 11–24–64. Cl. 38.
Gamra, Michael A.: *See*—
Steel City Testing Machines Inc.
Gardiner and Lewis, Inc., to Karnak Chemical Corp., New York, N.Y. 190,719, ren. 2–9–65. Cl. 16.
Garrison, Earl W., Inc., Bridgeton, N.J. 784,605, pub. 11–24–64. Cl. 1.
Gause, Anne, New Bern, N.C. 671,588, canc. Cl. 39.
Geigy Chemical Corp., Ardsley, N.Y. 671,438, canc. Cl. 18.
General Aniline & Film Corp., New York, N.Y. 671,536, canc. Cl. 26.
General Cigar Co., Inc., New York, N.Y. 671,411–2, canc. Cl. 17.
General Co. Ltd., Higashi-ku, Osaka, Japan. 784,845, pub. 11–24–64. Cl. 37.
General Foods Corp., White Plains, N.Y. 784,907, pub. 11–24–64. Cl. 46.
General Latex and Chemical Corp. (of Ga.), Dalton, Ga. 784,615, pub. 11–24–64. Cl. 1.
General Motors Corp., Detroit, Mich. 784,759, pub. 11–24–64. Cl. 19.
Gilman Engineering & Mfg. Co., Janesville, Wis. 784,764, pub. 6–9–64. Cl. 21.
Gill, James G., Co., The, Norfolk, Va. 784,922, pub. 11–24–64. Cl. 46.
Gladen Enterprises, Inc., Bay City, Mich. 784,773, pub. 11–24–64. Cl. 22.
Glenn, Jean: *See*—
Bedlington, June.
Glen Oaks Sales Co., Inc., New York, N.Y. 784,884, pub. 10–13–64. Cl. 39.
Globe Feather & Down Co., Chicago, Ill. 784,830, pub. 11–24–64. Cl. 32.
Gloria Game Co., Inc., from Fred Fuld, Jr., Los Angeles, Calif. 671,491–2, canc. Cl. 22.
Gordon Baking Co., Detroit, Mich. 784,909, pub. 11–24–64. Cl. 46.
Graham Paper Co., St. Louis, Mo. 784,854, pub. 11–24–64. Cl. 37.
Grand Island Biological Co., Grand Island, N.Y. 784,656–7, pub. 11–24–64. Cl. 6.
Graniteville Co., Graniteville, S.C. 784,975, pub. 11–24–64. Cl. 106.
Gravymaster Co., Inc., Long Island City, N.Y. 784,917, pub. 11–24–64. Cl. 46.
Gray, Madison C., d.b.a. West Anaheim Pharmacy, and West Anaheim Pharmaceuticals, Anaheim, Calif. 784,732, pub. 11–24–64. Cl. 18.
Greater New York Bridge Association, Inc., Bronx, N.Y. 671,567, canc. Cl. 38.
Green Giant Co.: *See*—
Atterbury, A. D.
Sacramento Freezers Inc.
Greenberg Fisch Hat Corp., New York, N.Y. 671,585, canc. Cl. 39.
Greppi, Cristina: *See*—
Antonioli, Virginia Pucetta, and Cristina Greppi.
Griffith, LeJeune W., d.b.a. LeJeune, Sunnyvale, Calif. 784,603, pub. 11–24–64. Cl. 1.
Grossman, Edward, d.b.a. Treslure, Leonia, N.J. 784,932, pub. 11–24–64. Cl. 51.
Gulf States Paper Corp., Tuscaloosa, Ala. 784,848, pub. 11–24–64. Cl. 37.
Habra-Werk Wilhelm F. Ott, Darmstadt, Germany. 784,843, pub. 3–19–63. Cl. 37.
Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. 671,496, canc. Cl. 23.
Hamilton Mfg. Co., Two Rivers, Wis. 784,811, pub. 11–24–64. Cl. 24.
Hampton Roads Paper Co., Norfolk, Va., to Crown Zellerbach Corp., San Francisco, Calif. 191,637, ren. 2–9–65. Cl. 37.
Hanes, P. H., Knitting Co., Winston-Salem, N.C. 784,879, pub. 11–24–64. Cl. 39.
Hankscraft Co., Reedsburg, Wis. 784,895, pub. 11–24–64. Cl. 44.
Hassenfeld Bros., Inc., Pawtucket, R.I. 784,779, pub. 11–24–64. Cl. 22.
Her Majesty The Queen in the Right of Canada as Represented by the Minister of National Defense, Ottawa, Ontario, Canada. 784,860–1, pub. 11–24–64. Cl. 38.
Herbert Hosiery Co.: *See*—
Herbert Hosiery Mills, Inc.
Herbert Hosiery Mills, Inc., Norristown, Pa. 246,634, canc. Cl. 39.
Herbert Hosiery Mills, Inc., to Herbert Hosiery Co., Norristown, Pa. 542,243, canc. Cl. 39.
Hickory Mountain Barbecue Co., Inc., Baltimore, Md. 671,605, canc. Cl. 46.
Hoffman Tire Co., Inc., Philadelphia, Pa. 784,839, pub. 11–24–64. Cl. 35.
Holland Hall Products, Inc., Stamford, Conn. 784,776, pub. 11–24–64. Cl. 22.
Holophane Co., Inc., New York, N.Y. 784,766, pub. 11–24–64. Cl. 21.
Honey-Kist Fruits, Inc., d.b.a. Apple Annie, Chicago, Ill. 671,610, canc. Cl. 46.
Hornschuh, Konrad, Aktiengesellschaft Werk Weissbach, Wurttemberg, Germany. 784,604, pub. 11–24–64. Cl. 1.
Hotel and Restaurant Employees and Bartenders International Union: *See*—
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America.
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America, to Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. 410,177, ren. 2–9–65. Cl. 37.
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America, to Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. 410,275–9, ren. 2–9–65. Cl. 37.
Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America, to Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. 412,500, ren. 2–9–65. Cl. 38.
Huber, J. M., Corp., Borger, Tex. 784,613, pub. 9–22–64. Cl. 1.
Hudson, H. D., Mfg. Co., Chicago, Ill. 784,627, pub. 11–24–64. Cl. 2.
Hulman & Co., Terre Haute, Ind. 784,915, pub. 11–24–64. Cl. 46.
Huntingdon Industries Inc., Bethayres, Pa. 784,790, pub. 11–24–64. Cl. 23.
Hyster Co., to Hyster Co., Portland, Oreg. 413,547, ren. 2–9–65. Cl. 23.
I-T-E Circuit Breaker Co.: *See*—
Victor Insulators, Inc.
Ideal Industries, Inc., Sycamore, Ill. 784,794, pub. 11–24–64. Cl. 23.
Impact Container Corp., Alden, N.Y. 784,637, pub. 11–24–64. Cl. 5.
Impact Extrusions, Inc., Valparaiso, Ind. 784,692, pub. 11–24–64. Cl. 13.
Interbuild, Inc., Cambridge, Mass. 784,685, pub. 11–24–64. Cl. 12.
International Flavors & Fragrances Inc., New York, N.Y. 784,931, pub. 8–18–64. Cl. 51.
International Latex Corp., Dover, Del. 784,725, pub. 11–24–64. Cl. 18.
International Machinery Corp., N.V., St. Niklaas-Waas, East Flandern, Belgium. 784,784, pub. 11–24–64. Cl. 23.
International Pharmaceutical Corp., Norristown, Pa. 784,734, pub. 11–24–64. Cl. 18.
International Silver Co., The, Meriden, Conn. 784,824, pub. 11–24–64. Cl. 28.
Interwoven Stocking Co., to Powerhouse, Inc., New Brunswick, N.J. 194,072, ren. 2–9–65. Cl. 39.
Ipco Hospital Supply Corp., New York, N.Y. 784,898, pub. 11–24–64. Cl. 44.
Italcrem, S.A., Barcelona, Spain. 784,782, pub. 11–24–64. Cl. 23.
Italcrem, S.A., Barcelona, Spain. 784,808, pub. 11–24–64. Cl. 24.
Jack's Cookie Corp., Charlotte, N.C. 784,921, pub. 11–24–64. Cl. 46.
Jaico Products: *See*—
Jaidinger Mfg. Co., Inc.
Jaidinger Mfg. Co., Inc., d.b.a. Jaico Products, Chicago, Ill. 671,457, canc. Cl. 21.
James Mfg. Co., Inc., Aktinson, Wis., from Rockwood & Co., d.b.a. James Mfg. Co., Chicago, Ill. 784,927, pub. 10–27–64. Cl. 50.
Jaybee Mfg. Corp., Los Angeles, Calif. 784,702, pub. 11–24–64. Cl. 13.
Jet Electronics Corp., Albuquerque, N. Mex. 784,697, pub. 11–24–64. Cl. 13.
Joh. Mustad Aktiebolac, Goteborg, Sweden. 784,840, pub. 11–24–64. Cl. 36.
Johns-Manville Corp., New York, N.Y. 784,679–80, pub. 11–24–64. Cl. 12.
Johnson & Johnson, d.b.a. Tek-Hughes, New Brunswick, N.J. 784,825, pub. 11–24–64. Cl. 29.
Jumbo Food Stores, Inc., Washington, D.C. 784,961, pub. 11–24–64. Cl. 100.
Kahn, David, Inc., North Bergen, N.J. 784,852–3, pub. 11–24–64. Cl. 37.

Kahn, David, Inc., North Bergen, N.J. 784,835, pub. 11–24–64. Cl. 37.
Kain, John F., d.b.a. Sun Boss Co., Riverside, Calif. 784,666, pub. 11–24–64. Cl. 12.
Karnak Chemical Corp.: *See*—
Gardiner and Lewis, Inc.
Kelson Engineering Co., El Monte, Calif. 784,758, pub. 11–24–64. Cl. 19.
Kernel Kutter, Inc., Libertyville, Ill. 784,787, pub. 11–24–64. Cl. 23.
Key Pharmaceuticals, Inc., Miami, Fla. 784,731, pub. 11–24–64. Cl. 18.
Keystone Laboratories, Inc., Memphis, Tenn. 784,733, pub. 11–24–64. Cl. 18.
King Louie International, Inc., Kansas City, Mo. 784,876, pub. 11–3–64. Cl. 39.
Knick, Perley L., d.b.a. Knick's Mend-Rite Mfg. Co., Kansas City, to Knick's Mend-Rite Co., North Kansas City, Mo. 194,200, ren. 2–9–65. Cl. 35.
Knickerbocker Co., The, Jackson, Mich. 784,805–6, pub. 11–24–64. Cl. 23.
Knick's Mend-Rite Co.: *See*—
Knick, Perley L.
Koebel Diamond Tool Co., Detroit, Mich. 784,807, pub. 11–24–64. Cl. 23.
Kresge, S. S., Co., Detroit, Mich. 784,920, pub. 11–24–64. Cl. 46.
Kruskal & Kruskal, Inc., New York, N.Y. 671,580, canc. Cl. 39.
Lackawanna Leather Co., The, Hackettstown, N.J. 784,612, pub. 11–24–64. Cl. 1.
Lake Erie Plastics, Inc., Elyria, Ohio. 784,624, pub. 11–24–64. Cl. 2.
Lambert-Kay, Inc., Los Angeles, Calif. 784,738–9, pub. 11–24–64. Cl. 18.
Lanman & Kemp-Barclay & Co. Inc.: *See*—
Barclay & Co.
Lanther, Eugene, Los Angeles, Calif. 784,821, pub. 11–24–64. Cl. 28.
Lauder, Estee, Inc., New York, N.Y. 784,945–6, pub. 11–24–64. Cl. 51.
Lawrence Paper Co., The, d.b.a. Jayhawk Fibre Form Co., Lawrence, Kans. 784,667, pub. 11–24–64. Cl. 12.
Leeben Color & Chemical Co., Inc., New York, N.Y. 784,918, pub. 11–24–64. Cl. 46.
Lehn & Fink Products Corp., d.b.a. Tussy Cosmetics, Bloomfield, N.J. 784,938, pub. 11–24–64. Cl. 51.
Lehn & Fink Products Corp., Bloomfield, N.J. 784,944, pub. 11–24–64. Cl. 51.
Le Jeune: *See*—
Griffith, Lejeune W.
Lilly, Eli, and Co., Indianapolis, Ind. 784,737, pub. 11–24–64. Cl. 18.
Londontown Mfg. Co., The, Baltimore, Md. 784,888, pub. 11–24–64. Cl. 39.
L'Oreal, Paris, France. 784,941, pub. 11–24–64. Cl. 51.
Lubrizol Corp., The, Wickliffe, Ohio. 671,409, canc. Cl. 16.
Magnaflow Pump Corp., New York, N.Y. 576,461, canc. Cl. 23.
Mainzer, Adolf J., Inc., Brooklyn, N.Y. 411,129, ren. 2–9–65. Cl. 46.
Maison Zarpe: *See*—
Fragrance Inc.
Maradel Products, Inc., New York, N.Y. 784,947–8, pub. 11–24–64. Cl. 51.
Marcal Paper Mills, Inc., East Paterson, N.J. 784,859, pub. 11–24–64. Cl. 37.
Marion Laboratories, Inc., from Marion Laboratories, Inc., Kansas City, Mo. 784,728, pub. 11–24–64. Cl. 18.
Mark 111 Enterprises, Inc., San Francisco, Calif. 784,910, pub. 11–24–64. Cl. 46.
Masson, Paul, Inc., d.b.a. Paul Masson Vineyards, San Francisco, Calif. 784,924, pub. 11–24–64. Cl. 47.
McGraw-Hill, Inc.: *See*—
Nursing Home Administrator, Inc.
McInturff, William R., Hickory Hills, Ill. 784,772, pub. 11–24–64. Cl. 22.
Mead Johnson & Co., Evansville, Ind. 874,892, pub. 11–24–64. Cl. 44.
Melville Shoe Corp., New York, N.Y. 784,744, pub. 11–24–64. Cl. 18.
Mercury Pharmaceuticals, Inc., San Francisco, Calif. 671,441, canc. Cl. 18.
Merson Products Co., Inc., Jersey City, N.J. 671,631, canc. Cl. 52.
Meussner Mfg. Co.: *See*—
Meussner, Robert C.
Meussner, Robert C., d.b.a. Meussner Mfg. Co., Kirkland, Wash. 671,448, canc. Cl. 19.
Miami Window Corp., Miami, Fla. 784,677, pub. 11–24–64. Cl. 12.
Michaud, A., Co., Philadelphia, Pa. 671,641, canc. Cl. 46.
Michigan Carton Co., Battle Creek, Mich. 784,619, pub. 10–15–63. Cl. 2.
Miller, Willman, I., d.b.a. Wimco Distribution, Downers Grove, Ill. 784,804, pub. 11–24–64. Cl. 23.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Toyko, Japan. 784,673, pub. 11–24–64. Cl. 12.
Mitsubishi Shoji Kaisha, Ltd., Chiyoda-ku, Tokyo, Japan. 784,675, pub. 11–24–64. Cl. 12.
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Morganton Furniture Co., Morganton, N.C. 671,647, canc. Cl. 32.
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Moto-Mower, Inc., Oak Park, Mich., from Detroit Harvester Co., Detroit, Mich. 671,504, canc. Cl. 23.
Moyer, Walter W., Co., Inc., Ephrata, Pa. 784,869, pub. 11–24–64. Cl. 39.
Narda Ultrasonics Corp., Mineola, N.Y. 671,472, canc. Cl. 21.
National Chemsearch Corp. of Texas, Irving, Tex. 784,904, pub. 11–24–64. Cl. 45.
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National Gypsum Co., Buffalo, N.Y. 784,672, pub. 11–24–64. Cl. 12.
National Potteries, Inc., Cleveland, Ohio. 671,463, canc. Cl. 21.
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Sloan, Ralph A.
Natser Corp., d.b.a. Acco Products, Ogdensburg, N.Y. 784,857, pub. 11–24–64. Cl. 37.
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New England Chemical Supply Corp., Merrimack, N.H. 784,643, pub. 11–24–64. Cl. 6.
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Northern Life Insurance Co., d.b.a. Northern Life Insurance Co., Seattle, Wash. 784,964, pub. 11–24–64. Cl. 102.
Novo Industrial Corp., New York, N.Y. 784,780, pub. 6–23–64. Cl. 23.
Nursery Metal Pots, Inc., San Francisco, Calif. 671,385, canc. Cl. 12.
Nursing Home Administrator, Inc. McGraw-Hill, Inc., New York, N.Y. 668,074. Am. 7(d). Cl. 38.
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Olin Mathieson Chemical Corp., New York, N.Y. 784,740, pub. 11–24–64. Cl. 18.
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Organon Inc., Orange, N.J. 784,746, pub. 12–1–64. Cl. 18.
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Pamplin-Cocherell Research & Development, West Covina, Calif. 784,902, pub. 11–24–64. Cl. 44.
Pantasote Co., The, Passaic, N.J. 784,610, pub. 11–24–64. Cl. 1.
Parfums Corday, Inc., Hollywood, Calif. 784,942, pub. 11–24–64. Cl. 51.
Park Industries, Inc., Murfreesboro, Tenn. 784,858, pub. 11–24–64. Cl. 37.
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Pilot Chemical Co., Santa Fe Springs, Calif. 784,642, pub. 11–24–64. Cl. 6.
Poreen Corp., Freeport, N.Y. 784,678, pub. 11–24–64. Cl. 12.
Porter Precision Products Co., Cincinnati, Ohio. 784,802, pub. 11–24–64. Cl. 23.
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Printed Supplies Co.: *See*—
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Progressive Metal Equipment, Inc., d.b.a. Progressive Metal Equip't Inc., and Progressive Metal Equipment Inc., Philadelphia, Pa. 784,695, pub. 11–24–64. Cl. 13.





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Select Foods, Inc., Charlotte, N.C. 784,905, pub. 11–24–64. Cl. 46.
Selectrons, Ltd., New York, N.Y. 784,646, pub. 11–24–64. Cl. 6.
Selectrons, Ltd., New York, N.Y. 784,653, pub. 11–24–64. Cl. 6.
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Southern Railway Co., Richmond, Va. 784,967, pub. 11–24–64. Cl. 105.
Space Implements Co., Burbank, Calif. 784,788, pub. 11–24–64. Cl. 23.
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Standard Garments, Inc., Baltimore, Md. 784,883, pub. 11–3–64. Cl. 39.
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Sun Oil Co., Philadelphia, Pa. 784,707, pub. 11–24–64. Cl. 15.
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Swank, Inc., Attleboro, Mass. 784,934, pub. 11–24–64. Cl. 51.
Swenson, Arthur W., Jr., d.b.a. Stern-Williams Co., Shawnee Mission, Kans. 784,693, pub. 11–24–64. Cl. 18.
Systems Programming Corp., State College, Pa. 784,962, pub. 11–24–64. Cl. 101.
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Textar G.m.b.H., Leverkusen, Germany. 784,753, pub. 11–24–64. Cl. 19.
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Top Value Enterprises, Inc., Dayton, Ohio. 784,626, pub. 11–24–64. Cl. 2.
Topco Associates, Inc., Skokie, Ill. 784,611, pub. 11–24–64. Cl. 1.
Trans-Aire Electronics, Inc., Mineola, N.Y. 784,760, pub. 5–28–63. Cl. 21.
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Transland Aircraft, Inc., Redondo Beach, Calif. 784,789, pub. 11–24–64. Cl. 23.
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United Silver and Cutlery Co., Los Angeles, Calif. 784,801, pub. 11-24-64. Cl. 23.
U.S. Department of the Interior, Washington, D.C. 784,960, pub. 11-24-64. Cl. 100.
Upjohn Co., The, Kalamazoo, Mich. 784,727, pub. 11-24-64. Cl. 18.
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Valtronic Corp., The, New York, N.Y. 784,832, pub. 11-24-64. Cl. 32.
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West Virginia Pulp and Paper Co., New York, N.Y. 784,842, pub. 6-30-64. Cl. 37.
Wey Aktiengesellschaft, Vaduz, Liechtenstein. 784,641, pub. 11-24-64. Multiple Class (Classes 6 and 12).
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Yardney Electric Corp., New York, N.Y. 784,763, pub. 11-24-64. Cl. 21.
Young Door Co., Inc., Plymouth, Ind. 784,665, pub. 11-24-64. Cl. 12.
Zanella Hnos. y Cia. S.A. Com. Ind. Finan. E. Inmob, Caseros, Argentina. 784,754, pub. 11-24-64. Cl. 19.

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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
February 16, 1965 Volume 811 Number 3

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of January 1965

| | |
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| Examiner affirmed | 324 |
| Examiner affirmed in part | 45 |
| Examiner reversed | 80 |
| Total | 449 |

Jan. 4, 1965.

RICHARD A. WAHL,
*Acting Superintendent,*
*Patent Examining Corps.*

### Citation of Publications and Foreign Patents

*Foreign Patents*

In accordance with Rule 107, for each foreign patent cited, there should be indicated the number of sheets of drawing and pages of specification and also the sheet number(s) and page number(s) specifically relied upon if less than the entire disclosure is used. Because it is essential to conserve space in the Examiner's file of applications and to minimize the cost to applicant under the automatic supply of references cited, whenever the total number of sheets and pages in any foreign patent exceeds ten, the Examiner should keep the total relied on as near to ten as possible. Applicants who desire a copy of the complete foreign patent or of the portion not "relied on" must order it, not through the automatic supply system, but in the usual manner.

*Publications*

Publications such as German allowed applications and Netherlands printed specifications should be similarly handled. With other publications such as books, periodicals and catalogues, the specific pages relied upon should be cited. If the copy relied upon is located only in the Group making the action (there is no call number), the additional information, "Copy in Group —" should be given.

### Adjudicated Patents

(D.C. Va.) Nusbaum Patent No. 2,956,708 (222—4), for DISPENSING CONTAINERS FOR REFRIGERANTS, *Held* invalid. *Pennco Engineering Co.* v. *Allied Chemical Corp.*, 235 F. Supp. 625; 143 USPQ 432.

(C.A. Ill.) Frediani Patent No. 2,740,694 (23—230), for METHOD AND APPARATUS FOR CONTROL OF TITRATIONS AND OTHER PHENOMENA, *Held* invalid. *Beckman Instruments Inc.* v. *Coleman Instruments, Inc.*, 338 F.2d 573; 143 USPQ 278.

(C.A. Ind.) Szilces Patent No. 2,353,771 (195—36), for METHOD OF PRODUCING CITRIC ACID. Claim 1 *Held* not infringed. *Ferment-Acid Corp.* v. *Miles Laboratories, Inc.*, 338 F.2d 586; 143 USPQ 275.

(D.C. Calif.) Page Reissue Patent No. 25,122 (128—142), for UNDERWATER BREATHING APPARATUS. Claims 1 through 18 *Held* invalid. *Page* v. *U.S. Divers Co.*, 235 F. Supp. 554; 143 USPQ 142.

### New Applications Received During December 1964

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| Patents | 7,905 |
| Designs | 405 |
| Plant Patents | 12 |
| Reissues | 18 |
| Total | 8,340 |

### Issue—February 16, 1965

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| Patents | 911 | No. 3,169,249 to No. | 3,170,159, incl. |
| Designs | 104 | No. 200,288 to No. | 200,391, incl. |
| Plant Patents | 12 | No. 2,471 to No. | 2,482, incl. |
| Reissues | 4 | No. 25,728 to No. | 25,731, incl. |
| Total | 1031 | | |

# ADDRESS OF COMMISSIONER EDWARD J. BRENNER

## Before the Professional Staff of the Patent Office, Departmental Auditorium, Department of Labor Building, Monday, January 25, 1965

[811 O.G. 467]

I would like to discuss with you this afternoon the highlights of a number of current and future programs in the Office relating to our patent examining operations. Incidentally, copies of my talk this afternoon will be made available to each of you as soon as they can be reproduced.

First, I believe you will be interested in hearing about the current status of our new patent examining program. Our latest best estimate is that we will dispose of approximately 9,500 cases during January which, as far as I know, is an all-time monthly record for the Patent Office. This would bring our total disposals for the first seven months of fiscal 1965 to approximately 57,000, which is equivalent to an annual rate of nearly 100,000 disposals per year. This progress to date would indicate that with the exceptionally high volume of disposals expected to continue at least through April, we should at least equal or exceed the estimate of 102,500 disposals for fiscal 1965 made by the Group Supervisors last summer. I would like to sincerely compliment each of you who has had a direct or indirect part in helping the Office accomplish these fine results to date. I believe we should also express our appreciation to the many applicants and patent practitioners whose cooperation has also contributed substantially to helping us achieve these results.

I know you will also be interested in learning that I have received in the past several months many fine compliments from applicants and patent practitioners with respect to the excellent work you have been doing and the fine cooperation you have shown to these applicants and patent practitioners. I would like to give you a few specific examples of such comments which I have received from patent practitioners. One attorney from a Midwest pharmaceutical company wrote:

> "The purpose of this letter is to give you one specific indication of a member of your staff making such cooperation possible. I refer to the action of Mr. S. in suggesting modifications to rejected claims in Final Rejection ——. If the kind of action which we have received from Mr. S. is any indication at all of the future work product of the Examining Divisions, there is no doubt in my mind that your program will succeed."

The manager of the patent department of an Eastern engineering company wrote:

> "I would like to take this opportunity to commend Supervisory Examiner P. and Examiners S. and B. of this same group for the cooperation which they gave to attorneys in my department in connection with the examination of a number of applications. . . . Several interviews were held and during these helpful suggestions were made by the Examiners such that the attorneys handling these applications could know what was considered allowable and could amend the applications to put them in condition for allowance. This cooperative spirit was extremely helpful to us and is appreciated greatly. It is believed that this type of cooperation will do much to alleviate the problem which our patent system faces concerning the large work load of the Patent Office. . . ."

An attorney from a large Midwest chemical company wrote:

> "Let me cite an example of this cooperation. Last week Examiner P. telephoned on his personal initiative to clarify two minor points which remained after my response to the first Office action. . . . I heartily commend this initiative and cooperation."

For my part, I would like to personally extend my own compliments to each of you for this fine record of cooperation.

I would also like to mention today several other goals I believe we should be seeking to attain. As you know, in my June 8, 1964 talk, I stated that I hoped we would be able to indicate allowable claims or allowable subject matter in at least 50% of our first actions on the merits. Our current surveys indicate that we are now doing this in nearly 40% of such first actions in the entire Corps. One Operation has done this in about 50% of such actions over a three-month period. I think that this indicates excellent progress to date. I hope that it will be possible in the immediate future, by more careful attention to this matter, to raise this to our goal of 50% or more of the first action for the entire Corps.

Also, I hope that, as we move toward the point where all examiners give that thorough first action which is the foundation of all our improved procedures, the proportion of final rejections in which new art must be cited will steadily decline. More particularly, with better first actions and increased cooperation of applicants and patent practitioners, we should be able to reduce this proportion to below 25% in the near future, and I hope eventually to a goal of 10% or less.

Another goal I believe we should try to attain through the cooperative efforts of the Office and the applicants and patent practitioners, is to increase significantly the proportion of our cases disposed of by allowance or abandonment before they reach the second action final rejection stage. More specifically, I believe we should try to increase this proportion from the 30% figure of the past up to approximately 50%. Again, I believe that we can reach this goal and still maintain adequate quality, if every individual examiner in every case makes that thorough first action which is the shortest road to sound disposals.

As you may know, President Johnson has directed that each Department and agency concentrate its efforts on the *essential* matters involved in its particular mission. In our case, I believe this means we should make sure that we concentrate our efforts in patent examining on the truly essential matters and to simultaneously

minimize or eliminate our efforts on other matters which may have played a part in the examination process in the past, but which are not really critical in today's circumstances. In this connection, I wish to request that we concentrate our efforts in examination in the future particularly on three main points, namely (1) "Is the invention, as defined by the claims, patentable over the prior art?" (2) "Is the specification sufficiently clear that the inventive concept and utility of the invention can *reasonably* be understood by a person skilled in the art?" and (3) "Are the claims sufficiently definite so that one can *reasonably* determine whether or not the claims are infringed?" These, I believe, are the key points on which our examination should be concentrated.

Thus the scope of the claims should be limited primarily by (1) the prior art and (2) a reasonable basis on our part for holding that the claims are so broad that a person *skilled* in the art would consider them to be obviously an unreasonable extension of the inventive concept. Further, if the invention and its utility can be *reasonably* understood upon a reading of the specification, we should not ordinarily make rejections on account of inadequate disclosure or lack of utility. I wish to emphasize here that we keep in mind throughout the examination that the specification is addressed to the man *skilled* in the art. It is also our responsibility to make sure that the wording of the claims is sufficiently definite to *reasonably* determine infringement, but we should refrain from rejecting claims merely because we would prefer a different choice of wording. It should be primarily the applicant's responsibility to select the proper wording of the claim, except to the extent that the selection of words makes the claim indefinite. We plan to continue our studies directed towards minimizing so-called "formal" or "technical" rejections, in order that we may concentrate a greater share of our examination effort on the more essential matters discussed above. A part of our future efforts in this area will involve a careful review of our Rules of Practice, the Manual of Patent Examining Procedures and the curriculum of the Patent Office Academy to make sure that they reflect this approach.

We also plan to initiate in the near future several additional procedural changes. First, we plan to establish a new procedure for making applications "special." It should be pointed out initially that this new procedure would be strictly optional on the part of the applicant. More particularly, an applicant could request to take advantage of this new "special" procedure in the event his application has been awaiting action for six months or more. Under the new "special" procedure, the examiner would give a thorough first action on the merits, setting a four-month period for response on the part of the applicant. The first action would be based on the *claimed* invention, as under the new "special" procedure the applicant would be expected to claim his invention properly prior to requesting "special" action. The applicant would be encouraged to hold an interview with the examiner during this four-month period to resolve finally all issues in the case, once a formal response had been made, or a written copy of any proposed amendment was made available to the examiner for review prior to the interview. However, no amendments to the claims requiring a new search or raising new issues would be permitted at any time after issuance of the first Office action. Upon receiving the first response from the applicant, the examiner would then either issue a notice of allowance or issue a final rejection setting a thirty-day period for response by the applicant. No personal interview would be permitted after final rejection, nor would any further action be issued by the examiner except, of course, in the case of appeal or in a case where a notice of allowance would be issued if an amendment were filed cancelling all rejected claims.

A more detailed announcement of this new "special" procedure will be published in the near future. It is our plan to initially try out the new "special" procedure on a trial basis to determine whether it will work to the mutual advantage of applicants and the Office. Thus, we plan to limit the cases to be handled under this new procedure on a trial basis to the first 100 requests for each Group, which will give us a test sample of 3100 applications. It should be noted that this new "special" procedure, if adopted on a regular basis, will make it possible for an applicant to obtain a United States patent within 18 months or less from the filing date of his application. If the new "special" procedure works out successfully, we are considering the possibility of eliminating in the future the requirement that the application be pending for at least six months. In this possible future case, it should be noted that it would be possible for an applicant to obtain a United States patent within one year or less of his filing date.

We have also been considering what steps might be taken to assist the Board of Appeals in maintaining their work on a current basis in view of the increased number of appeals being filed as a result of the higher throughput of cases resulting from the new examining program. As a result of discussions with the Board of Appeals on this matter, we have decided that, effective immediately, the Board will render a *per curiam* decision in every appeal where this type of decision is feasible. A *per curiam* decision, of course, is a decision where the Board would simply indicate that it holds either for the examiner or the applicant. We estimate that we will be able to use this type of decision in a substantial proportion of the appeals.

We have also been giving particularly careful consideration to examiner turnover. It is our goal here to reduce turnover from the approximate 15 to 20% per year figure of the past to about 10 to 12%. The heart of this program, of course, involves our efforts directed at increasing the professional responsibility and status of examiners and increasing the attractiveness of a career in the Patent Office. We have also studied carefully the proposal that we have new examiners sign a written employment commitment as several other bureaus of the Government have been doing. However, we have decided against adopting this procedure in the Patent Office, at least for the foreseeable future. Instead, we plan to emphasize in our recruiting that we are primarily seeking candidates who are interested in making a career in the Patent Office. For example, we plan to emphasize this specifically in our offer letters to examiner candidates. We feel that to be fair to our career employees in the Office, to other qualified and deserving candidates on the Civil Service registers who are interested in becoming career examiners, and to the future of the United States Patent Office and Patent System, we should make every effort to employ people who, at the time of employment, are interested in making a career in the Patent Office. In particular, we do not think it is fair to employ examiners who, at the time of employment, are planning to stay with the Office for only a year or two.



We have also been studying very carefully the organization, grade structure, lines of responsibility and promotional opportunities in the Patent Examining Corps, and have decided to initiate the following changes. First, we have decided to change the title of our present Group Supervisors to Group Managers, since we feel that this will more appropriately designate their future responsibilities. Secondly, we have decided to increase the number of Supervisory Primary Examiners. Thus, in the course of the next several months we plan to designate a significant number of non-supervisory Primary Examiners as acting *Supervisory* Primary Examiners. More particularly, we plan to establish in the near future art units *averaging* about 10 to 12 examiners each, which will be headed up by present Supervisory Primary Examiners and the new acting Supervisory Primary Examiners. It is our further plan that when a particular acting Supervisory Primary Examiner has demonstrated that he can effectively perform the duties of a Supervisory Primary Examiner, he will be made a regular Supervisory Primary Examiner.

The Group Managers in the future will have greater authority, responsibility and accountability for their Group's operations. More particularly, each Group Manager will be responsible for administering the budget assigned to him to cover his Group's operations. He will thus have the primary responsibility, for example, for determining the need for and the optimum balance examiners, patent aids, and clerical personnel, as well as the optimum use of overtime, dictating machines, and the like, to accomplish his assigned mission. In turn the Group Manager will be held *fully accountable* for the costs and productivity of his Group. Similarly, each Operation Director in the future will be responsible for administering the budget assigned to him for his Operation and will be held *fully accountable* for the costs and productivity of his Operation.

Under the new organizational arrangement, the Supervisory Primary Examiner will hold a very key position. He will be responsible for the prompt and effective continuing utilization of improved procedures, such as maximum use of "compact prosecution" techniques, examiner initiation of personal or telephone interviews wherever a saving of time appears possible, and the technical training of examiners to higher competence. He will also be responsible for seeing that his art unit meets the goals established for his unit by making sure his unit's efforts are concentrated on the essential, and by working closely with his examiners to guide and assist them to use their time effectively. This will increase the opportunity for individual examiners to develop and advance in the Office as well as to assure that the Office meets its goals.

Thus, under the new organizational setup, the Superintendent, Directors, and Group Managers will have the responsibility of seeing that our dollars are spent in the optimum manner and the Supervisory Primary Examiners will have the responsibility of seeing that our examiners' time is spent in the optimum manner. It is our plan to work out the detailed arrangements necessary to establish this new organizational setup during the next several months so that we will be fully operational on the new basis prior to the beginning of fiscal 1966, i.e., July 1, 1965. We plan no further changes in the management or supervisory structure of the Patent Examining Corps for the foreseeable future.

The establishment of the full use of the Supervisory Primary Examiner position in the Corps will therefore make it possible for an individual examiner to advance in the Corps below the Group Manager level to Grade 15 by becoming either a Supervisory Primary Examiner or an individual Primary Examiner under our Civil Service classification standards for non-supervisory examiners. Thus, I think we have arrived at a point where the organization, lines of responsibility, grade structure and promotional opportunities in the Corps have been worked out on a reasonable, fair and effective basis for the future. This comes, I believe, at a most opportune time. As you know, both the Presidential Commission, if established, and the Senate Subcommittee on Patents, Trademarks and Copyrights will be carefully studying the U.S. Patent System. I am sure they will be watching most closely the operations of the United States Patent Office during the next year or so. Our accomplishments in fiscal 1965 will undoubtedly be of great interest to them. However, our accomplishments in fiscal 1966 will probably be of even greater significance since we will be operating that year without the boost given to our productivity in fiscal 1965 as a result of working on the older cases. We should therefore make sure that our efforts during the remainder of this fiscal year lay a sound foundation for our operations in fiscal 1966 so that our accomplishments in 1966 will make a significant contribution towards our long range goal of disposing of an average of 100,000 cases per year for the fiscal years 1965–1970. I am sure we all share the feeling that we want to make a good showing during the next several years by meeting the goals we have set, which I believe we can accomplish if everyone does his part.

Thank you.

# PATENT EXAMINING CORPS

**H. B. WHITMORE, Superintendent**

## CONDITION OF PATENT APPLICATIONS AS OF JANUARY 1, 1965

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 7-20-62 | 4- 9-56 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 11-30-62 | 6-14-57 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 12-31-56 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 8- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 9-18-62 | 12-28-56 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-20-62 | 1- 3-56 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 3-28-57 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 11-19-62 | 3- 2-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 5- 1-53 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-19-62 | 2-25-58 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 5-16-57 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 7-19-57 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-28-62 | 12-14-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 4-14-59 |

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|---|---|
| Total number of pending applications (excluding Designs) | 206,227 |
| Total number of Design applications pending | 5,784 |
| Total number of applications awaiting action (excluding Designs) | 141,524 |
| Total number of Design applications awaiting action | 2,717 |
| Date of oldest new application awaiting action | July 5, 1962 |
| Date of oldest amended application awaiting action | May 1, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during February 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,435,187 to 2,436,781, inclusive

Plant Patents ..... Numbers 783 to 785, inclusive

| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **MECHANICAL ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner<br>Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids. | 5-23-63 | 2-11-63 |
| METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner<br>Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 7-29-59 |
| MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner<br>Special Article Making; Assembling, Tool and Implement Making; and Metal Working. | 10-23-62 | 3- 2-60 |
| MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner<br>Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders. | 2- 5-63 | 9-25-58 |
| HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner<br>Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling. | 1-16-63 | 4-20-60 |
| FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner<br>Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing. | 2- 1-63 | 8-28-59 |
| POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner<br>Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3-23-63 | 5-12-60 |
| HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner<br>Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination. | 3- 1-63 | 5-19-59 |
| **GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner<br>Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working. | 7- 8-63 | 12-28-59 |
| CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner<br>Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 8-28-58 |
| PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner<br>Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12-31-62 | 7-23-57 |
| TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner<br>Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-14-63 | 12-10-59 |
| TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner<br>Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 3- 6-63 | 10-16-58 |
| FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner<br>Furniture; Supports; Cabinet Structures; Receptacles; Baggage. | 4-18-63 | 11- 5-60 |
| PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner<br>Printing; Typewriters; Stationery; Material Treatment. | 7-17-62 | 8-14-59 |
| PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisory Examiner<br>Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner<br>Industrial Arts; Household, Personal and Fine Arts. | 3- 9-64 | 9-26-61 |



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE ROBERT L. GINESI AND WILLIAM S. DORMAN

*No. 7231. Decided December 17, 1964*

[52 CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—COATED SPHERULES OF TOOTHPASTE.

The refusal of claims to coated spherules of toothpaste, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 685,122.

AFFIRMED.

*Ellsworth H. Mosher* for appellants.

*Clarence W. Moore* (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

KIRKPATRICK, *J.*, delivered the opinion of the court.

The application (Serial No. 685,122, filed September 20, 1957) involved in this appeal relates to coated spherules of toothpaste. The product is intended to take the place of the commonly used toothpaste while at the same time retaining the paste form of the dentifrice. Presently before this court is an appeal from the disallowance of three of the claims, namely, claims 5, 6, and 8, the appeal from disallowance of the remaining claims having been withdrawn at oral argument.

Claim 5 is as follows:

5. A rounded and coated dental product comprising a viscous toothpaste interior having an equivalent sphere diameter of less than about ½ inch, and an outer solidified coating consisting of a saliva-soluble base material and an active ingredient having dental therapeutic properties, said active ingredient being included substantially entirely in said outer coating.

Claim 6 differs from claim 5 in that it adds the limitations that the toothpaste interior shall be not less than ¼ inch in diameter and that the coating shall be less than 1/32 inch in thickness. Claim 8 is the same as claim 6 except that it provides that the coating shall be 0.01 to 0.02 inch thick.

The specification explains that when one of these coated spherules is placed in the user's mouth, the coating, being readily soluble in the saliva of the mouth, will dissolve quickly and the remaining and now uncoated toothpaste may be used with a toothbrush in the usual manner.

The references relied upon by the Board are Lautmann, No. 2,311,923, February 23, 1943, and Bly, No. 2,778,045, January 22, 1957, in combination.

The Bly patent is for a capsule having a thin shell which can be easily broken by the teeth or dissolved in the mouth, containing a dentifrice, antiseptic gargle or mouth wash, the shell being made of flavoured, edible material.

The Lautmann patent is for a cough drop made of a hard candy shell having a medicated liquid center. The shell, it is stated, will dissolve in the mouth, and it is pointed out in the specification that the shell may be medicated as well as the interior.

The only points of distinction between Bly and the present application are:

(1) Bly does not specify, as does the present application, that the shell shall contain "an active ingredient having dental therapeutic properties" or, for that matter, any kind of medication. We are unable to agree with the Board that the calcium suggested by Bly meets the requirement of the application which, we think, refers to an ingredient which would be active within the mouth. However, in view of the disclosure of Lautmann, that is immaterial.

(2) The Bly patent does not specify the dimensions of either the center or the shell, but it does not seem to us that the exact dimensions set out in the claims are critical, the only requirements being that the diameter should be large enough to contain the desired amount of dentifrice and not so large as to be inconvenient and that the shell should be thick enough to be handled, but not so thick that it would be difficult to crush or dissolve. Apart from that, however, inasmuch as Bly expressly, and the present application by necessary implication, calls for an amount of toothpaste in the capsule sufficient for one brushing, the sizes would have to be about the same—certainly not enough difference to leave room for the present invention to be unobvious.

Given Bly's capsule loaded with toothpaste and Lautmann's disclosure that the shell of a somewhat similar capsule with a cough remedy interior may be medicated, it would hardly be achieving an unexpected result to include some medication having dental therapeutic properties in the make-up of the shell covering of a toothpaste capsule.

[1] The Board concluded that the invention was obvious in view of the references and we agree.

AFFIRMED.

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## U.S. Court of Customs and Patent Appeals

IN RE JEROME Y. LETTVIN

*No. 7232. Decided December 17, 1964*

[52 CCPA —; — F.2d —; —USPQ —]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"IMPROVED CATAMENIAL TAMPON AND TREATMENT OF DYSMENORRHEA."

The refusal of the method claims in an application entitled "Improved Catamenial Tampon and Treatment of Dysmenorrhea," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 788,725.

AFFIRMED.

*Norman Lettvin* (*Bair, Freeman & Molinare* of counsel) for appellant.

*Clarence W. Moore* (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

KIRKPATRICK, *J.*, delivered the opinion of the court.

This appeal is from a portion of the decision of the Patent Office Board of Appeals affirming the Examiner's rejection of claims 1–11 of the appellant's application Serial No. 788,725, filed January 26, 1959, for an "Improved Catamenial Tampon and Treatment of Dysmenorrhea," as unpatentable over the prior art. The appellant has chosen to prosecute this appeal with respect to process claims 8 and 9 only. No claim stands allowed.



Claim 8 is representative and reads as follows:

8. A method of treating dysmenorrhea comprising the steps of capturing the menstrues within the vaginal cavity while simultaneously introducing analgesic into the vaginal cavity.

Dysmenorrhea is menstruation accompanied by pain or discomfort in or referred from the pelvic region. Although the claims are not so limited, the method of treatment disclosed in the specification involves the utilization of a tampon of the type commonly employed by women for absorbing menstrual flow. The tampon of the application is coated or impregnated with an analgesic or local anaesthetic, such as aspirin, phenacetin, or tetracaine. Upon insertion of the medicated tampon into the vaginal cavity during the menstrual period, the menstrues serve as the moistening vehicle to effect diffusion of the analgesic from the tampon to the mucous membrane of the vagina, thereby affording some relief from symptomatic pain of dysmenorrhea.

The Examiner rejected the claims in suit as unpatentable over Hemsted (British specification) 765,457, January 9, 1957, in view of Krantz and Carr, "Pharmacologic Principles of Medical Practice," 3rd edition (1954), pages 337, 338, 979, 982.

Hemsted discloses that a mass of water-insoluble fibers, impregnated with various therapeutic chemicals, may be treated to render the fiber water-soluble and then formed into a tampon. As to the use to which the medicated tampon may be put, the following excerpts from the Hemsted specification are pertinent:

* * * Any of these or other suitable chemicals, may be loaded on to soluble fibres by the process described above in accordance with the invention in order to produce soluble fibrous materials for medical, surgical or therapeutic uses, e.g. when made up as tampons or wads, or flat wound dressings.

* * * * * * *

In medicine and therapeutics the locus of final use will be the living body; and the advantages of the application * * * over a wide surface area of skin or of mucus-bearing epithelium would appear to offer the possibility of very convenient techniques for the application and maintenance of local anaesthesia, of applying antipyretics and analgesics * * *.

* * * * * * *

By the above described means it is possible to effect local application of these or any desired chemicals, e.g. antibiotics, in localities where application through the stomach is often uncomfortable, and may have serious side effects e.g. in [infections] of the vagina * * *.

* * * * * * *

important uses for which such fibres can be employed are, first, in the vagina, for the treatment of cervicitis, vaginitis and leucorrhoea * * *.

The portions of Hemsted quoted above plainly teach the insertion of a tampon loaded with analgesic or local anaesthetic into the vagina as a treatment for some female disorders involving pain in that region. The result of using the Hemsted tampon would be the same as that claimed in the appellant's method claims, namely, the retention of the menstrues in the vagina at the same time as the analgesic is being applied. The reference discloses a tampon of soluble fibers, but it seems hardly necessary to say that it would be obvious even to one not skilled in the art to use insoluble tampon material—which is the kind in ordinary use—where solubility of the material is not desired.

The Krantz and Carr reference discusses the use of drugs in treating the syndrome of dysmenorrhea. The syndrome is described as characterized by spasmodic, cramp-like pains localized generally in the suprapubic region. Aspirin is mentioned as helpful in mitigating the pain. The context implies oral administration of the analgesics.

The appellant's main argument—in fact, the only one which we need discuss—is that his method of treating dysmenorrhea was not obvious at the time of filing the application because it was contrary to the then accepted position of medical science which, he says, was that the vagina, cervix, and uterus are relatively insensitive to pain. Hence, the appellant argues, one seeking a remedy for dysmenorrhea would be laboring under the misapprehension that no useful result could be obtained by applying an analgesic to those parts. We think, however, even assuming that the appellant's statement about medical opinion is correct, that the disclosures of the references made the method of treatment claimed in the application obvious and unpatentable.

Obviousness is a legal conclusion which we are required to draw from facts appearing in the record or of which judicial notice may be taken. Thus before we can conclude that any disclosed invention is "obvious" under the conditions specified in 35 U.S.C. 103, we must evaluate facts from which to determine (1) what was shown in the prior art at the time the invention was made, and (2) the knowledge which a person of ordinary skill in the art possessed at the time the invention was made. [*In re Sporck*, 49 CCPA 1039, 301 F.2d 686, 133 USPQ 360.]

The "facts" which we have in the record here are, on the one hand, the theoretical predictability of failure advanced by the appellant and, on the other, the clear teaching of Hemsted in combination with the disclosure of Krantz and Carr that dysmenorrhea is characterized by pain in the suprapubic region which may be relieved by analgesics. The fact that both references relate to treatment with analgesics of female disorders involving pain in the vaginal area makes the combination proper here.

We have considered the appellant's additional remaining arguments, including his contention based upon our recent decision in *In re Caldwell*, 50 CCPA 1464, 319 F.2d 254, 138 USPQ 243. We find them without merit. In the *Caldwell* case the method claimed achieved a result not suggested by the prior art.

We agree with the Examiner and the Board that the claimed method is rendered obvious within the meaning of 35 U.S.C. 103 by the reference combination.

[1] Accordingly, the decision of the Board is affirmed.

AFFIRMED.

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**United States Court of Appeals**
**District of Columbia Circuit**

SETRAK K. BOYAJIAN, APPELLANT
*v.*
EDWIN L. REYNOLDS, ACTING COMMISSIONER OF PATENTS, APPELLEE

*No. 18,717*

APPEAL from the United States District Court for the District of Columbia.

Before BAZELON, *Chief Judge*, and FAHY and WRIGHT, *Circuit Judges*

JUDGMENT

THIS CAUSE came on to be heard on the record on appeal from the United States Court for the District of Columbia, and was argued by counsel.



ON CONSIDERATION WHEREOF It is ordered and adjudged by this Court that the order ------ of the District Court appealed from in this cause be, and it is hereby, affirmed. See *Moore* v. *United States ex rel. Chott*, 40 App.D.C. 591 (1913), writ of error dismissed, 237 U.S. 197 (1915).

PER CURIAM.

Dated: January 19, 1965.

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# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**993,469**, G. Stocker, TRUNK; **1,652,964**, E. M. Hixson, TOOL BOXES; **1,835,897**, Pratt and Hansen, RECEPTACLES WITH TRAYS; **1,987,018**, G. A. Loftin, CEDAR CHESTS; **2,038,950**, L. Moore, REVERSIBLE STOVE CONSTRUCTION; **2,066,729**, Myers and Emily, OVEN; **2,119,213**, R. H. Burdge, COSMETIC CASES; **2,124,071**, G. A. Loftin, CHEST; **2,149,114**, A. R. Constantine, REFRIGERATOR; **2,219,597**, A. Lutz, BOXES FOR HOLDING COSMETIC PREPARATIONS AND TOOLS AND THE LIKE; **2,276,419**, E. Roos, CHESTS; **2,300,514**, J. H. Orley, REFRIGERATOR BOX; **2,488,067**, M. L. Roark, METAL BOX HAVING TRAYS MOUNTED ON SWINGABLE LINKAGE; **2,542,162**, W. H. Sutton, PORTABLE BEVERAGE CASE; **2,880,918**, G. A. Schweikhard, UTILITY BOX; **2,905,469**, E. H. Simonsen, TRAY SUPPORT BRACKET; **3,087,769**, L. W. Guth, RACK SYSTEM FOR DISHWASHING MACHINE, filed Sept. 11, 1964, D.C., W.D. Ky. (Louisville), Doc. 4873, *General Electric Company* v. *Westinghouse Electric Corporation et al.* All of the above patents with the exception of Patent No. 3,087,769 were included by answer Oct. 7, 1964.

**1,652,964.** (See 993,469.)
**1,835,897.** (See 993,469.)
**1,987,018.** (See 993,469.)
**2,038,950.** (See 993,469.)
**2,066,729.** (See 993,469.)
**2,119,213.** (See 993,469.)
**2,124,071.** (See 993,469.)
**2,149,114.** (See 993,469.)
**2,219,597.** (See 993,469.)
**2,276,419.** (See 993,469.)
**2,300,514.** (See 993,469.)
**2,488,067.** (See 993,469.)
**2,542,162.** (See 993,469.)

**2,671,922**, Lower and Hatz, Jr., SPUN GLASS ROOFING MOP, filed Apr. 25, 1955, D.C., District of Columbia Doc. 1845–55, *Halore, Inc.* v. *Owens-Corning Fiberglass Corporation*. Judgment for defendant Dec. 23 1955. Appealed C.C.A., Dist. of Columbia, Doc. 14730. Judgment of District Court reversed and remanded May 14, 1959. On remand, Judgment in favor of defendant; patent held invalid; complaint dismissed with prejudice Jan. 15, 1960. Appealed C.C.A., Dist. of Columbia, Doc. 15669. Judgment of District Court affirmed Feb. 9, 1961.

**2,880,918.** (See 993,469.)

**2,925,625**, D. W. Souza, CONTRAST COLOR EMBOSSED PLASTICS AND METHOD OF PRODUCTION; **2,996,822**, same, CONTRAST COLOR EMBOSSED PLASTICS; **3,006,945**, same, EMBOSSABLE PLASTIC ASSEMBLY, filed July 30, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42660, *Dymo Industries, Inc.* v. *Aaron L. Rubino*.

**2,905,469.** (See 993,469.)
**2,996,822.** (See 2,925,625.)
**3,006,945.** (See 2,925,625.)
**3,087,769.** (See 993,469.)

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# REISSUES

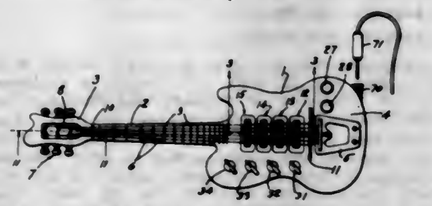
## FEBRUARY 16, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

### 25,728
### STRINGED MUSICAL INSTRUMENT

Quilla H. Freeman, Los Angeles, Calif., assignor to Fender Electric Instrument Co., Inc., Fullerton, Calif., a corporation of California

Original No. 3,035,472, dated May 22, 1962, Ser. No. 5,863, Feb. 1, 1960. Application for reissue Mar. 13, 1964, Ser. No. 362,542
7 Claims. (Cl. 84—1.16)

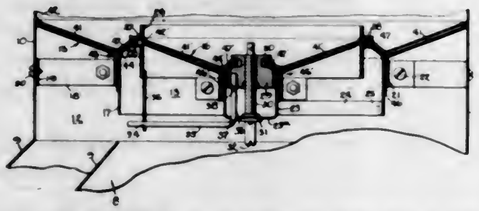


*2. An electric guitar, which comprises*
*a body having an outer face,*
*a neck connected to said body and extending outwardly therefrom,*
*a plurality of guitar strings mounted over said face and said neck in substantially parallel, tensioned relationship,*
*said strings being stretched over a bridge which is disposed on said body in spaced relationship from said neck,*
*said strings being formed of magnetizable material, said strings being disposed generally in a single plane which is generally parallel to said face,*
*first permanent-magnet means mounted on said body beneath at least said one of said strings,*
*said first permanent-magnet means being so disposed that one magnetic pole means thereof is relatively adjacent said plane of said strings and the opposite magnetic pole means thereof is remote from said plane of said strings,*
*said one magnetic pole means of said first permanent-magnet means being disposed sufficiently far from said plane of said strings to prevent interference with plucking of said strings,*
*second permanent-magnet means mounted on said body beneath at least said one of said strings,*
*said second permanent-magnet means being so disposed that one magnetic pole means thereof is relatively adjacent said plane of said strings and the opposite magnetic pole means thereof is remote from said plane of said strings,*
*said one magnetic pole means of said second permanent-magnet means being of the same magnetic polarity as said one magnetic pole means of said first permanent-magnet means,*
*said one magnetic pole means of said second permanent-magnet means being disposed sufficiently far from said plane of said strings to prevent interference with plucking of said strings,*
*said one magnetic pole means of said first permanent-magnet means and said one magnetic pole means of said second permanent-magnet means being disposed sufficiently close to each other that said one magnetic pole means thereof of the same magnetic polarity repel each other in substantial degree,*
*said one magnetic pole means of said first permanent-magnet means and said one magnetic pole means of said second permanent-magnet means being spaced from each other,*
*the spacing between said one magnetic pole means being sufficient to effect upward projection to the plane of said strings of the magnetic flux present at said one magnetic pole means, whereby vibration of said strings will affect said magnetic flux in substantial degree, and*
*electrical coil means provided around said first permanent-magnet means and said second permanent-magnet means to generate a voltage in response to said vibration of said strings,*
*said coil means being disposed sufficiently far from said plane of said strings to prevent interference with plucking of said strings,*
*said coil means being a single coil of wire encompassing said first and second permanent-magnet means.*

### 25,729
### DAMPER ASSEMBLY FOR AIR MIXERS

Walter W. Kennedy, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Original No. 3,123,097, dated Mar. 3, 1964, Ser. No. 96,208, Mar. 16, 1961. Application for reissue Apr. 27, 1964, Ser. No. 377,150
10 Claims. (Cl. 137—601)



1. The combination of, an elongated outer wall, a ring smaller than said wall and fixedly mounted within said wall concentric with the latter and cooperating therewith to define an outer annular air passage, an annulus shorter than said wall and smaller than said ring and mounted concentric with the latter for axial shifting, a second smaller ring rigid with said wall and said first ring and cooperating with said annulus to form an inner annular air passage concentric with said outer passage, a member rigid with said annulus and mounted within said second ring for movement back and forth along the axis of said rings, a frusto-conical umbrella disposed in said outer air passage and radially expansible and contractible to vary the width of said outer passage and thereby control the flow of air therethrough, a similar smaller umbrella disposed in said inner passage and radially expansible and contractible to control the flow of air therethrough, the peripheral shapes of said umbrellas corresponding to said wall and annulus so as to close the passages when the umbrellas are expanded against the wall and annulus, and actuating means for moving said member and said annulus back and forth axially relative to said rings to open and close both of said umbrellas in unison.

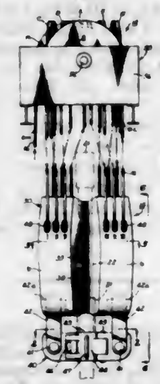




### 25,730
### SIDE-OPENING TRAVELING BLOCK AND CROWN BLOCK ARRANGEMENT

Burt S. Minor, Whittier, Calif., by Dresser Industries, Inc., assignee, Dallas, Tex., a corporation of Delaware

Original No. 2,734,718, dated Feb. 14, 1956, Ser. No. 290,022, May 26, 1952. Application for reissue July 1, 1963, Ser. No. 295,587
13 Claims. (Cl. 254—190)

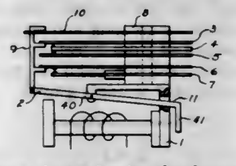


1. A traveling block and crown block combination including:
a traveling block having two vertical casing sections vertically connected at one side and providing between them at the other side a vertical, laterally directed opening extending [substantially the height] *vertically entirely through the block* [of the block] and opening out to the side thereof and adapted to receive pipe *extending above and below the block* by sidewise movement;
elevator means secured to the under side of said traveling block in alignment with said opening to engage and support pipe;
vertical sheaves mounted in both of said casing sections on horizontal axes;
a crown block to be disposed above said traveling block and having two sets of vertical sheaves disposed on horizontal axes all in the same horizontal plane, most sheaves of one set of crown block sheaves being respectively disposed in substantially the same vertical planes as the sheaves of the traveling block, the sheaves of the other set of crown block sheaves including a spaced pair disposed transversely to said one set and on opposite sides thereof, all of the sheaves of the two blocks having the same diameter; and
a line running over the sheaves of the two blocks for supporting and operating the traveling block from the crown block in balanced relation.

### 25,731
### CONTACT DEVICE

Per Harry Elias Claesson, Sportstugevagan 4, Danderyd, Sweden

Original No. 2,924,684, dated Feb. 9, 1960, Ser. No. 570,331, Mar. 8, 1956. Application for reissue Dec. 23, 1963, Ser. No. 342,585
Claims priority, application Sweden, Mar. 11, 1955, 2,335/55
14 Claims. (Cl. 200—104)



*14. A switching device having fixed contact springs and a pair of movable contact springs, one a make-contact and the other a break-contact, mounted on opposite sides of a fixed contact spring and arranged for indirect operation; said fixed contact spring being more rigid than either of its associated movable contact springs; both of said movable contact springs being pre-tensioned toward their associated fixed contact spring so as to yield at the contact points a force amounting to at least 50 times the weight of the movable part of the contact spring inclusive contacts and wherein the natural frequency of vibration of the fixed contact springs inclusive their contacts is somewhat higher than the natural frequency of vibration of the movable contact springs inclusive their contacts; and contact actuating means positioned between the movable contact springs and movable in one direction to a first fixed position to move the make-contact spring away from said fixed contact spring and allow the contact on the break-contact spring to close against the contact on the fixed contact spring solely due to said pre-tension force and movable in the other direction to a second fixed position to move the break-contact spring away from said fixed contact spring and allow the contact on the make-contact spring to close against the contact on the fixed contact spring solely due to said pre-tension force.*

# PLANT PATENTS

## GRANTED FEBRUARY 16, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

### 2,471
### AZALEA PLANT

Howard Kerrigan, 3003 Totterdell St., Oakland, Calif.

Filed Dec. 27, 1963, Ser. No. 334,064
1 Claim. (Cl. Plt.—57)

A new and distinct variety of forcing azalea of the Belgian Indica type characterized primarily by its extremely deep rich color, which is Currant Red, by its exceptionally large flower size, by its ability to retain its opened flowers on the plant for a long period of time under florists' use conditions, by its retention of its rich red color when forced and throughout the life of the flower, by its ease of propagation from cutting, by its compact habit of growth and its strong, vigorous growth.

### 2,472
### AZALEA PLANT

Howard Kerrigan, 3003 Totterdell St., Oakland, Calif.

Filed Dec. 27, 1963, Ser. No. 334,066
1 Claim. (Cl. Plt.—55)

A new and distinct variety of azalea plant of the florists'

forcing type essentially intermediate between the Belgian Indica type of azalea and the Sanders hybrids, which is primarily characterized by its unique coloration, which is a white flower splashed with several tones of China Pink over the entire area of the flower; by its profuse and early bud set and its ease of forcing over an unusually long season; by its ease of propagation from own root cuttings and by its unusually rapid growth.

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2,473

ROSE PLANT

Hiroshi Miyawaki, Hiroshima, Japan, assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Dec. 27, 1963, Ser. No. 334,865

1 Claim. (Cl. Plt.—5)

A new and distinct variety of rose plant of the climber class, substantially as herein shown and described, characterized particularly as to novelty by being substantially identical with its parent variety "Sterling Silver" (U.S. Plant Patent No. 1,433), but being essentially distinguished therefrom by its long and strong canes which attain a mature height of from 8 feet to 10 feet, indicative of its climbing habit, and the habit of producing few or no flowers on the current season's growth.

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2,474

ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Jan. 3, 1964, Ser. No. 335,704

1 Claim. (Cl. Plt.—20)

A new and distinct variety of rose plant of the class falling between the hybrid tea and floribunda classes, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of vigorous, bushy, well-branched and attractive habits of growth, glossy, disease-resistant foliage, abundant flowers borne both singly and in small clusters on stems of medium length, said flowers being evenly distributed over the plant and being of medium size and quite double in form, with short petals and increasing tendency thereof to stand upright toward the center and to ruffle and fold inward, sometimes covering the center and giving an over-all attractive ruffled effect reminiscent of carnation flowers, a distinctive, attractive, extremely bright and glowing orange-red flower color which strikingly contrasts with and stands out against the glossy green foliage, and a very long flower life attributable to the great substance of the individual flower petals.

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2,475

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,959

1 Claim. (Cl. Plt.—70)

A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing, compact, densely tufted plant form, usually not exceeding three to four inches in height, and bearing many very double flowers of ashes of rose color, with centers of darker rose, said flowers having a faint, carnation-like fragrance, and being borne on the ends of stiff, upright stems of approximately 4 to 6 inches in length.

2,476

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,960

1 Claim. (Cl. Plt.—72)

A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing, compact, densely tufted plant form, usually not exceeding two to three inches in height, and bearing many double flowers of a distinctive coral rose color, said flowers having a faint carnation-like fragrance, and being borne at the ends of stiff upright stems approximately 6 to 7 inches in height.

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2,477

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,961

1 Claim. (Cl. Plt.—72)

A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing, compact, densely tufted plant form, usually not exceeding two to three inches in height, and bearing many duplex flowers of intense magenta color, said flowers having a very faint carnation-like fragrance, and being borne on the ends of stiff, upright stems.

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2,478

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,962

1 Claim. (Cl. Plt.—70)

A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing, compact, densely tufted plant form usually not exceeding two to three inches in height, and bearing many duplex, parti-colored flowers having magenta centers and shading abruptly into light rosy pink margins, said flowers having a very faint carnation-like fragrance, and being borne on the ends of stiff, upright stems of approximately 8 to 10 inches in height.

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2,479

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,963

1 Claim. (Cl. Plt.—71)

A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing, compact, densely tufted plant form, usually not exceeding three inches in height, and bearing many small, double flowers of a delicate salmon pink with markings of slightly darker hue, said flowers having a light, spicy, carnation-like fragrance, and being borne on the ends of stiff, upright stems approximately 8 to 10 inches in height.

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2,480

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,964

1 Claim. (Cl. Plt.—70)

A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing,



compact, densely tufted plant form, usually not exceeding three to four inches in height, and bearing many large, very double, ruffled flowers of almost pure white, with a slightly creamy cast, said flowers being heavily scented with carnation-like fragrance, and being borne on the ends of stiff, upright stems approximately 4 to 6 inches in height.

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2,481

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,965

1 Claim. (Cl. Plt.—71)

A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing, compact, densely tufted plant form, usually not exceeding two to three inches in height, and bearing many small double flows of uniform soft delicate rose color, said flowers having a very faint carnation-like fragrance, and being borne on the ends of stiff, upright stems approximately 4 to 5 inches in height.

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2,482

DIANTHUS PLANT

Jacob R. Mittleider, Loma Linda, Calif., assignor to Milo Academy, Inc., Milo, Oreg., a corporation of Oregon

Filed Sept. 23, 1963, Ser. No. 310,966

1 Claim. (Cl. Plt.—70)

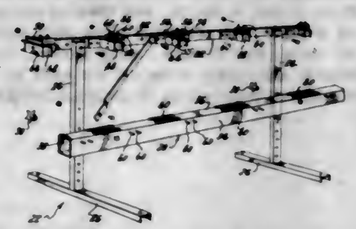
A new and distinct variety of dianthus plant, substantially as shown and described herein, characterized particularly by its floriferous blooming habit, low-growing, compact, densely tufted plant form, usually not exceeding two to three inches in height, and bearing many double flowers of a distinctive rosy-pink color with splashes or streaks of cerise, said flowers having a faint, carnation-like fragrance, and being borne on the ends of stiff upright stems approximately 6 to 10 inches in height.

# PATENTS

## GRANTED FEBRUARY 16, 1965

## GENERAL AND MECHANICAL

**3,169,249**
**JIG FOR ASSEMBLING POCKET DOOR FRAMES**
Robert Brydolf and Kenneth K. Kellems, Pasadena, Calif., assignors to Acme Appliance Manufacturing Company, Monrovia, Calif., a corporation of California
Filed Mar. 13, 1962, Ser. No. 179,317
9 Claims. (Cl. 1—149)



1. A jig for assembling a pocket door frame which includes a bumper jamb embraced by paired horizontal spreaders extending perpendicularly from the bumper jamb and having first ends abutting opposite edges thereof, two laterally spaced, channel-shaped split-jamb stiffeners telescoped over the opposite, second ends of the respective sets of spreaders which are on opposite sides of the bumper jamb, and two split jambs respectively abutting the stiffeners substantially in alignment with the spreaders of the respective sets, said jig assembling the pocket door frame rotated into a generally horizontal position with the bumper jamb below the stiffeners and split jambs and with the upper and lower edges of the spreaders oriented generally vertically, said jig including in combination:

(*a*) an upright supporting structure;

(*b*) a generally horizontal lower positioning means mounted on said supporting structure and having means for supporting the bumper jamb and said first end of each of the spreaders;

(*c*) locating means on said lower positioning means and engageable with the edges and one end of the bumper jamb and with one edge of each spreader for locating the bumper jamb and said first end of each spreader in assembled relation with said first ends of the spreaders of each pair respectively adjacent the respective edges of the bumper jamb;

(*d*) a generally horizontal upper positioning means mounted on said supporting structure above said lower positioning means;

(*e*) a plurality of spacer means on said upper positioning means and each engageable by adjacent sides of the spreaders of one pair adjacent the second ends thereof to space same apart; and

(*f*) a plurality of pairs of spring clip means on said upper positioning means for resiliently clamping the respective pairs of spreaders against said spacer means, respectively.

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**3,169,250**
**FIELDER'S GLOVES**
Melvin Heiman, Long Beach, N.Y., assignor to Hillcrest Sporting Goods, Inc., New York, N.Y., a corporation of New York
Filed Nov. 27, 1963, Ser. No. 326,560
5 Claims. (Cl. 2—19)

1. A fielder's glove including a thumb and a forefinger and a two-ply web between the thumb and forefinger, the two plies of the web having aligned substantially median slits therein extending upward from substantially the bases thereof dividing each of the web plies into two sections, one of the plies having the slit therein extending through the top edge thereof, the other of the plies having the slit therein terminating at a point near but spaced a distance from the top edge thereof, and means consisting in the provision on one of the sections of one of the web plies of a substantially rectangular ex-



tension extending at approximately right angles to the slit therein in a direction toward the other section thereof, said extension having a width substantially twice said distance and a length substantially twice the length of the top edge of said other section, the upper portion of said extension being doubled back along the median line of its length thereby providing two flaps each engaging one face of the two-ply web, and means securing the two flaps to the opposed faces of the two-ply web.

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**3,169,251**
**HONEYCOMB HAT**
Harold L. Humes, Jr., New York, N.Y., assignor to Parametrics Research & Development Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 30, 1961, Ser. No. 148,482
1 Claim. (Cl. 2—177)



A hat comprising; a tubular honeycomb of annular cross-section, said tubular honeycomb being characterized by an array of longitudinally extending strips in which the individual strips are affixed to an adjacent strip on one side at spaced-apart intervals and to an adjacent strip on the other side at spaced-apart intervals to define a plurality of longitudinally extending cells, the said cells being defined at least in part by walls joined at acute angles to permit the honeycomb to expand so as to increase both the internal and external diameters of the honeycomb, the honeycomb being adapted to be expanded at one end more than the other end to form a truncated conical tubular honeycomb structure to be placed on the head, and a flexible tie laced through at least two of the open cells of the hat and having free ends extending downwardly within the hat which can be secured together under the wearer's chin to hold it securely on the head of the wearer.





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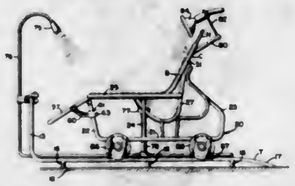
**3,169,252**
**KNITTED HEADWEAR**
Arthur Goldstein, Milwaukee, Wis., assignor, by mesne assignments, to Zwicker Knitting Mills, Appleton, Wis., a corporation of Wisconsin.
Filed July 1, 1963, Ser. No. 291,824
1 Claim. (Cl. 2—203)



A cap comprising, an elongated knitted tube closed at one end thereof to form a crown portion and open at its opposite end to provide an integral neck engaging hood, said tube having an arcuate slit therein intermediate its ends forming an integral flap above said slit, said flap being folded upon itself to form a pocket, and a visor comprising a stiffening member enclosed within said pocket, the free marginal edge of said flap extending beyond said stiffening member and cooperating with the lower edge of said arcuate slit to define a face opening spanned by said visor, the marginal edge of said flap being stitched to the inner surface of said tube beyond said stiffening member with the stitching extending entirely about said face opening to thereby provide a reinforced edge therefor while also closing said visor pocket.

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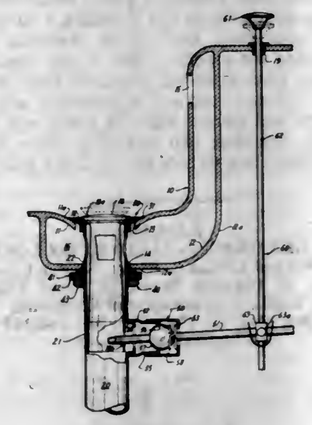
**3,169,253**
**MOBILE CHAIR FOR SHOWER FACILITIES**
Joe Segar, 12950 Kercheval Ave., Detroit 15, Mich.
Filed Sept. 24, 1962, Ser. No. 225,460
7 Claims. (Cl. 4—145)



1. A mobile type apparatus for invalid use comprising a trackway composed of two parallel rails, a wheeled body supporting chair with a rigid frame-work and a shower head connected at one end of a fluid conduit, the opposite end of said conduit adapted for connection to a source of fluid under pressure, a valve assembled with said conduit for controlling the amount of fluid flowing to said shower head, four flanged rubber rollers assembled to the lower portion of said frame-work of said body support, said chair adapted for riding upon said rails of said trackway, a frame extension means with a horizontal cross-bar attached to and extending upwardly from the forward ends of said rails of said trackway, said shower head assembled upon said cross-bar of said extension means and said wheeled body supporting chair comprising two pivotal leg rests, a back rest and two spaced apart and perforated seat supporting members, said supporting members being sufficient to enable said seat members to comfortably support the buttocks and thighs of a patient while leaving the central portion of the pelvic region exposed for shower bathing effected by the space between said seat supporting members, and said rails elevate from the ground by suitable means and having incline type standards at the rear end integrally secured therewith so that the rubber rollers may ride upwardly onto said trackway for guidance under a plurality of shower heads.

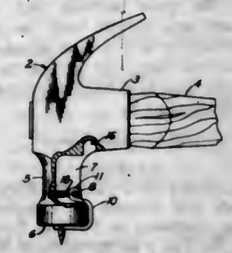
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**3,169,254**
**SIMPLIFIED LAVATORY DRAIN PIPE ASSEMBLY**
George H. Lantz and Donald D. Longfellow, Morgantown, W. Va., assignors to Sterling Faucet Company, Morgantown, W. Va., a corporation of West Virginia
Filed Oct. 16, 1962, Ser. No. 230,818
2 Claims. (Cl. 4—203)



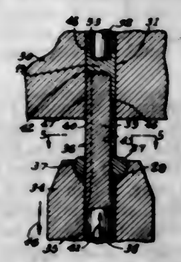
1. In lavatory apparatus including a basin having inner and outer surfaces and an open portion that extends through the inner and outer surfaces for receiving a drain pipe assembly, an improved drain pipe assembly comprising: an elongated integral thin-walled, press-deformable tubular body member, said body member having a neck portion at one end thereof, said body member further having an integral outwardly offset support boss located at an intermediate location therealong; first clamping flange means removably-connected to said neck portion at one end thereof, said first clamping flange means having an outwardly-extending rim portion that engages the inner surface of the basin and an inwardly-facing valve seat portion; second clamping flange means adjustably-connected to an intermediate part of said neck portion, said second flange means having a resilient portion that engages the outer surface of the basin; a valve member movably-supported within said body member for movement into and out of cooperative engagement with said valve seat portion of said first clamping flange means; an actuating lever for moving said valve member, said actuating lever having a spherical surface portion intermediate its end, means for supporting said actuating lever on said body member, said supporting means having a tubular mounting part at one end which surroundingly-receives and is securely connected to said support boss and includes an integral annular lever support bead adjacent its other end for supportingly receiving said spherical surface portion, a housing cap securely-connected to said tubular mounting part, and resilient means operatively-engaging said spherical portion and said housing cap for urging said spherical portion into frictional-pivotal engagement with said lever support bead.

3,169,255
COMBINED HAMMER AND PUNCH
Albert Paul Simmons, Burnside, Ill.
Filed May 14, 1963, Ser. No. 280,201
6 Claims. (Cl. 7—8)



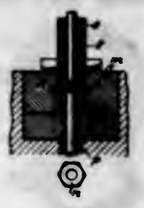
1. A combination tool comprising a hammer having a head with a striking face and a handle receiving portion, a handle fixed therein, a punch swingable between first and second positions and including a mounting part and a hardened point fixed to the mounting part, and means pivoting the mounting part to the hammer head, the hardened point extending outwardly from the striking face of the hammer head and in alignment with the generally central part thereof when the punch is in its second position, the mounting part including means engageable with the striking face to hold the hardened point in alignment.

3,169,256
METHOD OF FORMING SLEEVE FOR LOCK RIVET
George Siebol and Dorian E. Rippy, Garden Grove, Calif., assignors to Olympic Screw & Rivet Corporation, Downey, Calif., a corporation of California
Filed Mar. 11, 1963, Ser. No. 264,363
10 Claims. (Cl. 10—27)



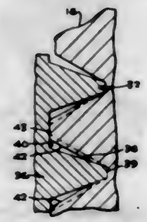
1. A method for forming a sleeve for a lock rivet from a cylindrical blank that consists in
(*a*) forming a pre-head on one end of said blank by upsetting said end to a larger size than the blank while simultaneously forming a flared end socket in said pre-head and foreshortening said blank accordingly,
(*b*) subjecting the headed blank from the head end thereof to longitudinal extrusion forces to form a blind cylindrical passage in the blank and to simultaneously form a set of longitudinal slits in the tubular wall around said passage by dividing said wall by extrusion into arcuate portions,
(*c*) simultaneously subjecting the opposite end of the blank to longitudinal extrusion in a direction toward the pre-head thereof to form a blind cylindrical depression with a tubular wall around said depression and to leave and integral bridge portion in the blank between the blind ends of said passage and depression,
(*d*) separating said bridge from the tubular wall by shearing the same from the blank and displacing it from said opposite end of the blank along the axis of the blank while contacting a portion of the head to close the ends of the slits in the head and form a collar extension on the end of the head, and finally,
(*e*) swaging the head to its final shape while removing the sheared bridge from the passage.

3,169,257
PROCESS FOR PRODUCING NUTS
Wilhelm Loos and Wilhelm Meier, Plettenberg, Germany, assignors to Loos & Schmidt, Plettenberg, Germany, a firm of Germany
Original application Aug. 12, 1957, Ser. No. 677,590. Divided and this application May 27, 1959, Ser. No. 819,529
4 Claims. (Cl. 10—86)



1. A method of making nut blanks from rod stock having a generally round cross-section, comprising the steps of:
(*a*) shearing sections of a predetermined length from said rod stock;
(*b*) forming undersized slugs by flattening said sections in a generally unheated state by compressing them axially;
(*c*) heating the slugs so flattened to a temperature between substantially 600° and 800° C.;
(*d*) indenting the so heated slugs axially while expanding them radially under renewal axial pressure against polygonally adjoining surfaces; and
(*e*) piercing the so indented polygonal bodies thus formed.

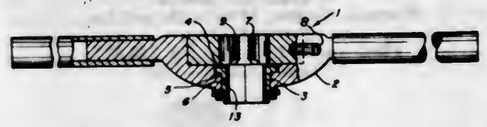
3,169,258
METHOD OF FORMING SELF-LOCKING THREADED ELEMENTS
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif.
Filed July 16, 1962, Ser. No. 209,947
7 Claims. (Cl. 10—86)



1. The method comprising forming on an element a thread adapted to interfit with a coacting threaded member and having a major diameter portion and a minor diameter portion and a thread face radially therebetween, applying radial force to a localized area of said thread having a limited axial extent which is short as compared with the fuell axial length of the thread, thereby radially offsetting said major and minor diameter portions of said thread and said intermediate thread face at said localized area relative to corresponding portions of the thread at other locations and in a direction to interfit with said coacting member more tightly and thereby attain a self locking action, and subsequently removing material at said locally offset major and minor diameter portions to relieve the tightness of the thread interfit at those locations, while leaving said intermediate thread face less relieved to interfit more tightly than said major and minor diameter portions with said coacting member.

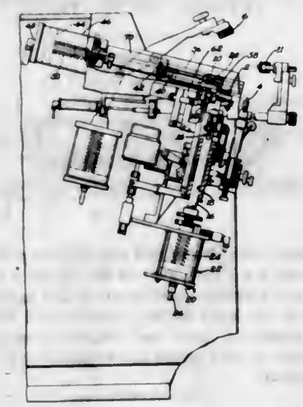


3,169,259
PIPE FOLLOWER INSERT
William H. Thompson, 22 Chapel Drive S., R.D. 3, Wexford, Pa.
Filed Oct. 24, 1962, Ser. No. 232,731
1 Claim. (Cl. 10—127)



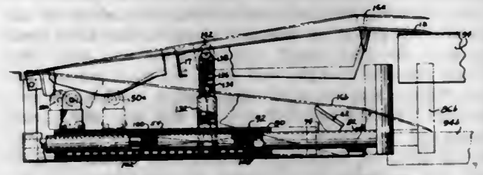
In combination, a pipe threading tool having a body portion provided with a recess in one face thereof receiving a threading die, an aperture through the opposite face of said body portion and communicating with said recess, a pipe follower mounted in said aperture and provided with a cylindrical passageway therethrough for reception of an end of a pipe to be threaded, and a liner disposed within said passageway, said liner comprising a hollow cylindrical semiflexible body portion having an inner surface non-marring to the surface of a pipe moving therethrough an an outer diameter not greater than that of the passageway through said follower, a laterally outward extending flange defining one end of said liner body portion for overlapping the adjacent end of the pipe follower passageway and aligned cuts through said flange and the length of said liner body portion.

3,169,260
LASTING MACHINES
Oliver C. Brett, Jr., Boxford, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Aug. 21, 1963, Ser. No. 303,633
7 Claims. (Cl. 12—12.4)



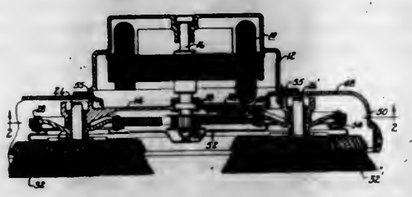
1. In a shoe lasting machine having a pair of forepart wipers, means for imparting normal equal movements to said wipers to wipe the margin of an upper inwardly over the bottom of the forepart of a shoe, means for selectively extending the movement of either of said forepart wipers after completion of the normal movements of both forepart wipers, said extending means comprising control means responsive to the normal movement of said forepart wipers, and drive means for each wiper responsive to said control means.

3,169,261
RAMP MECHANISM
Theodore O. Saider, Dayton, Ohio, assignor to The Joyce-Cridland Company, Dayton, Ohio, a corporation of Ohio
Filed June 6, 1960, Ser. No. 34,201
11 Claims. (Cl. 14—71)



11. In an apparatus for varying the height of the front end of a ramp plate, the combination comprising: pivot means mounting the back end of the ramp plate to a platform; support means normally occupying a supporting position for supporting the front end of said plate, said pivot means and said support means normally supporting said plate in a horizontal position with its upper surface lying in the plane of the upper surface of the platform; means pivotally mounting said support means; a movable carriage mounted beneath said plate; means engaged with said carriage for moving said carriage rearwardly beneath said plate; means interengaging between said plate and said carriage pivoting the front end of said plate upwardly upon initial rearward movement of said carriage, the front end of said plate lowering upon continued rearward movement of said carriage; and a latch mechanism mounted on and movable with said carriage normally engaged with said support means locking said support means in the supporting position, said latch mechanism including means pivoting said support means out of the supporting position upon rearward movement of the carriage, whereby the front end of the plate may lower below its normal horizontal position.

3,169,262
FLOOR POLISHER WITH DOUBLE-TOOTHED BELT DRIVE
Oliver L. Allen, Riverside, and Leon P. Borkoski, Stamford, Conn., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Continuation of application Ser. No. 236,599, Nov. 9, 1962. This application Jan. 7, 1964, Ser. No. 336,195
2 Claims. (Cl. 15—49)

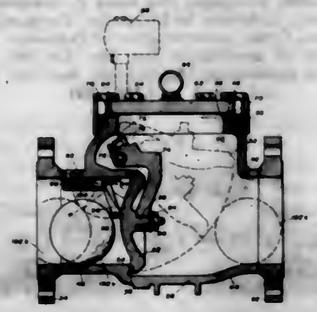


1. A floor polisher comprising: a motor having a vertically-arranged, rotatable, armature shaft; a toothed driving pulley mounted at an end section of said armature shaft for rotation therewith; three toothed driven pulleys mounted on first, second and third vertically-arranged shafts, respectively, for rotating said first, second and third shafts; a plate member having therein a first apertured journal, a second apertured journal and an apertured armature shaft journal for journalling said first shaft, second shaft and armature shaft, respectively, which pass through said apertured journals of said plate member, said plate member including slide rails formed therein; a slidably adjustable element mounted on said slide rails and adapted to be secured to said plate member,

said adjustable element having an end section including an apertured journal therein, said end section and its apertured journal extending outwardly beyond said plate member, said end section's apertured journal journalling said third shaft which passes through said apertured journal of said end section; said first, second and end section apertured journals and their respective first, second and third vertically-arranged shafts being situated at the respective apexes of an isosceles triangle, said third shaft being at the apex which terminates the two equal legs of the isosceles triangle, said armature shaft journal and its armature shaft being situated within the triangle at a location which is equidistant from said first and second shafts and their respective journals; a flexible endless belt having teeth on both faces thereof, one toothed face of said belt engaging said toothed driving pulley and the toothed driven pulley supported on said third vertical shaft, the other toothed face of said belt engaging the two driven pulleys which are supported on said first and second shafts, said one toothed face having relatively small arcuate lengths engaging less than one half of the circumferences of said driving and driven pulleys, said other toothed face having relatively large arcuate lengths engaging more than one half of the circumferences of said two driven pulleys, said endless belt having a relatively small amount of tension therein when said driving and driven pulleys are not rotating, said adjustable element being slidable to enable the arranging of said belt on said pulleys and to adjust the tension in said belt; three floor polishing elements, each polishing element being connected to a respective one of the vertical shafts of said driven pulleys for rotation with said shafts; means defining a protective wall between said floor polishing elements and said belt and pulleys, said belt and pulleys being situated between said plate member and said wall defining means.

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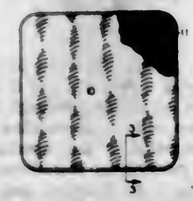
3,169,263
SPHERE LAUNCHING APPARATUS
Harold N. Eagleton, Colorado Springs, Colo., assignor to Charles Wheatley Company, Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 23, 1962, Ser. No. 168,599
5 Claims. (Cl. 15—104.06)



1. In combination with a pivotal closure member, a launching mechanism for injecting spheroids into a pipe line and comprising a shaft, a releasing arm journalled on the shaft and engageable with the closure member for injecting the first spheroid into the pipe line upon movement of the closure member in one direction, a catcher arm journalled on the shaft, means constantly urging the releasing arm and catcher arm in a direction toward the closure member, stop means provided on the catcher arm for limiting the rotation thereof in one direction for permitting limited independent rotation of the releasing arm simultaneously with the closure member whereby the first spheroid is released and the catcher arm intercepts the next succeeding spheroid for precluding injection of more than one spheroid during a single operation, and means cooperating between the releasing arm and the catcher arm for disengaging the catcher arm from the next succeeding spheroid upon rotation of the closure member and releasing arm in a second direction whereby the launching mechanism is reset for a subsequent injection of the next succeeding spheroid into the pipe line.

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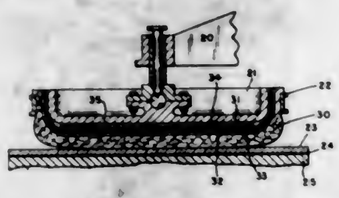
3,169,264
MULTI-PURPOSE CLEANING AND WASHING CLOTH
Wayne L. Walker, 5738 N. Detroit Ave., Portland, Oreg.
Filed Apr. 9, 1964, Ser. No. 358,527
1 Claim. (Cl. 15—118)



A composite scrubbing wash cloth consisting of a sheet of strong but very pliable nylon mesh, having a surface moderately abrasive in character with substantially square open spaces approximately ⅛ of an inch on each side, and a companion sheet of soft, heavy, absorbent cotton cloth, the two sheets being of the same size and being connected together only around their common border so as to enable the two sheets to have considerable freedom of motion with respect to each other.

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3,169,265
COMPOSITE RESILIENT POLISHING PAD AND METHOD FOR MAKING SAME
William E. Becker, Norton, Mass., assignor to Bacon Felt Company, Taunton, Mass., a corporation of Massachusetts
Filed Jan. 11, 1963, Ser. No. 250,846
15 Claims. (Cl. 15—230.19)



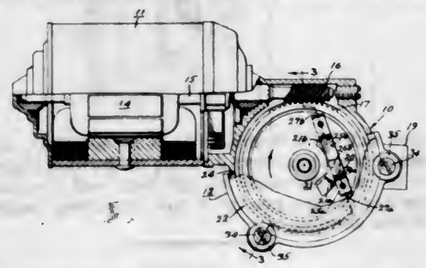
13. A composite, laminated and unitary polishing member, comprising a lower layer of felt fibers, a middle layer of rubber and fabric reinforcement and a top layer of soft rubber, said top layer having a preformed recess for receiving a polishing block and uniformly spaced, integral resilient teeth in said recess for engaging the face of said polishing block.

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3,169,266
WINDOW WIPER MECHANISM
David M. Crawford, Columbus, Miss., assignor to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed Oct. 22, 1962, Ser. No. 232,203
4 Claims. (Cl. 15—250.17)

1. A windshield wiper mechanism comprising a motor, a rotatable member coupled to said motor and driven thereby to supply driving motion to a connection for a conventional windshield wiper linkage, a frame supporting said motor and said rotatable member, a parking switch including a pair of contacts electrically connectable in the circuit of the motor and a movable support member for one of the switch contacts, a cam operator, the parking switch being mounted on a portion of the frame which is movable relative to the rest of the frame about the same axis of rotation as the rotatable member and the cam operator being mounted on the rotatable member, such that the relative rotatable motion between the parking switch and cam operator will cause the cam to move against the movable support to open the parking switch contacts, the cam being at a radius on the rotatable member selected to produce actuation of the parking switch over the length of the cam, means to fix the movable portion of the frame in selected positions,

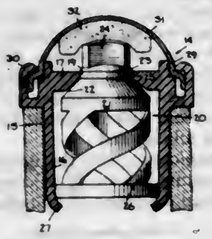




a manual switch and electrical connectors for directly connecting the motor to a source of power through the electrical connectors, with the length of the electrical connectors of the manual switch allowing remote location of the manual switch from the rest of the windshield wiper mechanism, the manual switch serving to provide the direct connection of the motor to the source of power and when the direct connection is open the motor is connected to the source of power through the parking switch alone, whereby the motor driving the mechanism will stop when the parking switch contacts are opened, the parking switch being actuated open by the cam operator once each revolution irrespective to the contact position of the manual switch, the movable portion of the frame providing adjustment of the wiper parking position.

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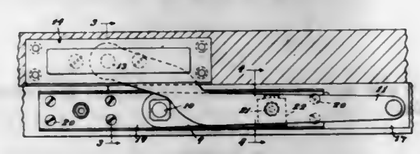
3,169,267
FLUID APPLICATOR
Warren J. Luedtke, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Mar. 29, 1963, Ser. No. 268,920
5 Claims. (Cl. 15—566)



1. A dauber of the class described, comprising a fluid container having an opening, and fluid flow control means positioned in said opening and controlling the flow of fluid from said container, said fluid flow control means including a body formed with a longitudinal bore and an end wall, means forming an aperture in said end wall opening into said bore, closure means in said bore having a stem extending through said aperture and formed with a surface for engaging the portion of said end wall defining said aperture in a friction fit resisting disengagement thereof and constituting a primary seal, said closure means having a second surface for engaging a zone of said means forming said aperture to constitute a secondary seal, said seals being broken by application of force to the stem of said closure means extending through said aperture thus to permit the flow of fluid from said container, and spring means in said bore urging said closure means into a position to effect said second seal.

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3,169,268
MEANS FOR POSITIONING THE ARMS OF A DOOR CLOSER
James T. Lundebjerg, West Hartford, Conn., assignor to Emhart Corporation, a corporation of Connecticut
Filed Sept. 14, 1961, Ser. No. 138,159
4 Claims. (Cl. 16—49)



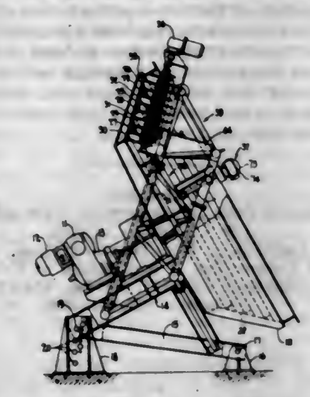
1. In a door closer for biasing a door member to closed position in its frame member and including a first casing adapted to be mounted in recessed position in one of said members, said first casing having a biasing means therein, a main arm secured to a first pivot means on said first casing and operatively connected to said biasing means, a forearm pivotally connected at one end to the end of said main arm, a second mounting casing recessed in the other of said members adjacent said first casing having a second pivot means rotatably supporting the other end of said forearm thereon, said arms being adapted to occupy overlying positions substantially in alignment with said door member between the end edge thereof and said frame member when said door member is closed, slidable means associated with one of said casings for released, free longitudinal movement of its pivot means relative to its member, manually operated fastening means for securing said slidable means in fixed operating position when it has moved to said desired fixed operating position when said door member is closed, said fastening means being accessible for operation when said door member is in fully closed position, and a stop member positioned between the edge of said door member and said frame member when said door is closed, said stop member having a projecting portion engageable with said arms for locating said arms in aligned relation to said door member when it is in closed position.

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3,169,269
SCRAPING APPARATUS FOR PELLETIZING PAN
Robert C. McDowell, Cleveland, and Thomas E. Ban, Cleveland Heights, Ohio, assignors, by mesne assignments, to McDowell-Wellman Engineering Company
Filed Aug. 6, 1962, Ser. No. 215,186
10 Claims. (Cl. 18—1)

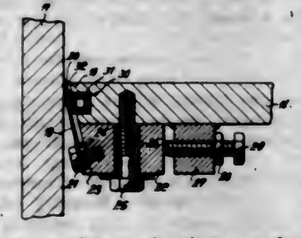
1. In combination, a material receiving vessel mounted for rotation on an inclined axis, said vessel having a base and a side wall extending therefrom, and a scraping mechanism coacting therewith to maintain a predetermined thickness of charged material on the side wall beyond a predetermined angular disposition of said vessel, including a frame disposed in spaced overlying relation beyond said predetermined angular disposition of said vessel, a shaft rotatably journalled in said frame and having its axis disposed in overlying spaced relation to the side wall of said vessel, a plurality of material engaging members disposed in axially spaced, outwardly projecting relation

along said shaft for rotation therewith, said members having individual lengths adapted to conform to the profile



of said side wall of said vessel, and means for rotating said shaft.

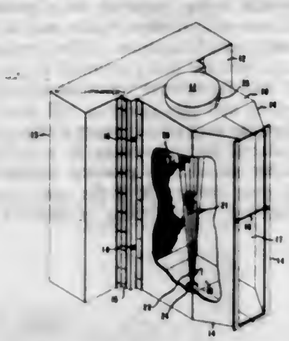
3,169,270
KNEADER
Friedrich Wilhelm Pass, Schwelm, Westphalia, Germany, assignor to Gussstahlwerk Pass & Sohn, Schwelm, Westphalia, Germany, a firm
Filed May 6, 1963, Ser. No. 278,120
Claims priority, application Germany, June 14, 1962, G 35,203
9 Claims. (Cl. 18—2)



1. A kneader comprising a charging space for the material to be worked composed particularly of rubber and filling substances; kneading tools against which the material to be worked is to be pressed; boundary walls forming lateral extensions of the charging space; a hinged charging flap guided between the extensions of the charging space, said charging flap being provided with grooves at the side edges thereof; sealing blades mounted on the side edges of the charging flap at an acute angle to the boundary walls and directed towards the charging space, said sealing blades having sharpened edges adapted to bear tightly against said boundary walls; and an elongated tubular rubber packing located in each of said grooves, respectively, of said charging flap and provided with a longitudinally extending lip bearing against the respective sealing blade.

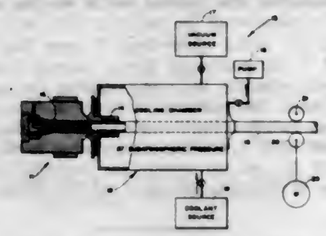
3,169,271
APPARATUS FOR QUENCHING EXTRUDED SPINNERET FILAMENTS
John Weaver Mussr, Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,903
3 Claims. (Cl. 18—8)

1. Apparatus for the cross-flow quenching of freshly-spun filaments comprising a vertical elongated chamber, said chamber being defined by a horizontal top wall provided with an opening through which the filaments pass in descending through said chamber, a back wall with an opening and foraminous partition for introducing a quenching medium into said chamber, and two laterally movable side panels each cooperatively joined to the



back wall by a double-action hinge assembly, said side panels projecting inwardly along the forward edges thereof to form oppositely of said back wall a vertical slot opening for the passage of said quenching medium out of said chamber.

3,169,272
APPARATUS FOR MAKING PLASTIC TUBING
Orwin G. Maxson, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Oct. 30, 1962, Ser. No. 234,056
9 Claims. (Cl. 18—14)



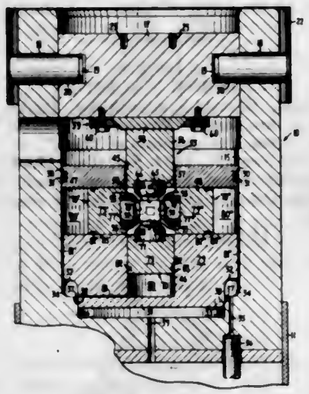
1. Apparatus for forming plastic material which comprises:
means for forming a plastic substance into heat-softened tubing, said means including a vent communicating with the interior of the heat-softened tubing and with the atmosphere;
means adjacent said forming means for shaping the heat-softened tubing, said shaping means including means for equalizing pressure between the interior and exterior of said shaping means;
a substantially gas-tight chamber surrounding at least a portion of said shaping means for holding fluid for cooling the tubing; and
means communicating with the interior of said chamber for creating a zone of subatmospheric pressure within at least a portion of said chamber.

3,169,273
PRESSURE-MULTIPLYING APPARATUS
Jacob Braymen, Staten Island, N.Y., assignor to Barogenics, Inc., New York, N.Y., a corporation of New York
Filed Jan. 23, 1963, Ser. No. 253,326
7 Claims. (Cl. 18—16)

1. Apparatus comprising, means forming a hydraulic cylinder, a piston disposed in said cylinder and having formed therein a central space and a plurality of bores

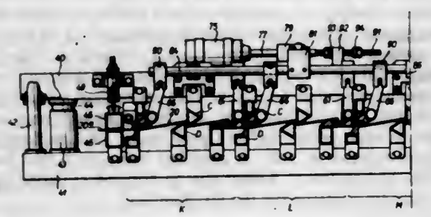


which extend in three dimensions from said space through said piston, and which include a first bore and second bores, said first bore extending axially into said piston from the front end thereof, a plurality of pressure-multiplying anvils comprised of a first stationary anvil operably received in said first bore and of second movable anvils respectively received in slidable relation in said



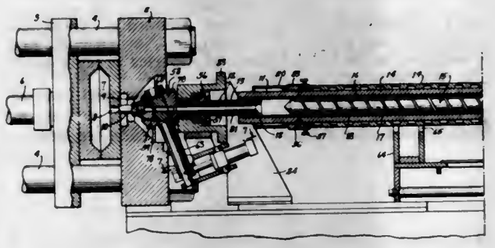
second bores, and means to produce by pressurized hydraulic fluid a driving of said second anvils along the axes of said second bores towards said space and an accompanying movement of said piston in said cylinder and the second anvils contained thereby towards said first anvil so as to compress by all said anvils an object contained in said space.

3,169,274
CONTINUOUS MACHINE FOR CORRUGATING THERMOPLASTIC SHEETS
Roberto Colombo, Turin, Italy, assignor to Lavorazione Materie Plastiche-L.M.P. S.p.A., Turin, Italy
Filed Mar. 5, 1963, Ser. No. 263,019
Claims priority, application Italy, Mar. 10, 1962, 5,014/62
4 Claims. (Cl. 18—19)



1. In a machine for continuously corrugating a web of a synthetic thermoplastic material, the machine being of the type including a preliminary hot-drawing section for longitudinally drawing the web including a pair of drawing rolls; a corrugating section fed by said drawing rolls and including two transverse series of hollow, internally cooled shaping dies arranged to act on the opposite faces of the web to transversely draw and corrugate the latter therebetween, one of said series of dies being displaceable towards and away of the other series of dies; take-off means for pulling the web at a predetermined speed through the corrugating section in sliding contact with the dies in the two series; and means correlating the pull speed of said take-off means and the effective speed of the drawing rolls; the improvements in said corrugating section for producing corrugated profile undercuts comprising; at least one undercut-shaping die in one of said series having associated therewith a complementary undercut-shaping die in the other series; means for mutually displacing the undercut-shaping dies relative to one another between a non-interlocked condition, in which the said one series of dies are freely displaceable and away from each other series, and a mutually interlocked condition in which the undercut-shaping die of one series is hooked behind a complementary die in the other series to determine the desired undercut; all of the shaping dies in the two series being arranged to establish with the web an overall transverse contact dimension smaller than the amount of the transverse drawing in the corrugating section; and means adjacent the opposite ends of the series of dies arranged to hold the web transversely during operation of the two series of dies.

3,169,275
SCREW TYPE PREPLASTICIZING PLASTIC INJECTION MOLDING MACHINE
Francis E. Compton and Bernard D. Ashbaugh, Rochester, N.Y., and Peter Hold, Milford, Conn., assignors to Farrel Corporation, a corporation of Connecticut
Filed Oct. 31, 1961, Ser. No. 148,896
16 Claims. (Cl. 18—30)

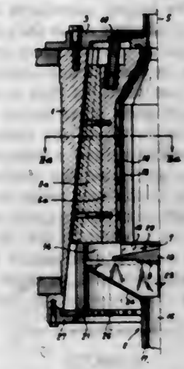


12. A screw preplasticizing injection molding machine including a cylinder having a closely fitting rotative screw therein for advancing plastic material therethrough, said screw being non-reciprocative relative to said cylinder, a hollow nozzle carrying plunger received into said cylinder ahead of said screw, said plunger being reciprocative relative to said cylinder, means for receiving plastic material and for rotating said screw to advance said material to ahead of said screw between the latter and said plunger, and means for causing said cylinder and screw and said plunger to move towards each other whereby said plastic material is forced from said cylinder through said plunger.

3,169,276
MOLD
Kurt Hugentobler, Onex, Geneva, Switzerland, assignor to Etablissements G. Lesieur et Ses Fils, Paris, France, a firm
Filed May 15, 1963, Ser. No. 280,548
12 Claims. (Cl. 18—34)

1. In a mold having an inlet for fluid and a mold cavity communicating with the inlet when the mold is closed, the improvement which comprises, a plurality of movably mounted mold side sections to be shifted radially between positions corresponding to open and closed positions of the mold, and end structure engaging first adjacent ends of said movably mounted side sections to shift said side sections radially to position corresponding to closed position of the mold and having a mold end section forming the mold cavity with said side sections when the mold is closed, said side sections in position corre-

sponding to closed position of the mold having second adjacent ends sealingly engaged with the mold inlet and



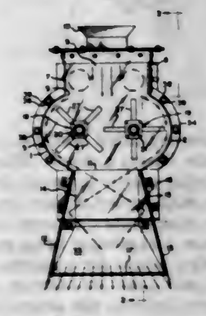
forming an opening communicating with the mold inlet for fluid to be supplied to the mold cavity.

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**3,169,277**
**APPARATUS FOR INDIVIDUALIZING COTTONSEED**

Leo L. Holzenthal, New Orleans, Edward A. Gastrock, Metairie, and William T. Gentry, Jr., New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Sept. 18, 1962, Ser. No. 224,904
3 Claims. (Cl. 19—65)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for particularizing cottonseed comprising:

(*a*) a contoured housing having an inlet and an outlet end;

(*b*) a pair of adjacent rotors mounted in the contoured housing with their axes of rotation parallel;

(*c*) a plurality of radially-extending spikes secured to each rotor;

(*d*) means connected to the rotors for driving said rotors;

(*e*) a first combination of rectilinear side walls defining a first essentially box-like compartment with parallel facing side walls contiguous with and in communication with the inlet end of the contoured housing, said first box-like compartment being provided with a restricted feed orifice;

(*f*) a second combination of rectilinear walls defining a second essentially box-like compartment attached to and in communication with the outlet end of the contoured housing, said second box-like compartment forming an expansion chamber having at least two opposite side walls uniformly flared outward relative to one another in a direction away from the point of attachment to the contoured housing; and

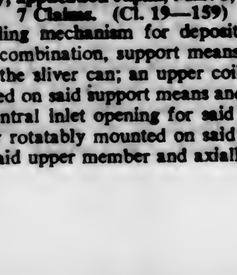
(*g*) a slanted rebound baffle attached to the second box-like compartment opposite the point of attachment of said second box-like compartment to the contoured housing and forming another rectilinear wall of said second box-like compartment, said baffle being disposed at an angle away from and outward relative to the plane of rotation of the rotors.

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**3,169,278**
**CARDING MACHINES**

Kunio Aoki, Higashi-Sumiyoshi-ku, Osaka, Japan, assignor to Daiwa Boseki Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Sept. 11, 1961, Ser. No. 137,082
Claims priority, application Japan, Sept. 12, 1960, 35/38,288; Oct. 1, 1960, 35/40,597; Aug. 1, 1961, 36/27,998
11 Claims. (Cl. 19—105)



1. A carding machine comprising a feed table and a feed roller disposed thereabove for feeding the material fibers, at least one licker-in provided adjacent said feed table, a carding cylinder disposed on the side of said licker-in opposite from said feed table with its periphery adjacent the periphery of the licker-in, an upper casing covering the upper part of said licker-in and a part of the upper part of the adjacently disposed carding cylinder, an air chamber enclosed with four walls provided below said licker-in, said air chamber being provided with an opening for the inflow of air in its wall nearest to the feed table, a perforated cylinder disposed below the carding cylinder at a point nearer to the licker-in, said perforated cylinder rotating in contiguity to said carding cylinder but being spaced at a definite interval from and out of engaging contact with said licker-in, said perforated cylinder having within it a suction compartment, said suction compartment opening at least at a point other than where said perforated cylinder and said carding cylinder come adjacent to each other, and the position of said perforated cylinder relative to said air chamber being such that said suction compartment within the perforated cylinder can draw the air contained in the air chamber.

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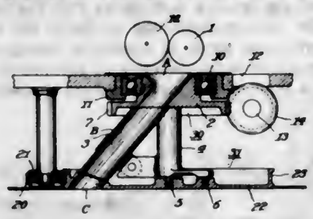
**3,169,279**
**COILER-GEAR MECHANISM**

Shozo Noda, Nishi-ku, Nagoya-shi, Japan, assignor to Howa Kogyo Kabushiki Kaisha, Nishikasugai-gun, Aichi-ken, Japan, a joint-stock company of Japan

Filed Feb. 27, 1962, Ser. No. 176,065
Claims priority, application Japan, Mar. 3, 1961, 36/6,921
7 Claims. (Cl. 19—159)

1. In a coiling mechanism for depositing sliver in a sliver can, in combination, support means located above the mouth of the sliver can; an upper coiler member rotatably mounted on said support means and provided with a generally central inlet opening for said sliver; a lower coiler member rotatably mounted on said support means coaxial with said upper member and axially spaced therebelow; first bearing means journaling said upper member to said support means; second bearing means axially spaced from said first bearing means journaling said lower member to said support means; coupling means interconnecting said members for joint rotation while permitting relative axial motion therebetween, said lower member being provided with a discharge opening outwardly of the axis of rotation of said members; guide means on one of said members interconnecting said openings for directing sliver from said inlet opening to said outlet opening; and drive means coupled with said upper member for rotating it about said axis.



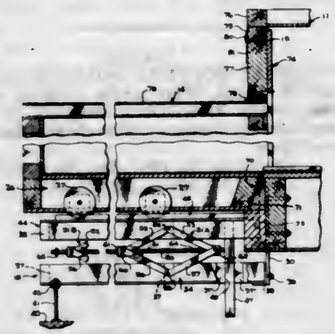


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**3,169,280**
**EXPANSIBLE HOUSE TRAILER**

Harry Lee Jarman, Anaheim, Calif. (12121 Adrian St., Apt. A, Garden Grove, Calif.), assignor of one-third to Vloden N. Cardner, Fullerton, Calif.

Filed Dec. 30, 1960, Ser. No. 79,677
3 Claims. (Cl. 20—2)



3. An expansible house trailer comprising a main section having a floor and at least one upright wall having an opening therein extending upwardly from the floor, a telescoping room section having a floor mounted on wheels on said main section floor for parallel supporting relationship therebetween, track rail means on the floor of the main section for supporting and guiding engagement with said room section, track rail extension means mounted adjacent the track rail means on the main section to form a coplanar continuation thereof whereby to support the room section as it is moved from the telescoped position in the main section through the opening in said wall to an extended parallel position on the outer side thereof, and means for lowering the track rail extension means to bring the room section floor coplanar with the main section floor.

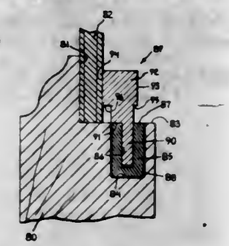
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**3,169,281**
**CONVERTIBLE DOOR OR DRAWER FRONT**

John W. Clements, Jr., N. 15th and F Sts., Richmond, Ind.

Filed Dec. 16, 1960, Ser. No. 76,213
7 Claims. (Cl. 20—15)

1. In a device of the class described, a boundary frame defining an opening therethrough, ledge means at the inner edge region of said frame providing a supporting surface substantially parallel with, but spaced from, the plane of one major face of said frame, a panel disposed within said frame and resting on said supporting surface to close said opening, the inner edge region of said frame being formed with socket means extending substantially parallel with said supporting surface, disposed between said supporting surface and said one major face and spaced from said supporting surface by a dimension at least equal to the edge thickness of said panel, and retainer means for securing said panel in place in said frame comprising a strip formed at one edge with a



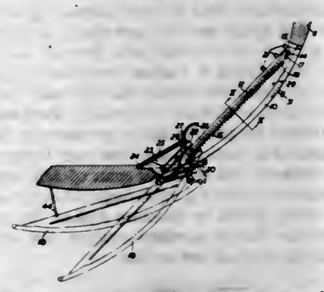
fin portion snugly received in said socket means and formed at its opposite edge with a head extending laterally in opposite directions to different degrees beyond the lateral dimensions of said fin portion to define shoulders generally perpendicular to the width of said fin portion and facing toward said fin portion, said strip being formed with an abutment having a face extending transversely relative to the lateral dimension of said fin portion and disposed between said shoulders and the distal end of said fin portion, said abutment face engaging said frame to maintain separation between said shoulders and said frame.

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**3,169,282**
**DOOR CONSTRUCTIONS**

Roy Charles Godwin, Ringwood, England, assignor to Vickers-Armstrong (Aircraft) Limited, London, England, a company of Great Britain

Filed July 10, 1962, Ser. No. 210,874
Claims priority, application Great Britain, July 19, 1961, 26,231/61
5 Claims. (Cl. 20—19)

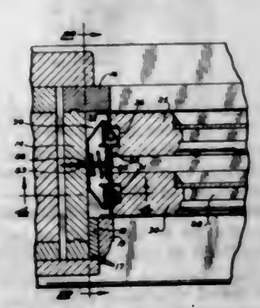


1. A door and supporting structure combination, comprising: a curved wall forming part of the fuselage of an aircraft, said wall having an exterior convex surface and having a relatively low portion located adjacent to an underside of said fuselage and formed with a door opening, a door having a closed position located in and substantially filling said opening, said door also having an open position located outside of said opening, guide means carried in part by said wall at said opening thereof and in part by said door for guiding said door for shifting, substantially planar downward movement from said closed position to an intermediate position between said closed and open positions, hinged carrier means carried by said wall in region of said opening thereof, and

connecting means carried in part by said door and in part by said hinged carrier means for connecting said door to said hinged carrier means when said door has been displaced from said closed position to said intermediate position, said hinged carrier means, when said door is thus connected thereto by said connecting means when said door reaches said intermediate position, supporting said door for swinging movement to said open position, said door in said open position being located closely adjacent to said underside of said fuselage.

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3,169,283
WINDOW CHANNEL STRUCTURE
Benedict R. Gerulis, 6517 37th Ave. N., Minneapolis 27, Minn.
Filed Aug. 29, 1963, Ser. No. 305,428
1 Claim. (Cl. 20—52)



A sash guide structure having in combination,

an elongated sash guide member comprising a pair of spaced channel portions having a connecting web therebetween and having extended frame portions at the remote sides thereof to engage the side walls of a window channel,

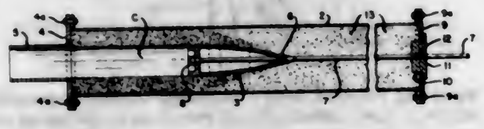
said channel portions being substantially rectangular in cross section, coplanar oppositely extending flange portions formed as transverse projections of the rear walls of said channel portions and having a span less than the span of said extended frame portions, and

a spring-like backing plate member extending longitudinally of said guide member overlying a substantial central portion of the rear side thereof, said plate member comprising a central longitudinal portion and side portions at either side thereof having a wing-like cross sectional relationship therewith, inwardly turned flinger-like flange portions at the free ends of said side portions, said free ends being spaced apart a distance less than the span of said coplanar flange portions whereby said finger-like flange portions in being spread by pressure against the back of said coplanar flange portions engage and embrace said flange portions under tension.

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3,169,284
MOLD FORMING APPARATUS AND METHOD
Loyal L. Johnston, Zelienople, Pa., assignor to Herman Pneumatic Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 31, 1962, Ser. No. 199,079
2 Claims. (Cl. 22—17)

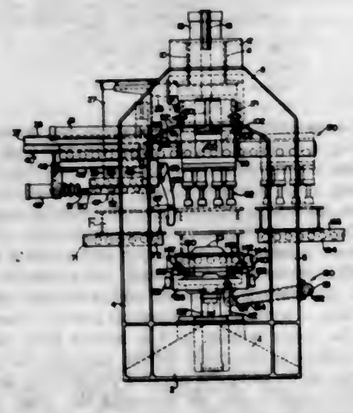
1. Mold forming apparatus comprising an elongated flask adapted to receive finely divided mold forming material, a tapered former and means for pulling the tapered former through the flask from the end of the flask toward which the former advances with the portion of relatively small transverse cross-sectional area of the former leading to form an elongated cavity in finely divided mold forming material in the flask and compact the mold forming material to form a mold for casting, a portion of the former following the leading portion having relatively great transverse cross-sectional area and also being tapered at such an angle that its surface is more nearly parallel to the axis of the former than the surface of the leading portion so that the leading portion of the former forms the cavity in the mold forming material and tends to somewhat advance the mold forming material in the direction of advance of the former to cause a flow of the mold forming material before it



is finally compacted to substantially uniformly distribute the mold forming material about the former and the following portion of the former compacts the thus distributed mold forming material, the length of the former being but a fraction of the length of the flask so that during at least the major portion of the travel of the former through the flask the mold being formed in the mold forming material by the former serves to guide the former, the pulling means extending freely through the leading portion of the former and being connected with the former at the portion thereof of greatest transverse cross-sectional area.

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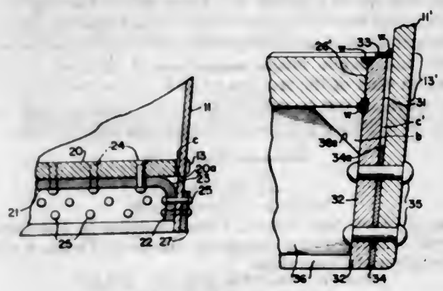
3,169,285
OVERHEAD SQUEEZE MOLDING MACHINE
Edmond K. Hatch, Warrensville Heights, and Leon F. Miller, Rocky River, Ohio, assignors to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 24, 1961, Ser. No. 133,700
19 Claims. (Cl. 22—25)



11. A foundry molding machine comprising an upstanding frame, a squeeze ram assembly fixedly mounted on the upper portion of such frame, a horizontally movable squeeze head, means to shuttle said squeeze head to a position vertically beneath said ram for vertical movement therewith whereby said squeeze head will be operative to squeeze sand within a mold box vertically positioned therebeneath, and means to maintain said head beneath said ram during such vertical movement.



3,169,286
LADLE CONSTRUCTION
Harry L. McFeaters and Robert C. Layman, New Castle, Arthur O. Dunn, New Wilmington, Richard P. Krause, Butler, and Jack Grant, New Castle, Pa., assignors to Pennsylvania Engineering Corporation, New Castle, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1962, Ser. No. 171,880
8 Claims. (Cl. 22—81)

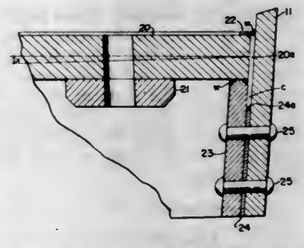


1. An improved metal bottom construction for a teeming ladle vessel that is subjected to wide temperature changes and non-uniform heat application, and that has a shell-like vertically-extending enclosing metal side wall terminating at its upper end in a loading opening and near its bottom end in a closure zone; wherein the improved bottom structure comprises, a substantially transversely-flat and circular metal bottom plate member for supporting molten metal within the vessel, said bottom plate member having an area and configuration defined by its outermost edges similar to but smaller than the transverse area of the closure zone, support means of metal construction secured to said bottom plate member and projecting radially-outwardly and vertically-downwardly therefrom, said support means having a yieldable bridging connector portion that extends vertically-downwardly from said bottom plate member and that terminates in an underpositioned vertical flange portion, said bridging connector portion normally positioning said bottom plate member in a substantially horizontally extending and an upwardly-spaced relation above the bottom end of the side wall and with outermost edges of said bottom plate member in a radially-inwardly spaced clearance-defining relation with the side wall, said vertical flange portion being positioned vertically along the inner side of the side wall, metal means rigidly-securing said vertical flange portion in an effective heat-conducting surface relation therealong to the inside of the side wall towards its bottom end and in such a manner as to close-off the clearance spacing between the outermost edges of said bottom plate member and the side wall below said bottom plate member, and said support means reinforcing the side wall beneath said bottom plate member and retaining said bottom plate member in a relatively free expansible and flexible relation with respect to the side wall, whereby said bottom plate member may expand radially-outwardly and centrally-upwardly within the closure zone.

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3,169,287
LADLE BOTTOM CONSTRUCTION
Harry L. McFeaters and Robert C. Layman, New Castle, Arthur O. Dunn, New Wilmington, Richard P. Krause, Butler, and Jack Grant, New Castle, Pa., assignors to Pennsylvania Engineering Corporation, New Castle, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1962, Ser. No. 171,924
3 Claims. (Cl. 22—81)

1. An improved metal bottom construction of the character shown and described for a teeming ladle vessel that is subjected to temperature variations and deformations due to its use for receiving and discharging hot molten metal and that has a shell-like vertically-extending rounded enclosing metal side wall of substantially frustoconical shape terminating at its upper end in an opening and near its bottom end in a closure zone; wherein the bottom construction comprises, a circular and horizontally-extending metal bottom plate member for supporting molten metal within the vessel, said bottom plate member having an area and configuration defined by its outer edges similar to but smaller than the transverse area of the closure zone, a discharge nozzle extending through said bottom plate member adjacent a radially outer edge portion thereof for discharging molten metal therefrom, a support assembly of metal construction having arc-shaped vertically-extending metal flange members, said metal flange members having their upper edge portions weld-secured along the full extent of their thicknesses to the underside of said bottom plate member in vertical alignment with and along the outer peripheral edge thereof and providing a bridging connector portion with the outer peripheral edge portions of said bottom plate member within the closure zone that is radially-inwardly-spaced from the side wall of the vessel, said support assembly of metal flange members supporting



said bottom plate member in an upwardly-centrally-offset relation within the closure zone of the vessel in such a manner that said bottom plate member declines radially-outwardly from its upwardly-offset central area towards its outer peripheral edge portions past said discharge nozzle, said flange members being in an annular relationship about the inside of the side wall and sloping vertically-downwardly in a spaced relation therealong from said bottom plate member to the bottom end of the side wall, a continuous annular metal spacing member extending from a downwardly-spaced position with respect to said bottom plate member vertically-downwardly in abutment between and along the inside of the side wall and the outer side of said metal flange members along a relatively large heat conducting surface area below said bottom plate member to close-off the construction below said connector portion, and a reinforcing metal structure having transversely-spaced-apart members weld-secured to and along the underside of the bottom plate member in such a manner as to provide for central-upward arching of said bottom plate member with respect to said support assembly when heat is imparted thereto, whereby the upwardly centrally-offset relation and radial-outer declination of said bottom plate member is increased with the application of heat thereto.

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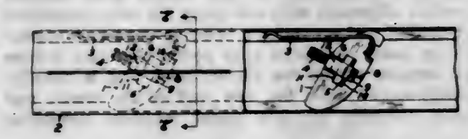
3,169,288
COATINGS FOR PATTERNS EMPLOYED IN CAVITYLESS CASTING PROCESS
John L. Dewey, Pleasant Hill, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 15, 1961, Ser. No. 157,245
2 Claims. (Cl. 22—195)

1. In a process for casting of metals which comprises making a pattern mold with destructible patterns of foamed, thermoplastic resinous materials with surfaces

corresponding to the desired casting embedded in said mold, and the pouring of molten metal into said mold whereby the foam pattern is destroyed and a metal casting is obtained, the improvement which comprises depositing on the surface of the pattern a coating of an aqueous suspension of an admixture of at least one pulverulent inorganic refractory material and a binding agent therefor and causing the removal of water from the deposited wet coating whereby to provide the pattern with a smooth, dry, adherent, cementitious coating.

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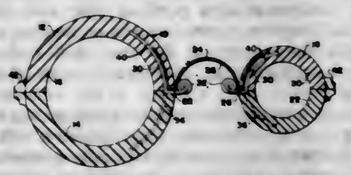
3,169,289
MOLDING FASTENER
Warren L. Trafton, Grosse Pointe, Mich., assignor to United-Carr Incorporated, a corporation of Delaware
Filed May 10, 1961, Ser. No. 109,118
6 Claims. (Cl. 24—73)



1. A fastening device for assembly with a hollow molding and the like, said fastening device comprising a cross plate for insertion within said molding, a fastener shank assembled with said cross plate and pivot means provided between the cross plate and the fastener shank whereby said shank may be moved from a plane substantially parallel with said plate and within the molding to a position extending normal to the plane of said plate and exposed beyond the molding.

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3,169,290
POLE CLIP
Harold F. Snodgrass, 1125 Topeka St., Emporia, Kans.
Filed May 31, 1963, Ser. No. 284,625
7 Claims. (Cl. 24—81)



1. A clip for releasably securing the disassembled sections of a sectional fishing pole in a compact parallel relationship comprising, a first relatively large molded plastic split tubular shaped clamp element, a second relatively small molded plastic split tubular shaped clamp element equal in length to said first clamp element, a bridging means for securing said first and second clamp elements in spaced parallel relationship, said bridging means comprised of a metal element of a length equal to said clamp elements and having a center arcuate shaped portion, relatively short oppositely extending flat portions joined to the ends of said arcuate portion, and arcuate end portions joined to the extending ends of said oppositely extending portions, one of said arcuate end portions being embedded in one of the sections of said first plastic split tubular clamp elements, and the other of said arcuate end portions embedded in one of the sections of said second plastic split tubular clamp element, spring biased hinge means for each of said first and second split tubular clamp elements, each hinge means comprised of a first relatively large coil spring having opposed terminal legs positioned with its longitudinal axis parallel and spaced from the longitudinal axis of said split tubular clamp element, a second relatively small coil spring having opposed terminal legs snugly disposed within said first coil spring, the opposite legs of each respective coil spring being embedded in opposed sections of the tubular split plastic clamp elements respectively, the legs of said springs arranged relative to said springs and clamp elements so that upon opening the sections of the clamp element the diameter of the outer coil spring contracts and the diameter of the outer coil spring expands, said hinge means exerting force to maintain said clamp elements in closed position, handle means on each of said clamp elements to facilitate opening same said handle means comprised of adjacent protrusions on each of the sections of said clamp elements, said clip when in use to releasably secure disassembled sections of a fishing pole in a compact parallel relation.

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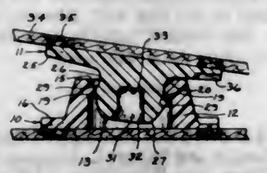
3,169,291
STRAP CONNECTOR
John Stachori, New Britain, Conn., assignor to The Capewell Manufacturing Company, Hartford, Conn., a corporation of Connecticut
Filed Oct. 26, 1962, Ser. No. 233,321
8 Claims. (Cl. 24—196)



7. An adjustable strap connector comprising: a frame having side and end members defining a strap-receiving opening, a gripping bar disposed in said opening and having its ends mounted on the side members for sliding and limited pivotal movement, a strap adjustably threaded around said bar and between said bar and one of the end members to be clamped therebetween upon tension loading of the strap, and a strap tensioner comprising first and second resilient side walls positioned in said opening with one of the walls engaging a transverse portion of said strap disposed on said gripping member along a path offset from the plane of said frame to urge said gripping bar toward said one end member to thereby clamp said strap therebetween regardless of the loading on said strap, the corners of the portion of the tensioner engaging said strap being contoured to present smoothly curved surfaces to said strap.

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3,169,292
PLASTIC SNAP FASTENER
Paul E. Fenton, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed June 28, 1962, Ser. No. 205,992
2 Claims. (Cl. 24—213)



1. In a snap fastener in which the socket and stud elements each consist of a single piece of pliable plastic material, wherein said stud element comprises

(*a*) a substantially flat base by which the element may be attached to supporting material;

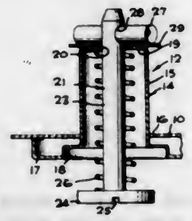
(*b*) a neck of solid cross-section projecting centrally from said base and terminating in



(*c*) a head of larger outside diameter than the neck, said head joining said neck by a beveled surface and having an axially extending recess through the major portion of the head and opening through the end of the stud, said recess being of such size that a portion of the stud head wall surrounding said recess may collapse inwardly to permit easy action when the stud head is being engaged or disengaged from the socket, the inner surfaces of the sidewalls of said recess tapering inwardly from the end of the stud to the bottom of said recess.

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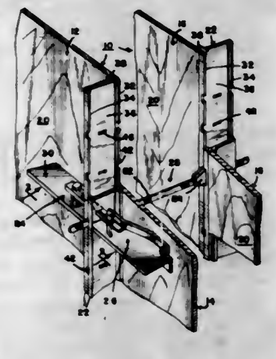
3,169,293
QUICK RELEASE FASTENER STRUCTURE
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif.
Filed July 16, 1962, Ser. No. 210,170
2 Claims. (Cl. 24—221)



1. A quick release fastener socket for use with a coacting spring pressed quick release stud which has a latching cross piece and is mounted for relative rotary movement about an axis and relative axial movement therealong, said socket including a tubular body having an axially inner end and an axially outer end, said body having external threads near said axially outer end for engaging mating threads in a carrier part to secure the body therein, said body containing an external groove of undercut cross section extending axially through and interrupting said threads, an axially elongated key carried in said groove in fixed position relative thereto and drivable axially therealong to cut into the threads of said carrier part to lock the socket against rotary movement in response to rotary forces exerted by said stud, said body containing an inner passage extending axially thereinto from essentially said axially outer end of the body and defined by a substantially cylindrical side wall surface having a portion located directly radially inwardly opposite said external threads, said body having a portion at said axially inner end thereof projecting axially inwardly beyond said threads and presenting an unthreaded external surface axially inwardly beyond said threads, said body forming a generally transverse wall structure at said axially inner end of the body and axially inwardly beyond said threads and extending radially inwardly beyond the diameter of said substantially cylindrical side wall surface of said passage, said transverse wall structure containing stud passing notches through which two ends of said cross piece may pass axially from an axially outer side of the wall structure to its axially inner side, said wall structure having camming ramps at said axially inner side engageable by said ends of the cross piece to cam said stud and socket axially together in response to rotary movement of said stud relative to the socket, said wall structure having locking notches at the ends of said ramps for receiving said two ends of the cross piece to retain said stud and socket in fully latched condition, said stud passing notches having radially outer portions continuing radially outwardly beyond the diameter of said inner passage to said unthreaded external surface of the body and forming interruptions in said unthreaded surface axially inwardly beyond said external threads and beyond said groove and key.

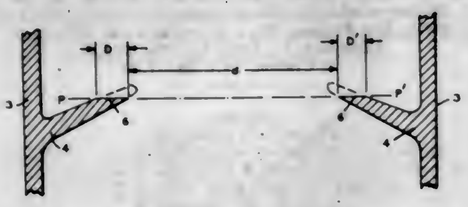
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3,169,294
CONCRETE WALL FORM PANEL UNITS WITH ATTACHED CONNECTING MEANS THEREFOR
Lawrence G. Bonin, Chicago, and William G. Smith, Streamwood, Elgin, Ill., assignors to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Oct. 11, 1963, Ser. No. 315,466
6 Claims. (Cl. 25—131)



1. In a concrete wall form structure, in combination, a pair of aligned contiguous prefabricated similar panel units disposed in edge-to-edge upstanding relationship, each panel unit embodying a pair of opposed marginal frame members, a panel facing bridging the distance between said frame members and secured at its ends to the latter, and a horizontal crossbar also bridging the distance between the frame members and secured at its ends to the latter, each panel unit having one of its marginal frame members abutting the adjacent marginal frame member of the other panel unit throughout the length thereof, there being a hole in each of the abutting frame members at substantially the same height in the wall form structure and a small distance away from the associated crossbar whereby the two holes are in registry, an elongated bolt positioned adjacent to and in parallel relation with the crossbar of one panel unit, slidable lengthwise in a path which is in alignment with the registering holes, and movable bodily between a retracted rear position wherein the bolt is moved within the confines of said one panel unit and an advanced position wherein one end portion of the bolt is projected through both of the registering holes and extends into the confines of the other panel unit, said bolt being provided with a first elongated slot in the rear end portion thereof, a first anchor post mounted on the crossbar of said one panel unit and projecting through said slot for guiding the rear end portion of the bolt in said path, the forward end portion of the bolt being guided in the hole in said one panel unit, a shoulder on the bolt engageable with the marginal frame member of said one panel unit for establishing the forward position of the bolt, there being a second elongated slot in the forward end portion of the bolt, a second anchor post mounted on the crossbar of the other panel unit, a wedge-supporting arm, means including a lost-motion connection pivotally connecting the proximate end of said arm to said anchor post, a flat tapered wedge pivotally mounted on the distal end of the arm, said arm being movable between a retracted position wherein the wedge is remote from said projected one end portion of the bolt and an advanced position wherein the wedge is projected into the slot in binding engagement with the adjacent frame member and with one end of the second slot for drawing the panel units hard against each other.

3,169,295
PRECISION TILE SETTER
Stanley F. Paspy, Zanesville, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 17, 1962, Ser. No. 166,757
11 Claims. (Cl. 25—153)

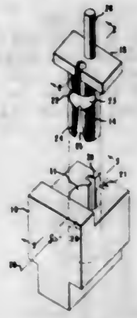


1. In a refractory ceramic ware setter having a generally horizontally disposed base, at least two generally opposed vertical upright members spaced apart from each other, in contact with and supported by said base, said upright members each carrying ceramic ware supporting means corresponding to and complementing generally opposed ceramic ware supporting means carried by an opposed upright member, the improvement in combination therewith of two opposed, corresponding, complementary ware supporting means, having ceramic ware supporting surfaces, characterized by a precision relationship between said means such that any given point on said ware supporting surfaces of either of said ware supporting means varies from a reference plane described by any other three points taken on the ware supporting surfaces of said two means, at least one each of said three points occurring respectively on the ware supporting surface of each of said means, by less than one percent of the shortest distance between said two opposed ware supporting means.

8. In the method of manufacture of a refractory ceramic ware setter having a generally horizontally disposed base, at least two generally opposed vertical upright members spaced apart from each other, in contact with and supported by said base, said upright members each carrying ceramic ware supporting means corresponding to and complementing generally opposed ceramic ware supporting means carried by an opposed upright member, the manufacturing improvement step comprising forming a pair of said complementing generally opposed ceramic ware supporting means to provide them respectively with ceramic ware supporting surfaces having a precision relationship between same characterized by any given point on said ware supporting surfaces of either of said ware supporting means, varying from a reference plane, described by any other three points taken on the ware supporting surfaces of said two means, at least one each of said three points occurring respectively on the ware supporting surface of each of said means, by less than 1% of the shortest distance between said two opposed ware supporting means.

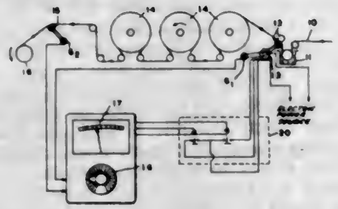
3,169,296
APPARATUS FOR FLUID TREATMENT OF SYNTHETIC FILAMENTS
Francis Joseph Clendening, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,461
6 Claims. (Cl. 28—1)

1. In an apparatus for treating synthetic filaments with hot gas or steam to introduce a curvilinear crimp with a bulking jet having passages for a filamentary strand passing through the bulking jet, a chamber for treating the strand during passage through the bulking jet, and means for introducing treating fluid into the chamber to impinge against the filaments; means for feeding a strand into the bulking jet for treatment and conveyor means having a foraminous surface for receiving the treated strand from the bulking jet, separating the strand from treating fluid and conveying the strand away; the improvements comprising a bulking jet having a body with a recess, a removable core which mates within the body recess and extends through the body, guide means for positioning the core within the body, locking means for holding the core in operating position within the body, strand passages and a treating chamber cut into the surface of the core, a string-up slot through the body into



the body recess located so as to be sealed from said passages and chamber when the core is in operating position, said string-up slot, passages and chamber being opened by removal of the core from the body to provide for string up with a traveling endless strand, an orifice duct in the body for directing treating fluid into said chamber to intersect the direction of strand travel into the chamber at an angle of 10° to 70°, and a tunnel located on the end of the core for guiding the treated strand onto the foraminous surface of said conveyor means.

3,169,297
STRETCH-SHRINK INDICATING APPARATUS
Robert C. Strandberg, Greensboro, N.C., assignor to Strandberg Engineering Laboratories, Inc., Greensboro, N.C., a corporation of North Carolina
Filed Dec. 21, 1961, Ser. No. 161,082
7 Claims. (Cl. 28—28)



1. The combination of a textile machine for processing a continuously running web and the like, said machine including web sizing means, web drying means and web take-up means, and an electrical stretch-shrink indicating and control apparatus comprising a first voltage generator driven by the running movement of the web at a point between said sizing means and said drying means, a second voltage generator driven by the running movement of the web at a point between said drying means and said take-up means, the voltage output of said generators being directly proportional to their respective speeds, first and second logarithmic function producing means connected respectively with said first and second voltage generators for converting the output voltages of said voltage generators to logarithmic functions thereof, a single coil meter in circuit with said first and second logarithmic function producing means for measuring the difference in their voltage output, an electric motor operated variable speed drive for imparting running movement to said web, and automatic control means in circuit with said motor and with said first and second logarithmic function producing means and responsive to variations in the difference in voltage output of said first and second logarithmic function producing means for maintaining the stretch-shrink factor of the web within predetermined limits.

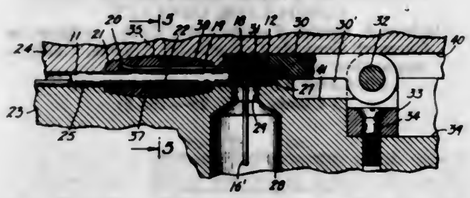


3,169,298
METHOD OF PRODUCING LIFE SAVING APPAREL
Jiro Tachibana, 194 Azuma-cho, Toyohashi-shi, Japan
Filed Feb. 1, 1961, Ser. No. 86,420
Claims priority, application Japan, June 14, 1960, 35/28,048; Nov. 22, 1960, 35/45,878
3 Claims. (Cl. 28—75)



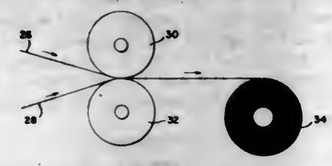
1. A method of producing a textile fabric suitable for use in making life saving articles comprising the steps of
depositing on raw kapok fiber an aqueous silicone resin solution in an amount about equal to the weight of the kapok;
drying said treated kapok;
curing said dried and treated kapok at a high temperature for a very short period of time;
separately depositing on rayon staple fiber a waterproof and oil-proof resin of an amount equal in weight to somewhat more than the weight of the staple fiber;
mixing said treated kapok and rayon staple in weight proportions of the order of 70% kapok to 30% staple;
forming slivers of said mixture; and,
knitting said slivers as woof yarn with non-treated warp yarn to form a knitted fabric.

3,169,299
METHOD OF PRODUCING WEEDLESS FISH HOOKS
Louis H. Morin, Bronx, N.Y. (125 Beechwood Ave., New Rochelle, N.Y.), assignor of one-fourth to Madeline F. McGill, Denver, Colo., and one-fourth to J. R. Hanna, Bronxville, N.Y.
Filed May 14, 1963, Ser. No. 280,361
4 Claims. (Cl. 29—9)



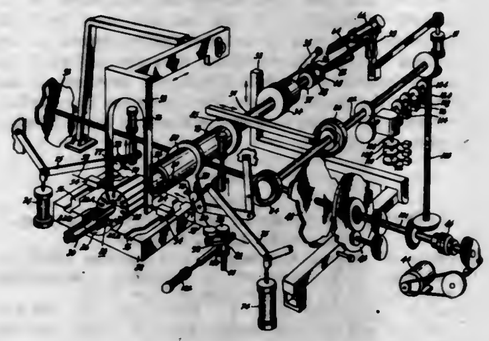
1. The method of producing weedless fish hooks, the fish hook comprising an elongated shank having a reversely curved end portion terminating in a barb end, the other end portion of the shank terminating in an eye and a weedless guard having an offset end, with the remainder of said guard extending from the eye to said barb end, which consists in supporting the offset end of said guard in intimate contact with said shank and part of the eye, and pressure molding a plastic body about that part of the shank having the major portion of the offset end of the guard in intimate contact therewith in securely bonding said offset end to the shank.

3,169,300
FOIL ROLL SYSTEM
Garrett S. Nagle, Jackson Heights, N.Y., and Joe E. Roberson, Richmond, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Original application June 18, 1958, Ser. No. 742,847, now Patent No. 3,049,229, dated Aug. 14, 1962. Divided and this application Nov. 28, 1961, Ser. No. 160,967
2 Claims. (Cl. 29—18)



1. A process for producing rolls of a composite double layer aluminum foil for household and related uses comprising the steps of: passing two strips of aluminum foil while in intimate contact with each other through a rolling mill to form a first roll of doubled aluminum foil, said strips tending to cling together as a result of said rolling mill operation, separating said strips forming said doubled foil in the course of rewinding said first roll into a second roll of double layer aluminum foil, and annealing said double layer aluminum strip while wound in said second roll, said prior step of separating said strips of aluminum foil preventing said strips from sticking during annealing, and respooling said double layer of aluminum foil from said second roll into smaller rolls of easily separable composite double layer aluminum foil.

3,169,301
ARMATURE WINDING AND COMMUTATOR CONNECTING MACHINE
William A. Fletcher, Daleville, and Max E. Todd, Windfall, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Aug. 2, 1954, Ser. No. 447,266, now Patent No. 3,002,259, dated Oct. 3, 1961. Divided and this application June 16, 1961, Ser. No. 126,407
8 Claims. (Cl. 29—33)

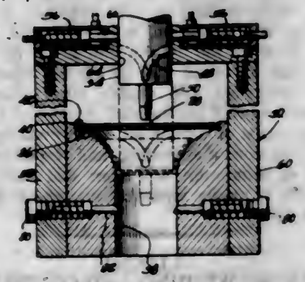


1. A machine for winding coils of wire on an armature assembly which includes a shaft, a slotted core and a commutator and for inserting conductors into the slots of the commutator comprising, means for supporting said arma-

ture assembly along a fixed longitudinal axis, means for rotating said assembly about said axis in opposite directions, wire guiding means movable substantially parallel to said longitudinal axis for depositing wire in at least one slot of said core when said assembly is maintained in a fixed rotative position, means for reciprocating said wire guiding means, said means for rotating being operable to rotate said armature assembly a predetermined amount when said wire guiding means reaches an end of said armature core, said means for rotating said assembly and said means for reciprocating said wire guiding means being operated in synchronism whereby said wire guiding means moves back and forth while said armature assembly is angularly oscillated to apply coils of wire to circumferentially spaced slots of said core, a gripping means, means for moving said gripping means, said gripping means being operated in synchronism with operation of said means for reciprocating said wire guiding means for gripping a portion of said wire when a predetermined number of coils of wire have been applied to said armature core, a staking means for driving said wire out of said gripping means and into a commutator slot and for substantially simultaneously severing said wire, and means for driving said staking means.

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**3,169,302**
**METHOD AND APPARATUS FOR FORMING SLEEVE BEARINGS**
Miroslaw R. Tethal, 331 N. 2nd St., Elsie, Mich.
Filed June 20, 1963, Ser. No. 289,236
7 Claims. (Cl. 29—149.5)



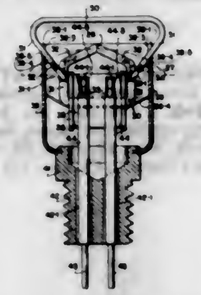
6. In a method of manufacturing from a flat, circular workpiece a sleeve-bushing having an internal bearing surface provided with helical oil-groove structure, the steps comprising: providing a mandril for insertion into a female die-block structure, said mandril having helically-shaped, outwardly protruding configurations on the sides thereof substantially complementary to the desired oil-groove structure; positioning the workpiece for cooperative engagement of the mandril and die-block; forcibly pressing with the mandril the workpiece into the die-block to cause the workpiece to wrap itself about the mandril including the helically-shaped protrusions; and retracting the mandril from the workpiece in a helical-rotational movement to preserve the thus formed helical oil-groove structures.

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**3,169,303**
**METHOD OF MAKING MAGNETIC RECORD TRANSDUCING HEADS**
Helman W. Koren, Huntington, and Ignatius Michalko, Oakdale, N.Y., assignors to Sanotone Corporation, Elmsford, N.Y., a corporation of New York
Original application Nov. 21, 1957, Ser. No. 697,912. Divided and this application Apr. 26, 1961, Ser. No. 105,647
2 Claims. (Cl. 29—155.5)

1. In the production of a magnetic record transducing head comprising a casing with an open casing face and holding in its casing interior a magnetic core loop having two confronting core sections with one set of confronting pole faces separated by a transducing core gap extending transversely to a flat surface of a magnetic record medium moving past one edge of said core gap exposed along said casing face and an opposite set of confronting pole faces at the opposite ends of said two core sections held in the deeper casing interior,

the procedure comprising assembling the two core sections and their windings into the core loop which is interlinked with said windings,



clamping the two so-assembled core sections across their two sets of substantially plane confronting pole faces by an elongated clamping spring having an intermediate spring region overlying the exposed edge of said transducing gap and having two opposite spring grip ends embracing middle portions of the two assembled core sections and thereby exerting on said two sets of confronting pole faces pressure forces solely in a direction perpendicular to each of said two respective sets of pole faces,

inserting the so clamped assembled core loop into the casing interior and bringing the opposite end regions of said spring into aligning engagement with aligning sidewall portions of said casing to fix said core loop in a predetermined aligned position relative to said casing, while leaving said intermediate spring region outside said casing,

filling the interior space of said casing with said assembled core loop and said spring end region held therein with a fluid resin body and solidifying the resin body in said casing to affix said core loop in said aligned position within said casing,

thereafter removing said intermediate spring region together with excess of solidified resin and excess of adjacent casing sidewalls and forming along the exposed solidified resin continuous smooth guide surface along which the opposite core portions having said one set of pole faces are exposed to engagement with the moving recording medium.

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**3,169,304**
**METHOD OF FORMING AN OHMIC SEMICONDUCTOR CONTACT**
Herbert J. Gould, Temple City, Calif., assignor to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed June 22, 1961, Ser. No. 118,944
2 Claims. (Cl. 29—155.5)

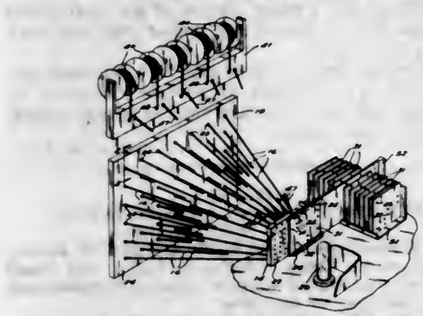


1. The method of forming a substantially ohmic contact on a surface of p-type silicon, said method comprising contacting the surface with an aqueous solution containing a reducible nickel salt, an alkali metal hypophosphite and a source of boron atoms to deposit simultaneously on said surface a layer of metallic nickel and relatively minor proportions of phosphorus atoms and boron atoms, the concentration of the boron source in the solution being sufficient that the deposited boron atoms compensate electrically the deposited phosphorus atoms.



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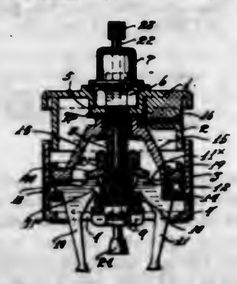
**3,169,305**
**CABLE HARNESS ASSEMBLY APPARATUS**
Edward W. Gray, R.R. 3 Bucyrus Road, Galion, Ohio
Filed Sept. 25, 1963, Ser. No. 311,434
11 Claims. (Cl. 29—203)



1. Apparatus for use in assembling an electrical wiring harness comprising a form board having front and rear faces, a plurality of hollow tubular pins extending from the front face of said form board, said pins being arranged in an array whereby a selective pattern designates the pattern for assembling an individual wire of the harness on said form board, a plurality of elongated flexible light conductors, a light source, each of said conductors having one end extending adjacent said light source, mask means to selectively control the admission of light to selected ones of said conductors, each of said conductors extending toward the rear face of said form board and having its other end positioned at a pin on said form board whereby the pattern of light admitted to said conductors is displayed on the pins on said form board.

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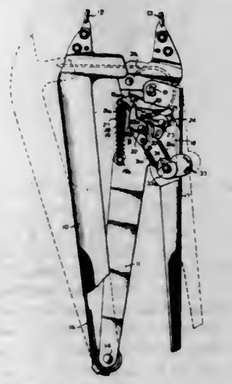
**3,169,306**
**DEVICE FOR APPLYING AND REMOVING WATCH CRYSTALS**
Jerome Shiffman, New York, N.Y., assignor to Standard Unbreakable Watch Crystals, Inc., Bronx, N.Y., a corporation of New York
Filed Jan. 14, 1963, Ser. No. 251,087
2 Claims. (Cl. 29—210)



1. A device for applying and removing watch crystals with respect to watches, comprising a pair of cup-like casing members in telescopic relation, one being an upper cup member, and the second being a lower cup member having a base wall, a threaded shaft extending through an axial opening in the upper cup and fixedly held by the lower cup base wall, the upper cup member being threaded on said shaft, an annularly channeled member carried by said shaft above the base wall of the lower cup, said base wall being formed with a plurality of radial passages, a plurality of gripping fingers movable in said passages, each finger having two oppositely directed nose portions, one of said nose portions being received in the channel of said annularly channeled member and adapted for rocking motion therein, and means surrounding said shaft and carried by the upper cup member and engaging the outermost of said nose projections of the gripping fingers, said last named means being adapted to rock the fingers in accordance with the rotation of said upper cup member.

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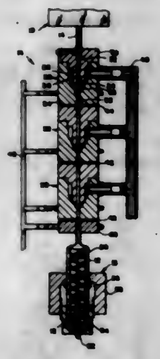
**3,169,307**
**TOOLS FOR HANDLING SPLIT RETAINING RINGS**
John D. Langwell, Freeport, N.Y., assignor to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York
Filed Nov. 1, 1962, Ser. No. 234,767
14 Claims. (Cl. 29—229)



1. A pliers-type tool for handling split spring retaining rings requiring radial deformation in their assembly and disassembly comprising, in combination, first and second elongated lever arms having corresponding tip ends terminating in working points and being pivotally connected to one another at their extreme opposite ends, means operatively connected to and extending between said arms adjacent their tip ends for imparting relative angular motion to said arms and thereby their working points against the spring tension of a ring to which the working points are coupled developing both during deformation of and while releasing said ring, a third lever arm pivotally connected to said second lever arm for angular motion with respect thereto, and thereby to said first arm about an axis disposed adjacent the tip end of said second arm, means biasing said first, second and third arms to normal angular positions with respect to one another wherein said working points are normally positioned a predetermined distance from one another and said third arm extends in a substantial parallelism with said first arm, the pivoted end of said first arm and the corresponding free end of said third arm being shaped as handles adapted for opening and closing movement with respect to one another, pawl and ratchet means operatively mounted on said second arm adjacent its tip end for actuating said motion-impartnig means and thereby said working tips with a step-by-step motion, means interrelating the motion of said third arm with that of said pawl and ratchet means in such manner that a succession of closing and opening movements of the handle ends of the first and third arms effects actuation of said pawl and ratchet means and thereby step-by-step motion of said working points as aforesaid in one or the opposite direction, and means carried by one of said arms for selectively determining

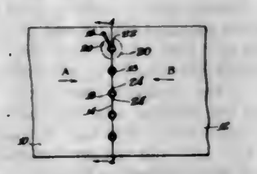
the direction of relative step-by-step angular motion imparted to said working points with respect to one another as aforesaid.

3,169,308
METHOD FOR HANDLING SMALL ARTICLES
Leo Gorsn, Jr., Madison Heights, Mich., assignor, by mesne assignments, to Avis Industrial Corporation, Detroit, Mich., a corporation of Delaware
Filed July 20, 1959, Ser. No. 828,143
9 Claims. (Cl. 29—429)



2. A method of feeding coil springs from a coil spring forming machine into products adapted to utilize one or more of said coil springs, comprising the steps of directing a series of axially aligned coil springs from said machine to a relatively long tube, transporting said tube to a spring loading station for said product, positioning a product in a spring receiving position at said loading station, providing communication between one end of said tube and the receiving portion of said product, releasing a coil spring for passage to said product and accelerating movement of the released coil spring until loaded into said product, replacing the spring loaded product with an unloaded product, and continuously repeating the cycle of loading a coil spring into an unloaded product until said tube is empty.

3,169,309
METHOD FOR JOINING SHEET METAL
Robert H. Grotnes, East Moline, Ill., assignor to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
Filed Sept. 18, 1961, Ser. No. 138,949
7 Claims. (Cl. 29—471.7)



1. A method of joining two abutted pieces of relatively thin sheet metal which comprises the steps of assembling said pieces side-by-side in contact with each other, maintaining said pieces butted against each other, applying a torch to burn and melt a series of holes along the line of contact through both of said butted pieces whereby said metal of said sheets around said holes is momentarily melted and tacked along said butted edges adjacent said holes, and filling said holes with weld metal which simultaneously flows into and seals the joint between said butted edges while they are held securely together by the tacking to form a strong joint between said pieces.

3,169,310
VITREOUS ENAMEL COATINGS
Francis E. Gibson, Lansing, Ill., and Louis McDaniel, Hammond, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed June 1, 1959, Ser. No. 817,030
5 Claims. (Cl. 29—527)

3. A method for producing a floor plate with scattered enamel areas thereon, said method comprising:
hot-rolling a mild steel floor plate having a surface of raised scattered bosses;
forming a tight, light blue oxide coating on said bosses;
roll-coating only a major portion of the area of said bosses with an enamel slip applied atop said tight, light blue oxide;
and thereafter firing the floor plate at an elevated temperature in a controlled, oxygen-free atmosphere for a time sufficient to form a vitreous enamel coating fused to said bosses.

3,169,311
METHOD OF MAKING A DISH-SHAPED ANTENNA REFLECTOR
Bernard I. Small, San Diego, Calif., and Jack H. Jensen, 341 Westwind Drive, El Cajon, Calif.; said Small assignor to the United States of America as represented by the Secretary of the Navy
Filed June 28, 1961, Ser. No. 120,450
7 Claims. (Cl. 29—527)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A method of forming a dish-shaped antenna reflector having a predetermined concave reflector curvature, comprising shaping a plastic material for providing a concave surface curvature roughly corresponding to but deeper than said predetermined reflector curvature, building-up said concavely shaped surface to a curvature shallower than said predetermined reflector curvature by applying thereto a coating of a settable plasticized material, permitting said material to partially set, shaping said partially set material for providing said predetermined reflector curvature, and metalizing said finally shaped surface.

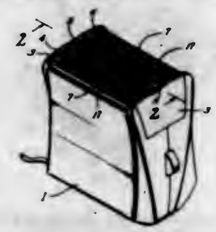
3,169,312
GUARD FOR NAIL CLIPPER
Charles H. Fink, 2304 N. Main St., Midland, Tex.
Filed Mar. 25, 1963, Ser. No. 267,546
4 Claims. (Cl. 30—28)



1. For mounting on a nail clipper having coextensive upper and lower resilient jaw members secured at one end and flexibly biased apart for the remainder of their length, cooperating inwardly directed cutting edges on the free ends of the jaw members, a pivot pin through aligned openings in said jaws, and a cam lever for effecting a closing of the jaw members for the severance of a portion of a nail positioned between the cutting edges; a nail guard for retaining the cut nails within the space between the jaw members rearward of the cutting edges, said guard including two spaced side panels, a bottom panel connecting said side panels and spacing them from each other a distance substantially equal to the width of the jaw members in the vicinity of the pivot pin, inwardly extending detents on said side panels, the distance between the planes of the inner ends of the detents being slightly less than the aforementioned jaw member width, said detents being spaced above the bottom panel a distance so as to accommodate the thickness of the lower jaw member, said guard possessing sufficient flexibility so as to enable a slight outward flexing of the side panels sufficient to allow the positioning of the lower jaw member between the detents and the bottom panel, and means for pivotally mounting said guard on the nail clipper for movement between a first position wherein said side panels are positioned on opposite sides of the space between the jaw members so as to enclose this space, and a second position wherein said guard is orientated below the lower jaw so as to open the space between the jaws, said means for pivotally mounting said guard consisting of a lug integral with the rearward edge of each side panel, said lugs being bendable so as to extend inwardly toward each other thereby enabling a mounting of the guard on an assembled nail clipper and providing a barrier for retaining the cut nails within the enclosed space.



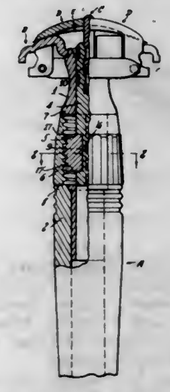
3,169,313
FLOATING CUTTER HOUSING FOR ELECTRIC RAZORS
Joseph B. King, 3423 Ozark, Houston, Tex.
Filed May 13, 1963, Ser. No. 279,888
2 Claims. (Cl. 30—43.92)



1. In an electric shaving mechanism, a housing, a cutter reciprocating mechanism in said housing, said mechanism comprising outer and inner cutter members, a cutter member base detachably mounted on said housing, an outer cutter member mounted on said base, said cutter member base having elongated slots therein and mounting screws extending through said slots and into said outer cutter member, said screws guiding the longitudinal movement of said cutter member, said screws extending upwardly through said member and into the interior thereof forming spring stops, an inner cutter member mounted in said outer cutter member and horizontally movable therein, said cutter members having slots therein forming cutting edges and springs mounted on a bar secured to the inner cutter member, said springs abutting at one end against the extended end of one of said screws and at the other end against said inner cutter member to resist the movement of said inner cutter member in one direction.

3,169,314
SECTIONAL CAP TYPE SAFETY RAZOR WITH CAPTIVE NUT MEANS TO MOVE THE CAP CARRIER
Peter Michael Frederick Watson, Old Windsor, England, assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Mar. 5, 1963, Ser. No. 262,989
Claims priority, application Great Britain, Mar. 7, 1962, 8,756/62
3 Claims. (Cl. 30—60.5)

1. A safety razor comprising a blade support fixed to a hollow elongated handle, a spider carrying a pair of pivoted caps fixed to a spindle mounted for axial movement within said handle to carry said spider and caps to and from open and closed position with respect to said blade support, said handle including an elongated slot opening into its hollow interior and a nut covering said slot mounted for rotation about the axis of the handle in



axially fixed position thereon, and means connecting said spindle to the threads of the nut through the slot, whereby rotation of said nut with respect to the handle moves said spindle axially of the handle.

3,169,315
ARRANGEMENT FOR REMOVING THE CASING AT THE END OF AN ELECTRIC CABLE
Robert Mankovitz, Soderarmsvagen 45, Johanneshov, Stockholm, Sweden
Filed July 30, 1963, Ser. No. 298,624
Claims priority, application Sweden, Oct. 1, 1962, 10,532/62; Feb. 14, 1963, 1,614/63
2 Claims. (Cl. 30—91)



1. A device for stripping the end from an electric cable comprising a first member and a second member, means pivotally connecting said members together, cutter means mounted on one of said members, means for adjusting the depth said cutter means will cut into said electric cable, said adjusting means including block means mounted on one of said members, shaft means mounted in said block means, gripping means rotatably mounted on said shaft means, said cutter means being mounted on said gripping means and including spaced cutting projections extending therefrom, each cutting projection having a different cutting depth, means to maintain said gripping means and cutter means at one of the cutting projections, and abutment means mounted on the other of said members, said abutment means including chute means disposed therein to receive the electric cable to cut same first in one direction and then in another direction by said cutter means.

3,169,316
VEGETABLE PEELER
Alva J. Johnston, Glacier County, Cut Bank, Mont.
Filed Jan. 31, 1964, Ser. No. 341,660
3 Claims. (Cl. 30—279)

1. A vegetable peeler comprising a frame member, a pair of support pins each having a longitudinal slot therethrough and each pivotally mounted at a respective end of said frame member, a resilient blade having each end thereof slidably mounted in a respective slot and biased in a straight line position therebetween, said blade

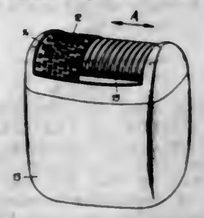
disposed for movement to an arcuate position between said pins, means for limiting the movement of said blade



to the arcuate position thereof, and a handle secured to said frame.

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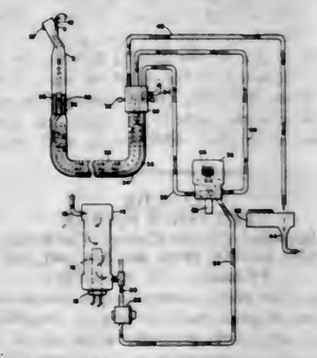
3,169,317
SCREENING OR SHEARING FOILS FOR DRY-SHAVING APPLIANCES
Bodo Füttterer, Langen, Hesse, Joachim Helmer, Bad Soden, Taunus, and Friedrich Blume, Frankfurt am Main, Germany, assignors to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Aug. 7, 1962, Ser. No. 215,367
Claims priority, application Germany, Aug. 16, 1961, B 63,663
2 Claims. (Cl. 30—354)



1. For use in a dry-shaving appliance, a perforated foil comprising a foil element having a plurality of hair entry holes therein, the edges of said holes, respectively, forming a plurality of smoothly curved arches located closely adjacent each other and respectively having convex peripheries directed towards the interior of the respective hole, each of said curved arches having a length of only up to about 200 microns.

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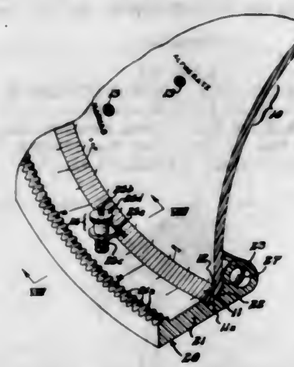
3,169,318
DENTAL HANDPIECE AND APPARATUS FOR SUPPLYING HEATED FLUID THERETO
Willis C. Oaks, Scotia, N.Y., assignor to Ritter Company, Inc., Rochester, N.Y., a corporation of Delaware
Filed June 20, 1960, Ser. No. 37,262
7 Claims. (Cl. 32—28)



1. In combination with a dental handpiece, apparatus for supplying fluid of a selected temperature to a discharge point on said dental handpiece comprising: a first fluid conduit extending from a source of fluid supply of a selected temperature to said discharge point; a second fluid conduit means in heat exchange relationship with at least a portion of said first conduit being in close proximity to said discharge point; a first end of said second conduit means being connected to a source of fluid supply of a selected temperature and a second end of said second conduit terminating at a discharge point away from said handpiece; and means for selectively conducting fluid through said first conduit and for continuously conducting fluid through said second conduit.

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3,169,319
POSITION INDICATOR
Philip E. Hoffmeister, 2400 Halifax Drive, Daytona Beach, Fla.
Filed May 11, 1962, Ser. No. 194,095
6 Claims. (Cl. 33—61)



1. A position indicator for locating the position of an observer on the earth's surface in terms of longitude in relation to the stars of the celestial sphere, said indicator comprising

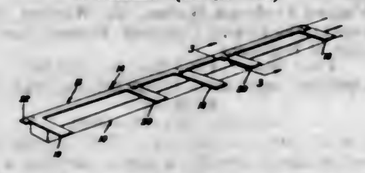
a truncated sphere having means for indicating thereon the relative celestial position of a plurality of selective stars,

means associated with said sphere for relating the position of the stars to a particular day in the year as viewed from one location of the earth's surface,

means independent of the sphere for relating the position of the sphere to the time of day of observation, said independent means having longitudinal markings and a gravity responsive indicator whereby when the sphere is positioned by the observer similarly to the relative position of the identified stars of the celestial sphere, the gravity responsive indicator responds in relation to the longitudinal markings to provide an indication of longitude.

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3,169,320
FRAMEWORK LAYOUT TOOL
Herbert K. Carrie, 1305 W. 5th St., Littlefield, Tex.
Filed Nov. 2, 1961, Ser. No. 149,599
3 Claims. (Cl. 33—96)

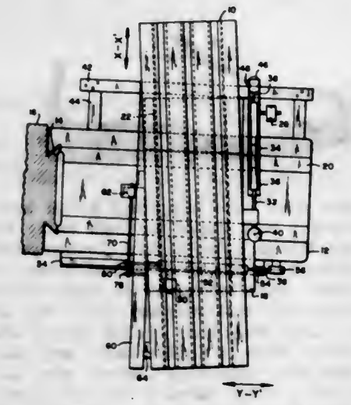


1. A framework layout tool for use in marking a first piece of timber at equally spaced points therealong to which other timbers are to be secured, said tool comprising an elongated straight header member, a set of five parallel branch members of identical width adapted to equal the thickness of said other timbers projecting laterally outwardly from one side edge of said header member, said branch members being positioned at five consecutive predetermined positions spaced longitudinally along said header member, the first, second, fourth and fifth positions being equally spaced apart and the third position being equally spaced apart and the third position being spaced equally between said second and fourth positions as well as equally between said first and fifth positions; one of said first and fifth branch members being positioned adjacent corresponding end of said header member and spaced from said corresponding end a distance equal to one-half the width of said one branch member.



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3,169,321
POSITIONING TABLE WITH COMPENSATING MECHANISM
Robert C. Benton, State College, Pa., assignor to Centre Circuits, Inc., State College, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1961, Ser. No. 139,789
14 Claims. (Cl. 33—125)



6. In two axis table positioning mechanism provided with a base for supporting the table and a saddle carried on means on said base and carrying said table on means on said saddle so as to support the table for universal rectilinear movement in a substantially horizontal plane, said means on said saddle and on said base consisting of sets of ways disposed substantially at right angles to one another, the improved combination of first bipartite gage means one part of which being carried by said saddle and another carried by said table and consisting of a longitudinally extending part disposed parallel to the axis of the ways on said saddle and a coacting part and together effective for the accurate gaging of the position of the table on the ways just named, said saddle provided with first compensating mechanism thereon connected to the one bipartite part carried by said saddle and engageable with means on said base for displacing said one part by a counteracting amount equal to the deviational effect arising due to imperfect operational characteristics of the ways on said base, second bipartite gage means one part of which being carried by said saddle and another carried by said base, and consisting of a longitudinally extending part disposed parallel to the axis of the ways on said base and a coacting part and together effective for the accurate gaging of the position of the table and the saddle along the axis of the ways on said base, said saddle provided with second compensating mechanism thereon connected to the one of the second bipartite gage means parts carried by said saddle and engageable with means on said table for displacing the just said one part by a counteracting amount equal to the deviational effect due to imperfect operational characteristics of the ways on said saddle.

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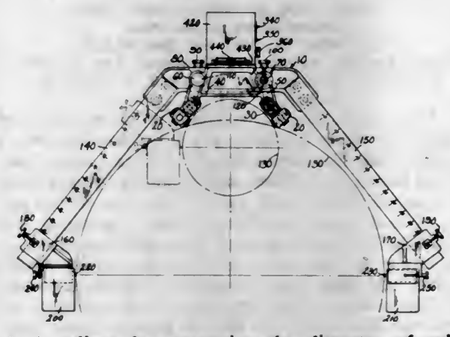
3,169,322
COMBINED GAGE AND SAMPLER DEVICE
Joseph V. Milo, 2026 Kay Ave., Union, N.J.
Filed July 17, 1961, Ser. No. 124,399
5 Claims. (Cl. 33—126.4)



1. A combination gage and sampling device for determining water and other liquid content of a storage tank including a transparent tubular member, one end of said tubular member being closed by a valve seat fixed to said end, said valve seat having a recess on the outer side thereof, a cross piece stem support mounted in said recess and fixed to the outer side of said valve seat, a valve stem slidably mounted in said stem support and having a valve head fixed to the inner end of the stem and spring biasing means fixed between the outer end of said stem and said stem support, a gage stick, said tubular member being fixed to said gage stick at one end thereof, said tubular member retaining water upon withdrawal to the depth of the water in said storage tank which has been sampled and indicating on the gage stick the total depth of the water and other liquid supply whereby the amount of other liquid supply can be determined.

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3,169,323
DIFFERENTIAL ELECTRONIC ROLL CALIPER
Peter Hold, Milford, Conn., assignor to Farrel-Birmingham Company, Incorporated, Ansonia, Conn., a corporation of Connecticut
Filed May 31, 1961, Ser. No. 113,749
3 Claims. (Cl. 33—147)



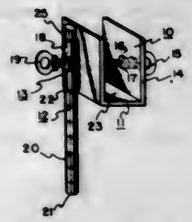
1. A caliper for measuring the diameter of cylindrical objects comprising a cradle, roller means for sup-

porting said cradle on the surface of said object for moving said cradle longitudinally along the surface of the cylindrical object, a pair of caliper arms extending outwardly from said cradle and arranged to receive the object therebetween, and arm support means mounted on said cradle and arranged to hold said arms in fixed radial relationship to the surface of the object, said support means longitudinally extending beyond said roller means at either end of said cradle, said arms being movable longitudinally on said support means to positions beyond said roller means at either end of said cradle.

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3,169,324
## SLIDE-TYPE, COURSE LEVELING ATTACHMENT FOR MASON'S LEVEL

Elmer L. Heinz, 1155 South 150 West, Orem, Utah
Filed Feb. 28, 1961, Ser. No. 92,377
4 Claims. (Cl. 33—206)



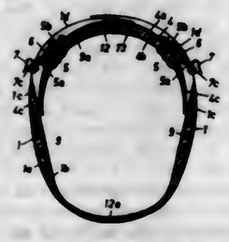
1. A mason's level device including, in combination, a level, a slide member slideably disposed upon said level and having means for releasably securing said slide member to said level at a selected disposition with respect thereto, an elongate member transversely disposed with respect to said level, and means securing said elongate member to said slide member for enabling a selected, releasably fixed extension of said elongate member away from said level and in a direction which is transverse with respect to said level, said elongate member being in off-set relationship with respect to said level such that the travel of the former is unimpeded by the presence of the latter and said slide member, and wherein said level has a lower surface, said slide member being U-configured and having an interior, upwardly facing surface disposed in contact with said lower surface of said level, said securing means including tubular means slideably encompassing said elongate member and having an extremity disposed in the same horizontal plane as said interior, upwardly facing surface of said slide member and screw means for fixing the position of said elongate member without said tubular means.

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3,169,325
## SPORTS BOOT CLOSURE CONSTRUCTION

Franz Fesl, Duchaserstrasse 11,
Furstenfeldbruck, Germany
Filed Mar. 29, 1961, Ser. No. 99,276
Claims priority, application Germany, Apr. 5, 1960, F 30,924; Austria, Oct. 24, 1960, A 7,963/60
6 Claims. (Cl. 36—2.5)

1. In a boot particularly suitable for use as a ski boot, at least one upper including a pair of side portions, a separate saddle-like closing member having a central portion and lateral end portions, said saddle-like closing member being positioned in the region of said pair of side portions of said upper, stabilizing means cooperating with said saddle-like closing member, said stabilizing means incorporating at least one metallic band-shaped flexible member, said band-shaped member being predominantly flexible transverse to the longitudinal axis thereof in the lengthwise direction of the boot to prevent lateral bending of the foot of a user, and holding means including fastener means arranged adjacent at least one lateral edge portion of said saddle-like closing member and said side portion of said upper and lacing means threadably engaging said fastener means along said side portion of said



upper to releasably secure said saddle-like closing member to said upper without crossing said central portion of said closing member.

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3,169,326
## SHOE WITH CAVITY CONTAINING IMPRINT

Matteo Butera, 4 Broadway, Lynbrook, N.Y.
Filed Apr. 18, 1963, Ser. No. 273,909
1 Claim. (Cl. 36—2.5)



A custom made shoe comprising a first layer cloth insole having a foot shaped toe high cavity having a base portion therein; a flexible cord disposed peripherally about said insole and adhesively secured thereto; a second sponge rubber insole tapered at its edge secured adhesively to said cloth insole with the tapered edge engaging said cord; a third insole layer of cloth secured adhesively to said rubber insole; a flexible latex composition containing cork filler adhesively disposed onto said third layer of cloth; a wedge shaped flexible rubber heel adhesively secured to said flexible latex composition; exterior lining means adhesively secured to said insoles to form the upper portion of said shoe and a rubber wearing exterior sole adhesively secured to said latex composition at the front of the shoe and to said heel.

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3,169,327
## DRIVER'S SAFETY SHOE

Tatuo Fukuoka, 21 3-chome, Minami, Fukushima-cho, Tokushima, Japan
Filed Mar. 20, 1964, Ser. No. 353,373
1 Claim. (Cl. 36—34)

In a driver's safety shoe for use in an automobile having a flat control pedal adjacent and extending upwardly at an angle from the floor, said shoe having a sole with a forward, toe end and a rear, heel end, and said shoe having a heel mounted on the rearward end of said sole, said heel having a forward end and a rearward end, and having a longitudinal center line in alignment with the longitudinal center line of said sole, the improved structure comprising: a heel having a substantially flat main bottom surface with a tread formed therein, and said heel having a flat, beveled rearward portion with a tread therein, said flat beveled portion being formed at an angle relative to the plane of the heel main portion corresponding substantially to the relative angle between the control pedal and the automobile floor, and said heel beveled portion being offset relative to the heel longitudinal center line so that a greater part of its area is located laterally outwardly of said center line to correspond to the normal, toe-out position of a driver's foot, the design of said heel being such that when the shoe sole is rested on the control pedal said beveled heel portion will contact

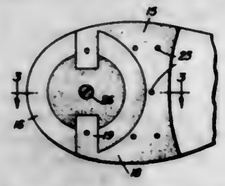


the floor not at a single point or line, but over the entire surface thereof to minimize the possibility of slipping, and the offset position of said beveled area relative to the shoe center line permitting the driver to rest his foot in its normal position, and to actuate said pedal with a minimum of physical effort.

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3,169,328
## RUBBER HEEL WITH CIRCULAR ADJUSTABLE REAR SECTION

Benjamin Gilowitz, 1996 Belmont Ave., Bronx, N.Y., assignor of one-half to Harry Litman, Bronx, N.Y.
Filed June 24, 1963, Ser. No. 289,820
6 Claims. (Cl. 36—39)



1. A rubber heel for attachment to a leather shoe heel comprising a flat body section and a flat rotatably shiftable circular section, the two sections being of the same thickness, said body section having at its rear a substantially semi-circular opening forming two rearwardly tapered side wings, means connecting the end portions of said wings to prevent them from springing away from each other, said connecting means including a straight, flat strap of less thickness than said body section and extending transversely of the body section at the rear of said opening, said strap having its top surface in the plane of the top surface of the body section, said circular section having in its top surface a straight diametrically extending shallow channel adapted to receive said strap when one-half of the circular section is positioned in said opening in the body section, fastener receiving openings in said body section to permit it to be secured to a shoe heel, and at least one fastener receiving opening in said circular section to permit it to be removably secured to the shoe heel, together with interlocking means between the body and circular sections at each side of the heel, said interlocking means comprising two diametrically opposed and inwardly extending generally rectangular arms integral with the rear ends of said side wings, said arms having the same width as said strap and extending downwardly from end portions of said strap, said circular section having in its edge diametrically arranged notches to snugly receive said arms when said strap is seated in said channel, whereby said arms form portions of said strap.

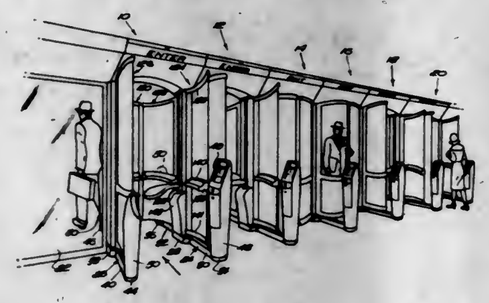




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3,169,329
## TURNSTILE

Howard A. Powers, Medfield, Mass., assignor to Universal Controls, Inc., New York, N.Y., a corporation of Maryland
Filed May 31, 1962, Ser. No. 199,030
43 Claims. (Cl. 39—3)



1. In a fare collection station, a fare collection machine, a turnstile unit located adjacent said fare collection machine including an entrance door assembly and an exit door assembly, an operating mechanism interconnected to said entrance and exit door assemblies for coordinating the movement thereof, an operating assembly responsive to movement of a patron into said turnstile unit and interconnected to said operating mechanism for causing said operating mechanism to operate said door assembles, wherein said entrance door assembly is moved from a normally open position to a closed position and said exit door assembly is moved from a normally closed position to an open position, means operatively connected to said door assemblies for returning them to the normal position thereof after said patron has passed through said turnstile unit, said door assemblies defining an enclosure into which the patron enters, said operating assembly including an operating arm that projects into said enclosure and into the path of the patron entering said enclosure, said operating arm being movable by the patron upon passage through the enclosure to cause said operating mechanism to operate said door assemblies.

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3,169,330
## PRICE BEADING

Francis Warwick Deuchar, Beryl St., Croydon, Victoria, Australia
Filed Nov. 14, 1961, Ser. No. 152,189
Claims priority, application Australia, Nov. 17, 1960, 66,671/60
5 Claims. (Cl. 40—23)

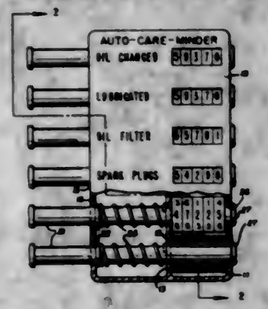


1. A price ticket clamp comprising: an elongated sheet metal base strip for attachment to a support, said base strip having an inwardly directed flange along each side to form a pair of substantially parallel, oppositely disposed longitudinal grooves adapted to receive the upper and lower marginal edges of price tickets; an arcuate

price ticket retaining strip bridging said base strip whereby its sides fit into said grooves behind the marginal edges of said price tickets, said retaining strip containing a plurality of apertures at longitudinally spaced intervals; and a threaded fastening member projecting through each of said apertures for threaded engagement with said retaining strip and to contact said base strip, thereby being adjustably mounted so as to tension said retaining strip outwardly from said base strip and tightly clamp the marginal edges of said price tickets in said grooves.

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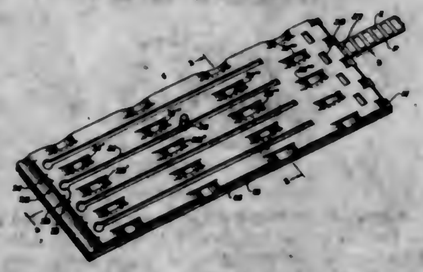
**3,169,331**
**INDICIA INDICATING DEVICE**
Anton J. Herster, 554 S. Buhlfarm Drive, Sharon, Pa.
Filed Mar. 30, 1962, Ser. No. 183,885
6 Claims. (Cl. 40—68)




1. An indicia indicating device comprising a housing having oppositely disposed apertures, notches in said housing communicating with said apertures, at least one plunger movably positioned transversely of said housing in said apertures, a spline on one portion of said plunger, at least one indicia carrying wheel having several internal grooves positioned on said splined portion of said plunger, and having a portion of its periphery in registry with a window opening in said housing, said spline normally engaging one of said grooves in said indicia carrying wheel and one of said notches in said housing and acting to hold said wheel in fixed relation to said window opening, said plunger being movable longitudinally relative to said wheel and said housing to a position disengaging said spline from said grooves and said notch to permit said wheel to be rotated and means in said housing normally positioning said wheel in registry with said window opening.

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**3,169,332**
**STRIP STORAGE DEVICE**
Norman J. Rosenburgh, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 30, 1962, Ser. No. 213,506
5 Claims. (Cl. 40—106.1)



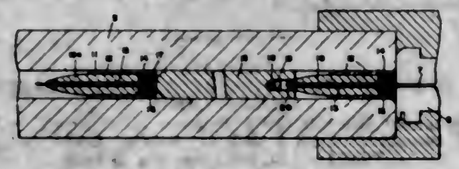
1. A device for storing strips, having a strip storage channel and comprising:

(*a*) a first sheet, having
(1) a channel area, and
(2) guide areas located on opposite sides of and adjacent to said channel area forming the lateral edges of the strip receiving channel, said guide areas being defined by a plurality of slits arranged parallel to the channel area, and the areas adjacent to said slits and outside of said channel area (*i*) protruding from said first sheet and (*ii*) having portions which lie in a plane spaced from and parallel to said first sheet;

(*b*) a second sheet,
(1) substantially co-extensive with the channel area and the guide areas, and
(2) secured to said portions of the guide areas to form with said channel area and said portions the strip receiving channel.

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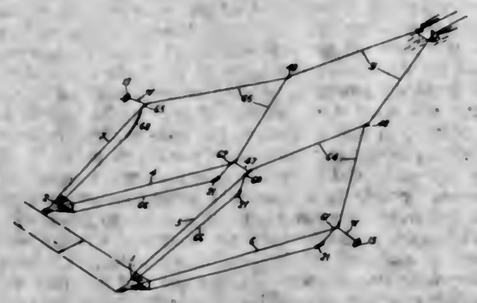
**3,169,333**
**PROJECTILE FOR FIRING A LEAKPROOF CASELESS ROUND**
John J. Scanlon, Jr., Levittown, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed June 14, 1963, Ser. No. 288,057
4 Claims. (Cl. 42—69)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a closed breech firearm for firing a caseless round of propellant, the combination therewith of a breech closure, a gun barrel extending axially forwardly from said breech closure, a projectile to be fired from said barrel, a caseless round of propellant in rear of said projectile to be fired, and a second projectile in rear of said caseless propellant, a primer in a rear portion of said propellant, a firing rod extending through said second projectile axially thereof to adjacent said primer, means for transmitting energy for firing said primer through said firing rod, and a packing ring on the periphery of said second projectile.

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**3,169,334**
**TRAWLERS AND TRAWLING**
Charles Dennistoun Burney, 1 Chesham Place, London SW. 1, England
Filed July 5, 1963, Ser. No. 293,032
10 Claims. (Cl. 43—9)



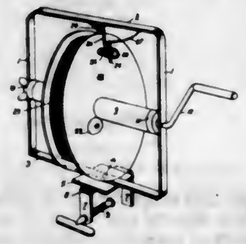
1. A trawling system including a plurality of nets for simultaneous towing by one trawler comprising two nets



in spaced positions substantially in line abreast, at each side of each net a towing warp connected to the upper corner of the net mouth and a ground line connected to the lower corner of the net mouth, forward towing warps, the towing warp and corresponding ground line on each side of each net extending forward to a point well in advance of the net and there being connected together and to a forward towing warp, main towing cables, the two said forward towing warps of each net extending further forward to an advanced point where they are connected together and to a said main towing cable, a transverse link detachably connecting together the two junctions of towing warps and ground lines running forward respectively from adjacent inner sides of the two nets, two buoyant otters each having a connection warp and each linked by a said connecting warp to one of the junctions of ground lines and towing warps respectively running forward from the outer sides of the two nets, said buoyant otters, when being towed with the nets through the water, providing transverse forces drawing the outer warps and ground lines in an outward and upward transverse direction and thus holding the mouths of the nets laterally extended, and load weights mounted on each of said ground lines well forward of the nets, in the vicinity of the junction of the ground line and towing warp, in order both to hold the net mouths open vertically and to drag over the sea bed in widely spaced positions well in advance of the net.

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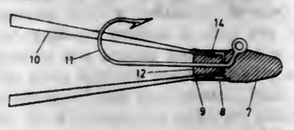
**3,169,335**
**DEVICE FOR FISHING**
Gerald Ebsworth Nalder, 37 Kingslangley Road, Greenwich, New South Wales, Australia
Filed Sept. 9, 1963, Ser. No. 307,580
3 Claims. (Cl. 43—15)



1. A device for fishing, said device comprising, in combination, a frame rotatably mounted upon a mounting bracket and upstanding therefrom, a roller rotatably mounted transversely in the frame, a reel fixed on the roller, said reel having fishing line wound thereon, a winding handle for the roller rotatable in the frame, a roller retracting spring in the roller, stop means on the reel and on the frame, said stop means being set manually to hold the roller in a desired position against retraction when said roller has been rotated in a direction tensioning said spring and being automatically released upon further tension being applied to the spring, said stop means comprising a downwardly projecting member fixed to the frame above the reel and projecting downwardly in juxtaposition to one side of said reel, a reel stop-pin fixed in said one side of the reel and projecting outwardly therefrom above the lower end of said downwardly projecting member, and an abutment stop-pin loosely suspended from the top of and within the frame, said downwardly projecting member being formed to permit unrestricted movement of the reel stop-pin during rotation of the reel, said abutment stop-pin being located between the downwardly projecting member and the reel stop-pin when it is desired to hold the roller and reel stationary with the roller retracting spring tensioned, and a guide member on the frame for the fishing line.

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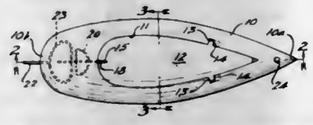
**3,169,336**
**FISHING LURE**
Robert E. Pope, Box 1183, Naples, Fla.
Filed Nov. 22, 1963, Ser. No. 325,693
2 Claims. (Cl. 43—42.28)



1. A fish lure comprising a hook having a shank a portion of which is straight, a solid head rigid with one end of said shank, a tail piece slidably carried by said straight shank portion having one end closely adjacent said head, said tail piece being held in adjusted position on said shank by frictional engagement therewith and adapted to be linearly and non-rotatably adjusted thereon, said tail piece having a generally conical outer surface, a tail secured to said surface of said tail piece, and a sleeve having one end detachably engaging said head and having its opposite end in tight engagement with said tail and said opposite end being flared to thereby cooperate with said tail piece to impart a flared shape to said tail.

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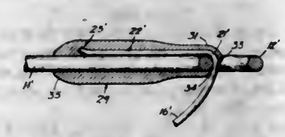
**3,169,337**
**FISH LURE**
Ronald H. McGregor, 22636 Beach, Dearborn, Mich.
Filed Aug. 28, 1963, Ser. No. 305,088
5 Claims. (Cl. 43—42.09)



3. In a fish lure, a body member having an orifice with sides converging toward one end of said body member, an insert member adapted to fit within said orifice and having converging sides mating with the converging sides of said orifice, and means for removably securing said insert member to said body member within said orifice comprising interfitting portions on said members adjacent said one end thereof at each of the converging sides of said orifice, said interfitting portions at each side comprising a pair of oppositely inclined tabs extending from the inclined side of one of said members and receiving therebetween the mating inclined side of the other of said members in a wedge action upon movement of said insert member in the direction toward said one end with respect to said body member, and resilient means on said body member engageable with said insert member adjacent the other end thereof yieldingly urging said insert member in said direction.

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**3,169,338**
**WEEDLESS FISH HOOKS**
Louis H. Morin, Bronx, N.Y. (125 Beechwood Ave., New Rochelle, N.Y.), assignor of one-fourth to Madeline F. McGill, Denver, Colo., and one-fourth to J. R. Hanna, Bronxville, N.Y.
Filed May 14, 1963, Ser. No. 280,287
2 Claims. (Cl. 43—43.6)

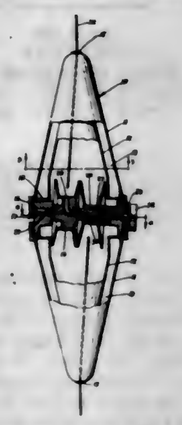


1. A weedless fish hook comprising a barbed end and eye end, adjacent which is an elongated shank, the

barbed end joining the shank in a reversely curved portion, a guard element comprising a strand looped centrally to form one end arranged adjacent said barbed end, the other end of said element comprising two offset strands engaging and paralleling the shank adjacent said eye end, said element including a bent portion extending through the eye end, a molded bonding body enveloping the shank and second named end of said guard element in retaining the guard element upon the hook, said fish hook, guard element and molded body having interengaging means retaining the molded body against movement on said fish hook, said last named means comprising a head on said molded body, said head having laterally flared portions engaging part of said eye end, and said head including a hook end defining an upper portion overlying said bent portion of the element and spaced from a lower portion of the head and between which the guard element extends outwardly from the eye end.

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3,169,339
DEEP WATER CASTING BOBBER
Jerome D. Ehstrand, 3669 South 4400 West, Salt Lake City, Utah
Filed July 5, 1963, Ser. No. 293,055
8 Claims. (Cl. 43—43.11)

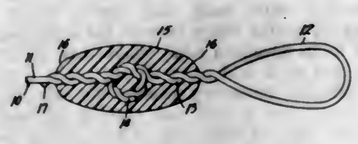


1. A deep water casting bobber comprising
(A) a buoyant bobber body,
(B) a pair of rotatable fishline winding members within said body,
(1) said winding members being separate, but
(2) engageable to permit rotation together,
(C) disengageable connecting means extending between said winding members to permit one of said winding members to be rotated independently,
(D) knob means secured to one of said winding members adapted when turned to rotate said one winding member independently, and
(E) a pair of line guides
(1) at opposite ends of the bobber body
(2) each adapted to guide different segments of the same continuous fishline to one of said winding members.

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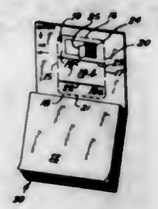
3,169,340
LOOPED SNELL FOR FISH HOOKS
Louis H. Morin, Bronx, N.Y. (125 Beechwood Ave., New Rochelle, N.Y.), assignor of one-fourth to Madeline F. McGill, Denver, Colo., and one-fourth to J. R. Hanna, Bronxville, N.Y.
Filed July 30, 1963, Ser. No. 298,611
2 Claims. (Cl. 43—44.98)

1. A monofilament strand having a loop end portion, the strand inwardly of the loop having a twist therein extending a predetermined length of the strand, an encapsulating element enveloping the major portion of the length of the twist in said strand in retaining the twisted portion of the strand against untwisting and in retaining the loop in operative position, end portions of the twist extending beyond ends of said element, the twisted portion including an enlarged anchorage member defined by a ring-like knot disposed within said element, said strand being formed of plastic material, and said element comprising a molded plastic body enveloping the anchorage member of said twist.



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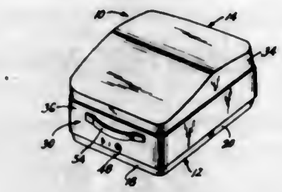
3,169,341
PAPER PRODUCT
Richard E. White, Appleton, Wis., assignor to Winnebago Corporation, Menasha, Wis., a corporation of Wisconsin
Filed July 19, 1961, Ser. No. 125,239
2 Claims. (Cl. 281—15)



1. A paper pad adapted to be attached to a telephone desk set which desk set has a body with a bottom surface and a plurality of supporting legs for holding the bottom surface raised with respect to the supporting surface for the desk set, said pad comprising a plurailty of paper sheets fixed together along one edge thereof and a bottom cover of relatively heavy paper material fixed to said sheets along said edge, said cover comprising a tongue connected with the rest of the cover along a score line spaced from and parallel with said edge, said tongue having an intermediate score line parallel with said edge dividing the tongue into an end portion and an inner portion, the distance from said edge to said first named score line being substantially the same as the distance between said first named score line and said intermediate score line so that said tongue may be folded backwardly with said inner portion of the tongue lying substantially flat underneath said bottom cover from said first named score line to said edge of the pad and so that said tongue may be bent along said intermediate score line whereby said end portion of the tongue may contact the raised bottom of the desk set with the bottom cover of the pad resting on the supporting surface for the desk set and with said end portion extending between a pair of the legs of the desk set and obliquely upwardly from the level of said supporting surface to the level of said bottom surface of said desk set, and a patch of sticky material on said end portion of the tongue for fixing the tongue and pad with respect to the bottom surface of the desk set.



3,169,342
CARRYING CASE FOR A PORTABLE MACHINE
Otto Krauss, Nuraberg, Germany, assignor to Triumph Werke Nuraberg A.G., Nuraberg, Germany
Filed May 16, 1962, Ser. No. 195,278
Claims priority, application Germany, Oct. 20, 1961, G 24,773
13 Claims. (Cl. 312—284)



1. A carrying case for a portable machine, comprising, in combination, a substantially rigid base including a front portion and a rear portion and adapted to carry said portable machine, said rear portion being provided with engageable connecting means positioned at its outside and facing to the rear of said carrying case; a removable substantially rigid cover including a front wall and a rear wall and fitting said base to enclose said portable machine, said rear wall being provided with engageable connecting means positioned at its inside and adapted to engage said first-mentioned engageable connecting means so as to prevent said removable cover from being lifted straight up from said base; and releasable locking means for securing said front wall of said removable cover to said front portion of said base to close said carrying case with both of said engageable connecting means being covered by said rear wall of said removable cover, whereby said removable cover when in place on said base will prevent contact of said engageable connecting means with a surface on which said carrying case may be placed to rest thereon.

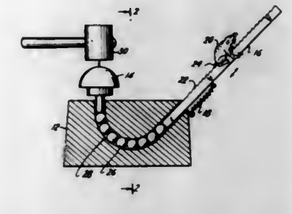
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3,169,343
DOLL KISSING MECHANISM
Sam Freimanser, Hillside, N.J., and Joseph Lieberman, Brooklyn, N.Y., assignors to The Frey-Lieb Co., Inc., New York, N.Y., a corporation of New Jersey
Filed June 25, 1963, Ser. No. 290,518
5 Claims. (Cl. 46—118)



1. A doll kiss-simulating mechanism comprising a reed, means adapted to hold said reed with one end secured directly to an opening in a doll's mouth, a rocker arm, resilient air-impelling means having an opening at one end communicating with the other end of said reed and the opposite end communicating with said rocker arm, said rocker arm adapted to be pivotally mounted at the neck of said doll, and actuating means adapted to move said rocker arm to compress and release said air-impelling means.

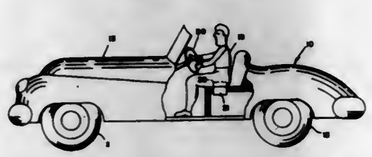
3,169,344
ACTION TOY OPERATED BY POUNDING
Norman A. Greene, New Rochelle, N.Y. (101 W. 55th St., New York 19, N.Y.)
Filed Oct. 3, 1962, Ser. No. 228,101
7 Claims. (Cl. 46—132)



1. A toy comprising a base, a driving means on said base for movement in an up and down direction and adapted to be pounded downwardly as by means of a mallet, an elongated slide member projecting outwardly and upwardly for a substantial distance from said base and having its lower end only slidably received in said base, the entire projecting portion being exposed on all sides, a return spring directly connecting said slide member to said base for urging said slide member longitudinally toward the base, means simulating a figure slidably embracing and movable from one portion to a second portion of said slide member when said driving element is actuated, means to inhibit rearward while affording forward movement of said figure along said slide member, and a force-transmitting and direction-changing means between said driving element and said slide member, such that downward blows on the driving element cause longitudinal reciprocations of the slide member and consequent progressive movement of the figure along the slide member.

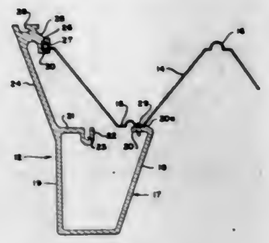
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3,169,345
ELECTRICALLY PROPELLED TOY VEHICLES WITH REMOVABLE MAGNETIC ELEMENTS BRIDGING CONTACTS
Michael L. Marmo, 33—21 172nd St., Flushing, N.Y., and Robert F. Walsh, 26—37 212th St., Bayside, N.Y.
Filed Oct. 4, 1961, Ser. No. 142,858
4 Claims. (Cl. 46—241)



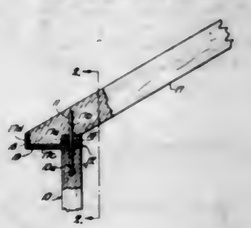
1. In an electrically driven toy vehicle having a motor for driving the same and a battery for energizing the motor, the vehicle having a driver's seat, a rigid light weight plastic toy figure of a driver in seated position adapted to be seated on said seat, said seat having two spaced members of magnetizable metal therein whose upper surfaces are exposed, said figure having a member of magnetizable metal therein exposed through the bottom surface thereof having a length sufficient to bridge said spaced members, said battery, said motor and said spaced members being connected in a series circuit, at least one of said magnetizable members comprising a permanent magnet, the toy figure being adapted to be seated on the seat with the magnetizable member on the figure bridging said spaced members to close said circuit through said three magnetizable members.

3,169,346
## STRUCTURAL BEAM FOR ROOF EDGES
Leo P. Sklar, Oak Park, Mich., assignor to Lite-Vent Industries, Inc., Oak Park, Mich.
Filed Sept. 19, 1963, Ser. No. 310,021
7 Claims. (Cl. 50—8)



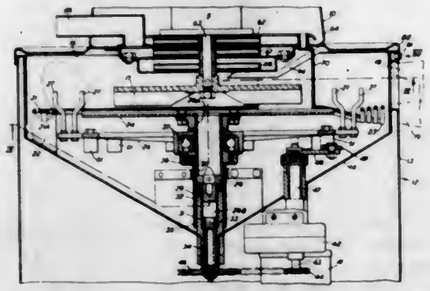
1. A roof deck facia comprising an elongated, integral, uniform cross-section member formed, in cross-section, as an upwardly opening wide U-shaped channel whose legs form an outer wall and an inner wall respectively; the upper end of the inner wall terminating in a short flange extending towards the outer wall; a flange formed on the outer wall and extending towards and being aligned with said short flange and terminating in an upwardly opening, narrow, U-shaped member arranged within said channel near said outer wall and having a narrow groove of a width sufficient to threadedly receive screws; the outer wall extending a considerable distance above the inner wall and having an integral grooved portion located considerably above said U-shaped member and having a groove which opens inwardly, that is, towards the inner wall, with the opening of such groove being narrower, in cross-section, than the cross-sectional width of the groove.

3,169,347
## SOFFIT AND TIE PLATE CONSTRUCTION FOR PREFABRICATED BUILDINGS
Joe J. Sky, Jr., P.O. Box 745, Chillicothe, Mo.
Filed Aug. 3, 1961, Ser. No. 129,041
3 Claims. (Cl. 50—66)



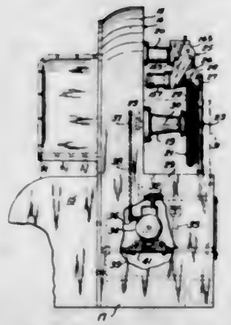
1. The combination in a building of a plurality of laterally spaced vertical studs having upper ends, each stud including at its upper end a vertically extending pin, a combined soffit and top plate member extending between and overlying the upper ends of said studs, said member including a relatively thin horizontal soffit having a portion extending outwardly beyond the studs and a top plate secured to said soffit, said soffit and top plate provided with spaced apertures registering with and receiving therethrough said pins whereby said member is connected with said stud by said pins, the pins each having a length such that they project above said member, and rafter members extending laterally from the upper ends of said studs, each rafter member having a pin recess slidably fitting over the pin of the adjacent stud with a portion of the rafter member engaging the upper face of the soffit and top plate.

3,169,348
## EGG CLEANING APPARATUS
Maxwell Seely Woosnam, London, and David John Capron, Suffolk, England, assignors to Capewell Developments Limited, London, England
Filed Nov. 21, 1962, Ser. No. 239,158
Claims priority, application Great Britain, Nov. 22, 41,956/61
5 Claims. (Cl. 51—9)



1. An egg cleaning machine comprising, within a chamber having spaced inlet and outlet openings for eggs, a continuously operating conveyor for frictionally engaging eggs and carrying them along an arcuate path between said inlet and outlet openings, an egg turner having a plurality of projections spaced along said arcuate path af distances greater than the length of an egg and extending across said arcuate path so that when said egg turner is stationary said projections can engage and prevent movement of eggs along said arcuate path, intermittent drive means for intermittently moving said egg turner, thereby to move each said projection along a part only of said arcuate path towards said outlet opening, said intermittent drive means moving said egg turner through a succession of short arcs compared with the length of said arcuate path, and propulsive means for producing a flow of abrasive particles outwardly across said arcuate path.

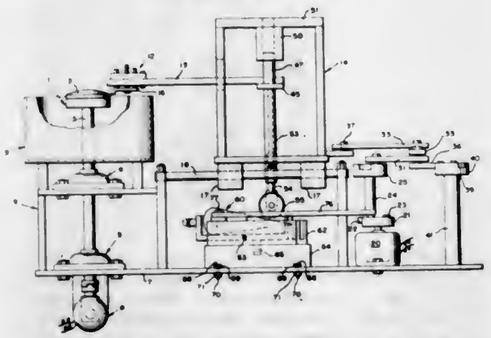
3,169,349
## GEAR FINISHING APPARATUS
Howard J. Findley, Cleveland, Ohio, assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 12, 1961, Ser. No. 82,228
28 Claims. (Cl. 51—52)



1. In gear finishing apparatus; a frame means; workholder means on said frame means and adapted to rotatably support a gear member to be finished; a rotatable gear-shaped tool member adapted for meshed engagement with said gear member and to drive the same; means providing for an abrasive condition between the meshed portions of said members; rotatably driven tool spindle means supported by said frame means and having said tool member connected therewith for rotation thereby; vibrator means effective through said tool spindle means for vibrating said tool member; and traverse mechanism effective through said tool spindle means for causing an axial traverse movement of said tool member during the rotative and vibratory movements thereof.



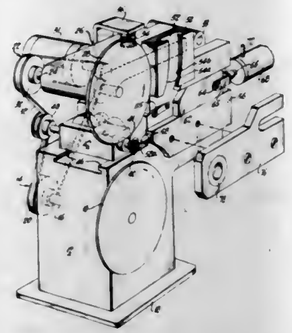
3,169,350
## MACHINE FOR FORMING LENSES AND SIMILAR ARTICLES
Gareld M. Corman, San Francisco, Calif., assignor to Gilbert Alm, Chico, Calif.
Filed July 25, 1963, Ser. No. 297,505
4 Claims. (Cl. 51—67)



1. In a machine for forming lenses and like articles:
a lens holder adapted to receive a lens thereon,
means for rotating said holder about a vertically disposed axis,
a grinding tool adapted to engage a lens blank on said holder,
a tool holder for said tool,
a carriage supporting said tool holder,
motor means for reciprocating said carriage along a horizontal path of travel perpendicular to said vertically disposed axis,
contour determining means driven by said motor means for moving said tool holder axially of said vertically disposed axis during said reciprocation,
said contour determining means including a follower wheel carried by said tool holder and a portion of a cone on which said wheel engages during said reciprocation,
linkage means connecting said portion of a cone with said motor means for swinging said portion of a cone about an axis parallel to said vertically disposed axis while engaged by said follower wheel.

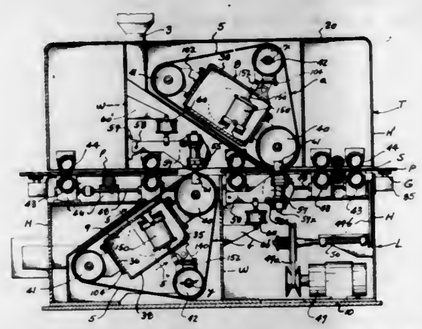
3,169,351
## GRINDING MACHINE
William F. Hannon, Berlin, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Nov. 27, 1962, Ser. No. 240,259
5 Claims. (Cl. 51—103)

1. Apparatus for guiding a circular workpiece to be machined comprising
a first rotary driving member adapted for movement in a first direction of rotation,
a second rotary driving member spaced from said first driving member and also adapted for movement in said first direction of rotation,
said circular workpiece being located between said first and second members and having its curved peripheral surface in contact with the curved outer surfaces of said first and second members to be rotated thereby,
the axis of rotation of said workpiece being located to one side of a straight line connecting the axes of rotation of said first and second driving members, and a fixed work-guiding member positioned for continuous engagement with the curved peripheral surface of said workpiece,



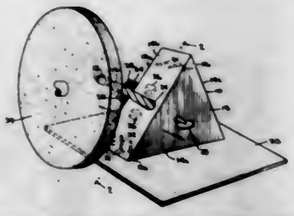
said work-guiding member having a hardness greater than the hardness of said workpiece and being formed with a diminished end portion for said engagement with said workpiece, said work-guiding member consisting of a diamond and having said diminished end portion polished to provide a smooth rounded surface for substantially point contact with said workpiece, whereby said workpiece is smoothly and accurately rotated between said driving members and said fixed work-guiding member.

3,169,352
## PANEL SANDING MACHINE
Orson W. Smith, Seattle, Wash., assignor, by mesne assignments, to Smithway Sales Corporation, Seattle, Wash., a corporation of Washington
Filed June 26, 1961, Ser. No. 119,578
13 Claims. (Cl. 51—140)



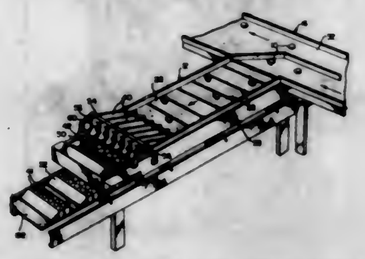
1. A panel sanding machine comprising spaced upper and lower housings for the delivery of panels between them for sanding, a sanding unit mounted in each of said housings, in spaced longitudinal relationship, means for adjusting the vertical spacing between said sanding units to accommodate the sanding units to panels of different thicknesses, panel backup means associated and vertically aligned with each sanding unit and adjustable relative thereto to establish the surface sanding depth of the corresponding unit, a plurality of pairs of panel feed rolls between which the panels are successively delivered for advancement between the sanding units and means for adjusting the paired feed rolls to accommodate them for the advancement of panels of different thickness.

3,169,353
## DRILL GRINDING APPARATUS
Lester S. Kraiwich, 241 Central Park W., New York 24, N.Y.
Filed Nov. 17, 1961, Ser. No. 153,020
4 Claims. (Cl. 51—219)



4. An apparatus for grinding the cutting lips of a drill, comprising a block substantially in the form of a triangular prism having three lateral faces intersecting at predetermined angles to form three corners which respectively terminate in three lateral edges, the angles between said lateral faces at the corners which terminate in two of said lateral edges being about the same as an angle of each of the cutting lips of the drill being ground, an aperture midway on the lateral face between the said two corners extending longitudinally downwards into the said block at right angles to the surface of the said lateral face designed to accommodate the lower portion of drills of various sizes, with means holding the drill in the aperture with its upper portion extending out perpendicularly to the surface of the said lateral face, adapted so that when the block rests on either of its two other lateral faces, the angles at the said corners determine the angular inclination of the drill projecting towards a vertical grinding wheel which thereby imparts the same angle to a cutting lip of the drill, the two lateral faces opposite the aperture having holes for accommodation of a post whereby the block may be oscillated.

3,169,354
## EGG HANDLING AND PACKING SYSTEM
George N. Bliss, Birmingham, and George A. Page, Detroit, Mich., assignors to Page-Detroit, Inc., Redford, Mich., a corporation of Michigan
Filed May 1, 1962, Ser. No. 191,501
55 Claims. (Cl. 53—61)



1. In a system for handling and packing eggs in plural numbers,

a reservoir for temporary storage of said eggs in plural number having means to move said eggs from their position of entry into said reservoir to a position for discharge from said reservoir,

means for charging said reservoir with eggs,

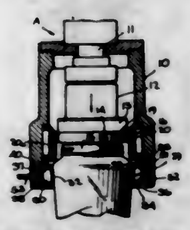
means temporarily restricting said eggs against discharge from said reservoir until a predetermined number of said eggs are accumulated at said latter means,

means for translating said eggs simultaneously in such predetermined number from their position for discharge in said reservoir,

means for orienting said eggs in a substantially point-down attitude following translation and removal from said reservoir,

and means to support a container or tray to receive said point-down eggs simultaneously in said plural number upon release from said translating and orienting means.

3,169,355
## CONTAINER SEALING MECHANISM
Raymond L. Holloway and Harry E. Stover, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,463
1 Claim. (Cl. 53—88)

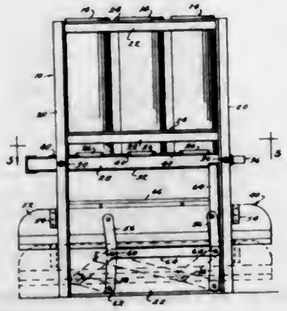


A container sealing head comprising a hood having a bladder-receiving wall, an annular hollow inflatable bladder extending from said wall, said bladder comprising a substantially flat front wall, curved connecting portions at the upper and lower edges of said front wall and extending rearwardly therefrom, holding means extending rearwardly from said curved portions, said holding means comprising flanges substantially normal to the front wall and integral with the curved portions and locking beads at the end of said flanges substantially parallel to the front wall and normal to said flanges, said bladder-receiving wall having spaced cavities therein adapted to receive and hold said beads and having a separator portion extending within said bladder between said cavities, said separator portion terminating adjacent to the point where the flanges of the bladder meet said curved portions thereof whereby the space between the front wall and said flanges is devoid of any part of said bladder-receiving wall, said curved connecting portions being adapted to be re-shaped and move toward each other when a fluid is introduced into the hollow bladder to move said front wall forward and cause it to assume a generally curved configuration, the cross-sectional thickness of said front wall before and after inflation of the bladder remaining substantially equal.

3,169,356
## CUP DROPPER
James E. Dye, Athens, Ga., assignor to Dye Sheet Metal Products, Inc., Athens, Ga., a corporation of Georgia
Filed Nov. 1, 1963, Ser. No. 320,632
12 Claims. (Cl. 53—166)

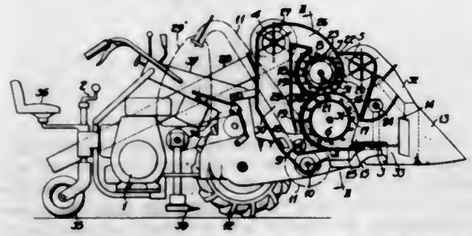
1. Apparatus for simultaneously dispensing the lowermost cup from each of a plurality of stacks of nested, lipped cups comprising: means retaining said cup stacks spaced laterally from one another in a plurality of longitudinally spaced transversely extending rows and a plurality of transversely spaced, longitudinally extending rows, said means also retaining said cups in substantially vertical, right side up orientation; slide means mounted for reciprocation in a substantially horizontal plane closely subjacent said stack retaining means between a first and a second position, first support means mounted in a substantially horizontal plane on the slide and arranged to supportingly engage the undersurface of the lip of the lowermost cup in each stack at a plurality of circumferentially spaced points on each of said lips when said slide is disposed in the first position thereof, said first support means being arranged on the slide to be moved from supporting relation with said cups as said slide is moved from the first toward the second position thereof; second support means mounted on the slide in substantially non-coextensive longitudinally alternating relationship with said first support means, said second support means being





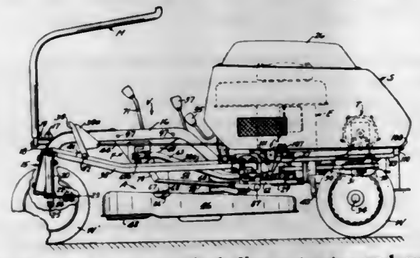
disposed in a substantially horizontal plane located above the plane of the first support means by at least the thickness of a cup lip and said second support means arranged on the slide to be moved into supporting relationship with the next cup upward from the lowermost cup in each stack as the slide is moved from the first position toward the second position thereof, thereby dispensing only the lowermost cup from each stack.

3,169,357
## PNEUMATIC HARVESTER AND THRESHER
Miyoshi Suzue, 1343–1 Higashiaki, Nangoku-shi, Kochi-ken, Japan
Filed Nov. 29, 1963, Ser. No. 326,983
Claims priority, application Japan, Dec. 4, 1962, 37/54,635
1 Claim. (Cl. 56—21)



A harvest machine for harvesting grain stalks having a housing located at the front thereof and comprising a plurality of reaping blades mounted in the front of said housing adapted to cut said stalks, a primary threshing chamber located to the rear of said blades, a secondary threshing chamber communicating with said primary chamber, a plurality of threshing blades disposed in each of said chambers for separating the grain from the stalk, a grain separating chamber adjacent said threshing chambers, and at the rear thereof in which the grains are separated from the dust, straw, and chaff, a pair of blowers located intermediate said threshing blades and said reaping blades, vertically upward and to the side thereof and adapted to suck air from said threshing chambers and discharge said air back into the front of said housing whereby said stalks are blown onto said reaping blades and into said threshing chamber, a plurality of wire nets located intermediate said threshing chambers and said blowers and adapted to prevent the passage of grain from said threshing chamber to said blower, a pair of exhaust blowers located upward from and communicating with said secondary threshing chamber, and adapted to discharge said dust, straw, and chaff from said grain separating chamber to the rear of said machine and also adapted to discharge threshed stalks from said threshing chambers to the rear of said machine, without the passage of grains through said blowers.

3,169,358
## AUTOMATIC SAFETY SWITCH MECHANISM FOR A TRACTOR MOUNTED ROTARY POWER MOWER
Byron L. Ertagaard, Excelsior, and Robert M. Rubin, Wayzata, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 22, 1960, Ser. No. 89,595
19 Claims. (Cl. 56—25.4)

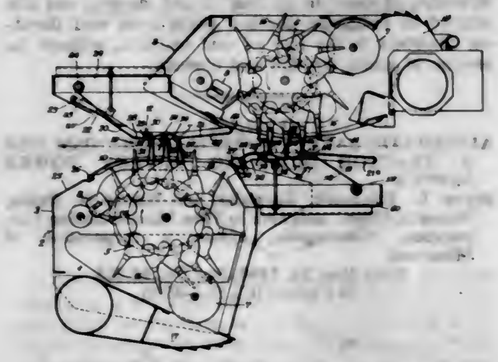


1. In a power mower including a tractor and cutting mechanism suspended from said tractor, motor means for driving said cutting mechanism and tractor, power transmitting means interconnecting said motor means and cutting mechanism, means for raising said cutting mechanism from a cutting position to an elevated inoperative position whereby said movement of said cutting mechanism effects disengagement of said cutting mechanism from said motor means when in said inoperative elevated position, switch means movable between opened and closed positions and adapted to stop said motor when closed, switch holding means interconnected with said cutting mechanism for movement therewith, said switch holding means being adapted to engage and hold said switch in open position when said cutting mechanism is in elevated inoperative position and adapted to move away from and release said switch for closing when said cutting mechanism is moved to cutting position, resiliently mounted seat structure adapted to engage and hold said switch open when said seat is occupied, said seat structure being further adapted to move away from said switch means when unoccupied and thereby release said switch for closing, and means for closing said released switch.

3,169,359
## COTTON PICKER CROP GUIDING AND PICKING STRUCTURE
Louis E. Nickla and James T. Tracy, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed July 9, 1962, Ser. No. 208,232
1 Claim. (Cl. 56—44)

In a cotton harvester movable forwardly over a field of cotton plants: housing structure providing a passage for successively passing earthborne cotton plants through the harvester, a picker drum mounted in the housing structure for rotation on an upright axis including vertically spaced apart and radially extending spindle members operative to successively move in an arc into the passage to collect cotton from the plants and carry the same inwardly of the housing structure, said passage defined by compressor means opposing the drum and having a leading straight portion substantially parallel to the direction

of travel and an adjoining curved pocket portion contoured to said arc, said pocket portion being of limited extent and encompassing only an area wherein said



spindles project the maximum amount into said passage, and a plurality of ribs extending across said curved portion and having edge surfaces adjacent to the drum subtending said arc, said ribs intercalating with said spindles.

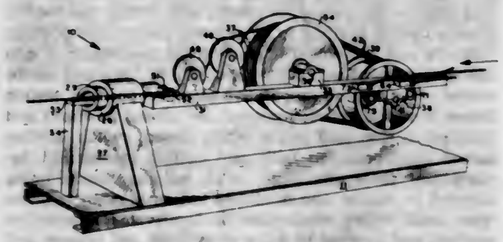
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3,169,360

## STRANDING APPARATUS AND METHOD

Roy E. Corrall, Franklin Square, and George N. Menasoff, Tarrytown, N.Y., assignors, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware

Filed July 2, 1962, Ser. No. 206,764
22 Claims. (Cl. 57—34)



1. Apparatus applying a reversing twist to advancing strand comprising:

(A) means accumulating said strand comprising
- (*a*) a sheave and
- (*b*) a cradle mounting said sheave, said cradle being fixed against translation along the axis of advance of said strand, and

(B) means alternately
- (*a*) rotating said cradle so as to impart a twist of one direction to said strand leaving said sheave and a twist of opposite direction to said strand entering upon said sheave, and
- (*b*) restraining said cradle from rotation for a period sufficient to advance said strand having said opposite twist around the circumference of said sheave.

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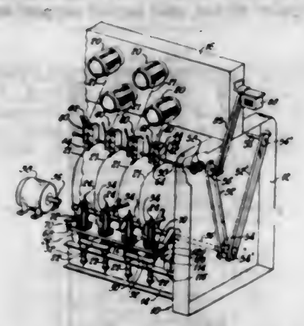
3,169,361

## METHOD AND APPARATUS FOR CONTROLLING THE PROCESSING OF FILAMENTARY MATERIAL

James R. White, Aiken, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Feb. 14, 1963, Ser. No. 258,463
9 Claims. (Cl. 57—79)

1. The method of controlling the operation of apparatus for transferring filamentary material from supply packages to rotating bobbins through the medium of a movable guide for distributing the filamentary material on the bobbins including the steps of presetting a yardage counter for the amount of yardage of filamentary material to be collected on the bobbins, initiating operation of a motor driving the bobbins and actuating the



yardage counter and the guide, automatically actuating a switch by the counter when the predetermined yardage of filamentary material has been transferred to the bobbins to condition a control circuit for the motor, and thereafter automatically de-energizing the motor when the moving guide attains a predetermined position.

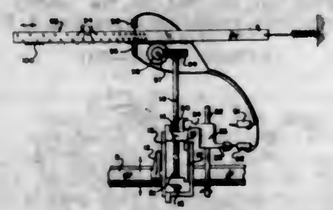
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3,169,362

## ROVING PACKAGE WINDING APPARATUS

Gaston G. Fornes, Charlottesville, Va., assignor to Institute of Textile Technology, Charlottesville, Va., a corporation of Virginia

Original application Apr. 25, 1961, Ser. No. 105,401, now Patent No. 3,123,970, dated Mar. 10, 1964. Divided and this application Oct. 10, 1963, Ser. No. 318,476
5 Claims. (Cl. 57—99)



1. In a roving frame having bobbins mounted on a member of the frame for reciprocatory movement with respect to flyers, means, including a rotatable tumbler shaft and builder dog, for reversing the direction of said reciprocatory movement, and a builder mechanism, including a builder shaft, mounted on said member to control the actuation of said reversing means, said builder dog having a pair of oppositely extending arms adapted for alternate engagement with said builder mechanism, the improvement which comprises a rack mounted in said frame for longitudinal movement, a tension linkage mounted in said frame and connected to said rack, gear means connecting said rack to said builder mechanism, a template mounted on said rack, a plurality of stop pins mounted on said template and projecting therefrom, said pins being successively spaced longitudinally of said template, solenoid means mounted adjacent said template for periodic engagement of said pins, and switch means electrically connected to said solenoid means for actuating the same, said switch means being mounted in said frame, the position of said builder mechanism being adapted to determine the position of actuaton of said switch means, and said tension linkage biasing said rack for longitudinal movement when ever said solenoid means are out of engagement with said pins.



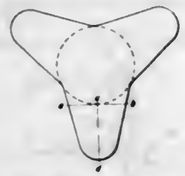
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3,169,363

## ELASTOMERIC YARN

Emmett V. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 14, 1963, Ser. No. 258,479
2 Claims. (Cl. 57—152)



1. A composite elastomeric yarn comprising an elastomeric core composed of a polymer formed by condensing dimethyl terephthalate, 1,4-cyclohexanedimethanol and poly(tetramethylene glycol), said elastomeric core essentially consisting of three lobes in a substantially Y-shaped configuration, the lobes of said core having a tip-to-base ratio of at least 1 to 1 and being substantially symmetrical and of essentially the same shape; and, said core having a helically wound fine denier yarn cover thereover.

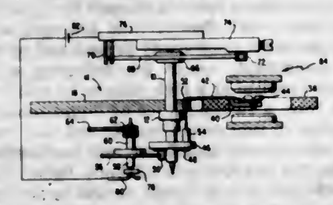
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3,169,364

## ELECTRIC TIMEPIECE

Philip E. Biemiller, deceased, late of Lancaster County, Pa., by Idamae V. Biemiller, legal representative, Lancaster County, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania

Filed July 19, 1963, Ser. No. 296,897
7 Claims. (Cl. 58—28)



1. A battery operated electric wrist watch comprising a watch casing enclosing, a balance assembly carrying a coil having a pair of coil sides, a battery, contact means associated with said balance assembly for periodically connecting said coil to said battery, a first pair of permanent magnets disposed immediately above said coil sides, a second pair of permanent magnets disposed immediately below said coil sides in alignment with said first pair of magnets, said magnets having magnetic axes substantially parallel to the axis of rotation of said balance, said magnets having a length along their magnetic axes which is no more than one fourth of their dimension perpendicular to their magnetic axes, upper shunt means engaging said first pair of magnets, lower shunt means engaging said second pair of magnets, and further shunt means connecting said upper shunt means and said lower shunt means.

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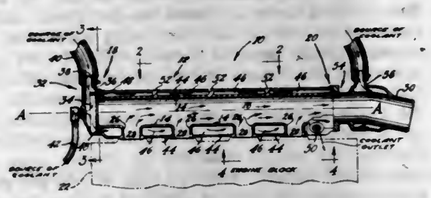
3,169,365

## APPARATUS FOR COOLING AN EXHAUST MANIFOLD

Lysle I. Benjamen, Birmingham, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 29, 1961, Ser. No. 99,156
10 Claims. (Cl. 60—31)

1. In an exhaust manifold having an exhaust gas passageway, a fluid coolant conveying chamber and an exhaust gas inlet port extending from said exhaust gas passageway through the fluid coolant conveying chamber to create an obstruction therein to the flow of fluid coolant therethrough, the improvement comprising, in combination with said fluid coolant conveying chamber, apparatus for inducing a fluid coolant to flow with swirling action through the fluid coolant conveying chamber, said



apparatus comprising baffle-like means disposed within the fluid coolant conveying chamber and extending therethrough and terminating at locations therein which are circumferentially offset relative to the exhaust gas inlet port.

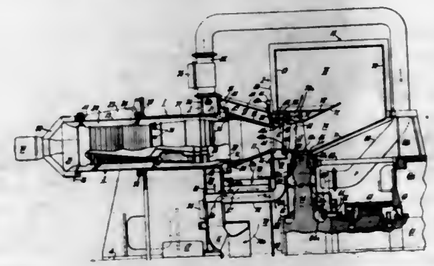
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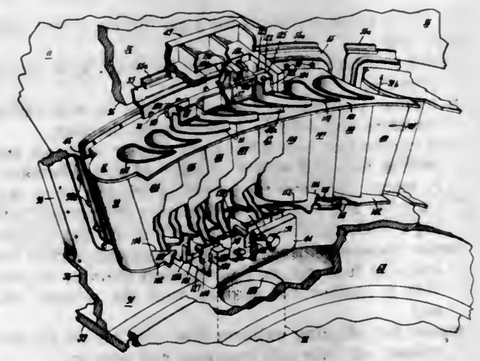
3,169,366

## MULTIPLE GAS GENERATOR TURBINE

Gordon W. Clark, Charles Fuerst, and Richard C. Sheldon, Schenectady, N.Y., and Eugene E. Stoeckly, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York

Filed Mar. 25, 1963, Ser. No. 267,447
13 Claims. (Cl. 60—39.37)





1. A multiple gas generator turbine powerplant comprising:

a turbine wheel including a circumferential row of radially extending buckets,

a cylindrical array of individually-operaitve gas generators disposed parallel to one another, said array being coaxial with said turbine wheel, each of said gas generators including combustion chambers and rotating compressor and turbine stages discharging hot motive fluid axially from a substantially cylindrical outlet,

a plurality of flow-directing ducts each shaped to receive fluid from one of said gas generator outlets and to discharge it from an arcuate mouth into a portion of said turbine buckets,

a plurality of radially extending nozzle partitions sealed within the arcuate mouth portion of each of said flow-directing ducts, a selected number of said nozzle partitions in each of said ducts being constructed to extend through opposite arcuate walls thereof and to support the arcuate end of the duct against axial and tangential thrust of the fluid, the remainder of the nozzle partitions in the duct being supported by the arcuate walls thereof, all of said nozzle partitions directing the motive fluid into an arcuate sector of said turbine buckets, whereby each of said gas generators supplies an arcuate sector of buckets through a group of both supporting and supported nozzle partitions separately from each of the other gas generators.

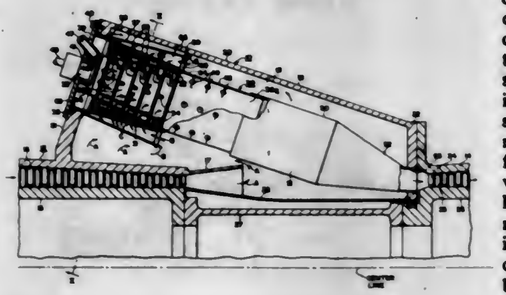
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3,169,367

## COMBUSTION APPARATUS

Charles E. Hussey, Brookhaven, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 18, 1963, Ser. No. 296,040
7 Claims. (Cl. 60—39.37)



1. Combustion apparatus for a gas turbine power plant comprising,

casing structure having an intake for receiving air under pressure,

a tubular combustion basket disposed in said casing structure and defining a combustion chamber,

said combustion basket having a tubular upstream end portion provided with a plurality of circumferentially spaced apertures for admitting primary air to said chamber and a tubular downstream end portion having a discharge outlet for connecting to a gas turbine,

means disposed adjacent said upstream end portion for injecting fuel into said combustion chamber to provide a combustible mixture with the primary air, and

means for effecting uniform flow distribution of said primary air into said upstream end portion,

said last mentioned means including a tubular imperforate shield disposed in encompassing spaced relation with said upstream portion,

said shield and said basket jointly defining an annular primary air inlet communicating with said apertures, and

a foraminous tubular member interposed between said shield and said upstream end portion,

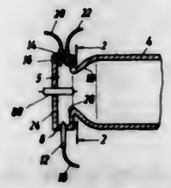
said shield and said foraminous member converging towards each other in downstream direction with relation to said air inlet.

3,169,368

## COMBUSTION CHAMBER FOR LIQUID FUELS

German Munding, Ottobrunn, near Munich, Germany, assignor to Bölkow-Entwicklungen Kommanditgesellschaft, Ottobrunn, near Munich, Germany

Filed Feb. 7, 1961, Ser. No. 87,583
3 Claims. (Cl. 60—39.66)



1. A rocket engine for liquid fuels comprising a relatively axially elongated combustion chamber having a circular cross section and including a substantially cylindrical main section; an axially relatively short swirl chamber having a circular cross section and coaxial with said combustion chamber at the entrance of the latter; said swirl chamber including cylindrical wall means and axially spaced end wall means having portions extending substantially perpendicular to said cylindrical wall means, one of said end wall means having a relatively small diameter circular opening communicating with said combustion chamber; said combustion chamber having an entrance transition section between said circular opening and said substantially cylindrical main section and progressively increasing in diameter from said circular opening; first and second nozzle means opening through the cylindrical wall means of said whirl chamber and arranged to direct a fluid into the latter tangentially thereof and with an axial velocity component; means for delivering a relatively heavy liquid coolant at a high velocity to said first nozzle means to form a swirling layer of liquid coolant on the inner surface of said swirl chamber and said combustion chamber and moving axially of said combustion chamber; means for delivering a relatively lighter liquid fuel at high velocity to said second nozzle means to form a swirling layer of liquid fuel on the inner surface of said layer of coolant and moving axially of said combustion chamber; and means for introducing a combustion supporting gas into said combustion chamber for admixture with said liquid fuel; said transition section maintaining continuity of said layer of liquid coolant throughout the length of said inner surface of said combustion chamber to maintain said layer of liquid fuel separated from the surface of said combustion chamber during combustion of said liquid fuel by the combustion supporting gas.

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3,169,369

## COMBUSTION SYSTEM

Peter M. Holl, Walnut Creek, Calif., assignor to General Electric Company, a corporation of New York

Filed June 19, 1963, Ser. No. 289,045
12 Claims. (Cl. 60—39.66)

1. A reverse flow combustion system adapted for use at the downstream end of a gas turbine engine adjacent the turbine, said system comprising:

a pair of concentric shells defining an annular air passage around the turbine,

an outer combination conical-cylindrical closed casing secured to the outer shell,

an inner concentric combination conical-cylindrical and open-ended perforated liner secured to the inner shell,

said casing and liner being symmetrically spaced to continue said annular air passage downstream,

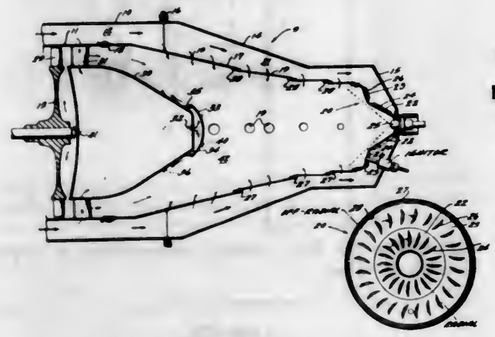


a double conical dome member closing the open end of said liner including an inner cone and a continuing outer cone opening away from said inner cone,

a series of substantially radial louvers around said inner cone,

a second series of louvers in said outer cone oriented off radial to provide a component of flow radially inward of said liner,

a fuel injector through said dome member,



a hollow conical centerbody,

hollow turbine nozzles connecting said centerbody and inner shell to support said centerbody spaced centrally of said liner and to conduct air to said centerbody,

aperture means in the cone of the centerbody,

and a dome cap supported on and spaced from said centerbody over said aperture to provide an annular air metering duct to direct air forward along the centerbody surface.

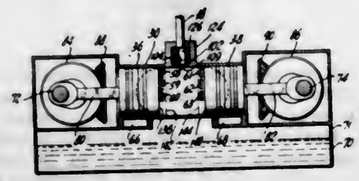
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3,169,370

## APPARATUS AND METHOD FOR DEVELOPING MECHANICAL POWER FROM A LIQUID

Isaac Szlechter, 184 Lee Ave., Apt. 1C, Brooklyn, N.Y.

Filed Nov. 1, 1962, Ser. No. 234,796
3 Claims. (Cl. 60—51)



1. A hydromotor for developing mechanical power from a liquid comprising

a pair of cylinders,

a pair of pistons in each of said cylinders axially aligned with one another,

crankshaft means connected to said pistons so that said pistons in each of said cylinders are adapted for movement in opposite directions from one another, corresponding pistons in the different cylinders being operable out of phase with one another,

the pistons in each cylinder having opposed faces which are generally cup-shaped so as to form a cavity between them when they are in their innermost positions,

valve means operated by said crankshaft means to alternately feed said liquid under pressure to said cylinders into the regions between said pistons,

a liquid outlet path in each of said cylinders, each path being maintained in a closed condition until the respective pistons have travelled a substantial distance from their top-dead-center positions at which time the respective paths are opened to allow some of said liquid to leave said cylinders,

the liquid then remaining in said cylinders being substantially contained within said cavity when said pistons return to their top-dead-center positions,

and a throttle for controlling the flow of liquid into said cylinders to vary the speed of said motor.

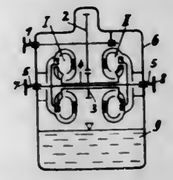
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3,169,371

## FLUID FLOW TRANSMISSION, ESPECIALLY FOR RAIL VEHICLES

Fritz Kugel, Heidenheim (Brenz), Germany, assignor to J. M. Voith, G.m.b.H., Heidenheim (Brenz), Germany

Filed Oct. 3, 1960, Ser. No. 60,089
Claims priority, application Germany, Oct. 9, 1959, V 17,372
15 Claims. (Cl. 60—54)



1. In a fluid flow transmission comprising a housing having mounted therein at least two coaxially arranged fluid flow machines each comprising a rotatable primary wheel and a rotatable secondary wheel, said fluid flow machines being operable in the same direction of rotation and being respectively designed for different velocity ranges and being adapted to be made effective and ineffective: a hollow primary shaft having said primary wheels connected thereto for rotation therewith, gear means adapted to be drivingly connected to a prime mover and including a gear interposed between two fluid flow machines and drivingly connected to said primary shaft, and a secondary shaft common to said secondary wheels and connected thereto for rotation therewith, said secondary shaft extending through said primary shaft and from one side wall of the housing to the opposite side wall to permit power take off at both ends of the secondary shaft through the respective side walls of the housing.

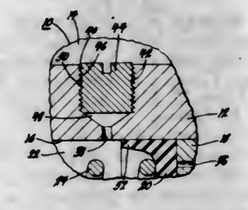
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3,169,372

## MASTER CYLINDER PRIMARY CUP ANTI-EXTRUSION MECHANISM

Richard C. Rike, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 27, 1963, Ser. No. 291,091
2 Claims. (Cl. 60—54.6)

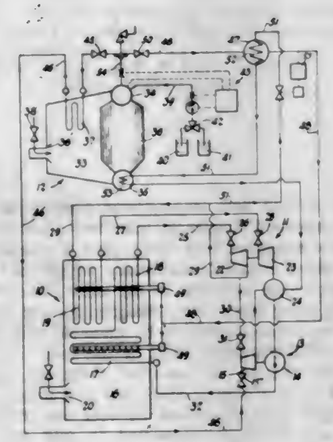


1. A port control assembly comprising, a housing having a fluid pressurizing first chamber and a fluid reservoir second chamber and a passage formed therein fluid connecting said chambers for replenishing fluid in said first cham-

ber from said second chamber and terminating in a port at said first chamber, thread means formed in the wall of said passage at said second chamber to a point spaced from said port, insert means having cooperable thread means thereon threaded in said passage, said thread means defining a pressure restrictive orifice fluid-connecting said port and said second chamber and sensitive to fluid pressure generated at a predetermined rate in said first chamber to cause a pressure buildup in said passage at said port to establish a maximum pressure differential between said first chamber and said passage at said port.

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**3,169,373**
**POWER PLANT EMPLOYING EXTRACTION STEAM FOR STEAM GENERATION PURPOSES**
**Frederick J. Hanzalek, Suffield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware**
**Filed June 19, 1962, Ser. No. 203,549**
**13 Claims. (Cl. 60—67)**

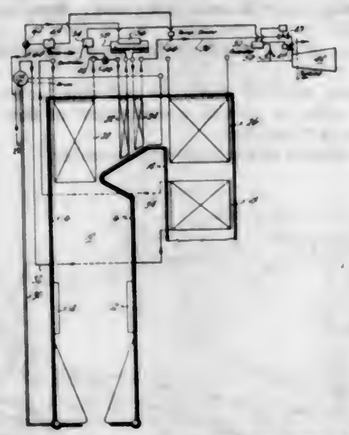


12. A steam power plant operating on a reheat cycle comprising a main steam generator having both high purity and low purity steam requirements and a turbine installation operatively connected thereto; a secondary steam generator capable of generating high purity steam operatively connected to said main steam generator for satisfying the high purity steam requirements thereof during start-up of said main steam generator, means for passing low purity feedwater in heat exchange relation with extraction steam from said turbine during normal operation of said main steam generator for satisfying said low purity steam requirements thereof.

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**3,169,374**
**POWER PLANT SYSTEM**
**Elmo M. Powell, Avon, and Virginius Z. Caracristi, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware**
**Filed Dec. 27, 1961, Ser. No. 162,357**
**19 Claims. (Cl. 60—105)**

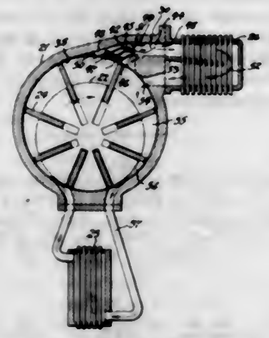
1. In a power plant system having a vapor turbine and a vapor generator which supplies said turbine with superheated vapor, the improved method comprising providing full admission to the governing or high pressure turbine stage throughout a substantial load range, regulating the vapor supply to the high pressure turbine stage by throttling the vapor stream at a predetermined location, imparting heat to said vapor downstream of said predetermined location and regulating the heat thus imparted to maintain the temperature of the vapor



delivered to the high pressure turbine stage at a predetermined value.

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**3,169,375**
**ROTARY ENGINES OR PUMPS**
**Lucas J. Veltkuis, P.O. Box 160, Colborne, Ontario, Canada**
**Filed Jan. 10, 1963, Ser. No. 250,582**
**15 Claims. (Cl. 60—108)**



1. A rotary engine comprising in combination, a stator, a rotor, eccentrically positioned therein, and a generator, said rotor including a set of centrifugally biassed radially disposed, equispaced vanes, said generator having intake and return passages communicating with the interior of said stator on either side of the locus of minimum distance between said stator and rotor via intake and return parts in said stator one side being the intake side and the other the exhaust side, and means for returning low-pressure propellant to said generator the space between said ports being less than the space between three adjacent vanes measured upon the circumference of said rotor.

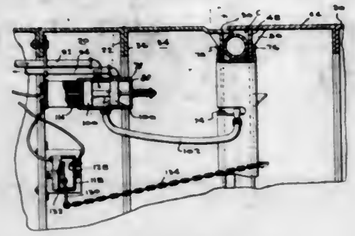
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**3,169,376**
**SUBTERRANEAN TUNNEL LINER INSTALLATION**
**Wesley B. Cunningham, 2 Morris St., Charleston, W. Va.**
**Filed Aug. 25, 1961, Ser. No. 133,893**
**4 Claims. (Cl. 61—42)**

1. In an apparatus for use in a system for the installation of subterranean tunnel lining elements arranged in an end-to-end string, the apparatus being of the type adapted for movement of the lining elements in one-by-



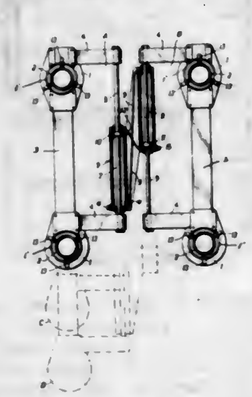
one sequential order, the apparatus including expandable, annular tubes interposed between said lining elements, fluid pressure means operatively interconnecting the tubes for effecting the expansion thereof, and valve means operatively connected to each of the tubes and to the fluid pressure means; that improvement which comprises: each



lining element having a pair of ends, annular, inwardly directed flanges on each lining element arranged adjacent said ends thereof, the expandable tubes being disposed between said flanges, and an annular tube shield comprising a flat, annular body portion having a pair of resilient arms extending from its sides and fitting about said flanges whereby an expansion chamber is provided for said tube.

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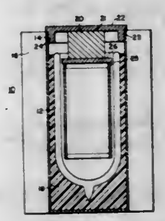
**3,169,377**
**BASE FOR MINE PROPS AND THE LIKE**
**Erich Hoffmann, Altluneu, Germany, assignor to Gewerkschaft Eisenhütte Westfalia, Westphalia, Germany, a German corporation**
**Filed Mar. 28, 1961, Ser. No. 98,923**
**Claims priority, application Germany, Apr. 27, 1960, G 29,546**
**9 Claims. (Cl. 61—45)**



1. Advanceable mine prop base arrangement which comprises a pair of flexible skid members each adapted to support mine prop roof bearing means, a rod for each skid member, an arm at each end of the skid members rigidly supporing the rods in parallel spaced relation to the skid members, a pair of cylinders on said rods and a pair of double acting pistons operatively disposed in said cylinders on said rods intermediate the ends of said rods, the ends of each rod extending through the ends of each cylinder, means connecting said cylinders together in staggered endwise fixed relation to each other to maintain said rods parallel to each other and to permit said cylinders to move said rods longitudinally an additive longitudinal distance substantially equal to the length of one rod from a starting position where both rods are side by side.

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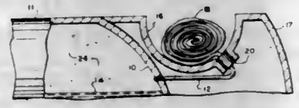
**3,169,378**
**THERMOELECTRIC CHAMBER**
**Joseph C. Taylor, Hempfield Township, Westmoreland County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 10, 1963, Ser. No. 279,494**
**3 Claims. (Cl. 62—3)**



1. A thermoelectric chamber suitable for controlling the ambient temperature about temperature sensitive semiconductor devices comprising a Dewar flask, an outer housing surrounding the flask, a thermally insulating material disposed along the bottom and side walls of the flask between the flask and the housing, a thermoelectric device disposed within the flask and housing and means for hermetically sealing the flask and housing.

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**3,169,379**
**CRYOGENIC STORAGE CONTAINER WITH INFLATABLE JACKET INSULATION**
**Dolphus H. Black, Rte. 1, Arab, Ala.**
**Filed Mar. 12, 1963, Ser. No. 264,730**
**17 Claims. (Cl. 62—50)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



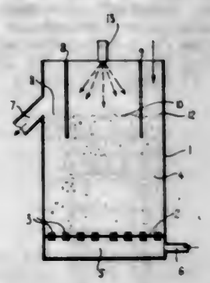
1. An insulating structure comprising:
(*a*) a wall for confining a temperature sensitive material;
(*b*) a multiplicity of flexible sheets stored in a compacted condition at one point on said wall,
(1) said sheets being adapted to extend from said stored condition along said wall,
(2) said sheets being disposed in parallel relationship to each other when extended along said wall; and
(*c*) means for introducing a gaseous material into the voids between said parallel flexible sheets so that said sheets are inflated into spaced relationship to each other thereby forming gas pockets for reducing the transmisison of heat across said sheets.

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**3,169,380**
**COOLING OF SOLIDS**
**Alan Edward Callow, Normanby, Middlesbrough, and Bernard Harris, Acklam, Middlesbrough, England, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom**
**Filed Nov. 14, 1962, Ser. No. 237,674**
**Claims priority, application Great Britain, Nov. 14, 1961, 40,740/61**
**6 Claims. (Cl. 62—57)**

1. A process of cooling hot particulate solids which comprises passing a gas through a bed of the hot solids at a rate of flow sufficient to fluidize the bed, feeding a cooling fluid to a portion of an upper surface of the fluid bed, introducing hot particulate solids to a por-

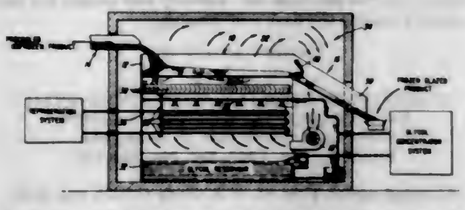
tion of the bed removed from that portion in contact with the cooling fluid, and removing cooled particulate



solids from another portion of the bed not subjected to the cooling fluid.

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**3,169,381**
**FLUIDIZED FREEZER**
**Per-Oskar Persson, Vikea, Sweden, assignor to Frigoscandia Ltd., London, England, a corporation of Great Britain**
**Filed Apr. 13, 1964, Ser. No. 359,244**
**27 Claims. (Cl. 62—57)**

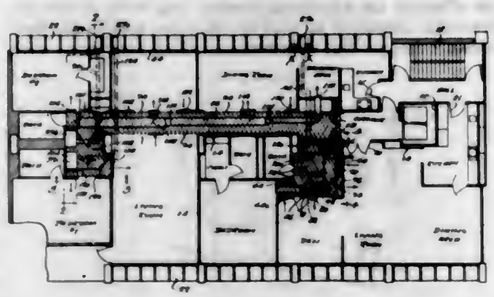


1. A method of freezing solid food particles comprising:
(*a*) feeding the said particles into a container;
(*b*) creating a fluidized bed of said particles solely by forcing refrigerated gas upwardly therethrough and therearound to achieve discrete glazing and freezing of said particles;
(*c*) providing a fluid head of fluidized particles at one end of said container by further feeding more particles at said one end to thereby achieve flow of said particles from said one end of said container to the other end thereof simultaneously with the fluidization; and
(*d*) removing the then frozen particles from the container.

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**3,169,382**
**AIR CONDITIONING SYSTEM FOR MULTIPLE UNIT DWELLINGS**
**Daniel M. Brown, Evanston, Ill., assignor to Systems Engineering Corporation, Chicago, Ill., a corporation of Illinois**
**Filed May 2, 1963, Ser. No. 277,547**
**2 Claims. (Cl. 62—259)**

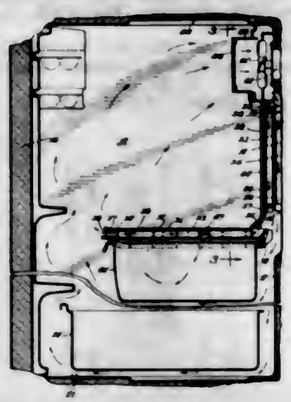
1. In an apartment which is one of many in a multiple unit dwelling and which has a plurality of rooms, some of which are non-adjacent, and a corridor adjoining most of said rooms, an air conditioning system comprising a false ceiling in said corridor situated below the true ceiling thereof over an area fronting on more than one of said rooms including non-adjacent rooms, means closing the peripheral edges of said false ceiling against said true ceiling to define a closed chamber against said true ceiling, an evaporator unit in said chamber including a blower having an air intake and a discharge orifice, said intake being open to said chamber, duct work within said chamber and connected to said orifice and extending through said closing means at at least two points to open on at least two of said non-adjacent rooms, means defining openings through said closing means in said rooms for admitting air into said chamber to permit circulation



of air in said rooms individually, a condenser unit outside the wall of said dwelling, and conduits interconnecting said condenser unit and said evaporator unit for conducting refrigerant fluid between said units.

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**3,169,383**
**REFRIGERATOR WITH HOLLOW COLD SHELF**
**Evans T. Morton, Benton Harbor, Mich., and Lee G. Beckett, Henderson, Ky., assignors to Whirlpool Corporation, a corporation of Delaware**
**Filed Nov. 25, 1958, Ser. No. 776,247**
**19 Claims. (Cl. 62—419)**



1. In a refrigerator having refrigerating means a fixed but removable container having a top access opening; first means for refrigerating the container comprising a wall removably closing said access opening and means for directing air refrigerated by said refrigerating means against said wall; second means for refrigerating the container comprising means directing air refrigerated by said refrigerating means through said wall into the container; and third means for refrigerating the container comprising means directing air refrigerated by said refrigerating means against the exterior of the container.

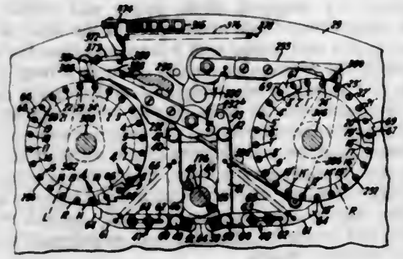
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**3,169,384**
**PATTERN MECHANISM FOR KNITTING MACHINES**
**Benjamin Franklin Colle, Athens, Ga., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania**
**Filed Mar. 23, 1960, Ser. No. 17,127**
**6 Claims. (Cl. 66—50)**

4. In a knitting machine, pattern means therefor including a rotatable pattern drum assembly, a first means



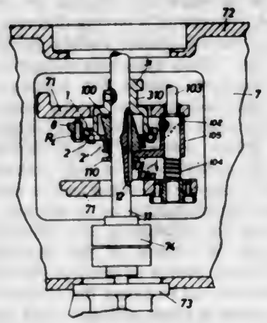
for causing step-by-step rotation of said pattern drum assembly through steps of one extent at predetermined times, and an auxiliary means for causing step-by-step rotation of said pattern drum assembly through steps of another extent at other times, said first means comprising a first pawl, a first means for continuously reciprocating said first pawl, and a ratchet wheel having ratchet teeth of a



first spacing adapted to be engaged by said first pawl, and said auxiliary means comprising a second pawl, a second means for continuously reciprocating said second pawl at a predetermined frequency, and ratchet means having ratchet teeth of a second spacing carried by said ratchet wheel and movable therewith into cooperative relationship with said second pawl by said first means.

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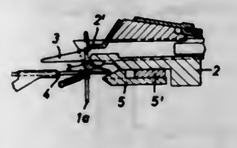
**3,169,385**
**APPARATUS FOR MAKING HEEL OR TOE POUCHES ON CIRCULAR KNITTING MACHINES**
**Karl Haberhauer, Ingolstadt, Germany, assignor to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, Germany, a German corporation**
**Filed Nov. 29, 1962, Ser. No. 241,006**
**Claims priority, application Germany, Jan. 11, 1962, Sch 30,816**
**18 Claims. (Cl. 66—54)**



1. A circular knitting machine for the knitting of tubular goods and adapted to selectively work pouches into the goods by variation of the longitudinal length of the knit loops while the machine is in continuous rotary motion, said knitting machine comprising:
(*a*) a cylinder having needles disposed axially about the cylinder and mounted thereon for axial movement thereof with respect to the cylinder for knitting operation, said needles having needle butts for actuation of the needles;
(*b*) a stitch cam for cooperation with the needle butts to actuate said needles for the knitting operation;
(*c*) means for rotating said cylinder relative to said stitch cam for cooperation of the stitch cam with the needle butts to provide the knitting operation of the needles;
(*d*) a pouch working cam and means for rotating the pouch working cam in synchronism with the said movement of the needle cylinder;
(*e*) a cam follower for cooperation with the pouch working cam;
(*f*) means interconnecting said cam follower and stitch cam and effective to move the stitch cam axially related to the needle cylinder in response to action of the pouch working cam on the cam follower, whereby to vary the axial stitching movement of needles, and therefore the longitudinal length of the knit loops;
(*g*) control means for the pouch working cam for changing the working height of said cam whereby the magnitude of the cam action on said cam follower can be changed and in turn axial stitching movement of the needles can be changed; and
(*h*) programming means for coordinating operation of the said control means with rotation of the needle cylinder to provide longitudinally elongated stitches over an area of the knit goods to provide a pouch therein.

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**3,169,386**
**PRESSING SUPPORT FOR STRAIGHT BAR KNITTING MACHINE**
**Wilhelm Ullmann and Hans Vettermann, Eislingen, and Hans Scheller, Faurndau, Kreis Goeppingen, Germany, assignors to Gebr. Scheller Textilmaschinenfabrik G.m.b.H., Eislingen (Fils), Germany**
**Filed July 12, 1961, Ser. No. 123,570**
**Claims priority, application Germany, July 22, 1960, Sch 28,204**
**22 Claims. (Cl. 66—88)**



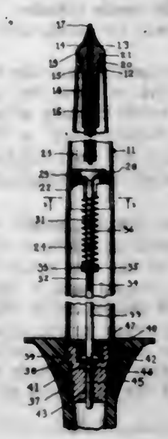
1. In a straight bar knitting machine, in combination a row of machine needles, each needle having a head with a beard on one side; means supporting said needles for movement in longitudinal direction of the same to and from an advanced pressing position; presser means located on said one side of said needles for pressing and closing said beards in said advanced position of said needles and also located on the opposite side of said needles supporting said needle heads of said needles in said advanced pressing position, said presser means including two sets of presser members arranged in a selected order and respectively aligned with said needles to cooperate with corresponding aligned sets of said needles, at least one of said sets of presser members being movable.

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**3,169,387**
**ARTIFICIAL CANDLE**
**Cosimo J. Cordillo, 18 W. 5th St., New Providence, N.J.**
**Filed Apr. 12, 1962, Ser. No. 186,965**
**6 Claims. (Cl. 67—55)**

3. An artificial candle comprising:
(*a*) an elongated shell shaped in the form of a candle,
(*b*) a refueling plug engageable and disengageable with the bottom of the shell shaped in the form of the bottom of a candle and the plug having a central passage,
(*c*) a shoulder in the central passage in the refueling plug,
(*d*) a push rod in the central passage,
(*e*) a head on the push-rod seated on the shoulder in the central passage,

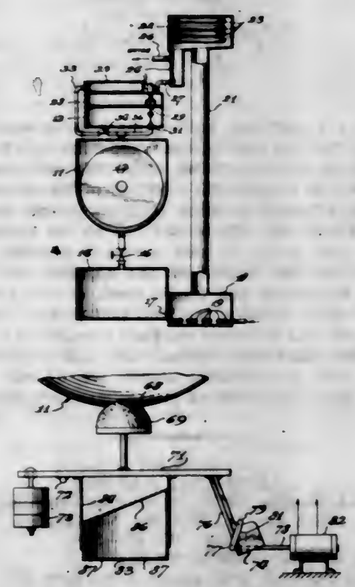
(*f*) a seal positioned in the passage above the head on the push-rod,



(*g*) an annular retainer for the seal engaged with the refueling plug in the central passage thereof.

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**3,169,388**
**SELF-CONTAINED DRY CLEANING MACHINE**
George W. Graham, 1033 S. Hamlin Ave., and Alexander C. Blagoue, 924 S. Crescent Ave., both of Park Ridge, Ill.
Filed Nov. 2, 1962, Ser. No. 235,004
5 Claims. (Cl. 68—18)

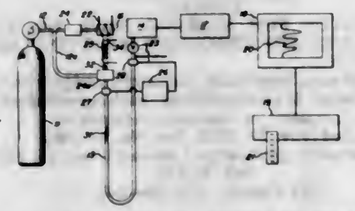


1. A discharge means for a chamber containing a liquid comprising an orifice at the bottom of said chamber, plugging means below said orifice normally urged upward into abutment with the walls of said orifice to seal said orifice with a force less than the force exerted by the pressure of the liquid thereabove, means to releasably hold said plugging means in abutment with the walls of said orifice against said liquid pressure thereabove and means to exert a timed downward force on said plugging means sufficient to overcome said normal upward force.

5. A self-contained dry cleaning machine comprising a washing chamber, delivery means to feed to said washing chamber liquid dry cleaning solvent to wash a batch of clothing, discharge means to remove said cleaning solvent from said washing chamber, said discharge means comprising (1) an orifice at the bottom of said washing chamber, (2) plugging means below said orifice normally urged upward into abutment with the walls of said orifice to seal said orifice with a force less than the force exerted by the pressure of the dry cleaning solvent thereabove, (3) means to releasably hold said plugging means into abutment with the walls of said orifice against said liquid pressure thereabove, and (4) means to exert a timed downward force on said plugging means sufficient to overcome said normal upward force, means for passing substantially all of said discharged cleaning solvent to a distillation means for evaporation and recondensation thereof, and means for returning said recondensed solvent to said delivery means.

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**3,169,389**
**ANALYSIS BY GAS CHROMATOGRAPHY AND APPARATUS THEREFOR**
Louis E. Green, Jr., Chesterton, and John C. Winters, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed June 16, 1960, Ser. No. 36,543
9 Claims. (Cl. 73—23.1)



1. Gas analysis apparatus adapted for resolving a mixture of organic compounds having different boiling points into fractions having similar boiling points and in boiling point order which apparatus comprises a gas chromatography column, means for passing a carrier gas stream through said column, means adapted for introducing a vaporized sample of said mixture into said carrier gas stream upstream of said column, a column packing material positioned in said column, which column packing comprises a non-selective stationary liquid phase consisting essentially of a silicone rubber gum, means adapted for increasing the column temperature linearly during the course of the analysis, and flame ionization detector means adapted to receive the effluent from said column and to detect the concentration of said fractions in said column effluent, said detector being adapted to produce a signal linear over a wide range of column effluent flow rates and temperatures, and means responsive to said signal from said detector to provide a quantitative record of each of said fractions.

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**3,169,390**
**LIQUID PHASE FOR GAS-LIQUID CHROMATOGRAPHIC COLUMN PACKING**
John N. Roper, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 27, 1962, Ser. No. 219,644
5 Claims. (Cl. 73—23.1)

3. A liquid phase gas chromatographic column article for producing sharp chromatogram peaks in analysis of mixtures containing organic acids which comprises:

(1) a porous solid support, and, coated thereon

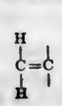


(2) an absorbent having a molecular weight of at least about 10,000 selected from the group consisting of:

(*a*) homopolymers of acrylic, methacrylic, itaconic, citraconic acids and

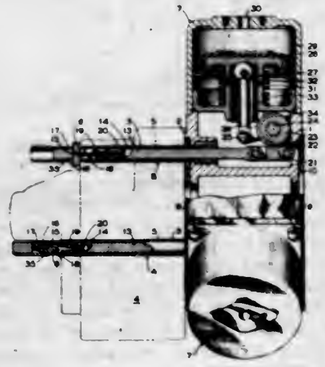


(*b*) copolymers of acrylic, methacrylic, itaconic, citraconic, maleic and fumaric acids with other vinyl monomers copolymerizable therewith containing the structural unit



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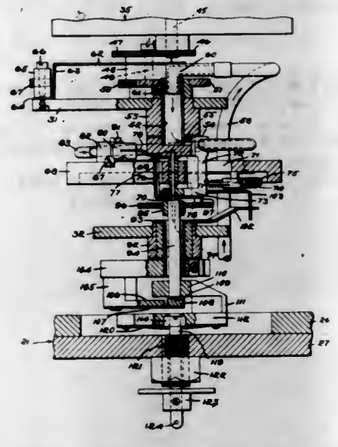
**3,169,391**
**PNEUMATIC POWER ACTUATED CLAMPING APPARATUS**
Willard P. Spalding, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1961, Ser. No. 160,833
7 Claims. (Cl. 73—39)



1. Power-operated clamping apparatus for clamping a ported valve device to be tested in sealed relation to a correspondingly ported test bracket on which said valve is mounted, said clamping apparatus comprising a member having a clamping face on which a valve device may be mounted, a plurality of valve mounting studs projecting in spaced relation from the clamping face of said member for extension through corresponding securing bolt passages in the valve device, said studs being tubular in form, reciprocable rods in each of said studs, latch means carried by each said rod and cooperable with the stud as the rod shifts in opposite directions in the stud to project out of said stud or to withdraw within the stud, and power means for shifting said rods simultaneously in a direction to first cause the several latch means to project from the respective studs and then engage the valve device to transmit to the valve device a clamping force exerted by the power means.

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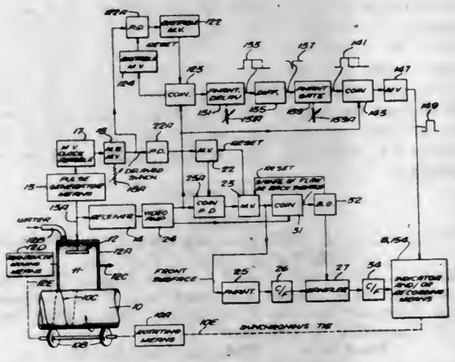
**3,169,392**
**VISCOMETER**
William B. Brookfield, 9 Osage Road, Canton, Mass.
Continuation of application Ser. No. 24,814, Apr. 26, 1960. This application Dec. 17, 1962, Ser. No. 245,637
19 Claims. (Cl. 73—59)



1. In a device for responding to changes in the viscosity of a liquid, a drive shaft, a driven shaft, including a member to be immersed in the liquid to be subjected to the drag thereof, a connection between said shafts operable to permit limited relative rotation therebetween when the driven shaft torque exceeds a predetermined value, a spring one end of which is connected to said driven shaft, and a connection between the other end of said spring and said drive shaft and including an air conduit provided with a valve port carried by said drive shaft, and a port closing member carried by said other spring end and closing said port until relative shaft movement occurs.

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**3,169,393**
**MEANS AND TECHNIQUES FOR INSPECTING METAL**
Larry O. Stebbins, Temple City, Calif., assignor, by mesne assignments, to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Apr. 3, 1961, Ser. No. 100,215
10 Claims. (Cl. 73—67.9)

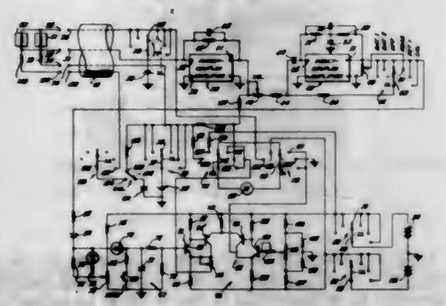


5. In an ultrasonic system of the character described wherein a test piece has ultrasonic energy transmitted thereto for developing resulting video echo signals as a result of reflections from the front and back surfaces as

well as a result of inhomogeneities in the test piece, means producing a sawtooth wave in response to one of said echo signals, sampling means coupled to said sawtooth generating means, means responsive to an echo signal which succeeds that echo signal which operates the sawtooth generating means for producing a voltage in said sampling means, and means producing a recording representative of said voltage.

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3,169,394
**REMOTE PORTABLE LOAD INDICATOR FOR POWER PRESSES AND THE LIKE**
Robert E. Vosteen, Medina, and Clarence O. Jones, Jr., Eggertsville, N.Y., assignors to Niagara Machine & Tool Works, Buffalo, N.Y.
Filed May 31, 1961, Ser. No. 113,803
7 Claims. (Cl. 73—88.5)

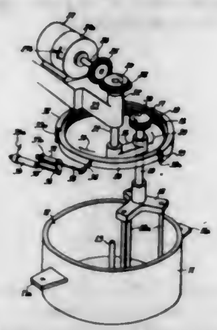


3. Apparatus for indicating the peak value of the strain on a machine member comprising at least one strain gage mounted on said member and a portable apparatus for connection to said strain gage for measurement of its peak resistance, said portable apparatus including a battery connectable in a closed circuit with said strain gage to develop a current therethrough of amplitude determined by the instantaneous resistance of the gage, a first and a second direct current amplifier each of amplification too low for building up current changes through said gage to a level suitable for indication but of cascaded gain satisfactory therefor, and each amplifier being subject to long-term drift, said first amplifier being directly connected to said gage to measure the instantaneous current therethrough, the output of said amplifier being capacitively connected to the input of said second amplifier to minimize the effects of long-term drift of the first amplifier, and an R-C circuit including the series combination of a first capacitor, a rectifier and a second capacitor connected across the output of said second amplifier, the capacitance of said first capacitor being many times higher than the capacitance of said second capacitor so that voltages representing peak strains are transferred from the second amplifier through said first capacitor into said second capacitor for storage thereby, and means for indicating the voltage across said second capacitor.

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3,169,395
**RHEOLOGICAL TESTING MEANS AND METHOD OF TESTING WHEAT FLOURS**
Durard W. Enoch and Gerald L. Scott, Kansas City, Mo., and Melvin M. Huber, Overland Park, Kans., assignors to Interstate Bakeries Corporation, Kansas City, Mo., a corporation of Delaware
Filed May 31, 1962, Ser. No. 199,182
37 Claims. (Cl. 73—169)

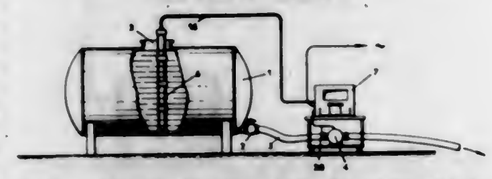
1. The method of measuring the characteristics of a flour comprising the steps of: preparing a dough from said flour; working said dough at a constant rate by pulling and stretching until the gluten fails completely; and measuring the length of time required to (*a*) reach the point of optimum dough development, (*b*) reach the



point of maximum dough elasticity, and (*c*) reach the point of complete fatigue of the gluten.

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3,169,396
**AUTOMATIC DEVICE TO ESTABLISH QUICKLY GAGING CHARTS FOR LIQUID HOLDING VESSELS**
Marius Renoult, Epinay sur Seine, France, assignor to Societe Dessaga & Lair, Alfortville, France, a corporation of France
Filed Mar. 27, 1961, Ser. No. 98,660
Claims priority, application France, Mar. 29, 1960, 822,786
4 Claims. (Cl. 73—198)



1. A device for making a chart indicating the relationship between the level of the liquid in a container and the volume of said liquid, said means comprising a recording device equipped with means for continuously advancing and means for marking a strip of indicia-receiving material, means for generating a signal indicative of changes in the said liquid level, means for generating a signal indicative of changes in said liquid volume, and a pulse generator responsive to the signals of one of said signal generating means and connected to actuate said marking means at intervals indicative of changes of a predetermined magnitude, said strip advancing means being responsive to the signals of the other signal generating means.

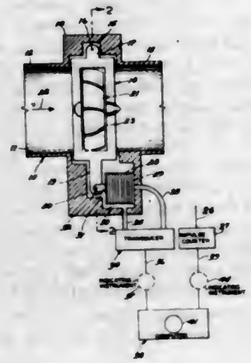
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3,169,397
**FLUID FLOW METER**
William Bruce Murray, 4523 Fairway Drive, Lakewood, Long Beach, Calif.
Filed Nov. 30, 1961, Ser. No. 155,922
8 Claims. (Cl. 73—231)

5. A fluid flow meter comprising a body having a passage therethrough for flow of fluid to be measured, a yoke extending across said passage and pivotally mounted at a first end thereof on said body for pivotal movement axially of said passage, a turbine wheel mounted in said yoke for free rotation by fluid flowing through said passage, first means pivotally connected to a second end of said yoke for measuring the force on said yoke as said yoke is pivoted relative to said body by fluid flowing through said passage and impinging on said wheel and yoke, second means responsive to said force as measured by said first means



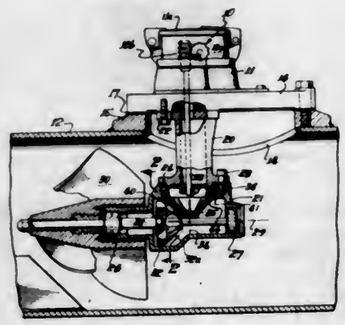
for providing an electrical output proportional thereto, third means for measuring the speed of rotation of said wheel and to provide an electrical output proportional to



the speed of said wheel, and fourth means for comparing the electrical output of said second and third means to provide an indication of the weight of fluid flowing through said passage.

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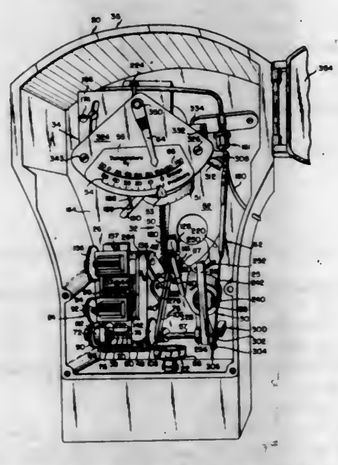
3,169,398
**MAGNETIC DRIVE FOR FLUID FLOW METERS**
Ray C. Sparling, San Gabriel, and Joseph A. Braun, Temple City, Calif., assignors to Hersey-Sparling Meter Company, El Monte, Calif., a corporation of Massachusetts
Filed Dec. 21, 1961, Ser. No. 161,179
6 Claims. (Cl. 73—231)



1. A drive for a fluid flow meter or the like comprising:
a support structure;
a first shaft rotatably mounted by said support structure;
impeller means on said shaft to rotate said shaft in response to movement in a body of fluid in contact with said impeller;
a first magnet means mounted on the shaft to rotate therewith;
a second shaft rotatably mounted by said support structure at an angle to the first shaft and adapted for driving connection to a register of the meter;
and a second magnet means mounted on the second shaft to rotate therewith, the second magnet means being magnetically coupled to the first magnet means whereby rotation of the first magnet means causes rotation of the second magnet means and the associated shaft;
each of said magnet means comprising a permanent magnet having beveled pole faces lying in a frusto-conical surface.

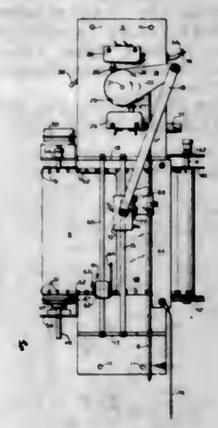
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3,169,399
**FLUID METERING APPARATUS WITH PRESSURE AND TEMPERATURE COMPENSATION**
Davies Allport and Walter I. Myers, Tulsa, Okla., assignors to Rockwell Manufacturing Company, a corporation of Pennsylvania
Filed May 17, 1962, Ser. No. 195,551
15 Claims. (Cl. 73—233)



1. In apparatus for correcting the volume of gas metered by a positive displacement type gas meter to base pressure and temperature:
(*a*) means including a lever member cyclically movable about a pivot at a frequency directly proportional to the metered rate of flow and output means drive connected to said lever member and cyclically movable therewith, said lever member having a variable angular displacement and a variable effective length for varying its amplitude of movement and the amplitude of movement of the output means connected thereto;
(*b*) means including temperature sensing means and a first motion transmitting drive mechanism operatively interposed between the temperature sensing means and the cyclically movable member continuously varying the effective length of said member in inverse proportion to variations in the temperature of the metered gas;
(*c*) independent means including pressure sensing means and a second motion transmitting drive mechanism comprised entirely of elements distinct from those in the first motion transmitting drive mechanism operatively interposed between the pressure sensing means and the cyclically movable member for continuously varying the angular displacement of said member in direct proportion to variations in the pressure of the metered gas;
(*d*) totalizing register means for registering the corrected flow; and
(*e*) means connected between said output means and said totalizing register means for advancing the latter at a rate directly proportional to the frequency of movement of said movable member through increments directly proportional to the amplitude of movement of said output means, said register advancing means providing the sole input to said totalizing register means.

**3,169,400**
**LIQUID LEVEL RECORDING APPARATUS**
Ludwig Kiramidjian, 599 40th Ave., San Francisco, Calif.
Filed Nov. 2, 1962, Ser. No. 235,058
13 Claims. (Cl. 73—290)



12. Apparatus for recording the level of a liquid comprising:

(*a*) a marking means;

(*b*) a probe;

(*c*) a recording medium moving at a determinable rate of speed;

(*d*) a driving means;

(*e*) a first mechanism connecting said driving means and said probe for oscillating said probe between a first position, above the level of said liquid, and a second position, in which said probe is dipped into said liquid, in response to operation of said driving means;

(*f*) a second mechanism connecting said driving means and said marking means for oscillation of said marking means across said recording medium in relation to oscillation of said probe;

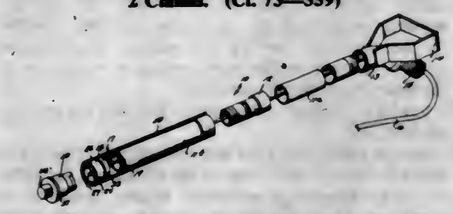
(*g*) means connected to said probe and said marking means for generating a marking signal in response to initial contact of said probe with said liquid during oscillation of said probe;

(*h*) said marking means marking said recording medium in response to said marking signal;

(*i*) control means connected to said driving means for periodically operating the same.

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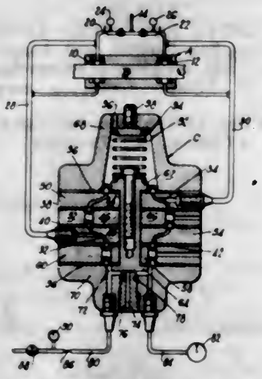
**3,169,401**
**THERMOCOUPLE LANCE AND CARTRIDGE**
Harold Thomas Newmann, Jr., Exeter, Pa., assignor to Universal Electronics Labs., Inc., West Wyoming, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1960, Ser. No. 50,417
2 Claims. (Cl. 73—359)



1. A thermocouple lance, comprising in combination, an elongated tubular member, a handle at one end of said member, an electrical fitting in the other end of said member, said electrical fitting comprising a cylindrical sleeve, a heat resistant disc secured in said sleeve, means connecting one side of said disc to an electrical measuring instrument, a centrally disposed longitudinally extending male connector element fixed to the other side of said disc, an expendable thermocouple assembly having a centrally disposed bore therein removably mounted in said electrical fitting, said male connector element extending into said bore in said thermocouple assembly, spaced electrical contacts in said bore in engagement with said male connector element to hold said thermocouple assembly in said cylindrical sleeve and place the thermocouple in electrical communication with said electrical measuring instrument, said cylindrical sleeve including portions defining a substantially centrally positioned exterior annular groove having a pair of spaced apart openings therein, the portions of said sleeve defining said annular groove providing a shoulder interiorly of said sleeve, said heat resistant disc seated within said shoulder, portions of said disc defining an annular groove therein, the pair of spaced openings in said cylindrical sleeve in alignment with the groove in said disc, and securing means extending through said openings in said sleeve into the annular groove in said disc.

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**3,169,402**
**PRESSURE DIFFERENTIAL GAGE**
Ralph C. Baker, Littleton, Colo., assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Aug. 16, 1961, Ser. No. 131,933
1 Claim. (Cl. 73—407)



In a differential pressure sensing device for accurately sensing the difference in pressure between two pressure signals: a housing member having an axially extending internal chamber, an axially extending hub structure in said chamber, a first pair of flexible diaphragms extending across said chamber between said housing and hub structure to form a first variable pressure compartment, a second pair of flexible diaphragms extending across said chamber between said housing and hub structure to form a second variable pressure compartment, the diaphragms of each pair having different effective areas and said pairs being arranged to produce forces on said hub structure which oppose each other, each of said diaphragms having a peripheral interconnection between the effective area thereof and said housing formed of rubber-like material having an annularly extending curved portion in which substantially all deflections take place, an escape nozzle positioned adjacent one end of said hub structure to be throttled thereby, a spring engaging the other end of said hub structure biasing said hub structure towards the end of said escape nozzle, said nozzle being adjustable toward and away from said hub structure, a fifth flexible diaphragm extending across said chamber between said housing and hub structure to form a back pressure compartment which includes said escape nozzle, a conduit adapted for connection to a pressure regulated air supply, a restriction in said conduit, and means for supplying air under pressure from said restriction to said back pressure compartment, said spring urging said hub structure towards said escape nozzle so that increase in pressure in said back pressure compartment moves said hub structure away from said nozzle, and said escape nozzle being adjustable toward and away from said hub structure to bring the throttling range of said hub structure with respect to said nozzle to a position coincident with a position establishing a mean centered position of said diaphragms, and pressure sensing means connected to said back pressure compartment.



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**3,169,403**
**GRAIN SAMPLING DEVICE**
Paul J. McGinn, Box 393, Ipswich, S. Dak.
Filed Apr. 30, 1962, Ser. No. 190,929
6 Claims. (Cl. 73—425.2)



1. A sampling device for use in sampling particulate material such as grain and the like,

said device comprising a grain type sampling probe having a pointed lower end and an open upper end,

a closure cover shiftably connected to said probe for opening and closing said open upper end,

an elongate sectional handle structure for said probe, and including elongate upper, lower and intermediate sections detachably connected together in end-to-end relation,

the lower end portion of said lower section being detachably connected to the closure cover in fixed relation therewith and the upper end portion of said upper section having a transversely extending hand grip element affixed thereto,

the respective end portions of said intermediate section, the lower end portion of the upper section, and the upper end portion of said lower section each defining a coupling connector,

one coupling connector on said intermediate section and one of the coupling connectors of said upper and lower sections comprising an axially extending generally cylindrical socket member, the other connector of said intermediate section and the other connector of one of said upper and lower sections comprising a generally cylindrical shaped socket engaging member for ready insertion into the socket member of the adjacent section to define a coupling connection,

releasable locking means for releasably locking said coupling connections,

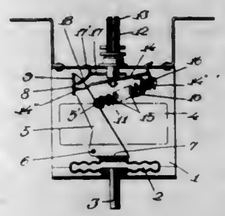
said locking means comprising a radially extending locking element mounted on one of said socket engaging and socket member of each coupling connection and a radially extending recess in the other of said members for receiving the locking element therein, said locking element when disposed in locking relation in said locking recess extending radially inwardly of the socket defined by said socket member,

and each coupling connection including a slot formed in one of said members and in the same member as said locking element, said slot for each coupling connection extending first axially from the end of said member and terminating in an angular offset portion and being spaced axially of the locking element of the associated member, a radially extending pin on the other of said members of each coupling connection which when disposed within said angular offset portion positioning said locking element in radial alignment with its associated recess to thereby facilitate locking of said coupling connection, said pin being spaced axially of the locking recess of the associated member,

and each of said coupling connections being readily disconnectible upon axial retraction of its locking element from the associated locking recess and thereafter revolving the socket and socket engaging members relative to each other.

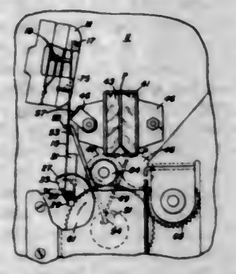
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**3,169,404**
**THERMOSTAT FOR REFRIGERATING APPARATUS**
Shigeo Mamiya and Takeshi Odashima, both of Tokyo, Japan, assignors to Saginomiya Seisakusho Co., Ltd, Tokyo, Japan
Filed Sept. 7, 1961, Ser. No. 136,655
Claims priority, application Japan, Sept. 16, 1960, (utility model) 35/46,713
2 Claims. (Cl. 74—2)



1. In combination, a first push button; trip plate means having a tip portion and including an integrally connected leaf spring member, said trip plate means and leaf spring member being depressable in response to depression of said first push button; a diaphragm including a temperature sensing means connected therewith for expanding said diaphragm in response to a predetermined temperature sensed by said sensing means; activating means including a base portion bearing against said diaphragm, said activating means being pivoted whereby expansible motion of said diaphragm causes limited pivotal movement of said activating means, said activating means including a cut-out portion at an end thereof opposite said base portion, said tip portion of said trip plate means being moved into said cut-out portion for latching engagement of said activating means with said trip plate means in response to depression of said first push button whereby said trip plate means and leaf spring are latched in the depressed condition; spring means connected between said activating means and said trip plate means for maintaining said tip portion of said trip plate means in said cut-out portion for latching engagement. the expansion of said diaphragm in response to said temperature sensing means acting against said spring means to unlatch said trip plate and activating means; a second push button; and, a second linkage means including a tip portion movable in response to the depression of said second push button to actively engage said activating means for urging said activating means out of latching engagement with said trip plate means.

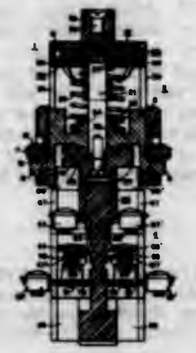
3,169,405
TIME DELAY DEVICE
John F. Egan and Donald M. Harvey, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 13, 1961, Ser. No. 82,436
3 Claims. (Cl. 74—3.5)



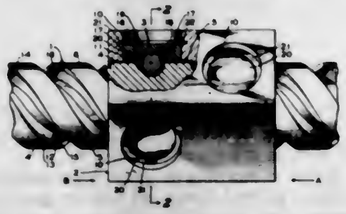
1. A time delay device for use in an apparatus having an element which is driven for rotation about a fixed axis, said device comprising:
(*a*) a member having spaced ends;
(*b*) means for pivotally mounting one of said ends so that the other is moveable between at least two spaced positions;
(*c*) means for moving said other end from one to the other of said positions;
(*d*) engaging means carried by and mounted for rotation about said other end of said member;
(*e*) said engaging means having one peripheral surface for engaging the rotating periphery of said element after the initiation of movement of said other end toward said one of said positions and a second peripheral surface disposed in angularly spaced relation to said one surface for abutting the rotating periphery of said driven element when said other end is in said one position; and
(*f*) means for aligning said one surface for engagement with said element prior to such engagement therewith;
(*g*) whereby the movement of said other end to said one position is delayed during the time between first engagement of said one surface with said driven element and abutting of said second surface with said driven element.

3,169,406
CONTROL SWITCH OPERATOR
John H. Mullen, Brighton Township, Beaver County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 31, 1961, Ser. No. 113,714
9 Claims. (Cl. 74—99)

1. In a switch actuating unit for reciprocally moving a switch operating member, a cam member, an actuating structure rotatable in a first direction from a first position to a second position to rotate said cam member to effect movement of said switch operating member from a first operating position to a second operating position, a first retaining means for retaining said actuating structure in said second position, resilient means operating to automatically return said first actuating structure to said first operating position when said retaining means is released to thereby effect movement of said switch operating member from said second operating position to said first operating position, said actuating structure being rotatable in a second direction from said first position to a third position to rotate said cam member to effect movement of said switch operating member from said first operating position to a third operating position, a second retaining means for retaining said actuating structure in said third position, and said resilient means operating to automatically return said actuating structure to said first operating position when said second retaining means is released to thereby effect movement of said switch operating member from said third operating position to said first operating position.



3,169,407
MOTION CONVERTING DEVICE
George K. Newell, Level Green, Penn Township, Westmoreland County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1962, Ser. No. 176,302
9 Claims. (Cl. 74—424.8)



1. A motion converting mechanism comprising:
(*a*) a hollow unthreaded nut having a radial aperture therein,
(*b*) a bearing member comprising a plurality of balls, the centers of said balls lying in a circle, said bearing member being removably carried in said radial aperture,
(*c*) a shaft disposed within said hollow unthreaded nut and having thereon a helical groove, the cross section of which has at least two intersecting sides forming an angle, the bisector of which passes through a point on the circumference of the circle passing through the centers of the balls of said bearing member, and
(*d*) a sphere rotatably mounted in said bearing member and having a portion thereof disposed in said helical groove on said shaft for rolling contact with two paths of point contact, each of which paths is on a separate one of two adjacent sides whereby, with said hollow unthreaded nut restrained against rotation and said shaft restrained against movement along its longitudinal axis, upon the exertion of a longitudinal thrust force to said hollow unthreaded nut in either direction, said sphere effects rotation of said shaft about its longitudinal axis, and upon rotation of said shaft in either direction about its longitudinal axis, said sphere transmits a force to said hollow unthreaded nut to cause said nut to travel correspondingly and longitudinally along said shaft.



3,169,408
NONLUBRICATED FORMED GEARING
William S. Rouverol, 1014 Shattuck Ave., Berkeley, Calif.
Filed Feb. 7, 1963, Ser. No. 256,892
4 Claims. (Cl. 74—461)



1. A pair of mating gears having an area of engagement and having similar complementarily formed tooth profiles and respectively mounted for rotation about spaced apart axes, the spacing between said axes being such as to cause compressive deformation of mating gears at the area of engagement thereof whereby a plurality of teeth of one gear are in mesh with a plurality of teeth of the other gear, the teeth of both of said gears being formed of resilient pliable material to permit such compressive deformation through the teeth of each gear.

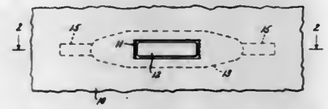
3,169,409
SELECTOR MECHANISM FOR A PUSH-PULL CONTROL SYSTEM
Lewis J. Babecz, Philadelphia, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,338
11 Claims. (Cl. 74—471)



1. A push-pull mechanism comprising:
a support structure;
an elongated operating member having a longitudinal axis, said member being supported within said support structure for longitudinal movement;
a plurality of controlled elements adapted to be selectively controlled by said operating member and supported within said support structure for longitudinal movement substantially parallel to said member axis;
a terminal member secured to each of said controlled elements and disposed within said support structure;
and a spool type member fixed to said operating member and having a pair of axially spaced flanges, one of said flanges being adapted to selectively coact with one of said terminal members at a time to move the member in one longitudinal direction and the other of said flanges being adapted to move said terminal members in the other direction.

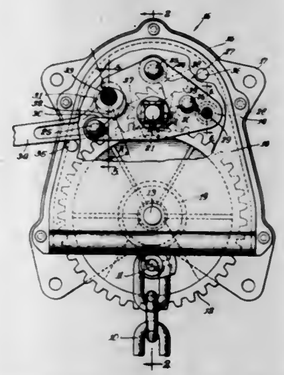
3,169,410
ACTUATING MECHANISMS
Taft E. Armandroff, New Britain, Conn., assignor to General Electric Company, a corporation of New York
Filed Sept. 18, 1961, Ser. No. 138,861
3 Claims. (Cl. 74—503)

1. An actuating mechanism comprising, a panel having an opening, an actuatable member on one side of said panel to be depressed toward said opening, an operating member on the other side of said panel secured to said actuatable member, said actuatable member having a pair of spaced recesses each opening at said panel opening, said operating member having a pair of spaced cavities each opening at said panel opening, a pair of spaced generally L-shaped fingers struck out from the panel at said other side thereof positioned within the



cavities of said operating member, said fingers having generally coplanar parts parallel to and spaced from said panel and adjacent the bases of said cavities, and a pair of conical spiral springs seated in the recesses of said actuatable member in engagement with said parts of said fingers to normally bias the actuatable member away from the panel, said springs being compressed within themselves when said actuatable member is actuated.

3,169,411
HAND BRAKE MECHANISM
Joseph Kuchar, Chicago, Ill., assignor, by mesne assignments, to Union Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed June 13, 1962, Ser. No. 202,259
9 Claims. (Cl. 74—505)

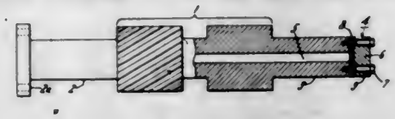


1. Hand brake mechanism comprising a winding drum, a gear having means for winding a brake chain around said drum when said gear is rotated, a carrier assembly including a pair of spaced plates secured together and pivoted at adjacent ends thereof for rocking as a unit, an operating shaft bridged between and journaled in said plates, a pinion secured to said shaft in mesh with and operable to rotate said gear in a winding direction, and means coacting with the ends of said plates remote from the pivot thereof to rock said assembly and disengage said pinion from said gear to permit unwinding of said drum.

3,169,412
VIBRATION DAMPING MEANS FOR GEAR PINION
Frank E. Weeks, Topsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed July 12, 1963, Ser. No. 294,602
7 Claims. (Cl. 74—574)

3. In a rotor member of substantial axial length relative to its diameter and having a bearing journal portion adjacent at least one end thereof and subject to vibration-inducing impulses in operation, the combination of:

vibration-damping means connected to an end journal portion and comprising a cylindrical member having substantial mass relative to the mass of the rotor, means supporting said cylindrical member on the end of the rotor journal portion and coaxially therewith to effect limited motion thereof relative to the journal



in a direction transverse to the axis of the rotor when the rotor vibrates,

and vibration-absorbing material disposed between the cylindrical member and journal end portion, whereby relative vibratory motion between the journal and cylindrical member effects imposition of shear forces within the vibration-damping material for absorbing vibration energy from the rotor member.

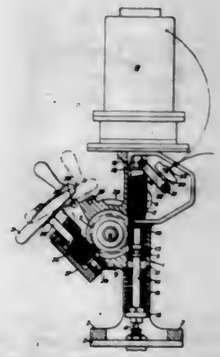
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3,169,413

## ACTUATING MECHANISMS

Alan John Morris Freeman, Hatfield, England, assignor to Drayton Controls Limited, West Drayton, England, a company of Great Britain

Filed Oct. 29, 1962, Ser. No. 233,833
Claims priority, application Great Britain, Nov. 6, 1961, 39,580/61
8 Claims. (Cl. 74—625)



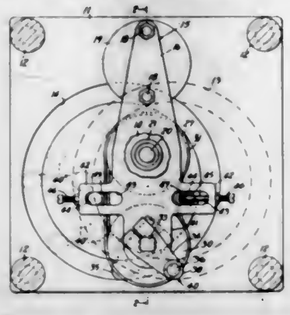
1. An actuating mechanism for imparting linear movement comprising a helical worm, a housing supporting said worm for axial movement, means connecting the worm to an actuating member for effecting linear movement thereof upon said axial movement of the worm, means for rotating the said worm, a worm wheel engaged with said worm, a drive worm engaged with said worm wheel for effecting rotation thereof, the pitch angle of the drive worm and worm wheel providing an irreversible drive from the drive worm to the worm wheel and means for rotating said drive worm, the tooth pitch of the worm and worm wheel being made such that upon rotation of the axially movable worm when said drive worm is stationary the axially movable worm is axially displaced by "screw jack" coaction between the axially movable worm and the worm wheel, and when the worm-rotating means is stationary and the drive worm is rotated to effect rotation of the worm wheel, the axially movable worm is axially displaced by "rack and pinion" coaction between the worm wheel and the worm.

3,169,414

## SPEED REDUCER

Louis H. Morin, Bronx, N.Y.
(125 Beechwood Ave., New Rochelle, N.Y.)

Filed Sept. 20, 1963, Ser. No. 310,277
4 Claims. (Cl. 74—802)



1. A speed reducer comprising a support including spaced fixed plates, bolts joining and spacing said plates, a drive unit rotatable between said plates, a drive shaft mounted in one plate and fixed to said unit, a driven shaft rotatably mounted in the other plate, a driven pulley fixed to the driven shaft and arranged in said unit, said unit having a drive pulley including a shaft spaced with respect to the axis of the drive and driven shafts, said pulleys lying in a plane which is perpendicular to the drive and driven shaft axes, means mounted on the shaft of said drive pulley for retaining said drive pulley and its shaft against rotation in rotation of the drive pulley around said driven pulley in the rotation of said unit, a belt placing the drive pulley in operative engagement with said driven pulley in the reduction drive between the drive and driven shafts, said means comprising a control mounted on and movable with the shaft of said drive pulley, means engaging said control in maintaining the shaft of said drive pulley against said rotation, said control comprising a pair of levers keyed to the shaft of the drive pulley, and said levers having rollers operating in annular cam grooves on inner surfaces of said plates.

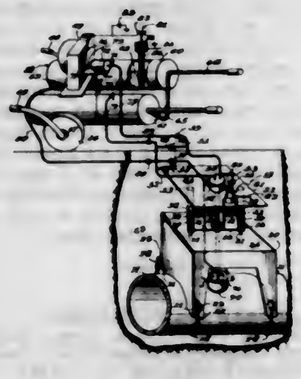
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3,169,415

## SEWER TAPPING

Charles R. Welty, Mission, Kans., assignor to Union Tank Car Company, a corporation of New Jersey

Filed Dec. 26, 1962, Ser. No. 247,085
19 Claims. (Cl. 77—14)



5. Portable power-driven apparatus for cutting circular holes in a body comprising:



(A) support means adapted to be immovably attached to such body, and fastener means for removably attaching said support means to such body,

(B) rigid plate means movable with respect to said support means,

(C) mating hydraulic cylinder and piston means,

(1) said piston means being immovably secured to said support means, and

(2) said cylinder means having an end secured to said plate means for causing movement thereof,

(D) means including rigid tubular pipes for supplying hydraulic fluid under pressure selectively to opposite ends of said cylinder means for causing movement of said plate means toward and away from such body,

(E) hydraulic motor means mounted on said plate means, hydraulic coupling means for connecting said motor means to a source of hydraulic fluid under pressure,

(F) shaft means driven by said motor means,

(G) rotary cutter means having a cutting surface requiring a supply of liquid during cutting,

(H) rigid pipe means having an end adjacent said cutter means for supplying such liquid,

(1) said pipe means being secured to said plate means so as to be movable therewith,

(2) there being a hole in said support means slidingly receiving said pipe means,

whereby said piston and cylinder means cause simultaneous movement of said cutter means and pipe means toward and away from such body.

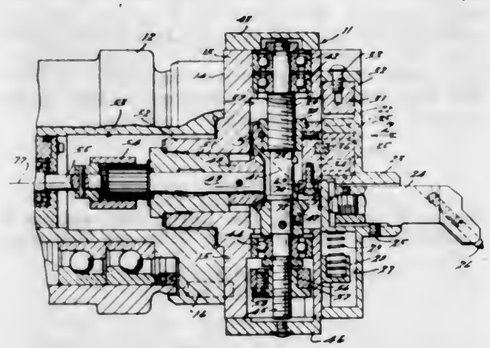
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3,169,416

## BORING HEAD AND METHOD OF USING SAME

Ernest Carlson, Birmingham, Mich., and Friedrich H. Burkhardt, Eislingen, Baden-Wurttemberg, Germany, assignors to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 5, 1961, Ser. No. 135,863
12 Claims. (Cl. 77—58)



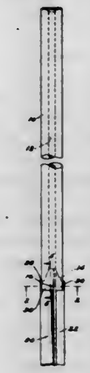
1. In a boring head, a housing adapted to be secured to a spindle, a tool slide assembly having a tool, means on said housing supporting said tool slide assembly for lateral movement with respect to the spindle centerline, and means for limiting the extreme positions of said lateral movement, the positions of said limiting means relative to the center of gravity of said tool slide assembly and said spindle centerline being such that at all points between said extreme positions said center of gravity will be to one side of a plane passing through said centerline at right angles to the path of movement of said tool slide assembly, said tool being on the other side of said plane.

3,169,417

## DEEP-HOLE DRILL AND REAMER

Rudolf W. Andreasson, Sr., P.O. Box 174
Birmingham, Mich.

Filed July 2, 1962, Ser. No. 206,972
5 Claims. (Cl. 77—65)



1. In a rotary tool of the type using a hollow shank tube and a bit bonded to the working end thereof,

(*a*) an elongate bit having alternate flutes and lands between a cutting end and a shank end, the shank end having a tapered portion,

(*b*) a hollow shank tube having at the bit end, a plurality of separate skirt portions extending axially of the tube and separated by slots, and a recess to receive the tapered end of the bit,

said bit and tube in assembly being bonded together with the tapered portion of the bit in the recess of the tube, and the lands adjacent the tube engaged in the slots of the tube, the skirt portions of said shank overlying in straight axial relation the flutes of said bit to impart a straight axial flow of coolant along said flute to the cutting end.

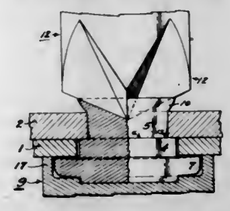
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3,169,418

## PIVOTAL CONSTRUCTION AND METHOD OF MAKING SAME

Francis J. Borowsky, Elkins Park, Pa., assignor to George K. Garrett Company, Division of M & L Industries, Inc., Philadelphia, Pa., a corporation of Minnesota

Filed Feb. 17, 1960, Ser. No. 9,371
16 Claims. (Cl. 78—46)



1. The method of making a hinge-assembly of two members to be pivotally connected with and secured to each other, one having a pivot-hole and the other having a substantially smaller rivet-hole, which comprises providing a malleable flanged pivot-and-rivet unit including a pivot having a diameter fitting within the aforementioned pivot-hole and having an axial length greater than the thickness of the aforementioned member having the pivot-hole and which is to be pivotally mounted thereon, a pre-formed integral flange at one end of the pivot having a diameter sufficiently greater than the diameter of the pivot and having an axial dimension sufficiently small

in relation to its diameter and malleability to permit it to be deformed in the direction of the pivotally mounted member by axial force exerted thereon without enlargement of the pivot to such an extent as would bind it in its aforementioned pivot-hole, and a rivet extending from the other end of the pivot and having a cross-sectional area substantially smaller than the cross-sectional area of the pivot and wholly therewithin and having an axial length sufficiently great in relation to the thickness of the aforementioned member having the rivet-hole and which is to be secured thereon, to permit the outer end of the rivet to be upset axially so as to effect a transverse enlargement of a portion thereof, said flanged pivot-and-rivet unit having a pre-formed seating shoulder between the pivot and the rivet thereof against which the last-mentioned member is adapted to be firmly riveted, placing the member having the pivot-hole on the pivot and placing the member having the rivet-hole on the rivet, transversely enlarging the outer end of the rivet so as firmly to secure the last-mentioned member against the aforementioned shoulder and firmly to bind the so enlarged pivot in its pivot-hole and permanently deforming the aforementioned pre-formed flange of the pivot-and-rivet unit in the direction of the pivot so as to reduce the axial distance between the aforementioned shoulder and the rim of the flange without enlargement of the pivot as would bind it in its aforementioned pivot-hole and without said flange entering said pivot-hole as a result of the last-mentioned step.

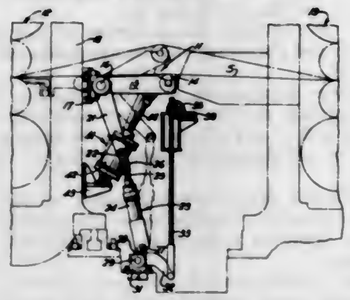
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**3,169,419**
**FORMATION OF GEAR TEETH ON BARS OR BLANKS**
**Robert Cecil Clerk, 97 High St., Maidenhead, England**
**Filed July 12, 1962, Ser. No. 209,436**
**5 Claims. (Cl. 80—20)**



1. A rack for forming gear teeth upon a blank, comprising a longitudinally movable bar having a first forming section followed by at least one additional forming section, said first forming section being sufficient in length to index the blank through half a revolution, a series of identical first forming teeth in said first section for making initial small penetrations of selected equal depth in the blank, said first forming teeth having equal pitch spacing longitudinally of the bar, the tips of said first forming teeth being rediused about their pitch centers, each of said additional forming sections including a plurality of forming teeth, the pitch and the tip radii of the teeth of each additional section being respectively different from those of said first forming teeth, and said forming teeth of said additional sections being arranged for penetration to progressively greater depths in the blank.

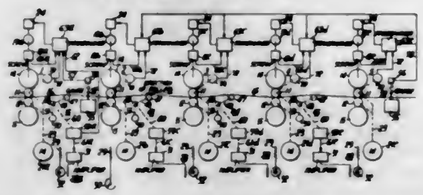
**3,169,420**
**APPARATUS FOR TENSIONING STRIP**
**Morris D. Stone, Pittsburgh, and Jeremiah W. O'Brien, Mount Lebanon, Pa., assignors to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed July 6, 1960, Ser. No. 41,051**
**11 Claims. (Cl. 80—35)**



1. A device for imposing a tension upon strip defining a pass line between two units, comprising a first pivot, a roller, an arm connected to said roller and connected to and adapted to be angularly displaceable about said pivot for causing the roller to engage one face of and force said strip away from said pass line at varying distances thereby to impose a tension upon said strip, the ratio between the strip deflecting force imposed by said roller and the tension developed in said strip by said force varying with the distances said strip is displaced away from said pass line, a first strut rigidly connected at said first pivot to and for displacing said arm, a second pivot spaced from said first pivot and a force actuated extensible strut connected at one end to said second pivot and at its opposite end to the other end of said first strut, said arm, struts, pivots and roller being operatively arranged with respect to each other, to the distance between the units and to the varying distances of the strip relative to said pass line so that the ratio between the force exerted by said roller on said strip and the force in said extensible strut bears a substantial constant relationship to the varying ratio between said strip deflecting force and strip tension, whereby the strip tension will be maintained substantially constant irrespective of the distance said strip is displaced away from said pass line, as long as the force in the extensible strut is held substantially constant.

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**3,169,421**
**AUTOMATIC GAUGE CONTROL**
**Thomas H. Bloodworth, Elm Grove, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Oct. 24, 1960, Ser. No. 64,520**
**3 Claims. (Cl. 80—35)**



1. In a control for a hot strip mill having a plurality of reducing stands with screws for positioning the work rolls of said stands with respect to a rolled strip and with variable speed motors for driving said work rolls, said control comprising means sensing errors in the thickness of said rolled strip and ordering error correcting changes in the pressure of said work rolls, means sensing variations in interstand strip tension and ordering roll drive motor speed changes to maintain constant interstand tension, and means responsive to an uncorrected variation in strip tension to prevent roll pressure changes in a direction to further increase the error in strip tension.



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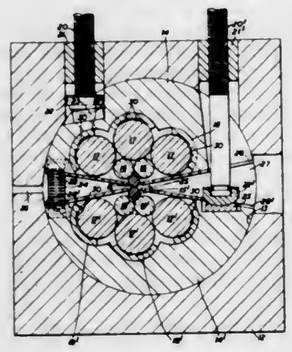
**3,169,422**
**TENSION LOOPER SYSTEM**
**Raymond Bernard Sims, Sheffield, and Bela Istvan Bathory, North Sheffield, England, assignors to Davy and United Engineering Company Limited**
**Filed Sept. 28, 1961, Ser. No. 141,475**
**Claims priority, application Great Britain, Sept. 28, 1960, 33,334/60; Apr. 6, 1961, 12,363/61**
**4 Claims. (Cl. 80—35)**

1. A method of operating a looper engageable with moving elongate material including a looper actuating fluid pressure means, the method comprising the steps of; supplying said pressure means with fluid at a first predetermined pressure, effectively sealing the pressure means when the looper is at a selected position whereby the pressure in the pressure means indicates the tension of said elongate material, and in the event that the latter pressure falls to or beyond a predetermined low value, supplying said pressure means with fluid at a second predetermined pressure lower than said first predetermined pressure and of the order of said low value.

2. Apparatus for operating a looper engageable with moving elongate material including a looper actuating fluid pressure means, comprising means for supplying fluid to said pressure means at a first predetermined pressure to operate said looper, means for effectively sealing said pressure means in response to the looper attaining a selected position, and means for supplying fluid to said pressure means at a second predetermined pressure in the event that the pressure in said pressure means falls to or beyond a predetermined low value, said second pressure being lower than said first pressure and of the order of said low value.

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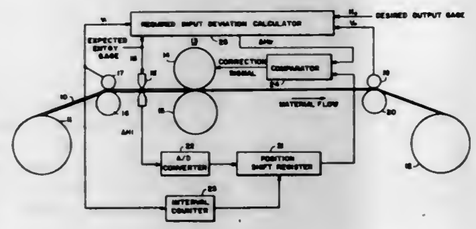
**3,169,423**
**ROLLING MILLS**
**Raymond Bernard Sims, Sheffield, England, assignor to Davy and United Engineering Company Limited, Yorkshire, England**
**Filed Nov. 30, 1960, Ser. No. 72,783**
**Claims priority, application Great Britain, Dec. 3, 1959, 41,104/59**
**5 Claims. (Cl. 80—38)**



1. A cluster mill comprising a mill frame, a pair of work rolls, at least one set of intermediate rolls for each work roll, a set of cylindrical back-up rolls for each work roll, hydrostatic bearings for the back-up rolls extending over at least a substantial part of the length of the back-up rolls, a first member for carrying the bearings of one set of back-up rolls, a second member for carrying the bearings for the other set of back-up rolls, said members being interposed between said back-up rolls and said frame for transferring thrust generated during rolling to said frame, and said members being movable relative to each other for adjustment of the gap between the work rolls.

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**3,169,424**
**AUTOMATIC CONTROL SYSTEM FOR ROLLING MILLS AND ADJUSTABLE DIES**
**Glenn A. Branscom, Burnette P. Chenaye, John A. Lindner, and Kenneth R. Thompson, Roanoke, Va., assignors to General Electric Company, a corporation of New York**
**Filed Jan. 30, 1962, Ser. No. 169,888**
**9 Claims. (Cl. 80—56)**



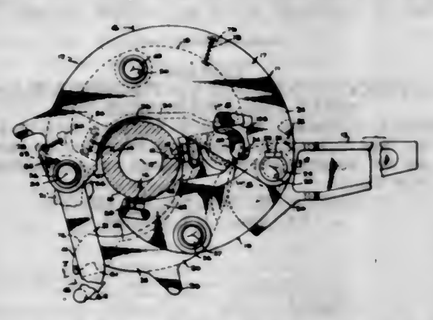

9. In a system for reducing strip material from a gage of a substantial predetermined value to a desired gage, means for passing said material through an adjustable mill, means for registering said predetermined value and said desired gage, velocity measuring means located before and after said mill to measure the entry and exit velocity of said material, calculating means operative in response to said predetermined value, said entry and exit velocities, and said desired gage to produce a control indication representative of the required deviation in thickness of said material to yield said desired gage, measuring means located before said mill for measuring the deviation of the thickness of said material from said predetermined value and producing a discrete indication thereof, means for storing said discrete indication until the measured increment of material is substantially at the bite of said mill, and comparison means responsive to said discrete indication after storage and to said control indication to develop control signals for selectively adjusting said mill.

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**3,169,425**
**VARIABLE SIZE PIPE TONGS**
**George H. Haby, Altadena, Calif., assignor to Abegg & Reinhold Co., Los Angeles, Calif., a corporation of California**
**Filed Aug. 20, 1962, Ser. No. 217,901**
**9 Claims. (Cl. 81—91)**

1. A pipe tong comprising first and second jaw members adapted to extend partially about a pipe to be gripped, additional linkage connected to said jaw members and forming with said members essentially a loop adapted to completely encircle said pipe, a pivotal joint connecting said jaw members together at a predetermined location for relative pivotal movement, each of said jaw members having first and second end portions extending in different directions from said pivotal joint, first and second pipe gripping means carried by said first end portions respectively of said jaw members, said first end portion of one of said jaw members extending generally in a first circular direction about said pipe and said first

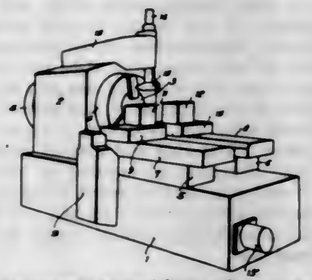
end portion of the other jaw member extending generally in the opposite circular direction, said second end portion of one jaw member extending generally in one circular direction and said second end portion of the other jaw member extending in generally the other circular direction, means for connecting opposite ends of said additional linkage to said second end portions of said two jaws



respectively, and means for actuating said jaw members pivotally relative to one another to grip a pipe, said additional linkage including a carrier part connected at opposite ends to said second end portions respectively of said first and second jaw members, and a third jaw member pivotally mounted to said carrier part and carrying third gripping means for contacting and gripping a pipe.

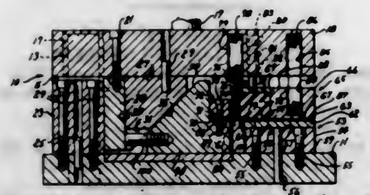
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3,169,426
THREAD CUTTING MACHINE
Pierre Edouard Renoux, Colombes, France, assignor to Cri-Dan, Paris, France, a company of France
Filed July 25, 1961, Ser. No. 126,618
Claims priority, application France, June 8, 1961, 864,328
17 Claims. (Cl. 82—5)



1. A machine-tool comprising a frame; work-carrier means supported on the frame for rotation about an axis of the workpiece; motor means for rotating said workpiece-carrier means; tool carrier means mounted for displacement relative to the frame longitudinally and transversely of the workpiece axis; thread-cutting tool means and cutting-off tool means carried on the tool carrier means in mutually displaced positions thereon; first drive means connected with the tool carrier means for imparting thereto a prescribed path of motion having both a longitudinal and a transverse component relative to the workpiece; second further drive means connected with said carrier means for imparting thereto a transverse path of motion relative to the workpiece; and control means selectively operable for cyclically disabling said first drive means and enabling said second further drive means to cause the cutting-off tool to cut off a length of the workpiece, and for disabling said second further drive means and enabling said first drive means to cause the thread-cutting tool to cut a screw-thread in the workpiece.

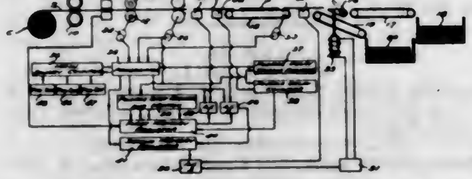
3,169,427
EDGE OPENING DEVICE
Boyd D. Cave, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Continuation of application Ser. No. 837,397, Sept. 1, 1959. This application Sept. 21, 1962, Ser. No. 225,968
18 Claims. (Cl. 83—4)



10. A method for splitting at least a portion of an end of a flat sheet into two sections comprising steps of holding said sheet stationary between opposed flat surfaces of a pair of relatively movable support plates defining a flat sheet-like zone therebetween, one of said support plates having at least a portion of said surface thereof formed of resilient material, and forcing an indenting element into said zone to split at least a portion of the end of said sheet into two sections and compress one of said sections into said resilient material while said indenting element is being moved into said zone whereby said surface of said one support plate engages said sheet not only at said one section thereof but also on opposite sides of said one section.

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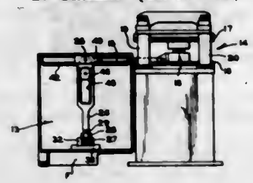
3,169,428
SINGLE SHEET CLASSIFIER
Albert G. Owen, Rockville, Md., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 22, 1959, Ser. No. 861,366
10 Claims. (Cl. 83—27)



1. A method of shearing strip material into sheets and classifying sheets so sheared in accordance with a characteristic of the material determined while it is in strip form, which includes the steps of continuously moving the strip material through an inspecting device at high speed, thereafter shearing the moving strip into sheets, determining at the instant each sheet is cut from the strip the distance between the inspecting device and the next future cut to be made in the strip that is approaching the inspecting device, and thereby determining at the instant a given characteristic is detected by the inspecting device which sheet subsequently to be cut from the strip will have said characteristic, following the position of said sheet having said characteristic in its passage from the inspecting device to a fixed point beyond the shear by means of one memory device, determining independently of the operation of the shear the instant that the leading edge of said sheet having said characteristic reaches said fixed point beyond said shear, following the position of said sheet having said characteristic from said fixed point to a point adjacent a deflector by means of a second memory device, and operating said deflector to separate said sheet having said characteristic from sheets that do not have said characteristic.



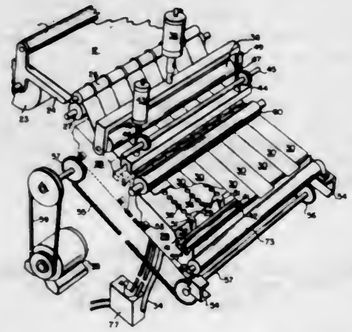
3,169,429
METHOD AND APPARATUS FOR ACCELERATING A FLYING TOOL
Charles J. Bognar, Parma, Ohio, assignor to The Yoder Company, Cleveland, Ohio, a corporation of Ohio
Filed June 28, 1960, Ser. No. 39,250
17 Claims. (Cl. 83—38)



1. In a method of processing lengths of elongated moving stock by accelerating a flying tool to the speed of such stock in a mill and the like; the steps of positioning a drive shaft at a predetermined angular position, connecting such drive shaft to the drive of such mill upon the recepit of a stock length responsive signal to rotate such shaft at substantially constant angular velocity, translating rotational movement of such shaft to variable velocity linear movement to accelerate such tool to the speed of the stock, further translating such rotational movement to constant velocity linear movement at the speed of the stock, actuating such flying tool, disconnecting such drive shaft from the mill drive and further rotating such shaft at a higher angular velocity, and then further translating such rotational movement to variable velocity linear movement to return such tool to its original position as such shaft returns to its predetermined angular position.

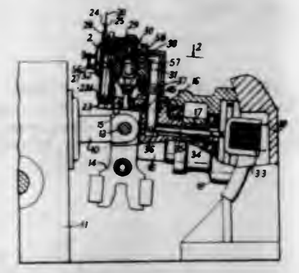
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3,169,430
SLITTING MECHANISM HAVING TRANSVERSE SEVERING MEANS
Howard R. De Mallie and Philip U. Brothers, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 6, 1961, Ser. No. 122,180
5 Claims. (Cl. 83—152)



1. In a machine for longitudinally separating a length of web material to form a plurality of strips as said material passes a slitting mechanism, the combination comprising: movable strip holding means adapted to engage said strips adjacent said mechanism; means for trimming the ends of said strips while so engaged so that alternate strips have ends thereof of distinctive length to be distinguishable by such length, and means for moving said movable strip holding means and the severed ends of said strips engaged thereby to a position remote from said mechanism to enhance sorting of said trimmed strips at a point remote from said mechanism.

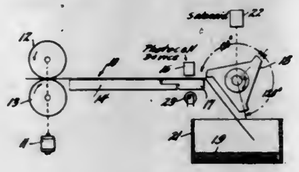
3,169,431
KNIFE-FEEDING ARRANGEMENTS FOR SICKLE-SHAPED KNIVES
James Arthur Mason, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a British company
Filed Mar. 21, 1963, Ser. No. 266,997
Claims priority, application Belgium, Apr. 13, 1962, 491,943
3 Claims. (Cl. 83—356)



1. In a cigarette cut-off for a continuous rod cigarette-making machine having a sickle knife rotatable about an axis parallel with the rod, a device for feeding the knife radially outwards to compensate for wear of the cutting edge of the knife, comprising a knife clamp frictionally gripping the knife, a nut engaging the knife near its radially inner end, a radially extending screw passing through the nut and having an unthreaded reduced diameter portion at its outer end, a ratchet wheel for rotating the screw, a pawl for rotating the ratchet wheel, reciprocable means for operating the pawl and comprising a rod reciprocable along said axis, means to reciprocate the rod at intervals to operate the pawl and thereby to rotate the screw and feed the nut and knife radially outwards along the screw against the frictional resistance of the knife clamp until the nut is driven on to the unthreaded portion of the screw to provide a limit for the outward feed of the knife, a spring against which the nut bears when it reaches the unthreaded portion of the screw to hold the nut against the threaded portion of the screw, manually-operable means for disengaging the pawl and manually operable means for rotating said screw in the opposite direction to re-engage the nut and return it towards the radially inner end of the screw.

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3,169,432
CUTTING MACHINE HAVING PHOTOELECTRIC MEANS INITIATING A FIRST CUT AND TIMING MEANS INITIATING A SECOND CUT
Sellers P. Hoffman, Graham, and Paul L. Whitehead, Burlington, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 7, 1962, Ser. No. 193,017
8 Claims. (Cl. 83—362)



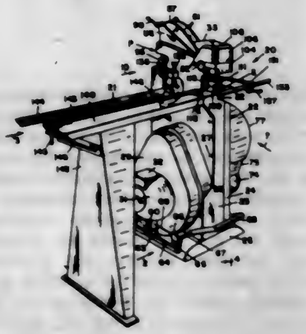
1. In a system for controlling a cutter to sever a continuous strip having randomly spaced control indicia marks thereon,

a photocell device for sensing the surface of said strip for indicia marks,

means for advancing the strip past said photocell device,
a cutter for severing the strip,
means actuated by said photocell device ascertaining an indicia mark for operating said cutter to sever the strip, and
a time delay device initiated into a cycle of operation by said photocell device sensing an indica mark for actuating said cutter a second time after a predetermined time delay to sever said strip into a predetermined length.

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3,169,433
METAL WORKING MACHINE
Ben B. Stockard, Jr., Greensboro, N.C., assignor to Wysong & Miles Company, Greensboro, N.C.
Filed Sept. 25, 1962, Ser. No. 226,862
6 Claims. (Cl. 83—524)

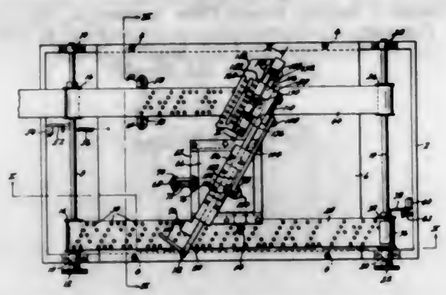


1. In a metal working machine, the combination of a support, a horizontal fulcrum provided thereon, a tool actuator swingably mounted on said fulcrum for raising and lowering movement, rotatable eccentric means, a link actuated by said eccentric means and pivotally connected to said actuator for raising and lowering the same when the eccentric means are rotated, a tool carrier swingably mounted on said fulcrum for raising and lowering movement independently of said tool actuator, a stationary tool member provided on said support, and a coacting tool member provided on said carrier, said carrier with said coacting tool member being lowerable to a work prelocating position on said stationary tool member while said actuator remains in a raised position, said actuator having an impact head engageable with said coacting tool member for driving the latter into working cooperation with the stationary tool member when the actuator is lowered.

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3,169,434
TAPE PUNCHING MACHINE
Raymond L. Westerfield, 2045 High St., Topeka, Kans.
Filed May 21, 1962, Ser. No. 196,277
8 Claims. (Cl. 83—560)

1. A tape punching machine comprising:
(*a*) a base,
(*b*) a master tape carried by said base, and having characters imprinted thereon,
(*c*) a sign tape carried by said base,
(*d*) means for moving said tapes independently in parallel relation,
(*e*) a bar carried by said base above said tapes and being movable relative to said base both longitudinally and transversely relative to said tapes,
(*f*) a stylus carried by said bar adjacent said master tape and adapted to be moved in tracing relation to the characters imprinted thereon,
(*g*) a punch die carried by said bar in the same relation to said sign tape as said stylus bears to said master



tape, and being operable when actuated to punch a hole in said sign tape, and
(*h*) means for actuating said punch die.

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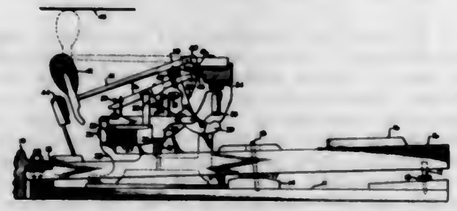
3,169,435
SAW FOR FERROUS MATERIALS
John G. Hartger, Grand Rapids, Mich., assignor to Oliver Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 12, 1962, Ser. No. 172,525
2 Claims. (Cl. 83—676)



1. A rotary saw for ferrous materials, comprising: a circular blade having a plurality of radially extending, circumferentially spaced teeth; said teeth each having adjacent back and bottom insert-receiving surfaces, and a radially extending insert tip having corresponding back and bottom surfaces brazed to said insert-receiving surfaces to form a back braze joint and a bottom braze joint; each of said tips having a shank portion and a radially outer head portion axially wider than said shank portion; said head portion having a radially outer cutting edge means and a pair of opposite radially inner cutting edges at the juncture of said head and shank portions; and said juncture and inner cutting edges being radially displaced from said bottom braze joint a substantial amount toward said outer cutting edge means, to prevent chips formed at said inner cutting edges from penetrating said bottom braze joint.

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3,169,436
PIANO ACTION
Charles F. Smith, 835 Circle Ave., Forest Park, Ill.
Filed Aug. 13, 1963, Ser. No. 301,827
4 Claims. (Cl. 84—243)

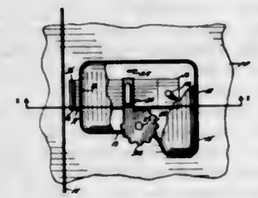


1. The combination in a grand piano action comprising a hammer butt carrying on its underside a knuckle, a repetition lever and jack arranged to actuate said hammer butt by engagement with said knuckle, and means on said hammer butt for engagement with said jack to position said jack under said knuckle.



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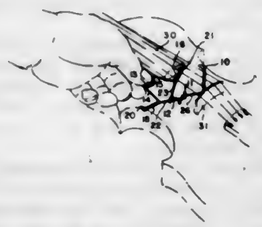
3,169,437
GUITAR ATTACHMENT
Roy E. J. De La Ronde, 31 Rose Ave., and Garnet O. de Lacia, 153 Furby St., both of Winnipeg, Manitoba, Canada
Filed July 15, 1963, Ser. No. 294,926
Claims priority, application Great Britain, July 16, 1962, 27,209
3 Claims. (Cl. 84—267)



1. An attachment for guitars adapted to be secured to the pick guard area of the front surface of the guitar adjacent the strings thereof; said attachment comprising in combination a hollow enclosure, and a flexible strip secured by one end within said enclosure, the other end of said strip extending through an apertured side of said enclosure adjacent the strings of said guitar, an upturned pick engaging portion formed on said other end, and positioned with respect to said strings so that the conventional pick strikes the said other end of said strip after said pick has passed over said strings.

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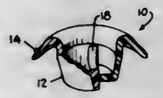
3,169,438
BOW GUIDE
Roy L. Belcher, Seattle, Wash.
(5416 88th St. SW., Everett, Wash.)
Filed July 9, 1964, Ser. No. 381,435
7 Claims. (Cl. 84—283)



1. A bow guide for a bowed string musical instrument comprising, a clamping means having a spring and two opposed jaws yieldingly urged toward another by said spring, said jaws being adapted to grip the opposite longitudinal side edges of a fingerboard on such an instrument with said spring located beneath the fingerboard, said clamping means also having a pair of oppositely extending clamp-releasing wings located between said jaws and said spring for projecting laterally beyond the longitudinal side edges of the fingerboard whereby said jaws may be spread apart by manually squeezing the tips of said wings toward one another, and a stop post carried by one of said jaws to project upwardly above the level of the strings between the fingerboard and the bridge.

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3,169,439
PLASTIC FASTENER HAVING WEB-LIKE REINFORCING MEANS
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 28, 1961, Ser. No. 162,803
12 Claims. (Cl. 85—5)



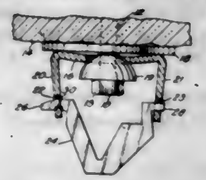
2. A fastener comprising a one piece plastic device adapted to be accepted within a substantially circular hole in a complementary plate-like workpiece, said fastener including a body portion and a head portion extending radially outwardly from one end of said body portion, said body portion including a generally tubular element tapering inwardly in the direction of a terminal end opposite to the head, the wall of said tubular portion being substantially uniform in thickness throughout the major portion of its axial extent and being initially substantially smooth and uninterrupted on its external surface, reinforcing means extending transversely between internal wall surfaces of said body portion, said body portion in transverse section being initially substantially oval in configuration having major and minor axes with the major axis being greater than and the minor axis being equal to or less than the diameter of the hole in the workpiece, said reinforcing means being a web of substantial thickness generally arcuate in transverse section and having its lateral terminal edges integral with the wall of the body portion at opposite points disposed generally on or immediately adjacent the major axis of the oval forming said body portion and extending axially within said body portion from its terminal end to a point spaced from said head, whereby when said oval body portion of the fastener is applied through the substantially circular hole in the workpiece, said reinforcing means will distort while passing through said hole and will return substantially to its initial position after the extremity of said reinforcing means has passed the undersurface of the workpiece, the wall portions intermediate the upper extremity of the reinforcing means and the head being distorted inwardly along the major axis of the oval to form shoulder means for engaging the undersurface of the panel opposite the surface engageable by the head.

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3,169,440
TENSION INDICATING DEVICES FOR INSTANCE IN ROOF BOLTING
Richard Francis Taylor, Johannesburg, Transvaal, Republic of South Africa, assignor to Anglo-Transvaal Consolidated Investment Company Limited
Filed Sept. 5, 1961, Ser. No. 136,074
Claims priority, application Republic of South Africa, Sept. 9, 1960, 3,689/60
4 Claims. (Cl. 85—62)

1. The combination of an anchor bolt having a head, a stem and anchoring means; a continuous tension indicat-

ing device consisting in a resiliently deformable washer having concave and convex sides adapted to be springily deformed by the head on tightening of the bolt and having a central opening to receive the bolt shank; two diametrically opposed wing formations extending from



the periphery of the convex side and having opposed holes in each formation; a gauge spanning the distance between the two formations and having end shanks that enter the holes in the formations; and a notch on one end shank for hanging the gauge from one of said formations, the other shank being straight.

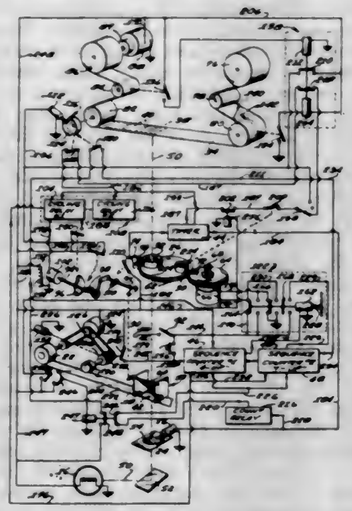
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3,169,441

## PHOTOGRAPHIC APPARATUS

James R. Johnson, Tujunga, Calif., assignor, by mesne assignments, to Edwards Photography, Glendale, Calif., a corporation of California

Filed Mar. 15, 1960, Ser. No. 15,130
16 Claims. (Cl. 88—24)



1. Photographic apparatus for automatically making a predetermined number of prints from a series of negative frames in the form of a length of film, said apparatus comprising:

paper advance means operative to advance a length of print paper across an exposure area;

paper advance control means electrically actuable to operate said paper advance means to advance said print paper across said exposure area;

means for projecting a beam of light and including light control means electrically actuable to effect projection of said beam onto said print paper at said exposure area, and, after a predetermined time interval, generate an output signal;

film transport means operative to advance a length of film across the path of said beam;

film actuator means engageable with said film transport means and electrically actuable to operate said film transport means;

a lens positioned in the path of said beam between said print paper and said film;

control apparatus in electrical circuit with said light control means and said paper advance control means and operative in response to an electrical signal to actuate said light control means, and operative in response to said output signal of said light control means to actuate said paper advance control means;

counter means for repeatedly generating separate first and second electrical signals to operate said control apparatus and said film actuator means, respectively, said counter means including clock means connected in parallel with said light control means to count each electrical actuation of said light control means by said first signals to thereby control the generation, interval and number of said first and second electrical signals in accordance with a predetermined setting of said counter means;

and switch means in circuit with said film actuator means and said counter means, and engageable by said paper advance means upon actuation thereof to convey said second signals from said counter means for electrical actuation of said film actuator means.

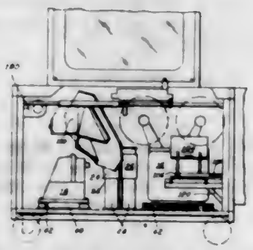
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3,169,442

## APPARATUS FOR PLURAL IMAGE PROJECTION

Victor L. Reddie, McLean, Kurt H. Hoppmann, Falls Church, and Stanley F. Staples, Alexandria, Va., assignors to Hoppmann Corporation, a corporation of Delaware

Filed June 21, 1962, Ser. No. 204,193
7 Claims. (Cl. 88—24)



5. An apparatus for plural image projection upon a screen comprising:

(A) a projector housing supporting said screen and a first projector and a second projector;

(B) a mirror system consisting of primary, secondary and tertiary mirrors mounted in said housing so as to reflect images from said first and second projectors onto said screen;

(C) a transparency stage plate positioned as an exterior portion of said housing together with a light source supported outwardly from said housing so that exterior light is transmittable through said stage plate onto said tertiary mirror;

(D) an adjustable lens positioned in said housing intermediate said transparency stage plate and said mirror system so as to focus the image from a transparency positioned on said stage plate;

(E) a transparency primary reflecting mirror positioned intermediate said transparency stage plate and said lens so as to reflect said light upon said mirror system; and

(F) a supplemental secondary mirror positioned in said housing intermediate said lens and said tertiary mirror, so as to reflect onto said tertiary mirror light focused by said lens.

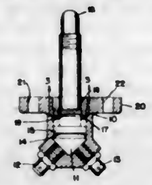


3,169,443

## PROPELLANT ACTUATED RELEASE BOLT

Albert M. Stott, Clifton Heights, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed July 20, 1962, Ser. No. 211,462
1 Claim. (Cl. 89—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



In a propellant actuated release bolt having longitudinally extending bolt means, a hollow body supporting said bolt means and having a recessed inner end portion constituting a firing chamber for containing propellant, an ignition element for said propellant, a piston movable longitudinally of said bolt and within said chamber, an obturator between said piston and ignition element, said bolt means having an enlarged eccentric inner end or head portion integral therewith, an insert secured to said body and having one portion surrounding said bolt means and in longitudinal abutment with said head and another eccentrically recessed portion mating with said eccentric bolt head, said enlarged inner end or head of said bolt means having a cylindrical recess or counterbore of substantially the same diameter as the outside shank diameter of said bolt means and of less length than said enlarged inner end or head of said bolt means, and said piston having a cylindrical projection substantially filling said counterbore to longitudinally shear an annulus portion of said enlarged end or head from said bolt means.

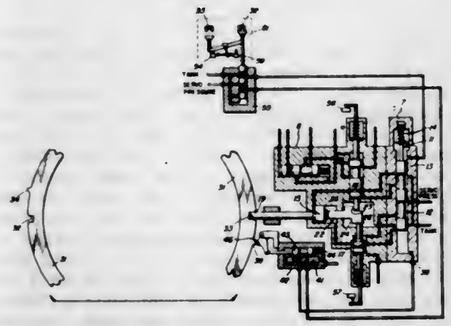
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3,169,444

## TRAIN POSITIONER AND INTERLOCK ASSEMBLY

Myron J. Bauer, St. Paul, and Judson C. Higgins, Minneapolis, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed July 31, 1963, Ser. No. 300,411
1 Claim. (Cl. 89—1.7)



In a missile launching system having a rotatable magazine and a launcher arm to which missiles are transferred from said magazine, the combination of a base ring carried by said magazine with train positioner and interlock assembly, said train positioner comprising:

a substantially stationary block base;

a latch piston mounted in and reciprocable in said base;

a latch carried by said latch piston;

means for moving said latch piston and said latch selectively to an extend or a retract position;

latch locking means associated with said latch piston for locking said latch piston and said latch in either of said extend or retract positions;

latch engaging means carried by said rotatable base ring adapted to be engaged by said latch when in extend position;

a detent carried by said rotatable base ring in spaced predetermined position relative to said latch engaging means; and

a cam connected to valves controlling said latch locking means, said cam being engaged by said detent to actuate said controlling valves.

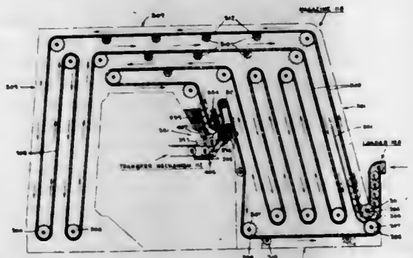
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3,169,445

## MAGAZINE MECHANISM

Arthur J. Stanton, Bethesda, Md., David F. Anderson, McLean, Va., Richard E. Taylor, Hyattsville, Md., and John B. King, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 3, 1957, Ser. No. 663,325
11 Claims. (Cl. 89—33)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A substantially self-balancing ammunition magazine trainable with and operable with a rapid fire gun elevatable about a gun trunnion axis, said magazine comprising an elongate flexible carrier for carrying rounds of ammunition through the magazine, support means in engagement with said carrier for supporting and guiding the carrier thoughout its travel, means for guiding the rounds throughout their travel, drive means for said carrier, a loading station adjacent the carrier and at one side of the magazine for introducing rounds to the carrier, an unloading station located adjacent the carrier, centrally of the magazine and remote from the loading station for receiving rounds from the carrier, cam means at said unloading station for unloading rounds from the magazine regardless of elevation of the gun, said carrier being disposed in a substantially balanced circuitous path of travel for moving the rounds from the loading station to the unloading station so as to fill successively and substantially equally the magazine on opposite sides of a vertical plane including the gun trunnion axis to thereby maintain a substantially uniform weight balance of the magazine during loading and unloading operations.

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3,169,446

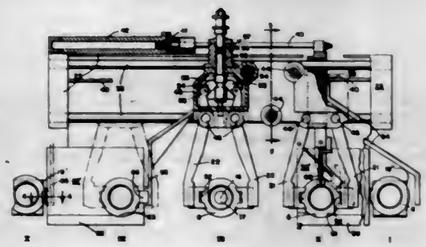
## WORK HANDLING MECHANISM

Henry J. Anderson and Robert J. Shartran, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York

Filed Mar. 8, 1962, Ser. No. 178,498
15 Claims. (Cl. 90—1)

8. A machine tool having a rotatable work holder for supporting a workpiece at a work station, a slide reciprocable in a path perpendicular to the rotation axis of the work holder, a carriage reciprocable on the slide in a path parallel to said axis, said carriage having a plurality of sets of jaws mounted thereon, each of said sets being adapted to engage a workpiece at the work station

in one poistion of reciprocation of the side, an indexable loading magazine for bringing workpieces successively to the machine, a support for a workpiece at a loading station between the loading magazine and the work station, the slide having an arm adapted to engage a workpiece on the loading magazine and, upon motion of the slide, move the workpiece from the loading magazine to the loading station, said support being so disposed that a workpiece thereon is engageable by one set of jaws while another set of jaws is engageable with a workpiece at the work station.



10. A work handling mechanism, for a machine having a rotatable work holder at a work station, comprising a transfer device for carrying toothed workpieces from a loading station to the work station, said transfer device having a set of jaws thereon, and a stock-dividing member movable on said transfer device to effect stock-dividing rotation of a workpiece at said loading station prior to gripping thereof by said jaws, and means for closing said jaws and concomitantly operating said stock-dividing member, said stock-dividing member being provided with a pin for entering a tooth space of said workpiece and rotating the workpiece into a predetermined angular position between the jaws prior to gripping of the workpiece by the jaws.

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**3,169,447**

**GEAR FINISHING TOOL HAVING HUNTING TOOTH ACTION AND A PLURALITY OF ZONES EACH WITH HELICALLY ARRANGED CUTTING EDGES**

**Fritz Hurth, Munich-Solln, Germany, assignor to Carl Hurth Maschinen- und Zahnradfabrik, Munich, Germany**

**Filed Dec. 11, 1961, Ser. No. 158,407**
**Claims priority, application Germany, Dec. 12, 1960, H 41,201**
**15 Claims. (Cl. 90—1.6)**




1. In a method of shaving a gear like workpiece having a predetermined number of teeth, the steps of bringing the workpiece in meshing engagement with a rotary shaving tool having several groups of teeth provided with uniformly spaced parallel cutting edges extending up and down between the roots and top lands thereof and forming with each other helices having a lead which is a whole multiple of the distance between two adjoining cutting edges on a tooth, the ratio between the number of teeth in a group and said predetermined number being such that one of said numbers is divisible with a rest by the other number, and rotating said tool to shave the workpiece whereby the face on any given tooth of the workpiece comes in renewed engagement with the cutting edges of a selected tooth in any one of said groups after all other teeth of the workpiece were treated by the cutting edges of a tooth whereon the cutting edges are arranged in the same way as on said selected tooth.

2. A gear shaped tool for finishing the faces of gear like workpieces having a predetermined number of teeth, said tool comprising a plurality of teeth including at least one group of teeth embracing at least some of said plurality of teeth, the teeth forming a group having serrated faces formed with uniformly spaced parallel cutting edges extending up and down between the roots and top lands thereof, the cutting edges of teeth forming a group being arranged in the form of at least one helix and the ratio between the number of teeth forming a group and the number of teeth on the workpiece to be treated in response to meshing engagement with and rotation of said tool being such that the face of a given tooth of the workpiece comes into renewed engagement with the cutting edges of a selected tooth in a group after all other teeth of the workpiece were treated by the cutting edges of a tooth whereon the cutting edges are arranged in the same way as on said selected tooth.

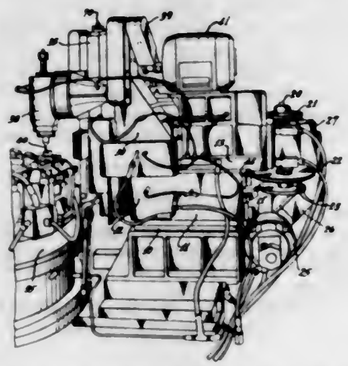
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**3,169,448**

**APPARATUS FOR FORMING CONTOURS**

**Nils Hoglund, 296 Hartshorn Drive, Short Hills, N.J.**

**Filed Feb. 14, 1963, Ser. No. 258,390**
**9 Claims. (Cl. 90—13)**



1. Apparatus for forming contours in three dimensions including a base, a housing slidably mounted on said base, a plurality of cams rotatably mounted on said housing, a first slide on said housing movable transversely of the movement of said housing and a tool slide on said first slide movable transversely of said first slide, cam means associated with each of said first and tool slides for controlling movement thereof, a slide on said base and a slide on said housing contacting the cam means for controlling movement of said first and tool slides, one of the rotatable cams on said housing contacting a portion on said base for controlling movement on said housing, other of the rotatable cams contacting portions on the slides on said base and said housing for controlling movement of said first and tool slides, said portions lying substantially in a common plane.

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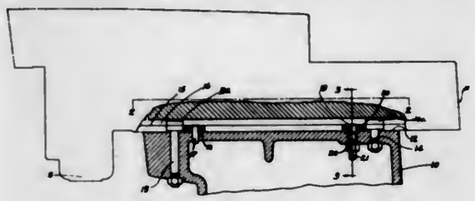
**3,169,449**

**RAM ALIGNMENT METHOD AND APPARATUS**

**Heinz E. Adelt, Racine, Wis., assignor to George Gorton Machine Co., Racine, Wis., a corporation of Wisconsin**

**Filed Sept. 23, 1963, Ser. No. 310,606**
**15 Claims. (Cl. 90—17)**

1. A mounting structure for a machine slide, comprising in combination: a bearing for said slide; a linearly slidable, pivotal connection between said slide and said bearing; a rotatable member carried by one of said slide or said bearing; an eccentric carrier by said member in slidable and rotatable engagement with the other of said slide or said bearing; said member being spaced from said pivotal connection, whereby rotation of said member and eccentric causes relative angular displacement of said slide and said bearing about said pivotal connection; and means slidably holding said slide on said bearing in any



selected angular relation established by rotation of said member and eccentric.

13. An alignment adjustment bolt for a machine slide assembly, comprising: a barrel terminating in a flange, a pin projecting from said barrel beyond said flange on an axis eccentric to the axis of said barrel, a threaded portion at the end of said barrel remote from said flange, and a head at the end of said bolt remote from said pin.

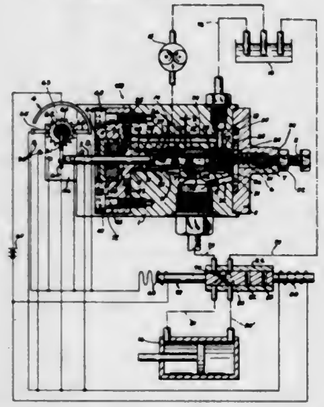
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**3,169,450**

**HYDRAULIC CONTROL DEVICE**

**Franz Köbl, Frankfurt-Sindlingen, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik K.G., Frankfurt am Main, Germany, a corporation of Germany**

**Filed Nov. 26, 1963, Ser. No. 325,960**
**Claims priority, application Germany, Dec. 19, 1962, T 23,229**
**9 Claims. (Cl. 91—28)**



1. A control unit for a hydraulic installation wherein a source of fluid under pressure is connectable to a load and valve means is interposed between said source and said load, said control unit comprising:
housing means forming a fluid cylinder;
a piston member reciprocable in said cylinder between a pair of extreme operative positions and subdividing said cylinder into a pair of fluid chambers;
conduit means connecting one of said chambers with said source and the other of said chambers with said load for applying a pressure differential to said piston member to displace the latter within said cylinder from one of said extreme positions into the other extreme position; and
transmission means including a ram displaceable with said piston member for connecting said piston member with said valve means for intermittently operating same in accordance with the movement of said piston member.

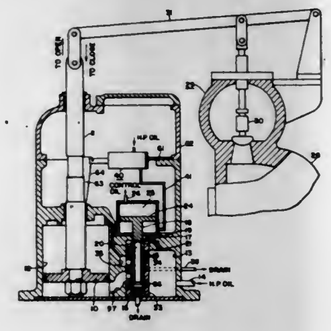
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**3,169,451**

**FLUID ACTUATED SERVO-MOTOR CONTROL**

**Ralph W. Le Gates, Thornbury Township, Delaware County, and Thomas A. Santobianco, Folcom, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Feb. 21, 1963, Ser. No. 260,197**
**7 Claims. (Cl. 91—385)**



1. In a fluid actuated servo-motor,
an operating cylinder having an operating piston therein,
a movable pressure responsive relay for controlling the admission and exhaust of motive fluid to and from said operating cylinder,
said relay having a neutral position in which the admission and exhaust of the motive fluid is arrested,
means responsive to a variable control fluid pressure for effecting movement of said relay from said neutral position,
means rendered effective by movement of said piston for providing a feedback fluid pressure varying in accordance with the position of said piston,
means responsive to said variable feedback pressure for effecting return of said relay to said neutral position,
said feedback pressure providing means including a fluid pressure outlet nozzle,
a fluid pressure inlet nozzle disposed in spaced registry with said outlet nozzle,
a fluid receiver communicating with said inlet nozzle, and
means for blocking and unblocking said outlet nozzle in a manner to vary the feedback fluid pressure in said fluid receiver.

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**3,169,452**

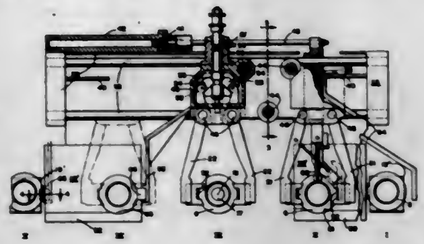
**PNEUMATICALLY ACTUATED FASTENER APPARATUS**

**Leo J. Dugin, Evergreen Park, Ill., assignor to Webcor, Inc., Chicago, Ill., a corporation of Illinois**

**Filed June 12, 1962, Ser. No. 202,007**
**4 Claims. (Cl. 91—398)**

1. A pneumatically actuated fastener apparatus comprising:
a housing,
a cylindrical sleeve liner secured within the housing defining a power piston cylinder and having an opening through the wall thereof at the bottom,

in one poistion of reciprocation of the side, an indexable loading magazine for bringing workpieces successively to the machine, a support for a workpiece at a loading station between the loading magazine and the work station, the slide having an arm adapted to engage a workpiece on the loading magazine and, upon motion of the slide, move the workpiece from the loading magazine to the loading station, said support being so disposed that a workpiece thereon is engageable by one set of jaws while another set of jaws is engageable with a workpiece at the work station.



10. A work handling mechanism, for a machine having a rotatable work holder at a work station, comprising a transfer device for carrying toothed workpieces from a loading station to the work station, said transfer device having a set of jaws thereon, and a stock-dividing member movable on said transfer device to effect stock-dividing rotation of a workpiece at said loading station prior to gripping thereof by said jaws, and means for closing said jaws and concomitantly operating said stock-dividing member, said stock-dividing member being provided with a pin for entering a tooth space of said workpiece and rotating the workpiece into a predetermined angular position between the jaws prior to gripping of the workpiece by the jaws.

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3,169,447

## GEAR FINISHING TOOL HAVING HUNTING TOOTH ACTION AND A PLURALITY OF ZONES EACH WITH HELICALLY ARRANGED CUTTING EDGES

Fritz Hurth, Munich-Solln, Germany, assignor to Carl Hurth Maschinen- und Zahnradfabrik, Munich, Germany

Filed Dec. 11, 1961, Ser. No. 158,407
Claims priority, application Germany, Dec. 12, 1960, H 41,201
15 Claims. (Cl. 90—1.6)




1. In a method of shaving a gear like workpiece having a predetermined number of teeth, the steps of bringing the workpiece in meshing engagement with a rotary shaving tool having several groups of teeth provided with uniformly spaced parallel cutting edges extending up and down between the roots and top lands thereof and forming with each other helices having a lead which is a whole multiple of the distance between two adjoining cutting edges on a tooth, the ratio between the number of teeth in a group and said predetermined number being such that one of said numbers is divisible with a rest by the other number, and rotating said tool to shave the workpiece whereby the face on any given tooth of the workpiece comes in renewed engagement with the cutting edges of a selected tooth in any one of said groups after all other teeth of the workpiece were treated by the cutting edges of a tooth whereon the cutting edges are arranged in the same way as on said selected tooth.

2. A gear shaped tool for finishing the faces of gear like workpieces having a predetermined number of teeth, said tool comprising a plurality of teeth including at least one group of teeth embracing at least some of said plurality of teeth, the teeth forming a group having serrated faces formed with uniformly spaced parallel cutting edges extending up and down between the roots and top lands thereof, the cutting edges of teeth forming a group being arranged in the form of at least one helix and the ratio between the number of teeth forming a group and the number of teeth on the workpiece to be treated in response to meshing engagement with and rotation of said tool being such that the face of a given tooth of the workpiece comes into renewed engagement with the cutting edges of a selected tooth in a group after all other teeth of the workpiece were treated by the cutting edges of a tooth whereon the cutting edges are arranged in the same way as on said selected tooth.

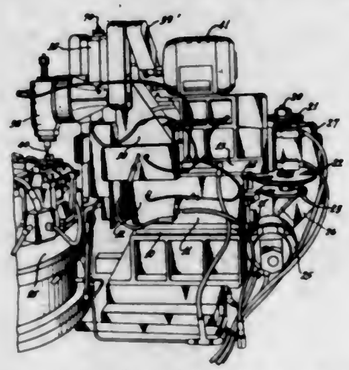
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3,169,448

## APPARATUS FOR FORMING CONTOURS

Nils Hoglund, 296 Hartshorn Drive, Short Hills, N.J.

Filed Feb. 14, 1963, Ser. No. 258,390
9 Claims. (Cl. 90—13)



1. Apparatus for forming contours in three dimensions including a base, a housing slidably mounted on said base, a plurality of cams rotatably mounted on said housing, a first slide on said housing movable transversely of the movement of said housing and a tool slide on said first slide movable transversely of said first slide, cam means associated with each of said first and tool slides for controlling movement thereof, a slide on said base and a slide on said housing contacting the cam means for controlling movement of said first and tool slides, one of the rotatable cams on said housing contacting a portion on said base for controlling movement on said housing, other of the rotatable cams contacting portions on the slides on said base and said housing for controlling movement of said first and tool slides, said portions lying substantially in a common plane.

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3,169,449

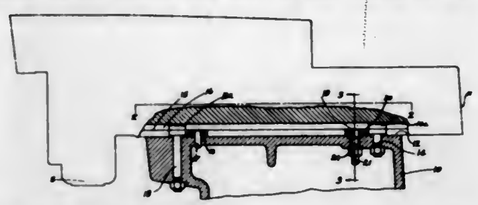
## RAM ALIGNMENT METHOD AND APPARATUS

Heinz E. Adelt, Racine, Wis., assignor to George Gorton Machine Co., Racine, Wis., a corporation of Wisconsin

Filed Sept. 23, 1963, Ser. No. 310,606
15 Claims. (Cl. 90—17)

1. A mounting structure for a machine slide, comprising in combination: a bearing for said slide; a linearly slidable, pivotal connection between said slide and said bearing; a rotatable member carried by one of said slide or said bearing; an eccentric carrier by said member in slidable and rotatable engagement with the other of said slide or said bearing; said member being spaced from said pivotal connection, whereby rotation of said member and eccentric causes relative angular displacement of said slide and said bearing about said pivotal connection; and means slidably holding said slide on said bearing in any





selected angular relation established by rotation of said member and eccentric.

13. An alignment adjustment bolt for a machine slide assembly, comprising: a barrel terminating in a flange, a pin projecting from said barrel beyond said flange on an axis eccentric to the axis of said barrel, a threaded portion at the end of said barrel remote from said flange, and a head at the end of said bolt remote from said pin.

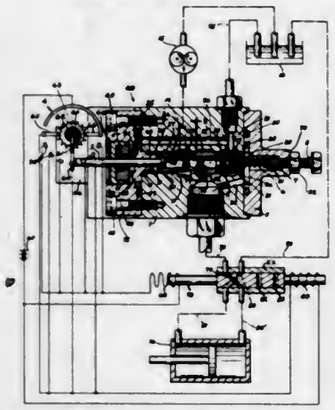
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3,169,450

## HYDRAULIC CONTROL DEVICE

Franz Köbl, Frankfurt-Sindlingen, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik K.G., Frankfurt am Main, Germany, a corporation of Germany

Filed Nov. 26, 1963, Ser. No. 325,960
Claims priority, application Germany, Dec. 19, 1962, T 23,229
9 Claims. (Cl. 91—28)



1. A control unit for a hydraulic installation wherein a source of fluid under pressure is connectable to a load and valve means is interposed between said source and said load, said control unit comprising:

housing means forming a fluid cylinder;

a piston member reciprocable in said cylinder between a pair of extreme operative positions and subdividing said cylinder into a pair of fluid chambers;

conduit means connecting one of said chambers with said source and the other of said chambers with said load for applying a pressure differential to said piston member to displace the latter within said cylinder from one of said extreme positions into the other extreme position; and

transmission means including a ram displaceable with said piston member for connecting said piston member with said valve means for intermittently operating same in accordance with the movement of said piston member.

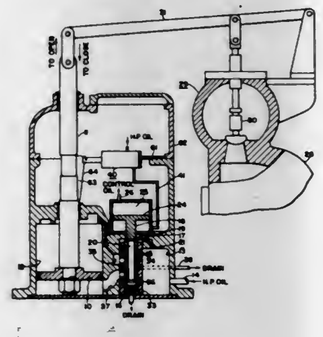
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3,169,451

## FLUID ACTUATED SERVO-MOTOR CONTROL

Ralph W. Le Gates, Thornbury Township, Delaware County, and Thomas A. Santobianco, Folsom, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 21, 1963, Ser. No. 260,197
7 Claims. (Cl. 91—385)



1. In a fluid actuated servo-motor,

an operating cylinder having an operating piston therein,

a movable pressure responsive relay for controlling the admission and exhaust of motive fluid to and from said operating cylinder,

said relay having a neutral position in which the admission and exhaust of the motive fluid is arrested,

means responsive to a variable control fluid pressure for effecting movement of said relay from said neutral position,

means rendered effective by movement of said piston for providing a feedback fluid pressure varying in accordance with the position of said piston,

means responsive to said variable feedback pressure for effecting return of said relay to said neutral position,

said feedback pressure providing means including a fluid pressure outlet nozzle,

a fluid pressure inlet nozzle disposed in spaced registry with said outlet nozzle,

a fluid receiver communicating with said inlet nozzle, and

means for blocking and unblocking said outlet nozzle in a manner to vary the feedback fluid pressure in said fluid receiver.

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3,169,452

## PNEUMATICALLY ACTUATED FASTENER APPARATUS

Leo J. Dugin, Evergreen Park, Ill., assignor to Webcor, Inc., Chicago, Ill., a corporation of Illinois

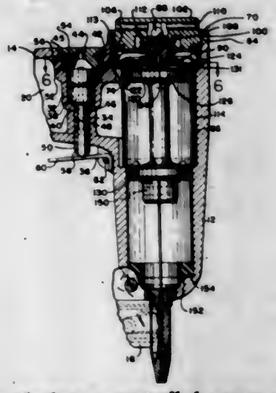
Filed June 12, 1962, Ser. No. 202,007
4 Claims. (Cl. 91—398)

1. A pneumatically actuated fastener apparatus comprising:

a housing,

a cylindrical sleeve liner secured within the housing defining a power piston cylinder and having an opening through the wall thereof at the bottom,

an upper inwardly formed radial flange providing a planar valve seat for engagement by the valve arrangement and a port area substantially less than the power piston area,
a piston reciprocably mounted in said liner between said opening and said flange,
a drive blade actuated by the piston,
a pressure reservoir in said housing in open communication with the interior of the sleeve below the piston through said opening,

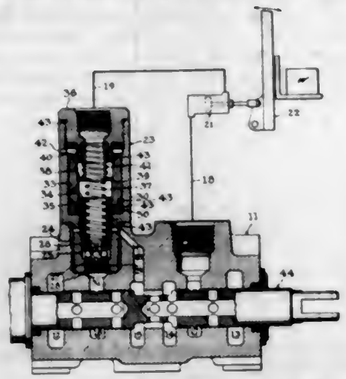


a flexible diaphragm controlled power valve arrangement for closing the liner but operably contacted by the power piston on its movement in reverse direction to open the liner to the full force of the pressure in the reservoir to drive the piston and drive blade in a forward fastener driving stroke,
means for pneumatically closing said valve arrangement to close the liner creating a pressure differential on the piston to return and maintain the piston and drive blade in the returned position a predetermined distance away from its return limit of travel, and
a control valve arrangement to selectively control the pressure on said power valve arrangement to effect reciprocal movement of the piston and drive blade to singularly drive a fastener into a work piece.

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**3,169,453**
**VALVE**
**Robert C. Westveer, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey**
**Filed Mar. 26, 1962, Ser. No. 182,426**
**4 Claims. (Cl. 91—420)**

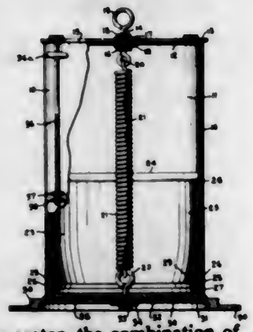
1. For use in conjunction with a reversible, positive displacement motor and a reversing valve having a supply chamber and arranged to control said motor, an anti-cavitation valve interposed in one of the lines interconnecting the motor and the reversing valve comprising a housing having a bore extending therethrough; a valve seat in said bore; a skirted check valve member coacting with said valve seat; a relatively light spring urging the check valve toward the seat, said check valve opening against the spring bias to permit flow toward the motor; a sleeve piston slidable in a counterbore formed in the bore in said housing and encircling the skirt of the check valve; means providing one way thrust engagement between said sleeve piston whereby the check valve may be raised from its seat by said piston; a graduating spring, heavier than the check valve spring urging said sleeve piston toward a position in which said check valve is permitted to seat; a working space defined by the bore, the end of the sleeve piston, and the skirt, the area of the end face of the sleeve piston being larger than that of the valve seat; means to admit pressure from the supply chamber of the reversing valve to said working space; an annular plug carrying a cylindrical flange, said plug being received in the end of said counterbore with the flange extending into sealing engagement with said sleeve piston,



said plug being adapted for connection to the line in which the anti-cavitation valve is interposed; and means providing a vent from the space defined by said housing, said plug and the sleeve piston.

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**3,169,454**
**AIR MOTOR**
**Ben Cones, 6635 E. Washington St., Indianapolis, Ind.**
**Filed July 24, 1963, Ser. No. 297,310**
**2 Claims. (Cl. 92—13)**



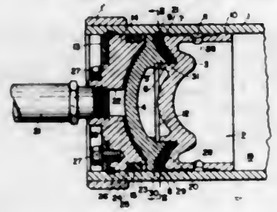
1. In an air motor, the combination of
an outer, hollow cylinder;
an inner, hollow cylinder telescoped to slide within said outer cylinder and open therein;
a sealing closure across an end of said outer cylinder;
a sealing closure across the end of said inner cylinder;
the two closure ends being respectively one at each opposite end of the two cylinders;
a flexible, elastic sleeve telescoped through the inner cylinder open end and retained frictionally against the inside of the cylinder, the sleeve terminating by one end therein at approximately one half the length of that cylinder from its said open end;
a ring integrally extending radially from the end of said sleeve at the open end of the inner cylinder and elastically bearing against the inside of said outer cylinder as a seal between said cylinders;
an elongated coil spring extending axially of said cylinders;
attaching means engaging one end of said spring and carried by said outer cylinder end;
attaching means engaging the other end of said spring and carried by said said inner cylinder end;



said spring and its attaching means normally yieldingly maintaining said inner cylinder open end to be adjacent said outer cylinder closed end; and
means limiting travel of said inner cylinder outwardly from the open end of said outer cylinder;
said limiting means being exposed laterally and entirely outside of said outer cylinder.

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**3,169,455**
**PISTON-AND-CYLINDER ARRANGEMENT**
**Helmut Hoffmann, Bad Homburg, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik Kommandit-Gesellschaft, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Oct. 2, 1962, Ser. No. 227,759**
**Claims priority, application Germany, Nov. 30, 1961, T 21,200**
**7 Claims. (Cl. 92—205)**

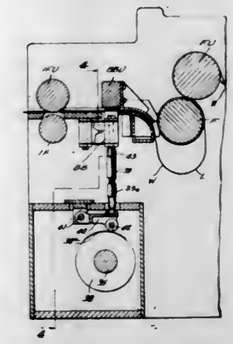


1. In a piston-and-cylinder arrangement, in combination, a cylinder having an inner wall; a piston assembly axially reciprocable within said cylinder and comprising first and second relatively movable pistons jointly displaceable within said cylinder, said first and second pistons being provided with interfitting means forming between them a closed central compartment of variable volume containing a gas and respective juxtaposed high-pressure surfaces defining an annular recess of variable volume outwardly of said compartment confronting said wall of said cylinder, said recess extending generally transversely to the axis of said cylinder, each of said pistons having a respective low-pressure surface having a surface area in excess of that of the respective high-pressure surface exposed to fluid pressure in one of said chambers, said assembly subdividing said cylinder into a pair of working chambers isolated from said compartments; and a sealing element deformable under pressure in said recess and disposed between said high-pressure surface for compression thereby radially outwardly into engagement with said wall upon introduction of fluid under pressure into at least one of said chambers against one of said low-pressure surfaces to displace said assembly within said cylinder while concurrently exerting pressure upon one of said pistons in the direction of the other of said pistons, said interfitting means including a male formation on one of said pistons disposed on a high-pressure side of said cylinder and a female formation complementarily receiving said male formation formed in the other of said pistons, said male and female formations being axially aligned, said recess being of truncated conical configuration and diverging from said axis in the direction of said low-pressure side of said cylinder.

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**3,169,456**
**DRIVE MECHANISM FOR CARTON BLANK FORMING PRESS**
**Peter Zernov, Wauwatosa, Wis., assignor to Zerand Corporation, Menomonee Falls, Wis., a corporation of Wisconsin**
**Filed Feb. 4, 1963, Ser. No. 256,020**
**8 Claims. (Cl. 93—58.3)**

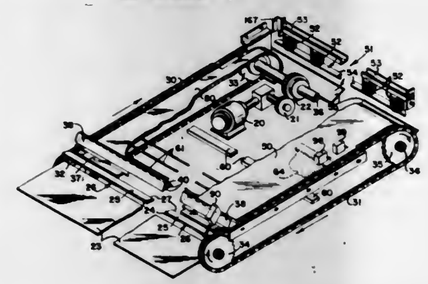
1. In a carton blank forming apparatus of the type having a cutting and creasing press into which a web is fed, a pair of continuously active metering rolls and a pair of intermittent feed rolls for said web, and a shiftable brake bar located between said pairs of metering and intermittent feed rolls for intermittently engaging said web, the improvement comprising, a driven cam shaft, two separate cams on said shaft, means connected with



one of said cams for shifting said brake bar into clamping engagement with said web to build up a web loop between said pairs of rolls and while said press forms a blank, other separate means connected with said other cam for rendering said intermittent feed rolls inactive while said loop is built up, and gear drive mechanism directly from said cam shaft to one of said metering rolls.

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**3,169,457**
**ELECTROPHOTOGRAPHIC PRINTER**
**Bernard Kaminstein, Paramus, N.J., assignor to Kamstat Corporation, Garden City, N.Y., a corporation of New York**
**Filed Feb. 13, 1962, Ser. No. 173,100**
**11 Claims. (Cl. 95—1.7)**

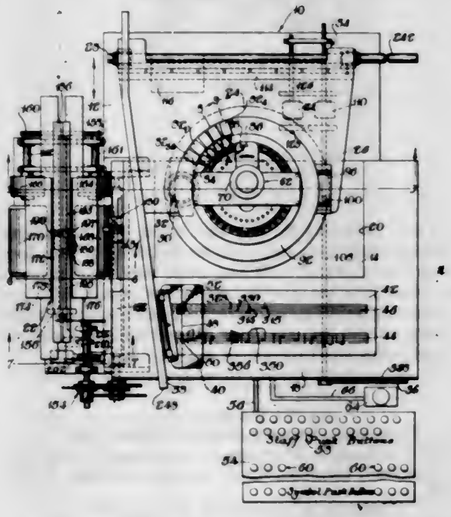


1. Electrophotographic printer apparatus of the type for developing an electrophotostatic image on a sheet of photoconductive print material, said apparatus comprising a dielectric easel having an input receiving end and an output delivery end, said easel being mounted on a base support frame and having a generally flat top surface with a curved output end surface for supporting said print material, means mounted adjacent the input end of said easel for placing a uniform electrostatic charge on said photoconductive print material, drive means for advancing said print material past said charging means and over the surface of said easel, projector means for exposing said print material to a light image while the material is supported on said easel after having been electrically charged, means for developing the image charge pattern on said material comprising a supply of developer mixture and an electromagnet pivotally supported adjacent the curved output end of said

easel, said electromagnet being adapted when energized to pick up and form a magnetic brush from said supply of developer, and means for moving said magnetic brush into contact with said print material as said print material passes along the curved output end of said easel.

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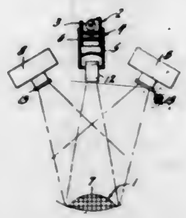
**3,169,458**
**METHOD AND APPARATUS FOR COMPOSING MUSIC COPY**
**Henry Blake Wilson, Wilmington, Del., and Allen W. Mickel, Chadds Ford, Pa., assignors to Kaumagraph Company, Wilmington, Del., a corporation of Delaware**
**Filed Mar. 28, 1961, Ser. No. 98,959**
**20 Claims. (Cl. 95—4.5)**



3. An apparatus for composing music copy comprising a stationary frame, a sheet of light sensitive material, a table mounted upon said frame for supporting said sheet of light sensitive material, a symbol magazine incorporating light-passing images of a variety of musical symbols, a source of light mounted upon said frame for directing light upon said platen, an exposure station positioned in front of said source of light, symbol image feeding means connected to said magazine for selecting a predetermined symbol image and disposing it at said exposure station between said light source and said light sensitive material, translating means reacting between said exposure station and said table through said frame for varying the vertical and lateral orientation of said exposure station relative to a musical staff imprinted upon said sheet disposed upon said table; part of said table extending visibly outside of said apparatus to provide a reference surface, a reference arm connected to said exposure station and extending over said reference surface for providing a visible indication of the relative positions of said exposure station and said light sensitive material, said reference surface including a guide surface for marking an accurate record of the vertical and lateral spacings of the images of notes printed upon said sheet of light sensitive material at said exposure station at a location remote from them which is visible to an operator, said symbol magazine comprising a disc having said light-passing images disposed about its periphery, said disc being mounted upon a turntable, said turntable and said exposure station being mounted upon a supporting plate, rotating means mounted upon said supporting plate and connected to said turntable, rotary indexing means mounted upon said supporting plate and connected to said turntable for accurately positioning said predetermined symbol images at said printing station, said rotating means comprising a motor, said motor being connected to said turntable through a slip-clutch, said rotary indexing means incorporating power-operated keys disposed about the peripbery of said turntable, a projection extending from said turntable into the path of motion of said keys, electrical control means associated with said slip-clutch and said power-operated keys for energizing said slip-clutch to cause rotation of said turntable and motion of one of said keys into the path of rotation of said projection to cause said turntable to be arrested when said pre-selected symbol image is disposed at said exposure station, said power-operated keys comprising an array of solenoid-operated keys disposed in slides about the periphery of said turntable, and said keys including indentations which permit the through passage of said projection when they are not actuated.

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**3,169,459**
**METHOD OF DETERMINING SURFACE CONTOURS OF AN EYE**
**Michael A. Friedberg, 6663 Ridgeville St., Pittsburgh, Pa., and William J. Dimond, Pittsburgh, Pa. (1941 Shady Oak Circle, Allison Park, Pa.)**
**Filed Mar. 11, 1963, Ser. No. 264,400**
**7 Claims. (Cl. 95—18)**



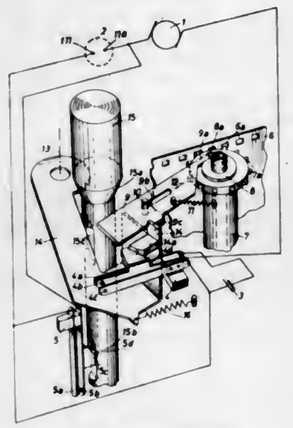
1. In a photogrammetric method of ascertaining the surface contours of an eye to be fitted with a contact lens the steps of depicting on the exposed surface of the substantially transparent tear layer which overlies the anterior epithelium of the cornea and sclera of the eye a multiplicity of photographically reproducible contiguous areas of contrasting light density to thereby render discernible surface irregularities existing in the exposed surface of said tear layer, increasing the photographic reproducibility of the patterned surface of the tear layer by causing the tear layer of the cornea and sclera of the eye to absorb a biological stain capable of emitting a visible light ray in the presence of ultraviolet light, directing an ultraviolet light onto the stained tear layer of said eye thereby to accentuate the contrast between said contiguous areas of contrasting light density, and stereoscopically photographing said continuous areas.

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**3,169,460**
**CAMERA WITH ELECTRICAL FILM TRANSPORT**
**Alfred Winkler and Rolf Schröder, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany**
**Filed May 21, 1962, Ser. No. 196,110**
**Claims priority, application Germany, May 20, 1961, A 37,500**
**6 Claims. (Cl. 95—31)**

1. In a camera having a motor-driven film transporting structure, in combination, an electrical circuit in which the motor of the motor-driven film transporting structure is located, said electrical circuit including a switch means which controls said circuit; turnable lever means for actuating said switch means; manually operable shutter-tripping means controlled by said lever means to prevent double exposures; cam means moved by transportation of the film; and second lever means actuated by said cam

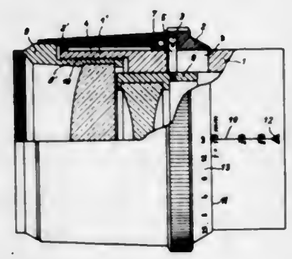




means for acting on said first-mentioned lever means to control said switch means as well as to prevent double exposures.

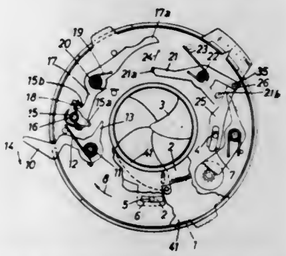
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**3,169,461**
**ADJUSTMENT MEANS FOR CAMERA OBJECTIVES**
**Otto Erbe, Aalen, Wurttemberg, and Christian Ludwig, Oberkochen, Wurttemberg, Germany, assignors to Carl Zeiss, Oberkochen, Wurttemberg, Germany**
**Filed Feb. 13, 1961, Ser. No. 88,975**
**Claims priority, application Germany, Feb. 12, 1960, Z 6,430**
**3 Claims. (Cl. 95—45)**



1. In objectives for photographic and moving picture cameras, an objective mounting, means within said objective mounting movable axially therein for adjustment of the focal length of the objective, means in said objective mounting rotatable therein for adjustment of the focal distance, annular actuating means mounted on said objective mounting for rotary and axially sliding motion in relation to said objective mounting, an axial slot in said objective mounting, substantially sleeve-like means disposed within said actuating means and secured thereto, radially extending projection means on said substantially sleeve-like means projecting radially therefrom through said axial slot in said objective mounting, a circular slot in said focal length adjustment means for slidably receiving said radially projecting means on said substantially sleeve-like means, an interior straight axial groove in said actuating means, and lug means on said exposure range adjustment means extending into said straight groove and slidable therein.

**3,169,462**
**IRIS DIAPHRAGM SHUTTER**
**Fritz Kessler and Franz Jakob, Unterhaching, and Roland Knorr, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany**
**Filed July 28, 1961, Ser. No. 127,741**
**Claims priority, application Germany, Aug. 2, 1960, A 35,252**
**11 Claims. (Cl. 95—63)**



1. A photographic shutter mechanism comprising, in combination, supporting means; a shutter mounted on said supporting means and including an iris diaphragm movable between a closed position and a plurality of open positions defining different apertures, said shutter including shutter operating ring and a pair of pins secured to said ring, said ring and said pins being movable between a position of rest in which said iris diaphragm is in said closed position, at the plurality of operative positions in which said iris diaphragm is in said open positions, respectively; a supporting plate turnably mounted on said supporting means for turning movement about an axis coinciding with the center of said iris diaphragm, and having a pair of part-circular slots, said pins being respectively, located in said slots, said plate being turnable with said slot relative to said pins between a position of rest, and a plurality of setting positions in which the end of at least one of said slots is located in the path of movement of the respective pin for stopping the same and thereby said ring in said operative positions, respectively; and a shutter actuating mechanism mounted on said plate and including a first spring-loaded member including a fork-shaped portion embracing the other pin, a second spring-loaded member, and a release lever, said release lever tensioning said second spring-loaded member while turning the same from a position located on one side of said first spring-loaded member to a position located on the other side of said first spring-loaded member so that upon release of said second spring-loaded member, said second spring-loaded member moves rapidly against said first spring-loaded member to move the same with said fork-shaped portion against said other pin for moving said other pin until said one pin is stopped by the end of said slot, whereupon said first and second spring-loaded members turn to their initial positions.

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**3,169,463**
**LIGHT CONTROLLING STRUCTURE FOR CAMERAS AND THE LIKE**
**Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Munich, Germany**
**Filed July 18, 1961, Ser. No. 124,971**
**Claims priority, application Germany, July 23, 1960, A 15,352**
**5 Claims. (Cl. 95—64)**

1. In a light-controlling structure such as a shutter, diaphragm, or the like for photographic devices, in combination, a plurality of blades for forming an aperture through which light is adapted to pass; support means; and a pair of rotary blade-controlling rings supported by said support means for rotary movement and operatively

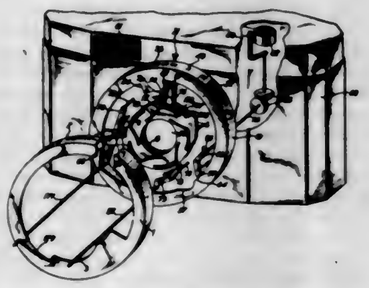
connected to said blades for controlling the latter to provide a given aperture according to the angular position of said rings one with respect to the other, said rings being located on the same side of said blades, said blades being arranged around the optical axis and said rings be-



ing concentric with and surrounding the optical axis and being axially displaced one with respect to the other along the optical axis, said support means having axially displaced bearings respectively supporting said rings, and said rings being located closely adjacent to each other with one of said rings overlapping the other.

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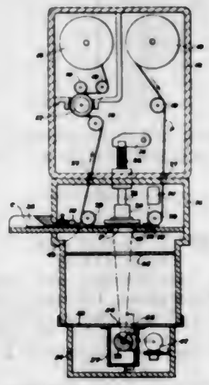
**3,169,464**
**PHOTOGRAPHIC CAMERA DIAPHRAGM ADJUSTING DEVICE**
**Heinz Köppen, Stuttgart, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany**
**Filed Dec. 4, 1961, Ser. No. 156,740**
**Claims priority, application Germany, Dec. 15, 1960, Z 8,428**
**19 Claims. (Cl. 95—64)**



1. A photographic camera designed for selectively making flash exposures and daylight exposures, said camera comprising in combination:
(*a*) a photographic objective provided with an adjustable diaphragm mechanism,
(*b*) an automatic diaphragm adjusting means,
(*c*) a manual diaphragm adjusting means,
(*d*) a flash guide number adjusting means,
(*e*) a distance adjusting means,
(*f*) means for coupling said distance adjusting means with said means for adjusting said guide number adjusting means for automatically adjusting said diaphragm to an aperture which produces a predetermined exposure by said photographic objective,
(*g*) said diaphragm mechanism being provided with two rotatable diaphragm cages and diaphragm segments adjustable by said cages, each one of said cages being adapted to adjust said diaphragm segments independently, and
(*h*) means for operatively connecting said diaphragm cages selectively with said flash guide number adjusting means, said automatic diaphragm adjusting means, said manual diaphragm adjusting means and said distance adjusting means in such a manner that the position of the first diaphragm cage is determined by the adjusted guide number and the position of the second diaphragm cage is determined by the adjusted distance.

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**3,169,465**
**CONTACT PRINTING APPARATUS**
**Roger W. Patterson, New York, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Dec. 15, 1961, Ser. No. 159,550**
**9 Claims. (Cl. 95—76)**



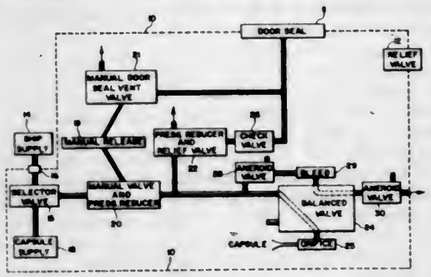
4. A photographic apparatus having a station for receiving a photo-sensitive material and an image-bearing member in surface contact with said material, comprising:
(*a*) means for supporting said material and member in superposed printing relation in said station;
(*b*) a fixed source of illumination spaced from said station;
(*c*) wall means between said source and station for defining a path for light from said source to illuminate the member in said station;
(*d*) means for selectively opening and closing said path to the light from said source; and
(*e*) a varying deflector disposed in said path for scanning the member in said station with the light from said source when said path is open;
(*f*) whereby the image on said member is exposed onto said material.

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**3,169,466**
**PRESSURIZATION SYSTEM FOR A SEALABLE ENCLOSURE**
**Robert L. Cramer, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware**
**Filed Mar. 9, 1962, Ser. No. 178,611**
**4 Claims. (Cl. 98—1.5)**

1. A pressurization system for use with a sealable enclosure having a pressure responsive sealing means whereby the system provides an absolute pressure never less than a physiological critical pressure for said enclosure and a higher second pressure for said sealing means comprising a high pressure gas inlet, a first flow passage in gas communication with said inlet and having an outlet means adapted to be in communication with a sealing means; means for controlling the flow through said first flow passage comprising a first valve member disposed in said first flow passage, pressure responsive means for controlling said first valve member and maintaining said second higher pressure downstream of said first valve member, check valve means disposed in said first flow passage and downstream of said first valve member for preventing a reverse flow from said outlet to said first valve member; a second flow passage in gas communication with said inlet and having a passage outlet means

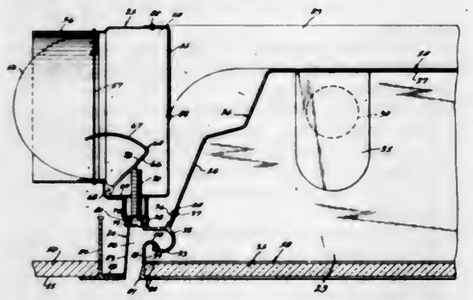





adapted to be connected with a sealable enclosure means for controlling the flow through said second flow passage comprising a second valve member disposed in said second flow passage, a resilient diaphragm connected to said second valve member and means for applying to said resilient diaphragm a pressure proportional to the difference between a pressure inversely variable with altitude but never less than said critical pressure and the current pressure at said passage outlet.

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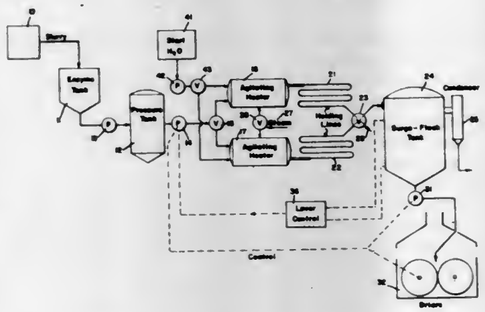
**3,169,467**
**SLOT-TYPE AIR FIXTURE FOR A CEILING VENTILATING-LIGHTING SYSTEM**
**Lee A. Archer, Wheaton, Ill., assignor to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey**
**Filed June 5, 1962, Ser. No. 200,162**
**6 Claims. (Cl. 98—40)**



1. A slot diffuser for combination with a ceiling to be ventilated and illuminated, and a fluorescent troffer light having side walls, comprising,
an elongated air fixture on each side of said troffer light each being co-extensive in length with said troffer light and each having end walls and an outer longitudinal wall member extending therebetween and disposed uprightly,
and an inner wall having locking means for engaging and supporting the corresponding side wall of said troffer light,
means forming a plenum chamber superjacent each said air fixture,
said outer and inner wall of said air fixture together with one another forming a narrow elongated slot at the uppermost portions of said air fixture,
snap-coupling means interconnecting each corresponding plenum chamber and said air fixture at said slot.
means for mounting each said air fixture in the ceiling comprising a flange at the lower portions of said outer wall for engagement with a ceiling support structure,
thereby to support and carry both the air fixture and the troffer light in the ceiling,
and a cross conduit interconnecting said plenum chambers and bridging said troffer light,
one of said plenum chambers having an air inlet formed in a side wall thereof for connection to a source of ventilating air at increased pressure,
and valve means in said inlet or regulating the flow of air into said plenum chambers and through said air fixtures.

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**3,169,468**
**APPARATUS FOR PROCESSING CEREAL PRODUCTS**
**Max R. Dietz, Merle R. Emerson, Norman A. Hurley, and Thomas Svanoe, all of Oakland, Calif., assignors to Gerber Products Company, Fremont, Mich.**
**Filed May 3, 1960, Ser. No. 26,516**
**3 Claims. (Cl. 99—237)**



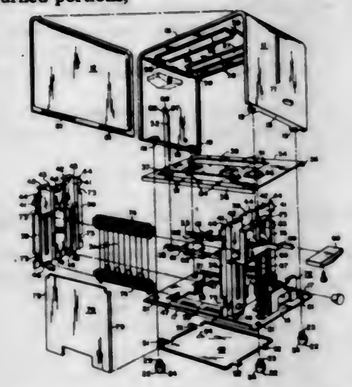

1. Apparatus for the continuous sterilization of cereal slurry comprising: a source of slurry, first and second steam injection agitating slurry heaters for heating slurry to a temperature sufficient to kill bacteria therein, first and second holding means associated respectively with said first and second heaters for receiving heated slurry therefrom and for maintaining the heated slurry received at a temperature and for a time sufficient to kill the bacteria therein, a flash tank, means for alternately selectively joining one of said holding means at a time in fluid communication with said tank and simultaneously joining the other of said holding means to an exhaust line, a source of presterilization fluid, and means for alternately selectively joining said source of presterilization fluid with the heater whose associated holding means is then being exhausted and for simultaneously linking said source of slurry in fluid communication with the other of said heaters.

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**3,169,469**
**TOASTER**
**Bernard F. Parr, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 2, 1962, Ser. No. 191,891**
**9 Claims. (Cl. 99—400)**

9. Toasting apparatus comprising
an inverted U-shaped shell having inturned flanges along the lateral margins thereof,

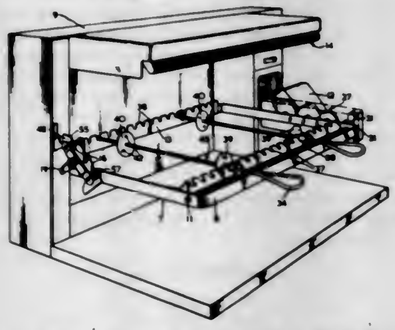
a base plate having upturned flanges along the lateral marginal edges thereof,
side panels,
the inturned flanges of said U-shaped shell and the upturned flanges of said base plate overlapping the edges of said side panels to hold them against outward displacement when said U-shaped shell is secured to said base plate,
the ends of the base of said U-shaped shell having inturned portions,



said latter portions overlapping and engaging portions of said base plate,
said portions on said shell having holes registering with holes in said portions of said base plate and means engaging said registering holes for retaining said portions on said shell against displacement from said base plate,
said retaining means having resilient expansible portions which engage the holes in said inturned portions on said leg and in said base plate and also having headed portions which serve as supporting feet for said toasting apparatus.

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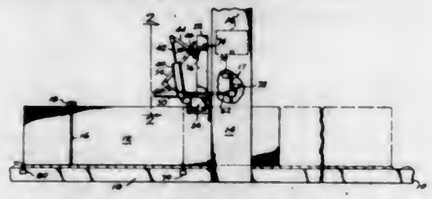
**3,169,470**
**MULTIPLE SKEWER ATTACHMENT FOR A BROILER**
**Arthur Frederick Oatley, Wilton Lodge, Wergs Road, Tettenhall, Wolverhampton, England**
**Filed Dec. 13, 1960, Ser. No. 75,604**
**3 Claims. (Cl. 99—421)**



1. A grilling appliance comprising a housing, a horizontal downwardly directed radiant heating surface mounted on the housing, a power-operated driving means having a rotary drive outlet socket of non-circular cross-section and a support member having upwardly directed open-ended slots mounted on the housing below the heating surface, and a multiple skewer unit supported horizontally under the heating surface by said driving means and support member, said multiple skewer unit having an open rectangular frame which on one side of a pair of first opposite sides has a pair of arms projecting horizontally away from the said one side and being engageable in the open-ended slots in said support member, transmission means mounted on the other side of the pair of first opposite sides, which transmission means includes a horizontally disposed rotatable shaft of non-circular cross-section corresponding to the socket which makes slidable engagement with the socket for rotation with the socket and to support the frame at the driving means, a plurality of skewers each having a coupling formation and each being detachably supported by the frame in a common horizontal plane and located in the frame parallel one to another in openings disposed in opposed, aligned pairs one in each of a pair of opposite second sides of the frame, and a coupling element mounted in the frame which is drivably connected through the transmission means to the rotatable shaft and which is drivably engaged by the coupling formations on the skewers for rotating the skewers on location of the skewers in said openings.

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**3,169,471**
**PALLETIZING APPARATUS**
**Daniel M. McLean, Independence, Oreg., assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia**
**Filed Nov. 13, 1962, Ser. No. 237,093**
**10 Claims. (Cl. 100—4)**



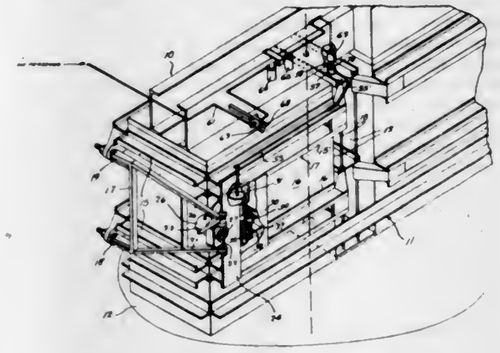
1. For use with package binding apparatus having a package binding station, package palletizing apparatus comprising:
(*a*) magazine means for holding a pallet-forming foot member spaced from the package binding station of the binding apparatus,
(*b*) advancing means positioned for advancing the foot member from the magazine means to said binding station wherein it lies across a pallet-forming surface of the package spaced from the latter and in the plane of a binder to be wrapped about the package, and
(*c*) holding means arranged for holding the foot member releasably in the package binding station for wrapping a binder around the package and foot member, whereby upon operation of a package-binding member of the binding apparatus the foot member is drawn from the holding means against the package and the binder is applied, thereby contemporaneously binding the package and forming an integral pallet therefor by binding the foot member to the pallet-forming surface.

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**3,169,472**
**PRESS DOOR LOCK FOR COTTON GINS**
**Bob M. Stribling, 4029 Ave. A, Lubbock, Tex.**
**Filed Aug. 30, 1963, Ser. No. 305,756**
**8 Claims. (Cl. 100—53)**

1. In a baling press, a press box enclosure having a vertically hinged door frame structure and a fixed wall frame structure, said door frame structure being hinged to one end of the fixed wall frame structure and being swingable to a closing position adjacent the other end of the fixed wall frame structure, said other end of the fixed wall frame structure having a pair of vertically spaced bar elements hinged thereto, a vertical lock rod secured between said spaced bar elements, a hydraulic locking cylinder mounted horizontally on said door frame structure, a piston in said cylinder, said piston having an external abutment portion lockingly engageable with said lock rod when said door frame structure is in closed position, a hydraulic compressor cylinder connected to said locking cylinder and containing hydraulic fluid, check





valve means between said compressor cylinder and said locking cylinder allowing hydraulic fluid to flow only toward said locking cylinder, means to at times by-pass said check valve means, a compressed air line, air controlled pressure-responsive valve means, and conduit means including a control valve connecting said compressed air line to said compressor cylinder through said air controlled valve means, said air controlled valve means being provided with means to allow compressed air trapped therein to escape to atmosphere at a restricted rate when said control valve is closed.

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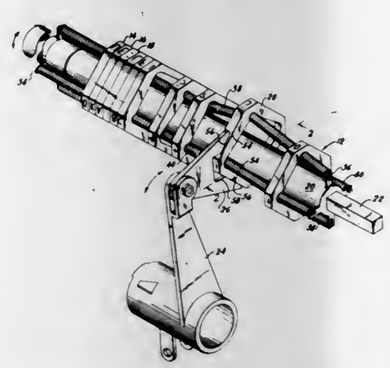
**3,169,473**
**TYPE CARRIER FOR PRINTING MACHINE**
**Calvin W. Irwin, Westport, David W. Hubbard, Stamford, and Orland F. Bergere, Fairfield, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 10, 1962, Ser. No. 222,342**
**9 Claims. (Cl. 101—93)**



1. In an impact form of high speed printing mechanism including a row of type hammer means arranged along a firing line, and actuator means for firing said hammer means along a common firing plane into printing impact, a continuously rotating drum-like carrier formed with a plurality of type faces each adapted to register with said hammer means at printing position within the firing plane of said hammer means at a predetermined instant during the rotation of said carrier, said type faces being arranged in perpendicularly arrayed rows and columns with each row extending along a line parallel to the carrier axis, and adjustable mounting means for supporting said carrier in operative relation to said hammer means, said mounting means in one adjusted setting supporting said carrier with its axis parallel to said firing line whereby each row of type faces is registered at print position for simultaneous firing of said hammer means, and in another adjusted setting supporting the carrier with its axis skewed relative to said firing line whereby each row of type faces is registered at print position for sequential firing of said hammer means.

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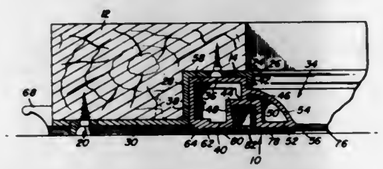
**3,169,474**
**TYPE CYLINDER**
**Bernard Howard, Upper Saddle River, N.J., assignor to Mite Corporation, New Haven, Conn., a corporation of Delaware**
**Filed June 4, 1963, Ser. No. 285,441**
**9 Claims. (Cl. 101—110)**



1. A type cylinder comprising a series of rings each one character wide, a sleeve passing through said rings, said sleeve being substantially smaller in diameter than the inside of the rings in order to afford room for radial displacement of any ring relative to the others, said sleeve having an aligned spider fixed at each of its ends, and helical tension springs of small diameter stretched between the arms of the spiders and passing inside the rings to support the same.

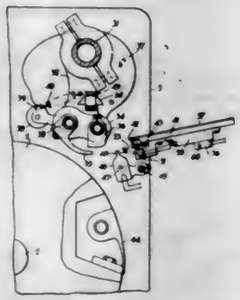
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**3,169,475**
**THIN ALUMINUM SILK SCREEN FRAME**
**Armand J. Caouette, 317 North St., Saco, Maine**
**Filed Jan. 24, 1963, Ser. No. 253,586**
**9 Claims. (Cl. 101—127.1)**



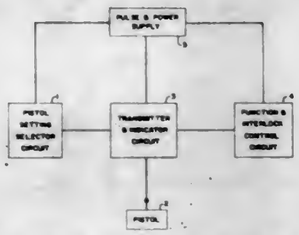
1. A thin silk screen frame comprising a peripheral hollow molding having a downwardly opening channel defined therein, a silk mesh member underlying the molding and having a portion of the periphery received in the channel, spline means received in the channel and frictionally retaining the silk mesh member attached to the molding, a thin metal strip underlying the channel and engaging the peripheral portion of the silk mesh where it underlies the molding, and lip means on said molding overlying the outer edge of said strip for securing the strip to the molding.

3,169,476
**PHOTOELECTRIC NO SHEET TRIP DEVICE FOR A PRINTING PRESS**
Raymond G. Fielding, Lymm, England, assignor to Linotype and Machinery Limited, London, England, a British company
Filed Nov. 30, 1962, Ser. No. 241,268
8 Claims. (Cl. 101—247)



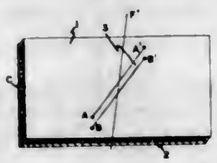
1. In a sheet fed printing press, the combination of a feed board, a rotary cylinder, a gripper mechanism intermittently movable between a sheet take and a sheet delivery position for transferring sheets from said feed board to said rotary cylinder, means for arresting said gripper mechanism in the sheet take position, and a no sheet trip device comprising light projector means, light receiver means, reflector means mounted on said gripper mechanism to reflect a beam of light from said projector means to said receiver means when said gripper mechanism is in a sheet take position, said light beam following a path that is intersected by a sheet in delivery position on said feed board, and means responsive to reflection of the light beam to said receiver means in the absence of a sheet for tripping the printing press.

3,169,477
**REMOTE CONTROL DEPTH CHARGE PISTOL SETTING SYSTEM**
Marcel E. Gres, Austin, Tex., George W. Wood, Washington, D.C., and Norman M. Schaeffer, Fort Worth, Tex., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 24, 1956, Ser. No. 618,162
6 Claims. (Cl. 102—16)




1. A depth charge remote control station for presetting the depth of the firing operation of an impulse responsive depth charge pistol comprising, in combination, impulse and potential generating means, an impulse selector circuit connected to said generating means for controlling the number of pre-setting impulses to be transmitted to the piston, and transmitting and indicating circuit means connected to said generating means and between said selector cricuit and the pistol, said circuit means including a normally open switch for initiating impulse transmission upon closure thereof, a normally unactuated first relay connected to said switch and being actuable upon closure thereof, a normally unactuated second relay and a normally unenergized first stepping switch connected to said first relay, said second relay and said first stepping switch respectively being actuated and energized upon actuation of said first relay, a normally unactuated third relay connected to said second relay, said third relay being momentarily actuated upon energizing of said second relay, a normally unenergized second stepping switch connected to said third relay and selectively connected to said impulse selector circuit, said second stepping switch being energized upon actuation of said third relay for movement from an initial position to a succession of moved positions, said movement being controlled by said selective connection of said impulse selector circuit to one of said moved positions, said second stepping switch including circuit means for holding said first relay and said second relay actuated until said second stepping switch returns to its initial position, a normally unenergized third stepping switch connected to said second stepping switch being energized upon energizing of said second stepping switch, said third stepping switch moving in unison with said second stepping switch from an initial position to a succession of moved positions upon being energized, said third stepping switch including detachable circuit means connected to the pistol, and a normally unactuated fourth relay interposed between said second stepping switch and said third stepping switch, said fourth relay being actuated upon movement of said second stepping switch to a moved position having a discrete connection with said impulse selector circuit.

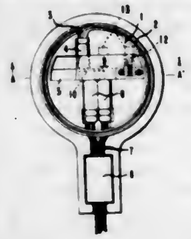
3,169,478
**FOLDABLE EXPLOSIVE TAPE**
Herbert L. Schaaf, Wenonah, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,636
5 Claims. (Cl. 102—22)



1. A foldable explosive structure which comprises a length of tape of tough, flexible, self-supporting explosive composition comprising from about 15 to about 92.5% by weight of cap-sensitive crystalline explosive in admixture with an elastomeric binding agent, a plurality of slits essentially equal in length extending through said explosive composition, said slits being arranged in echelon between the sides of the tape at an angle greater than 0° and less than 60° with respect to the line on which said tape is to be folded, torsion bars being defined by the sections of tape lying between said slits, the width of each torsion bar being essentially equal to the thickness of the tape, and each of said slits extending across said line and to each side thereof a distance at least equal to twice the thickness of the tape.

3,169,479
**EXPLOSIVELY ACTUATED HOLE CUTTER**
Paul J. Bryan, Hewitt, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 30, 1962, Ser. No. 220,491
4 Claims. (Cl. 102—24)

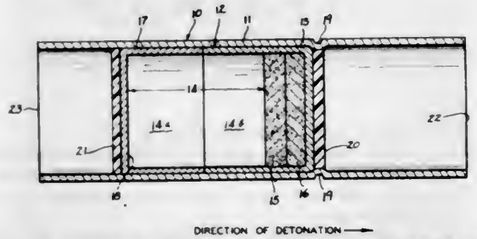
1. A cutting device which comprises:
(*a*) a saucer-shaped housing, said housing having a substantially marginal annular channel concentrically disposed in its concave surface,
(*b*) a linear shaped charge mounted in said channel, said charge comprising a flexible tube of essentially V-shaped cross section having a core of detonating explosive composition, said charge being positioned to permit continuous exposure to the inverted longitudinal surface of said tube,
(*c*) a primer mounted in said housing in propagating relationship to said charge, said primer containing a cap sensitive explosive composition,



(*d*) an initiator mounted in said housing in spaced relationship to, and in alignment with, said primer, and
(*e*) an arming switch laterally slidable in the space between said initiator and primer and having a length at least twice the diameter of the primer, at least half of said length being solid and adapted to prevent transmittal of an initiating impulse from said initiator to said primer, the remainder of the switch being provided with a chamber containing cap-sensitive explosive adapted to propagate an initiation impulse from said initiator and thereby actuate said primer, and means for successively locking the solid portion of said switch and said chamber in a position between said initiator and primer.

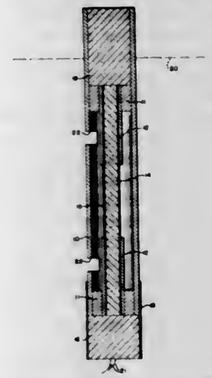


3,169,480
**SAFETY DEVICE FOR DETONATOR CORD**
Frederick R. Seavey, Alton, Ill., assignor, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland
Filed May 1, 1962, Ser. No. 191,542
5 Claims. (Cl. 102—27)



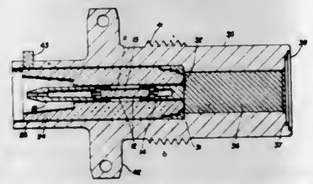

1. A connecting device for connecting two lengths of detonator cord and permitting detonation between the two lengths in only one direction comprising a tubular shell having an inner diameter substantially equal to the outer diameter of the detonator cord and a unidirectional detonating unit positioned within said shell consisting essentially of in the direction of detonation a baffle section and a detonating charge section, said shell having a sufficient length to provide on each side of said detonating unit a space adapted for the insertion of a length of detonator cord, said baffle section consisting essentially of a first barrier, said detonating charge section comprising in sequence arranged adjacent each other in the direction of detonation an explosive initiating charge, a secondary explosive charge and a second barrier, said first barrier and said initiating charge being spaced apart to define therebetween an enclosed air gap extending from said first barrier to said initiating charge, said first barrier being rupturable by the detonation of a detonator cord adjacent thereto to transmit sufficient detonating energy from the reaction of a detonator cord adjacent said first barrier across said air gap to detonate said initiating charge, the axial distance occupied by said air gap being sufficient to prevent the transmission of sufficient detonating energy from the reaction of the initiating and secondary charges across the air gap to detonate a detonator cord adjacent to the first barrier.

3,169,481
**WATER CONFINEMENT ARMING DEVICE**
Richard H. F. Streams, Jr., Spooner, Wis., and Warren M. Slie, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 5, 1962, Ser. No. 235,586
5 Claims. (Cl. 102—27)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An arming train for an explosive device comprising an ignition charge,
a base charge,
and a transmission charge interconnecting said ignition charge and said base charge, said transmission charge having a cross-sectional configuration insufficient to propagate a detonation wave when surrounded by a gas but sufficient to propagate a detonation wave when surrounded by a liquid.

3,169,482
**ELECTRO EXPLOSIVE DEVICE HAVING A SURFACE SPARK GAP**
Lowell A. Noble, Hillsborough, Calif., assignor to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California
Filed Aug. 14, 1963, Ser. No. 302,176
15 Claims. (Cl. 102—28)



1. A detonator device comprising: a metallized ceramic rod having a surface spark gap intermediate the ends thereof, a conductive shell coaxially disposed around said spark gap on said metallized ceramic rod, a ceramic body coaxially interposed between said metallized ceramic rod

and said conductive shell, and a bridge wire electrically coupled between an end portion of said metallized ceramic rod and said conductive shell.

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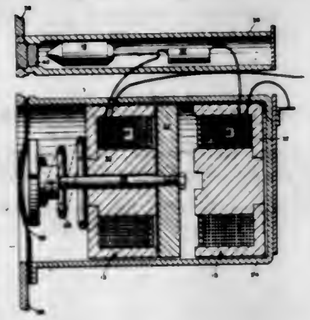
**3,169,483**
**PERCUSSION CAP**
**Heinz Gawlick and Helmut Bendler, both of Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a German corporation**
**Filed July 10, 1961, Ser. No. 123,400**
**Claims priority, application Germany, July 14, 1960, D 33,783**
**8 Claims. (Cl. 102—86.5)**



1. Rim ignitable percussion cap which comprises a body member having a recess defined therein providing said body member with an interior surface, said recess being partially defined intermediate its depth by a shoulder portion provided in the adjacent portion of the interior surface of said body member surrounding the recess, a separate thin foil longitudinally slidably disposed within the recess above and in slightly spaced relation to the shoulder portion throughout their common extent, said thin foil extending across the recess into covering contact with said adjacent portion of the interior surface of said body member surrounding the recess, and an explosive charge occupying the part of said recess below said thin foil including completely that part of said recess located between the thin foil and the shoulder portion slightly spaced therefrom and in peripheral engagement with said interior surface of said body member.

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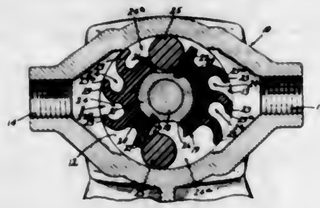
**3,169,484**
**SELF-CONTAINED TEST DEVICE FOR ORDNANCE MISSILES**
**Jacob Rabinow, Washington, D.C., and Evert Blomgren, Kensington, Conn., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Apr. 12, 1956, Ser. No. 577,904**
**1 Claim. (Cl. 102—70.2)**



In an ordnance missile, self-contained means for checking the continuity of a circuit within the missile, said means comprising in combination: a housing mounted within the missile, said housing having a first end and a second end, a first coil mounted in the first end of said housing, a first annular soft iron core mounted concentrically in the center of said first coil, a second coil mounted in the second end of said housing, said second coil being connected in series with said first coil so that the voltages induced in said coils will add, a shaft passing through the first end of said housing and extending through said first core, a push button connected to one end of said shaft, a magnet connected to the other end of said shaft, said magnet being movable between said first core and said second core, and a spring located between said first core and said push button, said spring and the magnetic field of said magnet biasing said push button away from said core and holding said magnet substantially in contact with said first core, the biasing provided by said spring and said magnet being such as to permit said magnet to rapidly jump from said first core to said second core upon manual actuation of said push button, said housing being mounted in said missile so that said shaft is substantially perpendicular with the missile axis and said push button is substantially flush with the skin of the missile, the skin of the missile around said push button being flexible so that manual pressure can be externally applied to said push button through the flexible portion of said skin, an indicator lamp and a resistor in parallel mounted within the missile near the missile skin, a transparent member placed in the missile skin above said lamp, and means connecting said circuit to be checked in series with said first and second coils and the parallel combination of said lamp and resistor, the application of manual pressure to said push button through the flexible portion of the missile skin causing said magnet to rapidly jump to said second core thereby inducing voltages in said first and second coils, the voltages so induced causing a momentary current to flow through said circuit to light said lamp, said light being observable through said transparent member, the intensity of said light providing an indication of the resistance of said circuit.

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**3,169,485**
**PUMP CONSTRUCTION**
**Harry J. Sedler, Minneapolis, and Ernest E. Cook, Coon Rapids, Minn., assignors to Hypro Engineering, Inc., Minneapolis, Minn., a corporation of Minnesota**
**Filed Nov. 1, 1963, Ser. No. 320,792**
**4 Claims. (Cl. 103—4)**



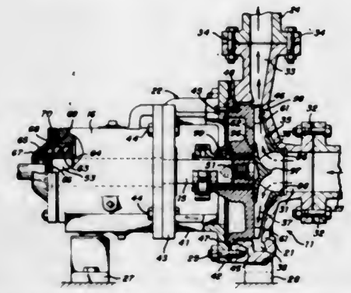
1. In a fluid pump, a housing defining:
(*a*) a chamber having spaced parallel end walls and a cylindrical side wall, and having circumferentially spaced inlet and outlet ports communicating with said chamber,
(*b*) a shaft journalled for rotation in at least one of said end walls on an axis radially offset from the axis of said chamber,
(*c*) a rotor fast on said shaft within said chamber, said rotor comprising:
(1) a hub concentric with said shaft and extending between said end walls,
(2) a plurality of circumferentially spaced radially outwardly projecting flexible resilient vane-like impeller elements fast on said hub,
(3) said impeller elements also extending between said end walls and having constant sweeping engagement with said cylindrical side wall during rotation thereof and being flexed rearwardly in varying degrees during such rotation,



(4) said impeller elements defining a plurality of circumferentially spaced axially extended pockets of varying capacity,
(*d*) one of said pockets defining a circumferentially and radially enlarged channel, and
(*e*) a relatively rigid impeller element mounted and guided in said channel for limited generally radial reciprocal movements with respect to said rotor and which during rotation of said rotor is in substantially contant engagement with said cylindrical side wall,
(*f*) the trailing side wall of said channel guiding said impeller element in its generally radial reciprocal movements and positively retaining said impeller element within said channel during said rotation.

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**3,169,486**
**PUMPS**
**Jacob B. Freed, Dayton, Ohio, assignor to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York**
**Filed July 29, 1963, Ser. No. 298,356**
**3 Claims. (Cl. 103—103)**



1. An improved centrifugal pump for handling corrosive chemical fluids and the like adapted to be connected to fluid supply and discharge lines, comprising a casing defining a pump chamber and having a forward inlet portion including an internal cylindrical surface formed therein, a cover member connected to the rear of said casing and including a central hub portion for supporting a stuffing box and a flat inner surface defining the rear wall of said pumping chamber, a drive shaft extending through said hub and said stuffing box, bearing means rotatably supporting said shaft, a housing enclosing and retaining said bearing means and connected to said casing with said cover member spaced therebetween, a centrifugal impeller including a plurality of vanes defining passageways therebetween and spaced within said chamber and connected to said drive shaft, said impeller including an inlet hub defining an outer cylindrical surface spaced in close sealing relationship with said internal cylindrical surface of said casing to provide for axial adjustment and expansion of said impeller without changing the sealing clearance between said inlet hub and said casing, said impeller including a partial front shroud covering a portion of said passageways to minimize wear on said casing in addition to providing strength to said vanes and reducing the hydraulic thrust on the forward side of said impeller, said impeller also including a rear shroud covering only a portion of said passageways for reducing the hydraulic thrust on the rear side of said impeller, means for axially adjusting said drive shaft for spacing said rear shroud and vanes of said impeller in close sealing relationship with said flat inner surface of said cover to maintain maximum pressure, and means for removing as a unit said housing, cover, shaft and impeller from said casing to enable visual setting and adjustment of the closely spaced relationship between said impeller and said cover.

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**3,169,487**
**HIGH PRESSURE VANE PUMP**
**Takashi Namikawa, Kure City, Japan, assignor to Yehan Numata, Yokohama, Japan**
**Filed June 15, 1962, Ser. No. 202,717**
**Claims priority, application Japan, Nov. 29, 1961, 36/42,379**
**1 Claim. (Cl. 103—129)**



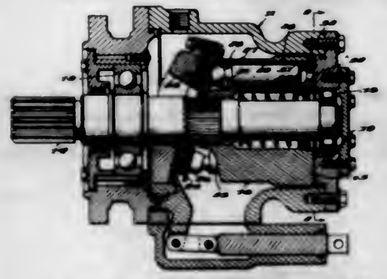
A pump comprising a casing, a cylinder rotatably mounted within said casing and carrying a plurality of vanes projecting radially inward from its circumferential wall, an independently rotatable rotor coaxially mounted to turn within said cylinder and provided with a plurality of vanes which project radially outward between the vanes carried by the cylinder, a transverse wall closing one end of said cylinder and pierced by a ring of spaced ports, with two of said ports disposed between each pair of cylinder-carried vanes, a valve plate forming one end of said casing and positioned adjacent said transverse wall, resilient means biassing said transverse cylinder wall against said valve plate, said valve plate being likewise provided with a ring of spaced ports, alternate ports being connected to outlet means and the remainder being connected to inlet means, said valve plate ports being positioned to successively register with said cylinder ports during each revolution of said cylinder, means for rotating one of said cylinder and rotor at a constant first speed, means for driving the other intermittently at twice said speed for half of each cycle, a pressure responsive safety valve mounted in said valve plate, those of said valve plate ports connected to an outlet being also connected to one side of said pressure responsive safety valve and those connected to an inlet being also connected to the other side of said safety valve, so that an excessive outlet pressure is relieved by passage of fluid from said outlet connected ports to said inlet connected ports through said safety valve, and means accessable from outside said casing for adjusting the loading of said pressure responsive valve.

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**3,169,488**
**ROTARY CYLINDER BARREL AND METHOD OF MAKING SAME**
**Karl W. Galliger, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey**
**Filed Nov. 3, 1961, Ser. No. 149,900**
**4 Claims. (Cl. 103—162)**

4. In a rotary cylinder barrel for a reciprocating piston pump or motor having a valving face at one end that cooperates with a stationary valve face, and an opposite end face from which the pistons project, the improvement that comprises:
(*a*) a bore extending through the cylinder barrel from end to end; and
(*b*) a one-piece insert fixed against movement in said bore and made of bearing material, said insert having
(1) a sleeve portion adapted to receive the piston, and

(2) an end portion whose face is flush with the valving face of the cylinder barrel and which



contains a working chamber port that communicates with the interior of the sleeve portion.

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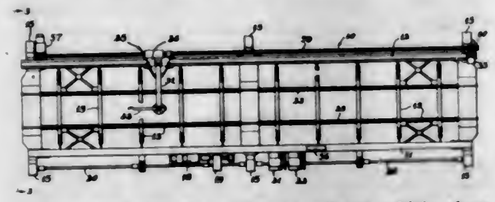
3,169,489
MONORAIL TRACKS
Leonard Edgar Ruston, Denham, England, assignor to Road Machines (Drayton) Limited, West Drayton, England, a British company
Filed Feb. 1, 1963, Ser. No. 255,464
Claims priority, application Great Britain, Feb. 9, 1962, 5,135/62
5 Claims. (Cl. 104—118)



1. A monorail track unit comprising a longitudinally extending base, and a sheet metal rail of inverted V-section, whose sides are secured to the base and whose apex is shaped to provide a rail head for engagement by the wheels of monorail vehicles.

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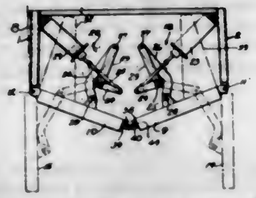
3,169,490
RAILWAY VEHICLE POSITIONER
Wallace J. Saxonmeyer, Park Forest, Ill., assignor to Whiting Corporation, a corporation of Illinois
Filed Oct. 29, 1962, Ser. No. 233,818
16 Claims. (Cl. 104—176)



1. A positioner for moving a railway vehicle along a length of track, which vehicle is of the type having a pivotally mounted coupler head at each end thereof, each of which coupler heads includes a movable jaw thereon, said positioner comprising a carriage mounted at one side of said track and being adapted to move in either direction in a rectilinear path parallel to said track, said carriage having a boom pivotally mounted thereto, which boom is adapted to swing in a plane perpendicular to said rectilinear path from a first generally vertical position to a second generally horizontal position over said track, means to move said boom between said positions, and hook means swingably supported from free end of said boom for mating engagement with the inside of each of said jaws, whereby said vehicle may be pulled along said track in either direction by corresponding movement of said carriage.

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3,169,491
RAILWAY BOTTOM DUMP GONDOLA CAR
Warren B. Darlington, Havertown, Pa., and Donald V. Slaker, Aurora, Ill., assignors to Baldwin-Lima-Hamilton Corporation, a corporation of Pennsylvania
Filed Sept. 26, 1960, Ser. No. 58,388
7 Claims. (Cl. 105—240)



1. A bottom dump gondola car comprising a body with side walls, a pair of bottom doors pivotably mounted on the lower portion of said side walls, means to open and close said doors, the distal ends of said doors being adjacent each other when in a closed position, a resilient and flexible sealing element mounted on the distal end of one door, a rigid support for said resilient and flexible sealing element mounted on the distal end of the other of said doors, whereby said rigid support deforms said sealing element when said doors are in a closed position.

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3,169,492
TILTABLE ROOF FOR STREET AND RAIL VEHICLES
Christian J. Stiefel and Wilhelm Blank, Aachen, and Helmut König, Minden, Westphalia, Germany, assignors to Waggonfabrik Talbot, Aachen, Germany
Filed Oct. 1, 1963, Ser. No. 313,025
Claims priority, application Germany, Oct. 5, 1962, W 33,074
6 Claims. (Cl. 105—377)

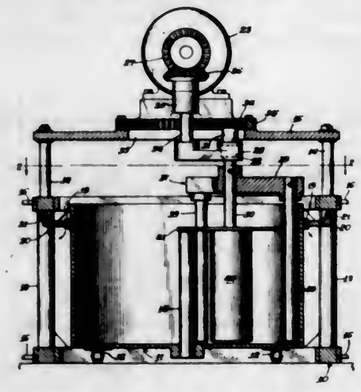


1. In combination with a vehicle having a box-shaped car body open at the top and provided with a bottom and two end walls, a multi-sectional roof structure, which comprises: two inner roof sections movable in opposite direction to each other into a closing position in which they extend side by side in a self-supporting manner from one end wall to the other end wall of said car body so as to cover the central open top portion of said car body, tiltable supporting members respectively pivotally connected to said end walls and supporting said inner roof sections for selectively tilting said inner roof sections from an open position to a closing position and from said closing position to said open position in which latter position said inner roof sections are located outside the vertical upward projection of said car bottom and at opposite sides thereof, two outer roof sections movable in opposite direction to each other from an open position to a closing position and vice versa and in said last mentioned closing position respectively extending adjacent to and along the respective adjacent inner roof sections from one end wall to the other end wall of said car body so as to cover open top portions of said car body other than those covered by said inner roof sections, said outer roof sections when occupying their closing position being detachably suspended in the respective adjacent inner roof sections, and roller means carried by said end walls and supporting said outer roof sections for movement thereon.



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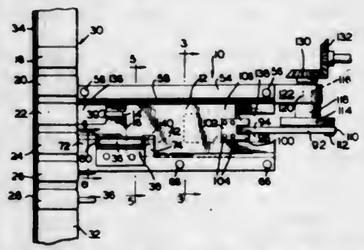
3,169,493
APPARATUS FOR PROCESSING DOUGH
Duard W. Enoch, Kansas City, Mo., assignor to Interstate Bakeries Corporation, Kansas City, Mo., a corporation of Delaware
Filed July 25, 1962, Ser. No. 212,212
10 Claims. (Cl. 107—36)



1. An apparatus for mixing dough or the like including: a mixing bowl having a first post extending upwardly from the bottom thereof; a second post positioned approximately parallel to said first post and mounted for movement in a path having said first post as an axis; a spider having a plurality of legs extending downwardly into said bowl, said spider being mounted for movement of said legs in paths such that a pair of the legs moves about said first post for intercalation of said first post therebetween; and power means connected to the second post and spider to move the two along said paths.

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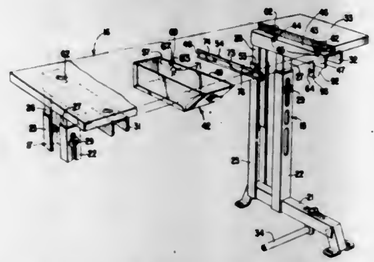
3,169,494
MACHINE AND METHOD FOR INSERTING STICKS IN BARS
Thomas L. Jernigan, Richmond, Va., and Christian K. Nelson, Los Angeles, Calif., assignors to Eskimo Pie Corporation, Richmond, Va., a corporation of Delaware
Continuation of application Ser. No. 119,240, June 23, 1961. This application Mar. 11, 1963, Ser. No. 264,282
10 Claims. (Cl. 107—54)



3. A process for continuously producing confectionery bars having handles protruding from one end thereof, comprising the steps of substantially continuously moving a conveyer carrying a succession of equally spaced bars along a path past a first point and a second point spaced thereafter, abreast of said first point in timed relationship to said conveyer motion periodically moving a dagger transversely of said path toward and away from said conveyer a distance to penetrate a substantial distance into and carve a hole in the end of each successive bar passing thereby, and abreast of said second point positioning a handle perpendicularly of said path with an end separated from said path substantially no less than the separation between the outer pointed extremity of said dagger and said path, and moving said handle lengthwise toward said conveyer a distance equal to that moved by said dagger and in timed relationship to said dagger movement to insert the handle into the carved hole of each successive bar passing thereby.

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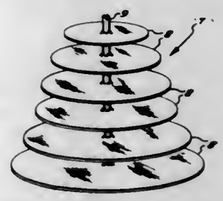
3,169,495
DRAWER AND DRAWER MOUNTING FOR SEWING MACHINE STAND
George A. O'Brien, Anderson, S.C., assignor to The Singer Company, a corporation of New Jersey
Filed Dec. 31, 1962, Ser. No. 248,360
4 Claims. (Cl. 108—26)



1. A drawer and drawer mounting for use with a sewing machine stand having at least one top rail, and a table top carried by said top rail, the said drawer and drawer mounting comprising a stationary runner part, means located adjacent to the top of said top rail for removably securing said stationary runner part to said top rail, said means being so constructed and arranged that when said table top is secured to said top rail, said stationary runner part is locked against removal from its normal operating position by the presence of said table top above said stationary runner part, a movable runner part slidably carried by said stationary runner part, and means securing said drawer to said movable runner part.

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3,169,496
SEPARABLE TIERED CAKE STAND
Lawrence A. Muggli, 5948 University Ave. SE., and Karl Erich Berg, 4124 10th Ave. S., both of Minneapolis, Minn.
Filed Aug. 29, 1963, Ser. No. 305,478
3 Claims. (Cl. 108—94)

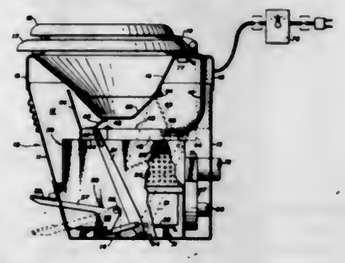


1. A cake stand of the class described, comprising in combination a plurality of independent mounting post sections having a central bore, a counter-bore in the lower end portion of each thereof, and a reduced diameter in

the upper end portion of each thereof, said counter-bore and said reduced diameter being substantially of the same depth and substantially of the same diameter, whereby independent sections of said mounting posts have endwise sliding telescopic movements the one with the other in stacked arrangement, a transversely disposed pin extending through the counter-bore in the lower end portion of each mounting post section and rigidly secured therein and a pair of circumferentially opposed notches formed in the peripheral upper edge portion of each of said mounting post sections, said notches in one mounting post section having engagement with the pin in the next upwardly succeeding mounting post section to thereby hold the assembled sections against axial rotation and a cake supporting platform rigidly secured against axial and endwise movement mounted on the lower end portion of each mounting post section whereby when said mounting post sections and the said cake supporting platform on each thereof, are assembled in interlocking engagement, the said platforms will be held positioned in upwardly spaced tiered relation.

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**3,169,497**
**INCINERATOR TOILET**
Ernest Bayne Blankenship, P.O. Box 35,164, Dallas 35, Tex.
Filed Dec. 26, 1961, Ser. No. 162,628
8 Claims. (Cl. 110—9)

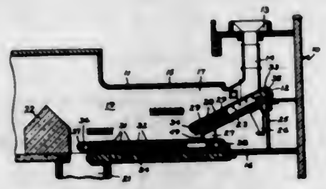


1. In a waterless toilet,
a housing,
a vertically disposed incinerator chamber within said housing and spaced from the walls thereof, said chamber being open at its upper and lower ends,
an ash pan within said housing beneath said incinerator chamber,
a cover mounted on top of said incinerator chamber, means for moving said cover,
a reflector wall within said incinerator chamber and positioned around the inner area thereof,
a heater within said reflector wall and adjacent thereto. said reflector wall being perforated,
a perforated channel around said perforated reflector wall,
a blower, means communicating said blower with said channel, said blower being mounted in a position to draw air from said channel, and means discharging effluent from said blower.

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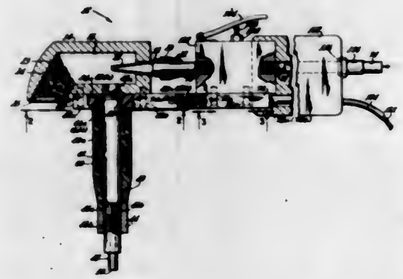
**3,169,498**
**TRAVELING GRATE INCINERATOR**
Russell C. Rivers, Boylston, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 14, 1961, Ser. No. 95,667
2 Claims. (Cl. 110—15)

1. An incinerator for refuse, comprising a furnace, a conditioning section in the furnace upon which the refuse is first introduced, the conditioning section having an inclined traveling grate, a burning section in the furnace, the burning section having a horizontal traveling grate, vertical legs supporting the lower end of the inclined grate in a position overlying one end of the horizontal grate, both grates having air chambers, at least one of the legs being in the form of a conduit joining the two air chambers and means for introducing combustion air into one of the chambers, at least part of the combustion air passing through the said one of the legs to the other chamber.



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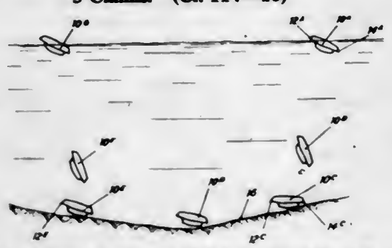
**3,169,499**
**MULTIPURPOSE DESOLDERING DEVICE**
Frank Armenise, 21 Pompano Lane, Massapequa Park, N.Y.
Filed June 28, 1963, Ser. No. 291,381
3 Claims. (Cl. 113—59)



1. An electrically heated desoldering device adapted to operate from an external source of pressurized air comprising:
(A) an inlet pipe having first and second ends,
(1) means to connect said first end to said source of pressurized air;
(B) an elongated housing disposed in coaxial relationship with said inlet pipe, said housing being provided with a chamber having an air inlet port, a melted solder passageway having an outlet port at one end positioned within the chamber proximate to the second end of said inlet pipe and an inlet port at the opposite end of the melted solder passageway and an air exhaust port positioned downstream from the air inlet port and the melted solder passageway outlet port,
(1) said air inlet port being adapted to receive said air inlet pipe whereby said chamber is in communication with said source of pressurized air;
(C) heating means having a bore extending therethrough,
(1) said heating means bore being coextensive with said melted solder inlet port and in communication with said chamber; and
(D) a desoldering tip removably secured coaxially with said heating means and having a bore communicating with said heating means bore,
(E) solder collecting means removably contained within said housing chamber opposite the second end of said air inlet pipe and proximate the air exhaust port.



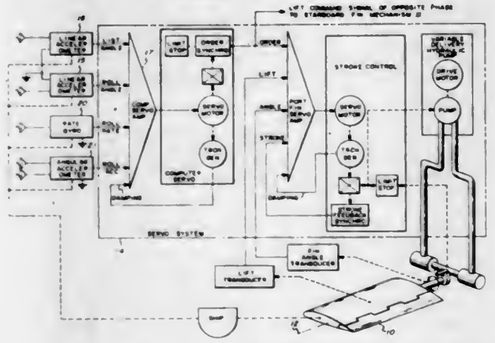
**3,169,500**
**METHOD OF NAVIGATION FOR A SUBMARINE BOAT**
Jacques Yves Cousteau, Paris, France, Emile Gagnan, Montreal, Quebec, Canada, and Jean Alinat, Nice, France, assignors to La Spirotechnique
Filed July 13, 1962, Ser. No. 209,589
Claims priority, application France, July 21, 1961, 868,601, Patent 1,302,625
3 Claims. (Cl. 114—16)



1. The method for submerging a submersible boat from a floating position on the water to a horizontal position at a desired depth under the water comprising the steps of tilting the boat to a sharp angle with the vertical and decreasing the buoyancy to sink the boat to the desired depth whereby to produce a fast dive due to the minimum of resistance offered by the shape of the craft, and then tilting the boat to the horizontal position.

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**3,169,501**
**SHIP STABILIZATION APPARATUS**
Charles R. Wesner, Crozet, Va., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 254,922
4 Claims. (Cl. 114—126)

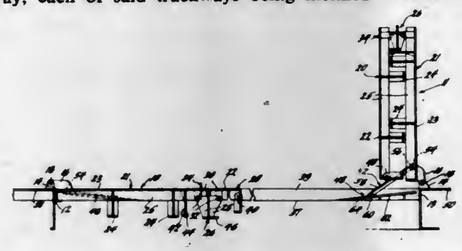


1. In a ship stabilization apparatus, the combination of first accelerometer means mounted on said ship and responsive to roll movements of said ship for providing a signal representative of the instantaneous roll angle of said ship, second accelerometer means mounted on said ship and responsive to the roll movements of said ship for providing a signal representative of the list angle of said ship, and means for modifying said roll angle signal in accordance with said list angle signal for providing a signal representative of the roll angle of said ship with respect to said list angle.

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**3,169,502**
**HATCH COVER ARRANGEMENT**
Eugene Groppell, % 600 Godchaux Bldg., 527 Canal St., New Orleans, La.
Filed Oct. 4, 1963, Ser. No. 313,988
10 Claims. (Cl. 114—202)

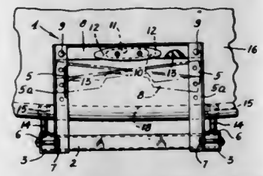
1. In a vessel having a hatchway, a pair of folding hatch covers hingedly mounted to opposite ends of said hatchway, each of said covers including an inner and outer panel movable into substantially vertical position when fully open and substantially horizontal position when fully closed, said inner and outer panel each hingedly mounted to a transverse beam generally T-configuration and having flat plate projections mounted along the stem of said T so adapted as to provide structural support for the contacting edges of said inner and outer panel when in the closed position, anti-translational movement means provided in close proximity to and interacting with said transverse beam during an opening or closing operation, a pair of anti-friction means mounted in opposite outer ends of said outer panel coacting with a pair of trackways correspondingly mounted in open opposite sides of said hatchway, each of said trackways being inclined toward the



outer extremities thereof, a bar member pivotly mounted to said inner panel, each of said outer extremities being slotted to slidably receive said bar member, said bar member serving as a trackway for said anti-friction means in the initial stage of a closing operation, said anti-friction means including a freely rotating wheel mounted in the underside of one of said outer ends and a second freely rotating wheel mounted within an arm like member pivotly and slidably mounted near the upper portion of said one of said outer ends, said first wheel acting during the initial portion of an opening operation, said second wheel acting during the initial portion of a closing operation, said second wheel and said arm like members adapted to be enclosed within a horizontal plane of said outer panel when in the closed position, and lift means for opening and closing said hatch covers.

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**3,169,503**
**DEMOUNTABLE BOAT LADDER**
Frank B. Lane, Annapolis, Md., assignor to Berliner Development Company, a corporation of Maryland
Filed May 28, 1963, Ser. No. 283,943
3 Claims. (Cl. 114—221)

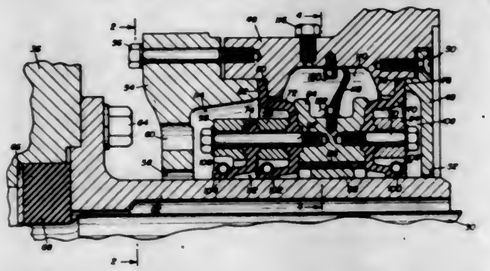


1. In combination, a boat having a hull and a deck mounted on said hull, a deck cleat mounted on said deck at a position adjacent to but spaced inwardly from one side edge of said hull, said deck cleat having a neck portion, a ladder positioned vertically on one side of said hull, said ladder including a plurality of horizontal rung members fixedly mounted between a pair of vertical stile members, a horizontal attachment member disposed in spaced relation rearwardly of said ladder in an inboard direction therefrom, said attachment member being hooked over said deck cleat and having a cut-out portion engaging the neck portion thereof on the inboard side, said cut-out portion comprising a notch approximately

equal in size to the width of the neck of said deck cleat at its narrowest point and having sides tapering outwardly therefrom to wedgingly engage said deck cleats, and connecting means secured between said ladder and said attachment member to hold said ladder in an upright position at the side of said boat.

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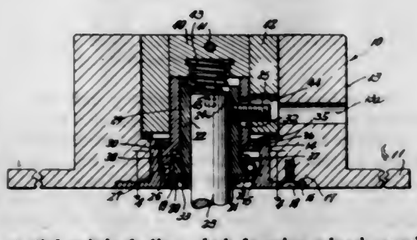
**3,169,504**
**CATHODIC SYSTEM**
**Jerome M. Gruber, Waukesha, Wis., assignor to Waukesha Bearings Corporation, Waukesha, Wis., a corporation of Wisconsin**
**Filed Dec. 16, 1963, Ser. No. 330,723**
**10 Claims. (Cl. 115—5)**



1. A combination including:
(A) A ship having:
(1) a metallic hull;
(2) a propeller;
(3) a rotating element including a shaft carried by the hull for rotating the propeller;
(4) a seal for preventing ingress of water to the hull along the rotating element, and for preventing the egress of oil from the hull along the rotating element, said seal including:
(*a*) a sealing ring surrounding and contacting the rotating element;
(*b*) metallic means supporting the sealing ring, said metallic means being lower in the electrochemical series than the hull;
(5) and means for electrically connecting the metallic means with the hull, whereby the hull functions as an anode and the metallic means as a cathode.

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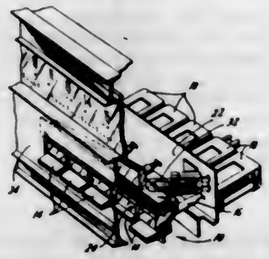
**3,169,505**
**ADJUSTABLE DIAL FOR SHAFTS**
**Louis Spraragen, Fairfield, Conn.**
**(29 Federal St., Bridgeport, Conn.)**
**Filed Nov. 14, 1962, Ser. No. 237,525**
**11 Claims. (Cl. 116—124)**



1. A dial unit including a hub forming a knob provided with an integral dial member having indicia thereon adapted to be adjustably positioned on a shaft to indicate the position thereof comprising cooperating cam means and a race, one secured to the dial member and the other secured to the shaft, a plurality of balls disposed between the cam means and race and urged by spring means into locking relation therewith whereby said dial member is normally locked to rotate with said shaft, and release means mounted within the knob on the dial member for axial movement with respect to the knob and shaft and having means for moving the balls against the spring means and out of locking relation to enable the dial member to be rotated in either direction with respect to the shaft to adjust the rotative position of the dial member and the indicia thereon with respect thereto.

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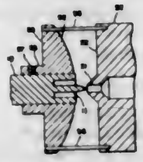
**3,169,506**
**OPERATION-INDICATING MEANS FOR PUSH-BUTTON-OPERATED MECHANISM**
**William J. Morris, Woodbury, N.J., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware**
**Filed Dec. 16, 1963, Ser. No. 330,937**
**3 Claims. (Cl. 116—124.4)**



1. A control device comprised of a plurality of individually selectable, movable elements, including an optical system for selectively visually indicating the operative condition of individual ones of said elements comprising:
(*a*) a plurality of serially aligned light-transmissive indicator elements individual ones of which are positioned adjacent individual ones of said movable elements,
(*b*) a source of radiation,
(*c*) a single elongate prism positioned to intercept radiation emanating from said source disposed contiguous said indicator elements and having provided therein a plurality of reflecting surfaces effective to reflect intercepted light onto individual ones of said indicator elements, and
(*d*) shutter means translatable by said individual elements from a position preventing transmission of intercepted radiation to an associated indicator element to a position permitting such transmission.

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**3,169,507**
**ELASTIC WAVE GENERATOR**
**Stanley R. Rich, West Hartford, Conn., assignor, by mesne assignments, to Northern Industries, Inc., Dover, Del., a corporation of Delaware**
**Filed June 14, 1961, Ser. No. 117,015**
**16 Claims. (Cl. 116—137)**

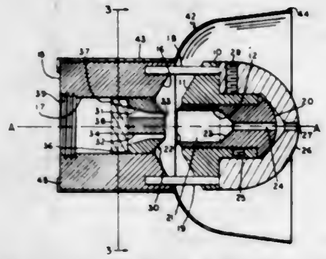


1. Apparatus for generating high intensity elastic waves in a gaseous medium comprising, a first body having a cavity with a single opening thereinto, a pin having a pointed end, said pin being located at least in part in said cavity and extending in the direction of a line which extends from a wall of said cavity through said opening, said pointed end being located outside said cavity and directed away from said wall, and a second body having a gas nozzle confronting said opening and said pointed end for propelling a stream of gas at said pointed end substantially in said direction toward the interior of said cavity, said second body having a substantially flat wave reflecting surface surrounding said nozzle, said nozzle extending above said surface toward said opening, there being a substantially free exhaust path for gas passage in directions normal to said first-named direction and tangent to said surface from the vicinity of said pointed end along said surface, said path substantially including said pointed end.



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**3,169,508**
**ELASTIC WAVE GENERATOR**
**Stanley R. Rich, West Hartford, Conn., assignor, by mesne assignments, to Northern Industries, Inc., Dover, Del., a corporation of Delaware**
**Filed Jan. 16, 1963, Ser. No. 251,838**
**7 Claims. (Cl. 116—137)**

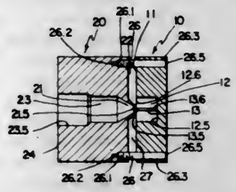


1. In apparatus for generating elastic waves in a gaseous medium with an acoustic resonator cavity, an opening at one end of said cavity and means to propel a stream of gas at said opening for generating said waves, the improvement comprising, a conically shaped wall means in said cavity opposite said opening, said wall means providing a vent column of generally uniform cross-section smaller than the cross-section of said cavity and extending away from the wall means in said cavity opposite said opening for draining liquid from said resonator, said cross-section of said vent column being so small that said vent column functions as an acoustic inductance, with respect to said waves, of which the reactance $j\omega M$ is large compared with the acoustic impedance of said resonator cavity, where
"$\omega$"$=2\pi f$;
"$f$"=the frequency of said waves; and
"$M$"=mass of gas in said vent column.

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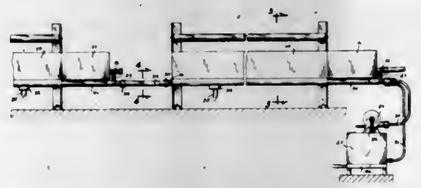
**3,169,509**
**ELASTIC WAVE GENERATOR**
**Stanley R. Rich, West Hartford, Conn., assignor, by mesne assignments, to Northern Industries, Inc., Dover, Del., a corporation of Delaware**
**Filed Apr. 8, 1963, Ser. No. 271,441**
**13 Claims. (Cl. 116—137)**

1. Apparatus for generating elastic waves in a gaseous medium comprising: a first member having a first surface and a cavity with an opening thereinto through said first surface, and a second member having a gas nozzle confronting said opening for propelling a stream of gas toward said cavity for generating elastic waves, said second member having a second surface surrounding said nozzle and confronting said first surface, said first and second surfaces defining an unobstructed annular venturi passage for gas flow in which the pressure of gas flowing radially in said passage increases substantially only as a function of the radius of said passage, said passage being simultaneously adapted to guide said elastic waves, the ratio of the larger radius of said passage to the smaller radius thereof being substantially greater than unity.



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**3,169,510**
**LIVESTOCK WATERING TROUGH AND CONNECTING CONDUIT**
**Joseph W. Fulton, Jr., 1824 Southern Ave., Shreveport, La.**
**Filed June 27, 1962, Ser. No. 205,628**
**1 Claim. (Cl. 119—73)**



In a livestock watering means, comprising, in combination,
at least two elongated trough members, each having integral therewith an oil conduit, a return oil conduit, and a water supply conduit, said conduits extending the entire length of the trough member of which they are a part,
a pipe having three separate passageways extended the entire length thereof with one passageway connecting the forward end of the oil conduit of an elongated trough member to the rear end of the oil conduit of the next elongated trough member, with another passageway connecting the forward end of the return oil conduit of an elongated trough member to the rear end of the return oil conduit of the next elongated trough member, and its third passageway connecting the forward end of the water supply conduit of an elongated trough member to the rear end of the water supply conduit of the next elongated trough member, and
means attachable to one end of a trough member for connecting the forward end of the oil conduit of the last trough member to the forward end of the return oil conduit of the last trough member.

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**3,169,511**
**MECHANICAL MARKING INSTRUMENT**
**Walter B. Spatz, Los Angeles, Calif., assignor to Spatz Corporation, Santa Monica, Calif., a corporation of California**
**Filed July 13, 1961, Ser. No. 123,679**
**4 Claims. (Cl. 120—18)**

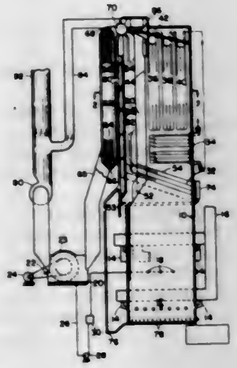


1. In a mechanical marking instrument: forward and rearward barrel sections piloted one within the other and

rotatable relative to each other; said rearward section having an internal thread extending from a rear portion of said rearward section to its forward end; said forward section having a non-circular bore; and a driver having a shank portion of non-circular cross-section conforming to said non-circular bore and longitudinally slidable in said bore and a head at the rear of said shank portion having a longitudinal groove therein receiving said internal thread, said thread engaging opposite sides of said groove, whereby relative turning between said sections feeds said driver longitudinally along said rear section and said bore, said shank portion having means at its forward end for engagement with a companion marking element; said head having a forward portion provided with a recess through which said thread extends freely and extending forwardly of the forward point of engagement between said thread and one side of said groove and adapted to engage said forward section to limit forward movement of said driver in said sections and to prevent complete unthreading of said head from said thread.

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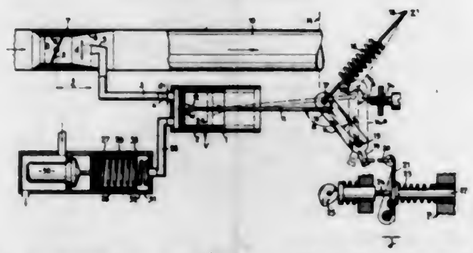
**3,169,512**
**BLACK LIQUOR CHEMICAL RECOVERY UNIT HAVING AN OPEN GAS PASS**
**Frank W. Hochmuth, West Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware**
**Filed Dec. 28, 1962, Ser. No. 248,061**
**2 Claims. (Cl. 122—7)**



1. In a system for recovering chemicals and generating and superheating steam from the combustion of black liquor, the combination of a smelter furnace defined by generally vertical walls, means for supplying black liquor into the furnace interior and for burning the same in the lower portion thereof for producing combustion gases laden with chemical ash particles, a superheater heat exchanger including both primary and secondary superheat surface positioned in the flow path of the combustion gases within the upper portion of the furnace, a gas pass connected to the upper portion of the furnace, said gas pass comprised of walls forming a tortuous gas passage made up of a plurality of upwardly and downwardly extending interconnected passages, the walls of the gas passage being lined with fluid cooled tubes, a first portion of the gas passage being connected to the upper portion of the furnace, said first portion being an open gas pass free of any heat exchange members other than the fluid cooled tubes lining the walls thereof, a second portion of the gas passage being downstream of the first portion and in series flow relationship therewith, said second portion having a plurality of steam generating tubes positioned within the passage over which the combustion gases flow, whereby as the hot combustion gases flow through the open first portion of the gas passage the chemical ash particles give up heat to the combustion gases and the combustion gases give up heat to the fluid cooled tubes, thereby reducing the over-all temperature of the chemical ash particles and the combustion gases prior to entering the second portion.

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**3,169,513**
**DEVICE FOR REGULATING THE SUPPLY OF FUEL INJECTED INTO AN INTERNAL COMBUSTION ENGINE**
**Ernest André Gaston Hennequin, Montbeliard, France, assignor to Societe d'Etudes et d'Applications Industricles et Immobilieres "Inter-Technique," Paris, France, a French body corporate**
**Filed May 7, 1963, Ser. No. 278,561**
**Claims priority, application France, May 10, 1962, 897,101; Sept. 18, 1962, 909,739; Nov. 29, 1962, 916,989**
**13 Claims. (Cl. 123—140)**



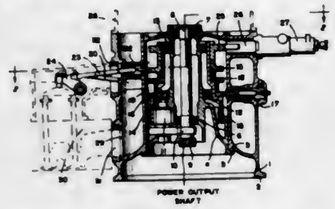
1. A device for regulating the supply of fuel injected into an internal combustion engine of the explosion type having an induction pipe and a Venturi disposed therein through which the induction air flows to the engine and a throttle controlling the entry of air through said Venturi, said device comprising: a volumetric injection pump having output regulating means; an expansible chamber device having a movable element connected to said output regulating means and a variable-volume chamber; a negative pressure inlet disposed in the induction pipe of the engine on the downstream side of the throat of the Venturi, said inlet consisting in a divergent nozzle opening out in front of said throat, that is in front of the stream of air travelling through said Venturi; connecting conduit means between said negative pressure inlet and said variable volume chamber; a calibrated jet arranged in said connecting conduit means; and an elastically yieldable device connected to said movable element of said expansible chamber device and to said output regulating means of said pump; the arrangement being such that any increase in the negative pressure in said negative pressure inlet results in a decrease in the output of the pump, in opposition to the action of said elastically yieldable return device.

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**3,169,514**
**VALVE ACTUATING MECHANISM FOR BARREL-TYPE ENGINES**
**Marius Georges Henri Girodin, 20 Place de la Madeleine, Paris, France**
**Filed Apr. 20, 1962, Ser. No. 189,066**
**4 Claims. (Cl. 123—58)**

1. A distributing device for a motor with a power output shaft and a block of several cylinders each having a cylinder head, said cylinders being spaced in regular manner around the power output shaft, said distributing device comprising a cam shaft coaxial to said power output shaft, said cam shaft being located in a cylindrical casing and coaxial with said power output shaft, said casing being constituted of two cylinders of which one cylinder is received inside the other cylinder, the interval between the said cylinders constituting a passage for the in-take

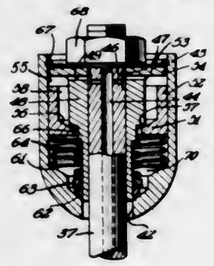




air, said casing and cam shaft constitute an assembly which is removable with respect to said cylinder block.

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**3,169,515**
**FULCRUM ADJUSTER**
**Charles R. Kilgore, Willowick, and James E. Yingst, Russell Township, Geauga County, Ohio, assignors to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Feb. 13, 1964, Ser. No. 344,751**
**9 Claims. (Cl. 123—90)**



1. In a fulcrum adjuster having a barrel and a mounting post extending into said barrel, a bushing mounted about said post, said bushing having an enlarged annular shoulder extending radially therefrom, a valve sleeve received within said barrel and cooperating with said barrel to provide a leakdown annulus therebetween, said valve sleeve having an internal seating surface upon which the peripheral edge of said shoulder is arranged to seat thereby providing a valve element therebetween, and spring means urging said valve sleeve into seated relation with said shoulder.

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**3,169,516**
**COMBINATION FURNACE, FIREPLACE, BROILER**
**Joseph Michael Agnese, 2770 Greenwich St., San Francisco, Calif.**
**Filed Mar. 13, 1963, Ser. No. 264,842**
**10 Claims. (Cl. 126—6)**

1. A heater adapted to provide a furnace and a fireplace within a room in a house, comprising:

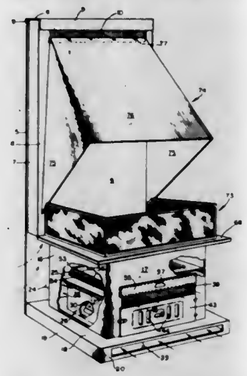
(*a*) a vertically extending passageway having an inlet for room air adjacent to its lower end and an outlet for said air at its upper end;

(*b*) a housing of sheet metal extending forwardly from said passageway having lateral sidewalls, front and rear walls, and an open top;

(*c*) a horizontal, imperforate wall within said housing intermediate the open top and lower end thereof extending to said lateral sidewalls and front and rear walls dividing it into an upper fireplace and broiler section and a lower firebox section;

(*d*) a firebox in said firebox section having heating means therein and also having an imperforate top wall spaced below said horizontal wall to provide a passageway for air between them;

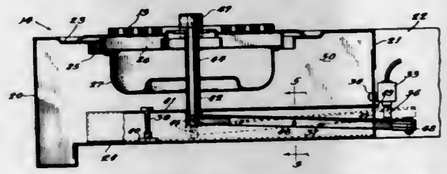
(*e*) said front wall of said housing being formed with an opening at a point remote from said inlet, communicating with said last mentioned passageway for admitting room air to said last mentioned passageway, said last mentioned passageway terminating



at one end thereof adjacent to said inlet and communicating with said inlet at said one end for passage of air from said last mentioned opening across said top wall to said lower end of said vertically extending passageway.

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**3,169,517**
**COOKING RANGE OF THE SLIDING DRAWER TYPE**
**Michael W. Maier, Beaver Dam, Wis., assignor to Malleable Iron Range Company, Beaver Dam, Wis., a corporation of Wisconsin**
**Filed Jan. 10, 1963, Ser. No. 250,684**
**7 Claims. (Cl. 126—37)**

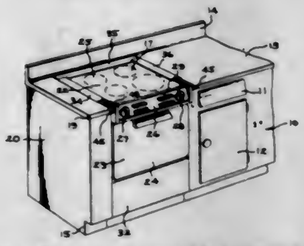


1. A cooking range comprising, in combination, a range body, a drawer slidably mounted therein, said drawer including a bottom wall, a back wall having an opening therein, a top wall having an opening therein, and side walls, drawer venting means arranged for exposure when said darwer is extended, a surface heating unit disposed in said top wall opening, a disconnect switch for said surface unit mounted externally on the back wall at a point adjacent said back wall opening, and switch actuating means extending between said surface unit and said switch and comprising a housing disposed beneath said surface unit and extending rearwardly to said back wall opening, an upright tubular member mounted on the upper wall of said housing, a lever pivotally mounted in said housing and having a rear end portion which extends through said back wall opening and engages said switch, a plunger rod disposed in said tubular member and maintained thereby in an upright position, and having its lower end engaging said lever, and means biasing said lever and said plunger rod into a normal position wherein the upper end of said plunger rod projects through said surface unit for engagement by a pan in order that said engagement may close said disconnect switch, whereby removal of said pan from said surface unit incident to the closing of said drawer will

restore said lever and said plunger rod to said normal position and cause operation of said disconnect switch to render inoperative said surface unit at a time when said venting means are exposed.

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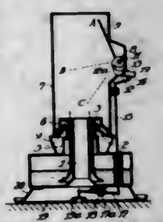
3,169,518
ACCESSORY TRIM FOR FREE-STANDING KITCHEN APPLIANCE
George A. Scott, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,309
7 Claims. (Cl. 126—39)



1. A free-standing range comprising a range body that includes a combined cooktop and oven body wherein the cooktop is provided with a plurality of surface heating means and the oven body is disposed directly beneath the cooktop, the range being adapted to be positioned in a kitchen cabinet and countertop structure, there being a slight gap between the cooktop and the underlying oven body, a side trim member assembled in said gap at each side of the range, said trim member including a wide top flange overlying the side edge of the cooktop and adapted to overlie the adjacent side edge of a notched countertop, the trim member stopping short of the front extremity of the cooktop, a front trim member cooperating with each side trim member and forming an extension thereof, each front trim member being engageable at one end with the related side trim member and adapted to be formed over a gap between the side of the range and the adjacent edge of the countertop, an edge of each front trim member including downwardly extending tab means adapted to be positioned within the last-mentioned gap so as to stabilize the front trim member, and fastening means provided for the other end of the front trim member and adapted to attach said trim member to the underside of the countertop.

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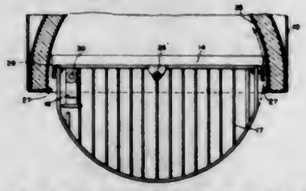
3,169,519
LIQUID FUEL BURNERS
Benji Aizawa and Nobuhiko Katagiri, Kamo-shi, Japan, assignors to Toshiba Denki Kigu Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Apr. 19, 1963, Ser. No. 274,073
Claims priority, application Japan, Dec. 17, 1962, 37/55,380; Jan. 19, 1963, 38/1,518
5 Claims. (Cl. 126—96)



1. A liquid fuel burner comprising a wick and a flame cylinder disposed above said wick, which comprises a flame extinguishing plate which is pivotally mounted in the upper portion of said flame cylinder, spring means adapted to force said extinguishing plate to quickly swing about its pivot to direct a blast of wind toward the flame burning on said wick, a latching mechanism which normally holds said spring means in the energized condition, a push rod associated with said latching mechanism so as to release said mechanism with said rod is pushed, and a connecting lever means which is rotated when said liquid fuel burner is tilted and is connected to said push rod so as to push said rod to release said latching mechanism when said lever means is rotated.

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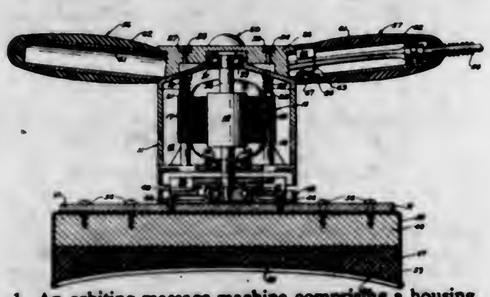
3,169,520
COOKING OVEN
Raymond A. Smith, Bradfordwoods, and Howard A. Anderson, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1963, Ser. No. 272,088
3 Claims. (Cl. 126—338)



1. A cooking oven comprising, an oven enclosure having a sidewall opening, an oven door having front and back surfaces and mounted on substantially vertical pivot hinges to be moved from a closed position with its back surface facing the interior of the oven to an open position with its back surface facing out of the oven, at least one generally horizontal oven shelf supported from the back surface of said door, and a door opening handle movably secured to the door to extend outward in front of the oven when the door is in any position from closed to open.

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3,169,521
ORBITING MASSAGE MACHINE
Earl McCaw, 525 Stockton St., San Francisco, Calif.
Filed Sept. 20, 1962, Ser. No. 224,929
3 Claims. (Cl. 128—46)

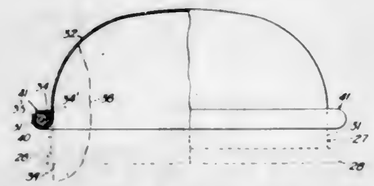


1. An orbiting massage machine comprising a housing, a motor rotatably mounted within said housing, a shaft with a shaft extension connected to and adapted to be rotated by said motor upon rotation thereof; said shaft extension projecting beyond one side of said housing, a member eccentrically mounted on said shaft extension for vibratory movement upon rotation of said shaft and said shaft extension, an elongated yieldable pad having a concave exterior surface connected to said member for vibratory movement therewith and for engaging curved areas of the human body while undergoing vibratory movement to stimulate circulation and suppleness of the body, and at least three hand grips on the other side of said housing for enabling a person to apply said pad while undergoing vibratory movement to selected areas of the body; said plurality of hand grips serving the dual function of supporting said housing on a planar surface in an inverted position.



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3,169,522
SPRING RIMMED DIAPHRAGM AND METHOD OF PRODUCING THE SAME
Edward Monett, 639 Scotch Plains Ave., Westfield, N.J.
Filed Mar. 6, 1962, Ser. No. 177,892
5 Claims. (Cl. 128—127)



1. A diaphragm of the character defined comprising a molded and cured workpiece consisting of a circular dome of extensible material, a rim integral with said dome and an annular coil spring embedded in said rim, a rim facing portion secured to and encircling said rim and the spring therein, and said rim facing portion including a fillet closing the crevice between the faced rim and adjacent portion of the dome.

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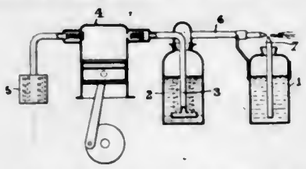
3,169,523
EAR PROTECTOR
Harry A. French, 2348 Cortez Lane, Sacramento, Calif.
Filed Feb. 23, 1962, Ser. No. 174,938
3 Claims. (Cl. 128—152)



1. An ear protector comprising an imperforate generally C-shaped auricle insert individually molded to the ear of the wearer, said C-shaped insert including a first portion of substantially rigid plastic material, and a second portion projecting laterally from one end of said C-shaped insert, said second portion being a solid body of relatively resilient plastic material integrally fused to said first portion and soft and flexible at body temperature.

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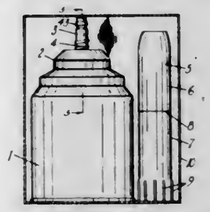
3,169,524
APPARATUS FOR ACTING UPON LIVING ORGANISMS
André Langevin, 38 Rue de Vaugirard, Paris, France
Filed May 22, 1961, Ser. No. 111,566
Claims priority, application France, May 30, 1960, 828,576
8 Claims. (Cl. 128—172.1)



1. An apparatus for producing negatively ionized aqueous aerosols for treating living organisms, which comprises first means for producing a stream of gas under pressure, second means for bubbling said gaseous stream in a liquid partially filling a closed container in order to ionize said gaseous stream, third means for atomizing a liquid in the form of a jet of droplets of variable size, fourth means for causing said ionized gaseous stream to pass through said jet of liquid droplets, said ionized gaseous stream being fed for this purpose through a pipe line branched off the upper portion of said container, the droplets on which the gaseous ions are fixed forming negatively and positively ionized aqueous aerosols and being carried along by said gaseous stream through a selector device adapted to retain the positively charged droplets and permit the negatively charged droplets to pass through.

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3,169,525
PRESSURIZED MEDICAMENT CONTAINER WITH EASILY ATTACHABLE DOSE MEASURING DISPENSING PROBE
Max E. Bowen, 49230 W. 14 Mile Road, Wixom, Mich.
Filed Apr. 7, 1961, Ser. No. 101,541
10 Claims. (Cl. 128—184)



1. A pressurized medicament container with tiltable discharge valve and an elongated dose measuring and dispensing probe adapted to be non-removably connected to the stem of the valve by the user comprising a rubber collar in the end of said container, a hollow stem on said valve extending through said collar from the inside to the outside of the container, a cap on said container forming an annular seat surrounding the outer end of said stem, a stud on the inside of said cap disposed alongside said stem, an annular ring non-rotatably engaged between said stem and said stud, a thread on the outer end of said stem from said ring, a hollow cylindrical probe and dose chamber having an end wall threadedly engaged with the thread on said stem, the inner end of said probe seating on said seat on said cap to prevent tilting of the stem and probe when the probe is threadingly retracted inwardly on said thread, the outer end of said probe defining a cylindrical bore of reduced size with an outwardly flared outer end forming a discharge opening, a hollow cylindrical stem extension non-removably connected to the outer end of said stem and projecting into said bore in the end of said probe, an O-ring seal on said extension positioned to lie in said bore when said probe is extended on said thread and to be projected into said flared portion of the bore when said probe is retracted, a flexible annular piston slidingly engaged between said extension and the inside of said probe, a coil spring compressed between said piston and said stem and urging the piston outwardly in said probe, a stop on said extension limiting outward movement of said piston short of the outer end of said probe, a rigid piston backing up said flexible piston and having an elongated skirt engageable with the inner end of said probe to define the size of said dose chamber, and a port formed in the wall of said extension from the hollow inside to outside thereof to open into said dose chamber at the outer side of said piston when said probe is extended on said thread, said stem extension being connected axially on the end of said stem by an axially split generally cylindrical spring metal connector having opposed catches engaged in locking notches provided therefor in the stem and stem extension, and a flexible tubular seal positioned within and

extending between the ends of said stem and said stem extension with an exterior flexible flange engaged between the ends of said stem and stem extension and retained in place by said connector, said connector having outwardly extending lugs on one end forming abutments for the inner end of said spring.

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**3,169,526**
**LIGATURE TYING MECHANISM**
**Ernest C. Wood, 2461 Ivanhoe Drive, Los Angeles, Calif., assignor of one-third each to Rene G. Le Vaux and Adolph M. Brown**
**Filed Sept. 12, 1962, Ser. No. 223,022**
**3 Claims. (Cl. 128—326)**



1. A mechanism for tying noose-like ligatures having a free end which when pulled causes closing of the loop of the ligature about an object to be tied, said mechanism comprising a pair of jaws adopted to hold the object to be tied, a pivotal connection for said jaws, a pair of arms forming a continuation of said jaws extending on the opposite side of said connection, finger holes in the ends of said arms and locking means associated with said arms adapted to restrain said jaws and arms from pivotal movement, a clamping means having a gripping end and being associated with one of said arms, the gripping end of said clamping means extending to a position adjacent the end of one of said jaws whereby the clamping means is adapted to receive the free end of a ligature, said clamping means being movably supported by said one arm whereby the loop of a ligature can be fitted around an object held in said jaws and the free end of the ligature can be gripped and pulled by said clamping means, and including a blade means adapted to cut off the free end of said ligature at a point immediately adjacent the tightened loop thereof, said blade means including a cutting end reciprocally movable in a slot defined in said one jaw, an opening in said one jaw extending from the outside end of said jaw to the end of said slot whereby the free end of a ligature can be inserted through said opening, clamped by the clamping means and pulled so that the loop will be tightened around the object to be tied, said cutting end being reciprocally movable in said slot whereby the free end portion extending through said opening can be engaged by said cutting end and severed, and including an actuating means for said blade means, said actuating means being attached to said blade means near the end opposite the cutting end thereof, said blade means extending through an opening defined in the other of said jaws with the opposite end of said blade means being positioned on the other of said arms, and said actuating means being connected to the other of said arms.

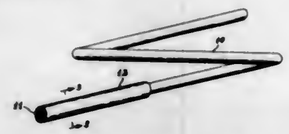
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**3,169,527**
**LUBRICATED CATHETER**
**David S. Sheridan, Argyle, N.Y., assignor to Sheridan Corporation, a corporation of New York**
**Filed May 13, 1963, Ser. No. 279,867**
**3 Claims. (Cl. 128—349)**

1. The combination of:

a flexible elongated hollow tube having a distal end and an external wall surface portion adjacent the distal end,

a flexible hollow sleeve having an internal wall surface greater in circumference than said tube external wall surface portion,



a plurality of ribs radially inwardly projecting from said sleeve internal wall surface and slidingly removably engaging said tube external wall surface portion to space said sleeve internal wall surface from said tube external wall surface portion, and a normally nonflowing lubricant interposed between said tube and sleeve.

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**3,169,528**
**CORONARY SINUS SUCKER**
**Francis S. Knox III, 814 Woodsdale Road, Wilmington, Del., and Harleston J. Hall, Jr., 261 Upper Mountain Ave., Upper Montclair, N.J.**
**Filed May 24, 1963, Ser. No. 282,895**
**2 Claims. (Cl. 128—350)**



1. An appliance for thoracic, cardiac surgery, said appliance adapted to have body fluids pass therethrough, said appliance embodying a tube having a bore, a proximal end and a distal end, said tube having at least one of its ends open, said tube having a cylindrical shaped wall, said tube being made of pliable transparent plastic material, and a reinforcing member consisting of a wire that is arranged externally of the bore of said tube, said reinforcing member being made of ductile material and being affixed to said tube, and said reinforcing member being shorter than said tube wherein the reinforcing member has its ends terminating inwardly of the ends of the tube, so that the proximal and distal ends of the tube are not reinforced thereby alleviating damage to the body tissue, said reinforcing member adapted to initially support said tube in a first configuration whereupon upon bending said tube into a second configuration, said member will retain the tube in the configuration into which it is shaped and bent, said distal end always retaining a straight shape, said wire being circular in cross section and permitting all portions of the appliance to bend in any direction.

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**3,169,529**
**TRACHEOSTOMY TUBE**
**Norman Z. Koenig, 1941 Malcolm Ave., Los Angeles 25, Calif.**
**Filed May 27, 1963, Ser. No. 283,436**
**3 Claims. (Cl. 128—351)**

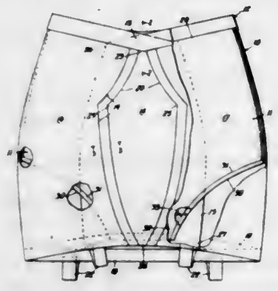


1. A tracheostomy tube for insertion into an opening of a patient's trachea comprising, an outer cannula member having a curvature permitting said cannula member to conform to the downward inner contour of the trachea after insertion, said cannula member terminating in flexible leaf members forming a cone-shaped inner end with interspaces between the leaf members to permit breathing of the patient through the tracheostomy tube while it is being inserted, and an inner cannula member slidably inserted into the outer cannula member and having its inner end when fully inserted bearing against said leaf members to expand them to a maximum diameter equal to the diameter of the inner end of the outer cannula member.



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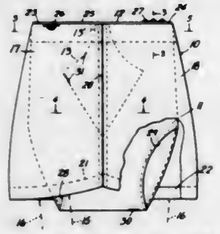
**3,169,530**
**GIRDLE WITH ATTACHED PANTY**
**Simon Grishman, Yonkers, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York**
**Filed Oct. 19, 1962, Ser. No. 231,754**
**1 Claim. (Cl. 128—519)**



A girdle of the character defined comprising a body portion, an elastic waistband attached to and projecting above the body portion, the waistband having upper and lower edges, an all-way stretch panty arranged entirely within the body portion, an upper edge of the panty being attached to the body portion adjacent the upper end thereof and to the lower edge portion only of said elastic waistband, said panty being freely disposed within the body portion below said elastic waistband, the body portion of the girdle including front and rear wide centrally disposed panels extending the full length of the body portion, said body portion comprising all-way stretch side portions extending onto the front and rear of the girdle and attached to side edges of both of said panels, and said panels having contracted upper and lower ends.

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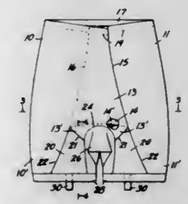
**3,169,531**
**FREE EDGE WAISTBAND FOR GIRDLES**
**Simon Grishman, Yonkers, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York**
**Filed July 29, 1963, Ser. No. 298,131**
**3 Claims. (Cl. 128—519)**



1. A garment of the character defined comprising a girdle body of extensible material, a panty of extensible material disposed within the girdle body and secured thereto by stitching to its upper edge portion only, an extensible waistband on the inner surface of the upper edge portion of said panty, the upper edge portion only of the waistband being stitched to the upper edge portion of the girdle body and panty by said first named stitching, leaving the major portion of the waistband free for independent support of the garment upon the body of the wearer, and the stitching of the waistband to the girdle body and panty comprising an extensible stitching.

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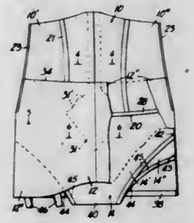
**3,169,532**
**PANTY GIRDLE WITH RELATIVELY MOVABLE FRONT PANELS**
**Simon Grishman, Yonkers, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York**
**Filed Feb. 2, 1962, Ser. No. 170,633**
**2 Claims. (Cl. 128—528)**



1. A girdle of the character described, comprising a body portion of all-way stretch material, said body portion being composed primarily of three parts, namely two one-piece side and front parts and a back part, said back part being secured to rear side edge portions of the front and side parts, each of said front and side parts having integral front panels, side edges of each of the front panels being stitched to the opposed front and side parts, the body portions of said front panels being overlapped and relatively movable between the stitched sides, said front panels extending the major portion of the length of the girdle, the front and side parts and said back part including downwardly extending integral leg portions, the leg portions at the front only of the girdle including two leg forming parts secured to the leg portions of the front and side parts and to the lower edge of one only of said front panels, and a crotch member fixed to said leg-forming parts, said leg portions and the lower edge portion of one front panel.

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**3,169,533**
**PANTY GIRDLE WITH INDEPENDENT RELATIVELY MOVABLE FRONT PORTIONS**
**Simon Grishman, Yonkers, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York**
**Filed Nov. 30, 1962, Ser. No. 241,416**
**6 Claims. (Cl. 128—528)**

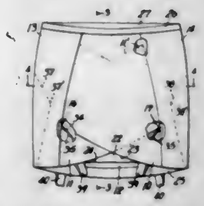


1. A girdle of the character defined comprising a plurality of sections, namely upper and lower front sections, upper and lower back sections and a panty section, the upper and lower back sections being joined in a seam,

the upper portion only of the lower front section overlapping the lower portion only of the upper front section, said upper and lower front sections being free of each other for relative movement in a vertical direction throughout the major portion of the circumferential length of said sections, the upper edge portion of the back of the panty section being coupled with the lower edge of the upper back section, and the upper edge of the front of the panty section being secured to the upper edge of the lower front section.

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**3,169,534**
**PANTY-TYPE GIRDLE WITH RELATIVELY MOVABLE FRONT PANELS**
**Simon Grishman, Yonkers, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York**
**Filed Dec. 14, 1962, Ser. No. 244,771**
**2 Claims. (Cl. 128—528)**



1. A girdle of the character described comprising a body portion defined by relatively movable overlapped front panels, a back panel and two side members attached to side edges of said back panel and said front panels, a waistband portion, a panty band having side edges attached to side edge portions of the back panel and said front panels, one end of said band being attached to the front of the waistband portion, the other end of the band being attached to the rear waistband portion, said panty band having a portion extending between the front and back panels, said portion extending between the front and back panels, said portion having curved side edges forming, in conjunction with the side members of the girdle, leg openings, said overlapped front panels being composed of all-way stretch material, one of said front panels extending to and being fixed to the waistband of the girdle, and the entire upper edge of the other front panel terminating short of said waistband.

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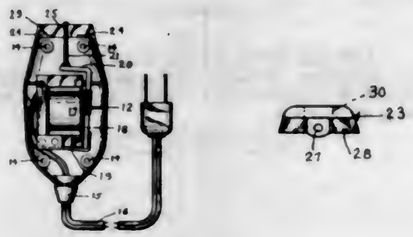
**3,169,535**
**CIGARETTE**
**Frederic H. Lanister, 527 Lexington Ave., New York, N.Y., and Jacob M. Fain, Brooklyn, N.Y.; said Fain assignor to said Lanister**
**Filed Jan. 18, 1962, Ser. No. 167,482**
**4 Claims. (Cl. 131—10)**



2. A filter cigarette having a tubular paper wrapper filled with tobacco which carries a volatile high-boiling flavoring material, and a filter tip which has a zone adjacent the tobacco of the cigarette which carries a mixture of two different activated carbons, one of which has an appreciable proportion of its area in small pores being effective to absorb low molecular weight constituents of tobacco smoke and the other of which has an appreciable part of its area in large pores being effective to absorb high molecular weight constituents of tobacco smoke, and an outer end zone which is free of the activated carbon, the said flavoring material being present in a concentration such that the cigarette provides tobacco smoke during the initial phase of its burning which is substantially free of the said flavoring material, and thereafter providing smoke which is noticeably flavored by the said flavoring material.

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**3,169,536**
**ABRADER**
**Anthony Caracciolo, Sr., 108 Finley Ave., Trenton, N.J.**
**Filed July 11, 1962, Ser. No. 209,148**
**1 Claim. (Cl. 132—73.6)**



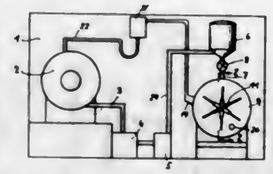
An abrader comprising
(*a*) a pair of complementary shells defining a housing having an internal cavity and an opening in at least one end thereof,
(*b*) an electromagnet seated within the cavity in the housing,
(*c*) an electro-magnetically, deflectable armature mounted in cooperative relation to the electromagnet,
(*d*) an upstanding wall on each shell at the said opening in the housing, the walls being generally parallel to each other and separated to define a slot,
(*e*) a pair of coplanar walls on the shells generally perpendicular to and positioned between the upstanding walls, the coplanar walls extending inwardly toward each other to define a platform beneath the top of the upstanding walls, the ends of the coplanar walls being separated to define an opening communicating with the cavity in the housing.
(*f*) a cap seated on the coplanar walls between the upstanding walls, the cap having a transverse opening communicating with the opening defined by the coplanar walls,
(*g*) an upstanding rib on one of the coplanar walls extending generally perpendicular to the upstanding walls,
(*h*) a complementary groove on the bottom of the cap receiving the rib,
(*i*) a domed enlargement on each upstanding wall extending into the slot,
(*j*) a complementary aperture on each side of the cap receiving one of the enlargements,
(*k*) the armature extending from within the cavity to a point beyond the housing through the said openings,
(*l*) a disc for an abrasive wafer attached to the end of the armature outside of the housing, and
(*m*) an abrasive wafer adhesively secured to the disc.

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**3,169,537**
**CHEMICAL CLEANING DRUM AND DISTILLER TANK THEREFOR**
**Heinrich Führing, Augsburg, Germany, assignor to Max Bohler and Ferdinand Weber, Augsburg, Germany**
**Filed Oct. 25, 1962, Ser. No. 233,102**
**7 Claims. (Cl. 134—111)**

1. In a chemical cleaning machine having a cleaning drum and a filter for the sludge and solvent, a distiller tank into which the sludge and solvent are passed from said cleaning drum and filter, with the filter positioned above said tank, pipes connecting the cleaning drum to the distiller tank, through said filter agitator gear for said sludge in said tank and driving means for forcing the sludge and solvent from said cleaning drum into said

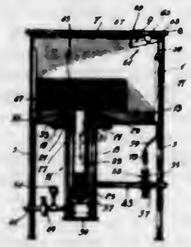




filter, the agitator gear consisting of paddles positioned on a horizontal rotatable shaft eccentrically disposed with respect to the central axis of said tank, and means for rotating said shaft.

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**3,169,538**
**MACHINE FOR WASHING AND CLEANING MECHANICAL PARTS**
**Andre Louis Arnaudin, 510 Rue Bisson, Montreal, Quebec, Canada**
**Filed Jan. 20, 1964, Ser. No. 338,722**
**4 Claims. (Cl. 134—141)**

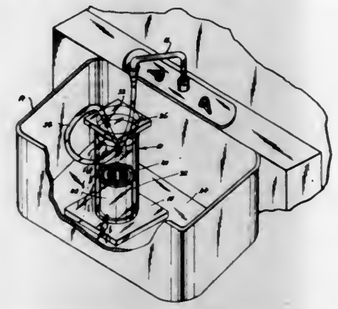


1. A machine for washing mechanical parts comprising:
(*a*) a tank adapted to contain a liquid for cleaning the parts, said tank having a pivotable cover at the top thereof;
(*b*) a basket movable in said tank;
(*c*) means to move said basket into a rectilinear oscillating movement of predetermined stroke including a direction reversing mechanism operative when the basket has reached the upper limit of the stroke thereof;
(*d*) further means connecting the cover to the direction reversing mechanism capable of rendering said mechanism inoperative, when the cover is pivoted, to open position to allow the basket to move past the said upper limit.

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**3,169,539**
**ROLL FILM WASHER**
**Tom van der Feer, Newark, N.J., assignor to Jan Photo Products, Inc., Newark, N.J., a corporation of New Jersey**
**Filed Nov. 21, 1963, Ser. No. 325,326**
**1 Claim. (Cl. 134—177)**

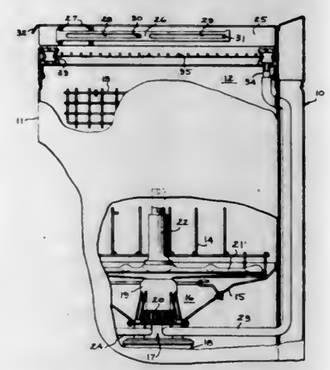
A device of the character described comprising a base, a vertically disposed tubular body secured to said base and extending upwardly therefrom, a removable cover by which the open upper end of said body is adapted to be closed, said cover being provided with a downwardly extending short annular flange which is adapted to be telescopically inserted into the upper end of said body to secure said cover to the upper end of said body; an elongated tubular nozzle, through which a cleaning liquid is adapted to be projected under pressure into said body, permanently secured in fixed position in an aperture in said cover adjacent said annular flange with the inlet end thereof disposed above the outer surface of said cover and the discharge end thereof disposed below the inner surface of said cover, said nozzle being disposed in a vertical plane which is radially spaced from and perpendicular to



a vertical plane passing through the common axis of said body and said cover, and at an angle to the horizontal whereby a whirling movement is imparted to cleaning liquid discharged from said nozzle downwardly against the inner wall of said body; and discharge openings adjacent the upper and lower ends of said body.

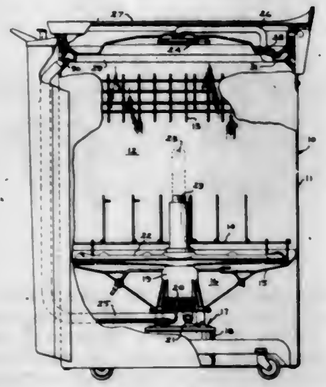
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**3,169,540**
**WASHING MACHINE HAVING IMPROVED CLOSURE MEMBER SEALING MEANS**
**Fred W. Moore, Louisville, and Robert C. Pressley, Jr., Anchorage, Ky., assignors to General Electric Company, a corporation of New York**
**Filed Dec. 26, 1963, Ser. No. 333,339**
**7 Claims. (Cl. 134—191)**



1. A washing machine comprising:
(*a*) a cabinet,
(*b*) a wash chamber within said cabinet adapted to receive articles to be washed therein,
(*c*) an access opening in said cabinet to provide access to said wash chamber,
(*d*) a closure member for said access opening, and
(*e*) means to provide a seal between said cabinet and said closure member,
(*f*) said means comprising an inflatable member in communication with a source of pressurized fluid,
(*g*) said means having at least one opening therein directly and continuously interconnecting the interior of said means with the wash chamber,
(*h*) said opening being configurated to effect a spray action by the fluid passing through said opening upon the articles within said wash chamber.

3,169,541
**WASHING MACHINE HAVING IMPROVED CLOSURE MEMBER SEALING MEANS**
Donald S. Cushing, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,340
4 Claims. (Cl. 134—191)



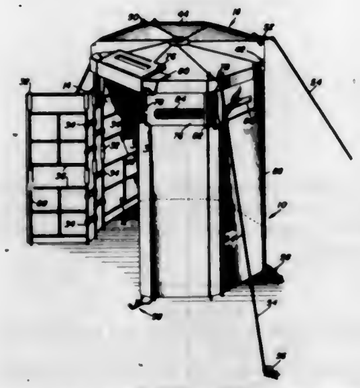
1. An automatic washing machine comprising:
(*a*) a cabinet,
(*b*) a wash chamber within said cabinet adapted to receive articles to be washed therein and further adapted to contain wash fluids for washing the articles,
(*c*) an access opening in said cabinet to provide access to said wash chamber,
(*d*) a closure member for said access opening,
(*e*) a spray device within said wash chamber to effect a wash action therein,
(*f*) sealing means to effect a seal around said closure member including a hollow inflatable member,
(*g*) a pump adapted to withdraw wash fluid from said wash chamber and pump it to said inflatable member, and
(*h*) an outlet in said inflatable member communicating with said spray device.

3,169,542
**INFLATABLE BUILDINGS**
Otto Walter Neumark, Heaton Mersey, Stockport, England, assignor to P. Frankenstein & Sons (Manchester) Ltd., a company of Great Britain
Filed Jan. 17, 1962, Ser. No. 166,877
7 Claims. (Cl. 135—1)



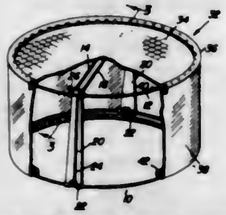
6. An inflatable building comprising a plurality of elongated panels convex in cross-section and located side-by-side, the lower edges of adjacent panels being in juxtaposed position over a substantial area, air pressure within said canopy pressing on said panels causing said lower edges to seal the joints between said adjacent panels against leakage from inside the canopy, means attached to said lower edges at spaced points having tethers thereon extending to and anchored in a fixed base.

3,169,543
**PORTABLE SHELTER**
James B. McGerty, 3300 Alice, Dearborn, Mich.
Filed June 21, 1962, Ser. No. 204,097
6 Claims. (Cl. 135—1)



1. A portable shelter comprising an enclosure forming collapsible vertical wall section, and a removable top for said enclosure, said top including a central hub, a plurality of radially extending ribs projecting outwardly from said hub, means releasably securing the inner end of each rib to said hub, a plurality of vertical rods, said rods releasably engaging the wall section at peripherally spaced points about the upper edge and projecting vertically thereabove, the outer ends of said ribs being releasably secured to the upper ends of said rods, a top cover positioned over and supported on said ribs, means releasably securing said top cover in position, a plurality of depending flaps orientated adjacent each other about the outer edge of said top, each flap having the upper edge thereof secured to the top cover and freely depending therefrom, means releasably sealing the adjacent edges of said flaps to each other, and transparent windows in selected ones of said flaps.

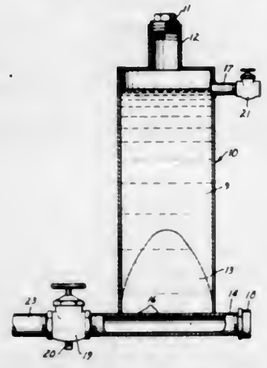
3,169,544
**COLLAPSIBLE FRAME**
Neil Brown, 25 Country Club Drive, Suisun, Calif.
Filed Nov. 17, 1960, Ser. No. 69,967
6 Claims. (Cl. 135—5)



1. A collapsible frame structure comprising upper and lower frames, a pair of elongated and upstanding stays interconnected between corresponding opposite side portions of said frames maintaining the latter in vertically spaced and vertically aligned positions, one set of corresponding ends of said stays being pivotally secured to a first frame of said frames for rotation about axes generally paralleling the longitudinal centerlines of the portions of said first frame to which said stays are secured for swinging movement of the other set of corresponding ends of said stays inwardly of said first frame toward a collapsed position generally paralleling the medial plane of said first frame, the second of said frames including elongated brace means secured thereacross and extending at right angles to the axes of rotation of said stays, the other set of ends of said stays including upwardly and outwardly inclined upper end portions having openings formed transversely therethrough slidingly receiving the corresponding ends of said brace means therethrough, the vertical diameters of said openings being greater than the vertical thickness of said elongated brace means, at least one edge of each opening cooperating with the corresponding end of said brace means, when said stays are fully erected, for maintaining said frames in said vertically spaced positions.



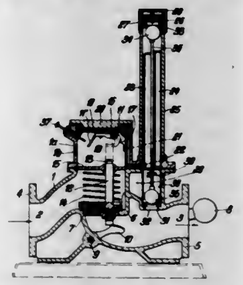
3,169,545
**APPARATUS FOR CLEANING PIPE SYSTEMS**
William J. Kolling, 901 S. Broadway, Spring Valley, Minn.
Filed Mar. 26, 1963, Ser. No. 268,179
1 Claim. (Cl. 137—209)



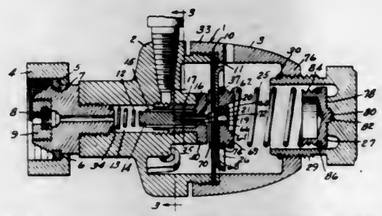
A casing having
(*a*) an elongated outlet tube at its lower end which extends normal to the axis thereof and joined directly thereto, and
(*b*) which communicates with the interior thereof through the medium of a plurality of longitudinally spaced apertures each having cross-sectional areas appreciably smaller than the cross-sectional area of said tube,
(*c*) means at the upper end of said casing for introducing liquid thereinto,
(*d*) independent means for introducing air under pressure into said casing above the fluid level thereof,
(*e*) and means on one end of said outlet tube for detachably connecting same to a water pipe delivery system,
(*f*) the opposite side portions of said casing converging to a width at the point of joinder thereof with said outlet tube less than the diameter of said outlet tube.

3,169,546
**SAFETY VALVE**
Josef Wenzl, Klein Stockheim, near Braunschweig, Germany, assignor to Luther-Werke, Luther & Jordan, Braunschweig, Germany
Filed Nov. 3, 1961, Ser. No. 150,025
Claims priority, application Germany, Nov. 8, 1960, L 37,458
7 Claims. (Cl. 137—461)

1. A safety valve comprising a housing having an inlet and an outlet, a partition in said housing separating said inlet and outlet and having a valve opening interconnecting said inlet and outlet, a valve member slidably mounted within said housing for opening and closing said valve opening, spring means acting upon said valve member to move the same to the closed position, means for manually moving said valve member to the open position, detent means adapted to engage automatically with said valve member when said valve member is moved to the open position and to arrest said valve member in said open position, a flexible diaphragm within said housing forming one wall of a closed chamber and engageable with said detent means, means for adjusting said arresting means relatively to said diaphragm, a standpipe mounted on said housing, a conduit connecting said closed chamber with the inside of said standpipe near the upper end thereof, said standpipe having a valve aperture at its lower end connecting the inside of said standpipe with said valve outlet and a passage at its upper end communicating with the atmosphere, a closure member within said standpipe normally adapted to close said valve aperture and adapted to open the same when a fluid within said valve outlet reaches a certain pressure so that fluid will then rise in said standpipe, and means for closing said passage upon opening of said valve aperture and opening said passage upon closure of said valve aperture, thereby enabling fluid rising within said standpipe to compress a gas therein which through said conduit communicates with said closed chamber so as to act upon and deflect said diaphragm and thereby act upon said detent means to disengage the same from said valve member so that said valve member will then close said valve opening under the action of said spring means.



3,169,547
**FLUID PRESSURE REGULATOR WITH FIXEDLY AND POSITIVELY HELD SPRING**
David S. Pearl, 1344 NE. 13th Ave., Fort Lauderdale, Fla.
Filed Sept. 21, 1960, Ser. No. 57,423
4 Claims. (Cl. 137—505.42)

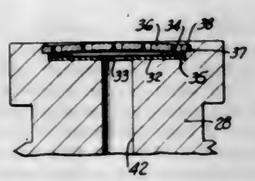


1. A fluid pressure regulator comprising, in combination, a casing, said casing having a fluid inlet passage and a fluid outlet passage, a valve between said fluid inlet passage and said fluid outlet passage, a flexible diaphragm positioned within said casing, said passages and said valve being on one side of said diaphragm, a pressure plate having at least a portion of one surface thereof abutting said diaphragm on the other side of said diaphragm at at least a portion of one surface of said diaphragm, a pressure adjusting spring positioned within said casing on said other side of said diaphragm, means positioned at one end portion of said pressure adjusting spring for fixedly and

positively holding said pressure adjusting spring against rotation and against shifting with respect to said pressure plate in said abutting position against at least said portion of said one surface of said diaphragm and for simultaneously holding said pressure plate at at least said portion of said one surface thereof in fixed abutment against said diaphragm at at least said portion of said one surface thereof, said means including a first washer positioned at one surface thereof against said pressure plate at at least a portion of the other surface of said pressure plate, said first washer being in contact, at at least a portion of its outer surface, with at least a portion of at least one convolution of said pressure adjusting spring at said one end portion thereof, a first fastener member extending through said diaphragm and said pressure plate and said first washer, said first fastener including a bead member and a shank member depending therefrom, said shank member having, for at least a portion of its length, a bore therein, said head member constituting a wearing plate and being positioned on said other side of said diaphragm and in fixed abutment against at least a portion of the other surface of said diaphragm, a second washer axially aligned with said first washer and positioned over and in contact with at least a portion of said one convolution of said pressure adjusting spring, and a second fastener means for holding said second washer positioned over and in contact with at least a portion of said one convolution and for holding said wearing plate fixed against said diaphragm surface, said second fastener extending through said second washer and being fixedly positioned for a portion thereof in at least a portion of said bore of said shank of said first fastener, said valve including a movable carrier element and stem means for moving said carrier element upon movement of said diaphragm, said stem means being attached to said carrier element and abutting said wearing plate, a valve closing spring attached to said carrier element, said spring being positioned in said fluid inlet passage, means for controlling the loading of said pressure adjusting spring to obtain predetermined fluid delivery pressures, said means being operatively associated with said casing, and means positioned at and in contact with the other end portion of said pressure adjusting spring for fixedly and positively holding said pressure adjusting spring against shifting with respect to said control means and with respect to said pressure plate, said latter means being operatively associated with said control means, whereby each of a plurality of fluid delivery pressures can be maintained and whereby the longitudinal axis of said pressure adjusting spring will not be shifted during constant usage of the regulator and whereby said pressure adjusting spring will not be rotated during constant usage of the regulator.

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**3,169,548**
**VENT FITTING FOR REGULATOR VALVE OR THE LIKE**
**Harold A. McIntosh, South Pasadena, Calif., assignor to Rehrig Pacific Co., Los Angeles, Calif., a corporation of California**
**Filed Mar. 27, 1962, Ser. No. 182,885**
**3 Claims. (Cl. 137—513.3)**




1. In a vent flow control fitting for a gas regulator valve having a diaphragm dividing a pressure chamber into zones, with one zone connected to a pressure reference through the vent fitting, the combination of:

a housing;

a gasket;

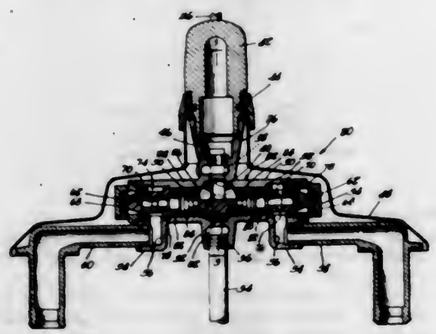
a seat of a flexible material a few thousandths of an inch thick and having a flow passage therethrough;

a flapper member of a flexible and relatively nonelastic material a fraction of a thousandth of an inch thick and having a first opening and at least one second opening therethrough; and

means for clamping said flapper member at its periphery in said housing between said gasket and seat in sealing engagement, with the first opening of said flapper member aligned with the passage of said seat so that flow through said fitting in one direction urges said flapper member against said seat closing said second opening and flow in the opposite direction deflects said flapper member away from said seat clearing said second opening.

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**3,169,549**
**MIXING VALVE**
**Leonard J. Quick, Burlington, Wis., assignor to Burlington Brass Works Inc., Burlington, Wis., a corporation of Wisconsin**
**Filed Nov. 20, 1961, Ser. No. 153,529**
**6 Claims. (Cl. 137—625.17)**

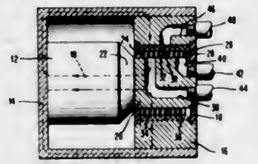


1. A valve structure for use in mixing two fluids in selected proportions, comprising: a valve body defining a central cavity, an outlet passageway communicating with said cavity, and inlet passageways opening radially from said cavity, each inlet passageway being connected to a fluid supply line; a valve plug slidably and rotatably disposed in said cavity and defining a hollow having a mouth disposable in fluid-discharging relationship with said outlet passageway, said valve plug further having radial ports opening into said hollow and flowwise registrable individually with an inlet passageway; a removable carrier unit in each of said inlet passageways, including a rigid thimble element having a central bore opening toward said valve plug and having ports cooperating to communicate said bore with a said supply line, said carrier unit further including a flexible element subject to becoming worn out in the use of the valve structure, said flexible element being at least partly received in the mouth of said bore to be extractable with said thimble element, said flexible element being perforated to define an orifice and coacting slidably with a radial port of said valve plug; and lever means connected to said valve body and to said valve plug for moving said plug to position the mouth of said hollow relative to said outlet passageway whereby to regulate aggregate flow through said valve body, and for rotating said valve plug to position the radial ports of said valve plug relative to the orifices of said flexible elements whereby to regulate the proportion of said aggregate flow entering said valve body from each of said supply lines.



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**3,169,550**
**FLUID DEVICE**
**Trevor Drake Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed June 6, 1962, Ser. No. 200,527**
**7 Claims. (Cl. 137—625.25)**



4. A device for controlling the flow of fluid therethrough comprising an inlet and an outlet, conduit means connecting said inlet to said outlet, a coil element disposed within said conduit means, and means for applying an electrical current through said coil element to compress said coil element to block the passage of said fluid from said inlet to said outlet.

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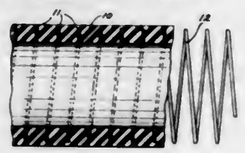
**3,169,551**
**PULSATION DAMPENER**
**George E. Lewis, Arcadia, Calif., assignor to Hydril Company, Los Angeles, Calif., a corporation of Ohio**
**Filed Aug. 8, 1961, Ser. No. 131,711**
**12 Claims. (Cl. 138—26)**



4. Pulsation dampening means comprising in combination two generally cylindrical walls substantially coaxial and radially spaced, a plurality of circumferentially spaced apertures in one wall, an equal plurality of apertures in the other wall aligned with, and smaller than, respective apertures in said one wall, first conduit means communicating with the space between the opposing faces of the walls, structure forming a chamber adapted to contain a compressible medium and communicating with the other face of said one wall, and second conduit means communicating with the other face of the other wall.

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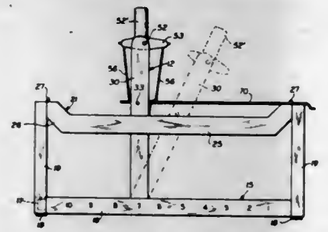
**3,169,552**
**HOSE**
**Thomas L. Fawick, Shaker Heights, Ohio**
**(% Hotel Statler-Hilton, Cleveland 14, Ohio)**
**Continuation of application Ser. No. 43,785, July 19, 1960. This application Feb. 27, 1963, Ser. No. 265,573**
**5 Claims. (Cl. 138—133)**



1. A hose comprising a tubular wall of rubber-like material, and a reinforcing wire helix having its successive turns extending helically about the axis of the hose and disposed completely within the thickness of the hose wall, the wire of said helix being substantially thicker radially of the hose than lengthwise of the hose and presenting substantially radially disposed opposite major faces which throughout their extent are bonded directly to said rubber-like material of the hose wall, said rubber-like material of the hose wall throughout its extent between successive turns of the helix having a radial extent at least as great as that of the adjacent turns of the helix.

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**3,169,553**
**WEAVING LOOM**
**Walter E. Nisperly, Glendale, W. Va., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York**
**Filed May 24, 1963, Ser. No. 282,997**
**3 Claims. (Cl. 139—33)**



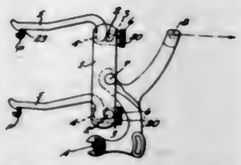
1. A toy loom comprising an open framework having a base and elevated side and end members on said base, warp holding means at opposite ends of said framework, an open frame disposed laterally in said framework and upstanding therefrom for receiving warp threads, mounting means mounting said frame for back-and-forth movement toward opposite end members, a reed carried by said frame for movement therewith and extending thereacross, said reed comprising a plurality of laterally spaced vertically projecting teeth connected to a common base, the facing surfaces of adjacent pairs of said teeth defining upwardly opening notches for respective reception of warp threads, a heddle frame carried by said frame in facing relation with one side of said reed and mounted for movement with said frame and up-and-down movement relative to said frame and reed, said heddle frame comprising a plurality of vertically projecting fingers aligned with certain respective notches and normally spaced below said common base, whereby said heddle frame is adapted to shed upon movement relative to said frame and reed, and said reed is adapted to beat upon movement with said frame, and a second heddle frame carried by said frame in facing relation with the other side of said reed and mounted for movement with said frame and up-and-down movement relative to said frame and reed, said second heddle frame comprising a plurality of vertically projecting fingers aligned with other respective notches and normally spaced below said common base, whereby said second heddle frame is adapted to shed upon movement relative to said frame and reed.

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**3,169,554**
**BAULKS AND HOOKS FOR DOBBIES**
**Rudolf Schwarz, Horgen-Zurich, Switzerland, assignor to Gebr. Staubli & Co., Horgen-Zurich, Switzerland, a Swiss corporation**
**Filed Dec. 6, 1961, Ser. No. 157,353**
**Claims priority, application Switzerland, Dec. 8, 1960, 13,881/60**
**2 Claims. (Cl. 139—71)**

1. A baulk arrangement for dobbies, comprising in combination: a baulk, at least one bearing plate provided with journal means articulately mounting said plate relative to said baulk, said plate having a joint and rear abut-

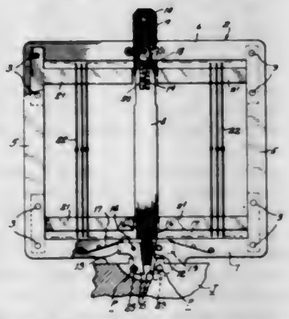
ments, a draw hook pivotally articulated to said bearing plate at said joint, and a stationary abutment rail arranged



for engagement by said rear abutment means, the pivotal axis of said bearing plate at said journal means coinciding with the pivot axis of said draw hook at said joint.

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**3,169,555**
**HARNESS FRAME FOR LOOMS**
**Walter J. Koyder and Gerald E. Monroe, Meadville, Pa., assignors to Talon, Inc., a corporation of Pennsylvania**
**Filed Nov. 15, 1962, Ser. No. 237,846**
**8 Claims. (Cl. 139—91)**



1. A loom harness comprising a rectangular-shaped frame consisting of a pair of flat members secured together in superimposed relation so as to provide a space therebetween, and so as to provide a pair of side portions, a top portion and a bottom portion,

a vertical bar arranged centrally of the frame in the space between said flat members, said vertical bar being movable vertically relative to said frame and having an extension arranged on the lower end thereof,

a pair of opposed spaced-apart dog members pivotally arranged in the space between the flat members at the bottom portion of the frame centrally thereof, said extension disposed between said dog members with which it is adapted to cooperate, said dog members adapted to engage means carried by a jack of the loom for removably connecting the frame thereto,

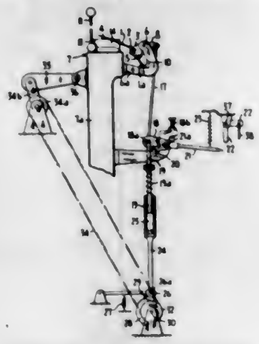
a pair of horizontal cross-bars arranged to either side of said vertical bar which are disposed in the space between the side portions of said frame and to which they are attached, and

a plurality of heddles extending between and carried by said cross-bars.

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**3,169,556**
**CENTRAL WEFT FEELER STOP MOTION**
**Rolf Honegger, Tann-Ruti, Zurich, Switzerland, assignor to Ruti Machinery Works Ltd., formerly Caspar Honegger, Zurich, Switzerland**
**Filed June 6, 1961, Ser. No. 115,215**
**Claims priority, application Switzerland, June 13, 1960, 6,742/60**
**2 Claims. (Cl. 139—376)**

1. In a loom having a shuttle a loom stop motion device comprising, a sensing element for acting to sense the presence or absence of each weft yarn during the insertion thereof, and means effective after each successive pick comprising a lever system for raising the sensing element in preparation for the delivery of weft yarn and for lowering it cyclically in timed relationship with the successive picks to an operative position to contact and sense the individual weft yarns, the first mentioned means comprising means to cause the sensing element to disengage itself from contacting the weft yarn in preparation for raising of said sensing element immediately subsequent to sensing it and prior to the completion of the flight of the shuttle delivering the weft yarn being sensed and including means to cause said sensing element to move past said operative



position in the absence of a weft yarn to be sensed in said operative position, a stop motion effective to stop the loom when said sensing element moves past said operative position, said lever system comprising a pivoted lever rockably operated cyclically for raising and lowering said feeler, means pivotally mounting said feeler on said pivoted lever, said means to cause the feeler to disengage itself from the weft yarn comprising a lever arm connected to said feeler and cam means comprising a surface for actuating said lever arm for guiding said feeler to another position past said weft yarn in readiness for raising thereof in a next successive sensing operation and ineffective for rendering the stop motion effective.

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**3,169,557**
**TOWEL WITH NON-PUCKERING DECORATIVE BORDER**
**Victor B. Holland and Merton C. Propst, Jr., Kannapolis, N.C., assignors to Cannon Mills Company, a corporation of North Carolina**
**Filed Apr. 30, 1963, Ser. No. 276,917**
**5 Claims. (Cl. 139—383)**

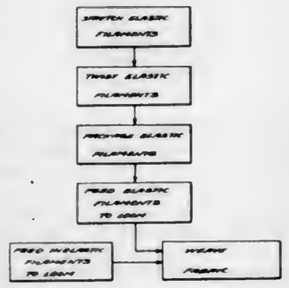


1. A water absorptive woven towel comprising a main body portion of terry cloth, and a decorative border adjacent each end of the towel, said towel being resistant to the effects of different shrinkage and puckering along the juncture of the decorative borders and terry cloth portions, said decorative borders being woven with conventional uncoiled warp yarns and coiled filling yarns having substantial excess length as woven, said coils being adapted to straighten without stretching and thereby increase the effective length of the filling yarns to allow the towel to remain unaffected by different shrinkage and puckering along the aforesaid juncture when the towel is wet.



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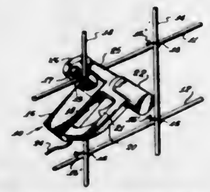
**3,169,558**
**ELASTIC FABRIC AND PROCESS FOR PREPARING SAME**
**Antonio N. Alelxo, New Castle, and Nicholas C. Ganoudis, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Sept. 13, 1962, Ser. No. 224,277**
**6 Claims. (Cl. 139—421)**




1. A woven fabric comprised of relatively inelastic yarns in one fabric direction and bare spandex filaments in the other fabric direction, said spandex filaments having a breaking elongation of at least 400% and a twist multiplier in the range from about 1.25 to about 2.50 at a residual elongation between about 40% and 75%.

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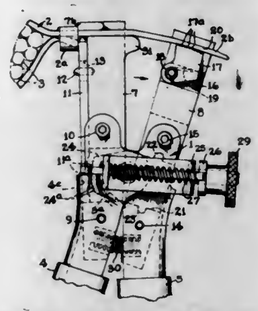
**3,169,559**
**WIRE TYING TOOL**
**Loren F. Working, Jr., 10423 Irondale Ave., Chatsworth, Calif.**
**Filed Mar. 2, 1961, Ser. No. 92,823**
**25 Claims. (Cl. 140—119)**



1. Wire tying apparatus comprising: a stapler-like device having a housing for a row of substantially U-shaped wire ties; ejection means in said device for moving a tie at one end transversely of the row to the exterior of said housing; rotary twister means to engage the legs of an ejected tie, said twister means being spaced from said housing and in the path of the ends of the legs of an ejected tie, said twister means being operable when turned to turn the engaged legs of an ejected tie therewith; means for operating said ejection means to eject a tie; and means cooperable with said operating means for automatically rotating said twister means upon ejection of a tie.

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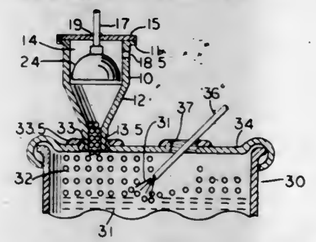
**3,169,560**
**BINDER STRAP TOOL**
**Jack E. Caveney, Chicago, and Roy A. Moody, Riverdale, Ill., assignors to Panduit Corporation, Tinley Park, Ill., a corporation of Illinois**
**Filed Mar. 8, 1962, Ser. No. 178,332**
**13 Claims. (Cl. 140—123.6)**



4. A binder strap tool comprising two jaw members pivotally secured together to provide relative angular movement between them, the first said jaw having means against which the connector end of binder strap loop encircled about an object can be held, the second said jaw member having thereon a strap gripper for gripping the free end of said binder strap loop extending from said connector end, the relative angular movement between the jaw members causing the free end to be pulled away from said connector end to cause said strap loop to shrink in size and be tensioned onto said object, a shear blade mounted for movement along said first jaw member, an actuator for said shear blade, and bias means to prevent said actuator from actuating said shear blade until a predetermined tension is reached in said binder strap loop.

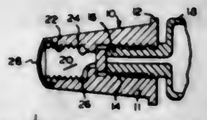
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**3,169,561**
**DEFOAMING SYSTEM**
**John R. Berger and Stanley R. Rich, West Hartford, Conn., assignors, by mesne assignments, to Northern Industries, Inc., Dover, Del., a corporation of Delaware**
**Filed Feb. 14, 1962, Ser. No. 173,239**
**11 Claims. (Cl. 141—69)**



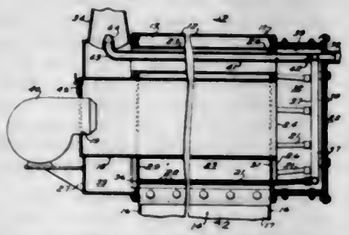
1. System for breaking foam formed during the filling of liquid containers of the type represented by totally-enclosed drums, tanks and the like, having at least one sealable relatively small port for filling and/or draining the same, said system embodied in a unitary portable device comprising, envelope means providing a chamber having a vent to the atmosphere in its upper portion, conduit means leading vertically from the bottom of said chamber for detachably temporarily coupling said chamber with the top of a liquid container of said type via one such port in place of the sealing means normally provided therefor, so that when said chamber is coupled with such a liquid container during filling thereof foam may rise into said chamber from said container, and means in said chamber to break foam, whereby defoamed liquid may be returned to said container via said conduit means.

3,169,562
COMBINATION CAP AND COUPLER
Sidney Gogel, 1096 Lenox Place, North Bellmore, N.Y.
Filed Apr. 17, 1962, Ser. No. 188,090
11 Claims. (Cl. 141—384)



2. A combination cap and coupler for containers, comprising a casing element having two recesses, said recesses each having connecting means for connecting the casing element to containers, wall means formed integral with said casing element for isolating the recesses from one another, said wall means cooperating with one of said recesses to form a cap, said wall means being adapted to be separated from the casing element to thereby provide communication between said passageways so that said casing element may be used as a coupler.

3,169,563
APPARATUS FOR HEATING LOW PRESSURE STEAM
Benton A. Hook, 18 Otsego St., Oakley, Calif.
Filed July 11, 1963, Ser. No. 294,362
5 Claims. (Cl. 146—47)



4. Apparatus for heating low pressure steam comprising, in combination, a housing enclosing a chamber, a first heating tube extending through said chamber and adapted to receive a flow of heating fluid, a second heating tube disposed in said chamber in spaced relation to said first tube, means defining a region within said housing in communication with said heating tubes and blocked from communication with said chamber and adapted to have heating fluid from said first tube flow through said region into said second tube, said second tube adapted to exhaust heating fluids from said housing, a steam duct disposed within said housing and extending through said region and said chamber, said steam duct adapted to receive low pressure steam for flow therein first through said region and then through said chamber whereby steam in said duct is heated prior to entering said chamber by heating fluid in said region, said steam duct having a plurality of orifices spaced along the portion thereof disposed in said chamber and positioned to direct steam released from said duct towards said first tube, and means for placing said chamber in communication with articles to be treated by the steam heated in said chamber.

3,169,564
PROCESS FOR PEELING WAXY FRUIT
Winfred O. Harrington, Philadelphia, and Claude H. Hills, Flourtown, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed May 2, 1963, Ser. No. 277,662
8 Claims. (Cl. 146—235)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for peeling a waxy skinned fruit comprising contacting said fruit with at least about a 10% lye solution containing at least about 5% of a wax solvent selected from the group consisting of ethyl alcohol, isopropyl alcohol, and mixtures thereof, at a temperature in the range of about 120 to 175° F. for about 14 to 1 minutes, the longer time being employed at the lower temperature, removing said fruit from the lye solution and rinsing in water to provide a peeled fruit product.

3,169,565
SELF LOCKING SCREW
Dwight F. Surratt, Versailles, Ky., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 14, 1961, Ser. No. 116,997
1 Claim. (Cl. 151—14)

PRIOR CONSTRUCTION



In combination; a member providing a threaded cavity wherein the threads of said cavity extend to the surface of said member; a self-locking type threaded fastener, said fastener being formed of a relatively hard material and said member being formed of a relatively soft material, said fastener comprising first and second axially aligned interconnected portions, said first portion being cylindrical and at least a part thereof being threaded, said threaded part having a major and a minor diameter, said major diameter constituting the largest dimension of said first portion, said second portion being unthreaded and having an axially extending slot therein to provide at least a pair of spaced apart head segments, said head segments having curvilinear peripheral surface portions forming part of a cylinder; said head segments being radially expanded in a direction away from each other so that at least a part of the curvilinear surface portions of each of said head segments normally extends radially outwardly beyond the minor diameter of said threaded part, said fastener being rotated into threaded engagement within said threaded cavity, said part of said curvilinear surface portions engage the threads of said cavity adjacent said surface whereby said head segments are resiliently forced toward each other by the threads of said threaded cavity, said curvilinear surface portions having a radius of curvature which is less than the radius of curvature of said minor diameter of said threaded part whereby the edges formed at the intersection between said slot and said curvilinear surface portions of said head segments are maintained out of engagement with the threads in said threaded cavity when said fastener is rotated into threaded engagement within said threaded cavity while, in the locking position, said curvilinear surface portions engage the threads of said threaded cavity in said member.

3,169,566
WEATHER RESISTANT LIGHT COLORED HALOGENATED BUTYL RUBBER COMPOSITIONS
George J. Ziarnik, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 10, 1960, Ser. No. 48,562
6 Claims. (Cl. 152—330)

3. A pneumatic tire having a sidewall composition of improved weathering properties consisting essentially of a vulcanized rubbery compound containing



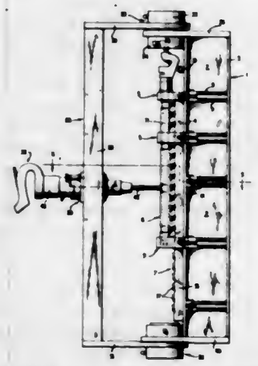
(A) a chlorinated rubbery copolymer of 85–99.5 wt. percent of a $C_4$ to $C_8$ isoolefin and 0.5 to 15 wt. percent of a $C_4$ to $C_{14}$ multiolefin and
(B) 5 to 50 parts by weight of a drying oil chosen from the group consisting of safflower oil, linseed oil, tung oil, fish oil, soybean oil, dehydrated castor oil and oiticica oil per 100 parts by weight of rubbery copolymer.

3,169,567
PUNCTURE REPAIR
Robert J. Covert and Howard W. Davis, Hamilton County, and George E. Talmage, Indianapolis, Ind., assignors to Bowes "Seal Fast" Corporation, Indianapolis, Ind., a corporation of Indiana
Filed June 27, 1963, Ser. No. 291,187
11 Claims. (Cl. 152—370)



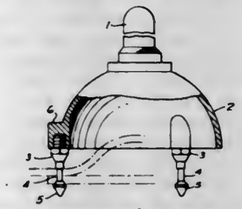
1. A puncture sealing material comprising an elongated strand including a loosely knitted sleeve formed from a multiplicity of hair-like threads substantially paralleling a monofilament, said sleeve being filled with and completely embedded in a homogeneous mass of substantially air-impervious, permanently-distortable material.

3,169,568
COTTON PICKER BAR RESIZING TOOL ASSEMBLY
Roland Gremillion, Cottonport, La., assignor to Gremillion Brothers, Inc., Cottonport, La., a corporation of Louisiana
Filed Oct. 5, 1962, Ser. No. 228,653
8 Claims. (Cl. 153—32)



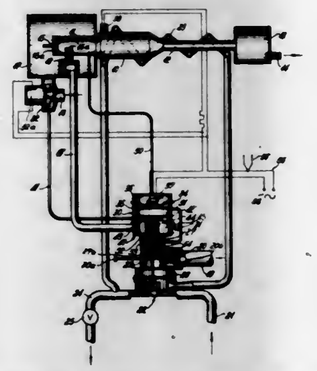
1. A resizing tool assembly of the character described for recrimping the lands in a spindle carrier bar comprising: support means, a plate mounted on said support means, a plurality of plugs mounted on said plate and adapted to fit within the apertures of a spindle carrier bar to support the bar while being crimped, clamping means operatively connected to said support means adjacent said plurality of plugs and adapted to secure a spindle carrier bar to said plate and said plurality of plugs, a swing table operatively connected to the support means for movement relative to said plate, and a crimping tool assembly adjustably mounted on the swing table adapted for crimping the lands in a spindle carrier bar secured to said plate and plurality of plugs.

3,169,569
DEVICE FOR AXIALLY FIXING A COLUMN UPON DISC WHEELS
Victor Duquesne, 42–44 Rue Quellin, Antwerp, Belgium
Filed Mar. 4, 1963, Ser. No. 262,681
3 Claims. (Cl. 157—1.1)



1. A device for mounting an axially extending tool mounting column upon disc wheels having only bolt holes arranged equidistant apart around the center of the wheel disc, comprising a shaft, a bell-shaped member having its convex side axially fixed at the end of said shaft and having its circular edge in a plane at right angles to the axis of said shaft, axially projecting stud bolts at the edge of said bell-shaped member, said stud bolts having a shank portion of smaller diameter ending in a bevel edge towards the outer end of the studs and forming an abutment shoulder at the opposite side, the bolt studs being located to register with the holes of the wheel disc and adapted to traverse said holes and U-shaped steadying locking means having a sloping bottom portion with an opening giving passage for said stud bolts and outwardly directed edges, said locking means cooperating with the bevel edges of said stud bolts for locking the wheel disc between these bevel edges and the abutment shoulders of the stud bolts.

3,169,570
STARTER APPARATUS FOR PULSE JET BURNERS
Franz Haag, Plochingen (Neckar), and Ludwig Huber, Stuttgart-Mohringen, Germany, assignors to Junkers & Co. G.m.b.H., Wernau (Neckar), Germany
Filed Nov. 13, 1963, Ser. No. 323,473
Claims priority, application Germany, Nov. 15, 1962, J 22,660
19 Claims. (Cl. 158—4)

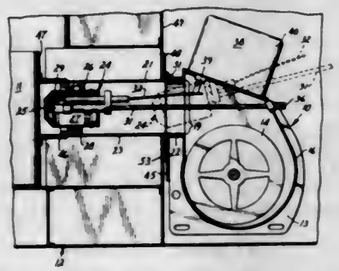


1. In a pulse jet burner, in combination, a combustion chamber including a suction duct arranged to form a mixture of fuel with oxygen and a resonance duct for dis-

charging the products developing on combustion of such mixture; a fuel supply conduit connected with said suction duct; a first valve including a pressure responsive element movable between two positions; a first line connecting said valve with said supply conduit so that the pressure of fuel may move said element to one of said positions; a second line connecting said valve with said suction duct so that the pressure of said mixture may move said element to the other position; an electric starter switch operatively connected with said pressure responsive element and operative to complete an electric circuit when said element is moved to said one position; compressor means comprising electric motor means connected in circuit with said starter switch for delivering oxygen into said suction duct in operative position of said switch; electric igniter means connected in circuit with said starter switch for igniting the mixture in said combustion chamber in operative position of said switch; a second valve provided in said supply conduit and comprising a second pressure responsive element movable between two positions; a third line connecting said second valve with said compressor means to move said second element to one of said positions thereof in response to pressure of oxygen generated by said compressor means, said second element being movable to the other position thereof by the pressure of fuel in said supply conduit; and a regulator valve provided in said supply conduit upstream of said second valve and operatively connected with said second pressure responsive element to permit flow of fuel through said second valve and into said suction duct when said second element moves to said one position thereof.

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**3,169,571**
**DEMOUNTABLE OIL BURNER CONSTRUCTION**
**Arnold J. Madsen, Minneapolis, Minn., assignor to Madsen Service Incorporated, Minneapolis, Minn., a corporation of Minnesota**
**Filed June 27, 1963, Ser. No. 291,049**
**1 Claim. (Cl. 158—76)**



In a gun-type burner structure of the type adapted for supplying a mixture of atomised fuel oil and air to a combustion chamber in a furnace and including a blower housing and related apparatus and being adapted for location in operative relation to an apertured wall of the furnace, the improvement of means for mounting said burner structure relative to said furnace wall, said improvement comprising:

(*a*) a generally cylindrical draft tube extending from said blower and being sectioned into inner and outer portions,

(*b*) the outer portion of said draft tube being secured at one end thereof to said blower housing and said inner portion of the draft tube being adapted to extend through the apertured wall of said furnace for communication of one end of said tube inner portion with the furnace combustion chamber, a burner head slidably supported within the inner portion of said draft tube and having a fuel supply line secured to the blower housing for removal therewith,

(*c*) a supporting plate and a mounting plate each having a generally centrally located aperture extending therethrough,

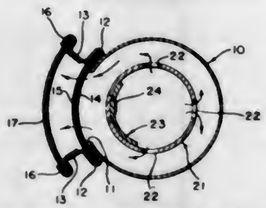
(*d*) one of said plates being rigidly secured to the other end of said inner tube portion and the other of said plates being rigidly secured to the other end of said outer tube portion, said supporting plate being adapted for securement to said furnace and located adjacent said apertured furnace wall,

(*e*) hook means and eye means located above the axis of said apertures in said supporting plate and mounting plate for releasably connecting said mounting plate to said supporting plate in face-to-face relation with the aperture of said plates in general alignment to define a continuous passage in said draft tube, and

(*f*) one of said means being carried by said supporting plate and the other of said means being carried by said mounting plate.

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**3,169,572**
**RADIANT SCREEN BURNER**
**Frederick G. Constance and Erwin C. Dalenberg, Mansfield, Ohio, assignors to The Tappan Company, Mansfield, Ohio, a corporation of Ohio**
**Filed Dec. 6, 1960, Ser. No. 74,139**
**1 Claim. (Cl. 158—116)**



A radiant screen burner comprising a chambered body adapted to receive gaseous fuel and having a slot for passage of such fuel therefrom, a rectangular transversely curved port screen disposed over the body slot, a transversely curved burner screen uniformly overlying the outer face of said port screen, said burner screen being of coarser mesh than said port screen, a transversely curved radiant screen in outward spaced and concentric relation to the burner screen, said radiant screen being of coarser mesh than said burner screen, the transverse curvature of said screens permitting directionally controlled expansion thereof upon being heated, and means for rigidly securing the thus disposed screens to the body, said securing means comprising portions of said body adjacent said slot forming longitudinally extending channels for supporting said port and burner screens, and outwardly spaced clamping bars secured to said body portions, said clamping bars respectively defining concentric longitudinal channels for supporting said radiant screen.

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**3,169,573**
**VERTICAL ADJUSTMENT DEVICE FOR BURNERS OF GAS-COOKERS**
**Masyoshi Hidaka, 3678 2-chome, Minami-cho, Nerima-ku, Tokyo-to, Japan**
**Filed Feb. 20, 1962, Ser. No. 174,587**
**1 Claim. (Cl. 158—117)**

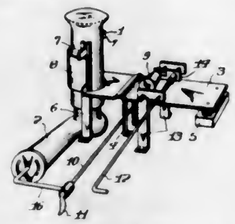
A vertical adjustment device for burners of gas stoves of the type wherein said burners are fed by an inlet tube controlled by a gas cock comprising in combination;

a balance plate and projection thereto pivotally mounted on supports designed to adjust the burner on one side and having a weight attached to the other side of said balance plate, the weight being made to balance the burner;



a telescoping air mixing chamber coupled to the burner fitted with external guide projections, and connecting means between said chamber and the balance plate, the telescopic position of said chamber depending upon the movement of said balance plate;

a horizontally disposed conical cam, the periphery of its cone being transverse to and engaging said balance plate projection;



an axle lever connected to the gas cock passing eccentrically through said cam so that relative rotation of said cam and axle lever is prevented, interlocking said gas cock and balance plate so that said balance plate can be inclined to the left or right in response to the opening of the gas cock; and,

a screw lever disposed parallel to said axle lever and coupled to said axle lever and cam for shifting the contact point between said cam and said balance plate projection backward and forward thus changing the telescopic expansion of said mixing chamber and burner.

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**3,169,574**
**FLEXIBLE DOOR**
**Walter D. Behlen, Columbus, Nebr., assignor to Behlen Manufacturing Company, Inc., Columbus, Nebr., a corporation of Nebraska**
**Filed July 6, 1962, Ser. No. 207,969**
**2 Claims. (Cl. 160—363)**



1. In a sliding one sheet door means, comprising, in combination,

a building structure having a wall with a doorway,

a sliding door guide support rail disposed on the floor of said building and horizontally extending in closely spaced parallel relation to the wall of said building having said doorway,

a second sliding door guide rail disposed above said doorway and horizontally extending in a similar spaced parallel relation to the wall of said building having said doorway as said first guide rail, and

a single piece flexible sheet door panel of sufficient height and length to close off said doorway disposed between and in operative slidable communication with said first and second rails;

said first and second rails being horizontally extended so as to horizontally bend at the corner junction of said wall and thence extend along at least one side wall thereto in a manner similar to their extension and position to said wall having said doorway;

said door panel being comprised of a flexible metal like material and adapted to flex around and with said bend in said first and second rails when said door is moved in relation to said doorway;

said door panel having parallel vertical major corrugations interconnected by flat vertical portions, said flat portions being parallel to the adjacent rails;

said door panel having at least three parallel vertical minor corrugations in each of said major corrugations, each minor corrugation being V-shaped and having leg portions extending at an angle to the adjacent rails,

said major corrugations being convex outwardly of a vertical plane through said door along its longitudinal axis and said flat vertical portions being disposed closely adjacent to the vertical plane of said door,

a plurality of spaced apart vertically disposed dollies adjacent the bottom and top edges of said door panel,

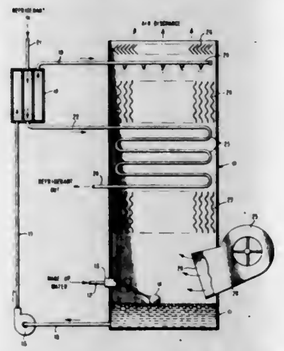
a plurality of spaced apart horizontally disposed dollies adjacent the bottom and top edges of said door panel,

said vertically and horizontally disposed dollies being arranged in alternating relationship along said door, and

means for securing each of said dollies to said flat vertical portion of said door whereby said door is firmly held against movement from vertical and horizontal forces.

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**3,169,575**
**EVAPORATIVE HEAT EXCHANGER**
**John Engalitcheff, Jr., Gibson Island, and Thomas F. Facius, Baltimore, Md., assignors to Baltimore Aircoil Company, Inc., Baltimore, Md., a corporation of Maryland**
**Filed Oct. 27, 1961, Ser. No. 148,254**
**7 Claims. (Cl. 165—1)**



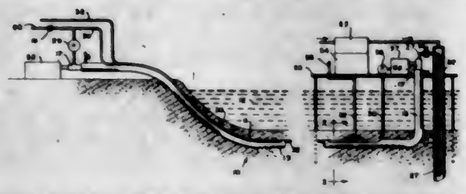
1. The method of improving the efficiency of evaporative heat extraction that comprises as the first step in extracting heat from a fluid that has absorbed heat, passing said fluid to have heat extracted therefrom and a cooling liquid in mutual heat exchange relation without evaporation of said cooling liquid and then passing the same fluid and of all said liquid in mutual heat exchange relation while evaporating at least a portion of said cooling liquid.

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**3,169,576**
**PIPE LINE FOR CONVEYING SULFUR AND OTHER HOT LIQUIDS**
**Clarence O. Lee and Clifford M. Cockrell, New Orleans, La., assignors to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware**
**Filed July 1, 1959, Ser. No. 824,245**
**6 Claims. (Cl. 165—81)**

1. A composite piping arrangement for conveying hot liquid material long distances which comprises a central

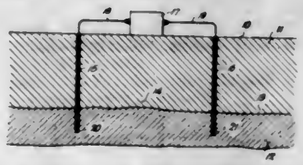
pipe for conveying the hot liquid, an insulated heating line larger than and surrounding but unattached to said central pipe through which hot fluid can be circulated to maintain the hot condition of the liquid in said central pipe, an outside jacket casing surrounding said heating line and spaced therefrom, anti-friction supporting means mounted along and around said insulated heating line at



intervals substantially throughout its length to support and permit longitudinal movement of the central pipe and heating line as a unit inside said outside casing, said central pipe and heating line being attached to said jacket casing only at the extreme ends of said casing, and said central pipe and heating line being prestressed so that they are under substantial compression at their normal temperature of operation.

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**3,169,577**
**ELECTROLINKING BY IMPULSE VOLTAGES**
**Erich Sarapuu, Kansas City, Mo., assignor to Electrofrac Corporation, a corporation of Delaware**
**Filed July 7, 1960, Ser. No. 41,418**
**10 Claims. (Cl. 166—42)**

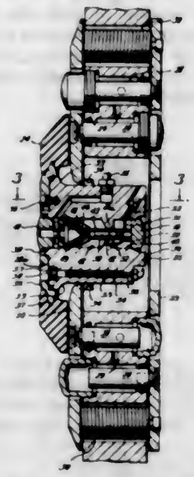


1. A process of linking underground electrodes contacting a single oil bearing earth formation comprising running a pair of well bores into the earth formation, connecting a pair of current concentrating electrodes into the earth formation in spaced relationship to one another, connecting a high voltage impulse generator to said electrodes, and applying a sufficient number of sequential high voltage and high energy electrical impulses to said electrodes that such physical shocks are produced in the earth formation next said electrodes as are sufficient to crack substantially the earth formation thereat the voltage of said impulses of the order of 150 kilovolts.

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**3,169,578**
**FORMATION TESTERS**
**Ulrich E. Voetter, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas**
**Filed July 16, 1962, Ser. No. 210,858**
**4 Claims. (Cl. 166—55.1)**

1. In combination with formation tester apparatus having formation sealing means adapted for sealing engagement with the wall of a well bore, a gun block having forward and rearward wall surfaces, said gun block having forward and rearward openings extending inwardly and terminating short of one another to form a solid barrier in said gun block, a guide opening through said barrier, shaped charge means sized for reception in said forward opening and having a tubular extension sized to be received in said guide opening, said solid barrier having sufficient thickness to withstand explosive forces developed by said shaped charge means; cover means for enclosing said shaped charge means in said forward opening; blasting cap means sized for reception in said tubular



extension through said rearward opening; and cover means for closing said rearward opening.

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**3,169,579**
**AXIALLY SPACED WELL PACKERS**
**Marcus W. Haines, Long Beach, Calif., assignor to McGaffey-Taylor Corporation, Long Beach, Calif., a corporation of California**
**Original application Nov. 30, 1953, Ser. No. 394,928. Divided and this application Feb. 14, 1961, Ser. No. 102,330**
**5 Claims. (Cl. 166—119)**



1. A well tool including: a tubular body and tubular means connected for relative axial movement; resilient sleeve packers axially spaced on said tubular means; said body having a port therein opening outside said tubular means between said packers; said tubular means including a pair of members connected for relative axial movement; means connecting the lower ends of said packers with said members; means for anchoring one of the members in the well; means releasably connecting the other of said members and said body for joint axial movement relative to said one member; means on said other member engaged with the upper end of the uppermost packer for compressing and expanding said packer responsive to said joint axial movement of said other member and body relative to said one member; said releasable means releasing said body for axial movement relative to said other member and being responsive to a predetermined load imposed on said releasable means by the axial movement of said body during said compression of said uppermost packer; and means on said body engaged with the upper end of the lowermost packer operable to compress and expand the lowermost packer responsive to said axial movement of said body relative to said pair of members.



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**3,169,580**
**WELL CLEANER AND WASHER**
**J. W. Bateman, 5435 Summerdale, Compton, Calif.**
**Filed May 29, 1963, Ser. No. 284,216**
**7 Claims. (Cl. 166—147)**



4. A casing-washing tool comprising:
(*a*) an elongated casing-fitting body having longitudinally spaced packers and having an internal pressure fluid passage, the passage having at least one branch terminating in a discharge port, thereby to discharge pressure fluid between said packers, and having a lower end,
(*b*) resiliently biased means normally closing the flow path of such fluid outwardly from the lower end of the body,
(*c*) means to close the path of said discharge between the packers and open the resiliently biased means to the path of said flow upon relative endwise movement of said body and resiliently biased means, and
(*d*) an elongated casing-slot cleaner connected to and above the elongated casing-fitting body and provided with a laterally-confined flow passage for pressure fluid flow to said body.

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**3,169,581**
**FIRE FIGHTING AND RESCUE APPARATUS**
**Phil F. Cummins, Fort Worth, Tex., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware**
**Filed July 27, 1962, Ser. No. 212,800**
**11 Claims. (Cl. 169—24)**

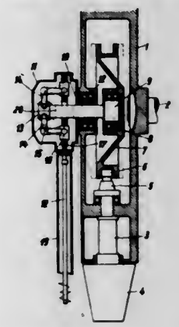
1. Fire fighting apparatus comprising, in combination:
a prime mover provided with tanker tires for carrying a supply of a fire extinguishing agent;
at least one trailer provided with tanker tires for carrying an additional supply of said fire extinguishing agent;
at least one self-propelled, remotely controlled vehicle transportable to the scene of a fire by means integral with said prime mover, said vehicle having a remotely controlled nozzle directably mounted thereon;
conduit means connecting said tanker tires to said nozzle; and



pump means disposed in said conduit means whereby said fire extinguishing agent may be discharged through said nozzle and onto said fire.

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**3,169,582**
**ARRANGEMENT FOR ADJUSTING MECHANICALLY THE ANGULAR SETTING OF THE BLADES OF AXIAL FLOW MACHINES, MORE PARTICULARLY IN THE CASE OF AXIAL BLOWERS**
**Hans Schilder, Alban Rupp, and Kurt Nickel, Zweibrucken, Germany, assignors to Dingierwerke Aktiengesellschaft, Zweibrucken, Germany**
**Filed Dec. 18, 1963, Ser. No. 333,254**
**Claims priority, application Germany, Dec. 21, 1962, D 40,569**
**7 Claims. (Cl. 170—160.4)**



1. In an axial flow machine, chiefly an axial flow blower, including a rotor the blades of which are adapted to be angularly shifted round their axes, the provision of a stationary casing on which the rotor is revolvably secured, an adjusting mechanism carried inside the casing and including a pusher-member adapted to be shifted along the axis of the rotor, said pusher member including inner and outer ends, said outer end being supported by the casing means controlling said mechanism from the outside to adjust the longitudinal position of said pusher-member inside the casing, a member coaxial with the rotor, journalled for rotation in unison therewith on the inner end of said pusher member, and adapted to be shifted in parallelism with the axis of said rotor by axial movement of said pusher-member and means whereby the shifting of said member coaxial with the rotor adjusts the angular setting of the blades.

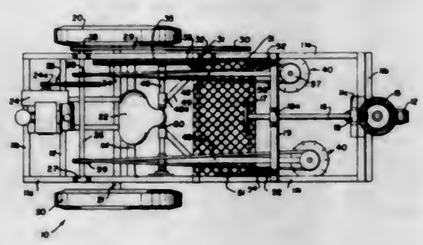
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**3,169,583**
**APPARATUS FOR BLOCKING AND THINNING OF ROW CROP FARM PRODUCE**
**Herbert J. Thurow, R.R., Ault, Colo.**
**Filed Dec. 7, 1962, Ser. No. 243,120**
**6 Claims. (Cl. 172—111)**

1. Apparatus for thinning and blocking a row of seeded plants comprising:

(*a*) a power driven frame having a power distribution shaft journalled thereto, and a drive wheel operatively connected to said power distribution shaft;

(*b*) a rotatable thinner head supported on said frame in depending relation thereto, said thinner head comprising a vertically disposed driving axle, a tine supporting member secured to said axle at the lower end thereof, said driving axle being operatively connected to said power distribution shaft, said tine supporting member comprising a disc means, said disc means having a rabbeted shoulder wall disposed about the periphery thereof, a circular array of apertures located about said wall;



(*c*) a plurality of resilient spring like tines, each of said tines having an upper end passing through a respective one of said apertures and a spring loop adjacent the upper end thereof adapted to be lodged in said rabbeted shoulder wall to resist twisting forces thereon, at least one of said tines being provided with an outstanding cutter blade at the lower end thereof; said tines being adapted to selectively contact the ground a given distance below the surface thereof; and

(*d*) said frame being driven by said power distribution shaft in overlying disposition to said seeded plants, and said thinner head being simultaneously rotated a given number of revolutions with respect to each revolution of said drive wheel whereby said tines travel through a plurality of cyclic pattern traversing said row of plants at predetermined points therealong.

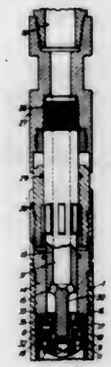
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**3,169,584**
**ROCK DRILLING APPARATUS**
**Andre Pierre Camille Stesmick, Fontaine l'Eveque, Belgium, assignor to Halifax Tool Company Limited, Halifax, England, a British company**
**Filed July 3, 1961, Ser. No. 121,626**
**Claims priority, application Great Britain, July 7, 1960, 23,813/60**
**7 Claims. (Cl. 173—18)**

7. For use in a pressure fluid operated percussive boring apparatus including drill tube means, hammer cylinder means mounted on said drill tube means for limited axial movement thereon, said hammer cylinder means defining a cavity therein and carrying drill bit means, hammer means in said cavity and dividing the same into two portions, said hammer means being reciprocable in said cavity for actuating movement of said drill bit means in a direction away from said drill tube means, a source of fluid under pressure communicating with said drill tube means, said drill tube means and hammer cylinder means constituting the supporting members of said apparatus, and means for exhausting said cavity; in combination,

(*a*) first valve means formed with an inlet conduit and two outlet conduits, and responsive to pressure differences in said conduits for alternatingly connecting said inlet conduit with respective outlet conduits;

(*b*) means for securing said first valve means to one of said support members for communication of said inlet conduit with said source, and for respective communication of said outlet conduits with said portions of said cavity;

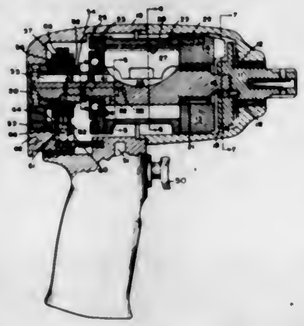


(*c*) second valve means communicating with said inlet conduit and one of said outlet conduits, said second valve means having two portions movable relative to each other toward and away from a position in which said second valve means connects said inlet conduit to said one outlet conduit; and

(*d*) means for respectively securing said portions of said second valve means to said support members for movement toward and away from said position when said hammer cylinder means moves on said drill tube means.

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**3,169,585**
**POWER OPERATED ROTARY IMPACT TOOL**
**Spencer B. Maurer, Novelty, Ohio (32145 Old South Miles Road, Solon, Ohio)**
**Filed Jan. 11, 1961, Ser. No. 81,693**
**20 Claims. (Cl. 173—93)**



1. A rotary impact tool comprising, in combination, a housing, motor means mounted within said housing and including central reaction member means and including massive rotor means surrounding at least a portion of said reaction member means and mounted concentrically thereon for limited rotary motion in respect thereto, hammer means coupled to said rotor means, output shaft means having an anvil always meshed with a portion of said hammer means and capable of relative lost motion in respect thereto, and automatic reversing means to cause said hammer to oscillate with respect to said anvil and deliver a series of blows in one direction to the anvil.



**3,169,586**
**UNDER WATER WELL-DRILLING METHOD**
**Billy J. Bullard, Oklahoma City, Okla., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Mar. 11, 1963, Ser. No. 264,382**
**6 Claims. (Cl. 175—5)**



1. In a method of drilling an underwater well from a floating drilling vessel equipped with a rotary table for engaging the upper and lower coupled together sections of a kelly in a drill string having a telescoping section in its length, the steps of the method comprising

(*a*) drilling a hole in the ocean floor while the lower section of kelly is in engagement with the rotary table,

(*b*) continuing drilling of the hole while the upper section of kelly is in engagement with the rotary table,

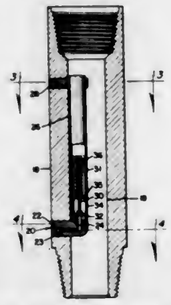
(*c*) stopping drilling of the hole and securing the drill string to the vessel at a point below the upper Kelly section,

(*d*) installing a pipe section in the drill string between the Kelly sections, and

(*e*) continuing drilling of the hole with the upper Kelly section in engagement with the rotary table.

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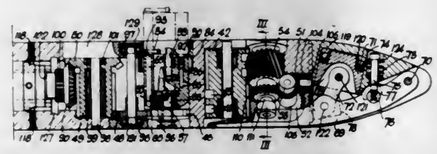
**3,169,587**
**METHOD OF REMOVING FORMATION FLUIDS FROM A WELL BORE IN DRILLING OPERATIONS**
**William C. Hubbard, Denver, Colo., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York**
**Filed Sept. 26, 1961, Ser. No. 140,907**
**2 Claims. (Cl. 175—38)**



2. In combination with well drilling apparatus, a hollow drill string for driving a bit in which the hollow of the drill string forms a first conduit for pressure fluid during drilling and the annulus between the well bore and the outer surface of the drill string forms a second conduit for removal of formation fluid, said drill string including hollow subs joining pipe sections together, each sub having a differential pressure valve supported in its interior for bleeding pressure from said first to said second ond conduit, each of said valves having a different opening pressure and having a closing pressure less than its opening pressure, said subs being arranged from the top of the drill string down so that each succeeding valve from the top valve down has an opening pressure less than the closing pressure of the valve immediately above it.

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**3,169,588**
**SAMPLING APPARATUS**
**William Stephen Cashen, Peterborough, Ontario, Canada, and Almond Tinkler, Liverpool, England, assignors to United Kingdom Atomic Energy Authority, London, England**
**Filed Nov. 7, 1960, Ser. No. 67,715**
**Claims priority, application Great Britain, Nov. 11, 1959, 38,337/59**
**4 Claims. (Cl. 175—51)**



1. Sampling apparatus comprising an elongate body of generally smooth contour, a hollow trepanning head with a cutting face having cutting blades, an opening for the trepanning head defined by the elongate body, means for feeding a coolant fluid into the body, means for conveying said coolant fluid to the trepanning head, passages in the trepanning head leading to the cutting face and communicating with said conveying means, a parting-off cutter mounted on said cutting face to lie behind said cutting blades during a trepanning cut, means for moving the parting-off cutter from behind the cutting blades at the end of the trepanning cut to provide a parting-off cut, a scroll cam having an endless track, a cam follower in the endless track, and means connecting the cam follower with the trepanning head so that axial movement of the trepanning head is governed by movement of the cam follower as dictated by the endless track on rotation of the cam, the endless track being shaped so that with unidirectional rotation of the cam the trepanning head executes a cycle of axial movement out from and back into the body, and means for rotating said trepanning head and said scroll cam.

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**3,169,589**
**SONIC METHOD AND APPARATUS FOR EXTRUDING FLOWABLE MATERIALS**
**Albert G. Bodine, Jr., Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)**
**Filed Aug. 21, 1958, Ser. No. 756,382**
**11 Claims. (Cl. 175—58)**

4. The method of taking a core of earthen material from the wall of a well bore that includes: holding a core tube against said wall with pressure so as to accomplish a sonic coupling thereto, transmitting a continuous pattern of longitudinal sonic vibrations along a path comprising an elastic column means of solid material to the point of contact of said core tube against said wall and continued by an annular portion of the wall material in immediate contact with said core tube, so that a core of earthen material is sonically severed from the naturally occurring position of its constituent material in said wall and introduced into said core tube, and

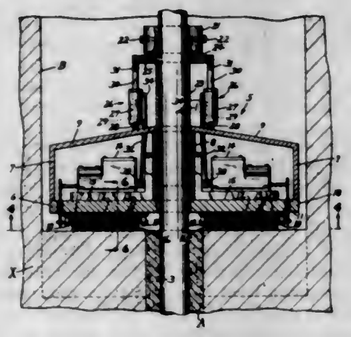
simultaneously transmitting a continuous pattern of longitudinal sonic elastic vibrations to said core of material



encompassed within said core tube as said core flows along inside of said core tube.

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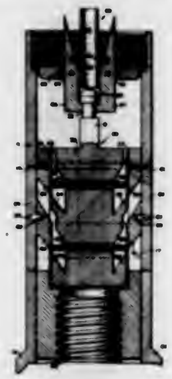
**3,169,590**
**APPARATUS FOR DRILLING LARGE DIAMETER HOLES**
**Orrin C. Thatcher, Stamford, Mont.**
**(% Ideas Inc., 2327 10th Ave. S., Great Falls, Mont.)**
**Filed Feb. 28, 1961, Ser. No. 92,419**
**1 Claim. (Cl. 175—94)**



Apparatus for drilling into the earth's crust a cylindrical opening of a given depth for the formation of an underground silo or the like, said apparatus comprising an elongated axle of constant diameter and the axial dimension of which is considerably greater than that of the proposed opening, said axle being adapted to be placed and secured within a previously drilled centrally located vertical pilot hole of a vertical depth greater than that of the proposed opening and with the upper end portion of said axle projecting above the upper elevation of said opening, a drilling head slidably rotatably received upon the projecting upper end portion of said axle and having a drilling diameter corresponding to the desired diameter of said opening, power operated means for imparting rotation to said head about said axle, and means for applying a generally downwardly directed pressure on said drilling head relative to the upper end portion of said axle, said means for applying a downward pressure on said drilling head comprising a vertically adjustable anchoring collar slidably received upon and releasably and adjustably secured to said axle in overlying relationship to said drilling head, and a generally vertically extensible and retractable device interposed between said drilling head and said anchoring collar.

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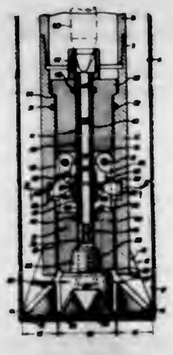
**3,169,591**
**DUAL DRILL BIT APPARATUS**
**John D. Worthington, Box 606, Somerset, Pa., and John L. Owen, 9235 SW. 43rd Terrace, Miami, Fla.**
**Filed Nov. 21, 1961, Ser. No. 153,993**
**17 Claims. (Cl. 175—257)**



12. Drilling apparatus comprising a casing member having means therein for receiving dog means, an attachment member in said casing member comprising a body, opening defining means in said body, dog means in said body extending through said opening defining means and into said receiving means, downwardly directed teeth means on said dog means, actuator means in said body having upwardly directed teeth means in engagement with the teeth means of said dog means for moving said dog means inwardly upon axial movement of said teeth actuator means, and a bit secured to the said attachment member, whereby said attachment member may be driven from said casing member and removed therefrom.

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**3,169,592**
**RETRIEVABLE DRILL BIT**
**Archer W. Kammerer, 800 N. Raymond Ave., Fullerton, Calif., assignor of one-fifth to Jean K. Lamphere, Fullerton, Calif., and one-fifth to Archer W. Kammerer, Jr., Houston, Tex.**
**Filed Oct. 22, 1962, Ser. No. 232,214**
**5 Claims. (Cl. 175—257)**

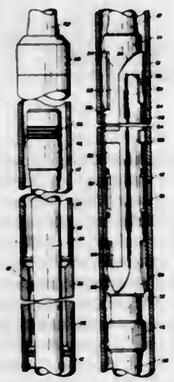


1. In apparatus adapted for operation in a well bore: a tubular member adapted to form part of a string of pipe to be lowered in the well bore and having a substantially smaller outside diameter than the diameter of the well bore, said member having first stop means therein; a coupling body adapted to move through the string of pipe into said tubular member, said body having second stop means engaging said other stop means to limit downward movement of said body in said tubular member; said tubular member having an inner circumferential groove intermediate its length and circumferentially spaced recesses laterally outwardly of and opening radially into said groove; coupling members mounted on said body for lateral movement with respect thereto and disposed in the horizontal plane of said groove and recesses when said second stop means engages said first stop means; a tubular mandrel slidably mounted in said body and engageable with said coupling members for expanding said coupling members into said groove and recesses, whereby rotation of said tubular member is transmitted through said coupling members to said body; outer cutter means secured to the lower end of said tubular member to cut the outer portion of the bottom of the bore hole; the lower portion of said body having a connection for attachment thereto of a drill bit to cut the inner portion of the bottom of the bore hole; and means for retracting said coupling members from said recesses and groove to enable said body to be elevated from said tubular member and through the pipe to the top of the well bore to leave an unobstructed passage through the pipe and its tubular member.



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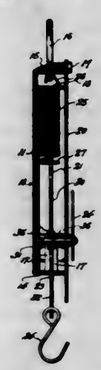
**3,169,593**
**WELL TUBING RETRIEVING APPARATUS**
**Franklin L. Le Bus, Sr., Longview, Tex., assignor, by mesne assignments, to Bowen Tools, Inc., a corporation of Texas**
**Filed Mar. 30, 1962, Ser. No. 183,774**
**8 Claims. (Cl. 175—315)**



1. In combination with a tubing string, a combined wash-over and retrieving tool adapted to be interposed in the tubing string, said retrieving tool comprising an outer sleeve secured to the upper portion of the tubing string and telescopically arranged with an inner sleeve secured to the lower portion of the tubing string, spline means cooperating between the outer sleeve and inner sleeve to provide a locking engagement therebetween, latching means provided on the inner sleeve for precluding an accidental disengagement of the outer sleeve therefrom in the locked position therebetween, means cooperating between the inner and outer sleeve to preclude leakage of fluid therebetween, said spline means responsive to a combined upward movement and rotational movement of the tubing string to provide for an unlatching of the outer sleeve from the inner sleeve whereby the upper portion of the tubing may be separated from the stuck lower portion thereof, said spline means responsive to a subsequent downward movement combined with a right hand torque on the upper portion of the tubing string for providing a telescopic movement of the outer sleeve over the stuck portion of the tubing, and means provided on the outer sleeve for reaming the stuck portion for a freeing thereof.

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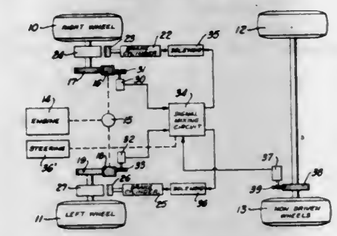
**3,169,594**
**SPRING SCALE WITH DIAL INDICATION**
**Earl D. Myers, Scotch Plains, N.J., assignor to Ohaus Scale Corporation, Union, N.J., a corporation of New Jersey**
**Filed Sept. 7, 1962, Ser. No. 222,104**
**3 Claims. (Cl. 177—173)**



1. A hanging weighing scale of the type described comprising an open front hollow casing, a spring suspended rack plate within said casing having a lower end portion projecting from the bottom end of the latter including means to attach material to be weighed thereto, a face plate affixed to the casing across the open front thereof, a shaft supported by the casing and face plate perpendicular to the rack plate with its forward end projecting exteriorly from said face plate, a weight indicating dial immovably applied to the front of the face plate concentric to said shaft, a pointer element affixed to the exterior end of the shaft for cooperation with the dial, and a compact driving gear comprising material possessing a high coefficient of friction, said gear being mounted on the shaft in forced fit relation thereto and thus in compact frictional clutched engagement therewith, the teeth of said gear meshing with the teeth of the rack plate, whereby to be rotated by longitudinal movements of the rack plate and thus to actuate the shaft and pointer element.

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**3,169,595**
**WHEEL SPEED CONTROL**
**Willard W. Shepherd, Whittier, Calif., assignor to Shepherd Machinery Co., City of Industry, Calif., a limited partnership**
**Filed Sept. 5, 1961, Ser. No. 136,085**
**4 Claims. (Cl. 180—1)**

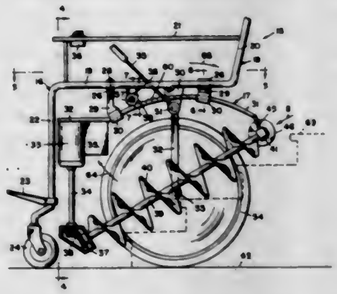



1. In a wheel speed control for a steerable vehicle having first and second driven wheels and having a manually actuated steering means, the combination of:

first signal generating means for generating a first signal which varies as a function of the rotational speed of the first wheel;
second signal generating means for generating a second signal which varies as a function of the rotational speed of the second wheel;
first speed reducing means for reducing the speed of the first wheel;
second speed reducing means for reducing the speed of the second wheel;
signal mixing means for determining the difference between first and second input signals and producing an output signal which varies as a function of such difference;
means for coupling said first and second signals to said signal mixing means as inputs;
turning rate means for varying said output signal as a function of the turning rate of the vehicle;
means for connecting said manually actuated steering means to said turning rate means in driving relation;
and means for coupling said output signal to said speed reducing means in controlling relation for reducing the speed of a driven wheel when its speed exceeds that of the other driven wheel by a predetermined amount which varies with the turning rate of the vehicle.

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**3,169,596**
**STEP TRAVERSING VEHICLES**
**Stephen A. Wright, P.O. Box 182, Joshua Tree, Calif.**
**Filed Dec. 19, 1962, Ser. No. 245,723**
**12 Claims. (Cl. 180—7)**

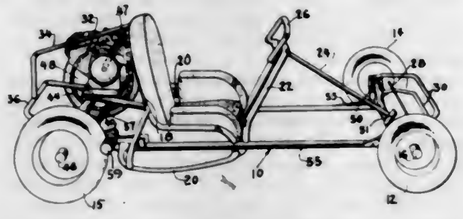


1. In a step traversing wheel chair, the combination of a chassis, wheels provided on said chassis for traveling over even surfaces, a rotatable screw disposed in a rearwardly inclined position and connected to said chassis for propelling the same over steps, means for rotating said screw, and means for raising and lowering said wheels relative to said screw.

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**3,169,597**
**DIFFERENTIAL DRIVE**
**Robert L. Holloway, Snyder, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey**
**Filed June 7, 1960, Ser. No. 34,506**
**1 Claim. (Cl. 180—76)**

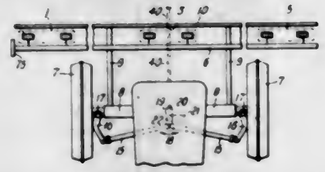
In a vehicle having a light skeleton chassis, steering means on said chassis, an engine disposed in offset relation to the medial axis of said chassis, and having a crankshaft with a driven sprocket secured thereon, an axle rod, a pair of tubular sleeves keyed on said rod adjacent opposite ends thereof, said sleeves having axial circular recesses formed therein, one of said sleeves having a sprocket fixedly secured thereto and operatively connected to said engine, a pair of wheel bearing housings rotatably mounted on said axle rod, means on said housings defining axial circular recesses communicating with said recesses of said sleeves for the reception of helical prehensile springs therein, said springs being



mounted about said rod and operatively connected with said sleeves, said housings being driven when the springs are rotated in a direction to expand the springs.

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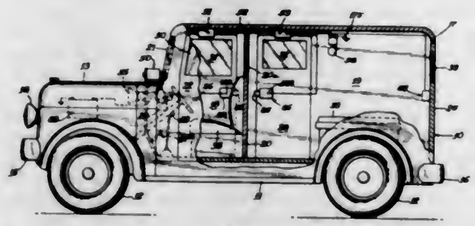
**3,169,598**
**VEHICLES AND MEANS FOR GUIDING THEM**
**Peter Gerard Finn-Kelcey, Eversley, Hants, and Vaughan Meyrick Owen, Reading, England, assignors to E.R.A. Patents Limited**
**Filed June 21, 1961, Ser. No. 118,590**
**Claims priority, application Great Britain, June 23, 1960, 22,022/60**
**41 Claims. (Cl. 180—79)**



1. A vehicle having a steering device under the control of a head able to pick up signals emitted by a conducting wire to cause the vehicle automatically to follow a plurality of different paths defined by the wire, said head having a number of different effective positions so as to pick up respective signals emitted at different laterally spaced positions, respectively, and signal responsive means on the vehicle for changing the lateral position from which the control of the steering is exercised to cause said vehicle to traverse a different one of said plurality of different paths, respectively, so that said vehicle in successively traversing said different paths travels a multiple of the length of said conducting wire.

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**3,169,599**
**SECURITY APPARATUS FOR ARMORED CARS**
**Frederick Johnston, Jr., 406 N. Fairview, Mount Prospect, Ill.**
**Filed Apr. 15, 1963, Ser. No. 273,136**
**15 Claims. (Cl. 180—82)**



1. In an armored car of the type having a body defining a driver's compartment with a windshield on the front



thereof and a separately armored rear vault compartment, said body having doors leading to the driver's compartment and to the vault compartment, a source of electricity, and a security apparatus for the armored car comprising, electric door locking solenoids on the inside of each door, at least one electrically actuated audible alarm, a first electrical control box mounted on said body outside of said compartments, a second electrical control box mounted within said driver's compartment, a third electrical control box mounted within said vault compartment, electrical circuit means joining said source of electricity with said first, second and third electrical control boxes, with said electric door locking solenoids, and with said electrically actuated audible alarm, and independently operable means on said first, second and third electrical control boxes for actuating certain of said electric door locking solenoids to effect opening of said doors and activating said electrically actuated audible alarm and whereby said three electrical control boxes and their electrical circuit means render the armored car substantially burglar-proof.

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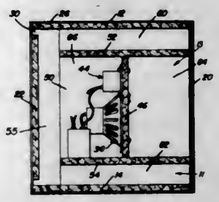
**3,169,600**
**SOUND HEAD SET**
**James E. Thomas, 16W067 Timber View Drive, Elmhurst, Ill.**
**Filed Jan. 31, 1964, Ser. No. 341,551**
**4 Claims. (Cl. 181—24)**



1. A stethoscope type sound head set for transmitting sound mechanically from a sound transmitting pipe uniformly to both ears of an operator, comprising:
(*a*) a single, hollow, tube having one end connected to said sound transmitting pipe;
(*b*) a pair of hollow tubes having corresponding ends connected to ear piece members;
(*c*) each of said ear piece members including:
(i) a relatively rigid, hollow, cylindrically shaped ear plug having an opening extending axially therethrough receiving the free end of a related tube of said pair; and
(ii) a soft, flexible, generally cylindrically shaped cushion having an axial bore receiving said ear plug;
(*d*) a clamp member encompassing said pair of tubes and holding them snugly together at a location spaced inwardly a relative short distance from their corresponding opposite ends;
(*e*) said pair of tubes having portions which lie outwardly of said clamp member bent at right angles to the axis of said clamp member and secured to each other in rigid, parallel, tangent side-by-side relation;
(*f*) said corresponding opposite ends of said pair of tubes being tapered to present adjacent, flat, end surfaces on each tube which diverge outwardly at an angle of approximately 90 degrees from each other from a point of tangency between said pair of tubes;
(*g*) a relatively rigid, hollow, connecting member having a cylindrical nipple on one side telescopically connected to the other end of said one tube, and having on the other side a generally figure-eight shaped opening telescopically receiving said corresponding opposite ends of said pair of tubes.

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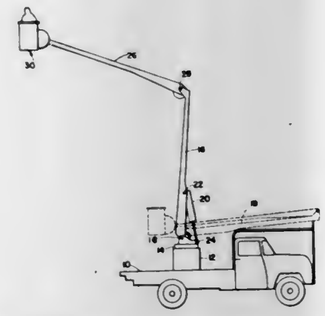
**3,169,601**
**ACOUSTICAL CABINET FOR LOUDSPEAKERS**
**Richard M. Smith, 318 6th St., Greenport, N.Y.**
**Filed June 28, 1963, Ser. No. 291,416**
**4 Claims. (Cl. 181—31)**



1. An acoustical cabinet for a loudspeaker having a sound radiating element comprising, interconnected outer walls forming an outer chamber extending between a completely open front end and a rear end, inside walls connected to said outer walls forming an inner chamber portion cross-sectionally larger throughout than the sound radiating element and extending from said front end a distance short of the rear end, said inner chamber portion being spaced from the outer walls to form surrounding passageways extending rearwardly from said front end, a baffle member connected to the inside walls completely dividing said inner chamber portion into substantially equal parts, said baffle member having an opening therein mounting the sound radiating element of the loudspeaker, a rigid back panel substantially closing the outer chamber at the rear end, and means securing said back panel in spaced relation to the outer walls to form a peripheral vent opening for the outer chamber aligned with said passageways.

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**3,169,602**
**MOBILE AERIAL TOWER STRUCTURE**
**Lester L. Myers, Fort Wayne, Ind., assignor to Mobile Aerial Towers, Inc., Fort Wayne, Ind.**
**Filed June 7, 1962, Ser. No. 200,875**
**8 Claims. (Cl. 182—46)**

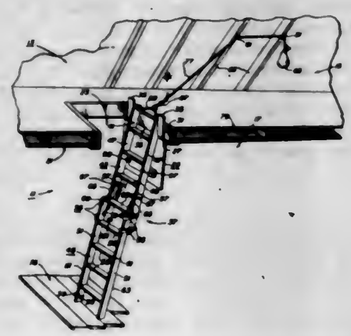


3. In combination, a personnel bucket of integral construction for supporting a workman in an elevated position on the boom of a mobile aerial tower for working in the vicinity of high voltage electrical power lines, comprising an inner lamination of glass fiber reinforced plastic, an outer lamination of glass fiber reinforced plastic extending substantially parallel to and spaced from said inner lamination, said laminations having substantially flat bottoms and sides upstanding therefrom respectively, a core lamination of cellular plastic material, said plastic material being an electrical insulator, said core lamination filling the entire space between said inner and outer laminations and being rigidly adhered

thereto, the combination of said inner, outer and core laminations providing an integrated, rigid and physically strong structure in which a workman may ride, said core lamination being thicker than said inner and outer laminations by an amount to provide for a predetermined dielectric strength and for maintaining a minimum spacing between said laminations and between a workman in said bucket structure and an electrical line touching the outer surface of said outer lamination, and means for mounting said outer lamination on the end of a boom.

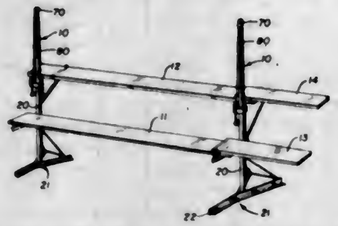
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**3,169,603**
**ACCESS LADDER**
**John J. Amic, Sr., 318 Brunton Road, Louisville, Ky.**
**Filed Feb. 21, 1963, Ser. No. 260,162**
**5 Claims. (Cl. 182—78)**



1. In a building having an upper room and an adjacent lower room and being provided with a ceiling opening between said upper and lower rooms, a joist adjacent said opening, a trap door pivotally mounted from said building adjacent said opening for pivot between an open and closed position of said opening, a ladder having a lower end and an upper end, said ladder when in an extended position having its lower end resting on the floor of said lower room and its upper end resting against said joist; said ladder including an upper section, a lower section, and means removably holding said sections together for movement of said ladder from said extended position in which only the adjacent ends of said sections overlap to a retracted position in which said sections overlap along substantially the overall length thereof, means interacting between said upper and lower sections for latching said ladder in said retracted position, when said ladder is in said retracted position said ladder being slidable upwardly on said joist into said opening to move the lower end thereof adjacent said trap door and to extend the greater part of said retracted ladder beyond said joist and establish a moment arm causing said ladder to have a tendency to pivot on said joist in a first direction to carry the lower end of said retracted ladder upwardly, pivot means detachably interconnecting said retracted ladder adjacent the lower end thereof to said trap door whereby the tendency of the lower end of said retracted ladder to move upwardly is effective to pull said trap door upwardly into a closed position as the ladder pivots about said joist into a housed position in said upper room; counterbalancing means including an elongated pull member movably mounted in said upper room, means detachably connecting one end of said pull member to said ladder adjacent the upper end thereof, and weight means attached to said pull member adjacent the opposite end of said pull member from said one end for causing a counterbalancing force to be exerted on the upper end of said retracted ladder in opposition to and less than the force of said moment arm.

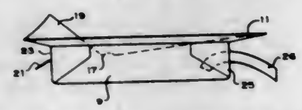
**3,169,604**
**SCAFFOLD**
**Gerald H. Pranger, 2475 S. Franklin St., Denver, Colo.**
**Filed May 29, 1963, Ser. No. 284,036**
**2 Claims. (Cl. 182—146)**



1. A portable scaffolding support arranged to be used in pairs for supporting upper and lower bridging planks on opposite sides of upright supports comprising a tubular upright member, a base removably secured to the bottom of said upright supporting it in an upright position, a removable carrier reciprocally mounted on said upright member, said carrier including an upper outwardly extending plank support projecting laterally from one side of said carrier and a lower plank support extending outwardly from said carrier in the direction opposite said upper plank support, an upper pair of rollers journaled in said carrier bearing against opposite sides of said upright and one of said upper rollers being mounted on the side opposite said upper plank support, a lower pair of rollers journaled in said carrier below said upper rollers and bearing against said upright, and one of said lower rollers being mounted on the side opposite said lower plank support whereby said carrier rides on said rollers on said upright, first pulley means mounted adjacent the top of said upright, second pulley means mounted on said carrier, rope means reeved around said pulleys, rope retrieve means mounted on said carrier including a movable crank handle, one end of said rope means being secured to said retrieve means and the other end connected to said carrier for raising and lowering said carrier along said upright, said handle being movable from an outside position for turning said rope retrieve means to an inside position against said carrier for preventing unwinding of the rope therefrom, a chain secured to the top of said upright, a bracket including an eye and slot mounted on said carrier for reception of said chain and provide temporary lock means to prevent downward movement of said carrier, and means for locking said chain in said slot and eye.

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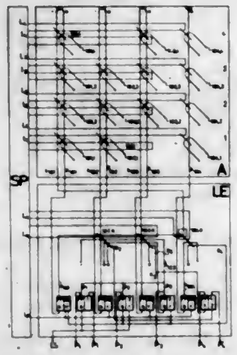
**3,169,605**
**AUTOMOTIVE OIL DRIP CATCHER**
**Lloyd R. Ashmead, 3857 Corina Way, Palo Alto, Calif.**
**Filed July 17, 1963, Ser. No. 295,778**
**2 Claims. (Cl. 184—106)**



1. An oil drip catcher comprising a container for mounting under and in close proximity to the engine of an automotive vehicle, said container having a large opening at the front end thereof and a small opening positioned rearward of said large opening, and means including a tube that extends downwards from said small opening towards the inside of said container whereby oil deposited in said container will be held therein when said vehicle is idle but will be ejected therefrom through said tube when said vehicle is moving due to the increase in static air pressure within said container.



**3,169,606**
**MAGNETIC CORE CONTROL CIRCUIT FOR ELEVATORS**
**Gunnar Thirup, Tyrsbjergvej, Korup, Denmark, assignor to Thomas B. Thrige, Odense, Denmark**
**Filed July 3, 1962, Ser. No. 207,306**
**Claims priority, application Denmark, July 10, 1961, 2,826; Sept. 2, 1961, 3,503**
**17 Claims. (Cl. 187—29)**

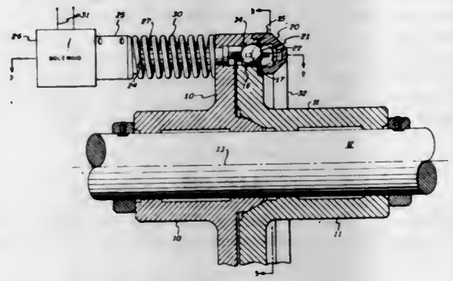



1. A control circuit for lifts or the like, movable between individual floors, comprising a number of magnetic memory cores adapted to be alternatively in a first zero-state, and a second one-state of saturation, said cores forming a matrix having horizontal rows corresponding to respective floors, and vertical columns, first circuits, each of said circuits being associated with one corresponding row, second circuits, each of said second circuits being associated with one of said columns, means to generate first interrogating pulses in said first circuits, those of said first interrogating pulses generated in first circuits associated with rows corresponding to subsequent floors being displaced in relation to each other by a predetermined period of time $t$ and those of said first interrogating pulses generated in first circuits associated with the rows corresponding to the last and the first floor being displaced in relation to each other by a period of time $2t$, means to apply second information pulses to said cores corresponding to each floor, said information pulses being adapted to bring a corresponding core from its zero-state to its one-state, and said interrogating pulses having a magnitude adapted to bring a corresponding core back from its one-state to its zero-state, means to generate third pulses in said second circuits when said cores are brought back from their one-state to their zero-state by said interrogating pulses, whereby said third pulses serve to contribute to the control order.

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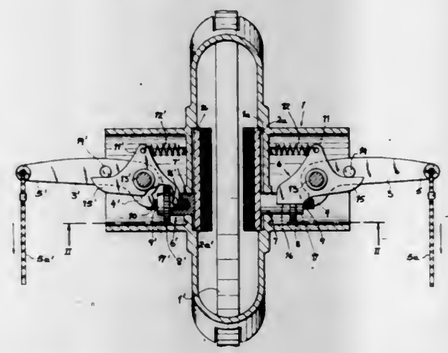
**3,169,607**
**ROTARY LATCH**
**Russell H. Romney, Salt Lake City, Utah, assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware**
**Filed Feb. 7, 1962, Ser. No. 171,648**
**2 Claims. (Cl. 188—69)**

1. A rotary latch comprising first and second adjacent discs having coincident axes of symmetry which form a common axis, said first disc being nested within said second disc, at least one of said discs being rotatable about said common axis, said first disc having a plurality of circumferentially spaced tapered recesses in the external periphery thereof, said second disc having a corresponding number of circumferentially spaced tapered recesses in the internal periphery thereof, said recesses being cooperatively disposed and adapted to define in combination a plurality of frustro-conical holes by means of the surfaces of said recesses, each of said surfaces being conical and tapering towards each other, each of said holes being adapted to receive a sphere, a corresponding number of spheres adapted to be retained individually in said holes, said tapered holes and said spheres being so constructed and arranged that with said spheres disposed within said holes said spheres contact said first and second discs to lock said first and second discs to each other in a precise predetermined relation upon positioning said tapered spheres within said holes and with said spheres disposed external to said holes said spheres are out of contact with said discs and said discs are rotatable relative to each other, and common activating means for simultaneously selectively positioning said spheres either within or external to said holes including resilient positionable sphere caging means for securely holding said spheres in a desired position.



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**3,169,608**
**DISK BRAKE AND ADJUSTING MEANS THEREFOR**
**Carl Press, Frankfurt-Bonames, and John R. Botterill, Dreieichenhain, Germany, assignors to Alfred Teves Maschinen- und Armaturenfabrik KG., Frankfurt am Main, Germany, a corporation of Germany**
**Filed Dec. 11, 1963, Ser. No. 329,837**
**Claims priority, application Germany, Dec. 19, 1962, T 23,227**
**8 Claims. (Cl. 188—72)**

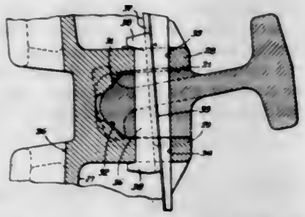


1. A disk-brake system comprising housing means; a brake disk rotatable relatively to said housing means; at least one brake shoe shiftable with respect to said housing means toward said disk; actuating means on said housing for displacing said brake shoe, said actuating means including an actuating lever swingable about an axis generally transverse to the direction of displacement of said disk; adjusting means interposed between said actuating means and said brake shoe for compensating the position of said brake shoe with respect to said actuating means

in accordance with wear of said brake shoe, said adjusting means including elongatable transmission means and pawl-and-ratchet means engageable by said actuating means for extending said transmission means and including an adjusting lever fulcrumed on said axis and entrainable by said actuating lever for operating said pawl-and-ratchet means, said elongatable transmission means including a pair of threadedly interconnected elongated elements; and retaining means for preventing rotation of one of said elements, the other of said elements being journaled in said housing means and axially shiftable for a displacement of said brake shoe, said pawl-and-ratchet means including a toothed wheel on said other of said elements and a pawl portion of said adjusting lever for stepping said wheel and rotating said other of said elements.

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**3,169,609**
**MULTI-GAUGE BRAKE BEAM**
**Eugene G. Opsahl, Chicago Heights, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey**
**Filed Feb. 28, 1963, Ser. No. 261,602**
**2 Claims. (Cl. 188—219.6)**

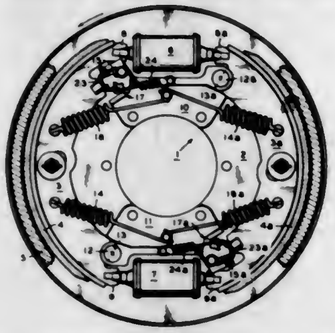


1. In a brake beam structure, a one-piece cast steel truss type brake beam having tension and compression members of T-section to provide front and rear vertical webs and front and rear horizontal legs, said members being interconnected at their medial portions by a strut and converging outwardly therefrom to merge with horizontal webs disposed coplanar with said legs, seat portions extending along the forward portions of said horizontal webs and provided with rearwardly diverging upper and lower flat surfaces disposed above and below the horizontal webs, said seat portions being inclined downwardly and rearwardly at an angle of approximately 10 degrees from the horizontal webs and having vertically spaced rearwardly diverging flat front faces, guide lugs provided on the ends of the brake beam and disposed coplanar with said seat portions, said front vertical webs merging with said seat portions, and said horizontal webs and rear vertical webs merging with said guide lugs, each seat portion having three apertures equidistantly spaced from said front faces and from each other.

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**3,169,610**
**AUTOMATIC ADJUSTOR**
**Robert L. Gold, Pine Lawn, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware**
**Filed July 26, 1963, Ser. No. 297,835**
**7 Claims. (Cl. 188—79.5)**

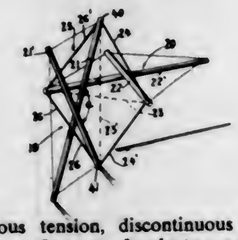
1. In a friction device having a pair of relatively displaceable members adapted for energization into frictional engagement, adjustable means movably supported in said friction device and engaged with one of said friction members for concert displacement therewith, said adjustable means being rotatably driven relative to said one friction member to adjust the displacement thereof, and resiliently urged means pivotally supported on a fixed portion of said friction device for driving engagement with said adjustable means including means normally engaged with said adjustable means to maintain said resiliently



urged means in a position out of driving engagement with said adjustable means.

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**3,169,611**
**CONTINUOUS TENSION, DISCONTINUOUS COMPRESSION STRUCTURES**
**Kenneth D. Snelson, New York, N.Y.**
**(P.O. Box 404, Sagaponack, Long Island, N.Y.)**
**Filed Mar. 14, 1960, Ser. No. 14,491**
**6 Claims. (Cl. 189—34)**



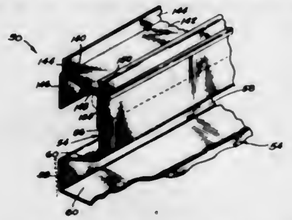
1. A continuous tension, discontinuous compression lattice comprising a first set of only two generally elongate compression members crossing intermediate the ends thereof, the compression members of said first set being arranged generally in a first plane, a second set of only two generally elongate compression members crossing intermediate the ends thereof positioned adjacent said first set and lying generally in a second plane, a network of tension members attached generally to the ends of each of said compression members in both sets and pulling adjacent ends toward each other to form a self-supporting structure, said tension members being attached selectively to separate said compression members in a given set.

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**3,169,612**
**OVERHEAD DOOR CONSTRUCTION**
**Cecil R. Wolf and John P. Holland, Rock Falls, and Paul F. Sharp, Sterling, Ill., assignors to Frantz Manufacturing Company, Sterling, Ill., a corporation of Illinois**
**Filed July 5, 1960, Ser. No. 40,920**
**6 Claims. (Cl. 189—34)**

1. In an overhead door construction, the combination comprising a panel of compressible water-repellent material having a longitudinally extending flange thereon along the top and bottom edges thereof, a plurality of horizontal and vertical frame members surrounding said panel to provide a stiffening and reinforcing frame therefor, each horizontal frame member disposed adjacent to and engaging one of said longitudinally extending flanges on said panel including a longitudinally extending stiffening wall disposed substantially perpendicular to the associated panel flange, a first longitudinally extending holding flange on said wall and extending therefrom substantially perpendicular thereto and generally parallel to said panel flange and disposed therebehind, a second longitudinally extending holding flange on said wall and extending therefrom in the same general direction as said first holding flange and spaced therefrom and generally parallel to said panel flange and disposed in front thereof, said first holding flange extending substantially beyond the longitudinal free edge of said second holding flange and providing a flat surface extending the length there-

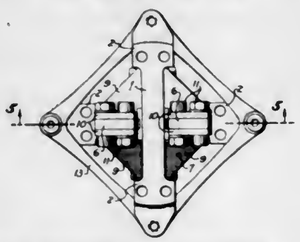




of for supporting thereon said panel flange throughout a substantial area thereof opposite the longitudinal free edge of said second holding flange, said first and second holding flanges being formed of a material having a hardness greater than that of said panel flange, and a gripping member on said second holding flange disposed toward said flat surface on said first holding flange and being pressed into and embedded in said panel flange and urging said panel flange against said flat surface on said first holding flange, whereby to form a strong and continuous and watertight joint between said gripping member and said panel flange.

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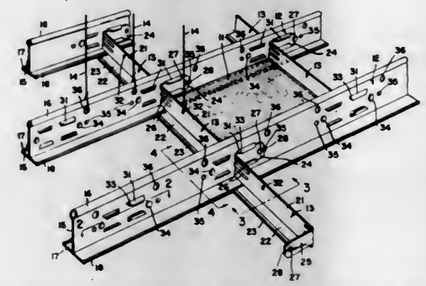
**3,169,613**
**ELASTIC UNIVERSAL JOINT**
**James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Edwin Y. Chow and Robert M. Bamford**
**Filed Mar. 7, 1962, Ser. No. 180,395**
**2 Claims. (Cl. 189—36)**



1. An elastic universal joint, comprising:
(*a*) a pair of mounting bars disposed at right angles in parallel planes, their cross portions defining a thrust axis passing through said planes;
(*b*) a pair of flexure plates extending from each of said mounting bars into axially overlapping relation, the pairs of flexure plates defining right-angularly related planes and defining a central clearance space in the region of said thrust axis between said mounting bars, the extremities of said flexure plates being increased in thickness to form mounting pads;
(*c*) a thrust transmitting block having a core in said clearance space and thrust members extending from the core to the mounting pads of said flexure plates for rigid attachment thereto;
(*d*) the mounting bars extending laterally beyond said thrust transmitting block and terminating in mounting posts;
(*e*) and a torsion and shear-resisting frame surrounding and spaced from said thrust transmitting block and secured to said posts.

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**3,169,614**
**SUSPENDED CEILING GRID STRUCTURE**
**John H. McCoy, Radnor, Pa., assignor to National Rolling Mills Co., Malvern, Pa., a corporation of Pennsylvania**
**Filed Jan. 23, 1962, Ser. No. 168,206**
**4 Claims. (Cl. 189—82)**



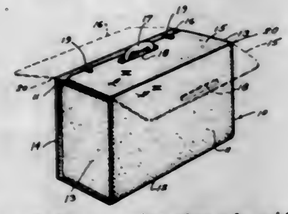
1. A suspended ceiling grid structure adapted to support ceiling tiles or the like, comprising a plurality of main beams arranged in spaced-apart, substantially parallel relationship, each main beam having a central fin and oppositely disposed bottom flanges, cross T's connecting adjacent main beams and having a central fin and oppositely disposed bottom flanges, a locking tongue extending from each end of said cross T's in opposite directions at substantially right angles from the cross T central fin, a pair of facing, parallel, horizontally disposed, vertically aligned holding tabs formed in the central fin of the main beam, the distance between the base portions of said tabs being substantially equal to the width of the locking tongues, thereby holding said locking tongues and preventing vertical movement of the cross T's, said tabs having an entrance portion which is flared outwardly from said main beam fin for easy insertion therein of the locking tongue, said main beam and cross T's having hanger holes formed therein from which extend wire hangers, each tongue having a locking hole formed therein, a locking dimple formed in the central fin of said main beams which registers with and snaps into said locking holes when the locking tongue is fully inserted into its associated holding tabs, and a stop lug projecting from the central fin of said main beams, each tongue having a stop recess formed in its end for contacting its associated stop lug to aid in positioning said tongue in its fully inserted position.

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**3,169,615**
**CARRYING CASE WITH FREELY HINGED CLOSURE**
**Leo Stein, Chicago, Ill., assignor to Stein Bros. Mfg. Co., Chicago, Ill., a corporation of Illinois**
**Filed Dec. 27, 1961, Ser. No. 162,602**
**7 Claims. (Cl. 190—48)**

4. In a luggage bag including sides with opposite movable closure flaps adapted to overlap each other to close an open end of the bag, a pivotal hinge connection between an edge of each side and an edge of its associated flap comprising an elongated hinge, there being one on each side of the bag at its open end, said sides and flaps being made of sheet material and said hinge including plates connected by hinge means and one plate having a portion extending in lapping engagement with the sheet material of a side and the other plate having a portion extending in lapping engagement with the sheet material of a flap, said plate portions each having spaced

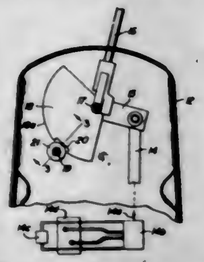
holes each of a size to receive a sewing machine needle and said hinge plate portions being secured to said flap



and side by stitching passing through said holes and through the sheet material of said flap and side.

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**3,169,616**
**APPARATUS FOR PREVENTING PREMATURE SHIFTING OF GEARS**
**Rollo N. Hunsaker, Ray, Ariz., and Sven E. Johansson, Goteborg, Sweden, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York**
**Filed May 11, 1962, Ser. No. 194,079**
**10 Claims. (Cl. 192—4)**



10. Apparatus for preventing premature shifting of gears from one direction to a reverse direction in equipment which includes

gear shifting means having at least one forward drive position and a reverse drive position, and

braking means for said equipment,

said apparatus comprising, in combination,

means normally operable to lock said shifting means in a neutral position between a forward drive position and a reverse drive position, said lock means including latch means associated and movable with the gear shift means, cooperating latch means placed in position for engaging the first name latch means when said gear shift means is its neutral position, and means normally urging said cooperating latch means toward locking engagement with the other latch means; and

means arranged to operate concurrently with said braking means for unlocking the lock means and thereby permitting shifting from a forward drive position to a reverse position and vice versa, said last-named means including means for moving said cooperating latch means away from locking engagement with the other latch means, and means operable by the braking means for actuating the said means for moving the cooperative latch means.

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**3,169,617**
**ELECTROMAGNETICALLY OPERATED DUAL CLUTCH DRIVE**
**Karl P. Schubert, Cleveland Heights, Ohio, assignor to The National Acme Company, a corporation of Ohio**
**Filed June 19, 1961, Ser. No. 118,013**
**5 Claims. (Cl. 192—84)**

1. A two-speed clutch drive, comprising in combination, a frame, input means and output means journaled on said frame, one of said means including first and second rotary members disposed on opposite sides of a central rotary member as the other of said means, first and second friction clutches each including first and second engageable clutch parts, means mounting said first clutch part of said first clutch rotationally fixed relative to said first rotary member, means mounting said first clutch part of said second clutch rotationally fixed relative to said second rotary member, means mounting said second clutch parts rotationally fixed and axially slidable relative to said central rotary member, said last named means comprising a composite shifter

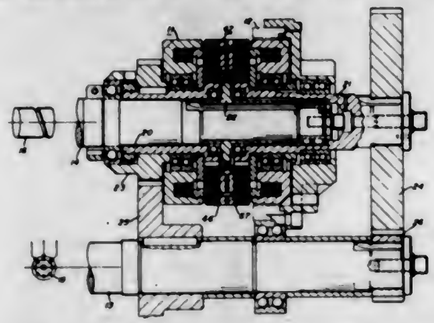
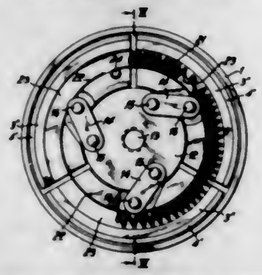


plate having first and second magnetic disc members on opposite sides of a non-magnetic plate, and first and second fixed clutch coils on opposite sides of said composite shifter plate, whereby flux from said first coil links said first magnetic disc plus said first clutch to urge same into frictional engagement, and whereby substantially simultaneous de-energization of said first coil and energization of said second coil establishes a flux path from said second coil linking said second magnetic disc plus said second clutch to axially move said composite shifter plate toward said second coil to engage said second clutch and to aid rapid disengagement of said first clutch.

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**3,169,618**
**CENTRIFUGALLY ACTUATED CLUTCH**
**Willy Hoffmann, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany**
**Filed Jan. 18, 1962, Ser. No. 166,993**
**Claims priority, application Germany, Jan. 20, 1961, F 33,012**
**3 Claims. (Cl. 192—105)**



1. A centrifugally actuated clutch comprising

(*a*) a driving member having an axis and being mounted to rotate about said axis,

(*b*) a driven member rotatable about said axis,

(*c*) a plurality of coupling members in a substantially adjacent and circular relationship, each of said coupling members being provided with an arcuate groove, said grooves forming jointly an annular channel having an inner wall portion directed toward said axis,



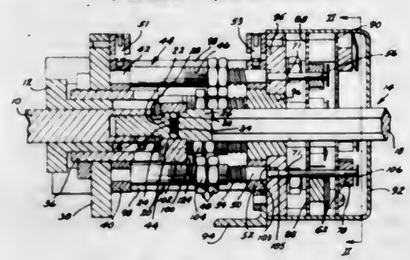
(*d*) pivot means pivoting said coupling members to said driving member so as to allow said coupling members, during rotation of said driving member and upon development of centrifugal forces, to swing outwardly and inwardly in different directions into frictional engagement with said driven member.

(*e*) resilient means provided to act on said coupling members in opposition to said centrifugal forces and thus to urge said coupling members to swing inwardly or backwardly, said resilient means including a tension spring member received in said annular channel and forming a loop therein, and

(*f*) friction means engaging said coupling members for frictionally retarding the swinging outward and inward movements of said coupling members, said friction means including an elongated friction member circularly received in said channel to be in contact with said inner wall portion.

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**3,169,619**
**MECHANICAL POSITIONING DEVICE**
**Clair B. Alexander, Jr., Akron, and Guy S. Mahan, Hudson, Ohio, assignors to International Basic Economy Corporation, New York, N.Y., a corporation of New York**
**Filed June 26, 1961, Ser. No. 119,694**
**3 Claims. (Cl. 192—143)**

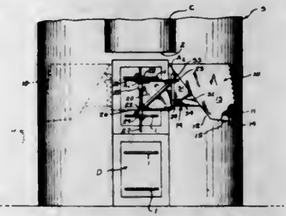


1. A sequential linear positioning device comprising two spaced mounting plates having a plurality of stop supports extending therebetween around a centrally disposed shaft; means for mounting said shaft and stop supports for relative reciprocal movement; a plurality of stop elements mounted on said stop supports; a striker member rotatably mounted on said shaft between said plates but axially secured thereto; resilient means for holding said striker member in different rotatable positions in which the striker member is aligned with different ones of said stops; said resilient means including the bore of said striker member, which bore surrounds said shaft, being rectilinear in cross section providing a plurality of interconnected walls with junctures therebetween and resiliently biased detents mounted on said shaft and biased outwardly against said walls; indexing means for forcing against the bias of said resilient means the rotation of said striker member to said different rotatable position in response to relative reciprocable movement of said shaft and stop supports; said indexing means including a ratchet and a cooperating trip dog, one of said ratchet or trip dog being mounted securely to one of said plates between the plates and the other to said striker member and each having cam surfaces which engage each other to cause the forced rotation of said striker member.

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**3,169,620**
**SWINGABLE SILO SPOUT**
**Paul Patz, Pound, Wis.**
**Filed Apr. 1, 1963, Ser. No. 269,582**
**3 Claims. (Cl. 193—2)**

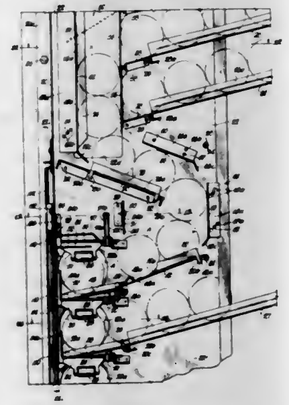
2. An ensilage directing spout assembly for a vertical silo chute of the type having a lower discharge opening adjacent a silo, said spout assembly comprising, a generally funnel shaped spout having an upper material receiving end for being positioned directly beneath said lower discharge opening, said spout also having a smaller lower end which is offset from said upper end, said spout having a downwardly and forwardly inclined rear wall and downwardly converging side walls, said side wall defining a pair of rear corners with said rear wall, double



hinge mounting means for mounting said spout to said silo for horizontal swinging and lateral adjustability of said spout relative to said chute, said mounting means including an intermediate member, a vertical pivot axis between said member and said spout, said pivot axis being located adjacent one of said corners, said mounting means having a second vertical pivot axis spaced from said first axis, and means for securing said mounting means to said silo.

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**3,169,621**
**SELECTIVE BOTTLE VENDING MACHINE**
**Fred F. Johnson and Richard Earl Rutledge, Sr., Kansas City, Mo., and Frank J. Thomas, Overland Park, Kans., assignors to Selectivend Corporation, a corporation of Missouri**
**Filed Feb. 23, 1962, Ser. No. 174,959**
**20 Claims. (Cl. 194—2)**

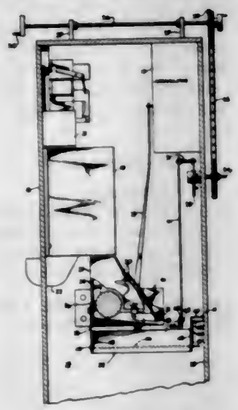


1. In a selective vending machine, a plurality of article storage magazines, a different vending station for receiving articles from each magazine, each station having a passageway via which articles can be withdrawn from that station, a gate for each passageway, mechanism common to the gates for all of said passageways normally locking all of same in closed position thereby to prevent withdrawal of articles from any station, coin controlled means for unlocking said mechanism thereby to permit the opening of any gate, said mechanism having means controlled by the opening of any gate for preventing the concurrent opening of any other gate, the article storage magazine for one station comprising an upright passageway communicating at its lower end with said one station, a plurality of superposed article storage

shelves, each of said shelves being inclined for communicating at its lower end with said upright passageway to feed articles thereinto, a pair of vertical panels normal to one another defining two sides of said upright passageway, means adjustably supporting each of said panels for horizontal movement in a direction normal to its own plane thereby to adjust the effective horizontal cross section of said upright passageway, said supporting means for one of the panels comprising a stationary frame having a pair of vertically spaced generally horizontal ledges, and a pair of brackets on said one panel having notched lower edges received on the respective ledges.

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**3,169,622**
**COIN SEGREGATION BOX FOR COIN OPERATED FLUID DISPENSING DEVICES**
**Vera W. West, Fort Collins, Colo., assignor to Pat Griffin, Fort Collins, Colo.**
**Filed Jan. 7, 1963, Ser. No. 249,692**
**4 Claims. (Cl. 194—3)**

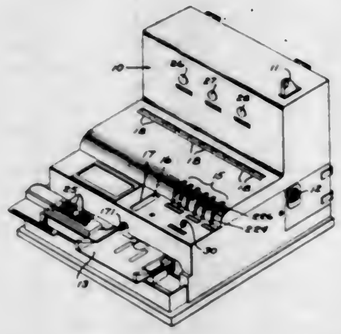


1. In a coin controlled dispensnig apparatus, a coin slot, a coin chute in communication with said coin slot, an impulser in communication with said coin chute along which the coins pass to instigate a measuring operation of a quantity of liquid to be dispensed, means conditioning the apparatus to dispense preselected quantities of liquid, and means for collecting and segregating the coins deposited for each individual dispensing operation and retaining the coins segregated until the conditioning of the apparatus for a next succeeding dispensing operation comprising a coin collecting and segregating box having a drop bottom, and a link pivotally connected from said conditioning means to said bottom, retaining said bottom in a closed position when the mechanism is in condition to receive coins and holding said bottom in a closed condition during the dispensing of a selected quantity of liquid, and dropping said bottom to accommodate the coins segregated to intermingle with the previously deposited coins upon resetting the apparatus for a next succeeding operation.

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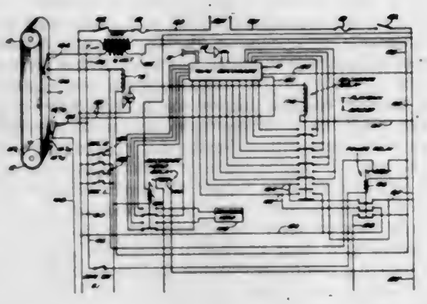
**3,169,623**
**MONEY REGISTERS**
**Donald H. Mackenzie, New York, N.Y. (101 Forest Road, Douglaston 63, N.Y.), and Kenton D. McMahan, Scotia, and John Cherrybone, Roslyn Heights, N.Y.; said McMahan and said Cherrybone assignors to said Mackenzie**
**Filed July 27, 1959, Ser. No. 829,872**
**22 Claims. (Cl. 194—9)**

1. A coin operated machine for registering coin deposits comprising a coin collection mechanism including electrical responsive means accumulating increments of a predetermined amount of deposits, means for supporting a record sheet, recording elements, manually operable means for entering data in said machine describing the deposit transaction and for setting said elements accordingly, and means responsive to the actuation of said coin collection mechanism upon coin deposit therein and said electrical responsive increment accumulating means for operating said recording elements on said record sheet to record therein said transaction representative of the increments.



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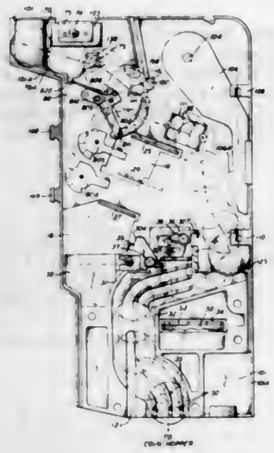
**3,169,624**
**AUTOMATIC COIN-CONTROLLED SOUND RECORDING APPARATUS**
**John A. Baker, North Hollywood, Lester A. Olson, Los Angeles, and Conrad M. Fritz, West Los Angeles, Calif., assignors to Auto-Photo Company, Los Angeles, Calif., a corporation of California**
**Filed June 20, 1960, Ser. No. 37,130**
**24 Claims. (Cl. 194—15)**



1. Apparatus for making a permanent recording of a soundtrack utilizing cyclically-operating apparatus employing coin-controlled means to initiate an operating cycle, said apparatus comprising a first erasable type recorder equipped with a continuous loop of magnetic tape and a second permanent record recorder operatively connected to record a voice track temporarily recorded on said erasable recorder, microphone means for conducting sound into said first recorder for temporary recording therein, coin-controlled means for initiating an operating cycle of said first and second recorders, and means operable automatically upon completion of the recording of the soundtrack by said second recorder and upon deposit of the proper coins in said coin-controlled means to condition both of said recorders for a new cycle of operation.



**3,169,625**
**COIN CHUTE FOR COIN OPERATED TELEPHONE**
**Jerry L. Peterson, Arlington, Va., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Aug. 21, 1962, Ser. No. 218,342**
**12 Claims. (Cl. 194—44)**

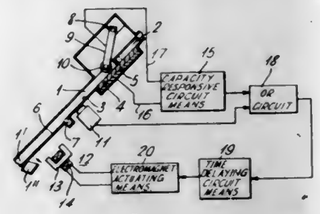


1. A coin chute for receiving and testing coins deposited in coin operated apparatus comprising, in combination, a plurality of superimposed plate members defining coin channels for directing the travel of deposited coins through said chute, said plate members including a relatively fixed plate member having an aperture therein and mounting means thereon for securing the others of said plate members thereto, a second plate member pivotally mounted on said fixed plate, one side of said second plate and one side of said fixed plate defining a first channel for the deposit of all coins, a third plate member pivotally mounted on said fixed plate including means for applying an eddy current test to dimes and quarters as said dimes and quarters are guided between a second channel between said fixed plate and said third plate, means for deflecting nickels through said aperture from said one side of said fixed plate to the opposite side of said fixed plate, and a fourth plate member affixed to said opposite side of said fixed plate thereby to form a third channel for nickels operative after the deflection of said nickels by said deflecting means, said fourth plate including means for applying an eddy current test to nickels in said third channel, whereby said chute may readily be converted for receiving both magnetic and nonmagnetic nickels by the removal of said last named eddy current test means.

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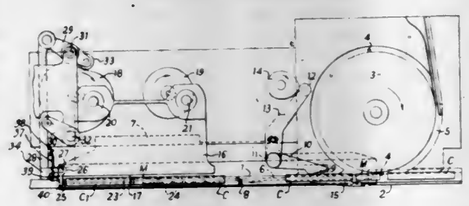
**3,169,626**
**COIN SELECTOR**
**Takesi Miyagawa and Kenichi Kitajima, Nagaoka-cho, Otokuni-gun, Kyoto-fu, Japan, assignors to Tateisi Denki Kabushiki Kaisha, Ukyo-ku, Kyoto, Japan, a corporation of Japan**
**Filed Nov. 22, 1963, Ser. No. 325,732**
**Claims priority, application Japan, Nov. 27, 1962, 37/70,982, 37/53,178; Nov. 28, 1962, 37/71,178; Mar. 22, 1963, 38/15,061**
**8 Claims. (Cl. 194—100)**

1. A coin selector comprising a coin selection passage having a coin reject path leading therefrom; a dielectric plate having one side exposed to said passage and flush with the inner surface thereof to receive a coin sliding along said inner surface; an electrode connected to the opposite side of said dielectric plate; electrical coin-contact means disposed in said passage opposite the exposed side of said plate and engageable by said coin whereby upon positioning of said coin therebetween a condenser is formed comprising the contact means, the coin, the dielectric plate and the first electrode; means for deflecting said coin into said reject path; and capacity responsive circuit means having inputs connected to said electrode and to said contact means and an output connected to said deflecting means and an output connected to said deflecting means and operable upon occurrence of a predetermined value of capacity in said condenser to actuate said deflecting means to reject said coin.



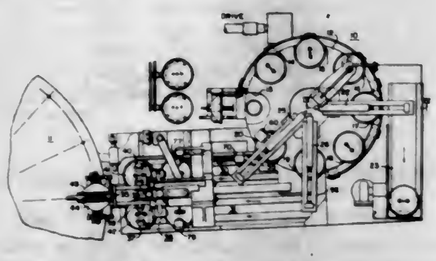

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**3,169,627**
**APPARATUS FOR MAKING MOUTHPIECE CIGARETTES**
**Tom Rowlands, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a British company**
**Filed Apr. 30, 1962, Ser. No. 190,854**
**Claims priority, application Great Britain, May 5, 1961, 16,382/61**
**2 Claims. (Cl. 198—31)**



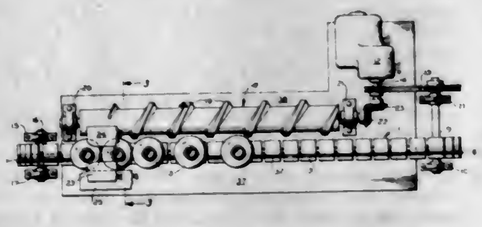
1. In a mouthpiece cigarette making machine, apparatus for forming an aligned and abutted group of at least three components which are to be united together for severing into two mouthpiece cigarettes, comprising a foraminous conveyor on which said components are conveyed in a lengthwise direction, a suction chamber having a narrow lengthwise extending port and communicating with said conveyor through said port whereby suction is operable through the foramina of said conveyor in communication with said port so as to hold the components of said group in aligned relationship, a pusher member adapted to push said components sideways over the surface of said conveyor, a stop member actuated by said pusher member during its pushing stroke to occupy a position in which the lengthwise movement of said group is arrested and further actuated by said pusher member to retract from said position during the return stroke of said pusher member, said port having a portion extending in a transverse direction positioned to cause suction to urge the two trailing components to continue their lengthwise movement while said pusher member moves them sideways and after the leading component has moved out of suctional influence of said port, whereby said components enter an abutting and aligned relationship.

**3,169,628**
**LAMP CONVEYOR MACHINE**
**Chester O. Merchant, East Longmeadow, Mass., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 12, 1963, Ser. No. 287,267**
**6 Claims. (Cl. 198—31)**



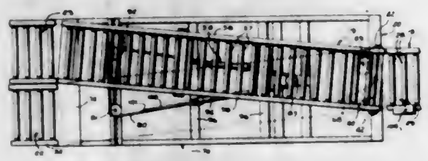
1. A machine for conveying and transferring lamp reflector bodies moving in sequence on a single source multiple station conveyor to a pair of transfer conveyors comprising; a multiple station source conveyor having means to intermittently move and index a plurality of lamp reflector bodies successively in sequence to a plurality of stations including first and second transfer stations; a first continuously moving transfer belt at said first transfer station; a second continuously moving transfer belt at said second transfer station; first ejector means at said first transfer station to be operated to transfer a body on said source conveyor at said first transfer station to said first moving transfer belt; second ejector means at said second transfer station to be operated to transfer a body on said source conveyor at said second transfer station to said second moving transfer belt; first control means to be operated responsive upon each index movement of said source conveyor to cause said first ejector means to operate; and second control means responsive to the operation of said first control means and also the presence of a body to be transferred carried by said source conveyor at said first transfer station to be operated to cause said second ejector means to be operated to transfer a body carried by said source conveyor at said second transfer station to said second transfer belt.

**3,169,629**
**SPOTTING CONVEYOR FOR BOTTLES AND THE LIKE AND ARTICLE FOR USE THEREWITH**
**Benjamin F. Randrup, Pleasant Hill, Calif., assignor to John Burton Machine Corporation, Concord, Calif.**
**Filed Nov. 13, 1962, Ser. No. 236,961**
**7 Claims. (Cl. 198—33)**



1. In a spotting device that includes article rotating means for use with an article having a bottom wall provided with a downwardly opening groove therein comprising:
an elongated conveyor having an article supporting surface,
an independent spotting element carried by said surface and extending a substantial distance along the active conveyor run and adapted to be received in said groove when said article is in a predetermined angular position relative to said conveyor,
and means for removably securing said element to said conveyor to permit removal therefrom when desired.

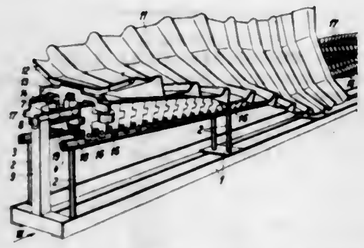
**3,169,630**
**CONVEYOR MECHANISM**
**Milton J. Christiansen, deceased, late of Brookfield, Ill., by Blanche E. Christiansen, executrix, Brookfield, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Apr. 16, 1962, Ser. No. 189,224**
**1 Claim. (Cl. 198—38)**



In a conveyor system having a main conveyor, a first pair of branch conveyors disposed at one elevation, and a second pair of branch conveyors disposed at a different elevation in vertically spaced and aligned relation to the first branch conveyors, a mechanism for selectively advancing articles from the main conveyor to the branch conveyors which comprises:
a stationary frame disposed between the main conveyor and the branch conveyors;
a carrier supported at one end on said stationary frame for pivotal movement about a vertical axis adjacent to the main conveyor;
roller means for supporting the other end of said carrier for horizontal pivotal movement on said frame;
a shiftable conveyor section mounted on said carrier for horizontal pivotal movement therewith and supported at one end for vertical pivotal movement about a horizontal axis intersecting said vertical axis;
toggle links interconnecting said carrier and said conveyor section for supporting the free end of said conveyor section in an upper position level with the upper branch conveyors when said toggles are in straight condition and for moving said conveyor section to a lower position with the free end level with the branch conveyors;
a first fluid-operated actuating means mounted on said carrier for actuating said toggle links to and from said straight condition;
a horizontally disposed endless chain supported on said frame for movement of a portion of the chain transversely of said frame and said conveyor section;
means interconnecting said portion of said chain with said carrier;
a second fluid-operated actuating means mounted on said frame for moving said chain back and forth through a predetermined distance to effect the horizontal pivotal movement of said carrier and said conveyor section thereon to predetermined positions with the free end of said conveyor section in alignment with the branch conveyors; and
means including a plurality of control elements disposed at different elevations adjacent the main conveyor and variously actuatable by different articles being conveyed for effecting the selective operation of said first and said second actuating means.

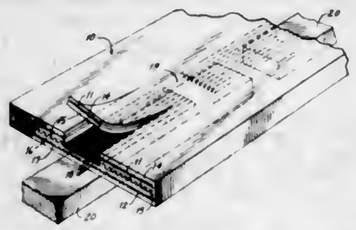


**3,169,631**
**CONVEYOR**
**Heinrich Knappe, Bad Oeynhausen-Eidinghausen, Germany, assignor to Friedrich Stubbe, Vlotho an der Weser, Germany**
**Filed Aug. 16, 1961, Ser. No. 131,752**
**Claims priority, application Germany, Aug. 27, 1960, St 16,846**
**5 Claims. (Cl. 198—187)**



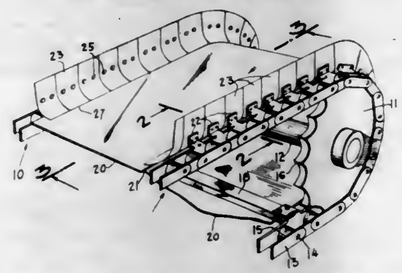
1. In a conveyor: movable means for receiving and carrying goods to be conveyed, said movable means being provided with roller means and being deformable in longitudinal direction of said conveyor along a helical line so as to tilt a portion of said movable means to one side of said conveyor for unloading goods therefrom, supporting means arranged in longitudinal direction of said conveyor for supporting said movable means, said supporting means including rail means, at least one portion of said rail means being composed of a plurality of individual relatively short successively and adjacently arranged rail sections tiltable about an axis extending in longitudinal direction of said conveyor to permit deformation of said rail portion in conformity with the desired helical deformation of said movable means, and means for controlling the tilting angle of said rail sections.

**3,169,632**
**MAGNETIC BELT AND TRAINER**
**Arthur F. Kain, Mulberry, Fla.**
**Filed Feb. 28, 1962, Ser. No. 176,386**
**2 Claims. (Cl. 198—193)**



1. A conveyor belt of substantial width formed of an overlying, relatively thin ply of fabric and an underlying, relatively thin ply of fabric, an intermediate fabric ply which is thicker than each of the individual overlying and underlying plies, said intermediate fabric ply having a central cut-away portion to provide a single, narrow, longitudinal recess in such intermediate fabric ply, a narrow group of longitudinally disposed, side-by-side related, twisted wire cables of magnetically responsive material received into and filling such cut-away portion and serving to guide the belt when such belt is operated with an adjacent, centrally disposed magnet means fixed independently of the belt, said plies and side-by-side related wire cables being united by a body of friction rubber vulcanized thereon and therethrough to form in effect an integral belt structure.

**3,169,633**
**CONVEYOR SEALING MEANS**
**David S. Baker, 475 5th Ave., New York 17, N.Y.**
**Filed Dec. 14, 1959, Ser. No. 859,488**
**12 Claims. (Cl. 198—204)**



1. A carrier which comprises an endless belt and mounting means for mounting said belt for travel in an orbit and which has in combination therewith a side wall disposed along and adjacent at least one margin of said belt, said side wall comprising a succession of overlapping pieces of flexible resilient sheet material presenting a common, substantially linear margin, elongated support means adapted and mounted for travel in contiguous relation with respect to said margin of said belt through at least a portion of said orbital travel of said belt, and means securing said pieces to said support means with said linear margin of said pieces in resilient pressure contact with said belt effected by flexure of said pieces.

**3,169,634**
**BARN GUTTER CLEANER**
**John K. Weigand and Cleone H. Weigand, both of Rte. 1, Allenton, Wis., assignors of three-sevenths to Carl F. Sutherland, Madison, Wis.**
**Filed Nov. 25, 1957, Ser. No. 698,714**
**5 Claims. (Cl. 198—224)**

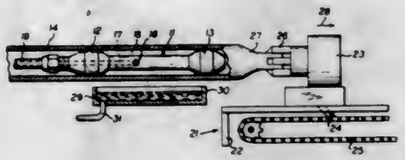


1. A barn gutter cleaner comprising a load paddle in the gutter, a motor and means connecting the motor to the load paddle for moving it along the gutter, and means for reversing the direction in which said motor drives said paddle including means for sensing litter in the gutter and responsive thereto for actuating the reversing means, said means for sensing litter in the gutter comprising a jam paddle driven by the motor and disposed at an oblique angle to a wall of the gutter and displaceable therefrom under pressure of the litter to engage said wall to wedge thereagainst.

**3,169,635**
**METHOD OF TESTING TUBING AND APPARATUS THEREFOR**
**Charles Prindle, Mount Kisco, N.Y., assignor to Robinson Technical Products, Incorporated, Teterboro, N.J., a corporation of New York**
**Filed Dec. 28, 1960, Ser. No. 78,911**
**20 Claims. (Cl. 205—7)**

1. The method of testing a relatively long piece of tubing which comprises positioning a relatively short test core having axially spaced end portions within the tubing and coaxial therewith, said end portions extending radial-

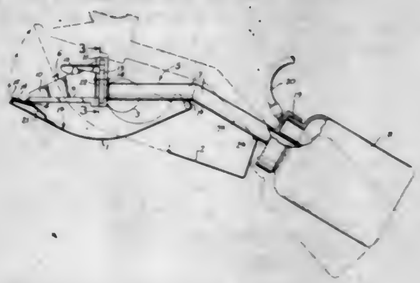
ly outwardly to contiguous relationship with the tubing, providing fluid under test pressure between the core and tubing and between said core end portions while leaving the tubing without said end portions free of fluid under test pressure, said core end portions providing a test pressure seal between the tubing and test core, and moving the tubing axially relative to the core while maintaining said fluid under test pressure, thereby exposing the



tubing to test pressure by successively exposing increments of length of the tubing to the test pressure so that throughout the testing a length of the tubing between the end portions is exposed to the test pressure while the remaining length of the tubing is free of exposure to fluid under test pressure, the outside diameter dimension of the core being undersize with respect to the inside diameter dimension of that tubing.

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**3,169,636**
**AUTOMOBILE ASH TRAY**
**George Webber, 1010 NE. Prescott St., Portland 11, Oreg., assignor of one-half to Alfred S. Parkhurst, Portland, Oreg.**
**Filed May 3, 1960, Ser. No. 26,551**
**6 Claims. (Cl. 206—19.5)**



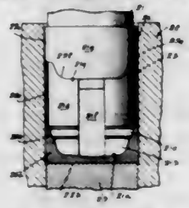
5. In an evacuatable ash tray,
a wall for the ash tray comprising laterally spaced inner and outer wall sections mounted with a space between the wall sections,
discharge apertures in said inner and outer wall sections defining a passage for the flow of air from the ash tray out through said wall,
a vacuum conduit connected to said wall of the ash tray operable to draw air through said apertures, and
valve mechanism movable to two positions, one operatively covering the discharge aperture in said outer wall section and another uncovering said aperture,
said valve mechanism comprising a reciprocating blade member including a closure portion disposed in the space between said wall sections which is movable transversely of said apertures, and a free-floating valve disc mounted on said closure portion of said blade member having a thickness which is less than the thickness of said closure portion,
said free-floating valve disc registering with said discharge aperture in said outer wall section when said valve mechanism is in its position covering said aperture,
said disc being loosely mounted in said closure portion of the blade member and being freely responsive to pressure changes in said conduit to promote sealing of said aperture in said outer wall section.

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**3,169,637**
WITHDRAWN

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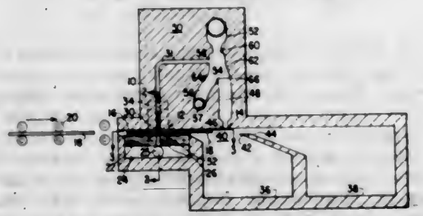
**3,169,638**
**PISTON MANUFACTURE**
**William C. Reinberger, Independence, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Nov. 27, 1961, Ser. No. 155,014**
**9 Claims. (Cl. 207—10)**



1. The method of making a cup-shaped article which comprises endwise impacting a metal slug to form a flattened biscuit with a dome top and a tapered bottom, inserting the biscuit in a die sized to position the apex of the dome top at the axial center of the die and to provide a space surrounding the tapered bottom, inserting a punch in the die having a side wall spaced from the die, a nose initially engaging the apex of the dome top of the biscuit in the die and a shoulder for limiting flow of biscuit metal between the punch and die, forcing the punch into the biscuit to initially flow biscuit metal laterally into the spaces between the punch and die provided by the dome biscuit top and the tapered biscuit bottom to thereby plasticize the metal, continuing the forcing of the punch into the biscuit to flow the plastic metal between the punch and die and against the shoulder of the punch, and extruding flash metal of controlled thickness beyond the shoulder of the punch to accommodate excess biscuit metal without damaging the punch and die.

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**3,169,639**
**FLUID SORTER**
**Peter Bauer, Rockville, and Edwin U. Sowers III, Silver Spring, Md., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Aug. 19, 1963, Ser. No. 303,031**
**17 Claims. (Cl. 209—74)**



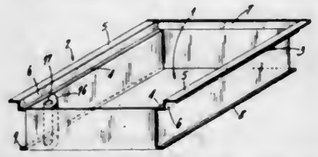
1. Fluid apparatus for sorting a record card according to the absence or presence of a perforation in a sorting column thereon, which comprises:
(*a*) a record card sensing station which includes a first fluid opening located on one side of said record card so that it is blocked or unblocked according to the absence or presence, respectively, of a perforation in said sorting column;



(*b*) fluid source means for producing fluid flow through said first fluid opening when it is unblocked by a perforation;
(*c*) a record card sorting station which includes at least first and second record card collecting channels and a second fluid opening located at a side of said record card for applying fluid pressure thereto to direct said card into one of said collecting channels;
(*d*) means to convey said record card through said sensing station to said sorting station;
(*e*) a pure fluid amplifier including a power stream input channel, an interaction chamber, a pair of power stream output channels, a first of which is connected to said second fluid opening, and at least one control stream input channel for receiving a fluid control signal to thereby deflect the power stream from one power stream output channel to the other power stream output channel; and
(*f*) fluid means connecting said first fluid opening with said pure fluid amplifier control stream input channel for applying a fluid control signal to said control stream input channel.

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**3,169,640**
**MULTIPLE-PURPOSE STOCKING ASSEMBLY**
**Jacques Jean Favre, Les Coquettes, Valreas, Vaucluse, France**
**Filed Oct. 23, 1962, Ser. No. 232,360**
**Claims priority, application France, Oct. 28, 1961, 1,837, Patent 1,305,749; Apr. 10, 1962, 1,887, Patent 1,305,749; Sept. 6, 1962, 1,906, Patent 1,305,749**
**6 Claims. (Cl. 211—126)**

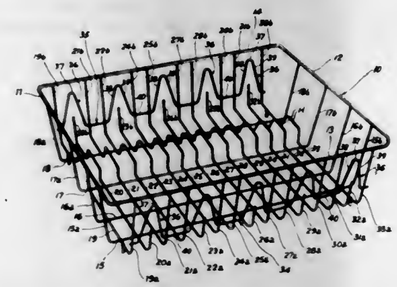


1. Stocking assembly comprising stocking units of substantially box shape, all identical to each other, each of the stocking units having at least two projecting parallel lateral wings, formed at its upper part, said wings each having a horizontal ledge delimiting a slide, and at least two lower lateral wings parallel to said upper lateral wings, but of smaller size, and at least one internal bossage having a vertically drilled hole, a supporting element for positioning in said bossage holes to connect said stocking units and at least one set of separating elements for positioning about said supporting element and between the stocking units so that said stocking units can be displaced the one from the other independently of the units that are adjacent to them.

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**3,169,641**
**WIRE DISH DRAINER WITH GLASS HOLDING ELEMENTS**
**George S. Chapman, 1712 Park Blvd., Erlton, N.J.**
**Filed Apr. 12, 1962, Ser. No. 186,953**
**4 Claims. (Cl. 211—74)**

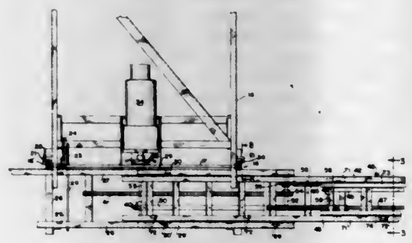
1. A dish drainer of basket-like structure having a base, two opposite sides and two opposite ends, and comprising an upper peripheral frame, a plurality of spaced longitudinal wire members having opposite upstanding end portions forming said opposite ends of said structure, a plurality of spaced transverse wire members having opposite upstanding end portions forming said opposite sides of the structure, portions of said longitudinal and transverse wire members being in crossing relation and constituting components of said base, and a plurality of container holding elements disposed between certain of said upstanding wire portions, whereby each of said holding elements is flanked by two of said upstanding supporting wire portions, said holding elements being spaced below said frame and each comprising an upper apical portion, two downwardly extending diverging legs and two substantially horizontal sections extending in opposite directions from



said respective legs and attached to the flanking upstanding wire portions, the narrowest portion of said holding elements being at the apical portion, whereby the laterally opposite spaces between each holding element and the flanking upstanding wire portions are of progressively decreasing proportions from said apical portion downwardly, said upper apical portion of said holding elements being in the planes defined by said respective flanking upstanding supporting wire portions.

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**3,169,642**
**ROD CHARGING APPARATUS**
**Milton W. Clark, Rockville Centre, N.Y., assignor to The Anaconda Company, a corporation of Montana**
**Filed Mar. 1, 1961, Ser. No. 92,581**
**4 Claims. (Cl. 214—1)**

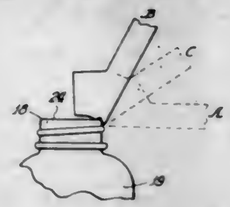




1. Rod mill charging apparatus comprising a frame, an elongated carrier longitudinally displaceable on said frame, driving means for displacing said carrier between

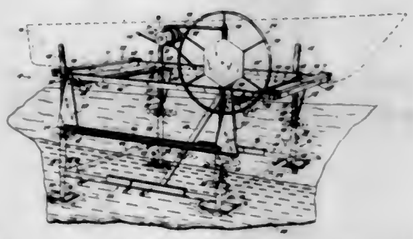
retracted and extended positions, a rod-supporting section at one end of said carrier adapted to advance fully into said mill upon displacement of said carrier to its extended position, a pivotal cradle on said rod-supporting section for supporting at least one rod substantially longitudinally thereon, a cam mounted independently of said rod-supporting section, a trip element positioned on said rod-supporting section to engage said cam when said carrier is in its extended position, and a linkage connecting said trip element with said cradle for pivoting said cradle and displacing said rod therefrom when said trip element engages said cam.

**3,169,643**
**ARTICLE HANDLING DEVICE**
**Dale N. Roberts, 2 E. 155th St., Harvey, Ill.**
**Filed Dec. 12, 1961, Ser. No. 158,912**
**8 Claims. (Cl. 214—1)**



1. A device for handling articles of the type which may be stored in a container having a lip defining an open mouth for the container comprising a plane surface platform having a tapered end portion and a guide secured to said platform in arched relation to said tapered end portion of said platform, said guide defining a large opening adjacent the non-tapered portion of said platform and a small opening adjacent the small end of said tapered portion of said platform for guiding articles moved along said platform by force of gravity when the device is inclined to direct the articles through the small guide opening, said platform having a lateral pivot groove formed in the edge of the small end thereof adapted for pivotally receiving the lip of the container to allow the device to be pivoted about the lip to an inclined position with the small guide opening over the container mouth, said guide having the upper portion of the small end thereof extending partially beyond the small end of the platform for directing articles passing through the small guide opening toward the plane of said platform to cause the articles to flow in a direction substantially toward said platform.

**3,169,644**
**PORTABLE BOAT HOIST**
**Byron L. Godbersen, Ida Grove, Iowa**
**Filed Feb. 12, 1964, Ser. No. 344,497**
**2 Claims. (Cl. 214—1)**



1. A portable boat hoist comprising in combination:
a base frame;
a pair of vertically disposed posts at each end of said base frame;
a plate having spaced ends and pivotally connected intermediate its ends to one of said posts;
a trio of lift members pivotally connected to the remaining posts;
means interconnecting said plate with one of said lift members at an opposite end of the base frame for transmitting movement therebetween;
a first bar interconnecting one end of said plate with a transversely spaced lift member;
another bar interconnecting said other pair of lift members;
platform means interconnecting said bars;
lift means mounted on said base frame and attachable to said first bar and operable to raise said platform means above said base frame a sufficient distance to permit the boat to float therebetween, said lift means operable to lower said platform means from said raised position to a position on top of said boat, and said lift means attachable to an end of said plate opposite said one end for raising said base frame toward said platform and against the boat underside.

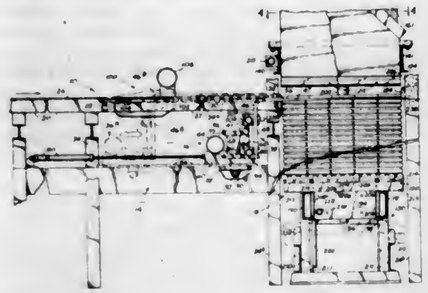
**3,169,645**
**DRILL PIPE AND COLLAR LAYING DOWN MACHINE**
**Richard B. Freeman, Sr., 1230 W. Main St., Houma, La.**
**Filed Aug. 11, 1961, Ser. No. 130,927**
**7 Claims. (Cl. 214—2.5)**



1. A machine for laying down drill pipe and collars as the drill joints are withdrawn from an oil well and disassembled by the derrick equipment comprising, an elongated base assembly, an elongated carriage track assembly mounted in overlying relation to the base assembly, means interconnecting the base assembly and the carriage track assembly for vertically guiding the carriage track assembly while preventing lateral movement in relation to the base assembly, means extending between the base assembly and the carriage track assembly for raising and lowering the carriage track assembly, a longitudinally movable carriage mounted on said carriage track assembly for receiving the lower end of a drill pipe joint from the derrick equipment when the carriage is at one end of the carriage track assembly and movable along the carriage track assembly as the drill pipe joint is lowered thereby positioning the drill pipe joint in a horizontal position, releasable means on the carriage for retaining the drill pipe joint in horizontal position on the carriage track assembly until the carriage reaches a point adjacent the other end of the carriage track assembly, and skid means operatively connected to the base assembly and the carriage track assembly for directing the drill pipe joint onto a track at different locations in accordance with the vertical position of the carriage track assembly, said means for raising and lowering the carriage track assembly including a pair of lift arm assemblies hingedly attached to the base assembly and having free ends rollingly engaging the undersurface of the carriage track assembly, and means connected to the lift arm assemblies lor swinging the lift arm assemblies in a vertical plane thereby raising and lowering the carriage track assembly.



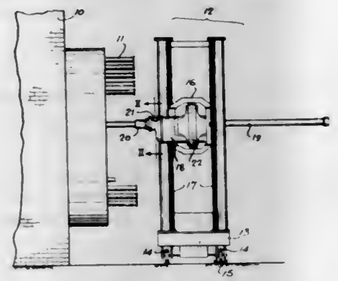
**3,169,646**
**LUMBER STACKER**
**Howard Carl Mason, Oregon City, Oreg., assignor to The Fryer Corporation, Portland, Oreg., a corporation of Oregon**
**Filed Aug. 18, 1961, Ser. No. 132,453**
**13 Claims. (Cl. 214—6)**



1. In mechanism of the character described for stacking lumber: conveyor means with feed and off-bearing ends comprising a plurality of conveyor units spaced from one another transversely of the length of said conveyor means and defining a first support plane; a pick-up section adjacent to the off-bearing end of said conveyor means having forks paralleling and interspaced between a plurality of said conveyor units of said conveyor means and defining a second support plane located below said support plane of said conveyor means with said forks in one position; first means for moving said forks from their said one position upwardly while maintaining said second support plane of said forks parallel to the position which it occupies when said forks are in their said first position to place said second support plane of said forks above said first support plane of said conveyor means; second means for moving said forks forwardly with said second support plane of said forks above said first support plane of said conveyor means to an extended position where said second support means of said forks is beyond said off-bearing end of said conveyor means; third means for moving said forks downwardly to a lowered extended position; fourth means for subsequently moving said forks retractively to their said one position; a depository having an approximately horizontal third support plane at the off-bearing end of said conveyor means for receiving articles from said forks when in their lower extended position; and means for lowering said depository in steps as articles are stacked thereon whereby the top of a stack as it is formed on said third support plane of said depository may be maintained at a substantially uniform loading level.

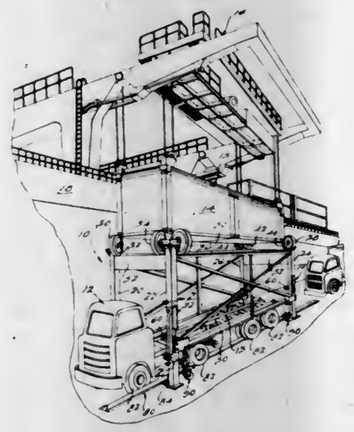
**3,169,647**
**NUCLEAR REACTOR FUELLING MACHINE**
**Frederick S. Hummel, Islington, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation**
**Filed Feb. 15, 1963, Ser. No. 258,742**
**Claims priority, application Canada, June 22, 1962, 852,177**
**5 Claims. (Cl. 214—23)**

1. In a fuelling machine for a nuclear reactor, including means defining a passageway terminating in a snout for clamping on to an end of a reactor tube to position said passageway as a coaxial continuation of said tube; a sensing and stop mechanism mounted on the machine to project into said passageway to cooperate with a row of fuel bundles therein moved out of said tube into the machine by ram means, said mechanism comprising
(*a*) a sensor,
(*b*) means for urging said sensor to projecting position to bear resiliently against a side of a fuel bundle,
(*c*) means for sensing movement of said sensor into a gap between the outer peripheries of abutting ends of adjacent fuel bundles,
(*d*) a stop,



(*e*) means actuated by said sensing means for moving said stop into projecting position aligned with said sensor to enter said gap and thereby arrest movement of the row of fuel bundles extending from said stop into the reactor tube,
(*f*) and means sensitive to movement of said stop into projecting position for engaging the fuel bundle situated on the side of said stop remote from the reactor tube and for deflecting said fuel bundle along the passageway away from the reactor tube for subsequent disposal.

**3,169,648**
**CONTAINER ALIGNMENT CHUTE**
**Keith W. Tantlinger, Grosse Pointe Shores, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan**
**Filed July 5, 1962, Ser. No. 207,495**
**2 Claims. (Cl. 214—41)**



1. In combination with an over-the-road wheeled vehicle and a container handling crane, an alignment chute for positioning a generally rectangular shipping container with respect to the vehicle while pendently suspended from the crane to facilitate coupling therebetween, said alignment chute comprising a plurality of spaced vertically extending
side members arranged in a generally rectangular array having

means at the tops thereof, respectively, for gathering the shipping container horizontally of said alignment chute upon movement of the container downwardly toward the vehicle, said alignment chute having

a horizontally extending top opening for the acceptance of the shipping container and

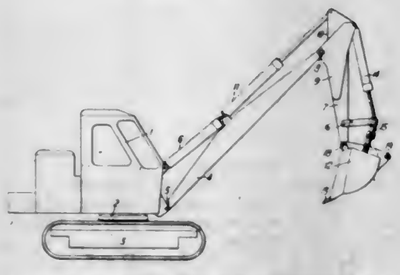
a vertically extending side opening for the acceptance of the vehicle,

means in vertically spaced relationship to the top opening in said chute for aligning the vehicle with the top opening upon movement of the vehicle through the vertically extending side opening therein, and

means for supporting the container at an initial position in spaced relationship above the vehicle, said supporting means being lowerable to effect lowering of the container into a coupling position at such times as a vehicle is properly positioned in said chute.

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**3,169,649**
**EXCAVATORS**
**Norman Brocklebank, Beverley, and Gordon Scott, Hull, England, assignors to Priestman Brothers Limited, Hull, England, a British company**
**Filed July 12, 1963, Ser. No. 294,658**
**5 Claims. (Cl. 214—138)**

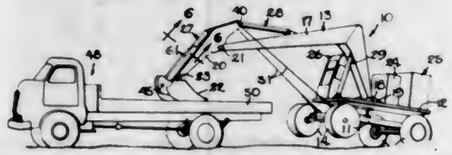


1. In a mechanical excavator comprising a boom, a digging arm pivotally mounted on said boom, and power operated digging means mounted on the free end of said arm, the improved digging means which comprises a digging bucket, first pivotal connection means on the free end of said arm, second and third pivotal connection means at the front and rear respectively of said bucket for alternative cooperation with said first pivotal connection means to rockably mount said bucket on said arm with the front of said bucket in positions facing forwards and backwards respectively, power means mounted on said arm, a rigid link, fourth means pivotally connecting one end of said link to said power means, fifth means pivotally connecting the other end of said link to said bucket intermediate said second and said third pivotal connection means, whereby said link can transmit thrust and pull from said power means to said bucket to rock said bucket on said arm when said bucket is mounted in either of said positions, and swivel means in said link whereby said bucket may be swivelled while supported by said link to selectively bring said second or said third pivotal connection means into cooperation with said first pivotal connection means.

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**3,169,650**
**TRANSPORT ARRANGEMENT FOR MOBILE EXCAVATOR**
**Ingebret Soyland, City of Bryne, near Stavanger, Norway**
**Filed Dec. 23, 1963, Ser. No. 332,732**
**9 Claims. (Cl. 214—138)**

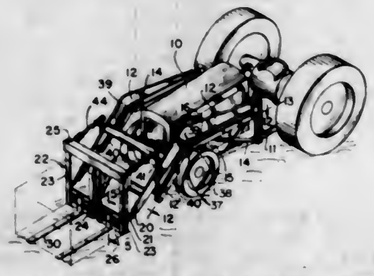
1. In a mobile excavator, the combination of, a frame having front and rear ends; ground-engaging wheels on said frame adjacent each end; said frame including a normally horizontal platform supported for rotation about a vertical axis; an articulated boom pivoted on top of said platform for swinging about a horizontal axis and including a jib arm pivoted at one end on the platform, a shovel arm pivoted intermediate its ends on the free end of said jib arm, and a shovel pivoted on one end of said shovel arm; a reciprocating hydraulic actuator for said shovel arm mounted above said jib arm and having opposite ends connected to the jib arm and to the other end portion of said shovel arm; a reciprocating hydraulic actuator for said jib arm having opposite ends connected to said platform and said jib arm; a reciprocating hydraulic actuator for said shovel having opposite ends connected to said shovel arm and said shovel; a hydraulic actuator for rotating said platform; means for delivering fluid under pressure selectively to said actuators to operate the



later and swing said boom to a transport position in which said arms extend forwardly from said frame in a predetermined angular relation, place said shovel on a tow vehicle, and lower the boom to elevate the front wheels off the ground, said shovel arm actuator being fully contracted in said predetermined relation of said arms thereby to prevent relative swinging of said arms in a direction to lower said front wheels; a pair of safety cables disposed on opposite sides of said boom and extending between said other end position and the front end of said frame; and a connection at each end of each cable for securing the latter to said frame and to said other end portion thereby to hold said arms in said predetermined relation, suspend said front end from said boom, and prevent rotation of said platform independently of said hydraulic actuators.

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**3,169,651**
**FORK LIFT FOR FARM TRACTORS**
**Harold W. Stottlemyer, R.D. 3, Waynesboro, Pa.**
**Filed Oct. 25, 1962, Ser. No. 233,027**
**5 Claims. (Cl. 214—140)**



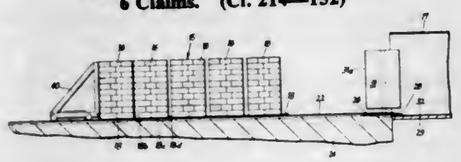
1. A fork lift attachment for a vehicle comprising a frame having spaced outer and inner posts connected by top and bottom members, a plurality of braces connecting said outer and inner posts and being spaced to provide a pair of slots, a pair of forks adjustably mounted on said frame by bolts passing through said slots, multiple lift arms pivotally connected at one end to the lower portion of said frame and at the opposite end to said vehicle, fluid means for raising and lowering said lift arms, a rocker assembly pivotally mounted on the upper portion of said frame, said rocker assembly including a shaft mounted on said frame, a pair of sleeves rotatably carried by said shaft, a rocker arm fixed to the outer end of each



of said sleeves and an operating lever secured to the inner end of each of said sleeves, a pair of levelling arms each being pivotally attached to one of said rocker arms and to said vehicle, fluid operating means connected at one end to the free ends of said operating levers and at the opposite end to said frame whereby said frame may be raised and lowered relative to said vehicle by the operation of said lift arms and may be tilted in a longitudinal direction by the operation of said rocker assembly.

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**3,169,652**
**METHOD FOR LOADING AND UNLOADING VEHICLES**
**James M. Ewell, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed July 10, 1963, Ser. No. 294,032**
**6 Claims. (Cl. 214—152)**



1. A method of loading a vehicle characterized as being a unitized loading method which comprises:

(A) providing a substantially smooth slide path in direct alignment with said vehicle and extending continuously from a unitizing area into the cargo loading area of said vehicle,

(B) positioning a thin flexible web comprising a sled on said slide path at the unitizing area with the length of the sled parallel to the length of said slide path,

(C) assembling the total load, consisting of a plurality of smaller load segments, on said flexible sled in at least one row and in such a manner that each of the segments in the row is positioned in longitudinal alignment and spaced from the segment adjacent thereto,

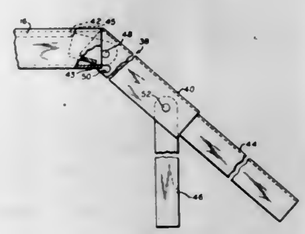
(D) causing a sequential and cumulative movement of the segments in the direction of said cargo loading area and parallel to the length of said slide path, substantially all of said movement being accomplished by sliding action between the lower surface of the sled and the slide path, whereby each of the unloaded portions of said flexible sled intermediate the adjacent segments folds upwardly upon itself and said segments are substantially brought into contact so as to result in a longitudinally compacted load, and

(E) thereafter transporting the longitudinally compacted load into the cargo loading area of said vehicle by sliding the loaded sled along said slide path.

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**3,169,653**
**LOADER-CARRIER FOR AUTOMOBILES**
**Emil A. Stromberg, 3451 Grant Road, Central Point, Oreg.**
**Filed Nov. 19, 1962, Ser. No. 238,673**
**7 Claims. (Cl. 214—450)**

1. A car top loader and carrier for enabling an inverted boat to be raised from the ground onto the top of a car by a continuous sliding movement, and there stably supported, comprising, in combination, a normally fixed platform type carrier which comprises straight front and rear transverse, parallel, tubular bars of uniform cross-section, free from obstructing external protuberances and continuously open interiorly from end to end, and each having a top wall which is slotted from the ends inward for at least substantial distances; and complete, ramp units, independent of the carrier bars, composed of foldable and nestable sections, and insertable when folded, into the respective carrier bars, and normally carried, concealed and completely confined within the carrier bars, but adapted when unfolded and erected to form independently mounted, straight, continuously smooth, stationary slideways of appropriate lengths to join the carrier bars to the ground at an inclination of not substantially more than 45°, each ramp unit consisting of a principal, channeled bar member, a lower extension bar member permanently hingedly connected to the principal ramp member, and nestable within the principal ramp member, and means forming an inseparable pivotal extension of the ramp unit for temporarily connecting the principal ramp member to the carrier bar and retaining the principal ramp member in position to assure a smooth transition joint between the upper faces of the erected ramp unit and the associated carrier bar, the folded ramp unit being substantially shorter than the associated carrier bar.



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**3,169,654**
**RECEPTACLE CLOSURE COMPRISING A RESILIENT SPACER**
**Heinrich Pollklesener, Ludenscheid, Westphalia, Germany, assignor to Vereinigte Aluminiumfabriken Ristau, Pieper and Company, Ludenscheid, Westphalia, Germany, a German firm**
**Filed June 24, 1963, Ser. No. 289,795**
**Claims priority, application Germany, July 2, 1962, V 14,188**
**8 Claims. (Cl. 215—37)**



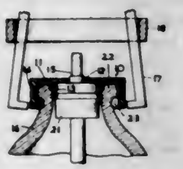
1. Receptacle closure comprising a resilient spacer for the vibration-free packing of the receptacle contents, characterized in that the spacer takes the form of a thin-walled tube whose wall is corrugated in the manner of a screw-thread.

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**3,169,655**
**CAPS FOR CONTAINERS, BOTTLES OR THE LIKE**
**Lambert Ronald Little, Eastwood, New South Wales, Australia, assignor to Samuel Taylor Pty. Limited, Gore Hill, New South Wales, Australia, a corporation of Australia**
**Filed July 5, 1962, Ser. No. 207,603**
**Claims priority, application Australia, July 5, 1961, 6,646/61**
**2 Claims. (Cl. 215—39)**

1. A closure for a container having a neck portion forming a rim at its top with an opening defined within the rim and a recess defined in the outer surface of the neck portion below said rim, comprising, a cap made of

acetal resin having a flat portion adapted to close at least a portion of the opening of the container and including a skirt portion connected to the circumference of the flat portion and extending downwardly beyond the recess of the neck portion of the bottle, said cap having a wall thickness of from about between ¼ mm. to 3 mm. and permit-



ting the skirt portion to be crimped to direct the acetal resin material into the recess of the container, said acetal resin material being capable of retaining its seat on the container with the crimped portion retained in the container recess when subjected to pressures of approximately 5 kilograms per square centimeter.

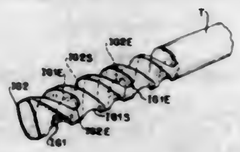
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**3,169,656**
**BOTTLE CLOSURE**
**Gerhard Wieckmann, 7706 Goddard Ave., Los Angeles 45, Calif.**
**Filed Apr. 17, 1961, Ser. No. 103,447**
**8 Claims. (Cl. 215—40)**



1. A closure assembly for use on the externally threaded tubular discharge member of a container having an external diameter and an internal bore that may vary in diameter between a predetermined maximum and a predetermined minimum value, said assembly including: a cap having a circular top from which a cylindrical side wall depends, said side wall having threads formed on the interior thereof for engaging said exterior threads on said discharge member, and said top having a recess formed therein that extends upwardly from the lower surface thereof and defines a surrounding wall; and a formed circular sheet of resilient material defining a central area from which a continuous wall extends downwardly to develop into an annulus-shaped web having a convex lower surface, the outer edge of which web develops into a ring-shaped flange with the internal diameter of said flange being slightly greater than said predetermined maximum diameter of said bore, said continuous side wall being removably disposable within said recess to engage the surrounding wall thereof to hold said formed sheet at a fixed position relative to said cap when said sheet is disposed within the confines of said side wall, with said formed sheet effecting a first seal when a circumferentially extending segment of said lower web convex surface contacts an upper interior surface of said bore as said cap is screwed downwardly on said neck, and a second seal being formed as said cap continues to be screwed downwardly on said neck when at least a portion of the upper surface of said flange is pressure contacted by the interior surface of said cap top to press the lower surface of said flange in sealing contact against the top surface of the tubular discharge member, said formed sheet also having a portion of the surface area of the lower convex surface in sealing contact with the top surface of the tubular discharge member when said diameter of said bore is less than said predetermined maximum.

**3,169,657**
**MACHINE FOR FORMING LAMP TUBES AND ARTICLE FORMED THEREBY**
**Andrew H. Olsen, Jersey City, N.J., assignor to Duro-Test Corporation, North Bergen, N.J., a corporation of New York**
**Filed July 6, 1961, Ser. No. 122,328**
**15 Claims. (Cl. 220—2.1)**

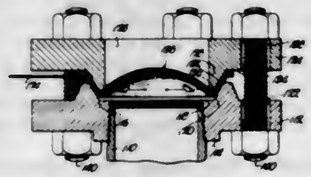


1. In combination with, means for supporting a glass tube for rotation on its longitudinal axis in a horizontal plane, at least two torches spaced axially of said tube and carriage means for supporting said torches and advancing them along a path parallel to the axis of said tube in timed relation to the speed of rotation of said tube, of combustible fuel mixture supply means for said torches, and means actuated by said carriage to successively activate and deactivate said supply means to render said torches successively operative and inoperative whereby two circumferentially displaced grooves are formed by the sagging of the wall of said tube along helical paths.

11. An enclosure comprising a single thin walled glass tube having at least one helical groove formed in its wall comprising a plurality of disconnected sections lying on and longitudinally spaced along the same helix.

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**3,169,658**
**DAMAGE RESISTANT RUPTURE DISC ASSEMBLY**
**Louis M. Porter, Independence, Mo., assignor to Fike Metal Products Corp., Blue Springs, Mo., a corporation of Missouri**
**Original application Sept. 19, 1960, Ser. No. 56,841, now Patent No. 3,121,509, dated Feb. 18, 1964. Divided and this application Mar. 20, 1963, Ser. No. 266,530**
**1 Claim. (Cl. 220—89)**



In a safety device for pressure systems having a relief opening, the combination of:

a frangible rupture disc having a central, concavo-convex portion with a peripheral edge therearound and responsive to pressure and suctions thereon;

a rupture disc supporting device having an arcuate slot presenting a rigid, concavo-convex member and a rigid annulus surrounding the member and integrally joined thereto along a single line of bend between the ends of the slot for swinging movement of the member relative to the annulus on said line of bend, the convex side of said member being disposed in complementally seated engagement with the concavo-convex portion of said rupture disc on the concave side thereof;

a plurality of inwardly extending ears on the annulus traversing the slot and engaging the member on the concave side thereof to prevent swinging movement of said member about said line away from said rupture disc;

a rigid concavo-convex element having a central dome-shaped portion overlying said concavo-convex portion of the rupture disc on the convex side thereof in slightly spaced relationship therefrom, and an integral, arcuate, peripheral edge on said dome-shaped portion in complementally seated engagement with the peripheral edge of the rupture disc, said dome-shaped portion being provided with an arcuate slot having angularly spaced ends defining a single line of bend therebetween and presenting the margin of a central flap swingable on the last mentioned line of bend;

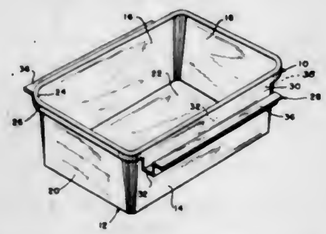
a plurality of inwardly extending tabs on said dome-shaped portion adjacent said peripheral edge of the element, traversing the slot in said dome-shaped portion, and engaging the convex side of said flap to prevent swinging movement of the flap about said last-mentioned line away from said rupture disc until rupture thereof occurs; and

means rigidly mounting said rupture disc, said device and said element to dispose said rupture disc across said opening in sealed relationship thereto.



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**3,169,659**
**RECEPTACLE**
**Fred N. Blackmore, Ann Arbor, Mich., assignor to Lus-Trus Corporation, Ypsilanti, Mich., a corporation of Michigan**
**Filed Dec. 31, 1962, Ser. No. 248,583**
**9 Claims. (Cl. 220—97)**



1. A flange for the edge of an open receptacle comprising:

a leg portion secured and extending outwardly from the upper edge of said receptacle,

a lip portion secured and depending from said leg portion,

a first web member of substantially the same width as the lip portion pivotally secured and extending downwardly from said lip portion,

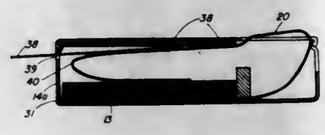
a second web member of substantially the same width as said leg portion secured and extending outwardly from said first web member,

a third web member of substantially the same width as said leg portion secured and extending upwardly from the second web member, and

a fourth web member secured and extending outwardly from the third web member,

said web members pivoting to a position on top of the lip and leg portion in one direction wherein the fourth web member engages the bottom wall of a mating receptacle when stacking one receptacle on top of another during use and in the other direction beneath the lip and leg portions to engage the lip and leg portions of a mating receptacle below when nesting one receptacle within another when not in use.

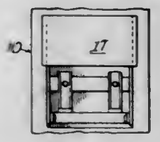
**3,169,660**
**BLADE DISPENSER**
**Henry A. Holzwarth, Bayside, Peter Schladermundt, Bronxville, and John D. Wark, Freeport, N.Y., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia**
**Filed May 23, 1963, Ser. No. 282,754**
**4 Claims. (Cl. 221—102)**



2. A dispenser for blades comprising a casing provided with an end wall and top and bottom walls, an abutment within said casing spaced from said end wall and defining with said bottom wall and said end wall a space for a stack of the blades with ends thereof arranged adjacent said abutment, a flat relatively stiff elastic band member having a curved portion at one end arranged between said top wall and the stack and adapted to exert an elastic pressure on the top of said stack, said end wall having a first slit adapted to permit the exit of the bottom blade of the stack, and a second slit adapted to permit the insertion of used blades between said top wall and said curved band portion, said band member presenting a smooth curved area toward said second slit for the free reception and guidance of an inserted blade, the opposite end of said elastic band member being curved around into engagement with said bottom wall, said opposite end of the band and said abutment being complementally formed to permit said opposite end to advance past the abutment into engagement with the bottom blade to advance it through the exit slit.

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**3,169,661**
**CASE UNSTACKING MACHINE**
**Milton C. Klotz, Chicago, Ill., assignor to Warren Du Broff**
**Filed Nov. 29, 1962, Ser. No. 241,010**
**5 Claims. (Cl. 221—210)**



3. In a case unstacking mechanism,

(A) a frame,

(B) a conveyor including a pair of continuously-running, spaced-apart, horizontally-extending chains, said frame being positioned astride said conveyor,

(C) a carriage mounted on said frame for vertical reciprocation over said conveyor, said carriage having a pair of opposed pads for gripping the second-from-the-bottom of a stack of cases to allow the bottom case to be conducted out of said frame,

(D) means for reciprocating said carriage and means for actuating said pads to lower a stack of cases onto said conveyor and thereafter move said carriage upwardly to grip the second-from-the-bottom case, and

(E) an improved case ejector, comprising:

(1) a guide positioned between said conveyor chains and rigidly interconnected into said frame,

(2) an elongated slide mounted in said guide for movement parallel to said conveyor and

equipped at one end with arms extending transversely to the direction of slide movement, each arm carrying an actuating roller rotatably mounted thereon, said slide at the other end being equipped with a pivotally mounted pusher, means mounting said pusher on said slide for movement from a vertical position through a vertical arc forward in the direction of chain movement whereby said pusher is adapted to push a case out of said frame but have a case pass thereover in entering said frame, said slide adjacent said other end being equipped with brake rollers,

(3) a pair of brake bars on said frame frictionally engaging said brake rollers to retard the movement of said slide,

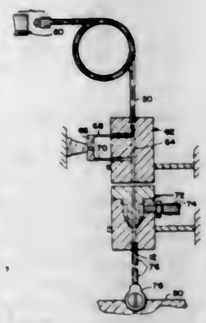
(4) a pair of elongated cam arms pivotally mounted on said frame on opposite sides of said conveyor and aligned with said actuating rollers, each of said cam arms being equipped with a linear slot for the receipt of its associated arm roller whereby pivotal movement of said cam arms moves said actuating rollers and slide in the direction of conveyor movement, each cam arm being equipped with a generally L-shaped slot, and

(5) a pair of carriage rollers rotatably mounted on said carriage adjacent the carriage bottom and aligned with said cam arms, a carriage roller being received in each of said L-shaped slots whereby upward movement of said carriage produces pivotal movement of said cam arms and thereby movement of said pusher in the direction of conveyor movement and only when said carriage is gripping the second-from-the-bottom of a stack of cases.

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**3,169,662**
**APPARATUS FOR HANDLING SMALL ARTICLES**
**Leo Goran, Jr., Madison Heights, Mich., assignor to Avis Industrial Corporation, Almont, Mich., a corporation of Delaware**
**Application May 26, 1960, Ser. No. 31,953, now Patent No. 3,063,213, dated Nov. 13, 1962, which is a division of application Ser. No. 828,143, July 20, 1959. Divided and this application July 27, 1962, Ser. No. 212,905**

**2 Claims. (Cl. 221—236)**

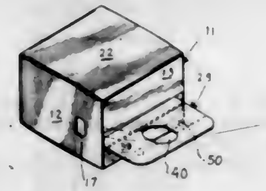


1. Apparatus for feeding in sequence a series of axially aligned coil springs into a plurality of products having chambers therein for receiving such springs, comprising a relatively long flexible tube open at its inlet and outlet ends so as to be adapted for passage of air under pressure therethrough, said tube being adapted to be wound in a coil and having an internal transverse cross section slightly larger than the external diameter of said springs and having a relatively long length so as to accommodate therein said series of springs in end-to-end relationship; a metering device having a passageway to which the outlet of said tube is connected and having means in said passageway for metering said coil springs therethrough without interrupting continuous passage of air; an impeller unit positioned adjacent the discharge outlet of said metering device and including a through passageway aligned with said discharge outlet and means therein for accelerating passage of each metered spring therethrough; and conduit means defining an uninterrupted flow passageway communicating with the discharge outlet of said through passageway for guiding the accelerated springs to the chambers of said products.

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**3,169,663**
**TYPEWRITER RIBBON DISPENSER PACKAGE**
**Eugene Di Luco, 1270 Kearney Drive, North Brunswick, N.J.**
**Filed Oct. 8, 1963, Ser. No. 314,747**

**4 Claims. (Cl. 221—255)**



1. A dispensing package comprising:

(*a*) a carton sheet with fold lines defining a plurality of interconnected panels,

(*b*) generally vertical folded panels of the carton sheet defining successively a first side panel, a front panel, a second side panel, a rear panel and a tab,

(*c*) generally horizontal folded panels of the carton sheet defining a top flap on the first side panel,

(*d*) a bottom flap on the first side panel opposite the top flap,

(*e*) a top panel on the front panel adjacent to the top flap on the first side panel,

(*f*) an insertion tab on the top panel opposite the front panel,

(*g*) a top flap on the second side panel adjacent to the top panel,

(*h*) a bottom flap on the second side panel opposite the top flap,

(*i*) a bottom panel on the rear panel adjacent to the bottom flap on the second side panel,

(*j*) an insertion tab on the bottom panel opposite the rear panel,

(*k*) one of the vertical folded panels having a dispenser slot spaced above the bottom a distance approximating the height of a tray,

(*l*) a tray sheet with fold lines defining a plurality of interconnected panels, and a pull tab,

(*m*) generally horizontal, and vertical folded panels defining top, bottom, ends and sides of a tray,

(*n*) a pull tab extending in a generally horizontal direction at the top of the tray,

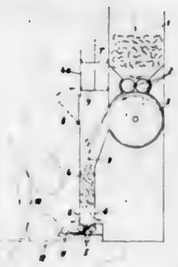
(*o*) the tray dimensioned shorter than the carton; the tray further dimensioned with the height of the top approximating the bottom of the slot,

(*p*) an upstanding lip opposite the pull tab at the rear of the top of the tray,

(*q*) the tray defined by the folded tray sheet slidably positioned in the carton defined by the folded carton sheet and on the bottom thereof, with the pull tab extending out through the slot.



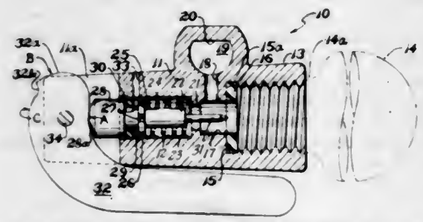
**3,169,664**
**SUPPLY APPARATUS FOR CARDING MACHINE AND METHOD**
**Erich Meinicke, Rheydt, Germany, assignor to Trutzschler & Co., Rheydt-Odenkirchen, Germany**
**Filed June 13, 1963, Ser. No. 287,621**
**Claims priority, application Germany, June 19, 1962, T 22,321**
**20 Claims. (Cl. 222—1)**



1. A feeder for a carding machine comprising a shaft into which the fibre material for delivery to the carding machine is fed at the top and from which the material is withdrawn at the bottom, and means at the top of said shaft for raising the density of the fibre material inside said shaft by discontinuously forcing a column of air downwards through the fibre material to compress the fibre material, said shaft being provided with openings at the bottom thereof through which openings the air can escape.

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**3,169,665**
**INFLATING APPARATUS**
**Russell S. Colley, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**
**Filed Aug. 1, 1962, Ser. No. 214,070**
**5 Claims. (Cl. 222—5)**



1. Inflating apparatus for attachment to an inlet of an inflatable article, said inflating apparatus comprising

(*a*) a hollow housing having a bore extending longitudinally therethrough which terminates at its inner end in a tubular end portion adapted to receive a compressed gas cartridge and which terminates at its outer end in a slotted end portion,

(*b*) said housing having adjacent the inner end of said bore a gas-conducting passage extending laterally from said bore to an outlet opening in said housing for receiving the inlet of the inflatable article,

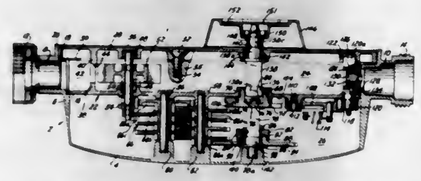
(*c*) a venting passage spaced inwardly from the outer end of said bore and extending laterally from said bore to the outer surface of said housing for communication with the ambient atmosphere,

(*d*) a puncturing member longitudinally movable within said bore for disposition sequentially at a venting position, a puncturing position, and a partially retracted position, said puncturing member including an actuating end portion connected to a piercer portion with the diameter of said member other than the said actuating end portion being less than that of said bore, and

(*e*) a sealing means intermediate said piercer and actuating portions in sealing cooperation with said bore and member and positionable outwardly of said venting passage, when said member is in the venting position, to permit communication through said bore, of said gas-conducting passage and said venting passage, and positionable intermediate the said passages to seal said venting passage from said gas-conducting passage, when said member is in either the puncturing position or the partially retracted position.

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**3,169,666**
**FLOW TIMER**
**Isaac Rinkewich, Hasbrouck Heights, N.J., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York**
**Filed Oct. 19, 1961, Ser. No. 146,270**
**11 Claims. (Cl. 222—20)**



1. In a flow timer having a housing including a fluid flow passage therethrough, a valve for controlling flow of fluid through said passage, means for sensing said fluid flow, and means for actuating said valve in accordance with said sensed fluid flow, said actuating means including a manually settable adjusting element; the improvement which comprises a shaft operatively connected to said adjusting element to rotate therewith and having a shoulder remote from said element, a first member drivingly connected to said sensing means, rotatably mounted on said shaft, and axially movable along said shaft into engagement with said shoulder, a second member mounted on said shaft for rotation therewith above said first member and axially movable along said shaft into engagement with said first member, and resilient means active on said second member to move it into engagement with said first member and to move said first member into rotation-transmitting engagement with said shoulder.

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**3,169,667**
**AIRCRAFT FUEL AND DEFUEL APPARATUS**
**Richard T. Headrick, 916 Crestfield Ave., Duarte, Calif.**
**Continuation of application Ser. No. 198,925, May 31, 1962. This application Aug. 10, 1964, Ser. No. 389,825**
**12 Claims. (Cl. 222—23)**

7. Fuel distributing and cleaning apparatus connectible to a fuel source for flight-line fueling of aircraft comprising

(*a*) a fuel inlet, connectible to the fuel source,

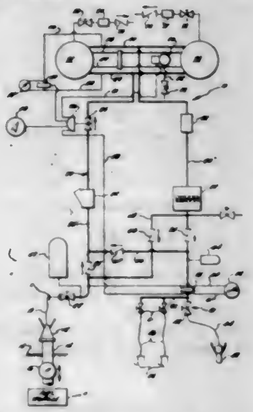
(*b*) a fuel outlet,

(*c*) a fuel-water separation unit, water separated from the fuel passing through the inlet accumulating in the lower portion of the unit,

(*d*) a fuel conduit connected from the inlet to the separation unit and from the separation unit to the outlet,

(*e*) water level sensing means connected to the separation unit operable to manifest a preselected signal when the water level in the separation unit reaches a predetermined level,

(*f*) a fuel flow control valve in the fuel flow conduit between the separation unit and the inlet, and operable to terminate flow of fuel therethrough in response to the preselected signal of the water level sensing means,



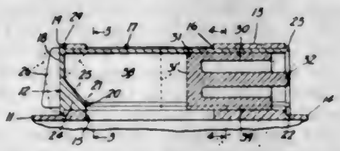
(*g*) fuel monitoring means in the fuel flow conduit operative to terminate flow of fuel therethrough in response to the presence of water in the fuel flowing therethrough,

(*h*) a fuel strainer unit in the fuel flow conduit between the control valve and the inlet,

(*i*) fuel metering means in the fuel flow conduit between the fuel-water separation unit and the outlet.

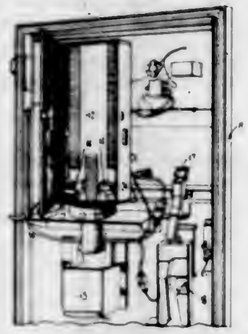
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**3,169,668**
**DEVICE FOR DISPENSING A MEASURED QUANTITY OF INSTANT COFFEE**
**Louis C. Ziegler, 5 Skyline Drive, Englewood Cliffs, N.J.**
**Filed Aug. 19, 1963, Ser. No. 302,793**
**7 Claims. (Cl. 222—50)**



1. The combination with a container having a closure cap, of a device on the cap for measuring a predetermined quantity of the contents of said container and then dispensing said measured quantity from said device, said device comprising an elongated cylinder on the cap and a passage in the cap adapted to communicate the cylinder with the interior of said container in connection with which the cap is mounted, the cylinder having a discharge passage circumferentially spaced with respect to said first named passage, the discharge passage being of the same width and length as said first named passage, an element rotatably mounted in the cylinder, said element having an elongated cylindrical bore opening through one end of said element, a single slit extending longitudinally of the element to said open end, at least part of said slit forming a passage adapted to register with both of said first named passages in two different rotatable positions of the element in said cylinder, and a cup-shaped plug having an inner closed end movable longitudinally in said element for controlling the size of a measuring chamber formed in said cylindrical bore, whereby a measured amount of material disposed in the measuring chamber can be dispensed through the discharge passage of said cylinder in rotation of said element.

**3,169,669**
**BEVERAGE DISPENSING MACHINE**
**Stewart Alfred Maxwell, Walsall, England, assignor to Fisher & Ludlow Limited, Birmingham, England, a British company**
**Filed July 16, 1963, Ser. No. 295,554**
**Claims priority, application Great Britain, July 19, 1962, 27,684/62**
**2 Claims. (Cl. 222—70)**

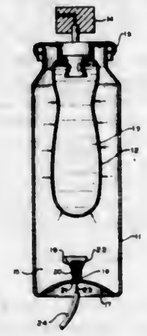


1. In a beverage dispensing machine which includes a cabinet, a liquid storage vessel having an outlet disposed within said cabinet, a solenoid operated valve in said outlet and a switch means for energising the solenoid of said valve for three periods of time; a maximum period, an intermediate period and a minimum period, and in which the period of time for which the solenoid is energised and the valve is opened is progressively increased as the quantity of liquid in the storage vessel is decreased the improvement in that said switch means includes first and second cam switches in series with the solenoid, the first cam switch being closed for a period of time equal to said maximum period, the second cam switch being closed for a period of time equal to said intermediate period and the periods of closing of the cam switches overlapping for a period equal to said minimum period, a first normally open by-pass switch in parallel with the second cam switch, means for closing said first by-pass switch so as to by-pass the first cam switch for opening the valve for said intermediate period and means for closing said second by-pass switch so as to by-pass the second cam switch for opening the valve for said maximum period and the two by-pass switches, when open ensuring that the current supply to the solenoid of the valve passes through the first and second cam switches to open the valve for the minimum period of time.

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**3,169,670**
**PORTABLE DISPENSING UNITS**
**Paul Hrebenak, East Hanover, N.J., and Leo Zuckerman, 29 Chesapeake Ave., Lake Hiawatha, N.J.; said Hrebenak assignor to said Zuckerman**
**Filed June 30, 1961, Ser. No. 121,056**
**6 Claims. (Cl. 222—95)**

1. A portable self-contained pressurized unit for dispensing fluids comprising an air-tight container open at one end and with its other end permanently closed, a movable member within said container and dividing the space therein into two chambers, one of said chambers containing an active ingredient to be discharged and the other of said chambers containing a propellant adapted to provide a predetermined discharge pressure for said active ingredient and to move said member into the space initially occupied by said active ingredient as it is discharged, said propellant chamber being defined by said container, a valve-controlled discharge nozzle for said active ingredient chamber, a back-check valve in said closed portion for admitting the propellant to, and holding it in, the propellant chamber of, said container, said valve normally closing, and axially movable with respect



to, an aperture in said portion, and means for holding said valve closed.

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**3,169,671**
**CONTAINER FOR POWDERED AND GRANULAR PRODUCTS**
**William Edward Taylor, Fairfield, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey**
**Filed Oct. 23, 1962, Ser. No. 232,520**
**4 Claims. (Cl. 222—143)**



1. A container for powdered and granular products comprising a rectangular container body having an open end and a surrounding marginal edge portion, a slip top closure for said container having a raised panel, a surrounding marginal step bordering upon said panel including pairs of vertical side walls and vertical end walls and pairs of horizontal side walls and horizontal end walls, a slideway formed in each of said vertical side walls, and a skirt depending directly from said horizontal side walls and said horizontal end walls said skirt having frictional engagement with said marginal edge portion of said body for securing said top closure in position on the open end of said container, and a slide member for the container having sliding engagement on the upper surface of said panel for covering a dispensing opening in said panel and for protecting the container contents, said slide member being provided with a pair of depending slide flanges which frictionally engage against the slideways of said vertical side walls, said slide member having at least one perforation therein, which perforation is registrable with said dispensing opening in said panel when said slide member is shifted to permit sifting of the container contents.

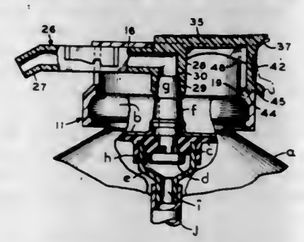
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**3,169,672**
**LOCKING ACTUATOR CAP FOR VALVED DISPENSER**
**Jack W. Soffer, Beverly Hills, Calif., and James L. Rhodes, Clayton, and Richard C. Hug, Affton, Mo., assignors to The Clayton Corporation of Delaware, a corporation of Delaware**
**Continuation of application Ser. No. 10,310, Feb. 23, 1960. This application Jan. 23, 1963, Ser. No. 254,042**
**13 Claims. (Cl. 222—153)**

8. An actuator-cap for aerosol dispensers of the type having a downward-opening valve, comprising a radially-



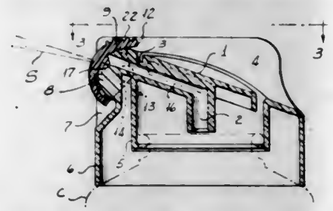
extending discharge spout having downwardly operable finger-actuated means and a nozzle outlet, cap means having a first aperture through which the nozzle outlet projects and a second aperture through which the finger-



actuated means projects, and latch means including a latching tab extending downward from the finger actuated means and a tab-engaging portion on that part of the cap means diametrically opposite said first aperture.

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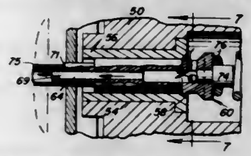
**3,169,673**
**COMBINED CAP AND VALVE OPERATING MEMBER FOR AEROSOL DISPENSERS**
**John Richard Focht, Yonkers, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York**
**Filed June 18, 1963, Ser. No. 288,665**
**14 Claims. (Cl. 222—182)**



1. A combined cap and valve operating member for an aerosol dispenser comprising: a cap with means for supporting the same on an aerosol can, said cap being provided with an arcuate surface, a valve operating tab pivoted to said cap at one of its ends and having a socket to engage with the valve stem of an aerosol dispenser, said tab being provided with a discharge passage leading from the socket to said arcuate surface, and a spray director having a discharge outlet and provided with an arcuate surface bearing against the arcuate surface of said cap and movable circumferentially of the latter, and passages leading from the discharge passage of the tab to said discharge outlet of the spray director, whereby circumferential movement of the spray director will adjust the spray pattern of the effluent from the can in different angular directions relative to the axis of the cap.

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**3,169,674**
**PUMP WITH DELIVERY ADJUSTMENT**
**Jens Lund, 31 Cornell Ave., Staten Island 10, N.Y., and Carl G. Nilsen, 296 Melba St., Staten Island 14, N.Y.**
**Filed Apr. 5, 1962, Ser. No. 185,412**
**7 Claims. (Cl. 222—309)**

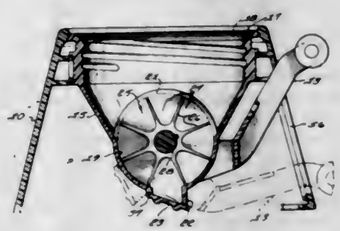


1. A filling pump comprising a pump housing, a hollow cylinder located therein, a reciprocating piston slid-

ably mounted in the cylinder and extending outwardly from the rear end thereof, a discharge nozzle mounted at the forward end of the cylinder and extending forwardly therebeyond, spring means biasing the nozzle forwardly to a closed position relative to the cylinder, an intake port to the interior of the cylinder positioned forward of the piston when said piston is in its retracted position, and rearward of the nozzle, a valve seat mounted in the forward end of the cylinder, said valve seat having a recess formed in its inner end, the nozzle being slidably received within the valve seat and having an enlarged valve head engageable within the recess and biased thereto by said spring means, a longitudinally extending bore extending inwardly from the forward end of said nozzle, a plurality of apertures located forward of the enlarged valve head and in communication with the bore so as to provide a fluid passage between the cylinder and the nozzle bore upon a rearward movement of the nozzle against the bias of the spring, and means for effecting a periodic forward and rearward movement of the piston, said cylinder being slidably mounted for limited movement in response to movement of the piston so as to engage the forward end of the nozzle with a stationary item to be filled, with a continuing forward movement of the cylinder causing the rearward movement of the nozzle relative to the valve seat resulting in the opening of the apertures and the flowing of fluid therethrough.

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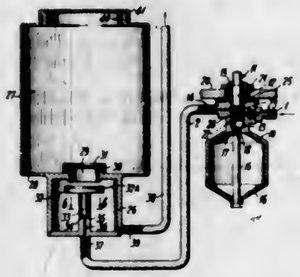
**3,169,675**
**METERING DISPENSING DEVICE FOR GRANULAR MATERIAL**
**Raymond H. Gutzmann, 11917 Gerald Ave., Granada Hills, Calif., and John M. McGavin, 7437 Sylmar Ave., Van Nuys, Calif.**
**Filed July 1, 1963, Ser. No. 291,738**
**8 Claims. (Cl. 222—360)**



1. A dispensing device comprising
a hopper,
an impeller,
said impeller including a plurality of outwardly extending blades defining pockets of predetermined volume between adjacent blades,
means rotatably mounting said impeller in said hopper adjacent the bottom wall of said hopper,
said hopper having an opening in said bottom wall, the blades on said impeller being spaced such that adjacent blades can straddle said opening in said bottom wall,
a closure member normally closing said opening,
an actuating member reciprocative through a rotary stroke from a retracted position relative to said housing,
said actuating member being connected to said closure member and operative to move said closure member away from said opening upon movement of said actuating member in one direction through its stroke,
and to return said closure member to said opening upon movement of said actuating member in the opposite direction,
said closure member including a plate longitudinally in parallelism with the axis of said impeller,
said plate being inclined radially inward with respect to said axis from a trailing edge to a leading edge on the side of said closure member facing in the direction of rotation of said plate upon said movement of said actuating member in said one direction,
said opening being inclined so as to complementarily engage said plate when said actuating member is in its retracted position,
and drive means interconnecting said actuating member and said impeller for rotating said impeller only during movement of said actuating member in said one direction.

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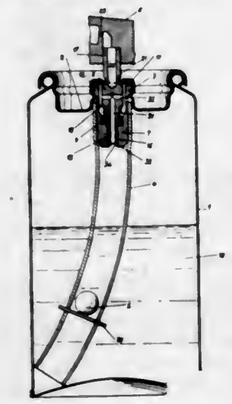
**3,169,676**
**WINDSHIELD CLEANING DEVICE**
**Frank Hanselmann, Seestrasse, Stafa, Zurich, Switzerland**
**Filed Jan. 22, 1963, Ser. No. 253,156**
**Claims priority, application Germany, Jan. 31, 1962, H 44,760**
**8 Claims. (Cl. 222—373)**



1. A liquid ejecting device comprising a liquid supply chamber, a metering chamber in communicating relation to said supply chamber to be gravity filled with liquid from said supply chamber, a valved connection between said chambers, a liquid delivery conduit extending from said metering chamber, a chamber for containing a predetermined volume of compressed gas and including gas inlet means and gas outlet means, a gas delivery conduit connecting said gas outlet means and said metering chamber, valve means including movable piston means movable to a depressed position thereof for closing said gas outlet means and opening said gas inlet means for passing compressed gas into said gas chamber via said gas inlet means, said piston means being responsive to the pressure of the gas within said gas chamber to move said piston means from said depressed position thereof to its normal elevated position whereby to close said gas inlet means and to open said gas outlet means to connect the interior of said gas chamber with said gas delivery conduit and to pass the gas from said gas chamber to said metering chamber, thereby actuating said valved connection to its closed position and ejecting the liquid contents of said metering chamber into said liquid delivery conduit, said valve means further comprising a cylinder communicating at the lower end thereof with the interior of said gas chamber and on side portions thereof with said gas inlet means and said gas delivery conduit respectively, said piston means being movable in said cylinder and having an inverted L shaped passage therein communicating at the lower end thereof with the lower end of said cylinder and at the upper end thereof selectively with the side portions of said cylinder in accordance with the position of said piston means.



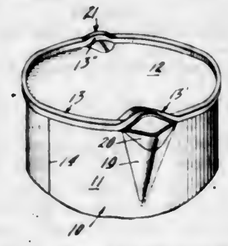
**3,169,677**
**VALVE MECHANISM WITH METERING BALL FOR AEROSOL PRESSURE CONTAINERS**
**John Richard Focht, Yonkers, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York**
**Filed Dec. 17, 1962, Ser. No. 245,166**
**Claims priority, application France, Dec. 20, 1961, 882,526**
**6 Claims. (Cl. 222—394)**



1. A dispensing apparatus for pressure packed fluids comprising: a valve housing with a chamber in its upper portion and a bore through its lower portion and provided at its lower end with a depending eduction tube with a metering ball disposed within and longitudinally movable within said tube, in combination with a valve core provided with an upstanding valve stem extending to the exterior of the housing and having therein a discharge passage, a normally sealed manually operative main discharge valve between the chamber of the housing and the passage of the valve stem to control discharge of fluid from said chamber, a tubular nozzle on the valve core having therein a passage leading to said chamber, said nozzle extending downwardly through said bore and being of sufficient length to extend beyond the lower edge of said bore when the valve core is depressed to unseal the main discharge valve to thereby provide a sealing seat at the projected end of the nozzle with the metering ball when the metering ball is near the top of the eduction tube and the length of the nozzle limited such that it is retractable within the bore when the main discharge valve is sealed.

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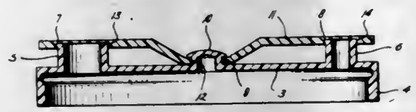
**3,169,678**
**CONTAINER WITH A PRY-OPEN POURING SPOUT**
**Harlen Edgar Wilkinson, Crystal Lake, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey**
**Filed Oct. 26, 1962, Ser. No. 233,314**
**7 Claims. (Cl. 222—478)**



1. A pouring spout container comprising a tubular body and an end closure seamed together in interfolded securement to form an end seam, said body having a discontinuous flange extending about the periphery of one end thereof, said end closure having continuous peripheral margin, said flange and said margin being interfolded and interlocked to form said end seam, said end seam including a double seam along the extent of said interfolded flange and a single-fold seam at the region of discontinuity in said flange said region of discontinuity being concealed within said single-fold seam and extending therein a predetermined distance about the periphery of said container, said single-fold seam being adapted to be pried open in said region of discontinuity to bend said end closure upwardly and deform the contiguous wall of said body outwardly into pouring spout configuration.

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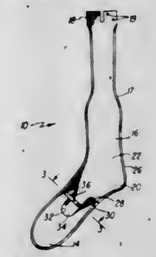
**3,169,679**
**CLOSURE FOR TOP PERFORATED CANS**
**Bernard A. Hunter, 12749 E. Market St. Road, Houston, Tex.**
**Filed Dec. 6, 1963, Ser. No. 328,744**
**4 Claims. (Cl. 222—484)**



1. In a closure for containers, a cap having a depending marginal flange adapted to be mounted on the top of the container, a pair of upstanding conduits in opposed relation, an axial post extending upwardly from said cap, a strap rotatably mounted on said post and sockets formed in said strap adjacent each end thereof adapted to be mounted on the extended end of each of said conduits.

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**3,169,680**
**HOSIERY BOARDING FORM**
**Charles Horberg, Jr., Chicago, Ill., assignor to Paramount Textile Machinery Co., Kankakee, Ill., a corporation of Illinois**
**Filed Aug. 31, 1962, Ser. No. 220,732**
**1 Claim. (Cl. 223—75)**

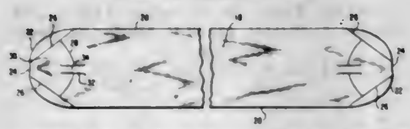


A hosiery form for use with interchangeable parts and comprising a heel plate, a toe plate detachably joined to said heel plate to provide a two-piece hosiery form having substantially continuous smooth outer surfaces, said plates adjoining each other at transverse abutting edges, one said toe plate edge defining a longitudinal recess in the plate, the remaining said plate edge defining a mating projection extending into said recess, a flat spring secured on one side of said projection substantially flush with the surface thereof, said spring including a segment protruding transversely outwardly from said projection, means forming a locking recess in the corresponding side of said one plate and receiving said spring segment therein substantially flush with the surface thereof, whereby relative longitudinal movement of the plates is prevented, said abutting edges respectively having interengaging tongue means and groove means thereon for joining said

plates together in alignment in said form and whereby said plates are slidable on each other and guided into alignment in assembling the plates together, said tongue means engaging said spring segment to cause it to clear said one plate during assembly, said spring segment entering said locking recess when the plates are assembled, and means forming an access opening through said one plate and communicating with said locking recess, for inserting an instrument to remove said spring segment from the recess and permit the plates to be separated.

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**3,169,681**
**GARMENT HANGER GUARD**
**Hubert B. Tillery, Kansas City, Mo., assignor to Tillery Container Company, Kansas City, Mo., a partnership**
**Filed Sept. 17, 1963, Ser. No. 309,552**
**4 Claims. (Cl. 223—98)**



1. A guard for a wire garment hanger wherein the guard is formed of relatively stiff material and comprises an elongated body curved transversely of its length, said body formed with indentations at each end thereof coinciding with its longitudinal axis, said body provided at each end portion thereof with a pair of crease lines emanating from the end of said body adjacent to said indentations and arranged in diverging relation to the longitudinal axis of the body, each end portion of said body provided with an arcuate shaped score line arranged to extend inwardly towards the center of the body, the ends of said arcuate score line intersecting said pair of crease lines and defining therewith a segmental portion in each end of said body, a pair of elongated slits provided in said body in spaced parallel relation to one another on opposite sides of the longitudinal axis of said body, said slits intersecting said arcuate score line and having one end thereof terminating in said segmental portion, the sides of said body adjacent each end being folded inwardly towards one another along said crease lines with said folded portions being spaced from one another and lying adjacent the under surface of said body to define a guideway for a wire garment hanger, each segmental portion and folded side portions being bent upwardly with respect to said body along said arcuate score line to flex downwardly the portion of the body contiguous to said arcuate score line, said downwardly flexed portion of the body defining in conjunction with said slits a notch for receiving a wire garment hanger.

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**3,169,682**
**CARRYING AND STORAGE CASE FOR REEL OF FILM OR THE LIKE**
**Robert R. Hollingsworth, Hollywood, Calif., assignor to Probe and Develop, Inc., Palo Alto, Calif.**
**Filed June 21, 1963, Ser. No. 289,589**
**4 Claims. (Cl. 224—45)**

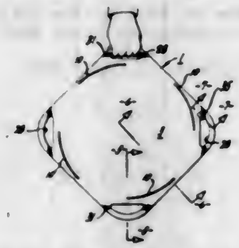
1. In combination with an article such as a reel of movie film having a central aperture, a carrying case for such article comprising:

a case portion including a side of generally square peripheral contour and an integral circular flange at right angles to said side defining a central cylindrical space receiving said article therein,

a cover of substantially the same generally square peripheral contour as said case portion and connected to said case portion in a closed position with the corners of said cover in registration with the corners of said case thereby forming a carrying case of substantially square contour,

bayonet type peripherally extending interengaging elements on said case portion and said cover respectively connecting them together in said closed position,

said interengaging elements being closely adjacent but radially outwardly of said flange,



a hand opening formed at each of the four corners of said case portion and said cover with the openings in said corners of said case portion and said cover in registration when said case portion and cover are in closed position,

the outer diameter of the periphery of said interengaging elements being substantially equal to but less than the length of one side of the square defining the contour of said case and said hand openings being formed in the generally triangular shaped corners that are radially outwardly of said periphery.

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**3,169,683**
**METHOD OF BREAKING GLASS BY IMPACTING THE SURFACE OPPOSITE A PRE-SCORED LINE**
**Burdette H. Pierce, Bouckville, N.Y.**
**Filed Oct. 6, 1964, Ser. No. 403,445**
**1 Claim. (Cl. 225—2)**



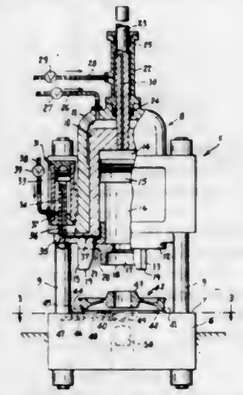
A method of cracking glass along a curved line without serious flaws comprising the steps: first, scoring one surface of the glass along the desired curved line, then driving a pointed hammer in reciprocating strokes of mechanically controlled intensity against the opposite surface of the glass, said hammer being mechanically guided in strokes substantially normal to said opposite surface, and at the same time manually guiding said hammer along said line while maintaining said glass in a plane mechanically spaced with respect to the reciprocatory path of the moving hammer so that the hammer always strikes the glass with the same regulated intensity, whereby said glass is subjected to rapid blows of the hammer of controlled intensity at successive narrowly-spaced points on said opposite surface along said scored line.

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**3,169,684**
**METHOD FOR BREAKING WHEELS**
**Stanislaw Antoni Purski, St. Laurent, Quebec, Canada, assignor to Canadian Vickers Limited, Montreal, Quebec, Canada**
**Filed Nov. 9, 1961, Ser. No. 151,233**
**3 Claims. (Cl. 225—2)**

1. A method of breaking scrap wheels of the solid type having a wheel rim and a central hub comprising notching one face of the wheel at the wheel rim, the notches radiating from the axis of the wheel at approximately equally spaced apart intervals around the periphery of the wheel, supporting the notched face of the wheel rim at points midway between the notches, applying a load to the rim of the wheel at points immediately above the notches to break the wheel into sections with the lines of break extending from one notch towards

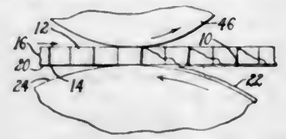




adjacent notches leaving the wheel hub attached to one of the broken sections, and applying a second load to the said latter section between the hub and the rim to break the said section into two.

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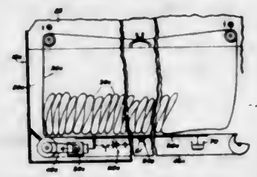
**3,169,685**
**SERRATED TEARING EDGES**
**John S. Reilly, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey**
**Filed Nov. 14, 1962, Ser. No. 237,648**
**6 Claims. (Cl. 225—91)**




1. In a tearing edge including fibrous sheet having a serrated edge portion of a deposit of hardened thermoplastic material extending along a face of the cardboard adjacent the serrations and portions of hardened thermoplastic material integral with said deposit covering edge surfaces of the serrations, said portions of thermoplastic material covering said edge surfaces being supported in firm relation on said fibrous sheet by said deposit of hardened material against the stresses encountered of tearing sheet material.

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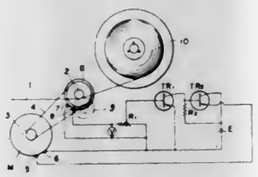
**3,169,686**
**MAGNETIC TAPE DATA STORAGE DEVICE**
**Jacob Rabinow, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota**
**Filed Dec. 14, 1962, Ser. No. 244,625**
**13 Claims. (Cl. 226—26)**



1. In a magnetic tape machine provided with a vertical compartment, a magnetic head at the upper part of the compartment, and forward and rearward drive means for the tape, said compartment having walls which are so spaced as to require the supply of tape in the compartment to form a vertical stack of doubled back smoothly curved folds in serpentine manner as the tape is fed into the compartment during operation of said drive means, the improvement comprising a substantially horizontal extension of said vertical compartment at the lower part thereof to enlarge the capacity for tape storage, and means for moving the lower part of the vertical stack of smoothly curved folds into said horizontal compartment extension to thereby prevent the stack from exceeding a height in said vertical compartment which is great enough to cause the bottom folds to be crushed.

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**3,169,687**
**AUTOMATIC TAPE SPEED CONTROLLING APPARATUS**
**Isuke Sato, Machida-shi, Tokyo, Japan, assignor to Nikken Sangyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan**
**Filed May 31, 1963, Ser. No. 284,474**
**Claims priority, application Japan, Aug. 10, 1962, 37/34,569**
**1 Claim. (Cl. 226—174)**



An automatic tape speed controlling device in a tape recorder comprising a capstan to move a magnetic tape, a pinch roller in contact with said capstan, an electric motor to drive said capstan, a generator rotated by the rotation of said capstan, a first transistor to which a part of the output voltage of the generator rotated by the rotation of the capstan is to be added between its base and emitter, a second transistor having a base connected to the collector of said first transistor and a resistance connected between the base and collector of said second transistor, said electric motor to drive the capstan being set between the emitter and collector of said second transistor.

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**3,169,688**
**THIN WALLED CONTAINER**
**Robert Dietrich Schad, Toronto, Ontario, Canada, assignor, by mesne assignments, to Traders Leasing Ltd., Toronto, Ontario, Canada**
**Filed July 25, 1960, Ser. No. 45,094**
**4 Claims. (Cl. 229—1.5)**

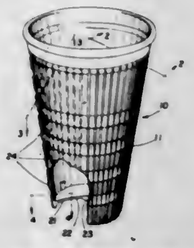


1. A molded plastic drinking cup of substantially uniform waterproof composition throughout, having a generally frustro-conical shape, comprising: a solid side wall of generally uniform thickness, a plurality of ribs formed integrally as a part of said wall, said ribs:

(*a*) being formed on the outer face of the side wall, evenly spaced about the circumference thereof;
(*b*) extending longitudinally along the major portion of the conical wall surface;
(*c*) having a width along the circumference of the cone of .036" to .09"; and
(*d*) the maximum distance between the ribs being 0.27" extending beyond the wall at least .018";
and at least one circumferential band, said band:
(*a*) being formed integrally as a part of the cup wall;
(*b*) being integrally united at the points of intersection with the longitudinal ribs;
(*c*) extending outwardly of the cup wall at least as far as said longitudinal ribs; and
(*d*) located intermediate of the rim and bottom of the cup wall.

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**3,169,689**
**THIN WALLED CONTAINER**
**Jules H. Schwartz, Toronto, Ontario, Canada, assignor, by mesne assignments, to Traders Leasing Ltd., Toronto, Ontario, Canada**
**Filed May 13, 1963, Ser. No. 279,931**
**3 Claims. (Cl. 229—1.5)**

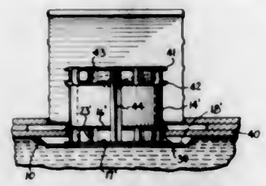


1. A molded plastic drinking cup of substantially uniform waterproof composition throughout, having a generally frustroconical shape, comprising: a solid side wall of substantially uniform thickness and a plurality of longitudinal ribs formed integrally as a part of said wall, said ribs:
(*a*) being formed on the outer face of the side wall, evenly spaced about the circumference thereof;
(*b*) extending longitudinally along the conical wall surface;
(*c*) having a width along the circumference of the cone of 0.096" to 0.09";
(*d*) extending beyond the wall, at least 0.018";
(*e*) the maximum distance between the ribs being 0.27"; and
at least one annular rib formed integrally with said side wall on said outer surface of generally wedge-shaped cross-section and providing strengthening means to said side wall; the taper on said side wall co-operating with said longitudinal and annular ribs to provide draft for said container in one direction only.

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**3,169,690**
**CONTAINER**
**William R. Scholle, Newport Beach, Calif., assignor to Scholle Container Corporation, Long Beach, Calif., a corporation of Illinois**
**Filed Oct. 20, 1961, Ser. No. 146,487**
**16 Claims. (Cl. 229—14)**

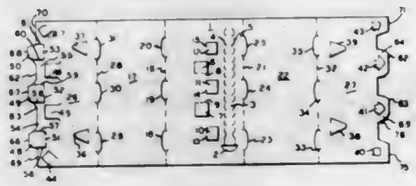
1. A flexible receptacle for fluent material composed of plastic sheet material, a relatively rigid cylindrical spout therefor secured to a surface of said receptacle about a communicating opening formed therein, a first integral external radially extending flange at the base of said spout, a second integral external radially extending flange on said spout spaced from the first flange, the latter being adapted to be frictionally projected through the defining edge of a circular aperture formed in a paperboard container wall of smaller diameter than said second flange, and a plurality of longitudinally extending radially pro-



jecting ribs adapted to be frictionally projected into said circular aperture-defining edge portion formed on the outer surface of said conduit intermediate said flanges, said second flange being composed of segments disposed between said ribs.

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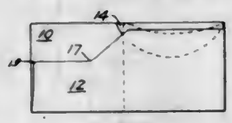
**3,169,691**
**ARTICLE CARRIER**
**Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio**
**Filed Jan. 7, 1963, Ser. No. 249,903**
**4 Claims. (Cl. 229—40)**



1. A wrapper blank comprising a main panel, a pair of side panels foldably joined respectively along opposite edges of said main panel, a pair of lap panels foldably joined respectively to said side panels along the edges thereof remote from said main panel, at least one protrusion formed on the edge of one of said lap panels remote from the associated side panel, a locking tab formed at least partially within said protrusion, at least two keel tabs foldably joined to the edge of the other lap panel remote from the associated side panel, means defining at least one locking aperture in said other lap panel, and a reinforcing panel formed on the edge of said other lap panel remote from the associated side panel and intermediate said keel tabs, said reinforcing panel being directly adjacent said locking aperture.

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**3,169,692**
**DUAL PURPOSE BANKING ENVELOPE**
**Robert D. Cousins, Jefferson County, Ky., assignor to Curtis 1000, Inc., St. Paul, Minn., a corporation of Minnesota**
**Filed Oct. 8, 1963, Ser. No. 314,664**
**5 Claims. (Cl. 229—72)**

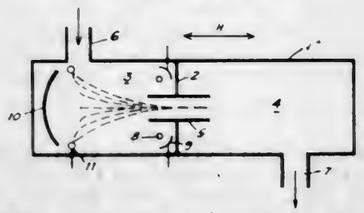


1. A banking envelope, suitable for both drive-in and postal banking, comprising:
a rectangular back panel having a length of at least about 8½ inches and a width of at least about 3½ inches,
a substantially rectangular end panel adjacent one end of said back panel and positioned thereover, the height of said end panel being slightly less than the height of said back panel and the length of said end panel being on the order of one-half that of said back panel, the end portions of said end panel being joined to transverse portions of said back panel, thereby forming a pocket suitable for containing either coins or a banking identification card,
a front panel extending from the bottom of said back panel and folded over said back panel and said pocket, the length of said front panel being substantially the same as the length of said back panel, one end of said front panel being connected to the panel immediately therebeneath, thereby forming a bill- or check-receiving recess having a closed end and an open end, the height of said front panel at a point slightly less than 6 inches from said closed end being slightly less than 2½ inches,
a flap extending from the top of said back panel adjacent said closed end and folded over said pocket, the length of said flap being at least as great as the length of said pocket,
the height of said flap at the portion adjacent said closed end being such that (*a*) the flap extends to at least slightly less than 2½ inches from the lower edge of the envelope and (*b*) the combined height of said flap and said side panel is on the order of 5/4 to 3/2 the height of said back panel,
the height of said flap at a point slightly less than 6 inches from said closed end being such that the combined width of said flap and said side panel is less than the width of said central panel, whereby said flap may be readily folded over said pocket and tucked behind said front panel over the contents of said recess to keep said pocket closed, the contents of said recess remaining visible, said flap being readily lifted to examine or remove the contents of said pocket.



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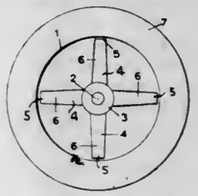
**3,169,693**
**ION PUMP**
**Richard F. Herzog, Lexington, Mass., assignor to Geophysics Corporation of America, Bedford, Mass., a corporation of Delaware**
**Filed Dec. 29, 1961, Ser. No. 163,353**
**1 Claim. (Cl. 230—69)**



An electron vacuum pump comprising a cylindrical housing, separator means located within said housing for forming a first and second chamber, tubular means passing through said separator means for joining said chambers, an inlet located in said first chamber, means for connecting said inlet to an area to be evacuated, an outlet located in said second chamber, means adapted to connect said outlet to additional pumping means, filament means for producing electrons located in said first chamber, electron focusing means located adjacent said filament for forming said electrons into a beam, anode means located in said first chamber for accelerating said electron beam so that ions are formed by electrons bombarding gas molecules, and cathode means located in said first chamber for focusing said ions into a beam which passes through said tubular means into said second chamber whereby any molecules located within said ion beam will be transported by the collision and momentum transfer from the ions in said ion beam into said second chamber where said ions and molecules are drawn out by said additional pumping means.

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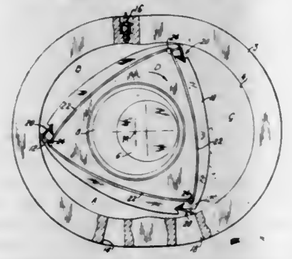
**3,169,694**
**PROPELLER FANS AND THE LIKE**
**Ariel George Borchers, 10 4th Ave., Lambton, Germiston, Transvaal, Republic of South Africa**
**Filed Apr. 8, 1963, Ser. No. 271,222**
**2 Claims. (Cl. 230—120)**



1. A propeller for air including a casing having a bell mouthed inlet portion and including an outlet portion and having a throat portion, a propeller mounted for rotation within said throat portion and including a plurality of blades, each of said blades including a tip portion, a design point disposed inwardly of the tip portion, and each of said blades having a hub portion, a hub mounting each of said blades, and a driving shaft connected with said hub for rotating the blades, the inlet angle at the tip portion of each of said blades being approximately 14.14 degrees, the inlet angle at the design point of each of said blades being approximately 19.6°, and the inlet angle at the hub portion of each of said blades being approximately 55.35°, and the outlet angle of each of the blades being approximately 16.6° at the tip portion of the blades, the outlet angle of each of the blades at the design point being approximately 22.25°, and the outlet angle of each of the blades at the hub portion being approximately 59.75°.

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**3,169,695**
**RADIAL SEAL FOR ROTARY MECHANISM**
**Felix Wankel, Lindau (Bodensee), Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, Germany, and Wankel G.m.b.H., Lindau (Bodensee), Germany**
**Filed Dec. 7, 1962, Ser. No. 243,129**
**Claims priority, application Germany, Dec. 9, 1961, N 20,934**
**12 Claims. (Cl. 230—145)**

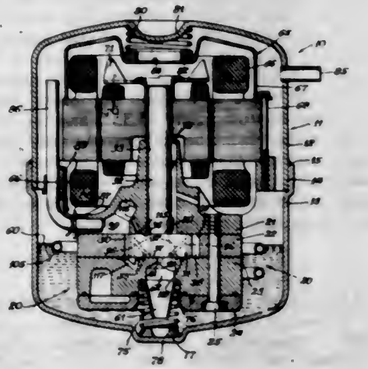


1. A rotary mechanism having an improved radial seal comprising an outer body having axially spaced parallel end walls, a peripheral wall interconnecting the end walls and an inner body mounted within the outer body for rotation relative to the outer body, said inner body having a plurality of circumferentially spaced grooves extending

over the whole axial width of the inner body, seal strips mounted in said grooves and extending between the end walls of the outer body and movable in a direction towards the peripheral wall of the outer body, and a shoe arranged between each seal strip and the peripheral wall, said shoe including a head portion and a body portion with the head portion extending over the whole axial length of said seal strip and having a radially outer surface for sliding along the peripheral wall and a radially inner surface for engagement with said seal strip thereby to provide adjacent chambers on opposite sides of said shoe, said chambers being sealed from each other by the engagement of the radially outer surface of the head portion of said shoe with the peripheral wall and the engagement of the radially inner surface of the head portion of the shoe with said seal strip, the body portion of the shoe being anchored within the inner body for tilting motion of the shoe about an axis parallel to the rotational axis of the inner body, and with the radially outer surface exposed to the gas pressure of the adjacent working chamber, and said body portion being formed to provide a gas passage between the radially inner and outer surfaces thereof whereby the gas pressure on the two radial surfaces is equalized.

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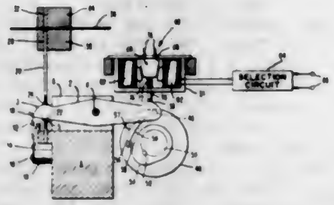
**3,169,696**
**COMPRESSOR LUBRICATOR MEANS**
**Milton Y. Warner, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware**
**Continuation of application Ser. No. 67,361, Nov. 4, 1960. This application Jan. 10, 1963, Ser. No. 250,627**
**9 Claims. (Cl. 230—207)**



1. A fluid compressor, comprising: means defining a cylindrical cavity having end surfaces and a side surface; a rotor positioned eccentrically in said cavity having end surfaces engaging said end surfaces of said cavity, said rotor having a side surface eccentric to the side surface of said cavity and defining therewith a compression chamber for fluid; means forming a suction inlet to said chamber; means forming an exit from said chamber; means operatively associated with said rotor for rotating said rotor in a preselected direction; a blade mounted in said rotor for radially inward and outward movement, said blade having end edges engaging said cavity end surfaces, a radially inner portion, and a radially outer portion slidably engaging said cavity side surface; and lubricant delivery means including a first lubrication passage opening through one of said rotor end surfaces radially inwardly of said blade to receive said radially inner blade portion during its inward travel to forcibly pump lubricant from said passage to between said one rotor end surface and the confronting cavity end surface, a second lubrication passage in said rotor radially outwardly of said first lubrication passage and opening through one of said rotor end surfaces for delivering lubricant to between that rotor end surface and the confronting cavity end surface, a lubricant sump in communication with said first passage during only a first preselected portion of the rotation of said rotor, and means connecting said first and second lubrication passages including an outwardly extending third passage arranged to pump the lubricant centrifugally during said first preselected portion of the rotation of said rotor, said blade pumping lubricant through said connecting means from said first passage to said second passage during a second, subsequent preselected portion of rotation for delivery of lubricant under pressure to between said rotor and cavity end surfaces.

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**3,169,697**
**RECORD PERFORATING DEVICE**
**Ludwig M. Schmidt, Bad Vilbel, Kreis Friedberg, Germany, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 30, 1963, Ser. No. 312,409**
**Claims priority, application Germany Oct. 12, 1962**
**7 Claims. (Cl. 234—119)**




1. In a record perforating device, a punching assembly comprising: a punch operating lever, said lever arranged to be moved in arcuate paths; a punch bar coupled to a first end of said punch operating lever and movable by said lever to a position to permit perforation of a record; biasing means connected to said punch operating lever to place said lever in a non-perforating position; drive means to selectively move said punch operating lever between said non-perforating position and said record perforating position, and means selectively operable to cause said punch operating lever to engage said drive means; said drive means comprising a driven cam disc having a return cam and a separate punch cam, said punch cam being so placed upon said cam disc as to hold said punch operating lever in engagement with said drive means during said record perforation, whereby said punch cam controls the position of said punch operating lever after said selectively operable means ceases to cause said punch operating lever to engage said drive means.

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**3,169,698**
**LOCKING AND UNLOCKING SYSTEM FOR VOTING MACHINE AND THE LIKE**
**John G. Lord, Swarthmore, and Raymond Abrams, Broomall, Pa., assignors to Shoup Voting Machine Corporation, New York, N.Y., a corporation of New York**
**Filed July 16, 1963, Ser. No. 295,330**
**7 Claims. (Cl. 235—51)**

1. A device for controlling the operation of a machine which comprises at least one member movable to a first position, or to a second position, to modify the operation of the machine.

said device including,

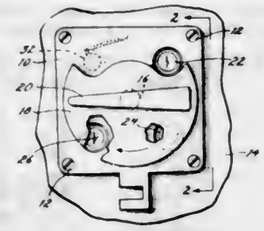
a rotary shaft,

means operatively connecting said shaft to said member whereby a first partial rotation of said shaft moves said member to its first position and whereby a second partial rotation of said shaft moves said member to a second position,

a fixed support,



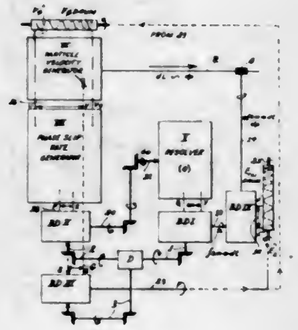
a lock carried by said support and having a cylinder rotatable to a first position and to a second position, means rotatable with, and operable in the first position of said cylinder to prevent rotation of said shaft,



said means being operable in the second position of said cylinder to permit rotation of said shaft, and, a cover plate rotatable with said shaft and operable, in one position of said shaft, to obstruct said lock.

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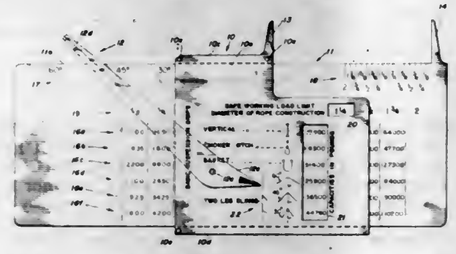
**3,169,699**
**ANALOGUE COMPUTATION SYSTEM AND METHOD**
**Peter T. Demos, 49 Orchard St., Belmont, Mass.**
**Filed Apr. 19, 1960, Ser. No. 23,318**
**35 Claims. (Cl. 235—61)**



1. A mechanical analogue computer for solving problems including the illustrative equations of motion of a charged particle subjected to an alternating electric field that travels along a predetermined direction $z$, having, in combination, movable means provided with calibration means representing quantities including the particle amplitude E as function of the said direction $z$; resolver means adapted to be set at an angle $\theta$ corresponding to quantities including the instantaneous phase position of the particle under acceleration and provided with means for producing an output corresponding to sin $\theta$; first integrator means connected to receive the output of the resolver means to produce an output representative of the integral of quantities including sin $\theta dt$, where $dt$ is the differential of time; second integrator means connected to the output of the first integrator means, means following the calibration means upon the movable means connected to the second integrator means for producing an output representative of the integral of quantities including $E(z)$ sin $\theta dt$, which corresponds to the change in particle momentum $dp$; and first means connected to the output of the second integrator means for producing a mechanical length corresponding to quantities including the particle velocity $v$.

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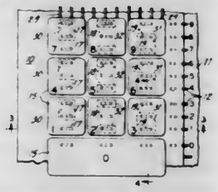
**3,169,700**
**MATERIAL HANDLING CALCULATOR-DEMONSTRATOR**
**Thomas A. Healy, 144 Winthrop St., Brooklyn, N.Y.**
**Filed May 1, 1963, Ser. No. 277,184**
**3 Claims. (Cl. 235—61)**



1. A calculating and demonstrating device for use in computing the relationship between a suspended load and the sling dimension and configuration therefor in material handling operations comprising a data display member bearing a plurality of sets of data, each set providing sling line dimension data correlated with load for a given sling configuration, and indexing means slidable with respect to said data display member and in overlapping relation therewith, said indexing means including line dimension indicating means for indicating particular sling line dimension data on said display means, plural load indicating means in fixed relationship with said line dimension indicator means for indicating an aggregate of load data corresponding with said line dimension data, sling configuration data selector means correlated with said load indicating means for indicating in said aggregate load data, load values related to sling configuration, angle measuring means comprising blade means rotatably coupled to said indexing means and further comprising said data selector means, and caliper means having a pair of separable blades, one of said blades being fixed to said data display member and the other to said indexing means.

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**3,169,701**
**INTERCHANGEABLE KEY BLANK AND KEY BUTTON COMBINATION**
**Edward J. Dombrowski, Derby, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Jan. 3, 1961, Ser. No. 80,312**
**6 Claims. (Cl. 235—145)**



1. In a keyboard structure,

(*a*) depressible key buttons arranged in spaced and parallel rows,

(*b*) said key buttons having recessed portions on the underside thereof,

(*c*) each of said rows containing at least two key buttons,

(*d*) a plurality of movable key blanks of like configuration in alignment with each row of key buttons and equal in number thereto and arranged to one side of said key buttons,

(*e*) said key blanks being spaced and parallel to each other and extending a distance corresponding to that occupied by the associated key button group,

(*f*) a plurality of identical stem projections on each key blank,

(*g*) and one of said stem projections of each key blank connected to a different key button in the associated row and the unconnected stem projections thereof loosely fitted in the said recess portions of the remaining key buttons in the row whereby depression of one of said last mentioned key buttons is effective to move only the stem projection connected thereto.

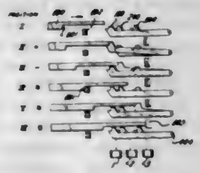
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**3,169,702**

## INPUT MEANS FOR INTRODUCING FUNCTION SIGNALS AND FUNCTIONAL INSTRUCTION SIGNALS TO A DATA PROCESSING MACHINE

**Hans Heuer, Wilhelmshafen, Germany, assignor to Olympia-Werke A.G., Wilhelmshafen, Germany**

**Filed June 19, 1962, Ser. No. 203,624**
**Claims priority, application Germany, June 19, 1961, O 8,108**
**7 Claims. (Cl. 235—146)**



1. In a data processing machine operable by first electrical actuation signals representing digits and by second actuation signals representing, respectively, different symbols or functional instructions, and having a movable slide member controlling the processing of said second actuation signals, in combination, a plurality of stop means, each individually movable between an idle position and an operative position in which a portion thereof projects into the path of said slide member to stop the movement of the latter in respectively different predetermined positions respectively associated with different ones of said second actuation signals; a plurality of control electromagnet means for individually moving upon energization thereof said plurality of stop means, respectively, to the operative position thereof; a plurality of control relay means for selectively causing when energized the energization of said control electromagnet means, respectively; a plurality of input means for receiving each a different one of said second actuation signals and respectively connected with corresponding ones of said plurality of said control relay means, respectively, for applying said signals, respectively, to, and for correspondingly energizing the latter; a special separate relay means responsive to a predetermined selected one of said second actuation signals and including two change-over contact means operable by energization of said separate relay means and arranged between selected two of said input means and two selected ones of said control relay means for interchanging the application of two other selected ones of said second actuation signals between said selected two control relay means; and a separate input means for receiving said predetermined selected one of said second actuation signals and for applying it to said separate relay means for energizing the latter, so that, when either one of said two other selected ones of said second actuation signals is applied subsequent to application of said predetermined selected one thereof, then one of said other selected second actuation signals will reach the first one of said two selected control relay means, while the other one of said other two selected second actuation signals will reach the second one of said two selected control relay means, but when said predetermined selected second actuation signal has not been applied beforehand, then said one other selected second actuation signal will reach said second one of said two selected control relay means, and said other one of said other two selected control relay means, whereby zero-control can be carried out when desired.

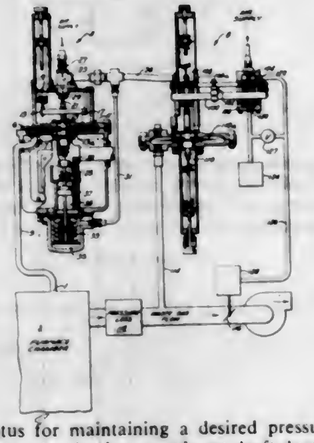
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**3,169,703**

## CASCADE DRAFT CONTROL

**Lyle F. Martz, Verona, Pa., assignor, by mesne assignments, to Hagan Controls Corporation, a corporation of Delaware**

**Filed June 27, 1960, Ser. No. 38,804**
**18 Claims. (Cl. 236—15)**



1. Apparatus for maintaining a desired pressure in a combustion chamber having an exhaust draft duct including an obstruction which causes a pressure drop therein comprising: a first pressure transducer for generating an electrical signal representing combustion chamber pressure, a first amplifier for generating a bias signal representing a variance between said pressure signal and a set point, said amplifier having a feedback circuit comprising a resistor and a capacitor, a second pressure transducer for generating an electrical signal representing pressure at a point downstream from the pressure drop, a second amplifier for generating a control signal as a function of the duct pressure biased by a set point regulated by said bias signal, and means responsive to said control signal for positioning an air flow device at a point downstream from that at which the duct pressure is sensed by said second pressure transducer.

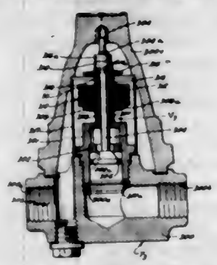
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**3,169,704**

## THERMOSTATICALLY ACTUATED VALVE

**Ulrich Domm and Werner Föller, Frankenthal, Pfalz, Germany, assignors to Klein, Schanzlin & Becker Aktiengesellschaft, Frankenthal, Pfalz, Germany**

**Filed Mar. 19, 1962, Ser. No. 180,571**
**Claims priority, application Germany, May 25, 1961, K 43,820**
**20 Claims. (Cl. 236—59)**



1. A thermostatically actuated valve for sealing the outlet means of a fluid-containing device in response to



rising temperature of the fluid, comprising a valve member having a sealing portion and movable with respect to the fluid-containing device so as to advance its sealing portion into and away from sealing engagement with the fluid-containing device and to thereby respectively seal and expose the outlet means; and means for moving the valve member under the action of a sealing force into sealing engagement with the fluid-containing device and for varying the sealing force in response to changes in temperature of the fluid as well as for changing the characteristics of said sealing force in different ranges of temperature of the fluid, said last-mentioned means comprising at least one group of superposed heat-expandible bimetallic elements located at least partially within and heatable by the fluid contained in the fluid-containing device for moving said sealing portion into sealing engagement with the fluid-containing device with a sealing force which increases in response to increasing temperature of the fluid and reaches in one range of elevated temperatures a predetermined higher sealing force, and means for transmitting said sealing force generated by the expanding group of superposed bimetallic elements to said valve member, said force transmitting means comprising at least one motion transmitting assembly which is elastically deformable to a predetermined limit by a force at least equal to said predetermined higher sealing force so that said motion transmitting assembly is deformed by said group of superposed bimetallic elements at least in said range of elevated temperatures of the fluid, said motion transmitting assembly being constructed so as to be prevented from further deformation when said limit is reached and which, when deformed, cooperates with said group of superposed bimetallic elements to resist the pressure of the fluid and to maintain said sealing portion in engagement with the fluid-containing device.

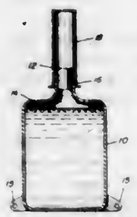
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**3,169,705**

## DEVICES FOR THE CONTINUOUS EMISSION OF ACTIVE SUBSTANCES

**Max Geiger, Riehen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**

**Filed Dec. 21, 1961, Ser. No. 161,028**
**Claims priority, application Switzerland, Dec. 29, 1960, 14,556/60; June 29, 1961, 7,684/61**
**2 Claims. (Cl. 239—43)**



1. A device for the continuous and even emission of biologically active substances consisting of

(*a*) a plastic supply vessel having polyethylene walls impermeable for the liquid containing the active substance, the neck of which vessel is closed before use by a stopper removable by squeezing the sides of the supply vessel together and so expelling the stopper from the neck into the diffusion candle set forth below under (*b*), and

(*b*) a plastic diffusion candle drawn over the neck of the supply vessel and consisting of polyvinyl chloride, which diffusion candle is in the form of a tube closed on one end, and the walls of which are of a homogenous structure that permits diffusion of a small steady amount of the active substance.

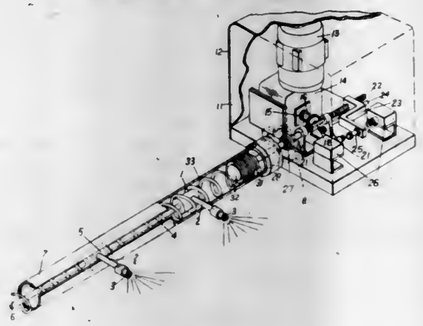
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**3,169,706**

## RECIPROCATING MEANS FOR LIQUID SPRAY ARRANGEMENTS

**John Cree Ross, North Harrow, Middlesex, England, assignor to The Reiss Engineering Company Limited, Stanmore, England, a British company**

**Filed July 2, 1963, Ser. No. 292,366**
**12 Claims. (Cl. 239—186)**



11. In a liquid spray arrangement comprising a spray head arranged for reciprocation and carrying a spray nozzle, reciprocating drive means comprising an open helically coiled drive member, said spray head being arranged within and guided by said coiled drive member, guide means extending along said drive member for preventing rotation of said spray head, means for rotating said drive member, and means for reversing the direction of rotation of said drive member.

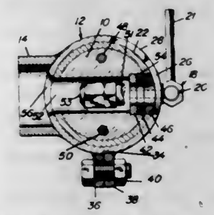
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**3,169,707**

## NOZZLE CONNECTION LOCK DEVICE

**David C. Williams, Aransas Pass, Tex., assignor, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky**

**Filed May 16, 1961, Ser. No. 110,381**
**1 Claim. (Cl. 239—538)**

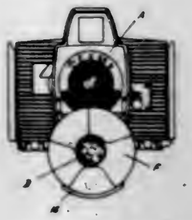


A quench spray arrangement for carbon black reactors, comprising a quench lock including a cylindrical housing having an inlet and an outlet formed in a circumferential portion thereof, said outlet being surrounded by one end of an extension joined with said housing for communicating with the interior of a reactor, a rotatable valve member positioned in said housing, said valve member having a passageway therethrough, said valve member having a normal position in which said inlet, outlet and passageway are all in registry with one another, a quench fluid conduit having a nozzle secured on one end thereof, said conduit and nozzle being disposed in said quench lock with the conduit extending through the inlet and passageway and being axially reciprocable into and out of said extension through the outlet while the valve member remains in normal position, means associated with said housing for locking said conduit and nozzle against axial displacement from a desired position, said inlet including means for positively preventing the complete withdrawal of the conduit and nozzle from the quench lock while said valve member is in normal position, said valve mem-

ber also having a withdrawal position wherein said inlet and passageway are in registry with one another but not with said outlet, said nozzle being positionable within said valve member and said inlet being adapted to accommodate said conduit during rotation of the valve member between said normal and said withdrawal positions, said means for preventing withdrawal of said conduit and nozzle being ineffective in said withdrawal position, whereby the quench fluid conduit may be readily removed for replacement of the nozzle, without danger of inadvertently opening the interior of the reactor to the atmosphere.

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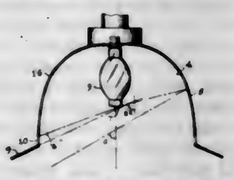
**3,169,708**
**PHOTOGRAPHIC CAMERA WITH PHOTOFLASH UNIT HINGED THERETO**
**Ludovico d'Incerti, Milan, Italy, assignor to Societa per Azioni Ferrania, Milan, Italy, a corporation of Italy**
**Filed Oct. 4, 1961, Ser. No. 142,853**
**Claims priority, application Italy, June 20, 1961, 3,139/61**
**4 Claims. (Cl. 240—1.3)**



1. A box-like photographic apparatus comprising a camera framework, a lens mounted on the front side of said camera framework, a flashlight unit comprising a lamp holder and a reflector with support means therefor mounted on the framework below and in alignment with said lens, said reflector having a plurality of blades fan-shaped and hinged to said lamp holder and being movable to open spread-out operative position, hinge means on the support means provided on one of the ends thereof and in the front part of the framework, said lamp holder and reflector being movable downwardly about said hinge means to said open spread-out operative position, said lamp holder and reflector being movable upwardly about said hinge means in a folded position and being held against the framework in said folded position and said lamp holder and reflector being of such a size that when it is in said folded position against said framework it is held just under said lens in an unobstructed position for use of the apparatus in natural light.

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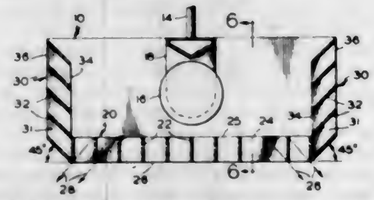
**3,169,709**
**LIGHTING FIXTURE**
**Isaac Goodbar, 93—02 211th St., Queens Village 28, N.Y.**
**Filed May 10, 1963, Ser. No. 279,526**
**5 Claims. (Cl. 240—25)**



1. A lighting fixture mounted above a roadway, comprising a shielding element having a hollow interior open at the bottom thereof to project light downwardly, a lamp, means for mounting said lamp within said element in a position located above a lower edge of said shielding element to produce an effective shielding angle which in clear weather normally obscures the lamp from the view of the drivers of oncoming cars and plate members spaced below said shielding element and leaving a light passage between the lower edge of the said shielding element and the upper edge of said plate members, said plate members extending downwardly and outwardly from the outer peripheral edge of said shielding element, the upper surface of said plate being matte, said surfaces being disposed so as to receive and be wet by precipitation, thus becoming specular, said surfaces being disposed at an angle to light rays from said lamp to reflect, when wet, the light rays upwardly above the range of such shielding angles and thus reveal at least part of the image of the lamp when the road is wet.

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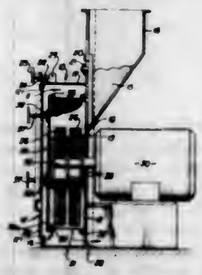
**3,169,710**
**LIGHTING FIXTURE**
**Willis L. Lipscomb, 2208 Willow, San Diego, Calif.**
**Filed Mar. 16, 1962, Ser. No. 180,153**
**4 Claims. (Cl. 240—78)**



1. A lighting fixture comprising:
a lamp; and
a pair of upwardly extending panels positioned relative to each other and disposed generally laterally of and on generally horizontally opposite sides of said lamp, said upwardly extending panels having an inner face, an outer face, and a plurality of intersecting slats forming a cellular lattice of similar rectangular-based, light-directing rhombohedron cells extending through said panel obliquely relative to said faces and extending from one face to the other face, all of said cells being open ended, whereby accumulation of dirt and dust within the fixture is prevented, said panels being unitized into a single panel assembly.

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**3,169,711**
**ROTARY GRINDING MILL**
**Robert D. Helms, 939 Arcadia Ave., Arcadia, Calif.**
**Filed Apr. 16, 1963, Ser. No. 273,364**
**6 Claims. (Cl. 241—74)**

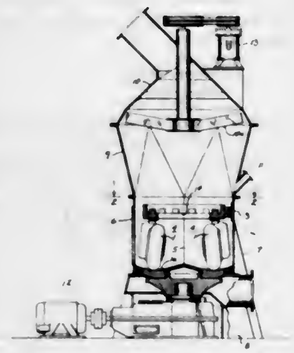


1. A grinder comprising a housing having an imperforate wall peripherally defining a grinding chamber and having at the front end of the housing an access opening and at its rear end a feed opening, a movable closure for said access opening mounted to the front end of the housing, a rotatably driven shaft and radially movable hammer assembly within said chamber, a screen ring surrounding the said assembly and internally communicating at one end with said feed opening to receive material to be ground by said assembly against and passed through the screen, said screen being annularly spaced from said imperforate housing wall and the space communicating with an outlet passage at the base of the housing, a second screen removably engaged against the opposite end of the screen ring directly at the inside of said closure, and means positioning the screen ring to the housing about the feed opening, said screen ring being releasable from said positioning means and the screens being removable through said access opening of the housing when said closure is opened.



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**3,169,712**
**ROLLER RING MILL**
**Siegfried Schauer, Hohenecken, Pfalz, and Ottmar Bacharach, Kaiserslautern, Pfalz, Germany, assignors to Gebr. Pfeiffer Barbarossa-Werke AG., Kaiserslautern, Pfalz, Germany**
**Filed July 16, 1962, Ser. No. 209,950**
**Claims priority, application Germany, July 19, 1961, P 18,549; June 29, 1962, P 20,144**
**4 Claims. (Cl. 241—117)**

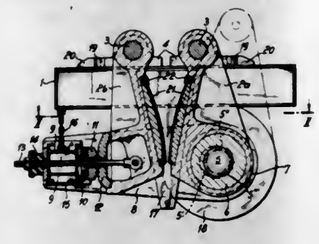


2. A roller mill of the type having a housing, a grinding plate disposed in said housing for rotation about a vertical axis, roller supporting means, rotatable milling or grinding elements, particularly rollers rotatably supported over said grinding plate by said supporting means, and a sifting device disposed in said housing above said grinding elements, said housing being in the form of a hexagonal prism disposed symmetrically with respect to said vertical axis and said roller supporting means having configurations in supporting engagement with adjacent sides of said prism.

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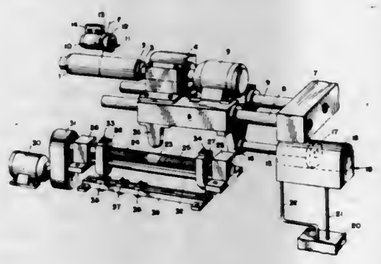
**3,169,713**
**JAW CRUSHER**
**Wilhelm Koch, Hambacher Strasse 43, Neustadt an der Weinstrasse, Germany**
**Filed Nov. 30, 1962, Ser. No. 241,240**
**Claims priority, application Germany, Dec. 2, 1961, K 45,336; Oct. 31, 1962, K 48,093**
**6 Claims. (Cl. 241—266)**

1. Jaw crusher of the type having two rocking crusher jaws each having an upper end and a lower end, said crusher comprising a support frame supporting said jaws for rocking movement relative to each other, said jaws being pivotally suspended in pivot bearings at the upper ends thereof from said support frame, a crusher drive shaft having a mid-portion extending through the lower end of one of said crusher jaws, tie rod means extending between the lower ends of said crusher jaws for operatively connecting said one said crusher jaw with the other said crusher jaw, a transverse member connecting together said tie rod means and the other said crusher jaw, said crusher drive shaft having eccentric offset means associated with said tie rod means to impart rocking movements to the other said crusher jaw and having a concentric outer driven portion.



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**3,169,714**
**MACHINE FOR THE SPOOLING OF FRESHLY SPUN, UNTWISTED SYNTHETIC FILAMENTS**
**Heinz Schippers, Remscheid-Lennep, Germany, assignor to Barmer Maschinenfabrik AG., Wuppertal-Ober-Barmen, Germany**
**Filed July 31, 1961, Ser. No. 128,055**
**Claims priority, application Germany Aug. 1, 1960**
**3 Claims. (Cl. 242—18)**

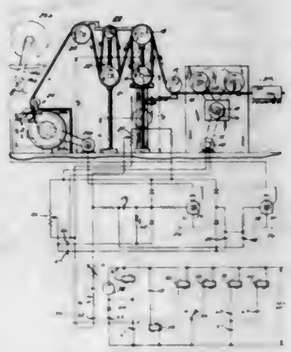


1. A winding machine for winding freshly spun filaments into a winding body with tapered ends comprising a spindle adapted to hold a winding tube, power-operated means for reciprocating said spindle in an axial direction at a variable stroke length, drive means for rotatably driving said spindle at variable rates of rotation, filament feed means for reciprocating said filaments over a constant, short stroke length as they are fed to the winding tube on said spindle, a pair of control blocks, power-driven means for moving said blocks toward each other during the winding operation, a switch on each of said control blocks, switch-actuating means reciprocating with said power-operated means for actuating each switch during reciprocal movement of said switch-actuating means, control means operatively connected with each switch for reversing the direction of movement of said spindle by said power-operated means when said switch-actuating means actuates alternately each of said switches, additional switches sequentially operated by at least one of said blocks during movement thereof toward each other, and means operatively connected with said additional switches and said drive means to decrease the rate of rotation of said spindle by said drive means in a predetermined control program to maintain the filament velocity at the point of winding substantially constant during the winding operation.

### 3,169,715
### WIRE TAKE-UP APPARATUS

**Alfons Ludwig, Fort Lee, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**

**Filed June 12, 1963, Ser. No. 287,251**
**5 Claims. (Cl. 242—25)**



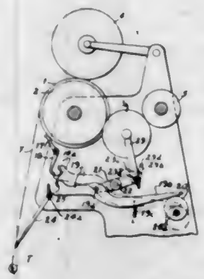
1. In a wire winding apparatus:
first and second take-up devices,
a driving means for each take-up device,
electrical control means for each driving means,
means for transferring the take-up of the wire from the first take-up device to the second take-up device when the first take-up device reaches a predetermined full condition, and
circuit means for applying a signal to each control means which is variable in accordance with the diameter of the wire accumulated on a take-up device at a given time, the signal being of relatively large magnitude when the diameter of the accumulated wire is low and of relatively small magnitude as the diameter of the wire approaches the full condition, the circuit means including:
means for transferring the signal being applied to the control means of the first device to the control means of the second device when the full condition is reached on the first take-up device,
a first potentiometer,
means for varying the effective value of the first potentiometer in accordance with the diameter of the wire on the first take-up device,
a second potentiometer, and
means for coupling the second potentiometer to the first potentiometer when the signal is transferred to the second take-up device.

### 3,169,716
### DRUM-WRAP AND THREAD-BREAK LOCKOUT FOR WINDING MACHINES

**Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany**

**Filed July 26, 1962, Ser. No. 214,789**
**Claims priority, application Germany, June 11, 1958, R 23,474**
**6 Claims. (Cl. 242—36)**

1. In a winding machine having a rotating yarn guide and drive means for rotating said yarn guide, first sensing means laterally disposed adjacent to said yarn guide and responsive to the presence of a wrap of yarn around said yarn guide, second sensing means responsive to absence of yarn travelling to said yarn guide, said drive means including friction roller means engageable with said yarn guide for rotating the latter during normal operation, drive-disconnecting means comprising lever means operatively linked to said roller means for moving same into and out of engaging position with said yarn guide, biasing means connected to said lever means for urging the latter in a predetermined direction, and latch means operatively connected to at least said first of said sensing means and biased for locking said lever



means and thereby said roller means out of said engaging position upon response of said first sensing means, so that as long as a wrap of yarn exists around said yarn guide said roller means will remain out of said engaging position to stop the winding operation until said wrap of yarn is eliminated.

### 3,169,717
### METHOD AND APPARATUS FOR TRAVERSING STRAND MATERIAL

**La Verdo J. Fox and Samuel R. Genson, Bowling Green, Ohio, assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York**

**Filed Mar. 20, 1962, Ser. No. 181,050**
**9 Claims. (Cl. 242—43)**



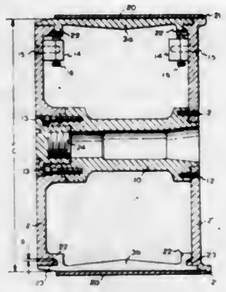
1. In apparatus for winding a continuous strand about a core and including a source of said strand, means for rotating said core about a first axis and advancing said strand in a path from said source to wind the strand on said core, primary traversing means for moving said strand along the periphery of said core including a progressive and a regressive motion to define a series of bights across the core and secondary traversing means for effecting a unilateral progression of the series of bights to form a layer extending along the length of the core, the improvement wherein said primary traversing means comprises:
(*a*) at least one strand engaging bar member supported for oscillatory movement in a plane oblique to the advancing path of said strand and to any vertical plane,
(*b*) each said bar member defining an extended surface along which said strand slides lengthwise thereof as said strand is advanced in said path and
(*c*) means for imparting oscillatory movement to each said bar member.



### 3,169,718
### SEGMENTED WINDING MANDREL

**Aaron G. Smith and Lorenzo D. Moore, Nashville, Tenn., assignors to Ferro Corporation, Cleveland, Ohio**

**Substituted for abandoned application Ser. No. 179,533, Mar. 12, 1962. This application Apr. 25, 1963, Ser. No. 276,695**
**4 Claims. (Cl. 242—46.5)**

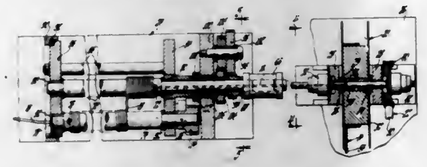


1. In a rotatable mandrel adapted to have wound thereon at high speeds continuous fibers, said mandrel comprising a rotatable hub, a multiplicity of substantially identical segments of a hollow cylinder, said segments positioned generally symmetrically and radially equidistant from said hub, a first connecting means co-acting between said hub and said segments for maintaining said segments radially in variable spaced relationship with respect to the axis of rotation of said hub, said first means comprising a pair of generally circular members having two faces respectively, each said member positioned generally parallel with respect to the other, and fixed to said hub and rotatable therewith, said circular members each having an annular flange in the interior face thereof and generally concentric with respect to the axis of rotation of said circular members, said annular flange positioned adjacent the periphery of said circular member, said cylindrical segments positioned generally symmetrically and radially equidistant from said hub, each of said segments having a generally convex and concave face and an axis of rotation generally coincident with the axis of rotation of said hub, said segments having annular flanges fixed to their concave face and generally adjacent and parallel to a curved edge of said cylindrical segment, said annular flanges of said cylindrical segments corresponding with and engaging said annular flanges of said circular members, a second means for urging said cylindrical segments away from the axis of rotation of said hub to the limit permitted by the engagement of the aforementioned flanges, said second means permitting said cylindrical segments to be compressed and moved radially toward the axis of rotation of said hub, said compressive movement of said cylindrical segments limited by contact between said cylindrical segments with said circular members, the improvement, in combination therewith, of each of said segments, when viewed in cross-section as an individual segment, independently of the remainder of said multiplicity of segments, having said cross-section taken in a plane passing through the axis of rotation of said mandrel, said cross-section displaying substantially a straight line corresponding to the convex working surface of said segment, said straight line being substantially parallel to the axis of rotation of said mandrel, said cross-section of said individual segment becoming progressively thinner, respectively, toward each of its extremities from its center, as manifested by a line corresponding to the concave surface of said segment, said latter line being farthest from said straight line corresponding to the convex working surface of said segment, at the center portion of said cross-section, said latter line assuming an attitude of convergence with respect to said straight line, respectively, progressively toward each extremity of said individual segment, from the center of said segment.

### 3,169,719
### NON-TWISTING ELECTRICAL LEAD WIRE MECHANISM

**Lewis J. Babacz, Philadelphia, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware**

**Filed Jan. 26, 1962, Ser. No. 169,050**
**3 Claims. (Cl. 242—54)**



2. A cable storage mechanism comprising a reel, cable means adapted to be coiled about said reel, one end of said cable means being free, said reel including a hollow hub member rotating therewith, the other end of said cable means extending within said hub and passing axially therefrom and being fixed against rotation at points remote from said reel, and a cable transfer mechanism supporting that portion of the cable means intermediate said reel and the fixed end of said cable means whereby twisting of said cable means about its longitudinal axis is substantially prevented, said cable transfer mechanism comprising a pair of rotatable and longitudinally spaced end cage members, stud means rigidly connecting said end cage members, a first roll member rotatably mounted between said end cage members and concentric with the axis of rotation of said members and having an axial passage which terminates in a radial opening proximate one end cage member, a second transfer roll offset from and parallel to the first roll member and having an axial passage which terminates at one end in a radial opening, said second roll also supported between said end cage members and relatively rotatable thereto, said first transfer roll means operatively connected to and coaxially aligned with said reel, that portion of the cable means between the reel hub and the fixed end being reversely coiled about the respective rolls such that reel rotation will cause a partial transfer of said cable means between said rolls, said cable means portion extending through said axial passage in said first roll and out the radial opening therein to be closely coiled in a single layer about said first roll for a portion of its length, said cable means portion passing from said first roll to said second roll where it is closely coiled thereabout in a single layer over a portion of its length, the final coil convolution on said second roll terminating proximate the radial opening therein with the cable means extending within said opening and out through the axial passage of said second roll, said first and second transfer rolls being constructed and arranged so that the angular velocity of the cable means receiving peripheries thereof are always equal.

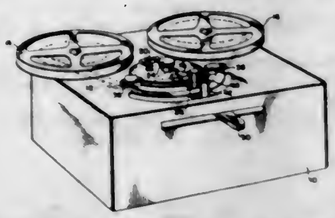
### 3,169,720
### RECORDING MEDIUM DRIVE

**Barton A. Proctor, 42 Hillside Road, Larchmont, N.Y., assignor of thirty-three and one-third percent to Albert C. Nolte, New York, N.Y.**

**Filed July 27, 1959, Ser. No. 829,933**
**12 Claims. (Cl. 242—55.12)**

6. A drive for transporting recording medium between a pair of spaced rotatable reels, comprising, magnetic head means between said reels, backing roller means adjacent each of said reels between a reel and said magnetic head means, a rotatable capstan, means for rotating said

capstan, and movable means supporting said rotatable capstan and movable to selectively position said capstan at a location in engagement with one of said backing roller means and to a location in engagement with the other of



said backing roller means, and to permit driving engagement of said recording medium at the location of the respective backing rollers by contact therewith by said capstan.

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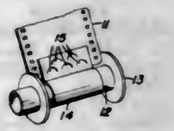
**3,169,721**
**MAGAZINE FOR A MAGNETIC TAPE RECORDER/REPRODUCER**
**Friedrich Laa and Friedrich Louzil, Vienna, Austria, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 1, 1961, Ser. No. 156,275**
**Claims priority, application Austria, Dec. 9, 1960, 9,204/60**
**12 Claims. (Cl. 242—55.13)**



1. A magazine for a magnetic tape having at least one extension member attached thereto at the outer end thereof comprising a casing member having a space therein for receiving a rotatable spool adapted to coil and uncoil magnetic tape, means associated with said casing for defining a lateral inwardly extending channel substantially tangential to said space, said channel being dimensioned to allow said extension to pass freely therethrough, an elongated member operatively connected with said casing having a movable portion projecting into said channel for preventing passage through said channel of an extension trailing tape entering said casing, said extension and moveable portion of said elongated member being conformed for moving said movable portion for allowing passage through said channel of an extension leading tape to the interior of said casing.

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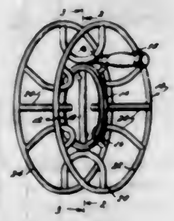
**3,169,722**
**PHOTOGRAPHIC ROLL FILM**
**Stanley P. Bartles and Donald R. Bartholomay, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Oct. 26, 1961, Ser. No. 147,915**
**8 Claims. (Cl. 242—74)**



5. In a roll of photographic roll film formed on a core, the combination comprising: an elongated strip of photographic film; a flexible tape connected to said core and having a free end overlapping an end of said strip in contacting end-to-end relation thereto; a first tongue-like member formed in that portion of said free end of said tape in overlapping relation with the end of said strip; a second tongue-like member formed in the end of said strip in alignment with said first tongue-like member, both of said tongue-like members being displaced in the same direction out of the planes of the surrounding material.

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**3,169,723**
**HAND HELD AND OPERATED REEL**
**Henry A. Wilson, 333 S. Gulfview Blvd., Clearwater Beach, Fla.**
**Filed Oct. 5, 1962, Ser. No. 228,669**
**11 Claims. (Cl. 242—96)**



1. In a light weight hand held reel constructed of bar stock sections throughout and adapted to receive a line thereabout and to pay the line out therefrom, a planar core and web portion therein, hand grip bar means mounted in said core and web portion and extending within the plane thereof, said core and web portion being mounted for relative rotation, an annular series of uniformly spaced U-shaped bar members radially connected at the bights thereof to said portion in the plane thereof and providing between the radially extending legs of said members a generally annular trough shaped line support between said legs, said core and web portion also including a hand cranking bar portion connected in the plane thereof and extending normal thereto, and annular bar members disposed on opposite sides of the plane of said core and web portion rigidly joining the free ends of said U-shaped bar members.

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**3,169,724**
**SPACE VEHICLE REENTRY SENSOR**
**James M. Perkins and Robert J. Twiford, Oxnard, Calif., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Oct. 26, 1961, Ser. No. 148,000**
**6 Claims. (Cl. 244—1)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

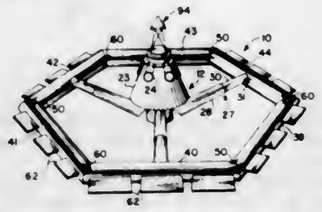


1. Sensing apparatus for functioning at a predetermined time or point in space during reentry of a vehicle into the earth's atmosphere comprising a vehicle heat shield having an inner and outer surface and having an opening extending transversely therein from the inner surface, heat sensitive barrier means located on an outer surface for blocking the opening, said barrier means being constructed of ablative material affected by a predetermined time of exposure to an atmospheric condition to uncover said opening, means positioned in the opening and biased for movement toward the outer surface, movement of said last mentioned means capable of actuating a mechanism within the vehicle, whereby reentry of the vehicle at the predetermined condition will initiate the mechanism.

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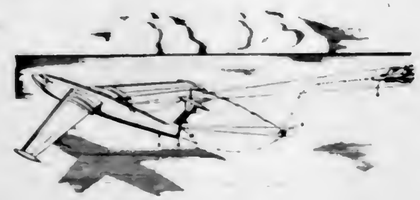
**3,169,725**
**ERECTABLE MODULAR SPACE STATION**
**Rene A. Berglund, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**
**Filed May 24, 1962, Ser. No. 197,551**
**15 Claims. (Cl. 244—1)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A space station capable of being disposed as the payload of a launch vehicle and thereby launched from a planetary surface into an extraplanetary spatial vacuum for operation therein carrying living occupants comprising: a system collapsible before launch and to facilitate launch; means for simultaneously erecting rigid living components of said collapsible system to form a space station after launch, said space station having hub means; access means connected to said hub means; and contiguous rigid living compartments comprising components of said system circumscribing said hub means and communicating with said access means.

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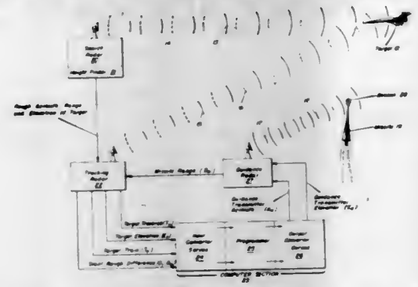
**3,169,726**
**MISSILE GUIDANCE SYSTEM**
**Charles H. Jackson, 1203 Radnor Place, Falls Church, Va.**
**Filed Oct. 3, 1955, Ser. No. 538,292**
**8 Claims. (Cl. 244—14)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. An aircraft defense weapon system for guiding a hot jet emitting missile to a target comprising a hot jet emitting, aerodynamically stable, guided missile having approximately spherical configuration, a missile launcher disposed at the rear of the aircraft, a continuous wave radar set capable of distinguishing target echoes from ground clutter, said radar being disposed in the rear upper fuselage of the aircraft, a radar scope, means responsive to information from said radar to produce an indication on said radar scope representing instantaneous elevational and azimuth direction of said target, an infrared tracker to continuously point to the instantaneous direction of the missile from the aircraft, means responsive to information from said infrared tracker to produce an indication on said scope of the instantaneous direction of the missile, and means to effect aligning of the path of the missile with the path of the target so that a target approaching toward the tail cone defense area of the aircraft may be hit and destroyed by said missile.

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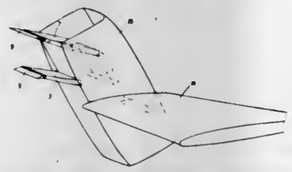
**3,169,727**
**MULTIPLE FLIGHT COURSE SECOND ORDER MISSILE PROGRAMMER**
**Irvin H. Schroader, Simpsonville, and Melvin E. Hosea and Leo C. Miller, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed June 23, 1960, Ser. No. 38,408**
**18 Claims. (Cl. 244—14)**



3. Apparatus for controlling the flight course of a guided missile to its target comprising in combination tracking radar means for tracking a target and obtaining target position information, a missile flight trajectory guidance computer, means at said computer for acting upon tracking radar target position output data, guidance radar means for guiding the missile in accordance with the prescribed trajectory, means to command said guidance radar means into position in accordance with output azimuth and elevation signals from said guidance computer means, receiving means on said guidance radar for selectably receiving a signal from said missile proportional to range from the guidance radar to the missile, and means for directing said missile range signal from said guidance radar means to said tracking radar means.

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**3,169,728**
**INTAKE FOR JET PROPULSION UNITS, MORE PARTICULARLY FOR AIRCRAFT**
**Willy Messerschmitt and Helmut Langfelder, Munich, Germany, assignors to Messerschmitt AG., Augsburg, Germany, a company of Germany**
**Filed Nov. 29, 1962, Ser. No. 241,076**
**Claims priority, application Germany, Oct. 20, 1959, M 43,115**
**20 Claims. (Cl. 244—23)**

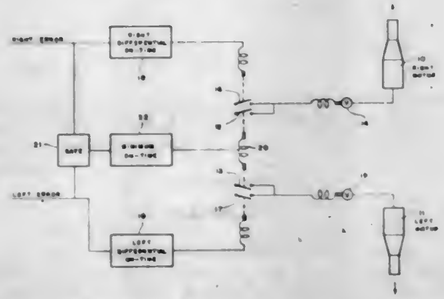


1. In combination, a jet propulsion power unit mounted at the wing tip of an aircraft for propelling said aircraft in cruising flight, said mounting means including means whereby said power unit is capable of being tilted into position for a vertical takeoff, said power unit including a unitary air intake having a wedge-shaped mouth, a pair of flaps pivotally mounted adjacent said mouth for defining a continuous uninterrupted air flow passage to said power unit, one of said flaps being disposed adjacent a central portion of said intake and the other of said flaps being disposed adjacent a wall of said intake, and means responsive to variations in the tilt position of said propulsion unit relative to said aircraft wing tip for simultaneously varying the positions of both said flaps about

their respective pivotal mountings, whereby the shape and orientation of at least portions of said uninterrupted air flow passage are changed with changes in the angle of incidence of the air-stream entering said unit.

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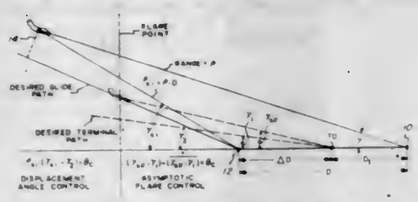
**3,169,729**
**ATTITUDE CONTROL SYSTEM**
**Einar Godo, 17103 NE. 16th Place, Bellevue, Wash.**
**Filed Mar. 26, 1963, Ser. No. 268,175**
**3 Claims. (Cl. 244—76)**



1. In combination, a pair of opposed thrust motors mounted on a space vehicle at a lever distance from a given attitude axis, said motors having a given on-time, means responsive to a given attitude error for turning said motors on and off with overlapping on-times of different durations, the period of overlap being at least as long as said given minimum on-time and the difference between the non-overlapping portions of said on-times being proportional to said error, the thrust motor which exerts its thrust in the direction for correcting said error having the longer on-time.

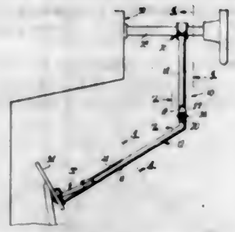
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**3,169,730**
**FLIGHT CONTROL SYSTEM**
**Randall Gaylor and Robert L. Schaeperkoetter, Phoenix, and Everett R. Tribken, Scottsdale, Ariz., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware**
**Filed Nov. 1, 1962, Ser. No. 234,621**
**25 Claims. (Cl. 244—77)**



1. Apparatus for use in controlling the flight of an aircraft during a landing maneuver comprising means for controlling said craft to a desired glide path and at a predetermined altitude controlling said craft to a desired less steep terminal path, and throttle control apparatus comprising means for gradually retarding the throttles of said craft above said predetermined altitude, whereby the angle of attack of said craft gradually increases to a first predetermined amount as the craft flies to hold said desired glide path and means at said predetermined altitude for retarding said throttles to their idle positions, whereby the angle of attack of said craft gradually increases to a second predetermined amount as the craft flies to hold the terminal path, said second predetermined angle of attack amount being less than the craft stall angle of attack.

**3,169,731**
**AIRCRAFT CONTROL LOCKING DEVICE**
**Paul B. Phillips, Meade, Kans., and Byron R. Wilson, 11851 W. 26th Ave., Denver, Colo.**
**Filed Mar. 18, 1963, Ser. No. 265,803**
**6 Claims. (Cl. 244—83)**



1. Structure for locking the shiftable control column of an aircraft with the rudder pedal thereof, said structure including:

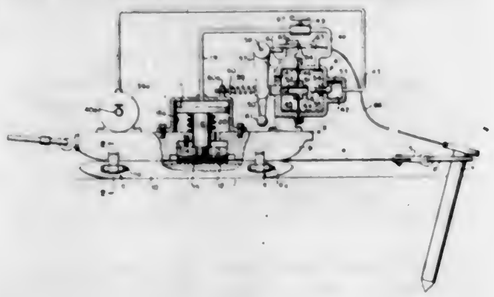
an elongated, rigid member normally adapted for spanning the distance between the control column and the pedal;

means carried by said member at one end thereof for releasably gripping said pedal, and including a pair of pedal-engaging projections adapted to be disposed on opposed sides of the pedal, and means mounting one of said projections for movement relative to the other projection toward and away from a fixed, pedal-engaging position; and

means on the member at the opposite end thereof for clamping said member to said control column, whereby said pedal and said control column are rigidly interconnected.

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**3,169,732**
**ARRESTING GEAR**
**James Owen Eames, Washington, Conn., assignor to Roy S. Sanford & Company, Oxford, Conn., a partnership**
**Filed Dec. 26, 1963, Ser. No. 333,355**
**6 Claims. (Cl. 244—110)**

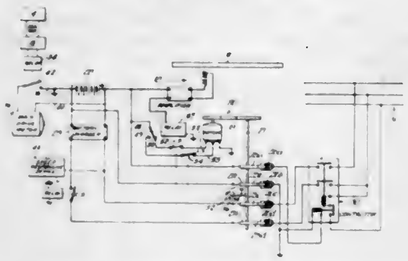


1. Aircraft arrester gear for use on an aircraft runway including an elongated flat flexible metal strip laid along the runway, said metal strip being sufficiently thin and flexible to permit rolling the strip into a compact coil for transport, means for anchoring at least one end of the strip, and a sled slidably mounted on the strip normally positioned adjacent said one end thereof and having means associated therewith engageable by a landing aircraft, said sled including friction brake shoes engageable with the metal strip and power means carried on the sled for effecting frictional engagement of the shoes with the metal strip, the sled also including power control means for controlling the degree of power applied to said brake shoes by said power means, said control means including means responsive to accelerations and decelerations of the sled to respectively increase or decrease the power applied to said brake shoes by said power means.



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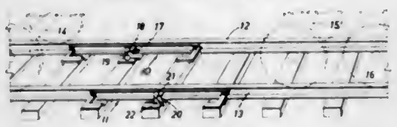
**3,169,733**
**BATTERY CHARGING SYSTEM FOR VEHICLES**
**Arthur M. Barrett, Jr., Northbrook, Ill., assignor to Barrett Electronics Corporation, Northbrook, Ill., a corporation of Illinois**
**Filed Oct. 1, 1959, Ser. No. 843,878**
**7 Claims. (Cl. 246—30)**



1. A battery charging system for a battery-powered vehicle which is adapted to follow a path and in which system an automatic block signal system is provided along said path to stop one of said vehicles at a location to prevent the vehicle from too closely following another vehicle along said path, said system comprising a battery charging station disposed adjacent said path and adapted to provide a source of electrical energy and including a pair of electrical terminals, battery charging means, electrical terminals carried by said vehicle each one of said terminals having a retracted position and an extended position, means for actuating the vehicle terminals to the retracted and extended positions, and when the vehicle arrives at said battery charging station, adapted to actuate the vehicle terminals to the extended position to engage with the first mentioned terminals to provide, upon stopping of the vehicle, a conductive path including said battery charging means, the battery of the vehicle, and the source of electrical energy.

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**3,169,734**
**RAIL TRACK TRAFFIC INDICATOR SYSTEM**
**Josef Fryba, 153 Madison Ave., Toronto, Ontario, Canada**
**Filed Apr. 21, 1959, Ser. No. 807,829**
**4 Claims. (Cl. 246—77)**

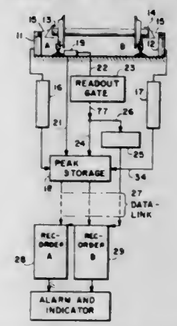


1. A railway track traffic indicator system comprising: presence relay means intermittently operated by the passing of a train; delay relay means operable during part of the period of operation of said presence relay means; relay means operable upon deactivation of said presence means and of the said delay relay means providing a predetermined duration signal independent of the period of operation of said presence relay means and said delay relay means; second presence relay means intermittently operated by the passing of a train; delay relay means associated with said second presence relay means and operable during part of the period of operation of said presence relay means; second relay means operable upon deactivation of said second presence relay means and said associated delay relay means to provide a predetermined duration signal independent of the period of operation of said second presence relay means and said associated delay relay means; first and second actuator means actuating said presence relay means; said actuator means being disposed in opposite rails in the track in semi overlapping staggered relationship whereby said actuators will be operated in sequence by the passage of a train wheel pair; and holding switch means associated with each said presence relay means whereby the first actuated of said presence relay means is held in operation throughout the actuation of both said actuators.



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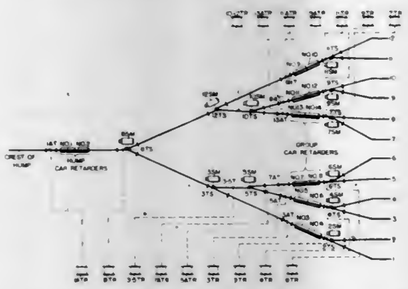
**3,169,735**
**HOTBOX DETECTOR**
**Carter Sinclair, Waynesboro, Va., assignor to General Electric Company, a corporation of New York**
**Filed May 31, 1961, Ser. No. 113,906**
**11 Claims. (Cl. 246—169)**




10. The combination, in a hotbox detector for railways, of a pair of transformers, one for each side of the railway, each having a primary winding, a secondary winding, and a third winding, means to substantially simultaneously supply to each of said primary windings pulses of intensity varying with the temperature of bearings on a corresponding side of a railway vehicle, whereby voltages are produced in said secondary windings, and connections between said third windings whereby the voltage in each secondary winding is reduced in proportion to the current in the primary of the other transformer.

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**3,169,736**
**RAILWAY CAR RETARDERS AND CONTROL THEREOF**
**Ned C. L. Brown, Scottsville, N.Y., assignor to General Signal Corporation, a corporation of New York**
**Filed May 6, 1954, Ser. No. 428,012**
**7 Claims. (Cl. 246—182)**



1. In a car retarder control system for a classification yard, the combination comprising:

(*a*) a car retarder disposed at an intermediate point in a stretch of track in a classification yard, said car retarder being selectively operable to positions of

different degrees of braking and to a nonbraking position,

(*b*) weight registration means responsive to the passage of a car over a predetermined point along said stretch of track in advance of said retarder for registering a weight classification for said car,

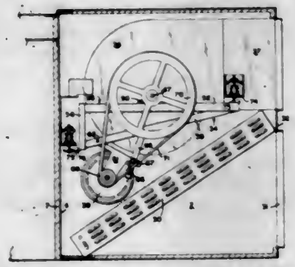
(*c*) rolling resistance registration means responsive to the free rolling passage of said car over a predetermined portion of said track in approach of said retarder for registering a rolling characteristic classification for said car, and

(*d*) operating means for said retarder controlled jointly by said weight registration means and said rolling resistance registration means for first operating said retarder to a degree of braking in accordance with the weight classification of said car as registered by said weight registration means and for subsequently operating said retarder to said nonbraking position when the speed of said car within the retarder is reduced to a speed selected in accordance with said rolling resistance registration means.

7. Automatic control apparatus for a classification yard having a master retarder, one or more group retarders and one or more storage tracks, said apparatus comprising, in combination, means for controlling the speed of each cut leaving the master retarder of said yard to the same preselected speed, means for measuring the speed of each cut in approach to a group retarder, means for computing the rolling resistance of each cut in dependence on said preselected speed and said measured speed, and means for controlling the speed of cuts leaving the group retarders in accordance with the computed rolling resistance of each cut.

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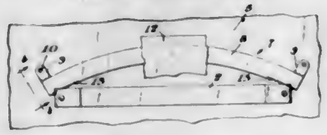
**3,169,737**
**VIBRATION ISOLATION SYSTEM**
**David S. Wilson, East Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed Aug. 2, 1962, Ser. No. 214,388**
**1 Claim. (Cl. 248—18)**



A support for resiliently positioning a fan and motor unit in an air conditioning apparatus housing comprising a rod-like member secured to said fan and motor unit, a plate-like bracket having a generally cylindrical outwardly projecting bracket part and an opening therethrough secured to said air conditioning apparatus housing, said bracket opening being coaxial with said projecting bracket part and dimensioned to permit free movement of said rod-like member therethrough, a generally cylindrical resilient member engaging said bracket, the portion of said resilient member engaging said bracket having a generally cylindrical recess for snugly receiving said bracket projecting part to inhibit lateral movement between said resilient member and said bracket, said resilient member having an opening therethrough coaxial with said recess and dimensioned to permit free movement of said rod-like member therethrough, said cylindrical resilient member having a first stepped portion and a second stepped portion spaced therefrom, the second stepped portion being adjacent the bracket and having an outer dimension greater than the outer dimension of the first stepped portion, the portion of the resilient member between said first and second stepped portions forming an abutment, a spring around said resilient member first stepped portion in engagement with resilient member abutment, and adjustable connecting means between said rod-like member and said spring for selectively controlling the dampening response of said support.

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**3,169,738**
**PICTURE HANGING APPARATUS**
**Norris Lyle Johnson, 229 S. St. Johns St., Ithaca, Mich., assignor of fifty percent to Clifford C. Wetzel, Ithaca, Mich.**
**Filed Sept. 12, 1962, Ser. No. 223,188**
**7 Claims. (Cl. 248—31)**



1. Apparatus for mounting an object on a substantially vertical wall or the like, said apparatus comprising a first elongated support member terminating at its opposite ends in spaced apart, laterally extending flanges; a second elongated support member having a bowed portion of such length as to span the distance between said flanges, each of said flanges having at least one notch therein and the bowed portion of said second support member having a plurality of notches at its opposite ends, the notches in said flanges receiving said second support member and cooperating with the notches at the opposite ends of the bowed portion of the latter to fix said support members against movement relative to one another; and mounting means on each of said support members for mounting one member on said wall and the other member on said object.

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**3,169,739**
**MOUNTING FOR ANTENNAS AND THE LIKE**
**Ara Yacobian, 7 Edge Hill Road, Wellesley Hills, Mass.**
**Filed Aug. 1, 1962, Ser. No. 214,018**
**2 Claims. (Cl. 248—40)**

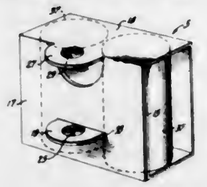


1. A clamp-mounted radio antenna for the trailing end of the rear fender of a bicycle, the fender being convexly curved and having opposite side edges, comprising a U-shape member of resilient material having the extremities of each downwardly extending leg bent inwardly and upwardly to form clamping lips adapted to fit around and under the opposite edges of the fender to embrace the same, a radio antenna, pressure means extending between the crotch of the U-shaped member and the convex curvature of the fender adapted to clamp the U-shaped member in position at the trailing end of the fender, radially of the wheel axis and at a substantial inclination to the vertical, a bracket presenting a pair of arms, one secured to the U-shaped member and the other secured to the antenna as a mounting for the same, the arms diverging from each other at an angle to accommodate the difference in inclination between that of said radially disposed U-shaped clamp and that of said substantially vertical antenna.



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**3,169,740**
**DISPLAY HOLDER**
**Richard W. Beckett, 430 Brannan St., San Francisco, Calif.**
**Filed Dec. 5, 1962, Ser. No. 242,523**
**2 Claims. (Cl. 248—46)**



1. A holder for a pole or the like comprising a generally rectangular sheet of stiff material, said sheet having a plurality of partial cutouts, each of said cutouts being attached to the sheet material; a hole in each of said cutouts, said holes being in alignment when the cutouts are folded outwardly at right angles to said sheet; and a hole in said sheet through which at least one of said cutouts can protrude, said sheet having fold lines thereon to divide the same into five segments whereby said sheet can be folded into a generally rectangular structure having three sides composed of a single thickness of said material and a fourth side of a double thickness formed by overlying end segments of said stiff material with at least one cutout protruding therefrom.

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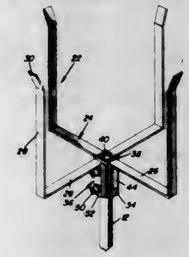
**3,169,741**
**FLUID CONDUIT ADJUSTABLE SUPPORT RAMP**
**Frank W. Bittner, 43235 E. Whittier St., Hemet, Calif.**
**Filed Jan. 24, 1963, Ser. No. 253,683**
**4 Claims. (Cl. 248—49)**



1. A fluid conduit adjustable support ramp comprising a plurality of generally horizontally disposed and elongated support members positioned in aligned end-to-end relation, means pivotally securing each pair of adjacent ends of said support members together for rotation relative to each other about upstanding axes, one set of corresponding ends of a set of said adjacent support members including depending leg means pivotally supported from the corresponding support members for pivotal movement between depending fully extended positions and collapsed positions closely underlying the corresponding ends of said set of adjacent support members with the free ends of said leg means projecting toward but spaced inwardly from the remote ends of said set of adjacent support members, coacting means carried by said leg means and said set of adjacent support members releasably securing said leg means in adjusted rotated positions, the support members of said set of support members being swingable relative to each other, when said leg means are fully collapsed, to positions in overlapped vertically stacked positions with said collapsed leg means sandwiched between the lower surfaces of the associated end of the corresponding support member and the upper surface of the end of the adjacent support member pivotally secured to said associated end.

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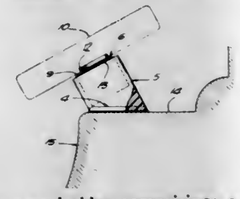
**3,169,742**
**GARBAGE CAN HOLDER**
**Guilford Houston Smith, Lock Drawer 330, Tuskegee, Ala.**
**Filed May 29, 1963, Ser. No. 284,028**
**2 Claims. (Cl. 248—146)**



1. A garbage can holder comprising an upright standard having ground-penetrating means on the lower end thereof, a garbage can holding assembly, and means connecting the garbage can holding assembly to the upper end of the standard, said garbage can holding assembly including a plurality of radially disposed resilient arms, means securing the inner ends of the arms to the standard, each of said arms including an upstanding portion and a radially extending horizontal portion integral therewith with the horizontal portions adapted to support the bottom of a garbage can and the upstanding portions adapted to frictionally resiliently engage the peripheral wall thereof for securely and detachably retaining the garbage can in position on the holder, said means connecting the arms to the upper end of the standard including a depending attaching portion on the inner end of each horizontal portion of the arms, said depending attaching portions being disposed in parallel relation to the longitudinal axis of the standard, and fastening means extending through the attaching portions and the standard for detachably securing the arms to the standard, a pair of angle iron members interposed between the standard and the attaching portions, said standard having a cylindrical external peripheral surface engaging the inner surfaces of the flanges of the angle iron members with the attaching portions engaging the outer surfaces of the angle iron members, said fastening means including a pair of perpendicularly arranged channel bolts staggered in relation to each other extending through the attaching portions, the angle irons and the standard for securely orientating the components in assembled relationship.

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**3,169.743**
**MAGNETIC SOAP HOLDER**
**John S. Page, Jr., 1450 El Mirador Ave., Long Beach 15, Calif.**
**Filed Oct. 5, 1962, Ser. No. 228,672**
**5 Claims. (Cl. 248—206)**

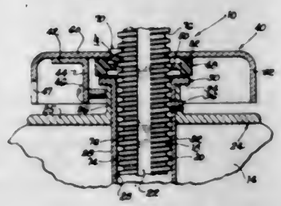


1. A magnetic soap holder comprising: a base having a mounting surface adapted to be affixed to a support; a

magnet; and a magnet supporting projection on said base extending angularly outwardly from and to one side of an edge of said base; said projection having an outer end in which said magnet is mounted with the face of the magnet so inclined with respect to the base that a bar of soap having a member affixed thereto subject to being magnetically held by said magnet, may be supported by the holder in a position inclined from the vertical and in front of said holder when said member is engaged with said magnet face.

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3,169,744
## CHAIR HEIGHT ADJUSTMENT MEANS
Stanley J. Nocek, Northlake, and George H. Stell, Elmhurst, Ill., assignors to Precision Metal Workers, Chicago, Ill., a co-partnership composed of Ralph Robinson and K. O. Robinson
Filed Jan. 22, 1963, Ser. No. 253,137
3 Claims. (Cl. 248—405)



2. In a chair having height adjustment means, the improvement comprising a handwheel formed from a single continuous piece of sheet material, said handwheel having a substantially flat central body portion, said central body portion including a single helical thread integral at its root therewith, the apex of said thread defining a substantially circular opening adjacent the center of said central body portion, said thread extending below the plane of said central body portion, and a recessed bearing having a central bore concentric with said opening surounding, but not contacting, said thread, said bearing further contacting said central body portion adjacent said thread, and cooperating means on said central body portion and said bearing for releasably locking said bearing to said central body portion.

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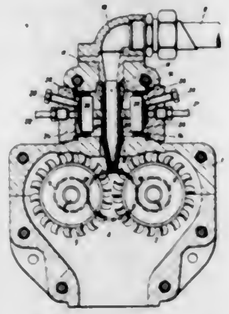
3,169,745
## FOLD AWAY DESIGN MASTER
Frank J. Wehringer, 217 E. Adele, Anaheim, Calif.
Filed Aug. 12, 1963, Ser. No. 301,363
3 Claims. (Cl. 248—454)




1. In a drafting board;
support means for said drafting board, said support means including first and second support panels adapted to support said drafting board at first and second angles;
means on said support panels to remove said support panels from supporting position with respect to said drafting board; and
means on said support panels for maintaining said support panels in drafting board supporting position, said means for maintaining said support panels including a stop hingedly secured to each of said support panels, said hinged support being hinged with built in stops to limit the opening of said hinges to substantially right angles with respect to said support panels, and a spring in said hinge to urge said hinge open against said hinge stop.

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3,169,746
## FLUID PRESSURE OPERATED TURBINES
Alois Moosmann, 11 Muttergartenweg, Stuttgart-Birkach, Germany
Filed Sept. 8, 1960, Ser. No. 54,645
Claims priority, application Germany, Sept. 11, 1959, M 42,723
7 Claims. (Cl. 253—24)



1. A fluid pressure operated turbine, especially for machine tools, comprising a housing, two impeller-type turbine wheels having parallel axes and mounted in the housing with their peripheries almost touching at a point in the medial plane between said axes, gearing means coupling said impeller wheels together and coupling said impeller wheels positively together so that in motion said impeller wheels rotate in the same direction, adjustable jet means for directing a jet of fluid medium under pressure onto at least either of said two impeller wheels, said jet of pressure fluid medium flowing from a nozzle fixedly arranged in the medial plane between the axes of said turbine wheels, movable diverting means comprising at least one knife edge arranged on a knife edge member, said knife edge being insertable into said jet substantially at right angles to the axis of said nozzle, at least one opening above said knife edge member extending substantially at right angles to the longitudinal axis of said nozzle, said jet of pressure fluid medium being deflectable away from the center axis of said nozzle on one of said turbine wheels by the force of reaction of said part of said jet which is diverted by said diverting means substantially at right angles to the axis of said nozzle.

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3,169,747
## ROTARY BLADED POWER CONVERSION MACHINES
Donald Glenfield Seymour, Bristol, England, assignor to Bristol Siddeley Engines Limited
Filed Jan. 2, 1962, Ser. No. 163,669
Claims priority, application Great Britain, Jan. 6, 1961, 668/61
13 Claims. (Cl. 253—39)

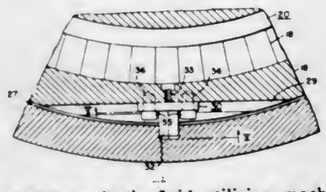
1. A rotary bladed fluid flow power-conversion machine operating with a compressible working fluid and comprising a stator and a rotor having co-axially arranged surfaces defining between them part of a flow passage for the working fluid, at least one ring of blades carried by the rotor and at least one ring of blades carried by the stator, the blades projecting into the said part of the flow passage, an adjacent flow passage part including a division wall causing differences in the flow direction on opposite sides of the division wall and thereby tending to cause transmission of a circumferential variation of flow to at least one ring of the rotor blades having a natural vibration mode such that the blades would be set in vibration by the said circumferential variation of flow within the working rotary speed of the machine, and means between the said adjacent flow passage part and the said ring of



rotor blades to prevent said transmission, the said means comprising a non-uniform arrangement of at least one ring of stator blades such as to convert the circumferential variation of flow to a form not liable to excite vibration of the said rotor blades.

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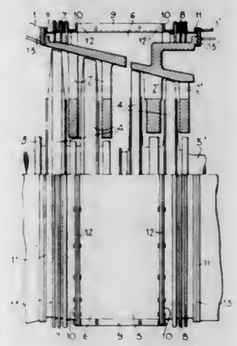
3,169,748
## TURBINE APPARATUS
Robert D. Howard, Marple Township, Delaware County, Pa., Richard A. Ladner, Camden, N.J., and Alvin L. Stock, Drexel Hill, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1962, Ser. No. 242,770
8 Claims. (Cl. 253—39)




1. An axial-flow elastic fluid utilizing machine comprising
a tubular casing structure having a first central axis and having an internal wall portion of substantially circular cross-sectional shape concentric with said axis,
said casing structure being axially divided along a central horizontal plane into upper and lower casing half portions,
an annular diaphragm structure disposed in said casing structure and having a second central axis,
said diaphragm structure being diametrically divided into upper and lower diaphragm half portions of substantially semicircular cross-sectional shape,
said upper and lower diaphragm half portions being associated with said upper and lower casing portions, respectively,
one of said diaphragm half portions having a semicircular outer ring portion disposed adjacent the internal wall of the associated casing portion,
the associated casing portion having a bore in its internal wall,
said ring having an elongated keyway extending chordwise therethrough,
a key member received in said keyway and slidable chordwise therein and having a portion projecting outwardly from said keyway into engagement with said bore, and
means carried by said ring portion for locking said key to said ring portion.

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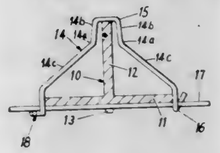
3,169,749
## EXPANSION DEVICES FOR TURBINE CASINGS
Frank Rosslyn Harris, Sale, England, assignor to Associated Electric Industries Limited, London, England, a British company
Filed June 18, 1963, Ser. No. 288,658
Claims priority, application Great Britain, June 20, 1962, 23,781/62
7 Claims. (Cl. 253—39)



1. A gas turbine plant comprising two independently rotatable turbines arranged on a common axis for axial flow of the gaseous medium in series through both turbines, two rotor shafts overhung inwardly with respect to the bearings thereof so that the inward ends of the rotor shafts are axially adjacent each other, an annular casing component surrounding and overlapping both of the overhung ends of the rotor shafts, a resilient expansion joint at each end of said casing component connecting the latter to two separately supported casing parts of the respective turbines, said annular casing component being split in the axial direction into at least two parts for transverse removal normal to the axis and each of the expansion joints being individually releasable for axial displacement into adjacent relationship with the other for allowing access to and transverse removal of parts of the turbines normally contained within the axial length of the annular casing component.

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3,169,750
## FENCE POST CLIP
Wayne B. Weed, Independence, Mo., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Jan. 7, 1963, Ser. No. 249,819
2 Claims. (Cl. 256—57)




1. A wire fence post clip comprising a body shaped to embrace a fence post, which post has a rearwardly extending member and a front portion against which a fence wire is to be secured, said body having a back member for engaging said rearwardly extending member and extend-

ing to each side of it, and arm members attached to each end of said back member, said arm members each having in succession a first portion, a second portion attached to said first portion, and a third portion attached to said second portion, said third portions having axes substantially at a right angle to the axis of said back member and spaced to engage the side edges of said front portion of said fence post, said first and second portions of said arm members extending between said back member and said third portion in non-rectilinear, angular relationship, said back member and said arm members lying substantially in a single plane, one of said arms having at its outer end an open hook-shaped configuration oriented substantially normal to said plane, the other of said arms having at its outer end an open U-shaped configuration of substantial length oriented substantially normal to said plane and in a plane normal to the axis of said third portion of said arm, the angular relationship of the several portions of said arms imparting resilience to said clip for the maintenance of tight engagement.

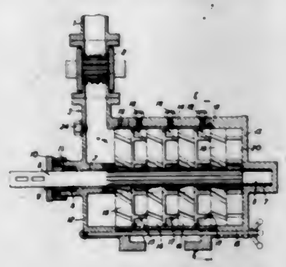
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3,169,751

## MIXING OR EMULSIFYING MACHINES

Thomas Steele, Wishaw, Scotland, assignor to Morton Machine Company Limited, Wishaw, Scotland, a British company

Filed July 10, 1961, Ser. No. 122,954
6 Claims. (Cl. 259—7)



1. A mixing or emulsifying machine having an inlet and an outlet for material to be treated and comprising in combination a mixing chamber, an axially extending series of cooperating members within said chamber consisting of material propelling members and means for rotating said propelling members, with fixed material directing members alternately arranged with respect to said material propelling members, each comprising radial arms joined by a frusto-conical member which directs the material towards the centre region of the chamber, said series of co-operating members being terminated by an impeller located at the outlet of the chamber, a pump for positively feeding material to said series of co-operating members and a further pump for effecting positive discharge of the material from the machine, the machine being further provided with means for effecting pressurisation of the interior of the machine.

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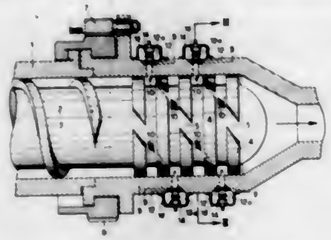
3,169,752

## HOMOGENIZING DEVICE FOR EXTRUDING OR INJECTING MACHINES IN THE TREATMENT OF THERMOPLASTICS

Leonce Marie Henri Kraffe de Laubarede, Boulogne-sur-Seine, France, assignor to Societe Anonyme dite: Plastus-S.A., Geneva, Switzerland, a corporation of Geneva

Filed Aug. 21, 1961, Ser. No. 132,620
Claims priority, application France, Aug. 22, 1960, 836,444
6 Claims. (Cl. 259—7)

1. In a device for homogenizing plastic material comprising an internally cylindrical casing, and an elongated member mounted axially of said casing for rotation therewithin, said elongated member being provided with a plurality of parallel annular ribs brushing the internal wall of said casing, and said ribs being interrupted by heli-



cally aligned passageways extending therethrough the improvement which comprises flow regulating means positioned between said ribs in helical alignment with said passageways, and means extending through said casing for adjusting the position of said flow regulating means.

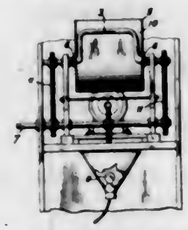
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3,169,753

## ELECTRIC HOUSEHOLD BREAD AND BUTTER AND PASTRY MACHINE

Sigmond Wegh, 7112 Farrell Road, Calgary, Alberta, Canada

Filed Mar. 26, 1962, Ser. No. 183,330
1 Claim. (Cl. 259—110)



A dough mixer and churn comprising a receptacle adapted to contain ingredients to be mixed in the preparation of dough, or milk or cream to be churned; a beater having ends revolubly mounted in said receptacle and provided therebetween at one side of said ends with a U-shaped, crank-like section rotatable within said receptacle; a plate-like churning member entirely covering the space within said crank-like section and detachably secured to said section and projecting therefrom to the opposite side of the beater ends; and means for revolving said beater whereby said churning member will churn butter or cream in said receptacle and upon detachment of said churning member from the beater said crank-like section of the beater will mix dough ingredients in the receptacle.

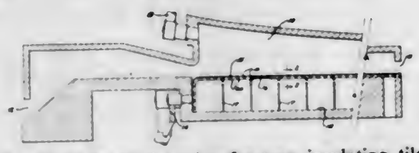
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3,169,754

## REHEAT FURNACE

Jack E. O'Reilly, Homewood, Ill., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 7, 1963, Ser. No. 263,652
2 Claims. (Cl. 263—6)



2. Generally C shaped refractory insulating tiles for mounting in pairs about a cooling conduit having a skid rail disposed there above and in contiguous contact therewith, and in which said cooling conduit contains external rigid hook means, each of said tile having a lower lip arranged to contact a similar lip of the other tile in said pair and a dished face above said lower lip constructed and arranged to oppose a similar dished face of the other tile to define an open topped, open ended slot, the open topped slot having an upper mouth which extends its length and which is narrower than the diameter thereof, the curvature of the dished face being such that a pair of tile will be adapted to peripherally encompass in spaced relation all but the top portion of a cooling conduit where it is adapted to be in contiguous heat-conducting relation with the skid rail, and means adapted to releasably mount and frictionally engage said tiles in place about the cooling conduit, said means including a plurality of longitudinally spaced passages opening through the dished face arranged for hanging on the hook means carried by the cooling conduit, said passages being above the center of gravity of the tile.



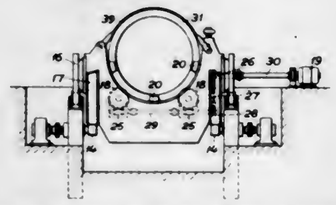
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3,169,755

## ROTATABLE FURNACE

Torsten Eklund, Yngve Bengtsson, and Elof Forsberg, Surahammar, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Sept. 25, 1962, Ser. No. 226,057
Claims priority, application Sweden, Oct. 3, 1961, 9,799/61
6 Claims. (Cl. 263—33)



1. Rotatable furnace including a base, a stand tiltably mounted on the base, a furnace body, and means rotatably mounting the furnace body in said stand, comprising a roll frame formed of at least two spaced laminated roll rings, traverse members connecting said rings, said stand and roll frame having cooperating roller means axially and radially supporting the roll frame and furnace body, the roller means for radial support being arranged around the furnace along not more than 180° of its periphery, said roll frame and said furnace body having cooperating spring loaded releasable means and recesses in which said releasable means engage to fasten the furnace body in the roll frame.

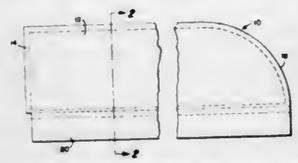
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3,169,756

## PNEUMATIC CUSHION

Russell B. Miller, Akron, Ohio, assignor to Barberton Plastics Products, Inc., Barberton, Ohio, a corporation of Ohio

Filed July 20, 1962, Ser. No. 211,270
3 Claims. (Cl. 267—1)



2. A pneumatic cushion made from two plastics of different softness, one plastic being relatively soft and flexible and formed as a hollow closed fluid impervious body of substantially half cylinder shape, the hollow body being inflated with air under pressure, the other plastic being relatively stiff and hard and having a flat portion molded in integral relation with the flat side of the hollow body to hold it flat even when inflated, and flanges integral with and on the flat portion and extending in the same plane as the flat portion beyond the hollow body and being of the other plastic and relatively stiff and hard and whereby the flanges of the flat portion of the cushion can be secured to any object to be cushioned as the flat portion is placed in adjacent relation thereto.

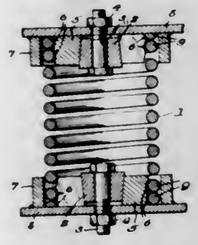
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3,169,757

## HOLDING AND GRIPPING DEVICE FOR TENSION-COMPRESSION SPRINGS

Josef Röder and Georg Klein, Darmstadt, Karl-Heinz Künzel, Darmstadt-Eberstadt, and Paul Krüger, Darmstadt-Arheilgen, Germany, assignors to Carl Schenck Maschinenfabrik G.m.b.H., Darmstadt, Germany, a German company

Filed June 19, 1962, Ser. No. 203,568
Claims priority, application Germany, June 24, 1961, Sch 29,910
7 Claims. (Cl. 267—60)



1. A holding and gripping device for springs which are subjected to tension and to compression, comprising radially outwardly expansible gripping means disposed within a spring in pressure engagement with terminal turns of said spring on the inside thereof, means engageable with said gripping means for adjusting the radially outwardly effective pressure exerted by said gripping means on said spring turns, said gripping device being constructed to exert a reactive force on said spring turns which counters the force exerted by the load on the spring and diminishes progressively in axially extending inward direction toward the spring turns which are free of said gripping means, said gripping device comprising an annular radially outwardly expansible member composed of a plurality of parts, grooves being formed in said parts for receiving the terminal turns of said springs, the width of said grooves increasing and the depth thereof decreasing in the direction of the spring turns which are free of said gripping device.

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3,169,758

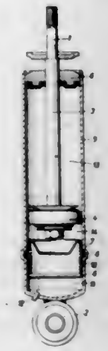
## TELESCOPIC SHOCK ABSORBERS

Albert Dillenburger, Andernacher Strasse 28a, Koblenz-Luetzel, Germany

Filed Sept. 13, 1962, Ser. No. 223,558
Claims priority, application Germany, Sept. 20, 1961, D 37,066
4 Claims. (Cl. 267—64)

1. A shock absorber comprising a cylinder, a working piston in the cylinder having a piston rod connected thereto, a compensating piston in the cylinder between the working piston and cylinder head, said compensating piston being cup shaped and having a rounded guide bulge for sliding engagement with the cylinder wall, a sealing ring secured to the cylinder wall and in sealing engagement with the compensating piston, the sealing ring

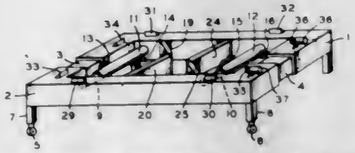
and guide bulge providing spaced supports for said compensating piston, and means for supplying gas under



pressure to the space between the compensating piston and cylinder head.

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**3,169,759**
**NAILING TABLE**
**Joseph C. Mehaffy, 201 Smith, Kirkwood, Mo.**
**Filed May 17, 1962, Ser. No. 195,618**
**2 Claims. (Cl. 269—25)**

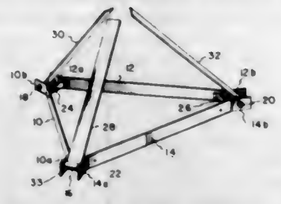


1. In a nailing table having a fixed side and a movable side and a top formed thereof, a pair of pistons and cylinders mounted upon said sides therebetween, a pair of expansion arms hinged to said sides and mounted therebetween, each expansion arm consisting of two members hinged together, a metering valve associated with each cylinder and a pair of lines connecting each metering valve to its associated cylinder to enable the piston in each cylinder to be driven reciprocably in and out of its cylinder to flex said expansion arms and move the movable side of said table toward and away from the fixed side thereof, a set of limiting blocks on the top of said table, consisting of a pair of right limiting blocks, a pair of left limiting blocks and a pair of upper limiting blocks, the right and left limiting blocks being mounted on opposite sides of the table and the upper limiting blocks pair being mounted one on the fixed side and one on the movable side, and a pair of smaller pistons and cylinders mounted opposite said upper limiting blocks to cooperate therewith.

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**3,169,760**
**APPARATUS FOR FACILITATING SPLITTING OF CORD WOOD AND THE LIKE**
**Paul Field, Journey's End Road, New Canaan, Conn.**
**Filed Oct. 26, 1962, Ser. No. 233,384**
**3 Claims. (Cl. 269—86)**

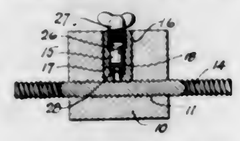
2. Apparatus for holding upright a length of cord wood and the like for splitting which comprises, three frame members disposed in the form of a triangle, the ends of the members being bent outwardly at an angle of substantially 45°, so that each apex of the triangle is defined by a pair of bent over ends spaced apart and substantially parallel, means interconnecting each member to each of the others adjacent to, and inwardly of, the parallel bent over end portions, pivot rods mounted between opposed, substantially parallel, bent over end portions of the frame members, and arms pivoted on said



pivot rods and extending in the direction of the center of the triangular frame.

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**3,169,761**
**THREAD VISE**
**Donald J. Herrington, 5230 S. Dawson St., Seattle 18, Wash.**
**Filed Aug. 20, 1962, Ser. No. 218,491**
**2 Claims. (Cl. 269—248)**



1. A vise for holding a rod for re-threading, comprising a body block that is adapted to be fixedly held and which is formed with a threaded, longitudinal bore for containing the rod for re-threading and formed also with a lateral bore directed into said block and opening into said longitudinal bore at a right angle thereto, a cylindrical sleeve threaded into the lateral bore; said sleeve being internally threaded along its outer end portion and formed with a smooth bore beyond said threaded portion extending to near its inner end and defining an outwardly facing shoulder and a bore of smaller diameter coaxial of the smooth bore and opening to the inner end of the sleeve, a rod clamping pin slidably contained in the smooth bore of said sleeve with its inner end portion extending through said bore of smaller diameter into holding engagement with a rod that is contained in said longitudinal bore of the body block and a clamping screw threaded into the threaded outer end portion of the sleeve to engage against the outer end of said clamping pin to force it against said rod to hold it against turning in the block.

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**3,169,762**
**MAGAZINE MAKING APPARATUS**
**Herman D. Parks, Norwalk, Conn., assignor to Time Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 7, 1963, Ser. No. 263,453**
**7 Claims. (Cl. 270—55)**



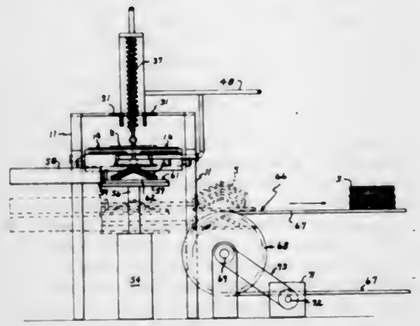
1. An apparatus for making up a magazine having a special section attached to the main section comprising a conveyor for carrying a main magazine section in straddling fashion thereon, a rail having a first portion spaced closely to and extending along the path of the conveyor on one side thereof and a second portion extending longitudinally and upwardly over the top of the conveyor to the opposite side, said rail spaced from said conveyor so that the leaves of the main section pass between said first



portion of said rail and said conveyor, means along the path of said conveyor at which the said first portion of the rail extends for delivering the special section in straddling fashion on the conveyor on top of the main section with the leaves on one side of the conveyor separated from the leaves of the main section by the said first portion of the rail and means along the path of said conveyor intermediate the said delivering means and the second portion of the rail for fastening the special section to the main section along a line intermediate the leaves on opposite sides of the conveyor, whereby as the conveyor carries the main and special sections relative to the rail, the rail changes the leaves of the special section from one side of the conveyor to the opposite side thereof.

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**3,169,763**
**APPARATUS TO TRANSFER PLIABLE MATERIAL**
**Woodrow W. Harris, Alexander City, Ala., assignor to The Russell Manufacturing Company, a corporation of Alabama**
**Filed Feb. 23, 1962, Ser. No. 175,150**
**3 Claims. (Cl. 271—68)**

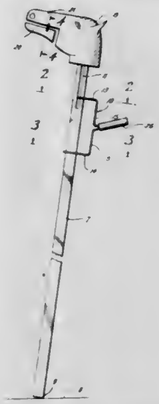


1. In apparatus to stack sheets of pliable material,
(*a*) a pair of generally parallel, spaced, side-by-side conveyors sufficiently close to each other for the material to span the space between the conveyors and to be supported for movement thereby,
(*b*) an air cylinder having a tubular piston rod with its outer end movable between the spaced conveyors,
(*c*) a tubular pusher member carried by the outer end of the tubular piston rod, sail tubular pusher member having air ports therein in fluid communication with the tubular piston rod,
(*d*) means to supply air to the pusher member through the tubular piston rod during the downward stroke of the piston, said pusher member moving downwardly in the space between the conveyors upon actuation of the air cylinder and pushing sheets of material downwardly between the conveyors,
(*e*) and support means beneath the conveyors to receive the sheets of material as they are delivered to the stack,
(*f*) said pusher member emitting air through the air ports when each sheet of material is deposited on the stack thereby to smooth the sheet.

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**3,169,764**
**TOY DEVICE**
**Fred H. Royce, 5903 Glenhurst, Houston 33, Tex.**
**Filed Oct. 26, 1962, Ser. No. 233,484**
**4 Claims. (Cl. 272—1)**

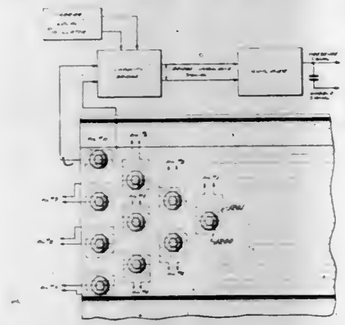
1. A noise maker toy including an elongated body having a lower end to engage the earth's surface, a slot in the upper end of said body and extending longitudinally in said body for a distance less than one-half the total length of said body, a U-shaped bracket having one leg thereof loosely encircling said body to accommodate free longitudinal movement between said body and said bracket leg, and the other leg of said bracket loosely fitting in said slot and loosely encircling only a portion



of said body, and handle means on said bracket whereby the lower end of said body may be frictionally propelled along the ground by a user grasping the handle and moving said body along in front of the user whereby said body may jump up and down as it is moved along over the earth's surface.

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**3,169,765**
**IMPEDANCE TYPE PIN PRESENCE INDICATOR**
**Milton Sanders and Howard S. Halpern, Stamford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey**
**Original application Apr. 4, 1957, Ser. No. 650,634, now Patent No. 2,980,424, dated Apr. 18, 1961. Divided and this application Mar. 24, 1960, Ser. No. 17,283**
**3 Claims. (Cl. 273—52)**



1. In a bowling alley installation, a bowling alley having a pin supporting bed providing a plurality of pin supporting positions, a standing pin detecting system comprising a plurality of capacitive transducers each constructed for positioning at a different one of the pin supporting positions of the alley bed, means for supplying alternating current to each of said transducers, and means for deriving from each of said transducers an output signal the amplitude of which depends upon the capacitance of the transducer from which the output signal is derived; and pin fall signalling means connected to be operated by said output signals for indicating the pin fall result of each ball of a frame rolled, said transducers being so constructed and arranged that, when said transducers are positioned at the pin supporting positions of

the alley bed below the surface thereof, the capacitance of each of said transducers is markedly different when a pin is standing at the pin supporting position at which the transducer is located than when the pin is absent.

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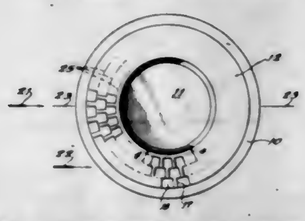
3,169,766
BOWLING PIN
John M. Ernst, Shelby, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 18, 1959, Ser. No. 840,912
6 Claims. (Cl. 273—82)



1. A plastic bowling pin comprising separate body, head and bottom sections, said body section provided with internal cavities adjacent the top and bottom thereof resembling two end-to-end frusto-conical members, said head and bottom sections each provided with an internal recess, means for joining said top and bottom sections to said body section to form a bowling pin, said recesses being located in juxtaposition whereby said pin is provided with internal cavities adjacent the top and bottom thereof, and a frusto-conical base below the bottom section and having a central internal aperture, a locking element adapted to be received in said aperture and having a portion thereof extending into said bottom section, the outer periphery of said frusto-conical base forming a continuation of the bottom edges of said pin when said base is in position, and means for actuating said locking member to removably maintain said base in position on said bottom section.

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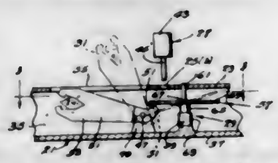
3,169,767
FLYING TARGET FOR TRAP SHOOTING
Samuel H. Bingham, Jr., Winnetka, Ill., assignor to Black Products Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 8, 1962, Ser. No. 229,119
11 Claims. (Cl. 273—105.4)



1. A flying target comprising an annular rim portion, a central disk-like portion offset in an axial direction from said rim portion, and a curved wall connecting said rim portion and said disk portion and providing a hollow dome, the peripheral surfaces of said rim portion being smooth, and the outer surface of said dome being provided with a plurality of depressions, said depressions each having a wall which provides one surface portion which is substantially parallel to the spinning axis of said target and perpendicular to a radius therefrom, and another surface portion which is substantially coplanar with said spinning axis, the spacing of said depressions being sufficiently close that, in the case of an offset hit, the pellet will engage one of said second mentioned surface portions directly without glancing off of an adjacent one of said first mentioned surface portions.

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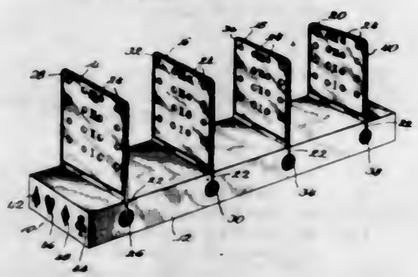
3,169,768
GAMEBOARD, CHANCE CONTROL MEANS AND PEG OPERATED INSTRUCTION MEANS
Marvin I. Glass, Burton C. Meyer, and Henry Stan, Chicago, Ill., assignors, by direct and mesne assignments, to Marvin Glass and Associates, Chicago, Ill., a partnership
Filed Oct. 6, 1961, Ser. No. 143,418
4 Claims. (Cl. 273—134)



2. A game comprising a game board having a playing surface including a series of openings therein defining a path of movement for the players, a marker to be moved along the path and which is insertable into any of the series of openings in the board, chance means for determining the extent of movement of said marker along said path by a player, play instruction means including a member movably supported on said board for generally outward movement relative thereto and a message on said board which is exposed only when said member is moved outwardly of the board, and operating means rotatably mounted on the back surface of said board for movement into a position of engagement with said movable member to effect said outward movement of the latter relative to said board, said operating means including a portion positionable for engagement by said marker when the latter is inserted into a predetermined one of said openings, and being movable in response to movement of said marker relative to said board to thereby effect movement of said movable member relative to said board to expose said message, and said operating means including another portion thereof which permits movement of said marker relative to said predetermined opening without effecting movement of said movable member, so that there is provided a random operation of said movable member dependent upon the position of said operating means at the time said marker is inserted into said opening.

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3,169,769
MULTI-DIMENSIONAL GAMEBOARD WITH CHANCE DEVICES
Don Cornish, 2540 NE. 97th St., Rochester, N.Y.
Continuation of application Ser. No. 740,377, Apr. 9, 1947. This application Feb. 11, 1952, Ser. No. 271,030
3 Claims. (Cl. 273—135)



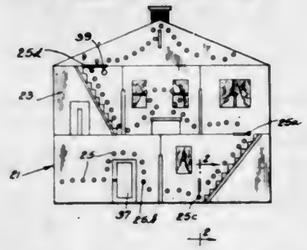
1. Amusement apparatus for play with game pieces comprising a three dimensional structure including four



spaced apart aligned transparent panels each having four horizontal rows or floors and four vertical columns or sections of playing positions, distinctive symbols for indicating each of said panels, the aligned floors and the aligned sections, and three devices of chance for indicating positions in which game pieces are to be played and of which one has symbols corresponding to said panels, a second has symbols corresponding to said floors and the third has symbols corresponding to said sections.

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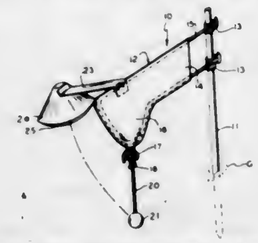
3,169,770
SURPRISE CHANCE DEVICE
Burton C. Meyer and Henry Stan, Chicago, Ill., assignors to Marvin I. Glass, Chicago, Ill.
Filed June 9, 1961, Ser. No. 116,026
5 Claims. (Cl. 273—138)



1. An arrangement for randomly effecting a given activity, said arrangement comprising a support, an element movably mounted on said support for movement to and from a first position and a second position, a stud on said support, and a member carried on said stud for pivotal movement therearound, said member also being tiltably displaceable on said stud relative to a position perpendicular to said stud and randomly engageably with said element to cause movement thereof from said first position to said second position incident to tiltable displacement of said member.

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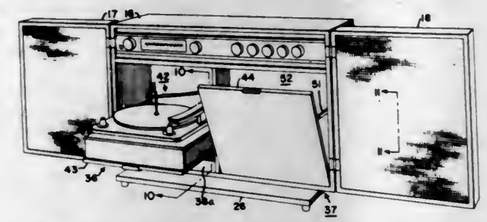
3,169,771
TETHERED BALL AND MEANS TO MARK BALL IMPACT AREA ON CLUB HEAD
William V. Holmes, Rome, N.Y., assignor to Marjorie V. Holmes and Phyllis A. Holmes, both of Rochester, N.Y.
Filed May 29, 1963, Ser. No. 284,120
3 Claims. (Cl. 273—186)



1. A golf practice device having means for supporting the device above the ground, a shield member projecting transversely from the supporting means, a target member comprising a receptacle filled with a soft porous material impregnated with ball-marking material, a tethered ball suspended from said shield member by suspension means including a resilient member pivotally connecting said suspension means to the shield member, and swivel means permitting said ball to rotate on said suspension means, said target member being secured to the shield member in the path of said ball when fairly struck, and said suspension means normally supporting said ball immediately above ground level.

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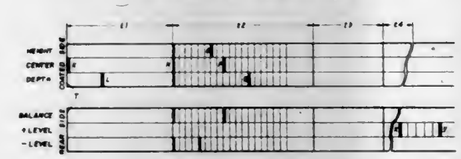
3,169,772
COMPACT CONSOLE PHONOGRAPH
Arthur R. Bentsen, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 1, 1962, Ser. No. 199,322
13 Claims. (Cl. 274—2)



6. A stereo phonograph of the type operably accessible from the front thereof, said phonograph comprising a cabinet having a record player and a record storage compartment in side-by-side relationship therein, said cabinet having a relatively small dimension between its front and rear and a top having a substantially uninterrupted surface, an opening in the front of said cabinet for containing said record player, said record player being pivoted in said cabinet at said opening so as to be alternatively tilted to a vertical position in said cabinet for storage and to a horizontal position for use, and a pair of doors containing loudspeaker means and respectively hinged to said cabinet at the opposite ends thereof to be alternatively opened to positions respectively sideways of said cabinet and closed to positions respectively in front of said record player and said record storage compartment, said record player being arranged in sandwiched relationship between one of said doors and the rear of said cabinet when said player is in the vertical position and said one door is in its closed position, and said record storage compartment being sandwiched between the other one of said doors and the rear of said cabinet when said other door is in the closed position.

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3,169,773
CONTROLLER
Horst Redlich, Berlin-Wilmersdorf, and Hans-Joachim Klemp, Berlin-Steglitz, Germany, assignors to Teldec Telefunken-Decca Schallplatten G.m.b.H., Hamburg, Germany
Filed Aug. 31, 1961, Ser. No. 135,222
Claims priority, application Germany, Sept. 2, 1960, T 18,951
17 Claims. (Cl. 274—4)

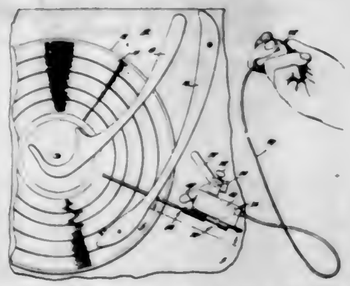


17. In a device for simplifying the reproduction operation of a signal on a recording medium by automatically controlling a setting of reproduction apparatus having a variable control and for use with a recording medium having selectively arranged information means including two indicators spaced apart a distance representative of the desired setting with the distance being dependent upon the characteristics of the signal on the recording medium, the improvement comprising: means for setting a variable control of reproduction apparatus; and means for actuating said setting means including means for sensing the information means and the distance between the indicators for operating said actuating means an amount depending upon said distance to thus actuate said setting means cor-

respondingly and consequently setting the control of a reproduction apparatus in dependence upon the characteristics of the signals on the recording medium.

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**3,169,774**
**RECORD PLAYER REPEAT ATTACHMENT**
**Francis O. Daellenbach, 1304 E. 5th St., Cheyenne, Wyo.**
**Filed May 8, 1962, Ser. No. 193,196**
**1 Claim. (Cl. 274—14)**



In a device for lifting the tone arm of a record player from a record on the turntable of such player and resetting the tone arm on the record so as to repeat the signal developed by said tone arm from said record, said device including a base adapted to be supported upon said record player in a position adjacent to and spaced from the turntable, a post rising from said base, a support element mounted on said post, and a horizontally disposed rod having the portion adjacent one end operatively connected to said support element for reciprocating longitudinal movement and for upward and downward movement of said rod, said rod being adapted to underlie the tone arm of said record player when said base is mounted thereon and to lift said tone arm upon execution of upward movement of said rod, shift said tone arm laterally upon execution of longitudinal movement of said rod, and lower said tone arm upon execution of downward movement of said rod, pneumatic means for effecting the upward and downward movement of said rod, said means consisting in an inflatable bag carried by said support element and operatively connected to said rod so as to raise said rod when said bag is inflated, a hand compressible bulb for air, a tube connecting said bulb to said bag, pivotal means operatively connected to said rod and carried by said support element having vertical and horizontal components of movement for effecting the movement of said rod in one longitudinal direction responsive to upward movement of said rod, and spring means biasing said rod in the opposite direction, and a restricted relief valve in said bag to deflate the bag slowly to reset the tone arm on the record with ease.

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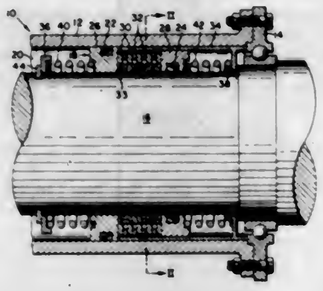
**3,169,775**
**MULTI-BEARING SEAL FOR ROTATABLE ELEMENTS**
**Francis L. Macaluso, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Aug. 30, 1962, Ser. No. 220,969**
**2 Claims. (Cl. 277—65)**

1. A seal between a relatively rotatable shaft in a shaft housing comprising:

(*a*) two spaced ring-shaped retainer members each housing an O-ring, one O-ring directed radially outwardly to contact the housing, another O-ring directed radially inwardly to contact the shaft;

(*b*) a plurality of washers positioned between said retainer members, alternate washers being made of a bearing material forming pairs of respective bearing surfaces; each of said washers having a bore diameter greater than the diameter of said shaft providing a hollow space therebetween;

(*c*) at least a portion of said washers having contacting surfaces with different coefficients of friction;



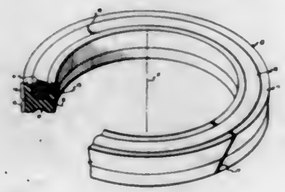
(*d*) a sleeve of absorbent material capable of maintaining a reservoir of a lubricant positioned in said hollow space;

(*e*) spring means for maintaining said retainers and washers in assembled relation;

(*f*) whereby relative motion occurs substantially successively between the bearing surfaces respectively in the order of their coefficients of friction starting with the bearing surface having the least coefficient of friction.

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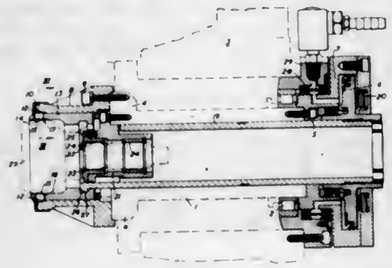
**3,169,776**
**MULTIPLE PURPOSE SELF-LOADING MACHINERY PACKING**
**Maurice D. Felt, Murray, Utah, assignor to Packing Supply Company, Salt Lake City, Utah, a corporation of Utah**
**Filed Mar. 18, 1963, Ser. No. 265,615**
**3 Claims. (Cl. 277—125)**



1. In machinery including a bore and a central member disposed within said bore and spaced therefrom to define an annular cavity of a transverse cross-section width W about a central member, a resilient packing-ring disposed in said cavity, said packing-ring comprising a packing-ring member including an upper surface and having a cross-section comprising a base portion of width less than W and an upper, deformable, bifurcated portion constructed to delineate an annular recessed area of undercut character which is contiguous with and medially depends from said upper surface and which is conformable to an O-ring snap-seated therein, and an O-ring snap-seated in said annular recessed area, said recessed area conforming to said O-ring snap-seated therein, and said O-ring protruding above said upper surface, said bifurcated portion with said O-ring seated in said annular recessed area being of nominal width greater than W, said packing-ring being compressed width-wise along said bifurcated portion of its said cross-section through the constrainment thereof by boundaries of said cavity defining width W, and wherein each of said packing-ring and O-ring is provided with a respective slit interruption, said slit interruptions being mutually displaced.



**3,169,777**
**WORK HOLDING MEANS**
**William Cull, Sutton Coldfield, England, assignor to Birfield Engineering Limited, London, England, a company of Great Britain**
**Filed Aug. 28, 1962, Ser. No. 219,955**
**Claims priority, application Great Britain, Aug. 29, 1961, 31,014/61**
**9 Claims. (Cl. 279—4)**

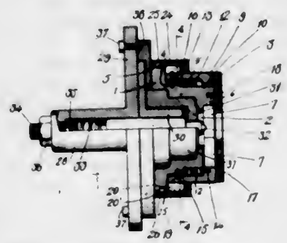


1. A work holding fixture comprising a grooved member arranged coaxially with a ball cage member adapted to receive a workpiece, a plurality of balls engaging the corresponding grooves in the grooved member and retained in the cage member so that they are located axially of the latter, the balls being arranged to grip a surface of the workpiece and the grooves so formed that the longitudinal axes thereof lie on a conical surface coaxial with said members, and means to produce relative axial movement of said members so that the grooves engage the balls with a wedging action to urge them radially into gripping contact with the workpiece.

7. A fixture according to claim 1, wherein power-operated means are provided to produce said relative axial movement of the grooved and cage members, the power-operated means comprising a fluid-operated piston and cylinder assembly, the piston and cylinder of the assembly being respectively connected to said members.

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**3,169,778**
**ROLLER JAW CHUCK**
**Shigematsu Matsuda, 65 Shimomaruko-cho, Ohta-Ward, Tokyo, Japan**
**Filed Nov. 8, 1960, Ser. No. 68,052**
**Claims priority, application Japan, Nov. 14, 1959, 34/35,951**
**3 Claims. (Cl. 279—72)**



1. A roller jaw chuck comprising

a hollow chuck body having a front grade of smallest diameter, a middle grade of median diameter, and a rear grade of largest diameter,

said grades being formed as concentric cylindrical faces of different diameters as outer faces of said hollow chuck body,

said hollow chuck body forming at its front end three lugs equidistantly angularly disposed relative to each other,

a roller disposed between each pair of adjacent lugs and radially movable within said hollow chuck body,

resilient means secured to said lugs urging said rollers in radial outward direction,

a first sleeve surrounding said hollow chuck body and defining a first annular chamber about said front grade of said hollow chuck body,

a helical spring wire disposed in said first annular chamber,

one end of said helical spring wire being secured to said hollow chuck body and the other end of said helical spring wire being secured to said first sleeve,

means permitting rotation of said first sleeve relative to said hollow chuck body for a predetermined angle against the force of said helical spring wire,

said one end of said helical spring wire operating as abutment means to limit the rotation of said first sleeve,

a second sleeve surrounding said first sleeve and defining a second annular chamber between said first and said second sleeve,

said second sleeve engaging said rear grade of said hollow chuck body,

means permitting rotation but preventing axial movement between said second sleeve and said hollow chuck body,

said first sleeve having inner cam faces of varying diameter engaging said rollers, so that upon rotation of said first sleeve said rollers are urged radially inwardly and moved radially outwardly by said resilient means of said lugs upon return rotation of said first sleeve member,

said first sleeve member having at least one recess at its outer periphery,

a double-armed locking pawl pivotally mounted on said hollow chuck body and disposed in said second annular chamber,

resilient means urging the operative end of said locking pawl into engagement with the outer face of said first sleeve and in a predetermined rotary position of said first sleeve into said recess of the latter,

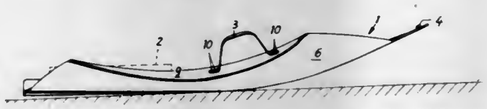
at least one lug extending radially inwardly from the inner face of said second sleeve, so that upon relative rotation between said first sleeve and said second sleeve said lug engages the rear end of said locking pawl, thereby withdrawing said operative end from said recess of said first sleeve,

a center member disposed within and coaxially with said hollow chuck body, and

resilient means engaging said center member and urging the latter axially forwardly, in order to expel a workpiece from said hollow chuck body upon release of said workpiece from said rollers.

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**3,169,779**
**TOBOGGAN**
**Otto Haab, 8483 Kollbrunn, Rikon, Zurich, Switzerland**
**Filed Nov. 2, 1962, Ser. No. 235,089**
**Claims priority, application Switzerland, Dec. 1, 1961, 13,981/61**
**5 Claims. (Cl. 280—18)**

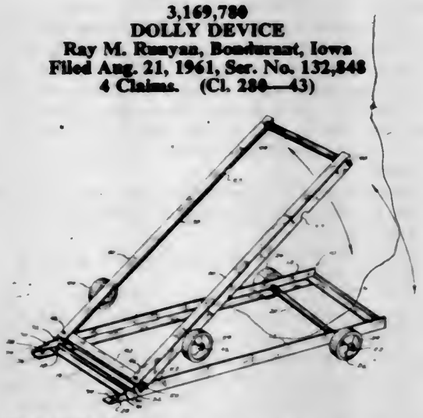


1. A dish-shaped toboggan, comprising a bottom wall having an upwardly curved front end portion, said bottom wall being provided with longitudinally extending grooves arranged in spaced relation to form runner surfaces on both sides thereof, upwardly and outwardly extending walls along the side edges of said bottom wall

inclined laterally, said side walls diverging forwardly in a direction of said upwardly curved bottom wall portion, downwardly and laterally extending lugs on the upper edges of said side walls with the major portion thereof extending upwardly in a longitudinal and divergent direction with respect to the center line of said bottom wall, and hand grips secured to said laterally extending lugs.

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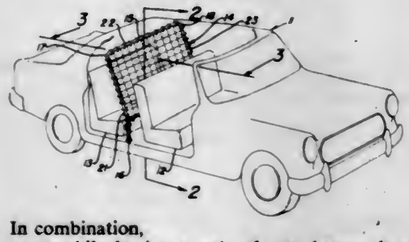
**3,169,780**
**DOLLY DEVICE**
**Ray M. Runyan, Bonduraut, Iowa**
**Filed Aug. 21, 1961, Ser. No. 132,848**
**4 Claims. (Cl. 280—43)**



1. In a dolly device,
a lower frame having forward and rearward ends,
an upper frame having forward and rearward ends pivotally secured by its forward end to the forward end of said lower frame and being adapted to assume a folded condition on top of said lower frame at times,
said upper and lower frames being of flat construction to permit them to be folded upon each other in a horizontal plane,
wheels on opposite sides of said upper frame near its forward end,
and wheels on opposite sides of said lower frame near its rearward end to facilitate the insertion thereof underneath an appliance and to permit such appliance to be supported on said wheels when said frames are folded upon each other.

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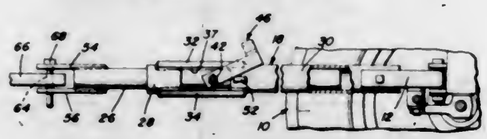
**3,169,781**
**SAFETY NET FOR VEHICLE OCCUPANTS**
**Samuel A. Abruzzino, 3480 Riverside-Airport Road, Zanesville, Ohio**
**Filed Jan. 8, 1963, Ser. No. 250,135**
**2 Claims. (Cl. 280—150)**



2. In combination,
an automobile having a pair of coat hanger hooks, a front seat, a rear seat, and a floor;
a length of shock cord secured at its opposite ends to the floor of the automobile and connected at two intermediate points to the coat hanger hooks of the automobile thus forming two vertical legs and one transverse leg and the legs forming supporting members;
snap hooks secured at the ends of said shock cord;
rings securely fastened to the floor boards of the automobile and connected to the snap hooks;
a transverse supporting member also formed of the shock cord connected to the two vertical legs of the device and spaced substantially vertically below said transverse leg; and
a net formed of soft vertical resilient textile strands and soft horizontal resilient textile strands connected to the vertical supporting members and transverse supporting members, all of which is positioned rearwardly of the front seat and contacts the front of the rear seat.

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**3,169,782**
**AUTOMATIC TELESCOPING TRAILER TONGUE**
**Earl P. Columbus, 2002 Russell Ave. N., Minneapolis, Minn.**
**Filed Aug. 30, 1963, Ser. No. 305,586**
**3 Claims. (Cl. 280—478)**

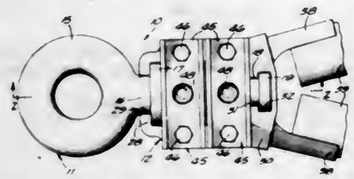


1. An automatic telescoping generally horizontally disposed trailer tongue comprising an outer tubular member and an inner elongated member having one end snugly and slidably disposed in a first end of said outer member, means carried by the second end of said outer member adapted to be pivotally secured to one vehicle and means carried by the other end of said inner member adapted to be pivotally secured to another vehicle, the first end of said outer member having a pair of horizontally aligned, diametrically opposite and longitudinally extending slots formed therein, said one end of said inner member having a plurality of diametric bores formed therethrough and spaced longitudinally therealong and selectively registrable with said slots, an abutment and pivot pin secured through a selected one of said bores and having its opposite end portions slidably received in said slots, said opposite end portions being engageable with the portions of said outer member defining the remote ends of said slots to limit reciprocation of said inner member relative to said outer member, a generally U-shaped locking member including a pair of horizontally aligned, generally parallel and elongated elements disposed on opposite sides of the first end of said outer member and pivotally secured to said opposite end portions at one pair of corresponding ends and interconnected at the other pair of corresponding ends by means of a saddle portion extending transversely of and engageable with the upper surface of said outer member, and a pair of laterally outwardly projecting abutments carried by opposite sides of said outer member and engageable by the end faces of said other pair of corresponding ends of said elongated elements when said abutment pin is disposed in the ends of said slots adjacent the terminal end of said first end of said outer member to prevent axial shifting of said inner member toward said second end of said outer member.

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**3,169,783**
**DRAWBAR HITCH ASSEMBLY**
**Henry C. Harbers, Pasadena, and Buck C. Hamlet, La Habra, Calif., assignors to Western Unit Corporation, City of Industry, Calif., a corporation of California**
**Filed July 30, 1962, Ser. No. 213,254**
**13 Claims. (Cl. 280—485)**

7. A drawbar hitch assembly comprising a main body casting having an opening in its front end wall, a cast steel eye bolt having the shank thereof extending lengthwise and centrally of said main body casting, said shank having an integral draft-transmitting collar at its forward end seated against the interior rim of said opening through the front end wall of said main body, resilient rubber

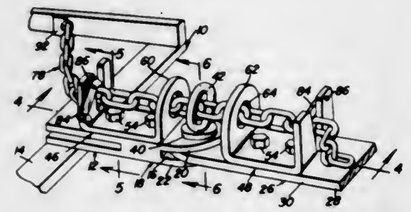


means embracing said shank and the adjacent face of said collar, and means for placing said rubber means under compression axially and radially with respect to said eye bolt shank to hold said collar in continuous metal-to-metal contact with said front end wall and to resist rotation of said shank relative to said main body.



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**3,169,784**
**TRAILER HITCH WITH DISENGAGEMENT PREVENTING MEANS**
**James H. Lorimor, R.F.D. 1, Shenandoah, Iowa**
**Filed Oct. 13, 1961, Ser. No. 144,899**
**11 Claims. (Cl. 280—507)**



1. A trailer hitch for pivotally securing the forward end of a first vehicle to the rear end of a second towing vehicle, said hitch comprising first and second hitch members adapted to be secured to the forward and rear ends of said first and second vehicles respectively and to have an extended end portion projecting forwardly and rearwardly of said first and second vehicles respectively, movably releasable means carried by said end portions engaged with each other and constituting a pivotal connection therebetween, first and second guide means carried by said first and second hitch members adjacent said movably releasable means, said movably releasable means including third guide means, and elongated lock means releasably engaged with said first, second and third guide means and preventing movement of said third guide means relative to said end portions sufficient to enable disengagement of said movably releasable means from said pivotal connection means.

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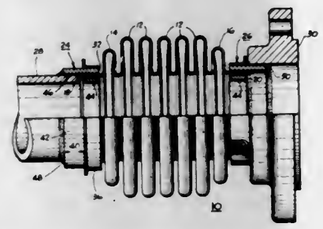
**ERRATUM**

For Class 281—15 see:
Patent No. 3,169,341

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**3,169,785**
**BELLOWS EXPANSION UNIT**
**Eugene H. Ziebold, 5711 La Jolla Blvd., La Jolla, Calif.**
**Filed Nov. 9, 1961, Ser. No. 151,362**
**1 Claim. (Cl. 285—226)**

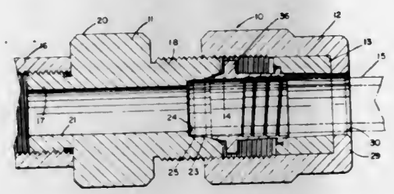
A bellows expansion unit for use in pipe lines utilizing expansion joints, said expansion unit comprising a plurality of like bellow spans, each interformed and integral with one another, said bellow spans having a predetermined diameter, snubber spans having a diameter less than the predetermined diameter, said snubber spans being interformed at each end of the bellow spans, and being integral with said bellow spans and terminating in an axially disposed extension of said bellows, a pair of attachment collars, one each disposed around the outside of said extension and connected with the terminus of each snubber span and inner stop rings disposed within said extensions, radially inwardly of said attachment collars,



and outer stop means consisting of a plurality of angular clips secured to the outer surface of said attachment collar, said stop rings and clips providing predetermined connecting surfaces for selectively receiving pipe and flange connections thereon, said predetermined connecting surfaces being those surfaces preselected as desired for selectively limiting insertion of the pipe into the unit and the flange onto the unit.

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**3,169,786**
**TUBE COUPLING WITH FRANGIBLE FERRULE**
**Edward J. Cator, Rochester, N.Y., assignor to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Sept. 27, 1960, Ser. No. 58,745**
**2 Claims. (Cl. 285—3)**

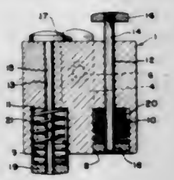


1. A coupling device for a generally cylindrical elongated male member, said device including a female body member provided with a generally axial male member receiving bore having an outwardly flared camming mouth, coupling nut means threadedly connected to the female body member for axial movement therealong, said coupling nut means including means forming a tapered inside wall of generally frustoconical configuration having a slope less than the slope of the flared camming mouth and forming a bore with a flared camming surface generally coaxial with the flared camming mouth of the female body, an abutment surface extending radially outwardly from said camming surface and disposed in spaced opposition to said flared camming mouth; deformable ferrule means for sealing against and gripping the male member, said ferrule means having a forward end portion and a rearward end portion, and a central axial male member receiving bore, said ferrule means having at its forward end portion a generally frustoconical external surface angled in a direction corresponding to that of the flared camming mouth of the female body but having a slope less than the slope of the flared camming mouth, said ferrule means further having a rearward

tapered generally frustoconical external surface corresponding to that of the camming bore of the coupling nut means, a plurality of axially spaced, radially inwardly directed ridge means disposed circumferentially about the inner periphery of said ferrule means and extending under said rearward tapered external surface for a major portion of the length thereof, said ferrule means being clamped between the mouth of the female body member and the camming bore of the coupling nut for subsequent axial compression therebetween with the forward generally frustoconical external surface of the ferrule means being received within and engaging the flared camming mouth of the female body member for wedging coaction therewith and with the tapered rearward surface being contiguous with the camming bore for wedging coaction therewith, said ferrule means being provided on the rearward end portion thereof with a substantially annular frangible radially outwardly extending abutment means lying in a plane generally perpendicular to the longitudinal axis of the coupling and engaging the abutment surface of the coupling nut means; said frangible flange means being closely adjacent the rearmost extremity of said ridge means and separating at least a major portion of the tapered rearward surface of the ferrule means from the rearward terminus of such ferrule means, the slope of the portion of said ferrule rearwardly of said frangible means and the corresponding slope of said tapered inside wall means of said coupling nut means being so constructed and arranged that substantially all forces exerted on said frangible element and said ferrule are axially acting and establish a substantially circular shear line between said frangible element and the adjacent exterior surface of said ferrule, the shear strength of said frangible abutment means being such as to render the same capable of being sheared off under an axial load slightly greater than that required to cam the forward generally frustoconical external surface of the ferrule means radially inwardly along said flared camming mouth to deform first the forward end of the ferrule means against the surface of the male member to be coupled, whereby upon rotation of the coupling nut means the components of the device coact in the following sequence: the ferrule is placed in axial compression and the forward generally frustoconical external surface thereof coacts with the flared camming mouth of the female body member to cause said forward end to contract radially upon a male member to grippingly engage said male member and perfect a principal seal, the annular frangible abutment means is sheared from the outer surface of the ferrule means, and the rearward tapered generally frustoconical external surface of the ferrule coacts with the camming bore of the coupling nut to radially contract on said rearward portion to place the ridge means on the inner surface thereof into gripping engagement with the male member.

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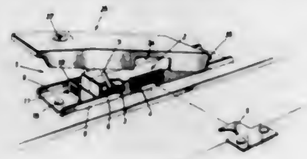
**3,169,787**
**PORTABLE KNOT-TYING DEVICE**
**John William Zolezzi, 82 Sycomore Road, Clifton, N.J.**
**Filed Nov. 8, 1962, Ser. No. 236,215**
**5 Claims. (Cl. 289—17)**



1. A knot-tying device comprising a block and a pair of releasable retaining means carried by said block for releasably retaining the ends of a pair of lines, respectively, against a face of the block including a pair of substantially flat retaining plates and spring means respectively urging said plates into engagement with said face of the block.

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**3,169,788**
**LOCK**
**Jack Slan, Toronto, Ontario, Canada, assignor, by mesne assignments, to Dominion Luggage Company, a partnership**
**Filed Dec. 3, 1962, Ser. No. 241,581**
**14 Claims. (Cl. 292—177)**



1. In a lock structure, a housing, a catch slidably mounted in said housing, a lever having a depending portion at one end formed with a slot therein, stop means formed on said housing for locating said depending portion, spring operated means carried by said housing and projecting through said slot to hold said lever end to said housing for hinging movement, and a linkage connected between said lever and sliding catch, said housing having a first opening on one side thereof and a second opening on a side opposed to said first side, said catch being substantially symmetrical about a centre line to engage and release a locking tongue introduced through one of said openings.

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**3,169,789**
**REEL HANDLING MECHANISM**
**Morris G. Cohn, 21 Knoll Lane, Roslyn Heights, N.Y.**
**Filed Aug. 25, 1961, Ser. No. 133,898**
**4 Claims. (Cl. 294—16)**



1. A mechanism for holding a pair of reels in spaced relation to each other when a continuous tape has portions of its length wound on each reel comprising a lift bar, a pair of members mounted in spaced relation on said bar for gripping a pair of reels near their peripheries, a pair of spring biased elements each mounted on said bar adjacent one of said members for gripping a pair of reels near their centers and a pair of resilient pads mounted in spaced relationship on said bar for urging an attached pair of reels away from said lift bar when disengaging said mechanism therefrom.

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**3,169,790**
**GOLF BALL RETRIEVER**
**John Kaanehe, 1516 Kam. 4th Road, Honolulu, Hawaii**
**Filed May 13, 1963, Ser. No. 280,765**
**2 Claims. (Cl. 294—19)**

1. Means for retrieving round objects comprising a handle, a club-shaped hollow head having top, bottom, front and rear sides, an opening in the front side thereof, said bottom being of perforated sheet material, an object engaging sill defining the lower edge of said opening, object retainer means mounted on the interior surface of the bottom of the head extending substantially parallel with respect to said sill, said last-named



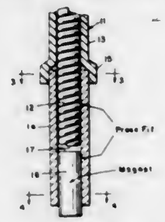
means having a feathered edge facing said sill, and spaced ball outwardly diverging guide means projecting forward



of said sill, said sill being curved inwardly and being rearward of said guide means.

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**3,169,791**
**MAGNETIC RETRIEVERS**
**Godfrey Twachtman, 618 N. Delaware, Independence, Mo.**
**Filed Jan. 18, 1962, Ser. No. 167,114**
**1 Claim. (Cl. 294—65.5)**

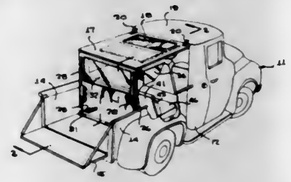


In a magnetic retriever, the combination of a straight tubular sleeve of non-magnetizable metallic material having a bore of a constant diameter open at both ends thereof, a tightly wound helical spring having one end portion thereof press-fitted into and tightly held in one end portion of the bore of said sleeve, a cylindrical permanent magnet of the same diameter as said spring press-fitted into and firmly held in the other end portion of the bore of said sleeve and projecting outwardly therefrom, the inner end of said magnet in said sleeve being spaced longitudinally from the adjacent end of said spring to provide an air gap therebetween, and a tubular plastic jacket enclosing said spring, an end portion of said jacket being radially stretched and tightly fitted over said sleeve.

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**3,169,792**
**PICK-UP TRUCK WHICH IS CONVERTIBLE INTO A PASSENGER VEHICLE**
**Carlos L. Solano Vlquez, San Vicente de Moravia, San Jose, Costa Rica**
**Filed Dec. 6, 1962, Ser. No. 242,698**
**7 Claims. (Cl. 296—99)**

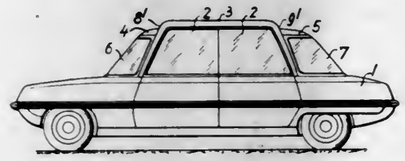
1. In a pick-up truck having a body including a horizontal truck floor, rigid side walls secured to the side margins of said floor, and a cab enclosure with side doors and a front seat positioned adjacent the forward end of the floor, a rigid rear wall hinged to the rear transverse edge of the cab roof and normally depending vertically from said rear transverse edge; a number of telescopic supporting posts hinged to the lower corner portions of the said rear wall, the said posts being foldable to a spaced and substantially parallel position in relation to the said rear wall, a number of socket members in the truck floor spaced rearwardly from the cab, the said rigid rear wall being swingable to a position extending rearwardly from said roof and in substantial horizontal alignment therewith, the free ends of the said supporting posts being engageable in said socket members to support the



said rigid rear wall, a flexible wall member secured to each of the free edges of the said rigid rear wall and depending vertically therefrom when the said rigid rear wall is supported on said posts providing flexible side and rear walls to define an auxiliary passenger compartment and slide fastener assemblies arranged to connect the rear edges of the flexible walls to the side edges of the rigid rear wall to the opposite side edges of the flexible wall connected to the free transverse edge of the rigid rear wall.

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**3,169,793**
**MOTOR VEHICLE WITH A CONCAVE TOP**
**Béla Barényi, Stuttgart-Vaihingen, and Paul Bracq, Sindelfingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed Jan. 6, 1964, Ser. No. 335,951**
**8 Claims. (Cl. 296—137)**



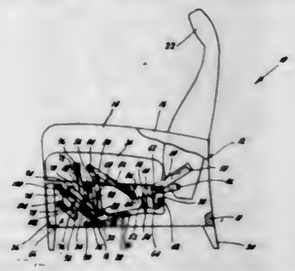
1. A motor vehicle having a top consisting of at least two differently shaped parts, one of said parts forming the front part connected to the windshield of the vehicle, and the other part connected to said front part and covering at least the central part of the vehicle and having a concave cross section, the lowest point of said concave part at the junction between said two parts being located at least as high from the ground as the highest point of said front part.

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**3,169,794**
**RECLINING CHAIR OF THE MULTIPLE MOVEMENT TYPE**
**Peter S. Fletcher, Delray Beach, Fla.**
**Continuation of application Ser. No. 836,410, Aug. 27, 1959. This application Oct. 22, 1962, Ser. No. 233,182**
**8 Claims. (Cl. 297—85)**

1. A reclining chair comprising a support, body-supporting means including a back-rest and seat adapted to be mounted on said support for reclining and inclining movement respectively, and means movably mounting body-supporting means on said support for a first movement phase from a sitting position to an intermediate, tilted sitting position during which there is no appreciable relative angular displacement between said back-rest and seat and for a second movement phase from said intermediate, tilted sitting position to a reclining position dur-

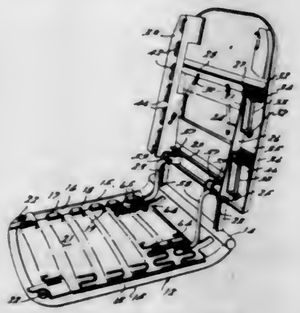
ing which said back-rest is angularly displaced relative to said seat, the mounting means including a first linkage for guiding said body-supporting means for movement from said sitting position to said intermediate, tilted sitting position and a second linkage for guiding said body-supporting means for movement from said intermediate, tilted sitting position to said reclining position, said first linkage being mounted on said second linkage, said second linkage including said support as a stationary link thereof, a carrier link, and pivotally interconnected mov-



able links including second linkage connecting means movably mounting said carrier link on said support, said first linkage being mounted on said second linkage with said carrier link serving as a relatively stationary support therefor during said first movement phase, said first linkage including pivotally interconnected movable links including said seat and first linkage connecting means serving as front and rear guiding means movably mounting said seat on said second linkage, and means including a back-rest link pivotally connecting said back-rest to one of said movable links of said second linkage.

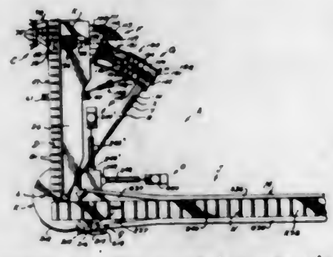
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**3,169,795**
**HINGED BACK CUSHION MOVABLE WITH THE SEAT CUSHION**
**Hyland C. Flint, 3551 Walnut Lake Road, Rte. 2, Orchard Lake, Mich.**
**Filed Mar. 26, 1962, Ser. No. 182,298**
**4 Claims. (Cl. 297—309)**



2. In a seat construction, a seat frame having a sprung area, back cushion supporting means, pivots securing said supporting means to said seat frame, a back cushion universally supported for vertical movement on said supporting means, arms secured to said back cushion on pivots aligned with the pivots securing the back cushion supporting means to the seat frame, means connecting the opposite ends to the arms to the sprung area of the seat frame, and spring means interconnecting the back cushion and its supporting means for resisting downward movement of said back cushion.

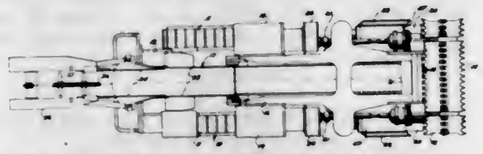
**3,169,796**
**CONTINUOUS MINER HAVING PIVOTALLY MOUNTED HEAD**
**John B. Long, Oak Hill, and Allen N. Blair, Beckley, W. Va., assignors to Marmon-Herrington Company, Inc., Indianapolis, Ind., a corporation of Indiana**
**Filed Apr. 25, 1961, Ser. No. 105,394**
**10 Claims. (Cl. 299—31)**



1. In a continuous miner mounted on supporting means, the combination of base means, a longitudinally extending frame, pivot means pivotally interconnectnig said frame with said base means, cutting means mounted upon said frame and extending laterally to one side thereof, conveying means mounted upon said frame, said conveying means being positioned with respect to said cutting means for receipt and conveying of material from said cutting means and positioned for discharge of the material onto said base means, guide means secured to said frame, said guide means including support means extending laterally from said frame at the side thereof opposite to said cutting means, said frame, support means and cutting means comprising a lever and the means for supporting said miner comprising a fulcrum for said lever, said frame abutting the fulcrum of said lever, said support means and said cutting means constituting arms of said lever extending to opposite sides of said frame, said guide means including means secured to said support means adjacent the end thereof laterally extendant from said frame for the application of a force adjacent the end of said support means laterally extendant from said frame, the force of said means being applicable for the guiding and tilting of said lever about its fulcrum, and advancing and retracting means mounted upon said frame for moving said frame about said pivot means.

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**3,169,797**
**MATERIAL COLLECTING MEANS FOR CONTINUOUS MINING MACHINE**
**Richard C. Lundquist, Palos Heights, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois**
**Filed Oct. 17, 1962, Ser. No. 231,096**
**11 Claims. (Cl. 299—64)**



1. In a continuous mining machine,
a main frame,
a boom transversely pivoted to said main frame and extending in advance thereof,
a rotary mining head supported on said boom for rotation about an axis extending transversely of said main frame,
means for vertically moving said boom with respect to said main frame and feeding said mining head vertically along a mine face,

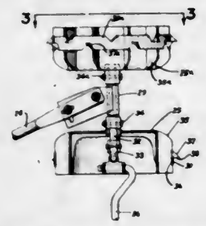


a conveyor extending along said main frame and having an inclined elevating forward end portion extending in advance of said main frame in a downwardly inclined direction into engagement with the ground,
inclined aprons extending along opposite sides of said conveyor and laterally therefrom and mounted on said conveyor for angular movement with respect thereto about axes extending longitudinally of said conveyor and parallel to the plane of travel thereof and engaged by said boom when said boom is in a lowermost position,
and fluid pressure operated means pivotally connected between said conveyor and aprons, pivotally moving said aprons upwardly to follow said boom and form an inclined hopper terminating at said conveyor.

10. In a conveyor having an inclined elevating forward end portion having parallel spaced side walls extending therealong and an endless chain and flight conveyor movable along said side walls in the space therebetween,
a hopper for said inclined elevating forward end portion of said conveyor for transferring the mined material onto said conveyor comprising
aprons extending along opposite sides of said inclined elevating forward end portion of said conveyor and longitudinally pivoted to said side walls,
hydraulic jack means connected between said side walls and aprons for raising and lowering said aprons about their axes of connection to said conveyor,
side boards extending along the outer sides of said aprons and pivotally connected thereto for movement about axes extending parallel to the axes of pivotal movement of said aprons,
and linkage connections between said side walls of said conveyor and said side boards pivoting said side boards outwardly upon angular upward movement of said aprons to maintain the width of said hopper substantially uniform in all vertical positions of said aprons with respect to said conveyor.

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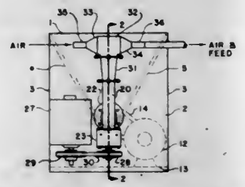
**3,169,798**
**SILO UNLOADER DRIVE HUB ATTACHMENT**
**Floyd E. Buschbom, Long Lake, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota**
**Continuation of application Ser. No. 121,961, July 5, 1961. This application Jan. 16, 1964, Ser. No. 340,587**
**2 Claims. (Cl. 301—43)**



2. In combination with a silo unloader drive hub having radially extending regularly spaced paddles, a traction increasing device comprising a band of sheet metal shaped to encircle the periphery of said drive hub paddle ends as a group, said band being longer than said periphery and having its ends bent to extend radially inward between two of said paddles, means secured to said band ends for drawing them together to clamp said band about said drive hub, said band being substantially narrower than said paddles axially, teeth formed on said band by making diagonal cuts in said band extending from a leading to a trailing point on said band relative to the rotation of said drive hub from the band side edges toward its longitudinal center line and the material of the band adjacent said cuts bent to extend radially outward from the band to form said teeth, said teeth having trailing edges slanting from the teeth points down to said band against the direction of rotation of said drive hub and the leading edges of said teeth extending radially with respect to said drive hub.

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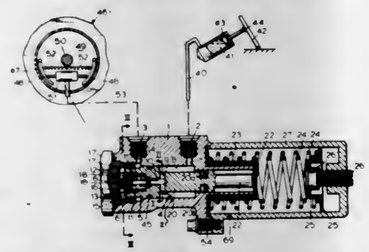
**3,169,799**
**AUGER FEED INJECTOR FOR PNEUMATIC CONVEYER**
**Hoyle B. Puckett and Herschel H. Klueter, Champaign, Ill., assignors to the United States of America as represented by the Secretary of Agriculture**
**Filed Jan. 11, 1963, Ser. No. 250,969**
**3 Claims. (Cl. 302—50)**




1. Apparatus for injecting particulate material into a pneumatic distribution system comprising:
(*a*) storage means for holding particulate material to be distributed comprising a hopper and a horizontal trough at the bottom of the hopper;
(*b*) a horizontally disposed auger mounted for rotation in said trough;
(*c*) a vertically disposed auger with its lower, input end mounted adjacent the output end of the horizontal auger;
(*d*) a mixing chamber for mixing a stream of air with particulate material, said mixing chamber having air inlet means at one end and air outlet means at the other end; and
(*e*) a vertical tapered duct connecting the output end of the vertical auger with the mixing chamber, the smaller end of said duct being connected to the vertical auger.

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**3,169,800**
**BRAKE REGULATOR**
**Heinrich Oberthür, Offenbach (Main), Germany, assignor to Alfred Teves KG, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Aug. 17, 1962, Ser. No. 217,609**
**Claims priority, application Germany, Sept. 16, 1961, T 20,778**
**10 Claims. (Cl. 303—22)**

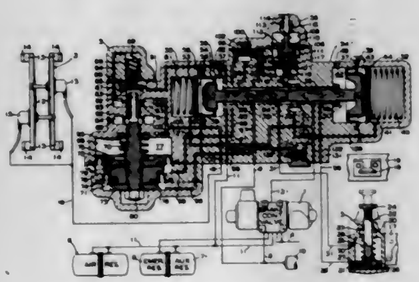


1. A brake regulator interposable between a master cylinder and a brake cylinder of a motor vehicle, said regulator comprising a body having a longitudinally extending stepped bore, a casing secured to said housing and forming an elongated first chamber communicating

with said bore, a complementarily stepped differential piston reciprocable within said bore and subdividing the latter into a second chamber and a third chamber, said piston having an end face extending into said first chamber, conduit means connecting said second chamber with said master cylinder and said third chamber with said brake cylinder, said piston being formed with a passage interconnecting second and third chambers, valve means in said passage for selectively opening and blocking same, said valve means including a valve member displaceably mounted in said piston, abutment means engageable with said valve member in an extreme position of said piston for retaining said valve means in an open position, and adjustable restoring means in said first chamber resiliently urging said piston into said extreme position, said piston having an annular shoulder exposed to fluid pressure in said second chamber for applying a force to said piston in aiding relationship with the variable force of said restoring means and a surface having an area greater than that of said shoulder exposed to fluid pressure in said third chamber for applying a force to said piston opposite the force of said restoring means.

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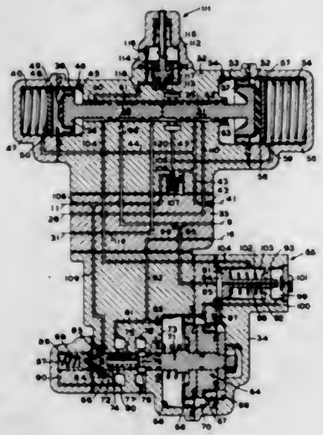
**3,169,801**
**FLUID PRESSURE BRAKE CONTROL APPARATUS WITH EMPTY AND LOAD CHANGEOVER**
**Francis R. Rackl, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed Mar. 27, 1963, Ser. No. 268,226**
**12 Claims. (Cl. 303—22)**



1. A load compensating brake system comprising:
(*a*) a brakepipe,
(*b*) brake cylinder means operative upon actuation to effect a braking application,
(*c*) a change-over valve device having selector valve means operable between a first and second position,
(*d*) brake controlling means responsive to a reduction in pressure in said brake pipe to supply fluid under pressure to a first conduit, and responsive to a subsequent increase in brake pipe pressure to release fluid under pressure from said first conduit,
(*e*) means for selectively positioning said selector valve means,
(*f*) relay valve means in said change-over valve device operative upon actuation thereof to connect a pressure source to said brake cylinder means for actuation thereof,
(*g*) said relay valve means cooperative with said selector valve means in said first position to connect fluid from said first conduit to said relay valve means for actuation thereof to provide one braking action,
(*h*) said relay valve means cooperative with said selector valve means in said second position to connect fluid from said first conduit to said relay valve means for actuation thereof to provide a second braking action wherein said first and second braking action are different in degree, and
(*i*) valve means in said change-over valve device cooperative with said selector valve means in said first position to connect fluid from said first conduit to said relay valve means for actuation thereof to provide said second braking action up to a predetermined amount.

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**3,169,802**
**FLUID PRESSURE BRAKE CONTROL APPARATUS WITH EMPTY AND LOAD CHANGE-OVER**
**Dale A. Chovan, Trafford, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed Apr. 25, 1963, Ser. No. 275,580**
**5 Claims. (Cl. 303—23)**

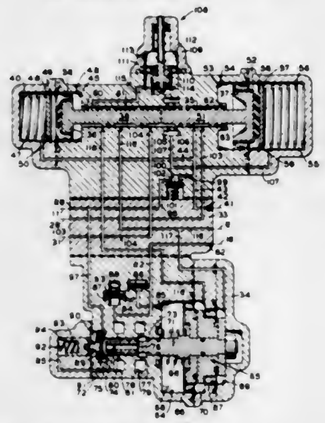


1. A change-over valve device having:
(*a*) a casing,
(*b*) an input connection,
(*c*) selector valve means operative between a first and second position,
(*d*) means for moving said selector valve means into said first and second positions,
(*e*) relay valve means having a normally seated valve member operative upon actuation to connect a pair of passageways, wherein one of said passageways is adapted to be connected to a pressure source,
(*f*) said relay valve means having a pair of spaced diaphragms of different effective areas cooperative with said casing to define pressure chambers,
(*g*) one of said diaphragms being common to a pair of adjacent pressure chambers,
(*h*) valve means,
(*i*) said relay valve means having one of said adjacent pressure chambers constantly connected to said input connection for actuation of said relay valve means and actuation of said normally seated valve member upon pressurization of said input connection,
(*j*) said selector valve means in one of said positions conditions said valve means to maintain communication between the other of said adjacent pressure chambers through said valve means to said input connection for actuation of said relay valve means and actuation of said normally seated valve member upon pressurization of said input connection,
(*k*) said relay valve means cooperative with a portion of said casing to define a balancing chamber,
(*l*) the other of said diaphragms being common to said balancing and said other adjacent pressure chamber,
(*m*) said balancing chamber operatively connected to the other of said passageways for pressurization of said balancing chamber to balance pressure in said pressure chambers for seating of said valve member,
(*n*) said valve means normally interconnecting said input connection to the other of said adjacent pressure chambers, and
(*o*) said selector valve means in the other of said positions, conditions said valve means to make such said valve means responsive to a predetermined pressure in said input connection to block communication between said input connection and said other pressure chamber.

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**3,169,803**
**RELAY VALVE DEVICE**
**Charles L. Weber, Jr., Irwin, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed June 27, 1963, Ser. No. 290,985**
**11 Claims. (Cl. 303—23)**

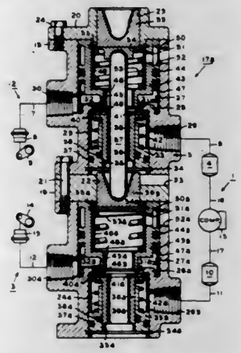


8. A relay valve device comprising:
(*a*) a casing,
(*b*) a pair of input connections subject to being pressurized,
(*c*) movable abutment means having diaphragms of different effective areas cooperative with said casing to provide an outer control chamber, an intermediate control chamber, and a pressure balancing chamber,
(*d*) said control chambers selectively connectible to said pair of input connections,
(*e*) valve means operative upon pressurization of said outer control chamber or said control chambers to effect supply of pressurized fluid from a pressure source to a conduit means adapted to be connected to a receiving device to pressurize such receiving device to different degrees, and
(*f*) normally seated loaded check valve means responsive to a certain predetermined pressure in said conduit means to be unseated to connect said balancing chamber to said conduit means for pressurization of said balancing chamber to balance the pressure developed in said control chambers.

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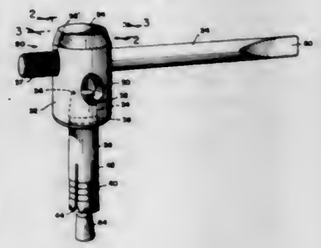
**3,169,804**
**CONTROL VALVE**
**Richard C. Bueler, Glendale, and Raymond F. Stelzer, Berkeley, Mo., assignors to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware**
**Filed Apr. 23, 1963, Ser. No. 274,983**
**1 Claim. (Cl. 303—52)**

A control valve comprising a housing having a pair of sets of ports therein, each port set including inlet, outlet and exhaust ports, a pair of valve means in said housing normally interrupting pressure fluid communication between the inlet and outlet ports of said port sets, a pair of exhaust openings in said valve means normally establishing pressure fluid communication between the outlet and exhaust ports of said port sets, respectively, a pair of valve control members adapted for concert and independent movement in said housing, a pair of precompressed resilient metering means contained in said valve control members and respectively including force receiving members movable in said valve control members, operator controlled means engaged with one of said force receiving members of one of said resilient metering means for applying an actuating force thereto, said one force receiving member and resilient metering means being movable in response to the actuating force on said one force receiving member by said operator controlled means to concertly move one of said valve control members into engagement with one of said valve means to initially close the exhaust opening therein and thereafter move said one valve means to a position establishing pressure fluid communication between the inlet and outlet ports of one of said port sets, the established fluid pressure at the outlet port of said one port set acting on the effective area of said one valve control member to create a reaction force for moving said one valve control member against said one force receiving member and resilient metering means and transmitting said reaction force therethrough in opposition to the actuating force applied by controlled



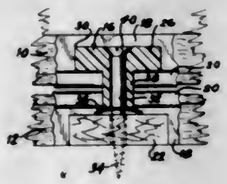
means, and rigid force transmitting means having an imperforate mid-portion extending substantially coaxially through the exhaust opening of said one valve means and being radially spaced therefrom and opposed free end portions in abutting engagement between said force receiving members for transmitting the applied actuating force on said one force receiving member to the other of said force receiving members and resilient metering means to effect applied force movement of said other valve control member substantially in concert with that of said one valve control member into engagement with the other of said valve means to initially close the exhaust opening therein and thereafter move said other valve means to a position establishing pressure fluid communication between the inlet and outlet ports of the other of said port sets in a time sequence substantially simultaneously with that established between the inlet and outlet ports of said one port set, the established fluid pressure at the outlet port of said other port set acting on the effective area of said other valve control member to create another reaction force for moving said other valve control member independently of said one valve control member against said other force receiving member and resilient metering means, and said rigid member serving to transmit said other reaction force directly to said one force receiving member to supplement said first named reaction force in opposition to the actuating force applied thereon by said operator controlled means.

3,169,805
CHUCK AND HANDLE FOR MANUAL INSTALLATION OF SELF-DRILLING EXPANSION SHELLS
Richard E. Dieterich, Michigan City, Ind., assignor to Phillips Drill Company, Michigan City, Ind., a corporation of Illinois
Filed Oct. 18, 1962, Ser. No. 231,534
1 Claim. (Cl. 306—33)



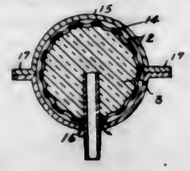
In a device of the character described, including a chuck body having a clear through transverse passageway with opposite entrances; an elongate handle in the form of a rod arranged to be engaged in the transverse passageway for rotating the chuck during use thereof, said handle having a uniform cylindrical body the major length thereof being of a diameter to permit free slidable movement through the passageway from either entrance thereof, and an enlarged knurled formation at one end of the handle the outside diameter of which is greater than the diameter of the body, and said knurled formation adapted to have a releasable interference fit at an entrance of the passageway, so as to enable the handle to be inserted into either entrance of the passageway while permitting releasable frictional engagement between the chuck and the handle preventing inadvertent sliding movement of the handle relative to the chuck during the use thereof.

3,169,806
ROLLER MOUNTED EXTENSION SLIDES
Otto A. Beeck, 158 Jericho Turnpike, Floral Park, N.Y.
Filed Apr. 5, 1961, Ser. No. 100,857
7 Claims. (Cl. 308—3.8)



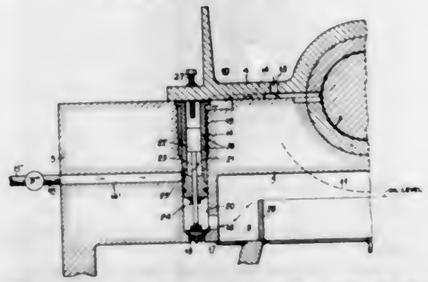
2. A slide comprising two juxtapositioned members arranged slidably with respect to each other, a channel formed in one of said members, said channel being provided with a flange, a centrally apertured two stage roller assemblage mounted for rotation and extending from the other of said members, one stage riding in said channel to slidably interlock said members together, the other stage riding on the said flange, a centrally apertured resilient dished spacer mounted between said roller assemblage and the member from which it extends, said roller and said spacer being mounted on a rod having a screw end and a roller retaining screw head, said spacer abutting the roller assemblage and the said member and cooperating with said roller retaining screw head to exert a clamping pressure on the roller arrangement.

3,169,807
AIR BEARING
Martin L. Abel, Oak Park, and David Tann, Detroit, Mich., assignors to Tann Corporation, Detroit, Mich., a corporation of Michigan
Filed June 28, 1962, Ser. No. 206,039
18 Claims. (Cl. 308—9)



1. An air bearing comprising a porous body having a dimpled bearing surface, the non-dimpled portion of said bearing surface being sealed off whereby pressurized air introduced into said porous body will pass therethrough and be ejected from said bearing surface through said dimples thereon.

3,169,808
LUBRICATING SYSTEMS FOR PLAIN BEARINGS
George Jones, Eccles, and John Kenneth Vose, Sale, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Nov. 5, 1962, Ser. No. 235,257
Claims priority, application Great Britain, Dec. 15, 1961, 45,030/61
13 Claims. (Cl. 308—122)



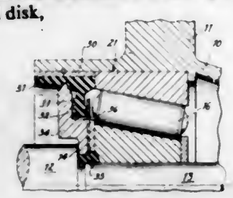
1. In a rotary machine incorporating a bearing having normal bearing clearance, means for lubricating said bearing comprising means defining upper and lower oil reservoirs disposed respectively above and below said bearing, said reservoirs communicating through said bearing clearance and passages associated therewith, a forced flow lubricating system comprising means for normally supplying oil under pressure to said bearing clearance, a stand-by lubricating system comprising means adapted for feeding oil from the lower reservoir to the upper reservoir for gravity feed through said bearing clearance back to the lower reservoir, and means responsive to the oil pressure in said forced flow system for maintaining said stand-by system substantially inoperable and automatically operable in the event of failure of said forced flow system to render said stand-by system operative to supply oil to the upper reservoir.

3,169,809
WHEEL BEARING SEAL
Alfred H. Pendleton, 902 W. Hadley St., Whittier, Calif.
Filed Jan. 7, 1963, Ser. No. 249,865
4 Claims. (Cl. 308—187.1)

3. The combination of a wheel bearing seal and a bearing assembly comprising:
a hollow tubular hub surrounding an axle spindle;
bearings in said hub riding on said spindle,
a wheel bearing seal sealing the inner extremity of said hub to said spindle,

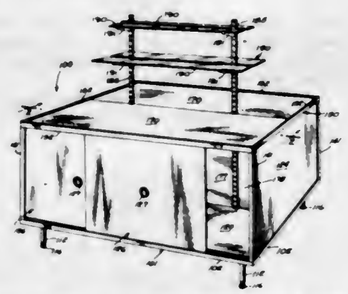


said seal including an annular packing,
means mounting the packing in the hub,
a flat and radially extending disk adjacent to the packing, said disk being mounted on the spindle,
means on the packing slidably engaging the flat side of the disk to seal against the same,
a metal annulus mounted on the spindle and spaced from said disk,



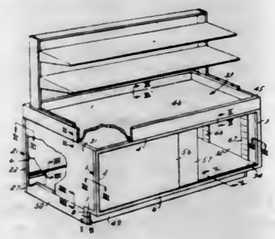
said last named means being positioned between the disk and said metal annulus,
a hub cup inclosing the outer extremity of said hub about said spindle,
means securing the cup to the hub,
and an air valve in said hub cup to admit air under pressure to the cup and the hub.

3,169,810
KNOCKDOWN COUNTER MERCHANDISING AND STORAGE UNITS
Edward M. Levy, Evanston, Perry Swan, Chicago, and Dale R. Lopatka, Glenview, Ill., assignors to Reflector-Hardware Corporation, Melrose Park, Ill., a corporation of Illinois
Filed May 19, 1961, Ser. No. 111,371
21 Claims. (Cl. 312—140.1)



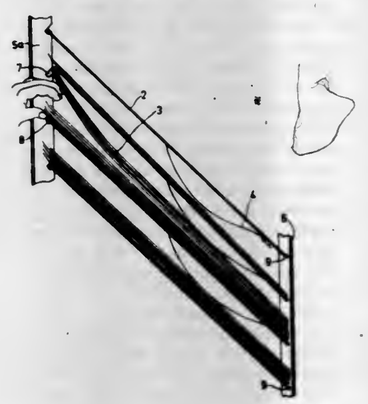
1. A knockdown counter unit comprising a base frame including an upwardly opening channel extending along each side thereof, a support flange on at least certain of said base frame channels and extending inwardly therefrom, a bottom panel supported by said base support flanges and substantially closing the bottom of said counter unit for receiving articles to be stored thereon, a door frame supported by one of said base support flanges, a door mounted in said door frame and adapted to close the area bounded thereby, rectangular side panels mounted on said base frame and having the lower edges thereof disposed in said base frame channels and supported thereby, a top frame having the same general outline as said base frame and including a downwardly opening channel extending along each side thereof and receiving the upper edges of said side panels therein, a support flange on at least certain of said top frame channels and extending inwardly therefrom, and a top panel supported by said top support flanges and substantially closing the top of said counter unit for receiving articles to be displayed thereon, all of the parts of said counter unit interfitting to form a self-supporting structure requiring no additional fastening members for assembly and use.

3,169,811
STORE FIXTURE
Robert J. Stewart, Sparta, Mich., assignor to The Bulman Corporation, Grand Rapids, Mich., a corporation of Michigan
Filed June 28, 1961, Ser. No. 120,283
6 Claims. (Cl. 312—140.1)



1. In a knock-down type, store counter construction, the combination comprising:
an integral, rigid, forward frame having top, bottom, and end members, the end members of said forward frame each having an integral extension extending rearwardly from the lower end thereof, said extensions each having an integral depending, vertical leg thereon at the end thereof for supporting said forward frame;
a rearward frame similar to said forward frame, the end members of said rearward frame each having an integral, collinear leg depending therefrom for supporting said rearward frame;
a pair of similar side sheets releasably attached to and extending between corresponding end members of said frames whereby to provide a rigid and self-supporting counter structure; and
top means at least partially supported on said frames.

3,169,812
DRAWING FILING ARRANGEMENTS
Lars Roland Grönkvist, Vedevagsslingan 12, Bandhagen, Sweden, and Isidor Teodor Örnlinde, Horningsholmsvagen 1, Alvsjo, Sweden
Filed Sept. 6, 1962, Ser. No. 221,823
Claims priority, application Sweden, Sept. 7, 1961, 8,897/61
1 Claim. (Cl. 312—190)

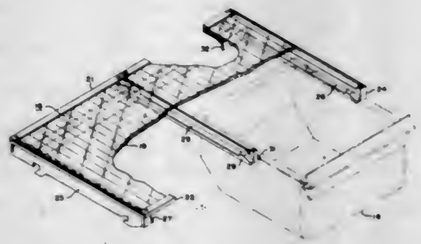


In a cabinet for filing relatively large size drawings made on paper and like material having no inherent stiffness characteristic, the combination comprising a support-

ing structure of vertical channel members at the front and the back of the cabinet, respectively, and filing shelves formed as lattice-work, there being recesses in the front channel members for taking up the front member of said shelves and pivotal connections between the aft member of said shelves and the back channel members, said shelves being supported by said channel members with a backward-downward inclination of about 45°, and being adapted to be tilted about said pivotal connections when raised at the front edge, and folder means for the drawings of a relatively stiff sheet material, adapted to accommodate the drawings when filed upon said shelves.

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**3,169,813**
**CABINET STRUCTURE**
**Lloyd M. Cannon, Grove City, and William T. Vaughn, Upper Arlington, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Aug. 26, 1963, Ser. No. 304,321**
**7 Claims. (Cl. 312—270)**



1. A cabinet structure having a plurality of walls including a pair of opposed side walls defining a storage compartment and a front opening thereto,

a removable shelf structure disposed in said compartment and having a side portion adjacent each of said side walls,

a front support member and a rear support member disposed adjacent each side wall for supporting said shelf structure,

each said shelf side portion having structure defining a forward slot for receiving said front support member and a rear slot for receiving said rear support member,

said structure defining said forward slot comprising a rearwardly projecting lower surface disposed beneath a front support member and an opening at the rear of said forward slot for entry of said front support member thereto, and

said structure defining said rear slot comprising a rearwardly projecting lower surface disposed beneath a rear support member and a downwardly extending surface disposed rearwardly of said rear support member, the terminal portion of said downwardly extending surface and said lower surface defining an opening at the rear of said rear slot for entry of said rear support member thereto,

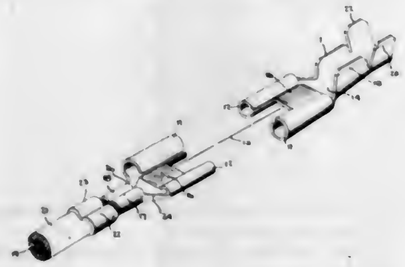
whereby upward movement of said shelf structure causes one of said support members adjacent each side wall to contact said respective rearwardly projecting surfaces and forward movement of said shelf causes the other of said support members adjacent each side wall to contact said downwardly extending surfaces.

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**ERRATUM**

For Class 45—68.2 see:
Patent No. 3,169,342

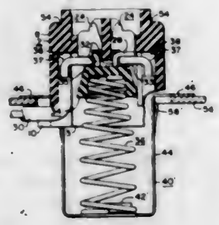
**3,169,814**
**BIAXIAL ELECTRIC TERMINAL**
**Joseph C. Collins, Scituate, R.I., assignor to North American Philips, New York, N.Y., a corporation of Delaware**
**Filed May 31, 1962, Ser. No. 198,816**
**3 Claims. (Cl. 339—47)**



1. A biaxial electric terminal comprising a pair of split longitudinally parallel cylinders, the internal, cross-sectional dimensions of one cylinder being substantially equal to the external, cross-sectional dimensions of the other cylinder; a central member comprising a flat shelf approximately coplanar with the axis of said cylinders and extending between said cylinders, one end of said cylinders extending beyond said member; a base portion rigidly joined to the other ends of said cylinders; and wire-crimping means extending from said base portion to attach said terminal to a wire.

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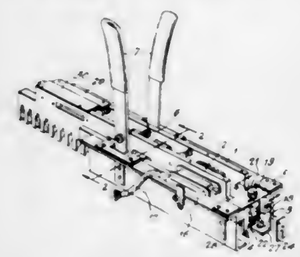
**3,169,815**
**LAMPHOLDER WITH MOUNTING MEANS**
**George C. Lennox, Southbury, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Apr. 19, 1960, Ser. No. 23,216**
**5 Claims. (Cl. 339—52)**



1. A lampholder comprising a U-shaped mounting member having respective guide slots extending longitudinally to the outer end of each arm thereof, an elongated contact supporting member located between said arms and having laterally outwardly and longitudinally extending guide projections formed on opposed sides thereof, said guide projections being located in said slots, respectively, resilient means reacting between the bight portion of said mounting member and said contact supporting member to bias the latter outwardly of said bight portion, the outer end of each of said arms having a laterally extending support portion, said guide projections respectively having an abutment portion facing longitudinally outward from the outer end thereof and respectively having another abutment portion projecting further laterally outwardly from a longitudinally inward portion thereof, said support portions engageable with one of the pairs of abutment portions to limit the longitudinal outward movement of said contact supporting member.



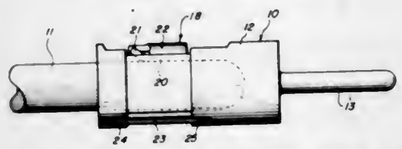
**3,169,816**
**ELECTRICAL CONNECTOR**
**Frank Hammond, Terrebonne, Quebec, Ernest F. Robin, Montreal, Quebec, and Pierre Gauthier, Chateauguay, Quebec, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada**
**Filed Jan. 28, 1963, Ser. No. 254,077**
**9 Claims. (Cl. 339—110)**



1. An electrical connector comprising a pair of supporting members, an electrical contact carried by each supporting member, resilient means providing a common pivot for the members; first contact spacing means spaced from said resilient means and acting resiliently on the members to pivot them about the resilient means in a manner to move the contacts together; the resilient means being in opposition to the first contact spacing means to limit the degree to which the latter moves the contacts together; and a second contact spacing means arranged to act on the members and operable to pivot them in a manner to move the contacts apart.

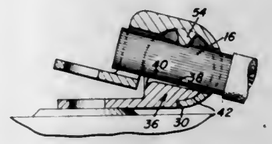
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**3,169,817**
**CLOSED-ENTRY CONTACT COMPONENT**
**William H. McKee, West Covina, Calif., assignor to United Carr Fastener Corporation, Boston, Mass., a corporation of Delaware**
**Filed June 19, 1961, Ser. No. 117,970**
**2 Claims. (Cl. 339—256)**



1. A closed-entry contact component adapted for use with a prong-equipped contact component, comprising an elongated barrel provided at the forward end portion thereof with a longitudinally extending socket for removably receiving such prong therein, said barrel being provided with a longitudinally extending slot opening into said socket along one side thereof and being provided with a perimetric channel extending thereabout in alignment with said slot, an open clip mounted within said channel in circumjacent relation and generally conforming to a perimetric portion thereof and having spaced terminal end portions one of which is equipped with a contact finger extending through said slot and into said socket for frictional engagement with such prong upon insertion thereof into said socket, and fastener structure provided by said barrel and clip for securing said clip to said barrel, said fastener structure comprising a recess in said barrel intersecting said channel, and said clip having an ear extending therefrom at its end opposite said contact finger, said ear being seated within said recess, said clip being resilient and the anchorage thereof to said barrel defining an axis about which said clip can pivot upon insertion of such prong into said socket.

**3,169,818**
**ELECTRICAL CONDUCTOR CLAMP**
**Arthur Vincent Tracy, Box 136, New Gretna, N.J., assignor of one-half to Mildred M. Tracy, New Gretna, N.J.**
**Filed Oct. 10, 1963, Ser. No. 315,210**
**5 Claims. (Cl. 339—266)**



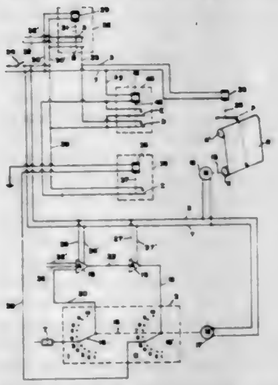
5. A conductor clamp comprising first and second gripper members, said first gripper member including a base, and fixed abutment means positioned transversely on the base and projecting upwardly therefrom, said second gripper member including a base, a generally vertical wall projecting upwardly from one end of the second member base, said second member base being positioned on the first member base with the vertical wall to one side of the abutment means, a wall portion integral with the upper end of the vertical wall and projecting forwardly therefrom in spaced relation above said abutment means, second abutment means fixed to and depending from the forwardly projecting wall portion toward the general plane of the first abutment means and on the other side thereof from the vertical wall, said forwardly projecting wall portion terminating in a depending portion adjustably engaged with the first gripper member in a manner so as to allow an upward pivoting of the second gripper member along with the vertical wall and forwardly projecting wall portion, and consequently the second abutment means, and a pair of aligned apertures through the vertical wall and the depending portion, said apertures being aligned with the space between the two abutment means so as to form a through passage for the introduction of a conductor between the two abutment means and through the two apertures, said second gripper member being pivotal between a first position wherein said second abutment means is positioned relative to the first abutment means a distance sufficient so as to allow for the aforementioned introduction of the conductor between the abutment means and through the apertures, and a second position wherein said second abutment means is positioned relative to the first abutment means in a manner so as to effect a clamping of the conductor therebetween, the portion of the vertical wall defining the upper limit of the aperture therethrough effecting a clamping of the conductor between this portion and the first abutment means when the second gripper member is in the second position, thereby effecting a three point clamping of the conductor with the first abutment means engaged with one side of the conductor, and with the second abutment means and the aperture defining portion of the vertical wall, located to each side of the first abutment means, engaged with the opposite side of the conductor.

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**3,169,819**
**DATA RECORDING SYSTEM**
**William I. Valentine, Glenolden, and James W. Banham, Jr., Drexel Hill, Pa., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 29, 1963, Ser. No. 327,153**
**2 Claims. (Cl. 346—33)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. A system for recording voltages which are transmitted during a cycle of operation of functional elements, said system comprising,

(*a*) a first switch having a set of contacts for receiving the transmitted voltages and a first scanning contactor,
(*b*) a second switch having a set of contacts corresponding to the first set of contacts and a second scanning contactor,
(*c*) a shaft supporting the scanning contactors for simultaneous movement to engage corresponding contacts of each set,
(*d*) a recording chart mounted for continuous movement,
(*e*) a control circuit including a first motor for moving said contactors and a second motor for moving said chart,
(*f*) solenoid means in the control circuit and mounting scriber means,
(*g*) a voltage generator and a voltage amplifier in series between said first and second scanning contactors,
(*h*) said voltage generator being operative to transmit a signal to the amplifier when the generated voltage

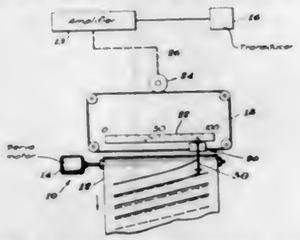


is greater than a voltage transmitted from a functional element,
(*i*) first relay means in the control circuit having first switch means connected to the voltage generator and second switch means connected to the solenoid means,
(*j*) said first switch means being effective to energize the voltage generator and said second switch means being effective to cause the scriber means to effect a linear record on the chart when the first and second motors are energized,
(*k*) second relay means in circuit with contacts of the second switch and having a normally open switch connected to the second switch means of said first relay means and
(*l*) said second relay means being operative to close its normally open switch to stop the operation of the scriber means when the voltage generator transmits a signal to the amplifier and provides a linear record which is proportional to a transmitted voltage.

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**3,169,820**
**TREND DETECTOR**
**Beverley H. Van Horne, Manson Keith Detwiler, and Myron P. Zimmermann, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed May 17, 1963, Ser. No. 281,105**
**4 Claims. (Cl. 346—35)**

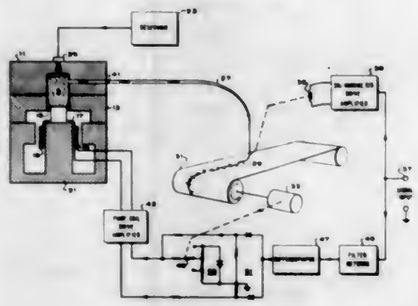
1. A mechanical device for visually detecting changes in the configuration of a line drawn on a moving chart by a pen whose movement is a function of one variable and in which the chart movement is a function of a second variable, comprising means for advancing the chart at a rate which is a function of said second variable, a first pen assembly and a second pen assembly, a drive mechanism for traversing the first and second pen of each said pen assemblies cyclically back and forth across said chart at a rate which is a function of said first variable to inscribe lines of identical configuration on said chart, and means for spacing said pens apart one from another by a



distance which is at least approximately equal to the distance between two successive cyclically drawn lines made by the same pen, whereby the line inscribed by one of said pens is at least closely adjacent to the previously drawn line of the other pen and changes in configuration between successive lines may be detected visually by comparison of the two lines.

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**3,169,821**
**FLUID PRESSURE CONTROLLER**
**Arthur Miller, Brookline, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a California corporation**
**Filed Nov. 20, 1963, Ser. No. 325,057**
**4 Claims. (Cl. 346—140)**



1. A dynamic ink system for supplying ink to the writing pen of a graphic recorder at a flow rate related to the writing rate of said pen, said ink system comprising:
a chamber enclosing a supply of ink in contact with all inner surfaces of said chamber;
a plunger disposed in a wall of said chamber for altering the volume thereof, said plunger including an electric coil disposed in a magnetic field;
a writing pen disposed in contact with the surface of a record chart of the graphic recorder;
a tube connecting said chamber to said pen for supplying ink thereto;
input terminals for receiving an input signal to be recorded;
means connected to said input terminals for moving said pen at a velocity related to the signal appearing on said input terminals;
electrical means connected to the coil of said plunger and connected to said input terminals for applying a signal to said coil related to the velocity of said pen for decreasing the volume of said chamber to exert increasing force upon the ink within the chamber in response to increasing magnitude of the writing rate of said pen.

# CHEMICAL

**3,169,822**
**DYEING WITH DYES HAVING $CH_2SCH_2CH_2$-HALIDE GROUPS**
**David Irwin Randall, New Vernon, and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Nov. 20, 1961, Ser. No. 153,682**
**8 Claims. (Cl. 8—1)**

1. A process for coloring fibers containing a reactive hydrogen atom comprising treating the fibers:
(1) under acid binding conditions, with
(2) an aqueous dispersion of a
(3) chromophoric compound containing
(4) two fiber-reactive groups substituted in meta position relative to each other in the same phenyl nucleus of a chromophore and having the formula

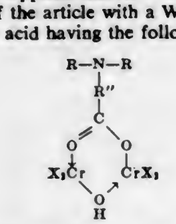
$$—CH_2—S—CH_2—CH_2—X$$

wherein
(*a*) X is halogen.

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**3,169,823**
**PROCESS FOR TREATING POLYOLEFIN MATERIALS WITH WERNER COMPLEXES AND THE DYEING OF SAME**
**Domenick Donald Gagliardi, 185 Howland St., East Greenwich, R.I.**
**No Drawing. Filed May 23, 1962, Ser. No. 196,908**
**11 Claims. (Cl. 8—55)**

2. A process for improving the ability of a preformed article of solid olefin polymer to retain on the surface thereof materials applied thereto which comprises coating the surface of the article with a Werner chrome complex of an amino acid having the following formula:



(I)

wherein
R is a radical selected from the group consisting of alkyl and alkenyl radicals containing 6 to 20 carbon atoms,
R' is a radical selected from the group consisting of hydrogen, alkyl, cycloalkyl,
R'' is a radical selected from the group consisting of alkylene, aralkylene, aminoalkylene, aryl, and carboxyalkyl, and
X is a halogen radical and heating the coated preformed article to an elevated temperature between about 100° C. and 10° C. below the melting point of the polymer of which the article is formed for a time between about 1 to 120 minutes.

5. A process of dyeing olefin fibers in deep shades which are fast to laundering and dry-cleaning which comprises:
(*a*) contacting olefin fibers with a Werner chrome complex having the Formula I of claim 2,
(*b*) heating the fibers while in contact with said chrome complex to a temperature between about 10° C. below the melting point of said fibers and 100° C. to effect a permanent association of said complex with the fibers,
(*c*) cleaning the fibers to remove chrome complex not permanently associated with the fibers, and
(*d*) dyeing the fibers with a water-soluble anionic textile dye.

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**3,169,824**
**PROCESS FOR DYEING SOLID POLYOLEFINS, NORMALLY NON-RECEPTIVE TO WATER-SOLUBLE DYES, WITH IONIC DYESTUFFS**
**Domenick Donald Gagliardi, 185 Howland Road, East Greenwich, R.I.**
**No Drawing. Filed Aug. 17, 1962, Ser. No. 217,544**
**11 Claims. (Cl. 8—55)**

2. A process for coloring preformed articles composed of solid olefin polymer, normally non-receptive to water-soluble dyes, in deep shades that are wash-fast which comprises:
(A) providing a liquid composition containing a colored salt formed of an oleophilic ion and a chromophoric ion having a charge opposite to the charge of said oleophilic ion,
(B) said oleophilic ion being selected from the group consisting of:
(*a*) sulfocarboxylic ions having a molecular weight between about 140 and 1000 containing a hydrocarbon group containing 1 to 18 carbon atoms,
(*b*) organophosphorous ions of the formula:



wherein R is a radical selected from the group consisting of alkyl, aryl, alkoxy, and aryloxy radicals containing 2 to 20 carbon atoms, and R' is a radical selected from the group consisting of hydroxy, alkyl, aryl, alkoxy and aryloxy radicals,
(*c*) amino alkyl carboxylic ions containing 6 to 22 carbon atoms,
(*d*) ions of Werner chrome complex of an amino alkyl carboxylic acid containing 6 to 22 carbon atoms,
(*e*) quaternary ammonium ions of hydrocarbon amines containing 6 to 44 carbon atoms,
(*f*) hydrocarbon carboxylic ions containing 6 to 44 carbon atoms,
(*g*) halohydrocarbon carboxylic ions containing 6 to 44 carbon atoms, and
(*h*) alkyl phenolate ions containing 6 to 24 carbon atoms,
(C) contacting a preformed article composed of solid olefin polymer normally non-receptive to water-soluble dyes with said liquid composition,
(D) heating the article white in contact with said colored salt to a temperature between about 10° C. below the melting point of said olefin polymer and 90° C. for between about 1 to 120 minutes,
(E) separating the article resulting from said heating step from any removable residue of said liquid composition, and
(F) recovering the resulting colored article.

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**3,169,825**
**REMOVAL OF VANADIUM FROM AQUEOUS SOLUTIONS**
**David W. Miller, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**No Drawing. Filed Jan. 3, 1961, Ser. No. 80,043**
**3 Claims. (Cl. 23—19)**

1. A method of recovering soluble vanadium values from an aqueous basic solution containing the same,

which comprises passing said solution through a liquid-permeable bed comprising a particulate matrix material selected from the group consisting of aluminaceous and siliceous materials, and mixtures thereof; coated with an adhesive selected from the group consisting of polystyrene, polyisobutylene, epoxy resins, cellulose esters, phenolic resins and polyester resins; and with an insoluble lead salt selected from the group consisting of lead oxide, lead sulfate, lead phosphate and lead carbonate deposited thereon; and eluting vanadium values from the resulting lead vanadate-loaded bed by passing an acid eluting agent through said loaded bed.

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**3,169,826**
**METHOD OF PREPARING A HYDRATED MAGNESIUM CARBONATE**
**Richard L. Pond, Livermore, and Leo F. Heneghan, San Mateo, Calif., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**
**Filed Mar. 30, 1961, Ser. No. 99,494**
**1 Claim. (Cl. 23—67)**

The method for producing hydrated magnesium carbonate having the formula

$$4MgO \cdot 3CO_2 \cdot 11H_2O$$

which comprises preparing a slurry of magnesium hydroxide and water, contacting said magnesium hydroxide slurry with carbon dioxide until the pH of the slurry is between approximately 8.0 and 8.6 thereby to form a hydrated magnesium carbonate and drying said hydrated magnesium carbonate at a temperature less than about 75° C. to form a hydrated magnesium carbonate having the formula

$$4MgO \cdot 3CO_2 \cdot 11H_2O$$

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**3,169,827**
**METHOD OF PREPARING ALUMINA FROM ALUMINUM SULFATE**
**Armand J. de Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**No Drawing. Filed Dec. 6, 1960, Ser. No. 73,989**
**4 Claims. (Cl. 23—143)**

1. A method of preparing alumina from a solution of aluminum sulfate which comprises precipitating basic aluminum sulfate from said solution by commingling ammonium hydroxide with the solution, hydrolyzing the resulting precipitate with a chlorine-containing compound selected from the group consisting of ammonium chloride and hydrochloric acid in an amount to form a slurry having a formula weight ratio of alumina-equivalent to chloride of from about 3:1 to about 50:1, washing the hydrolyzed precipitate until the washed precipitate contains less than about 2.0 percent by weight of sulfate, thereafter drying said precipitate and calcining at an elevated temperature to produce alumina.

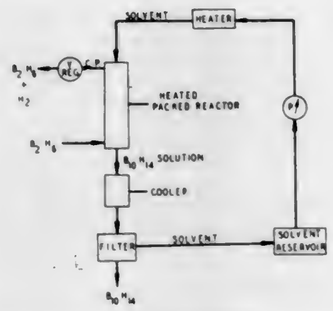
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**3,169,828**
**PROCESS OF PRODUCING BORON NITRIDE**
**Akinori Muta, House 4–N211, 30 Hiro-machi, Nakano-ku, Tokyo, Japan**
**No Drawing. Filed Feb. 19, 1964, Ser. No. 345,858**
**1 Claim. (Cl. 23—191)**

The process of producing boron nitride, comprising the steps of heating about 20 parts by weight of borax and between about 5 to 20 parts by weight of ammonium chloride in a reaction zone while passing ammonia gas through said zone at a temperature between about 850° C. to about 2,000° C., for about two hours, placing the reaction product in warm water and boiling to dissolve out the sodium chloride and residual impurities.

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**3,169,829**
**CONTINUOUS PROCESS FOR THE MANUFACTURE OF DECABORANE**
**Dean A. Johnston, Evans City, Pa., and Charles R. Morrison, Huntsville, Ala., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Mar. 6, 1956, Ser. No. 569,785**
**1 Claim. (Cl. 23—204)**




A process of manufacturing decaborane which comprises passing diborane through a packed column countercurrent to a stream of 2,3-dimethylbutane at a pressure of about 400 p.s.i.g. and a temperature of about 80° C., venting off the hydrogen evolved, removing a solution of decaborane dissolved in 2,3-dimethylbutane and recovering the decaborane from said solution.

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**3,169,830**
**PRODUCTION OF IODINE FROM MOLTEN LITHIUM IODIDE**
**Jennings B. Du Bois, Jr., Pasadena, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Oct. 18, 1963, Ser. No. 317,128**
**5 Claims. (Cl. 23—216)**

1. A process for the production of free iodine from lithium iodide while minimizing the formation of lithium paraperiodate by reacting lithium iodide in molten state at a temperature of from 400 to 650° C. with elemental oxygen in amount sufficient to oxidize from about 5% to 75% of the lithium iodide and at least about a stoichiometric amount of steam based on the oxygen reacted.

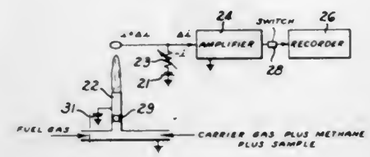
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**3,169,831**
**CATALYTIC HYDROCARBON CONVERSION ACTIVITY DETERMINATION PROCESS**
**Ralph J. Bertolacini, Chesterton, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana**
**No Drawing. Original application Mar. 15, 1960, Ser. No. 15,035. Divided and this application Nov. 29, 1961, Ser. No. 155,823**
**4 Claims. (Cl. 23—230)**

1. A method for determining the hydrocarbon conversion activity of a catalyst comprising a noble metal and a refractory inorganic support wherein the total amount of said metal in said composite is determinable, which method comprises contacting said catalyst with acetylacetone for a time sufficient to dissolve in said acetylacetone any of said metal soluble therein, separating the resulting liquid phase from any remaining undissolved residue, and determining the amount of said metal which dissolved in said acetylacetone, whereby the amount of said metal so dissolved, relative to the total amount of said metal in said composite, provides a measure of the hydrocarbon conversion activity of said catalyst.



**3,169,832**
**GAS CHROMATOGRAPHY PROCESS**
**William S. Gallaway and James C. Sternberg, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California**
**Filed Apr. 24, 1961, Ser. No. 105,032**
**4 Claims. (Cl. 23—232)**

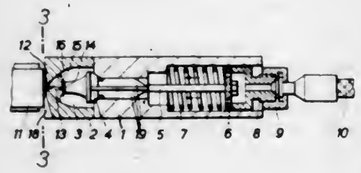



1. In an improved gas chromatography process permitting the quantity detection in a flame ionization detector of a normally unresponsive component contained in a carrier gas stream flowing from a gas chromatograph column to said flame ionization detector, the step comprising:

continuously supplying a normally responsive material in the carrier gas stream to the column, said normally responsive material being a substantially fixed volume fraction of the carrier gas stream before the normally unresponsive component is injected therein, the normally unresponsive component displacing a quantity of said normally responsive component to produce a response in the flame ionization detector characteristic of the resulting decrement in quantity of said normally responsive component.

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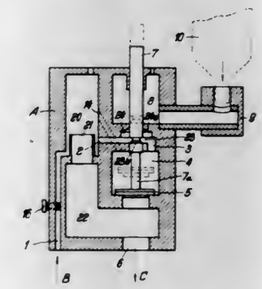
**3,169,833**
**APPARATUS FOR MIXING LIQUIDS**
**Karl Breer, Cologne-Flittard, Erwin Weinbrenner, Leverkusen, and Peter Hoppe, Troisdorf, Germany, assignors, by direct and mesne assignments, of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany, and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed Aug. 12, 1957, Ser. No. 677,676**
**Claims priority, application Germany, Aug. 23, 1956, F 21,080**
**5 Claims. (Cl. 23—252)**




1. An apparatus for mixing liquids comprising a mixing chamber having walls, said chamber walls having an opening therein, a valve comprising a stem, a seating surface and a blunt end, said seating surface being movably disposed to open and close said opening, said blunt end projecting into said chamber, said chamber walls having a discharge opening opposite said blunt end, and an injection nozzle aligned with said discharge opening and said blunt end, said injection nozzle adapted to inject liquid under pressure through said discharge opening and against said blunt end.

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**3,169,834**
**INSTRUMENT FOR TESTING A LIQUID**
**Günther Otto and Hans-Joachim Heyl, both of Hildesheim, Germany, assignors to Gebruder Heyl, Chemische Fabrik KG., Hildesheim, Germany, a limited partnership of Germany**
**Filed Apr. 4, 1962, Ser. No. 185,042**
**Claims priority, application Germany, Apr. 6, 1961, H 42,217; Jan. 9, 1962, H 44,563**
**14 Claims. (Cl. 23—253)**



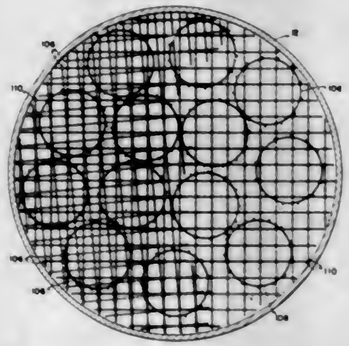
1. In a testing instrument of the character described the combination comprising a housing, a measuring chamber formed therein having an inlet in its top and an outlet in its bottom, a supply chamber being formed in said housing spaced from and located above said measuring chamber, a said supply chamber accommodating a supply of an indicator agent, a substantially horizontal passageway being located in said housing between said chambers and extending to said inlet for supplying a flow of liquid to be tested to said measuring chamber, and an upright cylindrical stem slidably guided for lengthwise movement in said housing and extending from said supply chamber downwardly through said passageway to the outlet of said measuring chamber and formed with an annular groove and on its lower end with a valve body for cooperation with said outlet, said annular groove being spaced from the bottom of said valve body substantially the same distance as the distance of the outlet of said measuring chamber from the portion of said pasageway intersected by said stem, the latter being movable between an upper position in which said outlet is opened to cause said flow to rinse said measuring chamber and said groove is located within said supply chamber to receive a metered quantity of an indicator agent therefrom and a lower position in which said valve body closes said outlet and said groove communicates with said passageway to cause said flow to carry said quantity into and to fill said measuring chamber.

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**3,169,835**
**FLUIDIZED SOLIDS TECHNIQUE**
**Allan R. Huntley, Cranford, and Steve T. Synodis, Roselle Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed July 1, 1959, Ser. No. 824,311**
**9 Claims. (Cl. 23—288)**

1. An apparatus adapted for use in improving contacting between finely divided solids and gaseous fluid in a dense fluidized condition and adapted to break up large gaseous bubbles and to prevent bubble growth which includes a vertically arranged cylindrical vessel having a bottom inlet and outlet means, means for introducing finely divided solids and gaseous material into said bottom inlet for passage through said vessel, means for withdrawing finely divided solids and gaseous material after they have passed through said vessel, said vessel being provided with a mesh packing comprising a multiplicity of spaced horizontal layers of flat coarse wire mesh having rectangular openings of from 1 to 6 inches formed from coarse wire mesh and held in vertically spaced and stacked rela-

tion by a multiplicity of coarse wire mesh spacer means, said mesh packing comprising said coarse wire mesh layers and spacer means substantially completely filling said vessel and having an open area within said vessel of between 80% and 95% and said mesh packing and spacer means being stacked one above the other without being fixedly attached to said vessel or to each other, said spacer means



including separate units each being formed from a narrow strip of flat coarse wire having protruding wire ends and having rectangular openings of from 1 to 6 inches and being formed by bending said strip and connecting the ends to form a substantially circular spacer means unit and arranged on its edge so that said protruding wire ends engage the wire mesh in adjacent layers of said flat coarse wire mesh to maintain said packing spatially stable.

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**3,169,836**

## EXHAUST GAS TREATING APPARATUS

**Walter M. Davis, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware**

**Filed May 18, 1961, Ser. No. 110,932**
**12 Claims. (Cl. 23—288)**



1. Apparatus for mounting on the underside of a vehicle and for catalytically oxidizing combustible constituents in the exhaust gases from a gasoline engine carried by said vehicle, said apparatus comprising an elongated container having an uninsulated, heat dissipating external wall formed of a thermally conductive material, a pair of superimposed beds of catalytic material disposed within said container, said beds being in spaced apart relationship with respect to each other, means for introducing a gaseous stream of said exhaust gases interiorly of said container, means for directing said stream of exhaust gases downwardly through the lower one of said pair of catalyst beds and into heat exchange relationship with said heat dissipating wall, and means for thereafter directing said stream of gases interiorly of said container and in contact with said wall to the upper surface of the upper catalyst bed and thereafter through said upper catalyst bed.

**3,169,837**

## METHOD OF DICING SEMICONDUCTOR WAFERS

**John R. Moross, Whittier, and John M. Gault, Manhattan Beach, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California**

**Filed July 31, 1963, Ser. No. 298,821**
**7 Claims. (Cl. 29—183)**



1. The method of dicing a large area wafer of single crystal semiconductor material comprising steps of cutting said wafer in a predetermined crystallographic plane, scribing dice lines on the surface of said wafer which are parallel to the natural cleavage direction and breaking said wafer into a plurality of dies along said scribed lines.

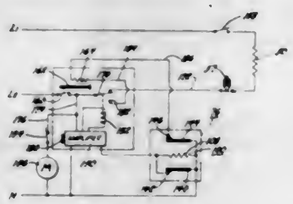
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**3,169,838**

## AUTOMATIC HUMIDITY SENSING CONTROL FOR A CLOTHES DRYER

**Joseph B. Kripke, Milwaukee, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Original application Nov. 27, 1959, Ser. No. 855,812, now Patent No. 3,110,005, dated Nov. 5, 1963. Divided and this application Nov. 24, 1961, Ser. No. 154,713**
**5 Claims. (Cl. 34—45)**



1. A control circuit for a clothes dryer having a casing defining a rotatable tumbling chamber and an air flow exhaust duct comprising, a power supply, a master switch for said power supply, means for opening said master switch after a predetermined delay, a heater for said tumbling chamber, a thermally responsive switch in series with said heater, means for alternately conditioning said heater or said master switch opening means for energization, means for adjusting said alternately conditioning means in accordance with a presettable degree of clothes dryness, a humidity sensing arrangement in communication with said exhaust duct and having a hollow humidity sensing element, a start bimetal switch in parallel with said sensing element and a cool-down bimetal switch in series with said master switch opening means, said start bimetal switch opening at a predetermined increase in air flow temperature to place said sensing element in operative relationship with said alternately conditioning means, said cool-down bimetal switch closing at a predetermined decrease in air flow temperature to condition said master switch opening means for energization, and said sensing element in accordance with the humidity of said air flow related to said preset degree of clothes dryness being adapted to actuate said alternately conditioning means for energizing said heater when said humidity is above a predetermined value and said thermally responsive switch is closed and for energizing said master switch opening means when said humidity is below a predetermined value and said cool-down switch is closed.

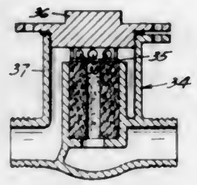


**3,169,839**

## ODORIZING OF LIQUIFIED GAS

**José B. Calva, 204 Upper Midwest Bldg., Minneapolis, Minn., assignor of one-half to George W. Benz, St. Paul, Minn.**

**Filed Sept. 23, 1959, Ser. No. 841,853**
**8 Claims. (Cl. 48—195)**



1. A gas odorizing apparatus adapted for supporting in a gas line a removable odorant cartridge having at least one unobstructed passage means extending from end to end for easy passage of gas therethrough; said apparatus including a hollow body having an inlet and an outlet, a portion between said inlet and outlet, a gas-impermeable sleeve supported by said partition and providing a close-fitting housing for said cartridge, said partition having aperture means therethrough adapted to connect with the passage means of a cartridge contained in said sleeve, and closure means for temporarily opening said apparatus for insertion or renewal of a cartridge.

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**3,169,840**

## METHOD FOR REMOVING WATER FROM FORMALDEHYDE

**Louis L. Wood, Washington, D.C., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Filed Nov. 4, 1963, Ser. No. 321,336**
**4 Claims. (Cl. 55—29)**

1. A method for removing water from formaldehyde which comprises contacting a gaseous stream of formaldehyde with dimethylsulfoxide maintained at a temperature of from about 20 to about 110° C., and separating said formaldehyde from said dimethylsulfoxide.

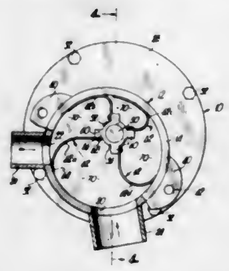
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**3,169,841**

## METHOD FOR ELIMINATING FOAM FROM SEWAGE TREATMENT EQUIPMENT

**Frank G. Weis, Kansas City, Mo., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey**

**Filed Sept. 18, 1961, Ser. No. 138,965**
**5 Claims. (Cl. 55—36)**



1. The method of eliminating foam from the surface of a liquid comprising:
(I) introducing said foam through an inlet adjacent said liquid surface into a large zone defined by a circular wall and at least two flexible impeller blades in contact therewith, said blades being connected along the entire length thereof to a rotatable shaft located eccentrically of said wall;
(II) moving and thereby decreasing the size of said zone so as to increase the pressure therein to a value that collapses said foam by rotating said shaft to cause said blades to slide along said wall; and
(III) dicharging liquid and gas resulting from collapse of said foam through an outlet from said zone.

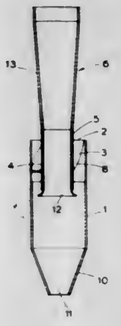
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**3,169,842**

## CYCLONES FOR REMOVING SOLIDS FROM GAS

**Charles M. Streete, Abergavenny, and Stanley Paul Witchell, Llanfoist, Abergavenny, England, assignors to Coopers Mechanical Joints Limited, Llanfoist Works, Abergavenny, Monmouthshire, England**

**Filed Apr. 16, 1962, Ser. No. 187,525**
**5 Claims. (Cl. 55—449)**



1. A cyclone for separating solids from air being drawn to the inlet of an internal combustion engine, the cyclone comprisng, in combination, a vessel for receiving the separate solids, said vessel having an untapered cylindrical portion, an outlet venturi tube mounted concentrically with respect to said untapered cylindrical portion, said outlet venturi tube having an untapered cylindrical section telescopically disposed within said untapered cylindrical portion, said venturi tube having an outwardly tapered section leading out of said untapered cylindrical section, the length of said tapered section being no less than twice the length of said untapered section with the angle of taper being approximately seven and one half degrees of arc, a flared inlet section telescopically disposed within the entrance to said untapered section and said inlet section having an entrance lip curving inward from its outer periphery to that portion disposed within said untapered section, said flared section having a radius at the periphery of said entrance lip approximately-equal to one-half the sum of the radii of said cylindrical portion of said vessel and said cylindrical untapered section of said venturi tube, a plurality of blades distributed about the untapered section of said venutri tube and having the pitch thereof selected whereby air passing between said venturi tube and said vessel encounters each blade at a substantially zero angle of incidence, with the pitch being increased to a maximum near said entrance lip to impart to the passing air an increasing component of velocity which is tangentially directed with respect to said vessel, whereby to impart a whirling motion to the air prior to same entering the said venturi tube with solids being substantially entirely separated and discharged within said vessel.

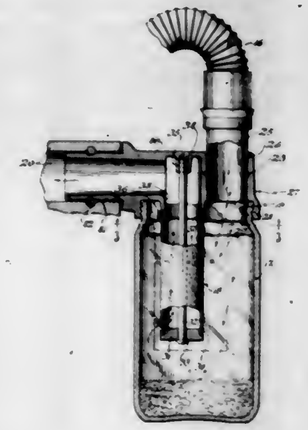
3,169,843

## CLEANING APPARATUS WITH SUCTION FILTER IN A TRANSPARENT RECEPTACLE

Albert B. Campbell, Glen Ellyn, Ill., assignor to Campbell Products Company, Bensenville, Ill., a corporation of Illinois

Original application Nov. 9, 1961, Ser. No. 151,337. Divided and this application June 7, 1962, Ser. No. 200,706

3 Claims. (Cl. 55—467)



1. Cleaning apparatus connectable to a conduit terminating at a cleaning nozzle, said apparatus comprising:

a transparent, unenclosed, one-piece receptacle including a bottom and side walls;

said receptacle having a top opening;

external threads on said receptacle around said top opening;

a fitting having internal threads engaging said external threads around said top opening of the receptacle to mount said fitting in air-tight engagement to said receptacle;

a first opening in said fitting, communicating with the top opening in said receptacle, and including means for slidably receiving a conduit connector portion;

a second opening in said fitting;

a hollow filter element having a bottom located above the bottom and within said receptacle, porous side walls, and a top opening in communication with the second opening in said fitting;

means on said fitting, above the second opening therein, defining a threaded opening;

means extending upwardly through the hollow filter consisting essentially of a bolt-like rod having a head engaging beneath and terminating at the bottom of said filter, said rod terminating at an upper threaded portion engaged in said threaded opening of the fitting;

said fitting having an integral tubular portion, extending angularly to and communicating with said second opening in the fitting, and terminating at an opening;

and suction means including opening means for slidably receiving said integral tubular portion of the fitting;

said receptacle being located outside of said suction means.

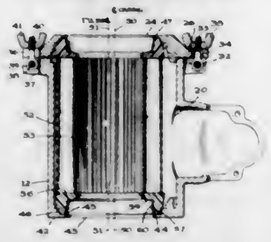
3,169,844

## AIR FILTER

Ralph L. Young, Gastonia, N.C., assignor to Wix Corporation, Gastonia, N.C., a corporation of North Carolina

Filed Jan. 24, 1961, Ser. No. 84,650

3 Claims. (Cl. 55—498)



1. An air filter comprising in combination with an annular casing having opposite end air inlet openings and a side wall air outlet opening, each of said end openings being defined by an encircling annular axially inwardly facing flat seat lying inside the casing in a plane substantially perpendicular to the longitudinal axis of the casing and by an inwardly and laterally sloping annular surface intersecting the seat and forming an obtuse angle therewith; a filter unit within the casing comprising an annular fluted body of filter material having open ends and having an annular elastomer gasket joined to and extending around each open end and each gasket being formed to make three separate and distinct annular lines of sealing contact with a flat seat and sloping annular surface.

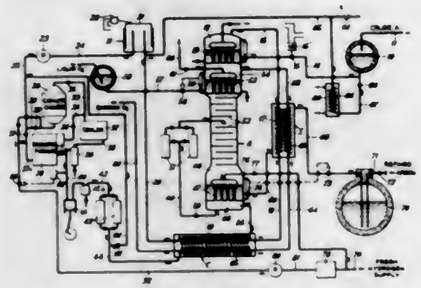
3,169,845

## METHOD OF AND APPARATUS FOR PRODUCING HIGH PURITY INERT GASES

Henry C. Kornemann and Edward F. Yendall, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed May 23, 1958, Ser. No. 737,246

2 Claims. (Cl. 62—18)



1. A process for refining liquid crude argon containing oxygen and nitrogen comprising the steps of vaporizing the crude argon, adding to the resulting crude gas mixture a supply of hydrogen at a rate in excess of stoichiometric requirements for reaction with the entire oxygen content, effecting reaction between the oxygen content of the crude mixture and said hydrogen, compressing the resulting gas mixture containing the unreacted hydrogen, drying the compressed mixture to a very low water content, cooling the dried mixture to a low temperature, subjecting the cooled mixture to fractional liquefaction to produce a gaseous remainder containing a major portion of the excess unreacted hydrogen and a liquid fraction containing the original nitrogen content in said crude argon and some residual hydrogen, employing the liquid fraction as a reflux liquid in a rectifying operation between said liquid fraction and said gaseous remainder to produce a refined liquid argon product of at least 99.99% purity substantially free of oxygen, hydrogen and nitrogen and an effluent gas containing substantially all of the residual hydrogen and a substantial amount of the original nitrogen content.



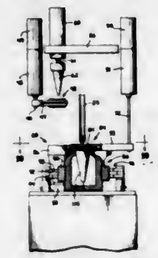
3,169,846

## MACHINE FOR FORMING GLASSWARE

Anthony T. Zappia, Indianapolis, Ind., assignor, by mesne assignments, to Speedway Machine & Tool Company, Inc., Indianapolis, Ind., a corporation of Indiana

Filed Aug. 17, 1961, Ser. No. 132,067

9 Claims. (Cl. 65—222)



2. In a machine of the class described, a pair of arms mounted for reciprocation and for arcuate oscillation about individual, spaced, axes which are parallel with the direction of such reciprocation, a finish ring carried by each arm, a single mold means equidistantly spaced radially from said individual axes, two additional mold means spaced from each other and each spaced radially from one only of said axes by a distance equal to the distance between said single mold means and each of said axes, and means for driving said arms, said driving means being so constructed and arranged that, when either of said finish rings registers with said single mold means, the other of said finish rings registers with its respective additional mold means.

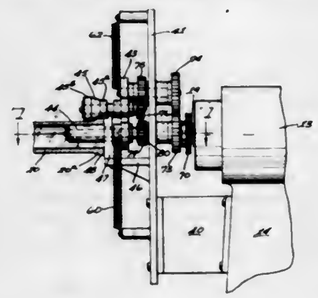
3,169,847

## APPARATUS FOR MAKING SMOOTH-SURFACED PRECISION-END TUBULAR ARTICLES

Harry F. Condon, Sylvania, Ohio, assignor, by mesne assignments, to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio

Filed June 28, 1961, Ser. No. 120,286

4 Claims. (Cl. 65—282)



1. Apparatus for forming a thickened flange on the end portion of a heavy-walled tubular glass workpiece comprising, in combination, mounting means for retaining said workpiece in cantilevered relation, means for rotating said workpiece about its axis, means for heat-softening a projecting end portion of said workpiece into thermoplastic condition during its rotation, a pair of rotatable circular shaping members mounted in vertical array to forcibly engage opposing heat-softened internal and external surfaces of said end portion, said internal shaping member having a uniform end portion, said internal shaping member having a uniform cylindrical contour of substantially lesser diameter than said workpiece and having sufficient lineal extent to contact both heat-softened and rigid internal surfaces, means for positively rotating at least the external shaping member at essentially the same peripheral speed of rotation as the contacted external surface to form an exteriorly-projecting thickened flange, and a non-rotating transverse rigid end shaping means surrounding the internal shaping means and longitudinally movable with respect to the axis of the workpiece for forming a flange end surface having a greater width than the workpiece sidewall thickness.

3,169,848

## COMPOSITION AND METHOD FOR INHIBITING THE GROWTH OF PLANTS

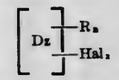
Hans Gysin, Basel, and Enrico Knusli, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland, a Swiss firm

No Drawing. Filed Dec. 18, 1956, Ser. No. 628,956

Claims priority, application Switzerland, Dec. 21, 1955, 28,070

8 Claims. (Cl. 71—2.5)

1. A composition for inhibiting the growth of plants comprising as active ingredient a diazine derivative corresponding to the formula



wherein Dz represents an otherwise unsubstituted diazine radical selected from the group consisting of pyridazine, pyrimidine and pyrazine radicals, $x$ represents a digit from 0 to 2 inclusive, $n$ represents a digit from 1 to 3 inclusive, $x+n$ being at most 4, R represents a member selected from the group consisting of lower alkylamino, lower dialkylamino, lower alkenylamino, lower alkoxy, lower alkenyloxy, lower alkylmercapto and lower alkenylmercapto radicals, and Hal represents a member selected from the group consisting of chlorine and bromine, in an amount sufficient to inhibit plant growth, and a solid powder as carrier.

3,169,849

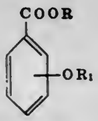
## METHOD FOR CONTROLLING GROWTH OF UNDESIRED VEGETATION

Alan J. Lemin, Richland Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed July 9, 1958, Ser. No. 747,362

12 Claims. (Cl. 71—2.6)

1. A method of controlling undesired vegetation which comprises applying to the vegetation, in an amount sufficient to exert a herbicidal effect, a compound having the formula:



wherein R and $R_1$ represent lower aliphatic hydrocarbon radicals selected from the class consisting of alkyl having from 1 to 11 carbon atoms, inclusive, alkenyl having from 3 to 11 carbon atoms, inclusive, alkynyl having from 2 to 11 carbon atoms, inclusive, cycloalkyl having from 4 to

11 carbon atoms, inclusive, and cycloalkenyl having from 5 to 11 carbon atoms, inclusive, such that the total number of carbon atoms in the radicals R and $R_1$ is not less than five and not more than twelve.

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**3,169,850**
**SYNERGISTIC HERBICIDAL COMPOSITION**
**Jack T. Thompson, 1123 George Circle, Griffin, Ga.**
**No Drawing. Filed Jan. 15, 1962, Ser. No. 166,401**
**2 Claims. (Cl. 71—2.6)**

1. An herbicidal composition comprising a mixture of N - (3,4 - dichlorophenyl) methacrylamide and disodium methyl arsonate in a weight ratio of between 5 parts of N-(3,4-dichlorophenyl) methacrylamide per part of disodium methyl arsonate, and 1 part of N-(3,4-dichlorophenyl) methacrylamide per 5 parts of disodium methyl arsonate, in total amount sufficient to form an effective herbicidal composition, a surfactant and a carrier.

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**3,169,851**
**PROCESS FOR THE OXIDATION OF POWDERS**
**David H. Fleming, Jr., Chatham, and Bruce C. Olmsted, Jr., Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York**
**Filed Feb. 4, 1960, Ser. No. 6,740**
**4 Claims. (Cl. 75—.5)**

3. A method for oxidizing a metal powder selected from the group consisting of ferrochromium, ferromanganese, ferronickel, ferrocobalt, ferrosilicon, ferrotitanium, ferrovanadium, and ferrotungsten to form an oxidized metal powder product thereof, which method comprises providing an oxidizing medium at an elevated temperature above approximately the fusion temperature of said metal powder and below approximately the temperature at which substantial fusion and agglomeration of said oxidized product become significant during oxidation, fluidizing said metal powder in a carrier gas, passing said metal powder in a fluidized state through said oxidizing medium at a rate sufficient to avoid substantial fusion and coalescence of said powder during oxidation, maintaining a supply of oxygen bearing gas into said oxidizing medium to ensure substantially complete oxidation of said metal powder to form said oxidized metal powder product, and rapidly cooling said oxidized metal powder product while in a fluidized state to avoid fusion and coalescene of said product.

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**3,169,852**
**PELLET OF IRON ORE AND FLUX, AND METHOD FOR MAKING SAME**
**Eugene W. Price, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Oct. 5, 1961, Ser. No. 143,096**
**3 Claims. (Cl. 75—3)**



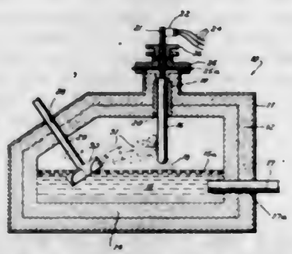

1. As an article of manufacture, a composite pellet having an inner core surrounded by an outer coating of iron ore free of added flux material, said inner core comprising an agglomerate of flux material free of added iron ore, and said agglomerate core having a volume less than the volume of space defined with said coating.

**3,169,853**
**PROCESS FOR ROASTING IRON SULFIDES TO FORM SULFUR DIOXIDE AND MAGNETITE**
**Adriaan C. van Es, Rotterdam, Netherlands, assignor, by mesne assignments, to Albatros Zwavelzuur-En Chemische Fabrieken N.V., Utrecht, Netherlands, a corporation of the Netherlands**
**No Drawing. Filed Jan. 16, 1961, Ser. No. 82,673**
**10 Claims. (Cl. 75—9)**

1. A process of burning iron sulfide contaminated with non-ferrous metal substances from the class consisting of copper, nickel and cobalt values to form sulfur dioxide gas suitable for sulfuric acid production and iron oxide cinders suitable for iron production while extracting usable heat from the process, comprising, reacting said sulfide in a fluidized bed with oxygen in an amount of 94% to 103% of that amount necessary to oxidize the total sulfide sulfur content of said sulfide to sulfur dioxide and the total iron content to magnetite, controlling the temperature of said fluidized bed within the range of about 700° C. to less than 900° C. to form sulfur dioxide and magnetite cinder, removing said sulfur dioxide and magnetite cinder from said fluidized bed, and leaching said magnetite cinder with an oxidizing leach solution to remove said values.

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**3,169,854**
**METHOD OF IMPROVING ARC STABILITY WHEN ARCING BETWEEN AN ELECTRODE AND A POOL OF MOLTEN METAL**
**Bryan Rapson, Arvida, Quebec, Canada, assignor to Aluminum Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada**
**Filed Mar. 26, 1962, Ser. No. 182,563**
**1 Claim. (Cl. 75—10)**



In an operation wherein an arc is maintained in an aluminum trihalide-containing atmosphere between an electrode and a pool of molten aluminum to supply heat to said pool of aluminum the improvement in combination therewith which comprises improving the stability of said arc by directing a stream of molten aluminum to impinge at least in part on said electrode to cause a stream of molten aluminum to flow along the surface of said electrode into said arc whereby the stream of molten aluminum is vaporized in the arc to provide arc stability due to the ionization of the vaporized aluminum within the arc.

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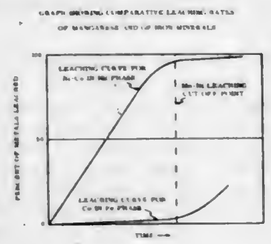
**3,169,855**
**ZINC PURIFICATION**
**Erich Pelzel, Stolberg, Rhineland, Germany, assignor to Stolberger Zink Aktiengesellschaft, Aachen, Germany**
**No Drawing. Filed Sept. 27, 1962, Ser. No. 227,651**
**Claims priority, application Germany, Aug. 22, 1961, St 18,228**
**9 Claims. (Cl. 75—88)**

1. In a method of reducing the lead content of zinc containing a minor proportion of lead, the steps of forming a molten mixture having a temperature of at least about 470° C. but less than 557° C. of said lead-containing zinc and of an effective amount of a substance selected from the group consisting of sodium and potassium; cooling said molten mixture to a temperature in the vicinity of but not below the melting point of zinc, thereby forming on the surface of said molten mixture a dross containing zinc, said substance and a relatively high proportion of lead while simultaneously reducing the lead content of the molten zinc located below said dross; and separating the thus formed molten zinc of reduced lead content from said dross.



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**3,169,856**
**PROCESS FOR SEPARATION OF NICKEL FROM COBALT IN OCEAN FLOOR MANGANIFEROUS ORE DEPOSITS**
**John L. Mero, Berkeley, Calif.**
**(1091 Via Robles, Lafayette, Calif.)**
**Filed May 22, 1962, Ser. No. 196,777**
**4 Claims. (Cl. 75—119)**



1. The method of separating the nickel from cobalt in ocean floor manganiferous deposits, in which the nickel is present in a manganese oxide phase and the cobalt in an iron oxide phase, comprising,

breaking up such ore,

leaching under reducing conditions in a solution, the manganese phase and included nickel from the iron phase including the cobalt, then removing such manganese phase in solution before any appreciable amount of the elements in the iron phase are dissolved, and processing the same to remove the nickel, and separately processing the iron phase remaining, to remove the cobalt.

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**3,169,857**
**FREE MACHINING STEEL WITH IMPROVED HOT WORKABILITY**
**Arlan E. Rathke, Hammond, Ind., and Arthur T. Morgan, South Holland, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Nov. 20, 1961, Ser. No. 153,724**
**6 Claims. (Cl. 75—123)**

2. A free machining, readily hot workable steel consisting essentially of:

0.07–0.1 wt. percent carbon;
0.07–0.08 wt. percent phosphorous;
0.30–0.50 wt. percent sulphur;
0.04–0.15 wt. percent of a machinability increasing addition selected from the group consisting of tellurium, selenium, and combinations thereof;
about 1.0 wt. percent manganese;
0.01–0.30 wt. percent zirconium;
and a balance consisting essentially of iron.

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**3,169,858**
**AUSTENITIC STEEL ALLOY**
**Gerald B. Heydt, Reading, and Clyde Raymond Whitney, Wyomissing, Pa., assignors to The Carpenter Steel Company, Reading, Pa., a corporation of New Jersey**
**No Drawing. Filed May 24, 1962, Ser. No. 197,290**
**5 Claims. (Cl. 75—124)**

2. An age hardening austenitic iron base alloy which in its hardened condition has good strength and ductility at temperatures up to about 1500° F., which is essentially free of a silicon-bearing segregate phase and which within the tolerances of good melting practice consists essentially of up to .10% carbon, up to 2% manganese, up to .25% silicon, 14% to 20% chromium, 20% to 30% nickel, 1% to 3% molybdenum, 2.75% to 3.75% titanium, .75% to 1.75% aluminum, .10% to 1.0% vanadium, .003% to .025% boron, the ratio of the titanium content to the aluminum content being about equal to at least 2, and the remainder essenially iron.

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**3,169,859**
**SUPERCONDUCTIVE MATERIALS**
**Harry N. Treaftis, Lee, Charles E. Watts, Jr., Pittsfield, and Raymond A. Meyer, Richmond, Mass., assignors to General Electric Company, a corporation of New York**
**No Drawing. Filed Mar. 27, 1962, Ser. No. 182,926**
**6 Claims. (Cl. 75—134)**

6. An electrical device containing a superconductive element, said element consisting essentially of a material selected from the group consisting of gallium and a material selected from the group consisting of (*a*) indium and (*b*) a 50% by weight indium–50% by weight tin alloy, the amount of indium in (*a*) above ranging from about 20 to 40% by weight and the indium-tin alloy in (*b*) ranging from about 5% to about 80% by weight, the remainder in each case being gallium.

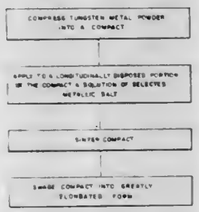
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**3,169,860**
**MOLYBDENUM-HAFNIUM ALLOY CASTING**
**Marion Semchyshen, Dearborn, Mich., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York**
**No Drawing. Filed Apr. 30, 1962, Ser. No. 191,258**
**The portion of the term of the patent subsequent to Dec. 31, 1980, has been disclaimed and dedicated to the Public**
**5 Claims. (Cl. 75—176)**

1. A cast alloy containing from .02% to 12% hafnium, .01% to .75% carbon, less than .005% oxygen, not more than 5% titanium, not more than 1% zirconium, and the balance consisting essentially of a member from the group consisting of molybdenum and mixtures of molybdenum and tungsten wherein the molybdenum content is at least equal to the tungsten content.

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**3,169,861**
**METHOD FOR MAKING WELDING ELECTRODES**
**Hermann J. Ehringer, West Orange, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Aug. 16, 1961, Ser. No. 131,812**
**12 Claims. (Cl. 75—206)**




1. The method of forming an elongated member principally comprising tungsten and having a cross section of heterogeneous composition which varies from substantially pure tungsten to tungsten having added thereto a predetermined proportion of selected additive refractory metallic oxide having an electron emissivity which is

considerably greater than the electron emissivity of substantially pure tungsten, which method comprises: compressing tungsten metal powder into a porous self-sustaining elongated compact, sorbing into said compact as a longitudinally disposed stripe which occupies a predetermined limited portion of any section taken perpendicular to the length dimension of said compact, a liquid solution containing a predetermined concentration of metallic salt which is convertible to said refractory metallic oxide on heating; sintering said compact in a non-oxidizing atmosphere to cause the particles comprising said compact to coalesce and form a sintered ingot; and mechanically working said ingot into greatly elongated form.

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### 3,169,862
### PROCESS FOR MAKING ANODES FOR ELECTROLYTIC CONDENSERS

**Walter Scheller, Muenchenstein, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**

**No Drawing. Filed Jan. 9, 1962, Ser. No. 165,211**
**Claims priority, application Switzerland, Jan. 10, 1961, 289/61**
**5 Claims. (Cl. 75—207)**

1. A process for the manufacture of sintered anodes for electrolytic condensers from a metal powder of a particle size below 150 microns containing from 0.5 to 1.4 percent by weight of oxygen and at most one further gaseous element, namely hydrogen, said powder being selected from the group consisting of niobium, tantalum and alloys thereof, the process comprising the steps of (A) mixing said metal powder with a carbon-containing product in the proportion of from 60 to 100 percent of the stoichiometric amount required for the formation of carbon monoxide, the carbon-containing product being selected from the group consisting of carbon and carbide which carbide is selected from the group consisting of tantalum carbide and niobium carbide, (B) pressing the powder into the desired anode shape, and (C) sintering it in a high vacuum at temperatures ranging from 1600 to 2200° C. until the carbon content has been reduced to below 0.015 percent by weight.

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### 3,169,863
### PENTAERYTHRITOL PHOSPHORIC ACID ESTER SENSITIZERS FOR PHOTOGRAPHIC EMULSIONS

**Herbert Grabhöfer, Cologne-Flittard, Herbert Müller, Leverkusen, Rolf-Fred Posse, Cologne-Flittard, and Hans Ulrich, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed June 11, 1963, Ser. No. 286,924**
**Claims priority, application Germany, July 21, 1962, A 40,784**
**9 Claims. (Cl. 96—66)**

1. In a process for the production of photographic images by developing silver halide emulsion layers in which the silver halide has a silver chloride content of at least 50 mole percent with photographic developer solutions containing formaldehyde, the improvement which comprises carrying out said development in the presence of a condensation product of a pentaerythritol ester of phosphorochloridic acid and a polyethylene glycol with a degree of polymerization of at least 3.

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### 3,169,864
### PHOTOSENSITIVE MATERIALS COMPRISING DIAZONIUM SALTS OF BISPHENOL ESTERS

**Reynold E. Holmen, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**

**No Drawing. Filed May 15, 1962, Ser. No. 194,961**
**7 Claims. (Cl. 96—75)**

1. A diazonium salt of a bisphenol compound, said compound having a hydrogen atom ortho to the phenolic hydroxyl, said compound having a radical containing a carbonyl group and in which the carbonyl carbon atom and the connecting carbon atom of the bisphenol group are joined by an alkylene radical having a chain length of at least two carbon atoms, said diazonium salt being further characterized as being capable of reacting with a beta-naphthol coupler solution in a coupling reaction with formation of a color-body.

6. A photosensitive lithographic printing plate having a water-resistant backing and a hydrophilic light-sensitive coating including as an essential component a light-sensitive diazonium salt of a bisphenol compound as defined in claim 1.

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### 3,169,865
### ZIRCONIA SUBBED PHOTOGRAPHIC PAPER

**George F. L. Wood, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed July 29, 1960, Ser. No. 46,057**
**6 Claims. (Cl. 96—85)**

1. A sensitized photographic element comprising a hydrophobic organic polymeric film base, an adherent coating comprising as the sole adhesive colloidal zirconia in an amount sufficient to increase the adhesion of a light-sensitive, silver halide-gelatin emulsion to said base on said polymeric film base and a light-sensitive silver halide gelatin emulsion over said adherent zirconia coating.

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### 3,169,866
### SYNTHETIC FILM MATERIALS AND SAME WITH LIGHT-SENSITIVE SILVER HALIDE EMULSIONS COATED THEREON

**Edward William Lee, Ilford, and Margaret Loudon Clachan, Manningtree, England, assignors to Ilford Limited, Ilford, England, a British company**

**No Drawing. Filed May 13, 1963, Ser. No. 280,127**
**Claims priority, application Great Britain, May 25, 1962, 20,290/62**
**16 Claims. (Cl. 96—87)**

15. A film product wherein the film base material consists of a film of synthetic linear polymer of highly hydrophobic character selected from the class consisting of polycarbonate and polymer containing both carbonate and urethane linkages, having superimposed thereon in order (1) a layer directly adherent to said film and consisting essentially of a copolymer selected from the class consisting of hydroxy-free vinyl chloride-vinyl acetate copolymer, hydroxy-free vinyl chloride-vinyl acetate-vinyl alcohol dicarboxylic acid ester copolymer and partially hydrolyzed vinyl chloride-vinyl acetate copolymer and also containing a cross linking agent, and layer (2) consisting essentially of a mixture of methyl methacrylate-itaconic acid copolymer and gelatin and having superimposed on layer (2) a gelatino-silver halide emulsion layer.

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### 3,169,867
### MANUFACTURE OF PHOTO-SENSITIVE FILMS

**Wilhelm Brandt, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany**

**No Drawing. Filed July 5, 1963, Ser. No. 293,191**
**Claims priority, application Germany, July 7, 1962, K 47,180**
**10 Claims. (Cl. 96—87)**

6. A photosensitive film comprising a polyethylene terephthalate base, a first layer comprising nitrocellulose and a salt of a sulfosuccinic acid which is at least partially esterified with alkyl groups of 3 to 18 carbon atoms, and a second photographic gelatin-silver halide layer.



### 3,169,868
### LIGHT SENSITIVE PHOTORESIST COMPOSITION

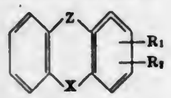
**Douglas G. Borden, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Apr. 16, 1962, Ser. No. 187,921**
**12 Claims. (Cl. 96—90)**

6. A film-forming light-sensitive photoresist coating composition comprising:

(1) A polymer selected from the class consisting of gelatin, a neutral rubber, a poly-cis-1,4-isoprene, a cellulosic polymer, a polyethylene oxide and a vinyl polymer,

(2) As the sole photosensitizer for said polymer (1) at least one compound having the formula:



wherein X represents an atom selected from the class consisting of sulfur and oxygen; $R_1$ and $R_2$ each represents a member selected from the class consisting of the hydrogen atom, a halogen atom, an alkyl group, an alkoxy group, and together $R_1$ and $R_2$ represent the nonmetallic atoms required to complete a fused benzene ring; Z represents a member selected from the class consisting of the C=S group and a NR group; and R represents a member selected from the class consisting of the hydrogen atom, a cyanoalkyl group and a benzo[b]phenoxazine group, and

(3) A solvent for said polymer and said photosensitizer.

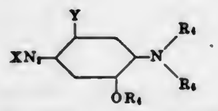
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### 3,169,869
### DIAZOTYPE MATERIAL

**Andreas Joseph Johannes Hendrickx, Venlo, Limburg, Netherlands, assignor to Chemische Fabriek L. van der Grinten N.V., Venlo, Limburg, Netherlands, a corporation of the Netherlands**

**No Drawing. Filed May 26, 1959, Ser. No. 815,781**
**Claims priority, application Netherlands, June 4, 1958, 228,409**
**9 Claims. (Cl. 96—91)**

1. Diazotype material comprising a sheet material carrying a light-sensitive layer containing a diazo compound of the general formula



in which X is an anion, Y is an atom selected from the class consisting of fluorine and chlorine atoms, and $R_4$, $R_5$ and $R_6$ are groups selected from the class consisting of alkyl groups having at most 4 carbon atoms and aralkyl groups having at most 11 carbon atoms, and $R_4$, $R_5$ and $R_6$ contain together at least 6 and at most 17 carbon atoms.

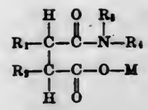
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### 3,169,870
### PHOTOGRAPHIC GELATIN LAYERS CONTAINING THE SALTS OF VARIOUS ALKYL AND ALKENYL SUCCINAMATES AS COATING AIDS

**William J. Knox, Jr., Rochester, N.Y., and Robert E. Sticker, Lawrence, Kans., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Dec. 4, 1961, Ser. No. 156,976**
**3 Claims. (Cl. 96—94)**

3. A gelatin-silver halide emulsion containing as a coating aid a compound having the following formula:



one of $R_1$ and $R_2$ being H, the other being selected from the group consisting of the alkyl and the alkenyl radicals containing 8–16 carbon atoms having at least two points of branching; $R_3$ is selected from the group consisting of —H, —$CH_3$, —$CH_2CH_2OH$ and —$CH_2CH_2CH_2OH$; $R_4$, where $R_3$ is selected from the group consisting of H and —$CH_3$, is selected from the group consisting of —$CH_2(CHOH)_4CH_2OH$,

$$—(CH_2)_x—O—(CH_2CH_2O)_yH$$

($x$ being 2–5, $y$ being 1–4, the sum of $x$ and $y$ being 3–9), and —$C(CH_2OH)_2(CH_2)_nCH_3$ ($n$ being 0–3); $R_4$, where $R_3$ is selected from the group consisting of —$CH_2CH_2OH$ and —$CH_2CH_2CH_2OH$, is selected from the group consisting of —$CH_2CH_2OH$,

$$—CH_2CH_2CH_2OH$$

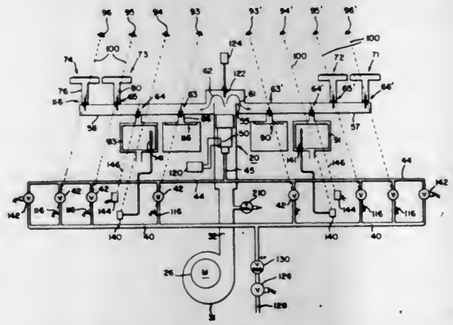
—$CH_2(CHOH)_4CH_2OH$ and the alkyl radicals containing 2 to 5 carbon atoms; and, M is a salt forming substitutent, which photographic emulsion, because of the presence of said coating aid, is capable of being coated as a single layer and simultaneously with another proteinaceous coating onto a photographic support to provide a dried down layer substantially free from blemishes and having, because of the presence of said coating aid, sufficient surface roughness to prevent slippage when sheets of the photographic element are stacked upon one another, and good rewettability characteristics to facilitate development of said emulsion.

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### 3,169,871
### COOKING METHOD AND APPARATUS

**Aldo Macchi, Belleville, and Calvin D. MacCracken, Tenafly, N.J., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware**

**Filed July 19, 1957, Ser. No. 672,945**
**4 Claims. (Cl. 99—1)**



2. The method of cooking, comprising: substantially completely burning fluid fuel in a burning zone in the presence of at least enough air to cause said burning to generate heated gases including fuel combustion products; maintaining said fuel, air and heated gases under superatmospheric pressure in said burning zone; conveying said heated gases while under said superatmospheric pressure in a confined path to a cooking zone remote from said burning zone; maintaining the heated gases under superatmospheric pressure in said cooking zone; and cook-

ing food by impinging a plurality of jets of said heated gases at said cooking zone directly against said food.

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3,169,872
## METHOD OF INCREASING THE SOLUBILITY RATE OF FUMARIC ACID AND COMPOSITIONS

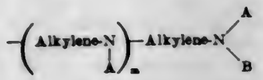
Robert L. Rau, Scarsdale, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 8, 1963, Ser. No. 263,692
18 Claims. (Cl. 99—78)

1. A method of increasing the rate of solubility of fumaric acid by forming a mixture of fumaric acid and a chelating agent of the formula



wherein X is selected from the group consisting of H, $-CH_2COOH$, $-CH_2CH_2OH$, $-CH_2CH_2COOH$ and



wherein

Alkylene is a low molecular weight bivalent alkyl group which places 1–3 carbon atoms between the nitrogens, selected from the group consisting of methylene, ethylene, propylene, isopropylene and cyclohexylene;

A and B are selected from the group consisting of H, $-CH_2COOH$, $-CH_2CH_2OH$ but not more than one of A, B, and X is hydrogen;

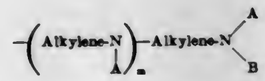
*m* has a value of 0, 1 and 2

which comprises mixing the fumaric acid and chelating agent in the presence of moisture and drying said mixture.

10. A fumaric acid composition having an increased rate of solubility in cold water which comprises an admixture of fumaric acid and a chelating agent of the formula



wherein X is selected from the group consisting of H, $-CH_2COOH$, $-CH_2CH_2OH$, $-CH_2CH_2COOH$, and



wherein

Alkylene is a low molecular weight bivalent alkyl group which places 1–3 carbon atoms between the nitrogens, selected from the group consisting of methylene, ethylene, propylene, isopropylene and cyclohexylene;

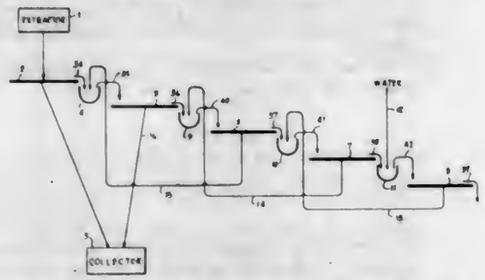
A and B are selected from the group consisting of H, $-CH_2COOH$, $-CH_2CH_2OH$ but not more than one of A, B and X is hydrogen;

*m* has a value of 0, 1 and 2.

3,169,873
## PROCESS FOR EXTRACTING FRUIT JUICES

Clarence B. Clark, P.O. Box 645, Fern Park, Fla.; James L. Froscher, P.O. Box 513, Apopka, Fla.; Clarence W. Du Bois, 926 Maxwell Ave., Orlando, Fla.; Don H. Kimball, 1406 Normandy Drive, Mount Dora, Fla.; and Wallace R. Roy, 1315 Lancaster Drive, Orlando, Fla.

Filed June 19, 1959, Ser. No. 821,475
16 Claims. (Cl. 99—105)



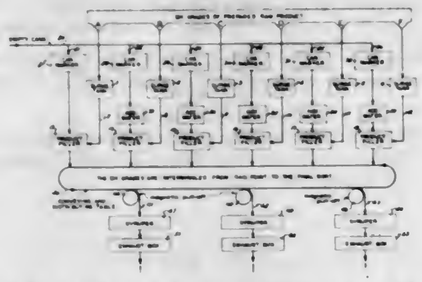

14. A method of treating food material characterized by having juice and pomace components comprising, the steps of separating said juice and pomace components from each other, washing said pomace with liquid condensate from juice concentration to provide a low solids juice, and separating said low solids juice and the washed pomace.

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3,169,874
## FOOD CANNING SYSTEM AND PROCESS

Thomas D. Birchall, Turlock, Calif.
(35 The Ridings, Epsom, Surrey, England)

Filed Sept. 7, 1960, Ser. No. 54,534
16 Claims. (Cl. 99—182)



1. In a food canning system wherein several grades of the same product are canned simultaneously, the combination of: a plurality of food product fillers, each used for only one product grade, means for sending a line of marked cans to each said filler, there being a different mark for each grade; means closely adjacent each said filler for charging the cans for each filler with a measured quantity of water, the quantity being different for each grade; means for intermingling the cans from all said fillers; syruping means for filling such empty space as remains in each can with undiluted syrup after said cans have been intermingled; a plurality of substantially identical cookers, there being fewer cookers than product fillers and each giving substantially the same cooking, each said cooker having one said syruping means and a can closer associated therewith; means sending the cans from said intermingling means to said cookers regardless of grade, to enable efficient use of said cookers so that the cookers are supplied with the full output of all the fillers up to the capacity of the cookers; collection means for all said cans from said cookers; and means for sorting the collected cans by grade, according to the mark thereon.



3,169,875
## PROCESS FOR PRODUCING A DEHYDRATED PUMPKIN PRODUCT

Maurice W. Hoover, Raleigh, N.C., assignor to North Carolina State College of the University of North Carolina, as represented by the business manager

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,067
5 Claims. (Cl. 99—204)

1. The process for producing pumpkin flakes having improved flavor and storage stability comprising: adding sugar and ungelatinized starch to a pumpkin puree maintained at an elevated temperature below 170° F. to increase the total solids of said puree to above 10%, the weight ratio of starch to sugar solids being between 1:3 and 1:3.5, the total amount of starch added accounting for up to 30% of the total dry weight of the mixture and the amount of sugar added accounting for less than 50% of the total dry weight of the mixture, the pumpkin solids in said mixture ranging between 20 and 85% of the weight of the mixture and dehydrating said mixture to a moisture content less than 6%.

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3,169,876
## PROCESS FOR PRODUCING DEHYDRATED SWEET POTATO FLAKES

Maurice W. Hoover, Raleigh, N.C., assignor to North Carolina State College of the University of North Carolina as represented by the business manager

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,786
5 Claims. (Cl. 99—207)

1. The process for producing sweet potato flakes having improved flavor and storage stability comprising:

(1) reducing the sweet potato to a puree;

(2) separating the puree into a first portion and a second portion;

(3) treating said first portion of said puree with a saccharifying enzyme at a temperature of from 110–170° F. to hydrolyze at least 90% of the starch therein;

(4) combining the said first treated portion with said second untreated portion of said puree in an amount of from 10–60% by weight, based on the total weight of said first and second portions; and

(5) dehydrating the same to a moisture content of from about 2% to about 4% and grinding the resultant dehydrated product to form the desired particle size.

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3,169,877
## MORTAR COMPOSITIONS

John A. Bartoll, 2846 Lucas, and Julius J. Bartoll, 5427 Red Field, both of Dallas, Tex.

No Drawing. Filed Jan. 16, 1961, Ser. No. 82,728
2 Claims. (Cl. 106—93)

1. A dry mortar composition which consists essentially of, by weight, 50 to 98.7% Portland cement, 1 to 49.7% of at least one substance selected from the group consisting of sand and powdered limestone, and 0.3 to 5% methyl cellulose of 10,000 to 15,000 centipoise viscosity grade, said composition being adapted to form a mortar comprising water in an amount which is, by weight, 50 to 75% of the weight of the dry ingredients exclusive of sand.

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3,169,878
## ASBESTOS-CEMENT PRODUCTS

William H. Snyder, Nashua, N.H., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 16, 1962, Ser. No. 195,320
16 Claims. (Cl. 106—99)

1. A consolidated and compressed article of manufacture consisting of a calcareous cementitious matrix containing incorporated throughout in amount up to approximately 60% by weight of the article, asbestos reinforcement and filler composed of a blend of: approximately 5 to 50 parts by weight of amosite fiber with the fibers and fibrous bodies thereof of an area, determined by the product of their length times their width, sized no greater than about 2 millimeters squared, and at least approximately 95% by weight of the said fibers and fibrous bodies being of an area not more than about 0.4 millimeter squared; and approximately 95 to 50 parts by weight of chrysotile fiber of grades having about 97% by weight of the fiber content of lengths not more than 14 mesh and with the fibers and fibrous bodies thereof of an area, determined by the product of their length times their width, sized no greater than about 1.5 millimeters squared.

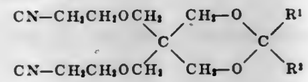
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3,169,879
## PLASTICIZED PLASTIC COMPOSITIONS

Ottmar Wahl, Baden-Baden, and Herbert Grabhofer, Cologne-Flittard, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 15, 1960, Ser. No. 69,288
Claims priority, application Germany, Nov. 17, 1959, A 33,315
9 Claims. (Cl. 106—176)

1. A plastic composition consisting essentially of a substance of the group consisting of cellulose esters, polyvinyl chloride, polycarbonates of bis(hydroxyphenyl) alkanes, and polystyrenes, which contains an amount that is sufficient to plasticize the said substance of a compound having the formula:



in which

$R^1$ is a radical of the group consisting of hydrogen and lower alkyl, and

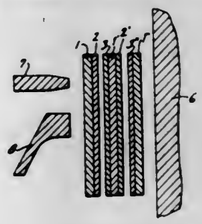
$R^2$ is a radical of the group consisting of lower alkyl, halogen-substituted lower alkyl, carboxy-substituted lower alkyl, lower alkoxycarbonyl-substituted lower alkyl, phenyl and amino-substituted phenyl radicals.

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3,169,880
## TRANSFER SHEET AND SHEET ASSEMBLY

Eugen Strauss, Via Cassiodoro 20, Milan, Italy

Filed July 9, 1962, Ser. No. 208,529
Claims priority, application Italy, July 8, 1961, A 14,588/61
32 Claims. (Cl. 117—36.3)



2. A copy paper or the like, comprising a carrier sheet provided on one face thereof with a transfer layer consisting essentially of a resinous substance selected from the group consisting of polyvinyl acetate, mixed polymerisates of polyvinyl acetate, colophonium, polymethylacrylate, polymethylmethacrylate, polycarbonates, polystyrene, polychloroprene, styrene-butadiene copolymers, synthetic cellulose resins, cumarone resin and cumarone-phenol resins, of an effective amount of at least one plasticizer for said resinous substance, of at least one organic fixing agent in an amount of between about 15–90% of the weight of said resinous substance and selected from the group consisting of tannic acid, phthalic acid, gallic

acid, digallic acid, salicylic acid, phenyl salicylate, 4-butylphenyl-salicylate, 5-chloro-2-hydroxy-benzophenone, 2,4-dibenzoyl-resorcin, phenol and pyrogallic acid, of at least one inorganic colloidal substance in an amount of 1.15–1.70 times the weight of said resinous substance plus said plasticizer and selected from the group consisting of bentonite, kaolin, calcium carbonate, calcium sulfate, calcium phosphate and zinc oxide, and of a pigment, and provided on the other face thereof with a take-up layer sensitive to and adapted to receive impressions of said transfer layer, said take-up layer consisting essentially of a dried resinous substance selected from the group consisting of vinyl polymers, ethyl cellulose, benzyl cellulose, methyl cellulose, carboxymethyl cellulose, polydiolefines, diolefine-styrene mixed polymers, polycarbonates, colophonium, copal, abietic-maleic resins and cumarone resins, and of an effective amount of at least one plasticizer in which said resinous substance is soluble, whereby said take-up layer of the type described is adapted to transfer impressions thereto.

### 3,169,881
### VIBRATION DAMPING COATING FOR VIBRATORY STRUCTURES

Albert G. Bodine, Jr., Sherman Oaks, Calif. (7877 Woodley Ave., Van Nuys, Calif.)

Filed Feb. 7, 1962, Ser. No. 171,750
5 Claims. (Cl. 117—45)



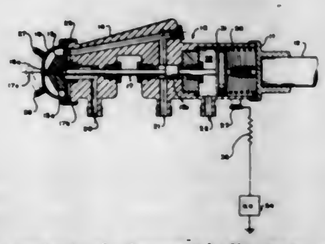
1. Damping means for a vibratory part comprising a layer of viscous substance coated on said part and

a layer of a hard substance coated over said viscous layer and being in intimate contact with said layer of viscous substance and extending beyond the periphery of said viscous layer, the portions of said layer of a hard substance which extend beyond the periphery of said viscous layer being fixed to said vibratory part.

### 3,169,882
### ELECTROSTATIC COATING METHODS AND APPARATUS

James W. Juvinall, Erhard Kock, and James C. Marsh, Indianapolis, Ind., assignors to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana

Filed Oct. 5, 1960, Ser. No. 60,657
13 Claims. (Cl. 117—93.4)



1. The method of electrostatically spray coating a grounded article surface portion of substantial area which comprises creating an electrostatic depositing field having said surface portion as one terminus with the lines of force distributed thereover, the depositing field at its other terminus having substantially all of the lines of force from said surface portion concentrated at a single sharp electrode tip facing toward the article, said electrode being negative with respect to said article and the electrostatic field at said electrode tip having an average potential gradient at least of the order of 5,000 volts per inch providing a highly ionized zone immediately adjacent said electrode tip, atomizing coating material issued as a solid liquid stream from a small orifice by interaction with air into a spray of fine coating material particles projected toward the article from a location more remote from the article than said electrode tip and with the axis of the spray pattern near said tip, and shaping the spray pattern by air issuing from another orifice in a member so constructed and located relative to the electrode tip as not to detract from the high field concentration thereat, the field creating connection to said electrode being completed through a resistor of at least about one megohm per kilovolt of a high potential source, the zone of atomization being so located relative to the electrode tip that the particles are projected in paths generally coinciding with those of the lines of force extending from said electrode tip to said surface portion, said spray particles having velocities not in excess of about 3,000 feet per minute adjacent said surface, the distance of the article from the electrode tip being sufficient to permit dispersion of the spray particles and the average potential gradient of the charging and depositing field extending from said electrode tip to the article surface portion being materially greater than the average potential gradient of any other electrostatic field extending to said surface portion from any other point within said depositing field.

### 3,169,883
### ELECTROSTATIC COATING METHODS AND APPARATUS

James W. Juvinall, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana

Filed Oct. 25, 1961, Ser. No. 148,793
15 Claims. (Cl. 117—93.42)



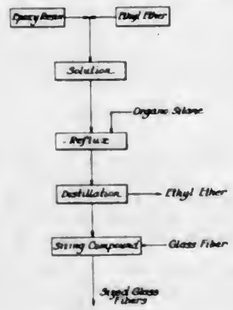
1. The method of electrostatically spray-coating an article which comprises continuously supplying liquid coating material under high hydrostatic pressure of at least two hundred fifty pounds per square inch to a small orifice in a single-fluid atomizing head, said orifice having an effective opening equivalent to a circular orifice of not greater than about fifteen thousandths of an inch in diameter, projecting the coating material therefrom into the surrounding atmosphere with a very high velocity, the coating material forming a thin expanding film with generally straight sides defining an angle of at least 15° and having a forward edge, the thickness of said film being less than the transverse extent thereof throughout the length of said film, to effect atomization of the coating material from said edge into fine spray particles, the distance of the center of said film edge from said orifice being not in excess of about three-quarters of an inch, whereby the particles are of a size providing on deposition a spray spot size of not greater than of the order of twenty thousandths of an inch in diameter, effecting relative movement between said head and the article surface transverse to the general direction of spray particle movement while maintaining the space between the article and said head great enough to permit substantial dispersion of the spray particles and at least several inches, maintaining a quiescent atmosphere adjacent the article, and providing an electrostatic charging field having an average gradient of the order of five thousand volts per inch electrostatically to charge and carry through said quiescent atmosphere and deposit on said article while still in liquid state a substantial portion of the spray particles which would not otherwise have been deposited thereon, the relative movement being such as to effect a substantial displacement between the article surface and head transverse to the general direction of spray particle movement during particle deposition.



### 3,169,884
### GLASS FIBERS SIZED WITH SILANE-EPOXY RESIN COMPOUNDS AND METHOD

Alfred Marzocchi, Cumberland, and Nicholas S. Janetos, Providence, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Mar. 4, 1959, Ser. No. 797,051
7 Claims. (Cl. 117—126)




1. A product consisting of glass fiber filaments and a thin coating present as a size on the glass fiber filaments wherein the size comprises a silane-organic polymeric compound having film forming properties wherein the silane component is selected of the group consisting of an unsaturated silane, an amino silane, a hydroxy silane and a carboxy silane, and wherein the organic polymeric component is selected from the group consisting of an epoxy resin and an epoxy resin containing an amino group, and wherein at least one of the components including the silane and the epoxy resin originally contained an amino group, said silane and epoxy resin being joined through the nitrogen atom of the amino group originally present in one of the components.

### 3,169,885
### METHOD FOR PRODUCING NOVEL LEATHER SUBSTITUTES

Marcos M. Golodner, West Orange, N.J., and George E. Sabino, Bronx, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,339
18 Claims. (Cl. 117—135.5)

1. A method for making a water vapor permeable coated fabric comprising dispersing (A) flock in a mixture of (B) water having dissolved therein a member selected from the group consisting of carboxymethyl cellulose, gum arabic, gum tragacanth and gum karaya and (C) a solution in a solvent, selected from the group consisting of methyl ethyl ketone, tetrahydrofuran and cyclohexanone, of an essentially linear polyesterurethane elastomer which is the reaction product obtained by heating a mixture comprising as essential polyurethane ingredients (1) one mol of an essentially linear hydroxyl terminated polyester of a saturated aliphatic glycol having from 4 to 10 carbon atoms and having hydroxyl groups on its terminal carbon atoms and a material selected from the group consisting of a dicarboxylic acid of the formula

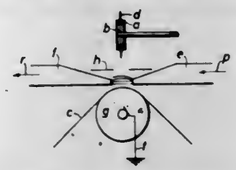
HOOC—R—COOH

where R is an alkylene radical containing from 2 to 8 carbon atoms and its anhydride, said polyester having an average molecular weight between 600 and 1200 and having an acid number less than 10, and (2) from 1.1 to 3.1 mols of a diphenyl diisocyanate having an isocyanate group on each phenyl nucleus in the presence of (3) from about 0.1 to 2.1 mols of a saturated aliphatic free glycol containing from 4 to 10 carbon atoms and having hydroxyl groups on its terminal carbon atoms, the molar amount of said polyester and said free glycol combined being essentially equivalent to the molar amount of said diphenyl diisocyanate whereby there are essentially no groups of the class consisting of isocyanate and hydroxyl groups in said reaction products, then applying said dispersion to the surfaces of a textile substrate and leaching said coated textile with water to remove the solvent.

### 3,169,886
### APPARATUS FOR THE ELECTROPHOTOGRAPHIC PRODUCTION OF IMAGES

Walter Simm, Opladen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Nov. 15, 1960, Ser. No. 69,402
Claims priority, application Germany, Nov. 18, 1959, F 29,879
6 Claims. (Cl. 118—637)




1. In an apparatus for the electro-photographic reproduction of images having corona discharge electrode means, transfer means for passing a semi-conductor layer having a latent conductivity image thereon to travel past said electrode means, the semi-conductor layer upon such travel passing through the path of discharge from the electrode means, and means disposed intermediate the electrode means and the transfer means for injecting an aerosol developer into the path of discharge from the electrode means, the improvement which comprises said electrode means being mounted for movement transverse to the direction of travel of the semi-conductor layer, means for moving said electrode means transversely to the direction of travel of the semi-conductor layer as the same is past, and shielding means disposed intermediate the corona discharge means and said injector means for shielding the injecting means from the corona discharge, said shielding means terminating short of the path of the discharge from the electrode means to the semi-conducting layer permitting passage of the corona discharge from the electrode means to the semi-conducting layer.

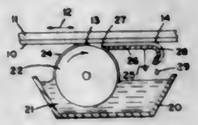
### 3,169,887
### ELECTROPHOTOGRAPHIC DEVELOPING APPARATUS

William C. York, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 4, 1961, Ser. No. 107,759
6 Claims. (Cl. 118—637)

1. For use in an electrophotographic developing process in which a liquid electrophotographic developer is applied to the surface of a continuously moving imagewise exposed photoconductive sheet, the combination of means for moving the imagewise exposed sheet through an area one edge of which is a horizontal straight line approximately at right angles to the direction of motion of the sheet, a roller with its axis of rotation lower than

and parallel to said line and spaced therefrom a distance exceeding the radius of the roller by between 1/64 and 1/4 inch, means for applying liquid electrophotographic developer to the roller below said line, means for rotating the roller to carry developer to and past said line to develop the surface of the imagewise exposed photoconductive sheet and means to provide a substantially uniform electric field at the surface being developed and including an electrically conductive apron below and parallel



to said area and spaced therefrom between 1/64 and 3/16 inch, the first edge of the apron being on the side of said line toward which the developer moves as it is carried past said line and so close to said roller and line that developer is driven between the apron and the sheet, the edge of said apron remote from said line being adapted for conducting developer away from said area, whereby said developer flows into said area at said first edge and then parallel to said area and flows out of said area at said edge of said apron remote from said line.

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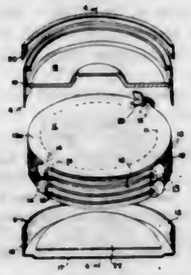
**3,169,888**
**PRESSED CRYSTAL SUGAR TABLET AND METHOD OF MANUFACTURING SAME**
**John D. Ryan, Franklin Square, and Peter F. Schuhmann, Oceanside, N.Y., assignors to American Sugar Company, New York County, N.Y., a corporation of New Jersey**
**Filed Mar. 5, 1962, Ser. No. 177,398**
**6 Claims. (Cl. 127—30)**

1. A pressed crystal sugar tablet prepared by forming a substantially homogeneous admixture consisting essentially of about 100 parts by weight tablet sugar, about 100 parts by weight medium granulated sugar and an amount of sugar syrup in the range 5–30 parts by weight, said tablet sugar having a moisture content in the range about 0.8–1.5% by weight and having a particle size such that substantially all of said tablet sugar passes through a 20 mesh U.S. Tyler Screen, said medium granulated sugar being substantially moisture-free and having a particle size such that substantially all of said medium granulated sugar is retained on a 20 mesh U.S. Taylor Screen and said sugar syrup being a substantially colorless, aqueous sucrose solution, pressing the resulting admixture into tablet form and drying the resulting pressed tablet form sugar.

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**3,169,889**
**STORAGE BATTERY CELL AND METHOD OF MAKING THE SAME**
**Harold E. Zahn, Edina, Minn., assignor to Gould-National Batteries, Inc., a corporation of Delaware**
**Filed Sept. 24, 1962, Ser. No. 225,471**
**2 Claims. (Cl. 136—6)**

1. A sealed alkaline storage battery cell comprising, a sealed casing, sets of positive and negative electrode plates within said casing, an integral relatively narrow portion of each positive plate connecting it to another positive plate of the same set, an integral portion of each negative plate connecting it to another negative plate of the same set, a pair of separators each comprising a sheet of porous material separating surfaces of said positive and negative plates, interconnecting integral portions of said separators folded over and covering opposite surfaces of each of said integral portions of the plates of at least one of the sets of plates, said separators having marginal portions projecting outwardly toward said casing from the edges of said plates, said marginal portions being sealed to one another along their opposite facing surfaces thereby completely enveloping said at least one set of plates, and means



securing said interconnecting portions of said separators to the underlying surfaces of the several integral narrow portions of said one of said sets of plates.

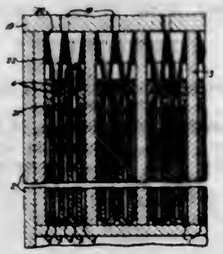
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**3,169,890**
**ACTIVE MATERIAL FOR A LEAD-ACID STORAGE BATTERY PLATE**
**Ernst Voss and Juergen Freundlich, both of Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, Hagen, Westphalia, Germany, a corporation of Germany**
**No Drawing. Filed Dec. 11, 1961, Ser. No. 158,600**
**Claims priority, application Germany, Dec. 16, 1960, A 36,299**
**5 Claims. (Cl. 136—26)**

1. A crack-free active material of a pasted storage battery plate, comprising felted elongated particles of basic lead sulfate selected from the group consisting of monobasic and dibasic lead sulfate.

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**3,169,891**
**RESERVE ENERGIZED BATTERY**
**Paul E. Streigle, Westminster, Md., assignor to Catalyst Research Corporation, Baltimore, Md., a corporation of Maryland**
**Filed Feb. 13, 1963, Ser. No. 258,303**
**6 Claims. (Cl. 136—90)**

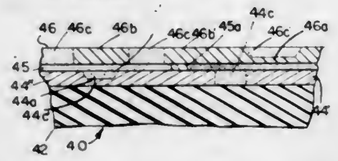


6. A reserve energized battery comprising a cell case and a cover for it, an odd number of vertical electrode plates disposed side by side in said case in a row, said row being formed from at least five of said plates, absorbent separators between the plates, means electrically connecting the upper ends of the even number plates in said row, means electrically connecting the upper ends of the odd number plates in said row, and a plurality of funnels in the upper part of said case having upper ends engaging the lower surface of said cover, each funnel having a bifurcated lower portion straddling the upper central portion of one of said even number plates in engagement with the opposite sides thereof, the upper ends of the funnels engaging each other along their adjoining edges and being flattened transversely, and said cover being provided with a vertical passage having a lower end straddling the underlying pair of adjoining funnel edges for delivering electrolyte to two funnels simultaneously.



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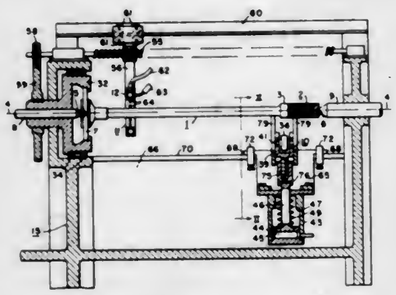
**3,169,892**
**METHOD OF MAKING A MULTI-LAYER ELECTRICAL CIRCUIT**
**Jerome H. Lemelson, 85 Rector St., Metuchen, N.J.**
**Filed Dec. 27, 1960, Ser. No. 86,838**
**11 Claims. (Cl. 148—6.3)**



1. A method of fabricating a multi-layer electrical circuit having a high density of individual circuit elements which comprises the steps of: sequentially applying first, second and third layers of conductive metals to an insulated base, selectively converting predetermined portions of each of said layers of conductive metal to a dielectric compound thereof, thereby providing a plurality of individual circuit elements, the converted portions electrically insulating adjacent conductive elements from one another, conductive portions of said second intermediate layer electrically interconnecting juxtaposed conductive portions of said first and third layers, and converted portions of said second intermediate layer electrically insulating juxtaposed conductive portions of said first and third layers.

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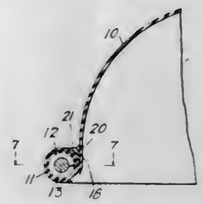
**3,169,893**
**METHOD AND APPARATUS FOR HEAT TREATING ELONGATED ROTARY WORKPIECES**
**Richard K. Wuerfel, Catonsville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 31, 1961, Ser. No. 113,922**
**8 Claims. (Cl. 148—131)**



1. A method of surface hardening a steel axle workpiece which is substantially of rough surface and which includes a longitudinal portion which during use is required to be maintained true to the axis of rotation of the axle with a high degree of accuracy, such method comprising the steps of machining an annular shoulder on the outer surface of said workpiece adjacent to said portion and concentric to an axis passing through centers at its opposite ends, and applying a radial constraining force to said annular shoulder while causing a consecutively heated and quenched zone to scan the workpiece longitudinally during rotation of same about an axis passing through centers at opposite ends of the workpiece and during the holding of such centers aligned with such axis.

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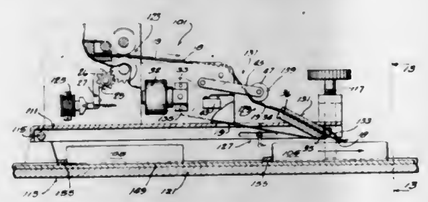
**3,169,894**
**METHOD OF PRODUCING A RIMMED DIAPHRAGM**
**Edward Monett, 639 Scotch Plains Ave., Westfield, N.J.**
**Filed May 28, 1962, Ser. No. 198,307**
**2 Claims. (Cl. 156—185)**



1. The method of producing devices of the character described, which comprises first definitely positioning hardened pin sections in spaced opposed relationship to each other in the coils of a circular spring utilized in forming part of a circular rim of a resulting device, molding a body portion of the device of a rubber compound together with an integral rim joining the body portion in a facing portion, the rim enveloping said spring and the pin sections therein in forming a workpiece, curing the compound of said workpiece, trimming the workpiece, then rolling the rim to encircle the facing portion thereon, securing the faced rim to the body portion by a cement in forming a fillet between the faced rim and body portion in production of the resulting end product, applying the cement to a groove formed between the rim and the body portion of the device, evenly distributing the cement in said groove, and agitating the device during part of the setting operation of the cement.

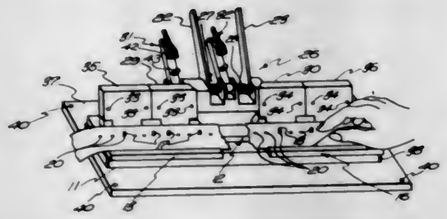
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**3,169,895**
**LABEL WEB REWINDER**
**Allen O. Sohn, 127 Fairview Drive, Plymouth, Wis.**
**Original application Apr. 1, 1957, Ser. No. 649,958. Divided and this application May 27, 1963, Ser. No. 283,515**
**10 Claims. (Cl. 156—361)**



1. A label web dispensing and rewinding machine comprising a label web source, take-up means, motor means connected to said take-up means, an edge over which the web is trained and about which labels are dispensed, means for regulating action of the motor means in accordance with the dispensing of labels from said web and including means to sense slack in said web between said source and edge and means whereby said motor will actuate said take-up means when the web is slack and will deactuate said take-up means when the web is taut, in further combination with means including a manually actuated trigger adjacent said edge for feeding the web from its source in response to manual removal of labels dispensed over said edge, manual actuation of said trigger causing the web to be fed from said source and slacken the web to energize said motor means.

3,169,896
TAPE SPLICER
Jasper Gilbert Dresser, Boynton Beach, Fla., assignor to Dresser Products Incorporated, a corporation of Rhode Island
Filed Aug. 17, 1962, Ser. No. 217,757
3 Claims. (Cl. 156—507)



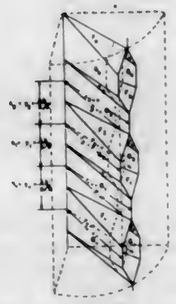
1. A punched data tape splicer comprising a base plate, a work block fixed on said plate, said base plate having a track extending longitudinally from said block, a second work block movably mounted on said base plate and guided by said track for movement into abutting relation with the fixed work block, said work blocks having tape supporting surfaces in a single plane and a plurality of pins on each block projecting from said work supporting surfaces with the pins of the two blocks uniformly spaced equivalent to the openings in the tape to be received when the blocks are in abutting relation, each of said blocks having two covers, the adjacent covers of the two blocks when abutting exposing the tape splicing area when lifted and the other two remote covers serving to hold the tape in position while the adjacent covers are lifted for splicing the tape.

3,169,897
FLOWER HOLDING PLATE
Kwong Tak Yue, Kowloon, Hong Kong, assignor, by direct and mesne assignments, to Rico Limited, Kowloon, Hong Kong, a corporation of Hong Kong
Filed May 3, 1962, Ser. No. 192,235
1 Claim. (Cl. 161—31)



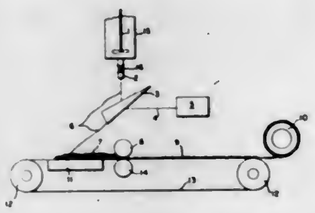
A base plate for an artificial floral arrangement comprising a thin, planar, resilient support sheet, a plurality of sleeves integral with and extending above the upper surface of the support sheet, each of said sleeves having a non-circular opening therein, a non-circular adapter removably mounted within the opening in said sleeves, said adapter having a configuration substantially matching the configuration of the non-circular opening in the sleeves, said adapter having an opening therein to receive the stems of artificial foliage therein.

3,169,898
CURVATURED HONEYCOMB AND METHOD OF MAKING SAME
Mahmoud I. Kaziml, Berkeley, Calif., assignor to Hexcel Products Inc., Berkeley, Calif.
Filed Mar. 7, 1961, Ser. No. 93,895
13 Claims. (Cl. 161—68)



1. A solid figure having an external surface of a conical shape and comprising a plurality of honeycomb cells, each cell being defined by ribbons of material, each ribbon having alternate bond areas and free areas and wherein the bond areas of adjacent ribbons are juxtaposed and bonded together and wherein the axis of symmetry of each said cell is perpendicular to a plane tangent to said external surface at the intersection of said axis with said surface, and wherein in all ribbons all alternate bond areas of an expanded ribbon lie in one plane containing the axis of said shape.

3,169,899
NONWOVEN FIBEROUS SHEET OF CONTINUOUS STRAND MATERIAL AND THE METHOD OF MAKING SAME
Walter Steuber, Media, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 22, 1961, Ser. No. 97,496
25 Claims. (Cl. 161—72)

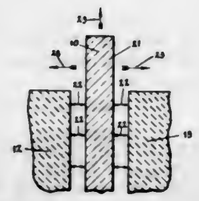


1. A coherent, flexible, nonwoven fibrous sheet from which there can be removed continuous lengths of plexifilamentary strand material, said strand material being disposed in multidirectional overlapping and intersecting arrangement throughout said sheet, lying generally parallel to the major plane of said sheet, and being self-bonded to provide a sheet density greater than 7 lbs./ft.$^3$ and a tensile strength above 0.3 lb./in.//oz./yd.$^2$; said strand material further being composed of networks having a surface area greater than 2 m.$^2$/g., comprising a three-dimensional integral plexus of synthetic organic, crystalline polymeric, fibrous elements, said elements being coextensively aligned with the network axis and having the



structural configuration of oriented film-fibrils, an average film thickness of less than 4 microns and an average electron diffraction orientation angle of less than 90°.

3,169,900
STRESS PATTERN TEMPERED GLASS SHEET AND METHOD OF MAKING THE SAME
John R. Ermlich, Perrysburg, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Jan. 31, 1955, Ser. No. 485,127
9 Claims. (Cl. 161—149)



1. In a sheet of tempered glass having its interior under tension and its major surfaces under compression, a marginal compression zone extending around the periphery of said sheet and being of a width greater than the thickness of the sheet.

6. A method of tempering a glass sheet or plate which comprises heating said sheet to substantially the softening point of the glass, chilling the marginal portion only of the heated sheet while substantially mantaining the temperature in the central portion thereof, and finally chilling the entire sheet.

3,169,901
MINK PELT
Jacques M. Kaplan, 730 5th Ave., New York, N.Y.
Filed Jan. 15, 1963, Ser. No. 251,683
3 Claims. (Cl. 161—62)



1. A fur product consisting of a mink fur pelt sheared on the fur side substantially throughout its entire area to a substantially uniform level at which the fur fibers and guard-hairs of the product are of a length between about three and seventeen millimeters (0.12–0.67 inch) measured in situ with the sheared mink pelt having improved water repellent characteristics which allow a minimum drying time after being wetted.

3,169,902
HORTESIN ANTIFUNGAL AGRICULTURAL COMPOSITIONS AND METHOD
Richard H. Gruenhagen, Blacksburg, Va., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 10, 1958, Ser. No. 760,063
7 Claims. (Cl. 167—22)

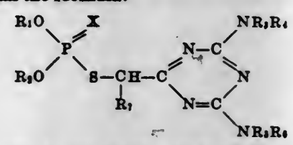
1. A method for the control of fungal disease of plants which comprises contacting plant parts with an anti-fungal agent produced as an aerobic, deep culture fermentation product by strain NRRL 2528 of Streptomyces, said agent being employed in the form of an aqueous composition containing at least about 0.1 part by weight of a concentrate of said agent per million parts of composition.

3,169,903
ORGANOPHOSPHORUS INSECTICIDE
Donald W. Stoutamire, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 26, 1961, Ser. No. 119,333
3 Claims. (Cl. 167—30)

3. A method for killing insects which comprises bringing said insects into contact with an insecticidally effective amount of toluene-alpha,alpha-dithiol bis(O,O-dimethyl phosphorodithioate).

3,169,904
TRIAZINE DERIVATIVES POSSESSING APHICIDAL PROPERTIES
Alan Calderbank, Eric Callander Edgar, and John Arthur Silk, all of Bracknell, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
No Drawing. Original application June 24, 1963, Ser. No. 290,196. Divided and this application Aug. 7, 1964, Ser. No. 394,372
Claims priority, application Great Britain, Oct. 25, 1957, 33,358/57; Apr. 23, 1959, 13,939/59
13 Claims. (Cl. 167—33)

1. An insecticidal composition comprising, as the essential active ingredient, at least one compound which in free base form has the formula:



wherein $R_1$ and $R_2$ are selected from the group consisting of methyl and ethyl; $R_3$ and $R_4$ are selected from the group consisting of hydrogen and lower alkyl; $R_5$ and $R_6$ are selected from the group consisting of hydrogen, lower alkyl and taken together, the atoms necessary to complete a piperidino ring with their adjacent nitrogen atoms; $R_7$ is selected from the group consisting of hydrogen and lower alkyl; and X is selected from the group consisting of oxygen and sulphur atoms, together with a carrier therefor and a dispersing agent.

3,169,905
SANITIZING COMPOSITION AND METHOD OF USE
William H. Lambert, 4107 Chippewa, St. Louis, Mo.
No Drawing. Filed May 15, 1961, Ser. No. 109,835
20 Claims. (Cl. 167—42)

1. A concentrated water dilutable sanitizing composition consisting essentially of finely divided pyrogenic colloidal silica in the amount of about 1 to 15% by weight, 5 to 74% of a compound consisting of at least one member of the group consisting of a quaternary ammonium compound, an alkalizing agent and a glycol and 25 to 80% of water.

### 3,169,906
### METHOD OF STERILIZING WITH ALKYLENE OXIDE

Richard M. Donchak, Norwich, and Joseph J. May, Oxford, N.Y., assignors to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed Nov. 16, 1961, Ser. No. 152,936
4 Claims. (Cl. 167—58)

1. In the method of sterilizing with alkylene oxides is a substantially non-aqueous medium, the improvement by which human topical aerosol preparations are sterilized by protracted storage at room temperature which comprises charging said aerosol preparations under an internal pressure of 15 to 110 p.s.i.g. with a gaseous mixture of an inert gaseous propellant selected from the group consisting of carbon dioxide, nitrogen and halogenated lower alkyl hydrocarbons containing at least one fluorine atom and an alkylene oxide containing 2 to 3 carbon atoms, such that the sterilizing concentration of the alkylene oxide in the aerosol preparation will be in the range of 20 to 500 p.p.m.; and storing said aerosol preparation under said pressure at room temperature for a period of 1 to 4 weeks.

### 3,169,907
### METHOD OF RELIEVING MIGRAINE WITH 5-ALLYL-5-(β - HYDROXY - PROPYL) - BARBITURIC ACID

Jean Heusser and Christian Schmid, both of Adliswil, Switzerland, assignors to Hommel, S.A., Zurich, Switzerland

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,539
Claims priority, application Switzerland, Apr. 26, 1961, 4,921/61
3 Claims. (Cl. 167—65)

1. A method of relieving migraine which comprises administering an effective but non-toxic amount of 5-allyl-5-(β-hydroxy-propyl)-barbituric acid of M.P. 164–165° C.

### 3,169,908
### THERAPEUTIC 3-(α,α,α-TRIFLUORO-m-TOLYLOXY)-1,2-PROPANEDIOL-1-CARBAMATE

Gilbert A. Youngdale, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Aug. 4, 1961, Ser. No. 129,232, now Patent No. 3,103,533, dated Sept. 10, 1963. Divided and this application Feb. 15, 1963, Ser. No. 258,898
2 Claims. (Cl. 167—65)

1. A therapeutic composition comprising in unit dosage form from about 200 mg. to about 1500 mg. of 3-(α,α,α-trifluoro-m-tolyloxy)-1,2-propanediol-1-carbamate in association with a pharmaceutical carrier.

### 3,169,909
### NUCLEAR REACTOR FUELLING MACHINE

Frederick S. Hummel, Islington, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation

Filed Feb. 15, 1963, Ser. No. 258,700
Claims priority, application Canada, June 22, 1962, 852,176
9 Claims. (Cl. 176—30)

1. In a fuelling machine for a nuclear reactor having a snout for clamping onto a flexible, projecting end of a reactor tube to form a coaxial continuation thereof;

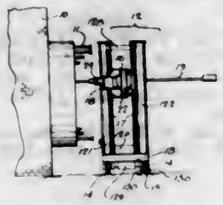
(*a*) gimbal means mounting said snout for pivotal movement about two mutually perpendicular axes both perpendicular to the axial direction of the snout,

(*b*) means for moving the snout in its axial direction generally towards a selected tube,

(*c*) means for sensing and automatically correcting pivotal displacement of the snout about each of said axes resulting from contact between said snout and tube,

(*d*) and means for clamping said snout and tube together,

(*e*) said gimbal means being such that said snout remains free to pivot about said axes after clamping

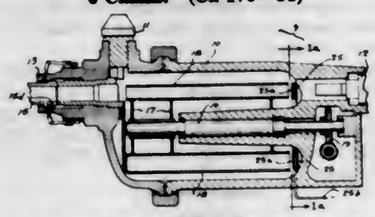


onto said tube whereby, in combination with a flexibility of the tube, to absorb minor inaccuracies of misalignment existing at the time of clamping on or occurring thereafter.

### 3,169,910
### NUCLEAR REACTOR FUELLING MACHINE

Frederick S. Hummel, Islington, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation

Filed Feb. 15, 1963, Ser. No. 258,701
Claims priority, application Canada, Oct. 10, 1962, 859,822
6 Claims. (Cl. 176—31)



1. In a fuelling machine for a nuclear reactor having a snout for clamping onto a projecting end of a reactor tube to form a communicating continuation thereof, conduit and pump means for supplying liquid coolant from an exterior source to the interior of said machine at a location remote from said snout to generate a pressure of liquid coolant in said machine sufficient to cause a stream of said liquid coolant to flow from said machine into said tube to inhibit flow of coolant from said tube into said machine.

5. In a method of fuelling a nuclear reactor including the step of clamping the snout of a fuelling machine onto a projecting end of a reactor tube to form a communicating continuation thereof; and during the period of such communication causing an auxiliary stream of liquid coolant to flow continuously from said machine into said tube to inhibit flow of coolant from said tube into said machine, said auxiliary stream being at a lower temperature than the coolant in said tube.

### 3,169,911
### PROCESS FOR SEPARATING ACRYLIC ACID n-BUTYL ESTER FROM n-BUTANOL AND ANOTHER IMPURITY BY DISTILLATION WITH ACETOPHENONE

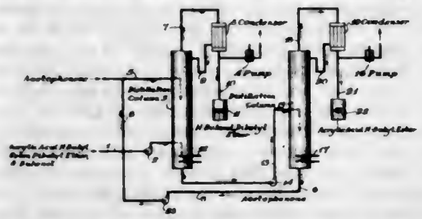
Wilhelm Vogt, Knapsack, near Cologne, Klaus Gehrmann, Efferen, near Cologne, Kurt Sennewald, Knapsack, near Cologne, and Hans Cöln, Hurth, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Aug. 30, 1962, Ser. No. 220,569
Claims priority, application Germany, Sept. 21, 1961, K 44,763
10 Claims. (Cl. 202—39.5)

1. A process for separating into its components a mixture of acrylic acid n-butylester and n-butanol which



mixture also contains as an additional component at least one substance selected from the group consisting of di-n-butylether and acetic acid n-butylester which comprises adding acetophenone to the mixture, distilling off n-

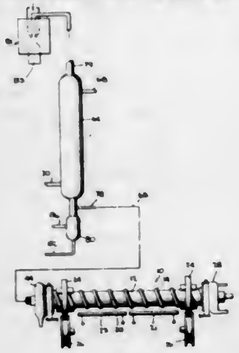


butanol and the additional component as head product from the resulting acetophenone-containing mixture, and separating by fractional distillation the residue obtained which consists of acrylic acid n-butylester and acetophenone.

### 3,169,912
### CONTINUOUS DISTILLATION APPARATUS

Andrea Ferrari, Scarsdale, N.Y., and William J. Smythe, Westfield, N.J., assignors to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York

Filed Nov. 13, 1961, Ser. No. 151,882
5 Claims. (Cl. 202—238)



1. Fractional distillation apparatus, comprising:

(*a*) a liquid heating vessel mounted horizontally for rotation about its longitudinal horizontal axis and having a liquid inlet and a liquid outlet longitudinally spaced from said inlet,

(*b*) said vessel having means operable during the rotation of said vessel for the flow of liquid from said inlet to a point downstream therefrom,

(*c*) means for heating said vessel along its length and thereby heating said liquid during its flow,

(*d*) means disposed in said vessel and extending longitudinally thereof and having a series of longitudinally spaced openings, and

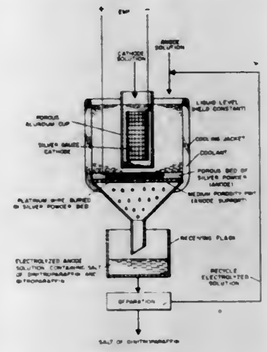
(*e*) a series of tubes, extending longitudinally within said means disposed in said vessel, each of said tubes connected to one of said openings.

### 3,169,913
### PREPARATION OF GEM-DINITROPARAFFINS BY ELECTROLYSIS

Charles M. Wright, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

Filed May 10, 1961, Ser. No. 109,204
14 Claims. (Cl. 204—72)

2. In the preparation of gem-dinitroparaffin by electrolysis in an electrolytic cell having a porous partition between its anode and cathode compartments, the method which comprises passing an aqueous solution of mononitroparaffin and alkali metal nitrite into the anode compartment of the cell, said solution being adjusted to a pH between 9 and 13 by the addition of alkali metal hydroxide and the anode being silver metal; subjecting

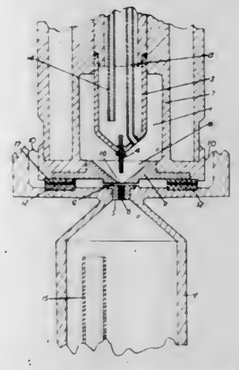


the solution to electrolysis at from about 20° to about 75° C. wherein the silver metal is electrolytically oxidized and reacts with the components of the solution to form dinitroparaffin in solution and the silver metal is reprecipitated at the anode; and separating the dinitroparaffin thus formed from the electrolyzed solution.

### 3,169,914
### METHOD AND APPARATUS FOR CONDUCTING GASEOUS REACTIONS

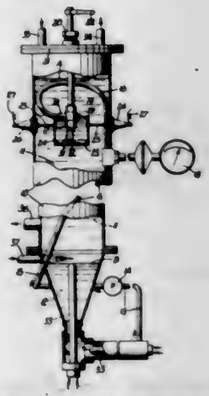
Philip William Young, Norton-on-Tees, England, and George Ingle Finch, Two Trees Farmhouse, Upper Heyford, Oxfordshire, England; said Young assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Aug. 17, 1960, Ser. No. 50,149
Claims priority, application Great Britain, Aug. 26, 1959, 29,257/59
6 Claims. (Cl. 204—164)



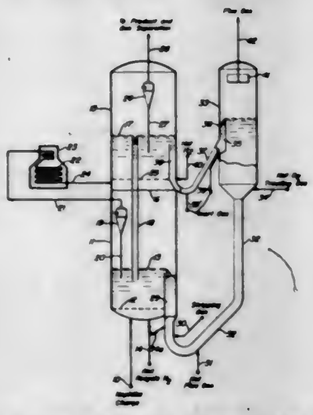
1. A method for conducting gaseous reactions comprising: establishing an electric arc discharge between a pair of electrodes at least one of which has an internal nozzle; feeding a gas radially inwardly toward said discharge peripherally of the discharge at the entrance to said nozzle; continuously applying an axially directed pinching force to said gas immediately prior to its contact with said discharge to increase the temperature of said gas; communicating the pinched gas with said discharge to actuate the gas; and jetting the actuated gas through said nozzle.

3,169,915
**PROCESS FOR PRODUCING ACETYLENES**
Harry E. Kennedy, Berkeley, Calif., assignor to Union Carbide Corporation, a corporation of New York
Filed July 25, 1960, Ser. No. 45,095
9 Claims. (Cl. 204—171)



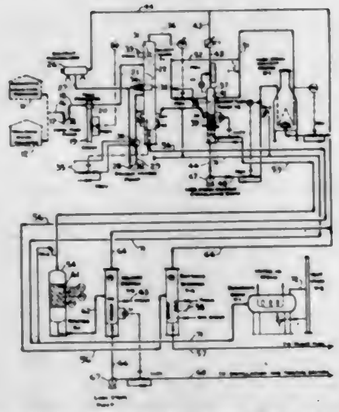
7. A process for producing acetylene which comprises directing a stream of electrically conductive droplets through a liquid bath of hydrocarbons, applying an electrical potential between the droplets in the stream, producing electrical arcs between the droplets, cracking said hydrocarbons in said electrical arcs, and recovering the acetylene formed by said cracking.

3,169,916
**MULTISTAGE HYDROCARBON REFORMING WITH FLUIDIZED PLATINUM CATALYST**
Robert J. Hengstebeck, Valparaiso, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed May 19, 1953, Ser. No. 356,037
6 Claims. (Cl. 208—65)



1. The method of treating a naphtha which comprises contacting said naphtha in a lower zone at a temperature in the range of about 750 to 900° F. under a pressure of about 100 to 350 p.s.i.g. with a dense fluidized mass of a platinum-containing catalyst in the presence of recycled hydrogen for effecting a partial conversion of said naphtha, separating said partially converted naphtha from catalyst and passing said partially converted naphtha through an interstage heater for heating said naphtha to a temperature in the range of about 950 to 1050° F., contacting said heated partially converted naphtha in an upper zone with a second dense fluidized mass of platinum-containing catalyst of higher average activity than the first catalyst mass, maintaining said second catalyst mass at a temperature in the range of about 900 to 975° F. which is substantially higher than the temperature of the first catalyst mass, withdrawing catalyst from the first catalyst mass to an oxygen treating zone, contacting catalyst in said treating zone with a gas having an oxygen partial pressure greater than 1 atmosphere and at a temperature in the range of about 950 to 1250° F., introducing treated catalyst from the treating step to the second catalyst mass, introducing catalyst from said second catalyst mass as a downwardly moving column to said first catalyst mass, maintaining the upper zone at such lower pressure than the lower zone so that the pressure differential is sufficient to cause flow of the gaseous stream from the lower zone through the interstage heater to the upper zone without the use of a mechanical gas circulator and balancing the pressure differential between the upper and lower zone by the downwardly moving column of catalyst.

3,169,917
**PROCESS FOR REMOVING ENGINE PRODUCED CONTAMINANTS FROM USED LUBRICATING OIL**
Ulrich L. Kahan, Oakland, Calif., assignor to Ulrich Process Company, Inc., a corporation of California
Filed July 24, 1961, Ser. No. 126,136
2 Claims. (Cl. 208—180)



1. The process of removing from used lubricating oil drainings contaminants of the class consisting of the products of cracking and polymerization of the oil and the decomposition products of oil additives including anti oxidants, deactivators, detergents, viscosity index improvers, polar organic rust inhibitors, and pour point depressants which consist of:

(1) obtaining a first solution by admixing said drainings with a specific solvent, composed of about 90% propane by volume, about 8% butane by volume, about 2% ammonia by volume, the ratio of drainings to solvent mixture being about 1:1 to 1:20 for removing from said lubricating oil by precipitation about 90% of said contaminants, said drainings and solvent being heated to a temperature of about 100° F. to 170° F. and under a pressure of about 400 to 600 pounds per square inch gauge;

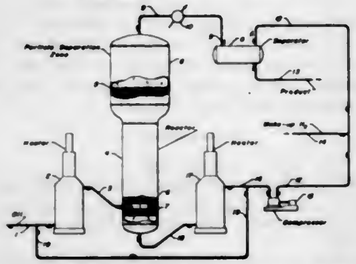
(2) obtaining a second solution by separating about 95% of said solvent from said first solution by flash vaporization;

(3) obtaining a third solution by passing said second solution through a catalyst composed of an activated bauxite containing iron oxide for adsorption by said bauxite of all but traces of said contaminants;



(4) removing substantially the balance of said solvent from said third solution by means of stripping steam.

3,169,918
**HYDROREFINING HEAVY OILS USING A PSEUDO-DRY CATALYST**
William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,919
10 Claims. (Cl. 208—264)



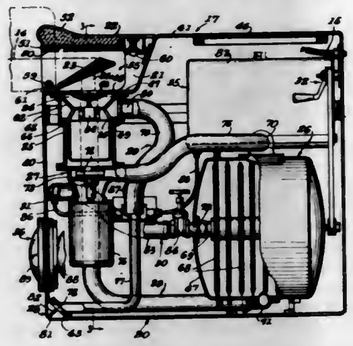
1. A process for hydrorefining a heavy hydrocarbon oil containing asphaltenes which comprises maintaining in a hydrorefining zone under hydrorefining conditions a pseudo-dry fluidized bed of absorptive hydrogenation catalyst particles, partially vaporizing said heavy oil by preheating it in the absence of catalyst to a temperature below that at which any substantial thermal cracking thereof can occur, introducing the partially vaporized oil into said hydrorefining zone and contacting it in the presence of hydrogen with said catalyst particles at asphaltene-hydrorefining conditions, sorbing unvaporized oil comprising hydrorefined asphaltenes into said catalyst particles to avoid any substantial accumulation of free liquid phase oil within the hydrorefining zone, flowing a hydrogen-containing gas upwardly through said hydrorefining zone and therewith stripping hydrorefined oil from the catalyst particles, withdrawing from said hydrorefining zone vaporous effluent and recovering therefrom a hydrorefining product of improved purity.

3,169,919
**HYDROREFINING OF PETROLEUM CRUDE OIL AND CATALYST THEREFOR**
John G. Gatsis, Des Plaines, and William K. T. Gleim, Island Lake, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,073
11 Claims. (Cl. 208—264)

1. A hydrorefining catalyst consisting essentially of a colloidal suspension of molybdenum blue in a hydrocarbon.

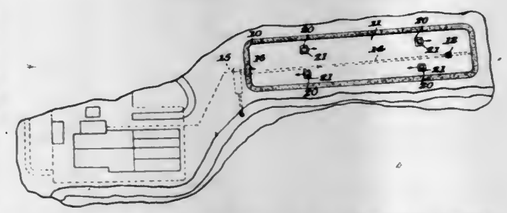
3,169,920
**POOL SERVICE UNIT**
Robert T. Payne, 12454 E. Elliott, El Monte, Calif.
Filed Jan. 3, 1961, Ser. No. 80,421
2 Claims. (Cl. 210—169)

1. A pool service unit comprising an enclosed housing having a top wall and a front wall adapted to form a continuation of a pool deck and a side wall thereof, respectively, said housing having a skimmer opening for receiving debris-laden water from the surface of a pool disposed in a recessed portion of said top wall and communicating with a portion of said front wall, said housing further being provided with a discharge opening for returning filtered water to the pool and an inlet opening for receiving water from substantially beneath the surface of the pool to be filtered, a pump within said housing, a sealed body extending within said housing and connected at its top end to said skimmer opening and at its bottom end to the intake of said pump within said housing, said pump having a discharge outlet connected by a first conduit to the intake side of a filter unit within



said housing, a second conduit connecting said inlet opening to said sealed body at a point intermediate said ends of the body, and an opening for discharging filtered water from said filter unit connected by a third conduit to said discharge opening in said front wall.

3,169,921
**POND WATER CIRCULATOR, AERATOR, AND FOAM FORMATION ELIMINATOR**
Llewellyn B. Griffith, 22 S. Edison St., Arlington, Va.
Filed Apr. 19, 1957, Ser. No. 653,797
3 Claims. (Cl. 210—170)



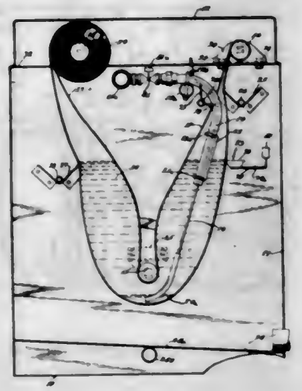
1. A sewage treatment pond of roughly symmetrical shape in plan with its length greater than its width and having, a level earth bed, a pipe roughly midway between the two long sides for admitting sewage having had both primary and secondary sewage treatment, a sump, a discharge pipe communicating with the sump near one end thereof and having a vertical pipe rising therefrom to form a wier to determine the liquid level in the pond, a plurality of means on each of the two opposite sides of the discharge pipe discharging air-laden water in an endless path roughly midway between the discharge pipe and the proximate long side of the pond, said means each having an adjustable member to direct the air-laden water from beneath the water level to cross the water level, said means being spaced from each other so that the flow in the endless closed path will be substantially uniform and will follow the shore line of the pond.

3,169,922
**FILTER**
Lloyd Hornbostel, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed July 31, 1961, Ser. No. 128,004
8 Claims. (Cl. 210—387)

1. A filter unit comprising,
a flexible tubular filter element,
feeding means for feeding the element,

take-up means for receiving the used portion of the element,

said take-up means being spaced longitudinally from said feeding means with said element having a portion depending downwardly from the



take-up means in the space between the feeding means and the take-up means,

means for opening the filter element longitudinally located in advance of the take-up means,

and conduit means extending into said filter element through the opening formed therein for feeding fluid to the filter.

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3,169,923

## OIL OF LUBRICATING VISCOSITY

Anthony J. Guarnaccio, Niles, and Edwin J. Latos, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,787
7 Claims. (Cl. 252—32.5)

1. Lubricating oil containing from about 0.01% to about 25% by weight of amine salt of polyoxyethylenated alkylphenol phosphate.

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3,169,924

## ALKALI FUSION OF COPOLYMERS OF MONOOLEFINS AND VINYL ESTERS

Arnold J. Morway, Clark, and Jeffrey H. Bartlett, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 24, 1961, Ser. No. 154,855
5 Claims. (Cl. 252—40)

1. A lubricating composition comprising a major amount of lubricating oil and 5 to 40 wt. percent of metal salt formed by the alkali fusion of a copolymer of a $C_2$ to $C_{16}$ aliphatic alpha olefin and a vinyl ester of a $C_2$ to $C_6$ monocarboxylic acid, said copolymer containing about 1 to 30 parts by weight of olefin monomer per part by weight of said vinyl ester monomer.

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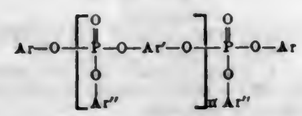
3,169,925

## HIGH TEMPERATURE LUBRICANTS AND PHOSPHORUS CONTAINING POLYMERS

Clarence L. Mahoney, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 26, 1961, Ser. No. 119,332
5 Claims. (Cl. 252—49.8)

1. A lubricating composition comprising a major proportion of a polyphenyl ether base having from 3 to 8 phenyl rings per molecule selected from the group consisting of unsubstituted ethers, tert-butyl substituted ethers, and alpha-cumyl substituted ethers, and mixtures thereof, and an effective load-bearing amount of 0.05% to about 5% by weight of a phosphorus polymer of the configuration:



wherein Ar, Ar', and Ar'' are aromatic radicals of the group consisting of phenyl, biphenyl and phenoxyphenyl, each phenyl radical having as substituents on the ring only substituents of the group consisting of hydrogen, tertiary butyl, phenyl, alpha-cumyl and phenoxy radicals, and *n* is an average integer from 5 to 500.

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3,169,926

## STABILIZATION OF ORGANIC SUBSTANCES

Ted Symon, Lombard, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 29, 1961, Ser. No. 155,795
14 Claims. (Cl. 252—51.5)

7. An organic substance normally subject to oxidative deterioration containing, as an inhibitor against said deterioration, a stabilizing concentration of an N-acyldiaminodiphenyl ether.

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3,169,927

## THERMAL INSULATION

Ladislas C. Matsch, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 4, 1961, Ser. No. 107,626
10 Claims. (Cl. 252—62)

1. In a solid-in-vacuum insulation system consisting essentially of a low conductive coarse thermal insulating material selected from the group consisting of perlite, magnesia, glass and mica having ultimate body sizes between about 3 and 1000 microns and being thermally sensitive to changes in pressure, the combination therewith for substantially decreasing its sensitivity to such changes in pressure, of an additive low conductive insulating material selected from the group consisting of silica, calcium silicate and titanium oxide and composed of relatively small bodies disposed in minor amounts in the interstices of said coarse material, said additive insulating material having an average ultimate body size not greater than $\frac{1}{10}$ the average ultimate body size of said coarse material, and constituting between about 5 and 40% of the total volume of said coarse insulating material alone.

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3,169,928

## COMPRESSION REFRIGERATION WORKING FLUID

Bernd Herold, Muhlenstrasse 53, Ludinghausen, Germany

Filed Feb. 24, 1959, Ser. No. 795,181
3 Claims. (Cl. 252—68)

1. A compression refrigeration working fluid consisting essentially of

(1) from 75% to 97% of a halogenerated aliphatic hydrocarbon refrigerant, and,

(2) from 3% to 25% of a lubricating oil consisting essentially of,

(*a*) 0% to 50% of a petroleum mineral oil, and

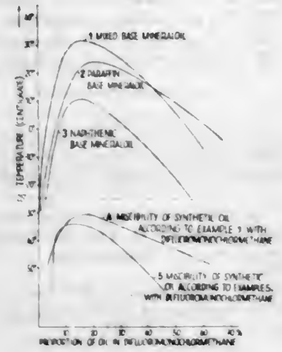
(*b*) 100% to 50% of a polyalkylated benezene distillation residue having,

(i) an initial boiling point between 150° C. @ 12 mm. Hg and 210° C. @ 12 mm. Hg,

(ii) a final boiling point of about 330° C. @ 12 mm. Hg,



(iii) a viscosity at 20° C. between 9° and 37° E.,




(iv) a viscosity at 50° C. between 2° and 5° E.,

said working fluid remaining single phase at —25° C.

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3,169,929

## DEFOAMING AQUEOUS LIQUIDS

William F. Nekervis, Midland, and Robert A. Canute, Mount Pleasant, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 12, 1960, Ser. No. 55,126
2 Claims. (Cl. 252—79.1)

1. An aqueous ferric chloride etching solution containing a diester member selected from the group consisting of diethyl phthalate, dibutyl phthalate, dimethyl phthalate, diethyl oxalate and diethyl fumarate, said ferric chloride etching solution containing from about 5 to about 45 weight percent ferric chloride and the amount of said diester member ranging from about 2 parts per million up to the solubility limit of said member in said aqueous ferric chloride etching solution.

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3,169,930

## BUILT LIQUID DETERGENT

Burton H. Gedge, Wyoming, Ohio (% The Procter & Gamble Company, Cincinnati 17, Ohio)

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,170
13 Claims. (Cl. 252—137)

1. A process of preparing a substantially non-aqueous built liquid detergent comprising the steps of (1) admixing a liquid nonionic detergent surface active agent constituted of a water solubilizing polyoxyethylene group in chemical combination with an organic hydrophobic compound selected from the group consisting of polyoxypropylene, alkyl phenol and dialkyl phenol in which the alkyl group contains from about 6 to about 12 carbon atoms, the reaction product of an excess of propylene oxide and ethylene diamine, and aliphatic alcohols having from about 8 to about 18 carbon atoms, said nonionic detergent having a molecular weight of from about 300 to about 11,000, with a colloidal suspension of dehydrated polyphosphate salts selected from the group consisting of sodium pyrophosphate, sodium tripolyphosphate, and mixtures thereof, in a dehydrating vehicle selected from the group consisting of glycols of 2 to 4 carbon glycerol, 1-octanol, monoethanol amine, and mixtures thereof, said nonionic detergent agent being added in an amount in excess of about 0.50 times the amount of the colloidal polyphosphate and (2) from this resulting mixture distilling off the said dehydrating vehicle, thereby leaving the said dehydrated polyphosphate salts in colloidal suspension in said nonionic agent.

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3,169,931

## METHOD OF PREPARING AN ALUMINA-SILICA SUPPORTED CATALYST COMPOSITION

Armand J. de Rosset, Clarendon Hills, and Mark J. O'Hara, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 6, 1960, Ser. No. 73,988
16 Claims. (Cl. 252—453)

1. A method for preparing alumina from aluminum sulfate which comprises forming a first precipitate of basic aluminum sulfate, maintaining a constantly acidic pH during the formation of said first precipitate, forming a second precipitate at a pH in excess of 8.0, through the addition of aluminum sulfate to an alkaline precipitant, admixing said first and second precipitates in a weight ratio, of the alumina-equivalent of said second precipitate to that of said first precipitate, in excess of about 1:6, drying the resulting slurry and subjecting the dried slurry to a calcination procedure at an elevated temperature to produce alumina.

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3,169,932

## METHOD OF PRODUCING ARTIFICIAL MARBLE FROM BARIUM SULFATE AND AQUEOUS ALKALI SILICATE

Mohammad Aslam, Syed Tehzibul Hasan, Riaz Ali Shah, and Khurshid Naqui Zaidi, Karachi, Pakistan, assignors to Pakistan Council of Scientific and Industrial Research, Karachi, Pakistan

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,483
8 Claims. (Cl. 252—478)

1. A method of producing artificial marble which method comprises the steps of:

(1) forming a mixture comprising barium sulfate having a particle size at least as small as about 100 mesh and an aqueous solution of an alkali silicate in a proportion of about 1–10% by weight of the dry silicate, based on the sulfate;

(2) molding said mixture under a pressure of at least 1,000 p.s.i.;

(3) drying said molded mixture;

(4) firing the dried molded mixture in a furnace at 800–1150° C. to obtain a hard strong structural material; and

(5) polishing the surfaces of said structural material with wax to obtain a marble-like finish.

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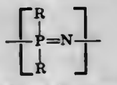
3,169,933

## HIGH MOLECULAR WEIGHT POLYPHOSPHONITRILES AND PROCESS OF MAKING SAME

Chui Fan Liu, Ann Arbor, Mich., and Roger L. Evans, Mendota Heights, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Aug. 31, 1962, Ser. No. 220,871
12 Claims. (Cl. 260—2)

1. A solid, high molecular weight, plastic, moldable, light colored, phosphonitrile polymer which is swellable by aromatic hydrocarbon solvents and which is insoluble in all common solvents, said polymer consisting essentially of recurring units represented by the formula:



wherein each R is a hydrocarbon group selected from the class consisting of methyl, ethyl, aryl and lower alkyl-substituted aryl groups, said aryl and lower alkyl-substituted aryl groups containing from 6 to 10 carbon atoms.

3,169,934
RIGID BUTYLENE-ETHYLENE-ETHER TYPE POLYURETHANE FOAMS
Robert F. Dennett and Harold J. Walker, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 5, 1961, Ser. No. 135,725
6 Claims. (Cl. 260—2.5)

1. A rigid, cellular, polyether polyurethane composition comprising the foamed reaction product of (A) a polyhydroxy ether comprising the condensation reaction product of a mixture of at least 55 percent by weight of a polyol selected from the group consisting of sorbitol and sucrose, and not more than 45 percent by weight of glycerine, first with butylene oxide and then with ethylene oxide, wherein the molar ratio of butylene oxide to ethylene oxide is within the range of 2:1 to 1:1 and in total amounts such that the condensation product contains from about 10 percent to about 20 percent by weight of hydroxyl groups, and (B) an organic polyisocyanate; said reaction being conducted in the presence of a dispersing agent, a catalyst and a volatile fluorine-containing polyhalohydrocarbon blowing agent.

3,169,935
CHLORINATED POLYVINYL CHLORIDE PLASTIC COMPOSITIONS CONTAINING CHLORINATED PARAFFINIC HYDROCARBON PLASTICIZERS
Francis Raymond Sheriker and Percy Jefferson Whinyates, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed June 18, 1962, Ser. No. 203,008
Claims priority, application Great Britain, June 26, 1961, 22,995/61
10 Claims. (Cl. 260—28.5)

2. A plastic composition which comprises 100 parts by weight of a mixture of chlorinated polyvinyl chloride containing 60–70 percent by weight of chlorine with not more than three times its weight of polyvinyl chloride and as primary plasticizer in said mixture 50–100 parts by weight of a member containing 40–70 percent by weight of chlorine selected from the group consisting of chlorinated $C_{14}$ paraffinic hydrocarbon and chlorinated paraffin wax.

3,169,936
EPOXY RESIN ADHESIVE COMPOSITIONS
Walter B. Armour, Plainfield, N.J., and Michael P. Diamantopoulos, South Acton, Mass., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 23, 1962, Ser. No. 239,808
14 Claims. (Cl. 260—29.7)

1. An adhesive composition which comprises a mixture of (*a*) an epoxidized polybutadiene resin having both terminal and internal epoxy groups and (*b*) a chlorinated polymer mixture of atactic polypropylene and an ethylene:propylene copolymer.

3,169,937
ANTI-CORROSIVE PLASTISOL COMPOSITION COMPRISING POLYVINYL CHLORIDE AND A COMPOUND SELECTED FROM THE GROUP CONSISTING OF CALCIUM PLUMBATE, STRONTIUM PLUMBATE AND BARIUM PLUMBATE
Ryuichi Yashiro, Tokyo, Masahiko Masuda, Chigasaki, and Ichiro Zama, Yokohama, Japan, assignors to The Furukawa Electric Company Limited, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 21, 1961, Ser. No. 154,056
5 Claims. (Cl. 260—30.4)

3. A plastisol composition which comprises about 0.5 to 50 weight parts of a compound selected from the group consisting of calcium plumbate, strontium plumbate and barium plumbate; about 5 to 150 weight parts of a compound selected from the group consisting of butyl-epoxy stearate, 3,4-epoxy cyclohexyl methyl ester, 9,10-epoxy-iso-octyl-stearate, 3,4-epoxy-6 methyl cyclohexyl methyl ester; about 1.0 to 200.0 weight parts of a compound selected from the group consisting of methylated maleic adduct of phthalic anhydride, pyromellitic dianhydride, dodecenyl succinic anhydride and chlorendic anhydride; and about 100 weight parts of polyvinyl chloride.

3,169,938
PREPARATION OF PRODUCTS OF HIGH MOLECULAR WEIGHT FROM FORMALDEHYDE BY POLYMERIZING IN THE PRESENCE OF AN INERT SOLID
Johannes J. M. Evers and Paul J. Hodzelmans, both of Sittard, and Theodorus H. Linders, Urmond, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Jan. 15, 1960, Ser. No. 2,582
Claims priority, application Netherlands, Jan. 20, 1959, 235,301
11 Claims. (Cl. 260—37)

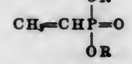
1. In a process for polymerizing formaldehyde by passing the same into an inert liquid vehicle, the improvement which comprises first adding a solid, inert, particulate material to said liquid vehicle before the passage of any monomeric formaldehyde into said vehicle and thereafter passing the formaldehyde into the resulting suspension to polymerize said formaldehyde, said solid, inert, particulate material being different from said formaldehyde.

3,169,939
HALOMETHYLATED DIARYLOXIDES AS CATALYSTS FOR CURING PHENOL- AND UREA-FORMALDEHYDE-TYPE RESINS
Howard P. Cordts, Bay City, and James D. Doedens, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 25, 1960, Ser. No. 44,895
11 Claims. (Cl. 260—38)

3. A composition of matter comprising a filler, an acid hardenable, thermosetting resin selected from the group consisting of intermediate condensation products of a phenol and an aldehyde, condensation products of urea and an aldehyde and condensation products of melamine and an aldehyde and a catalytic quantity of a-halomethylated diaryloxide composition selected from the group consisting of diaryloxides having from 1 to 4 chloromethyl substituent groups, diaryloxides having from 1 to 4 bromomethyl substituent groups and mixtures of the foregoing.

3,169,940
METHOD FOR MAKING CROSS-LINKED COPOLYMERS OF ETHYLENE AND DIALKYL VINYLPHOSPHONATES
Nathan L. Zutty, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 15, 1961, Ser. No. 159,756
6 Claims. (Cl. 260—41)

1. The process for producing a cross-linked copolymer of ethylene and a dialkyl vinylphosphonate which comprises heating at 130° C. to 350° C. a substantially linear copolymer containing from 50 to 99.5 weight percent polymerized ethylene and from 50 to 0.5 weight percent of a polymerized dialkyl vinylphosphonate of the formula:



wherein R is a member selected from the group consisting of alkyl of from 1 to 5 carbon atoms and halogen substituted alkyl of from 1 to 5 carbon atoms for a period of time sufficient to produce said cross-linked resin.



3,169,941
ISOBORNYLOXY PHENYLAMINES
Gerhard H. Alt, University City, Mo., and Gene R. Wilder, St. Albans, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 13, 1960, Ser. No. 35,411
8 Claims. (Cl. 260—45.9)

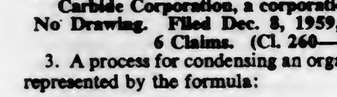
1. Sulfur vulcanizable diene rubber composition which deteriorates by absorbing oxygen and ozone from the atmosphere containing a small amount sufficient to inhibit degradation of compounds of the structure



where R represents 2-isobornyl and R' is selected from a group consisting of hydrogen, alkyl of 1–20 carbon atoms inclusive and alicyclic radicals containing at least 5 but not more than 6 ring carbon atoms.

3,169,942
ZEOLITE CATALYZED CONDENSATION OF HYDROXYL AND/OR ALKOXY CONTAINING SILICON COMPOSITIONS
Ronald M. Pike, Chelmsford, Mass., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 8, 1959, Ser. No. 858,047
6 Claims. (Cl. 260—46.5)

3. A process for condensing an organosilicon compound represented by the formula:



wherein *n* has a value of at least eight to produce a dimethylpolysiloxane gum, which process comprises heating an organosilicon compound represented by said formula to a temperature from 25° C. to 170° C. in the presence of from 0.001 part to 20 parts per 100 parts of the organosilicon compound of a crystalline zeolitic molecular sieve represented by the average formula:

$$0.9\pm0.2Na_2O:Al_2O_3:2.5\pm0.5SiO_2:YH_2O \qquad (3)$$

wherein Y has a value from 0 to about 8 to produce the gum, said condensation being effected by the catalytic activity of the zeolitic molecular sieve.

3,169,943
POLYMERIC CONDENSATION CHELATES OF TRIS-(2-HYDROXYPHENYL OR ALKYLPHENYL)-s-TRIAZINE AND A BORON COMPOUND
Iraf B. Johns, Marblehead, and Harry R. Di Pietro, Watertown, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 21, 1961, Ser. No. 139,609
10 Claims. (Cl. 260—47)

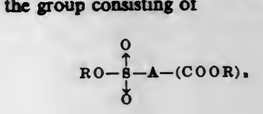
1. A polymeric condensation product of a boron compound selected from the class consisting of boron trioxide, benzeneboronic acid and alkylbenzeneboronic acids having from 1 to 5 carbon atoms in the alkyl radical and a hydroxy aryl triazine compound selected from the class consisting of 2,4,6-tris(2-hydroxyphenyl)-s-triazine and tris(alkyl-2-hydroxyphenyl)-s-triazines having from 1 to 5 carbon atoms in the alkyl radical, said boron compound and said triazine compound being present in a substantially 1:1 to 2:1 molar ratio.

3,169,944
PROCESS FOR REACTING A DIALKYL ESTER OF TEREPHTHALATE ACID WITH A GLYCOL AND POLYCONDENSING THE PRODUCT THEREOF
Neville Durrant Scott and Neil Munro, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Jan. 22, 1960, Ser. No. 4,016
Claims priority, application Great Britain, Feb. 18, 1959, 5,573/59
13 Claims. (Cl. 260—49)

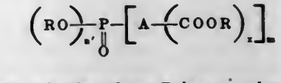
1. An improved process for the manufacture of highly polymeric polyesters of terephthalic acid which comprises reacting a member of the group consisting of the dialkyl ester of terephthalic acid and mixtures of it with a dialkyl ester of a di(carboalkoxyphenoxy) alkane, with at least one glycol of the series

$$HO(CH_2)_nOH$$

where *n* is greater than 1 but does not exceed 10, in the presence of an alkaline earth metal compound as an ester interchange catalyst, to form an ester interchange product,
adding, after completion of the ester interchange reaction, a second compound having a formula selected from the group consisting of



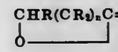
and



in which A is phenylene, R is a member of the group consisting of hydrogen and alkyl, *x* and *n'* are integers selected from the group consisting of 1 and 2 and $m=3-n'$, in an amount sufficient to convert said second compound to a salt of the alkaline earth metal moiety of said ester interchange catalyst and prevent deposition of insoluble salts of said alkaline earth metal moiety, the amount of said second compound being not greater than the amount required to convert said alkaline earth metal to said salt of said second compound,
and polycondensing said ester interchange product to a highly polymeric polyester in the presence of a polycondensation catalyst.

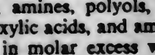
3,169,945
LACTONE POLYESTERS
Fritz Hostettler, Charleston, W. Va., and Donald M. Young, New York, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 7, 1963, Ser. No. 314,485
38 Claims. (Cl. 260—78.3)

1. A process which comprises heating a lactone of the formula:



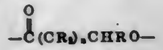
wherein *n* is an integer of from four to six, wherein at least $n+2$R's are hydrogen, and wherein the remaining R's are of the groups consisting of hydrogen, alkyl, cycloalkyl, alkoxy, and single ring aromatic hydrocarbon radicals; with an organic functional initiator having at least one reactive hydrogen substituent and being of the group consisting of alcohols, amines, polyols, polyamines, amino alcohols, polycarboxylic acids, hydroxycarboxylic acids, and aminocarboxylic acids; to a temperature of at least about 50° C.; said lactone being in molar excess with relation to said organic functional initiator to produce a product having at least two substantially linear groups,

per reactive hydrogen substituent of said initiator, of the formula

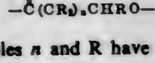


wherein the variables *n* and R have the aforesaid meanings, said product having an average molecular weight of at least about 300.

23. A product formed by the reaction of an admixture containing a lactone of the formula:



wherein *n* is an integer of from four to six, wherein at least *n* + 2R's are hydrogen, and wherein the remaining R's are of the group consisting of hydrogen, alkyl, cycloalkyl, alkoxy, and single ring aromatic hydrocarbon radicals; and an organic functional initiator having at least one reactive hydrogen substituent and being of the group consisting of alcohols, amines, polyols, polyamines, amino alcohols, polycarboxylic acids, and aminocarboxylic acids; said lactone being in molar excess with relation to said initiator; said initiator being capable of opening the lactone ring whereby said lactone is added to said initiator as a substantially linear group thereto; said product possessing, on the average, at least two of said linear groups, per reactive hydrogen substituent of said initiator, each of said linear groups having the formula:



wherein the variables *n* and R have the aforesaid meanings.

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**3,169,946**

**PROCESS FOR PREPARING AMMONIUM AND ALKALI METAL SALTS OF RESINOUS CARBOXY ESTER-LACTONES**

**Louis M. Minsk, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Oct. 16, 1961, Ser. No. 145,435**
**4 Claims. (Cl. 260—78.3)**

1. In the process for making a salt of a resinous mixed ester-lactone of the reaction product of (1) from 15–30% by weight of an interpolymer of a vinyl organic acid ester and an unsaturated alpha-beta-dicarboxylic acid compound from the group consisting of maleic acid, citraconic acid, dimethylmaleic acid and anhydrides and alkyl esters of 1–4 carbon atoms thereof, fumaric acid, mesaconic acid, dimethylfumaric acid and alkyl esters of 1–4 carbon atoms thereof, (2) from 35–65% by weight of a monohydroxy acid of the formula $C_nH_{2n}(OH)(COOH)_x$ wherein *n* is an integer of from 1–5 and *x* is an integer of from 1–2 and (3) from 10–45% by weight of an alkanol of the formula R—OH wherein R represents a member selected from the group consisting of an alkyl group containing from 1–12 carbon atoms, a phenylalkyl group wherein the said alkyl group contains from 1–4 carbon atoms and a tolylalkyl group wherein the said alkyl group contains from 1–4 carbons, said lactone containing $—COOC_nH_{2n}COOH$ groups, $—COOC_nH_{2n}COOR$ groups, and —COOH groups and —COOR groups attached directly to the carbon chain of said lactone wherein *n* and R are as above defined and wherein the total free carboxyl groups are equivalent to from 3.5–6.0 mls. of N NaOH solution/gram of the said lactone, the steps which comprise dissolving said lactone in solvent and adding to the resulting solution just sufficient alkaline reagent to adjust the solution to a pH within the range of 5–8 whereby said lactone is converted to a hydrophilic salt and the lactone rings thereof remain substantially intact, the alkaline reagent having been selected from the group consisting of ammonium hydroxide and the alkali metal hydroxides.

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**3,169,947**

**PROCESS FOR THE ADDITION POLYMERIZATION OF VINYLIDENE COMPOUNDS IN THE PRESENCE OF TRIALKYL BORON OR A MIXTURE OF TRIALKYL BORON AND OXYGEN**

**Rudolf Strobl, Leverkusen-Bayerwerk, Wilhelm Sutter, Leverkusen, and Hans Haberland, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed July 1, 1957, Ser. No. 668,860**
**Claims priority, application Germany, July 14, 1956, F 20,798**
**12 Claims. (Cl. 260—85.5)**

1. A process for the polymerization of a polymerizable vinylidene monomer which comprises contacting said vinylidene monomer with a catalyst consisting of a boron trialkyl of 1–18 carbon atoms per alkyl radical in admixture with catalytic amounts of molecular oxygen, thereby causing said vinylidene monomer to polymerize.

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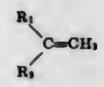
**3,169,948**

**PRODUCTION OF POLYMERS OF ALKYL-SUBSTITUTED VINYL AROMATIC COMPOUNDS**

**George F. Hardy, Drexel Hill, Pa., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed Oct. 22, 1959, Ser. No. 847,897**
**6 Claims. (Cl. 260—88.2)**

6. A process for preparing reproducible high molecular weight polymers in the form of fine beads which comprises polymerizing a monomer material selected from the group consisting of alpha-alkyl styrenes having the general formula:



wherein $R_1$ is phenyl and $R_2$ is an alkyl group, and mixtures of said alpha-alkyl styrenes and styrene in the presence of (1) a catalyst selected from the group consisting of alkali metals, alkali metal hydrides, alkali metal alkyls and alkali metal aryls, (2) an aliphatic hydrocarbon as diluent and (3) a small amount of an alkyl monoether containing at least one methyl group as activator, at least about two-thirds by weight of the monomer material being added in gradual manner subsequent to the other polymerization ingredients.

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**3,169,949**

**PROCESS FOR THE POLYMERIZATION OF VINYL CHLORIDE WITH A CATALYST MIXTURE OF TRIALKYL ALUMINUM AND BORIC ACID TRIALKYL ESTER AND A COCATALYST**

**Robert Büning, Troisdorf, Bezirk Cologne, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a German corporation**

**No Drawing. Filed Sept. 25, 1961, Ser. No. 140,207**
**Claims priority, application Germany, Dec. 30, 1960, D 35,086**
**13 Claims. (Cl. 260—92.8)**

1. Process for the polymerization of vinyl chloride which comprises effecting the polymerization of vinyl chloride in the presence of a catalyst mixture of an aluminum-triloweralkyl compound and a boric acid-triloweralkyl ester and a cocatalyst selected from the group consisting of methyl-chloromethyl ether, trithiane and diallyl sulfide, and recovering the polymerizate formed from the reaction product.



**3,169,950**

**PROCESS FOR DEODORIZING POLYMERS**

**Raymond L. Etter, Jr., and Preston S. Copenhaver, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed May 15, 1961, Ser. No. 109,806**
**5 Claims. (Cl. 260—94.9)**

1. The method for removing odoriferous materials from an emulsifiable polymer produced by thermally degrading a higher molecular weight polyethylene and oxidizing the resulting thermally degraded polymer which comprises stripping said odoriferous materials from said emulsifiable polymer by contacting said emulsifiable polymer with water at a temperature of 40° C. to 100° C. but below the softening point of said emulsifiable polymer.

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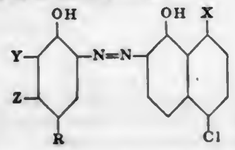
**3,169,951**

**CHROMIUM-CONTAINING AZO DYESTUFFS**

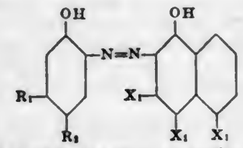
**Arthur Buehler, Rheinfelden, Aargau, Switzerland, and Gerhard Back, Lorrach, Baden, Germany, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland**

**No Drawing. Filed Oct. 7, 1963, Ser. No. 314,522**
**Claims priority, application Switzerland, Oct. 10, 1962, 11,875/62; Sept. 4, 1963, 10,927/63**
**9 Claims. (Cl. 260—145)**

1. A complex chromium compound containing one atom of chromium in complex union with two monoazo-dyestuff molecules of the formulae



and



wherein Y and Z each represent a member selected from the group consisting of hydrogen, chlorine and nitro, R is a member selected from the group consisting of hydrogen, chlorine, nitro, at most Y and R representing simultaneously nitro, X is a member selected from the group consisting of hydrogen and chlorine, $R_1$ is a member selected from the group consisting of hydrogen and nitro, $R_2$ is a member selected from the group consisting of hydrogen, chlorine, nitro, methyl and methoxy, $R_1$ and $R_2$ being different from each other, and one $X_1$ is sulfonic acid and the other two $X_1$'s hydrogen.

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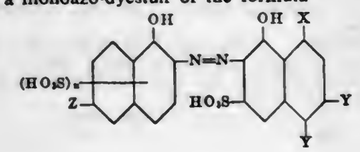
**3,169,952**

**FIBER REACTIVE COPPER COMPLEX MONOAZO-DYESTUFFS**

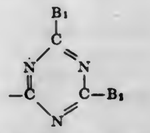
**Henri Riat, Ariesheim, and René de Montmollin, Riehen, Switzerland, assignors to Ciba Corporation, a corporation of Delaware**

**No Drawing. Filed Jan. 24, 1961, Ser. No. 84,492**
**Claims priority, application Switzerland, Jan. 28, 1960, 919/60; Apr. 21, 1960, 4,459/60; Dec. 6, 1960, 13,640/60**
**11 Claims. (Cl. 260—146)**

1. A complex copper compound containing one atom of copper in complex union with substantially one molecule of a monoazo-dyestuff of the formula



in which *n* is a positive whole number of at most 2, one Y is sulfonic acid and the other Y hydrogen, Z is a member selected from the group consisting of hydrogen, chlorine, nitro, sulfonic acid, acetylamino and halogenotriazinyl-amino, halogenotriazinyl- meaning a radical of the formula



wherein $B_1$ is a member selected from the group consisting of chlorine and bromine and $B_2$ is a member selected from the group consisting of chlorine, bromine, an amino group, an etherified hydroxy group and an etherified mercapto group, X is a member selected from the group consisting of an alkyl carboxylic acid amide radical containing at most 4 carbon atoms, an aromatic carboxylic acid amide radical of the benzenes series, the chloromaleic acid amide radical, the acrylic acid amide radical, the chloroacrylic acid amide radical, the chloroacetic acid amide radical, the β-chloropropionic acid amide radical, the β-bromopropionic acid amide radical, the α:β-dichloropropionic acid amide radical and a halogenotriazinyl-amino radical, halogenotriazinyl- meaning a radical as defined above, and which dyestuff contains at least two sulfonic acid groups in the radical of the diazo component and at least one radical, selected from the group consisting of the chloromaleic acid amide radical, the acrylic acid amide radical, the chloroacrylic acid amide radical, the chloroacetic acid amide radical, the β-chloropropionic acid amide radical, the β-bromopropionic acid amide radical, the α:β-dichloropropionic acid amide radical, and a halogenotriazinylamino radical, halogenotriazinyl- meaning a radical as defined above.

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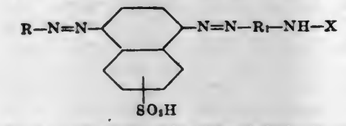
**3,169,953**

**WATER-SOLUBLE AZO DYESTUFFS**

**Raymond Gunst, Binningen, Switzerland, assignor to Ciba Corporation, a corporation of Delaware**

**No Drawing. Filed Aug. 8, 1961, Ser. No. 130,007**
**Claims priority, application Switzerland, Aug. 18, 1960, 9,350/60**
**7 Claims. (Cl. 260—153)**

1. A water-soluble dyestuff of the formula



in which R represents trisulfonaphthyl, $R_1$ represents phenylene being substituted by members selected from the group consisting of aliphatic lower acyl amino, lower alkyl and lower alkoxy, and bound to the azo group in para-position to the NH—X group, and X represents monochlorotriazine radical substituted with a member selected from the group consisting of $—NH_2$, lower alkylamino, hydroxy lower alkylamino and sulfophenylamino.

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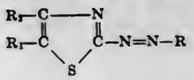
**3,169,954**

**MONOAZO THIAZOLE DYESTUFFS**

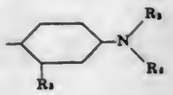
**James M. Straley and John G. Fisher, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Aug. 6, 1962, Ser. No. 214,832**
**8 Claims. (Cl. 260—158)**

1. Monoazo dyestuffs having the general formula



wherein
R=the radical



in which $R_3$ and $R_4$ represent a member of the class consisting of lower alkyl, lower hydroxyalkyl, lower cyanoalkyl, hydrogen and phenyl, and $R_5$ represents a member of the class consisting of methyl, chlorine and hydrogen,

$R_1$=a member of the class consisting of piperidinomethyl, lower dialkylaminomethyl, di($\beta$-cyanoethyl) aminomethyl and morpholinomethyl radicals, and

$R_2$=a member of the class consisting of hydrogen, phenyl, lower alkyl, piperidinomethyl and morpholinomethyl, $R_2$ being different from $R_1$.

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3,169,955

## PROCESS FOR THE MANUFACTURE OF AZO-PIGMENTS HAVING AN IMPROVED FLOWABILITY

Arthur Siebert, Frankfurt am Main, Erich Dietz, Kelkheim, Taunus, and Georg Geilsler, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 23, 1961, Ser. No. 111,906
Claims priority, application Germany, May 28, 1960, F 31,326
3 Claims. (Cl. 260—176)

1. Process for reducing the oil absorption characteristics of an azo pigment obtained by coupling a diazonium compound of a primary aromatic amine selected from the group consisting of tetrazotized 3:3'-dichlorobenzidine, diazotized 5-chloro-2-amino-toluene and diazotized 2:4:5-trichloroaniline with a coupling component selected from the group consisting of aceto acetic anilide, 1-acetoacetylamino-2-methoxy-benzene, 1 - acetoacetylamino - 2:4 - dimethylbenzene, 1 - (2':3' - hydroxynaphthoylamino)-4-chloro-2-methylbenzene and 1-(2':3'-hydroxynaphthoylamino)-2-methylbenzene, which comprises treating said azo pigment while in an aqueous suspension in a concentration of between about 1 and 10 percent by weight, with a water-insoluble organic solvent selected from the group consisting of benzene, toluene, xylene, nitrobenzene, chlorobenzene, bromobenzene, dichlorobenzene, trichlorobenzene, benzylcyanide, benzoic acid lower alkylester, quinoline, chloronaphthalene, acetonitrile and methyl chloroform in a proportion ranging from about 2 percent by weight up to about 25 percent by weight calculated on the pure azo pigment for from 5 minutes up to 3 hours at a temperature in the range from about 40° to 100° C.

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3,169,956

## SUCROSE ORGANO-PHOSPHORUS ESTER AND METHOD OF PREPARING IT

Giovanni Farnone and Alessandro Giorgetti, Cairo Montenotte, Italy, assignors to S.p.A. Ferrania

No Drawing. Filed June 7, 1962, Ser. No. 200,648
4 Claims. (Cl. 260—234)

1. Sucrose octa-diphenylphosphate.

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3,169,957

## TRITERPENOID ACID DERIVATIVES AND COMPOUNDS PRODUCED THEREFROM

Josef Fried, Princeton, and Gerald W. Krakower, Elizabeth, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 29, 1962, Ser. No. 198,425
26 Claims. (Cl. 260—239.5)

1. Methyl-3-acetyl-7-ethylenedithio-eburicane-3$\beta$-ol-11-one-21-oate.

12. A steroid selected from the group consisting of 3-acetyl - 21 - (N-pyrrolidyl)-$\Delta^{20}$-eburicene-3$\beta$-ol-11-one; 3-acetyl - 21 - (N-piperidyl)-$\Delta^{20}$-eburicene-3$\beta$-ol-11-one; and 3-acetyl - 21-(N-morpholyl) - $\Delta^{20}$ - eburicene-3$\beta$-ol-11-one.

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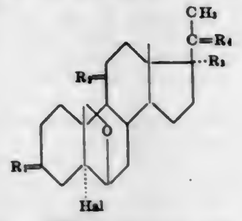
3,169,958

## 3-OXYGENATED-5$\alpha$-HALOGEN-6$\beta$:19-OXIDO-PREGNANES

Albert Wettstein, Rieben, Georg Anner, Karl Heusler, and Jaroslav Kalvoda, Basel, Hellmut Ueberwasser, Rieben, and Jules Heer, Binningen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,227
Claims priority, application Switzerland, June 2, 1961, 6,479/61; June 13, 1961, 6,895/61; Sept. 18, 1961, 10,803/61; Sept. 22, 1961, 11,071/61; Jan. 9, 1962, 185/62
22 Claims. (Cl. 260—239.55)

1. 3-oxygenated 5$\alpha$-halogen-6$\beta$:19-oxido-pregnanes of the formula



wherein

$R_1$ stands for a member selected from the group consisting of oxo, hydroxy together with hydrogen and acyloxy together with hydrogen,

$R_2$ stands for a member selected from the group consisting of hydrogen, oxo, hydroxy together with hydrogen and acyloxy together with hydrogen,

$R_3$ stands for a member selected from the group consisting of hydrogen, hydroxy, acyloxy and a 16:17$\alpha$-oxido group,

$R_4$ stands for a member selected from the group consisting of oxo, hydroxy together with hydrogen and acyloxy together with hydrogen and

Hal stands for a halogen atom with a molecular weight above 30.

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3,169,959

## METHOD OF OBTAINING SMILAGENIN

Helen C. Printy, Joliet, and Earl E. Dailey and Francis A. Taylor, Chicago, Ill., assignors to Intermediates Incorporated, Joliet, Ill., a corporation of Delaware

Filed July 23, 1963, Ser. No. 297,016
10 Claims. (Cl. 260—239.55)

1. The method of recovering smilagenin from a plant source containing smilonin which comprises wet grinding said source, agitating the ground mass in the presence of water, pressing liquid out of the resulting pulp to produce a pressed pulp and an extract, separating said pulp from said extract, and hydrolyzing the extract with a mineral acid to precipitate a smilagenin product.

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3,169,960

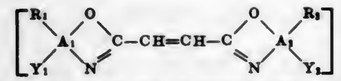
## ARYLOXAZOLYL OPTICAL BRIGHTENING AGENTS

Kenzo Konishi, Nishinomiya, Minoru Furukawa, Kawachi, and Yuji Maruyama, Sakai, Japan, assignors to Daito Chemical Industry Company, Limited, Daito, Japan

No Drawing. Filed July 16, 1962, Ser. No. 210,177
Claims priority, application Japan, July 21, 1961, 36/26,142; July 31, 1961, 36/27,677, 36/27,678; Dec. 29, 1961, 36/48,290
2 Claims. (Cl. 260—240)

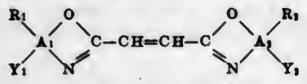
1. An optical brightening agent of the formula





wherein $A_1$ and $A_2$ are each a member selected from the group consisting of a benzene nucleus and a naphthalene nucleus; $R_1$ and $R_2$ are respectively a member selected from the group consisting of hydrogen, methyl and ethyl; $Y_1$ is a member selected from the group consisting of hydrogen and $-CH_2B$, and $Y_2$ is $-CH_2B$, B being a residual radical of a member selected from the group consisting of piperidine, alkylpiperidine, morpholine and guanidine.

2. An optical brightening agent of the formula



wherein $A_1$ and $A_2$ are phenyl; each of $R_1$ and $R_2$ is a member selected from the group consisting of hydrogen, methyl and ethyl; $Y_1$ is a member selected from the group consisting of hydrogen and $-CH_2B$, and $Y_2$ is $-CH_2B$, B being a residual radical of a member selected from the group consisting of ammonia, primary amine, single secondary amine and mixed secondary amine, said amine having at least a member selected from the group consisting of alkyl, hydroxyalkyl, aminoalkyl, cyclohexyl, phenyl, alkylphenyl and thiazole, and said alkyl group having 1–8 carbon atoms.

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3,169,961

## VANADIUM COMPLEX SALTS WITH HYDRAZINO PYRIDAZINES AND PHTHALAZINES

Adrian Marxer, Muttenz, Switzerland, assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Jan. 18, 1962, Ser. No. 167,159
Claims priority, application Switzerland, Feb. 3, 1961, 1,314/61; Feb. 14, 1961, 1,704/61
10 Claims. (Cl. 260—242)

1. A complex salt of 3-hydrazino-pyridazine with a vanadyl salt selected from the group consisting of vanadyl sulfate, halide, nitrate and perchlorate.

3. A complex salt of 1-hydrazino-phthalazine with a vanadyl salt selected from the group consisting of vanadyl sulfate, halide, nitrate and perchlorate.

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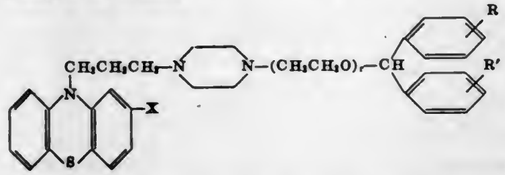
3,169,962

## BENZHYDRYL ETHERS OF 10-(HYDROXYETHYL-PIPERAZINOPROPYL) PHENOTHIAZINES

Harry Louis Yale and Jack Bernstein, New Brunswick, and Francis Alexander Sowinski, Nixon, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,880
6 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of bases of the formula



wherein $r$ is a positive integer less than three, and X, R and R' are each selected from the group consisting of hydrogen, halogen, trifluoromethyl, lower alkyl, lower alkoxy, lower alkanoyl, lower alkylmercapto, trifluoromethylmercapto, trifluoromethoxy, N,N-dimethylaminosulfonyl and lower alkylsulfonyl; and non-toxic acid-addition salts thereof.

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3,169,963

## 2,4,6-TRISUBSTITUTED-s-TRIAZINES AND PROCESS FOR PREPARING SAME

Grace A. Peters, Stamford, and Frederic C. Schaefer, Darien, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Nov. 7, 1960, Ser. No. 67,500
3 Claims. (Cl. 260—248)

1. 2-methyl-4-phenyl-6-trifloromethyl-s-triazine.

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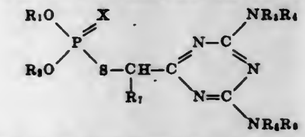
3,169,964

## TRIAZINE DERIVATIVES POSSESSING APHICIDAL PROPERTIES

Alan Calderbank, Eric Callander Edgar, and John Arthur Silk, Bracknell, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed June 24, 1963, Ser. No. 290,196
Claims priority, application Great Britain, Oct. 25, 1957, 33,358/57; Apr. 23, 1959, 13,939/59
11 Claims. (Cl. 260—249.9)

1. A compound selected from the group consisting of a triazine which in free base form has the formula:



wherein $R_1$ and $R_2$ are selected from the group consisting of methyl and ethyl; $R_3$ and $R_4$ are selected from the group consisting of hydrogen, lower alkyl and, taken together, the atoms necessary to form a piperidino ring; $R_5$ and $R_6$ are selected from the group consisting of hydrogen, lower alkyl and, taken together, the atoms necessary to form a piperidino ring; $R_7$ is selected from the group consisting of hydrogen and lower alkyl; and X is an atom selected from the group consisting of oxygen and sulfur atoms, and the acid addition salts thereof.

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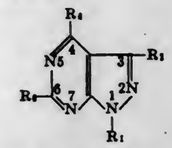
3,169,965

## NEW 4-MERCAPTO-PYRAZOLO[3,4-d]-PYRIMIDINES

Paul Schmidt, Therwil, and Kurt Eichenberger and Max Wilhelm, Basel, Switzerland, assignors to Ciba Corporation, a corporation of Delaware

No Drawing. Filed May 5, 1961, Ser. No. 107,907
Claims priority, application Switzerland, May 11, 1960, 5,405/60
8 Claims. (Cl. 260—256.5)

1. A member selected from the group consisting of a compound of the formula:



and their tautomers, in which $R_1$ represents a member selected from the group consisting of lower alkyl, halogen-lower alkyl, lower alkoxy-lower alkyl, cyclopentyl, cyclohexyl, cyclopentyl-lower alkyl, cyclohexyl-lower alkyl, $R_3$ stands for a member selected from the group consisting of hydrogen and lower alkyl, $R_4$ for a member selected from the group consisting of mercapto, lower alkylmercapto di-lower alkylamino-lower alkylmercapto, piperidino-lower alkylmercapto, pyrrolidino-lower alkylmercapto, morpholino-lower alkylmercapto and piperazino-lower alkylmercapto, and $R_6$ for a member selected from the group consisting of phenyl-lower alkyl, (lower alkyl-phenyl)-lower alkyl, (hydroxyl-phenyl)-lower alkyl, (lower alkoxy-phenyl)-lower alkyl, (mercapto-phenyl)-lower alkyl, (lower alkylmercapto-phenyl)-lower alkyl, (amino-phenyl)-lower alkyl, (lower alkylamino-phenyl)-

lower alkyl, (di-lower alkylamino-phenyl)-lower alkyl, (halo-phenyl)-lower alkyl, (trifluoromethyl)-phenyl)-lower alkyl, (nitrophenyl)-lower alkyl, their aryl lower alkyl quaternary ammonium compounds, their lower alkyl quaternary ammonium compounds, their therapeutically useful salts with metals and their therapeutically useful salts with acids.

## 3,169,966
## AMINOPYRAZOLES

**Paul Schmidt, Therwil, and Kurt Eichenberger and Max Wilhelm, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 18, 1962, Ser. No. 167,167**
**Claims priority, application Switzerland, Jan. 24, 1961, 770/61; Apr. 12, 1961, 4,305/61; July 13, 1961, 8,240/61; Sept. 13, 1961, 10,598/61; Nov. 15, 1961, 13,274/61**
**26 Claims. (Cl. 260—286)**

2. 2-methyl-quinolinoyl-(4)-acetonitrile.

5. A member selected from the group consisting of 2-secondary butyl-3-amino-5-[2-methyl-quinolyl-(4)]-pyrazole and its therapeutically useful acid addition salts.

7. A member selected from the group consisting of 3-(N-acyl)-derivatives of the compounds claimed in claim 6 and their therapeutically acceptacle acid addition salts, wherein the acyl substituent is that of an acid selected from the group consisting of carbamic acid, N-alkyl-carbamic acid, lower alkanoic acids, halogeno-lower alkanoic acids, hydroxy-lower alkanoic acids, amino-lower alkanoic acids, cyclo-alkane carboxylic acids, cycloalkyl-alkane carboxylic acids, benzoic acid, lower alkyl-benzoic acid, lower alkoxy-benzoic acid, halogeno-benzoic acid and pyridine-carboxylic acids.

## 3,169,967
## METHYL O-LOWER ALKANOYL-RESERPATES

**Emil Schlittler, Madison, N.J., assignor to Ciba Corporation, a corporation of Delaware**

**No Drawing. Filed Nov. 14, 1957, Ser. No. 696,335**
**9 Claims. (Cl. 260—287)**

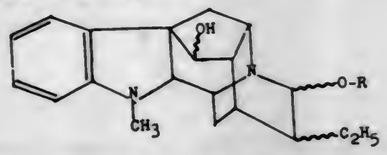
1. Methyl O-lower alkanoyl-reserpate.

## 3,169,968
## ESTERS OF AJMALINE AND RELATED COMPOUNDS

**Merrill Frederick Bartlett, Warren Township, and William Irving Taylor, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed May 8, 1962, Ser. No. 193,313**
**5 Claims. (Cl. 260—294.3)**

1. A member selected from the group consisting of a compound of the Formula I



(I)

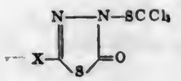
in which R is lower alkanoyl substituted by lower alkoxy, a lower alkyl quaternary ammonium compound thereof, and a non-toxic acid addition salt of such compound.

## 3,169,969
## 3-TRICHLOROMETHYLTHIO-5-HALO-1,3,4-THIADIAZOL-2-ONE

**Jean Metivier, Choisy-le-Roi, and Roger Boesch, Vitry-sur-Seine, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate**

**No Drawing. Filed May 14, 1963, Ser. No. 280,425**
**Claims priority, application France, May 15, 1962, 897,582**
**2 Claims. (Cl. 260—306.7)**

1. A compound of the formula:



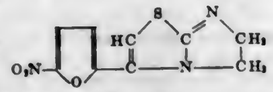
wherein X is halogen.

## 3,169,970
## 3-(5-NITRO-2-FURYL)-5,6-DIHYDROIMIDAZO-[2,1-b]THIAZOLE AND ACID ADDITION SALTS THEREOF

**Harry R. Snyder, Jr., Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York**

**No Drawing. Filed Jan. 31, 1963, Ser. No. 255,227**
**4 Claims. (Cl. 260—306.8)**

1. A member of the group consisting of a compound of the formula:



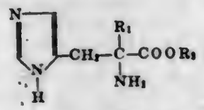
and a mineral acid salt thereof.

## 3,169,971
## α-ALKYL HISTIDINES

**Meyer Sletzinger, North Plainfield, and Karl Pfister, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Filed June 28, 1961, Ser. No. 120,175**
**7 Claims. (Cl. 260—309)**

1. A compound selected from the group consisting of (1) compounds of the formula—



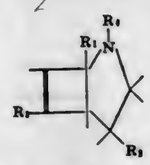
in which $R_1$ is lower alkyl and $R_2$ is selected from the group consisting of hydrogen and lower alkyl and (2) nontoxic water soluble mineral acid addition salts of the above compounds.

## 3,169,972
## 2-AZABICYCLO[3.2.0]-HEPT-6-ENES AND DERIVATIVES THEREOF

**Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Filed May 24, 1963, Ser. No. 282,882**
**10 Claims. (Cl. 260—313)**

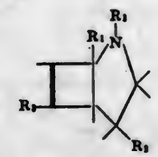
1. A compound selected from the group consisting of the free base form and acid addition salts of a compound of the formula:



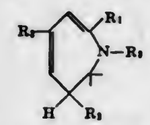
wherein $R_1$ and $R_2$ are alkyl of 1 to 4 carbon atoms, inclusive, wherein $R_3$ is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, and wherein $R_4$ is selected from the group consisting of hydrogen, alkyl of 1 to 6 carbon atoms, inclusive, alkenyl of 3 to 6 carbon atoms, inclusive, alkynyl of 3 to 6 carbon atoms, inclusive, cycloalkyl of 5 to 10 carbon atoms, inclusive, and aralkyl of 7 to 11 carbon atoms, inclusive.



7. A process for producing a 2-azabicyclo[3.2.0]hept-6-ene of the formula:



wherein $R_1$ and $R_2$ are alkyl of 1 to 4 carbon atoms, inclusive, wherein $R_3$ is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, and wherein $R_5$ is selected from the group consisting of alkyl of 1 to 6 carbon atoms, inclusive, alkenyl of 3 to 6 carbon atoms, inclusive, alkynyl of 3 to 6 carbon atoms, inclusive, cycloalkyl of 5 to 10 carbon atoms, inclusive, and aralkyl of 7 to 11 carbon atoms, inclusive, which comprises exposing a compound of the formula:



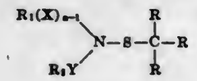
wherein $R_1$, $R_2$, $R_3$, and $R_5$ are as given above, to ultraviolet radiation, to form said 2-azabicyclo[3.2.0]hept-6-ene.

## 3,169,973
## TRISORGANOPHOSPHORUS COMPOUNDS AND A METHOD OF PREPARING THEM

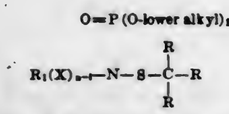
**Karoly Szabo, Yonkers, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 25, 1961, Ser. No. 147,447**
**6 Claims. (Cl. 260—326)**

1. An organophosphorus amide selected from the class consisting of



and



wherein R is selected from the class consisting of



and



wherein $R_3$ represents lower alkyl and $R_4$ is selected from the class consisting of lower alkyl and phenyl, and X and Y represent acyl groupings selected from the class consisting of

$$>C=O \text{ and } >SO_2$$

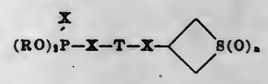
$R_1$ and $R_2$ are selected from the class consisting of lower alkyl and phenyl while taken together $R_1$ and $R_2$ represent a hydrocarbon residue selected from the class consisting of benzo and ethylene, and $n$ is an integer of from 1 to 2, it being understood that $n$ is always 2 when $R_1$ and $R_2$ are taken together.

## 3,169,974
## THIETANE PHOSPHORUS ESTERS

**Gustave K. Kohn, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware**

**No Drawing. Filed July 31, 1962, Ser. No. 213,593**
**5 Claims. (Cl. 260—327)**

1. Compound of the formula



wherein R is lower alkyl, X is chalcogen, T is dimethylene, and $n$ is a cardinal number in the range of 0 to 2.

## 3,169,975
## PRODUCTION OF SATURATED CYCLIC DICARBOXYLIC ANHYDRIDES

**Alfred Schulz, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed June 4, 1963, Ser. No. 285,203**
**Claims priority, application Germany, June 6, 1962, B 67,573**
**4 Claims. (Cl. 260—346.3)**

1. A process for the production of cyclic saturated dicarboxylic anhydrides having from 4 to 10 carbon atoms which comprises reacting cyclic olefinically unsaturated dicarboxylic anhydrides having from 4 to 10 carbon atoms with molecular hydrogen in the liquid phase and in the presence of a hydrogenation catalyst selected from the group consisting of copper molybdate, cobalt molybdate, nickel molybdate, copper tungstate, cobalt tungstate, nickel tungstate, copper chromate, cobalt chromate, nickel chromate, copper vanadate, cobalt vanadate, nickel vanadate and mixtures thereof.

## 3,169,976
## PRODUCTION OF PURE MALEIC ANHYDRIDE

**Wilhelm Friedrichsen and Hans Joachim Stephan, both of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland-Pfalz, Germany**

**Filed Mar. 7, 1962, Ser. No. 178,164**
**Claims priority, application Germany, Mar. 7, 1961, B 61,549**
**4 Claims. (Cl. 260—346.8)**

1. A process for the production of pure maleic anhydride from maleic acid which comprises introducing maleic acid into 2.3 to 17 times its weight of maleic anhydride boiling under a pressure of 50 to 760 mm. Hg, vaporizing maleic anhydride and water, cooling the vapors containing maleic anhydride and water vapor and having a temperature of between 110° and 200° C. at the pressure prevailing in the vaporization zone in a first condensation zone by 5° to 20° C., but not to below 100° C., withdrawing the condensing maleic anhydride, cooling the vapors coming from said first condensation zone in a second condensation zone to a temperature 30° to 80° C. below the temperature prevailing in said first condensation zone, but not below the dewpoint of water vapor at the prevailing pressure and not below 53° C., and correlating the temperature difference between the first condensation zone and the second condensation zone that the ratio of maleic anhydride condensed in the first zone to the maleic anhydride condensed in the second zone is between about 1:6 and 1:1.5, returning the condensate obtained in said second condensation zone into said boiling maleic anhydride, and condensing the water vapor and uncondensed maleic anhydride leaving said second condensation zone.

3,169,977

## NOVEL PREPARATION OF 10-FORMYL-STEROIDS

Johannes Kloosterman, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,650
Claims priority, application Netherlands, Sept. 19, 1962, 283,417
3 Claims. (Cl. 260—397.3)

1. Method for the preparation of a 10-formyl-steroid selected from the group consisting of the androstane and pregnane series comprising oxidizing a 19-hydroxy-steroid selected from the group consisting of the androstane and pregnane series with chromium trioxide in the presence of a halogenated aliphatic hydrocarbon solvent.

3,169,978

## 12α-METHYL PREGNENE DERIVATIVES

Patrick A. Diassi, Westfield, Pacifico A. Principe, South River, and Josef Fried, Princeton, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application May 31, 1963, Ser. No. 284,313. Divided and this application Mar. 5, 1964, Ser. No. 354,495
3 Claims. (Cl. 260—397.3)

2. 12α-methyl-$\Delta^{1,4,16}$-pregnatriene-3,11,20-trione.

3,169,979

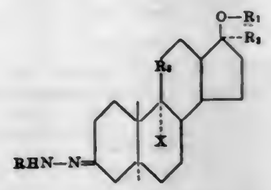
## 3-HYDRAZINO ANDROSTANE DERIVATIVES

George de Stevens, Willow Knoll, New Providence, N.J., assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Mar. 30, 1961, Ser. No. 99,337
14 Claims. (Cl. 260—397.5)

10. 3 - acetylhydrazono - 9α - fluoro - 17α - methyl-$\Delta^4$-androsten-11β,17β-diol.

14. A member selected from the group consisting of a 3-hydrazono-androstane compound of the formula



1:2-dehydro derivatives thereof, 4:5-dehydro derivatives thereof and pharmacologically acceptable acid addition salts of these compounds, wherein R is a member selected from the group consisting of hydrogen and lower alkanoyl, $R_1$ is a member selected from the group consisting of hydrogen and acyl, said acyl being derived from an acid having 1 to 12 carbon atoms and selected from the group consisting of an organic carboxylic acid and an organic sulfonic acid, $R_2$ is a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkynyl, $R_3$ is a member selected from the group consisting of hydroxymethylene and carbonyl, and X is fluoro.

3,169,980

## FATTY ACID POLYAMIDE

George J. Benoit, Jr., San Anselmo, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Mar. 31, 1961, Ser. No. 99,722
2 Claims. (Cl. 260—404.5)

1. The polyamide of fatty acids and tetraethylene pentamine in which the fatty acids are mixtures of from about 5 to about 30 mole percent of stearic acid and from about 70 to about 95 mole percent of methyl branched-chain fatty acid containing about 18 carbon atoms produced in the dimerization and hydrogenation of linoleic acid, said polyamide containing from 1 to 3 amine groups in addition to amide groups.

3,169,981

## PROCESS FOR IMPROVING FLAVOR AND TASTE OF SOYBEAN OIL

Tsutomu Kuwata, Tokyo, Shizuo Takumi, Kamakura-shi, Kanagawa-ken, and Toshio Hashimoto, Yokohama-shi, Kanagawa-ken, Japan, assignors to Nikki Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed July 31, 1962, Ser. No. 213,617
Claims priority, application Japan, Dec. 12, 1961, 36/44,764
1 Claim. (Cl. 260—409)

A process for improving flavor and taste of soybean oil which comprises hydrogenating refined soybean oil in the presence of a copper chromium manganese oxide catalyst under a hydrogen pressure of one atmosphere, at a temperature of 150–220° C. there being present from 0.1 to 0.2% by weight of said catalyst based on the weight of the refined soybean oil so as to reduce the iodine number of the soybean oil to 110–115 and to reduce the content of lineolenic acid to zero.

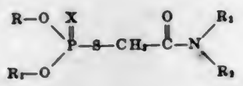
3,169,982

## PROCESS FOR THE PRODUCTION OF O,O-DIALKYL-S-CARBAMIDO-METHYL THIOL- AND -THIONOTHIOL PHOSPHORIC ACID ESTERS

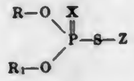
Günter Oertel, Cologne-Flittard, and Hugo Malz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 28, 1963, Ser. No. 283,695
Claims priority, application Germany, May 30, 1962, F 36,943
7 Claims. (Cl. 260—461)

1. A process for the production of an O,O-dialkyl-S-carbamido methyl thiophosphoric acid ester having the formula



wherein R and $R_1$ stand for alkyl, X stands for a member of the group consisting of O and S, $R_2$ when taken alone stands for hydrogen, $R_2$ when taken alone stands for lower alkyl and $R_3$ and $R_2$ when taken together with N stand for morpholinyl, comprising reacting a compound of the formula



wherein R, $R_1$ and X are defined as above and Z is a member selected from the group consisting of sodium, potassium, ammonia and lower alkyl amine, with chloroacetylchloride in a molar ratio of about 2 to 1, reacting the resulting intermediate product with an amine of the formula



wherein $R_3$ and $R_2$ are defined as above in a molar ratio of about 1 to 2 and recovering the O,O-dialkyl-S-carbamidomethyl thiophosphoric acid ester thus formed.



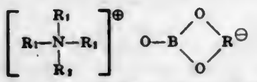
3,169,983

## QUATERNARY AMMONIUM GLYCOL MONOBORATE SALTS

Don L. Hunter, Long Beach, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed June 11, 1962, Ser. No. 201,244
8 Claims. (Cl. 260—462)

1. Quaternary ammonium glycol monoborate salts of the formula



where $R_1$ is an alkyl of from 1 to about 22 carbon atoms, $R_2$ is selected from the group consisting of alkyl of from 1 to about 22 carbon atoms, allyl, benzyl and lower alkyl substituted benzyl, and R is an alkylene radical of from 2 to 3 carbon atoms in length and containing a total of from 2 to 20 carbon atoms.

3,169,984

## PROCESS FOR THE PURIFICATION OF ACRYLONITRILE

Donald W. Neely, West Collingswood, N.J., and Robert R. Seller, Winter Park, Fla., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 13, 1962, Ser. No. 244,301
5 Claims. (Cl. 260—465.3)

1. In the process for the preparation of acrylonitrile by the catalytic reaction of nitric oxide with propylene followed by the distillation of the crude reaction product to yield semirefined acrylonitrile, the improvement of intimately contacting, at a temperature of about from 10 to 70° C., said semirefined acrylonitrile with sufficient water to dissolve about from 50 to 90% of said acrylonitrile until at least about 50% of said acrylonitrile is dissolved, allowing the resulting mixture to stratify into an upper organic layer and a lower aqueous layer containing dissolved acrylonitrile, removing said lower aqueous layer and thereafter distilling said lower aqueous layer to recover purified acrylonitrile.

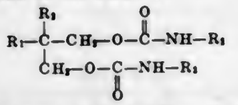
3,169,985

## 1,3-PROPANEDIOL DICARBAMATES

George de Stevens, New Providence, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,752
7 Claims. (Cl. 260—482)

1. A compound of the formula



in which $R_1$ is a member selected from the group consisting of cycloalkyl having from three to eight carbon atoms, and cycloalkyl-lower alkyl, in which cycloalkyl has from three to eight carbon atoms, $R_2$ is a member selected from the group consisting of lower alkyl, and cycloalkyl having from three to eight carbon atoms, and each of the groups $R_3$ and $R_5$ is a member selected from the group consisting of hydrogen and lower alkyl.

3,169,986

## PERACID PRODUCTION BY ESTER-$H_2O_2$ REACTION

Reginald Francis Webb, Cambridge, and David Guy Large, Hadstock, England, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Mar. 21, 1961, Ser. No. 97,166
Claims priority, application Great Britain, Mar. 22, 1960, 10,170/60
6 Claims. (Cl. 260—502)

1. A process for the production of a peracid wherein a mixture consisting essentially of anhydrous hydrogen peroxide and an ester of an organic carboxylic acid of which the alcohol moiety contains at least two carbon atoms and an acid catalyst, the initial reaction mixture being substantially anhydrous, is reacted at a temperature ranging from room temperature to the boiling point of the reactant solution.

3,169,987

## ALKARYL SULFONATE PRODUCTION VIA n-OLEFIN ISOMERIZATION

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,575
7 Claims. (Cl. 260—505)

1. A process for the production of an improved detergent from

(*a*) an aromatic compound selected from the group consisting of benzene, toluene, xylene, ethylbenzene, methylethylbenzene, diethylbenzene and phenol, and

(*b*) a normal mono-olefin of from 9 to about 15 carbon atoms per molecule in which the double bond is in a position other than the 3- and 4-positions, which comprises

(1) isomerizing said olefin in contact with an alkaline isomerization catalyst selected from the group consisting of alkali metals and their oxides, hydroxides and amides at a temperature of from about 50° to about 300° C. and a pressure sufficient to maintain the olefin substantially in liquid phase to convert the same to a normal olefin isomer in which the double bond is in a position between the third and fifth carbon atoms of the chain,

(2) alkylating said aromatic compound with said isomer in contact with an acid-acting alkylation catalyst at a temperature sufficient to form an aryl-substituted alkane in which the aryl radical is attached to a carbon atom from the third to the fifth carbon atom of the alkyl chain, and

(3) sulfonating the resultant alkylate.

3,169,988

## PREPARATION OF SCHIFF BASES

John P. Luvisi, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 16, 1961, Ser. No. 131,737
5 Claims. (Cl. 260—566)

1. A process for reacting o-chloronitrobenzene with toluene which comprises contacting said o-chloronitrobenzene, toluene, and t-butyl peroxide in at least a stoichiometric amount in relation to the nitro benzene at a temperature of from about 130° C. to about 300° C. and recovering the resulting o-chloro-(N-benzal)-aniline.

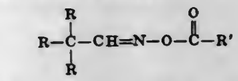
3,169,989

## TRIHALO-SUBSTITUTED ALDOXIME ESTERS

Charles H. Tieman and Marvin Legator, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 31, 1962, Ser. No. 198,770
6 Claims. (Cl. 260—566)

1. Aldoximes of the formula



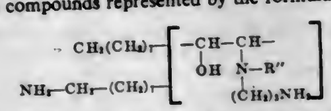
wherein each R represents middle halogen and R′ represents alkyl of from 1 to 10 carbon atoms.

3,169,990
PROCESS FOR THE PRODUCTION OF THIURAM MONOSULFIDES
Adolf Frank, Leverkusen, and Ferdinand Grewe, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Apr. 11, 1961, Ser. No. 102,107
Claims priority, application Germany, Apr. 14, 1960, F 31,008
8 Claims. (Cl. 260—567)

1. A process for the production of thiuram monosulfides which comprises desulfurizing the product produced by the oxidation of a compound selected from the group consisting of alkylene bis-dithiocarbamic acids, phenylene bis-dithiocarbamic acids and the disodium salts thereof by treating said product at a temperature up to about 100° C. with, as the only desulfurizing agent, a member selected from the group consisting of water and organic solvents.

3,169,991
(GAMMA-AMINOPROPYL) AMINOHYDROXY-ALKYL AMINES
Edgar R. Rogier, Hopkins, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Dec. 21, 1960, Ser. No. 77,295
6 Claims. (Cl. 260—570.5)

1. The compounds represented by the formula



wherein R'' is selected from the group consisting of hydrogen, methyl, ethyl, hexyl, octyl, dodecyl, stearyl, anilino,

$-(CH_2)_2NH_2$, $-(CH_2)_2NH(CH_2)_2-NH_2$,

$-(CH_2)_3-NH_2$, $-(CH_2)_2NH(CH_2)_2NH(CH_2)_2NH_2$

and hydroxy alkyl radicals in which the alkyl group has from 1–4 carbon atoms.

3,169,992
AMINE THIOSULFATE ANHYDRIDES
Richard W. Henn, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Jan. 9, 1961, Ser. No. 81,233
7 Claims. (Cl. 260—583)

1. An amine thiosulfate anhydride of the formula:

$$(R_3N)_x(SO_3)_{y-1}(S_2O_2)$$

wherein R represents a member selected from the class consisting of the hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a hydroxy substituted alkyl group having from 1 to 6 carbon atoms, and an amino substituted alkyl group having from 1 to 6 carbon atoms, such that not more than two R groups represent the hydrogen atom; $x$ is an integer of from 2 to 16; and $y$ is an integer of from 1 to 17, said amine thiosulfate anhydride being capable of storage without crystallizing and without sulfurizing.

3,169,993
CATALYTIC HYDROGENATION OF NITROSODIALKYLAMINES
William P. Moore, Jr., and Donald Pickens, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Aug. 17, 1959, Ser. No. 834,309
8 Claims. (Cl. 260—583)

1. The process of hydrogenating nitrosodialkylamines to produce unsymmetrical-dialkylhydrazines, in which the alkyl groups contain from 1 to 3 carbon atoms, which process comprises passing the nitrosodialkylamine in the liquid phase and hydrogen through a bed of catalyst particles consisting essentially of a metal from the group consisting of platinum and palladium on a carrier from the group consisting of alpha alumina and periclase, while maintaining the catalyst bed under superatmospheric pressure within the range of from 500 to 3000 p.s.i.g. and at a temperature within the range of 30° C. to 75° C.

3,169,994
PREPARATION OF TERTIARY ALKYL AMINES
Gustave Roy, Versailles, Louis Colson, Vitry-sur-Seine, and Maurice Decuypere, Choisy-le-Roi, France, assignors to Commissariat à l'Energie Atomique, Paris, France
No Drawing. Filed July 21, 1961, Ser. No. 125,671
Claims priority, application France, Aug. 10, 1960, 835,547
3 Claims. (Cl. 260—583)

1. In a process for obtaining trialkylamines, the steps of

(*a*) mixing an alkyl bromide having from six to eighteen carbon atoms in an amount on the order of from 5 to 10% (molar) in excess of the stoichiometric proportion with a compound selected from the group consisting of mono and dialkylamines having an alkyl radical containing from six to eighteen carbon atoms,

(*b*) heating said mixture to a temperature in the range of from 120° C. to 178° C., and then

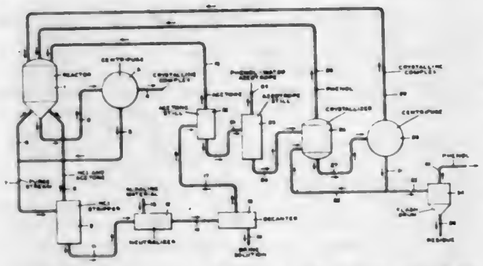
(*c*) diffusing gaseous ammonia through said mixture until reaction between the ammonia and said alkyl bromide is completed.

3,169,995
PROCESS FOR THE PREPARATION OF TERTIARY ALKYL AMINES
Gustave Roy, Versailles, Louis Colson, Vitry-sur-Seine, and Maurice Decuypere, Choisy-le-Roi, France, assignors to Commissariat à l'Energie Atomique, Paris, France
No Drawing. Filed July 18, 1961, Ser. No. 124,781
Claims priority, application France, Aug. 10, 1960, 835,546
3 Claims. (Cl. 260—585)

1. In a process for obtaining trialkylamines, the steps of heating an alkylbromide having from six to eighteen carbon atoms in the alkyl radical to a temperature in the range of from 100° C. to 200° C. and then diffusing gaseous ammonia through the alkylbromide until the ammonia has reacted completely therewith.

3,169,996
RECOVERY OF p,p'-ISOPROPYLIDENE-DIPHENOL
Logan C. Bostian, Morris Township, Morris County, Karl T. Nilsson, Montville Township, Morris County, and Zalik Oser, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Mar. 14, 1961, Ser. No. 95,635
4 Claims. (Cl. 260—619)

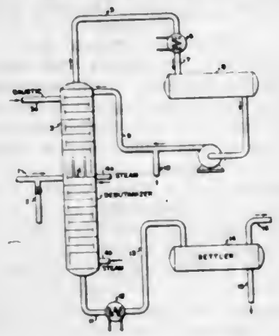
1. A process for recovering p,p'-isopropylidenediphenol from liquid mixtures thereof with by-products of the hydrogen chloride-catalyzed reaction of phenol and acetone, said mixtures also containing unreacted phenol, unreacted acetone, hydrogen chloride and water, which comprises distilling the mixture at temperature of about 80° to 120° C. at substantially atmospheric pressure to remove part of the hydrogen chloride and part of the acetone without removing hydrogen chloride in the form of an azeotrope with water and phenol, adjusting the residue from the distillation to pH of about 4.0 to about 4.5 to neutralize the remaining hydrogen chloride, distilling the neutralized material at temperature of about 80° to 160° C. at substantially atmospheric pressure to remove the remaining acetone and then at about 80° to 160° C. and at pressure of about 100 to 400 mm. Hg to remove water in the form of an azeotrope with phenol,



crystallizing the residue from the last-named distillation to obtain a slurry of crystals comprising a complex of p,p'-isopropylidenediphenol, phenol in liquid phenol and separating said crystals from the slurry and recovering p,p'-isopropylidenediphenol from the separated crystals.



3,169,997
SIMPLIFIED DEBUTANIZER FOR USE IN ISOBUTYLENE EXTRACTION
George P. Baumann, Sparta, and Earle A. Nirmaier, Maplewood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed June 15, 1960, Ser. No. 36,236
5 Claims. (Cl. 260—639)



1. A process for preparing normal butene which comprises contacting a $C_4$ hydrocarbon feed stream containing isobutylene and normal butenes with sulfuric acid to obtain absorption of a major portion of the isobutylene in said sulfuric acid, separating an extract stream from an acidic raffinate stream, feeding said raffinate stream directly to an intermediate hydrocarbon feed plate to a multiplate distillation column, feeding liquid caustic solution to a plate above said hydrocarbon feed plate to obtain a countercurrent flow of liquid caustic to the ascending hydrocarbon vapors in said distillation column, holding liquid caustic solution in said distillation column on said intermediate hydrocarbon feed plate in an amount and for a time sufficient to substantially neutralize the acids contained in said raffinate stream and recovering overhead substantially neutralized $C_4$ hydrocarbons.

5. A process for the production of secondary butanol and separation of $C_4$ hydrocarbons which comprises contacting a substantially isobutylene-free $C_4$ hydrocarbon stream containing 25 to 95 wt. percent of normal butylenes with 75 to 85 wt. percent sulfuric acid to obtain an acid extract containing normal butylenes, separating said acid extract from the resulting acidic raffinate stream containing $C_4$ hydrocarbons, diluting said acid extract to about 40 to 50 wt. percent sulfuric acid concentration and stripping said extract to obtain secondary butanol, passing said acidic raffinate stream directly to an intermediate feed plate of a multiplate distillation column, feeding liquid caustic solution to a plate above said intermediate feed plate to obtain countercurrent flow of liquid caustic to the ascending hydrocarbon vapors in said distillation column, holding liquid caustic solution in contact with said raffinate stream on said intermediate feed plate for a time sufficient to substantially neutralize said raffinate and distilling $C_4$ hydrocarbons overhead from said distillation column.

3,169,998
SEPARATION OF HYDROCARBON MIXTURES WITH THE USE OF GAMMA-BUTYROLACTONE
Paul N. Rylander, Newark, N.J., and William A. Junk, Jr., Homewood, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Nov. 2, 1959, Ser. No. 850,040
6 Claims. (Cl. 260—666)

3. A process for the selective separation of a normally liquid naphthenic hydrocarbon from a mixture thereof with a normally liquid paraffinic hydrocarbon, which process comprises contacting said mixture with liquid gamma-butyrolactone in an amount sufficient at least to form a distinct liquid phase, and separating a liquid extract phase comprising said naphthenic hydrocarbon.

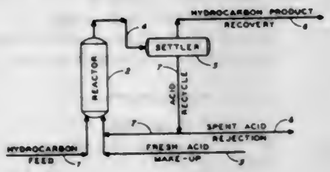
3,169,999
AROMATIC ALKYLATION PROCESS UTILIZING A NICKEL-CHROMIA-SILICA-ALUMINA CATALYST
Henry Erickson and Glenn O. Michaels, Park Forest, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 15, 1961, Ser. No. 138,281
7 Claims. (Cl. 260—671)

1. A process of alkylating an alkylatable aromatic hydrocarbon which comprises contacting the alkylatable aromatic hydrocarbon with an olefin under alkylation conditions including a temperature of about 200 to 600° F. in the presence of a catalyst consisting essentially of catalytic amounts of nickel and chromia on a silica-alumina support.

3,170,000
TERTIARY OLEFIN SEPARATION VIA ETHERIFICATION WITH SMALL SURFACE AREA CATALYSTS
Joseph A. Verdol, Dolton, Ill., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 24, 1962, Ser. No. 232,880
21 Claims. (Cl. 260—677)

1. In a process for the separation of tertiary monoolefin of 4 to 7 carbon atoms in admixture with another monoolefin hydrocarbon in approximately the same boiling range, the steps which comprise reacting selectively tertiary monoolefin of the mixture with a primary alcohol of 1 to 6 carbon atoms to obtain the corresponding tertiary ether, separating the tertiary ether from unreacted hydrocarbons, decomposing the tertiary ether to said tertiary monoolefin and primary alcohol by contact with an acid-acting solid metal oxide catalyst selected from the group consisting of alumina, magnesia, and oxides of metals of Groups IVA, VA and VIA of the periodic table, at a temperature of about 350° F. to 1000° F. and recovering tertiary monoolefin product, said catalyst having a surface area of less than 25 square meters per gram.

**3,170,001**
**POLYMERIZATION OF HYDROCARBONS**
**Gordon E. Langlois, El Cerrito, and Willard M. Hanneschild, Walnut Creek, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware**
**Filed Oct. 31, 1961, Ser. No. 150,113**
**1 Claim. (Cl. 260—683.15)**




In a polymerization process wherein a hydrocarbon feed with a substantial content of olefins selected from the group consisting of propylene and butenes and mix tures thereof is contacted in a reaction vessel with a bulk liquid phosphoric acid catalyst to produce a motor polymer product, the method of increasing the relative specific reaction rate, conversion to said product, octane number of said product, and volatility of said product, which comprises:

(*a*) passing said feed together with said bulk liquid phosphoric acid catalyst in concurrent flow at a space velocity of from 0.1 to 100 v./v./hr. nto a first of a series of reaction chambers, thence consecutively in concurrent flow through at least three additional reaction chambers in said series,

(*b*) maintaining the total transverse cross-sectional area of the passageways between adjacent chambers less than 15% of the cross-sectional area of said chambers,

(*c*) maintaining the temperature in said chambers from 200° to 500° F.,

(*d*) maintaining the pressure in said chambers from 200 to 1800 p.s.i.g.,

(*e*) substantially preventing back-mixing between adjacent chambers by passing said feed and acid through said passageways at a total flow rate greater than one-half foot per second,

(*f*) withdrawing an effluent containing said motor polymer product from the final reaction chamber,

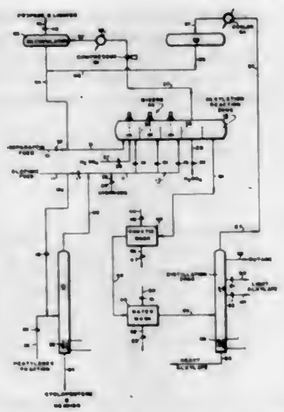
(*g*) separating said motor polymer product from said effluent, and

(*h*) recycling a portion of the remaining effluent which is substantially free of all polymer product so that said polymer product is substantially prevented from returning by external recycle to any of said chambers.

**3,170,002**
**REDUCTION OF ACID CONSUMPTION IN ALKYLATION**
**Edward A. Kelso, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware**
**Filed June 19, 1963, Ser. No. 289,108**
**21 Claims. (Cl. 260—683.59)**

1. A method of decreasing acid consumption in the sulfuric acid catalyzed alkylation of an isoparaffin with a monoolefin contaminated with a small amount of a diolefin which comprises conducting said alkylation under alkylation conditions in the presence of a small amount of free hydrogen effective to overcome the effect of said diolefin on acid consumption.

15. A method of treating a hydrocarbon fraction contaminated with a contaminating amount of a diolefin which comprises contacting said hydrocarbon fraction



with sulfuric acid in the presence of a small amount of free hydrogen effective to overcome the contaminating effect of said diolefin.

**3,170,003**
**PROCESS OF PRODUCING POLYURETHANE PLASTICS AND RESULTING PRODUCTS**
**Kurt Gerald, Cornelius Mühlhausen, and Erwin Müller, all of Leverkusen, and Hans Holtschmidt, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed Sept. 25, 1959, Ser. No. 842,211**
**Claims priority, application Germany, Oct. 1, 1958, F 26,699**
**20 Claims. (Cl. 260—858)**

1. The process of producing polyurethane plastics which comprises preparing a storage stable intermediate in a first step by reacting a first organic compound containing active hydrogen containing groups in the molecule, said groups being reactive with isocyanate groups, said first compound having a molecular weight of at least about 1000, a second organic compound containing active hydrogen containing groups in the molecule, said groups being reactive with isocyanate groups, said second compound having a molecular weight of less than about 500 with a deficiency of an organic diisocyanate and curing said storage stable intermediate in a second step by admixing therewith an organic compound containing active hydrogen containing groups in the molecule, said groups being reactive with isocyanate groups, said compound having a molecular weight of less than about 500, and an organic polyisocyanate in excess of the amount necessary to react with all the active hydrogen containing groups of the storage stable intermediate and the organic compound containing active hydrogen containing groups added in said second step.

5. A polyurethane plastic product prepared by the process which comprises preparing a storage stable intermediate in a first step by reacting a first organic compound containing active hydrogen containing groups in the molecule, said groups being reactive with isocyanate groups, said first compound having a molecular weight of at least about 1000, a second organic compound containing active hydrogen containing groups in the molecule, said groups being reactive with isocyanate groups, said second compound having a molecular weight of less than about 500 with a deficiency of an organic diisocyanate and curing said storage stable intermediate in a second step by admixing therewith an organic compound containing active hydrogen containing groups in the molecule; said groups being reactive with isocyanate groups, said compound having a molecular weight of less than about 500, and an organic polyisocyanate in excess of the amount necessary

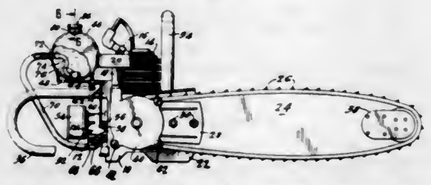


to react with all the active hydrogen containing groups of the storage stable intermediate and the organic compound containing active hydrogen containing groups added in said second step.

**3,170,004**
**DYEABLE COPOLYMER OF PROPYLENE CONTAINING A SUBSTITUENT FROM THE CLASS CONSISTING OF (a) SULFONIC ACID, (b) PHOSPHONIC ACID AND (c) SULFONAMIDE**
**John Farago, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Mar. 10, 1961, Ser. No. 94,692**
**3 Claims. (Cl. 260—874)**

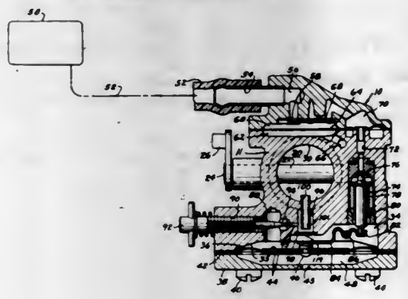
1. A dyeable, fiber-forming composition of matter from the class consisting of (I) a copolymer wherein from about 99.75 to about 75% of the repeating units are propylene, the remainder repeating units comprising a random copolymer wherein from about 99 to about 50% of the repeating units are members selected from the class consisting of (*a*) styrene, (*b*) an aliphatic ester of acrylic acid acid (*c*) an aliphatic ester of methacrylic acid; the remainder repeating units of the said random copolymer comprising units containing an organic radical bearing a substituent selected from the class consisting of (*d*) sulfonic acid, (*e*) phosphonic acid and (*f*) sulfonamide; and (II) a mixture of from about 99 to about 75% by weight of the entire copolymer defined in "I" above, the remainder of the mixture comprising the polymer of the random copolymeric component of the block copolymer defined in "I"; and (III) a mixture of from about 99 to about 75% by weight of at least one component selected from a member of the class consisting of (1) the compositions defined in "I" above, (2) the composition defined in "II" above and (3) a copolymer wherein from about 99 to about 75% of the repeating units are propylene, the remainder repeating units being a member selected from the class consisting of (*a*), (*b*) and (*c*) above, the remainder of the mixture comprising an inert, dyeable linear polyamide wherein the amide linkage is an integral part of the polymer chain.

**3,170,005**
**FUEL FEED SYSTEM FOR INTERNAL COMBUSTION ENGINES**
**Bernard C. Phillips, Toledo, Ohio, assignor to The Tillotson Manufacturing Company, Toledo, Ohio, a corporation of Ohio**
**Filed Jan. 30, 1963, Ser. No. 254,872**
**8 Claims. (Cl. 261—35)**



1. A fuel feed system for an internal combustion engine, said system including a fuel supply tank adapted to contain liquid fuel and having a filler opening, a closure for the filler opening, a carburetor formed with a mixing passage arranged to deliver fuel and air mixture to an engine, said carburetor having a fuel inlet, means arranged between the fuel tank and the fuel inlet for conveying liquid fuel to the inlet, a relatively movable valve in the fuel inlet, resilient means normally biasing the inlet valve to closed position, means in said carburetor responsive to aspiration in the mixing passage arranged to overbalance said resilient means to effect flow of liquid fuel past the valve into the mixing passage, said closure for the filler opening of the fuel tank being normally closed to seal the tank to prevent escape of fuel from the system except through the valved fuel inlet in the carburetor, a vent for the tank, a valve for the vent, resilient means biasing the vent valve to closed position, said vent valve being arranged to admit air to the fuel tank when the pressure in the tank is below atmospheric pressure.

**3,170,006**
**CARBURETOR**
**Morris C. Brown, St. Louis, Mo., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey**
**Filed Oct. 31, 1962, Ser. No. 234,393**
**5 Claims. (Cl. 261—69)**



1. A carburetor comprising a body, a fuel and air mixture conduit through said body, said body formed with a fuel chamber, a fuel inlet and a fuel conduit extending from said fuel inlet to said fuel chamber, an inlet valve in said fuel conduit between said fuel inlet and said fuel chamber, means for operating said inlet valve, said operating means including a diaphragm operatively connected to said inlet valve and sealed at its periphery to said body across said fuel chamber to form a wall thereof, said body having a fuel connection between said fuel chamber and said mixture conduit, said fuel connection including a fuel well adjacent to said mixture conduit, a tubular nozzle fitting fixed within said fuel connection and having one end extending into said mixture conduit and another open end enclosed within and spaced from the wall of said fuel well, a pair of fuel passages in said body extending between said fuel chamber and said fuel well, each one of said fuel passages having a different fixed predetermined restriction therein, one of said fuel passages formed of a size to supply fuel to said fuel well at a rate less than that required for high speed engine operation, and an adjustably movable needle mounted in said body and extending into the other one of said predetermined restrictions to control the opening therethrough to provide additional fuel to said fuel well required for high speed engine operation.

5. A carburetor comprising a body having a fuel and air mixture conduit therethrough, a throttle valve in said mixture conduit, said body formed with a fuel chamber, a fuel inlet and a fuel passage extending from said fuel inlet to said fuel chamber, an inlet valve in said fuel passage between said fuel inlet and said fuel chamber, means for operating said inlet valve, said operating means including a diaphragm operatively connected to said inlet valve and sealed at its periphery to said body across said fuel chamber to form a wall thereof, said body having a fuel connection between said fuel chamber and said mixture conduit, said fuel connection including a single fuel well adjacent to said mixture conduit, a tubular fuel nozzle fixed within said fuel connection and having one end opening into said mixture conduit and another open end enclosed within and spaced from the wall of said fuel well, a first air bleed passage extending from a

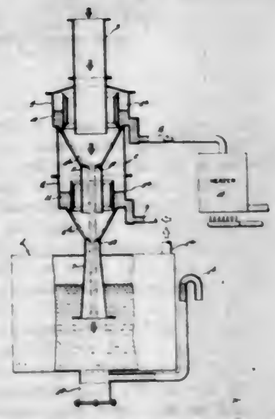
point in said mixture conduit upstream of said nozzle and directed downwardly into said fuel well and terminating at a point adjacent to said enclosed open end of said fuel nozzle to entrain air into the fuel entering the enclosed open end of said nozzle to lift said fuel through said nozzle upon opening of said throttle, said tubular nozzle having a plurality of apertures through the wall thereof and extending along the length thereof within said fuel well, and a second air bleed passage extending from a point in said mixture conduit upstream of said nozzle into said fuel well at a point between the ends of said nozzle and adjacent to said apertures to entrain additional air through said apertures to emulsify fuel within said nozzle upon opening of said throttle.

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**3,170,007**
## APPARATUS FOR CLEANING DUST-LADEN GASES

**Evert Krantz, Stockholm, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden, a corporation of Sweden**

**Filed June 11, 1963, Ser. No. 287,017**
**Claims priority, application Sweden, Dec. 23, 1960, 12,498/60**
**4 Claims. (Cl. 261—136)**



1. Apparatus for the wet-purifiction of hot dust-laden gases, comprising in combination: a first expansion chamber, a gas supply conduit extending down into said first expansion chamber, a second expansion chamber disposed below said first expansion chamber, a convergent bottom for said first expansion chamber, a first mixing conduit extending from the bottom of said convergent bottom into said second expansion chamber, a convergent bottom for said second expansion chamber, a second mixing conduit extending downward from the bottom of the second expansion chamber, inwardly projecting flanges at the upper ends of each of said mixing conduits, means to supply hot liquid around the outer periphery of said first expansion chamber above the upper end of said convergent bottom to flow down in an annular film over said convergent bottom and inward over said flange to break up in the violent turbulence of the hot gas flowing at high velocity over said flange, and means to supply cold liquid around the outer periphery of said second expansion chamber above the upper end of said convergent bottom to flow down in an annular film over said convergent bottom and inward over said flange to break up in the violent turbulence of the gas flowing at high velocity over said flange, the entire flow of gas and liquid being confined to pass through said mixing conduits, said conduits being successively of smaller size downward to take account of reduced gas volume and provide high velocity gas flow through said conduits.

**3,170,008**
## EMBOSSING PROCESS

**Alfred B. Levine, Chevy Chase, Md., assignor to Litton Systems, Inc., College Park, Md.**

**Filed Mar. 14, 1961, Ser. No. 95,564**
**17 Claims. (Cl. 264—22)**

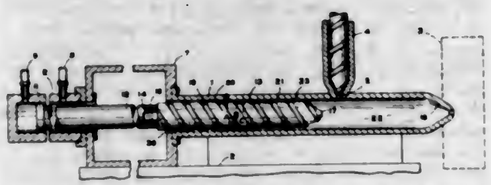
1. A process for providing an image on a thermoplastic member by deforming the surface of the member in a pattern corresponding to the image comprising the steps of producing a two-dimension heat pattern corresponding to the image, exposing a region of a thermoplastic record member to the heat pattern thereby to heat and raise the temperature of different discrete positions on the thermoplastic record in a two-dimensional configuration according to the pattern of information to soften the record member at said discrete heated positions, and subjecting the region of the record member exposed to the heat pattern to an electric field of sufficient intensity producing a dielectric force to deform the thermoplastic at the heated positions but of insufficient intensity to deform the unheated positions thereon.

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**3,170,009**
## METHOD FOR RENDERING A PLASTIC WORKING MACHINE SELF-CLEANING

**James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**

**Filed June 25, 1963, Ser. No. 290,560**
**3 Claims. (Cl. 264—39)**



1. A method of molding plastic material which comprises the steps of:
placing plastic material within a cylinder in front of a ram therein;
moving said ram forwardly with said cylinder to eject plastic material therefrom through the forward end of said cylinder;
utilizing the reaction pressure of said plastic material against said ram for simultaneously rotating said ram;
utilizing the rotation of said ram for moving a small quantity of said plastic material rearwardly in said cylinder between said cylinder and said ram to serve as lubricant for said ram; and
discharging plastic material from the rearward end of said cylinder.

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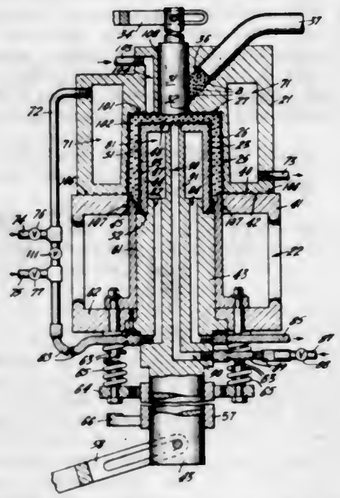
**3,170,010**
## METHOD OF MOLDING PRE-EXPANDED PLASTIC BEADS

**Robert Stephen Schultz, Somerville, N.J., and Eugen Franz Polka, Algonquin, and Jerome Alfred Cherney, Fox River Grove, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey**

**Filed Dec. 28, 1961, Ser. No. 162,862**
**4 Claims. (Cl. 264—51)**

1. A method of producing cellular thermoplastic articles from pre-expanded plastic beads, which comprises arranging a pair of multi-passaged male and female mold members in concentrically spaced relation to define therebetween a mold cavity communicating with a fluid admission passage and essentially surrounded by concentrically spaced first and second fluid admission chambers isolated from said mold cavity, feeding a quantity of beads into said cavity, introducing a first heated fluid into said first and second chambers, and while said first fluid is in said chambers in heat exchange relation with said





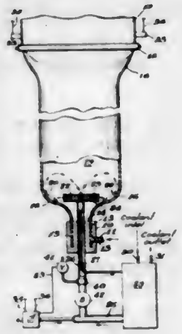
mold cavity, introducing a second heated fluid into said passage and into direct contact with said beads to effect fusion thereof.

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**3,170,011**
## METHOD AND APPARATUS FOR MAKING FILM

**Grant W. Cheney, Midland, Mich., and Frank T. Hughes, Rolling Hills, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**Filed Feb. 14, 1962, Ser. No. 173,270**
**31 Claims. (Cl. 264—95)**



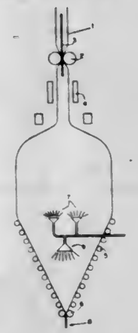
1. Method of producing film from a thermoplastic resinous film-forming material which comprises:
(*a*) extruding a fused thermoplastic film-forming resin through a generally circular extrusion orifice in a tube die in the form of a seamless film tube;
(*b*) withdrawing said freshly extruded film tube away from said die and radially expanding said film tube over a trapped gaseous bubble;
(*c*) flattening said expanded film tube with flattening means positioned at a distance from said die;
(*d*) continuously applying to the exterior surface of said tube, immediately after its extrusion and prior to its being expanded to its maximum diameter, a circumenveloping gaseous coolant stream at a temperature beneath the temperature of said freshly extruded film tube; and
(*e*) continuously applying to the interior surface of said tube, immediately after its extrusion and prior to its being expanded to its maximum diameter, a stream of gaseous coolant for the tube, which stream is at a temperature beneath the temperature of said freshly extruded film tube and which is omniradially directed against the inner surface of the tube from a peripheral outlet within the tube while being rotatingly swept thereon on a line about perpendicular to the axis of extrusion of said tube.

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**3,170,012**
## PROCESS OF REDUCING SAG IN TUBULAR FILM MANUFACTURE

**John Wright Stinchcombe, Welwyn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**Filed July 12, 1962, Ser. No. 209,459**
**Claims priority, application Great Britain, July 12, 1961, 25,256/61**
**9 Claims. (Cl. 264—95)**



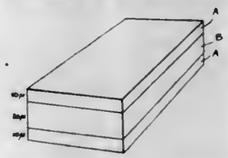
1. In a process of tubular film manufacture wherein a thermoplastic tube of film is heated and then collapsed to a lay-flat film by V-section guides, the improvement wherein the film, before it is completely collapsed, is cooled in zones thereof where it does not contact the guides, said zones being near to where edges will be formed in the film when it becomes completely collapsed.

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**3,170,013**
## METHOD OF PRODUCING LAMINATED PLASTIC FOILS AND FILMS

**Theodor Ploetz, Am Adels 19, Hoesel, Kreis Mettmann, Germany**

**Filed Dec. 20, 1960, Ser. No. 77,248**
**6 Claims. (Cl. 264—255)**



1. In a process of producing a substantially water- and gas-proof laminated film, the steps which consist in
(*a*) applying to an impervious support of high surface smoothness a dispersion of a first synthetic thermoplastic material in a liquid wherein said material is substantially insoluble;
(*b*) heating the resulting first coating to a temperature and for a time sufficient to coalesce the dispersed particles into a coherent film layer and to remove the dispersing liquid therefrom;

(c) applying to said first film layer a dispersion of a second synthetic thermoplastic material different from said first thermoplastic material, in a liquid wherein said first and second thermoplastic materials are substantially insoluble;

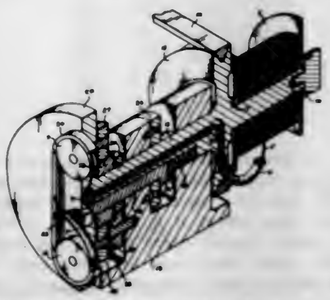
(d) one of said thermoplastic materials being capable of forming a substantially gas-proof film layer and the other one being capable of forming a substantially water-proof film layer and one of said thermoplastic materials being diffusible, on heating, into the film layer of the other one of said thermoplastic materials;

(e) heating the resulting second coating on said first film layer to a temperature and for a time sufficient to coalesce the dispersed particles of said second thermoplastic material into a coherent second film layer to cause partial diffusion of said diffusible thermoplastic material into the other thermoplastic material, and to remove the dispersing liquid from said second film layer; and

(f) jointly removing said superposed film layers firmly adhering to each other from said impervious support.

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**3,170,014**
**COIL FORMING METHOD AND APPARATUS FOR ZIPPER FASTENERS**
John E. Burbank, Stamford, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 7, 1962, Ser. No. 172,073
4 Claims. (Cl. 264—281)



1. A process of supplying a plastic filament in coil form to a series of dies presenting a series of cavities, each of which is adapted to receive a portion of each convolution of the coil, which comprises

(a) positively feeding from a bodily rotating source a filament and pushing through a guide rotating about the same axis as said source, a length of filament equal to that required in one complete convolution of the coil to be formed, upon each complete rotation of said guide;

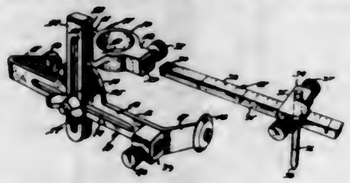
(b) discharging the filament from the guide in a direction tangentially of the coil and at the pitch angle thereof whereby the filament naturally assumes the shape of a helix; and,

(c) engaging each convolution as it is shaped, in one of the cavities of said series of dies.

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**3,170,015**
**UNIVERSALLY ADJUSTABLE CUTTING CARRIAGE AND CIRCULAR CUTTER FOR OXY-ACETYLENE CUTTING EQUIPMENT**
Theodor Zlebart, 126 S. Norah St., Fort William, Ontario, Canada
Filed Dec. 4, 1961, Ser. No. 157,872
2 Claims. (Cl. 266—23)

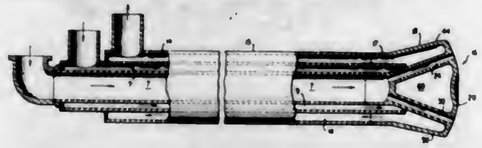
1. A cutting carriage and circular cutting device for oxy-acetylene cutting equipment and the like, comprising in combination a carriage engageable with and movable on the surface to be cut, a radius bar detachably secured by one end thereof to said carriage, a pivot point assembly slidably adjustable on said radius bar, said carriage including torch nozzle holding means and means coacting between said torch nozzle holding means and said carriage whereby said torch nozzle holding means is adjustable with respect to said carriage, horizontally, vertically and angularly in a plane parallel to the longitudinal axis of said radius bar, said carriage including a



horizontal main portion, off standing ends on each end of said horizontal main portion, and roller means on said off standing ends, said nozzle holding means being offset from said horizontal main portion substantially above said roller means, said radius bar being selectively engageable with means on said horizontal main portion or with means on said nozzle holding means, and a supporting arm selectively engageable with said nozzle holding means and extending therefrom at right angles to said radius bar, and support means on said supporting arm engageable on said surface to be cut.

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**3,170,016**
**FLUID TRANSFER DEVICE**
Richard W. Grace, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,711
1 Claim. (Cl. 266—34)



Transfer device providing improved area contact for top blowing of oxygen onto a metallurgical bath comprising

elongated lance structure and nozzle structure joined to one end of the elongated lance structure;

the elongated lance structure including an outer tubular member, oxygen supply means, an elongated centrally located oxygen passageway, and coolant supply and discharge means;

the nozzle structure including a main body section conforming in cross-sectional diameter to that of the outer tubular member, a plurality of individual oxygen outlet conduits which diverge outwardly at an angle in the range of 15° to 25° from the centrally located elongated oxygen passageway, a longitudinally fluted outer wall, having alternate raised sections and grooved sections, in which each raised section diverges outwardly from the outer tubular member of the elongated lance structure and is located to partially circumscribe at least one of the divergent oxygen outlet conduits and the grooved sections are longitudinally coextensive with the raised sections but conform in cross-sectional diameter to that of the outer tubular member, face plate means joined to the longitudinally fluted outer wall to define a coolant chamber housing the divergent oxygen outlet conduits, the face plate being apertured to define openings therein for the oxygen outlet conduits, and

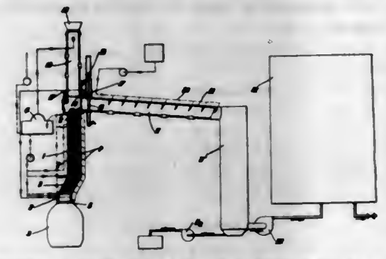


means for joining the oxygen outlet conduits to the oxygen supply means of the elongated lance structure and to the openings defined in the face plate means of the nozzle structure.

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**3,170,017**
**CONVERTER-GAS PROCESSING SYSTEM**
Gerald Nanny, Saint-Etienne, France, assignor to Compagnie des Ateliers et Forges de la Loire St.-Chamond-Firminy-St.-Etienne-Jacob Holtzer, Paris, France, a corporation of France
Filed Apr. 18, 1960, Ser. No. 22,855
Claims priority, application France, Apr. 21, 1959, 792,667
16 Claims. (Cl. 266—35)

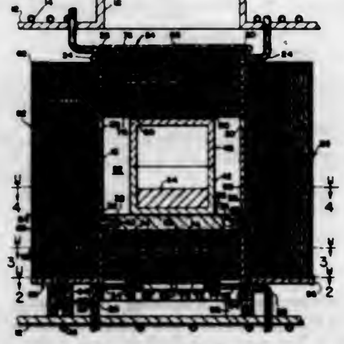
1. In a system for processing converter exhaust gases to recover heat energy therefrom and to reduce the dust content and the volume of said exhaust gases, a converter having a top outlet for exhaust gases; a hood connected with said outlet for receiving and discharging the exhaust gases issuing from said top outlet; seal means at the connection of said converter to said hood; steam boiler means including water tubes associated with said hood in heat exchanging relation with said gases; a collector vessel; means for conducting water in a circuit from said collector vessel through said tubes for generation of steam therein and conducting water mixed with steam back to said collector vessel for collection of water and steam in said collector vessel; stack means connected to said hood, said stack means and said hood forming a first exhaust gas flow path; means, including dust extraction means for receiving and cleaning the gases directed thereto, for forming a second exhaust gas flow path associated with said first path; valve means for alternatively opening and closing said first path and said second path; gas storage means for receiving gases from said dust extraction means; and means for delivering steam from said collector vessel to at least one of said two gas paths.



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# ELECTRICAL

**3,170,018**
**HIGH TEMPERATURE FURNACE**
John G. Lewis, Ann Arbor, Mich., assignor, by mesne assignments, to Nuclear Technical Service Corporation, Ann Arbor, Mich., a corporation of Michigan
Filed May 3, 1960, Ser. No. 26,472
10 Claims. (Cl. 13—31)

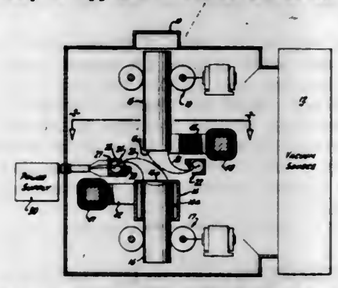


1. In an electric resistance furnace having a heater tube defining therein a heating zone, an annular heat radiation shielding member encircling said tube comprising a rigid structure having a plurality of thin, concentric, graphite sleeves secured in close, spaced relationship by a plurality of graphite studs threadedly connected to said sleeves.

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**3,170,019**
**ELECTRON BEAM FURNACE**
Charles W. Hanks, Orinda, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed Jan. 15, 1962, Ser. No. 166,341
3 Claims. (Cl. 13—31)

1. An electron beam furnace comprising a crucible having an open top, a melting station for material overlying said crucible, means generating a unidirectional magnetic field across said crucible, and a pair of electron guns on diametrically opposite sides of said crucible, said electron guns being aimed to project electron beams transversely in opposite directions across said unidirectional field so that said magnetic field deflects the beam from one of said guns upwardly to said melting station and deflects the beam from the other of said guns downwardly into the top of said crucible.



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**3,170,020**
**APPARATUS FOR PRODUCING BASS SOUNDS IN ELECTRIC MUSICAL INSTRUMENTS WHEREIN CONTRABASS VOICE CAN BE OBTAINED BY SPECIAL SWITCH AND CIRCUIT**
Michio Kondo, Hamamatsu-shi, Japan, assignor to Nihon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan
Filed Oct. 3, 1960, Ser. No. 60,114
Claims priority, application Japan, Apr. 6, 1960, 20,143/60
1 Claim. (Cl. 84—1.26)

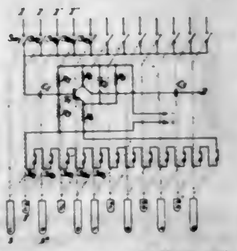
In an electrical musical instrument, an arrangement to produce contrabass-like decaying sounds, comprising in combination;

a plurality of input terminals to which are applied sound signals and a plurality of first switch means, each responsive to a pedal, one side of each of said first switch means being connected to one of said input terminals, said first switch means being normally open;

a like plurality of second switch means, normally closed, all in series, each of said second switch means

corresponding to one of said first switch means including a first, power source lead line, to the first in the series of said second switch means;

mechanical means between each one of said first and second switch means to open one of said second switch means when one of said first switch means are closed, adjusted so that said second switch means will open earlier than the closing of said first switch means;

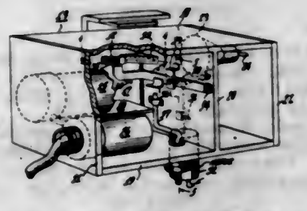


a decaying circuit between said first and second switch means including a first condenser connected by a common terminal with each of said first switch means, a transistor with base, emitter, collector electrodes, the base of which is coupled to said first condenser, base bias resistor means, a collector load resistor, an emitter the last in the series of resistor connected in series between said emitter and said second switch means, a second condenser between the collector electrode and the output side of the arrangement, a second, power source lead line connected to said collector load resistor and base bias resistor means; and,

a timing resistor and timing condenser both in parallel with each other between the second power source lead line and said emitter, the time constant between said resistor and condenser being so set as to gradually cut off said transistor so that the sound signal applied to the decaying circuit through the closing of one of said first switch means is lead out from said second condenser as a decaying sound signal.

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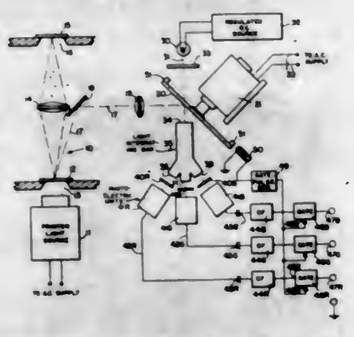
**3,170,021**
**COLOR MEASURING DEVICE FOR PRINTING PRESSES**
**Gustav Bergson, Jenkintown, Pa.**
**(York Road and Sunset Lane, Hatboro, Pa.)**
**Filed Apr. 22, 1959, Ser. No. 808,090**
**3 Claims. (Cl. 88—14)**



1. A color measuring device for printing presses comprising, means providing a housing including walls defining first and second closed compartments separated by a partition, means providing a source of radiant energy in said first compartment, means providing a radiant energy detector in said second compartment, means defining a first aperture in an exterior wall of said housing communicating with said first compartment through which radiant energy from said source may be directed to a sample of a material under test, means defining a second aperture in an exterior wall of said housing communicating with said second compartment for admitting at least a portion of the radiant energy directed through said first aperture and reflected from a sample of a material under test, means defining a third aperture in said partition communicating between said first and second compartments, said radiant energy detector being positioned in said second compartment so that radiant energy entering said second compartment through said second and third apertures impinges on said detector, said housing adapted to be positioned with respect to said printing press such that copies of the material printed by said press pass by said first and second apertures so that radiant energy emanating from said first aperture is reflected from said material into said second aperture, a shutter member for blocking said third aperture in a first position thereof and for blocking at least one of said first and second apertures in a second position thereof, means providing a vane on said shutter member, a conduit through which air is passed positioned to direct air against said vane to move said shutter member from said first position to said second position, means for blocking said conduit in synchronism with the movement of said press, and means for comparing the response of said detector when said shutter means is in the first position thereof with the response when said shutter means is in the second position thereof.

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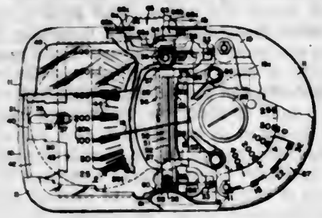
**3,170,022**
**ELECTRO-OPTICAL PHOTOMETER**
**Jorgen Reesen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Mar. 27, 1961, Ser. No. 98,398**
**8 Claims. (Cl. 88—14)**



1. A photometer for indicating the average optical density of a transparency to light of a predetermined color, comprising a first source of light of such color for transilluminating the transparency, a reference light source, said reference light source emitting light of substantially constant intensity, electro-optical means responsive to light impinging thereon to produce an output voltage having a predetermined relationship to the intensity of the light impinging thereon, light control means for cyclically rendering said electro-optical means alternately responsive to diffuse light from said first source as modified by said transilluminated negative and from said reference source to produce an output signal therefrom, means for shifting the average level of the output signal from said electro-optical means to a predetermined reference value, an output terminal, and signal gating means operating in timed synchronism with said control means for applying said shifted signal to said output terminal only during those alternate periods when the light impinging on said electro-optical means is derived from said reference source.



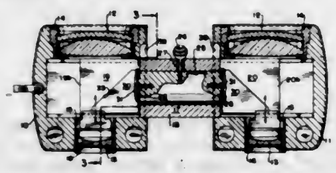
**3,170,023**
**DOUBLE RANGE EXPOSURE METER**
**Austin W. Barry, Fanwood, and Richard P. Schake, Livingston, N.J., assignors to Weston Instruments, Inc., a corporation of Texas**
**Filed Apr. 11, 1961, Ser. No. 102,267**
**3 Claims. (Cl. 88—23)**



1. A double range exposure meter comprising, a base, a photoelectric cell mounted in fixed relationship to said base, a measuring instrument mounted in fixed relationship with said base and including a pointer actuated in response to the level of brightness of a scene to which said cell is exposed, a movable plate having a pair of scales for cooperating with said pointer and being selectively presented to view, a fixed baffle arrangement overlying said cell, a movable baffle having a generally shaft-like portion and supported for angular movement about the axis of said shaft into and out of position overlying said fixed baffle, and spiral spring means fitted over said shaft for mechanically coupling said movable baffle to said movable plate, said spring means being adapted to be biased in opposite directions to positively drive said movable plate in a given direction to bring one of said scales into view when said movable baffle is in a fully closed position overlying said fixed baffle and to positively drive said movable plate in a direction opposite to said given direction to bring the other of said scales into view when said movable baffle is in a fully open position.

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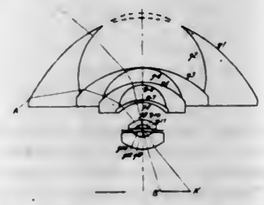
**3,170,024**
**BINOCULAR TELESCOPE WITH SLIDING LENS CASINGS AND CENTRAL FOCUSING MEANS**
**Robert Whittle Dowling, New York, N.Y., and Lorenzo Del Riccio, Bel Air, Los Angeles, Calif., assignors to D & D Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 30, 1958, Ser. No. 783,977**
**Claims priority, application Germany, Jan. 7, 1958, H 32,061**
**2 Claims. (Cl. 88—34)**



1. A binocular telescope comprising a pair of ocular-objective lens combinations, a box-like casing for each of said lens combinations mounting the lenses of a combination in spaced relation, said casings comprising members of U-shaped configuration having openings in their adjacent side walls between the lenses of the combinations thereof, a unitary central support member disposed transversely of said casings having end portions comprised of pairs of vertically spaced arms, pairs of said arms engaging said U-shaped members adjacent the upper and lower surfaces thereof providing an unobstructed field of sight through said U-shaped members in all operative positions of said casings relative to said support member, means for slidably interconnecting the arms of said support member and said U-shaped members permitting relative transverse movement of said casings upon said support member, the combined widths of said casings being not less than the length of said support member whereby said casings may be moved together to completely envelop said support member, and focusing means carried by said support member and extending into each of said casings in engagement with the movable lenses of each of said lens combinations in all positions of the casings relative to the support member, said focusing means including manually manipulatable means for adjusting said focusing means and the movable lenses accessible when said casings have been moved apart to positions of minimum interpupillary distance accommodation, said casings when closed completely enveloping said focusing means and the manually manipulatable portions thereof.

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**3,170,025**
**OPTICAL SYSTEM FOR PANORAMIC PHOTOGRAPHING**
**Yoshiyuki Ino, 70 Ozu-machi, Kochi-shi, Japan**
**Filed June 7, 1961, Ser. No. 130,702**
**4 Claims. (Cl. 88—57)**



1. A panoramic system consisting of axially symmetrically arranged elements geometrically determined as follows where $r$ is the radius of curvature, $d'$ is the thickness, $n$ is the refractive index, $v$ is the Abbé number, and $e$ is the eccentricity and $Z_{11}'$ is the real stop: and $g1$ to $g15$ are lens surfaces and lens ($g9$, $g10$, $g11$) and lens ($g12$, $g13$, $g14$) are doublets, and the other lenses are singlets:

| No. | $r$ | $d'$ | $n$ | $v$ | $e$ |
|---|---|---|---|---|---|
| $g1$ | 1.210 | −0.056 | 1 | | [1] 0.698 |
| $g2$ | 0.761 | 0.653 | 1.5163 | 64 | |
| $g3$ | 1.060 | 0 | 1 | | [2] 1.222 |
| $g4$ | 0.489 | 0.169 | 1.4875 | 70 | |
| $g5$ | 0.675 | 0.023 | 1 | | |
| $g6$ | 0.283 | 0.166 | 1.4875 | 70 | |
| $g7$ | 0.495 | 0.023 | 1 | | |
| $g8$ | 0.396 | 0.183 | 1.4875 | 70 | |
| $g9$ | 0.231 | 0.058 | 1 | | |
| $g10$ | 0.1117 | 0.061 | 1.7174 | 29.6 | |
| $g11$ | 0.488 | 0.029 | 1.6260 | 39.2 | $z_{11}'=0.022$ |
| $g12$ | 1.194 | 0.058 | 1 | | |
| $g13$ | −0.1463 | 0.161 | 1.6260 | 39.2 | |
| $g14$ | −0.334 | 1.812 | 1.7174 | [2] 1.812 | |
| $g15$ | | 1 | | | |

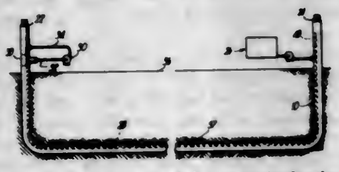
[1] Ellipoid of revolution.
[2] Hyperboloid of revolution.

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**3,170,026**
**CIRCULATION SYSTEM FOR FLUID IN PIPES CARRYING ELECTRIC CABLES**
**Riley D. Woodson, 2012 W. 50th Terrace, Shawnee Mission, Kans.**
**Filed Apr. 30, 1962, Ser. No. 191,031**
**6 Claims. (Cl. 174—15)**

1. In a circulation system for fluid in a pipe carrying electric cables; tube means carried within said pipe exteriorly of the cables; and a pump coupled to one end of said tube means for introducing fluid thereinto, the in-

take of said pump being in communication with said pipe whereby to draw fluid therefrom, the other end of said



tube means being open and in communication with the interior of said pipe.

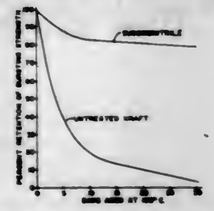
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3,170,027

## TREATED CELLULOSIC INSULATION AND ELECTRICAL APPARATUS EMBODYING THE SAME

James G. Ford, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 3, 1962, Ser. No. 164,113
12 Claims. (Cl. 174—17)



1. An improved sheet cellulosic product adapted for use in electrical apparatus in combination with a fluid dielectric impregnant, the product comprising cellulosic fibers in sheet form, the sheet having uniformly distributed throughout its interstices from about 0.02% to about 10% by weight based on the weight of the cellulosic fibers of a nitrile compound having the general formula

X—R—CN

wherein R is a member of the group consisting of alkyl, alkoxy, alkoxy alkane, aromatic, and substituted aromatic substituents, and X is a member of the group consisting of H and —CN.

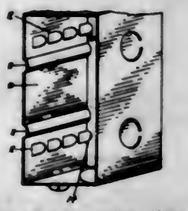
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3,170,028

## ADJUSTABLE ELECTRICAL BOX AND PLATE

Bernard J. Otten, La Mesa, Calif.
(14212 Red Hill Ave., Santa Ana, Calif.)

Filed Dec. 24, 1962, Ser. No. 246,831
8 Claims. (Cl. 174—58)



1. A combination of a mounting plate and an electrical switch, outlet, or junction box, the mounting plate comprising a sheet of plastic or metallic material, rectangular in shape, the sheet supporting one or more raised surfaces, the face of each raised surface forming an obtuse angle relative to the face of the mounting plate, the face of each raised surface incorporating a hole substantially at right angles to and passing through said surface, each hole serving as a guide for a nail or screw in such a manner that the nail or screw inserted into the hole forms an acute angle relative to the face of the mounting plate, the centerline of the nail or screw being in a plane substantially parallel to the two short edges of the mounting plate and substantially at right angles to the two long edges of the mounting plate, the mounting plate thus being capable of being secured to a wall structural member by means of a nail or screw passing through the hole or holes thus provided, the mounting plate also comprising one or more rows of open-ended raised loops, the centerline of each row being substantially parallel to the two short edges of the mounting plate and being common to all loops in each row, the bottom loop in each row being closed at its bottom end, by a curved surface, this surface being convex on its outside and concave on its inside, each row of loops being so formed that it will allow a nail or similar device to be inserted through the loops until the point of the nail touches the inside, concave surface closing the bottom of the bottom loop, this concave surface then serving to guide the point of the nail outward to the underside of the mounting plate either into the wall structural member or between this member and the underside of the mounting plate, the electric switch, outlet, or junction box, of plastic or metallic material, comprising in one side wall one or more grooves, cutouts, or detents which provide clearance for the raised surfaces of the mounting plate, and one or more rows of holes which mate with the raised loops of the mounting plate, wherein the mounting plate is attached to a wall structural member by means of nails or screws passing through the holes in the mounting plate raised surfaces and thence into the wall structural member, and wherein the electrical switch, outlet, or junction box then is secured to the mounting plate by mating the box sidewall holes with the mounting plate loops and then passing a nail or similar device through the mounting plate loops so that this nail will retain the box in its attached position.

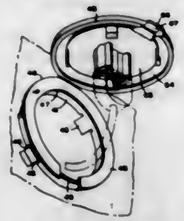
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3,170,029

## RECEPTACLE APERTURE COVER

James B. Stewart, Franklin Township, Somerset County, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 22, 1962, Ser. No. 181,678
1 Claim. (Cl. 174—66)



A unitary cover for a receptacle for passing therethrough an electrical cord having an electrical plug at one end thereof comprising, a molded plastic base member having a plurality of flexible integral tabs extending from one side thereof to provide a snap fit with the sides of said aperture, said base member having a rim member with the inner edge defining an access aperture to said receptacle, a molded plastic cover member, a relatively thin plastic hinge member integral with said base member and said cover member to provide pivotal movement of said cover member toward and away from the other side of said base member, integral resilient plastic tabs on said cover member to provide a snap-on fit with said rim member, and a pair of adjacent flexible grip members fixed on the surface of said cover member adjacent said aperture extending inwardly toward said base member, said flexible grip member releasably frictionally gripping the electric plug of said electric cord so that when said cover member is open said electric plug will be readily accessible.



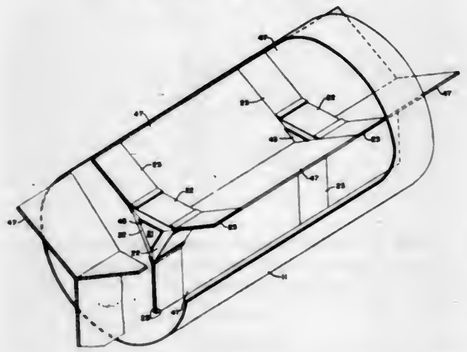
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3,170,030

## ELECTRICAL BUS STRUCTURE

Raymond A. Beck, Deer Park, and Robert W. Stretch, Norwood, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 15, 1963, Ser. No. 265,412
4 Claims. (Cl. 174—99)



1. An electrical bus structure comprising a hollow cylindrical housing, three phase conductors symmetrically disposed inside the housing and extending longitudinally of the housing, radially disposed insulators spaced at 120° angles supporting the phase conductors, each insulator being mounted on one side of a triangular-shaped supporting member having equal sides, each insulator being disposed between the associated phase conductor and said supporting member forming the sole support for the associated phase conductor, and legs extending from the apices of the triangular member to the inner surface of the housing and being secured thereto and supporting the triangular member.

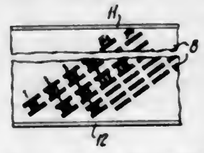
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3,170,031

## RECORDING SYSTEM WITH PROVISION FOR FAST OR SLOW REPRODUCTION

Shiro Okamura, 26 2-chome, Shirogane-dai-machi, Minatoku, Tokyo, Japan

Continuation of application Ser. No. 66,770, Nov. 2, 1960. This application Dec. 27, 1963, Ser. No. 338,277
12 Claims. (Cl. 178—6.6)



8. In a system for recording and reproducing periodical signals comprising a series of recurring periods each of which contains a plurality of recurring sub-periods, the improvement comprising means for receiving said periodical signals, means for recording said periodical signals on a magnetic storage surface with sequential periods of said signal being recorded on adjacent tracks across said magnetic storage surface, and reproducing means adapted to move in a path having a lateral component of velocity across said recorded tracks to speed up or retard the reproduced signals with respect to the recorded signals.



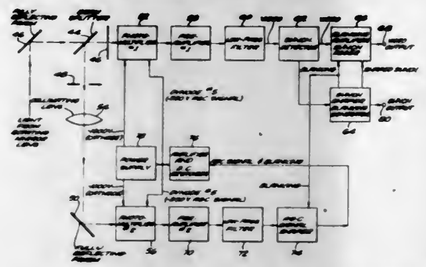
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3,170,032

## FACSIMILE-SCANNER WITH A.G.C. OF OUTPUT SIGNAL BY MULTIPLICATION OF LOW AND HIGH DEFINITION SIGNALS

William E. Evans, Jr., Los Altos Hills, and Howard E. Murphy, Redwood City, Calif., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois

Filed June 22, 1961, Ser. No. 118,986
5 Claims. (Cl. 178—7.1)



1. Apparatus for deriving a video signal representative of data written upon a document comprising a first and second flat member each having an aperture therethrough, the aperture in said first flat member being small relative to the aperture in said second flat member, scanning means for successively deriving light from incremental areas of said document and for directing the light from each incremental area upon both of said apertures, first and second photomultiplier means respectively positioned opposite the apertures in said first and second flat members for converting the light passing therethrough into first and second electrical signals, means for applying only said second electrical signals to said first and second photomultiplier means for controlling the gain thereof solely responsive thereto, and means for deriving an output signal from said first photomultiplier means.

5. In a system wherein it is desired to obtain an electrical signal representing the product of two light modulations, apparatus comprising means for converting one of said two light modulations to a first electrical signal, a photomultiplier tube upon the photocathode of which said second light modulation is directed, said photomultiplier tube having a dynode, means to apply operating potential to said photomultiplier tube including said dynode, and means for applying said first electrical signal to said dynode to modulate the voltage thereon whereby the output of said photomultiplier tube is an electrical signal representing said product.

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3,170,033

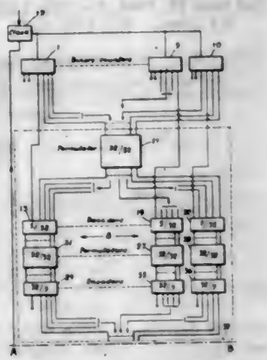
## ELECTRICAL GENERATORS OF QUASI-RANDOM SYMBOLS

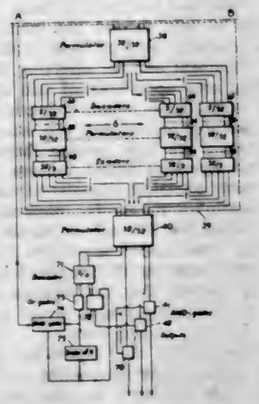
Jean-Pierre Vasseur, Paris, France, assignor to Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed July 27, 1961, Ser. No. 127,171
Claims priority, application France, Aug. 2, 1960, 834,731
5 Claims. (Cl. 178—22)

1. A generator of quasi-random symbols represented by coded combinations of signals comprising, in combination; a clock pulse generator including an output; a plurality of multistage binary counters; each of said multistage binary counters including an input and a plurality of outputs for transmitting signals; means for connecting the inputs of said multistage binary counters to the output of said clock pulse generator; a plurality of decoder means, each of said decoder means including a plurality of inputs and outputs for transmitting signals from different ones of its outputs in response to different coded combinations of signals received at its inputs; means for connecting selected outputs of said multistage binary counters to the inputs of said decoder means; a plurality

of permutation means, each of said permutation means including a plurality of inputs and outputs for permutationally transferring signals received at is inputs to its outputs; means for connecting the inputs of each of said permutation means to the outputs of each of said decoder means respectively; a plurality of encoder means, each of





said encoder means including a plurality of inputs and outputs for transmitting different coded combinations of signals from its outputs in responses to signals received at different ones of its inputs; and means for connecting the outputs of each of said permutation means to the inputs of said encoder means respectively, the signals at the outputs of said encoder means representing said symbols.

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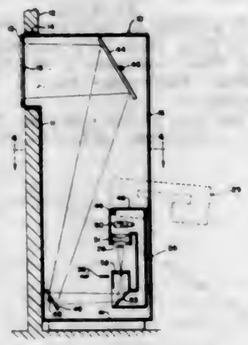
**3,170,034**
**STOCK TICKER CABINET WITH ROTATABLE PRINTER AND PROJECTOR ASSEMBLIES**
**Walter J. Zenner, Des Plaines, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware**
**Filed Jan. 29, 1963, Ser. No. 254,716**
**7 Claims. (Cl. 178—24)**

1. In a cabinet having a screen for displaying stock ticker intelligence thereon and having a pair of opposed access openings in the cabinet so that the cabinet may have either its front or back wall placed in close proximity to a room wall that would deny access to the interior of the cabinet from the access opening in the side of the cabinet in close proximity to the wall;

(*a*) a recording means in said cabinet for recording stock ticker intelligence on a record medium,

(*b*) pivot means interconnecting said recorder and cabinet, said recording means being pivotal in two directions about said pivot means toward either of the access openings, and

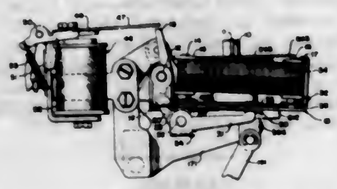
(*c*) a projection means in said cabinet for projecting said ticker information printed on said record medium to said display screen, said projecting means



being pivotally mounted for pivotal movement to permit said recording means to be rotated toward either of the access openings.

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**3,170,035**
**INKING RIBBON GUIDE MECHANISM**
**Frederick C. Moebius, Barrington, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware**
**Filed Jan. 3, 1963, Ser. No. 249,207**
**6 Claims. (Cl. 178—42)**



1. In a printing telegraph page printer having a ribbon feeding and guiding mechanism including a ribbon supply spool, a ribbon guide member, and a platform for supporting said spool and said guide member and reciprocatable in each cycle of the printer for moving said guide member and said spool, to carry one portion of said ribbon into a printing position, and then to retract them thereby to move the ribbon out of the printing position and make the last character that has been printed visible; the combination of a normally ineffective motion amplifying leverage mechanism for moving said guide member an amount in addition to its normal movement including

(*a*) one portion of said leverage mechanism interposed between said platform and said ribbon guide member,

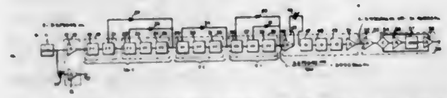
(*b*) a second portion of said leverage mechanism normally movable with said platform,

(*c*) selectively operable means to block movement of said second portion of the leverage mechanism with the platform, and

(*d*) means formed on the two portions of the leverage mechanism for moving the first portion thereof with respect to the platform when the second portion thereof is blocked.



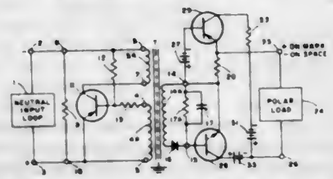
**3,170,036**
**DERIVATION OF TWICE LINE FREQUENCY FROM SUB-CARRIER GENERATOR**
**Albert J. Baracket, Cedar Grove, N.J., assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio**
**Filed Sept. 5, 1962, Ser. No. 221,462**
**4 Claims. (Cl. 178—69.5)**



1. An oscillation generator for a color television system, said generator comprising: an oscillator producing oscillations at a predetermined, relatively high frequency; a plurality of binary counters connected in series with a first one of said counters connected to said oscillator to be controlled by a signal derived therefrom and to reduce the repetition rate of said signal to a predetermined submultiple; a plurality of frequency multipliers connected in series, a first one of said multipliers being connected to the last of said binary counters, said multipliers producing a signal having a repetition rate which is not an integral sub-multiple of said signal derived from said oscillator, the repetition rate of the signal produced by said multipliers being substantially twice as great as the repetition rate of the horizontal synchronizing signal of said television system.

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**3,170,037**
**ELECTRONIC RELAY**
**Lawrence M. Carver, Springdale, and Herbert Levick, Wilton, Conn., assignors to Stelma, Incorporated, Stamford, Conn., a corporation of Connecticut**
**Filed Jan. 25, 1960, Ser. No. 4,580**
**15 Claims. (Cl. 178—70)**

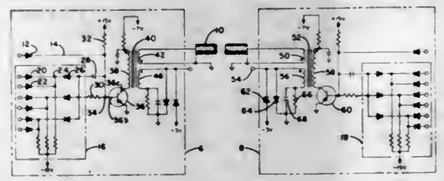



1. A non-mechanical relay comprising first neutral input means for receiving marking current, a second means for transmitting signals related to said marking current, coupling and D.C. current isolating means having input means and output means for electrically connecting said first and second means, oscillator means for connecting said oscillator means to said input means, means connected in said first means, amplifying and rectifier means in said second means to produce polar output signals corresponding to said marking current by producing a positive polarity signal on a mark condition and a negative polarity signal on a no mark condition and means for connecting said output means to said amplifying and rectifier means.

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**3,170,038**
**BIDIRECTIONAL TRANSMISSION AMPLIFIER**
**Lloyd A. Johnson, Richfield, and Donald E. Marpe, Bloomington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Aug. 1, 1961, Ser. No. 128,549**
**11 Claims. (Cl. 178—71)**

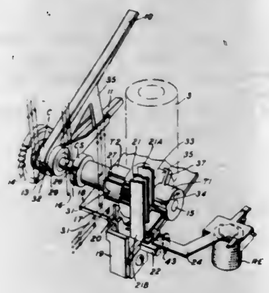
1. A transmission amplifying system comprising: first and second amplifying means; said first and second amplifying means each including input means, output means, and input/output means; a transmission line coupling said first amplifying means input/output means to said second amplifying means input/output means; said second amplifying means output means responsive to a first predetermined input signal impressed upon said first amplifying means input means; said first amplifying means output means responsive to a second predetermined input signal impressed upon said second amplifying means input means; said first amplifying means further including a nonsaturating transformer means including at least three winding means; first winding means; second winding



means coupled to said output means; third winding means coupled to said input/output means; an active element having at least three electrodes designated the base electrode, the collector electrode, and the emitter electrode; said first winding means coupling said collector electrode to a first voltage source; means coupling said emitter electrode to a second voltage source; means coupling said base electrode to said input means; said input means including at least one input terminal.

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**3,170,039**
**COIN TELEPHONE CONTROL APPARATUS**
**Ernest R. Andregg and Lawrence A. Strommen, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Sept. 18, 1962, Ser. No. 224,353**
**10 Claims. (Cl. 179—6.3)**

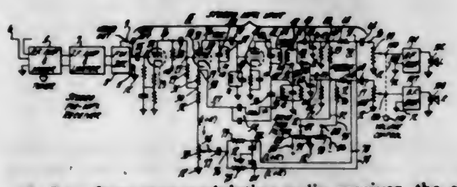


4. Coin telephone control apparatus, compatible with a central office positive start potential, said apparatus comprising, in combination, means responsive to the deposit of a coin for storing indicia of the value of said coins, means responsive to the deposit of a coin or coins equal in value to a preselected initial rate for removing said indicia from said storing means, means responsive to said indicia removing means for generating tone pulse signals for transmission to said central office indicative of the value of deposited coins in terms of the number of pulses and in terms of pulse repetition rate, said coin lelephone including dial pulse generating means, means responsive to the inception of operation of said indicia removing means for enabling said dial pulse generating means, means responsive to the operation of said enabling means for maintaining said enabling means in the operated condition after the removal of said indicia from said storing means, means responsive to a signal from said central office for disabling said enabling maintaining means, whereupon said dial pulse generating means are disabled, and means for selec-

tively changing the value of said preselected initial rate in precise incremental steps, each of said steps being indicative of the value of a minimal deposit coin.

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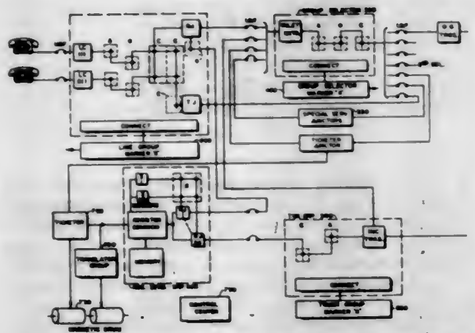
**3,170,040**
**FM STEREOPHONIC MULTIPLEX RECEIVER HAVING AUTOMATIC DISABLING MEANS FOR THE SUBCARRIER CHANNEL**
John H. O'Connell, Franklin Park, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 27, 1961, Ser. No. 141,104
10 Claims. (Cl. 179—15)



1. In a frequency-modulation radio receiver, the combination of, means providing a main modulation signal channel and a subcarrier signal channel, a main frequency-modulation detector having a multiplex signal output connection with each of said channels to apply received sum and difference modulation signal components thereto, a reverse-biased diode detector in the subcarrier signal channel for cutting off the signal flow therethrough in the absence of stereo signal information and for effecting automatic operation of the main channel for monophonic signal translation, and means for applying a received subcarrier signal to said diode detector of a magnitude to overcome the reverse bias and to permit subcarrier signal translation through said diode detector and the subcarrier signal channel.

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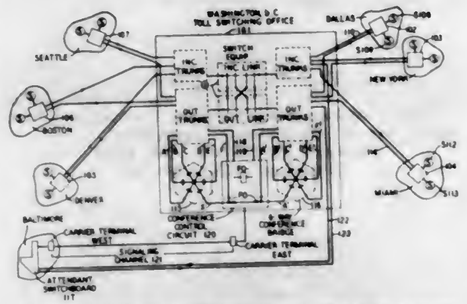
**3,170,041**
**COMMUNICATION SWITCHING SYSTEM**
Kore K. Spellner, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 16, 1962, Ser. No. 230,887
15 Claims. (Cl. 179—18)



1. A communication switching system comprising a plurality of switching groups, each group including a plurality of crosspoint switching devices arranged in coordinate matrices;
marker apparatus for controlling the establishment of connections through said crosspoint matrices;
register-sender apparatus comprising register means and a plurality of senders;
translating means common to said plurality of switching groups, and means for transferring information directly between the register means and the translator means;
means including the marker apparatus, responsive to a calling line service request signal for identifying the calling line and connecting it to the register means,
means for transmitting the information identifying the calling line from the marker apparatus to the register means for registration therein;
means for registering in said register means the called line directory number as transmitted over the calling line and for translating, under the control of said translating means, at least a part of said directory information into corresponding equipment location information;
means including one of the senders for transmitting said equipment location information to said marker apparatus;
and means including the marker apparatus for completing a connection between the calling and called lines.

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**3,170,042**
**CONFERENCE ARRANGEMENTS**
Henry A. Giroud, New York, N.Y., and Burton McKim, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 14, 1962, Ser. No. 244,746
16 Claims. (Cl. 179—27)



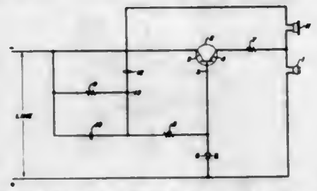
9. In a meet me communication switching system, a first switching office comprising a plurality of individual controlled-access multichannel conference circuits, a plurality of stations, and switching means selectively controlled by any of said stations for connecting said station to a channel of a selected one of said conference circuits when said channel is available for station connection; a second remote office; and control means at said first office responsive to first signals from said remote office for rendering said channels available to said stations, responsive to second signals from said remote office for rendering said channels unavailable to said stations, and responsive to third signals from said remote office for connecting said individual conference circuits together; said remote office comprising means inaccessible to said substations for sending first and second control signals to said first office control means for controlling conference channel availability and for sending third signals to said first office control means for connecting said conference circuits together.

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**3,170,043**
**TELEPHONE ANTI-SIDETONE CIRCUIT**
Lawrence A. Hohmann, Jr., Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 29, 1961, Ser. No. 141,775
11 Claims. (Cl. 179—81)

1. A subscriber telephone circuit comprising transmitting means, amplifying means, and a telephone line, first and second circuit means respectively joining said amplifying means to said telephone line and said transmitting means so that said amplifying means are disposed intermediate said transmitting means and said line, impedance means consisting of parts effectively linked only

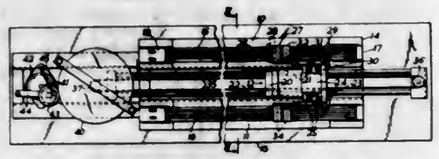




by conduction, said impedance means having terminal points bridged across said line, and receiving means bridged between said second circuit means and a point situated on said impedance means intermediate said terminal points.

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**3,170,044**
**MANUFACTURE OF MAGNETIC RECORDS**
Josef Groak, Ashley Cottage, 32 Ashley Lane, London NW. 4, England
Filed Oct. 5, 1959, Ser. No. 844,493
Claims priority, application Great Britain, Oct. 15, 1958, 32,969/58
12 Claims. (Cl. 179—100.2)

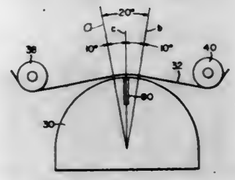


10. Apparatus for rapidly making a duplicate of a magnetic record having a continuous record of information divided into a plurality of parallel arranged component tracks presenting said information in sequence through said tracks comprising, in combination, rotatable means for supporting said magnetic record in a loop and for moving said magnetic record around a looped path, a first set of transducer heads disposed in fixed position across said path for cooperation with said magnetic record, a linear bed for supporting a magnetic recording medium, a carriage movable parallel to said bed, a second set of transducer heads carried by the carriage in spaced apart relationship across the width of the bed for cooperation with said recording medium, a plurality of amplifiers each having an input and an output, leads connecting said first transducer heads to the inputs, respectively, of said amplifiers, further leads connecting said outputs of said amplifiers to said second transducer heads, respectively, and motor means for so driving said loop around said looped path and for so driving said carriage backwards and forwards that said first transducer heads scan said magnetic record and said second transducer heads lay down parallel magnetic tracks corresponding to and duplicating said component tracks of the magnetic record.

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**3,170,045**
**HYDRODYNAMICALLY AIR LUBRICATED MAGNETIC TAPE HEAD**
Heard K. Bannister, Rhinebeck, and Vladimir Nejezchleb, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 6, 1960, Ser. No. 74,150
18 Claims. (Cl. 179—100.2)

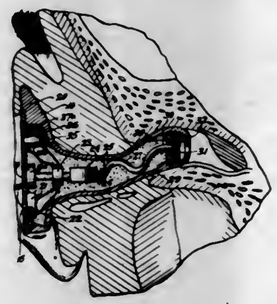
1. In a tape transport adapted to process therein a tape, a tape processing head having a curved surface, said head having a tape processing zone at a point on the surface thereof, a tape in said transport, tape guide means adapted to maintain an angle of wrap of said tape about said curved surface which is within the range of .25°–10° at opposite sides of said processing zone, means for feeding said tape over the curved surface of said head past said processing zone at a sufficiently high velocity to



draw in enough air to urge said tape from the surface of said head, and means for applying a tension to said tape while said tape is being fed so as to urge said tape toward the surface of the head and to maintain an air film of substantially constant thickness between the tape and the surface of the head.

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**3,170,046**
**HEARING AID**
Leslie P. Leale, Hillsborough, Calif., assignor to Earmaster, Inc., a corporation of California
Filed Dec. 5, 1961, Ser. No. 157,144
4 Claims. (Cl. 179—107)

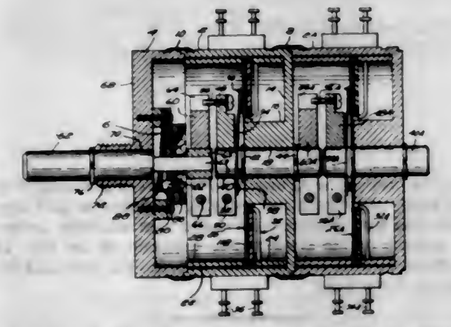


1. A self-contained hearing aid comprising:
a unitary, electro-formed, metallic housing having thin walls of substantially uniform wall thickness, said unitary housing comprising a main body portion conforming substantially to the concha area of the ear and having means dependent from said main portion for frictionally engaging the hollow of the ear formed by the antihelix and concha and an auditory canal portion formed to fit snugly within the auditory canal of the ear, the outer end of the main body portion having an opening to provide access to the interior of the housing;
a coverplate removably attached to said housing totally enclosing said housing, said plate having a slot located therein;
a pair of opposed resilient metal electrical contacts mounted on said cover in spaced relationship on the opposite sides of said slot;
a removable battery carrier fitted within said slot, said carrier having a recess therein for holding an electrical battery;
a microphone attached to said coverplate;
an amplifier circuit directly connected to said microphone; and
a receiver connected only to said amplifier circuit and to said microphone.

### 3,170,047
## ENCAPSULATED ROTARY SWITCHES

William J. Mairs, Waltham, Richard W. Schneider, Acton, and Richard D. Ward, West Acton, Mass., assignors to Acton Laboratories, Inc., a corporation of Massachusetts

Filed Feb. 1, 1961, Ser. No. 86,476
6 Claims. (Cl. 200—11)



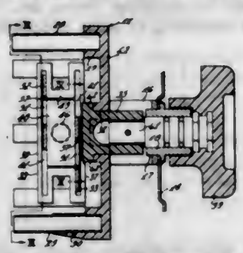
1. A long-life rotary switch comprising a housing having an end wall and a shaft journaled in the end wall, an annular capsule contact assembly within the housing, means holding said capsule contact assembly in fixed spaced relation with said end wall, said capsule contact assembly held solely at its outer edge, said capsule contact assembly comprising (1) a rigid annular non-planar conductive switch disk having a plurality of conductive switch segments on one face thereof, and (2) a flexural annular contact laminate overlying one side of said switch disk in parallel spaced relation to the said switch segments, means securing the inner and outer edges of said contact laminate to the corresponding edges of said switch disc, said contact laminate comprising a conductive inner layer and a resilient non-conductive outer layer, a plurality of terminals on the outside of said housing, a plurality of leads disposed in the space between said capsule contact assembly and said end wall, said leads each connected at one end to one of said switch segments and at the other end to one of said terminals an additional lead connected at one end to said inner conductive layer of said contact laminate and at the other end to another of said terminals, said additional lead also disposed in the space between said capsule contact assembly and said end wall, and a pressure piece attached to said shaft and rotatable therewith, said pressure piece having a portion engaging said outer non-conductive layer of said contact laminate and moveable relative thereto for causing said contact laminate to engage each switch segment in turn as said shaft rotates.

### 3,170,048
## MULTICONTACT NO LOAD ELECTRIC SWITCH

Charles E. Glatz and John M. Anderson, Pittsburgh, Pa., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Mar. 3, 1961, Ser. No. 93,090
7 Claims. (Cl. 200—11)

1. A multicontact switch comprising: a stationary insulating plate; a plurality of parallel and circular arranged contact posts extending axially from said plate; an electrical insulating contact housing rotatably mounted on said plate on an axis parallel to said posts and centrally located within the space defined by said posts, said housing having a pair of diametrically disposed electrical insulating contact holders; a pair of disk contacts mounted on each of said holders in axially spaced planes perpendicular to said posts and parallel to said plate and intersecting said posts, each said disk having a displaceable axis of rotation and being offset to each be in a bridging position with a common post and a different one of the two adjacent posts, spring means for urging said contacts

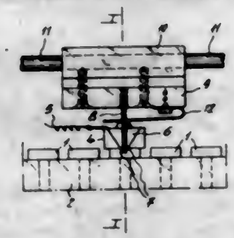


against said posts; and handle means for rotating said housing.

### 3,170,049
## ELECTRIC SLIDING-CONTACT SWITCH WITH NON-TILT OPERATION OF SLIDING CONTACT

Jean Clavel, Nanterre, Seine, France, assignor to L'Electro - Commutation (Elcom), Zainvilliers-Vagney, Vosges, France, a company of France

Filed Feb. 3, 1960, Ser. No. 6,473
Claims priority, application France, Feb. 13, 1959, 786,650, Patent 1,225,070
4 Claims. (Cl. 200—16)



1. An electric sliding-contact switch having a conductive bridge incorporating at least one moving-contact stud, comprising a plurality of fixed contact studs forming a track, a driving member, means for supporting said moving-contact stud for sliding movement thereof along said track by said driving member, the contact plane of said moving-contact stud being larger than the contact area of any one of said fixed contact studs whereby a part of said moving-contact stud projects beyond the plane of contact when said moving-contact is in a position over a fixed contact stud, said projecting part being shaped with a recess making an acute angle with said plane of contact to form an edge in the said plane, an operating member secured to said driving member and passing through said recess beyond said plane of contact to apply pressure to said edge on movement of said driving member, and spring means between said driving member and said moving-contact member to urge said moving-contact member against a fixed contact member, said moving-contact member being otherwise free of said driving member.

### 3,170,050
## SAFETY GUARD FOR ELECTRIC SWITCH

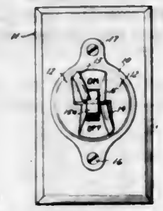
John Buturuga, 2201 Nostrand Ave., Brooklyn 10, N.Y.

Filed July 17, 1961, Ser. No. 124,669
5 Claims. (Cl. 200—42)

1. A safety bracket adapted to be mounted over a double throw electrical switch having a toggle arm having two positions corresponding to On and Off respectively, said bracket comprising a plate with a central aperture through which toggle arm extends, said plate having projections on opposite sides of the aperture and latches spring mounted in the projections and said latch biased to a position blocking accidental movement of the toggle



arm from the particular one of said two positions in which the arm is in, said latches being movable to positions clearing said aperture and said projections protecting the aperture and arm, said latches and said arm cooperat-

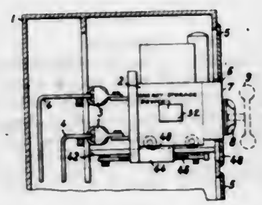


ing in a manner whereby the arm must be moved manually at the same time the appropriate latch must be released manually in order to permit the arm to be moved from one position to the other.

### 3,170,051
## SWITCH OPERATING ARRANGEMENT UTILIZING ENERGY STORAGE MEANS

Heinz Fehling, Einfeld, Neumunster, and Friedrich Bösoldt, Neumunster, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Feb. 19, 1962, Ser. No. 174,931
Claims priority, application Germany, Feb. 21, 1961, L 38,253/21C
1 Claim. (Cl. 200—50)



In a switch box installation including a housing having a front wall, the improvement comprising:

(*a*) a switch-gear means movable between an "open" and a "closed" position, said switch-gear means being removably disposed in a switch box installation and including means for storing energy to aid in moving said switch-gear means to the open position;

(*b*) switch control shaft means projecting from one side of said switch-gear means and connected to move said switch-gear means between said positions;

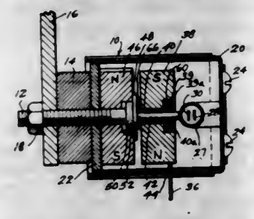
(*c*) two control knobs on said shaft of different size and shape, the larger of said knobs being removable and the smaller knob being arranged so that only the torque sufficient for actuating said energy storing means to move the switch-gear means to the open position can be exerted by this knob; and

(*d*) drive spindle means in said installation operatively associated with said switch-gear means to at least partially withdraw the switch-gear means from the installation upon movement thereof, the front wall of said installation defining an access opening, an end of said spindle means being constructed for detachable engagement with said larger knob for operating the spindle means, said spindle means end being disposed within said installation and in alignment with said opening.

### 3,170,052
## MAGNETICALLY RESTORABLE SENSING SWITCH

Eugene Hajos, Chicago, Ill., assignor to Hydraxtor Company, Skokie, Ill., a corporation of Illinois

Filed Aug. 17, 1961, Ser. No. 132,137
15 Claims. (Cl. 200—61.41)



1. A sensing switch including switch means having contact elements, a sensing element engaged by traveling articles and pivotally movable in response to the passage of articles past said sensing element, means effecting movement of said contact elements from an initial condition thereof in response to pivotal movement of said sensing element including a magnet pivotally movable with said sensing element, and magnetic restoring means for restoring said sensing element to said initial position subsequent to said pivotal movement of said sensing element away from an initial condition, after the passage of an article thereby, comprising a second magnet mounted adjacent said first magnet and having an opposite polarity to that of said first magnet.

### 3,170,053
## REED CONTACT ARRANGED WITHIN A PROTECTIVE ENVELOPE

Rudolf Scheidig, Stuttgart-Feuerbach, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 853,774, Nov. 18, 1959. This application Oct. 1, 1963, Ser. No. 313,043
Claims priority, application Germany, Dec. 6, 1958, St 14,534
2 Claims. (Cl. 200—87)

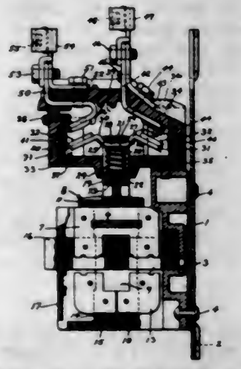


1. A reed contact assembly for controlling the continuity of at least one electrical circuit responsive to externally applied magnetic fields comprising a stationary contact of magnetic material and a movable contact sealed in a tube, said movable contact including a first blade of non-magnetic material and a second blade of magnetic material, said first and second blades being joined at one end to form a resilient bifurcated structure, means comprising the tip of the other end of said first blade for providing an electrical circuit through the wall of said tube and a fixed end mount for said resilient structure, the other end of said resilient structure being free to move, the tip of the other end of said second blade being positioned adjacent said stationary contact, whereby substantially all of the flux in said magnetic field is compressed in the air gap between said stationary contact and said second blade and substantially none of said flux is shunted through said first blade, an elongated contact member attached to and supported by the other end of said second blade, said elongated contact member extending away from said blade at a substantially large angle approximating 90° with respect to the length of said bifurcated structure, said elongated contact member making or

breaking an electrical circuit through said stationary contact depending upon whether said reed contact is normal or is operated, the other end of said second blade being positioned near a terminal leading through said wall, said elongated contact extension having a first portion positioned adjacent said stationary contact for movement into and out of electrical contact with the stationary contact and another portion movable into and out of electrical contact with said terminal.

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3,170,054
**ELECTROMAGNETIC SWITCH**
Leland E. Lawrence, Wauwatosa, and John L. Haydu, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 9, 1961, Ser. No. 116,156
11 Claims. (Cl. 200—147)

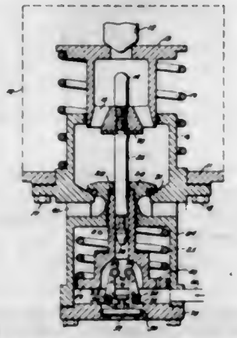


10. In a switch contact assembly the combination comprising: a fully enclosed arc chamber having side walls, a top wall and a bottom wall; a pair of stationary contacts entering the chamber and presenting contact faces spaced from one another at the front and rear top of the chamber; a movable contact actuator entering an opening in the bottom wall with a close fit; a movable contact with a spanner carried by said actuator and bridging between said stationary contacts that is movable from a lower open position toward said stationary contacts for engagement therewith, said spanner having contact ends in alignment with said stationary contact faces; a cooling shield that is not electrically connected to the movable and stationary contacts and is of generally U-shape set on end and encircles the sides and outer ends of each stationary contact and associated spanner end together with the gap therebetween; said shield being spaced from the sides and outer ends of its associated contacts at a distance equal to approximately 0.4 to 1 times the maximum gap between the movable and stationary contacts; and the bottom of said chamber being spaced immediately beneath the movable contact spanner when in open position and immediately beneath the lower ends of each cooling shield.

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3,170,055
**LATCHING MEANS FOR AIR-BLAST CIRCUIT BREAKER**
Hasken Forwald, Ludvika, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Aug. 28, 1961, Ser. No. 134,461
Claims priority, application Sweden, Sept. 6, 1960, 8,464/60
5 Claims. (Cl. 200—148)

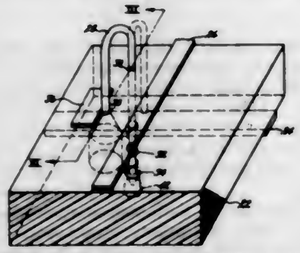
1. In an air blast circuit breaker, a high pressure first chamber, a stationary contact within the first chamber, said first chamber having means forming a second chamber having a first opening into the first chamber and a second opening to free air, a blast valve normally closing said second opening, a movable contact movably mounted in the second chamber for movement between engaged and disengaged positions with respect to the stationary contact, a spring biasing said movable contact to engaged position, compressed-air-responsive means to move the blast valve to open position, means responsive to the opening of said blast valve to move the movable contact



to disengaged position, gripping means for engaging the movable contact and holding it in disengaged position, and pressure-responsive means connected to the pressure in said compressed-air-responsive means for exerting a force on said gripping means tending to hold them in gripping position, the holding power of said gripping means being proportional to the force exerted thereon by said pressure-responsive means.

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3,170,056
**PRINTED CIRCUIT BOARD PROVIDED WITH A JUNCTION CIRCUIT BREAKER HAVING A SLIDABLE AND ROTATABLE ARMATURE**
Carl E. Keene, 13809 East Ave. G-8, Lancaster, Calif.
Filed Oct. 26, 1962, Ser. No. 233,492
2 Claims. (Cl. 200—166)
(Granted under Title 35, U.S. Code (1952), sec. 266)

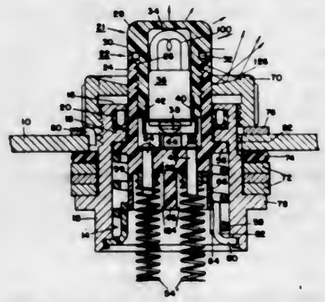


1. A junction circuit breaker, a printed circuit board, said printed circuit board comprising two conductors separated from each other by an insulating card, a U-shaped armature having legs of unequal length, the longer leg of said armature extending through said insulation card and one of said conductors, said armature being rotatable and slidable in said insulating card such that the shorter leg of said U-shaped armature may be engaged with the other of said conductors, spring means on said longer leg of said U-shaped armature for biasing said armature downwardly against said other conductor, retaining means for securing said spring on said armature, a hole through said insulating card for receiving said shorter leg of said U-shaped armature when said armature is rotated from its contact with said other conductor to circuit open position, and means for producing light on one side of said insulating card such that, when said armature is in circuit closed position, light is allowed to pass through said hole and in a circuit opened position the passage of light is blocked.



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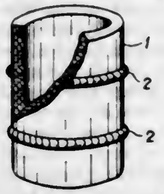
3,170,057
**ILLUMINATED PUSH PUTTON SWITCH**
Hugh Kane, Normal, and Robert A. Pusch, Le Roy, Ill., assignors to General Electric Company, a corporation of New York
Filed Dec. 22, 1960, Ser. No. 77,748
7 Claims. (Cl. 200—167)



1. An illuminated switch actuator comprising a base having an opening and a reflecting surface around said opening, and a lamp housing mounted in the opening of said base for movement to different positions in and out of said base, said housing including a transparent hollow cylinder having a threaded portion, means for mounting and electrically connecting a lamp in the housing adjacent said threaded portion, and a transparent cap having a threaded portion in threaded engagement with the threaded portion of said cylinder, and having an unthreaded portion, said unthreaded portion of said cap directing light from a lamp in the housing to said reflecting surface with said housing in one of said positions, and one of said threaded portions refracting light from a lamp in the housing to said reflecting surface with said housing in the other of said positions, the materials of said cylinder and said cap having different indices of refraction.

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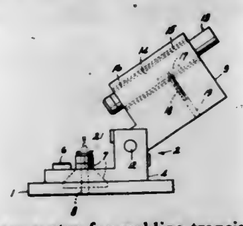
3,170,058
**METHOD OF REINFORCING GRAPHITE ARTICLES BY DEPOSITING FUSED METALS**
Yoshio Ando, Tokyo, and Tadato Fujimura, Tokai-mura, Naka-gun, Japan, assignors to Japan Atomic Energy Research Institute, Tokyo, Japan, a corporation of Japan
Filed Apr. 26, 1962, Ser. No. 190,338
Claims priority, application Japan, June 16, 1961, 36/21,127
2 Claims. (Cl. 219—76)




1. A method of reinforcing graphite articles, more particularly graphite tubes, by depositing fused metallic alloy which comprises depositing iron-nickel alloy containing 5 to 50% of nickel and the balance substantially of iron in bold relief on the surface spirally around said graphite tube by means of an electric arc to firmly amalgamate the fused and deposited iron alloy with the surface of said graphite tube.

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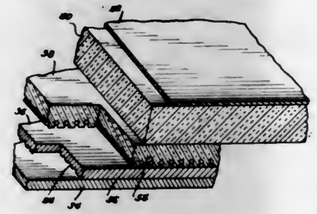
3,170,059
**WELDING APPARATUS**
George T. De Moss, Wyomissing, Pa., assignor to Western Electric Company, Incorporated, a corporation of New York
Filed Oct. 4, 1961, Ser. No. 142,916
5 Claims. (Cl. 219—86)



1. Welding apparatus for welding transistor can-header assemblies comprising a turntable indexable to a plurality of positions, a plurality of pairs of electrode support members mounted thereon, with one support member of each said pair being pivotally mounted with respect to the other, a hollow electrode mounted within each of the electrode support members so as to enable the insertion of a transistor can-header assembly between the electrodes of each said pair of electrode support members, and means cooperatively associated with the turntable to successively energize the electrodes mounted within each said pair of electrode support members and eject welded transistor can-header assemblies therefrom.

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3,170,060
**HIGH STABILITY TEST OVEN**
Kenneth R. Oliver, Jr., and Henry Lewis McKimmy, Newport News, Va., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 2, 1961, Ser. No. 149,634
9 Claims. (Cl. 219—390)



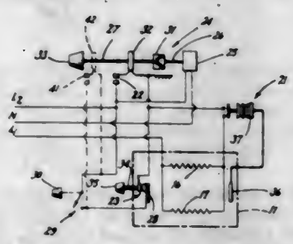
8. In an oven, a wall assembly comprising an inner and an outer plate means, said inner plate means being formed to provide a continuous generally parallel-groove passageway on one interior surface thereof, a block means arranged between the inner and outer plate means, said block means being formed to provide a plurality of generally parallel-groove means which extend transversely of said continuous generally parallel-groove passageways in said inner plate means at an angle not less than ten degrees, and electric heating elements arranged in said block groove means.

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3,170,061
**HEATING APPARATUS**
Edward P. Colalillo, Cherry Hill, N.J., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 7, 1962, Ser. No. 178,170
3 Claims. (Cl. 219—413)

1. In cooking range apparatus, the combination of a cooking chamber, heating means for the latter, and means for controlling energization of said heating means to obtain a higher and a lower average temperature period in

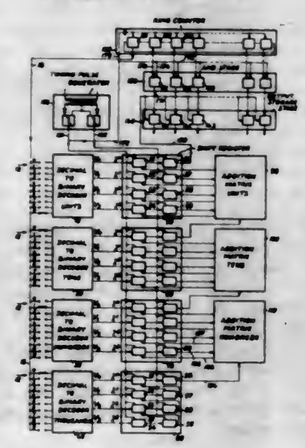
the cooking chamber, said last recited means comprising: a timer-actuated switch and a first thermostatic switch connected in series electrical circuit with one another and controlling energization of said heating means, said first thermostatic switch having opening and closing temperatures providing for said higher average temperature in said cooking chamber when said timer actuated switch is closed; a second thermostatic switch connected in parallel



electrical circuit with said timer actuated switch and having opening and closing temperatures below both the opening and closing temperatures of said first thermostatic switch and providing for said lower average temperature in said cooking chamber when said timer-actuated switch is opened; and a selectively actuatable switch disposed in series electrical circuit with said second thermostatic switch and in parallel electrical circuit with said timer actuated switch.

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**3,170,062**
**COMPUTER**
**Peter Boose and Elmar Götz, Berlin-Frohnau, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany**
**Filed July 29, 1960, Ser. No. 46,133**
**Claims priority, application Germany, Aug. 4, 1959, L 33,879**
**3 Claims. (Cl. 235—155)**



1. Decimal-to-binary converter comprising, in combination:

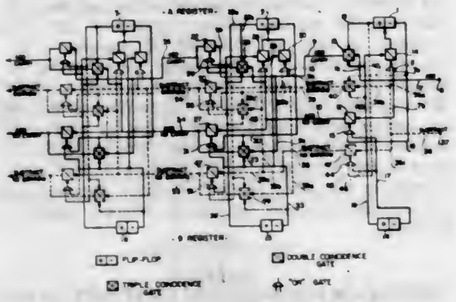
(*a*) decimal-to-binary encoding means for encoding a binary number;

(*b*) an *n*-decade shifting register connected to said encoding means for dividing the binary encoded decimal number, each of said shifting register decades including a series of storage elements and a series of intermediate storage elements, each of said storage and intermediate storage elements constituting a stage corresponding respectively to a binary digital position of a binary number, said storage elements being connected to a first common input and said intermediate storage elements being connected to a second common input, whereby a pulse appearing on said first common input shifts binary digit information stored in said storage elements to said intermediate storage elements and a pulse appearing on said second common input shifts said information back to said storage elements, said binary digits being shifted downwardly by one digit position upon being shifted from said intermediate storage elements to said storage elements; and

(*c*) addition matrix means having (*n*—1) decades, each of said addition matrix decades being connected to a respective one of said shifting register decades except the highest-order shifting register decade for controlling the respective shifting register decade and to be controlled thereby, each of said matrix decades having a control input connected to the lowest-order stage of the shifting register decade of the next-highest order, said connections between said matrix decades and said shifting register decades being the sole connection to and from said matrix decades.

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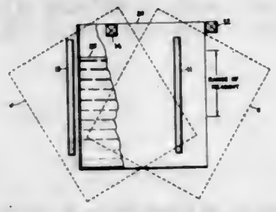
**3,170,063**
**HIGH SPEED BINARY ADDER AND/OR SUBTRACTOR CIRCUIT**
**Joseph A. Webb, Sr., Atlanta, Ga. (735 Rasada St., Satellite Beach, Fla.)**
**Filed Dec. 14, 1960, Ser. No. 75,801**
**12 Claims. (Cl. 235—175)**



1. A binary digital computer circuit comprising a first and a second register each having a plurality of bi-stable means, each bi-stable means representing and indicating one stage of a binary number, each stage of bi-stable means in both said first and second registers interconnected together by a circuitry means, a plurality of pulse lines interconnecting the circuitry means of each stage of bi-stable means with adjacent stages, and at least one pulse line leading into the first stage circuitry means whereupon passage of a command pulse into the first stage circuitry means over said line will pass through each stage, the passage from one stage to a subsequent one through only one of the interconnecting pulse lines with said command pulse passage through each binary stage changing the binary number in the first register by the amount of the binary number in the second register while concurrently changing the binary status of the first register bi-stable means in each appropriate stage determined by the interconnecting pulse line carrying the command pulse into the stage and the binary status of the second register bi-stable means in that stage, the interconnecting pulse line the command pulse passes through determined by the binary status of the pair of bi-stable means in each stage and the interconnecting pulse line that carried the pulse into the stage.



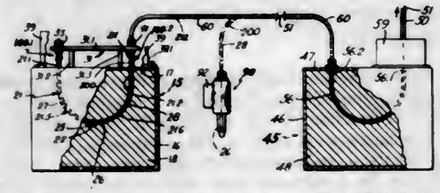
**3,170,064**
**LIQUID LEVEL MEASURING SYSTEM**
**Philip T. Martin, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio**
**Filed May 26, 1961, Ser. No. 113,008**
**4 Claims. (Cl. 250—43.5)**



1. In combination with a liquid storage vessel to be mounted on a carrier subject to movement such as roll, pitch, yaw or accelerations, in a number of directions, to cause the liquid surface to have three-dimensional movement, wherein the fill level of said liquid may vary from a low level to a high level as observed in the absence of said movement and while said vessel occupies a normal upright position, apparatus for measuring the true value of said fill level in the presence or absence of said movement, said apparatus comprising three elongated radiation detectors spaced around the periphery of said vessel and each extending from above said high level to below said low level, means located above said high level for irradiating those portions of said detectors which are above the surface of said liquid whereby each of said detectors generates a signal indicative of the height of a respective point in the plane of the surface of said liquid, and means for combining the signals from said three detectors to produce a resultant signal indicative of said true value of said fill level.

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**3,170,065**
**METHOD FOR MANIPULATING RADIOACTIVE MATERIAL**
**Robert J. Prest, Concord, Mass., assignor to Technical Operations, Incorporated, Arlington, Mass., a corporation of Delaware**
**Original application May 15, 1956, Ser. No. 585,081, now Patent No. 2,976,423, dated Mar. 21, 1961. Divided and this application Feb. 8, 1961, Ser. No. 87,938**
**5 Claims. (Cl. 250—106)**



1. Method of exchanging sources of radioactive material in a first shielding means containing a first source of radioactive material, comprising the steps of

(1) providing the second shielding means adapted for receiving said first source of radioactive material,

(2) providing third shielding means containing a second source of radioactive material,

(3) providing conduit means between said first and second shielding means,

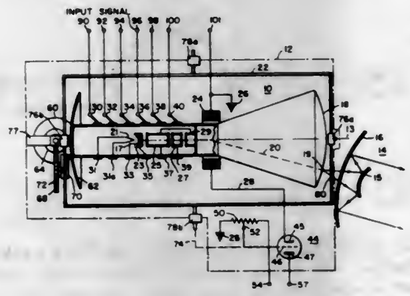
(4) transporting said first source through said conduit means from said first shielding means to said second shielding means,

(5) providing conduit means between said first and third shielding means, and

(6) transporting said second source through said conduit means from said third shielding means to said first shielding means.

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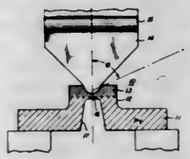
**3,170,066**
**OPTICAL COMMUNICATIONS TRANSMITTER**
**Jon W. Ogland, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Dec. 18, 1961, Ser. No. 159,881**
**5 Claims. (Cl. 250—199)**



1. A transmitter for optical communications comprising in combination: a cathode ray tube having a longitudinal axis and including a fluorescent screen; means operably connected to said cathode ray tube for producing a point source of light at a predetermined spot on said fluorescent screen; means operable with said cathode ray tube for maintaining the position of said point source substantially stationary in space; means connected to said cathode ray tube for simultaneously axially rotating and tilting said cathode ray tube about said longitudinal axis; and means located adjacent said point source for directing the light emanating therefrom to an external location.

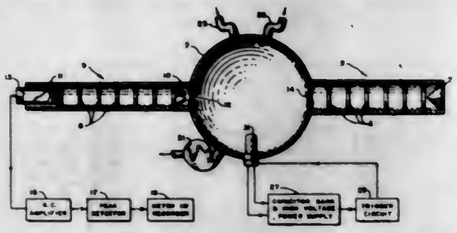
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**3,170,067**
**SEMICONDUCTOR WAFER HAVING PHOTO-SENSITIVE JUNCTION**
**Lynden U. Kibler, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed June 11, 1962, Ser. No. 201,689**
**7 Claims. (Cl. 250—211)**



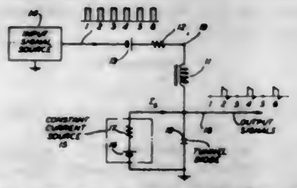
1. A signal translating device responsive to signals in the optical range comprising a germanium semi-conductor wafer substantially of one conductivity type having a mesa portion on one surface thereof, said mesa portion comprising a high resistivity epitaxially-deposited germanium layer having a thickness of between 4 and 10 microns, said layer having therein a small area pn junction located approximately one-half way through the thickness of said layer, the opposite surface of said wafer having a cavity therefrom in alignment with said small area pn junction, said cavity extending to just short of the boundary of said high resistivity layer, thereby defining an active detecting region between said junction and the opposite boundary of said layer, the minority carrier lifetime, in said mesa portion being relatively high compared with that of the remainder of said wafer.

3,170,068
SPHERICAL CHAMBER FOR MEASUREMENT OF VISIBILITY
Andrew Patriw, West Belmar, and Helmut Weickmann, Interlaken, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 3, 1962, Ser. No. 164,204
4 Claims. (Cl. 250—228)
(Granted under Title 35, U.S. Code (1952), sec. 266)



4. An atmospheric visibility meter comprising a spherical chamber with highly diffusive reflective walls, means to draw a sample of the atmosphere into said chamber, means to omnidirectionally illuminate said atmospheric sample, and means to measure and record the amount of said illumination scattered along a diameter of said chamber.

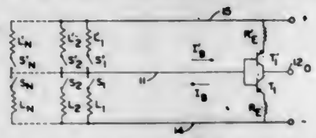
3,170,069
FREQUENCY-DIVIDING CIRCUIT
Reginald A. Kaenel, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 16, 1960, Ser. No. 76,378
2 Claims. (Cl. 307—88)



1. In combination in a frequency-dividing circuit, an inductor having a core exhibiting a rectangular hysteresis loop characteristic which includes maximum negative and positive remanent flux regions, a tunnel diode connected in series with said inductor, means for biasing said diode for monostable operation, means connected in series with said inductor-diode series arrangement for supplying thereto sets of pulses which step the flux condition of said core toward said maximum positive remanent flux region, only the last one of each set of pulses being effective to actually shift said core to its maximum positive remanent flux region and to trigger said diode to undergo a regenerative switching cycle, and constant current source means connected in parallel with said diode and responsive to said diode undergoing a regenerative switching cycle for causing a current flow through said inductor in a direction to reset said core to its maximum negative remanent flux region.

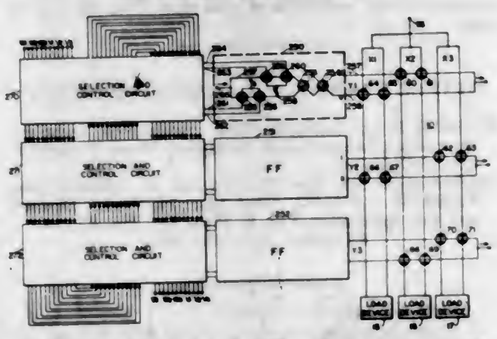
3,170,070
CURRENT DETECTING SYSTEM
Walter F. Schachard, Hingham, Mass., assignor to S. H. Couch Company, Inc., North Quincy, Mass., a corporation of Massachusetts
Filed Oct. 19, 1959, Ser. No. 847,219
1 Claim. (Cl. 307—88.5)

A transistor circuit comprising, first and second complementary transistors each having at least a base-emitter rectifying junction and an oppositely polarized emitter-collector rectifying junction, the bases of said transistors being connected together, the collectors of said transistors being connected together, first and second lines, first and second means respectively in series with said first and second transistor emitters and said first and second lines respectively for detecting emitter current of the respective transistors, means for maintaining said first and second lines at potentials relative to the potential on said connected together collectors so as to forward-bias said base-



collector junctions and reverse-bias said base-emitter junctions, first and second groups of loads, and switching means for selectively connecting each load from said first group in series with said first line and said connected-together bases and each load from said second group in series with the latter bases and said second line so that emitter current flows across a reverse-biased base-emitter junction in response to load current being drawn across the adjacent forward-biased base-collector junction.

3,170,071
ERROR CORRECTION DEVICE UTILIZING SPARE SUBSTITUTION
James H. Griesmer and John Paul Roth, Ossining, and Eric G. Wagner, New York, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 30, 1960, Ser. No. 18,601
10 Claims. (Cl. 307—88.5)



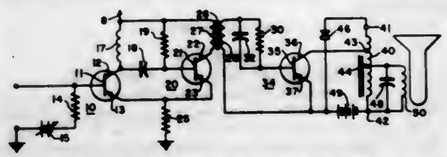

1. In a cryogenic data handling device having a plurality of component parts buried in a liquified gas bath, an error correction device including at least one spare part associated with each of the component parts and being identical in construction therewith, first means coupled to the component parts and the associated spare parts for substituting any spare part for any defective part, and second means coupled to the first means for operating the first means, said second means including a code-responsive device which in turn has component parts and associated spare parts, whereby a highly reliable data handling device is provided.

3,170,072
MULTIVIBRATOR FOR TELEVISION DEFLECTION CIRCUIT
Melbourne J. Hellstrom, Watchung, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1960, Ser. No. 70,567
1 Claim. (Cl. 307—88.5)

A deflection wave generator comprising in combination an asymmetrical astable emitter coupled multivibra-

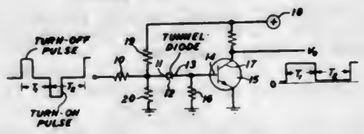


tor including first and second transistors, each having emitter, collector and base electrodes, said emitter electrodes being commonly connected, a point of reference potential, impedance means connected between said point and the commonly connected emitter electrodes to provide regenerative feedback between said second transistor to said first transistor, a source of operating potential connected at one end to said point, an inductive load impedance connected between said source and the collector electrode of said first transistor for storing reactive energy during intervals when said first transistor is conductive, a differentiation circuit comprised of a capacitor and a resistor connected in series in the order named between the collector of said first transistor and said source with the junction of said resistor and capacitor being connected to the base electrode of said second transistor, a reactive current pulse being applied from said load impedance to the base electrode of said second



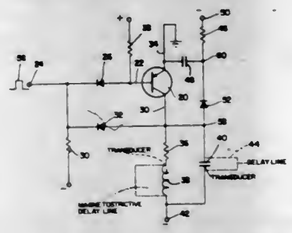
transistor when said first transistor is switched to its non-conductive state in response to the discharge of said capacitor so that the base electrode of said second transistor draws a substantially large base current to render the same highly and continuously conductive during periods immediately following cutoff of said first transistor until said first transistor is rendered conductive again, an output transformer connected between the collector electrode of said second transistor and said source of operating potential, means for applying a frequency controlling signal to the base electrode of said first transistor so that said multivibrator oscillates at a predetermined frequency to produce a substantially rectangular voltage waveform across said output transformer, and means coupled to said output transformer and responsive to said voltage waveform for applying a sawtooth waveform current to the deflection coils of a cathode ray tube.

3,170,073
NON-INVERTING BISTABLE CIRCUIT COMPRISING TUNNEL DIODE-TRANSISTOR COMBINATION, THE OUTPUT HAVING BOTH VOLTAGE AND CURRENT GAIN
Edward F. Kovanic, Livingston, N.J., and Richard H. Wachsman, New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 21, 1961, Ser. No. 125,812
2 Claims. (Cl. 307—88.5)




1. A bistable circuit comprising, in combination, a single voltage controlled negative resistance tunnel diode, having an anode and a cathode and a high impedance and a low impedance state, a transistor having a base electrode, an emitter electrode, and a collector electrode, said transistor being connected in the common emitter configuration and having substantially conducting and non-conducting states, output means connected to said collector electrode of said transistor means connecting said cathode of said tunnel diode to said base electrode of said transistor, a source of input pulses of positive and negative polarity connected to said anode of said tunnel diode, and a resistor connected across the base-emitter circuit of said transistor whose resistance is at least several times greater than the input impedance of said base-emitter circuit of said transistor in the conducting state so that said transistor conducts when an input pulse of a negative polarity causes said tunnel diode to assume its low input impedance state, but at least several times less than said input impedance of said transistor in the non-conducting state so that said transistor ceases to conduct when an input pulse of positive polarity causes said tunnel diode to assume its high impedance state.

3,170,074
HALF-CYCLE RINGING CIRCUIT
Howard H. Hill, Northboro, Mass., assignor to Computer Control Company, Inc., Framingham, Mass., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,259
7 Claims. (Cl. 307—88.5)




6. An electronic apparatus for driving with return-to-zero pulses an acoustic delay line transducer having shunt capacitance, said apparatus comprising in combination:
an unsaturated unit transistor switching amplifier normally base biased into conduction and being actuatable to a non-conduction state by application of one of said pulses to said base;
a resonant ringing circuit including said capacitance in parallel with a series inductor and resistor, and being connected between a first source of potential and one of the collector and emitter terminals of said transistor; said resonant circuit being actuable to oscillate by the change of said amplifier from its conductive to its non-conductive state;
a second resistor and second capacitor in series forming an integrating network, said second resistor being connected to a second source of potential and said second capacitor being connected to the other of said collector and emitter terminals;
a diode for coupling said circuit and said network, and being connected between said second resistor and second capacitance to said one of said collector and emitter terminals, the values of said resistors, capacitances, inductor and potentials being selected for forward biasing said diode during conduction of said amplifier, for reverse biasing said diode just after said amplifier is actuated to said non-conductive state, and for again forward biasing said diode just before the end of the first half cycle of said oscillation of said resonant circuit.

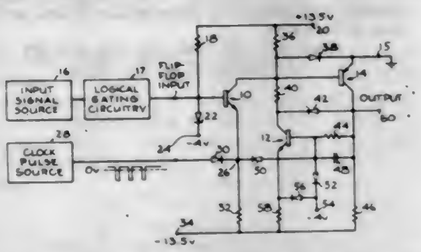
3,170,075
DELAY FLIP-FLOP CIRCUIT
Robert N. Mellott, Northridge, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed July 24, 1962, Ser. No. 212,023
4 Claims. (Cl. 307—88.5)

3. In combination with a flip-flop circuit including first and second complementary type transistors, each having

an emitter, a collector, and a base and wherein first means are provided coupling the collector of said first transistor to the base of said second transistor for rendering said second transistor nonconductive when said first transistor is nonconductive and wherein second means are provided coupling the collector of said second transistor to the base of said first transistor for rendering said first transistor conductive when said second transistor is conductive and wherein third means are provided respectively, coupling said first and second transistor emitters to sources of reference potential, an input circuit for respectively controlling said first and second transistors, said input circuit comprising:

input signal source means capable of selectively providing first and second output signals;

clock pulse source means for periodically providing clock pulses;




a third transistor having an emitter, a collector, and a base;

means applying said input signal source means output signal to said third transistor base and said clock pulses to said third transistor emitter;

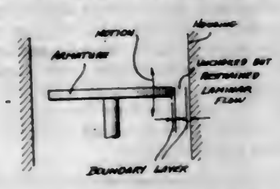
said third transistor being rendered conductive in response to said first output signal and one of said clock pulses;

means connecting said third transistor emitter to said first transistor base for rendering said first transistor nonconductive in response to one of said clock pulses when said third transistor is nonconductive; and

means connecting said third transistor collector to said second transistor base for rendering said second transistor conductive in response to one of said clock pulses when said third transistor is conductive.

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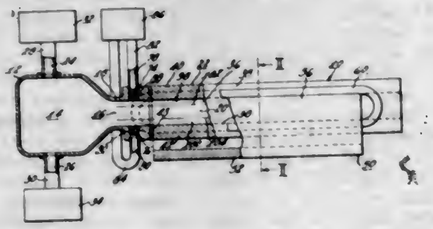
**3,170,076**
**ACCELEROMETER**
**Thomas Wing, New Brunswick, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey**
**Filed Nov. 1, 1962, Ser. No. 234,776**
**4 Claims. (Cl. 310—8.4)**




1. An accelerometer comprising a base, means for securing the base to an object to be vibrated for vibrating the base in accordance with the vibrations of the objects, a substantially circular, disc-shaped armature centrally supported by the base and flexed about its center toward and away from the base in accordance with the vibrations imparted to the base, a thin piezoelectric element provided with electrodes on the faces thereof and secured in face abutting relation to the armature and stressed in accordance with the flexing of the armature for producing electrical output signals at the electrodes in accordance with said vibrations, a housing sealed to the base and having a substantially cylindrical cavity enclosing and substantially concentrically encompassing the armature with an annular space between the periphery of the armature and the housing, and a viscous damping liquid filling the cavity about the armature and flowing through said annular space between the periphery of the armature and the housing as the armature is flexed by said vibrations for damping the flexing movement of the armature, the ratio of the area of the armature to the area of said annular space between the periphery of the armature and the housing being within the approximate range of 3:1 to 4:1 to provide an unchoked but restrained laminar flow through the annular space for producing optimum damping and substantially constant electrical output signals per vibration forces over a wide range of vibration frequencies.

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**3,170,077**
**APPARATUS FOR GENERATING ELECTRICAL ENERGY**
**Vernon H. Blackman, Laguna Beach, Anthony Demetriades, Pasadena, and Malcolm S. Jones, Jr., Corona del Mar, Calif., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis., and MHD Research, Inc., Newport Beach, Calif.**
**Filed Mar. 20, 1961, Ser. No. 96,866**
**15 Claims. (Cl. 310—11)**



1. In apparatus for transforming energy in a moving stream of fluid into electrical energy, in combination, a moving stream of electrically conductive fluid, electrode means in contact with said moving stream of electrically conductive fluid, said electrode means having a region adjacent the surface thereof which is characterized as an electrode boundary layer, and means for increasing the electrical conductivity of only that portion of said electrically conductive fluid which moves through said electrode boundary layer.

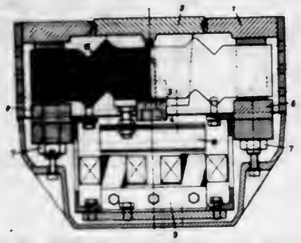
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**3,170,078**
**VIBRATORY DRIVE**
**Konrad Kuschel, Vienna, Austria, assignor, by mesne assignments, to PVG Patent-Verwaltungs-Gesellschaft m.b.H., Lucerne, Switzerland**
**Filed Apr. 7, 1961, Ser. No. 101,561**
**Claims priority, application Austria, Apr. 12, 1960, A 2,787/60**
**10 Claims. (Cl. 310—29)**

3. A vibratory drive comprising, in combination, elongated spring means; first mass means having a pair of portions spaced from each other in direction of elongation of said spring means; a pair of connecting means respectively fixed to said elongated spring means in the region of opposite ends thereof and to said spaced portions of said first mass; a second mass fixed to said spring means substantially midway between the ends thereof; and a vibrator mechanism acting on said spring means substantially midway between the ends thereof for flexing said spring means in direction transverse to the elonga-



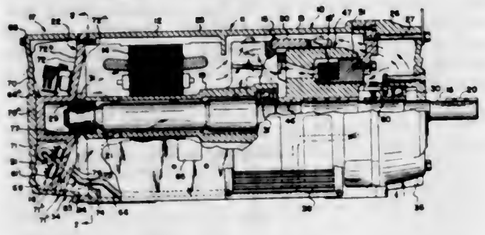
tion thereof, one of said means being resiliently yieldable in longitudinal direction of said spring means to



avoid undesired distortion of said spring means during flexing thereof by said vibrator mechanism.

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**3,170,079**
**COUPLING APPARATUS**
**Ralph L. Jaeschke, Kenosha, Wis., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio**
**Filed July 17, 1962, Ser. No. 210,380**
**10 Claims. (Cl. 310—105)**

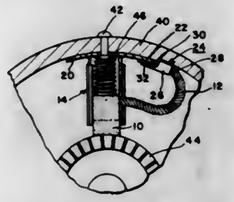


1. In a device of the class described, a housing having support bearing means therein, relatively rotatable driven and driving shaft members supported by said bearing means, electromagnetic coupling means in said housing including a field coil and operable to transmit torque from said driving shaft member to said driven shaft member in response to energization of said field coil, energizing circuit means for said coil including control means for controlling coil excitation, said housing having an air inlet for a flow of cooling air thereinto, and heat sink means comprised at least in part by a portion of said housing and supporting said control means, said heat sink means having a surface portion extending from said air inlet toward the axis of rotation of said shaft members and angularly toward the coupling means in said housing and disposed in said flow of cooling air for dissipating heat generated by said control means and directing the air flow towards the interior of said housing.

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**3,170,080**
**BRUSH HOLDER AND CONNECTOR ASSEMBLY**
**Karl P. Shetterly, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 30, 1961, Ser. No. 99,446**
**7 Claims. (Cl. 310—249)**

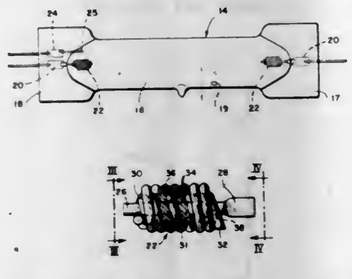
1. In combination, a brush holder, a brush slidable in said brush holder, a brush shunt conductor connected with said brush, and a terminal fitted to said brush shunt conductor including a ferrule portion encircling a part of said brush shunt conductor and a flat section extending coextensively with at least a portion of said brush shunt conductor, said flat section and a portion of said brush shunt conductor being welded to said brush holder and



said ferrule portion preventing stressing of said welded portion during movement of said conductor.

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**3,170,081**
**DISCHARGE LAMP ELECTRODE**
**Ferdinand Rokosz, Clifton, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 5, 1962, Ser. No. 200,078**
**9 Claims. (Cl. 313—213)**



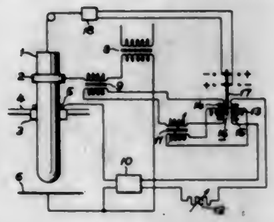
1. An electrode for an electric discharge lamp or the like comprising, a support rod, a loose fitting inner coil of refractory metal wire on said support rod, and a loose fitting outer coil of refractory metal wire over and enclosing said inner coil, said inner coil having a transversely protruding leg at one end and at least one turn that is anchored to said rod and thus locks said inner coil in predetermined position on said rod, and the end turn of said outer coil proximate the protruding leg of said inner coil being seated against said leg and having a deformed portion that protrudes inwardly toward said rod and interlockingly engages the proximate end face of said inner coil.

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**3,170,082**
**METHOD FOR REGULATING OF THE POSITION OF THE ELECTRODES IN AN ELECTRODE FURNACE AND ARRANGEMENT FOR CARRYING OUT THE METHOD**
**Bengt Renborg, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation**
**Filed Dec. 27, 1962, Ser. No. 247,659**
**Claims priority, application Sweden, Dec. 30, 1961, 13,173/61**
**5 Claims. (Cl. 314—74)**

1. In the operation of an electrode resistance furnace having a furnace bottom containing the molten part of the charge and a non-molten part of the charge above the molten part, a roof having at least one opening therein, an electrode mounted for vertical movement through said opening and extending into the non-molten part of the charge, and means forming a circuit path between said electrode and the molten part of the charge; the steps of

deriving a magnitude which is dependent on the reactance of said circuit path and independent of the resistance and current of said path, and varying the vertical position of



said electrode in accordance with variations in such magnitude to maintain the reactance of said circuit path substantially constant.

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**3,170,083**
**MICROSPACE DATA STORAGE TUBE USING ELECTRON MICROSCOPE OPTICAL ASSEMBLY**
Sterling P. Newberry, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,925
24 Claims. (Cl. 315—31)

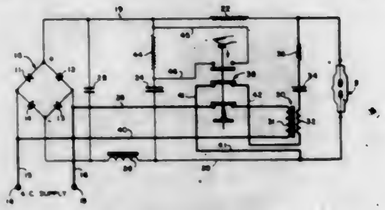


1. In a data storage system, the combination comprising an electron microscope optical system including at least a source of charged particles and an objective lens assembly for producing a high density beam of charged particles focussed to a diameter below the lateral resolution of visible light optical devices, and a data storage element disposed substantially at the focal point of said beam, said storage element being exposed to the action of said beam to alter the characteristics of said storage element at discrete positions in response to the primary effects of said beam.

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**3,170,084**
**LAMP STARTING AND OPERATING CIRCUIT**
Theodore C. Retzer, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 3, 1961, Ser. No. 150,065
10 Claims. (Cl. 315—173)

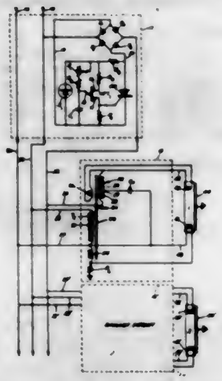
1. The combination comprising: a bridge rectifying circuit adapted to operate a gaseous discharge lamp on direct current from an alternating voltage source; an alternating current starting circuit comprising a capacitor, a resistor, and a transformer having a primary and a secondary winding; and circuit means including a switch having one set of contacts in a circuit connecting the primary winding of said transformer to the input of said rectifying circuit, and a second set of contacts in a cir-



cuit connecting the secondary winding of said transformer, capacitor and resistor in series across the output of said rectifying circuit.

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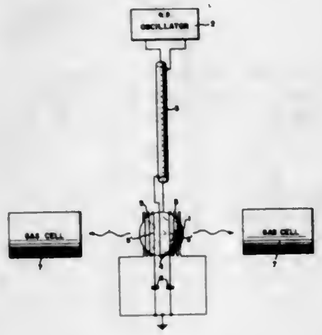
**3,170,085**
**BALLAST CIRCUIT AND SYSTEM FOR DIMMING GASEOUS DISCHARGE LAMPS**
Luther L. Genalt, Scottsdale, Ariz., assignor to General Electric Company, a corporation of New York
Filed Apr. 19, 1961, Ser. No. 104,107
11 Claims. (Cl. 315—227)



1. A ballast circuit for starting and operating at least one fluorescent lamp at various levels of luminous intensity from an alternating current supply in conjunction with a phase control and switching circuit adapted to connect one side of the alternating current supply in circuit with a switching network line at a predetermined point in each half cycle, said ballast circuit comprising a first and second input terminal lead for connection across the alternating current supply, a high reactance transformer having a primary winding connected across said input terminal leads, a high leakage reactance secondary winding, at least one switching terminal lead for connection to the switching network line, a tap provided on said secondary winding and dividing said secondary winding into a first winding portion and a second winding portion, said switching terminal lead being connected to one end of said first winding portion, circuit means including at least a pair of output leads for connection to the fluorescent lamp to supply the output of the high reactance transformer thereto, a capacitor connected in circuit with the other end of said first winding portion and one of said output leads, at least said first winding portion and said capacitor forming an oscillatory circuit under open circuit conditions to provide a transient voltage to aid the ignition of said lamp and said second winding portion of said secondary winding augmenting said transient voltage by autotransformer action.



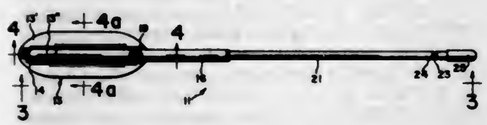
**3,170,086**
**ELECTRODELESS DISCHARGE LAMP APPARATUS**
William E. Bell, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Jan. 26, 1962, Ser. No. 169,040
4 Claims. (Cl. 315—248)



1. An electrodeless discharge lamp apparatus comprising: a bulb containing a discharge substance sealed therein, said substance being in the gaseous state at glow discharge pressure in operation, said bulb having at least a light transmissive portion for transmission of light out of said bulb; exciting means at least partially disposed externally to said bulb for exciting an optically radiating discharge therein; said exciting means including a source of R.F. energy, a first termination circuit means portion disposed inductively adjacent said bulb and coupled to said source for generating an alternating R.F. magnetic field in said bulb which dissipates sufficient power in the discharge when excited to maintain said discharge, and a tuned second termination circuit means portion tuned to a frequency having a peaked response at substantially a frequency of R.F. energy supplied from said source and disposed inductively adjacent said bulb and initially inductively coupled to said first termination circuit means portion for building up a high intensity alternating field in said bulb which initiates said discharge, and thereafter being at least partially decoupled from said first termination circuit means portion by the conductivity of the discharge.

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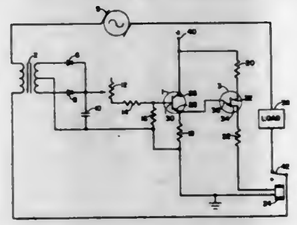
**3,170,087**
**STATIC DISCHARGER APPARATUS**
Robert L. Tanner and Hugh D. Kennedy, Menlo Park, and Loren L. Raglin, Mountain View, Calif., assignors to Granger Associates, Palo Alto, Calif., a corporation of California
Filed July 31, 1961, Ser. No. 128,165
9 Claims. (Cl. 317—2)



1. A precipitation static discharger comprising a retainer base adapted to be secured to the object to be discharged, said base having a large surface area for physical and electrical contact with said object, an elongated electrically non-conductive discharge member having a distributed high resistance electrically conductive coating thereon arranged to be removably secured to said retainer base at one end of said discharge member with said coating electrically coupled to said retainer base, a metallic electrically conductive corona discharge pin secured in said discharge member and extending entirely through said discharge member transverse to the axis thereof with two sharp pointed ends extending therefrom on either side and at a position spaced apart from said retainer base, said coated discharge member being provided with a reservoir at the place where said pin extends from the discharge member and a solidified pool of electrically conductive material positioned in said reservoir to provide a good electrically conductive path between said resistive coating and said pin, thereby provide a corona discharge point from said static discharger and an electrically non-conductive cap covering the free end of said discharge member.

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**3,170,088**
**OVERLOAD PROTECTIVE DEVICE**
Constantine M. Coutsourakis, 35 Columbus Ave., Tuckahoe, N.Y.
Filed Mar. 17, 1961, Ser. No. 96,621
3 Claims. (Cl. 317—22)
(Granted under Title 35, U.S. Code (1952), sec. 266)



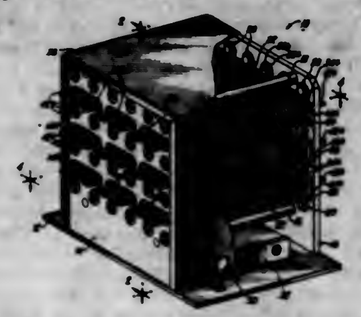
1. Apparatus for overload protection comprising a first source of voltage connected to supply a load which is to be protected; relay means having a solenoid coil and a pair of contacts; a current transformer having a primary winding and a secondary winding; said source, load, pair of contacts and primary winding being connected to each other in a first series circuit; said secondary winding of said current transformer connected to inputs of a R.C. time constant network by way of a rectifying means; outputs of said R.C. time constant network being connected across a base-emitter circuit of a first transistor; a unijunction transistor having an emitter and a pair of base electrodes; a second series circuit comprising said pair of base electrodes and said solenoid coil; a second source of voltage; said second source of voltages, said first transistor, and said second series circuit each being connected parallel to each other; and a direct connection between said emitters, whereby impedance of said first transistor will control firing of said unijunction transistor and therefore operation of said relay means.

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**3,170,089**
**SWITCHING ASSEMBLY**
Robert D. Zielinski, Mount Prospect, Ill., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 20, 1962, Ser. No. 224,926
15 Claims. (Cl. 317—101)

1. A switching assembly comprising a supporting structure providing a plurality of first sets of guide means and a plurality of second sets of guide means, a plurality of winding means each slidably mounted on one of said first sets of guide means, a plurality of sealed switch units

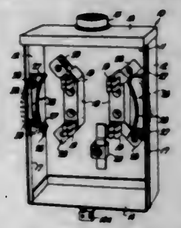
disposed within said winding means, and a plurality of retaining means each slidably mounted on one of said



second sets of guide means to hold the sealed switch units within the winding means.

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3,170,090
**METER RECEPTACLE WITH MOVABLE METER SUPPORT AND SURGE PROTECTOR**
Robert F. Waldrop, Mission Hills, Kans., assignor to Milbank Manufacturing Co., Inc., Kokomo, Ind., a corporation of Indiana
Filed Apr. 7, 1961, Ser. No. 101,439
5 Claims. (Cl. 317—104)

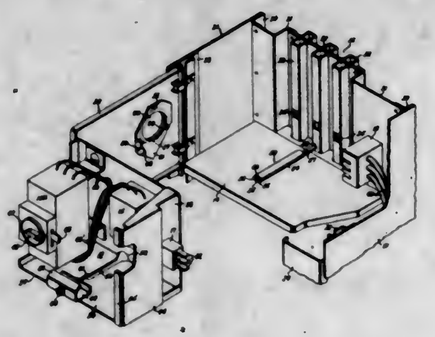


1. In a receptacle for an electrical instrument of the type having a circular base surmounted on one face by an instrument enclosure, the base having on its exposed face axially projecting contact blades, the combination of an open front box having a back wall and side walls and in which said base can be positioned, insulation blocks mounted on the back wall of the box, jaw terminals mounted upon said insulation blocks, a pair of electrically conductive base contacting members respectively supported from opposite side walls of the box, each said contacting member including an arm portion pivotally connected at one end with a side wall at a location spaced from the outer edge of the box and normally extending inwardly away from said wall and a base contacting portion extending from said arm outwardly toward the front of said box and adapted to contact a portion of said base when the instrument is inserted in said box, each arm portion including stop means cooperating with said wall to prevent pivotal motion of said arm inwardly in said box past said normal position, each arm being capable of pivotal movement outwardly of the box from said normal position whereby to swing said base contacting portions in a direction away from the center of the box toward said side walls when said instrument is removed.

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3,170,091
**ELECTRICAL STRUCTURES**
Robert C. Hudson, Granada Hills, Calif., assignor to General Electric Company, a corporation of New York
Filed Jan. 11, 1962, Ser. No. 165,606
9 Claims. (Cl. 317—119)

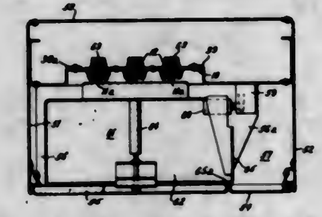
1. An electrical structure comprising, a housing having a front opening, a plurality of bus bars in the housing, a unit to be inserted and withdrawn through the front opening into and out of the housing for connection to and disconnection from said bus bars, means predetermining the position of the unit relative to the bus bars when the unit is inserted, a door mounted on the housing to open and close the front opening, a first part on said unit to be



positioned inside the housing adjacent said front opening when the unit is inserted, and a second part adjustably mounted on the door for cooperation with said first part when the unit is inserted and the door is closed, said second part being mounted for limited adjustment in the plane of the door and also in directions generally perpendicular to the plane of the door.

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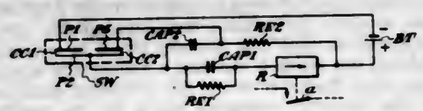
3,170,092
**ELECTRIC DISTRIBUTION APPARATUS**
Albert H. Adams, Simsbury, and William F. Olsshaw, New Britain, Conn., assignors to General Electric Company, a corporation of New York
Filed Sept. 5, 1961, Ser. No. 135,880
11 Claims. (Cl. 317—120)



1. A multi-compartment cabinet for removably mounting and enclosing a plurality of unit assemblies of electric apparatus comprising a vertically standing housing having spaced apart sidewalls and a back wall, a substantially inperforate dividing wall extending between said sidewalls parallel to said back wall and within said cabinet, said dividing wall including an integral sheet of electric insulating material having electric bus bars mounted thereon behind the front surface thereof, said insulating sheet having front opening stab contact apertures therein providing conductor access to said bus bars, and a plurality of horizontal supporting shelves mounted in said cabinet in front of said dividing wall and having their rear edges closely juxtaposed to said insulating sheet thereby to define a plurality of apparatus compartments, said insulating sheet extending vertically throughout at least that portion of the height of said cabinet which is occupied by said apparatus compartments.



3,170,093
**ELECTRICAL CONTROL APPARATUS**
Chalmers W. Gilbert, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 26, 1962, Ser. No. 212,507
14 Claims. (Cl. 317—135)




1. Means for detecting a predetermined sequence of actuation to circuit closing positions of first and second normally open circuit controllers, said means, comprising, in combination:

(*a*) a capacitor,

(*b*) a source of direct current energy,

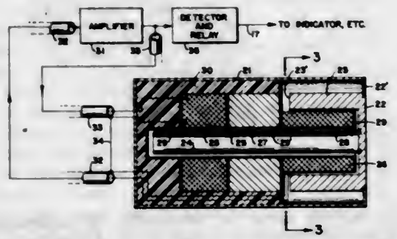
(*c*) electrical contact controlling means actuated only when direct current energy is supplied thereto in a predetermined direction,

(*d*) first circuit means responsive to an actuation of said first circuit controller prior to an actuation of said second circuit controller for supplying direct current energy from said source to said contact controlling means in a direction opposite to said predetermined direction and at the same time to said capacitor for charging thereof, and

(*e*) second circuit means responsive thereafter to an actuation of said second circuit controller for discharging said capacitor through said contact controlling means in said predetermined direction.

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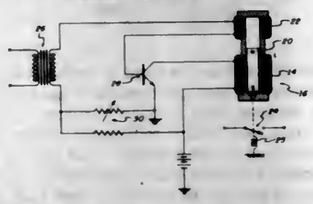
3,170,094
**LIQUID LEVEL INDICATOR**
Wilfred Roth, 58 Brainard Road, West Hartford, Conn.
Filed May 29, 1961, Ser. No. 113,320
4 Claims. (Cl. 317—146)




1. Liquid level sensing apparatus which comprises a magnetostrictive transducer having a diaphragn and an elongated magnetostrictive element attached thereto for producing oscillation thereof, said diaphragm being externally positioned for contact by a liquid whose level is to be sensed and be damped thereby, said diaphragm and the structure attached thereto forming a mechanically resonant structure, separate transmitting and receiving coils encircling said magnetostrictive element in spaced relationship therealong for producing and responding to oscillations therein, respectively, a magnet encircling the magnetostrictive element for producing a substantial magnetic bias therein, an amplifier having an input connected to the receiving coil and an output connected to the transmitting coil in regenerative relationship to form a regenerative loop including said magnetostrictive element in which the regenerative frequency of oscillation is essentially determined by the mechanical resonant frequency of said mechanically resonant structure, the gain of the amplifier being predetermined to lie between the gains required to produce oscillation of said diaphragm when in contact with and out of contact with the liquid, shielding means in said transducer for reducing the electromagnetic coupling between said coils to a value substantially less than the coupling therebetween through the magnetostrictive element when the diaphragm is in contact with said liquid, means for determining the presence or absence of oscillations in said regenerative loop.

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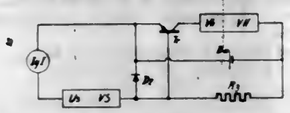
3,170,095
**RELAY CONTROL CIRCUIT**
Raymond Goldstein, Phoenix, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Apr. 4, 1961, Ser. No. 100,700
7 Claims. (Cl. 317—155.5)



1. A control circuit responsive to energize a relay when a control signal reaches a predetermined level and deenergize said relay when the control signal falls slightly below that level comprising summing means adapted to receive an alternating current control signal, means for rectifying signals connected to receive the output signal from said summing means, and relay means, said relay means comprising a first coil connected to the output signal from said means for rectifying signals and a second coil inductively linked to said first coil, means for increasing and decreasing said inductive linkage when said first coil is respectively energized and deenergized, said second coil being connected to said summing means, whereby the alternating component of the rectified signal applied to the first coil is applied as a degenerative feedback signal to said summing means, thereby reducing the magnitude of the rectified signal applied to said first coil.

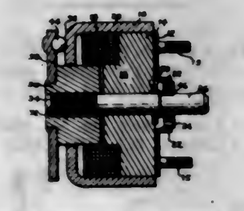
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3,170,096
**ELECTRIC CIRCUITS WITH GROUPS OF RELAYS ACTUATED BY CURRENT IMPULSES**
Erwin Schlatter, Oberglatt, Zurich, Switzerland, and Walter Hoppe, Munich, Germany, assignors to El-Re-Ma S.A. per lo sfruttamento di brevetti, Lugano, Switzerland
Filed Sept. 29, 1961, Ser. No. 141,723
5 Claims. (Cl. 317—157)



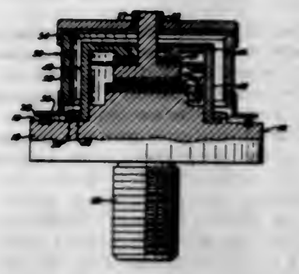
1. An electrical circuit comprising, in combination, at least two groups of relays actuated by current impulses, an impulse generator for feeding each of said relay groups with control impulses, a holding circuit means for holding a relay armature actuated by a control impulse in each of said relay groups, contacts in one of said relay groups, which contacts are switched in series with windings of the other relay group, means for feeding each holding circuit with direct current, electronic switch means actuated by control impulse current passing through at least one relay winding of one group of relays and a contact of another group of relays for controlling the flow of direct current in each holding current, said holding current being interrupted during the duration of each control impulse.

3,170,097
ROTARY ACTUATOR
William M. Owens and Wilfred Hunter, Hertfordshire, England, assignors, by mesne assignments, to Leder, Inc., Dayton, Ohio, a corporation of Ohio
Filed Oct. 19, 1961, Ser. No. 146,190
5 Claims. (Cl. 317—192)



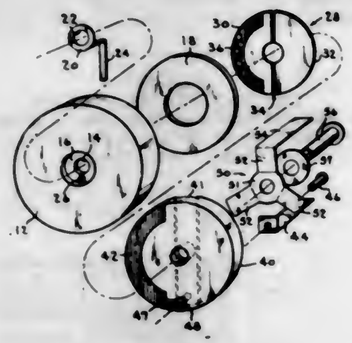
1. In a rotary actuator: a fixed assembly having spaced first and second surface portions and an aperture communicating between said surface portions; a shaft journalled for axial and rotary movement within said aperture and projecting beyond both of said surface portions; a plate connected to said shaft adjacent said first surface portion, one of said plate and said first surface portion having an arcuate inclined recess therein; a rotatable element in said recess interposed between and in contact with said plate and said first surface portion; a flange secured to said shaft adjacent said second surface portion, said flange and said plate being sufficiently spaced to permit said rotatable elements to engage the shallow ends of said recesses but sufficiently close to confine the rotatable elements between said plate and said first surface; drive means inducing relative axial movement between said plate and said first surface portion whereupon said shaft undergoes both rotary and axial movement causing said flange to move away from said second surface portion; means to reset said shaft, plate and rotatable element after each operation of said drive means whereupon said flange moves toward said second surface portion; and yieldable means having a greater yielding capacity than that present in said fixed assembly at the second surface portion thereof interposed between said second surface portion and said flange, said flange striking said yieldable means at the end of the reset movement of said shaft, said yieldable means and said flange cooperating to stop the reset movement of said shaft.

3,170,098
COMPRESSION CONTACTED SEMICONDUCTOR DEVICES
Joseph Marino, North Huntingdon Township, Westmoreland County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1963, Ser. No. 265,424
2 Claims. (Cl. 317—234)



1. A sealed electrical device comprising a good thermally conductive support, a laterally extending peripheral flange from the support having an upper surface, an upwardly extending base mounting portion having an upper surface integral with said support, an upwardly extending peripheral flange integral with the upper surface of said first-mentioned peripheral flange, a semiconductor element disposed on the upper surface of the base mounting portion, at least one electrical contact disposed on the upper surface of the semiconductor element, a cylindrical metal member surrounding the semiconductor element and having its upper end partially closed by a centrally-apertured cap which is resilient, a peripherally extending flange about the lower end of the cylindrical metal member, the upwardly extending flange on the peripheral flange of the thermally conductive support cooperating with the peripheral flange at the bottom of the cylindrical member to hold said cap member in pressure engagement with said electrical contact on the semiconductor element, and a header member containing an insulating segment joined to the outer periphery of the upper surface of the flange of the thermally conductive support to provide a hermetic enclosure for the semiconductor element.

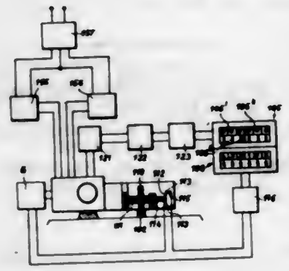
3,170,099
MINIATURE VARIABLE CAPACITOR
Leonard J. Sperry, Glendale, and Bert H. Marks, Milwaukee, Wis., assignors to Globe-Union, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Feb. 8, 1962, Ser. No. 171,961
7 Claims. (Cl. 317—249)



1. A variable capacitor comprising in combination, a disc rotor of dielectric material of generally circular form and having first and second oppositely facing surfaces including a generally arcuate electrode confined to a given angular area on said first surface, said electrode having an appreciable radial extent and radially extending openings through said rotor adjacent to the respective ends thereof in areas of said rotor which are free of said electrode, said openings extending radially substantially throughout the full radial extent of said electrode, a stator including an electrode conforming generally to the arcuate electrode of the rotor, means supporting said rotor in generally parallel relation to and for rotation relative to said stator to move said rotor electrode into and out of axial alignment with said stator electrode for adjustment of said capacitor between maximum and minimum capacitance settings, and for positioning said electrodes when out of overlapping relation so as to lie on opposite sides of said openings, thus to cooperate in establishing the minimum capacitance for said variable capacitor, and a resilient member engaging said first surface of said rotor to maintain operative relation between said second rotor surface and said stator during rotation.



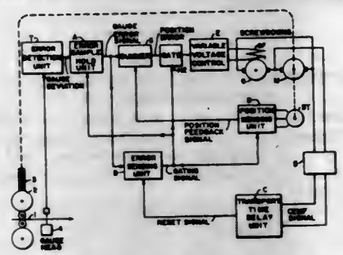
3,170,100
AUTOMATIC INDICATING DEVICE FOR MEASURING SCALES IN MACHINE TOOLS
Kurt Rintsch and Otto Trötscher, Wetzlar (Lahn), Germany, assignors to M. Hensoldt & Sohne, Optische Werke, Aktiengesellschaft, Wetzlar (Lahn), Germany
Filed Nov. 17, 1959, Ser. No. 853,564
Claims priority, application Germany, Nov. 19, 1958, H 34,851; Oct. 31, 1959, H 37,786
10 Claims. (Cl. 318—28)



10. Apparatus for automatically indicating the adjusted position of measuring scales in machine tools, comprising, in combination with a measuring scale, a photo-electric scanning and indicating unit, and a mechanical scanning and indicating unit, said mechanical unit recording and indicating the adjusted position of said scale independently from the operation of said photo-electric unit, a photo-electric cell in said photo-electric unit, and, disposed between said photo-electric scale and said scale, optical means for producing an image of a portion of said scale in said photo-electric cell, means for deflecting the path of rays of said image, a light mark, means for deflecting the light rays emanating from said light mark in the path of rays of said image, and interrupting means disposed between said photo-electric cell and said light mark and connected with said means for deflecting the path of rays of said image, said optical means including a first and a second objective lens with a parallel path of rays therebetween and disposed between said scale and said photo-electric cell with said second objective lens facing said scale, a measuring screw for displacing said second objective lens relative to said scale and for operating said interrupting means comprising a motor displacing said photo-electric and said mechanical unit relative to said scale, and control means actuated by said fine counting portion, setting said motor in operation as soon as the measured value is preselected by said fine counting portion, at least one further photo-electric cell actuating said control means for said motor, and optical means for producing image of the division strokes of said scale in said further photo-electric cell.

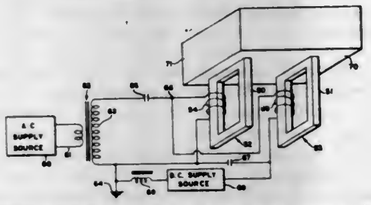
3,170,101
SAMPLED DATA SYSTEM FOR AUTOMATIC GAUGE CONTROL
Loren F. Stringer, Clarence, and John W. Wallace, Orchard Park, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 10, 1961, Ser. No. 88,525
6 Claims. (Cl. 318—28)

1. In a position control system operative with a machine member, the combination of position error sensing means for transmitting an error signal proportional to the deviation of the actual position of said member from a given position, error signal holding means for holding an error signal greater than a minimum error signal for a period time necessary for position correction, position control means operative with said machine member, position sensing means for producing a feedback signal proportional to a change in position, and signal combining



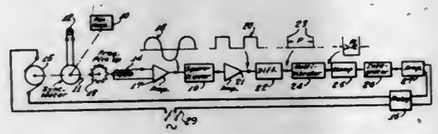
means for subtracting said feedback signal from said error signal to produce an output signal for controlling said position control means.

3,170,102
ULTRASONIC TRANSDUCERS
Channing W. Hayes, Davenport, Iowa, assignor to The Bendix Corporation, a corporation of Delaware
Original application July 2, 1957, Ser. No. 669,562. Divided and this application Nov. 23, 1959, Ser. No. 858,303
1 Claim. (Cl. 318—118)



Ultrasonic wave generating apparatus comprising first and second transducers each comprising a magnetostrictive core and an energizing winding, first and second electrical capacitors, a unidirectional power source comprising means for opposing the flow of alternating currents therethrough, an alternating electrical power source having connected from one of its terminals to the other the series circuit combination of one of said electrical capacitors and one of said energizing windings, said other electrical capacitor and said other energizing winding being connected in series from said other terminal of said alternating current source to the junction of said one electrical capacitor and said one energizing winding, and said unidirectional power source being connected across said other electrical capacitor.

3,170,103
SYNCHRONOUS MOTOR CONTROL
Martin J. Kutik, New York, N.Y., assignor to Litton Systems, Inc., a corporation of Maryland
Filed Nov. 18, 1960, Ser. No. 70,172
13 Claims. (Cl. 318—137)

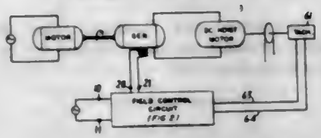


1. In a control system operating in response to a variable-frequency input signal, a wave differentiating network for sharpening the pulses of the input signal, means including a multivibrator connected to the network for generating pulses of uniform size and duration at the

frequency of said input signal pulses and integrating means connected thereto for converting said uniform pulses into a continuous signal varying in amplitude with the frequency thereof.

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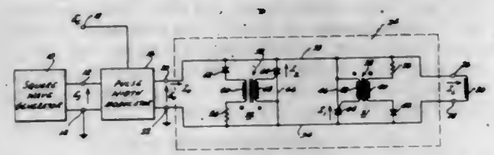
**3,170,104**
**SPEED-RESPONSIVE MOTOR GENERATOR FIELD CONTROL CIRCUIT**
**Paul Richards, Roselle, N.J., and Alfred A. Wolf, York, Pa., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware, and Fidelity Instrument Corporation, York, Pa., a corporation of Pennsylvania**
**Filed Aug. 23, 1961, Ser. No. 133,474**
**7 Claims. (Cl. 318—146)**



1. A motor generator field control system comprising magnetic amplifier means providing an output voltage to be applied to a motor generator to drive the motor in accordance with the magnitude of the voltage, a first control winding in the magnetic amplifier means for receiving a control signal to control the output voltage of the amplifier means, a second control winding in the magnetic amplifier means, means responsive to the speed of rotation of the motor to provide a feedback signal proportional to the speed and circuit means connecting the means responsive to the speed of the motor to the second control winding to drive the amplifier means in the direction reducing the output voltage therefrom whenever the motor speed exceeds a selected value, said circuit means including means normally preventing application of feedback signals having magnitude below a selected level to the amplifier means.

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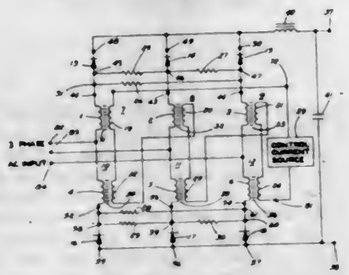
**3,170,105**
**COMMUTATING FILTER FOR INDUCTIVE LOAD**
**William J. Muldoon, Palos Verdes, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed Apr. 16, 1963, Ser. No. 273,405**
**15 Claims. (Cl. 318—341)**



14. A control circuit for a direct current controlled shunt motor having a reversible direction of rotation comprising: means for rectifying and modulating a square wave carrier signal in accordance with a direct voltage of a polarity determinative of the direction of rotation of said motor to produce a series of pulses of a duration determined by the magnitude of said direct voltage and of a polarity determined by the polarity of said direct voltage; commutating filter means having first and second terminals coupled to said rectifying and modulating means; said filter means comprising first and second transformers each having a primary winding and a secondary winding, a first rectifier coupled in series with said primary winding of said first transformer to form a first unidirectional current path between said first and second terminals, a second rectifier coupled in series with said primary winding of said second transformer to form a second unidirectional current path between said first and second terminals in a direction opposite that of said first unidirectional path, and first and second controlled rectifiers each having a unidirectional current path and a control electrode, the current paths of said first and second controlled rectifiers being coupled between said first and second terminals in opposite unidirectional conductives, the control electrode of said first controlled rectifier being coupled to said secondary winding of said first transformer, the control electrode of said second controlled rectifier being coupled to said secondary winding of said second transformer; and the energizing windings of said motor being coupled in parallel between said first and second terminals of said filter means.

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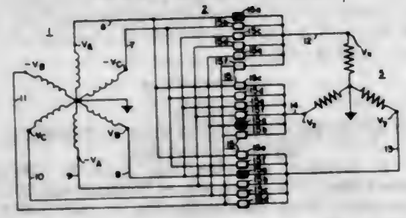
**3,170,106**
**RESISTIVE CORE BALANCING FOR MAGNETIC REACTOR CIRCUITS**
**Allen B. Rosenstein, 314 S. Rockingham Ave., West Los Angeles, Calif.**
**Filed July 20, 1960, Ser. No. 44,209**
**9 Claims. (Cl. 321—25)**



1. In a polyphase magnetic amplifier, a plurality of saturating reactors each supplied with intermittent unidirectional current derived from a corresponding phase of a polyphase source of alternating current, a resistive network comprising a plurality of resistors equal in number to said reactors for mutually interconnecting said reactors whereby neutralizing voltages are applied from one reactor to another to maintain a substantially constant crest value of the ripple-voltage from said amplifier.

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**3,170,107**
**CONTROLLED FREQUENCY ALTERNATING CURRENT SYSTEM**
**Ralph D. Jessee, Lima, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 2, 1960, Ser. No. 25,985**
**19 Claims. (Cl. 321—61)**

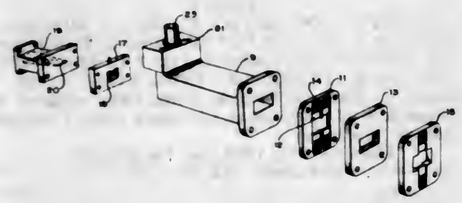


1. A frequency converter for converting polyphase alternating current of one frequency to alternating current of a different frequency, said converter comprising bilaterally conductive semiconductor switching means for connecting a plurality of polyphase input leads to a plurality of output leads, said switching means being adapted to connect each output lead to each input lead in succession in a predetermined sequence to provide an output frequency equal to the difference between the input frequency and the frequency of operation of the switching means, and means for controlling the frequency of operation of the switching means.



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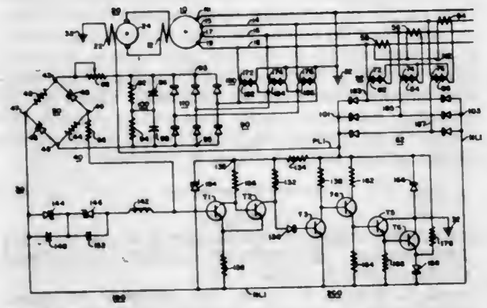
**3,170,108**
**BROADBAND FREQUENCY DOUBLING**
**Russell B. Riley, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California**
**Filed Dec. 5, 1960, Ser. No. 73,614**
**15 Claims. (Cl. 321—69)**



12. A broadband frequency doubling device comprising a first envelope and a dielectric therein for conducting high frequency energy, a unidirectional conduction element disposed near one end of the envelope to receive said high frequency energy, a second envelope of non-resonant structure attached to said one end of the first envelope and being adapted to conduct higher frequency energy than the first envelope, filter means near the other end of the first envelope, means including the filter means to apply the high frequency energy to the first envelope, said filter means being adapted to absorb said higher frequency energy conducted in the first envelope and to pass the high frequency energy applied to the first envelope, and means disposed near said one end of the first envelope to increase the higher frequency energy conducted in the second envelope and to decrease the higher frequency energy conducted in the first envelope.

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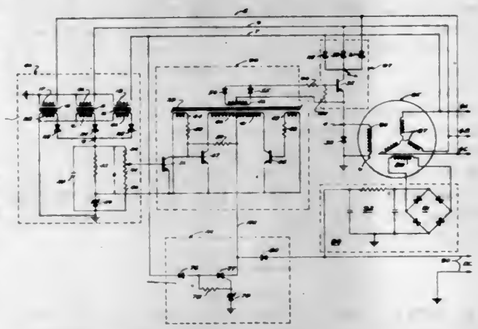
**3,170,109**
**DYNAMOELECTRIC MACHINE EXCITATION CONTROL BY USE OF PULSE WIDTH MODULATION**
**James L. Roof, Lima, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Jan. 18, 1960, Ser. No. 3,041**
**5 Claims. (Cl. 322—28)**



4. In a regulator system for maintaining the output voltage of an alternator having an excitation field winding and output terminals at substantially a predetermined value, the combination comprising, first means connected in circuit relation with the output terminals of said alternator for obtaining a unidirectional voltage which includes a ripple component and which varies with said output voltage, second means connected in circuit relation with said first means for converting the ripple component of said unidirectional voltage to substantially a triangular waveform, third means connected in circuit relation with said second means for comparing the converted unidirectional voltage to obtain a difference voltage having substantially a triangular waveform component and a direct-current component, fourth means connected in circuit relation with the output terminals of said alternator for supplying excitation current to said field windings, a plurality of switching amplifiers connected in circuit relation between said third means and said fourth means, time delay means connected in circuit relation between said third means and said switching amplifiers, said switching amplifiers being responsive to said difference voltage for producing periodic pulses having a width which varies with said output voltage to control the average excitation current supplied to said field winding by said fourth means, and circuit means connected in circuit relation with the last switching amplifier of said plurality for maintaining the latter amplifier in a conducting condition in the absence of output pulses from the balance of said switching amplifiers to thereby provide initial excitation current to the field winding of said alternator.

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**3,170,110**
**ALTERNATING CURRENT GENERATOR REGULATING SYSTEM WITH PULSE CONTROL SIGNAL**
**Aloysius W. Pratt, New Carlisle, Ohio, assignor to American Machine & Foundry Co., a corporation of New Jersey**
**Filed July 12, 1961, Ser. No. 123,467**
**15 Claims. (Cl. 322—28)**



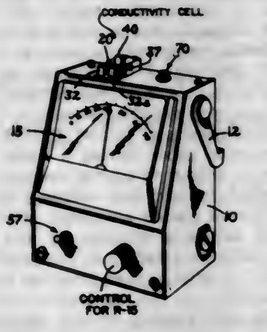
10. In a system for maintaining a desired voltage output level from a three-phase alternating current generator having a field winding operative to control the generator output potential, the combination of a sensing circuit operative from the generator output potential to develop control pulses having a time duration inversely related to the magnitude of the output potential, said sensing means comprising rectifying means for developing from the output potential a varying potential unipolar signal, circuit means for changing the reference level of said varying potential signal to derive therefrom a bipolar signal, filter means connected to said circuit means to reduce but not eliminate ripple from said varying potential signal, and switching means operative only in response to one polarity of said bipolar signal to provide control pulses of discrete duration; and control circuit means operative from the generator output potential to selectively energize the field winding for the time duration of said control pulses, said sensing circuit and said control circuit means being operative from different half-cycles of the generator output potential.

3,170,111

## CONDUCTIVITY TEST CELL WITH AUTOMATIC COMPENSATION FOR SAMPLE TEMPERATURE

David A. Case, Yellow Springs, Ohio, assignor to The Yellow Springs Instrument Company, Inc., Yellow Springs, Ohio, a corporation of Ohio

Filed Sept. 15, 1961, Ser. No. 138,449
3 Claims. (Cl. 324—30)



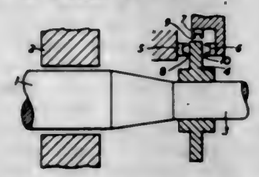

2. In apparatus for testing a sample of material by determining the conductivity thereof to an electric current flow, a test cell including a test cavity for holding the sample, spaced contacts forming two separate electrical flow paths from the exterior of said cell to said cavity, means forming a path of low heat flow resistance from said cavity to the exterior of said cell, mounting means for said cell including spaced contact posts and a member for holding said cell against said posts with said contacts engaged with respective said posts, a bridge circuit including connections to said posts for incorporating the cell in one arm of said circuit, a thermistor mounted in one of said posts and in direct communication with said means forming a heat flow path, means connected to apply a potential difference to said circuit for causing current flow through a sample in said cell, a meter connected to indicate an unbalance in said circuit related to the conductance of material in said cell, and means connecting said thermistor into said circuit in such relation to said contact post connections that changes in resistance of a sample in said cell due to thermal changes are compensated by corresponding resistance changes of said thermistor.

3,170,112

## MAGNETIC CIRCUIT MEANS AND ALLOY COMPONENTS OF CONSTANT MAGNETIC PERMEABILITY THEREFOR

Karl Bungardt and Hermann Dietrich, Krefeld, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany

Filed Feb. 15, 1960, Ser. No. 8,731
Claims priority, application Germany, Feb. 21, 1959, D 30,051
2 Claims. (Cl. 324—34)



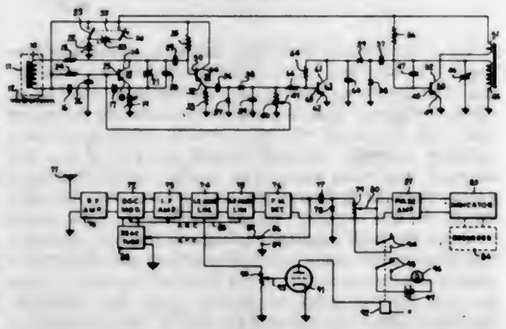
2. In a machine incorporating at least one component carried by a rotatable part of the said machine which becomes heated in the functioning of the machine and magnetic monitoring means co-operating with said component and responsive to changes in form or movement which take place in said part during its rotation, the improvement which consists in that the said component comprises an iron-chromium alloy consisting essentially of 5.0 to 20.0% chromium, 0.5 to 10% in total of at least one of the elements selected from the group consisting of aluminum, molybdenum and tungsten, 0.2 to 3.0% silicon, 0 to 35% cobalt, up to 0.2% carbon, and the remainder iron, the said component having a permeability which remains constant up to a temperature of at least 500° C. and at field strength up to at least 100 moe. and which is non-scale-forming at said temperatures.

3,170,113

## FLAW DETECTION DEVICE HAVING A MOVABLE PICK-UP UNIT FOR DEVELOPING A FREQUENCY MODULATED SIGNAL THAT IS TRANSMITTED TO A STATIONARY INDICATING UNIT

William C. Harmon, Chagrin Falls, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Nov. 10, 1959, Ser. No. 852,005
10 Claims. (Cl. 324—37)



1. A seam depth indicator comprising a movable structure including an oscillatory system having a resonant circuit establishing the frequency of oscillation thereof, means included in said system for establishing long-term steady-state oscillation amplitude stabilization thereof while permitting short-term oscillation amplitude instability thereof, an exploring inductor included in said resonant circuit for producing an oscillatory magnetic field external to said system and movable with said structure over the surface of a metallic body to develop by reason of eddy-current losses produced in said body by said field an oscillatory-system transient oscillation amplitude variation indicative of the presence of a seam-like flaw in the vicinity of the surface of said body, means carried by said structure and controlled by said oscillatory system for generating and transmitting an electromagnetic carrier wave frequency modulated according to each said transient oscillation amplitude variation, and stationary means for receiving said modulated carrier wave and for deriving and utilizing the modulation component thereof to indicate the presence of said seam-like flaws in said body.

3,170,114

## MAGNETIC INSPECTION SEARCH SHOE MOUNT PROVIDING MOVEMENT ABOUT MULTIPLE ORTHOGONAL AXES

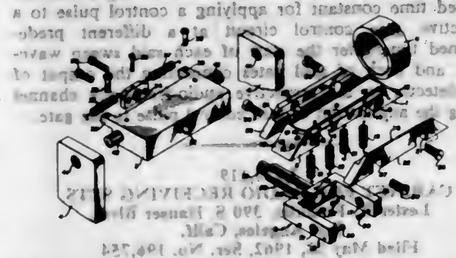
Eugene A. Placke, Houston, Tex., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New York

Filed July 18, 1960, Ser. No. 43,375
16 Claims. (Cl. 324—37)

1. In a mount for a device to be maintained in close proximity to a surface of an elongated member moving axially past the mount, the combination of a first support means; means mounting said first support means for pivotal movement about a fixed axis parallel to and spaced



from the line of travel of the elongated member; second support means mounted on and carried by said first support means for pivotal movement about a second axis extending at right angles to said fixed axis; a carrier constructed to receive and support said device, said carrier being mounted on said second support means for pivotal movement about a third axis at right angles to said second



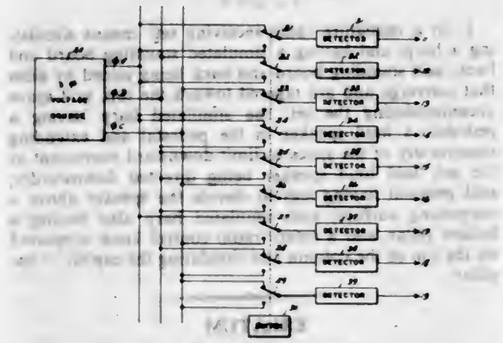
axis and spaced from said fixed axis, and yieldable means connected to said first support means and operative to bias the same pivotally about said fixed axis in a direction moving said first support means toward the line of travel of the elongated member for continuously urging the first support means to a normal position when displaced therefrom by the elongated member.

3,170,115

## VOLTAGE BREAKDOWN TEST CIRCUIT

Clarence J. Tabor, Jr., Schnecksville, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 20, 1960, Ser. No. 44,053
5 Claims. (Cl. 324—51)

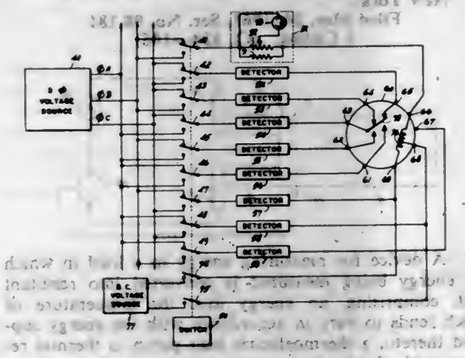


1. Apparatus for testing a plurality of elements to determine whether there is any leakage therebetween, which comprises:

a source of polyphase voltage having a plurality of output leads corresponding to the different phases thereof;

switching means selectively operable from a first to a second position for connecting said elements to the output leads of said polyphase voltage source, in said first position a plurality of first groups of the elements being connected to said output leads in a manner such that each of said first groups is connected to a different output lead, and in said second position a plurality of second groups of the elements being connected to said output leads in a manner such that each of said second groups is connected to a different output lead, said first and second groups being selected such that those elements belonging to the same first group are each in a different second group;

means connected to each element and responsive to a predetermined current therethrough for indicating leakage between that element and any of the other elements; and



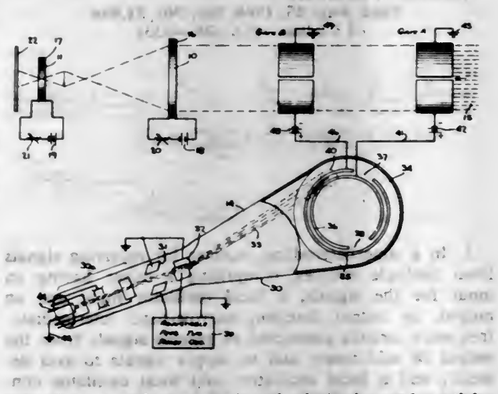
means for operating said switching means from its first to its second position whereby each of said elements is tested for leakage to any of the other of said elements.

3,170,116

## APPARATUS FOR MEASURING THE INTENSITY AND PARTICLE VELOCITY OF A BEAM OF ELECTRICALLY CHARGED PARTICLES

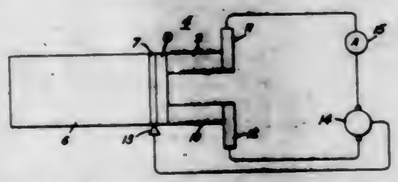
William B. Farrington, Upper Montclair, N.J., assignor to Farrington Engineering Corporation, Upper Montclair, N.J., a corporation of Delaware

Filed June 20, 1960, Ser. No. 37,334
4 Claims. (Cl. 324—70)



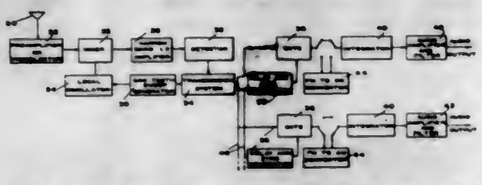
1. Apparatus for measuring the intensity and particle velocity of a beam of electrically charged particles, comprising: a pair of electrical gates disposed at spaced points along the path of said beam, means for electrically energizing said gates to suppress said flow therethrough, switching means for momentarily de-energizing said gates in a pre-selected time sequence, to transmit through said gates successively, particles of said beam flowing at a pre-selected velocity, electron telescope means disposed along said path beyond said gates in the direction of particle movement for focusing said transmitted particles on a plane therebeyond, and means at said focusing plane for indicating the intensity of the beam of particles thus transmitted at any point in the image formed thereby.

3,170,117
**THERMOELECTRIC CALORIMETER DEVICE FOR MEASURING ENERGY IN A LOAD AND USING A HEAT PUMP**
Kenneth W. Berning, Whitesboro, and William A. Sebastian III, Holland Patent, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 24, 1961, Ser. No. 98,181
4 Claims. (Cl. 324—106)



1. A device for measuring energy in a load in which the energy being measured is converted into resultant heat, comprising, an energy load the temperature of which tends to vary in accordance with the energy supplied thereto, a thermoelectric heat pump in thermal relation with the load, means responsive to the resultant temperature of said load to control the amount of heat being pumped by said thermoelectric heat pump in such a manner as to maintain said load at a constant predetermined temperature, and means for measuring the heat being pumped by said heat pump, whereby a measurement of the rate energy is being converted into resultant heat by said load is obtained without changing the temperature of said load in response to said energy being measured.

3,170,118
**PANORAMIC RECEIVER FOR MULTIPLEXING COMMUNICATION SIGNALS FROM MULTIPLE SOURCES**
Jimmie J. Logan, Irving, Tex., assignor, by mesne assignments, to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 25, 1960, Ser. No. 51,986
2 Claims. (Cl. 325—333)



1. In a superheterodyne receiver for receiving signals from multiple sources, comprising a mixer having an input for the signals, a local oscillator input and an output, an output detector, narrow-band intermediate-frequency circuits connected to receive signals from the output of said mixer and to supply signals to said detector, and a local oscillator, said local oscillator connected to the oscillator input of said mixer and having an input responsive to application of sweep signals to vary its output frequency, thereby to tune said receiver successively to different radio-frequency channels within a prescribed frequency band, a sweep generator having an output connected to said input of said local oscillator to apply a repetitive sweep waveform to said receiver to cause it to be tuned successively through different frequency channels repeatedly within said prescribed frequency band; a plurality of audio-frequency output channels, each of said audio-frequency output channels having an integrator and a gate, the output of said detector being connected through each of said gates to the input of the respective integrator, said gates normally being open to isolate said audio-frequency channels from said detector, each of said gates having a control circuit, a time delay circuit connected to each of said gate control circuits, means connected to said sweep generator for applying to each of said time delay circuits a pulse synchronized with the start of each of said sweep waveforms, each of said time delay circuits having a different selected time constant for applying a control pulse to a respective gate control circuit at a different predetermined time after the start of each said sweep waveform, and each of said gates connecting the output of said detector to the respective audio-frequency channel during the application of said control pulse to the gate.

3,170,119
**CABINET FOR RADIO RECEIVING SETS**
Lester K. Franklin, 390 S. Hauser Blvd., Los Angeles, Calif.
Filed May 22, 1962, Ser. No. 196,754
3 Claims. (Cl. 325—352)



1. In a miniature radio receiving set: means simulating a harp, and having a simulated sounding board and back, said sounding board and back being joined by sides that converge and are tapered toward the top, said space accommodating the set; the simulated harp having a pedestal; a loud speaker in the pedestal and extending transversely of the space to limit downward movement of the set; said loud speaker being directed downwardly; said pedestal having legs to elevate the speaker above a supporting surface; said simulated harp also having a hollow pillar, and a rotary radio control knob supported on the top of the column and simulating the capital of the pillar.

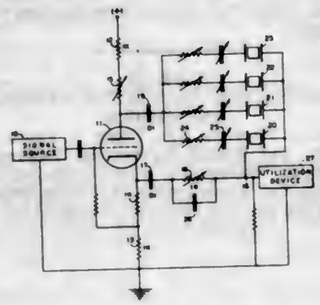
**ERRATUM**

For Class 329—117 see:
Patent No. 3,170,121

3,170,120
**ACTIVE COMB FILTER**
Gerold K. Jensen, 8012 Overlook Drive, Pinecrest, Va., and James E. McGeogh, 902 Dennis Ave., Silver Spring, Md.
Filed Sept. 23, 1960, Ser. No. 58,146
5 Claims. (Cl. 330—117)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A filter for rejecting selected narrow bands of frequencies from an input signal comprising, means for deriving a push-pull signal in response to the input signal, a first signal path substantially non-frequency selective, a second signal path containing a plurality of crystals connected in parallel, one tuned approximately to the center of each band of frequencies, said paths having input and output connections, means for connecting the input of one path to said first named means to transmit one of the push-pull signals, means connecting the input of the other path to said first named means to transmit the other of the push-pull signals, and means for connecting the output connections of the two paths whereby equal amplitude combination at the crystal frequency occurs.



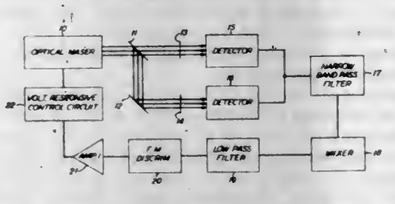


3,170,121
**FREQUENCY DISCRIMINATOR WITH CENTER FREQUENCY CONTROL**
Er-chun Ho, Newport Beach, John J. Fakkeldij, Huntington Beach, and Irving B. Merles, Costa Mesa, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,420
1 Claim. (Cl. 329—117)



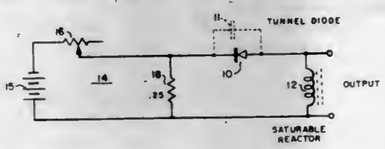
A discriminator circuit for providing a unidirectional output voltage indicative of the instantaneous frequency deviation of a frequency modulated input signal from a center frequency comprising: a transformer having a primary winding and first and second secondary windings, means for applying said frequency modulated input signal to said primary winding, a first inductor connected in series with said first secondary winding, a second inductor connected in series with said second secondary winding, at least a first capacitor connected across said first secondary winding and said first inductor, at least a second capacitor connected across said second secondary winding and said second inductor, a first quartz crystal connected across said first capacitor, a second quartz crystal connected across said second capacitor, a first pair of variable capacitance semiconductor diodes connected in series in opposite polarity across said first quartz crystal, a second pair of variable capacitance semiconductor diodes connected in series in opposite polarity across said second quartz crystal, a first variable coupling capacitor connected to one of said first pair of semiconductor diodes, a second variable coupling capacitor connected to one of said second pair of semiconductor diodes, a first plurality of rectifier diodes connected in series in like polarity to said first variable coupling capacitor, a second plurality of rectifier diodes connected in series in like polarity to said second variable coupling capacitor, a third capacitor connected between the other of said first pair of semiconductor diodes and the end of said first plurality of rectifier diodes remote from said first variable coupling capacitor, an output circuit including a first resistor and a second resistor connected in series, said first resistor being connected across said first plurality of rectifier diodes, said second resistor being connected across said second plurality of rectifier diodes, a control terminal, a third resistor connected between said control terminal and the junction between said first pair of semiconductor diodes, and a fourth resistor connected between said control terminal and the junction between said second pair of semiconductor diodes, said third and fourth resistors being adapted to apply a control voltage to said first and second pairs of semiconductor diodes to vary the capacitances thereof, whereby said center frequency is effectively altered in accordance with said control voltage.

3,170,122
**FREQUENCY STABILIZED OPTICAL MASER**
William R. Bennett, Jr., Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 30, 1961, Ser. No. 148,338
6 Claims. (Cl. 331—94.5)



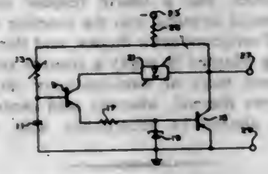
1. In combination, an optical maser comprising means forming an optical cavity resonator characterized by a plurality of resonant modes at distinct optical frequencies, an active maser medium disposed within said cavity resonator, said medium being characterized by an inhomogeneously broadened optical emission line having a width which encompasses the frequencies of a plurality of said resonant modes, pump means for causing said maser to oscillate simultaneously in at least three of said modes, the oscillation frequencies of said modes being shifted toward the center of said emission line, the amount of said shift varying with the separation of the mode frequencies from the line center so that the separation of adjacent oscillation frequencies is least near the line center and increases away from the line center, means for detecting beats between pairs of oscillating modes in said optical maser, and means responsive to the magnitude of the frequency difference between selected pairs of said beats for tuning said optical maser.

3,170,123
**TUNNEL DIODE OSCILLATOR**
Victor Boxer, Belmar, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 6, 1961, Ser. No. 122,359
5 Claims. (Cl. 331—107)
(Granted under Title 35, U.S. Code (1952), sec. 266)



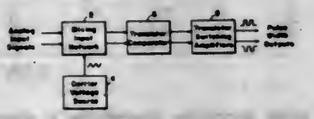

1. A pulse generator comprising a source of direct current, a tunnel diode and a saturable reactor connected in series.

3,170,124
TUNNEL DIODE PULSE GENERATOR HAVING INDEPENDENTLY CONTROLLABLE PULSE WIDTH AND REPETITION RATE
Emmanuel E. Castillo, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 16, 1961, Ser. No. 144,131
5 Claims. (Cl. 331—111)



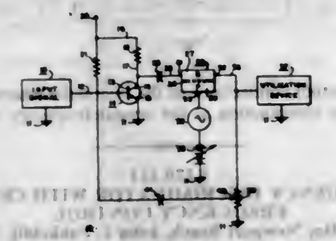
1. A signal generator comprising:
a first transistor circuit having an input and an output;
a tunnel diode which shows in the current-voltage characteristics thereof a region of negative resistance between adjacent regions of positive resistance;
said tunnel diode being connected to the input of the first transistor and being adapted to operate in the low voltage positive resistance region for signals applied thereto below a selected value;
a charging circuit having an output and including resistance and capacitance;
circuit means having first, second and third terminals and including a plurality of P-N semiconductor junctions at least some of which comprise the base-emitter and base-collector junctions of a second transistor circuit connected to the first and second terminals for providing substantially unity voltage gain between said first and second terminals and at least one of which operates with unidirectional conductivity between the first and third terminals;
means connecting the first and second terminals of said circuit means respectively to the output of the charging circuit and to the tunnel diode for switching the tunnel diode to operation in the high voltage positive resistance region in response to the signal appearing on said second terminal of the circuit means exceeding said selected value;
said first transistor circuit producing a signal at the output thereof in response to the change in the voltage across the tunnel diode; and
means connecting the third and first terminals of said circuit means respectively to the output of the first transistor and circuit to said charging circuit for discharging said capacitance in response to signal appearing at the output of said first transistor circuit;
said tunnel diode being returned to operation in the low voltage positive resistance region in response to signal applied thereto from the second terminal of said circuit means decreasing below said selected value.

3,170,125
CONTROLLER CIRCUITRY
Francis T. Thompson, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1959, Ser. No. 860,474
13 Claims. (Cl. 332—14)



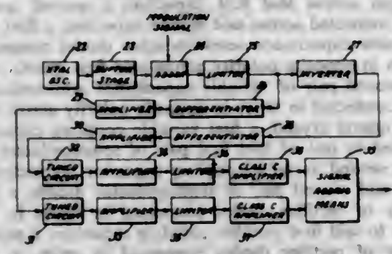
5. In a differential amplifier wherein each of first and second amplifier channels includes a transistor having respective emitter, base, and collector electrodes, a circuit commonly connected to said emitter electrodes for supplying substantially constant current to said emitter electrodes in parallel, and clamp means for maintaining a reverse bias across the collector-base junction of each of said transistors.

3,170,126
SEMICONDUCTOR AMPLITUDE MODULATOR APPARATUS
Robert Bento, Tiverton, R.I., Edgar L. Fogle, Shirleysburg, Pa., and Roland G. Lascola, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1961, Ser. No. 126,159
7 Claims. (Cl. 332—31)



2. Modulator apparatus comprising, a circuit adapted to have impressed thereon carrier frequency signals, a utilization device, said circuit means including triode transistor means, p-n junction means having two regions of different types of semiconductivity, one of said regions having ohmic contacts included in said circuit between the output of said transistor and said utilization device, a feedback circuit connected between the output side of said one region and the input of said triode transistor, a source of modulating signal potential, a source of direct current biasing potential, circuit means connecting said source of modulating signal potential and said source of direct curren biasing potential in series to said p-n junction means in a manner to apply a reverse bias on said p-n junction, which bias varies in amplitude in accordance with the variations in the modulating signal to thereby shift the center frequency of the band of frequencies which is regeneratively passed through said circuit means between said transistor means and said utilization device to thereby vary the transmission characteristics of said circuit for the carrier frequency to thereby amplitude modulate the amplitude of the carrier signal applied to said utilization device.

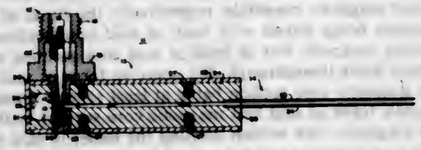
3,170,127
AMPLITUDE MODULATION SYSTEM
Bruce G. Cramer, Norristown, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 21, 1961, Ser. No. 104,668
7 Claims. (Cl. 332—41)



1. In an outphasing amplitude-modulation system, apparatus for producing two constant-amplitude phase-displaced signals which are oppositely phase-modulated according to a modulation signal, comprising means for adding the modulation signal to a carrier signal, means for limiting the resulting signal to produce a rectangular wave signal, means for producing a second rectangular wave signal of opposite phase in relation to said first rectangular wave signal, means for differentiating said rectangular wave signals to produce two spike signals, and means for producing from the latter signals the desired two oppositely phase-modulated signals.



3,170,128
MICROWAVE BROADBAND BALUN BETWEEN COAXIAL LINE AND PARALLEL STRIP LINE
Charles R. Eason, Belelle, and John L. Kerr, Neptune, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 15, 1963, Ser. No. 258,933
5 Claims. (Cl. 333—26)
(Granted under Title 35, U.S. Code (1952), sec. 266)



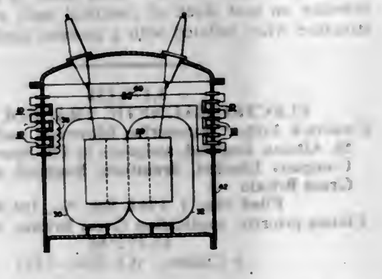
1. A balun for providing a broad-band transition from an unbalanced transmission line to a balanced transmission line, comprising a double-ridged rectangular waveguide, means for connecting at a first location said unbalanced transmission line to said ridges, means connecting at a second location said balanced transmission line to said ridges, said ridges being spaced such that the characteristic impedance of said waveguide at all locations between said first and second locations is equal to the characteristic impedance of said balanced and unbalanced transmission lines, and said first and second locations being spaced a distance of at least one wavelength for all operating frequencies.

3,170,129
CAVITY RESONATOR TUNED BY VARIABLE RECESSING, INSTEAD OF VARIABLE PROJECTING, TUNING SCREW
Kenneth D. Powell, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1961, Ser. No. 92,540
6 Claims. (Cl. 333—83)



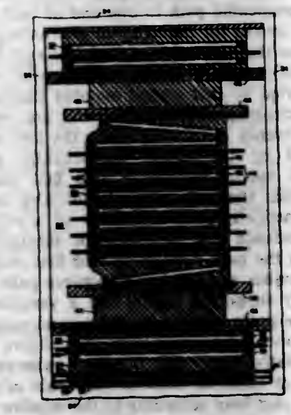
6. A resonant cavity formed of upper and lower faces and of side walls, a wave guide beyond cutoff provided in said side walls to provide an additional volume within said cavity, a tuning member extending into said wave guide and confined therein, said tuning member being movable within said wave guide to vary the field within said wave guide connected to said cavity to thereby vary the operating wavelength of said cavity.

3,170,130
TRANSFORMER COOLING USING THERMOELECTRIC DEVICES
Francis T. Begley, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 24, 1962, Ser. No. 168,418
3 Claims. (Cl. 336—55)



1. An electrical transformer comprising, a tank having a liquid electrical insulating dielectric disposed therein, a plurality of electrical windings disposed in inductive relation with a magnetic core and positioned within said tank, a plurality of thermoelectric cooling devices each having a cold portion and a hot portion when an electric current flows therethrough, said plurality of thermoelectric devices being associated with said tank, with their cold portions being in heat inductive relation with said insulating dielectric and their hot portions being disposed to radiate heat to the air surrounding said tank, a rectifier disposed within said tank, and means connecting said plurality of thermoelectric devices, one of said plurality of electrical windings, and said rectifier in electric circuit relation such that electric current will flow through said thermoelectric devices when said transformer is energized with an electric potential.

3,170,131
SUPPORTING MEANS FOR ELECTRICAL COILS IN ELECTRICAL APPARATUS
Paul Narbut, Hickory Township, Mercer County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1962, Ser. No. 219,037
4 Claims. (Cl. 336—65)

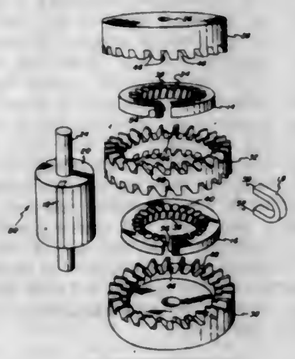


1. An electrical transformer comprising, a magnetic core, a plurality of electrical coils disposed in inductive relation with said magnetic core, said electrical coils each

having substantially flat sides which are disposed adjacent one another to form a stack of electrical coils, means disposed at one end of said stack of electrical coils compressing said stack with a pressure substantially perpendicular to the flat sides of said electrical coils to maintain said electrical coils in assembled relation by friction forces, said means including a plurality of inflatable containers and supporting structure which exert a predetermined pressure on said stack of electrical coils and supporting structure when inflated with a gaseous medium.

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3,170,132
## ELECTROMAGNETIC TRANSDUCERS
Frederick Arthur Summerlin, Isleworth, and Frank Dove, St. Albans, England, assignors to The Sperry Gyroscope Company Limited, Brentford, England, a company of Great Britain
Filed May 1, 1961, Ser. No. 106,942
Claims priority, application Great Britain, May 3, 1960, 15,472/60
6 Claims. (Cl. 336—132)



1. An electromagnetic transducer comprising first and second members of magnetically permeable material, the first of said members defining a first magnetically permeable path and the second of said members defining second and third magnetically permeable paths which are stationary with respect to each other, means rigidly supported by and cooperating with said second member to provide a low reluctance path from one end of said second permeable path to one end of said third permeable path, means for inducing an alternating magnetic field in at least the permeable material of said first member, a pair of windings connected in series opposition and so supported by said second member that said windings link electromagnetically with, and are respectively substantially evenly distributed along the two permeable paths defined by the second magnetically permeable member, and means supporting said first and second members so that they are relatively movable and define a single magnetically permeable loop of a substantially constant permeance that lies through substantially the whole of both the path defined by said first magnetically permeable member and the low reluctance path provided by said rigidly supported means and a variable portion of each of the paths defined by the second magnetically permeable member depending upon the relative positions of said two relatively movable members, whereby a variable number of turns of each of said pair of windings is linked with said loop according to the relative positions of said first and second members, and whereby a substantially constant number of turns of said pair of windings is continually linked electromagnetically with said loop irrespective of the relative positions of said members.

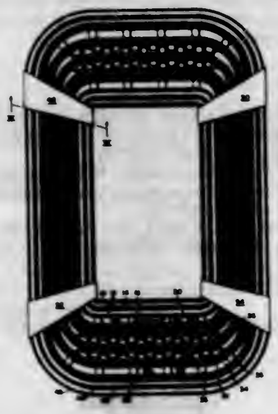
3,170,133
## ELECTRICAL INDUCTIVE APPARATUS
Andreas Kerwick, Lima, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1961, Ser. No. 80,894
9 Claims. (Cl. 336—165)



1. A transformer comprising a magnetic core structure, and at least two windings including a plurality of conductor turns, said magnetic core structure comprising first and second magnetic core sections formed from first and second magnetic materials, respectively, the turns of said windings being linked with both of said core sections to produce magnetic flux in both of said core sections when current flows therethrough, the coercive force of said second magnetic core section being at least several times the coercive force of said first magnetic core section, with the first magnetic core section limiting the losses in said magnetic core structure and the second magnetic core structure preventing gradual saturation of said magnetic core structure.

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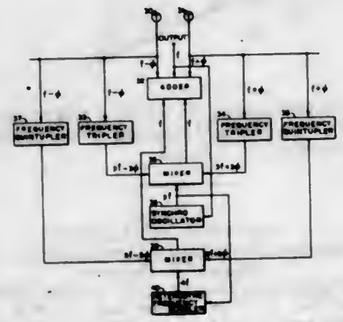
3,170,134
## ELECTRICAL COIL STRUCTURE FOR INDUCTIVE APPARATUS
Betty J. Palmer, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 15, 1961, Ser. No. 159,699
5 Claims. (Cl. 336—205)



1. A wound coil having a plurality of turns of insulating and conducting material comprising, a first strip of insulating material wound to provide a coil form, a first winding disposed on said coil form, a second strip of insulating material disposed on said first winding to form a tubular insulating member, a second winding disposed on said tubular insulating member, and an adhesive disposed between the several turns of said wound coil at spaced intervals around said coil, said adhesive firmly bonding each turn of material to the adjacent turn of material at said spaced intervals.



3,170,135
## PHASE MULTIPLIER TRANSDUCER ARRAY
John J. Yagolowich, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 19, 1962, Ser. No. 167,454
2 Claims. (Cl. 340—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

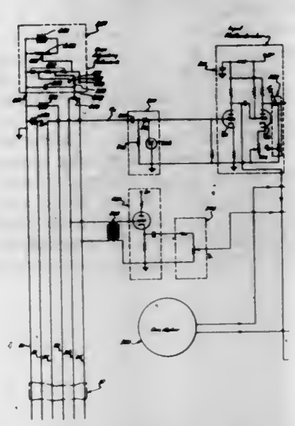


1. A directional sound detecting apparatus comprising,
a first sound to electrical signal transducer,
a second sound to electrical signal transducer spaced an integral distance from said first transducer whereby sound phase fronts, which do not strike both transducers simultaneously induce signals having equal and opposite integral angular initial phase shifts in said transducers relative to a signal measured midway between said transducers,
a plurality of multiplying means connected to each of said transducers for producing a plurality of signals each having different phase shifts, larger than said initial phase shifts by an integral factor, and each being capable of generating harmonics of the fundamental frequency each of the transducer's output signals,
mixer means connected to said multiplying means wherein the multiplied signals from said transducers having the same frequencies are combined,
oscillator means, generating harmonics of said fundamental frequency, connected to said mixer means wherein said harmonic signal is injected into said mixer at the same time the multiplied signals are combined in said mixer thereby returning the resultant multiplied signal to its original frequency,
and adder means connected to said transducers and mixer means wherein signals from said transducers and mixer means are added.

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3,170,136
## SYSTEM FOR LOGGING WELLS
Edgar T. Howes, Pasadena, Calif., assignor to United Geophysical Corporation, a corporation of California
Filed Oct. 13, 1954, Ser. No. 462,062
30 Claims. (Cl. 340—18)

5. In a well testing system, wherein signals generated by a signal source in a well are detected by a receiver in the well and are transmitted over a pair of conductors to a signal-responsive device at the surface, the improvement comprising the combination of:
a voltage source at the surface;
control means located in the well adjacent said signal source for rendering said receiver operative to transmit said signals over said conductors at a time that varies in accordance with the voltage applied to said means;
means for connecting said pair of conductors as a conductor of a phantom circuit between said voltage source and said control means;



and means located at the surface for varying the voltage supplied from said voltage source to said phantom circuit.

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3,170,137
## METHOD OF IMPROVING ELECTRICAL SIGNAL TRANSMISSION IN WELLS
Harry Brandt, Whittier, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed July 12, 1962, Ser. No. 209,453
14 Claims. (Cl. 340—18)



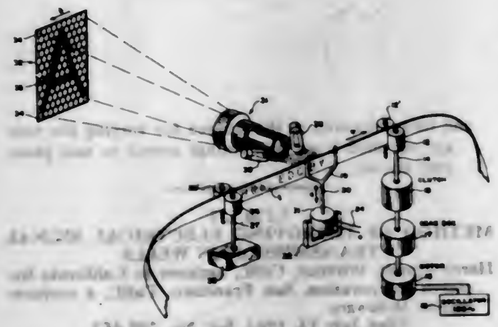
13. In a method of electrically transmitting a signal on a pair of connected conductors located in a well containing an electrolytic drilling mud, the improvement comprising establishing a direct current potential on the conductors to cause electrolysis of the drilling mud adjacent the connections of said conductors and the formation of a gaseous film therebetween, and maintaining said direct current potential on the conductors while establishing an alternating current potential on said conductors for the transmission of a signal thereon.

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3,170,138
## CHARACTER RECOGNITION SYSTEM AND APPARATUS
William D. Buckingham, Southampton, Frank T. Turner, Hampton Bays, and Alan E. Hildreth, Jr., Southampton, N.Y., assignors to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Apr. 21, 1960, Ser. No. 23,713
12 Claims. (Cl. 340—146.3)

1. Character reading apparatus comprising means for holding page copy having successive lines of characters to

be read, means for producing a beam of energizing rays, an array of devices each of which includes means for causing an electrical potential to be produced when the device is exposed to said beam, means for causing said beam to successively view the characters in each line to be read and to cause an image of each character in turn to fall upon said array of potential-producing devices to cover certain of the devices and leave the remaining ones uncovered with respect to said beam, means electrically connecting said devices in predetermined different groupings of selected ones only of said devices and in which the groups respectively are individual to different characters with certain of the potential-producing devices of each group covered by the image of the character currently being viewed and the others of said group left uncovered by said image, means for integrating the potentials produced by the devices covered by the image of the character currently being viewed to obtain a first summation po-



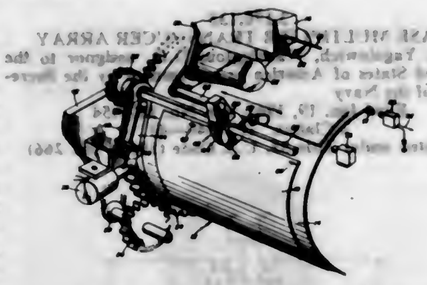
tential, means for integrating the potentials of particular ones of the devices left uncovered by said image to obtain a second summation potential, means for integrating the first and second summation potentials in a manner to produce a resultant potential representing the character currently being viewed and which is different from the resultant potential produced by any other of said groups at any time and different from the resultant potential produced as a result of viewing any other character, means responsive to said first named resultant potential for producing electrical output signals representing the particular character currently viewed by said beam, means automatically operative when the ends of said successive lines of the text appear in the viewing field for generating line return and line feed signals and means responsive to said last named signals for effecting relative movement between said beam and said page copy to a position to cause the beam to view the first character appearing in the next line of the text to be read.

### 3,170,139
### MARKER FOR MACHINE READABLE DOCUMENTS

Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 15, 1962, Ser. No. 166,166
15 Claims. (Cl. 340—146.3)

1. In an optical reading machine for identifying printed characters on documents, where the machine has means providing a signal which indicates a machine-rejection of a character; marking means, and means responsive to said

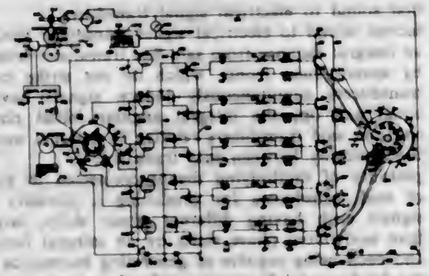


signal-providing-means for actuating said marking means to form a record of said rejection on the document containing the rejected character.

### 3,170,140
### CONTROL APPARATUS

Kurt Brücker-Steinkuhl, Lieseggangstrasse 10, Duesseldorf, Germany

Original application Dec. 30, 1957, Ser. No. 706,092, now Patent No. 3,117,261, dated Jan. 7, 1964. Divided and this application Sept. 14, 1961, Ser. No. 140,161
Claims priority, application Germany, Dec. 31, 1956, B 43,007
7 Claims. (Cl. 340—149)



1. In a production control system, a control circuit to be interposed between a measuring device and a servo mechanism, said control circuit comprising: a first plurality of unipolar error signal producing circuit networks, including means establishing standard signals for said networks; a second plurality of unipolar error signal producing circuit networks including means establishing a standard signal for said networks, said first and second plurality of networks producing error signals of opposite polarity; first terminal means adapted to be connected to a measuring device; means for cyclically and sequentially connecting each of said first networks and each of said second networks to said terminal means; and two coincidence circuits respectively associated with and connected to said first and second plurality of networks and each responding to a common response of all its associated networks.

### 3,170,141
### FREQUENCY RESPONSIVE INTERROGATION SYSTEM HAVING A REPLY OSCILLATOR AT THE RECEIVER

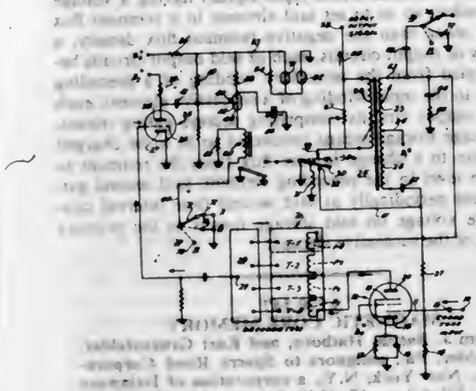
Clifford Dale Nesterenko, West Covina, Calif., assignor to Standard Kollsman Industries, Inc., Melrose Park, Ill., a corporation of Illinois

Filed Dec. 21, 1960, Ser. No. 77,384
4 Claims. (Cl. 340—171)

1. In combination an interrogating transmitter and a plurality of receivers connected thereto, each of said receivers being responsive to selected tone signals from said transmitter and operable to generate a reply tone signal, each of said receivers having an electron tube



amplifier for receiving said interrogating signals and a thyratron tube dischargeable in response to the reception of said selected tone signals, a solenoid operated upon discharge of said thyratron tube, oscillator circuitry nor-

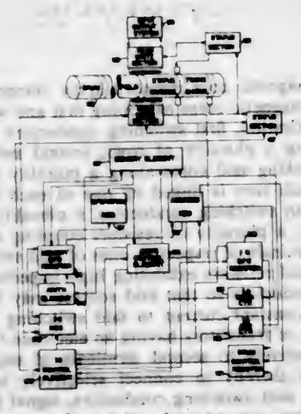


mally disconnected from said electron tube and switch means operable by said solenoid for connecting the oscillator circuitry to said electron tube whereby the electron tube functions as an oscillator to generate a reply tone.

### 3,170,142
### DATA PROCESSING MACHINE

Morton M. Astrahan, San Jose, Calif., and Bennett Housman, Poughkeepsie, Hrand L. Kurkjian, Hyde Park, and Bernard L. Serahan, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 26, 1956, Ser. No. 612,265
9 Claims. (Cl. 340—172.5)



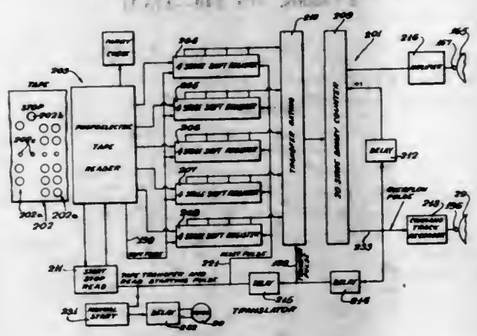
1. A data processing machine comprising a storage device having a plurality of signal storage registers, each storage register being capable of storing data signals and associated tag signals, means for randomly storing data signals and associated tag signals in said signal storage registers, said tag signals being individually recognizable, a receiving device, and a control means including means for recognizing individually each tag signal and responsive to said tag signals for causing an associated data signal to be delivered to said receiving device.



### 3,170,143
### TRANSLATOR SYSTEM

Marvin F. Royston, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 8, 1960, Ser. No. 48,007
7 Claims. (Cl. 340—172.5)

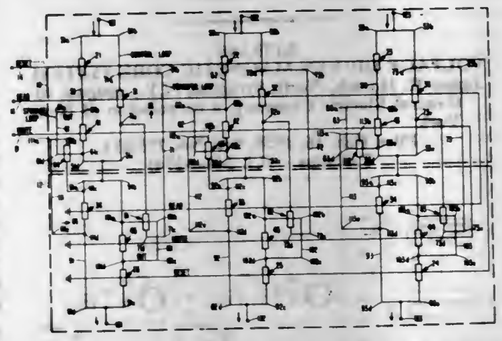


2. In a translator system for recording pulses in a predetermined pattern on a helical recording track keyed to and rotated by a feed screw, a pulse-producing device driven in synchronism with the feed screw and supplying pulses to a counting means in proportion to the extent of rotation of the feed screw, said counting means being responsive to pulses from the pulse-producing device for applying a pulse to the track each time the counting means counts out, and means for sequentially setting the counting means to count out at different counts.

### 3,170,144
### CRYOGENIC MEMORY SYSTEM WITH INTERNAL INFORMATION EXCHANGE

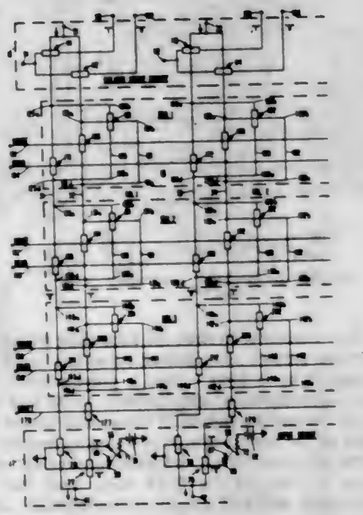
Munro K. Haynes, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 18, 1960, Ser. No. 29,899
14 Claims. (Cl. 340—173.1)



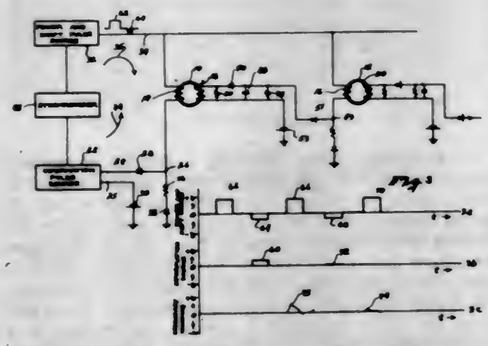
1. A memory device including a plurality of registers each of which has a plurality of stages, means coupled to each register for writing information in parallel into all of the stages therein, means coupled to each register for reading information in parallel from all of the stages therefrom and means coupled to each register which is operative in conjunction with the means for writing and the means for reading to transfer information in parallel from all of the stages of a selected first register to a selected second register simultaneously as information in the selected second register is transferred to the selected first register without requiring information transfer to a device external to the memory device.

3,170,145
**CRYOGENIC MEMORY SYSTEM WITH SIMULTANEOUS INFORMATION TRANSFER**
Munro K. Haynes, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 18, 1960, Ser. No. 30,019
2 Claims. (Cl. 340—173.1)



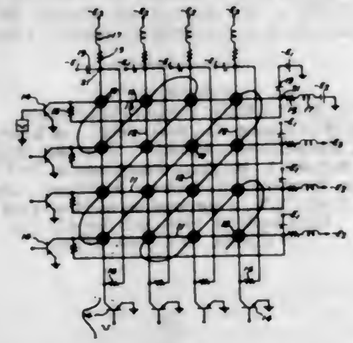
1. A memory system having a plurality of plural stage registers for the storage of information, means coupled to the memory system for transferring information in parallel from a first register to a first external device, means coupled to the memory system for transferring information in parallel from a second register to a second external device, and means coupled to the memory system for transferring information in parallel from a third external device into a third register, said first, second and third transfers occurring simultaneously.

3,170,146
**VOLTAGE DRIVEN MAGNETIC CORE SYSTEM**
James R. Hersch, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 26, 1959, Ser. No. 795,811
8 Claims. (Cl. 340—174)



7. A shift register circuit comprising a plurality of magnetic elements, a primary and secondary winding on each of said elements, a source of voltage pulses periodically applied at a first time interval across each of said primary windings, said voltage pulses having a predetermined amplitude and duration to set said cores to a positive retentive flux density, a source of input signals, a first gating means periodically at a second time interval coupling said input signals to the primary winding of a first one of said elements, said input signals having a voltage time product so as to set said element to a remnant flux density other than the negative remnant flux density, a plurality of output circuits, each of said output circuits being coupled from the secondary winding of a preceding element to the input winding of a successive element, each of said output circuits comprising second gating means, and voltage storage means connected so as to be charged responsive to a change in core flux from the remnant to retentive level in the preceding element, said second gating means periodically at said second time interval coupling the voltage on said storage means to the primary winding of the successive element.

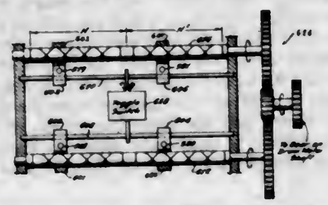
3,170,147
**MAGNETIC CORE MEMORY**
William J. Bartik, Hatboro, and Kurt Gruenefelder, Ambler, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 17, 1959, Ser. No. 834,275
19 Claims. (Cl. 340—174)



8. A magnetic core memory array comprising a plurality of magnetic cores exhibiting first and second states of magnetization, first switching conductors linking said cores along a plurality of rows, second switching conductors linking said cores along a plurality of columns, so that each core is linked by one of each of said row and column switching conductors, a plurality of sources of current, a plurality of resistors coupling said sources to first terminals of respective ones of said switching conductors, said resistors exhibiting high impedance relative to said conductors so that said sources may furnish substantially constant current to said switching conductors, a plurality of transistors having an electrode thereof coupled respectively to second terminals of said switching conductors thereby to connect selectively said current sources to said switching conductors, signal means coupled to other electrodes of said transistors to render said transistors selectively operative, each current source supplying to its respective conductor a fraction only of the current required to switch the cores linked by said conductor from their first to their second state of magnetization so that in order to switch a selected core current must be supplied to the row and column switching conductor linking said core, and a separate resistor having a resistance equal to the characteristic impedance of said switching conductors connected between said first and second terminals of each switching conductor.

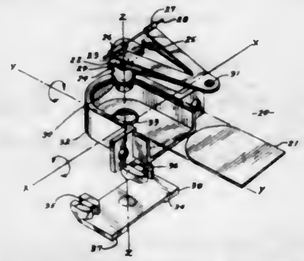


3,170,148
**MAGNETIC DRUM MEMORY SYSTEM**
Floyd G. Steele, La Jolla, Calif., assignor to Digital Controls Systems, Inc., La Jolla, Calif.
Original application Feb. 16, 1956, Ser. No. 566,219, now Patent No. 2,995,729, dated Aug. 8, 1961. Divided and this application Aug. 20, 1959, Ser. No. 835,095
7 Claims. (Cl. 340—174.1)



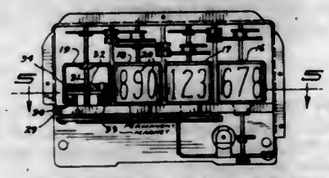
1. A magnetic memory comprising: a rotatable magnetic drum; first means for continuously rotating said drum; a rotatable level wind shaft having an endless worm thereon positioned adjacent said drum and having its axis substantially parallel with the longitudinal axis of said drum; a level wind shaft follower coupled to said level wind shaft and engaging said endless worm to be operative in response to rotation of said level wind shaft for moving reciprocatingly therealong in the dimension of the axis of said shaft; a magnetic writing transducer positioned contiguous with the surface of said drum and coupled to said level wind shaft follower for moving therewith; second means for applying to said transducer electrical signals to be recorded; and third means intercoupling said level wind shaft with said first means to rotate said level wind shaft in synchronization with the rotation of said drum whereby said magnetic transducer is operative to record said electrical signals in a spiral magnetic track on the surface of said drum.

3,170,149
**TRANSDUCER**
Wallace W. Kosbie, Minneapolis, Donald K. Sampson, St. Paul, and Byron D. Smith, Minneapolis, Minn., assignors, by mesne assignments, to Data Products Corporation, Culver City, Calif., a corporation of Delaware
Filed Oct. 4, 1961, Ser. No. 142,793
6 Claims. (Cl. 340—174.1)



1. Transducer mounting apparatus comprising, a hollow frame member having mutually perpendicular first, second and third axes, an opening adapted for connection to a source of fluid under pressure and a circular opening having an axis coincident with said first axis, a first member located externally of said housing and being adapted to receive and hold a plurality of transducers, said member having a projection slidably inserted into said circular opening, having substantially the same size as said circular opening, being shaped to permit omnidirectional motion of said member with respect to said frame; a pair of bifurcated members positioned inside said frame and adapted for connection at one extremity and having lateral tubular extensions formed at the opposite extremities thereof; connecting means interconnecting said last named members substantially at said one extremity so as to permit relative rotation therebetween; means rotatably connecting one of said other extremities to said frame along an axis parallel to said second axis and further means rotatably connecting the other of said extremities to the projection on said first member along an axis parallel to said second axis whereby said members cooperate to tend to maintain said first member in a retracted position adjacent said frame and to allow linear motion of said first member along said first axis and rotational movement of said first member about said second and third axes.

3,170,150
**MENSURATION DEVICE WITH ELECTRONIC DETECTION FOR REMOTE READING**
Joseph Kelar, Richard L. Dennison, and Norman E. Daggett, Minneapolis, Minn., assignors to Magnetic Controls Co., Minneapolis, Minn., a corporation of Minnesota
Filed July 11, 1960, Ser. No. 41,861
5 Claims. (Cl. 340—197)

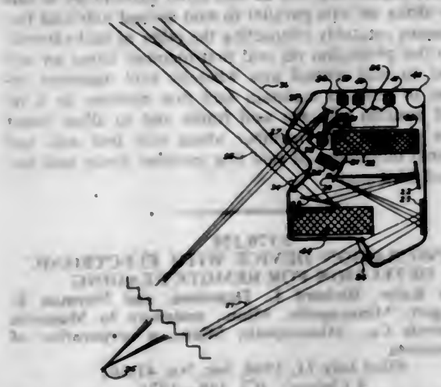


1. In mensuration apparatus of the digital type, indicator means rotatable to register values of mensuration, a plurality of separate and distinct transformer units each having a core of alterable permeability and disposed at spaced intervals and defining a circular pathway coaxial with said indicator means, each of said transformer units corresponding to a predetermined value of mensuration on said indicator means, a permanent magnet lying closely adjacent said pathway and having a surface adapted to overlie any one of said transformers and only one at a time, means mechanically coupled to said indicator means for causing relative rotation between said plurality of transformer units and said permanent magnet along said prescribed circular pathway, means supplying electrical input pulses to the primaries of said transformers, and means detecting the difference in character between the output pulse of the transformer over which the permanent magnet lies and that of the remaining transformers whereby to read the value of mensuration corresponding thereto.

3,170,151
**OPTICAL WALKING AID FOR THE BLIND**
Alexander Roth, 166 S. 2nd Ave., Fort Walton Beach, Fla.
Filed Apr. 20, 1962, Ser. No. 189,140
1 Claim. (Cl. 340—213)

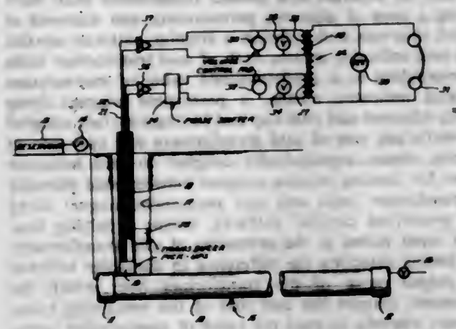
In an optical walking aid for the blind, means for producing a converging beam, first focussing means for focussing said converging beam, second focussing means for focussing reflections of said converging beam, a photocell, a fine aperture positioned between said photocell and said second focussing means, whereby said fine aperture admits reflections of said converging beam only from a specific point along said converging beam, means for producing a divergent beam, third focussing means for focussing said diverging beam, fourth focussing means for focussing reflections of said diverging beam, a coarse aperture positioned between said photocell and said fourth focussing means, whereby said coarse aperture admits reflections of said diverging beam from any point between two specific distances along said diverging beam, said

photocell being responsive to the reflections admitted by either of said apertures, means for separately modulating said converging and diverging beams, means for amplifying the electrical signal from the photocell, and means connected to said amplifying means for producing a sensory stimulus.



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3,170,152
PIPELINE LEAK DETECTION DEVICE
Francis Vinton Long, Shreveport, La., assignor to Texas Eastern Transmission Corporation, Shreveport, La., a corporation of Delaware
Filed June 8, 1961, Ser. No. 115,814
4 Claims. (Cl. 340—242)

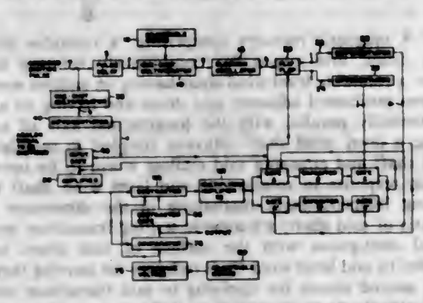


1. A pipeline leak detection device comprising, a probe adapted to be inserted into the ground until one end of the probe contacts a pipe to be tested, a first transducer on said end of the probe for contacting the pipe to be tested, a second transducer substantially identical to the first mounted on said probe and spaced from said first transducer and positioned to be out of contact with said pipe when the end of the probe is in contact with said pipe, means for shifting the phase of the output from at least one of said transducers until the output of said transducers is approximately 180° out of phase with each other, means for integrating the output of said transducers, and means for sensing any remaining signal after said integration.

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3,170,153
ANALOG-TO-DIGITAL CONVERTER
William Brooks, Sunnyvale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 4, 1960, Ser. No. 7,739
5 Claims. (Cl. 340—347)

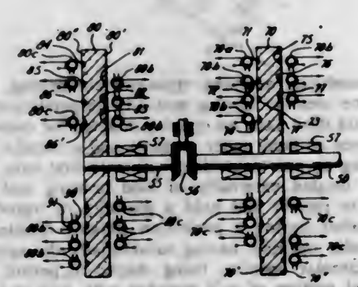
1. An analog to digital conversion system comprising in combination: a first means to which the analog signal to be digitized is fed, said first means for subtracting a fixed magnitude signal from said analog signal when the analog signal is greater than a predetermined magnitude and for passing the analog signal without subtraction when said analog signal is equal and less than said predetermined magnitude, a second means to which the output of said first means is fed, said second means adapted to multiply the output signal from said first means by a predetermined multiplying factor, a first and second signal storage means each having an input and output connection, a first gate means connected between the output of said second means and the input connection of said first storage means, a second gate means connected between the output of said second means and the input connection of said second storage means, a third gate means connected between said first storage means and the input of said first means,



a fourth gate means connected between the output connection of said second storage means and the input to said first means, an input gate means between said analog signal and the input of said first means, circuit means connected to said first, second, third, and fourth gate means for driving said gates so that the multiplied output from said second means connected to said input of said first and second gate means is alternately stored in each of said first and second storage means, said analog signal is disconnected from said first means and the signal stored on each respective storage means is recirculated through said system a predetermined number of times after said analog signal is disconnected, and means connected to said first means for generating a pulse each time said first means performs a subtraction operation, the pulses thereby generated being a digital representation of said analog signal.

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3,170,154
ENCODER SYSTEMS
Howard M. Fleming, Jr., Lebanon, N.J., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Feb. 16, 1961, Ser. No. 89,853
3 Claims. (Cl. 340—347)

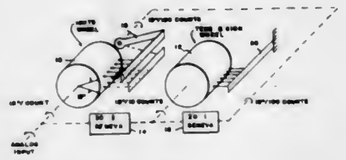


3. Position sensing apparatus comprising in combination, a first movable magnetic member and a second movable magnetic member, said first and said second movable members each having spaced magnetized areas forming a binary code pattern consisting of a number of magnetic tracks, and a plurality of saturable reentrant magnetic cores, each core having at least one excitation winding and one readout winding on each of said cores, said cores being adjacent each of said members for decoding said tracks, said plurality including a single core member for decoding the least significant track of said pattern on said first member and a pair of cores for each of the remaining tracks on each of said members; the separation between the two elements of each pair, measured in quantum units of said least significant track, being substantially the same on each of said remaining tracks; one core member of each pair being spaced in leading relation to said code pattern with respect to said single core member and the other core member of each pair being spaced in lagging relation with respect to said single core member; means applying an alternating signal to each excitation winding and logic means for readout of each lagging core or each winding of each leading core in dependence upon the relative position between said single core member and said first movable member, said logic means including at least one detector connected to each of said readout windings, a first bistable device, a second bistable device, first gating means for gating signals representing the positions of said first magnetic member, and second gating means for gating signals representing the positions of said second magnetic member, said first bistable device selectively applying to said first gating means the output signal from the detector detecting the signal from the readout winding on said single core, said second bistable device selectively applying the output signals from said first gating means to said second gating means, the combined output signals from said first and second gating means representing the relative positions of said first and second movable magnetic members.



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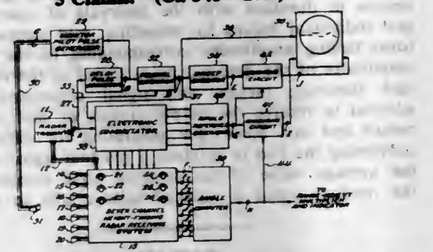
3,170,155
QUANTIZER
Blanchard D. Smith, Jr., Alexandria, and Arthur H. Ballard, Falls Church, Va., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 8, 1961, Ser. No. 94,409
9 Claims. (Cl. 340—347)



1. An encoder for converting analog information of mixed positive and negative values into a cyclic binary-decimal code comprising a code units wheel having cyclic binary-decimal code positions thereon driven by a continuous analog function input, code wheels having cyclic binary-decimal code positions thereon representing higher decades, means for stepping said higher decade code wheels at appropriate times during the revolution of said units wheel, a brush means in conjunction with each of said wheels maintaining electrical contact with their respective said wheels for removing the said cyclic binary-decimal code, and means for rotating the said units wheel brush means opposite to the wheel rotation a predetermined amount when the said analog function enters a specific range of values encompassing analog zero.

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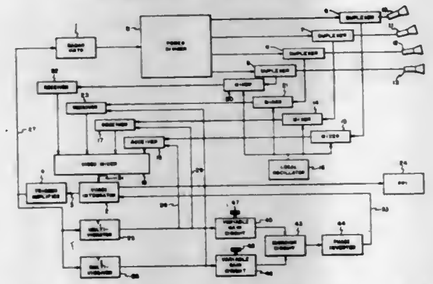
3,170,156
GAIN MONITORING SYSTEM FOR A HEIGHT-FINDING RADAR
John W. Downs, Eau Gallie, Fla., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Dec. 2, 1955, Ser. No. 550,574
5 Claims. (Cl. 343—17.7)



1. In a gain monitoring system for a multi-channel receiving system, said gain monitoring system including a pilot pulse generator means producing recurrent pulse-modulated pilot signals to be received by each channel of said multi-channel receiving system, means for comparing the gains of adjacent channels of said multi-channel receiving system, comprising in combination, switching means coupled between said pilot pulse generator means and said multi-channel receiving system for recurrently activating a first pair of adjacent channels during first monitoring intervals, each of said first pair of adjacent channels producing recurrent output pulses, computer means coupled to the output of said receiving system and responsive to the output pulses during said first monitoring intervals for producing recurrent video output pulses whose magnitude varies according to the ratio of the voltage gains of said first pair of adjacent channels, the magnitude of said video output pulses having a predetermined value when the gains of said first pair of adjacent channels are equal, reference generator means coupled to said switching means for producing a recurrent reference voltage, the magnitude of said reference voltage having a fixed value equal to the predetermined value of said video output pulses from said computer means when the gains of said pair of adjacent channels are equal, and indicator means coupled to the output of said computer means and to the output of said reference generator means for indicating the difference between said video output pulses from said computer means and said recurrent reference voltage.

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3,170,157
RECEIVER NOISE COMPENSATION SYSTEM
Rudolph F. Schreitmueller, Hempstead, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed June 3, 1957, Ser. No. 664,878
7 Claims. (Cl. 343—17.1)

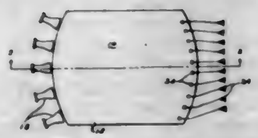


1. In a stacked-beam radar system, receiving means including individual means for detecting target signals and noise present in each of the respective beam chan-

nels, means for rendering said individual means operative during respective portions of the target reception interval, means for summing the detected target signals and the detected noise signals at the outputs of said individual means, means for generating a stepped waveform having portions synchronous in time and coextensive in duration with the intervals of operation of said individual means for detecting, said stepped waveform having amplitudes corresponding to the average amplitudes of the detected noise signal at the output of said summing means, and signal combining means adapted to receive the output signals of said summing means and said means for generating for differentially combining the two to produce a residual signal whereby the average value of the detected noise component of the residual signal is reduced substantially to zero.

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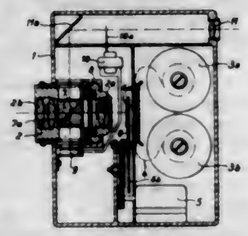
**3,170,158**
**MULTIPLE BEAM RADAR ANTENNA SYSTEM**
**Walter Rotman, Brighton, Mass., assignor to the United States of America as represented by the Secretary of the Air Force**
**Filed May 8, 1963, Ser. No. 279,029**
**9 Claims. (Cl. 343—100)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A radar antenna system comprising, a parallel plate wave conducting lens having a feed aperture, multiple beam producing means for launching a plurality of wave energy beams separated angularly from each other relative to the lens axis into the aperture of said lens, a linear array of radiating elements, and multiple phase shifter means receiving the energy propagating within said lens and coupled in energy conducting relation to said array of radiating elements for linearly altering the phase shift of the energy input into said array thereby to scan the radiated energy through a predetermined space.

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**3,170,159**
**MOTION PICTURE CAMERA**
**Willi Goldberg and August Bröhl, both of Wetzlar (Lahn), Germany, assignors to Ernst Leitz Gesellschaft mit beschränkter Haftung, Wetzlar (Lahn), Germany**
**Filed Jan. 2, 1962, Ser. No. 163,647**
**Claims priority, application Germany, Jan. 7, 1961, L 37,896**
**4 Claims. (Cl. 352—171)**

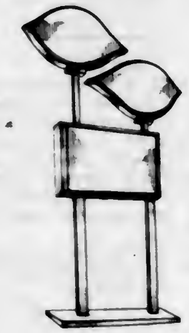


1. A motion picture camera comprising an objective lens having front and rear lenses in spaced relation and an objective diaphragm positioned in said space, a reflex view-finder, optical means between said objective lens and said diaphragm for reflecting a portion of the light rays entering said objective onto said view-finder and passing the remainder of said light rays through said diaphragm, a rotating shutter positioned after said diaphragm and behind the rear lens of the objective and having a cut-out portion therein to permit the intermittent passage of light rays onto a film, there being a reflecting surface on the surface of said shutter facing towards said objective, an exposure meter having a photoelectric cell, and means on said optical means for receiving all of the light reflected from said shutter and reflecting all of this light to said photoelectric cell.

# DESIGNS

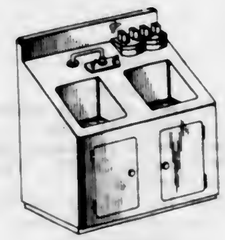
## FEBRUARY 16, 1965

**200,288**
**SIGN**
**Robert Orion Smythe, Cedar Rapids, Iowa, assignor to American Dairy Queen Corporation, Minneapolis, Minn., a corporation of Delaware**
**Filed Oct. 21, 1963, Ser. No. 77,064**
**Term of patent 14 years**
**(Cl. D1—12)**



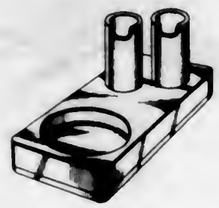
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**200,289**
**SINK**
**Max Schor, 518B 126th St., Rockaway Park, N.Y.**
**Filed Nov. 26, 1963, Ser. No. 77,576**
**Term of patent 7 years**
**(Cl. D4—2)**



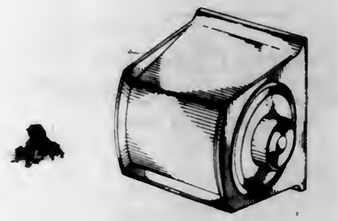
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**200,290**
**COMBINED TOOTHBRUSH AND TUMBLER HOLDER**
**Jack T. Turner, 806 Cary Campbell Road, Fort Pierce, Fla.**
**Filed Nov. 23, 1962, Ser. No. 72,577**
**Term of patent 14 years**
**(Cl. D4—3)**



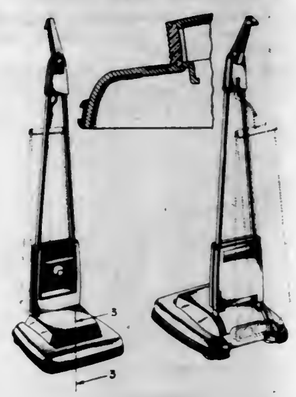
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**200,291**
**ROLL PAPER DISPENSER OR SIMILAR ARTICLE**
**Winfred D. Wren, 1034 S. Kealing Ave., Indianapolis, Ind.**
**Filed Apr. 23, 1964, Ser. No. 79,664**
**Term of patent 14 years**
**(Cl. D4—3)**



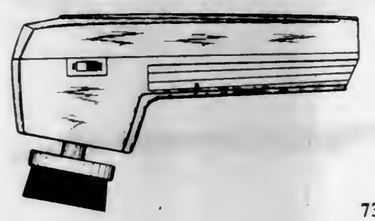
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**200,292**
**VACUUM CLEANER OR SIMILAR ARTICLE**
**Russell A. Fritts, Cranford, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey**
**Filed July 5, 1963, Ser. No. 75,678**
**Term of patent 14 years**
**(Cl. D9—2)**

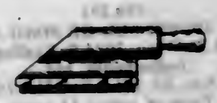


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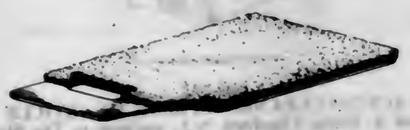
**200,293**
**BATTERY POWERED MOTOR DRIVEN SHOE BRUSH**
**Alvin Polatchek, New York, N.Y., assignor to Shields, Inc., Attleboro, Mass., a corporation of Massachusetts**
**Filed Mar. 2, 1964, Ser. No. 78,836**
**Term of patent 14 years**
**(Cl. D9—2)**



200,294
COMBINATION BRUSH AND POLISHING PAD
James D. Gainsley, 2625 Inglewood Ave. S., Minneapolis, Minn.
Filed July 9, 1964, Ser. No. 80,774
Term of patent 14 years
(Cl. D9—2)



200,295
AUTOMOBILE FLOOR MAT
Harlan L. Lee, P.O. Box 274, Wapakoneta, Ohio
Filed Mar. 16, 1964, Ser. No. 79,002
Term of patent 14 years
(Cl. D9—6)



200,296
OVERHEAD DOOR CLOSER
Norman Harold Edgley, Birmingham, England, assignor to William Newman & Sons Limited, Birmingham, England, a British company
Filed Aug. 5, 1963, Ser. No. 76,106
Term of patent 14 years
(Cl. D10—7)



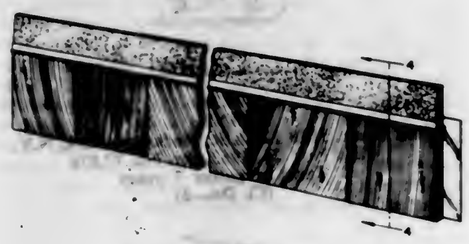
200,297
PULL FOR FURNITURE, KITCHEN CABINETS OR THE LIKE
Vytaut P. Aleks, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 81,771
Term of patent 14 years
(Cl. D10—8)



200,298
DOG HOUSE
William H. Daniel, Daniel Bldg., Tulsa, Okla.
Filed May 18, 1964, Ser. No. 80,014
Term of patent 14 years
(Cl. D12—2)



200,299
ARCHITECTURAL SIDING STRIP
Hugo E. Pannullo, 77 Atwells Ave., Johnston, R.I., and Hugh C. Neville, Barrington, and Hugh Neville, Jr., Tiverton, R.I., assignors, by direct and mesne assignments, of forty-two and one-half percent to said Pannullo, fifty percent to Anawan Plastics & Machine Corp., Fall River, Mass., a corporation of Massachusetts, and seven and one-half percent to Bernard Plante, Lincoln, R.I.
Filed May 11, 1964, Ser. No. 79,915
Term of patent 14 years
(Cl. D13—1)

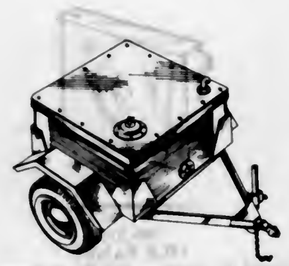


200,300
ENTRANCE STAIRCASE FOR MOBILE HOMES AND THE LIKE
Francis L. Struben, Baltimore County, Md., assignor to Silver Top Manufacturing Co., Inc., White Marsh, Md., a corporation of Maryland
Filed Mar. 10, 1964, Ser. No. 78,944
Term of patent 14 years
(Cl. D13—7)

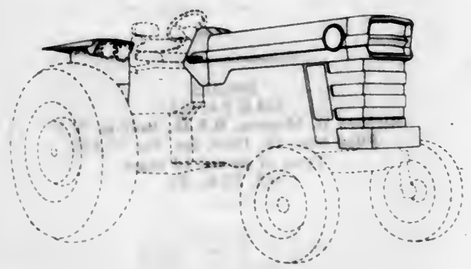




200,301
COMBINATION TANK AND TRAILER
Joseph E. Kaciuik, 2704 McKinnie Ave., Fort Wayne, Ind.
Filed Nov. 21, 1963, Ser. No. 77,526
Term of patent 14 years
(Cl. D14—3)



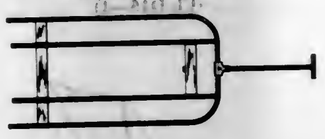
200,302
TRACTOR
Leo J. Lorenz, Farmington, and Thomas E. Stephenson, Detroit, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Jan. 31, 1964, Ser. No. 78,443
Term of patent 14 years
(Cl. D14—3)



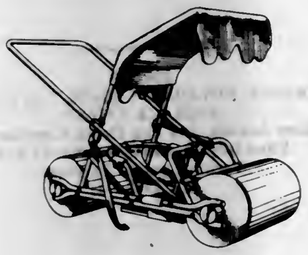
200,303
DOLLY
Robert D. Handley, Jackson, Mich., assignor to Handley Industries, Inc., Jackson, Mich., a corporation of Michigan
Filed Feb. 6, 1964, Ser. No. 78,550
Term of patent 14 years
(Cl. D14—3)



200,304
LOW BED UTILITY HAND CART
Elodoro R. Perez, 149 E. Anderson St., Stockton, Calif.
Filed Feb. 28, 1964, Ser. No. 78,819
Term of patent 7 years
(Cl. D14—3)



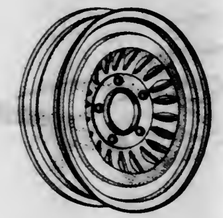
200,305
CHILD'S STROLLER OR SIMILAR ARTICLE
Nick W. Bradov, % Gay-Nik Enterprises, Box 2098, De Land, Fla.
Filed Feb. 13, 1964, Ser. No. 78,618
Term of patent 7 years
(Cl. D14—14)



200,306
WHEEL
Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 79,705
Term of patent 14 years
(Cl. D14—30)



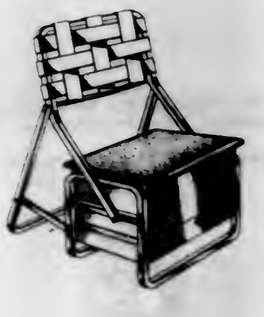
200,307
WHEEL
Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 79,709
Term of patent 14 years
(Cl. D14—30)



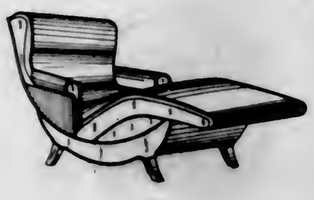
200,308
CHAIR
Leo H. Klausen, 338 Hillcrest Ave., Willowdale, Ontario, Canada
Filed Sept. 30, 1963, Ser. No. 76,801
Term of patent 14 years
(Cl. D15—1)



200,309
COMBINED FOLDING CHAIR, TACKLE BOX AND ICE CHEST
Albert Sokolis, 302 Ben Drive, Chatham, Ill.
Filed July 30, 1964, Ser. No. 81,075
Term of patent 14 years
(Cl. D15—1)



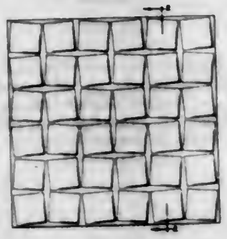
200,310
CHAIR
Arthur C. Ferro, St. Louis, Mo., assignor to Contour Chair-Lounge Co., Inc., St. Louis, Mo., a corporation of Missouri
Filed Aug. 28, 1963, Ser. No. 76,377
Term of patent 14 years
(Cl. D15—11)



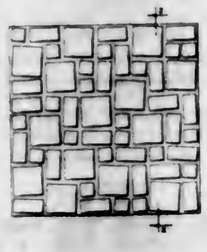
200,311
COMBINED BELT BUCKLE AND COSMETIC KIT
Jack Lesser, 1030 Arboretum Road, Wyncote, Pa., and Leon H. Halber, 1109 Glenview St., Philadelphia 11, Pa.
Filed Sept. 13, 1963, Ser. No. 76,578
Term of patent 14 years
(Cl. D17—1)



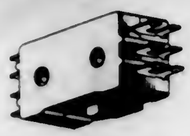
200,312
TILE PANEL
Richard H. Monroe, R.F.D., Bolivar, N.Y.
Filed Nov. 25, 1963, Ser. No. 77,551
Term of patent 14 years
(Cl. D18—2)



200,313
TILE PANEL
Richard H. Monroe, R.F.D., Bolivar, N.Y.
Filed Nov. 25, 1963, Ser. No. 77,552
Term of patent 14 years
(Cl. D18—3)

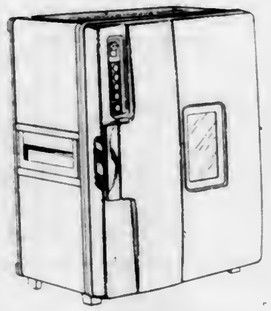


200,314
PUSHBUTTON SWITCH OR SIMILAR ARTICLE
Wladyslaw S. Zagorski, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed May 21, 1963, Ser. No. 74,988
Term of patent 14 years
(Cl. D26—13)





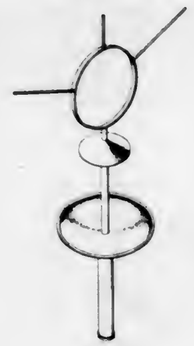
200,315
MAGNETIC TAPE TRANSPORT
Glenn A. Smith, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 27, 1963, Ser. No. 75,558
Term of patent 14 years
(Cl. D26—14)



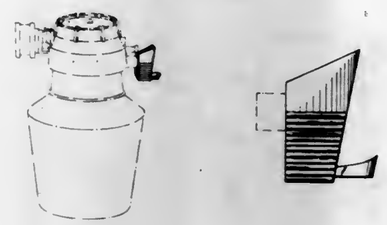
200,316
FIREARMS RECOIL PAD
Frank A. Pachmayr, Los Angeles, Calif., assignor to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California
Filed June 11, 1964, Ser. No. 80,365
Term of patent 14 years
(Cl. D30—1)



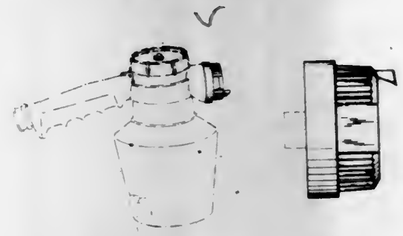
200,317
COMBINATION BIRD BATH AND SUPPORT FOR FEEDERS AND SIMILAR ARTICLES
George M. Etnyre, Oregon, Ill.
Filed Feb. 3, 1964, Ser. No. 78,470
Term of patent 14 years
(Cl. D31—2)



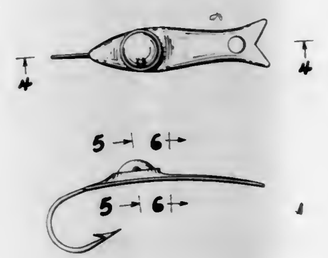
200,318
DEFLECTOR FOR A GARDEN SPRAYER OR SIMILAR ARTICLE
John D. Beinert, Babylon, N.Y., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York
Filed Dec. 10, 1963, Ser. No. 77,730
Term of patent 7 years
(Cl. D31—3)



200,319
DEFLECTOR FOR A GARDEN SPRAYER OR SIMILAR ARTICLE
John D. Beinert, Babylon, N.Y., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York
Filed Dec. 10, 1963, Ser. No. 77,738
Term of patent 7 years
(Cl. D31—3)



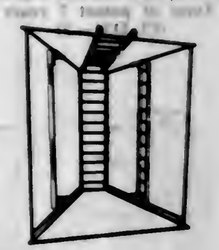
200,320
FISH LURE
Roy H. Grant, 518 Cleveland St., Toledo, Ohio
Filed Mar. 26, 1964, Ser. No. 79,198
Term of patent 14 years
(Cl. D31—4)



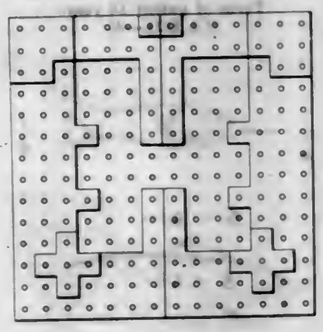
200,321
TELEVISION CART
Walter Gustorf, 1042 Orchard Lane, Creve Coeur, Mo.
Filed Jan. 24, 1964, Ser. No. 78,352
Term of patent 7 years
(Cl. D33—14)



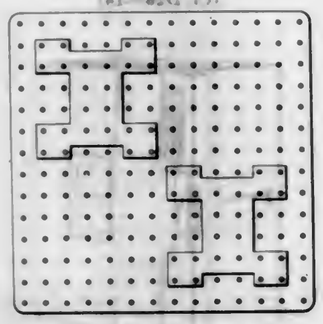
200,322
ISOMETRIC EXERCISE FRAMEWORK
Robert R. Speckman, Jr., and Marvin E. Johnson, Carbondale, Ill., assignors to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois
Filed July 15, 1963, Ser. No. 75,793
Term of patent 14 years
(Cl. D34—5)



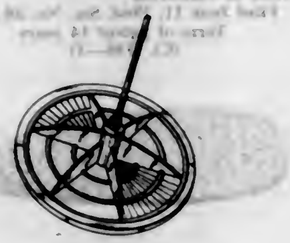
200,323
GAME BOARD
John W. Hankins, 1021 Poplar Court, Mount Carmel, Ill.
Filed June 2, 1964, Ser. No. 80,246
Term of patent 14 years
(Cl. D34—5)



200,324
GAME BOARD
John W. Hankins, 1021 Poplar Court, Mount Carmel, Ill.
Filed July 2, 1964, Ser. No. 80,677
Term of patent 14 years
(Cl. D34—5)



200,325
SLIPPING FOOT FOR A TOY TOP
Friedrich Fuchs, Zirndorf-Nurnberg, Germany
Filed Feb. 3, 1964, Ser. No. 78,476
Term of patent 7 years
(Cl. D34—15)

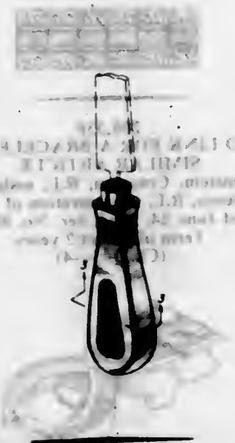


200,326
COMBINED FERTILIZER AND INSECTICIDE DISPENSER FOR GARDEN USE
Paul C. Bye, 3500 Bucks Bar Road, Placerville, Calif.
Filed Feb. 24, 1964, Ser. No. 78,749
Term of patent 14 years
(Cl. D35—2)





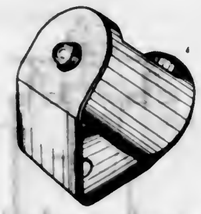
200,327
HANDLE FOR A FILE OR SIMILAR ARTICLE
Ronald G. Clothe, % Geo. Clothe Manufacturing Co. Limited, Waterloo, Ontario, Canada
Filed Feb. 25, 1963, Ser. No. 73,693
Claims priority, application Canada Aug. 23, 1962
Term of patent 14 years
(Cl. D37—1)



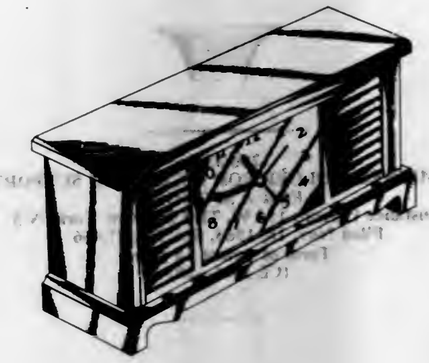
200,328
BELT SANDER
William Palmer Ippolidon, Belcombe Park Lane, Beaumaris, Victoria, Australia
Filed Feb. 3, 1964, Ser. No. 78,483
Claims priority, application Australia Aug. 16, 1963
Term of patent 14 years
(Cl. D37—1)



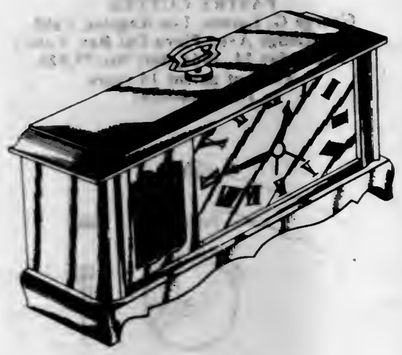
200,329
COMBINED MOUNTING BRACKET AND REEL FOR A SAFETY BELT FOR AUTOMOBILES
Eugene F. Busch, R.F.D. 2, Litchfield, Conn.
Filed July 27, 1964, Ser. No. 81,034
Term of patent 14 years
(Cl. D41—1)



200,330
CLOCK
Monte L. Levin, Roslyn, N.Y., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 5, 1964, Ser. No. 78,525
Term of patent 14 years
(Cl. D42—7)



200,331
CLOCK
Monte L. Levin, Roslyn, N.Y., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 78,580
Term of patent 14 years
(Cl. D42—7)



200,332
COOKING POT
May L. Lee, 3546 Dahlia Ave., Los Angeles, Calif.
Filed July 24, 1964, Ser. No. 80,990
Term of patent 14 years
(Cl. D44—1)



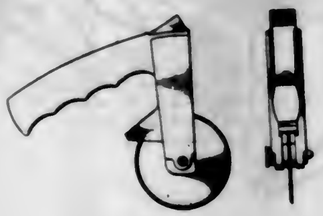
200,333
DESSERT DISH
Henry Albert Holzwarth, Bayside, N.Y., Charles Lewis Metzler, Alpine, N.J., and John Duncan Wark, Freeport, N.Y., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 21, 1964, Ser. No. 79,625
Term of patent 14 years
(Cl. D44—10)



200,334
COMBINED HOLDER FOR A CAN AND SUPPORT FOR A SPONGE
Constance Carroll, 154 W. 73rd St., New York, N.Y.
Filed Nov. 18, 1963, Ser. No. 77,466
Term of patent 14 years
(Cl. D44—39)



200,335
PASTRY CUTTER
George G. Larson, Los Angeles, Calif. (8424 Rindge Ave., Playa Del Rey, Calif.)
Filed May 11, 1964, Ser. No. 79,920
Term of patent 14 years
(Cl. D44—29)



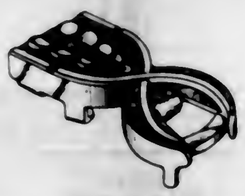
200,336
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed June 19, 1964, Ser. No. 80,481
Term of patent 7 years
(Cl. D45—4)



200,337
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed June 19, 1964, Ser. No. 80,492
Term of patent 7 years
(Cl. D45—4)



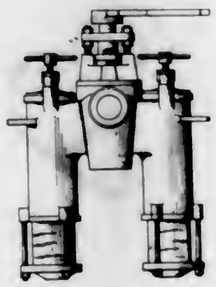
200,338
END LINK FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed June 24, 1964, Ser. No. 80,565
Term of patent 7 years
(Cl. D45—4)



200,339
END LINK FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed June 24, 1964, Ser. No. 80,567
Term of patent 7 years
(Cl. D45—4)



200,340
DUPLEX FILTER
Frederick Kraissl, Jr., 244 Kinderkamack Road, North Hackensack, N.J.
Filed Feb. 21, 1963, Ser. No. 73,676
Term of patent 14 years
(Cl. D46—1)





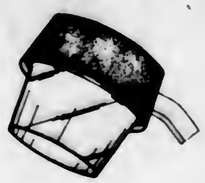
200,341
LAMP
Julius I. Dabah, Little Neck, N.Y., assignor to Dabs International Corporation, New York, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 77,618
Term of patent 14 years
(Cl. D48—20)



200,342
LAMP
Julius I. Dabah, Little Neck, N.Y., assignor to Dabs International Corporation, New York, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 77,619
Term of patent 14 years
(Cl. D48—20)



200,343
LUMINAIRE
Edmund L. Izzi, North Olmsted, Ohio, assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Oct. 31, 1963, Ser. No. 77,229
Term of patent 14 years
(Cl. D48—31)



200,344
LUMINAIRE
Giacinto C. D'Ercoli, Chicago, Ill., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 77,363
Term of patent 14 years
(Cl. D48—31)



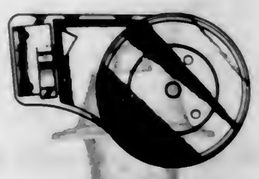
200,345
COMBINED WARNING LIGHT AND SIGN FOR EMERGENCY VEHICLES
Earl W. Gosswiller, Chicago, Ill., assignor to Federal Sign and Signal Corporation, Blue Island, Ill., a corporation of New York
Filed Sept. 9, 1963, Ser. No. 76,508
Term of patent 14 years
(Cl. D48—32)




200,346
MACHINE FOR WASHING AND CLEANING DENTURES OR THE LIKE
Anthony P. Ciccone, Los Angeles County, Calif. (315 E. Mission Drive, San Gabriel, Calif.)
Filed Apr. 10, 1964, Ser. No. 79,441
Term of patent 14 years
(Cl. D49—1)



200,347
DISPENSER FOR TIE STRIPS OR THE LIKE
Gerald C. Bower, Santa Ana, and Wayne M. Becker, Studio City, Calif., assignors to Royal Industries, Inc., Pasadena, Calif., a corporation of California
Filed Mar. 13, 1964, Ser. No. 78,994
Term of patent 14 years
(Cl. D32—1)



200,348
STAMP DISPENSER
George J. Perkins, 44 Hawthorne Road, Barrington, Ill.
Filed Mar. 18, 1964, Ser. No. 79,074
Term of patent 14 years
(Cl. D62—2)



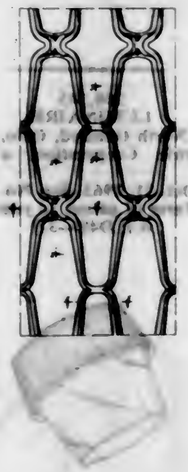
200,349
COFFEE DISPENSING MACHINE, OR SIMILAR ARTICLE
Peter B. Allard, Mansfield, Ohio, and James R. Reichow, Edina, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed May 26, 1964, Ser. No. 80,153
Term of patent 14 years
(Cl. D52—3)




200,350
SURFACE-FINISH GAUGE
Charles A. Le Bourhis, Bois-Colombes, France, assignor to Commissariat a l'Energie Atomique, Paris, France, and Laboratoire Central et des Ecoles de l'Armement, Arcueil (Seine), France
Filed June 20, 1963, Ser. No. 75,444
Claims priority, application France Dec. 21, 1962
Term of patent 14 years
(Cl. D52—6)

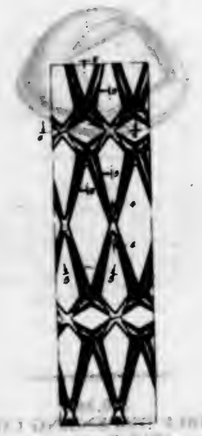


200,351
GRILLEWORK FOR TREILLAGES, ROOM DIVIDERS OR THE LIKE
Barney Bright, Anchorage, Ky., assignor to Julius Blum & Co., Inc., Carlstadt, N.J., a corporation of New York
Filed Feb. 4, 1964, Ser. No. 78,508
Term of patent 14 years
(Cl. D54—2)

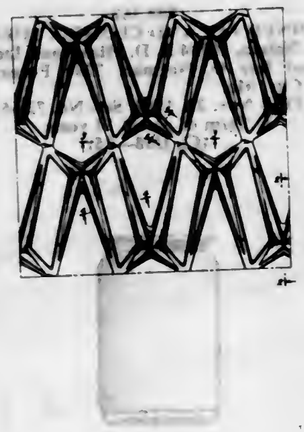




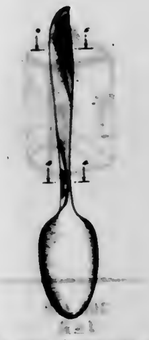
200,352
GRILLEWORK FOR TREILLAGES, ROOM DIVIDERS OR THE LIKE
Arthur A. Schlott, Jr., Louisville, Ky., assignor to Julius Blum & Co., Inc., Carlstadt, N.J., a corporation of New York
Filed Feb. 4, 1964, Ser. No. 78,516
Term of patent 14 years
(Cl. D54—2)



200,353
GRILLEWORK FOR TREILLAGES, ROOM DIVIDERS OR THE LIKE
Arthur A. Schlott, Jr., Louisville, Ky., assignor to Julius Blum & Co., Inc., Carlstadt, N.J., a corporation of New York
Filed Feb. 4, 1964, Ser. No. 78,517
Term of patent 14 years
(Cl. D54—2)



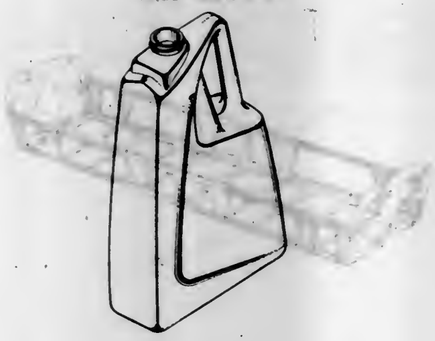
200,354
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Mar. 23, 1962, Ser. No. 69,387
Term of patent 14 years
(Cl. D54—12)



200,355
PAIR OF SPECTACLES
Armand De Angelis, Southbridge, Mass., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed May 18, 1964, Ser. No. 80,016
Term of patent 14 years
(Cl. D57—1)



200,356
JUG
Richard L. Platte, Ann Arbor, Mich., assignor to The Dow Chemical Company, Midland, Tex., a corporation of Delaware
Filed Jan. 30, 1964, Ser. No. 78,427
Term of patent 14 years
(Cl. D52—5)



200,357
BOTTLE
Emory L. Groff, Jr., 6308 Redwig Road, Bethesda, Md.
Filed Aug. 7, 1964, Ser. No. 81,203
Term of patent 14 years
(Cl. D68—5)



200,358
JAR
Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Apr. 15, 1964, Ser. No. 79,516
Term of patent 14 years
(Cl. D58—8)



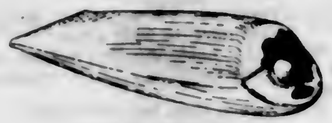
200,359
FOOD PACKAGING TRAY OR SIMILAR ARTICLE
Leo Cesarco, 7 Killman Hill Road, Benford, Mass.
Filed May 18, 1964, Ser. No. 80,039
Term of patent 14 years
(Cl. D58—12.6)



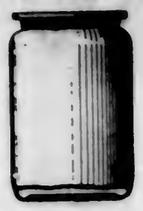
200,360
COVER FOR A WASTE RECEPTACLE
Virgil S. Dolmar, Cleveland, Ohio, and Lynden Hoffman, York, Pa., assignors, by mesne assignments, to Fierstein Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed July 1, 1963, Ser. No. 75,997
Term of patent 14 years
(Cl. D68—17)



200,361
COLLAPSIBLE DISPENSING CONTAINER
Thomas L. Laker, 6815 Beatty Ave., Cincinnati, Ohio
Filed Jan. 2, 1964, Ser. No. 78,010
Term of patent 14 years
(Cl. D58—17)



200,362
COMBINED JAR AND CLOSURE THEREFOR
Melvin O. Nelson, 16904 E. D. Mine Road, Independence, Mo., and Ray O. Neyman, 7200 Pennsylvania St., Kansas City, Mo.
Filed Nov. 29, 1962, Ser. No. 72,651
Term of patent 14 years
(Cl. D58—25)





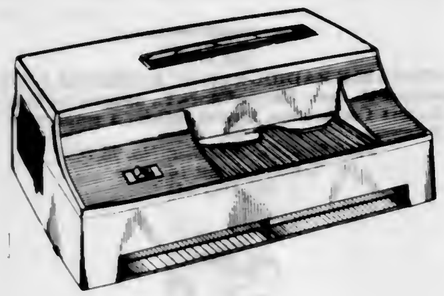
200,363
JAR
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed May 4, 1964, Ser. No. 79,805
Term of patent 14 years
(Cl. D58—25)



200,364
DISPENSER CAP AND SPOUT FOR LIQUIDS
Harvey Brody, Los Angeles, Calif., assignor to Norvey, Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 8, 1963, Ser. No. 74,339
Term of patent 14 years
(Cl. D58—26)



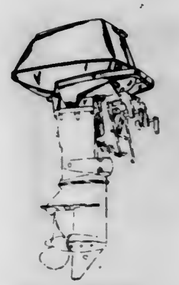
200,365
DOCUMENT REPRODUCING APPARATUS
Frederick G. Knowles and Theodore G. Clement, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 9, 1964, Ser. No. 78,928
Term of patent 14 years
(Cl. D61—1)



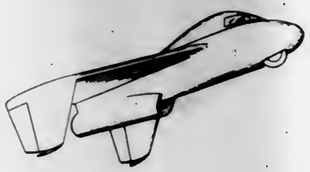
200,366
OUTBOARD MOTOR
Carl Erik Sixten Andersson-Sasse, Solna, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed May 22, 1963, Ser. No. 75,005
Claims priority, application Sweden Nov. 23, 1962
Term of patent 14 years
(Cl. D71—1)



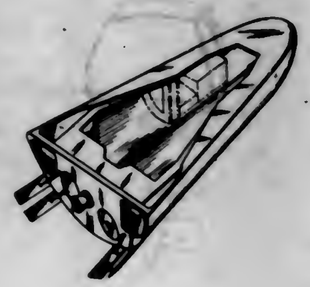
200,367
OUTBOARD MOTOR
Carl Erik Sixten Andersson-Sasse, Solna, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed May 22, 1963, Ser. No. 75,013
Claims priority, application Sweden Nov. 23, 1962
Term of patent 14 years
(Cl. D71—1)



200,368
AIRCRAFT
Clarence B. Cohen, Redondo Beach, Warren G. Koerner, Manhattan Beach, and Irvin N. Spielberg, Pacific Palisades, Los Angeles, Calif., assignors to Thompson Ramo Wooldridge Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 77,996
Term of patent 14 years
(Cl. D71—1)



200,369
RE-ENTRY BODY
Clarence B. Cohen, Redondo Beach, Warren G. Koerner, Manhattan Beach, and Irvin N. Spielberg, Pacific Palisades, Los Angeles, Calif., assignors to Thompson Ramo Wooldridge Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 77,997
Term of patent 14 years
(Cl. D71—1)



200,370
MEMO PAD HOLDER OR THE LIKE
William S. Sherman, Highland Park, Ill., assignor to Cory Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 26, 1963, Ser. No. 74,145
Term of patent 14 years
(Cl. D74—1)



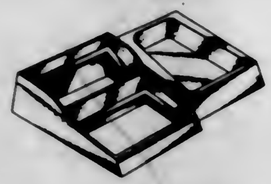
200,371
DISPLAY BIN
George Gavora, % Maine Industries, Earlville, Ill.
Filed Oct. 1, 1963, Ser. No. 76,816
Term of patent 14 years
(Cl. D99—9)



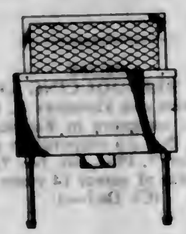
200,372
MERCHANDISE DISPLAY STAND
Donald R. Kester, Lincolnwood, Ill., assignor to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 77,075
Term of patent 14 years
(Cl. D99—9)



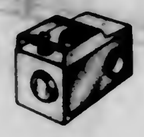
200,373
COMBINATION CONFECTIONARY DISPLAY STAND AND CHANGE TRAY
Michel S. Schwartz, 14 Clover Drive, Great Neck, N.Y.
Filed Jan. 30, 1964, Ser. No. 78,465
Term of patent 14 years
(Cl. D99—9)



200,374
SAUNA HEATER
Larry O. Partman, 4549 Goya Parkway, Sacramento, Calif.
Filed Aug. 30, 1963, Ser. No. 76,469
Term of patent 14 years
(Cl. D61—30)



200,375
PORTABLE RADIOGRAPHIC EXPOSURE UNIT
Lawrence P. Feer, Cazenovia, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 76,745
Term of patent 14 years
(Cl. D83—1)

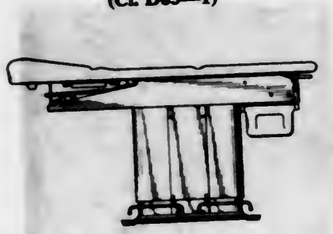




200,376
SYRINGE
Theodore E. Weichselbaum, St. Louis, Mo., assignor to Brunswick Corporation, a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 77,122
Term of patent 14 years
(Cl. D83—1)



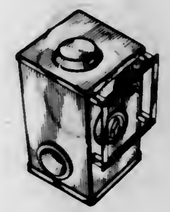
200,377
MEDICAL EXAMINATION TABLE OR THE LIKE
Karl H. Burzlaff, Fairport, and Egon R. Weickgenannt, Rochester, N.Y., assignor to Ritter Company Inc., Rochester, N.Y., a corporation of Delaware
Filed May 5, 1964, Ser. No. 79,826
Term of patent 14 years
(Cl. D83—1)



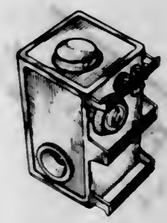
200,378
PORTABLE RADIOGRAPHIC EXPOSURE UNIT
Lawrence P. Feer, Cazenovia, N.Y., assignor to General Motors Corporation, Detroit, Mich.
Original design application Sept. 26, 1963, Ser. No. 76,745. Divided and this application Aug. 3, 1964, Ser. No. 81,111
Term of patent 14 years
(Cl. D83—1)



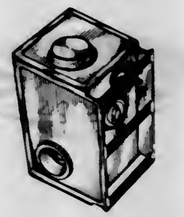
200,379
PORTABLE RADIOGRAPHIC EXPOSURE UNIT
Lawrence P. Feer, Cazenovia, N.Y., assignor to General Motors Corporation, Detroit, Mich.
Original design application Sept. 26, 1963, Ser. No. 76,745. Divided and this application Aug. 3, 1964, Ser. No. 81,112
Term of patent 14 years
(Cl. D83—1)



200,380
PORTABLE RADIOGRAPHIC EXPOSURE UNIT
Lawrence P. Feer, Cazenovia, N.Y., assignor to General Motors Corporation, Detroit, Mich.
Original design application Sept. 26, 1963, Ser. No. 76,745. Divided and this application Aug. 3, 1964, Ser. No. 81,113
Term of patent 14 years
(Cl. D83—1)



200,381
PORTABLE RADIOGRAPHIC EXPOSURE UNIT
Lawrence P. Feer, Cazenovia, N.Y., assignor to General Motors Corporation, Detroit, Mich.
Original design application Sept. 26, 1963, Ser. No. 76,745. Divided and this application Aug. 3, 1964, Ser. No. 81,149
Term of patent 14 years
(Cl. D83—1)



200,382
BABY'S TEETHING RING
Myrtle J. Smith, P.O. Box 481, Casa Grande, Ariz., assignor of one-half to Leonard R. Nenry
Filed June 4, 1964, Ser. No. 80,276
Term of patent 14 years
(Cl. D63—8)



200,383
ASH TRAY
Seymour M. Glock, 1320 Cornaga Ave., Far Rockaway, N.Y.
Filed Jan. 10, 1964, Ser. No. 78,158
Term of patent 14 years
(Cl. D85—2)



200,384
ASH TRAY OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 81,516
Term of patent 14 years
(Cl. D85—2)



200,385
COSMETIC APPLICATOR OR THE LIKE
Frederic Edmund Thaley, 176 Sandgate Road, Folkestone, Kent, England
Filed Dec. 17, 1963, Ser. No. 77,844
Term of patent 14 years
(Cl. D86—10)



200,386
PLASTIC COATED SHEET MATERIAL
Richard A. Mazur, Verona, and Robert L. Giddley, Stoughton, Wis., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 28, 1962, Ser. No. 72,972
Term of patent 14 years
(Cl. D87—3)



200,387
LAWN SPRINKLER
Clarence Lee Folden, Downers Grove, Ill., assignor to Sears, Roebuck & Co., Chicago, Ill., a corporation of New York
Filed Nov. 13, 1962, Ser. No. 72,477
Term of patent 14 years
(Cl. D91—1)





200,388
FACE PLATE FOR A PLUMBING FIXTURE OR THE LIKE
William Taylor, 2222 Malcolm Ave., Los Angeles, Calif., and Nathan Holzberg, Los Angeles, Calif.; said Holzberg assignor to said Taylor
Filed Nov. 19, 1962, Ser. No. 72,528
Term of patent 14 years
(Cl. 91—3)



200,389
FACE PLATE FOR PLUMBING FIXTURES OR THE LIKE
William Taylor, 2222 Malcolm Ave., Los Angeles, Calif., and Nathan Holzberg, Los Angeles, Calif.; said Holzberg assignor to said Taylor
Filed Nov. 19, 1962, Ser. No. 72,529
Term of patent 14 years
(Cl. D91—3)



200,390
SINGLE LEVER LAVATORY FAUCET
Aaron A. Staat, Edgewood, and Robert A. Staat, Ludlow, Ky., and Merrit Nelson, Grand Rapids, Mich., assignors to Bal-Cam, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed May 6, 1964, Ser. No. 79,846
Term of patent 14 years
(Cl. D91—3)



200,391
PAIR OF SUNGLASSES
Charles A. Bartelli, Reading, Pa., assignor to Pennsylvania Optical Company, Reading, Pa., a corporation of Pennsylvania
Filed Apr. 6, 1964, Ser. No. 79,358
Term of patent 14 years
(Cl. D57—1)











# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 16TH DAY OF FEBRUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Barber-Colman Co.: *See*—
Kennedy, Walter W. Re. 25,729.
Claesson, Per H. E. Contact device. Re. 25,731, 2–16–65, Cl. 200—104.
Dresser Industries, Inc.: *See*—
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Kennedy, Walter W., to Barber-Colman Co. Damper assembly for air mixers. Re. 25,729, 2–16–65, Cl. 137—601.
Minor, Burt S., by Dresser Industries, Inc. Side-opening traveling block and crown block arrangement. Re. 25,730, 2–16–65, Cl. 254—190.

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Andersson-Sason, Carl E. S., to Electrolux, Aktiebolaget. Outboard motor. 200,367, 2–16–65, Cl. D71—1.
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Beinert, John D., to International Patent Research Corp. Deflector for a garden sprayer or similar article. 200,319, 2–16–65, Cl. D31—3.
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Busch, Eugene F. Combined mounting bracket and reel for a safety belt for automobiles. 200,329, 2–16–65, Cl. D41—1.
Bye, Paul C. Combined fertilizer and insecticide dispenser for garden use. 200,326, 2–16–65, Cl. D35—2.
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**Gainsley, James D.** Combination brush and polishing pad. 200,294, 2–16–65, Cl. D9—2.
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**Schlott, Arthur A., Jr.**, to Julius Blum & Co., Inc. Grillework for treillages, room dividers or the like. 200,353, 2–16–65, Cl. D54—2.
**Schor, Max.** Sink. 200,289, 2–16–65, Cl. D4—2.
**Schwarz, Michel S.** Combination confectionery display stand and change tray. 200,373, 2–16–65, Cl. D80—9.
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Armandroff, Taft E., to General Electric Co. Actuating mechanisms. 3,169,410, 2–16–65, Cl. 74—503.
Armanno, Frank. Multipurpose desoldering device. 3,169,499, 2–16–65, Cl. 113—59.
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Bauer, Myron J., and J. C. Higgins, to United States of America, Navy. Train positioner and interlock assembly. 3,169,444, 2–16–65, Cl. 89—1.7.
Bauer, Peter, and E. U. Sowers III, to Sperry Rand Corp. Fluid sorter. 3,169,639, 2–16–65, Cl. 209—74.
Baumann, George P., and E. A. Nirmaier, to Esso Research and Engineering Co. Simplified debutanizer for use in isobutylene extraction. 3,169,997, 2–16–65, Cl. 260—639.
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Beck, Raymond A., and R. W. Stretch, to Westinghouse Electric Corp. Electrical bus structure. 3,170,030, 2–16–65, Cl. 174—99.
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Bennett, William R., Jr., to Bell Telephone Laboratories, Inc. Frequency stabilized optical maser. 3,170,122, 2–16–65, Cl. 331—94.5.
Benoit, George J., Jr., to California Research Corp. Fatty acid polyamide. 3,169,980, 2–16–65, Cl. 260—404.5.
Bento, Robert, E. L. Fogle, and R. G. Lascola, to Westinghouse Electric Corp. Semiconductor amplitude modulator apparatus. 3,170,126, 2–16–65, Cl. 332—31.
Benton, Robert C., to Centre Circuits, Inc. Positioning table with compensating mechanism. 3,169,321, 2–16–65, Cl. 33—125.
Bentsen, Arthur R., to General Electric Co. Compact console phonograph. 3,169,772, 2–16–65, Cl. 274—2.
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Berning, Kenneth W., and W. A. Sebastian III, to General Electric Co. Thermoelectric calorimeter device for measuring energy in a load and using a heat pump. 3,170,117, 2–16–65, Cl. 324—106.
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Biemiller, Philip E., deceased (I. V. Biemiller, legal representative), to Hamilton Watch Co. Electric timepiece. 3,169,364, 2–16–65, Cl. 58—28.
Bingham, Samuel H., Jr., to Black Products Co. Flying target for trap shooting. 3,169,767, 2–16–65, Cl. 273—105.4.
Birchall, Thomas D. Food canning system and process. 3,169,874, 2–16–65, Cl. 99—182.
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Cull, William. 3,169,777.
Bittner, Frank W. Fluid conduit adjustable support ramp. 3,169,741, 2–16–65, Cl. 248—49.
Black, Dolphus H. Cryogenic storage container with inflatable jacket insulation. 3,169,379, 2–16–65, Cl. 62—50.
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Bingham, Samuel H., Jr. 3,169,767.
Blackman, Vernon H., A. Demetriades, and M. S. Jones, Jr., to Allis-Chalmers Mfg. Co. Apparatus for generating electrical energy. 3,170,077, 2–16–65, Cl. 310—11.
Blackmore, Fred N., to Lus-Trus Corp. Receptacle. 3,169,659, 2–16–65, Cl. 220—97.
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Blankenship, Ernest B. Incinerator toilet. 3,169,497, 2–16–65, Cl. 110—9.
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Bliss, George N., and G. A. Page, to Page-Detroit, Inc. Egg handling and packing system. 3,169,354, 2–16–65, Cl. 53—61.
Bloch, Herman S., to Universal Oil Products Co. Alkaryl sulfonate production via N-olefin isomerization. 3,169,987, 2–16–65, Cl. 260—505.
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Bodine, Albert G., Jr. Vibration damping coating for vibratory structures. 3,169,881, 2–16–65, Cl. 117—45.
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Bognar, Charles J., to The Yoder Co. Method and apparatus for accelerating a flying tool. 3,169,429, 2–16–65, Cl. 83—88.
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Bonin, Lawrence G., and W. G. Smith, to Symons Mfg. Co. Concrete wall form panel units with attached connecting means therefor. 3,169,294, 2–16–65, Cl. 25—131.

Borchers, Ariel G. Propeller fans and the like. 3,169,694, 2–16–65, Cl. 230—120.

Borden, Douglas G., to Eastman Kodak Co. Light sensitive photoresist composition. 3,169,868, 2–16–65, Cl. 96—90.

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Borowsky, Francis J., to George K. Garrett Co., division of MSL Industries, Inc. Pivotal construction and method of making same. 3,169,418, 2–16–65, Cl. 78—46.

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Brandt, Harry, to California Research Corp. Method of improving electrical signal transmission in wells. 3,170,137, 2–16–65, Cl. 340—18.

Brandt, Wilhelm, to Kalle Aktiengesellschaft. Manufacture of photo-sensitive films. 3,169,867, 2–16–65, Cl. 96—87.

Branscom, Glenn A., B. P. Chausse, J. A. Lindner, and K. R. Thompson, to General Electric Co. Automatic control system for rolling mills and adjustable dies. 3,169,424, 2–16–65, Cl. 80—56.

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Brayman, Jacob, to Barogenics, Inc. Pressure-multiplying apparatus. 3,169,273, 2–16–65, Cl. 18—16.

Breer, Karl, E. Weinbrenner, and P. Hoppe, ¼ to Farbenfabriken Bayer Aktiengesellschaft and ¼ to Mobay Chemical Co. Apparatus for mixing liquids. 3,169,833, 2–16–65, Cl. 23—252.

Brett, Oliver C., Jr., to United Shoe Machinery Corp. Lasting machines. 3,169,260, 2–16–65, Cl. 12—12.4.

Bristol Siddeley Engines Ltd.: *See*—
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British Titan Products Co. Ltd.: *See*—
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Brocklebank, Norman, and G. Scott, to Priestman Bros. Ltd. Excavators. 3,169,649, 2–16–65, Cl. 214—138.

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Brookfield, William B. Viscometer. 3,169,392, 2–16–65, Cl. 73—59.

Brooks, William, to Lockheed Aircraft Corp. Analog-to-digital converter. 3,170,153, 2–16–65, Cl. 340—347.

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Brown, Daniel M., to Systems Engineering Corp. Air conditioning system for multiple unit dwellings. 3,169,382, 2–16–65, Cl. 62—259.

Brown, Morris C., to ACF Industries Inc. Carburetor. 3,170,006, 2–16–65, Cl. 261—69.

Brown, Ned C. L., to General Signal Corp. Railway car retarder and control thereof. 3,169,736, 2–16–65, Cl. 246—182.

Brown, Neil. Collapsible frame. 3,169,544, 2–16–65, Cl. 135—5.

Brucker-Steinkuhl, Kurt. Control apparatus. 3,170,140, 2–16–65, Cl. 340—149.

Bryan, Paul J., to E. I. du Pont de Nemours, and Co. Explosively actuated hole cutter. 3,169,479, 2–16–65, Cl. 102—24.

Brydolf, Robert, and K. K. Kellema, to Acme Appliance Mfg. Co. Jig for assembling pocket door frames. 3,169,249, 2–16–65, Cl. 1—149.

Buckingham, William D., F. T. Turner, and A. E. Hildreth, Jr., to The Western Union Telegraph Co. Character recognition system and apparatus. 3,170,136, 2–16–65, Cl. 340—146.3.

Buehler, Arthur, and G. Back, to Ciba Ltd. Chromium-containing azo dyestuffs. 3,169,951, 2–16–65, Cl. 260—145.

Bueler, Richard C., to Wagner Electric Corp. Control valve. 3,169,804. 2–16–65, Cl. 303—52.

Bullard, Billy J., to Shell Oil Co. Under water well-drilling method. 3,169,586, 2–16–65, Cl. 175—5.

Bulman Corp., The: *See*—
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Bungardt, Karl, and H. Dietrich, to Deutsche Edelstahlwerke Aktiengesellschaft. Magnetic circuit means and alloy components of constant magnetic permeability therefor. 3,170,112. 2–16–65, Cl. 324—34.

Buning, Robert, to Dynamit Nobel Aktiengesellschaft. Process for the polymerization of vinyl chloride with a catalyst mixture of trialkyl aluminum and boric acid trialkyl ester and a cocatalyst. 3,169,949, 2–16–65, Cl. 260—92.8.

Bunker-Ramo Corp., The: *See*—
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Burbank, John E., to Scovill Mfg. Co. Coil forming method and apparatus for zipper fasteners. 3,170,014, 2–16–65, Cl. 264—281.

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Burney, Charles D. Trawlers and trawling. 3,169,334, 2–16–65, Cl. 43—9.

Burton, H. John Machine Corp.: *See*—
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Buschbom, Floyd E., to Vandale Corp. Silo unloader drive hub attachment. 3,169,798, 2–16–65, Cl. 301—43.

Butera, Matteo. Shoe with cavity containing imprint. 3,169,326, 2–16–65, Cl. 36—2.5.

Buturuga, John. Safety guard for electric switch. 3,170,050, 2–16–65, Cl. 200—42.

Calderbank, Alan, E. C. Edgar, and J. A. Silk, to Imperial Chemical Industries Ltd. Triazine derivatives possessing aphicidal properties. 3,169,904, 2–16–65, Cl. 167—33.

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California Research Corp.: *See*—
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Langlois, Gordon E., and Haunschild. 3,170,001.

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Callow, Alan E., and B. Harris, to British Titan Products Co. Ltd. Cooling of solids. 3,169,380, 2–16–65, Cl. 62—57.

Calva, Jose B., ½ to George W. Benz. Odorising of liquified gas. 3,169,839, 2–16–65, Cl. 48—195.

Campbell, Albert B., to Campbell Products Co. Cleaning apparatus with suction filter in a transparent receptacle. 3,169,843, 2–16–65, Cl. 55—467

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Campbell, Albert B. 3,169,843.

Canadian Vickers Ltd.: *See*—
Puraki, Stanislaw A. 3,169,684.

Candilis, Emmanuel E., to Hewlett-Packard Co. Tunnel diode pulse generator having independently controllable pulse width and repetition rate. 3,170,124, 2–16–65, Cl. 331—111.

Cannon, Lloyd M., and W. T. Vaughn, to Westinghouse Electric Corp. Cabinet structure. 3,169,813, 2–16–65, Cl. 312—270.

Cannon Mills Co.: *See*—
Holland, Victor B., and Propst. 3,169,557.

Canute, Robert A.: *See*—
Nekervis, William F., and Canute. 3,169,929.

Caouette, Armand J. Thin aluminum silk screen frame. 3,169,475, 2–16–65, Cl. 101—127.1.

Capewell Developments Ltd.: *See*—
Woosnam, Maxwell S., and Capron. 3,169,348.

Capewell Mfg. Co., The: *See*—
Stacherl, John. 3,169,291.

Capron, David J.: *See*—
Woosman, Maxwell S., and Capron. 3,169,348.

Caracciolo, Anthony, Sr. Abrader. 3,169,536, 2–16–65, Cl. 132—73.6.

Caracristi, Virginius Z.: *See*—
Powell, Elno M., and Caracristi. 3,169,374.

Cardner, Vloden N.: *See*—
Jarman, Harry L. 3,169,280.

Carlson, Ernest, and F. H. Burkhardt, to Ex-Cell-O Corp. Boring head and method of using same. 3,169,416, 2–16–65, Cl. 77—58.

Carpenter Steel Co., The: *See*—
Heydt, Gerald B., and Whitney. 3,169,858.

Carrier Corp.: *See*—
Wilson, David S. 3,169,737.

Carver, Lawrence M., and H. Levick, to Stelma, Inc. Electronic relay. 3,170,037, 2–16–65, Cl. 178—70.

Case, David A., to The Yellow Springs Instrument Co. Conductivity test cell with automatic compensation for sample temperature. 3,710,111, 2–16–65, Cl. 324—30.

Cashen, William S., and A. Tiakler, to United Kingdom Atomic Energy Authority. Sampling apparatus. 3,169,588, 2–16–65, Cl. 175—51.

Catalyst Research Corp.: *See*—
Streigle, Paul E. 3,169,891.

Cator, Edward J., Crawford Fitting Co. Tube coupling with frangible ferrule. 3,169,786, 2–16–65, Cl. 285—3.

Cave, Boyd D., to Reynolds Metals Co. Edge opening device. 3,169,427, 2–16–65, Cl. 83—4.

Caveney, Jack E., and R. A. Moody, to Panduit Corp. Binder strap tool. 3,169,560, 2–16–65, Cl. 140—123.6.

Centre Circuits, Inc.: *See*—
Benton, Robert C. 3,169,321.

Chapman, George S. Wire dish drainer with glass holding elements. 3,169,641, 2–16–65, Cl. 211—74.

Chausse, Burnette P.: *See*—
Branscom, Glenn A., Chausse, Lindner, and Thompson. 3,169,424.

Chemische Fabriek L. van der Grinten N. V.: *See*—
Hendrickx, Andreas J. J. 3,169,869.

Cheney, Grant W., and F. T. Hughes, to The Dow Chemical Co. Method and apparatus for making film. 3,170,011, 2–16–65, Cl. 264—95.

Cherney, Jerome A.: *See*—
Schultz, Robert S., Polka, and Cherney. 3,170,010.

Cherrybone, John: *See*—
Mackenzie, Donald H., McMahan, and Cherrybone. 3,169,623.





Chovan, Dale A., to Westinghouse Air Brake Co. Fluid pressure brake control apparatus with empty and load changeover. 3,169,802, 2–16–65, Cl. 303—23.

Chow, Edwin Y.: *See*—
Webb, James E. 3,169,613.

Christiansen, Blanche E.: *See*—
Christiansen, Milton J. and B. E. 3,169,630.

Christiansen, Milton J., deceased, by B. E. Christiansen, to Western Electric Co., Inc. Conveyor mechanism. 3,169,630, 2–16–65, Cl. 198—38.

Ciba Corp.: *See*—
Bartlett, Merrill F., and Taylor. 3,169,968.
De Stevens, George. 3,169,979.
De Stevens, George. 3,169,985.
Gunst, Raymond. 3,169,953.
Marxer, Adrian. 3,169,961.
Riat, Henri, and De Montmollin. 3,169,952.
Schlittler, Emil. 3,169,967.
Schmidt, Paul, Eichenberger, and Wilhelm. 3,169,965.
Schmidt, Paul, Eichenberger, and Wilhelm. 3,169,966.
Wettstein, Albert, Anner, Heusler, Kalvoda, Ueberwasser, and Heer. 3,169,958.

Ciba Ltd.: *See*—
Buehler, Arthur, and Back. 3,169,951.
Geiger, Max. 3,169,705.
Scheller, Walter. 3,169,862.
Webb, Reginald F., and Large. 3,169,986.

Clachan, Margaret L.: *See*—
Lee, Edward W., and Clachan. 3,169,866.

Clare, C. P., & Co.: *See*—
Zielinski, Robert D. 3,170,089.

Clark, Clarence B., J. L. Froscher, C. W. Du Bois, D. H. Kimball, and W. R. Roy. Process for extracting fruit juices. 3,169,873, 2–16–65, Cl. 99—105.

Clark, Gordon W., C. Fuerst, R. C. Sheldon, and E. E. Stoeckly, to General Electric Co. Multiple gas generator turbine. 3,169,366, 2–16–65, Cl. 60—39.37.

Clark, Milton W., to The Anaconda Co. Rod charging apparatus. 3,169,642, 2–16–65, Cl. 214—1.

Clavel, Jean, to L'Electro-Commutation (Elcom). Electric sliding-contact switch with non-tilt operation of sliding contact. 3,170,049, 2–16–65, Cl. 200—16.

Clayton Corp. of Delaware, The: *See*—
Soffer, Jack W., Rhodes, and Hug. 3,169,672.

Clements, John W., Jr. Convertible door or drawer front. 3,169,281, 2–16–65, Cl. 20—15.

Clendening, Francis J., Jr., to E. I. du Pont de Nemours and Co. Apparatus for fluid treatment of synthetic filaments. 3,169,296, 2–16–65, Cl. 28—1.

Clerk, Robert C. Formation of gear teeth on bars or blanks. 3,169,419, 2–16–65, Cl. 80—20.

Cockrell, Clifford M.: *See*—
Lee, Clarence O., and Cockrell. 3,169,576.

Cohn, Morris G. Reel handling mechanism. 3,169,789, 2–16–65, Cl. 294—16.

Colle, Benjamin F., to Textile Machine Works. Pattern mechanism for knitting machines. 3,169,384, 2–16–65, Cl. 66—50.

Colalillo, Edward P., to Philco Corp. Heating apparatus. 3,170,061, 2–16–65, Cl. 219—413.

Colley, Russell S., to The B. F. Goodrich Co. Inflating apparatus. 3,169,665, 2–16–65, Cl. 222—5.

Collins, Joseph C., to North American Philips Co., Inc. Biaxial electric terminal. 3,169,814, 2–16–65, Cl. 339—47.

Coln, Hans: *See*—
Vogt, Wilhelm, Gehrmann, Sennewald, and Coln. 3,169,911.

Colombo, Roberto, to Lavorazione Materie Plastiche-L.M.P. S.p.A. Continuous machine for corrugating thermoplastic sheets. 3,169,274, 2–16–65, Cl. 18—19.

Colson, Louis: *See*—
Roy, Gustave, Colson, and Decuypere. 3,169,994.
Roy, Gustave, Colson, and Decuypere. 3,169,995.

Columbus, Earl P. Automatic telescoping trailer tongue. 3,169,782, 2–16–65, Cl. 280—478.

Combustion Engineering, Inc.: *See*—
Hanzalek, Frederick J. 3,169,373.
Hochmuth, Frank W. 3,169,512.
Powell, Elno M., and Caracristi. 3,169,374.

Commercial Solvents Corp.: *See*—
Seavey, Frederick R. 3,169,480.

Commissariat a L'Energie Atomique: *See*—
Roy, Gustave, Colson, and Decuypere. 3,169,994.
Roy, Gustave, Colson, and Decuypere. 3,169,995.

Compagnie Generale de Telegraphie Sans Fil: *See*—
Vasseur, Jean-Pierre. 3,170,033.

Compton, Francis E., B. D. Ashbaugh, and P. Hold, to Farrel Corp. Screw type preplasticising plastic injection molding machine. 3,169,275, 2–16–65, Cl. 18—30.

Computer Control Co., Inc.: *See*—
Hill, Howard H. 3,170,074.

Condon, Harry F., to Owens-Illinois Glass Co. Apparatus for making smooth-surfaced precision-end tubular articles. 3,169,847, 2–16–65, Cl. 65—282.

Cones, Ben. Air motor. 3,169,464, 2–16–65, Cl. 92—13.

Constance, Frederick G., and E. C. Dalenberg, to The Tappan Co. Radiant screen burner. 3,169,572, 2–16–65, Cl. 158—116.

Continental Oil Co.: *See*—
Maxson, Orwin G. 3,169,272.

Control Data Corp.: *See*—
Rabinow, Jacob. 3,169,686.
Rabinow, Jacob. 3,170,139.

Cook, Ernest E.: *See*—
Hadler, Harry J., and Cook. 3,169,485.

Coopers Mechanical Joints Ltd.: *See*—
Streete, Charles M., and Witchell. 3,169,842.

Copenhaver, Preston S., Jr.: *See*—
Etter, Raymond L., Jr., and Copenhaver. 3,169,950.

Cordillo, Cosimo J. Artificial candle. 3,169,887, 2–16–65, Cl. 67—55.

Cordts, Howard P., and J. D. Doedens, to The Dow Chemical Co. Halomethylated diaryloxides as catalysts for curing phenol- and urea-formaldehyde-type resins. 3,169,939, 2–16–65, Cl. 260—38.

Corman, Gareld M., to G. Alm. Machine for forming lenses and similar articles. 3,169,350, 2–16–65, Cl. 51—67.

Cornish, Don. Multi-dimensional gameboard with chance devices. 3,169,769, 2–16–65, Cl. 273—135.

Corrall, Roy E., and G. N. Menasoff, to Anaconda Wire and Cable Co. Stranding apparatus and method. 3,169,360, 2–16–65, Cl. 57—34.

Couch, S. H., Co., Inc.: *See*—
Schuchard, Walter F. 3,170,070.

Cousins, Robert D., to Curtis 1000, Inc. Dual purpose banking envelope. 3,169,692, 2–16–65, Cl. 229—72.

Cousteau, Jacques Y., E. Gagnan, and J. Alinat, to La Spirotechnique. Method of navigation for a submarine boat. 3,169,500, 2–16–65, Cl. 114—16.

Coutsourakis, Constantine M. Overload protective device. 3,170,088, 2–16–65, Cl. 317—22.

Covert, Robert J., H. W. Davis, and G. E. Talmage, to Bowes "Seal Fast" Corp. Puncture repair. 3,169,567, 2–16–65, Cl. 152—370.

Cramer, Bruce G., to Philco Corp. Amplitude modulation system. 3,170,127, 2–16–65, Cl. 332—41.

Cramer, Robert L., to The Bendix Corp. Pressurization system for a sealable enclosure. 3,169,466, 2–16–65, Cl. 98—1.5.

Crawford, David M., to American Bosch Arma Corp. Window wiper mechanism. 3,169,266, 2–16–65, Cl. 15—250.17.

Crawford Fitting Co.: *See*—
Cator, Edward J. 3,169,786.

Cri-Dan: *See*—
Renoux, Pierre E. 3,169,426.

Cull, William, to Birfield Engineering Ltd. Work holding means. 3,169,777, 2–16–65, Cl. 279—4.

Cummins, Phil F., to General Dynamics Corp. Fire fighting and rescue apparatus. 3,169,581, 2–16–65, Cl. 169—24.

Cunningham, Wesley B. Subterranean tunnel liner installation. 3,169,376, 2–16–65, Cl. 61—42.

Currie, Herbert K. Framework layout tool. 3,169,320, 2–16–65, Cl. 33—96.

Curtis 1000, Inc.: *See*—
Cousins, Robert D. 3,169,692.

Cushing, Donald S., to General Electric Co. Washing machine having improved closure member sealing means. 3,169,541, 2–16–65, Cl. 134—191.

D & D Co., Inc.: *See*—
Dowling, Robert W., and Del Riccio. 3,170,024.

Daellenbach, Francis O. Record player repeat attachment. 3,169,774, 2–16–65, Cl. 274—14.

Daggett, Norman E.: *See*—
Kelar, Joseph, Dennison, and Daggett. 3,170,150.

Dailey, Earl E.: *See*—
Printy, Helen C., Dailey, and Taylor. 3,169,959.

Daimler-Benz Aktiengesellschaft: *See*—
Barenyi, Bela, and Bracq. 3,169,793.

Daito Chemical Industry Co., Ltd.: *See*—
Konishi, Kenzo, Furukawa, and Maruyama. 3,169,960.

Dalwa Boseki Kabushiki Kaisha: *See*—
Aoki, Kunio. 3,169,278.

Dalenberg, Erwin C.: *See*—
Constance, Frederick G., and Dalenberg. 3,169,572.

Darlington, Warren B., and D. V. Slaker, to Baldwin-Lima-Hamilton Corp. Railway bottom dump gondola car. 3,169,491, 2–16–65, Cl. 105—240.

Data Products Corp.: *See*—
Koskie, Wallace W., Sampson, and Smith. 3,170,149.

Davis, Howard W.: *See*—
Covert, Robert J., Davis, and Talmage. 3,169,567.

Davis, Walter M., to Monsanto Co. Exhaust gas treating apparatus. 3,169,836, 2–16–65, Cl. 23—288.

Davy and United Engineering Co. Ltd.: *See*—
Sims, Raymond B. 3,169,423.
Sims, Raymond B., and Bathory. 3,169,422.

Decuypere, Maurice: *See*—
Roy, Gustave, Colson, and Decuypere. 3,169,994.
Roy, Gustave, Colson, and Decuypere. 3,169,995.

Deis, William H., and L. F. Heneghan. Method of preparing a hydrated magnesium carbonate. 3,169,826, 2–16–65, Cl. 23—67.

De La Ronde, Roy E. J., and G. O. De Lucia. Guitar attachment. 3,169,437, 2–16–65, Cl. 84—267.

De Laubarede, Leonce M. H. K., to Societe Anonyme dite: Plastus-S.A. Homogenising device for extruding or injecting machines in the treatment of thermoplastics. 3,169,752, 2–16–65, Cl. 259—7.

Del Riccio, Lorenso: *See*—
Dowling, Robert W., and Del Riccio. 3,170,024.

De Lucia, Garnet O.: *See*—
De La Ronde, Roy E. J., and De Lucia. 3,169,437.

De Mallie, Howard R., and P. U. Brothers, to Eastman Kodak Co. Slitting mechanism having transverse severing means. 3,169,430, 2–16–65, Cl. 83—152.

Demetriades, Anthony: *See*—
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De Montmollin, Rene: *See*—
Riat, Henri, and De Montmollin. 3,169,952.

Demos, Peter T. Analogue computation system and method. 3,169,699, 2–16–65, Cl. 235—61.

De Moss, George T., to Western Electric Co., Inc. Welding apparatus. 3,170,059, 2–16–65, Cl. 219—80.

Dennett, Robert F., and H. J. Walker, to The Dow Chemical Co. Rigid butylene-ethylene-ether type polyurethane foams. 3,169,934, 2–16–65, Cl. 260—2.5.

Dennison, Richard L.: *See*—
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De Rosset, Armand J., to Universal Oil Products Co. Method of preparing alumina from aluminum sulfate. 3,169,827, 2–16–65, Cl. 23—143.

De Rosset, Armand J., and M. J. O'Hara, to Universal Oil Products Co. Method of preparing an alumina-silica supported catalyst composition. 3,169,931, 2–16–65, Cl. 252—453.

De Stevens, George, to Ciba Corp. 3-hydrazino androstane derivatives. 3,169,979, 2–16–65, Cl. 260—397.5.

De Stevens, George, to Ciba Corp. 1,3-propanediol dicarbamates. 3,169,985, 2–16–65, Cl. 260—482.

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Deuchar, Francis W. Price beading. 3,169,330, 2–16–65, Cl. 40—23.

Deutsche Edelstahlwerke Aktiengesellschaft: *See*—
Bungardt, Karl, and Dietrich. 3,170,112.

Dewey, John L., to The Dow Chemical Co. Coatings for patterns employed in cavityless casting process. 3,169,288, 2–16–65, Cl. 22—195.

Diamantopoulos, Michael P.: *See*—
Armour, Walter B., and Diamantopoulos. 3,169,936.

Diamond Power Specialty Corp.: *See*—
Barsacket, Albert J. 3,170,036.

Diassi, Patrick A., P. A. Principe, and J. Fried, to Olin Mathieson Chemical Corp. 12e-methyl pregnene derivatives. 3,169,973, 2–16–65, Cl. 260—397.3.

Dick, A. B., Co.: *See*—
Evans, William E., Jr., and Murphy. 3,170,032.

Dieterich, Richard E., to Phillips Drill Co. Chuck and handle for manual installation of self-drilling expansion shells. 3,169,805, 2–16–65, Cl. 308—33.

Dietrich, Hermann: *See*—
Bungardt, Karl, and Dietrich. 3,170,112.

Dietz, Erich: *See*—
Siebert, Arthur, Dietz, and Geilhsler. 3,169,955.

Dietz, Max R., M. R. Emerson, N. A. Hurley, and T. Svanoe, to Gerber Products Co. Apparatus for processing cereal products. 3,169,468, 2–16–65, Cl. 99—237.

Digital Controls Systems, Inc.: *See*—
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Dillenburger, Albert. Telescopic shock absorbers. 3,169,758, 2–16–65, Cl. 267—64.

Di Luco, Eugene. Typewriter ribbon dispenser package. 3,169,663, 2–16–65, Cl. 221—255.

Dimond, William J.: *See*—
Friedberg, Michael A., and Dimond. 3,169,459.

D'Incerti, Ludovico, to Societa per Azioni Ferrania. Photographic camera with photoflash unit hinged thereto. 3,169,708, 2–16–65, Cl. 240—1.3.

Dinglerwerke Aktiengesellschaft: *See*—
Schilder, Hans, Rupp, and Nickel. 3,169,582.

Di Pietro, Harry R.: *See*—
Johns, Iral B., and Di Pietro. 3,169,943.

Doedens, James D.: *See*—
Cordts, Howard P., and Doedens. 3,169,939.

Dombrowski, Edward J., to Sperry Rand Corp. Interchangeable key blank and key button combination. 3,169,701, 2–16–65, Cl. 235—145.

Dominion Luggage Co.: *See*—
Slan, Jack. 3,169,788.

Domm, Ulrich, and W. Föller, to Klein, Schanzlin & Becker Aktiengesellschaft. Thermostatically actuated valve. 3,169,704, 2–16–65, Cl. 236—59.

Donchak, Richard M., and J. J. May, to The Norwich Pharmacal Co. Method of sterilizing with alkylene oxide. 3,169,906, 2–16–65, Cl. 167—58.

Dove, Frank: *See*—
Summerlin, Frederick A., and Dove. 3,170,132.

Dow Chemical Co., The: *See*—
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Cordts, Howard P., and Doedens. 3,169,939.
Dennett, Robert F., and Walker. 3,169,934.
Dewey, John L. 3,169,288.
Gruenhagen, Richard H. 3,169,902.
Nekervis, William F., and Canute. 3,169,929.
Oliver, Kenneth R., Jr., and McKimmy. 3,170,060.
Van Horne, Beverley H., Detwiler, and Zimmermann. 3,169,820.

Dowling, Robert W., and L. Del Riccio, to D & D Co., Inc. Binocular telescope with sliding lens casings and central focusing means. 3,170,024, 2–16–65, Cl. 88—34.

Downs, John W., to Sperry Rand Corp. Gain monitoring system for a height-finding radar. 3,170,156, 2–16–65, Cl. 343—17.7.

Drayton Controls Ltd.: *See*—
Freeman, Alan J. M. 3,169,413.

Dresser, Jasper G., to Dresser Products Inc. Tape splicer. 3,169,896, 2–16–65, Cl. 156—507.

Dresser Products Inc.: *See*—
Dresser, Jasper G. 3,169,896.

Du Bois, Clarence W.: *See*—
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Du Bois, Jennings B., Jr., to Shell Oil Co. Production of iodine from molten lithium iodide. 3,169,830, 2–16–65, Cl. 23—216.

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McFeaters, Harry L., Layman, Dunn, Krause, and Grant. 3,169,287.

Du Pont de Nemours, E. I. and Co.: *See*—
Aleixo, Antonio N., and Ganoudis. 3,169,558.
Bryan, Paul J. 3,169,479.
Clendening, Francis J., Jr. 3,169,296.
Farago, John. 3,170,004.
Musser, John W. 3,169,271.
Neely, Donald W., and Seller. 3,169,984.
Schaaf, Herbert L. 3,169,478.
Steuber, Walter. 3,169,899.

Duquesne, Victor. Device for axially fixing a column upon disc wheels. 3,169,569, 2–16–65, Cl. 157—1.1.

Duriron Co., Inc., The: *See*—
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Gawlick, Heins, and Bendler. 3,169,483.

E.R.A. Patents Ltd.: *See*—
Flan-Kelcey, Peter G., and Owen. 3,169,598.

Eagleton, Harold N., to Charles Wheatley Co. Sphere launching apparatus. 3,169,263, 2–16–65, Cl. 15—104.06.

Eames, James O., to Roy S. Sanford & Co. Arresting gear. 3,169,732, 2–16–65, Cl. 244—110.

Earmaster, Inc.: *See*—
Leale, Leslie P. 3,170,046.

Eason, Charles R., and J. L. Kerr, to United States of America, Army. Microwave broadband balun between coaxial line and parallel strip line. 3,170,128, 2–16–65, Cl. 333—26.

Eastman Kodak Co.: *See*—
Bartles, Stanley P., and Bartholomay. 3,169,722.
Borden, Douglas G. 3,169,868.
De Maille, Howard R., and Brothers. 3,169,430.
Egan, John F., and Harvey. 3,169,405.
Etter, Raymond L., Jr., and Copenhaver. 3,169,950.
Hiens, Richard W. 3,169,992.
Knox, William J., Jr., and Sticker. 3,169,870.
Martin, Emmett V. 3,169,363.
Minsk, Louis M. 3,169,946.
Patterson, Roger W. 3,169,465.
Reesen, Jorgen. 3,170,022.
Roper, John N., Jr. 3,169,390.
Rosenburgh, Norman J. 3,169,332.
Straley, James M., and Fisher. 3,169,954.
Wood, George F. L. 3,169,865.
York, William C. 3,169,867.

Eaton Mfg. Co.: *See*—
Benjamen, Lysle I. 3,169,865.
Jaeschke, Ralph L. 3,170,079.

Edgar, Eric C.: *See*—
Calderbank, Alan, Edgar, and Silk. 3,169,904.
Calderbank, Alan, Edgar, and Silk. 3,169,964.

Edwards Photography: *See*—
Johnson, James R. 3,169,441.

Egan, John F., and D. M. Harvey, to Eastman Kodak Co. Time delay device. 3,169,405, 2–16–65, Cl. 74—3.5.

Ehringer, Hermann J., to Westinghouse Electric Corp. Method for making welding electrodes. 3,169,861, 2–16–65, Cl. 75—206.

Eichenberger, Kurt: *See*—
Schmidt, Paul, Eichenberger, and Wilhelm. 3,169,965.
Schmidt, Paul, Eichenberger, and Wilhelm. 3,169,966.

Eitel-McCullough, Inc.: *See*—
Noble, Lowell A. 3,169,482.

Eklund, Torsten, Y. Bengtsson, and E. Forsberg, to Allmänna Svenska Elektriska Aktiebolaget. Rotatable furnace. 3,169,755, 2–16–65, Cl. 263—33.

Ekstrand, Jerome D. Deep water casting bobber. 3,169,339, 2–16–65, Cl. 43—43.11.

Electrofrac Corp.: *See*—
Sarapuu, Erich. 3,169,577.

Electrolux Corp.: *See*—
Allen, Oliver L., and Borkoski. 3,169,262.

Electro-Mechanical Research, Inc.: *See*—
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El-Re-Ma S.A. per lo sfruttamento di brevetti: *See*—
Schlatter, Erwin, and Hoppe. 3,170,096.

Emerson, Merle R.: *See*—
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Emhart Corp.: *See*—
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Engalitcheff, John, Jr., and T. F. Facius, to Baltimore Aircoil Co., Inc. Evaporative heat exchanger. 3,169,576, 2–16–65, Cl. 165—1.

Enoch, Duard W., to Interstate Bakeries Corp. Apparatus for processing dough. 3,169,493, 2–16–65, Cl. 107—36.

Enoch, Duard W., G. L. Scott, and M. M. Huber, to Interstate Bakeries Corp. Rheological testing means and method of testing wheat flours. 3,169,395, 2–16–65, Cl. 73—169.

Erbe, Otto, and C. Ludwig, to Carl Zeiss. Adjustment means for camera objectives. 3,169,461, 2–16–65, Cl. 95—45.

Erickson, Henry, and G. O. Michaels, to Sinclair Research, Inc. Aromatic alkylation process utilising a nickel-chromia-silica-alumina catalyst. 3,169,999, 2–16–65, Cl. 260—671.

Ermlich, John R., to Libbey-Owens-Ford Glass Co. Stress pattern tempered glass sheet and method of making the same. 3,169,900, 2–16–65, Cl. 161—149.





Ernst, John M., to American Machine & Foundry Co. Bowling pin. 3,169,766, 2–16–65, Cl. 273—82.

Ertsgaard, Byron L., and R. M. Rubin, to Toro Mfg. Corp. Automatic safety switch mechanism for a tractor mounted rotary power mower. 3,169,358, 2–16–65, Cl. 56—25.4.

Eskimo Pie Corp.: *See*—
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Esso Research and Engineering Co.: *See*—
Baumann, George P., and Nirmaier. 3,169,997.
Huntley, Allan R., and Synodis. 3,169,835.
Kelso, Edward A. 3,170,002.
Morway, Arnold J., and Bartlett. 3,169,924.
Ziarnik, George J. 3,169,566.

Etter, Raymond L., Jr., and P. S. Copenhaver, Jr., to Eastman Kodak Co. Process for deodorizing polymers. 3,169,950, 2–16–65, Cl. 260—94.9.

Eutectic Welding Alloys Corp.: *See*—
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Evans, Roger L.: *See*—
Liu, Chui F., and Evans. 3,169,933.

Evans, William E., Jr., and H. E. Murphy, to A. B. Dick Co. Facsimile-scanner with A.G.C. of output signal by multiplication of low and high definition signals. 3,170,032, 2–16–65, Cl. 178—7.1.

Evers, Johannes J. M., P. J. Hodselmans, and T. H. Linders, to Stamicarbon N.V. Preparation of products of high molecular weight from formaldehyde by polymerizing in the presence of an inert solid. 3,169,938, 2–16–65, Cl. 260—37.

Ewell, James M., to The Procter & Gamble Co. Method for loading and unloading vehicles. 3,169,652, 2–16–65, Cl. 214—152.

Ex-Cell-O Corp.: *See*—
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Facius, Thomas F.: *See*—
Engalitcheff, John, Jr., and Facius. 3,169,575.

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Fakkeldij, John J.: *See*—
Ho, Er-chun, Fakkeldij, and Merles. 3,170,121.

Farago, John, to E. I. du Pont de Nemours and Co. Dyeable copolymer of propylene containing a substituent from one class consisting of (a) sulfonic acid (b) phosphoric acid and (c) sulfonamide. 3,170,004, 2–16–65, Cl. 260—874.

Faraone, Giovanni, and A. Giorgetti, to Ferrania, S.p.A. Sucrose organo-phosphorus ester and method of preparing it. 3,169,956, 2–16–65, Cl. 260—234.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Breer, Karl, Weinbrenner, and Hoppe. 3,169,833.
Frank, Adolf, and Grewe. 3,169,990.
Genski, Kurt, Muhlhausen, Müller, and Holtschmidt. 3,170,003.
Oertel, Gunter, and Mals. 3,169,982.
Simm, Walter. 3,169,886.
Stroh, Rudolf, Sutter, and Haberland. 3,169,947.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
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Farrel Corp.: *See*—
Compton, Francis E., Ashbaugh, and Hold. 3,169,275.

Farrel-Birmingham Co., Inc.: *See*—
Hold, Peter. 3,169,323.

Farrington Engineering Corp.: *See*—
Farrington, William B. 3,170,116.

Farrington, William B., to Farrington Engineering Corp. Apparatus for measuring the intensity and particle velocity of a beam of electrically charged particles. 3,170,116, 2–16–65, Cl. 324—70.

Favre, Jacques J. Multiple-purpose stocking assembly. 3,169,640, 2–16–65, Cl. 211—126.

Fawick, Thomas L. Hose. 3,169,552, 2–16–65, Cl. 138—133.

Fehling, Heins, and F. Bösoldt, to Licentia Patent-Verwaltungs-G.m.b.H. Switch operating arrangement utilising energy storage means. 3,170,051, 2–16–65, Cl. 200—50.

Felt, Maurice D., to Packing Supply Co. Multiple purpose self-loading machinery packing. 3,169,776, 2–16–65, Cl. 277—125.

Fenton, Paul E., to Scovill Mfg. Co. Plastic snap fastener. 3,169,292, 2–16–65, Cl. 24—213.

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Smith, Aaron G., and Moore. 3,169,718.

Fesl, Franz. Sports boot closure construction. 3,169,325, 2–16–65, Cl. 36—2.5.

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Fidelity Instruments Corp.: *See*—
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Field, Paul. Apparatus for facilitating splitting of cord wood and the like. 3,169,760, 2–16–65, Cl. 269—86.

Fielding, Raymond G., to Linotype and Machinery Ltd. Photoelectric no sheet trip device for a printing press. 3,169,476, 2–16–65, Cl. 101—247.

Fike Metal Products Corp.: *See*—
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Finch, George I.: *See*—
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Findley, Howard J., to Textron Inc. Gear finishing apparatus. 3,169,349, 2–16–65, Cl. 51—52.

Fink, Charles H. Guard for nail clipper. 3,169,312, 2–16–65, Cl. 30—28.

Finn-Kelcey, Peter G., and V. M. Owen, to E.R.A. Patents Ltd. Vehicles and means for guiding them. 3,169,598, 2–16–65, Cl. 180—79.

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Fleming, David H., Jr., and B. C. Olmsted, Jr., to Union Carbide Corp. Process for the oxidation of powders. 3,169,851, 2–16–65, Cl. 75—.5.

Fleming, Howard M., Jr., to Electro-Mechanical Research, Inc. Encoder systems. 3,170,154, 2–16–65, Cl. 340—347.

Fletcher, Peter S. Reclining chair of the multiple movement type. 3,169,794, 2–16–65, Cl. 297—85.

Fletcher, William A., and M. E. Todd, to General Motors Corp. Armature winding and commutator connecting machine. 3,169,301, 2–16–65, Cl. 29—33.

Flint, Hyland C. Hinged back cushion movable with the seat cushion. 3,169,795, 2–16–65, Cl. 297—309.

Focht, John R., to Precision Valve Corp. Combined cap and valve operating member for aerosol dispensers. 3,169,678, 2–16–65, Cl. 222—182.

Focht, John R., to Precision Valve Corp. Valve mechanism with metering ball for aerosol pressure containers. 3,169,677, 2–16–65, Cl. 222—394.

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Ford, James G., to Westinghouse Electric Corp. Treated celluiosic insulation and electrical apparatus embodying the same. 3,170,027, 2–16–65, Cl. 174—17.

Fornes, Gaston G., to Institute of Textile Technology. Roving package winding apparatus. 3,169,362, 2–16–65, Cl. 57—99.

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Fox, La Verdo J., and S. R. Genson, to Johns-Manville Corp. Method and apparatus for traversing strand material. 3,169,717, 2–16–65, Cl. 242—43.

Frank, Adolf, and F. Grewe, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of thiuram monosulfides. 3,169,990, 2–16–65, Cl. 260—567.

Frankenstein, P., & Sons (Manchester) Ltd.: *See*—
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Franklin, Lester K. Cabinet for radio receiving sets. 3,170,119, 2–16–65, Cl. 325—352.

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Freeman, Alan J. M., to Drayton Controls Ltd. Actuating mechanisms. 3,169,413, 2–16–65, Cl. 74—625.

Freeman, Richard B., Sr. Drill pipe and collar laying down machine. 3,169,645, 2–16–65, Cl. 214—2.5.

Freeport Sulphur Co.: *See*—
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Freimauer, Sam, and J. Lieberman, to The Frey-Lieb Co., Inc. Doll kissing mechanism. 3,169,343, 2–16–65, Cl. 46—118.

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Friedberg, Michael A., and W. J. Dimond. Method of determining surface contours of an eye. 3,169,459, 2–16–65, Cl. 95—18.

Friedrichsen, Wilhelm, and H. J. Stephan, to Badische Anilin & Soda Fabrik Aktiengesellschaft. Production of pure maleic anhydride. 3,169,976, 2–16–65, Cl. 260—346.8.

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Fryba, Josef. Rail track traffic indicator system. 3,169,734, 2–16–65, Cl. 246—77.

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Fuerst, Charles: *See*—
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Fulton, Joseph W., Jr. Livestock watering trough and connecting conduit. 3,169,510, 2–16–65, Cl. 119—73.

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Gagliardi, Domenick D. Process for treating polyolefin materials with Werner complexes and the dyeing of same. 3,169,823, 2–16–65, Cl. 8—55.
Gagliardi, Domenick D. Process for dyeing solid polyolefins, normally non-receptive to water-soluble dyes, with ionic dyestuffs. 3,169,824, 2–16–65, Cl. 8—55.
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Gaylor, Randall, R. L. Schaeperkoetter, and E. R. Tribken, to Sperry Rand Corp. Flight control system. 3,169,730, 2–16–65, Cl. 244—77.
Gedge, Burton H. Built liquid detergent. 3,169,930, 2–16–65, Cl. 252—137.
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Branscom, Glenn A., Chausse, Lindner, and Thompson. 3,169,424.
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Holl, Peter M. 3,169,369.
Horsch, James R. 3,170,146.
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Genski, Kurt, C. Muhlhausen, E. Müller, and H. Holtschmidt, to Farbenfabriken Bayer Aktiengesellschaft. Process of producing polyurethane plastics and resulting products. 3,170,003, 2–16–65, Cl. 260—858.
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Gode, Elmar. Attitude control system. 3,169,729, 2–16–65, Cl. 244—76.
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Gold, Robert L., to Wagner Electric Corp. Automatic adjustor. 3,169,610, 2–16–65, Cl. 188—79.5.
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Gunst, Raymond, to Ciba Corp. Water-soluble azo dyestuffs. 3,169,953, 2–16–65, Cl. 260—153.
Gutsmann, Raymond H., and J. M. McGavin. Metering dispensing device for granular material. 3,169,675, 2–16–65, Cl. 222—360.
Gysin, Hans, and E. Knusli, to J. R. Geigy, A.-G. Composition and method for inhibiting the growth of plants. 3,169,848, 2–16–65, Cl. 71—2.5.
Haab, Otto. Toboggan. 3,169,779, 2–16–65, Cl. 280—18.
Haag, Frans, and L. Huber, to Junkers & Co. G.m.b.H. Starter apparatus for pulse jet burners. 3,169,570, 2–16–65, Cl. 158—4.
Haberhauer, Karl, to Schubert & Salzer Maschinenfabrik Aktiengesellschaft. Apparatus for making heel or toe pouches or circular knitting machines. 3,169,385, 2–16–65, Cl. 66—54.
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Haines, Marcus W., to McGaffey-Taylor Corp. Axially spaced well packers. 3,169,579, 2–16–65, Cl. 166—119.
Hajos, Eugene, to Hydraxtor Co. Magnetically restorable sensing switch. 3,170,062, 2–16–65, Cl. 200—61.41.
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Hall, Harleston J., Jr.: *See*—
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Halpern, Howard S.: *See*—
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Biemiller, Philip E. and I. V. 3,169,364.
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Morin, Louis H. 3,169,338.
Morin, Louis H. 3,169,340.
Hannon, William F., to The Fafnir Bearing Co. Grinding machine. 3,169,351, 2–16–65, Cl. 51—103.
Hanselmann, Frank. Windshield cleaning device. 3,169,676, 2–16–65, Cl. 222—373.
Hansalek, Frederick J., to Combustion Engineering, Inc. Power plant employing extraction steam for steam generation purposes. 3,169,373, 2–16–65, Cl. 60—67.
Harbers, Henry C., and B. C. Hamlet, to Western Unit Corp. Drawbar hitch assembly. 3,169,783, 2–16–65, Cl. 280—485.
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Hardy, George F., to Allied Chemical Corp. Production of polymers of alkyl-substituted vinyl aromatic compounds. 3,169,948, 2–16–65, Cl. 260—88.2.
Harmon, William C., to Republic Steel Corp. Flow detection device having a movable pick-up unit for developing a frequency modulated signal that is transmitted to a stationary indicating unit. 3,170,113, 2–16–65, Cl. 324—37.
Harrington, Winfred O., and C. H. Hills, to United States of America, Agriculture. Process for peeling waxy fruit. 3,169,564, 2–16–65, Cl. 146—235.
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Harris, Frank R., to Associated Electric Industries Ltd. Expansion devices for turbine casings. 3,169,749, 2–16–65, Cl. 253—39.
Harris, Woodrow W., to The Russell Mfg. Co. Apparatus to transfer pliable material. 3,169,763, 2–16–65, Cl. 271—68.
Hartger, John G., to Oliver Machinery Co. Saw for ferrous materials. 3,169,435, 2–16–65, Cl. 83—676.
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Kuwata, Tsutomu, Takumi, and Hashimoto. 3,169,981.
Hatch, Edmond K., and L. F. Miller, to The Osborn Mfg. Co. Overhead squeeze molding machine. 3,169,285, 2–16–65, Cl. 22—25.
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Headrick, Richard T. Aircraft fuel and defuel apparatus. 3,169,667, 2–16–65, Cl. 222—23.
Healy, Thomas A. Material handling calculator-demonstrator. 3,169,700, 2–16–65, Cl. 235—61.
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Heins, Elmer L. Slide-type, course leveling attachment for Mason's level. 3,169,824, 2–16–65, Cl. 33—206.
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Henn, Richard W., to Eastman Kodak Co. Amine thiosulfate anhydrides. 3,169,992, 2–16–65, Cl. 260—583.
Hennequin, Ernest A. G., to Societe d'Etudes et d'Applications Industrielles et Immobilieres, "Inter-Technique." Device for regulating the supply of fuel injected into an internal combustion engine. 3,169,513, 2–16–65, Cl. 123—140.
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Herster, Antun J. Indicia indicating device. 3,169,831, 2–16–65, Cl. 40—68.
Hersog, Richard F., to Geophysics Corp. of America. Ion pump. 3,169,693, 2–16–65, Cl. 230—69.
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Heyl, Hans-Joachim: *See*—
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Hochmuth, Frank W., to Combustion Engineering, Inc. Black liquor chemical recovery unit having an open gas pass. 3,169,512, 2–16–65, Cl. 122—7.

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Hoffmann, Erich, to Geuerkschaft Eisenhutte Westfalia. Base for mine props and the like. 3,169,377, 2–16–65, Cl. 61—45.

Hoffmann, Helmut, to Alfred Teves Maschinen- und Armaturenfabrik Kommandit-Gesellschaft. Piston-and-cylinder arrangement. 3,169,455, 2–16–65, Cl. 92—205.

Hoffmann, Willy, to Fichtel & Sachs A.G. Centrifugally actuated clutch. 3,169,618, 2–16–65, Cl. 192—105.

Hofmeister, Philip E. Position indicator. 3,169,319, 2–16–65, Cl. 33—61.

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Hold, Peter, to Farrel-Birmingham Co., Inc. Differential electronic roll caliper. 3,169,323, 2–16–65, Cl. 33—147.

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Holland, Victor B., and M. C. Propst, Jr., to Cannon Mills Co. Towel with non-puckering decorative border. 3,169,557, 2–16–65, Cl. 139—383.

Hollaway, Raymond L., and H. E. Stover, to Anchor Hocking Glass Corp. Container sealing mechanism. 3,169,355, 2–16–65, Cl. 53—88.

Hollingsworth, Robert R., to Probe and Develop, Inc. Carrying and storage case for reel of film or the like. 3,169,-682, 2–16–65, Cl. 224—45.

Holloway, Robert L., to American Machine & Foundry Co. Differential drive. 3,169,597, 2–16–65, Cl. 180—76.

Holmen, Reynold E., to Minnesota Mining and Mfg. Co. Photosensitive materials comprising diazonium salts of bisphenol esters. 3,169,864, 2–16–65, Cl. 96—75.

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Holzenthal, Leo L., E. A. Gastrock, and W. T. Gentry, Jr., to United States of America, Agriculture. Apparatus for individualizing cottonseed. 3,169,277, 2–16–65, Cl. 19—65.

Holzwarth, Henry A., P. Schladermundt, and J. D. Wark, to Philip Morris Inc. Blade dispenser. 3,169,660, 2–16–65, Cl. 221—102.

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Honegger, Rolf, to Ruti Machinery Works Ltd. Central weft feeler stop motion. 3,169,556, 2–16–65, Cl. 139—376.

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Hoover, Maurice W., to North Carolina State College of the University of North Carolina. Process for producing a dehydrated pumpkin product. 3,169,875, 2–16–65, Cl. 99—204.

Hoover, Maurice W., 15% to North Carolina State College of the University of North Carolina as represented by the business manager. Process for producing dehydrated sweet potato flakes. 3,170,876, 2–16–65, Cl. 99—207.

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Howard, Bernard, to Mite Corp. Type cylinder. 3,169,474, 2–16–65, Cl. 101—110.

Howard, Robert D., R. A. Ladner, and A. L. Stock, to Westinghouse Electric Corp. Turbine apparatus. 3,169,748, 2–16–65, Cl. 253—39.

Howes, Edgar T., to United Geophysical Corp. System for logging wells. 3,170,136, 2–16–65, Cl. 340—18.

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Hummel, Frederick S., to Atomic Energy of Canada Ltd. Nuclear reactor fuelling machine. 3,169,647, 2–16–65, Cl. 214—23.

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Hunsaker, Rollo N., and S. E. Johansson, to Kennecott Copper Corp. Apparatus for preventing premature shifting of gears. 3,169,616, 2–16–65, Cl. 192—4.

Hunter, Bernard A. Closure for top perforated cans. 3,169,-679, 2–16–65, Cl. 222—484.

Hunter, Don L., to United States Borax & Chemical Corp. Quaternary ammonium glycol monoborate salts. 3,169,983, 2–16–65, Cl. 260—462.

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Huntley, Allan R., and S. T. Synodis, to Esso Research and Engineering Co. Fluidized solids technique. 3,169,835, 2–16–65, Cl. 23—288.

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Intermediates Inc.: *See*—
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Haynes, Munro K. 3,170,145.

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Irwin, Calvin W., D. W. Hubbard, and O. F. Bergere, to Sperry Rand Corp. Type carrier for printing machine. 3,169,473, 2–16–65, Cl. 101—93.

Isaac, Salechter. Apparatus and method for developing mechanical power from a liquid. 3,169,370, 2–16–65, Cl. 60—51.

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Jaeschke, Ralph L., to Eaton Mfg. Co. Coupling apparatus. 3,170,079, 2–16–65, Cl. 310—106.

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Jarman, Harry L., ⅓ to V. N. Cardner. Expansible house trailer. 3,169,280, 2–16–65, Cl. 20—2.

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Johnson, James R., to Edwards Photography. Photographic apparatus. 3,169,441, 2–16–65, Cl. 88—24.

Johnson, Lloyd A., and D. E. Marpe, to Sperry Rand Corp. Bidirectional transmission amplifier. 3,170,038, 2–16–65, Cl. 178—71.

Johnson, Norris L., 50% to C. C. Wetsel. Picture hanging apparatus. 3,169,738, 2–16–65, Cl. 248—31.

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Johnston, Alva J. Vegetable peeler. 3,169,316, 2–16–65, Cl. 30—279.

Johnston, Dean A., and C. R. Morrison, to Callery Chemical Co. Continuous process for the manufacture of decaborane. 3,169,829, 2–16–65, Cl. 23—204.

Johnston, Frederick, Jr. Security apparatus for armored cars. 3,169,599, 2–16–65, Cl. 180—82.

Johnston, Loyal L., to Herman Pneumatic Machine Co. Mold forming apparatus and method. 3,169,284, 2–16–65, Cl. 22—17.

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Juvinall, James W., to Ransburg Electro-Coating Corp. Electrostatic coating methods and apparatus. 3,169,883, 2–16–65, Cl. 117—93.42.

Juvinall, James W., E. Kock, and J. C. Marsh, to Ransburg Electro-Coating Corp. Electrostatic coating methods and apparatus. 3,169,882, 2–16–65, Cl. 117—93.4.

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Kaenel, Reginald A., to Bell Telephone Laboratories, Inc. Frequency-dividing circuit. 3,170,069, 2–16–65, Cl. 307—88.

Kahan, Ulrich L., to Ulrich Process Co., Inc. Process for removing engine produced contaminants from used lubricating oil. 3,169,917, 2–16–65, Cl. 208—180.

Kain, Arthur F. Magnetic belt and trainer. 3,169,632, 2–16–65, Cl. 198—193.

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Wettstein, Albert, Anner, Heusler, Kalvoda, Ueberwasser, and Heer. 3,169,958.

Kaminstein, Bernard, to Kamstat Corp. Electrophotographic printer. 3,169,457, 2–16–65, Cl. 95—1.7.

Kammerer, Archer W., Jr.: *See*—
Kammerer, Archer W. 3,169,592.

Kammerer, Archer W., ⅛ to J. K. Lamphere, and ⅛ to A. W. Kammerer, Jr. Retrievable drill bit. 3,169,592, 2–16–65, Cl. 175—257.

Kamstat Corp.: *See*—
Kaminstein, Bernard. 3,169,457.

Kane, Hugh, and R. A. Pusch, to General Electric Co. Illuminated push button switch. 3,170,057, 2–16–65, Cl. 200—167.

Kaplan, Jacques M. Mink pelt. 3,169,901, 2–16–65, Cl. 161—62.

Katagiri, Nobuhiko: *See*—
Aizawa, Bunji, and Katagiri. 3,169,519.

Kaumagraph Co.: *See*—
Wilson, Henry B., and Mickel. 3,169,458.

Kasimi, Mahmoud I., to Hexcel Products Inc. Curvatured honeycomb and method of making same. 3,169,898, 2–16–65, Cl. 161—68.

Keene, Carl E. Printed circuit board provided with a junction circuit breaker having a slidable and rotatable armature. 3,170,056, 2–16–65, Cl. 200—166.

Kelar, Joseph, R. L. Dennison, and N. E. Daggett, to Magnetic Controls Co. Mensuration device with electronic detection for remote reading. 3,170,150, 2–16–65, Cl. 340—197.

Kellems, Kenneth K.: *See*—
Brydolf, Robert, and Kellems. 3,169,249.

Kelso, Edward A., to Esso Research and Engineering Co. Reduction of acid consumption in alkylation. 3,170,002, 2–16–65, Cl. 260—683.59.

Kennecott Copper Corp.: *See*—
Hunsaker, Rollo N., and Johansson. 3,169,616.

Kennedy, Harry E., to Union Carbide Corp. Process for producing acetylenes. 3,169,915, 2–16–65, Cl. 204—171.

Kennedy, Hugh D.: *See*—
Tanner, Robert L., Kennedy, and Raglin. 3,170,087.

Kernick, Andress, to Westinghouse Electric Corp. Electrical inductive apparatus. 3,170,133, 2–16–65, Cl. 336—165.

Kerr, John L.: *See*—
Eason, Charles R., and Kerr. 3,170,128.

Kessler, Fritz, F. Jakob, and R. Knorr, to Agfa Aktiengesellschaft. Iris diaphragm shutter. 3,169,462, 2–16–65, Cl. 95—63.

Kibler, Lynden U., to Bell Telephone Laboratories, Inc. Semiconductor wafer having photosensitive junction. 3,170,067, 2–16–65, Cl. 250—211.

Kilgore, Charles R., and J. E. Yingst, to Thompson Ramo Wooldridge Inc. Fulcrum adjuster. 3,169,515, 2–16–65, Cl. 123—90.

Kimball, Don H.: *See*—
Clark, Clarence B., Froscher, Du Bois, Kimball, and Roy. 3,169,873.

King, John B.: *See*—
Stanton, Arthur J., Anderson, Taylor, and King. 3,169,-445.

King, Joseph B. Floating cutter housing for electric razors. 3,169,313, 2–16–65, Cl. 30—43.92.

Kilper, Gerd, to Agfa Aktiengesellschaft. Light controlling structure for cameras and the like. 3,169,463, 2–16–65, Cl. 95—64.

Kiramidjian, Ludwig. Liquid level recording apparatus. 3,169,400, 2–16–65, Cl. 73—290.

Kitajima, Kenichi: *See*—
Miyagawa, Takesi, and Kitajima. 3,169,626.

Klein, Georg: *See*—
Rödder, Josef, Klein, Künzel, and Kruger. 3,169,757.

Klein, Schanzlin & Becker Aktiengesellschaft: *See*—
Domm, Ulrich, and Föller. 3,169,704.

Klemp, Hans-Joachim: *See*—
Redlich, Horst, and Klemp. 3,169,773.

Kloosterman, Johannes, to Organon Inc. Novel preparation of 10-formyl-steroids. 3,169,977, 2–16–65, Cl. 260—397.3.

Klots, Milton C., to W. Du Broff. Case unstacking machine. 3,169,691, 2–16–65, Cl. 221—210.

Klueter, Herschel H.: *See*—
Puckett, Hoyle B., and Klueter. 3,169,799.

Knappe, Heinrich, to F. Stubbe. Conveyor. 3,169,631, 2–16–65, Cl. 198—187.

Knapsack-Griesheim Aktiengesellschaft: *See*—
Vogt, Wilhelm, Gehrmann, Sennewald, and Coln. 3,169,-911.

Knorr, Roland: *See*—
Kessler, Fritz, Jakob, and Knorr. 3,169,462.

Knox, Francis S., III, and H. J. Hall, Jr. Coronary sinus sucker. 3,169,528, 2–16–65, Cl. 128—350.

Knox, William J., Jr., and R. E. Sticker, to Eastman Kodak Co. Photographic gelatin layers containing the salts of various alkyl and alkenyl succinamates as coating aids. 3,169,870, 2–16–65, Cl. 96—94.

Knusli, Enrico: *See*—
Gysin, Hans, and Knusli. 3,169,848.

Koch, Wilhelm. Jaw crusher. 3,169,713, 2–16–65, Cl. 241—266.

Kock, Erhard: *See*—
Juvinall, James W., Kock, and Marsh. 3,169,882.

Koenig, Norman Z. Tracheostomy tube. 3,169,529, 2–16–65, Cl. 128—351.

Kohl, Franz, to Alfred Teves Maschinen- und Armaturenfabrik K.G. Hydraulic control device. 3,169,450, 2–16–65, Cl. 91—28.

Kohn, Gustave K., to California Research Corp. Thietane phosphorus esters. 3,169,974, 2–16–65, Cl. 260—327.

Kolling, William J. Apparatus for cleaning pipe systems. 3,169,545, 2–16–65, Cl. 137—209.

Köppen, Heinz, to Zeiss Ikon Aktiengesellschaft. Photographic camera diaphragm adjusting device. 3,169,464, 2–16–65, Cl. 95—64.

Kondo, Michio, to Nihon Gakki Seiso Kabushiki Kaisha. Apparatus for producing bass sounds in electric musical instruments wherein contrabass voice can be obtained by special switch and circuit. 3,170,020, 2–16–65, Cl. 84—1.26.

Konig, Helmut: *See*—
Stiefel, Christian J., Blank, and Konig. 3,169,492.

Konishi, Kenzo, M. Furukawa, and Y. Maruyama, to Daito Chemical Industry Co., Ltd. Arylozasolyl optical brightening agents. 3,169,960, 2–16–65, Cl. 260—240.

Koren, Heiman W., and I. Michalko, to Sonotone Corp. Method of making magnetic record transducing heads. 3,169,303, 2–16–65, Cl. 29—155.5.

Kornemann, Henry C., and E. F. Yendall, to Union Carbide Corp. Method of and apparatus for producing high purity inert gases. 3,169,845, 2–16–65, Cl. 62—16.

Koskie, Wallace W., D. K. Sampson, and B. D. Smith, to Data Products Corp. Transducer. 3,170,149, 2–16–65, Cl. 340—174.1.

Kovanic, Edward F., and R. H. Wachsman, to Bell Telephone Laboratories, Inc. Non-inverting bistable circuit comprising tunnel diode-transistor combination, the output having both voltage and current gain. 3,170,073, 2–16–65, Cl. 307—88.5.

Koyder, Walter J., and G. E. Manroes, to Talon, Inc. Harness frame for looms. 3,169,556, 2–16–65, Cl. 139—91.

Krakower, Gerald W.: *See*—
Fried, Josef, and Krakower. 3,169,957.

Krantz, Evert, to Svenska Flaktfabriken, Aktiebolaget. Apparatus for cleaning dust-laden gases. 3,170,007, 2–16–65, Cl. 261—136.

Krause, Richard P.: *See*—
McFeaters, Harry L., Layman, Dunn, Krause, and Grant. 3,169,286.
McFeaters, Harry L., Layman, Dunn, Krause, and Grant. 3,169,287.

Krause, Otto, to Triumph Werke Nurnberg A.G. Carrying case for a portable machine. 3,169,342, 2–16–65, Cl. 312—284.

Kripke, Joseph B., to General Motors Corp. Automatic humidity sensing control for a clothes dryer. 3,169,838, 2–16–65, Cl. 34—45.

Kruger, Paul: *See*—
Röder, Josef, Klein, Künsel, and Kruger. 3,169,757.

Krulwich, Lester S. Drill grinding apparatus. 3,169,353, 2–16–65, Cl. 51—219.

Kuchar, Joseph, to Union Railway Equipment Co. Hand brake mechanism. 3,169,411, 2–16–65, Cl. 74—505.

Kugel, Fritz, to J. M. Voith, G.m.b.H. Fluid flow transmission, especially for rail vehicle. 3,169,371, 2–16–65, Cl. 60—54.

Kunsel, Karl-Heinz: *See*—
Roder, Josef, Klein, Kunsel, and Kruger. 3,169,757.

Kurkjian, Hrand L.: *See*—
Astrahan, Morton M., Housman, Kurkjian, and Sarahan. 3,170,142.

Kuschel, Konrad, to PVG Patent-Verwaltungs-Gesellschaft m.b.H. Vibratory drive. 3,170,078, 2–16–65, Cl. 310—29.

Kutik, Martin J., to Litton Systems, Inc. Synchronous motor control. 3,170,103, 2–16–65, Cl. 318—137.

Kuwata, Tsutomu, S. Takumi, and T. Hashimoto, to Nikki Kagaku Kabushiki Kaisha. Process for improving flavor and taste of soybean oil. 3,169,981, 2–16–65, Cl. 260—409.

Laa, Friedrich, and F. Lousil, to North American Philips Co., Inc. Magazine for a magnetic tape recorder/reproducer. 3,169,721, 2–16–65, Cl. 242—55.13.

Ladner, Richard A.: *See*—
Howard, Robert D., Ladner, and Stock. 3,169,748.

Lambert, William H. Sanitizing composition and method of use. 3,169,905, 2–16–65, Cl. 167—42.

Lamphere, Jean K.: *See*—
Kammerer, Archer W. 3,169,592.

Lane, Frank B., to Berliner Development Co. Demountable boat ladder. 3,169,503, 2–16–65, Cl. 114—221.

Langevin, Andre. Apparatus for acting upon living organisms. 3,169,524, 2–16–65, Cl. 128—172.1.

Langfelder, Helmut: *See*—
Messerschmitt, Willy, and Langfelder. 3,169,728.

Langlois, Gordon E., and W. M. Haunschild, to California Research Corp. Polymerization of hydrocarbons. 3,170,001, 2–16–65, Cl. 260—683.15.

Langwell, John D., to Waldes Kohinoor, Inc. Tools for handling split retaining rings. 3,169,307, 2–16–65, Cl. 29—229.

Lantz, George H., and D. D. Longfellow, to Sterling Faucet Co. Simplified lavatory drain pipe assembly. 3,169,254, 2–16–65, Cl. 4—203.

Large, David G.: *See*—
Webb, Reginald F., and Large. 3,169,986.

Lascola, Roland G.: *See*—
Bento, Robert, Fogle, and Lascola. 3,170,126.

Lassiter, Frederic H., and J. M. Fain; said Fain assor. to said Lassiter. Cigarette. 3,169,535, 2–16–65, Cl. 131—10.

Latos, Edwin J.: *See*—
Guarnaccio, Anthony J., and Latos. 3,169,923.

Lavorazione Materie Plastiche-L.M.P. S.p.A.: *See*—
Colombo, Roberto. 3,169,274.

Lawrence, Leland E., and J. L. Haydu, to Allen-Bradley Co. Electromagnetic switch. 3,170,064, 2–16–65, Cl. 200—147.

Layman, Robert C.: *See*—
McFeaters, Harry L., Layman, Dunn, Krause, and Grant. 3,169,286.
McFeaters, Harry L., Layman, Dunn, Krause, and Grant. 3,169,287.

Leale, Leslie P., to Earmaster, Inc. Hearing aid. 3,170,046, 2–16–65, Cl. 179—107.

Le Bus, Franklin L., Sr., to Bowen Tools, Inc. Well tubing retrieving apparatus. 3,169,593, 2–16–65, Cl. 175—315.

Ledex, Inc.: *See*—
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Lee, Clarence O., and C. M. Cockrell, to Freeport Sulphur Co. Pipe line for conveying sulfur and other hot liquids. 3,169,576, 2–16–65, Cl. 165—81.

Lee, Edward W., and M. L. Clachan, to Ilford Ltd. Synthetic film materials and same with light-sensitive silver halide emulsions coated thereon. 3,169,866, 2–16–65, Cl. 96—87.

Le Gates, Ralph W., and T. A. Santobianco, to Westinghouse Electric Corp. Fluid actuated servo-motor control. 3,169,451, 2–16–65, Cl. 91—385.

Legator, Marvin: *See*—
Tieman, Charles H., and Legator. 3,169,989.

Leitz, Ernst, Gesellschaft mit beschrankter Haftung: *See*—
Goldberg, Willi, and Brohl. 3,170,159.

L'Electro-Commutation (Elcom): *See*—
Clavel, Jean. 3,170,049.

Lemelson, Jerome H. Method of making a multi-layer electrical circuit. 3,169,892, 2–16–65, Cl. 148—6.3.

Lemin, Alan J., to The Upjohn Co. Method for controlling growth of undesired vegetation. 3,169,849, 2–16–65, Cl. 71—2.6.

Lennox, George C., to Westinghouse Electric Corp. Lampholder with mounting means. 3,169,815, 2–16–65, Cl. 339—52.

Lesieur, G., et Ses Fils, Etablissements: *See*—
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Le Vaux, Rene: *See*—
Wood, Ernest C. 3,169,526.

Levick, Herbert: *See*—
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Levine, Alfred B., to Litton Systems, Inc. Embossing process. 3,170,008, 2–16–65, Cl. 264—22.

Levy, Edward M., P. Swan, and D. R. Lopatka, to Reflector-Hardware Corp. Knockdown counter merchandising and storage units. 3,169,810, 2–16–65, Cl. 312—140.1.

Lewis, George E., to Hydril Co. Pulsation damper. 3,169,551, 2–16–65, Cl. 138—26.

Lewis, John G., to Nuclear Technical Service Corp. High temperature furnace. 3,170,018, 2–16–65, Cl. 13—31.

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Boese, Peter, and Götz. 3,170,062.
Fehling, Heinz, and Böcoldt. 3,170,051.

Lieberman, Joseph: *See*—
Freimauer, Sam, and Lieberman. 3,169,343.

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Evers, Johannes J. M., Hodselmans, and Linders. 3,169,938.

Lindner, John A.: *See*—
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Ling-Temco-Vought, Inc.: *See*—
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Linotype and Machinery Ltd.: *See*—
Fielding, Raymond G. 3,169,476.

Lipscomb, Willis L. Lighting fixture. 3,169,710, 2–16–65, Cl. 240—78.

Lite-Vent Industries, Inc.: *See*—
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Little, Lambert R., to Samuel Taylor Pty. Ltd. Caps for containers, bottles or the like. 3,169,655, 2–16–65, Cl. 215—39.

Litton Systems, Inc.: *See*—
Kutik, Martin J. 3,170,103.
Levine, Alfred B. 3,170,008.

Liu, Chui F., and R. L. Evans, to Minnesota Mining & Mfg. Co. High molecular weight polyphosphonitriles and process of making same. 3,169,933, 2–16–65, Cl. 260—2.

Lockheed Aircraft Corp.: *See*—
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Logan, Jimmie J., to Ling-Temco-Vought, Inc. Panoramic receiver for multiplexing communication signals from multiple sources. 3,170,118, 2–16–65, Cl. 325—333.

Long, Francis V., to Texas Eastern Transmission Corp. Pipeline leak detection device. 3,170,152, 2–16–65, Cl. 340—242.

Long, John B., and A. N. Blair, to Marmon-Herrington Co., Inc. Continuous miner having pivotally mounted head. 3,169,796, 2–16–65, Cl. 299—31.

Longfellow, Donald D.: *See*—
Lantz, George H., and Longfellow. 3,169,254.

Loos & Schmidt: *See*—
Loos, Wilhelm, and Meier. 3,169,257.

Loos, Wilhelm, and W. Meier, to Loos & Schmidt. Process for producing nuts. 3,169,257, 2–16–65, Cl. 10—86.

Lopatka, Dale R.: *See*—
Levy, Edward M., Swan, and Lopatka. 3,169,810.

Lord, John G., and R. Abrams, to Shoup Voting Machine Corp. Locking and unlocking system for voting machine and the like. 3,169,698, 2–16–65, Cl. 235—51.

Lorimor, James H. Trailer hitch with disengagement preventing means. 3,169,784, 2–16–65, Cl. 280—507.

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Ludwig, Alfons, to Western Electric Co., Inc. Wire take-up apparatus. 3,169,715, 2–16–65, Cl. 242—25.

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Luedtke, Warren J., to S. C. Johnson & Son, Inc. Fluid applicator. 3,169,267, 2–16–65, Cl. 15—566.

Lund, Jens, and C. G. Nilsen. Pump with delivery adjustment. 3,169,674, 2–16–65, Cl. 222—309.

Lundebjerg, James T., to Emhart Corp. Means for positioning the arms of a door closer. 3,169,268, 2–16–65, Cl. 16—49.

Lundquist, Richard C., to Goodman Mfg. Co. Material collecting means for continuous mining machine. 3,169,797, 2–16–65, Cl. 299—64.

Lus-Trus Corp.: *See*—
Blackmore, Fred N. 3,169,659.

Luther-Werke, Luther & Gordan: *See*—
Wenal, Josef. 3,169,546.

Luvial, John P., to Universal Oil Products Co. Preparation of Schiff bases. 3,169,988, 2–16–65, Cl. 260—566.

Macaluso, Francis L., to United States of America, Navy. Multi-bearing seal for rotatable elements. 3,169,775, 2–16–65, Cl. 277—65.

Macchi, Aldo, and C. D. MacCracken, to Whirlpool Corp. Cooking method and apparatus. 3,169,871, 2–16–65, Cl. 99—1.

MacCracken, Calvin D.: *See*—
Macchi, Aldo, and MacCracken. 3,169,871.

Mackenzie, Donald H., K. D. McMahan, and J. Cherrybone; said McMahan and Cherrybone assors. to D. H. Mackenzie. Money registers. 3,169,623, 2–16–65, Cl. 194—9.

Madsen, Arnold J., to Madsen Service Inc. Demountable oil burner construction. 3,169,571, 2–16–65, Cl. 158—76.

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Mahan, Guy S.: *See*—
Alexander, Clair B., Jr., and Mahan. 3,169,619.

Mahoney, Clarence L., to Shell Oil Co. High temperature lubricants and phosphorus containing polymers. 3,169,925, 2–16–65, Cl. 252—49.6.

Maier, Michael W. to Malleable Iron Range Co. Cooking range of the sliding drawer type. 3,169,517, 2–16–65, Cl. 126—37.

Mairs, William J., R. W. Schneider, and R. D. Ward, to Acton Laboratories, Inc. Encapsulated rotary switches. 3,170,047, 2–16–65, Cl. 200—11.

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Maier, Michael W. 3,169,517.

Malz, Hugo: *See*—
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Mamiya, Shigeo, and T. Odashima, to Saginomija Seisakusha Co., Ltd. Thermostat for refrigerating apparatus. 3,169,404, 2–16–65, Cl. 74—2.

Mankovits, Robert. Arrangement for removing the casing at the end of an electric cable. 3,169,315, 2–16–65, Cl. 30—91.

Manross, Gerald E.: *See*—
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Marino, Joseph, to Westinghouse Electric Corp. Compression contacted semiconductor devices. 3,170,098, 2–16–65, Cl. 317—234.

Marks, Bert H.: *See*—
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Marmo, Michael L., and R. F. Walsh. Electrically propelled toy vehicles with removable magnetic elements bridging contacts. 3,169,345, 2–16–65, Cl. 46—241.

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Martin, Emmett V. to Eastman Kodak Co. Elastomeric yarn. 3,169,363, 2–16–65, Cl. 57—152.

Martin, Philip T., to Industrial Nucleonics Corp. Liquid level measuring system. 3,170,064, 2–16–65, Cl. 250—43.5.

Marts, Lyle F., to Hagan Controls Corp. Cascade draft control. 3,169,703, 2–16–65, Cl. 236—15.

Marx, Louis & Co., Inc.: *See*—
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Marxer, Adrain, to Ciba Corp. Vanadium complex salts with hydrazino pyridazines and phthalazines. 3,169,961, 2–16–65, Cl. 260—242.

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Marsocchi, Alfred, and N. S. Janetos, to Owens-Corning Fiberglas Corp. Glass fibers sized with silane-epoxy resin compound and method. 3,169,884, 2–16–65, Cl. 117—126.

Mason, Howard C., to The Fryer Corp. Lumber stacker. 3,169,646, 2–16–65, Cl. 214—6.

Mason, James A., to Molins Machine Co. Ltd. Knife-feeding arrangements for sickle-shaped knives. 3,169,431, 2–16–65, Cl. 83—356.

Masuda, Masahiko: *See*—
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Matsch, Ladislas C., to Union Carbide Corp. Thermal insulation. 3,169,927, 2–16–65, Cl. 252—62.

Matsuda, Shigematsu. Roller jaw chuck. 3,169,778, 2–16–65, Cl. 279—12.

Maurer, Spencer B. Power operated rotary impact tool. 3,169,585, 2–16–65, Cl. 173—93.

Maxson, Orwin G., to Continental Oil Co. Apparatus for making plastic tubing. 3,169,272, 2–16–65, Cl. 18—14.

Maxwell, Stewart A., to Fisher & Ludlow Ltd. Beverage dispensing machine. 3,169,669, 2–16–65, Cl. 222—70.

May, Joseph J.: *See*—
Donchak, Richard M., and May. 3,169,906.

McCaw, Earl. Orbiting massage machine. 3,169,521, 2–16–65, Cl. 128—46.

McCoy, John H., to National Rolling Mills Co. Suspended ceiling grid structure. 3,169,614, 2–16–65, Cl. 189—62.

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McDowell, Robert C., and T. E. Ban, to McDowell-Wellman Engineering Co. Scraping apparatus for pelletising pan. 3,169,269, 2–16–65, Cl. 18—1.

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McFeaters, Harry L., R. C. Layman, A. O. Dunn, R. P. Krause, and J. Grant, to Pennsylvania Engineering Corp. Ladle construction. 3,169,286, 2–16–65, Cl. 22—81.

McFeaters, Harry L., R. C. Layman, A. O. Dunn, R. P. Krause, and J. Grant, to Pennsylvania Engineering Corp. Ladle bottom construction. 3,169,287, 2–16–65, Cl. 22—81.

McGerty, James B. Portable shelter. 3,169,543, 2–16–65, Cl. 135—1.

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McGavin, John M.: *See*—
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Morin, Louis H. 3,169,340.

McGinn, Paul J. Grain sampling device. 3,169,403, 2–16–65, Cl. 73—425.2.

McGregor, Ronald H. Fish lure. 3,169,337, 2–16–65, Cl. 43—42.09.

McIntosh, Harold A., to Rehrig Pacific Co. Vent fitting for regulator valve or the like. 3,169,548, 2–16–65, Cl. 137—513.3.

McKee, William H., to United-Carr Fastener Corp. Closed-entry contact component. 3,169,817, 2–16–65, Cl. 339—256.

McKim, Burton: *See*—
Giroud, Henry A., and McKim. 3,170,042.

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McLean, Daniel M., to Georgia-Pacific Corp. Palletising apparatus. 3,169,471, 2–16–65, Cl. 100—4.

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Meinicke, Erich, to Trutzschler & Co. Supply apparatus for carding machine and method. 3,169,664, 2–16–65, Cl. 222—1.

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Corrall, Roy E., and Menasoff. 3,169,360.

Merchant, Chester O., to Westinghouse Electric Corp. Lamp conveyor machine. 3,169,628, 2–16–65, Cl. 198—31.

Merck & Co., Inc.: *See*—
Pond, Richard L., and Heneghan. 3,169,826.
Sletsinger, Meyer, and Pfister. 3,169,971.

Merles, Irving B.: *See*—
Ho, Er-chun, Fakkeldij, and Merles. 3,170,121.

Mero, John L. Process for separation of nickel from cobalt in ocean floor manganiferous ore deposits. 3,169,856, 2–16–65, Cl. 75—119.

Messerschmitt AG.: *See*—
Messerschmitt, Willy, and Langfelder. 3,169,728.

Messerschmitt, Willy, and H. Langfelder, to Messerschmitt AG. Intake for jet propulsion units, more particularly for aircraft. 3,169,728, 2–16–65, Cl. 244—23.

Metivier, Jean, and R. Boesch, to Rhone-Poulenc S.A. 3-trichloromethylthio-5-halo-1,3,4-thiadiazol-2-one. 3,169,969, 2–16–65, Cl. 260—306.7.

Meyer, Burton C.: *See*—
Glass, Marvin I., Meyer, and Stan. 3,169,768.

Meyer, Burton C., and H. Stan, to Marvin I. Glass. Surprise chance device. 3,169,770, 2–16–65, Cl. 273—138.

Meyer, Raymond A.: *See*—
Treaftis, Harry N., Watts, and Meyer. 3,169,859.

Michaels, Glenn O.: *See*—
Erickson, Henry, and Michaels. 3,169,999.

Michalko, Ignatius: *See*—
Koren, Heiman W., and Michalko. 3,169,303.

Mickel, Allen W.: *See*—
Wilson, Henry B., and Mickel. 3,169,458.

Milbank Mfg. Co., Inc.: *See*—
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Miller, Arthur, to Hewlett-Packard Co. Fluid pressure controller. 3,169,821, 2–16–65, Cl. 346—140.

Millar, David W., to Phillips Petroleum Co. Removal of vanadium from aqueous solutions. 3,169,825, 2–16–65, Cl. 23—19.

Miller, Leo C.: *See*—
Schroader, Irvin H., Hosea, and Miller. 3,169,727.

Miller, Leon F.: *See*—
Hatch, Edmond K., and Miller. 3,169,285.

Miller, Russell B., to Barberton Plastics Products, Inc. Pneumatic cushion. 3,169,756, 2–16–65, Cl. 267—1.

Milo, Joseph V. Combined gage and sampler device. 3,169,322, 2–16–65, Cl. 33—126.4.

Minnesota Mining and Mfg. Co.: *See*—
Holmen, Reynold E. 3,169,864.
Liu, Chui Fan, and Evans. 3,169,933.

Minsk, Louis M., to Eastman Kodak Co. Process for preparing amomnium and alkali metal salts or resinous carboxy ester-lactones. 3,169,946, 2–16–65, Cl. 260—78.3.

Mite Corp.: *See*—
Howard, Bernard. 3,169,474.

Miyagawa, Takesi, and K. Kitajima, to Tateisi Denki Kabushiki Kaisha. Coin selector. 3,169,626, 2–16–65, Cl. 194—100.

Mobay Chemical Co.: *See*—
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Mobile Aerial Towers, Inc.: *See*—
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Moebius, Frederick C., to Teletype Corp. Inking ribbon guide mechanism. 3,170,035, 2–16–65, Cl. 178—42.

Moline Machine Co. Ltd.: *See*—
Mason, James A. 3,169,431.
Rowlands, Tom. 3,169,627.

Monett, Edward. Spring rimmed diaphragm and method of producing the same. 3,169,522, 2–16–65, Cl. 128—127.

Monett, Edward. Method of producing a rimmed diaphragm. 3,169,894, 2–16–65, Cl. 156—185.

Monsanto Co.: *See*—
Alt, Gerhard H., and Wilder. 3,169,941.
Davis, Walter M. 3,169,836.

Monsanto Research Corp.: *See*—
Johns, Iral B., and Di Pietro. 3,169,943.

Moody, Roy A.: *See*—
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Moore, Fred W., and R. C. Pressley, Jr., to General Electric Co. Washing machine having improved closure member sealing means. 3,169,540, 2–16–65, Cl. 134—191.

Moore, Lorenzo D.: *See*—
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Moore, William P., Jr., and D. Pickens, to Allied Chemical Corp. Catalytic hydrogenation of nitrosodialkylamines. 3,169,993, 2–16–65, Cl. 260—583.

Moosmann, Alois. Fluid pressure operated turbines. 3,169,746, 2–16–65, Cl. 253—24.

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Rathke, Arlan E., and Morgan. 3,169,857.

Morin, Louis H., ¼ to M. F. McGill, and ¼ to J. R. Hanna. Method of producing weedless fish hooks. 3,169,299, 2–16–65, Cl. 29—9.

Morin, Louis H., ¼ to M. F. McGill, and ¼ to J. R. Hanna. Weedless fish hooks. 3,169,338, 2–16–65, Cl. 43—43.6.

Morin, Louis H., ¼ to M. F. McGill, and ¼ to J. R. Hanna. Looped snell for fish hooks. 3,169,340, 2–16–65, Cl. 43—44.98.

Morin, Louis H. Speed reducer. 3,169,414, 2–16–65, Cl. 74—802.

Moross, John R., and J. M. Gault, to International Rectifier Corp. Method of dicing semiconductor wafers. 3,169,837, 2–16–65, Cl. 29—183.

Morris, Philip Inc.: *See*—
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Morris, William J., to Philco Corp. Operation-indicating means for push-button-operated mechanism. 3,169,506, 2–16–65, Cl. 116—124.1.

Morrison, Charles R.: *See*—
Johnston, Dean A., and Morrison. 3,169,829.

Morton, Evans T., and L. G. Beckett, to Whirpool Corp. Refrigerator with hollow cold shelf. 3,169,383, 2–16–65, Cl. 62—419.

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Steele, Thomas. 3,169,751.

Morway, Arnold J., and J. H. Bartlett, to Esso Research and Engineering Co. Alkali fusion of copolymers of monoolefins and vinyl esters. 3,169,924, 2–16–65, Cl. 252—40.

Muggli, Lawrence A., and K. E. Berg. Separable tiered cake stand. 3,169,496, 2–16–65, Cl. 108—94.

Muhlhausen, Cornelius: *See*—
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Muldoon, William J., to Hughes Aircraft Co. Commutating filter for inductive load. 3,170,105, 2–16–65, Cl. 318—341.

Mullen, John H., to Westinghouse Electric Corp. Control switch operator. 3,169,406, 2–16–65, Cl. 74—99.

Muller, Erwin: *See*—
Genski, Kurt, Muhlhausen, Muller, and Holtschmidt. 3,170,003.

Muller, Herbert: *See*—
Grabhofer, Herbert, Muller, Posse, and Ulrich. 3,169,863.

Munding, German, to Bolkow-Entwicklungen Kommanditgesellschaft. Combustion chamber for liquid fuels. 3,169,368, 2–16–65, Cl. 60—39.66

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Scott, Neville, and Munro. 3,169,944.

Murphy, Howard E.: *See*—
Evans, Williams E., Jr., and Murphy. 3,170,032.

Murray, William B. Fluid flow meter. 3,169,397, 2–16–65, Cl. 73—231.

Musser, John W., to E. I. de Pont de Nemours and Co. Apparatus for quenching extruded spinneret filaments. 3,169,271, 2–16–65, Cl. 18—8.

Muta, Akinori. Process of producing boron nitride. 3,169,828, 2–16–65, Cl. 23—191.

Myers, Earl D., to Ohaus Scale Corp. Spring scale with dial indication. 3,169,594, 2–16–65, Cl. 177—173.

Myers, Lester L., to Mobile Aerial Towers, Inc. Mobile aerial tower structure. 3,169,602, 2–16–65, Cl. 182—46.

Myers, Walter I.: *See*—
Allport, Davies, and Myers. 3,169,399.

NSU Motorenwerke Aktiengesellschaft: *See*—
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Nagle, Garrett S., and J. E. Roberson, to Reynolds Metals Co. Foil roll system. 3,169,300, 2–16–65, Cl. 29—18.

Nalder, Gerald E. Device for fishing. 3,169,335, 2–16–65, Cl. 43—15.

Namikawa, Takashi, to Yehan Numata. High pressure vane pump. 3,169,487, 2–16–65, Cl. 103—129.

Namy, Gerald, to Ateliers et Forges De La Loire St-Chamond-Firminy-St-Etienne-Jacob Holtzer. Converter-gas processing system. 3,170,017, 2–16–65, Cl. 266—35.

Narbut, Paul, to Westinghouse Electric Corp. Supporting means for electric coils in electric apparatus. 3,170,131, 2–16–65, Cl. 336—65.

National Acme Co., The: *See*—
Schubert, Karl P. 3,169,617.

National Aeronautics and Space Administration: *See*—
Webb, James E. 3,169,613.

National Rolling Mills Co.: *See*—
McCoy, John H. 3,169,614.

National Starch and Chemical Corp.: *See*—
Armour, Walter B., and Diamantopoulos. 3,169,936.

National Steel Corp.: *See*—
Grace, Richard W. 3,170,016.

Neely, Donald W., and R. R. Seiler, to E. I. de Pont de Nemours and Co. Process for the purification of acrylonitrile. 3,169,984, 2–16–65, Cl. 260—465.3.

Nejeschleb, Vladimir: *See*—
Baumeister, Heard K., and Nejeschleb. 3,170,045.

Nekervis, William F., and R. A. Canute, to The Dow Chemical Co. Defoaming aqueous liquids. 3,169,929, 2–16–65, Cl. 252—79.7.

Nelson, Christian K.: *See*—
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Nestlerode, Clifford D., to Standard Kollsman Industries, Inc. Frequency responsive interrogation oscillator at the receiver. 3,170,141, 2–16–65, Cl. 340—171.

Neumark, Otto W., to P. Frankenstein & Sons (Manchester) Ltd. Inflatable buildings. 3,169,542, 2–16–65, Cl. 135—1.

Neuschotz, Robert. Method of forming self-locking threaded elements. 3,169,258, 2–16–65, Cl. 10—86.

Neuschotz, Robert. Quick release fastener structure. 3,169,293, 2–16–65, Cl. 24—221.

Newberry, Sterling P., to General Electric Co. Microspace data storage tube using electron microscope optical assembly. 3,170,083, 2–16–65, Cl. 315—31.

Newell, George K., to Westinghouse Air Brake Co. Motion converting device. 3,169,407, 2–16–65, Cl. 74—424.8.

Newman, Harold T., Jr., to Universal Electronics Labs., Inc. Thermocouple lance and cartridge. 3,169,401, 2–16–65, Cl. 73—353.

New York Air Brake Co., The: *See*—
Galliger, Karl W. 3,169,488.
Westveer, Robert C. 3,169,453.

Niagara Machine & Tool Works: *See*—
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Nickel, Kurt: *See*—
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Nickla, Louis E., and J. T. Tracy, to International Harvester Co. Cotton picker crop guiding and picking structure. 3,169,359, 2–16–65, Cl. 56—44.

Nihon Gakki Seizo Kabushiki Kaisha: *See*—
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Nikki Kagaku Kabushiki Kaisha: *See*—
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Nilsen, Carl G.: *See*—
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Nilsson, Karl T.: *See*—
Bostian, Logan C., Nilsson, and Oser. 3,169,996.

Nirmaier, Earle A.: *See*—
Baumann, George P., and Nirmaier. 3,169,997.

Nisperly, Walter E., to Louis Marx & Co., Inc. Weaving loom. 3,169,553, 2–16–65, Cl. 139—33.

Noble, Lowell A., to Eitel-McCullough, Inc. Electro explosive device having a surface spark gap. 3,169,482, 2–16–65, Cl. 102—28.

Nocek, Stanley J., and G. H. Stell, to Precision Metal Workers. Chair height adjustment means. 3,169,744, 2–16–65, Cl. 248—405.

Noda, Shoso, to Howa Kogyo Kabushiki Kaisha. Collergear mechanism. 3,169,279, 2–16–65, Cl. 19—159.

Nolte, Albert C.: *See*—
Proctor, Barton A. 3,169,720.

North American Philips Co., Inc.: *See*—
Collins, Joseph C. 3,169,814.
Laa, Friedrich, and Lousil. 3,169,721.

North Carolina State College of the University of North Carolina: *See*—
Hoover, Maurice W. 3,169,875.
Hoover, Maurice W. 3,169,876.

Northern Electric Co. Ltd.: *See*—
Hammond, Frank, Robin, and Gauthier. 3,169,816.

Northern Industries, Inc.: *See*—
Berger, John R., and Rich. 3,169,561.
Rich, Stanley R. 3,169,507.
Rich, Stanley R. 3,169,508.
Rich, Stanley R. 3,169,509.

Norwich Pharmacal Co., The: *See*—
Donchak, Richard M., and May. 3,169,906.
Snyder, Harry R., Jr. 3,169,970.

Nuclear Technical Service Corp.: *See*—
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Numata, Yehan: *See*—
Namikawa, Takashi. 3,169,487.

Oaks, Willis C., to Ritter Co., Inc. Dental handpiece and apparatus for supplying heated fluid thereto. 3,169,318, 2–16–65, Cl. 32—28.

Oatley, Arthur F. Multiple skewer attachment for a broiler. 3,169,470, 2–16–65, Cl. 99—421.





Oberthür, Heinrich, to Alfred Teves, KG. Brake regulator. 3,169,600, 2–16–65, Cl. 303—22.

O'Brien, George A., to The Singer Co. Drawer and drawer mounting for sewing machine stand. 3,169,495, 2–16–65, Cl. 108—26.

O'Brien, Jeremiah W.: *See*—
Stone, Morris D., and O'Brien. 3,169,420.

O'Connell, John H., to Radio Corp. of America. F.M. stereophonic multiplex receiver having automatic disabling means for the subcarrier channel. 3,170,040, 2–16–65, Cl. 179—15.

Odashima, Takeshi: *See*—
Mamiya, Shigeo, and Odashima. 3,169,404.

Oertel, Gunter, and H. Mais, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of O,O-dialkyl-s-carbamido-methyl thio- and -thionothiol phosphoric acid esters. 3,169,982, 2–16–65, Cl. 260—461.

Ogland, Jon W., to Westinghouse Electric Corp. Optical communications transmitter. 3,170,066, 2–16–65, Cl. 250—199.

O'Hara, Mark J.: *See*—
De Rosset, Armand J., and O'Hara. 3,169,931.

Ohaus Scale Corp.: *See*—
Myers, Earl D. 3,169,594.

Okamura, Shiro. Recording system with provision for fast or slow reproduction. 3,170,031, 2–16–65, Cl. 178—6.6.

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Adams, Albert H., and Olashaw. 3,170,092.

Olin Mathieson Chemical Corp.: *See*—
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Fried, Josef, and Krakower. 3,169,957.
Yale, Harry L., Bernstein, and Sowinski. 3,169,962.

Oliver, Kenneth R., Jr., and H. L. McKimmy, to The Dow Chemical Co. High stability test oven. 3,170,060, 2–16–65, Cl. 219—390.

Oliver Machinery Co.: *See*—
Hartger, John G. 3,169,435.

Olmsted, Bruce C., Jr.: *See*—
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Olsen, Andrew H., to Duro-Test Corp. Machine for forming lamp tubes and article formed thereby. 3,169,857, 2–16–65, Cl. 220—2.1.

Olson, Lester A.: *See*—
Baker, John A., Olson, and Frits. 3,169,624.

OlympiaWerke A.G.: *See*—
Heuer, Hans. 3,169,702.

Olympic Screw & Rivet Corp.: *See*—
Siebol, George, and Rippy. 3,169,256.

Opsahl, Eugene G., to Amsted Industries Inc. Multi-gauge brake beam. 3,169,609, 2–16–65, Cl. 188—219.6.

O'Reilly, Jack E., to Harbison-Walker Refractories Co. Reheat furnace. 3,169,754, 2–16–65, Cl. 263—6.

Organon Inc.: *See*—
Kloosterman, Johannes. 3,169,977.

Örnlinde, Isidor T.: *See*—
Grönkvist, Lars R., and Örnlinde. 3,169,812.

Osborn Mfg. Co., The: *See*—
Hatch, Edmond K., and Miller. 3,169,285.

Oser, Zalik: *See*—
Bostian, Logan C., Nilsson, and Oser. 3,169,996.

Otten, Bernard J. Adjustable electrical box and plate. 3,170,028, 2–16–65, Cl. 174—58.

Otto, Gunther, and H.-J. Heyl, to Heyl Chemische Fabrik KG Gebruder. Instrument for testing a liquid. 3,169,834, 2–16–65, Cl. 23—253.

Owen, Albert G., to Blaw-Knox Co. Single sheet classifier. 3,169,428, 2–16–65, Cl. 83—27.

Owen, John L.: *See*—
Worthington, John D., and Owen. 3,169,591.

Owen, Vaughan M.: *See*—
Finn-Kelcey, Peter G., and Owen. 3,169,598.

Owens, William M., and W. Hunter, to Ledex, Inc. Rotary actuator. 3,170,097, 2–16–65, Cl. 317—192.

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Marsocchi, Alfred, and Janetos. 3,169,884.
White, James R. 3,169,361.
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PVG Patent-Vertwaltungs-Gesellschaft m.b.H.: *See*—
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Packing Supply Co.: *See*—
Felt, Maurice D. 3,169,776.

Page, John S., Jr. Magnetic soap holder. 3,169,743, 2–16–65, Cl. 248—206.

Page-Detroit, Inc.: *See*—
Bliss, George N., and Page. 3,169,354.

Page, George A.: *See*—
Page-Detroit, Inc. 3,169,354.

Pakistan Council of Scientific and Industrial Research: *See*—
Aslam, Mohammad, Hasan, Shah, and Zaidi. 3,169,932.

Palmer, Betty J., to Westinghouse Electric Corp. Electrical coil structure for inductive apparatus. 3,170,134, 2–16–65, Cl. 336—205.

Panduit Corp.: *See*—
Caveney, Jack E., and Moody. 3,169,560.

Paquette, Leo A., to The Upjohn Co. 2-azabicyclo[3.2.0]-hept-6-enes and derivatives thereof. 3,169,972, 2–16–65, Cl. 260—313.

Parametrics Research & Development Co., Inc.: *See*—
Humes, Harold L., Jr. 3,169,251.

Paramount Textile Machinery Co.: *See*—
Horberg, Charles, Jr. 3,169,680.

Parkhurst, Alfred S.: *See*—
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Parks, Herman D., to Time, Inc. Magazine making apparatus. 3,169,762, 2–16–65, Cl. 270—55.

Parr, Bernard F., to Westinghouse Electric Corp. Toaster. 3,169,469, 2–16–65, Cl. 99—400.

Paspy, Stanley F., to Ferror Corp. Precision tile setter. 3,169,295, 2–16–65, Cl. 25—153.

Pass, Friedrich W., to Gummiwerk Pass & Sohn. Kneader. 3,169,270, 2–16–65, Cl. 18—2.

Patterson, Roger W., to Eastman Kodak Co. Contact printing apparatus. 3,169,465, 2–16–65, Cl. 95—76.

Patz, Paul. Swingable silo spout. 3,169,620, 2–16–65, Cl. 193—2.

Payne, Robert T. Pool service unit. 3,169,920, 2–16–65, Cl. 210—169.

Pearl, David S. Fluid pressure regulator with fixedly and positively held spring. 3,169,547, 2–16–65, Cl. 137—505.42.

Pelzel, Erich, to Stolberger Zink Aktiengesellschaft. Zinc purification. 3,169,855, 2–16–65, Cl. 75—88.

Pendleton, Alfred H. Wheel bearing seal. 3,169,809, 2–16–65, Cl. 308—187.1.

Pennsylvania Engineering Corp.: *See*—
McFeaters, Harry L., Layman, Dunn, Krause, and Grant. 3,169,286.
McFeaters, Harry L., Layman, Dunn, Krause, and Grant. 3,169,287.

Perkins, James M., and R. J. Twiford, to United States of America, Navy. Space vehicle reentry sensor. 3,169,724, 2–16–65, Cl. 244—1.

Persson, Per-Oskar, to Frigoscandia Ltd. Fluidized freezer. 3,169,381, 2–16–65, Cl. 62—57.

Peters, Grace A., and F. C. Schaefer, to American Cyanamid Co. 2,4,6-trisubstituted-s-triazines and process for preparing same. 3,169,963, 2–16–65, Cl. 260—248.

Peterson, Jerry L., to Bell Telephone Laboratories, Inc. Coin chute for coin operated telephone. 3,169,625, 2–16–65, Cl. 194—44.

Petriw, Andrew, and H. Weickmann, to United States of America, Army. Spherical chamber for measurement of visibility. 3,170,068, 2–16–65, Cl. 250—228.

Pfeiffer Barbarossa- Werke AG., Gebr.: *See*—
Schauer, Siegfried, and Bacharach. 3,169,712.

Pfister, Karl: *See*—
Sletzinger, Meyer, and Pfister. 3,169,971.

Philco Corp.: *See*—
Colalillo, Edward P. 3,170,061.
Cramer, Bruce G. 3,170,127.
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Phillips, Bernard C., to The Tillotson Mfg. Co. Fuel feed system for internal combustion engines. 3,170,005, 2–16–65, Cl. 261—35.

Phillips Drill Co.: *See*—
Dieterich, Richard E. 3,169,805.

Phillips, Paul B., and B. R. Wilson. Aircraft control locking device. 3,169,731, 2–16–65, Cl. 244—83.

Phillips Petroleum Co.: *See*—
Miller, David W. 3,169,825.

Pickens, Donald: *See*—
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Pierce, Burdette H. Method of breaking glass by impacting the surface opposite a pre-scored line. 3,169,683, 2–16–65, Cl. 225—2.

Pike, Ronald M., to Union Carbide Corp. Zeolite catalyzed condensation of hydroxyl and/or alkoxy containing silicon compositions. 3,169,942, 2,16–65, Cl. 260—46.5.

Placke, Eugene A., to American Machine & Foundry Co. Magnetic inspection search shoe mount providing movement about multiple orthogonal axes. 3,170,114, 2–16–65, Cl. 324—37.

Plastus-S.A., Societe Anonyme dite: *See*—
De Laubarede, Leonce M. H. K. 3,169,752.

Ploetz, Theodor. Method of producing laminated plastic foils and films. 3,170,013, 2–16–65, Cl. 264—255.

Polka, Eugen F.: *See*—
Schultz, Robert S., Polka, and Cherney. 3,170,010.

Polliesener, Heinrich, to Vereinigte Aluminiumfabriken Ristau Pieper and Co. Receptacle closure comprising a resilient spacer. 3,169,654, 2–16–65, Cl. 215—37.

Pond, Richard L., and L. F. Heneghan, to Merck & Co., Inc. Method of preparing a hydrated magnesium carbonate. 3,169,926, 2–16–65, Cl. 23—67.

Pope, Robert E. Fishing lure. 3,169,336, 2–16–65, Cl. 43—42.28.

Porter, Louis M., to Fike Metal Products Corp. Damage resistant rupture disc assembly. 3,169,658, 2–16–65, Cl. 220—89.

Posse, Rolf-Fred: *See*—
Grabhofer, Herbert, Muller, Posse, and Ulrich. 3,169,863.

Powell, Elno M., and V. Z. Caracristi, to Combustion Engineering, Inc. Power plant system. 3,169,374, 2–16–65, Cl. 60—105.

Powell, Kenneth D., to Westinghouse Electric Corp. Cavity resonator tuned by variable recessing, instead of variable projecting, tuning screw. 3,170,129, 2–16–65, Cl. 333—83.

Powers, Howard A., to Universal Controls, Inc. Turnstile. 3,169,329, 2–16–65, Cl. 39—3.

Pranger, Gerald H. Scaffold. 3,169,604, 2–16–65, Cl. 182—146.

Pratt, Aloysius W., to American Machine & Foundry Co. Alternating current generator regulating system with pulse control signal. 3,170,110, 2–16–65, Cl. 322—28.

Precision Metal Workers: *See*—
Nocek, Stanley J., and Stell. 3,169,744.

Precision Valve Corp.: *See*—
Focht, John R. 3,169,673.
Focht, John R. 3,169,677.

Press, Carl, and J. R. Botterill, to Alfred Teves Maschinen- und Armaturenfabrik KG. Disk brake and adjusting means therefor. 3,169,608, 2–16–65, Cl. 188—72.

Pressley, Robert C., Jr.: *See*—
Moore, Fred W., and Pressley. 3,169,540.

Prest, Robert J., to Technical Operations, Inc. Method for manipulating radioactive material. 3,170,065, 2–16–65, Cl. 250—106.

Price, Eugene W., to Allis-Chalmers Mfg. Co. Pellet of iron ore and flux, and method for making same. 3,169,852, 2–16–65, Cl. 75—3.

Priestman Bros. Ltd.: *See*—
Brocklebank, Norman, and Scott. 3,169,649.

Principe, Pacifico A.: *See*—
Diassi, Patrick A., Principe, and Fried. 3,169,978.

Prindle, Charles, to Robinson Technical Products, Inc. Method of testing tubing and apparatus therefor. 3,169,635, 2–16–65, Cl. 205—7.

Printy, Helen C., E. E. Dalley, and F. A. Taylor, to Intermediates Inc. Method of obtaining amilageniu. 3,169,959, 2–16–65, Cl. 260—239.55.

Probe and Develop, Inc.: *See*—
Hollingsworth, Robert R. 3,169,682.

Procter & Gamble Co., The: *See*—
Ewell, James M. 3,169,652.

Proctor, Barton A., 33⅓ to A. C. Nolte. Recording medium drive. 3,169,720, 2–16–65, Cl. 242—55.12.

Propst, Merton C., Jr.: *See*—
Holland, Victor B., and Propst. 3,169,557.

Puckett, Hoyle B., and H. H. Klueter, to United States of America, Commerce. Auger feed injector for pneumatic conveyer. 3,169,799, 2–16–65, Cl. 302—50.

Puraki, Stanislaw A., to Canadian Vickers Ltd. Method for breaking wheels. 3,169,684, 2–16–65, Cl. 225—2.

Pusch, Robert A.: *See*—
Kane, Hugh, and Pusch. 3,170,057.

Pyle-National Co., The: *See*—
Archer, Lee A. 3,169,467.

Quick, Leonard J., to Burlington Brass Works Inc. Mixing valve. 3,169,549, 2–16–65, Cl. 137—625.17.

Rabinow, Jacob, to Control Data Corp. Marker for machine readable documents. 3,170,139, 2–16–65, Cl. 340—146.3.

Rabinow, Jacob, to Control Data Corp. Magnetic tape data storage device. 3,169,686, 2–16–65, Cl. 226—26.

Rabinow, Jacob, and E. Blomgren, to United States of America, Army. Self-contained test device for ordnance missiles. 3,169,484, 2–16–65, Cl. 102—70.2.

Racki, Francis R., to Westinghouse Air Brake Co. Fluid pressure brake control apparatus with empty and load changeover. 3,169,801, 2–16–65, Cl. 303—22.

Radio Corp. of America: *See*—
O'Connell, John H. 3,170,040.

Raglin, Loren L.: *See*—
Tanner, Robert L., Kennedy, and Raglin. 3,170,087.

Randall, David I., and W. Schmid-Nickels, to General Aniline & Film Corp. Dyeing with dyes having $CH_2SCH_2CH_2$-halide groups. 3,169,822, 2–16–65, Cl. 8—1.

Randrup, Beenjamin F., to H. John Burton Machine Corp. Spotting conveyor for bottles and the like and article for use therewith. 3,169,629, 2–16–65, Cl. 198—33.

Ransburg Electro-Coating Corp.: *See*—
Juvinall, James W. 3,169,883.
Juvinall, James W., Kock, and Marsh. 3,169,882.

Rantsch, Kurt, and O. Trotscher, to M. Hensoldt & Sohne, Optische Werke, Aktiengesellschaft. Automatic indicating device for measuring scales in machine tools. 3,170,100, 2–16–65, Cl. 318—28.

Rapata, George M., to Illinois Tool Works Inc. Plastic fastener having web-like reinforcing means. 3,169,439, 2–16–65, Cl. 85—5.

Rapson, Bryan, to Aluminium Laboratories Ltd. Method of improving arc stability when arcing between an electrode and a pool of molten metal. 3,169,854, 2–16–65, Cl. 75—10.

Rathke, Arian E., and A. T. Morgan, to Inland Steel Co. Free machining steel with improved hot workability. 3,169,857, 2–16–65, Cl. 75—123.

Rau, Robert L., to Geigy Chemical Corp. Method of increasing the solubility rate of fumaric acid and compositions. 3,169,872, 2–16–65, Cl. 99—78.

Reader, Trevor D., to Sperry Rand Corp. Fluid device. 3,169,550, 2–16–65, Cl. 137—625.25.

Reddle, Victor L., K. H. Hoppmann, and S. F. Staples, to Staples-Hoppmann, Inc. Apparatus for plural image projection. 3,169,442, 2–16–65, Cl. 88—24.

Redlich, Horst, and H.-J. Klemp, to Teldec Telefunken-Decca Schallplatten G.m.b.H. Controller. 3,169,773, 2–16–65, Cl. 274—4.

Reesen, Jorgen, to Eastman Kodak Co. Electro-optical photometer. 3,170,022, 2–16–65, Cl. 88—14.

Reflector-Hardware Corp.: *See*—
Levy, Edward M., Swan, and Lopatka. 3,169,810.

Rehrig Pacific Co.: *See*—
McIntosh, Harold A. 3,169,548.

Reilly, John S., to United Shoe Machinery Corp. Serrated tearing edges. 3,169,685, 2–16–65, Cl. 225—91.

Reinberger, William C., to Thompson Ramo Wooldridge Inc. Piston manufacture. 3,169,638, 2–16–65, Cl. 207—10.

Reiners, Walter: *See*—
Fürst, Stefan. 3,169,716.

Reiss Engineering Co. Ltd., The: *See*—
Ross, John C. 3,169,706.

Renborg, Bengt, to Allmänna Svenska Elektriska Aktiebolaget. Method for regulating of the position of the electrodes in an electrode furnace and arrangement for carrying out the method. 3,170,082, 2–16–65, Cl. 314—74.

Renoult, Marius, to Societe Desauge & Lair. Automatic device to establish quickly gaging charts for liquid holding vessels. 3,169,396, 2–16–65, Cl. 73—198.

Renoux, Pierre E., to Cri-Dan. Thread cutting machine. 3,169,426, 2–16–65, Cl. 82—5.

Republic Steel Corp.: *See*—
Harmon, William C. 3,170,113.

Retser, Theodore C., to Westinghouse Electric Corp. Lamp starting and operating circuit. 3,170,084, 2–16–65, Cl. 315—173.

Reynolds Metals Co.: *See*—
Cave, Boyd D. 3,169,427.
Nagle, Garrett S., and Roberson. 3,169,300.

Rhodes, James L.: *See*—
Soffer, Jack W., Rhodes, and Hug. 3,169,672.

Rhone-Poulenc S.A.: *See*—
Metivier, Jean, and Boesch. 3,169,969.

Riat, Henri, and R. De Montmollin, to Ciba Corp. Fiber reactive copper complex monoaso-dyestuffs. 3,169,952, 2–16–65, Cl. 260—146.

Rich, Stanley R.: *See*—
Berger, John R., and Rich. 3,169,561.

Rich, Stanley R., to Northern Industries, Inc. Elastic wave generator. 3,169,507, 2–16–65, Cl. 116—137.

Rich, Stanley R., to Northern Industries, Inc. Elastic wave generator. 3,169,508, 2–16–65, Cl. 116—137.

Rich, Stanley R., to Northern Industries, Inc. Elastic wave generator. 3,169,509, 2–16–65, Cl. 116—137.

Richards, Paul, and A. A. Wolf, to General Dynamics Corp., and Fidelity Instruments Corp. Speed-responsive motor generator field control circuit. 3,170,104, 2–16–65, Cl. 318—146.

Rico Ltd.: *See*—
Yue, Kwong T. 3,169,897.

Rike, Richard C., to General Motors Corp. Master cylinder primary cup anti-extrusion mechanism. 3,169,372, 2–16–65, Cl. 60—54.6.

Riley, Russell B., to Hewlett-Packard Co. Broadband frequency doubling. 3,170,108, 2–16–65, Cl. 321—69.

Riley Stoker Corp.: *See*—
Rivers, Russell C. 3,169,498.

Rinkewich, Isaac, to International Patent Research Corp. Flow timer. 3,169,666, 2–16–65, Cl. 222—20.

Rippy, Dorian E.: *See*—
Siebol, George, and Rippy. 3,169,256.

Ritter Co., Inc.: *See*—
Oaks, Willis C. 3,169,318.

Rivers, Russell C., to Riley Stoker Corp. Traveling grate incinerator. 3,169,498, 2–16–65, Cl. 110—15.

Road Machines (Drayton) Ltd.: *See*—
Ruston, Leonard E. 3,169,489.

Roberson, Joe E.: *See*—
Nagle, Garrett S., and Roberson. 3,169,300.

Roberts, Dale N. Article handling device. 3,169,643, 2–16–65, Cl. 214—1.

Robin, Ernest F.: *See*—
Hammond, Frank, Robin, and Gauthier. 3,169,816.

Robinson Technical Products, Inc.: *See*—
Prindle, Charles. 3,169,635.

Rockwell Mfg. Co.: *See*—
Allport, Davies, and Myers. 3,169,399.

Röder, Josef, G. Klein, K.-H. Künsel, and P. Kruger, to Carl Schenck Maschinenfabrik G.m.b.H. Holding and gripping device for tension-compression springs. 3,169,757, 2–16–65, Cl. 267—60.

Rogier, Edgar R., to General Mills, Inc. (Gamma-aminopropyl) aminohydroxyalkyl amines. 3,169,991, 2–16–65, Cl. 260—570.5.

Rokosz, Ferdinand, to Westinghouse Electric Corp. Discharge lamp electrode. 3,170,081, 2–16–65, Cl. 313—218.

Romney, Russell H., to Sperry Rand Corp. Rotary latch. 3,169,607, 2–16–65, Cl. 138—69.

Roof, James L., to Westinghouse Electric Corp. Dynamo-electric machine excitation control by use of pulse width modulation. 3,170,109, 2–16–65, Cl. 322—28.

Roper, John N., Jr., to Eastman Kodak Co. Liquid phase for gas-liquid chromatographic column packing. 3,169,390, 2–16–65, Cl. 73—23.1.

Rosenburgh, Norman J., to Eastman Kodak Co. Strip storage device. 3,169,332, 2–16–65, Cl. 40—106.1.

Rosenstein, Allen B. Resistive core balancing for magnetic reactor circuits. 3,170,106, 2–16–65, Cl. 321—25.

Ross, John C., to The Reiss Engineering Co. Ltd. Reciprocating means for liquid spray arrangements. 3,169,706, 2–16–65, Cl. 239—186.

Roth, Alexander. Optical walking aid for the blind. 3,170,151, 2–16–65, Cl. 340—213.

Roth, John P.: *See*—
Griesmer, James H., Roth, and Wagner. 3,170,071.

Roth, Wilfred. Liquid level indicator. 3,170,094, 2–16–65, Cl. 317—146.

Rotman, Walter, to United States of America, Air Force. Multiple beam radar antenna system. 3,170,158, 2–16–65, Cl. 343—100.

Rouverol, William S. Nonlubricated formed gearing. 3,169,408, 2–16–65, Cl. 74—461.

Rowlands, Tom, to Molins Machine Co. Ltd. Apparatus for making mouthpiece cigarettes. 3,169,627, 2–16–65, Cl. 198—31.

Roy, Gustave, L. Colson, and M. Decuypere, to Commissariat a L'Energie Atomique. Preparation of tertiary alkyl amines. 3,169,994, 2–16–65, Cl. 260—583.

Roy, Gustave, L. Colson, and M. Decuypere, to Commissariat a L'Energie Atomique. Process for the preparation of tertiary alkyl amines. 3,169,995, 2–16–65, Cl. 260—585.

Roy, Wallace R.: *See*—
Clark, Clarence B., Froscher, Du Bois, Kimball, and Roy. 3,169,873.

Royce, Fred H. Toy device. 3,169,764, 2–16–65, Cl. 272—1.

Royston, Marvin F., to Bell & Howell Co. Translator system. 3,170,143, 2–16–65, Cl. 340—172.5.

Rubin, Robert M.: *See*—
Ertsgaard, Byron L., and Rubin. 3,169,358.

Runyan, Ray M. Dolly device. 3,169,780, 2–16–65, Cl. 280—43.

Rupp, Alban: *See*—
Schilder, Hans, Rupp, and Nickel. 3,169,582.

Russell Mfg. Co., The: *See*—
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Ruston, Leonard E., to Road Machines (Drayton) Ltd. Monorail tracks. 3,169,489, 2–16–65, Cl. 104—118.

Ruti Machinery Works Ltd.: *See*—
Honegger, Rolf. 3,169,556.

Rutledge, Richard E., Sr.: *See*—
Johnson, Fred F., Rutledge, and Thomas. 3,169,621.

Ryan, John D., and P. F. Schuhmann, to American Sugar Co. Pressed crystal sugar tablet and method of manufacturing same. 3,169,888, 2–16–65, Cl. 127—30.

Rylander, Paul N., and W. A. Junk, Jr., to Standard Oil Co. Separation of hydrocarbon mixtures with the use of gamma-butyrolactone. 3,169,998, 2–16–65, Cl. 260—666.

Sabino, George E.: *See*—
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Sadler, Harry J., and E. E. Cook, to Hypro Engineering, Inc. Pump construction. 3,169,485, 2–16–65, Cl. 103—4.

Saginomija Seisakusha Co., Ltd.: *See*—
Mamiya, Shigeo, and Odashima. 3,169,404.

Sampson, Donald K.: *See*—
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Sandera, Milton, and H. S. Halpern, to American Machine & Foundry Co. Impedance type pin presence indicator. 3,169,765, 2–16–65, Cl. 273—52.

Sanford, Roy S., & Co.: *See*—
Eames, James O. 3,169,732.

Santoblanco, Thomas A.: *See*—
Le Gates, Ralph W., and Santoblanco. 3,169,451.

Sarahan, Bernard L.: *See*—
Astrahan, Morton M., Housman, Kurkjian, and Sarahan. 3,170,142.

Sarapuu, Erich, to Electrofrac Corp. Electrolinking by impulse voltages. 3,169,577, 2–16–65, Cl. 166—42.

Sato, Isuke, to Nikken Sangyo Kabushiki Kaisha. Automatic tape speed controlling apparatus. 3,169,687, 2–16–65, Cl. 226—174.

Saxonmeyer, Wallace J., to Whiting Corp. Railway vehicle positioner. 3,169,490, 2–16–65, Cl. 104—176.

Scanlon, John J., Jr., to United States of America, Army. Projectile for firing a leakproof caseless round. 3,169,333, 2–16–65, Cl. 42—69.

Schaaf, Herbert L., to E. I. du Pont de Nemours and Co. Foldable explosive tape. 3,169,478, 2–16–65, Cl. 102—22.

Schad, Robert D., to Traders Leasing Ltd. Thin walled container. 3,169,688, 2–16–65, Cl. 220—1.5.

Schaefer, Frederic C.: *See*—
Peters, Grace A., and Schaefer. 3,169,963.

Schaeffer, Norman M.: *See*—
Gres, Marcel E., Wood, and Schaeffer. 3,169,477.

Schaeperkoetter, Robert L.: *See*—
Gaylor, Randall, Schaeperkoetter, and Tribken. 3,169,730.

Schake, Richard P.: *See*—
Barry, Austin W., and Schake. 3,170,023.

Schauer, Siegfried, and O. Bacharach, to Pfeiffer Barbarossa-Werke AG., Gebr. Roller ring mill. 3,169,712, 2–16–65, Cl. 241—117.

Scheidig, Rudolf, to International Standard Electric Corp. Reed contact arranged within a protective envelope. 3,170,053, 2–16–65, Cl. 200—87.

Scheller, Hans: *See*—
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Scheller Textilmaschinenfabrik G.m.b.H., Gebr.: *See*—
Ullmann, Wilhelm, Vettermann, and Scheller. 3,169,386.

Scheller, Walter, to Ciba Ltd. Process for making anodes for electrolytic condensers. 3,169,862, 2–16–65, Cl. 75—207.

Schenck, Carl, Maschinenfabrik G.m.b.H.: *See*—
Röder, Josef, Klein, Künsel, and Kruger. 3,169,757.

Schilder, Hans, A. Rupp, and K. Nickel, to Dingierwerke Aktiengesellschaft. Arrangement for adjusting mechanically the angular setting of the blades of axial flow machines, more particularly in the case of axial blowers. 3,169,582, 2–16–65, Cl. 170—160.4.

Schippers, Heins, to Barmer Maschinenfabrik AG. Machine for the spooling of freshly spun, untwisted synthetic filaments. 3,169,714, 2–16–65, Cl. 242—18.

Schladermundt, Peter: *See*—
Holzwarth, Henry A., Schladermundt, and Wark. 3,169,660.

Schlatter, Erwin, and W. Hoppe, to El-Re-Ma S.A. per lo sfruttamento di brevetti. Electric circuits with groups of relays actuated by current impulses. 3,170,096, 2–16–65, Cl. 317—157.

Schlittler, Emil, to Ciba Corp. Methyl O-lower alkanoyl-reserpates. 3,169,967, 2–16–65, Cl. 260—287.

Schlumberger Well Surveying Corp.: *See*—
Voetter, Ulrich E. 3,169,578.

Schmid, Christian: *See*—
Houssier, Jean, and Schmid. 3,169,907.

Schmid-Nickels, Wilhelm: *See*—
Randall, David I., and Schmid-Nickels. 3,169,822.

Schmidt, Ludwig M., to Sperry Rand Corp. Record perforating device. 3,169,697, 2–16–65, Cl. 234—119.

Schmidt, Paul, K. Eichenberger, and M. Wilhelm, to Ciba Corp. New 4-mercapto-pyrasolo [3,4-d] pyrimidines. 3,169,965. 2–16–65, Cl. 260—256.5.

Schmidt, Paul, K. Eichenberger, and M. Wilhelm, to Ciba Corp. Aminopyrasoles. 3,169,966, 2–16–65, Cl. 260—286.

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Mairs, William J., Schneider, and Ward. 3,170,047.

Scholle Container Corp.: *See*—
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Scholle, William R., to Scholle Container Corp. Container. 3,169,690, 2–16–65, Cl. 229—14.

Schreitmueller, Rudolph F., to Sperry Rand Corp. Receiver noise compensation system. 3,170,157, 2–16–65, Cl. 343—17.1.

Schroader, Irvin H., M. E. Hoess, and L. C. Miller, to United States of America, Navy. Multiple flight course second order missile programmer. 3,169,727, 2–16–65, Cl. 244—14.

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Schubert & Salzer Maschinenfabrik Aktiengesellschaft: *See*—
Harberhauer, Karl. 3,169,385.

Schubert, Karl P., to The National Acme Co. Electromagnetically operated dual clutch drive. 3,169,617, 2–16–65, Cl. 192—84.

Schuchard, Walter F., to S. H. Couch Co., Inc. Current detecting system. 3,170,070, 2–16–65, Cl. 307—88.5.

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Schultz, Robert S., E. F. Polka, and J. A. Cherney, to American Can Co. Method of molding pre-expanded plastic beads. 3,170,010, 2–16–65, Cl. 164—51.

Schultz, Alfred, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of saturated cyclic dicarboxylic anhydrides. 3,169,975, 2–16–65, Cl. 260—346.3.

Schwartz, Jules H., to Traders Leasing Ltd. Thin walled container. 3,169,689, 2–16–65, Cl. 229—1.5.

Schwarz, Rudolf, to Staubli & Co., Gebr. Baulks and hooks for dobbies. 3,169,554, 2–16–65, Cl. 139—71.

Scott, George A., to General Electric Co. Accessory trim for free-standing kitchen appliance. 3,169,518, 2–16–65, Cl. 126—39.

Scott, Gerald L.: *See*—
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Scott, Gordon: *See*—
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Scott, Neville D., and N. Munro, to Imperial Chemical Industries Ltd. Process for reacting a dialkyl ester of terephthalate acid with a glycol and poly-condensing the product thereof. 3,169,944, 2–16–65, Cl. 260—49.

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Fenton, Paul E. 3,169,292.

Seavey, Frederick R., to Commercial Solvents Corp. Safety device for detonator cord. 3,169,480, 2–16–65, Cl. 102—27.

Sebastian, William A. III: *See*—
Berning, Kenneth W., and Sebastian. 3,170,117.

Segar, Joe. Mobile chair for shower facilities. 3,169,253, 2–16–65, Cl. 4—145.

Seiler, Robert R.: *See*—
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Selectivend Corp.: *See*—
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Semchyshen, Marion, to American Metal Climax, Inc. Molybdenum-hafnium alloy casting. 3,169,860, 2–16–65, Cl. 75—176.

Sennewald, Kurt: *See*—
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Seymour, Donald G., to Bristol Siddeley Engines Ltd. Rotary bladed power conversion machines. 3,169,747, 2–16–65, Cl. 253—39.

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Sheldon, Richard C.: *See*—
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Du Bois, Jennings, B., Jr. 3,169,830.
Mahoney, Clarence L. 3,169,925.
Stoutamire, Donald W. 3,169,903.
Tieman, Charles H., and Legator. 3,169,989.

Shepherd Machinery Co.: *See*—
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Shepherd, Willard W., to Shepherd Machinery Co. Wheel speed control. 3,169,595, 2–16–65, Cl. 180—1.

Sheridan Corp.: *See*—
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Sheridan, David S., to Sheridan Corp. Lubricated catheter. 3,169,527, 2–16–65, Cl. 128—349.

Sherliker, Francis R., and P. J. Whinyates, to Imperial Chemical Industries Ltd. Chlorinated polyvinyl chloride plastic compositions containing chlorinated paraffinic hydrocarbon plasticizers. 3,169,935, 2–16–65, Cl. 260—28.5.

Shetterly, Karl P., to General Motors Corp. Brush holder and connector assembly. 3,170,080, 2–16–65, Cl. 310—249.

Shiffman, Jerome, to Standard Unbreakable Watch Crystals, Inc. Device for applying and removing watch crystals. 3,169,306, 2–16–65, Cl. 29—210.

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Lord, John G., and Abrams. 3,169,698.

Shy, Joe J., Jr. Soffit and tie plate construction for prefabricated buildings. 3,169,347, 2–16–65, Cl. 50—66.

Siebert, Arthur, E. Dietz, and G. Geßauer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of azo-pigments having an improved flowability. 3,169,955, 2–16–65, Cl. 260—176.

Siebol, George, and D. E. Rippy, to Olympic Screw & Rivet Corp. Method of forming sleeve for lock rivet. 3,169,256, 2–16–65, Cl. 10—27.

Silk, John A.: *See*—
Calderbank, Alan, Edgar, and Silk. 3,169,904.
Calderbank, Alan, Edgar, and Silk. 3,169,964.

Simm, Walter, to Farbenfabriken Bayer Aktiengesellschaft. Apparatus for the electrophotographic production of images. 3,169,886, 2–16–65, Cl. 118—637.

Simmons, Albert P. Combined hammer and punch. 3,169,255, 2–16–65, Cl. 7—8.

Sims, Raymond B., to Davy and United Engineering Co. Ltd. Rolling mills. 3,169,423, 2–16–65, Cl. 80—38.

Sims, Raymond B., and B. I. Bathory, to Davy and United Engineering Co. Ltd. Tension looper system. 3,169,422, 2–16–65, Cl. 80—35.

Sinclair, Carter, to General Electric Co. Hotbox detector. 3,169,735, 2–16–65, Cl. 246—169.

Sinclair Research, Inc.: *See*—
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Singer Co., The: *See*—
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Sklar, Leo P., to Lite-Vent Industries, Inc. Structural beam for roof edges. 3,169,346, 2–16–65, Cl. 50—8.

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Darlington, Warren B., and Slaker. 3,169,491.

Slan, Jack, to Dominion Luggage Co. Lock. 3,169,788, 2–16–65, Cl. 292—177.

Sletzinger, Meyer, and K. Pfister, to Merck & Co., Inc. α-Alkyl histidines. 3,169,971, 2–16–65, Cl. 260—309.

Slie, Warren M.: *See*—
Stresau, Richard H. F., Jr., and Slie. 3,169,481.

Small, Bernard L., and J. H. Jensen, said Small assor. to United States of America, Navy. Method of making a dish-shaped antenna reflector. 3,169,311, 2–16–65, Cl. 29—527.

Smith, Aaron G., and L. D. Moore, to Ferro Corp. Segmented winding mandrel. 3,169,718, 2–16–65, Cl. 242—46.5.

Smith, Blanchard D., Jr., and A. H. Ballard, to United States of America, Air Force. Quantizer. 3,170,155, 2–16–65, Cl. 340—347.

Smith, Byron D.: *See*—
Koskie, Wallace W., Sampson, and Smith. 3,170,149.

Smith, Charles F. Piano action. 3,169,436, 2–16–65, Cl. 84—243.

Smith, Guilford H. Garbage can holder. 3,169,742, 2–16–65, Cl. 248—146.

Smith, Orson W., to Smithway Sales Corp. Panel sanding machine. 3,169,352, 2–16–65, Cl. 51—140.

Smith, Raymond A., and H. A. Anderson, to Westinghouse Electric Corp. Cooking oven. 3,169,520, 2–16–65, Cl. 126—338.

Smith, Richard M. Acoustical cabinet for loudspeakers. 3,169,601, 2–16–65, Cl. 181—31.

Smith, William G.: *See*—
Bonin, Lawrence G., and Smith. 3,169,294.

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Snelson, Kenneth D. Continuous tension, discontinuous compression structures. 3,169,611, 2–16–65, Cl. 189—34.

Snider, Theodore O., to The Joyce-Cridland Co. Ramp mechanism. 3,169,291, 2–16–65, Cl. 14—71.

Snodgrass, Harold F. Pole clip. 3,169,290, 2–16–65, Cl. 24—81.

Snyder, Harry R., Jr., to The Norwich Pharmacal Co. 3-(5-nitro-2-furyl)-5,6-dihydroimidaso[2,1-B] thiazole and acid addition salts thereof. 3,169,970, 2–16–65, Cl. 260—306.8.

Snyder, William H., to Johns-Manville Corp. Asbestos-cement products. 3,169,878, 2–16–65, Cl. 106—99.

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Societe Desauge & Lair: *See*—
Renoult, Marius. 3,169,396.

Societe d'Etudes et d'Applications Industrielles et Immobilieres, "Inter-Technique": *See*—
Hennequin, Ernest A. G. 3,169,513.

Soffer, Jack W., J. L. Rhodes, and R. C. Hug, to The Clayton Corp. of Delaware. Locking actuator cap for valved dispenser. 3,169,672, 2–16–65, Cl. 222—153.

Sohn, Allen O. Label web rewinder. 3,169,895, 2–16–65, Cl. 156—361.

Solano Viques, Carlos L. Pick-up truck which is convertible into a passenger vehicle. 3,169,792, 2–16–65, Cl. 296—99.

Sonotone Corp.: *See*—
Koren, Helman W., and Michalko. 3,169,303.

Sowers, Edwin U., III.: *See*—
Bauer, Peter, and Sowers. 3,169,639.

Sowinski, Francis A.: *See*—
Yale, Harry L., Bernstein, and Sowinski. 3,169,962.

Soyland, Ingebret. Transport arrangement for mobile excavator. 3,169,650, 2–16–65, Cl. 214—138.

Spalding, Willard P., to Westinghouse Air Brake Co. Pneumatic power actuated clamping apparatus. 3,169,391, 2–16–65, Cl. 73—39.

Sparling, Ray C., and J. A. Braun, to Hersey-Sparling Meter Co. Magnetic drive for fluid flow meters. 3,169,398, 2–16–65, Cl. 73—231.

Spatz Corp.: *See*—
Spatz, Walter B. 3,169,511.

Spatz, Walter B., to Spatz Corp. Mechanical marking instrument. 3,169,511, 2–16–65, Cl. 120—18.

Speedway Machine & Tool Co., Inc.: *See*—
Zappia, Anthony T. 3,169,846.

Spelines, Kore K., to Automatic Electric Laboratories, Inc. Communication switching system. 3,170,041, 2–16–65, Cl. 179—18.

Sperotechnique, La: *See*—
Cousteau, Jacques Y., Gagnan, and Alinat. 3,169,500.

Sperry Gyroscope Co. Ltd., The: *See*—
Summerlin, Frederick A., and Dove. 3,170,132.

Sperry, Leonard J., and B. H. Marks, to Globe-Union, Inc. Miniature variable capacitor. 3,170,099, 2–16–65, Cl. 317—249.

Sperry Rand Corp.: *See*—
Bartik, William J., and Gruensfelder. 3,170,147.
Bauer, Peter, and Sowers. 3,169,639.
Dombrowski, Edward J. 3,169,701.
Downs, John W. 3,170,156.
Gaylor, Randall, Schaeperkoetter, and Tribken. 3,169,730.
Goldstein, Raymond. 3,170,095.
Irwin, Calvin W., Hubbard, and Bergere. 3,169,473.
Johnson, Lloyd A., and Marpe. 3,170,035.
Reader, Trevor D. 3,169,550.
Romney, Russell H. 3,169,607.
Schmidt, Ludwig M. 3,169,697.
Schreitmueller, Rudolph F. 3,170,157.
Wesner, Charles R. 3,169,501.

Spraragen, Louis. Adjustable dial for shafts. 3,169,505, 2–16–65, Cl. 116—124.

Stacherl, John, to The Capewell Mfg. Co. Strap connector. 3,169,291, 2–16–65, Cl. 24—196.

Stamicarbon N.V.: *See*—
Evers, Johannes J. M., Hodselmans, and Linders. 3,169,988.

Stan, Henry: *See*—
Glass, Marvin I., Meyer, and Stan. 3,169,768.
Meyer, Burton C., and Stan. 3,169,770.

Standard Kollsman Industries, Inc.: *See*—
Nestlerode, Clifford D. 3,170,141.

Standard Oil Co. (Indiana): *See*—
Bertolacini, Ralph J. 3,169,831.
Green, Louis E., Jr., and Winters. 3,169,389.
Hengstebeck, Robert J. 3,169,916.
Rylander, Paul N., and Junk. 3,169,998.

Standard Unbreakable Watch Crystals, Inc.: *See*—
Shiffman, Jerome. 3,169,306.

Stanton, Arthur J., D. F. Anderson, R. E. Taylor, and J. B. King, to United States of America, Navy. Magazine mechanism. 3,169,445, 2–16–65, Cl. 89—33.

Staples, Stanley F.: *See*—
Reddle, Victor L., Hoppmann, and Staples. 3,169,442.

Staples-Hoppmann, Inc.: *See*—
Reddle, Victor L., Hoppmann, and Staples. 3,169,442.

Staubli & Co., Gebr.: *See*—
Schwarz, Rudolf. 3,169,554.

Stauffer Chemical Co.: *See*—
Hanks, Charles W. 3,170,019.
Szabo, Karoly. 3,169,973.

Stebbins, Larry O., to Automation Industries, Inc. Means and techniques for inspecting metal. 3,169,393, 2–16–65, Cl. 73—67.9.

Steele, Floyd G., to Digital Controls Systems, Inc. Magnetic drum memory system. 3,170,148, 2–16–65, Cl. 340—174.1.

Steele, Thomas, to Morton Machine Co. Ltd. Mixing or emulsifying machines. 3,169,751, 2–16–65, Cl. 259—7.

Stein Bros. Mfg. Co.: *See*—
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Stein, Leo, to Stein Bros. Mfg. Co. Carrying case with freely hinged closure. 3,169,615, 2–16–65, Cl. 190—48.

Stell, George H.: *See*—
Nocek, Stanley J., and Stell. 3,169,744.

Stelma, Inc.: *See*—
Carver, Lawrence M., and Levick. 3,170,037.

Stenuick, Andre P. C., to Halifax Tool Co. Ltd. Rock drilling apparatus. 3,169,584, 2–16–65, Cl. 173—18.

Stephan, Hans J.: *See*—
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Sterling Faucet Co.: *See*—
Lantz, George H., and Longfellow. 3,169,254.

Sternberg, James C.: *See*—
Gallaway, William S., and Sternberg. 3,169,832.

Steuber, Walter, to E. I. du Pont de Nemours and Co. Non-woven fiberous sheet of continuous strand material and the method of making same. 3,169,899, 2–16–65, Cl. 161—72.

Stewart, James B., to Westinghouse Electric Corp. Receptacle aperture cover. 3,170,029, 2–16–65, Cl. 174—66.

Stewart, Robert J., to The Bulman Corp. Store fixture. 3,169,811, 2–16–65, Cl. 312—140.1.

Sticker, Robert E.: *See*—
Knox, William J., Jr., and Sticker. 3,169,870.

Stiefel, Christian J. W. Blank, and H. König, to Waggonfabrik Talbot. Tiltable roof for street and rail vehicles. 3,169,402, 2–16–65, Cl. 105—377.

Stinchcombe, John W., to Imperial Chemical Industries Ltd. Process of reducing sag in tubular film manufacture. 3,170,012, 2–16–65, Cl. 264—95.

Stock, Alvin L.: *See*—
Howard, Robert D., Ladner, and Stock. 3,169,748.

Stockard, Ben B., Jr., to Wysong & Miles Co. Metal working machine. 3,169,433, 2–16–65, Cl. 83—524.

Stoeckly, Eugene E.: *See*—
Clark, Gordon W., Fuerst, Sheldon, and Stoeckly. 3,169,366.

Stolberger Zink Aktiengesellschaft: *See*—
Peisel, Erich. 3,169,855.

Stone, Morris D., and J. W. O'Brien, to United Engineering and Foundry Co. Apparatus for tensioning strip. 3,169,420, 2–16–65, Cl. 80—35.

Stott, Albert M., to United States of America, Army. Propellant actuated release bolt. 3,169,443, 2–16–65, Cl. 89—1.

Stottlemyer, Harold W. Fork lift for farm tractors. 3,169,651, 2–16–65, Cl. 214—140.

Stoutamire, Donald W., to Shell Oil Co. Organophosphorus insecticide. 3,169,903, 2–16–65, Cl. 167—30.

Stover, Harry E.: *See*—
Holloway, Raymond L., and Stover. 3,169,355.

Straley, James M., and J. G. Fisher, to Eastman Kodak Co. Monoazo thiazole dyestuffs. 3,169,954, 2–16–65, Cl. 260—158.





Strandberg Engineering Laboratories, Inc.: *See*—
Strandberg, Robert C. 3,169,297.

Strandberg, Robert C., to Strandberg Engineering Laboratories, Inc. Stretch-shrink indicating apparatus. 3,169,297, 2–16–65, Cl. 28—28.

Strauss, Eugen. Transfer sheet and sheet assembly. 3,169,880, 2–16–65, Cl. 117—36.3.

Streete, Charles M., and S. P. Witchell, to Coopers Mechanical Joints Ltd. Cyclones for removing solids from gas. 3,169,842, 2–16–65, Cl. 55—449.

Streigle, Paul E., to Catalyst Research Corp. Reserve energised battery. 3,169,891, 2–16–65, Cl. 136—90.

Stresau, Richard H. F., Jr., and W. M. Slie, to United States of America, Navy. Water confinement arming device. 3,169,481, 2–16–65, Cl. 102—27.

Stretch, Robert W.: *See*—
Beck, Raymond A., and Stretch. 3,170,030.

Stribling, Bob M. Press door lock for cotton gins. 3,169,472, 2–16–65, Cl. 100—53.

Stringer, Loren F., and J. W. Wallace, to Westinghouse Electric Corp. Sampled data system for automatic gauge control. 3,170,101, 2–16–65, Cl. 318—28.

Stroh, Rudolf, W. Sutter, and H. Haberland, to Farbenfabriken Bayer Aktiengesellschaft. Process for the addition polymerisation of vinylidene compounds in the presence of trialkyl boron or a mixture of trialkyl boron and oxygen. 3,169,947, 2–16–65, Cl. 260—85.5.

Stromberg, Emil A. Loader-carrier for automobiles. 3,169,653, 2–16–65, Cl. 214—450.

Strommen, Lawrence A.: *See*—
Andregg, Ernest R., and Strommen. 3,170,039.

Stubbe, Friedrich: *See*—
Knappe, Heinrich. 3,169,631.

Summerlin, Frederick A., and F. Dove, to The Sperry Gyroscope Co. Ltd. Electromagnetic transducers. 3,170,132, 2–16–65, Cl. 336—132.

Surratt, Dwight F., to Texas Instruments Inc. Self locking screw. 3,169,565, 2–16–65, Cl. 151—14.

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Weigand, John K. and C. H. 3,169,634.

Sutter, Wilhelm: *See*—
Stroh, Rudolf, Sutter, and Haberland. 3,169,947.

Susue, Miyoshi. Pneumatic harvester and thresher. 3,169,357, 2–16–65, Cl. 56—21.

Svanoe, Thomas: *See*—
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Svenska Flaktfabriken, Artiebolaget: *See*—
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Swan, Perry: *See*—
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Symon, Ted, to Universal Oil Products Co. Stabilization of organic substances. 3,169,926, 2–16–65, Cl. 252—51.5.

Symons Mfg. Co.: *See*—
Bonin, Lawrence G., and Smith. 3,169,294.

Synodis, Steve T.: *See*—
Huntley, Allan R., and Synodis. 3,169,835.

Systems Engineering Corp.: *See*—
Brown, Daniel M. 3,169,882.

Szabo, Karoly, to Stauffer Chemical Co. Trisorganophosphorus compounds and a method of preparing them. 3,169,975, 2–16–65, Cl. 260—326.

Tabor, Clarence J., Jr., to Western Electric Co., Inc. Voltage breakdown test circuit. 3,170,115, 2–16–65, Cl. 324—51.

Tachibana, Jiro. Method of producing life saving apparel. 3,169,298, 2–16–65, Cl. 28—76.

Takumi, Shisuo: *See*—
Kuwata, Tsutomu, Takumi, and Hashimoto. 3,169,981.

Talmage, George E.: *See*—
Covert, Robert J., Davis, and Talmage. 3,169,567.

Talon, Inc.: *See*—
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Tann Corp.: *See*—
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Tann, David: *See*—
Abel, Martin L., and Tann. 3,169,807.

Tanner, Robert L., H. D. Kennedy, and L. L. Raglin, to Granger Associates. Static discharger apparatus. 3,170,087, 2–16–65, Cl. 317—2.

Tantlinger, Keith W., to Fruehauf Corp. Container alignment chute. 3,169,648, 2–16–65, Cl. 214—41.

Tappan Co., The: *See*—
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Taylor, Francis A.: *See*—
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Taylor, Joseph C., to Westinghouse Electric Corp. Thermoelectric chamber. 3,169,378, 2–16–65, Cl. 62—3.

Taylor, Richard E.: *See*—
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Taylor, Richard F., to Anglo-Transvaal Consolidated Investment Co. Ltd. Tension indicating devices for instance in roof bolting. 3,169,440, 2–16–65, Cl. 85—62.

Taylor, Samuel, Pty. Ltd.: *See*—
Little, Lambert R. 3,169,655.

Taylor, William E., to American Can Co. Container for powdered and granular products. 3,169,671, 2–16–65, Cl. 222—143.

Taylor, William I.: *See*—
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Technical Operations, Inc.: *See*—
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Technicon Instruments Corp.: *See*—
Ferrari, Andres, and Smythe. 3,169,912.

Teknika, Inc.: *See*—
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Babacs, Lewis J. 3,169,719.

Teletype Corp.: *See*—
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Tethal, Miroslaw R. Method and apparatus for forming sleeve bearings. 3,169,302, 2–16–65, Cl. 29—149.5.

Teves, Alfred, KG.: *See*—
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Teves, Alfred, Maschinen- und Armaturenfabrik Kommandit-Gesellschaft: *See*—
Hoffmann, Helmut. 3,169,455.

Teves, Alfred, Maschinen- und Armaturenfabrik K.G.: *See*—
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Press, Carl, and Botterill. 3,169,608.

Texas Eastern Transmission Corp.: *See*—
Long, Francis V. 3,170,152.

Texas Instruments Inc.: *See*—
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Textile Machine Works: *See*—
Colle, Benjamin F. 3,169,384.

Textron Inc.: *See*—
Findley, Howard J. 3,169,349.

Thatcher, Orrin C. Apparatus for drilling large diameter holes. 3,169,590, 2–16–65, Cl. 175—94.

Thirup, Gunnar, to Thomas B. Thrige. Magnetic core control circuit for elevators. 3,169,606, 2–16–65, Cl. 187—29.

Thomas, Frank J.: *See*—
Johnson, Fred F., Rutledge, and Thomas. 3,169,621.

Thomas, James E. Sound head set. 3,169,600, 2–16–65, Cl. 181—24.

Thompson Francis T., to Westinghouse Electric Corp. Controller circuitry. 3,170,125, 2–16–65, Cl. 332—14.

Thompson, Jack T. Synergistic herbicidal composition. 3,169,850, 2–16–65, Cl. 71—2.6.

Thompson, Kenneth R.: *See*—
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Thompson Ramo Wooldridge Inc.: *See*—
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Reinberger, William C. 3,169,688.

Thompson, William H. Pipe follower insert. 3,169,259, 2–16–65, Cl. 10—127.

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Thurow, Herbert J. Apparatus for blocking and thinning of row crop farm produce. 3,169,583, 2–16–65, Cl. 172—111.

Tieman, Charles H., and M. Legator, to Shell Oil Co. Trihalo-substituted aldoxime esters. 3,169,989, 2–16–65, Cl. 260—566.

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Tillery, Hubert B., to Tillery Container Co. Garment hanger guard. 3,169,681, 2–16–65, Cl. 223—98.

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Time, Inc.: *See*—
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Tinkler, Almond: *See*—
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Todd, Max E.: *See*—
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Toshiba Denki Kigu Kabushiki Kaisha: *See*—
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Tracey, Arthur V., ¼ to Mildred M. Tracy. Electrical conductor clamp. 3,169,818, 2–16–65, Cl. 339—266.

Tracy, James T.: *See*—
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Schwartz, Jules H. 3,169,689.

Trafton, Warren L., to United-Carr Inc. Molding fastener. 3,169,289, 2–16–65, Cl. 24—73.

Treaftis, Harry N., C. E. Watts, Jr., and R. A. Meyer, to General Electric Co. Superconductive materials. 3,169,859, 2–16–65, Cl. 75—134.

Tribken, Everett R.: *See*—
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Turner, Frank T.: *See*—
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Twachtman, Godfrey. Magnetic retrievers. 3,169,791, 2–16–65, Cl. 294—65.5.

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Ullman, Wilhelm, H. Vettermann, and H. Scheller, to Scheller Textilmaschinenfabrik G.m.b.H., Gebr. Pressing support for straight bar knitting machine. 3,169,386, 2–16–65, Cl. 66—88.

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Ulrich Process Co., The: *See*—
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Hostettler, Fritz, and Young. 3,169,945.
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Kornemann, Henry C., and Yendall. 3,169,845.
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Pike, Ronald M. 3,169,942.
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United Engineering and Foundry Co.: *See*—
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United Shoe Machinery Corp.: *See*—
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Petriw, Andrew, and Weickmann. 3,170,068.
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Paquette, Leo A. 3,169,972.
Youngdale, Gilbert A. 3,169,906.
Valentine, William I., and J. W. Banham, Jr., to United States of America, Navy. Data recording system. 3,169,819, 2–16–65, Cl. 346—33.
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Van der Feer, Tom, to Jan Photo Products, Inc. Roll film washer. 3,169,539, 2–16–65, Cl. 134—177.
Van Es, Adrian C., to Albatros Zwavelzuur-en Chemische Fabrieken, N.V. Process for roasting iron sulfides to form sulfur dioxide and magnetite. 3,169,853, 2–16–65, Cl. 75—9.
Van Horne, Beverley H., M. K. Detwiler, and M. P. Zimmermann, to The Dow Chemical Co. Trend detector. 3,169,820, 2–16–65, Cl. 346—35.
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Vasseur, Jean-Pierre, to Compagnie Generale de Telegraphie Sans Fil. Electrical generators of quasi-random symbols. 3,170,033, 2–16–65, Cl. 178—22.
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Voetter, Ulrich E., to Schlumberger Well Surveying Corp. Formation testers. 3,169,578, 2–16–65, Cl. 166—65.1.
Vogt, Wilhelm, K. Gehrmann, K. Sennewald, and H. Coln, to Knapsack-Griesheim Aktiengesellschaft. Process for separating acrylic acid n-butyl ester from n-butanol and another impurity by distillation with acetophenone. 3,169,911, 2–16–65, Cl. 202—39.5.
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Voss, Ernst, and J. Freundlich, to Varta Aktiengesellschaft. Active material for a lead-acid storage battery plate. 3,169,890, 2–16–65, Cl. 136—26.
Vosteen, Robert E., and C. O. Jones, Jr., to Niagara Machine & Tool Works. Remote portable load indicator for power presses and the like. 3,169,394, 2–16–65, Cl. 73—88.5.
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| 222–484 | 3,169,679 | 246– 77 | 3,169,734 | 260–158 | 3,169,954 | 264– 39 | 3,170,009 | 303– 23 | 3,169,802 | 324– 34 | 3,170,112 |
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| 40 | 3,169,691 | 250– 43.5 | 3,170,064 | 286 | 3,169,966 | 269– 25 | 3,169,759 | 9 | 3,169,807 | 111 | 3,170,124 |
| 72 | 3,169,692 | 106 | 3,170,065 | 287 | 3,169,967 | 86 | 3,169,760 | 122 | 3,169,808 | 332– 14 | 3,170,125 |
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| 120 | 3,169,694 | 211 | 3,170,067 | 306.7 | 3,169,969 | 270– 55 | 3,169,762 | 310– 8.4 | 3,170,076 | 41 | 3,170,127 |
| 145 | 3,169,695 | 228 | 3,170,068 | 306.8 | 3,169,970 | 271– 68 | 3,169,763 | 11 | 3,170,077 | 333– 26 | 3,170,128 |
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| 61 | 3,169,699 | 51.5 | 3,169,926 | 327 | 3,169,974 | 105.4 | 3,169,767 | 312–140.1 | 3,169,810 | 132 | 3,170,132 |
| | 3,169,700 | 62 | 3,169,927 | 346.3 | 3,169,975 | 134 | 3,169,768 | | 3,169,811 | 165 | 3,170,133 |
| 145 | 3,169,701 | 68 | 3,169,928 | 346.8 | 3,169,976 | 135 | 3,169,769 | 190 | 3,169,812 | 205 | 3,170,134 |
| 146 | 3,169,702 | 79.1 | 3,169,929 | 397.3 | 3,169,977 | 138 | 3,169,770 | 270 | 3,169,813 | 339– 47 | 3,169,814 |
| 155 | 3,170,062 | 137 | 3,169,930 | | 3,169,978 | 186 | 3,169,771 | 284 | 3,169,342 | 52 | 3,169,815 |
| 175 | 3,170,063 | 453 | 3,169,931 | 397.5 | 3,169,979 | 274– 2 | 3,169,772 | 313–213 | 3,170,081 | 110 | 3,169,816 |
| 236– 15 | 3,169,703 | 478 | 3,169,932 | 404.5 | 3,169,980 | 4 | 3,169,773 | 314– 74 | 3,170,082 | 256 | 3,169,817 |
| 59 | 3,169,704 | 253– 24 | 3,169,746 | 409 | 3,169,981 | 14 | 3,169,774 | 315– 31 | 3,170,083 | 266 | 3,169,818 |
| 239– 43 | 3,169,705 | 39 | 3,169,747 | 461 | 3,169,982 | 277– 65 | 3,169,775 | 173 | 3,170,084 | 340– 6 | 3,170,135 |
| 186 | 3,169,706 | | 3,169,748 | 462 | 3,169,983 | 125 | 3,169,776 | 227 | 3,170,085 | 18 | 3,170,136 |
| 538 | 3,169,707 | | 3,169,749 | 465.3 | 3,169,984 | 279– 4 | 3,169,777 | 248 | 3,170,086 | | 3,170,137 |
| 240– 1.3 | 3,169,708 | 254–190 | Re.25,730 | 482 | 3,169,985 | 72 | 3,169,778 | 317– 2 | 3,170,087 | 146.3 | 3,170,138 |
| 25 | 3,169,709 | 256– 57 | 3,169,750 | 502 | 3,169,986 | 280– 18 | 3,169,779 | 22 | 3,170,088 | | 3,170,139 |
| 78 | 3,169,710 | 259– 7 | 3,169,751 | 505 | 3,169,987 | 43 | 3,169,780 | 101 | 3,170,089 | 149 | 3,170,140 |
| 241– 74 | 3,169,711 | | 3,169,752 | 566 | 3,169,988 | 150 | 3,169,781 | 104 | 3,170,090 | 171 | 3,170,141 |
| 117 | 3,169,712 | 110 | 3,169,753 | | 3,169,989 | 478 | 3,169,782 | 119 | 3,170,091 | 172.5 | 3,170,142 |
| 266 | 3,169,713 | 260– 2 | 3,169,933 | 567 | 3,169,990 | 485 | 3,169,783 | 120 | 3,170,092 | | 3,170,143 |
| 242– 10 | 3,169,714 | 2.5 | 3,169,934 | 570.5 | 3,169,991 | 507 | 3,169,784 | 135 | 3,170,093 | 173.1 | 3,170,144 |
| 25 | 3,169,715 | 28.5 | 3,169,935 | 583 | 3,169,992 | 281– 15 | 3,169,341 | 146 | 3,170,094 | | 3,170,145 |
| 36 | 3,169,716 | 29.7 | 3,169,936 | | 3,169,993 | 285– 3 | 3,169,786 | 155.5 | 3,170,095 | 174 | 3,170,146 |
| 43 | 3,169,717 | 30.4 | 3,169,937 | | 3,169,994 | 226 | 3,169,785 | 157 | 3,170,096 | | 3,170,147 |
| 46.5 | 3,169,718 | 37 | 3,169,938 | 585 | 3,169,995 | 289– 17 | 3,169,787 | 192 | 3,170,097 | 174.1 | 3,170,148 |
| 54 | 3,169,719 | 38 | 3,169,939 | 619 | 3,169,996 | 292–177 | 3,169,788 | 234 | 3,170,098 | | 3,170,149 |
| 55.12 | 3,169,720 | 41 | 3,169,940 | 639 | 3,169,997 | 294– 16 | 3,169,789 | 249 | 3,170,099 | 197 | 3,170,150 |
| 55.13 | 3,169,721 | 45.9 | 3,169,941 | 666 | 3,169,998 | 19 | 3,169,790 | 310– 28 | 3,170,100 | 213 | 3,170,151 |
| 74 | 3,169,722 | 46.5 | 3,169,942 | 671 | 3,169,999 | 65.5 | 3,169,791 | | 3,170,101 | 242 | 3,170,152 |
| 96 | 3,169,723 | 47 | 3,169,943 | 677 | 3,170,000 | 137 | 3,169,793 | | 3,170,102 | 347 | 3,170,153 |
| 244– 1 | 3,169,724 | 49 | 3,169,944 | 683.15 | 3,170,001 | 296– 99 | 3,169,792 | 118 | 3,170,102 | | 3,170,154 |
| | 3,169,725 | 78.3 | 3,169,945 | 683.59 | 3,170,002 | 297– 85 | 3,169,794 | 137 | 3,170,103 | | 3,170,155 |
| 14 | 3,169,726 | | 3,169,946 | 858 | 3,170,003 | 309 | 3,169,795 | 146 | 3,170,104 | 343– 17.1 | 3,170,157 |
| | 3,169,727 | 85.5 | 3,169,947 | 874 | 3,170,004 | 299– 31 | 3,169,796 | 341 | 3,170,105 | 17.7 | 3,170,156 |
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| 77 | 3,169,730 | 94.9 | 3,169,950 | 136 | 3,170,007 | 302– 50 | 3,169,799 | 69 | 3,170,108 | 35 | 3,169,820 |
| 83 | 3,169,731 | 145 | 3,169,951 | 263– 6 | 3,169,754 | 303– 22 | 3,169,800 | 322– 28 | 3,170,109 | 140 | 3,169,821 |
| 110 | 3,169,732 | 146 | 3,169,952 | 33 | 3,169,755 | | 3,169,801 | 324– 30 | 3,170,110 | 352–171 | 3,170,159 |
| 246– 30 | 3,169,733 | 153 | 3,169,953 | 264– 22 | 3,170,008 | | | | 3,170,111 | | |

## CLASSIFICATION OF DESIGNS

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D 1– 12 | 200,288 | D14– 30 | 200,306 | D34– 5 | 200,324 | D48– 20 | 200,341 | D58– 5 | 200,357 | D61– 1 | 200,377 |
| D 4– 2 | 200,289 | | 200,307 | 15 | 200,325 | | 200,342 | 8 | 200,358 | 20 | 200,374 |
| 3 | 200,290 | D15– 1 | 200,308 | D35– 2 | 200,326 | 31 | 200,343 | 12.6 | 200,359 | D63– 1 | 200,375 |
| | 200,291 | | 200,309 | D37– 1 | 200,327 | | 200,344 | 17 | 200,360 | | 200,376 |
| D 9– 2 | 200,292 | 11 | 200,310 | | 200,328 | 32 | 200,345 | | 200,361 | | 200,378 |
| | 200,293 | D17– 1 | 200,311 | D41– 1 | 200,329 | D49– 1 | 200,346 | 25 | 200,362 | | 200,379 |
| | 200,294 | D18– 2 | 200,312 | D42– 7 | 200,330 | D52– 1 | 200,347 | | 200,363 | | 200,380 |
| 6 | 200,295 | | 200,313 | | 200,331 | 2 | 200,348 | 26 | 200,364 | | 200,381 |
| D10– 7 | 200,296 | D26– 13 | 200,314 | D44– 1 | 200,332 | 3 | 200,349 | D61– 1 | 200,365 | 8 | 200,382 |
| 8 | 200,297 | 14 | 200,315 | 10 | 200,333 | 6 | 200,350 | D71– 1 | 200,366 | D65– 2 | 200,383 |
| D12– 2 | 200,298 | D30– 1 | 200,316 | 29 | 200,334 | D54– 2 | 200,351 | | 200,367 | | 200,384 |
| D13– 1 | 200,299 | D31– 2 | 200,317 | | 200,335 | | 200,352 | | 200,368 | D66– 10 | 200,385 |
| 7 | 200,300 | 3 | 200,318 | D45– 4 | 200,336 | | 200,353 | | 200,369 | D67– 3 | 200,386 |
| D14– 3 | 200,301 | | 200,319 | | 200,337 | 12 | 200,354 | D74– 1 | 200,370 | D91– 1 | 200,387 |
| | 200,302 | 4 | 200,320 | | 200,338 | D57– 1 | 200,355 | D80– 9 | 200,371 | 3 | 200,388 |
| | 200,303 | D33– 14 | 200,321 | | 200,339 | | 200,391 | | 200,372 | | 200,389 |
| | 200,304 | D34– 5 | 200,322 | D46– 1 | 200,340 | D58– 5 | 200,356 | | 200,373 | | 200,390 |
| 14 | 200,305 | | 200,323 | | | | | | | | |

## CLASSIFICATION OF PLANTS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| P. – 5 | 2,473 | P. – 55 | 2,472 | P. – 70 | 2,475 | P. – 70 | 2,480 | P. – 71 | 2,479 | P. – 72 | 2,476 |
| 20 | 2,474 | 57 | 2,471 | | 2,478 | | 2,482 | | 2,481 | | 2,477 |


# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

February 16, 1965 Volume 811 Number 3


# TRADEMARKS

## NOTICES

### Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants, listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Shaff Laboratories, Brooklyn, N.Y., Reg. No. 416,782, Canc. No. 8367.

Charles L. King Imports, Inc., assignee of Charles L. King, New York, N.Y., Reg. No. 504,382, Canc. No. 8408.

Charles L. King Imports, Inc., assignee of Charles L. King, New York, N.Y., Reg. No. 413,504, Canc. No. 8404.

EDWIN L. REYNOLDS,
*First Assistant Commissioner of Patents.*

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 65,189 (LONGINES), A. Wittnauer Co., Watches, parts of watches, and watchcases; Reg. No. 668,966 (LONGINES AND DESIGN), Compagnie des Montres Longines, Francillon S.A. (Longines Watch Co., Francillon Ltd.) (Swiss corporation), Watches and watch movements and parts thereof, filed Nov. 28, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c2170, *Longines-Wittnauer Watch Co., Inc.* v. *Genender Sales & Supplies, Inc. et al.* Final consent judgment; trademarks held valid and infringed; defendants enjoined Mar. 25, 1963.**

**Reg. No. 122,126 (FAFNIR), The Fafnir Bearing Company, Certain named cutlery, machinery, and tools and parts thereof, filed Aug. 13, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1402, *The Fafnir Bearing Company* v. *Western Bearings Corporation.***

**Reg. No. 360,984 (DANIEL BOONE AND DESIGN), United Sheeplined Clothing Co., Leather and fabric coats and jackets, and coats and jackets of leather and fabric combinations, for men, women, and children; Reg. No. 634,602 (DANIEL BOONE in script), United Sheeplined Clothing Co., Inc., Coats and jackets for men, women, and children, filed Oct. 16, 1964, D.C., S.D.N.Y., Doc. 64/3150, *United Sheeplined Clothing Co., Inc.* v. *National Broadcasting Company, Inc. et al.***

**Reg. No. 368,915 (OLD J. T. S. BROWN BRAND AND DESIGN), J. T. S. Brown's Son Company, Whiskey, gin, rum, brandy, and alcoholic cordials, filed Sept. 11, 1964, D.C., W.D. Ky. (Louisville), Doc. 4874, *J. T. S. Brown's Son Company* v. *J. T. S. Brown Sales Company et al.***

## CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1964

| | |
|---|---|
| Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] | 15,450 |
| Date of oldest new application | June 1, 1964 |
| Date of oldest amended application | May 4, 1964 |

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION

| | Oldest Application: New | Oldest Application: Amended |
|---|---|---|
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44 | 6-16-64 | 6-1-64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 6-1-64 | 5-4-64 |
| Renewals (All Classes) | 12-11-64 | 12-10-64 |
| Sec. 12 (c) Publications (All Classes) | 12-14-64 | ------- |

Applications filed during the month of December 1964—2,135

| | |
|---|---|
| Registrations Issued | 424—No. 784,986 to No. 785,409 |
| Renewals Issued | 46 |


The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

**Reg. No. 373,500** (LIFE AND DESIGN), Time, Incorporated, Weekly magazine and for pamphlets, containing material taken from such magazine; **Reg. No. 565,000** (LIFE), same, Weekly magazine, **filed** Oct. 27, 1964, D.C., S.D.N.Y., Doc. 64/3256, *Time, Incorporated* v. *Bell Records, Inc.*

**Reg. No. 378,438** (BUTTER BALL), Ada Walker, Live and dressed poultry, sandwiches, eggs, and fresh vegetables; **Reg. No. 573,136**, same, Leo Peters, Ice cream, frozen custard, sherbet, and cheese, **filed** Oct. 15, 1964, D.C., N.D. Iowa (Fort Dodge), Doc. 64–C–2023–C, *Swift & Company et al.* v. *Central Cooperative Turkey Producers.*

**Reg. No. 378,528** (GELUSIL), William R. Warner & Co., Inc., Medicinal preparations for the rational control of gastrointestinal hyperacidity, **filed** Oct. 20, 1964, D.C., S.D.N.Y., Doc. 64/3177, *Warner-Lambert Pharmaceutical Company* v. *Success Chemical Co., Inc.* Consent judgment; defendants enjoined Dec. 4, 1964.

**Reg. No. 389,692** (HOLLIWOOD in script), Finders Manufacturing Co., Electric table broilers and grills; **Reg. No. 547,176**, same, Electric frying vessels; **Reg. No. 677,628** (HOLLIWOOD), Berns Air King Corporation, Electrical heating and cooking appliances—namely, broilers, grills, barbecues, etc., **filed** July 14, 1960, D.C., N.D. Ill. (Chicago), Doc. 60c1114, *Berns Air King Corporation* v. *Hollicood Aluminum Castings, Inc. et al.* Trademarks held valid and infringed; defendants enjoined Jan. 28, 1964.

**Reg. No. 395,312** (HOME-MAKER'S), Shaw-Barton, Inc., Wall calendars, **filed** Jan. 13, 1955, D.C., N.D. Ill. (Chicago), Doc. 55c72, *Shaw-Barton, Inc.* v. *John Baumgarth Co., Inc.* Trademark held valid and infringed Oct. 23, 1961. Appealed, C.C.A., 7th Cir. Judgment of District Court reversed Jan. 3, 1963. Case remanded to District Court June 26, 1963. Final judgment on mandate, complaint dismissed June 28, 1963.

**Reg. No. 420,000** (EXECUTIVE), The Gruen Watch Company, Watches, watch cases and watch movements, **filed** Oct. 18, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1941, *The Gruen Watch Co.* v. *Waltham Watch Company.* Stipulation dismissing complaint and counterclaim with prejudice Oct. 29, 1963.

**Reg. No. 506,311** (RAYCO in script), Rayco Mfg. Co., Automobile seat covers; **Reg. No. 576,000** (RAYCO AND DESIGN), same; **Reg. No. 653,991**, same, Automobile mufflers, exhaust systems, and tailpipe assemblies, **filed** Feb. 13, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c249, *Rayco Manufacturing Company* v. *Rayco Berwyn.* Order dismissing cause and each count of complaint and each count of the counterclaim with prejudice Oct. 19, 1964.

**Reg. No. 527,590** (ANIMATED FIGURE COMPOSED OF LETTERS WT), White Tower Management Corporation, Serving and dispensing food and beverages; **Reg. No. 557,475** (WHITE TOWER AND DESIGN), same, Coffee, hamburger sandwiches and other sandwiches; **Reg. No. 558,371**, same, Serving and dispensing food and beverages in restaurants, **filed** Oct. 6, 1964, D.C.N.J. (Camden), Doc. 917–64, *White Tower Management Corporation* v. *Israel Roel Saul.*

**Reg. No. 535,492** (HARVESTORE), A. O. Smith Corporation, Silos, **filed** Oct. 26, 1964, D.C. Nebr. (Omaha), Doc. 02161, *A. O. Smith Harvestore Products, Inc.* v. *Norfolk Farm Equipment Co.*

**Reg. No. 547,176.** (See Reg. No. 389,692.)

**Reg. No. 552,846** (THERMO-RITE), Thermo-Rite Manufacturing Company, Fireplace fixture or front consisting of a metal and glass screen for radiating heat, **filed** Oct. 26, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1806, *The Thermo-Rite Manufacturing Company* v. *Sidney Adler, doing business as Thermo-Rite Sales of Ill. et al.* Defendant Sidney Adler has infringed and is enjoined; defendants Illinois Bell Telephone Co. and Reuben H. Donnelly Telephone Directory Co., also enjoined Nov. 25, 1964.

**Reg. No. 557,475.** (See Reg. No. 527,590.)

**Reg. No. 557,750** (MAJESTIC AND DESIGN), Garod Radio Corporation, Radio receiving sets, television receiving sets, automatic phonographs and combinations of any of them; **Reg. No. 569,709**, same, **filed** Mar. 21, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c472, *The Wilcox-Gay Corporation* v. *Majestic Electronics Ltd.* Order of dismissal without prejudice Dec. 2, 1963.

**Reg. No. 558,371.** (See Reg. No. 527,590.)

**Reg. No. 562,751** (JOHN STUART INC. AND DESIGN), John Stuart, Inc., Articles of furniture, the particular articles of furniture being beds, dressers, mirrors, chests of drawers, etc., **filed** Apr. 23, 1963, D.C. Conn. (New Haven), Doc. 9782, *John Stuart, Inc.* v. *Stuart's Furniture & Bedding Shop, Inc. et al.* Withdrawal of action by plaintiff Sept. 1, 1964.

**Reg. No. 565,000.** (See Reg. No. 372,500.)

**Reg. No. 569,709.** (See Reg. No. 557,750.)

**Reg. No. 571,708** (ROQUEFORT), The Community of Roquefort, Cheese, **filed** Oct. 5, 1964, D.C., W.D. Pa. (Pittsburgh), Doc. 64–1028, *The Community of Roquefort et al.* v. *The Pittsburgh Hilton.* **Same**, Doc. 64–1029, *The Community of Roquefort et al.* v. *The Fountain Room.* **Same, filed** June 25, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42516, *Community of Roquefort et al.* v. *Gustin & Co. et al.* Consent judgment; defendants enjoined Oct. 14, 1964.

**Reg. No. 573,136.** (See Reg. No. 378,438.)

**Reg. No. 576,000.** (See Reg. No. 506,311.)

**Reg. No. 634,092.** (See Reg. No. 360,024.)

**Reg. No. 636,263** (SEA AND SKI in script), Rolley, Inc., Suntan cream; **Reg. No. 671,416** (SEA AND SKI), Botany Mills, Inc., Lotion for use as a relief from, and preventative for chapping, skin irritations, and diaper rash; **Reg. No. 674,720** (BABY SEA AND SKI), Botany Mills, Inc., doing business as Rolley Co., Suntan lotion for babies; **Reg. No. 675,076** (SEA AND SKI), Botany Mills, Inc., Lotion for use as a tanning cream, which may be used also as an after shave lotion, hairdressing, etc.; **Reg. No. 692,204** (BABY SEA AND SKI), Botany Mills, Inc., doing business as Rolley Co., Medicated preparation for babies used as a preventative for sunburn, also for the relief of diaper rash and mosquito bites; **Reg. No. 746,868** (SEA AND SKI), Botany Industries, Inc., doing business as Renauld of France, Sun glasses; **Reg. No. 776,000**, same, Botany Industries, Inc., doing business as Sea and Ski Company, Eye shields, **filed** Oct. 5, 1964, D.C., W.D. Wash. (Seattle), Doc. 6287, *Botany Industries, Inc.* v. *Great Western Optical Co., Inc.*

**Reg. No. 643,926** (RABBIT HEAD DESIGN), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 743,134**, same, Operating private social clubs which feature food, drinks, and entertainment; **Reg. No. 762,884** (BUNNY COSTUME DESIGN), same, Operating establishments which feature food, drinks and entertainment, **filed** Oct. 7, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–525, *HMH Publishing Co., Inc. et al.* v. *Bunny Club.*

**Reg. No. 658,291.** (See Reg. No. 506,311.)

**Reg. No. 662,189** (DREAM PETS AND DESIGN), R. Dakin & Co., Stuffed animals used as toys, **filed** Oct. 19, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1441–PH, *R. Dakin & Co.* v. *Circle Import-Export Corp.*

**Reg. No. 668,566.** (See Reg. No. 65,109.)

**Reg. No. 671,416.** (See Reg. No. 636,263.)

**Reg. No. 674,720.** (See Reg. No. 636,263.)

**Reg. No. 675,076.** (See Reg. No. 636,263.)

**Reg. No. 677,628.** (See Reg. No. 389,692.)

**Reg. No. 679,763** (PINK MAGIC), S & S Soap Company, All purpose cleanser, **filed** Oct. 8, 1964, D.C., S.D.N.Y., Doc. 64/3062, *S & S Soap Company* v. *Max Ehrlich et ano.* Consent judgment; defendants enjoined Dec. 30, 1964.

**Reg. No. 692,204.** (See Reg. No. 636,263.)

**Reg. No. 694,654** (BEAUTIFUL EYES), Beautiful Eyes, Ltd., Compacts containing mascara, eye shadow, mascara brush, and eyebrow pencil, **filed** Oct. 2, 1964, D.C., S.D.N.Y., Doc. 64/3009, *Marian Bialac, Inc.* v. *Harriet Hubbard Ayer, Inc.*

**Reg. No. 696,323** (EXCEDRIN), Bristol-Myers Company, Analgesic, **filed** Oct. 20, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1447–FW, *Bristol-Myers Company* v. *Medco Pharmacies, Inc. et al.*

**Reg. No. 743,134.** (See Reg. No. 643,926.)

**Reg. No. 746,868.** (See Reg. No. 636,263.)

**Reg. No. 752,443** (TAMMY), Ideal Toy Corporation, Dolls; **Reg. No. 757,234**, same, Accessories for a toy mannequin doll, including, clothing, handbags, jewelry, shoes, etc., **filed** Oct. 13, 1964, D.C., S.D.N.Y., Doc. 64/3112, *Ideal Toy Corporation* v. *Feb-Lu Ltd. (Inc.) et ano.*

**Reg. No. 757,234.** (See Reg. No. 752,443.)

**Reg. No. 762,884.** (See Reg. No. 643,926.)

**Reg. No. 776,000.** (See Reg. No. 636,263.)

# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 153,221. Sigma Instruments, Inc., South Braintree, Mass. Filed Sept. 14, 1962.

**SIGMA**

Owner of Reg. No. 526,253.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electromechanical Relays, Reed Relays, Electromechanical Magnetically Latching Relays, Acoustical Switches, Stepping Motors, Stepping Motor Drives, Stepping Motor Switch Combinations, Magnetic Amplifiers, Photo Relays, Light Sources for Photo Relays, Transistor Amplifiers, Servo-Mechanisms, Transformers and Rectifier Assemblies.

**Class 26—Measuring and Scientific Appliances**

For Electrical Testing and Measuring Equipment—Namely, Electrical and Magnetic Pick-Up Equipment for Testing Power Lines, Indicating Electrical Counters, Relay Test Sets, Automatic Temperature Controllers and Indicating and Measuring Systems for Power Lines.

First use March 1935.

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SN 182,437. Oliver Pell Control Limited, Woolwich, London, England. Filed Dec. 5, 1963.

Varley

Owner of British Reg. Nos. 481,194, dated June 1, 1927, and B617,943, dated Feb. 24, 1942.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electric Coil Windings, Electric Current Rectifiers, Electric Transformers, Electromagnets, Electric Tuning Coils, Electric Choking Coils, Electric Variable Resistors, Motors, Relays, Solenoids, Electric Coils, and Switches.

**Class 26—Measuring and Scientific Appliances**

For Electric Power Potentiometers, Electric Thermionic Delay Switches, Electromagnetic Control Mechanisms for Pumps, Electromagnetic Control Mechanisms for Switches, Electromagnetic Control Mechanisms for Lifting Gear Magnets, Electromagnetic Control Mechanisms for Brakes of Trucks and Automobiles, Eelectromagnetic Control Mechanisms for Axle Control Gears of Trucks, and Electromagnetic Control Mechanisms for Power-Driven and Power-Generating Attachments of Automobiles and Trucks.

First use June 1958; in commerce July 1963.

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SN 182,681. Thompson Ramo Wooldridge Inc., Cleveland, Ohio. Filed Dec. 9, 1963.

**TRW**

Owner of Reg. Nos. 742,881 and 746,125.

**Class 9—Explosives, Firearms, Equipments, and Projectiles**

For Rifles.
First use Nov. 18, 1963.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Amplifiers, Speakers, Carrying Cases and Electrical Components Therefor.
First use Oct. 2, 1963.

**Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires**

For Piston Rings.
First use Oct. 8, 1963.

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SN 183,321. Electronic Assistance Corporation, Red Bank, N.J. Filed Dec. 20, 1963.




The drawing is lined for red, but color is not claimed as an integral feature of the mark.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Transducers, Ultrasonic Air Eliminators, Defoamers, Cleaning Generators, and Bottle Vibrators.

**Class 26—Measuring and Scientific Appliances**

For Computers, Totalisers, and Altimeters.

First use Sept. 15, 1958.

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SN 184,861. Werner & Mertz, G.m.b.H., Mainz, Germany. Filed May 13, 1964.

**TUBA**

Owner of German Reg. No. 94,195, dated Jan. 23, 1907.

**Class 4—Abrasives and Polishing Materials**

For Polish and Polishing Materials for Shoes, Floors, Stoves, and Automobiles.

**Class 5—Adhesives**

For Adhesives for Industrial Use.

**Class 6—Chemicals and Chemical Compositions**

For Anti-Corrosion Agents and Leather Preserving Materials for Shoes.

**Class 29—Brooms, Brushes, and Dusters**

For Synthetic Sponges.

**Class 52—Detergents and Soaps**

For Stain Removers and Cleaning Materials for Shoes, Floors, Automobiles, Carpets, Upholstery, and Lavatories.

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SN 185,475. A/S De-No-Fa og Lilleborg Fabriker, Oslo, Norway. Filed Jan. 28, 1964.

## COMPRESIN

Owner of Norwegian Reg. No. 59,574, dated June 1, 1962.

**Class 12—Construction Materials**

For Plates, i.e., Boards or Sheets Produced of Compounds Composed Wholly or Mainly of Wood Fibers Blended or Mixed With Artificial Resins.

**Class 32—Furniture and Upholstery**

For Shelves, Counter Tops, Table Tops, and Writing Desk Tops Manufactured of Such Plates.

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SN 189,558. Robert M. Crooker, d.b.a. Crooker, Cold Spring Harbor, N.Y. Filed Mar. 25, 1964.

Crooker

**Class 9—Explosives, Firearms, Equipments, and Projectiles**

For Book Matches.

**Class 22—Games, Toys, and Sporting Goods**

For Playing Cards.

**Class 37—Paper and Stationery**

For Stationery, Paper Napkins, Book Marks, Bridge Tallies, Paper Towels, and Place Cards.

**Class 38—Prints and Publications**

For Christmas Cards, Post Cards, and Book Plates.

First use Jan. 15, 1961.

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SN 192,664. Bally Block Company, Bally, Pa. Filed May 5, 1964.

## BALLY

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Die Cutting Blocks, Meat Cutting Blocks, and Carving Boards.

**Class 32—Furniture and Upholstery**

For Laminated Tops for Furniture.

First use August 1930.

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SN 194,841. The Atlantic Refining Company, Philadelphia, Pa. Filed May 27, 1964.

Atlantic

Owner of Reg. Nos. 218,647 and 602,092.

**Class 6—Chemicals and Chemical Compositions**

For Modified Wax-Polymer Blends.

**Class 15—Oils and Greases**

For Gasoline, Motor Oil, Automotive Grease, Industrial Lubricating Oil and Grease, Cutting Oil, Paraffin Wax, and Microcriptalline Wax.

**Class 52—Detergents and Soaps**

For Anionic Detergents for Household and Industrial Use.

First use Sept. 24, 1963.

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## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 180,516. Aerojet-General Corporation, El Monte, Calif. Filed Nov. 12, 1963.

## AEROJET-GENERAL

For Synthetic Resins.

First use Mar. 4, 1959.

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SN 182,827. Polymer Corporation Limited, Sarnia, Ontario, Canada. Filed Dec. 11, 1963.

## TRANS-PIP

Priority claimed under Sec. 44(d) on Canadian application filed Oct. 21, 1963; Reg. No. 136,902, dated Aug. 7, 1964.

For Synthetic Rubber.

SN 186,068. Ferry-Morse Seed Co., Mountain View, Calif. Filed Feb. 5, 1964.

Advance A GOLD TAG

Owner of Reg. No. 511,749.

For Agricultural and/or Field Seeds, Including Grain Sorghum Seed, Forage Sorghum Seed, Alfalfa Seed, Grass Seed, Cotton Seed, Safflower Seed, Legume Seed, Barley Seed, Oat Seed, and Wheat Seed.

First use on or about Sept. 15, 1946.



SN 187,976. Union Carbide Corporation, New York, N.Y. Filed Mar. 4, 1964.

## BAKELITE

Owner of Reg. Nos. 75,266 and 699,949.

For Synthetic Resins and Plastics for General Use in the Industrial Arts.

First use on or about June 30, 1907.

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### Class 2—Receptacles

SN 186,320. Bathurst Containers Limited, Montreal, Quebec, Canada. Filed Feb. 10, 1964.



Priority claimed under Sec. 44(d) on Canadian application filed Oct. 16, 1963; Reg. No. 136,326, dated June 26, 1964.

For Shipping Cartons, Shipping Cartons That Can Be Opened for Display Purposes and Display Stands That Can Be Used To Display Goods at Point of Retail Sales, All Made From Paperboard and/or Wood.

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SN 191,380. Georgia-Pacific Corporation, Portland, Oreg. Filed Apr. 17, 1964.

Glacier Pak

The term "Pak" is disclaimed apart from the mark as shown. Such disclaimer is without prejudice to the common law rights of applicant.

For Paperboard Cartons.

First use Oct. 31, 1963.

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SN 194,787. Equality Plastics, Inc., New York, N.Y. Filed June 3, 1964.

Equality

For Household Accessories—Namely, Garment Bags, Shoe Bags, Storage Bags, Plastic Bags, Hampers, Appliance Covers, Picnic Bags, Zipper Bags, Closet Accessories, Food Bags, and Shopping Bags.

First use Apr. 15, 1950.

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SN 201,355. American Paper & Plastic Products, Inc., Milwaukee, Wis. Filed Sept. 8, 1964.

## STRIP KLEEN

For Cups Made From Release-Treated Paper or the Like.

First use on or about Apr. 1, 1957.

### Class 4—Abrasives and Polishing Materials

SN 135,162. Albright & Wilson (Mfg.) Limited, London, England. Filed Jan. 4, 1962.

## PHOSBRITE

Owner of British Reg. No. 755,418, dated July 5, 1956.

For Polishing, Scouring and Abrasive Preparations Used in Industrial Polishing of Metals and Alloys.

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SN 183,844. Knomark, Inc., Springfield Gardens, N.Y. Filed Dec. 31, 1963.

Quik ease

For Throw-Away Applicator Containing Paste Shoe Polish.

First use Dec. 26, 1963.

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SN 187,876. Metal Textile Corporation, Roselle, N.J. Filed Mar. 3, 1964.

Reddy

Owner of Reg. Nos. 155,734, 510,341, and others.

For Plastic Pot Cleaners.

First use Feb. 5, 1963; during the month of May 1952 as to the mark "Reddy."

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### Class 5—Adhesives

SN 198,931. Lincoln A. Brooks, d.b.a. Brooks Manufacturing Co., Cincinnati, Ohio. Filed July 31, 1964.

## PLASTI-TAK

For Pressure Sensitive Plastic Adhesive in Cake Form.

First use December 1951.

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### Class 6—Chemicals and Chemical Compositions

SN 135,163. Albright & Wilson (Mfg.) Limited, London, England. Filed Jan. 4, 1962.

## PHOSBRITE

Owner of British Reg. No. 755,417, dated July 5, 1956.

For Chemical Brightening Solutions for Use on Metals and Alloys.

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SN 146,744. The Ottawa Chemical Company, Toledo, Ohio. Filed June 12, 1962.

## DCMX

Owner of Reg. No. 594,116.

For Chemical Compound Identified as 2,4-Dichloro-3,5-Dimethylphenol Used as a Preservative for Casein and as an Additive for Soaps and Detergents.

First use May 22, 1962.

SN 162,084. Drew Chemical Corporation, New York, N.Y. Filed Feb. 5, 1963.



The lining is part of the mark and does not indicate color.

For Chemical Reagents, Chemicals and Chemical Compositions for Water Treatment and Conditioning for Marine and Industrial Use; Textile Chemicals; Bactericides; Fatty Acids, Surfactants, Emulsifiers, Synthetic Triglycerides and Plasticisers, All for Industrial Use.

First use March 1962.

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SN 164,190. Tennant Development Corporation, New York, N.Y. Filed Mar. 7, 1963.

## TENNANT

For Chemical Compositions and Compounds—Namely, Phenoxy-Acetic Acid, Aliphatic Amine Halogen Salts Such as Methyl Amine Hydrochloride, Dimethyl Amine Hydrochloride, Triethanol Amine Hydrochloride, Aluminum and Ammonium Lactate, Ammonium and Calcium Tartrate, Halogen Acids, Such as Hydrobromic Acid, Hydriodic Acid, Organic and Inorganic Iodine Compounds Such as Ethylenediamine Dihydriodide, Ethyl Iodide, Iodoform, Methyl Iodide, Thymol Iodide, Ammonium Iodide, Calcium Iodate, Calcium Iodide, Copper Iodide, Iodine, Potassium Iodate, Potassium Iodide, Silver Iodate, Silver Iodide, Sodium Iodate, Sodium Iodide, Sodium Hydroxyacetate, Caprylate, Sulfide and Cobaltinitrite, Betaine Hydrochloride, Chlorophenesin, 3-Chloro-1,2-Propanediol, Dibutyl Succinate, Glyceryl Guayacolate, Hexamine (Methenamine) Mandelate, 1-Hydroxy-2-Phenyl Naphthoate, 2-Methyl - 5 - Phenyl Benzoxasole, Phenyl-1-Hydroxy-2-Naphthoate, Phenyl Isothiocyanate, 1-Phenyl-5-Mercapto Tetrazole, Potassium Formate, 50% Solution, Salicylsalicylic Acid, Strontium Salicylate and Zinc Undecylenate.

First use November 1956.

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SN 181,577. Steuart, Son & Co., Inc., Baltimore, Md. Filed Nov. 20, 1963.

## GOLDEN CROWN

For Laundry Starch for Household Use.

First use Mar. 11, 1952.

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SN 182,234. Alfa Inorganics, Inc., Beverly, Mass. Filed Dec. 3, 1963.



The drawing is lined for blue, however, the applicant is not claiming color as a feature of the mark.

For Inorganic and Organo-Metallic Chemicals.

First use May 15, 1963.

SN 182,385. United States Rubber Company, New York, N.Y. Filed Dec. 4, 1963.

## TONOX

For Toner for Compounding With Rubber and Curative for Epoxy Resins.

First use in 1929.

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SN 182,388. Velsicol Chemical Corporation, Chattanooga, Tenn. Filed Dec. 4, 1963.

## TENSYN

For Chemicals and Chemical Compositions—Namely, Butyl Benzoate, Benzyl Acetate, Benzoguanamine, Benzyl Alcohol, Benzaldehyde, Sodium Benzoate, Benzoic Acid, Benzyl Chloride, Benzoyl Chloride, Benzyl Benzoate, Benzotrichloride, Benzonitrile, Dibenzyl Ether, Sucrose Benzoate, Methylbenzophenone, and Muriatic Acid.

First use Oct. 28, 1963.

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SN 182,897. Rayonier Incorporated, New York, N.Y. Filed Dec. 12, 1963.

## MICRONIER

Owner of Reg. No. 750,362.

For Chemical Compounds in Small Particles for Use in Forming Sheets, Compositions and for Coating Various Articles.

First use Oct. 9, 1963.

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SN 186,704. The Dow Chemical Company, Midland, Mich. Filed Feb. 14, 1964.

## RIVERFRAC

Owner of Reg. No. 650,273.

For Chemical Compositions Useful in Wells and Underground Earth Formations.

First use Jan. 8, 1964.

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SN 186,705. The Dow Chemical Company, Midland, Mich. Filed Feb. 14, 1964.

## SANDFRAC

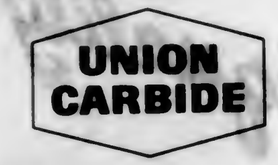
Owner of Reg. Nos. 584,015, 593,399, and 651,306.

For Chemical Compositions Useful in the Treatment of Wells and Underground Earth Formations.

First use Jan. 8, 1964.

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SN 187,975. Union Carbide Corporation, New York, N.Y. Filed Mar. 4, 1964.




For Chemicals and Chemical Compositions for Use in Industry, Science, Agriculture, and Horticulture.

First use July 1957.

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SN 188,174. Alchem Limited, Burlington, Ontario, Canada. Filed Mar. 9, 1964.

## ALCHEM

Owner of Canadian Reg. No. 56/N.S. 14,804, dated Apr. 4, 1941.

For Water Conditioning Chemicals for Control of Corrosion, Deposits and Foaming in Boiler Feedwater, Cooling



Water, Secondary Recovery and Disposal Sewers, Railroads, and All Types of Process Water Systems; Corrosion Inhibitors for Cooling Waters, Boiler Waters, Municipal Water Systems, for Oil Field and Refinery Hydrocarbon Systems; Fuel Oil Stabilizers for Prevention of Sludge and Gum Formation, Color Degradation, and Inhibition of Corrosion in Residual and Distillate Fuels; Combustion Chemicals for Improved Combustion, Control of Soot and Slag in Coal and Oil Fired Boilers; Paper Process Chemicals for Fiber and Filler Retention, White Water Clarification, for Wire Life Extension, for Control of Foam and Pitch; and Antifoam Chemicals for Manufacturers of Paints and Paper, for Processors of Sugar Beets, and Rubber, for Control of Foam in Any Liquid Processing.

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## Class 8—Smokers' Articles, Not Including Tobacco Products

SN 202,344. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Sept. 22, 1964.

## SURE-SNUFF

For Ash Trays.

First use on or about Aug. 4, 1964.

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SN 202,584. S. M. Frank & Co., Inc., New York, N.Y. Filed Sept. 24, 1964.

## EVER-DRI

For Smokers' Pipes.

First use 1924.

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## Class 10—Fertilizers

SN 156,457. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Nov. 2, 1962.

## CROTODUR

For Fertilizers.

First use May 3, 1962; in commerce Aug. 13, 1962.

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## Class 11—Inks and Inking Materials

SN 191,127. Carbon Paper Co., Ltd., Oyodo-ku, Osaka, Japan. Filed Apr. 15, 1964.

## UNICOAT

For Carbon Papers and Other Paper Sheets for Copying.

First use May 11, 1962; in commerce on or about Feb. 2, 1964.

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SN 204,061. Formulabs, Incorporated, Escondido, Calif. Filed Oct. 15, 1964.

## CLIMATE CONTROLLED

For Ball Pen Inks.

First use Sept. 23, 1964.

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## Class 12—Construction Materials

SN 176,130. The National Paving and Contracting Company, Baltimore, Md., assignee, by mesne assignments, of Arthur T. Ward, Jr., and Clara E. Haines, Baltimore, Md. Filed Aug. 30, 1963.

## BLACK FILL

For Asphalt Paving Mix.

First use December 1957.

SN 180,447. Rainier Plywood Company, Tacoma, Wash. Filed Nov. 4, 1963.

## Richlite

For Fibrous Core Material Impregnated With a Synthetic Resin To Form a Solid Plastic Laminate of Paper and the Like.

First use Mar. 5, 1949.

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SN 181,759. Dependable Chemical Co., Incorporated, Rocky River, Ohio. Filed Nov. 22, 1963.




The words "Crack Filler" are disclaimed apart from the mark shown on the drawing, but applicant does not waive its common law rights thereto nor is it intended that such disclaimer shall prejudice or affect applicant's rights now existing or hereafter arising in the disclaimed matter or its right of registration on another application if the disclaimed matter be or shall have become distinctive of his goods.

For Cementitious Underlayment Compound.

First use January 1951.

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SN 183,635. Trophy Industries, Inc., Los Angeles, Calif. Filed Dec. 26, 1963.

## TROPHY

For Above the Ground Swimming Pools, and Pool Covers.

First use on or about Apr. 24, 1963.

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SN 183,636. Trophy Industries, Inc., Los Angeles, Calif. Filed Dec. 26, 1963.




For Above the Ground Swimming Pools, and Pool Covers.

First use on or about Dec. 13, 1963.

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SN 184,561. Abitibi Power and Paper Company, Limited, Toronto, Ontario, Canada. Filed Jan. 14, 1964.

## F. R. PLATEWOOD

Applicant hereby disclaims the letters "F.R." apart from the mark as shown. Priority claimed under Sec. 44(d) on Canadian application filed July 26, 1963; Reg. No. 133,926, dated Dec. 20, 1963. Owner of U.S. Reg. No. 643,795.

For Particle Board.

SN 188,009. Granite City Steel Company, d.b.a. Granco Steel Products Company, Granite City, Ill. Filed Mar. 5, 1964.

## CEL-WAY

For Cellular Metal Floor Ducts for the Passage of Electrical Wires.
First use Nov. 26, 1963.

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SN 193,384. Johnson & Johnson, New Brunswick, N.J. Filed May 13, 1964.

## PERMA-DOPE

Owner of Reg. No. 713,753.
For Pipe Tape.
First use Mar. 2, 1964.

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SN 196,388. Martin Marietta Corporation, New York, N.Y. Filed June 24, 1964.

## "MARTY"

For Building Cement, Paving Cement, and Mortar.
First use Feb. 5, 1964.

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SN 197,175. Red Plastic Co., Inc., City of Industry, Calif. Filed July 6, 1964.

## DUR-RED

For Construction Materials—Namely, Sky Lights, Roofing Surrouds, Vents, and Roof Hatches.
First use June 1, 1964.

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SN 198,399. Bethesda Cinder Block Manufacturing Co., Inc., Bethesda, Md. Filed July 23, 1964.

## BETCO

For Cinder Blocks.
First use Feb. 14, 1964.

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SN 198,434. The Purdy-Ammon Lumber Company, Cincinnati, Ohio. Filed July 23, 1964.



For Lumber.
First use on or about Apr. 28, 1964.

SN 198,740. Johns-Manville Corporation, New York, N.Y. Filed July 29, 1964.

## J-SPRAY

For Spray-Type Insulation Comprising Mineral Fiber, for Use in Various Thermal and Acoustical Insulation Applications.
First use at least on or about May 21, 1964.

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SN 198,941. Dierks Forests, Inc., Kansas City, Mo. Filed July 31, 1964.

## FLAME-GUARD

For Gypsum Wallboard.
First use June 10, 1964.

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## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 139,010. American Screen Products Company, Chicago, Ill. Filed Mar. 5, 1962.

## HIDE-AHL

For Brackets, Bolts, Nuts, Screws, Couplings, Connectors, and the Like for View Obstructing Fencing or Shields for Yard and Home.
First use Nov. 17, 1961.

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SN 163,362. Hechinger Co., Washington, D.C. Filed Feb. 25, 1963.

## HARRY HOMEOWNER

Owner of Reg. No. 583,622.
For Hardware—Namely, Builders' and Roofers' Hardware (Latches, Catches, Hooks, Sliding and Hinged Door and Window Fittings, Storm and Screen Sash and Fittings, Pulleys, Door Hinges, Springs, Stops and Closers, Push and Pull Bars, Handles, Kick-Plates, Brackets, Saw-Horses, Ladders, Threshold Plates, Glazier Points, Trim Strips, Sash Weights, Railings); Box, Cabinet, Closet and Table and Chair Hardware (Hinges, Catches, Corners, Handles, Braces, Glides, Casters, Feet); Bathroom Hardware (Article Holders, Racks, Hooks, Shower Enclosure Fittings, Shelves); Household Hardware (Rubbish Burners, Trash Receptacles, Curtain Rods and Fittings, Roller and Venetian Blind Hardware); and Miscellaneous Hardware (Nails, Tacks, Screws, Bolts and Nuts, Corner Keys, Washers, Chain, Harness Snaps, Turnbuckles, Cleats, Sheaves); and Plumbing and Steam-Fitting Supplies—Namely, Kitchen, Bath and Laundry Fixtures, Sinks, Tubs and Basins; Tanks, Water Pipe and Tubing, Connectors, T's, Elbows, Pipe Caps and Plugs, Traps, Faucets, Unions; Washers, Gaskets, Pipe Hangers, Strainers, Shower Heads; and Nozzles and Valves.
First use at least as early as July 1948.

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SN 176,660. Holland Industries, Inc., Holland, Mich., assignee of Kara Petersen, Inc., Holland, Mich. Filed Sept. 10, 1963.




For Skid Prevention Cups for Washing Machines.
First use Feb. 23, 1963.



SN 183,172. Jerome I. Heald, d.b.a. Sudsation Shower Company, Long Beach, Calif. Filed Dec. 17, 1963.




For Shower Head With Soap Dispensing and Metering Means.
First use on or about Aug. 1, 1963.

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SN 185,695. Marquette Coppersmithing Company, Inc., Philadelphia, Pa. Filed Jan. 30, 1964.




For Spiral Corrugated Metal Bellows Type Expansion Joints.
First use Nov. 15, 1963.

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SN 186,050. The Bastian-Blessing Company, Chicago, Ill. Filed Feb. 5, 1964.

## FLOMATIC

For Internal Type Liquid Shut-Off Valves for Large Tanks.
First use Feb. 8, 1962.

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SN 194,984. Kenney Manufacturing Company, Warwick, R.I. Filed June 5, 1964.



The name "Kay Kenney" and the representation of a girl do not identify any particular living individual. Owner of Reg. No. 515,708.
For Drapery Hardware.
First use Sept. 25, 1963.



SN 195,480. National Distillers and Chemical Corporation, New York, N.Y. Filed June 11, 1964.

## BRASSCO-FLEX

Owner of Reg. No. 119,500.
For Sink Flexible Supply Tubes; Tank Flexible Supply Tubes; Lavatory Flexible Supply Tubes; Straight and Angle Supply Stops (Valves); Male and Female Supply Adapters; and Straight and Elbow Supply Adapters.
First use June 4, 1964.

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SN 195,939. Curt H. Hanfland, Stuttgart-Sonnenberg, Germany. Filed June 18, 1964.




Owner of German Reg. No. 775,524, dated July 16, 1963.
For Nuts, Screws, Locking Elements for Screws and Nuts.

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SN 196,330. Yale & Towne, Inc., New York, N.Y. Filed June 23, 1964.

## CHALLENGER

Owner of Reg. No. 574,006.
For Door Closers.
First use December 1961.

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SN 196,503. Club Aluminum Products Company, La Grange Park, Ill. Filed June 26, 1964.

## CLUB

Owner of Reg. Nos. 509,002, 620,684, and others.
For Metal Hollow Cookware.
First use at least as early as Apr. 15, 1923.

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SN 198,102. U.S. Products Co., Phoenix, Ariz. Filed July 17, 1964.




For Closing Mechanism for Sliding Glass Doors.
First use Apr. 1, 1964.

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## Class 14—Metals and Metal Castings and Forgings

SN 201,159. Vanadium-Alloys Steel Company, Latrobe, Pa. Filed Sept. 2, 1964.

## CVM

Owner of Reg. No. 775,220.
For Heat Resisting Alloys, Low Alloy Steels for Bearings and Springs, High Strength Alloy Steels, Tool Steels and High Speed Steels, Stainless Steels, Electronic Alloys, Nuclear Reactor Materials—Namely, Zircaloy and Circonium Alloys and Boron Containing Stainless Steels, Hard Facing Alloys, Investment Castings, and Special Analysis Alloy.
First use July 31, 1964.

SN 208,209. Sims Castings Corp., Syracuse, N.Y. Filed Oct. 2, 1964.

SIMS

For Precision Castings of Aluminum, Zinc, and Magnesium.
First use at least as early as July 1, 1954.

## Class 15—Oils and Greases

SN 182,696. ALD, Inc., Chicago, Ill. Filed Dec. 10, 1963.

### ALDLUBE

Owner of Reg. Nos. 539,267, 668,662, and others.
For Silicone Base Lubricant.
First use Sept. 5, 1963.

SN 188,250. A. Margolis & Sons Corporation, Brooklyn, N.Y. Filed Mar. 9, 1964.

### TRANS-O-MAGIC

For Automatic Transmission Additive.
First use Jan. 15, 1964.

SN 189,158. Dualube, Inc., Burbank, Calif. Filed Mar. 20, 1964.

DUALUBE

For Industrial Oils and Lubricants.
First use approximately January 1955.

SN 194,433. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

### SOHITRO

Owner of Reg. Nos. 235,809, 667,648, and others.
For Petrolatum Compound for Use as an Industrial Lubricant.
First use April 1961.

SN 194,437. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1964.

### SOHIPET

Owner of Reg. Nos. 235,809, 667,648, and others.
For Petrolatum for Use as an Industrial Lubricant.
First use April 1961.

SN 197,845. Prairie States Corporation, Danville, Ill. Filed July 14, 1964.

GEAR-O-MATIC

For Automatic Transmission Fluid and Power Steering Fluid.
First use Oct. 1, 1956.

SN 199,121. Scott Chemical Corporation, Tunjunga, Calif. Filed Aug. 3, 1964.

### NO WELD

For Metal-Working Lubricants, Mold Release Agents and Parting Compounds.
First use on or about Dec. 1, 1947.

SN 200,017. Montrose Oil & Belting Co., Inc., Brooklyn, N.Y. Filed Aug. 17, 1964.

MOBECO

For Penetrating and Lubricating Oils and Oils for the Removing of Rust and Sludge.
First use Jan. 2, 1954.

SN 201,933. Fleet-Wing Corporation, Cleveland, Ohio. Filed Sept. 15, 1964.

Fleet-Heat

The drawing is lined for the color red. Owner of Reg. Nos. 175,967, 523,227, and others.
For Furnace Oil for Home Heating.
First use Nov. 1, 1960.

SN 203,313. Malco Products Inc., Akron, Ohio. Filed Oct. 5, 1964.

### MOTOR MINDER

For Concentrated Oil Additive for Automotive Engines.
First use Sept. 1, 1964.

## Class 16—Protective and Decorative Coatings

SN 179,675. Thompson-Hayward Chemical Company, Kansas City, Kans. Filed Oct. 23, 1963.

### GRID-WHITE

For Marking Compounds, Particularly for Athletic Fields.
First use in or before August 1954.

SN 195,915. Amway Corporation, Ada, Mich. Filed June 18, 1964.

### DRI-FAB

For Protective and Decorative Coatings—Namely, a Water Repellent Spray for Fabrics, Leather, and Wood.
First use during the year 1962.



## Class 17—Tobacco Products

SN 191,441. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Apr. 17, 1964.

RJR

Owner of Reg. No. 713,389.
For Cigarettes.
First use Mar. 25, 1964.

SN 201,015. Compania Insular Tabacalera, S.A., Las Palamas de Gran Canaria, Canary Islands. Filed Sept. 1, 1964.

FLAMENCO

Owner of Spanish Reg. No. 409,138, dated Sept. 11, 1963; and U.S. Reg. No. 768,638.
For Cigars.

SN 202,223. The Bloch Brothers Tobacco Co., Wheeling, W. Va. Filed Sept. 21, 1964.

### CLUB CAVENDISH

No registration rights are claimed to the word "Cavendish" apart from the mark as shown.
For Smoking Tobacco.
First use Sept. 9, 1964.

SN 202,277. Lane Limited, New York, N.Y. Filed Sept. 21, 1964.

### AFTER HOURS

For Smoking Tobacco.
First use May 1963.

## Class 18—Medicines and Pharmaceutical Preparations

SN 168,832. The S. B. Massengill Company, Bristol, Tenn. Filed May 14, 1963.

### MYCODEX

For Pharmaceutical—Namely, Veterinary Preparation for Treatment of Dermatoses in Dogs.
First use June 21, 1962.

SN 181,914. Ezra M. Norris, d.b.a. Zados Laboratories, Los Angeles, Calif. Filed Nov. 26, 1963.

ZADOS

For Medicinal Preparation for Use as a Gargle and for the Treatment of Minor Burns, Wounds, and Sunburn.
First use July 2, 1933.

SN 183,385. Dram Pharmaceuticals, Inc., Hempstead, N.Y. Filed Dec. 23, 1963.

### LOBIDRAM

For Smoke Depressant Pharmaceutical.
First use June 18, 1963.

SN 187,604. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Feb. 27, 1964.



Owner of Reg. Nos. 732,390 and 763,793.
For Antibiotic Ointment.
First use June 10, 1961.

SN 188,292. The Sun City Pharmaceutical Corp., Phoenix, Ariz. Filed Mar. 9, 1964.

### SUN CITY

For Vitamin Preparation.
First use Dec. 27, 1963.

SN 188,389. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 10, 1964.

### MINIPRESS

For Anti-Hypertensive Compound.
First use Feb. 17, 1964.

SN 189,475. Imperial Chemical Industries Limited, London, England. Filed Mar. 24, 1964.

### INDERAL

Owner of British Reg. No. 851,809, dated July 22, 1963.
For Adrenergic B-Receptor Blocking Agent for Use in the Treatment of Certain Cardio-Vascular Conditions.

SN 198,718. Conal Pharmaceuticals, Inc., Chicago, Ill. Filed July 29, 1964.

### URICEUTICAL

For Pharmaceutical Preparations Used in the Treatment and Diagnosis of Genito-Urinary Disorders.
First use Jan. 27, 1964.

## Class 19—Vehicles

SN 133,751. AMF Beaird, Inc., Shreveport, La., by change of name from The J. B. Beaird Company, Inc., Shreveport, La. Filed Dec. 11, 1961.

### BEAIRD

Owner of Reg. Nos. 413,066 and 421,620.
For Transports, i.e., Tanks Mounted on Vehicles.
First use at least as early as July 1953.

SN 163,020. Metal-Matic, Inc., Minneapolis, Minn. Filed Feb. 14, 1963.



For Wheelchair for Disabled Persons.
First use Aug. 10, 1962.

SN 197,361. Byford & Morris, Inc., McGregor, Tex. Filed July 8, 1964.

## TRAV-L-TRAY

For Compartmented Tray for Attachment to Vehicle Seat.
First use May 15, 1964.

SN 197,783. Semlac Corporation, Houston, Tex. Filed July 13, 1964.

## ROD-'N-RIFLE

For Mobile Homes.
First use June 20, 1964.

SN 197,835. Lockheed Aircraft Corporation, Burbank, Calif. Filed July 14, 1964.

## STARLIFTER

For Airplanes and Components Thereof.
First use no later than Apr. 19, 1962.

## Class 20 — Linoleum and Oiled Cloth

SN 141,518. Formica Corporation, Cincinnati, Ohio. Filed Apr. 4, 1962.

## PINWHEEL

For Decorative Sheets of Laminated Plastic for Use on Walls, Shelves, Countertops, Furniture, and the Like.
First use Feb. 13, 1962.

SN 184,417. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Jan. 13, 1964.

## CLOUD

For Vinyl Flooring.
First use Dec. 16, 1963.

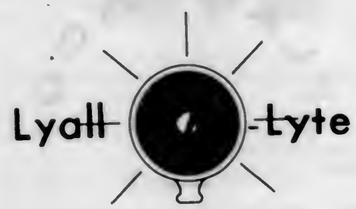
## Class 21 — Electrical Apparatus, Machines, and Supplies

SN 150,361. Omni Spectra, Inc., Detroit, Mich. Filed Aug. 2, 1962.



For Electronic Equipment and Particularly for Wave Guide Systems and Components Therefor.
First use June 29, 1962.

SN 170,919. Lyall Electric, Inc., Albion, Ind. Filed June 13, 1963.



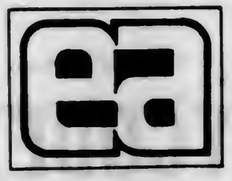

The representation of the goods is disclaimed apart from the mark as a whole.
For Flasher Light for Use on Slow Moving Vehicles.
First use May 17, 1963.

SN 174,020. Al Davis Radio, Inc., Los Angeles, Calif. Filed July 30, 1963.

## CONTINENTAL CUSTOM

For Automobile Antennas.
First use June 10, 1958.

SN 175,739. Electrical Automation Company, Inc., Paterson, N.J. Filed Aug. 26, 1963.



For Electrical Variable Speed Drives for Automatic Control Systems.
First use Apr. 14, 1961.

SN 181,331. Comtek, Inc., Woburn, Mass. Filed Nov. 18, 1963.

## COMTEK

For Electronic Parts and Assemblies—Namely, Magnetrons, Microwave Heating Systems, Rectifiers, Power Supply Modules, Transformers, Reactors, Electromagnets, Vacuum Tubes, and Solid State Devices.
First use Mar. 1, 1963.



SN 181,684. Ransomes Sims & Jefferies Limited, Ipswich, Suffolk, England. Filed Nov. 21, 1963.

## SOLECTRON

Owner of British Reg. No. 832,429, dated Mar. 23, 1962.
For Electrical and Electronic Apparatus for Controlling the Speed and Direction of Electric Motor Driven Vehicles.

SN 183,920. Packard-Bell Electronics Corporation, Los Angeles, Calif. Filed Jan. 2, 1964.

## SURFER

For Portable Radios.
First use Nov. 12, 1963.

SN 185,481. Ansa Fone Corp., Inglewood, Calif. Filed Jan. 28, 1964.

## TELE-TIMER

For Timer for Computing Long Distance Telephone Charges.
First use on or about Sept. 26, 1963.

SN 191,888. Siemens & Halske Aktiengesellschaft, Munich, Germany. Filed Apr. 23, 1964.

## SIMIBLOCK

Priority claimed under Sec. 44(d) on German application filed Oct. 25, 1963; Reg. No. 784,882, dated Mar. 4, 1964.
For Electrical, Electronic, and Microelectronic Components in Form of Modular Blocks; Resistors, Capacitors, Semiconductor Devices, Coils and Ferrite Components Also in Modular Form.

SN 192,333. Sprague Electric Company, North Adams, Mass. Filed Apr. 29, 1964.

## TANTOROID

For Interference Filters.
First use Mar. 31, 1964.

SN 193,367. Heyman Manufacturing Company, Kenilworth, N.J. Filed May 13, 1964.

## NYLET

For Electrical Conductor Protective Plastic Bushings.
First use Apr. 24, 1964.

SN 195,289. The Eagle-Picher Company, Cincinnati, Ohio. Filed June 10, 1964.

## ZOX

For Fuel Cells Which Utilize the Zinc-Potassium Hydroxicle Oxygen Electro Chemical System.
First use May 26, 1964.

SN 195,471. Varian Associates, Palo Alto, Calif. Filed June 11, 1964.

## TWYSTRON

For Electron Tube Microwave Amplifiers.
First use Apr. 15, 1964.

## Class 22 — Games, Toys, and Sporting Goods

SN 158,884. White Stores, Inc., Wichita Falls, Tex. Filed Dec. 10, 1962.

## SEA HAWK

Owner of Reg. No. 651,416.
For Water Skis.
First use Mar. 29, 1962.

SN 188,011. Hedaya & Co., New York, N.Y. Filed Mar. 5, 1964.




For Dolls and Stuffed Animals.
First use Sept. 4, 1958.

SN 189,544. Gonks Limited, London, England, assignee of Daniel Buckley Enterprises Limited, London, England. Filed Mar. 25, 1964.




Priority claimed under Sec. 44(d) on British Reg. No. 856,736, dated Nov. 19, 1963.
For Dolls.

SN 189,559. Dearborn Gage Company, Garden City, Mich. Filed Mar. 25, 1964.

## TRU SPHERE

For Golf Balls.
First use Sept. 23, 1963.

SN 189,626. St. Lawrence Manufacturing Company, Inc., Giffard, Quebec, Canada. Filed Mar. 25, 1964.

## ROYAL CANADIAN

Applicant disclaims the word "Canadian" apart from the mark shown.
For Ice Skate Blades.
First use Jan. 3, 1963; in commerce Jan. 3, 1963.

SN 193,183. De Luxe Reading Corporation, Elizabeth, N.J. Filed May 11, 1964.

## MICROHELMET

For Toy Helmet, Comprising a Two-Way Telephone and Goggles.
First use Mar. 30, 1964.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 168,322. Huber-Warco Company, Marion, Ohio. Filed May 7, 1963.

### AMERICAN

For Clay Working Machinery and Parts and Accessories Therefor.
First use on or before Apr. 1, 1906.

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SN 184,072. Jacobsen Manufacturing Company, Racine, Wis. Filed Jan. 6, 1964.

### TURBO-VAC

For Gasoline Powered Lawn Mowers, Grass Catchers, and Parts Therefor, for Home Use Only.
First use on or about Apr. 10, 1958.

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SN 184,117. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 6, 1964.

### PIG-PUMP

For Mechanical Pump Dispenser for Veterinary Medicine.
First use Nov. 4, 1963.

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SN 184,739. Midwest Automotive Research, Inc., Sheboygan, Wis. Filed Jan. 16, 1964.

FLOOD CHECK

For Fuel Pressure Relief Device for Fuel Pumps of Automobiles To Equalise Pressure at Both Sides of Fuel Pump When Engine Is Stopped.
First use Mar. 1, 1962.

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SN 184,809. Girdler Corporation, Louisville, Ky. Filed Jan. 17, 1964.

### AMMOPAC

For Package Plants for the Synthesis of Ammonia and Components of Such Plants.
First use Nov. 25, 1963.

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SN 185,136. Walter P. Hill, Inc., Troy, Mich. Filed Jan. 22, 1964.

### TAPE-ALL

For Numerically Controlled Drilling, Boring, and Milling Machines.
First use Oct. 3, 1963.

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SN 185,451. Stowe-Woodward, Inc., Newton Upper Falls, Mass. Filed Jan. 27, 1964.

### STOWE-WOODWARD

For Rolls and Rubber Components of Rolls for Machinery.
First use on or before Jan. 21, 1964.

SN 185,703. The Myers-Sherman Company, Streator, Ill. Filed Jan. 30, 1964.

### VACTOR

For Commercial and Industrial Vacuum Tanks To Remove Debris Such as Trash, Wood Chips, Loose Dirt, Sand, Litter, and Sludge.
First use Aug. 8, 1963.

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SN 185,734. The Viking Tool Company, Shelton, Conn. Filed Jan. 30, 1964.

### VIKING

For Cutting Tools, Assemblies and Elements for Use With Machine Tools—Namely, Tool Holders, Boring Bars, Cartridges, Milling Cutters, Regrindable Cutting Inserts, and Separate Indexable Cutting Inserts.
First use 1947.

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SN 185,735. The Viking Tool Company, Shelton, Conn. Filed Jan. 30, 1964.

Viking

For Cutting Tools, Assemblies and Elements for Use With Machine Tools—Namely, Tool Holders, Boring Bars, Cartridges, Milling Cutters, Regrindable Cutting Inserts, and Separate Indexable Cutting Inserts.
First use 1959.

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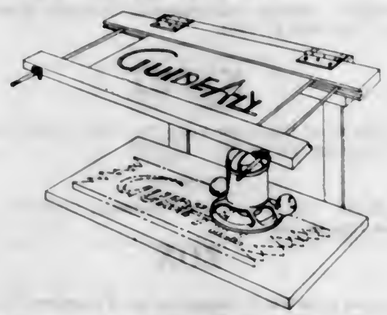
SN 186,053. Bonis Bros. Fur Machinery Corp., New York, N.Y. Filed Feb. 5, 1964.

### BONIS

Owner of Reg. No. 361,488.
For Sewing Machines.
First use Jan. 6, 1964.

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SN 186,526. Kenneth R. Gilfry, d.b.a. The Rustic Shop, Buena Park, Calif. Filed Feb. 12, 1964.




For Duplicating Attachment for Routers.
First use Apr. 23, 1963.

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SN 186,719. Clarence G. Grube, Brookfield, Wis. Filed Feb. 14, 1964.

### BIG EARTHA

For Back Hoe.
First use June 4, 1963.



SN 187,172. The Cleveland Twist Drill Company, Cleveland, Ohio. Filed Feb. 21, 1964.

### CLE-BIDE

For Twist Drills—Namely, Carbide Tipped Double Crimped Tube Drills.
First use Feb. 6, 1964.

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SN 187,538. Strasa Industries, El Cajon, Calif. Filed Feb. 26, 1964.

### LIDO TOOLS

The word "Tools" is disclaimed apart from the mark as shown.
For Boring Tools, Boring Heads, and Fly Cutters.
First use in or before June 1959.

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SN 187,840. Frank J. Zamboni & Co., Paramount, Calif. Filed Mar. 2, 1964.

### ZAMBONI

For Ice Resurfacing Machines and Dump Attachments Therefor.
First use July 1962; September 1954 in a different form.

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SN 188,327. American Air-Master, La Crescenta, Calif. Filed Mar. 10, 1964.

AMERICAN AIR-MASTER

AA

Applicant makes no claim to the word "American" alone.
For Air Operated Saws and Tools and Parts Thereof.
First use Mar. 4, 1964.

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SN 190,708. The Fyr-Fyter Company, Dayton, Ohio. Filed Apr. 9, 1964.

### SQUEEZ-GRIP

For Portable Fire Extinguisher, and Parts Therefor.
First use July 6, 1942.

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SN 192,133. Great Bend Manufacturing Company, Inc., Great Bend, Kans. Filed Apr. 24, 1964.

THE GB LINE

The drawing is lined for red.
For Manufactured Products, Principally Front End Loaders on Farm Tractors, but Not Limited Thereto.
First use Mar. 13, 1963.

SN 192,203. The Renner Company, d.b.a. The Miller Spreader Company, Youngstown, Ohio. Filed Apr. 28, 1964.

### MILLER-VIBRAMITE

For Vibrating Road Rollers.
First use June 15, 1961.

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SN 193,893. Nicholson File Company, Providence, R.I. Filed May 20, 1964.

### ROYAL

For Files and Rasps.
First use 1875.

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SN 193,934. Carbidex Corporation, Wyandotte, Mich. Filed May 21, 1964.

### CARBIDEX

For Stampings, and Dies for Stampings.
First use on or about Aug. 30, 1963.

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SN 195,384. Eversharp, Inc., Milford, Conn. Filed June 11, 1964.

STAINLESS KRONA

Applicant disclaims the term "Stainless" apart from the mark as shown. Owner of Reg. Nos. 702,520, 763,067, and Others.
For Safety Razor Blades and Dispensers for Safety Razor Blades.
First use Mar. 2, 1963.

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SN 195,640. Calk-It Corporation, Pasadena, Calif. Filed June 15, 1964.

### CALK-IT

For Tool for Applying Plastic Compounds.
First use May 13, 1963.

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SN 195,827. Vann Industries, Inc., Clinton, N.C. Filed June 16, 1964.

### TIE-MASTER

For Tobacco Sewing Machine.
First use Apr. 30, 1963.

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SN 195,829. Viking Corporation, Minneapolis, Minn. Filed June 16, 1964.

### VIKING

Owner of Reg. No. 692,370.
For Ledger Plates, Wear Plates, Mower Knives, Mower Sections, Combine Guards and Swather Guards.
First use on or about Sept. 12, 1958.

SN 195,987. Jervis B. Webb Company, Detroit, Mich. Filed June 18, 1964.

## BULKMASTER

For Belt Conveyor Idlers.
First use January 1963.

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SN 197,617. The A. J. Sackett & Sons Company, Baltimore, Md. Filed July 10, 1964.

## MON-O-FLO

For Vertical or Gravity Flow Type Dry Bulk Blend System and Apparatus for Manufacturing and Processing of Plant Foods.
First use May 31, 1962.

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SN 197,945. Crompton & Knowles Corporation, Worcester, Mass. Filed July 16, 1964.

## REDINGTON

Owner of Reg. No. 737,848.
For Automatic Packaging Machinery for Pouch Packaging, Cartoning, Multi-Packing, Roll Wrapping, Over Wrapping, and Case Opening, Forming, and Positioning.
First use 1897.

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SN 197,991. Scott Aviation Corporation, Lancaster, N.Y. Filed July 16, 1964.

## WATER-VAK

For Portable Liquid Suction, Storage and Discharge Devices Activated by Electricity or Other Suitable Source of Power.
First use June 23, 1964.

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SN 198,079. RaM Enterprises, d.b.a. Boar Equipment Company, Shreveport, La. Filed July 17, 1964.




The words "Shreveport" and "Louisiana" and "Equipment Co." are disclaimed apart from the mark shown.
For Digger Tooth for Excavating Apparatus.
First use Feb. 25, 1964.

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SN 198,471. Elgin Sweeper Company, Elgin, Ill. Filed July 24, 1964.




Owner of Reg. Nos. 695,613, 731,803, and 778,125.
For Street Sweeping Machines and Parts Thereof.
First use June 9, 1964.

SN 199,008. Bata Shoe Company of Canada Limited, Batawa, Ontario, Canada. Filed Aug. 3, 1964.

## HYVIT

Owner of Canadian Reg. No. 131,806, dated July 12, 1963.
For Hydraulic Cutting Machines for Use in Conjunction With Clicker Type Dies.

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SN 199,009. Bata Shoe Company of Canada Limited, Batawa, Ontario, Canada. Filed Aug. 3, 1964.

## HYNIT

Owner of Canadian Reg. No. 131,807, dated July 12, 1963.
For Hydraulic Cutting Machines for Use in Conjunction With Clicker Type Dies.

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SN 199,010. Bata Shoe Company of Canada Limited, Batawa, Ontario, Canada. Filed Aug. 3, 1964.

## HYTEM

Owner of Canadian Reg. No. 131,808, dated July 12, 1963.
For Hydraulic Cutting Machines for Use in Conjunction With Clicker Type Dies.

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SN 199,574. Kelsey-Hayes Company, Romulus, Mich. Filed Aug. 10, 1964.

## LOC-RITE

For Box, End, and Socket Wrenches.
First use Feb. 14, 1964.

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SN 199,980. Feature Products Inc., Chicago, Ill. Filed Aug. 17, 1964.

## CORN O MATIC

For Culinary Device for Stripping, Coring, and Decorating Foods.
First use Aug. 14, 1964.

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SN 200,039. Sossner Steel Stamps, Inc., Long Island City, N.Y. Filed Aug. 17, 1964.

## ROLL-A-MATIC

For Self-Timing, Positive Lock, One Revolution Roll Indent Marking Attachments for Single Spindle Automatics, Chuckers, and Lathes.
First use July 1, 1960.

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SN 205,725. Riccar America Company, Anaheim, Calif. Filed Nov. 6, 1964.

## COUNTESS

For Sewing Machines and Sewing Machine Component Parts.
First use Sept. 1, 1964.

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SN 206,096. United-Greenfield Corporation, Northbrook, Ill. Filed Nov. 12, 1964.

UG

Owner of Reg. Nos. 775,628, 775,807, and 778,476.
For Milling Cutters and Carbide Burrs.
First use June 15, 1964, on carbide burrs.



SN 206,652. Royal McBee Corporation, New York, N.Y. Filed Nov. 20, 1964.

## EDUCATOR

For Typewriting Machines and Parts Thereof.
First use Nov. 3, 1964.

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## Class 24 — Laundry Appliances and Machines

SN 204,123. John H. Alsip, d.b.a. Southwest Machinery Company, Garland, Tex. Filed Oct. 16, 1964.

## CHORE CHAMP

For High Pressure Washing Machines.
First use on or about May 1, 1964.

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## Class 26 — Measuring and Scientific Appliances

SN 181,555. Moeller Manufacturing Co., Inc., Greenville, Miss. Filed Nov. 20, 1963.

## JEWELL

For Closure Unit in the Nature of Stoppers for Test Tubes Held Together as a Single Unit To Close a Number of Test Tubes Simultaneously.
First use Oct. 10, 1963.

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SN 183,057. A. H. Harris & Sons, Inc., New Britain, Conn. Filed Dec. 16, 1963.

## CURAMOLD

For Curing Box for Test Cylinder Molds of Concrete and the Like.
First use Jan. 4, 1963.

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SN 202,961. Rotolite Corporation, Stirling, N.J. Filed Sept. 29, 1964.

## DIAZOLUX

For Fluorescent Lamps for Diazo Printing Machines.
First use Dec. 12, 1962.

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## Class 27 — Horological Instruments

SN 202,536. Atlantic Fabrique d'Horologerie S.A. Bettlach (Atlantic Uhrenfabrik AG Bettlach) (Atlantic Watch Factory Ltd. Bettlach), Bettlach, Switzerland. Filed Sept. 24, 1964.

## SESAME

Priority claimed under Sec. 44(d) on Swiss Reg. No. 203,693, dated Apr. 10, 1964.
For All Horological Products—Namely, Watches, Watch Movements, Watch Cases, Watch Dials, and Parts of Watches.

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## Class 28 — Jewelry and Precious-Metal Ware

SN 197,199. Textron Inc., Providence, R.I. Filed July 6, 1964.

## BRAIDED ELEGANCE

No claim is made to the word "Braided" apart from the remainder of the mark.
For Expansion Bracelets Including Watch Bracelets.
First use June 18, 1964.

SN 197,205. Textron Inc., Providence, R.I. Filed July 6, 1964.

## THIN WATCHMATE

No claim is made to the word "Thin" apart from the remainder of the mark.
For Expansion Bracelets Including Watch Bracelets.
First use June 18, 1964.

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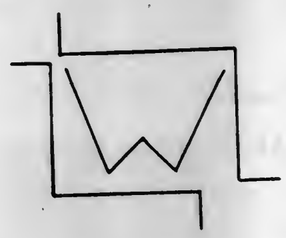
SN 197,347. Tippy Taster Corporation of America, New York, N.Y. Filed July 7, 1964.

## TIPPY TASTER

For Safety Feeding Spoons for Infants Made of or Coated With Precious Metal, e.g., Silver.
First use January 1958.

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SN 200,007. William Lowe, Inc., New York, N.Y. Filed Aug. 17, 1964.



The mark consists of the letters "W" and "L" in fanciful arrangement.
For Precious Jewelry.
First use June 18, 1964.

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SN 201,875. Ronnie Jewelry, Inc., Providence, R.I. Filed Sept. 14, 1964.

## RINALDO

For Jewelry.
First use on or about Aug. 28, 1964.

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SN 203,284. James H. Hall Co., Inc., Providence, R.I. Filed Oct. 5, 1964.

## YS

For Costume Jewelry.
First use on or about Aug. 29, 1964.

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## Class 29 — Brooms, Brushes, and Dusters

SN 175,258. The Drackett Company, Cincinnati, Ohio. Filed Aug. 19, 1963.

CROWN

Owner of Reg. No. 665,722.
For Mops, Brooms, and Refills for Mops.
First use Aug. 8, 1963.

SN 184,207. Brenham Broom & Mop Works, Inc., Brenham, Tex. Filed Jan. 8, 1964.




Applicant hereby disclaims the representation of the mop and the broom shown, except as shown in combination with applicant's design and trademark.
For Brooms and Mops.
First use Sept. 3, 1963.

SN 185,213. Jack-Sons Products Corp., Lahabra, Calif. Filed Jan. 23, 1964.

## ACOUSTI-COATER

For Roller Applicators Particularly Useful in Applying Paint.
First use Nov. 28, 1962.

SN 186,125. Joyce Tatelbame, Inc., d.b.a. Oral Hygiene Industries, Chicago, Ill. Filed Feb. 5, 1964.




The words "Oral, Hygiene" and "Brand" are hereby disclaimed apart from the mark as shown.
For Toothbrushes.
First use Dec. 3, 1962.

SN 201,042. Theron V. Moss, d.b.a. South Eastern Cordage, Cleveland, Ohio. Filed Sept. 1, 1964.

## RING TAIL

For Mop Heads.
First use July 21, 1964.

SN 202,167. Pellon Corporation, New York, N.Y. Filed Sept. 18, 1964.

## PANW

For Unimpregnated Polishing Pads, Sheets, and Disks.
First use Jan. 18, 1960.

## Class 31 — Filters and Refrigerators

SN 166,944. Sparkler Mfg. Co., Conroe, Tex. Filed Apr. 17, 1963.




Applicant disclaims the words "Vertical," "Plate," and "Filters." Owner of Reg. Nos. 507,573 and 617,452.
For Industrial Fluid Filters.
First use at least as early as Dec. 11, 1959.

SN 175,701. Union Tank Car Company, Chicago, Ill. Filed Aug. 23, 1963.

## PRINCESS

For Water Softening Equipment.
First use Aug. 13, 1963.

SN 180,355. Arrowhead and Puritas Waters Inc., Los Angeles, Calif. Filed Nov. 4, 1963.

## DEL

For Water Coolers.
First use June 1960.

SN 184,054. General Electric Company, Schenectady, N.Y. Filed Jan. 6, 1964.

## MINI-CUBE

For Freezing Trays for Ice Cubes.
First use Nov. 6, 1953.

SN 185,373. Eliason Refrigerator Company, Hartford, Mich. Filed Jan. 27, 1964.

## ELIASON

For Refrigeration Equipment—Namely, Commercial Refrigerators, Walk-In Coolers, and Parts Therefor.
First use April 1953.

SN 187,303. McQuay, Inc., Minneapolis, Minn. Filed Feb. 24, 1964.

## MC QUAY

For Ice Making Machines and Refrigeration Units for Commercial and Industrial Use and Devices and Parts Therefor.
First use 1933.

SN 187,451. Water Refining Company, Inc., Middletown, Ohio. Filed Feb. 25, 1964.

## MONTCLAIR

For Apparatus for Chlorinating and Conditioning Water, and Parts Therefor.
First use at least as early as Sept. 15, 1962.



SN 195,838. Water Refining Company, Inc., Middletown, Ohio. Filed June 16, 1964.




Owner of Reg. No. 731,545.
For Water Treatment Equipment—Namely, Water Conditioners, Softeners, Filters, Chemical Feeders, and Aerators, and Parts Therefor.
First use May 14, 1964.

SN 197,322. Pall Corporation, Glen Cove, N.Y. Filed July 7, 1964.

## EPOCEL

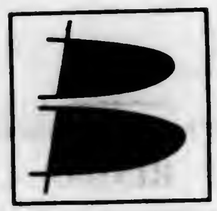
For Filters for Filtration of Fluids.
First use July 11, 1962.

SN 197,323. Pall Corporation, Glen Cove, N.Y. Filed July 7, 1964.

## PUMPSTER

For Filters for Purifying Water.
First use May 28, 1964.

SN 197,870. Bally Case and Cooler, Inc., Bally, Pa. Filed July 15, 1964.



For Refrigeration Equipment—Namely, Refrigerated Display Cases, Walk-In Coolers, and Freezers.
First use April 1963.

## Class 32 — Furniture and Upholstery

SN 182,670. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company, Chicago Heights, Ill. Filed Dec. 9, 1963.

## AMERICAN MAID

For Window Shades.
First use Nov. 20, 1963.

SN 196,169. Levolor Lorentzen, Inc., Hoboken, N.J. Filed June 22, 1964.

## FLEX-KING

Owner of Reg. No. 414,337.
For Venetian Blinds and Parts Therefor Sold as a Unit.
First use on or about Apr. 7, 1964.

## Class 33 — Glassware

SN 178,624. Morgan & Co., Inc., Boston, Mass. Filed Oct. 9, 1963.

## MORGAN

For Drinking Glasses, Salad Bowls, Decanters, Serving Trays, Candlesticks, Vases, Sugarbowls, Cream Pitchers, Condiment Sets, Beverage Cooling and Stirring Sticks Made of Glass.
First use on or about Sept. 1, 1957, on drinking glasses.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 151,358. Premier Industrial Corporation, Cleveland, Ohio. Filed Aug. 16, 1962.

## THERMOSTAT ACTION

For Welding Supplies—Namely, Welding Rods and Welding Electrodes.
First use October 1961.

SN 177,520. Franklin Frohlich, Teufen, Switzerland. Filed Sept. 23, 1963.




Priority claimed under Sec. 44(d) on Swiss Reg. No. 198,481, dated Apr. 1, 1963.
For Heat Exchanger Apparatus for Exchanging Heat Between Plural Confined Fluid Streams, Particularly Industrial Heat Exchanger Apparatus Having Glass Heat Transmitting Elements.

SN 179,062. J. C. Pitman & Sons Engineering Corp., Concord, N.H. Filed Oct. 15, 1963.

PITMAN *Mastermatic*

For Automatic Continuous, Deep Fat Food and Nut Fryer.
First use Nov. 30, 1947.

SN 181,419. The Standard Motor Company Limited, Canley, Coventry, England. Filed Nov. 18, 1963.

## TRIUMPH - AIRE

For Air-Conditioning Units for Motor Road Vehicles.
First use Sept. 5, 1963; in commerce Sept. 5, 1963.

SN 186,319. Barber Manufacturing Company, Cleveland, Ohio. Filed Feb. 10, 1964.

## VENTRONIC

For Electric Ignition Systems for Fluid Burners.
First use January 1964.

SN 187,063. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Feb. 20, 1964.

THERMO-ZONE

For Motor Operated Valves for Heating, Cooling, and Air Conditioning Systems.
First use Sept. 24, 1963.

SN 202,561. De Wolf Furnace Co., Inc., Garden City, N.Y. Filed Sept. 24, 1964.




For Specially Shaped Refractory Elements and Metal Parts for Furnace Wall and Arch Construction.
First use about November 1928.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 184,650. Raybestos-Manhattan, Inc., Manheim, Pa. Filed Jan. 15, 1964.




For Brake Linings.
First use Oct. 31, 1963.

SN 197,955. The General Tire & Rubber Company, Akron, Ohio. Filed July 16, 1964.

JET-AIR II

Owner of Reg. Nos. 715,078 and 728,321.
For Pneumatic Tires.
First use May 21, 1964.

SN 198,143. Eaton Manufacturing Company, Cleveland, Ohio. Filed July 20, 1964.




For Repair Materials for Tubeless Tires.
First use Feb. 18, 1964.

## Class 36 — Musical Instruments and Supplies

SN 175,404. Hammond Organ Studios of Boston, Inc., Newton, Mass. Filed Aug. 20, 1963.

WE DELIVER HAPPINESS

For Organs.
First use Apr. 30, 1958.

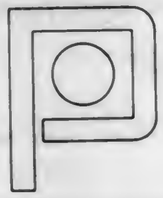
SN 192,666. The Belcor Corp., Inc., Newark, N.J. Filed May 5, 1964.

BELCOR

For Tape Recorders and Phonographs.
First use Oct. 31, 1963.

## Class 37 — Paper and Stationery

SN 182,111. Packaging Corporation of America, Evanston, Ill. Filed Nov. 29, 1963.



For Paperboard.
First use on or about June 7, 1963.

SN 184,216. Cory Corporation, Chicago, Ill. Filed Jan. 8, 1964.

RING-O

For Pens.
First use Dec. 18, 1963.

SN 184,217. Cory Corporation, Chicago, Ill. Filed Jan. 8, 1964.

NEVA-LOSE

For Caps for Pens.
First use Dec. 18, 1963.

SN 190,340. The H. C. Cook Company, Ansonia, Conn. Filed Apr. 6, 1964.

BULLDOG

For Utility Spring Clips for Letters, Paper, and the Like.
First use on or before Jan. 31, 1922.

SN 196,164. KVP Sutherland Paper Company, Kalamazoo, Mich. Filed June 22, 1964.

GLENVALE

For Printed and Decorated Wrapping Paper.
First use Mar. 17, 1962.



SN 197,564. E. Greene and Company, Inc., Brooklyn, N.Y. Filed July 10, 1964.

Greenetree

For Wax Papers, Wrapping Papers, Facial and Toilet Tissue.
First use at least prior to June 1, 1955.

## Class 38 — Prints and Publications

SN 167,181. Fairchild Publications, Inc., New York, N.Y. Filed Apr. 19, 1963.

GUIDELINES TO GOVERNMENT CONTRACTS

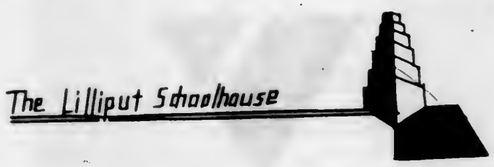
For Lift-Out Supplement of a Business Newspaper.
First use Feb. 5, 1962.

SN 179,818. Southern States Cooperative Incorporated, Richmond, Va. Filed Oct. 25, 1963.

Hen·otel

For Blue Prints of Poultry House Plans.
First use Oct. 10, 1963.

SN 184,807. Genevieve Tarlton Alexander, d.b.a. The Lilliput Schoolhouse, Corpus Christi, Tex. Filed Jan. 17, 1964.




For Guide Books to the Montessori Method.
First use August 1963.

## Class 39 — Clothing

SN 127,335. John E. Fuchs Corp., New York, N.Y. Filed Sept. 6, 1961.

THE HAND OF FASHION

For Gloves.
First use June 19, 1961.

SN 181,784. Georges Levy, Paris, France. Filed Nov. 22, 1963.

CEDRIC

Owner of French Reg. No. 416,528, dated Dec. 17, 1951 (Paris); Natl. Inst. No. 505,362.
For Boots, Shoes, and Slippers.
First use Nov. 15, 1936; in commerce Mar. 17, 1957.

SN 194,282. Esther K. Davis, d.b.a. Davis Manufacturing Co., Alamo, Tenn. Filed May 26, 1964.

LITTLE KING

For Children's Clothing—Namely, Suits, Shorts, Slacks, and Shirts.
First use at least as early as December 1955.

SN 198,329. Boss Manufacturing Company, Kewanee, Ill. Filed July 22, 1964.

TIN MIL

For Work Gloves of Leather, Fabric, and a Combination of Leather and Fabric.
First use Feb. 19, 1962.

SN 199,729. Endicott Johnson Corporation, Endicott, N.Y. Filed Aug. 12, 1964.

THE ROYCE SHOE

No claim is made to the word "Shoe" apart from the mark shown.
For Men's Shoes.
First use June 23, 1964.

## Class 41 — Canes, Parasols, and Umbrellas

SN 198,777. Schertz Umbrellas, Inc., New York, N.Y. Filed July 29, 1964.

TRAVELAIRE

For Umbrellas.
First use May 11, 1964.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 163,759. Kirban Corporation, New York, N.Y., by change of name from Pedigree Fabrics, Inc., New York, N.Y. Filed Mar. 1, 1963.

PEDITEX

Owner of Reg. Nos. 442,317 and 560,148.
For Textile Fabrics of Cotton and Synthetic Fibers.
First use Jan. 2, 1962.

SN 176,174. Designs by Lotte, Inc., New York, N.Y. Filed Sept. 3, 1963.

DESIGNS BY LOTTE

The term "Designs by" is hereby disclaimed apart from the mark as shown.
For Textile Piece Goods of Cotton, Wool, and Synthetic Fibres and Blends Thereof for Drapery, Furniture Upholstery and Towelling.
First use Aug. 15, 1963.

SN 177,765. Carpet Engineers Inc., Beverly Hills, Calif. Filed Sept. 26, 1963.

Carpet ENGINEERS

Applicant disclaims the word "Carpet."
For Carpets.
First use Nov. 1, 1962.

SN 185,038. Indian Head Mills, Inc., New York, N.Y. Filed Jan. 21, 1964.

## GIVE 'N TAKE

For Cotton Stretch Poplin.
First use May 14, 1963.

SN 185,476. Aetslon Textile Company, Union City, N.J. Filed Jan. 28, 1964.

## AETZLON

For Synthetic Silk Cloth as a Base for Lace During the Manufacture Thereof.
First use Oct. 24, 1963.

SN 186,086. Lawson Products, Inc., Pawtucket, R.I. Filed Feb. 5, 1964.

Lawsonit

Owner of Reg. No. 439,159.
For Elasticized and Non-Elasticized Knitted and Netted Fabrics To Be Used in Making Bathing Suits, Lingerie, Foundation Garments, and the Like.
First use Nov. 21, 1945.

SN 189,140. Boyd Lee Hosiery Mills, Inc., Hickory, N.C. Filed Mar. 20, 1964.

ROUTE "6"

For 100% Nylon Double Knit Fabric, Used for Wearing Apparel Such as Ladies' Suits and Dresses.
First use Jan. 14, 1964.

SN 190,226. W. V. Matheny, d.b.a. Protect-A-Mat-Company, Grafton, W. Va. Filed Mar. 31, 1964.

PLAS FILM
ACETATE
MATTRESS PADS

Applicant disclaims the words "Film Acetate Mattress Pads." The drawing is lined for blue.
For Bed or Mattress Pads.
First use April 1963.

SN 191,725. J. W. Valentine Co., Inc., New York, N.Y. Filed Apr. 21, 1964.

## GENERAL WORTH

Owner of Reg. No. 527,204.
For Textile Piece Goods, Used in Articles of Wearing Apparel, Such as Coats, Dresses, Pants, and Uniforms and Also for Tablecloths, Napkins, and the Like.
First use July 20, 1948.

SN 191,726. J. W. Valentine Co., Inc., New York, N.Y. Filed Apr. 21, 1964.

For Textile Piece Goods, Used in Articles of Wearing Apparel, Such as Coats, Dresses, Pants, and Uniforms and Also for Tablecloths, Napkins, and the Like.
First use Jan. 20, 1964.

SN 193,772. Everfast Fabrics, Inc., New York, N.Y. Filed May 19, 1964.

## EVERFASHIONABLE

Owner of Reg. Nos. 407,862 and 415,278.
For Textile Fabrics in the Piece, of Cotton, Spun Rayon, or Other Man-Made Fibres.
First use June 2, 1936.

SN 194,154. Dyersburg Cotton Products, Inc., Dyersburg, Tenn. Filed May 25, 1964.

beersheba

For Knitted Fleece (Pile) Fabrics.
First use in or about January 1963.



SN 194,155. Dyersburg Cotton Products, Inc., Dyersburg, Tenn. Filed May 25, 1964.

Dy-Mor

For Knitted Fleece (Pile) Fabric.
First use in or about December 1962.

SN 194,156. Dyersburg Cotton Products, Inc., Dyersburg, Tenn. Filed May 25, 1964.

Kilmalcolm

For Knitted Fleece (Pile) Fabric.
First use in or about February 1963.

SN 194,157. Dyersburg Cotton Products, Inc., Dyersburg, Tenn. Filed May 25, 1964.

SNUG-N-HUG

For Knitted Fleece Fabric.
First use in or about January 1962.

SN 198,100. United Merchants and Manufacturers, Inc., New York, N.Y. Filed July 17, 1964.

## EXCELLON

For Yarns in the Form of Fabrics Adapted To Be Made Up Into Ready-Made Draperies.
First use on or about June 10, 1964.

SN 198,814. Ascot Textile Corp., New York, N.Y. Filed July 30, 1964.

## TAFFSKIN

For Woven Lining Material in the Piece From Which Garment Linings Are Made.
First use Jan. 2, 1962.

SN 199,043. Faribault Woolen Mill Company, Faribault, Minn. Filed Aug. 3, 1964.

## LANALAIRE

For Blankets and Bedspreads.
First use on or about May 9, 1964.

SN 199,224. Regal Rugs, Inc., North Vernon, Ind. Filed Aug. 4, 1964.

## TRAMP 'N TUB

For Rugs.
First use June 19, 1964.

SN 199,248. Amphenol-Borg Electronics Corporation, Broadview, Ill. Filed Aug. 5, 1964.

## BOONSKIN

For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use July 30, 1964.

SN 199,368. Huyck Corporation, Rensselaer, N.Y. Filed Aug. 6, 1964.

## POROSOFT

For Felts for Papermaking Machines.
First use Nov. 10, 1959.

SN 199,471. Huyck Corporation, Rensselaer, N.Y. Filed Aug. 7, 1964.

## 2-A-PLUS

For Felts for Papermaking Machines.
First use Oct. 23, 1962.

SN 199,475. Knitweave Associates, Inc., New York, N.Y. Filed Aug. 7, 1964.

## KERSAN

For Woven Cotton Cloth Coated With a Combination of Chemical Polymers.
First use June 30, 1964.

SN 199,542. Coronet Industries, Inc., Dalton, Ga. Filed Aug. 10, 1964.

Coronet

For Tufted Carpeting.
First use Oct. 1, 1961.

SN 200,121. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 18, 1964.

## DELISSA

For Piece Goods of One or More Natural Fibers Including Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use Aug. 3, 1964.

SN 200,173. Erwin Mills, Inc., Durham, N.C. Filed Aug. 19, 1964.

## SEA BLUES

Owner of Reg. No. 675,292.
For Cotton Piece Goods.
First use June 16, 1964.

SN 200,223. Hodges Research & Development Company, New York, N.Y. Filed Aug. 19, 1964.

## RAMISTAFF

For Bacteria-Resistant Fabrics Made of Ramie.
First use May 1962.

## Class 43 — Thread and Yarn

SN 198,573. Monsanto Company, St. Louis, Mo. Filed July 27, 1964.




No claim is made to the words "Nylon" or "Spandex" apart from the mark as shown. Owner of Reg. Nos. 600,796, 758,996, and others.

For Thread and Yarn Comprised in Whole or in Substantial Part of Nylon and Spandex.

First use June 26, 1964.

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SN 198,801. Allied Chemical Corporation, New York, N.Y. Filed July 30, 1964.

### ALLYN-707

For Yarn.

First use June 30, 1964.

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## Class 44 — Dental, Medical, and Surgical Appliances

SN 162,033. Bonnie H. Stauffer, executrix of the last will of Bernard H. Stauffer, deceased, San Marino, Calif., assignee of Bernard H. Stauffer, San Marino, Calif. Filed Feb. 4, 1963.

### STAUFFER HOME PLAN

For Electric Motor Driven Vibrator Used for Posture Correction, Stimulating Circulation, and Exercising Muscles as an aid to Weight Reduction and Figure Control.

First use Aug. 15, 1952.

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SN 193,504. Star X-Ray Co., Inc., New York, N.Y. Filed May 14, 1964.




Applicant disclaims the word "X-Ray" apart from the mark as shown.

For X-Ray Dental and Physicians' Illuminators, Dark Room Lights, Film Hangers, Aluminum Splash and Dust Collectors, Lead Aprons, Film Dryers, Aluminum Work Pans, and Developing Tanks.

First use July 18, 1956.

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SN 197,810. Aristo Manufacturing Co., Chicago, Ill. Filed July 14, 1964.

### ARISTETTE QUEEN

Owner of Reg. No. 777,929.

For Electric Hair Dryers.

First use April 1954.

## Class 46 — Foods and Ingredients of Foods

SN 153,754. Toasta Foods, Incorporated, Minneapolis, Minn., assignee of Fun Foods, Inc., Sioux Falls, S. Dak. Filed Sept. 24, 1962.

### TOASTA

For Frozen Meatless Pizza.

First use in or about October 1961.

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SN 174,070. Arkansas Valley Industries, Inc., Dardanelle, Ark. Filed July 31, 1963.




The drawing is lined for the colors blue and yellow. Owner of Reg. No. 729,532.

For Fresh and Frozen Chickens, Frozen Turkeys, Frozen Meat Dinners Consisting in the Main of Beef and Vegetables, Frozen Turkey Pies Consisting in the Main of Turkey Meat and Vegetables, Frozen Pre-Cooked Chicken Roll Consisting in the Main of Chicken Meat, Precooked Chickens and Turkeys, Cooked Chicken Roll Consisting in the Main of Chicken Meat, Fresh Eggs, and Poultry and Livestock Feeds.

First use on or about July 1, 1960.

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SN 178,610. Hlad Brothers & Company Limited, Umbilo, Durban, Republic of South Africa. Filed Oct. 9, 1963.

### PRO NUTRO

Owner of South African Reg. No. 61/1216, dated Apr. 14, 1961.

For Dietetic Foods Consisting Principally of Skimmed Milk, Processed Peanuts, Soya Beans and Peas, Fish Flour, Food Yeast, Wheat Germ, Whey Powder, Whole Maize Meal, Sugar, Iron, Bone Meal, Iodised Salt and Vitamins A and B.

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SN 180,567. Dawe's Laboratories, Inc., Chicago, Ill. Filed Nov. 6, 1963.




Owner of Reg. No. 708,808.

For Nutritional Additives for Animal and Poultry Feeds.

First use prior to 1959; 1939 as to "Dawe's."

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SN 181,850. E. J. Brach & Sons, Chicago, Ill. Filed Nov. 26, 1963.




Owner of Reg. Nos. 214,857, 728,067, and others.

For Candy.

First use on or about Apr. 3, 1962; 1907 as to the mark "Brach's."



SN 182,578. Carnation Company, Los Angeles, Calif. Filed Dec. 9, 1963.

### CRAZY COW

For Flavored Milk Drink.

First use Nov. 5, 1963.

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SN 183,198. American Tradition Inc., d.b.a. American Tradition Foods, Chicago, Ill. Filed Dec. 18, 1963.

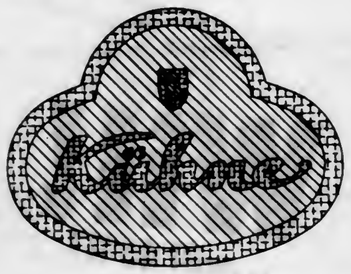



For Sauces, Some Containing Meat and Some Without Meat, for Use in Seasoning Food for Human Consumption and Prepared Frozen Foods—Namely, Breaded Filet of Sole, Sliced Turkey, Creamed Turkey and Ham, Creamed Smoked Sliced Beef, Roast Pork, Salisbury Steak, Beef Goulash, Creamed Tuna and Noodles, Chili Mac, Pork Chop Suey, Diced Beef in Sour Cream, Creamed Chicken, Turkey a la King, Spaghetti With Meat, Sliced Roast Beef, Beans and Frankfurters, Roast Pork, and Creamed Macaroni and Cheese.

First use July 1, 1959.

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SN 185,686. Carl Kuhne KG, Hamburg, Altona, Germany. Filed Jan. 30, 1964.




The drawing is lined for yellow and green. Owner of German Reg. No. 747,733, dated Apr. 18, 1961; and U.S. Reg. No. 699,497.

For Fruits and Vegetables in Cans, Jars or Other Similar Containers, Edible Oil, Herbs for Food Purposes, Sauces, Vinegar, and Mustard.

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SN 189,548. Broughton Specialty Foods, Inc., Marietta, Ohio. Filed Mar. 25, 1964.

### QUIKEE

For Cake Mixes.

First use Feb. 18, 1964.

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SN 193,158. General Foods Corporation, White Plains, N.Y. Filed May 11, 1964.

### TALL TATERS

The word "Taters" is disclaimed apart from the mark as shown.

For Frozen Prepared French Fried Potato Product.

First use Mar. 12, 1963.

## Class 47 — Wines

SN 177,852. Louis Bert & Cie, Barsac, Gironde, France. Filed S.R. Sept. 27, 1963; Am. P.R. Sept. 24, 1964.

### HENRI MARSAL

The name "Henri Marsal" does not identify any particular individual. Owner of French Reg. No. 45,425, dated Oct. 9, 1949 (Bordeaux); Natl. Inst. No. 465,481.

For Wines.

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SN 188,474. The Stellenbosch Farmers' Winery Limited, Stellenbosch, Cape Province, Republic of South Africa. Filed Mar. 11, 1964.

### TASHEIMER

Owner of South African Reg. No. 2338/57, dated July 29, 1957.

For Wine.

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SN 188,475. The Stellenbosch Farmers' Winery Limited, Stellenbosch, Cape Province, Republic of South Africa. Filed Mar. 11, 1964.

### CHATEAU LIBERTAS

Owner of South African Reg. No. 1565/37, dated Dec. 2, 1937.

For Light Red Wine.

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SN 188,476. The Stellenbosch Farmers' Winery Limited, Stellenbosch, Cape Province, Republic of South Africa. Filed Mar. 11, 1964.

### LA GRATITUDE

The French words "La Gratitude" translated into the English language mean "the gratitude." Owner of South African Reg. No. 1566/37, dated Dec. 2, 1937.

For Light White Wines.

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## Class 48 — Malt Beverages and Liquors

SN 163,036. Drewrys Limited U.S.A., Inc., South Bend, Ind. Filed Feb. 19, 1963.

### EZE-OPEN
### Big D

The term "Ese-Open" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 682,655 and 591,375.

For Beer Sold in Cans.

First use Nov. 30, 1962.

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## Class 49 — Distilled Alcoholic Liquors

SN 184,068. The Huntington Creek Corporation, d.b.a. Leroux & Company, Ruffsdale, Pa. Filed Jan. 6, 1964.

### TURKISH DELIGHT

No claim is made to the word "Turkish" as used on liqueur made with Turkish fruits.

For Liqueurs.

First use Oct. 21, 1963.

SN 188,805. Schenley Industries, Inc., New York, N.Y., assignee of Schenley Distillers, Inc., New York, N.Y. Filed Mar. 16, 1964.

## AMERICANA

Owner of Reg. Nos. 610,493 and 677,810.
For Blended Whiskey.
First use Feb. 19, 1964.

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SN 188,807. Joseph S. Finch and Company, New York, N.Y., assignee of Schenley Distillers, Inc., New York, N.Y. Filed Mar. 16, 1964.

## ROYAL WEDDING

For Blended Whiskey.
First use Feb. 19, 1964.

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### Class 51 — Cosmetics and Toilet Preparations

SN 143,672. Wesley J. Richards, d.b.a. Research Specialties Co., Santa Monica, Calif. Filed May 2, 1962.

## MISTI

Owner of Reg. No. 708,509.
For Hair Conditioner.
First use Nov. 9–13, 1942.

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SN 164,380. Parfums Guy Laroche, Paris, France. Filed Nov. 18, 1963.

## TOUJOURS GUY LAROCHE

The word "Toujours" is the French language equivalent of the English word "always." Owner of French Reg. No. 508,322, dated Oct. 11, 1962 (Seine); Natl. Inst. No. 192,885.
For Perfumery.

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SN 167,482. L'Oreal, Paris, France. Filed Apr. 24, 1963.

## FOAM POEM

Owner of French Reg. No. 507,242, dated Aug. 9, 1962 (Seine); Natl. Inst. No. 190,012.
For Bath Liquids, Such as Foaming Bath Oils, and Bath Salts.

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SN 183,104. Pharmafac, Inc., Austin, Tex. Filed Dec. 16, 1963.

SunGard

For Topical Use of Medicinal Cream, Lotion and Salve To Protect From Harmful Solar Radiation.
First use Aug. 1, 1963.

SN 183,145. Western Beauty Supply, Inc., Phoenix, Ariz. Filed Dec. 16, 1963.




For Hair Spray, Wave Sets, Dandruff Remover, Facial Creams, Lipstick and Rouge.
First use on or before Dec. 11, 1962.

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### Class 52 — Detergents and Soaps

SN 142,661. Texas Refinery Corp., Fort Worth, Tex. Filed Apr. 19, 1962.

## TETRALENE

For Sludge and Carbon Remover for Use in Connection With Automotive Engines and Distributed Through Gasoline Stations.
First use Apr. 12, 1962.

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SN 146,640. Magnolia Paper Co., Houston, Tex. Filed June 11, 1962.

Wil!
...will do it!

For Multi-Purpose Cleaner.
First use Apr. 6, 1962.

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SN 184,763. The Tinolan Corporation of America, Toledo, Ohio. Filed Jan. 16, 1964.

## TINOLAN

For Carpet Cleaning, Conditioning and Mothproofing Compound.
First use May 6, 1924.

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SN 185,535. Shontex, Inc., Los Angeles, Calif. Filed Jan. 28, 1964.

dandrid

For Dandruff Shampoo.
First use Jan. 7, 1964.

# SERVICE MARKS

### Class 100 — Miscellaneous

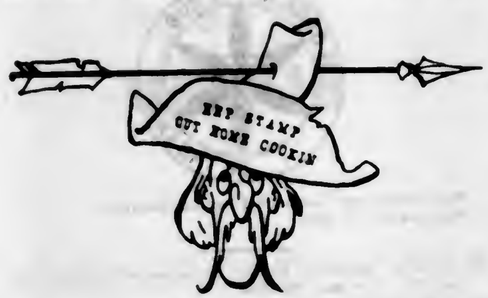
SN 181,918. Paddock of Texas, Inc., Dallas, Tex., by merger from Paddock Engineering Co. of Texas, Dallas, Tex. Filed Nov. 26, 1963.

Paddock
Seablue

Owner of Reg. Nos. 603,196, 653,643, and others.
For Technical and Engineering Services to Others in the Construction of Swimming Pools; Furnishing Sales Assistance Material To Aid Swimming Pool Builders in Securing Contracts To Construct Pools; and Planning and Designing Swimming Pools for Others.
First use Jan. 7, 1961.

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SN 187,808. 7 Steers, Inc., Atlanta, Ga. Filed Mar. 2, 1964.




The words "Home Cookin" are disclaimed apart from the mark as shown.
For Restaurant Services.
First use Jan. 15, 1957.

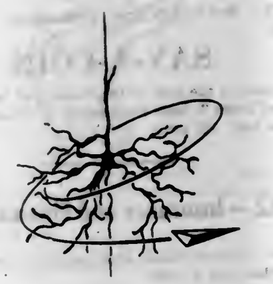
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SN 188,779. National Cotton Council of America, d.b.a. National Cotton Council or as the Cotton Council, Memphis, Tenn. Filed Mar. 16, 1964.




Owner of Reg. Nos. 653,551 and 670,025.
For Association Services—Namely, Promoting the Sale of Cotton and Cotton Products.
First use February 1961.

SN 189,131. Adaptronics, Inc., Alexandria, Va. Filed Mar. 20, 1964.



For Research, Development and Engineering Services in the Field of Electronics, Materials Development and Computing Machinery.
First use October 1962.

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### Class 101 — Advertising and Business

SN 142,009. Acme Markets, Inc., Philadelphia, Pa., by change of name from American Stores Company, Philadelphia, Pa. Filed Apr. 11, 1962.

Lancaster Brand

No claim is made to the word "Brand" apart from the mark as shown. Owner of Reg. Nos. 421,234 and 551,261.
For Services Comprising Complete Meat Service Including Preparing Cuts of Meat to Order, and in Accordance With Applicant's Pre-Determined Standards.
First use May 4, 1960.

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SN 160,522. Wright Engineering Company, Inc., Pasadena, Calif. Filed Jan. 10, 1963.



For Manufacturer's Representative Services in the Field of Electrical, Electronic and Mechanical Equipment.
First use May 15, 1961.

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SN 168,241. Spin & Win, Inc., Dallas, Tex. Filed May 6, 1963.

## SPIN & WIN

For Promoting the Sale of the Goods of Others by Means of a Wheel of Chance Game for Determining the Amount of the Premium and the Coupons Which Entitle the Holders of a Predetermined Group of Coupons Bearing Concealed Indicia To Participate in the Game.
First use Mar. 28, 1963.

SN 175,058. Queen's-Way, Inc., Skokie, Ill. Filed Aug. 14, 1963.

## QUEEN'S-WAY

For Shopping Services Rendered Through Home Party Fashion Showings.
First use July 29, 1963.

SN 179,067. Sav-A-Coin, Inc., Philadelphia, Pa. Filed Oct. 15, 1963.

## SAV-A-COIN

For Promoting the Sale of the Goods and Services of Others by Means of Sales Tokens Redeemable in Goods.
First use Sept. 19, 1963.

## Class 102 — Insurance and Financial

SN 141,905. United Benefit Life Insurance Company, Omaha, Nebr. Filed Apr. 9, 1962.



Applicant disclaims the words "Flexible Fund Annuity" apart from the mark as shown in the drawing.
For Underwriting Annuities.
First use Mar. 1, 1962.

SN 173,671. The North American Company for Life, Accident and Health Insurance, Chicago, Ill. Filed July 24, 1963.

NOA *The North American Company for Life, Accident and Health Insurance*

Without waiving its common law rights herein, applicant makes no claim to the representation of the map of North America, apart from the mark as shown.
For Insurance Services—Namely, the Underwriting of Life, Accident, and Health Insurance and Every Insurance Appertaining Thereto.
First use Jan. 10, 1963.

SN 173,672. The North American Company for Life, Accident and Health Insurance, Chicago, Ill. Filed July 24, 1963.

NOA

Without waiving its common law rights herein, applicant makes no claim to the representation of the map of North America, apart from the mark as shown.
For Insurance Services—Namely, the Underwriting of Life, Accident, and Health Insurance and Every Insurance Appertaining Thereto.
First use Jan. 10, 1963.

SN 176,967. The Statesman Insurance Company, Indianapolis, Ind. Filed Sept. 13, 1963.




For Underwriting of Insurance.
First use Nov. 16, 1956.

SN 181,058. Ohio Federal Savings & Loan Association of Columbus, Columbus, Ohio. Filed Nov. 13, 1963.

## DIVI-CHEK

For Banking Services—Namely, Savings Account Services.
First use June 26, 1963.

SN 186,879. Montgomery County Bank and Trust Company, Norristown, Pa. Filed Feb. 17, 1964.




For General and Commercial Banking Services.
First use Feb. 3, 1960.

SN 189,134. American Mutual Reinsurance Company, Chicago, Ill. Filed Mar. 20, 1964.

## AMRECO

For Writing of Reinsurance.
First use August 1946.

## Class 103 — Construction and Repair

SN 163,624. General Electric Company, New York, N.Y. Filed Feb. 28, 1963.




The drawing is lined for the color grey, but color is not claimed as a special feature of the mark.
For Construction and Repair Services Rendered to the Public (1) by Service Centers in Several States Operated by



It To Repair and Service Light Electrical Equipment, Such as Housewares, Household Appliances, Electric Blankets, Heaters, Ranges, Refrigerators, Washers, Toasters, Irons, etc., Principally of Types Sold by It in Commerce; and (2) by Service Shops in Several States Operated by It To Repair, Reconstruct, and Service, Electrical Equipment, Principally of Character Sold by It in Commerce for Use in Industry, Such as Turbines, Motors, Generators, Transformers, Regulators and Many Other Items; All of Which Service Centers and Service Shops Are Staffed by Its Employees, or by Employees Over Whom It Exercises Control as to Quality of Service Rendered.
First use May 1, 1962.

SN 163,625. General Electric Company, New York, N.Y. Filed Feb. 28, 1963.




The drawing is lined for the color grey, but color is not claimed as a special feature of the mark.
For Construction and Repair Services Rendered to the Public (1) by Service Centers in Several States Operated by It To Repair and Service Light Electrical Equipment, Such as Housewares, Household Appliances, Electric Blankets, Heaters, Ranges, Refrigerators, Washers, Toasters, Irons, etc., Principally of Types Sold by It in Commerce; and (2) by Service Shops in Several States Operated by It To Repair, Reconstruct, and Service, Electrical Equipment, Principally of Character Sold by It in Commerce for Use in Industry, Such as Turbines, Motors, Generators, Transformers, Regulators and Many Other Items; All of Which Service Centers and Service Shops Are Staffed by Its Employees, or by Employees Over Whom It Exercises Control as to Quality of Service Rendered.
First use May 1, 1962.

SN 169,885. Starline Structures, Inc., Foxboro, Mass. Filed May 28, 1963.

## DON'T MOVE OUT— MOVE UP

For Dormer and Upper Level House Construction.
First use May 22, 1960.

SN 188,369. Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Mar. 10, 1964.



For Automotive Vehicle Maintenance and Repair, Lubrication, Car Washing, Battery Charging, Wheel Changing, and Tire Repair.
First use March 1957.

## Class 104 — Communication

SN 188,079. Columbia Broadcasting System, Inc., New York, N.Y. Filed Mar. 6, 1964.

## MEGALOPOLIS AT NIGHT

For Title of a Radio Program Series—Namely, News and Information.
First use Jan. 1, 1963.

## Class 105 — Transportation and Storage

SN 151,102. U.S.A.C. Transport, Inc., Detroit, Mich. Filed Aug. 13, 1962.

## USAC

For Interstate Motor Transportation by Truck.
First use Nov. 3, 1944.

SN 165,527. National Auto Renting Co., Inc., New York, N.Y. Filed Mar. 27, 1963.

NARCO INC

For Leasing and Rental of Automotive Vehicles—Namely, Passenger Cars and Trucks.
First use on or about Oct. 1, 1936.

SN 182,889. Omnifight Helicopters, Inc., Beulah, Mich. Filed Dec. 12, 1963.

## HELIFREIGHT

For Freight Hauling Service by Helicopters.
First use Aug. 1, 1963.

## Class 106 — Material Treatment

SN 184,503. Providence Metallising Company, Inc., Providence, R.I. Filed Jan. 13, 1964.

## COLORSPEC

For Providing a Decorative and Protective Finish to Articles of Manufacture.
First use on or about Oct. 4, 1963.

## Class 107 — Education and Entertainment

SN 161,273. Ohio Valley Professional Athletic Association, Inc., Wheeling, W. Va. Filed Jan. 23, 1963.




The drawing is lined for the color yellow. The name "Wheeling" is disclaimed apart from the mark as shown.

For Entertainment Services in the Nature of Professional Football Games.

First use September 1962.

SN 183,266. International Car Club Association, Los Angeles, Calif. Filed Dec. 19, 1963.

### AUTOLYMPICS

For Staging of Automobile Contests in Which the Participants Are Judged on Their Overall Driving Skills.

First use Aug. 10, 1963.

SN 188,832. Bobby Crafford, Newport, Ark. Filed Mar. 9, 1964.

### THE PACERS

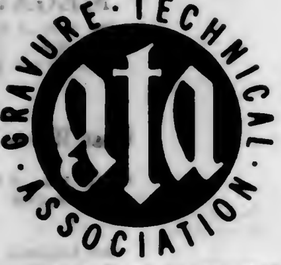
For Musical Group Offering Vocal and Instrumental Renditions for Entertainment Services.

First use Oct. 1, 1957.

# COLLECTIVE MEMBERSHIP MARKS

## Class 200

SN 177,790. The Gravure Technical Association, Inc., New York, N.Y. Filed Sept. 26, 1963.




For Indicating Membership in the Applicant Association.

First use Oct. 2, 1961.

# CERTIFICATION MARKS

## Class A — Goods

SN 165,556. U.S. Rice Export Development Association, Washington, D.C. Filed Mar. 8, 1963.




The mark certifies that the rice to which the mark is applied is edible rice grown in the United States which is of uniform size, clean, and generally of high quality.

For Rice.

First use Feb. 15, 1963.

# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

## Class 1 — Raw or Partly Prepared Materials

784,986. MISCELLANEOUS DESIGN. Chomerics, Inc. MULTIPLE CLASS (Classes 1, 14 and 21). SN 161,955. Pub. 12–1–64. Filed 2–4–63.

784,987. NU-DWARF. Ross H. Rasmussen. SN 165,075. Pub. 12–1–64. Filed 3–20–63.

784,988. SANFIX. Halliburton Company. MULTIPLE CLASS (Classes 1 and 6). SN 170,188. Pub. 12–1–64. Filed 6–3–63.

784,989. MEXIKING. Northrup, King & Co. SN 187,952. Pub. 12–1–64. Filed 3–4–64.

784,990. EPOCRYL. Shell Oil Company. SN 188,921. Pub. 12–1–64. Filed 3–17–64.

784,991. BRESIN. Hercules Powder Company. SN 189,171. Pub. 12–1–64. Filed 3–20–64.

784,992. ASTRONAUT. Select Nurseries, Inc. SN 189,508. Pub. 12–1–64. Filed 3–24–64.

784,993. BREA. Select Nurseries, Inc. SN 189,509. Pub. 12–1–64. Filed 3–24–64.

784,994. RUBY POINT. Select Nurseries, Inc. SN 189,510. Pub. 12–1–64. Filed 3–24–64.

784,995. KAOFREE. J. M. Huber Corporation. SN 190,930. Pub. 12–1–64. Filed 4–13–64.

## Class 2 — Receptacles

784,996. KRIB KADDIE. Fox Crafts. SN 165,049. Pub. 12–1–64. Filed 3–20–63.

784,997. "PETTI-TOTE." Lee Shipley, d.b.a. Country Cottons. SN 173,389. Pub. 12–1–64. Filed 7–19–63.

784,998. GENERAL TIRE AND DESIGN. The General Tire & Rubber Company. SN 178,604. Pub. 12–1–64. Filed 10–9–63.

784,999. TIDY-TRAY. Sun Industries, Inc. SN 179,165. Pub. 12–1–64. Filed 10–16–63.

785,000. BIPAX. Tra-Con, Inc. SN 182,845. Pub. 12–1–64. Filed 12–11–63.

785,001. MARQUEE. American Can Company. SN 190,573. Pub. 12–1–64. Filed 4–8–64.

785,002. "WONDER-GLO." American Can Company. SN 190,574. Pub. 12–1–64. Filed 4–8–64.

785,003. HANDI-WARE. The Dow Chemical Company. SN 191,843. Pub. 12–1–64. Filed 4–23–64.

785,004. MET'R-LOC. H & K Sales Co., Inc. SN 194,180. Pub. 12–1–64. Filed 5–25–64.

785,005. REPRESENTATION OF A LINE OF DIAMOND FIGURES (DESIGN). Maryland Cup Corporation. SN 198,426. Pub. 12–1–64. Filed 7–23–64.

785,006. CANOUFLAGE. Jarco Metal Products Corp. SN 198,738. Pub. 12–1–64. Filed 7–29–64.

785,007. DU-O-CUP. Foster Grant Co., Inc. SN 200,340. Pub. 12–1–64. Filed 8–21–64.

785,008. MISCELLANEOUS DESIGN. Mercury Packaging Company. SN 200,654. Pub. 12–1–64. Filed 8–26–64.

## Class 6 — Chemicals and Chemical Compositions

784,988. (See Class 1 for this trademark.)

785,009. HUMPTY DUMPTY. Eureka Specialty Printing Company. CONSOLIDATED CERTIFICATE. SN 142,295, pub. 11–24–64, filed 4–16–62, Cl. 6; SN 142,296, pub. 11–24–64, filed 4–16–62, Cl. 16; SN 142,298, pub. 11–24–64, filed 4–16–62, Cl. 37; SN 142,299, pub. 11–24–64, filed 4–16–62, Cl. 38.

785,010. KALEIDOSCOPE. S. C. Johnson & Son, Inc. SN 149,091. Pub. 12–1–64. Filed 7–16–62.

785,011. SILKAND. Onyx Chemical Corporation. SN 154,836. Pub. 7–30–63. Filed 10–9–62.

785,012. REDI-TONE. L. B. Russell Chemicals, Inc. SN 161,281. Pub. 11–5–63. Filed 1–23–63.

785,013. REDI-FIX. L. B. Russell Chemicals, Inc. SN 161,282. Pub. 11–5–63. Filed 1–23–63.

785,014. PURASAN. Guard Chemical Co., Inc. SN 161,990. Pub. 3–3–64. Filed 2–4–63.

785,015. ATRACTA. Atracta Wax Corporation. MULTIPLE CLASS (Classes 6, 16, and 52). SN 170,974. Pub. 12–1–64. Filed 6–14–63.

785,016. 3 LEGGED CAT (DESIGN). Agip Società per Azioni. SN 177,212. Pub. 11–10–64. Filed 9–18–63.

785,017. RO-PEL. The Upjohn Company. SN 185,636. Pub. 12–1–64. Filed 1–29–64.

785,018. TRACE. L. H. Kellogg Chemical Company. SN 189,317. Pub. 12–1–64. Filed 3–23–64.

785,019. FORMAL-CREME. L. H. Kellogg Chemical Company. SN 189,319. Pub. 12–1–64. Filed 3–23–64.

785,020. MILDEX. Nott Manufacturing Co., Inc. SN 190,109. Pub. 12–1–64. Filed 4–1–64.

785,021. AQUA-D-CHLOR. Sternco Industries, Inc. SN 190,988. Pub. 12–1–64. Filed 4–13–64.

785,022. AQUASORB. Mallinckrodt Chemical Works. SN 191,190. Pub. 12–1–64. Filed 4–15–64.

785,023. HUKILL. Hukill Chemical Corporation. SN 192,399. Pub. 12–1–64. Filed 4–30–64.

785,024. CROWNEX. Crown Zellerbach Corporation. SN 194,708. Pub. 12–1–64. Filed 6–2–64.

785,025. PONTIFICAL. Will & Baumer Candle Co., Inc. SN 194,764. Pub. 12–1–64. Filed 5–27–64.

785,026. AERO. American Cyanamid Company. SN 194,852. Pub. 12–1–64. Filed 6–4–64.

785,027. OR. Mallinckrodt Chemical Works. SN 194,894. Pub. 12–1–64. Filed 6–4–64.

785,028. FREON-214. E. I. du Pont de Nemours and Company. SN 194,971. Pub. 12–1–64. Filed 6–5–64.

785,029. F-214. E. I. du Pont de Nemours and Company. SN 194–972. Pub. 12–1–64. Filed 6–5–64.

785,030. B'HAVE. Lowe's, Inc. SN 195,000. Pub. 12–1–64. Filed 6–5–64.

785,031. SOS. The Dow Chemical Company. SN 195,073. Pub. 12–1–64. Filed 6–8–64.

785,032. TIM-BOR. United States Borax & Chemical Corporation. SN 195,569. Pub. 12–1–64. Filed 6–12–64.

785,033. PRUV. Chas. Pfizer & Co., Inc. SN 195,705. Pub. 12–1–64. Filed 6–15–64.

785,034. AERO. American Cyanamid Company. SN 195,907. Pub. 12–1–64. Filed 6–18–64.

785,035. FLY FREE EDDIE AND DESIGN. Atomic Basic Chemicals Corporation. SN 200,616. Pub. 12–1–64. Filed 8–26–64.

## Class 8 — Smokers' Articles, Not Including Tobacco Products

785,036. TREXILOY. Habitat, Inc. SN 172,488. Pub. 12–1–64. Filed 7–5–63.

785,037. CUPID. Zaima Corporation of America. SN 192,447. Pub. 12-1-64. Filed 4-30-64.

## Class 10 — Fertilizers

785,038. MINERALIME. Spang and Company. SN 153,031. Pub. 12-1-64. Filed 9-12-62.

## Class 12 — Construction Materials

785,039. PICON. Insular Products Corporation. SN 158,712. Pub. 12-1-64. Filed 12-7-62.

785,040. HONEYCOMB (DESIGN). Hexcel Products Inc. SN 159,891. Pub. 12-1-64. Filed 12-28-62.

785,041. WEATHERTROL. Decatur Iron & Steel Company. SN 169,615. Pub. 12-1-64. Filed 5-24-63.

785,042. TECTIG. Libbey-Owens-Ford Glass Company. SN 175,045. Pub. 12-1-64. Filed 8-14-63.

785,043. KADEX. Kadex Corporation. SN 178,354. Pub. 12-1-64. Filed 10-4-63.

785,044. SUN VALLEY. American Metal Climax, Inc. SN 189,550. Pub. 12-1-64. Filed 3-30-64.

785,045. WINSUM. F. E. Schumacher Company. SN 193,223. Pub. 12-1-64. Filed 5-11-64.

785,046. ALUM-A-FELT. The Eagle-Picher Company. SN 193,344. Pub. 12-1-64. Filed 5-13-64.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

785,047. VALSTRAP. Band-It Company. SN 179,856. Pub. 12-1-64. Filed 10-28-63.

785,048. GP. Granville-Phillips Company. SN 179,897. Pub. 12-1-64. Filed 10-28-63.

785,049. STRINGER AND DESIGN. Utilities Safety Supply Co., Inc. SN 179,970. Pub. 12-1-64. Filed 10-28-63.

785,050. BYROS. William Ross & Sons Limited. SN 190,844. Pub. 12-1-64. Filed 4-10-64.

785,051. THREE STARS (DESIGN). Star Heel Plate Co., Inc. SN 194,533. Pub. 12-1-64. Filed 5-28-64.

785,052. "IN-EN-OUT." F. Dexter Sanborn, Jr., d.b.a. Dexter Sanborn & Company. SN 194,663. Pub. 12-1-64. Filed 6-1-64.

785,053. POLYHINGE. The Electric Storage Battery Company. SN 194,975. Pub. 12-1-64. Filed 6-5-64.

785,054. JB AND DESIGN. Jaybee Manufacturing Corporation. SN 198,052. Pub. 12-1-64. Filed 7-17-64.

## Class 14 — Metals and Metal Castings and Forgings

784,986. (See Class 1 for this trademark.)

785,055. HI-AMP. American Smelting and Refining Company. SN 165,018. Pub. 12-1-64. Filed 3-20-63.

785,056. H AND DESIGN. Hammond Sheet Metal Company. SN 181,776. Pub. 12-1-64. Filed 11-22-63.

785,057. REDI-KOTE. United States Steel Corporation. SN 185,461. Pub. 12-1-64. Filed 1-27-64.

785,058. INSTANT ALUMINUM. Mideast Aluminum Corp. SN 196,459. Pub. 12-1-64. Filed 6-25-64.

## Class 15 — Oils and Greases

785,059. SOHIKOTE. The Standard Oil Company. SN 194,429. Pub. 12-1-64. Filed 5-27-64.

785,060. SOHIFLO. The Standard Oil Company. SN 195,560. Pub. 12-1-64. Filed 6-12-64.

785,061. SOHITUN. The Standard Oil Company. SN 195,563. Pub. 12-1-64. Filed 6-12-64.

785,062. INLOX 44. Everlube Corporation of America, d.b.a. Everlube Corporation. SN 196,650. Pub. 12-1-64. Filed 6-29-64.

785,063. LORELEI. Dacom, Inc. SN 198,540. Pub. 12-1-64. Filed 7-27-64.

785,064. RFS-1000. Fuels Research Corporation. SN 198,546. Pub. 12-1-64. Filed 7-27-64.

## Class 16 — Protective and Decorative Coatings

785,015. (See Class 6 for this trademark.)

785,065. THOMSON'S AND DESIGN. Thomson Porcelite Paint Company. SN 163,086. Pub. 12-1-64. Filed 2-19-63.

785,066. VITHANE. The Goodyear Tire & Rubber Company. SN 167,723. Pub. 12-1-64. Filed 4-29-63.

785,067. TECOTE. Thompson and Company. SN 175,151. Pub. 12-1-64. Filed 8-15-63.

## Class 17 — Tobacco Products

785,068. ORO DE CUBA. Casa Cuba Cigar Co., Inc., d.b.a. Z. Garcia y Cia. SN 179,194. Pub. 12-1-64. Filed 10-17-63.

## Class 18 — Medicines and Pharmaceutical Preparations

785,069. TINEAX. Wallace & Tiernan Inc. SN 170,003. Pub. 12-1-64. Filed 5-29-63.

785,070. 4-I-V. Benjamin N. Silberg, d.b.a. Armail Laboratory. SN 176,324. Pub. 12-1-64. Filed 9-4-63.

785,071. VIVO-ZYME. Soluble Nutrients, Inc. SN 179,074. Pub. 12-1-64. Filed 10-15-63.

785,072. UDDER-EZE. American Home Products Corporation. SN 182,558. Pub. 12-1-64. Filed 12-9-63.

785,073. SCOUR-MED. Dr. Salsbury's Laboratories. SN 186,447. Pub. 12-1-64. Filed 2-11-64.

785,074. GREEK LETTER PI (DESIGN). Pi-Lon Laboratories, Incorporated. SN 189,358. Pub. 12-1-64. Filed 3-23-64.

785,075. LYSINATAL. The Purdue Frederick Company. SN 191,211. Pub. 12-1-64. Filed 4-15-64.

785,076. B. E. PREP. Gray Pharmaceutical Co., assignee of The Purdue Frederick Company. SN 191,880. Pub. 12-1-64. Filed 4-23-64.

785,077. VOLITANE. Trent Pharmaceuticals, Inc. SN 192,336. Pub. 12-1-64. Filed 4-29-64.

785,078. VYLAR. Trent Pharmaceuticals, Inc. SN 192,337. Pub. 12-1-64. Filed 4-29-64.

785,079. COLUMN AND FEMININE FIGURE (DESIGN). G. D. Searle & Co. SN 192,761. Pub. 12-1-64. Filed 5-5-64.

785,080. NOP-K-PLEX. Nopco Chemical Company. SN 193,033. Pub. 12-1-64. Filed 5-8-64.

785,081. DYRENIUM. Smith Kline & French Laboratories. SN 193,818. Pub. 12-1-64. Filed 5-19-64.

785,082. HOMATROCEL. Professional Pharmacal Co., Inc. SN 196,194. Pub. 12-1-64. Filed 6-22-64.



785,083. ACLERON. Geigy Chemical Corporation. SN 196,271. Pub. 12-1-64. Filed 6-23-64.

785,084. PARAZOLIDIN. Geigy Chemical Corporation. SN 196,273. Pub. 12-1-64. Filed 6-23-64.

785,085. CEREBRO-NICIN. David A. Brown and George Anton (joint owners), d.b.a. The Brown Pharmaceutical Company. SN 196,343. Pub. 12-1-64. Filed 6-24-64.

785,086. MUCOVAX. The Dow Chemical Company. SN 196,364. Pub. 12-1-64. Filed 6-24-64.

785,087. MENOTABS. The Upjohn Company. SN 196,487. Pub. 12-1-64. Filed 6-25-64.

785,088. DR. SAM THE FIRST-AID MAN. Chesebrough-Pond's Inc. SN 196,620. Pub. 12-1-64. Filed 6-29-64.

785,089. DR. SAM THE FIRST-AID MAN. Chesebrough-Pond's Inc. SN 196,622. Pub. 12-1-64. Filed 6-29-64.

785,090. ALIVE. Creighton Laboratories, Inc. SN 196,767. Pub. 12-1-64. Filed 6-30-64.

785,091. RENEW. Creighton Laboratories, Inc. SN 196,768. Pub. 12-1-64. Filed 6-30-64.

## Class 19 — Vehicles

785,092. UA. United Aircraft Corporation. SN 170,782. Pub. 12-1-64. Filed 6-11-63.

785,093. COTTONTAIL. Holiday Yachts, Inc. SN 187,666. Pub. 12-1-64. Filed 2-28-64.

785,094. VICEROY BY VAGABOND. Guerdon Industries, Inc. SN 191,171. Pub. 12-1-64. Filed 4-15-64.

785,095. WESTCODE. Westinghouse Brake and Signal Company Limited. SN 194,761. Pub. 12-1-64. Filed 6-2-64.

785,096. MULTALLOY. Boyertown Auto Body Works Incorporated., SN 195,059. Pub. 12-1-64. Filed 6-8-64.

785,097. PS-2CD AND DESIGN. Pullman Incorporated. SN 195,247. Pub. 12-1-64. Filed 6-9-64.

785,098. CAPSULE. Berg Mfg. & Sales Co. SN 195,274. Pub. 12-1-64. Filed 6-10-64.

## Class 21 — Electrical Apparatus, Machines, and Supplies

785,099. B K AND DESIGN. Bruel & Kjaer. MULTIPLE CLASS (Classes 21 and 26). SN 109,032. Pub. 12-1-64. Filed 11-25-60.

785,100. HELIOTEK AND DESIGN. Textron Electronics, Inc. SN 162,684. Pub. 12-1-64. Filed 3-22-63.

785,101. ALPHA. Far Eastern Commerce Corporation. SN 167,717. Pub. 12-1-64. Filed 4-29-63.

785,102. SHIELDS. Shields, Inc. of Attleboro, Mass. SN 170,953. Pub. 12-1-64. Filed 6-13-63.

785,103. F AND DESIGN. Flexifior Electrical Systems, Inc. SN 180,496. Pub. 12-1-64. Filed 11-5-63.

785,104. ASBESTOS EBONY. Johns-Manville Corporation. SN 180,898. Pub. 12-1-64. Filed 11-12-63.

785,105. LUMA-LITE. Prescolite Manufacturing Corporation. SN 181,408. Pub. 12-1-64. Filed 11-18-63.

785,106. KLEEN KART. Purex Corporation, Ltd., d.b.a. Holt Manufacturing Company. SN 184,251. Pub. 12-1-64. Filed 1-8-64.

785,107. DESIGN OF LIGHT BULB LINED FOR TAN. Botany Industries, Inc., d.b.a. Sea and Ski Company. SN 185,490. Pub. 12-1-64. Filed 1-28-64.

785,108. REPRESENTATION OF A FLAG AND DESIGN. American Pacific European Trading, Inc., d.b.a. Ampetco Inc. MULTIPLE CLASS (Classes 21 and 50). SN 188,177. Pub. 12-1-64. Filed 3-9-64.

785,109. SAR. Varo, Inc. SN 188,933. Pub. 12-1-64. Filed 3-17-64.

785,110. IBR. Varo, Inc. SN 188,934. Pub. 12-1-64. Filed 3-17-64.

785,111. 9 AND DESIGN. Union Carbide Corporation. SN 191,812. Pub. 12-1-64. Filed 4-22-64.

785,112. AQUA RANGE. The Cleveland Heater Co. SN 192,008. Pub. 12-1-64. Filed 4-27-64.

785,113. UNISET. Durant Manufacturing Company. SN 199,806. Pub. 12-1-64. Filed 8-13-64.

785,114. REDI-LOK. Gremar Manufacturing Co., Inc. SN 199,819. Pub. 12-1-64. Filed 8-13-64.

## Class 22 — Games, Toys, and Sporting Goods

785,115. TRANSACTION AND DESIGN. John R. Tusson. SN 160,565. Pub. 12-1-64. Filed 1-11-63.

785,116. LITTLE OSCAR. Lambert Lucietto and Ledo Lucietto (joint venture), d.b.a. Little Oscar. SN 163,637. Pub. 12-1-64. Filed 2-28-63.

785,117. PENNY. American Doll & Toy Corp. SN 170,720. Pub. 12-1-64. Filed 6-11-63.

785,118. SPITTIN' IMAGE. Daisy Manufacturing Company. SN 174,348. Pub. 12-1-64. Filed 8-5-63.

785,119. CURV CARE. Coach's Sporting Goods Corporation. SN 177,768. Pub. 12-1-64. Filed 9-26-63.

785,120. FUN BOWL. Realistic Games Inc. SN 178,371. Pub. 12-1-64. Filed 10-4-63.

785,121. CORTINA. Cortina Ski Company. SN 181,019. Pub. 12-1-64. Filed 11-18-63.

785,122. HOC-STRAP. KBS, Inc. SN 181,899. Pub. 12-1-64. Filed 11-26-63.

785,123. MIKASA. Myojo Rubber Industry Co., Ltd. SN 182,433. Pub. 12-1-64. Filed 12-5-63.

785,124. GENERAL TIRE AND G DESIGN. The General Tire & Rubber Company. SN 183,171. Pub. 12-1-64. Filed 12-17-63.

785,125. COURT STAR AND DESIGN. Hillcrest Sporting Goods, Inc. SN 185,037. Pub. 12-1-64. Filed 1-21-64.

785,126. 299 AND DESIGN. Scott J. Yancey, d.b.a. 299 Products. SN 186,426. Pub. 12-1-64. Filed 2-10-64.

785,127. BARBIE'S KEYS TO FAME. Mattel, Inc. SN 186,960. Pub. 12-1-64. Filed 2-18-64.

785,128. SEE SAW. Cotton Goods Manufacturing Company. SN 188,965. Pub. 12-1-64. Filed 3-18-64.

785,129. GUMBY. Clokey Productions, Inc. SN 189,146. Pub. 12-1-64. Filed 3-20-64.

785,130. ACTION MARINE. Hassenfeld Bros., Inc. SN 189,295. Pub. 12-1-64. Filed 3-23-64.

785,131. ACTION SAILOR. Hassenfeld Bros., Inc. SN 189,296. Pub. 12-1-64. Filed 3-23-64.

785,132. ACTION SOLDIER. Hassenfeld Bros., Inc. SN 189,297. Pub. 12-1-64. Filed 3-23-64.

785,133. ACTION PILOT. Hassenfeld Bros., Inc. SN 189,298. Pub. 12-1-64. Filed 3-23-64.

785,134. OTARIE. U.S. Divers Co., Inc. SN 189,403. Pub. 12-1-64. Filed 3-23-64.

785,135. TROUBLE MAKER. Gudebrod Bros. Silk Co., Inc. SN 190,612. Pub. 12-1-64. Filed 4-8-64.

785,136. TOOTY FROOTY. Hassenfeld Bros., Inc. SN 190,723. Pub. 12-1-64. Filed 4-9-64.

785,137. GONDOLYS. Henri Fournillier. SN 190,728. Pub. 12-1-64. Filed 4-9-64.

785,138. GLADYL. B. F. Gladding & Co., Inc. SN 191,279. Pub. 12-1-64. Filed 4-16-64.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

785,139. AIR-O-MATIC. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co. SN 166,002. Pub. 6-9-64. Filed 4-3-63.

785,140. SHIELDS. Shields, Inc. of Attleboro, Mass. SN 170,952. Pub. 12–1–64. Filed 6–13–63.

785,141. MIKRON HAESLER AND DESIGN. Mikron Haesler S.A. SN 180,662. Pub. 12–1–64. Filed 11–7–63.

785,142. AMF. American Machine & Foundry Company. SN 180,820. Pub. 12–1–64. Filed 11–12–63.

785,143. WIL-DEX AND DESIGN. Ex-Cell-O Corporation. SN 182,063. Pub. 12–1–64. Filed 11–29–63.

785,144. CHEM-GARD. Cooper Alloy Corporation. SN 182,248. Pub. 12–1–64. Filed 12–3–63.

785,145. BLUE DART ETC. AND DESIGN. General Pneumatic Products Corporation. SN 183,583. Pub. 12–1–64. Filed 12–26–63.

785,146. GRINDEX HYDROMASTER. Aktiebolaget Kirstenson Och Grahs. SN 186,923. Pub. 12–1–64. Filed 2–18–64.

785,147. TUF-STUF. Stowe-Woodward, Inc. SN 192,229. Pub. 12–1–64. Filed 4–28–64.

785,148. TACCONE INDEXED-INLINE SYSTEM AND DESIGN. Taccone Corporation. SN 192,436. Pub. 12–1–64. Filed 4–30–64.

785,149. FERTI-SPRAY. Clover Chemical Company. SN 193,262. Pub. 12–1–64. Filed 5–12–64.

785,150. AMERICAN TREASURE. Imperial Knife Associated Companies, Inc. SN 193,376. Pub. 12–1–64. Filed 5–13–64.

785,151. MORANIT-WEBSTRICK. Frans Morat G.m.b.H. MULTIPLE CLASS (Classes 23, 39, and 42). SN 193,689. Pub. 12–1–64. Filed 5–18–64.

785,152. SPRITE. Imperial Knife Associated Companies, Inc. SN 195,670. Pub. 12–1–64. Filed 6–15–64.

785,153. NOB HILL. Imperial Knife Associated Companies, Inc. SN 195,671. Pub. 12–1–64. Filed 6–15–64.

785,154. EXCELSIOR. Imperial Knife Associated Companies, Inc. SN 195,672. Pub. 12–1–64. Filed 6–15–64.

785,155. THE VILLAGER. Imperial Knife Associated Companies, Inc. SN 196,277. Pub. 12–1–64. Filed 6–23–64.

785,156. COSCOB. Imperial Knife Associated Companies, Inc. SN 196,278. Pub. 12–1–64. Filed 6–23–64.

785,157. MILLER. Flick-Reedy Corporation. SN 196,959. Pub. 12–1–64. Filed 7–2–64.

785,158. SLIDERBELT. M-H Standard Corporation. SN 197,144. Pub. 12–1–64. Filed 7–6–64.

785,159. ROSE DUET. Oneida Ltd. SN 197,611. Pub. 12–1–64. Filed 7–10–64.

785,160. TITAL. Compagnie Industrielle des Céramiques Electroniques (C.I.C.E.). SN 197,860. Pub. 12–1–64. Filed 6–18–64.

785,161. IR-A-JET. The Aldrich Pump Company. SN 197,865. Pub. 12–1–64. Filed 7–15–64.

785,162. GROTESQUE HUMAN MALE (DESIGN). The Warner & Swasey Company. SN 198,009. Pub. 12–1–64. Filed 7–16–64.

785,163. THE DIME STORE. Mechanical Servants, Inc. SN 198,190. Pub. 12–1–64. Filed 7–20–64.

785,164. INSTAMAT AND DESIGN. The Pillsbury Company. SN 198,291. Pub. 12–1–64. Filed 7–21–64.

785,165. DCM CO., INC. Dependable Compressor & Machine Co., Inc. SN 198,721. Pub. 12–1–64. Filed 7–29–64.

785,166. UNITED AND DESIGN. United Drill Bushing Corporation. SN 199,643. Pub. 12–1–64. Filed 8–10–64.

785,167. AIR RAKE. Air Rake Mfg. Co., Inc. SN 199,781. Pub. 12–1–64. Filed 8–13–64.

785,168. VWF. Erinac Equipment Corp. SN 199,979. Pub. 12–1–64. Filed 8–17–64.

785,169. RO-TRAX. Harrington Manufacturing Co., Inc. SN 199,992. Pub. 12–1–64. Filed 8–17–64.

785,170. BLACK BEAR AND DESIGN. Montrose Oil & Belting Co., Inc. SN 200,018. Pub. 12–1–64. Filed 8–17–64.

785,171. UNIWAVE. Uniwave, Inc. SN 200,125. Pub. 12–1–64. Filed 8–18–64.

785,172. HYDRA-PAK. Tangyes Limited. SN 200,213. Pub. 12–1–64. Filed 8–19–64.

785,173. NYLOY. Miniature Precision Bearings, Inc., d.b.a. Split Ball Bearing. SN 200,272. Pub. 12–1–64. Filed 8–20–64.

## Class 24 — Laundry Appliances and Machines

785,174. STEAM-PUFF. The Steam-Puff Co. SN 182,300. Pub. 12–1–64. Filed 12–3–63.

## Class 25 — Locks and Safes

785,175. MASTER AND DESIGN. Master Lock Company. SN 198,754. Pub. 12–1–64. Filed 7–29–64.

785,176. PRESO-MATIC. Preso-Matic Lock Co. SN 199,221. Pub. 12–1–64. Filed 8–4–64.

## Class 26 — Measuring and Scientific Appliances

785,099. (See Class 21 for this trademark.)

785,177. SONNAR. Carl Zeiss Stiftung, d.b.a. Carl Zeiss, assignee of Zeiss Ikon A.G. SN 114,295. Pub. 7–7–64. Filed 2–23–61.

785,178. ROCHAR. Rochar Electronique. SN 168,982. Pub. 12–1–64. Filed 5–13–63.

785,179. THI/M. Edward G. Solecki, d.b.a. Advance Dial Co. SN 177,556. Pub. 12–1–64. Filed 9–23–63.

785,180. IDQ AND DESIGN. IDQ Inc. SN 180,308. Pub. 12–1–64. Filed 11–1–63.

## Class 27 — Horological Instruments

785,181. LANCO. Societe d'Horlogerie de Langendorf. SN 198,439. Pub. 12–1–64. Filed 7–23–64.

## Class 28 — Jewelry and Precious-Metal Ware

785,182. RAIMOND. Raimond Silver Manufacturing Company, Inc. SN 160,800. Pub. 12–1–64. Filed 1–16–63.

785,183. R. Raimond Silver Manufacturing Company, Inc. SN 160,970. Pub. 12–1–64. Filed 1–18–63.

785,184. LIGHTNING ROD AND FLAME EMBLEM (DESIGN). Public Service Company of Colorado. SN 200,285. Pub. 12–1–64. Filed 8–20–64.

785,185. P AND DESIGN. Pyramid Jewelry Co. SN 200,783. Pub. 12–1–64. Filed 8–27–64.

785,186. 10+. The Kinney Company. SN 200,942. Pub. 12–1–64. Filed 8–31–64.

785,187. 14+. The Kinney Company. SN 200,943. Pub. 12–1–64. Filed 8–31–64.

785,188. 3 OVERLAPPED CIRCLES (DESIGN). Yuso Susagano. SN 200,989. Pub. 12–1–64. Filed 8–31–64.

785,189. PYRAMID. Pyramid Jewelry Co. SN 201,302. Pub. 12–1–64. Filed 9–4–64.

785,190. DEE BEE AND DESIGN. Medicated Products Co., d.b.a. Donald Bruce & Company. SN 201,451. Pub. 12–1–64. Filed 9–8–64.

785,191. D AND DESIGN. Ralph Destino, Ltd. SN 201,667. Pub. 12–1–64. Filed 9–11–64.

785,192. FJG. Zale Jewelry Company, Inc. SN 201,993. Pub. 12–1–64. Filed 9–15–64.



## Class 30 — Crockery, Earthenware, and Porcelain

785,193. CAMEO ROSE. Empire Crafts Corporation. SN 180,191. Pub. 12–1–64. Filed 10–31–63.

## Class 31 — Filters and Refrigerators

785,194. KLEAN-KOLD. Packers' Development Corporation. SN 163,754. Pub. 12–1–64. Filed 3–1–63.

785,195. WATER-GARD. Water-Gard Corporation. SN 178,510. Pub. 12–1–64. Filed 10–7–63.

## Class 32 — Furniture and Upholstery

785,196. MAYSTEEL. Maysteel Products Inc. SN 173,474. Pub. 12–1–64. Filed 7–22–63.

785,197. PORTRAIT GRAIN. Kroehler Mfg. Co. SN 183,210. Pub. 12–1–64. Filed 12–18–63.

785,198. CASUAL COMFORT. The General Tire & Rubber Company. SN 185,996. Pub. 12–1–64. Filed 2–4–64.

785,199. CARRY-COMFORT. The General Tire & Rubber Company. SN 185,997. Pub. 12–1–64. Filed 2–4–64.

785,200. MERSMAN TABLES AND DESIGN. Congoleum-Nairn Inc. SN 186,442. Pub. 12–1–64. Filed 2–11–64.

785,201. CHEVRON AND DESIGN. Clopay Corporation. SN 187,404. Pub. 12–1–64. Filed 2–25–64.

785,202. CONOMATIC. Conolite, Inc. SN 189,272. Pub. 12–1–64. Filed 3–23–64.

785,203. SELECT-A-PEDIC. Knight of Rest Products. SN 191,776. Pub. 12–1–64. Filed 4–22–64.

785,204. LECTURA. Clarin Mfg. Co. SN 193,338. Pub. 12–1–64. Filed 5–13–64.

785,205. VELVETREAD. Royal Rubber & Manufacturing Company. SN 195,716. Pub. 12–1–64. Filed 6–15–64.

785,206. COMSTO. Mutschler Brothers Company. SN 195,957. Pub. 12–1–64. Filed 6–18–64.

## Class 33 — Glassware

785,207. ARCOROC. Verrerie Cristallerie d'Arques, G. Durand & Cie. SN 180,975. Pub. 12–1–64. Filed 11–12–63.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

785,208. GROUPING OF COLORED SUPPLY CABLES (DESIGN). Tec Torch Company, Inc. SN 125,172. Pub. 12–1–64. Filed 8–1–61.

785,209. STARBREW. Star Metal Corporation. SN 192,765. Pub. 12–1–64. Filed 5–5–64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

785,210. OILWELL. Hennessy Lubricator Company, Inc. SN 181,234. Pub. 12–1–64. Filed 11–15–63.

785,211. CORE-THANE. E. F. Houghton & Co. SN 193,951. Pub. 12–1–64. Filed 5–21–64.

785,212. COACHMAN. United States Rubber Company. SN 194,088. Pub. 12–1–64. Filed 5–22–64.

785,213. REGENT. United States Rubber Company. SN 194,090. Pub. 12–1–64. Filed 5–22–64.

785,214. PAKABAND. Friesland Plastics Company. SN 194,381. Pub. 12–1–64. Filed 5–27–64.

785,215. ROYAL SAFETY STRIPE. United States Rubber Company. SN 194,444. Pub. 12–1–64. Filed 5–27–64.

785,216. KENGRIP. Kennametal Inc. SN 198,742. Pub. 12–1–64. Filed 7–29–64.

## Class 36 — Musical Instruments and Supplies

785,217. RICOHSYNCHROFAX. Ricoh Company, Ltd., by change of name from Riken Optical Industries, Ltd. SN 113,030. Pub. 12–1–64. Filed 2–3–61.

785,218. ABNAK. Abnak Music Enterprises, Inc. MULTIPLE CLASS (Classes 36 and 38). SN 176,139. Pub. 12–1–64. Filed 9–3–63.

785,219. CORDOVOX AND DESIGN. Chicago Musical Instrument Co. SN 180,565. Pub. 12–1–64. Filed 11–6–63.

## Class 37 — Paper and Stationery

785,220. EASY MASK. Daubert Chemical Company. SN 112,693. Pub. 12–1–64. Filed 1–30–61.

785,221. E.T.C. Kores Manufacturing Corporation. SN 168,012. Pub. 12–1–64. Filed 5–2–63.

785,222. 4 TRIANGLES (DESIGN). Gebr. Fend. SN 172,540. Pub. 12–1–64. Filed 7–3–63.

785,223. ESTERBROOK. The Esterbrook Pen Company. SN 182,476. Pub. 12–1–64. Filed 12–6–63.

785,224. ENVELO-FILE. V. W. Eimicke Associates, Inc. SN 185,767. Pub. 12–1–64. Filed 1–31–64.

785,225. GARLAND AND DESIGN. Lew Mfg. Co. SN 194,192. Pub. 11–24–64. Filed 5–25–64.

## Class 38 — Prints and Publications

785,218. (See Class 36 for this trademark.)

785,226. DIAMOND (DESIGN). Associated Label Co. SN 147,345. Pub. 12–1–64. Filed 6–21–62.

785,227. FANCIFUL REPRESENTATION OF A HUMAN HEAD. The Learning Center, Inc., assignee of Creative Playthings, Inc. SN 149,450. Pub. 12–1–64. Filed 7–20–62.

785,228. SNICKERSNOOPER'S CORNER. Francis L. Duffy. SN 155,897. Pub. 12–1–64. Filed 10–25–62.

785,229. GAS-CHROM NEWSLETTER. Applied Science Laboratories, Inc. SN 178,402. Pub. 12–1–64. Filed 10–7–63.

785,230. FUEL CELL PROGRESS. Fuel Cell Corporation. SN 178,797. Pub. 12–1–64. Filed 10–11–63.

785,231. ARROW (DESIGN). Fuel Cell Corporation. SN 178,798. Pub. 12–1–64. Filed 10–11–63.

785,232. INCENTIVE MAGAZINE OF THE PREMIUM INDUSTRY. Haire Publishing Company. SN 179,533. Pub. 12–1–64. Filed 10–22–63.

785,233. FF FORMS FORUM. Bell Intercontinental Corporation. SN 179,859. Pub. 12–1–64. Filed 10–28–63.

785,234. AIM. Allstate Insurance Company. SN 188,064. Pub. 12–1–64. Filed 3–6–64.

785,235. LA PORTE ART GALLERIES AND DESIGN. Frank C. Brown, d.b.a. La Porte Art Galleries. SN 188,717. Pub. 12–1–64. Filed 3–16–64.

785,236. MR. FRIENDLY AND DESIGN. Tim Finnegan Advertising Inc. SN 190,560. Pub. 12–1–64. Filed 4–7–64.

785,237. HIT AND DESIGN. Sterling Title Strip Co., assignee of Hit Parade Program Service, Inc. SN 192,395. Pub. 11–24–64. Filed 4–30–64.

785,238. GOODYEAR AEROSPACE PROFILE. Goodyear Aerospace Corporation. SN 192,718. Pub. 12–1–64. Filed 5–5–64.

785,239. MISCELLANEOUS DESIGN. RHT Publications, Inc. SN 193,583. Pub. 12–1–64. Filed 5–15–64.

785,240. PHOTO MARKETING. Master Photo Dealers' & Finishers' Association. SN 194,733. Pub. 12–1–64. Filed 6–3–64.

785,241. MPM. Dana Chase Publications, Inc. SN 195,369. Pub. 12–1–64. Filed 6–11–64.

785,242. NASHVILLE SEASONS. The Junior League of Nashville, Inc. SN 196,163. Pub. 12–1–64. Filed 6–22–64.

785,243. THE MAINTAINER. American Building Maintenance Co. of California. SN 196,334. Pub. 12–1–64. Filed 6–24–64.

785,244. PARA-SEAL. Paramount Paper Products Co. SN 196,552. Pub. 12–1–64. Filed 6–26–64.

## Class 39 — Clothing

785,151. (See Class 23 for this trademark.)

785,245. ETERNA. Sheffield Hosiery Mills, Inc. SN 144,648. Pub. 12–1–64. Filed 5–15–62.

785,246. PICKET 'N POST. J. C. Penney Company. SN 161,419. Pub. 10–29–63. Filed 1–25–63.

785,247. "HAPPY FELLA." Jerrold Tucker, d.b.a. Happy Fella. SN 161,920. Pub. 12–1–64. Filed 2–1–63.

785,248. "AUTUMN-WEAVE." Palm Beach Company. SN 173,126. Pub. 12–1–64. Filed 7–16–63.

785,249. THREE CROWNS AND DESIGN. Harnosand Knitting Mills, Limited. SN 175,917. Pub. 12–1–64. Filed 8–28–63.

785,250. ERA. Carmo Shoe Manufacturing Company. SN 178,254. Pub. 12–1–64. Filed 10–3–63.

785,251. TWO HEADS. Thomas Textile Co., Inc. SN 179,962. Pub. 12–1–64. Filed 10–28–63.

785,252. SHIKARI. Hat Council, Inc. SN 180,881. COLLECTIVE MARK. Pub. 12–1–64. Filed 11–12–63.

785,253. COZY BABY. Fitts Cotton Goods Company. SN 181,346. Pub. 12–1–64. Filed 11–18–63.

785,254. DAVID CHURCH. David A. Church Co. Inc. SN 182,036. Pub. 12–1–64. Filed 11–29–63.

785,255. PARK AVENUE. Park Avenue Imports, Inc., assignee of Park Avenue Imports. SN 182,966. Pub. 12–1–64. Filed 12–18–63.

785,256. DEAUVILLE. A. Schrater & Sons, Inc. SN 184,182. Pub. 12–1–64. Filed 1–7–64.

785,257. TEE SOCKS. Toufick Mickel, d.b.a. Mid South Hosiery Co. SN 185,059. Pub. 12–1–64. Filed 1–21–64.

785,258. SILVER CUP. Oxford Manufacturing Co., Inc., d.b.a. Maxon Shirt Company Division. SN 185,070. Pub. 12–1–64. Filed 1–21–64.

785,259. MULTI-PALS. Oxford Manufacturing Co., Inc., d.b.a. Maxon Shirt Company Division. SN 185,071. Pub. 12–1–64. Filed 1–21–64.

785,260. FLOREX. Florex-Werk Niemann & Harde K.G. MULTIPLE CLASS (Classes 39 and 42). SN 185,593. Pub. 12–1–64. Filed 1–29–64.

785,261. TAIL GATE. March & Mendl, Inc. SN 186,256. Pub. 12–1–64. Filed 2–7–64.

785,262. KNAPP SHOES. Knapp Brothers Shoe Manufacturing Corporation. SN 189,710. Pub. 12–1–64. Filed 3–26–64.

785,263. SUE BRETT. Sue Brett, Inc. SN 191,355. Pub. 12–1–64. Filed 4–17–64.

785,264. LADY DAY. Day's Tailor-d Clothing, Inc. SN 192,899. Pub. 12–1–64. Filed 5–7–64.

785,265. KRAY-PO-ZET. Eagle Sportswear, Inc. SN 192,907. Pub. 12–1–64. Filed 5–7–64.

785,266. VERNA. Jacob Boltz Knitting Mill, Inc. SN 192,966. Pub. 12–1–64. Filed 5–7–64.

785,267. BACK HAPPY. Exquisite Form Industries, Inc. SN 193,270. Pub. 12–1–64. Filed 5–12–64.

785,268. BACK TO NATURE. Peter Pan Foundations, Inc. SN 193,288. Pub. 12–1–64. Filed 5–12–64.

785,269. DA-ZEE. Joseph Bancroft & Sons Company. SN 193,531. Pub. 12–1–64. Filed 5–15–64.

785,270. MARBOLENE. Marlboro Shirt Company, Inc. SN 193,684. Pub. 12–1–64. Filed 5–18–64.

785,271. THE LITTLE NOTHING. Burlington Industries, Inc. SN 193,746. Pub. 12–1–64. Filed 5–19–64.

785,272. KASTOPS. Essex Products, Inc. SN 193,947. Pub. 12–1–64. Filed 5–21–64.

785,273. FEATHER FLIGHTS. Federated Department Stores, Inc. SN 193,948. Pub. 12–1–64. Filed 5–21–64.

785,274. WIZARD WIRE. Munsingwear, Inc., d.b.a. Hollywood Vassarette. SN 194,063. Pub. 12–1–64. Filed 5–22–64.

785,275. WELLFLEX. Wellco Ro-Search Industries, Inc. SN 194,092. Pub. 12–1–64. Filed 5–22–64.

785,276. ALSA. Alfons Saum, d.b.a. Alfons Saum, Fabrik fur Schuhbodenteile. SN 194,751. Pub. 12–1–64. Filed 6–2–64.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

785,151. (See Class 23 for this trademark.)

785,260. (See Class 39 for this trademark.)

785,277. SUPER DRYTEX. The Johnson Wire Works Limited. SN 183,327. Pub. 12–1–64. Filed 12–20–63.

785,278. ATAQUA. American Textile Arts, Inc. MULTIPLE CLASS (Classes 42 and 43). SN 184,565. Pub. 12–1–64. Filed 1–14–64.

785,279. DABACOLOR. Stein-Tex, Inc. SN 187,215. Pub. 12–1–64. Filed 2–21–64.

785,280. FABRICOLOR. Stein-Tex, Inc. SN 187,216. Pub. 12–1–64. Filed 2–21–64.

785,281. "SOUTH SEAS." Morgan-Jones, Inc. SN 188,027. Pub. 12–1–64. Filed 3–5–64.

785,282. ALLEN. Allen Industries, Inc. SN 189,756. Pub. 12–1–64. Filed 3–27–64.

785,283. ANAVOR. The Dow Chemical Company. SN 190,069. Pub. 12–1–64. Filed 4–1–64.

785,284. TWINAIRE. Fleet Fabrics, Inc. SN 190,076. Pub. 12–1–64. Filed 4–1–64.

785,285. DURSTRETCH. Greenwood Mills, Inc. SN 190,079. Pub. 12–1–64. Filed 4–1–64.

785,286. LINOWEVE. Everfast Fabrics, Inc. SN 193,773. Pub. 12–1–64. Filed 5–19–64.

785,287. SANDRINGHAM. Everfast Fabrics, Inc. SN 193,774. Pub. 12–1–64. Filed 5–19–64.

## Class 43 — Thread and Yarn

785,278. (See Class 42 for this trademark.)

785,288. CARLTON STRETCHSPUN. Carlton Yarn Mills, Incorporated. SN 155,969. Pub. 12–1–64. Filed 10–26–62.

785,289. KIPAO. Etablissements Louis Rochegude S.A. SN 181,530. Pub. 12–1–64. Filed 11–20–63.

785,290. PYMLAN. Etablissements Louis Rochegude S.A. SN 181,532. Pub. 12–1–64. Filed 11–20–63.

785,291. FIORACETA. Etablissements Louis Rochegude S.A. SN 181,534. Pub. 12–1–64. Filed 11–20–63.

785,292. HAF & HAF. Collins & Aikman Corporation. SN 188,003. Pub. 12–1–64. Filed 3–5–64.



## Class 44 — Dental, Medical, and Surgical Appliances

785,293. CADENZA. S. H. Camp & Company. SN 165,575. Pub. 12–1–64. Filed 3–28–63.

785,294. IA AND DESIGN. Instrumentation Associates Inc. SN 179,231. Pub. 12–1–64. Filed 10–17–63.

785,295. DITRACO. The L. S. Brown Company, d.b.a. Dixie Trading Company. SN 183,368. Pub. 12–1–64. Filed 12–23–63.

785,296. DENTALASTIC. Jennie O. Van Glider, d.b.a. Denta Products Company. SN 183,721. Pub. 12–1–64. Filed 12–27–63.

785,297. HYDRO-JET AND DESIGN. Boulevard Electronics, Inc. SN 183,878. Pub. 12–1–64. Filed 1–2–64.

785,298. FLUORITAPE. Francis C. Yanni. SN 186,921. Pub. 12–1–64. Filed 2–17–64.

785,299. FLUORIFLOSS. Francis C. Yanni. SN 186,922. Pub. 12–1–64. Filed 2–17–64.

785,300. C-CLIP. Ethicon, Inc. SN 189,835. Pub. 12–1–64. Filed 3–26–64.

785,301. PARAGON. Acme Cotton Products Co., Inc. SN 193,081. Pub. 12–1–64. Filed 5–11–64.

785,302. IVY BOARD AND DESIGN. Meda-Plast Products Co. SN 196,390. Pub. 12–1–64. Filed 6–24–64.

## Class 45 — Soft Drinks and Carbonated Waters

785,303. PRESTA-LEM. Apollinaris Brunnen A.G. SN 184,928. Pub. 12–1–64. Filed 1–2–62.

785,304. RACAUCHI AND DESIGN. Racauchi e Hijos. SN 182,550. Pub. 12–1–64. Filed 10–21–63.

## Class 46 — Foods and Ingredients of Foods

785,305. GOLDEN CHICK. Harry M. Pett, d.b.a. Pett Spice Products. SN 147,624. Pub. 12–1–64. Filed 6–25–62.

785,306. LAND O'FROST. Land O'Frost, Inc. SN 150,700. Pub. 9–17–63. Filed 8–7–62.

785,307. H. E. "12." Southern States Cooperative, Incorporated. SN 157,734. Pub. 12–1–64. Filed 11–21–62.

785,308. FAMILY FARE. Jobbers Service, Incorporated. SN 164,629. Pub. 12–1–64. Filed 3–14–63.

785,309. FLAN VAP. Maurice Ciana. SN 169,700. Pub. 12–1–64. Filed 5–27–63.

785,310. SODABURST. General Foods Corporation. SN 171,646. Pub. 12–1–64. Filed 6–24–63.

785,311. MOUNTAIN CREST. Jacobsen Orchards, Inc. SN 173,464. Pub. 12–1–64. Filed 7–22–63.

785,312. TWO STAGE. The James S. Merritt Company, d.b.a. The Merritt Co. SN 174,886. Pub. 12–1–64. Filed 8–12–63.

785,313. MR TUNA. IBEC Packing Company of New York, Inc. SN 176,099. Pub. 12–1–64. Filed 8–30–63.

785,314. FANCIFUL REPRESENTATION OF A GIRL IN A BONNET. The Creamette Company. SN 178,779. Pub. 12–1–64. Filed 10–11–63.

785,315. STONE'S. The Finsbury Distillery Co., Limited, d.b.a. Stone's. SN 179,410. Pub. 12–1–64. Filed 10–21–63.

785,316. BARREL HOUSE. Jerry's Nut House, Inc. SN 179,716. Pub. 12–1–64. Filed 10–24–63.

785,317. GOOD MEASURE. Mead Johnson & Company. SN 180,667. Pub. 12–1–64. Filed 11–7–63.

785,318. AFTER EIGHT AND DESIGN. Rowntree and Company Limited. SN 182,505. Pub. 12–1–64. Filed 12–6–63.

785,319. ED'S. South Coast Rice Milling Co., Inc. SN 185,248. Pub. 12–1–64. Filed 1–23–64.

785,320. C.H.B. AND DESIGN. C.H.B. Foods, Inc., assignee of California Conserving Company, Incorporated. SN 188,195. Pub. 9–29–64. Filed 3–9–64.

785,321. ARCO "B." Breddo Food Products Corporation. SN 190,329. Pub. 12–1–64. Filed 4–6–64.

785,322. FLEENOR ETC. Arthur Dryden Fleenor, d.b.a. Fleenor Poultry Farm. SN 193,146. Pub. 12–1–64. Filed 5–11–64.

785,323. SUN CROP. J. R. Simplot Company, d.b.a. Grandview Farms. SN 193,715. Pub. 12–1–64. Filed 5–18–64.

785,324. CARDINAL. Southern Fruit Distributors, Inc. SN 194,426. Pub. 12–1–64. Filed 5–27–64.

785,325. ALACASION. G. D. Geter, d.b.a. Alacasion Company. SN 195,486. Pub. 12–1–64. Filed 6–11–64.

785,326. ALPO. Allen Products Co., Inc. SN 199,340. Pub. 12–1–64. Filed 8–7–64.

## Class 47 — Wines

785,327. WINE N' DINE. Canandaigua Industries Co., Inc. SN 157,456. Pub. 12–1–64. Filed 11–19–62.

785,328. C. MAREY & CIE. LIGER-BELAIR ETC. AND DESIGN. Societe Anonyme des Anciens Etablissements C. Marey & Liger-Belair, Liger-Belair & Fils, Successeurs, d.b.a. C. Marey & Cie Liger-Belair, Liger-Belair & Fils, Sucrs. SN 160,336. Pub. 12–1–64. Filed 1–7–63.

785,329. CHATEAU QUINSAC. Chateau La France. SN 169,424. Pub. 12–1–64. Filed 5–22–63.

785,330. VINA SOL. Miguel Torres. SN 178,059. Pub. 12–1–64. Filed 9–30–63.

785,331. STONE'S. The Finsbury Distillery Co., Limited, d.b.a. Stone's. SN 179,411. Pub. 12–1–64. Filed 10–21–63.

785,332. VIEJA ESTIBA. Bodegas Esmeralda Sociedad Anonima. SN 184,276. Pub. 12–1–64. Filed 1–9–64.

785,333. PERAGRAU. Bodegas Esmeralda Sociedad Anonima. SN 184,277. Pub. 12–1–64. Filed 1–9–64.

## Class 48 — Malt Beverages and Liquors

785,334. MILE HI. The Tivoli Brewing Company. SN 186,909. Pub. 12–1–64. Filed 2–17–64.

785,335. WEBER. G. Heileman Brewing Company, Inc. SN 187,923. Pub. 12–1–64. Filed 3–4–64.

## Class 49 — Distilled Alcoholic Liquors

785,336. OLD ANGUS. R. H. Thomson & Co. (Distillers) Limited. SN 171,287. Pub. 12–1–64. Filed 6–18–63.

785,337. RACAUCHI AND DESIGN. Racauchi e Hijos. SN 182,549. Pub. 12–1–64. Filed 10–21–63.

785,338. F. PERSHING WINNER AND DESIGN. Frederick P. Winner, Ltd., d.b.a. F. Pershing Winner Distilling Co. SN 186,489. Pub. 12–1–64. Filed 2–11–64.

785,339. ST. LEONARD'S. J. & G. Stewart Limited, d.b.a. The St. Leonard's Blending Co. SN 187,422. Pub. 12–1–64. Filed 2–25–64.

785,340. COUNTRY HOUSE. The American Distilling Company, d.b.a. Clarke's Distilling Company, and Prince Royal Distillers Co. SN 191,823. Pub. 12–1–64. Filed 4–23–64.

## Class 50 — Merchandise Not Otherwise Classified

785,108. (See Class 21 for this trademark.)

785,341. GRAB BAG AND DESIGN. J. H. Enterprises, Inc. SN 134,024. Pub. 12–1–64. Filed 12–14–61.

785,342. ANAGRAPHIC. Anagraphic Corporation. SN 170,155. Pub. 12–1–64. Filed 6–3–63.

785,343. STA-PAD. Bernard J. Cebelak, d.b.a. Kent Manufacturing Company. SN 183,374. Pub. 12–1–64. Filed 12–23–63.

785,344. SHOWBOAT. K & S Manufacturing Company. SN 187,292. Pub. 12–1–64. Filed 2–24–64.

785,345. HAPPY HOME ETC. AND DESIGN. F. W. Woolworth Co. SN 188,829. Pub. 12–1–64. Filed 3–16–64.

785,346. ETERNAL. Eternal Floral Rosary Company. SN 195,290. Pub. 12–1–64. Filed 6–10–64.

785,347. AD·A·TAG. The Monarch Company. SN 195,882. Pub. 12–1–64. Filed 6–17–64.

## Class 51 — Cosmetics and Toilet Preparations

785,348. COLOR CHROME. Maradel Products, Inc. SN 166,735. Pub. 12–1–64. Filed 4–15–63.

785,349. CREST (DESIGN). Isod, Ltd. SN 167,266. Pub. 12–1–64. Filed 4–22–63.

785,350. HOOTENANNY. House of Westmore, Inc. SN 179,135. Pub. 12–1–64. Filed 10–16–63.

785,351. GALOPIN. Parfumerie Fragonard G. Fuchs & Cie. SN 185,154. Pub. 12–1–64. Filed 1–22–64.

785,352. MUU MUU. Germaine Monteil Cosmetiques Corp. SN 187,410. Pub. 12–1–64. Filed 2–25–64.

785,353. COOL SANDS. Germaine Monteil Cosmetiques Corp. SN 187,412. Pub. 12–1–64. Filed 2–25–64.

785,354. HAWAIIAN TIKI (DESIGN). Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki. SN 188,236. Pub. 12–1–64. Filed 3–9–64.

785,355. NUTRI METICS AND DESIGN. Nutritional Science Corporation. SN 188,654. Pub. 12–1–64. Filed 3–13–64.

785,356. FIRMATONE. Firmatone, Inc. SN 188,859. Pub. 12–1–64. Filed 3–17–64.

785,357. ODEVE. Josephine K. Preston, d.b.a. Jo Preston Cosmetics. SN 188,886. Pub. 12–1–64. Filed 3–17–64.

785,358. MIRAL. Alberto-Culver Company. SN 189,755. Pub. 12–1–64. Filed 3–27–64.

785,359. SATIN FOAM. Shulton, Inc., assignee of Jacqueline Cochran, Inc. SN 191,508. Pub. 12–1–64. Filed 4–20–64.

785,360. RIGIDENT DENTURE CLEANER RDC AND DESIGN. Wiekman Pharmaceuticals. SN 192,773. Pub. 12–1–64. Filed 5–5–64.

## Class 52 — Detergents and Soaps

785,015. (See Class 6 for this trademark.)

785,361. TRIAC. Pennsalt Chemicals Corporation. SN 157,640. Pub. 12–1–64. Filed 11–20–62.

785,362. W ON OVAL AND INDIAN DESIGN. Wyandotte Chemicals Corporation. SN 159,320. Pub. 12–1–64. Filed 12–17–62.

785,363. SCOURITE. Quaker Chemical Corporation. SN 187,148. Pub. 12–1–64. Filed 2–20–64.

785,364. NUTRI METICS AND DESIGN. Nutritional Science Corporation. SN 188,655. Pub. 12–1–64. Filed 3–13–64.

785,365. SINGLE. The Veritas Company, Inc. SN 191,814. Pub. 12–1–64. Filed 4–22–64.

# Service Marks

## Class 100 — Miscellaneous

785,366. SPACEBURGER AND DESIGN. Spaceburger, Inc. SN 173,293. Pub. 12–1–64. Filed 7–18–63.

785,367. A & W AND DESIGN. The A & W Root Beer Company. SN 195,492. Pub. 12–1–64. Filed 6–12–64.

## Class 101 — Advertising and Business

785,368. JIFFY AND DESIGN. Jiffy Food Stores, Incorporated. SN 162,450. Pub. 12–31–63. Filed 2–11–63.

785,369. FOODLAND. Foodland, Inc. SN 164,032. Pub. 12–1–64. Filed 3–6–63.

## Class 102 — Insurance and Financial

785,370. THE AGENCY MAKES THE DIFFERENCE. Wilson, McBride & Company. SN 174,813. Pub. 12–1–64. Filed 8–9–63.

785,371. LUCAYA G. B. AND DESIGN. The Grand Bahama Development Company, Limited. MULTIPLE CLASS (Classes 102 and 103). SN 186,075. Pub. 12–1–64. Filed 2–5–64.

785,372. ARROWS IN FLIGHT (DESIGN). The Grand Bahama Development Company, Limited. MULTIPLE CLASS (Classes 102 and 103). SN 187,414. Pub. 12–1–64. Filed 2–25–64.

## Class 103 — Construction and Repair

785,373. WHECO. Waste Heat Engineering Corp. SN 185,964. Pub. 12–1–64. Filed 2–3–64.

## Class 105 — Transportation and Storage

785,374. GROUPETTE. Richard L. Mandl. SN 181,907. Pub. 12–1–64. Filed 11–26–63.

## Class 106 — Material Treatment

785,375. CERTIFIED LIBRARY BINDING APPROVED LIBRARY BINDER AND DESIGN. Library Binding Institute. SN 110,818. COLLECTIVE MARK. Pub. 12–1–64. Filed 12–27–60.

# Collective Membership Mark

## Class 200

785,376. DESERT BURROS AND DESIGN. Desert Burros Four-Wheel Drive Club, Inc. SN 183,970. Pub. 12–1–64. Filed 1–3–64.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 6 — Chemicals and Chemical Compositions

785,377. J. T. Baker Chemical Company, Phillipsburg, N.J. SN 176,146. Filed 9–3–63.

J.T.Baker CHEMICAL

For Reagent Chemicals, Fine Chemicals and Industrial Chemicals.
First use November 1957.

## Class 8 — Smokers' Articles, Not Including Tobacco Products

785,378. William Missler, San Diego, Calif. SN 177,534. Filed P.R. 9–23–63; Am. S.R. 11–25–64.

TAR-STOP

For Cigarette Filter Not Sold Incorporated as a Part of the Cigarette.
First use Sept. 20, 1963.

## Class 12 — Construction Materials

785,379. Burnham Corporation, Irvington-on-Hudson, N.Y. SN 184,690. Filed P.R. 1–16–64; Am. S.R. 12–2–64.

LIFE SCIENCES LABORATORY

For Prefabricated Greenhouses.
First use May 14, 1963.

785,380. United States Plywood Corporation, New York, N.Y. SN 186,789. Filed P.R. 2–14–64; Am. S.R. 12–1–64.

OAK-DEK

For Plywood Panels for Various Purposes, i.e., Walls, Containers, Box Car Sidings, Pallets Including Parts Thereof, Table Tops, etc.
First use Sept. 23, 1963.

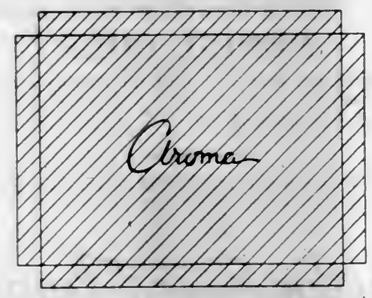
## Class 17 — Tobacco Products

785,381. Cigarette Manufacturing Company "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. SN 187,082. Filed P.R. 2–20–64; Am. S.R. 12–4–64.




The drawing is lined for red but color is not claimed as a feature of the mark. The mark "Ethnos" is a Greek word that means "nation."
For Cigarettes.
First use June 1, 1926; in commerce Dec. 1, 1959.

785,382. Cigarette Manufacturing Company "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. SN 187,085. Filed P.R. 2–20–64; Am. S.R. 12–4–64.




The drawing is lined for creamish brown but color is not claimed as a feature of the mark.
For Cigarettes.
First use Sept. 8, 1931; in commerce Nov. 1, 1961.

## Class 18 — Medicines and Pharmaceutical Preparations

785,383. Foster-Milburn Company, Buffalo, N.Y. SN 195,219. Filed P.R. 6–9–64; Am. S.R. 11–27–64.

CAPITROL

For Emollient Water-Dispersible Base, Incorporated as an Ingredient in Therapeutic Scalp Lotion.
First use May 24, 1963.

## Class 20 — Linoleum and Oiled Cloth

785,384. Formica Corporation, Cincinnati, Ohio. SN 141,940. Filed P.R. 4–10–62; Am. S.R. 12–2–64.

### SILVERSNOW

For Decorative Laminated Plastic in Sheet Form Useful for Covering Walls, Shelves, Counter Tops, Furniture and the Like.
First use Feb. 13, 1962.

## Class 22 — Games, Toys, and Sporting Goods

785,385. Forrest E. Roof, d.b.a. Forrest Enterprise, Inc., Piqua, Ohio. SN 160,072. Filed P.R. 1–2–63; Am. S.R. 12–3–64.

### Han-Dri

For Anti-Perspirant Hand Powder for Bowlers, Golfers, and Other Sports Participants.
First use Jan. 2, 1961.

785,386. The Allen Company, Inc., Charlottesville, Va. SN 179,011. Filed P.R. 10–15–63; Am. S.R. 11–24–64.

### PENCIL CROQUET

For Equipment Sold as a Unit for Playing a Croquet Table Board Game.
First use Sept. 28, 1962.

785,387. The Allen Company, Inc., Charlottesville, Va. SN 179,012. Filed P.R. 10–15–63; Am. S.R. 11–30–64.

### PENCIL GOLF

For Equipment Sold as a Unit for Playing a Golf Table Board Game.
First use Sept. 28, 1962.

785,388. Wilson House, Inc., Miami Beach, Fla. SN 186,036. Filed P.R. 2–4–64; Am. S.R. 11–27–64.

### *Rhythm Swing Practicer*

For Golf Practice Device—Namely, Practice Golf Ball Removably Tethered to a Mat.
First use Nov. 18, 1963.

## Class 31 — Filters and Refrigerators

785,389. The Marley Company, Kansas City, Mo. SN 130,924. Filed P.R. 10–30–61; Am. S.R. 11–27–64.

### *CompacTower*

For Liquid Cooling Towers and Parts Thereof.
First use May 18, 1961.

785,390. Melchior, Armstrong, Dessau Inc., Ridgefield, N.J. SN 162,273. Filed P.R. 2–7–63; Am. S.R. 11–25–64.

### MELCO ROOF-TOP POWERHOUSE

For Roof-Mounted Compressor Room Including Compressors, Controls, Timers, All Refrigerant Piping, and Other Refrigeration Equipment Necessary for the Total Refrigeration Requirements of Supermarkets and the Like, Shipped Ready To Install.
First use Jan. 21, 1963.

## Class 32 — Furniture and Upholstery

785,391. Selig Manufacturing Company, Inc., Leominster, Mass. SN 187,440. Filed P.R. 2–25–64; Am. S.R. 12–2–64.

### SLOUCH COUCH

For Sofas.
First use Apr. 9, 1963.

## Class 37 — Paper and Stationery

785,392. Winfield Eugene Smick, Jr., Hammond, Ind. SN 174,713. Filed P.R. 8–8–63; Am. S.R. 11–19–64.

### PHOTO CHECK

Applicant disclaims any rights in the word "Check" apart from the mark as shown.
For Bank Checks, Promissory Notes and Similar Items.
First use June 13, 1963.

785,393. Flynn International Corp., New York, N.Y., by change of name from Flynn International Distributing Corp., New York, N.Y. SN 187,860. Filed P.R. 3–3–64; Am. S.R. 9–28–64.

### TYPE-OUT

For Chemically Treated Paper for Eradicating Typed Characters.
First use June 12, 1960.

## Class 38 — Prints and Publications

785,394. Ken Publishing Co., Inc., New York, N.Y. SN 173,173. Filed P.R. 7–17–63; Am. S.R. 12–2–64.

### POCKET CRAMMER

For Educational Guide and Review Books.
First use July 10, 1963.

785,395. Fritzsche Brothers, Inc., New York, N.Y. SN 181,627. Filed P.R. 11–21–63; Am. S.R. 12–8–64.

### CREATIVE FLAVORING

For Quarterly Bulletin.
First use Nov. 6, 1963.



## Class 39 — Clothing

785,396. Haspel Brothers, Inc., New Orleans, La. SN 181,231. Filed P.R. 11–15–63; Am. S.R. 11–24–64.

### CHELSEA COUNTRY CLOTHES

For Men's Suits, Jackets, and Trousers.
First use Oct. 31, 1963.

## Class 46 — Foods and Ingredients of Foods

785,397. Francis Steinwand, Colby, Wis. SN 109,742. Filed P.R. 12–6–60; Am. S.R. 11–12–64.

The Originator of
**Colby Cheese**



This is the Original Colby Cheese made from Pasteurized Milk

J. F. Steinwand in 1885

The name of J. F. Steinwand and portrait shown represent an individual who died in 1944.
For Colby Cheese.
First use June 22, 1960.

785,398. Coffee of the Month Club, Lake Forest, Ill. SN 138,857. Filed P.R. 3–1–62; Am. S.R. 1–27–64.

### COFFEE OF THE MONTH *Club*

The drawing is lined for the color brown.
For Coffee.
First use Feb. 5, 1962.

785,399. Southern States Cooperative, Incorporated, Richmond, Va. SN 170,498. Filed P.R. 6–6–63; Am. S.R. 9–14–64.

### MULTI-BLEND "32"

For Livestock Feed.
First use May 13, 1963.

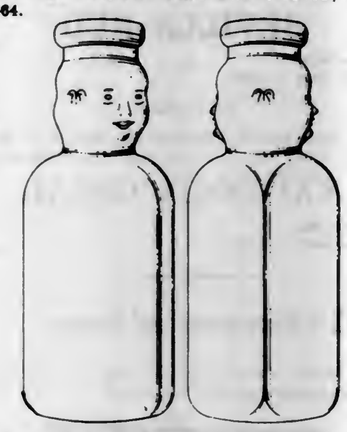
785,400. Southern States Cooperative Incorporated, Richmond, Va. SN 182,294. Filed P.R. 12–3–63; Am. S.R. 12–1–64.

### COLT MAKER

For Horse Feed.
First use Nov. 25, 1963.



785,401. Pecora Baby Top Products Company, West Haselton, Pa. SN 196,187. Filed P.R. 6–22–64; Am. S.R. 12–3–64.



The mark is comprised of a fanciful representation in the conformation of the container of a baby's face, and the drawings are front perspective and side views of such a container.
For Fluid Milk.
First use July 1936.

## Class 51 — Cosmetics and Toilet Preparations

785,402. Stanley Kasmiercsak, d.b.a. Beauty Care Products Co., Hales Corners, Wis. SN 136,986. Filed P.R. 1–31–62; Am. S.R. 9–10–63.

### BEAUTY CARE

For Hand Lotion.
First use Nov. 6, 1961.

785,403. The House For Men, Inc., d.b.a. Treasure Island Sales Co., Chicago, Ill. SN 143,394. Filed 4–30–62.



Applicant's mark consists of the configuration of a bottle partially covered by matter simulating strands woven, as shown, for the goods named herein.
For Bay Rum, After-Shave Preparation, After-Shave Lotion, Pre-Shave Lotion and Cologne.
First use Mar. 15, 1961.

785,404. Estee Lauder, Incorporated, New York, N.Y. SN 191,410. Filed P.R. 4–17–64; Am. S.R. 12–8–64.

## SEVILLA RED

For Lipsticks.
First use Sept. 1, 1958.

785,405. Estee Lauder, Incorporated, New York, N.Y. SN 191,417. Filed P.R. 4–17–64; Am. S.R. 12–8–64.

## VALENCIA CORAL

For Lipsticks.
First use Sept. 1, 1958.

### Class 52 — Detergents and Soaps

785,406. Leedal, Incorporated, Chicago, Ill. SN 163,058. Filed P.R. 2–20–63; Am. S.R. 1–21–64.

STA-CLEAN

For Cleaning Powder for Stainless Steel.
First use September 1957.

785,407. Lever Brothers Company, New York, N.Y. SN 166,816. Filed P.R. 4–16–63; Am. S.R. 12–3–64.

## SAFE 'N SOFT

For Detergent for Laundry Use.
First use Oct. 12, 1962.

785,408. Helena Rubinstein, Inc., New York, N.Y. SN 196,717. Filed 6–29–64.

## HERBESSENCE

For Toilet Soap.
First use Aug. 28, 1961.

### Service Mark

### Class 107 — Education and Entertainment

785,409. "42" Products Ltd., Inc., Santa Monica, Calif. SN 174,758. Filed P.R. 8–9–63; Am. S.R. 11–25–64.

## HOLLYWOOD DANCE TIME

For Title of a Television Program—Namely, Entertainment in the Form of Dance Music.
First use Apr. 13, 1963.

# TRADEMARK REGISTRATIONS RENEWED

25,627. WILLIMANTIC. Cl. 43. 12–11–1894.
25,628. IVERTON MILLS. Cl. 43. 12–11–1894.
25,629. INTRINSIC. Cl. 43. 12–11–1894.
25,630. DRAGON AND DESIGN. Cl. 43. 12–11–1894.
25,632. WILLIMATIC STAR THREAD AND DESIGN. Cl. 43. 12–11–1894.
25,633. SUPERIOR SIX CORD AND DESIGN. Cl. 43. 12–11–1894.
25,636. ALPHA. Cl. 43. 12–11–1894.
190,241. BUSTER. Cl. 14. 10–7–24.
191,497. RONEODEX. Cl. 37. 11–11–24.
193,459. GYPLATH. Cl. 12. 12–30–24.
193,693. EMAGRIN. Cl. 18. 1–6–25.
193,694. CUTICLEAR. Cl. 51. 1–6–25.
193,809. SANCHIA. Cl. 51. 1–6–25.
193,813. LAURO-BORACIC. Cl. 18. 1–6–25.
193,814. OBTUNDOBULBS. Cl. 18. 1–6–25.
194,098. LITTLE BROWN JUG AND DESIGN. Cl. 46. 1–13–25.
194,306. NADA. Cl. 39. 1–20–25.
194,675. COLLEGE INN. Cl. 46. 2–3–25.
195,026. PATHE AND DESIGN. Cl. 26. 2–17–25.
195,069. MERCOTONE AND DESIGN. Cl. 16. 2–17–25.
195,188. PAPER AND PULP MILL CATALOGUE. Cl. 38. 2–17–25.
195,783. LITTLE TOIDEY. Cl. 18. 3–3–25.
196,666. ORTHOPLAST. Cl. 44. 3–24–25.
197,415. JUMBO AND DESIGN. Cl. 45. 4–14–25.
197,859. BRICO AND DESIGN. Cl. 4. 4–28–25.
198,166. FOUR WINDS. Cl. 39. 5–5–25.
198,531. BELIEVE IT OR NOT. Cl. 38. 5–19–25.
199,534. DERBAC. Cl. 40. 6–9–25.
410,472. MARVINOL. Cl. 1. 11–28–44.
410,706. VELTEX. Cl. 44. 12–12–44.
410,784. FLOOR-VEYOR. Cl. 23. 12–19–44.
410,809. USI. Cl. 6. 12–19–44.
411,017. R & H AND DESIGN. Cl. 6. 1–2–45.
411,020. ADSTAY. Cl. 31. 1–2–45.
411,021. HILTEX. Cl. 31. 1–2–45.
411,023. HILPAK. Cl. 31. 1–2–45.
411,113. 666. Cl. 39. 1–2–45.
411,381. BIG RED. Cl. 46. 1–16–45.
411,404. DURLIN. Cl. 51. 1–16–45.
411,720. PLYAMINE. Cl. 5. 1–30–45.
412,670. R & H AND DESIGN. Cl. 4. 3–20–45.
412,821. AQUAMITE. Cl. 15. 3–27–45.
412,993. SOSPRAY. Cl. 6. 4–3–45.
413,732. RUNNING MATE AND DESIGN. Cl. 46. 5–8–45.
413,733. SEABISCUIT AND DESIGN. Cl. 46. 5–8–45.
413,923. DOVE SKIN AND DESIGN. Cl. 39. 5–22–45.

# TRADEMARK REGISTRATIONS CANCELED

### Section 8

663,866. O-R PRODUCTS CO. ETC. AND DESIGN. Cl. 44. 7–1–58.

*The following registrations issued Dec. 30, 1958*

671,643. FERRO CARD. Cl. 1.
671,647. ARNOLDWARE AND DESIGN. Cl. 2.
671,649. ALLBEV. Cl. 2.
671,650. TAP-A-CROCK. Cl. 2.
671,653. THE SPACE BAG AND DESIGN. Cl. 3.
671,660. SHIELD AND DESIGN. Cl. 6.
671,663. UOP 5 AND DESIGN. Cl. 6.
671,664. UOP UNICOR AND DESIGN. Cl. 6.
671,665. POLYDYE. Cl. 6.
671,668. KYLOSUR. Cl. 6.
671,670. ISOVAL. Cl. 6.
671,671. AMBURGO. Cl. 6.
671,676. DEXTRAFLEX. Cl. 6.
671,677. DEXTRAFIX. Cl. 6.
671,689. HOFLION. Cl. 7.
671,691. MIKROS AND DESIGN. Cl. 9.
671,692. LEATHERNECK. Cl. 9.
671,693. TOPPER. Cl. 9.
671,694. MEDALIST. Cl. 9.
671,696. NU-BUD. Cl. 10.
671,702. DIAMOND. Cl. 13.
671,705. THE GENERAL TIRE N AND DESIGN. Cl. 13.
671,708. NOE SEARCHE. Cl. 13.



671,709. MERMAID. Cl. 13.
671,719. SEALAMAT. Cl. 15.
671,723. SPICE. Cl. 16.
671,727. HYKOLEX. Cl. 18.
671,729. HYGEIASAN. Cl. 18.
671,733. APPEVIM. Cl. 18.
671,736. GCB. Cl. 18.
671,740. ISONYL. Cl. 18.
671,742. HAIRNOW. Cl. 18.
671,761. HIGHLAND. Cl. 19.
671,765. ECC. Cl. 19.
671,766. GRANITEERS. Cl. 20.
671,769. SHOO-FLY AND DESIGN. Cl. 21.
671,770. MIGHTY MITE. Cl. 21.
671,781. TOR-TERM. Cl. 21.
671,784. ELFIN. Cl. 21.
671,788. SEAPOWER AND DESIGN. Cl. 21.
671,794. CASCADE AND DESIGN. Cl. 22.
671,797. RAINY DAY GOLF. Cl. 22.
671,799. SPUTNIK AND DESIGN. Cl. 23.
671,803. FARM-O-RAMIC ANTHONY. Cl. 23.
671,805. CAM-O-MATIC. Cl. 23.
671,808. TEXILIA. Cl. 23.
671,810. WIL-MOW AND DESIGN. Cl. 28.
671,812. HOLD ALL. Cl. 23.
671,820. SPEEDY. Cl. 24.
671,829. MAXIM. Cl. 30.
671,834. AUTO CUBE. Cl. 31.
671,836. GARMENTIER. Cl. 32.
671,838. MAXIM. Cl. 33.
671,844. DB DAVID BRADLEY. Cl. 34.
671,850. AMP 3 RECORDS, INC. AND DESIGN. Cl. 36.
671,853. SINGULAR. Cl. 36.
671,854. ARENA. Cl. 36.
671,857. DESIGN FOR METROPOLITAN AND COUNTRY LIVING. Cl. 38.
671,858. TOGETHERNESS. Cl. 38.
671,861. MARKETEER. Cl. 38.
671,863. THE SOLAR QUARTERLY. Cl. 38.
671,866. EASI-FORM. Cl. 39.
671,867. FLORET. Cl. 39.
671,869. KAYEWOOD. Cl. 39.
671,875. BLAIR HOUSE. Cl. 39.
671,876. PENN TEST. Cl. 39.
671,878. CURLON. Cl. 39.
671,885. FLIANO. Cl. 42.
671,886. SERVISTUFT. Cl. 42.
671,887. B-D AND DESIGN. Cl. 42.
671,888. LADY MARCIA. Cl. 42.
671,892. WHITEWAY. Cl. 42.
671,895. LIN-SEAL. Cl. 42.
671,900. OXFORD LABORATORIES. Cl. 44.
671,901. DENTAGRAPH. Cl. 44.
671,902. FLEXOLIMB. Cl. 44.
671,905. SPRUCE. Cl. 45.
671,911. PAJARO AZUL ETC. AND DESIGN. Cl. 46.
671,919. BLUE DIAMOND. Cl. 46.
671,923. PLACTO. Cl. 46.
671,927. DESERT MOON. Cl. 46.
671,930. ROCKETTE. Cl. 47.
671,941. TAGON AND DESIGN. Cl. 50.
671,946. LIPSTICK "35." Cl. 51.
671,948. FRENCH SONATA. Cl. 51.
671,949. EH. Cl. 51.
671,953. CLEAR-O-DAN. Cl. 52.
671,958. GO-CLEAN. Cl. 52.
671,959. DEAN'S MAGIC. Cl. 52.
671,965. RADAX DISPLAY ADVERTISING SERVICE AND DESIGN. Cl. 101.
671,966. CPC. Cl. 101.
671,973. MY RECORD TOTE AND DESIGN. Cl. 3.
671,974. FLOWER FASHIONS. Cl. 3.
671,975. NO-MAR. Cl. 3.
671,976. BON AMI GLASS GLOSS ETC. AND DESIGN. Cl. 4.
671,978. NO-SEW. Cl. 6.
671,980. THE OIL OF OILS. Cl. 18.
671,983. DRIVOTESTER. Cl. 26.
671,984. KITCHEN FIT. Cl. 32.
671,985. GANTNER'S THE SUBURBAN HOUSE. Cl. 32.
671,986. NU-BILT AND DESIGN. Cl. 35.
671,990. OUTDOORS EQUIPMENT MERCHANDISING. Cl. 38.
671,996. FAMOUS UTAH TURKEY ETC. AND DESIGN. Cl. 46.

### Section 18

748,624. SAFARI. Cl. 9. 4–30–63.

# INDEX OF REGISTRANTS

## FEBRUARY 16, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)


A & W Root Beer Co., The, Santa Monica, Calif. 785,367, pub. 12–1–64. Cl. 100.
Abnak Music Enterprises, Inc., Dallas, Tex. 785,218, pub. 12–1–64. Multiple Class (Classes 36 and 38).
Acme Cotton Products Co., Inc., Valley Stream, N.Y. 785,301, pub. 12–1–64. Cl. 44.
Active Therapy Products Co. : *See*—
Lewis, Mack O.
Advance Dial Co. : *See*—
Solecki, Edward G.
Aetna Casualty and Surety Co., The, Hartford, Conn. 671,983, canc. Cl. 26.
Agip Societa per Azioni, Rome, Italy. 785,016, pub. 11–10–64. Cl. 6.
Agway Inc. : *See*—
Cooperative Grange League Federation Exchange.
Air Rake Mfg. Co., Inc., Westfield, Mass. 785,167, pub. 12–1–64. Cl. 23.
Aktiebolaget Kirstenson Och Graba, Fabriksvagen, Handen, Sweden. 785,146, pub. 12–1–64. Cl. 23.
Alacasion Co. : *See*—
Geter, G. D.
Alberto-Culver Co., Melrose Park, Ill. 785,358, pub. 12–1–64. Cl. 51.
Aldrich Pump Co., The, Allentown, Pa. 785,161, pub. 12–1–64. Cl. 23.
Allen Co., Inc., The, Charlottesville, Va. 785,386–7. Cl. 22.
Allen Industries, Inc., Detroit, Mich. 785,282, pub. 12–1–64. Cl. 42.
Allen Products Co., Inc., Allentown, Pa. 785,326, pub. 12–1–64. Cl. 46.
Allstate Insurance Co., Skokie, Ill. 785,234, pub. 12–1–64. Cl. 38.
Alsol Products Co., Irvington, N.J. 671,719, canc. Cl. 15.
Amburgo Co., Inc., The, Philadelphia, Pa. 671,671, canc. Cl. 6.
American Building Maintenance Co. of California, San Francisco, Calif. 785,243, pub. 12–1–64. Cl. 38.
American Can Co., New York, N.Y. 785,001–2, pub. 12–1–64. Cl. 2.
American Cyanamid Co., Wayne, N.J. 785,026, pub. 12–1–64. Cl. 6.
American Cyanamid Co., Wayne, N.J. 785,034, pub. 12–1–64. Cl. 6.
American Distilling Co., The, d.b.a. Clarke's Distilling Co., and Prince Royal Distillers Co., New York, N.Y. 785,340, pub. 12–1–64. Cl. 49.
American Doll & Toy Corp., New York, N.Y. 785,117, pub. 12–1–64. Cl. 22.
American Handbags, Inc., New York, N.Y. 671,975, canc. Cl. 3.
American Home Products Corp., New York, N.Y. 785,072, pub. 12–1–64. Cl. 18.
American Laundry Machinery Co., The, Cincinnati, Ohio. 671,820, canc. Cl. 24.
American Machine & Foundry Co., New York, N.Y. 785,142, pub. 12–1–64. Cl. 23.
American Metal Climax, Inc., New York, N.Y. 785,044, pub. 12–1–64. Cl. 12.
American Pacific European Trading, Inc., d.b.a. Ampetco Inc., South Gate, Calif. 785,108, pub. 12–1–64. Multiple Class (Classes 21 and 50).
American Smelting and Refining Co., New York, N.Y. 785,055, pub. 12–1–64. Cl. 14.
American Textile Arts, Inc., Wilmington, Del. 785,278, pub. 12–1–64. Multiple Class (Classes 42 and 43).
American Thread Co., The : *See*—
Willimantic Linen Co., The.
Amp 3 Records, Inc., New York, N.Y. 671,850, canc. Cl. 36.
Ampetco Inc. : *See*—
American Pacific European Trading, Inc.
Anagraphic Corp., Minneapolis, Minn. 785,342, pub. 12–1–64. Cl. 50.
Anthony Co., Streator, Ill. 671,803, canc. Cl. 23.
Anton, George : *See*—
Brown, David A., and George Anton.
Apollinaris Brunnen A.G., Bad Neuenahr, Germany. 785,303, pub. 12–1–64. Cl. 45.
Applied Science Laboratories, Inc., State College, Pa. 785,229, pub. 12–1–64. Cl. 38.
Armeli Laboratory : *See*—
Silberg, Benjamin N.
Associated Label Co., Los Angeles, Calif. 785,226, pub. 12–1–64. Cl. 38.
Atomic Basic Chemicals Corp., Pittsburgh, Pa. 785,035, pub. 12–1–64. Cl. 6.
Atracta Wax Corp., Chicago, Ill. 785,015, pub. 12–1–64. Multiple Class (Classes 6, 16, and 52).
B-W Mfg. Co. Inc., Sioux Falls, S. Dak. 671,984, canc. Cl. 32.
Baker, J. T., Chemical Co., Phillipsburg, N.J. 785,377. Cl. 6.
Bancroft, Joseph, & Sons Co., New York, N.Y. 785,269, pub. 12–1–64. Cl. 39.
Band-It Co., Denver, Colo. 785,047, pub. 12–1–64. Cl. 13.
Bardach & Schoene Co., Inc., Chicago, Ill. 671,902, canc. Cl. 44.
Beaunit Corp. : *See*—
Luxuray, Division of Beaunit Mills, Inc.
Beauty Care Products Co. : *See*—
Kasmiercsak, Stanley.
Bell Intercontinental Corp., New York, N.Y. 785,233, pub. 12–1–64. Cl. 38.
Berg Mfg. & Sales Co., Des Plaines, Ill. 785,098, pub. 12–1–64. Cl. 19.
Berkshire Hathaway, Inc., Providence, R.I. 671,892, canc. Cl. 42.
Best & Co. Inc., New York, N.Y. 194,306, ren. 2–16–65. Cl. 39.
Bodegas Esmeralda Sociedad Anonima, Cordoba, Argentina. 785,332–3, pub. 12–1–64. Cl. 47.
Boltz, Jacob, Knitting Mill, Inc., Pottsville, Pa. 785,266, pub. 12–1–64. Cl. 39.
Bon Ami Co., The, New York, N.Y. 671,976, canc. Cl. 4.
Bonafide Mills, Inc., New York, N.Y. 671,766, canc. Cl. 20.
Botany Industries, Inc., d.b.a. Sea and Ski Co., Reno, Nev. 785,107, pub. 12–1–64. Cl. 21.
Boulevard Electronics, Inc., Chicago, Ill. 785,297, pub. 12–1–64. Cl. 44.
Boyertown Auto Body Works Inc., Boyertown, Pa. 785,096, pub. 12–1–64. Cl. 19.
Breddo Food Products Corp., Kansas City, Kans. 785,321, pub. 12–1–64. Cl. 46.
Breezette, Inc. : *See*—
Hehr Mfg. Co.
Brett, Sue, Inc., New York, N.Y. 785,263, pub. 12–1–64. Cl. 39.
Brillo Mfg. Co., Brooklyn, N.Y., to Purex Corp. Ltd., Lakewood, Calif. 197,859, ren. 2–16–65. Cl. 4.
Brooklyn Mills, Inc., Englewood, N.J. 671,867, canc. Cl. 39.
Brown, David A., and George Anton, d.b.a. The Brown Pharmaceutical Co., Los Angeles, Calif. 785,085, pub. 12–1–64. Cl. 18.
Brown, Frank C., d.b.a. La Porte Art Galleries, Racine, Wis. 785,235, pub. 12–1–64. Cl. 38.
Brown, L. S., Co., The, d.b.a. Dixie-Trading Co., Atlanta, Ga. 785,295, pub. 12–1–64. Cl. 44.
Brown Pharmaceutical Co., The : *See*—
Brown, David A., and George Anton.
Bruce, Donald, & Co. : *See*—
Medicated Products Co.
Bruel & Kjaer, Naerum, Denmark. 785,099, pub. 12–1–64. Cl. 26.
Building Centre (B.C.) Ltd., The, Vancouver, British Columbia, Canada. 671,857, canc. Cl. 38.
Burke-Decker, Inc., New York, N.Y. 671,887, canc. Cl. 42.
Burlington Industries, Inc., New York, N.Y. 785,271, pub. 12–1–64. Cl. 39.
Burnham Corp., Irvington-on-Hudson, N.Y. 785,379. Cl. 12.
C.H.B. Foods, Inc., from California Conserving Co., Inc., Pico Rivera, Calif. 785,320, pub. 9–29–64. Cl. 46.
Cahn, Bernard, Co., Inc., New York, N.Y. 671,974, canc. Cl. 3.
California Conserving Co., Inc. : *See*—
C.H.B. Foods, Inc.
Camp, S. H., & Co., Jackson, Mich. 785,293, pub. 12–1–64. Cl. 44.
Canandaigua Industries Co., Inc., Canandaigua, N.Y. 785,327, pub. 12–1–64. Cl. 47.
Carlton Yarn Mills, Inc., Cherryville, N.C. 785,288, pub. 12–1–64. Cl. 43.
Carmo Shoe Mfg. Co., Union, Mo. 785,250, pub. 12–1–64. Cl. 39.
Carris Candles : *See*—
Carris, James M.
Carris, James M., d.b.a. Carris Candles, Riverside, Calif. 671,927, canc. Cl. 46.
Casa Cuba Cigar Co., Inc., d.b.a. Z. Garcia y Cia, Tampa, Fla. 785,068, pub. 12–1–64. Cl. 17.
Cascade Products, Inc., Kent, Wash. 671,794, canc. Cl. 22.
Cebelak, Bernard J., d.b.a. Kent Mfg. Co., Grand Rapids, Mich. 785,343, pub. 12–1–64. Cl. 50.
Central Soya Co., Inc., Fort Wayne, Ind. 412,993, ren. 2–16–65. Cl. 6.
Cereal Soaps Co., Inc., New York, N.Y. 199,534, ren. 2–16–65. Cl. 40.
Chase, Dana, Publications, Inc., Elmhurst, Ill. 785,241, pub. 12–1–64. Cl. 38.
Chateau La France, Beychac, near Bordeaux, France. 785,329, pub. 12–1–64. Cl. 47.
Chesebrough-Pond's Inc., New York, N.Y. 785,088–9, pub. 12–1–64. Cl. 18.
Chicago Musical Instrument Co., Chicago, Ill. 785,219, pub. 12–1–64. Cl. 36.
Chicago Pharmacal Co., Chicago, Ill. 671,727, canc. Cl. 18.
Chomerics, Inc., Plainville, Mass. 784,986, pub. 12–1–64. Multiple Class (Classes 1, 14, and 21).
Church, David A., Co. Inc., New York, N.Y. 785,254, pub. 12–1–64. Cl. 39.
Ciana, Maurice, Geneva, Switzerland. 785,309, pub. 12–1–64. Cl. 46.
Cigarette Mfg. Co. "Ethnos," G.A. Kerania, S.A., Piraeus, Greece. 785,381–2. Cl. 17.
Clapp, Otis, & Son, Inc., to Otis Clapp & Son, Inc., Boston, Mass. 193,693–4, ren. 2–16–65. Cl. 18.

Clapp, Otis, & Son, Inc., to Otis Clapp & Son, Inc., Boston, Mass. 193,809, ren. 2–16–65. Cl. 51.
Clapp, Otis, & Son, Inc., to Otis Clapp & Son, Inc., Boston, Mass. 193,813–14, ren. 2–16–65. Cl. 18.
Clarel Laboratory, Chicago, Ill. 671,696, canc. Cl. 10.
Clarin Mfg. Co., Chicago, Ill. 785,204, pub. 12–1–64. Cl. 32.
Clarke's Distilling Co.: *See*—
American Distilling Co., The.
Cleveland Heater Co., The, Chattanooga, Tenn. 785,112, pub. 12–1–64. Cl. 21.
Clokey Productions, Inc., Glendora, Calif. 785,129, pub. 12–1–64. Cl. 22.
Clopay Corp., Cincinnati, Ohio. 785,201, pub. 12–1–64. Cl. 32.
Clover Chemical Co., Pittsburgh, Pa. 785,149, pub. 12–1–64. Cl. 23.
Coach's Sporting Goods Corp., Marion, Ind. 785,119, pub. 12–1–64. Cl. 22.
Cochran, Jacqueline, Inc.: *See*—
Shulton, Inc.
Coffee of the Month Club, Lake Forest, Ill. 785,398. Cl. 46.
College Inn Food Department of The Hotel Sherman Co.: *See*—
College Inn Food Products Co.
College Inn Food Products Co., d.b.a. College Inn Food Department of The Hotel Sherman Co., Chicago, Ill., to Penick & Ford, Ltd., Inc., New York, N.Y. 194,678, ren. 2–16–65. Cl. 46.
Collins & Aikman Corp., New York, N.Y. 785,292, pub. 12–1–64. Cl. 43.
Columbia Tool Steel Co., Chicago, Heights, Ill. 190,241, ren. 2–16–65. Cl. 14.
Compagnie Industrielle des Ceramiques Electroniques (C.I.C.E.), Montreuil-sous-Bois, Seine, France. 785,160, pub. 12–1–64. Cl. 23.
Congoleum-Nairn Inc., Kearny, N.J. 785,200, pub. 12–1–64. Cl. 32.
Conolite, Inc., Carpentersville, Ill. 785,202, pub. 12–1–64. Cl. 32.
Cooper Alloy Corp., Hillside, N.J. 785,144, pub. 12–1–64. Cl. 23.
Cooperative Grange League Federation Exchange, Ithaca, N.Y., to Agway Inc., Syracuse, N.Y. 411,381, ren. 2–16–65. Cl. 46.
Cortina Ski Co., New York, N.Y. 785,121, pub. 12–1–64. Cl. 22.
Cotton Goods Mfg. Co., Chicago, Ill. 785,128, pub. 12–1–64. Cl. 22.
Country Cottons: *See*—
Shipley, Lee.
Creamette Co., The, Minneapolis, Minn. 785,314, pub. 12–1–64. Cl. 46.
Creative Playthings, Inc.: *See*—
Learning Center, Inc., The.
Creighton Laboratories, Inc., Brooklyn, N.Y. 785,090–1, pub. 12–1–64. Cl. 18.
Crown Zellerbach Corp., San Francisco, Calif. 785,024, pub. 12–1–64. Cl. 6.
Customer Preference Clinics, Inc., New York, N.Y. 671,966, canc. Cl. 101.
Dacom, Inc., Silverton, Ohio. 785,063, pub. 12–1–64. Cl. 15.
Daggett & Ramsdell, Inc., New York, N.Y. 671,948, canc. Cl. 51.
Daisy Mfg. Co., Rogers, Ark. 785,118, pub. 12–1–64. Cl. 22.
Dantoy Products, Burlingame, Calif. 671,649, canc. Cl. 2.
Dare Products, Inc., Battle Creek, Mich. 671,784, canc. Cl. 21.
Dare, Virginia, Extract Co., Inc., Brooklyn, N.Y. 194,098, ren. 2–16–65. Cl. 46.
Daubert Chemical Co., Chicago, Ill. 785,220, pub. 12–1–64. Cl. 37.
Day's Tailor-d Clothing, Inc., Tacoma, Wash. 785,264, pub. 12–1–64. Cl. 39.
Decatur Iron & Steel Co., Decatur, Ala. 785,041, pub. 12–1–64. Cl. 12.
Denta Products Co.: *See*—
Van Gilder, Jennie O.
Dependable Compressor & Machine Co., Inc., New York, N.Y. 785,165, pub. 12–1–64. Cl. 23.
Desert Burros Four-Wheel Drive Club, Inc., Torrance, Calif. 785,376, pub. 12–1–64. Cl. 200.
Destino, Ralph, Ltd., New York, N.Y. 785,191, pub. 12–1–64. Cl. 28.
Deutsche Grammophon Gesellschaft m.b.H., Hannover, Germany. 671,854, canc. Cl. 36.
Dexter Chemical Corp., New York, N.Y. 671,676–7, canc. Cl. 6.
D'Horlogerie de Langendorf, Societe, Langendorf, Switzerland. 785,181, pub. 12–1–64. Cl. 27.
Dix, Henry A., & Sons Corp., New York, N.Y. 411,113, ren. 2–16–65. Cl. 39.
Dixie-Trading Co.: *See*—
Brown, L. S., Co., The.
Dr. Salsbury's Laboratories, Charles City, Iowa. 785,073, pub. 12–1–64. Cl. 18.
Dow Chemical Co., The, Midland, Mich. 785,003, pub. 12–1–64. Cl. 2.
Dow Chemical Co., The, Midland, Mich. 785,031, pub. 12–1–64. Cl. 6.
Dow Chemical Co., The, Midland, Mich. 785,086, pub. 12–1–64. Cl. 18.
Dow Chemical Co., The, Midland, Mich. 785,283, pub. 12–1–64. Cl. 42.
Duffy, Francis L., Ottawa, Ill. 785,228, pub. 12–1–64. Cl. 38.
Dunham, Berman S., d.b.a. Thumb-Out Co., Toledo, Ohio. 671,901, canc. Cl. 44.
Durant Mfg. Co., Milwaukee, Wis. 785,113, pub. 12–1–64. Cl. 21.
Durlin Co.: *See*—
Durlin Corp., The.
Durlin Corp., The, New York, N.Y., to Durlin Co., Newark, N.J. 411,404, ren. 2–16–65. Cl. 51.
Durr Products, Inc., Dayton, Ohio. 671,740, canc. Cl. 18.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 785,028–9, pub. 12–1–64. Cl. 6.
E.H. Co.: *See*—
Henrichsen, Emmerick E.
Eagle Sportswear, Inc., Philadelphia, Pa. 785,265, pub. 12–1–64. Cl. 39.
Eagle-Picher Co., The, Cincinnati, Ohio. 785,046, pub. 12–1–64. Cl. 12.
Eastern Bag Mfg. Corp., New York, N.Y. 671,973, canc. Cl. 3.
Edwards, M. B., Co., Inc., d.b.a. M. B. Edwards Co., Inc., Philadelphia, Pa. 671,959, canc. Cl. 52.
Elmicke, V. W., Associates, Inc., Bronxville, N.Y. 785,224, pub. 12–1–64. Cl. 37.
Electric Storage Battery Co., The, Philadelphia, Pa. 785,053, pub. 12–1–64. Cl. 13.
Empire Crafts Corp., Newark, N.Y. 785,193, pub. 12–1–64. Cl. 30.
Erinac Equipment Corp., Chicago, Ill. 785,168, pub. 12–1–64. Cl. 23.
Essex Products, Inc., Haverhill, Mass. 785,272, pub. 12–1–64. Cl. 39.
Esterbrook Pen Co., The, Camden, N.J. 785,223, pub. 12–1–64. Cl. 37.
Etablissements Louis Rochegude S.A., Valance Drome, France. 785,289–91, pub. 12–1–64. Cl. 43.
Eternal Floral Rosary Co., Niantic, Conn. 785,346, pub. 12–1–64. Cl. 50.
Ethicon, Inc., Somerville, N.J. 785,300, pub. 12–1–64. Cl. 44.
Eureka Specialty Printing Co., Scranton, Pa. 785,009, pub. 11–24–64. Multiple Class (Classes 6, 16, 37, and 38).
Evans Products Co., Plymouth, Mich. 671,765, canc. Cl. 19.
Everfast Fabrics, Inc., New York, N.Y. 785,286–7, pub. 12–1–64. Cl. 42.
Everlube Corp.: *See*—
Everlube Corp. of America.
Everlube Corp. of America, d.b.a. Everlube Corp., North Hollywood, Calif. 785,062, pub. 12–1–64. Cl. 15.
Ex-Cell-O Corp., Detroit, Mich. 785,143, pub. 12–1–64. Cl. 23.
Exquisite Form Industries, Inc., New York, N.Y. 785,267, pub. 12–1–64. Cl. 39.
F. & N. Lawn Mower Co., The, Richmond, Ind. 671,805, canc. Cl. 23.
Far Eastern Commerce Corp., New York, N.Y. 785,101, pub. 12–1–64. Cl. 21.
Federated Department Stores, Inc., New York, N.Y. 785,273, pub. 12–1–64. Cl. 39.
Ferro Corp., The, Cleveland, Ohio, from The Prince Mfg. Co., Bowmanstown, Pa. 671,643, canc. Cl. 1.
Filmite Oil Corp., Butler, Wis. 412,821, ren. 2–16–65. Cl. 15.
Finnegan, Tim, Advertising Inc., Richmond, Va. 785,236, pub. 12–1–64. Cl. 38.
Finsbury Distillery Co., Ltd., The, d.b.a. Stone's, London, England. 785,315, pub. 12–1–64. Cl. 46.
Finsbury Distillery Co., Ltd., The, d.b.a. Stone's, London, England. 785,331, pub. 12–1–64. Cl. 47.
Firmatone, Inc., New York, N.Y. 785,356, pub. 12–1–64. Cl. 51.
Fisherman Press Inc.: *See*—
Popular Science Publishing Co., Inc.
Fitts Cotton Goods Co., Atlanta, Ga. 785,253, pub. 12–1–64. Cl. 39.
Flavor-Lok Corp., d.b.a. Spruce Co., Wilmington, Del. 671,905, canc. Cl. 45.
Fleenor, Arthur D., d.b.a. Fleenor Poultry Farm, Bristol, Tenn. 785,322, pub. 12–1–64. Cl. 46.
Fleenor Poultry Farm: *See*—
Fleenor, Arthur D.
Fleet Fabrics, Inc., New York, N.Y. 785,284, pub. 12–1–64. Cl. 42.
Flexidor Electrical Systems, Inc., Dayton, Ohio. 785,103, pub. 12–1–64. Cl. 21.
Flick-Reedy Corp., Bensenville, Ill. 785,157, pub. 12–1–64. Cl. 23.
Flocke & Co.: *See*—
Flocke, Karl.
Flocke, Karl, d.b.a. Flocke & Co., Solingen, Germany. 671,799, canc. Cl. 23.
Florex-Werk Niemann & Harde K.G., Steinhagen/Westfalen, Germany. 785,260, pub. 12–1–64. Multiple Class (Classes 39 and 42).
Flynn International Corp., from Flynn International Distributing Corp., New York, N.Y. 785,393. Cl. 37.
Flynn International Distributing Corp.: *See*—
Flynn International Corp.
Foodland, Inc., Cleveland, Ohio. 785,369, pub. 12–1–64. Cl. 101.
Formica Corp., Cincinnati, Ohio. 785,384. Cl. 20.
Forrest Enterprise: *See*—
Roof, Forrest E.
Foster Grant Co., Inc., Leominster, Mass. 785,007, pub. 12–1–64. Cl. 2.
Foster-Miliburn Co., Buffalo, N.Y. 785,383. Cl. 18.
Fournillier, Henri, Perpignan, Pyrenees-Orientales, France. 785,137, pub. 12–1–64. Cl. 22.
"42" Products Ltd., Inc., Santa Monica, Calif. 785,409. Cl. 107.
Fox Crafts, Fredericksburg, Va. 784,996, pub. 12–1–64. Cl. 2.
Frankel Associates, Inc., New York, N.Y. 671,895, canc. Cl. 42.
Friesland Plastics Co., Friesland, Wis. 785,214, pub. 12–1–64. Cl. 35.





Fritz, Edward B., Chicago, to Paper Industry Management Association, Des Plaines, Ill. 195,188, ren. 2–16–65. Cl. 38.
Fritzsche Bros., Inc., New York, N.Y. 785,895. Cl. 38.
Fuel Cell Corp., St. Louis, Mo. 785,230–1, pub. 12–1–64. Cl. 38.
Fuels Research Corp., Denver, Colo. 785,064, pub. 12–1–64. Cl. 15.
Gallo, E. & J., Winery, Modesto, Calif. 671,930, canc. Cl. 47.
Gantner Industries, Inc., Morton Grove, Ill. 671,985, canc. Cl. 32.
Garcia, Z., y Cia.: *See*—
Casa Cuba Cigar Co., Inc.
Gebr. Fend, Pforzheim, Baden, Germany. 785,222, pub. 12–1–64. Cl. 37.
Geigy Chemical Corp., Ardsley, N.Y. 785,083–4, pub. 12–1–64. Cl. 18.
General Foods Corp., White Plains, N.Y. 785,810, pub. 12–1–64. Cl. 46.
General Pneumatic Products Corp., Overland, Mo. 785,145, pub. 12–1–64. Cl. 23.
General Tire & Rubber Co., The, Akron, Ohio. 671,705, canc. Cl. 13.
General Tire & Rubber Co., The, Akron, Ohio. 784,998, pub. 12–1–64. Cl. 2.
General Tire & Rubber Co., The, Akron, Ohio. 785,124, pub. 12–1–64. Cl. 22.
General Tire & Rubber Co., The, Akron, Ohio. 785,198–9, pub. 12–1–64. Cl. 32.
Germaine Monteil Cosmetiques Corp., New York, N.Y. 785,352–3, pub. 12–1–64. Cl. 51.
Geter, G. D., d.b.a. Alacasion Co., Salt Lake City, Utah. 785,326, pub. 12–1–64. Cl. 46.
Gilmour Mfg. Co.: *See*—
Gilmour, Robert A.
Gilmour, Robert A., d.b.a. Gilmour Mfg. Co., Somerset, Pa. 785,139, pub. 6–9–64. Cl. 23.
Gladding, B. F., & Co., Inc., South Otselic, N.Y. 785,138, pub. 12–1–64. Cl. 22.
Good Grape Co., The, to Seminole Flavor Co., Chattanooga, Tenn. 197,415, ren. 2–16–65. Cl. 45.
Goodyear Aerospace Corp., Akron, Ohio. 785,238, pub. 12–1–64. Cl. 38.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 785,066, pub. 12–1–64. Cl. 16.
Grand Bahama Development Co., Ltd., The, New York, N.Y. 785,371–2, pub. 12–1–64. Multiple Class (Classes 102 and 103).
Granville-Phillips Co., Boulder, Colo. 785,048, pub. 12–1–64. Cl. 13.
Gray Pharmaceutical Co., from The Purdue Frederick Co., Yonkers, N.Y. 785,076, pub. 12–1–64. Cl. 18.
Greenwood Mills, Inc., New York, N.Y. 785,285, pub. 12–1–64. Cl. 42.
Gremar Mfg. Co., Inc., Wakefield, Mass. 785,114, pub. 12–1–64. Cl. 21.
Groden, Raymond, Baldwin, N.Y. 671,958, canc. Cl. 52.
Grosjean, C. E., Rice Milling Co., San Francisco, Calif. 671,911, canc. Cl. 46.
Guard Chemical Co., Inc., Ossining, N.Y. 784,014, pub. 3–3–64. Cl. 6.
Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 785,135, pub. 12–1–64. Cl. 22.
Guerdon Industries, Inc., Southfield, Mich. 785,094, pub. 12–1–64. Cl. 19.
H & K Sales Co., Inc., Kansas City, Mo. 785,004, pub. 12–1–64. Cl. 2.
Habitat, Inc., New York, N.Y. 785,036, pub. 12–1–64. Cl. 8.
Haire Publishing Co., New York, N.Y. 785,282, pub. 12–1–64. Cl. 38.
Halliburton Co., Duncan, Okla. 784,988, pub. 12–1–64. Multiple Class (Classes 1 and 6).
Halt Mfg. Co.: *See*—
Purex Corp., Ltd.
Hammond Sheet Metal Co., St. Louis, Mo. 785,056, pub. 12–1–64. Cl. 14.
Happy Fella: *See*—
Tucker, Jerrold.
Harnosand Knitting Mills, Ltd., Ozone Park, N.Y. 785,249, pub. 12–1–64. Cl. 39.
Harrington Mfg. Co., Inc., Lewiston, N.C. 785,169, pub. 12–1–64. Cl. 23.
Harrington & Richardson, Inc., Worcester, Mass. 671,692–4, canc. Cl. 9.
Hart, Schaffner & Marx, Chicago, Ill. 198,166, ren. 2–16–65. Cl. 39.
Haspel Brothers, Inc., New Orleans, La. 785,396. Cl. 39.
Hassenfeld Bros., Inc., Pawtucket, R.I. 785,130–3, pub. 12–1–64. Cl. 22.
Hassenfeld Bros., Inc., Pawtucket, R.I. 785,136, pub. 12–1–64. Cl. 22.
Hat Council, Inc., New York, N.Y. 785,252, pub. 12–1–64. Cl. 39.
Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki, Honolulu, Hawaii. 785,354, pub. 12–1–64. Cl. 51.
Hehr Mfg. Co., from Breezette, Inc., Los Angeles, Calif. 671,769, canc. Cl. 21.
Heileman, G., Brewing Co., Inc., La Crosse, Wis. 785,335, pub. 12–1–64. Cl. 48.
Hennessy Lubricator Co., Inc., Chambersburg, Pa. 785,210, pub. 12–1–64. Cl. 23.
Henrichsen, Emmerick E., d.b.a. E.H. Co., Cincinnati, Ohio. 671,949, canc. Cl. 51.
Hercules Powder Co., Wilmington, Del. 784,991, pub. 12–1–64. Cl. 1.
Horwitz, Harold H., d.b.a. Harold H. Horwitz and Associates, Chicago, Ill. 671,836, canc. Cl. 32.
Hexcel Products Inc., Berkeley, Calif. 785,040, pub. 12–1–64. Cl. 12.
Highland Car Co., Jackson, Miss. 671,761, canc. Cl. 19.
Hillcrest Sporting Goods, Inc., New York, N.Y. 785,125, pub. 12–1–64. Cl. 22.
Hilliard Corp., The, Elmira, N.Y. 411,020–1, ren. 2–16–65. Cl. 31.
Hilliard Corp., The, Elmira, N.Y. 411,023, ren. 2–16–65. Cl. 31.
Hinds, O. L., Co., New York, N.Y. 671,875, canc. Cl. 39.
Hit Parade Program Service, Inc.: *See*—
Sterling Title Strip Co.
Hoffman Lion Mills Co., Inc., Fall River, Mass. 671,689, canc. Cl. 7.
Hold-All Corp., Detroit, Mich. 671,812, canc. Cl. 28.
Holiday Yachts, Inc., Centerport, N.Y. 785,093, pub. 12–1–64. Cl. 19.
Hollywood Vassarette: *See*—
Munsingwear, Inc.
Horwitz, Harold H., and Associates: *See*—
Horwitz, Harold H.
Houghton, E. F., & Co., Philadelphia, Pa. 785,211, pub. 12–1–64. Cl. 35.
House for Men, Inc., The, d.b.a. Treasure Island Sales Co., Chicago, Ill. 785,403. Cl. 51.
House of Westmore, Inc., New York, N.Y. 785,350, pub. 12–1–64. Cl. 51.
Huber, J. M., Corp., Borger, Tex. 784,995, pub. 12–1–64. Cl. 1.
Hukill Chemical Corp., Cleveland, Ohio. 785,023, pub. 12–1–64. Cl. 6.
IBEC Packing Co. of New York, Inc., New York, N.Y. 785,313, pub. 12–1–64. Cl. 46.
IDQ Inc., Evansville, Ind. 785,180, pub. 12–1–64. Cl. 26.
I-T-E Circuit Breaker Co., Philadelphia, Pa. 671,861, canc. Cl. 38.
Imperial Brass Mfg. Co., The, Chicago, Ill. 671,702, canc. Cl. 13.
Imperial Knife Associated Companies, Inc., Providence, R.I. 785,150, pub. 12–1–64. Cl. 23.
Imperial Knife Associated Companies, Inc., Providence, R.I. 785,152–6, pub. 12–1–64. Cl. 23.
Imported Sportswear Corp., Bronx, N.Y. 671,878, canc.. Cl. 39.
Incardona, Joseph C., Johnstown, Pa. 671,650, canc. Cl. 2.
Instrumentation Associates Inc., New York, N.Y. 785,294, pub. 12–1–64. Cl. 44.
Insular Products Corp., Houston, Tex. 785,089, pub. 12–1–64. Cl. 12.
Interchemical Corp., New York, N.Y. 671,665, canc. Cl. 6.
Izod, Ltd., New York, N.Y. 785,349, pub. 12–1–64. Cl. 51.
J.H. Enterprises, Inc., Akron, Ohio. 785,341, pub. 12–1–64. Cl. 5.
Jacobsen Orchards, Inc., Tehachapi, Calif. 785,311, pub. 12–1–64. Cl. 46.
Jarco Metal Products Corp., Westbury, N.Y. 785,006, pub. 12–1–64. Cl. 2.
Jaybee Mfg. Corp., Los Angeles, Calif. 785,054, pub. 12–1–64. Cl. 13.
Jerry's Nut House, Inc., Denver, Colo. 785,316, pub. 12–1–64. Cl. 46.
Jiffy Food Stores, Inc., Wichita Falls, Tex. 785,368, pub. 12–31–63. Cl. 101.
Jobbers Service, Inc., Coldwater, Mich. 785,308, pub. 12–1–64. Cl. 46.
Johns-Manville Corp., New York, N.Y. 785,104, pub. 12–1–64. Cl. 21.
Johnson & Johnson, New Brunswick, N.J. 196,666, ren. 2–16–65. Cl. 44.
Johnson, S. C., & Son, Inc., Racine, Wis. 785,010, pub. 12–1–64. Cl. 6.
Johnson Wire Works Ltd., The, Montreal, Quebec, Canada. 785,277, pub. 12–1–64. Cl. 42.
Junior League of Nashville, Inc., The, Nashville, Tenn. 785,242, pub. 12–1–64. Cl. 38.
Juvenile Wood Products, Inc. of Fort Wayne, Ind.: *See*—
Van Arnam Mfg. Co.
KBS, Inc., Ann Arbor, Mich. 785,122, pub. 12–1–64. Cl. 22.
K & S Mfg. Co., Los Angeles, Calif. 785,344, pub. 12–1–64. Cl. 50.
Kadex Corp., Oakland, Calif. 785,043, pub. 12–1–64. Cl. 12.
Kazmierczak, Stanley, d.b.a. Beauty Care Products Co., Hales Corners, Wis. 785,402. Cl. 51.
Kellogg, L. H., Chemical Co., Minneapolis, Minn. 785,018–19, pub. 12–1–64. Cl. 6.
Ken Publishing Co., Inc., New York, N.Y. 783,394. Cl. 38.
Kennametal Inc., Latrobe, Pa. 785,216, pub. 12–1–64. Cl. 35.
Kent Mfg. Co.: *See*—
Cebelak, Bernard J.
Kinney Co., The, Providence, R.I. 785,186–7, pub. 12–1–64. Cl. 28.
Knapp Bros. Shoe Mfg. Corp., Brockton, Mass. 785,262, pub. 12–1–64. Cl. 39.
Knight of Rest Products, Newark, N.J. 785,203, pub. 12–1–64. Cl. 32.
Korea Mfg. Corp., New York, N.Y. 785,221, pub. 12–1–64. Cl. 37.
Kroehler Mfg. Co., Naperville, Ill. 785,197, pub. 12–1–64. Cl. 32.
Kutler, Harry, d.b.a. Radax Display Advertising Service, Beverly Hills, Calif. 671,965, canc. Cl. 101.
Land O'Frost, Inc., Chicago, Ill. 785,306, pub. 9–17–63. Cl. 46.
Lanolin Plus, Inc.: *See*—
National Boulevard Bank of Chicago.
La Porte Art Galleries: *See*—
Brown, Frank C.
Lauder, Estee, Inc., New York, N.Y. 785,404–5. Cl. 51.
Learning Center, Inc., The, New York, N.Y., from Creative Playthings, Inc., Cranbury, N.J. 785,227, pub. 12–1–64. Cl. 38.

Leedal, Inc., Chicago, Ill. 785,406. Cl. 52.
Lewis, Mack O., d.b.a. Active Therapy Products Co., Detroit, Mich. 671,742, canc. Cl. 18.
Lever Bros. Co., New York, N.Y. 785,407. Cl. 52.
Lew Mfg. Co., Coventry, R.I. 785,225, pub. 11–24–64. Cl. 37.
Liana of Waikiki: *See*—
Hawaiian Perfumers, Inc.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 785,042, pub. 12–1–64. Cl. 12.
Library Binding Institute, Boston, Mass. 785,375, pub. 12–1–64. Cl. 106.
Liqua-Mix, Inc., Indianapolis, Ind. 671,770, canc. Cl. 21.
Little Oscar: *See*—
Lucietto, Lambert, and Ledo Lucietto.
Loombrook Mills Corp., New York, N.Y. 671,885, canc. Cl. 42.
Lowe's, Inc., Cassopolis, Mich. 785,030, pub. 12–1–64. Cl. 6.
Lucietto, Lambert, and Ledo Lucietto, d.b.a. Little Oscar, Brookfield, Ill. 785,116, pub. 12–1–64. Cl. 22.
Lumen, Inc., Joliet, Ill. 671,781, canc. Cl. 21.
Luxuray, Division of Beaunit Mills, Inc., to Beaunit Corp., New York, N.Y. 413,923, ren. 2–16–65. Cl. 39.
M-H Standard Corp., Hamilton, Ohio. 785,158, pub. 12–1–64. Cl. 23.
Mallinckrodt Chemical Works, St. Louis, Mo. 785,022, pub. 12–1–64. Cl. 6.
Mallinckrodt Chemical Works, St. Louis, Mo. 785,027, pub. 12–1–64. Cl. 6.
Mandl, Richard L., Los Angeles, Calif. 785,374, pub. 12–1–64. Cl. 105.
Manufacture d'Armes des Pyrenees Francaises, Societe a Responsabilite Limitee, Hendaye, Basses Pyrenees, France. 671,691, canc. Cl. 9.
Maradel Products, Inc., New York, N.Y. 785,348, pub. 12–1–64. Cl. 51.
March & Mendl, Inc., New York, N.Y. 785,261, pub. 12–1–64. Cl. 39.
Marey, C., & Cie Liger-Belair, Liger-Belair & Fils Sucrs.: *See*—
Societe Anonyme des Anciens Etablissements C. Marey & Liger-Belair, Liger-Belair & Fils Successeurs.
Marlboro Shirt Co., Inc., New York, N.Y. 785,270, pub. 12–1–64. Cl. 39.
Marley Co., The, Kansas City, Mo. 785,389. Cl. 31.
Martin, Glenn L. Co., The, Middle River, Md., to United States Rubber Co., New York, N.Y. 410,472, ren. 2–16–65. Cl. 1.
Marubeni-Iida (America), Inc., from Marubeni-Iida Co. (New York), Inc., New York, N.Y. 671,866, canc. Cl. 39.
Marubeni-Iida Co. (New York), Inc.: *See*—
Marubeni-Iida (America), Inc.
Maryland Cup Corp., Owings Mills, Md. 785,005, pub. 12–1–64. Cl. 2.
Master Lock Co., Milwaukee, Wis. 785,175, pub. 12–1–64. Cl. 25.
Master Photo Dealers' & Finishers' Association, Jackson, Mich. 785,240, pub. 12–1–64. Cl. 38.
Mattel, Inc., Hawthrone, Calif. 785,127, pub. 12–1–64. Cl. 22.
Maxim Import Co., Inc., Los Angeles, Calif. 671,829, canc. Cl. 30.
Maxim Import Co. Inc., Los Angeles, Calif. 671,838, canc. Cl. 33.
Maxon Shirt Co. Division: *See*—
Oxford Mfg. Co., Inc.
Maysteel Products Inc., Mayville, Wis. 785,196, pub. 12–1–64. Cl. 32.
McCall Corp., New York, N.Y. 671,858, canc. Cl. 38.
McCrory Stores Corp., New York, N.Y. 671,869, canc. Cl. 39.
Mead Johnson & Co., Evansville, Ind. 785,317, pub. 12–1–64. Cl. 46.
Mechanical Servants, Inc., Chicago, Ill. 785,163, pub. 12–1–64. Cl. 23.
Meda-Plast Products Co., Palmyra, N.J. 785,302, pub. 12–1–64. Cl. 44.
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Mermaid Pool & Supply Co., Inc., Cincinnati, Ohio. 671,709, canc. Cl. 13.
Merritt Co., The: *See*—
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Merritt, James S., Co., The, d.b.a. The Merritt Co., Kansas City, Mo. 785,312, pub. 12–1–64. Cl. 46.
Mickel, Toufick, d.b.a. Mid South Hosiery Co., Monroe, La. 785,257, pub. 12–1–64. Cl. 39.
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Mideast Aluminum Corp., Dayton, N.J. 785,058, pub. 12–1–64. Cl. 14.
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Montrose Oil & Belting Co., Inc., Brooklyn, N.Y. 785,170, pub. 12–1–64. Cl. 23.
Morat, Franz, G.m.b.H., Stuttgart-Vaihingen, Germany. 785,151, pub. 12–1–64. Multiple Class (Classes 23, 39, and 42).
Morgan-Jones, Inc., New York, N.Y. 785,281, pub. 12–1–64. Cl. 42.
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Nopco Chemical Co., Newark, N.J. 785,080, pub. 12–1–64. Cl. 18.
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# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of January 1965

| | |
|---|---|
| Examiner affirmed | 324 |
| Examiner affirmed in part | 45 |
| Examiner reversed | 80 |
| Total | 449 |

### Adjudicated Patents

(D.C. Mass.) Tansel Patent No. 2,725,803 (95—4.5), for PHOTOGRAPHIC COMPOSING APPARATUS, *Held* invalid and not infringed. *Photon, Inc.* v. *Harris-Intertype Corporation*, 235 F. Supp. 921; 143 USPQ 397.

(D.C. Mass.) Tansel Patent No. 2,896,523 (95—4.5), for PHOTOTYPOGRAPH, *Held* invalid and not infringed. *Id.*

(D.C. Ill.) Shumaker Patent No. 2,933,344 (296—791), for WIND DEFLECTORS, *Held* not infringed. *Shumaker* v. *Grobreski Industries, Inc.*, 235 F. Supp. 947; 143 USPQ 280.

### Classification Order No. 369

The following transfers are hereby ordered to take effect on Monday, January 25, 1965:

From Group 180 to Group 380
Class 34, Drying and Gas or Vapor Contact With Solids
From Group 170 to Group 330
Class 266, Metallurgical Apparatus

RICHARD A. WAHL,
*Acting Superintendent, Examining Corps.*

### Disclaimer

2,974,236.—*Jacques I. Pankove*, Princeton, N.J. MULTI-ELECTRODE SEMICONDUCTOR DEVICES. Patent dated Mar. 7, 1961. Disclaimer filed Nov. 9, 1964, by the assignee, *Radio Corporation of America*.

Hereby enters this disclaimer to claims 3, 4, 5 and 6 of said patent.

### Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,870,805, A. S. Zakrzewski, G. Ashby, Z. Daskiewicz and E. S. Moore, HEAD FOR POWER OPERATED SCREW DRIVER, decided Jan. 8, 1965, Interference No. 94,314, claims 2 and 3.

Patent No. 2,947,717, W. J. Belanger and J. E. Masters, EPOXIDE RESIN COMPOSITIONS, decided Oct. 16, 1964, Interference No. 92,515, claims 1, 2, 3 and 5.

Patent No. 2,951,972, J. W. Pomasal, CONTROL MECHANISM FOR AN ELECTRIC ARC WELDER, decided Jan. 6, 1965, Interference No. 93,048, claim 14.

Patent No. 2,960,541, E. U. Elam and R. H. Hasek, ALLENE CONDENSATION PRODUCTS WITH DIENES, decided Dec. 10, 1964, Interference No. 92,745, claim 2.

Patent No. 2,974,236, J. I. Pankove, MULTI-ELECTRODE SEMICONDUCTOR DEVICES, decided Sept. 23, 1964, Interference No. 92,483, claims 3, 4, 5 and 6.

Patent No. 2,981,089, G. A. Neyhouse, J. W. Savage and R. K. Shewmon, POWER DRIVE APPARATUS, decided Jan. 8, 1965, Interference No. 92,507, claims 1, 3, 4, 5, 6, 7 and 8.

Patent No. 2,998,306, W. M. Huyck and V. A. Romito, TELLTALE FOR ETHYLENE OXIDE STERILIZATION, decided Sept. 22, 1964, Interference No. 92,683, claims 4, 5, 6 and 8.

Patent No. 3,001,305, R. Sardeson, PRESSING IRONS, decided Jan. 4, 1965, Interference No. 93,266, claim 9.

Patent No. 3,019,147, G. S. Nalle, Jr., PLASTIC NETTING EXTRUSION APPARATUS WITH OSCILLATING CONTACTING DIE ELEMENTS AND PRODUCTS OF SUCH APPARATUS, decided Sept. 25, 1964, Interference No. 92,931, claims 1, 2 and 3.

Patent No. 3,040,749, H. W. Payton, UMBILICAL CORD CLAMP, decided Sept. 28, 1964, Interference No. 93,184, claims 1, 2, 3, 4, 6 and 7.

Patent No. 3,049,588, J. S. Barnett, QUALITY CONTROL SYSTEM, decided Dec. 17, 1964, Interference No. 94,219, claim 2.

Patent No. 3,091,720, E. J. Huberty, BALLAST APPARATUS WITH DIMMING CONTROL, decided Jan. 8, 1965, Interference No. 94,236, claim 19.

### Patents Available for Licensing or Sale

Des. 198,860. SKIN DIVER'S HAND RAKE. Joseph Fedorka, Jr., 38 Meadowbrook Drive, Somerville, N.J.

2,854,337. RASTER SCREEN AND A PROCESS FOR MAKING THE SAME. Henry F. Pearson, Newton, Pa.

### New Applications Received During December 1964

| | |
|---|---|
| Patents | 7,905 |
| Designs | 405 |
| Plant Patents | 12 |
| Reissues | 18 |
| Total | 8,340 |

### Issue—February 23, 1965

| | | | |
|---|---|---|---|
| Patents | 971—No. | 3,170,160 to No. | 3,171,130, incl. |
| Designs | 68—No. | 200,392 to No. | 200,459, incl. |
| Plant Patents | 3—No. | 2,483 to No. | 2,485, incl. |
| Reissues | 3—No. | 25,732 to No. | 25,734, incl. |
| Total | 1045 | | |

2,978,940. ARRANGEMENT FOR ACCURATELY POSITIONING A WORM-CONTROLLED SLIDE IN A MACHINE TOOL. J. L. Jeanneret, Niort, France. Correspondence to: Mr. Saafir, Technical Adviser, Office of the Commercial Counselor, 610 5th Ave., New York, N.Y., 10020.

3,160,962. LEVEL. James T. and James M. Brame, Box 78, Corydon, Ky.

3,164,356. SOAP HOLDER. Walter Zajaczkowski, Forest Road, Allendale, N.J.

3,165,352. TELESCOPIC ROOF COVER CONSTRUCTION FOR AUTOMOTIVE VEHICLES. Albert W. Hallock et al. Correspondence to: Joseph F. Padlon, 165 Broadway, New York, N.Y., 10006.

3,166,055. POWER UNIT. Eugene R. and Willard L. Barnett, 6268 Windsor Drive, Indianapolis, Ind.

3,166,199. ATTACHMENTS FOR TRACTORS. Alta F. and Robert T. Hawkins, R.R. #1, Whitestown, Ind.

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The following 5 patents are offered by: Ionics, Inc., 152 6th St., Cambridge, Mass., 02142.

2,776,258. ION-EXCHANGE-REGENERANT RECOVERY.

2,854,792. METHOD AND APPARATUS FOR PROPAGATING ALGAE CULTURE.

2,884,310. PRODUCTION OF ALKALI METAL HYDROXIDES BY ION EXCHANGE.

2,917,368. METHOD OF PRODUCING CAUSTIC BY ION EXCHANGE AND REGENERATION THEREOF.

2,955,990. SELF-RECTIFYING ELECTRODIALYSIS UNIT.

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General Electric Company is prepared to grant non-exclusive licenses under the following 18 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Patent Counsel, Construction Ind. Div., General Electric Company, 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn., 06602.

3,161,746. FLUORESCENT LAMP STARTER INCLUDING A GLOW SWITCH CONTIGUOUS AND THERMALLY CONNECTED TO A THERMAL SWITCH.

Applications for license under the following 2 patents may be addressed to: Division Patent Counsel, Missile and Space Division, Valley Forge Space Technology Center, P.O. Box 8555, Philadelphia, Pa., 19101.

3,149,460. REACTION PROPULSION SYSTEM.

3,150,901. BEARING SURFACES.

Applications for license under the following 15 patents may be addressed to: General Electric Company, Component Products Division, 1635 Broadway, Fort Wayne, Ind., Attn: Patent Counsel.

2,939,808. METHOD OF FORMING AN ADHERENT FILM OF MAGNESIUM OXIDE.

3,010,091. TUBE-IN-STRIP ELECTRIC RESISTANCE HEATER.

3,050,267. DEVICE FOR CONTINUOUS TREATMENT OF STRANDS.

3,062,267. METHOD AND APPARATUS FOR HELICALLY WINDING STRIP MATERIAL.

3,075,279. METHOD OF PROVIDING A BEARING SURFACE.

3,095,774. METHOD AND APPARATUS FOR SEVERING A MOVING HELICAL STRIP.

3,109,759. HEAT TREATING MALLEABLIZED WHITE IRON TO CONTROL GROWTH.

3,126,779. APPARATUS FOR PIERCING A MOVING HELICAL STRIP.

3,136,650. METHOD FOR COATING A SURFACE OF AN ARTICLE WITH A RESIN LAYER.

3,151,492. SPEED REGULATING MECHANISM.

3,152,629. APPARATUS AND METHOD FOR HELICALLY WINDING STRIP MATERIAL.

3,153,942. LINEAR ACTUATING ARRANGEMENT.

3,154,704. RESILIENT MOTOR MOUNTING.

3,157,761. SPEED RESPONSIVE SWITCH HAVING A PIVOTALLY MOUNTED OPERATING MEMBER WITH AN INTEGRAL CONTACT.

3,157,762. SPEED RESPONSIVE SWITCH ARRANGEMENT FOR USE IN CONTROLLING WINDING CIRCUITS OF SINGLE PHASE REVERSIBLE ELECTRIC MOTORS.

## PATENT EXAMINING CORPS

### H. B. WHITMORE, Superintendent

### CONDITION OF PATENT APPLICATIONS AS OF JANUARY 1, 1965

| PATENT EXAMINING OPERATIONS AND GROUPS | Actual Filing Date of Oldest Case Awaiting Action: New | Amended |
|---|---|---|
| **CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.** | | |
| GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries. | 7-20-62 | 4- 9-56 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner. Heterocyclic; Amides; Alkaloids; Aso; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids. | 11-30-62 | 6-14-57 |
| PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 2- 4-63 | 12-31-56 |
| HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming. | 8- 1-62 | 2-26-60 |
| COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes. | 9-18-62 | 12-28-56 |
| COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures. | 7-20-62 | 1- 3-56 |
| SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving. | 9- 6-62 | 3-28-57 |
| CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner. Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 12- 6-62 | 6- 9-59 |
| **ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.** | | |
| POWER, GROUP 210—M. L. LEVY, Supervisory Examiner. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art. | 11-19-62 | 3- 2-59 |
| SECURITY, GROUP 220—S. BOYD, Supervisory Examiner. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 12-18-62 | 5- 1-53 |
| INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner. Communications; Multiplexing Techniques; Facsimile and Related Art. | 10-19-62 | 2-25-58 |
| INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner. Data Processing, Computation and Conversion; Storage Devices and Related Art. | 7- 5-62 | 5-16-57 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks. | 10- 1-62 | 7-19-57 |
| RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner. Optics; Radiant Energy; Measuring. | 9-28-62 | 12-14-58 |
| ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner. Conductors; Switches; Miscellaneous. | 1-18-63 | 4-14-59 |

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|---|---|
| Total number of pending applications (excluding Designs) | 206,227 |
| Total number of Design applications pending | 5,784 |
| Total number of applications awaiting action (excluding Designs) | 141,524 |
| Total number of Design applications awaiting action | 2,717 |
| Date of oldest new application awaiting action | July 5, 1962 |
| Date of oldest amended application awaiting action | May 1, 1953 |

## EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during February 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents ..... Numbers 2,435,187 to 2,436,781, inclusive

Plant Patents ..... Numbers 783 to 785, inclusive

| PATENT EXAMINING OPERATIONS AND GROUPS (Continued) | Actual Filing Date of Oldest Case Awaiting Action | |
|---|---|---|
| | New | Amended |
| **ENGINEERING EXAMINING OPERATION—R. A. WAHL, Director.** | | |
| **R ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner**<br>rticle Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; and Assorting Solids. | 5-23-63 | 2-11-63 |
| **PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner**<br>ng, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus. | 3- 1-63 | 7-29-59 |
| **RING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Examiner**<br>le Making; Assembling, Tool and Implement Making; and Metal Working. | 10-23-62 | 3- 2-60 |
| **OLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner**<br>ls for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission nts, Work and Tool Holders. | 2- 5-63 | 9-25-58 |
| **TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner**<br>s Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Etc.; Pushing and Pulling. | 1-16-63 | 4-20-60 |
| **LING, GROUP 360—E. PAUL, Supervisory Examiner**<br>ing; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; ding. | 2- 1-63 | 8-28-59 |
| **NTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner**<br>a, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation. | 3-23-63 | 5-12-60 |
| **OOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner**<br>iquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, tion, Ventilation, and Illumination. | 3- 1-63 | 5-19-59 |
| **GINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.** | | |
| **RE, GROUP 410—A. RUEGG, Supervisory Examiner**<br>sbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth | 7- 8-63 | 12-28-59 |
| **EERING, GROUP 420—B. BENDETT, Supervisory Examiner**<br>ructures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining. | 3- 1-63 | 8-28-58 |
| **OUP 430—R. L. EVANS, Supervisory Examiner**<br>y; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 12-31-62 | 7-23-57 |
| **ND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner**<br>nding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines. | 2-14-63 | 12-10-59 |
| **ATION, GROUP 450—P. ARNOLD, Supervisory Examiner**<br>d Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships. | 3- 6-63 | 10-16-58 |
| **AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner**<br>Supports; Cabinet Structures; Receptacles; Baggage. | 4-18-63 | 11- 5-60 |
| **TATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory**<br>ypewriters; Stationery; Material Treatment. | 7-17-62 | 8-14-59 |
| **TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisor**<br>ntistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors. | 5-24-63 | 4- 2-63 |
| **OUP 490—J. A. MANIAN, Supervisory Examiner**<br>rts; Household, Personal and Fine Arts. | 3- 9-64 | 9-26-61 |

# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE LEO V. BENT

*No. 7249. Decided December 17, 1964*

[52 CCPA —; 339 F.2d 255; 144 USPQ 28]

1. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS.
"It is not necessary in a combination rejection that the structure of one reference be substituted bodily in that of the reference with which it is combined."
2. SAME—PARTICULAR SUBJECT MATTER—"LOUVER TYPE WINDOWS."
The decision of the Board of Appeals, refusing the claims in an application entitled "Louver Type Windows" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 25,390.

AFFIRMED.

*Otis A. Earl* (*Austin A. Webb* of counsel) for appellant.

*Clarence W. Moore* (*J. F. Nakamura* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals which affirmed the Examiner's rejection of all the claims in appellant's application [1] for "Louver Type Windows." At oral hearing appellant withdrew claims 7 and 10 from appeal.

Appellant's application involves a louver type window assembly in which overlapping glass panels are mounted in side support members which swing about individual horizontal axes to open and close the window. Extending between the louver support members along the top edge of each of the glass panels is a crosspiece which includes resilient weatherstrip material designed to serve as a seal between the window panels in closed position. Appellant states his object is "to provide a panel and support assembly which effectively supports the panel and * * * in which the parts are economical to produce [and] quickly assembled * * *." The specific structure of the support members and crosspiece is best reflected in claim 1:

1. A louver assembly comprising a panel, oppositely facing panel support members with which the ends of the panel are supportedly engaged and having rearwardly projecting pivot arms spaced downwardly from their upper ends, and having front panel supporting flanges terminating at their lower ends in rearwardly projecting panel supporting lugs, the upper ends of the front flanges terminating in downwardly spaced relation relative to the upper ends of the support members, said support members having upper and lower rear flanges disposed above and below said pivot arms, the lower rear flanges terminating in spaced relation to the lower ends of the front flanges and having inwardly offset portions in thrust supporting engagement with the rear side of the panel, the upper rear flanges terminating at their upper ends in forwardly projecting lugs spaced upwardly relative to the upper ends of the front flanges, a crosspiece extending between said support members with said lugs on said upper

[1] Serial No. 25,390, filed April 28, 1960.

rear flanges in retaining engagement therewith, said crosspiece having a downwardly facing channel in which the upper edge of the panel is disposed and having a laterally facing dovetailed slot therein, and a resilient weatherstrip having a dovetailed portion retainingly engaged in said slot in said crosspiece.

The references relied on are:

Hallock, 2,822,587, February 11, 1958.
West, 2,845,153, July 29, 1958.
Cline, 2,952,050, September 13, 1960.

Hallock discloses a louver structure in which a resilient weatherstrip material having a dovetailed portion is engaged in a dovetailed slot formed on an edge of the louver panel. The weatherstrip provides a seal between top and bottom edges of adjacent panels when in closed position.

West discloses a louver type window structure having glass panels disposed one above the other, each being mounted in a pair of side support members. The side support members have rearwardly projecting pivot arms spaced downwardly from their upper ends and front panel support flanges terminating at their upper ends in downwardly spaced relation to the upper ends of the support members. The lower portion of the front panel support flange is bent rearwardly to serve as a support lug for the bottom edge of the glass. The upper portion of the side support member comprises a lug or ear which engages a rigid weatherstrip crosspiece extending between the support members along the top edge of the lower glass panel. The crosspiece has a downwardly facing channel receiving the upper edge of the panel and a tongue projecting laterally from the side thereof which forms a seal with a groove in the inner face of a second weatherstrip running along the bottom edge of the upper glass panel.

Cline discloses a louver type window structure with pivotally mounted members supporting each end of the glass panels. The Examiner characterized Cline as disclosing side support members "having the identical configuration of those disclosed by" appellant.

The Examiner rejected all of the claims over West in view of Cline and Hallock. In concise terms, the Examiner regarded the West reference as showing appellant's combination except for the specific panel support members and the flexible weatherstrip held in place by a dovetail groove structure. He was of the opinion that it would be obvious to one of ordinary skill in the art to utilize Cline's panel support members in place of West's support member, and to use Hallock's weatherstrip structure in place of West's structure. The Board agreed.

We find no error in that conclusion. Rather than being a case of hindsight, as urged by appellant, we are satisfied that one of ordinary skill in this art, with the clear teachings of West, Cline and Hallock before him, would find it obvious to do what appellant has done.

Contrary to appellant's contentions in his brief, the "combination of, and coaction between, the crosspiece" retained on the top edge of the panel and the lugs on the support member are clearly suggested by the references. As previously noted, West's support member has an upper lug which engages the weather sealing strip extending along the top edge of the glass. Cline's support member is shown with a similar lug which would serve the same purpose as is obvious from the reference combination.



We find no merit in appellant's argument that use of a flexible weatherstrip material having the specified dovetail structure of Hallock in place of the rigid tongue-and-groove weatherstrip material of West would be unobvious. It is apparent from those references that flexible weatherstrip is well known in the prior art. We agree with the Examiner and Board that its substitution in West would be obvious. Appellant, in contending that West has no part capable of receiving Hallock's seal and that there is nothing in Hallock that can be combined with West "without entirely departing from the structure and teaching" of both, ignores the combined teaching of the two references. [1] It is not necessary in a combination rejection that the structure of one reference be substituted bodily in that of the reference with which it is combined. *In re Billingsley*, 47 CCPA 1108, 279 F.2d 689, 126 USPQ 370. The provision of spaced ribs on the side of West's upper weatherstrip in lieu of the tongue to form a dovetail slot for a resilient sealing material is clearly suggested by Hallock.

Appellant argues that the Examiner and Board have disregarded the economy of production and simplicity of assembly achieved by his combination, emphasizing his panel support members are economically manufactured from a single stamping. That contention is disposed of by the Examiner's observation, with which we agree, that the side support members of Cline and those disclosed here are identical. It is clear to us that the ease of assembly and economy of production achieved by appellant is adequately suggested by the reference combination.

We have considered the details of all of the claims in view of appellant's arguments, but we are persuaded that the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to one of ordinary skill in this particular field.

[2] The decision is affirmed.

AFFIRMED.

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## U.S. Court of Customs and Patent Appeals

IN RE CHARLES H. GOODMAN, EDWARD K. RICE, KLAUS ROSENSTERN, AND GEORGE W. LENSIE

*No. 7250. Decided December 17, 1964*

[52 CCPA —; 338 F.2d 228; 144 USPQ 30]

1. PATENTABILITY—EVIDENCE—FAILURE OF PRIOR ART TO MENTION PROBLEM.
On the issue of obviousness of the claimed subject matter over the prior art, and with reference to the appellants' argument that the prior art must suggest the problem as well as the solution, *Held* that "The failure of the prior art to mention a problem may be due to the fact that in practice the problem is not a serious one or that a large number of satisfactory solutions is readily apparent."

2. SAME—SAME—COMMERCIAL ACCEPTANCE MUST BE DUE TO CLAIMED SUBJECT MATTER.
"Considering • • • commercial acceptance, we note from appellants' application that development of their core coincides with the 'development of the pre-stressed-concrete art.' The affidavit does not indicate that appellants' slabs are not prestressed. We do not know the relative importance of the core assembly and the prestressing of the concrete slab itself in the commercial success. Little weight can be given to the sales volume of appellants' slabs without some evidence that it was due to the cores from which the slabs were made, since appellants are claiming cores not slabs."

3. SAME—SAME—COMPARISON SHOULD BE WITH NEAREST PRIOR ART.

"The increased length and reduced cross-sectional area of slabs obtained by using the claimed core is highly significant. However, a comparison to be meaningful should be made with a slab formed by using a rigid prior art core most similar to appellants' core. The affidavit does not make such a comparison but merely makes the statement, unsupported by facts showing how the comparison was made, that slabs made with appellants' core are superior to prior art slabs. It is not clear how much better appellants' slabs are than slabs made by the best prior art techniques available for making long slabs. In summary, we find the affidavit not sufficiently persuasive for the reasons stated * * *."

4. SAME—PARTICULAR SUBJECT MATTER—"CORE ELEMENT FOR FORMING HOLLOW CAST STRUCTURES."

The decision of the Board of Appeals, refusing the claims in an application entitled "Core Element for Forming Hollow Cast Structures," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 772,790.

AFFIRMED.

*James H. Littlepage, Dugald S. McDougall*, for appellants.

*Clarence W. Moore* (*L. F. Parker* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection under 35 U.S.C. 103 of all of the claims in appellants' patent application.[1]

The invention relates to the formation of hollow concrete slabs which are used as beams. The beams are formed by pouring concrete into a mold containing a central core element running the length of the mold. The concrete fills the void between the mold walls and the central core element. When the concrete is partially cured, the core element is removed by moving the outer walls of the core element inward, thus making the core element smaller than the hollow central core. Appellants state that during curing of long hollow concrete slabs the core element within the mold is suspended only at its ends and thus tends to bend in the middle due to gravity. As a result, the core is not straight, making it difficult to remove the core element and causing a nonuniform beam cross-section. Appellants claim to have solved the problem of bending of the core element by prestressing the core element in an upward direction to make it free of gravity induced bending.

Appellants' core assembly is set forth in rejected claims 1, 3, 5, 6, 7, 9 and 11. Claim 1 is representative and reads as follows:

A core assembly for use in forming relieved passages in molded slabs, comprising an elongated beam formed of metal plates joined together at their edges to define an essentially prismatic structure, filamentary pre-stressing means of high-tensile-strength material disposed within said structure and anchored thereto adjacent the ends thereof, means for adjusting the tension on said filamentary means, said means being capable under tension of holding said structure in true prismatic shape, free of gravity-induced bending, when said structure is suspended horizontally from its ends, a set of wall plates mounted on said beam externally and generally parallel thereto, means for advancing and retracting said wall plates laterally with respect to said beam, the edges of said wall plates defining narrow gaps therebetween which vary in width as said plates are advanced and retracted, and flexible web means bridging over said gaps.

[1] Serial No. 772,790, filed November 10, 1958, for "Core Element for Forming Hollow Cast Structures."



The core assembly of the claims is illustrated below by FIGURES 2 and 6 of appellants' application.

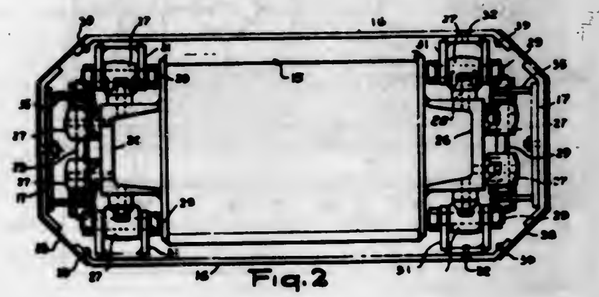
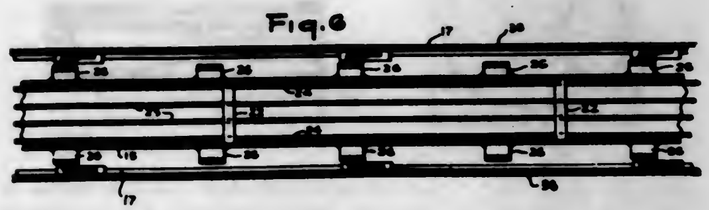


Fig. 2

Fig. 6



An end section of the core assembly is shown in FIGURE 2. The central beam is shown as 15. The wall plates are 16 and 17. The wall plates are joined by flexible web 38. Before removing the core assembly from a partially cured beam, the wall plates are moved inward toward central beam 15. The means for accomplishing this inward movement are shown in FIGURE 6. By moving the central beam to the right while holding wall plates 17 stationary with respect to lateral movement, the wall plates are drawn toward the central beam due to movement of the pins attached at 26 in the cam slots (not numbered). The end walls 16 are manipulated in the same manner. The central beam is prestressed in an upward direction by means of cables 23.

The Board relied upon the following references:

Terry, 433,189, July 29, 1890.
Adam, 796,789, August 8, 1905.
Beckman, 1,052,207, February 4, 1913.
Cobi, 2,153,741, April 11, 1939.
McCall, 2,315,634, April 6, 1943.
German patent, 62,205, May 14, 1892.

The Board affirmed the Examiner's position that the claims were obvious over McCall in view of Adam, Terry and Beckman.

The basic reference, McCall, is illustrated by the following drawings:

FIG. 2.

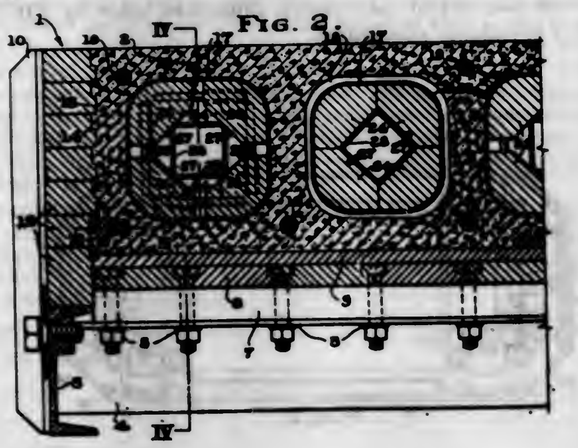
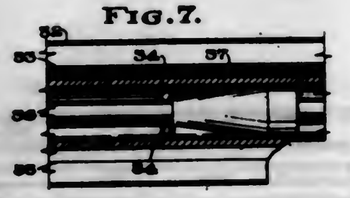


FIG. 5.



FIG. 7.



We agree with the Solicitor that:

> The patent to McCall • • • also shows an expandable core mold for use in casting hollow concrete floor slabs and other cementitious building units of varying length comprising an elongated metallic beam 28 • • • [FIG. 2] of an essentially rectangular prismatic structure, rigid walls or strips 24 mounted on said beam externally and generally parallel thereto and an envelope 23 of flexible material for bridging the gap formed between the edges of the walls or strips 24 as they are advanced and retracted. When the beam 28 is rotated, its corners engage the inner faces of the core walls 24 and force them outwardly to expand the beam.
>
> In an alternative embodiment • • • [FIGS. 5 and 7], the beam is in the form of a metallic tube having holes to accommodate pins 34 which rest against a rod 36 provided with wedges 37. Longitudinal movement of the rod [36] brings the wedges into contact with the pins to expand the core.

The Adam patent discloses a core-bar for use in fabricating concrete pipe. The core-bar comprises four outer metal walls which form a cylindrical core and a central rod on which the walls are mounted by means of cam slots on the walls and pins on the central rod. Longitudinal movement of the rod produces expansion or contraction of the wall plates.

The Terry patent discloses a hollow metal pole containing an adjustable cable for prestressing the pole to brace it against lateral strain. The internal bracing shown by Terry is essentially the same as that set forth in appellants' claims.

The Beckman patent discloses an I-beam for use as a building element. The beam is trussed by a cable connecting the lower and upper portion of the beam. Once again the arrangement of the prestressing cable does not differ materially from the prestressing means of appellants' claims.



It was the Examiner's position that the McCall patent discloses a core assembly having expandable walls and that with regard to the specific actuating mechanism, it would be obvious to follow the teachings of Adam.

Appellants, in their brief, do not rely for patentability upon the structure of the outer walls and their means of attachment to the central beam. Their main contention is that it would be unobvious to prestress the central beam against bending. The Examiner's position was that:

> It is held to be but a matter of common, good engineering practice, as shown *for example* by Beckman or Terry, to truss up a structural member which needs such support, and to do so by placing a conventional type of truss *within* the structural member, which member can be made hollow to accommodate such a truss means, in order that the truss will put the structural member under stress. Thus it would not amount to invention to internally truss an actuating member within the core • • • [of the] primary patent • • • in order to retain lightness yet increase strength against bending • • •.

Appellants answer the Examiner as follows:

> We concede, freely, that *if* someone before the present appellants had *taught* the core-element art the advantages of a perfectly straight central beam, it would have required no invention on the part of a skilled worker to fashion the necessary structure. But *without* such a teaching—with all the art going the other way in fact, toward balloons and rods and similar flexible structures—the ordinary skilled worker would have had nothing to point him in the direction that appellants traveled.

In support of their argument that the prior art must suggest the problem as well as the solution, appellants cite *In re Hortman*, 46 CCPA 814, 264 F.2d 911, 121 USPQ 218; *In re Shaffer*, 43 CCPA 758, 229 F.2d 476, 108 USPQ 326; *In re Deakins*, 25 CCPA 1153, 96 F.2d 845, 37 USPQ 693; *H. C. White* v. *Converse & Son Co.*, 20 F.2d 311 (2d Cr. 1927). In all of these cases the problem solved was itself unobvious. The Solicitor argues that the problem solved by appellants' structure was not unobvious.

We agree that the truss arrangement suggested by the Terry and Beckman patents would be an obvious means for strengthening or stiffening the central beam of a core assembly. Thus we must consider whether the desirability of stiffness is unobvious. Certainly it would be obvious that a more rigid core was needed if difficulty were encountered in removing the core because of bending. Appellants contend that all the art was going toward flexible structures. However, there is no indication that the McCall core is flexible. Claim 2, for example, describes the outer walls as "rigid." The Board noted that one of the problems set forth in the McCall patent was that of providing necessary strength. The only flexible part of the McCall patent is the outer envelope. The core itself, however, is not flexible. Even appellants' structure has a flexible web to allow for contraction. The core-bar of the Adam patent is also inflexible. The only patent showing a balloon-like core is Cobi which the Board did not rely on. Thus it is clear that rigid core elements were known in the prior art. While the problem of maintaining the core element extremely straight in long beams is not specifically mentioned in the prior art of record, we do not feel that the problem is an unobvious one.

[1] The failure of the prior art to mention a problem may be due to the fact that in practice the problem is not a serious one or that a large number of satisfactory solutions is readily apparent. Appellants have submitted an affidavit by Goodman, one of the inventors, as evidence that a problem did exist. We must consider this affidavit

along with the other evidence of unobviousness in reaching our final conclusion. The affidavit set forth three facts:

(1) The assignee, General Dynamics Corporation, completed a factory for the production of concrete slabs using the claimed cores in 1960. In 1961 sales of the slabs had exceeded $1,000,000 by September.

(2) Many of the slabs have been sold in lengths up to 52 feet.

(3) Slabs made with appellants' core have a cross-sectional area of about 444 square inches, whereas slabs made by prior art methods (using cores "of paper or • • • an inflatable rubber 'balloon'") require a cross-sectional area of 785 square inches.

[2] Considering, first, commercial acceptance, we note from appellants' application that development of their core coincides with the "development of the pre-stressed-concrete art." The affidavit does not indicate that appellants' slabs are not prestressed. We do not know the relative importance of the core assembly and the prestressing of the concrete slab itself in the commercial success. Little weight can be given to the sales volume of appellants' slabs without some evidence that it was due to the cores from which the slabs were made, since appellants are claiming cores not slabs.

[3] The increased length and reduced cross-sectional area of slabs obtained by using the claimed core is highly significant. However, a comparison to be meaningful should be made with a slab formed by using a rigid prior art core most similar to appellants' core. The affidavit does not make such a comparison but merely makes the statement, unsupported by facts showing how the comparison was made, that slabs made with appellants' core are superior to prior art slabs. It is not clear how much better appellants' slabs are than slabs made by the best prior art techniques available for making long slabs. In summary, we find the affidavit not sufficiently persuasive for the reasons stated above.

We have considered all of appellants' arguments bearing on unobviousness of the claimed prestressed core assembly. We do not, however, feel that the evidence indicates that the invention was unobvious. The problem solved by appellants, if not specifically pointed out by the prior art, was at least an obvious one. The means of solving the problem were clearly suggested by the prior art. [4] Finding no reversible error in the Board's decision, it is therefore affirmed.

AFFIRMED.

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## U.S. Court of Customs and Patent Appeals

IN RE ANTHONY J. CIVITELLO

*No. 7230. Decided December 17, 1964*

[52 CCPA —; 339 F.2d 243; 144 USPQ 10]

1. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS.

"Since Haslacher fails to *disclose* the feature of the claim relied on, we do not agree with the Patent Office that it would *suggest* modifying the Craig bag to contain that feature. The Patent Office finds the suggestion only after making a modification which is not suggested, as we see it, by anything other than appellant's own disclosure. This is hindsight reconstruction. It does not establish obviousness. We therefore find claim 2 allowable over the references applied."

2. SAME—COMPARISON OF REJECTED AND ALLOWED CLAIMS—COMBINATION.

"Appellant points out that the only difference between rejected claim 10 and allowed claim 11 is in a limitation added to claim 11 which is to be found in the prior art; wherefore, appellant argues, rejection of claim 10 reflects on the validity of claim 11. We cannot agree. While the added limitation is to be found in Craig, it has a special significance in claim 11 when read with the other recitations of the claim which clearly serves to distinguish the claim——'the subject matter as a whole,' in the words of section 103—from the art of record, more specifically from Haslacher, Craig being distinguished from by other limitations. One element in a combination claim, though an old element, may serve to distinguish from the art by making a new combination and the same is true of the recitation of this old feature when taken in conjunction with the other recited features."

3. SAME—PARTICULAR SUBJECT MATTER—"SQUARE BOTTOM BAG."

The decision of the Board of Appeals, refusing three claims in an application entitled "Square Bottom Bag" as unpatentable over the prior art, is reversed as to one claim and affirmed as to the two others.

APPEAL from the Patent Office. Serial No. 797,970.

MODIFIED.

*Mason, Porter, Diller & Stewart, Charles J. Diller* (*Vincent L. Ramik* of counsel) for appellant.

*Clarence W. Moore* (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, *Smith*, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals insofar as it rejected claims 2, 9, and 10 of application Serial No. 797,970, filed March 9, 1959, for "Square Bottom Bag." Some claims have been allowed and no appeal was taken on claim 7, which was also rejected.

The rejection of the appealed claims was on the ground that they are unpatentable over the following references:

Haslacher, 2,377,005, May 29, 1945.
Craig, 2,600,487, June 17, 1952.

The only issue is obviousness in view of the prior art under 35 U.S.C. 103.

The invention is a bottom construction and blank assembly for a two-ply paper bag having an oil and grease proof liner which makes the bag suitable for packaging oil-containing or greasy foods such as cookies. The bag is also said to be sift-proof and air-tight and thus suitable for coffee, insecticides, and the like.

Bags of the type here involved have a liner suitably impervious to grease, such as a glassine paper, and an outer ply or wrapper of ordinary paper which may be printed, serving as the external package display. The main purpose of the invention is to provide a bag, capable of being made on existing bag-making machinery, in which the liner is so formed and related to the wrapper as to protect the latter from any oil or grease from the bag contents getting into it for the obvious reasons that it would spoil the appearance of the package, soften up the wrapper and possibly cause it to let go in its bottom seams. The invention further contemplates the use of an all-glued construction as distinguished from prior art lined bags in which the liner is heat sealed, gluing being said to permit faster processing than heat sealing.

Of the appealed claims, claim 2 is directed to a bag. Claims 9 and 10 are directed to a "blank assembly" consisting of the blank which forms the liner and the blank which forms the wrapper, the only

difference between the last two claims being that claim 10 says the two blanks are secured together marginally with adhesive. Many, but not all, of the limitations of claim 2 describing the walls, slits, tabs, flaps, and folds and their interrlationships which exist in the completed bag are recited in claims 9 and 10 but claim 2, being more complete, is the most limited of the three appealed claims. We do not set it forth here as it would be meaningless in the absence of a drawing, which would also be meaningless in the absence of a description. Instead, we will state our understanding of the feature relied on for patentability which we find set forth in claim 2.

We first note that both references disclose lined bags, Craig being one with a pasted or glued construction and Haslacher being of the heat-sealed liner type. Appellant's bag, being made by similar production methods from continuous webs with slitting, plying, tubing, unit separating, and folding techniques common to the art, has many things in common with the prior art. The principal admittedly novel feature is the formation of a flap *on the liner* at the end of one of the bag walls which overlies and *extends somewhat beyond* the corresponding bottom flap on the wrapper, *the end of the liner flap being folded around the edge of the wrapper flap* to keep it out of contact with the bag contents. The flaps at the opposite side of the bag are then folded, in forming the bag bottom, so that the liner flap is stuck directly to the folded edge of the first-mentioned liner flap. This is described in claim 2 in this language:

> * * * the projecting bottom portion of one of said inner tube flaps being reversely folded over the bottom edge of an associated one of said outer tube flaps * * * the projecting bottom portion of the other of said inner tube flaps overlying said reversely folded bottom portion * * * and all interior portions of the bag bottom are formed by said inner tube.

The inner "tube" is, of course, the liner of grease-proof material.

We fully agree with the following statements in appellant's brief about the Craig reference:

> The bag is provided with a specific bottom construction which attempts to provide for a sift-proof bag, but does not provide a grease-proof bag wherein the liner forms a complete bottom seal exclusive of the wrapper.
>
> * * * * * * *
>
> In this patent there is no disclosure or suggestion of a bottom edge of the liner 11 projecting beyond the bottom edge of the wrapper 10. There is also no disclosure of *reversely folding* a projecting bottom portion of the inner tube flap *over the bottom edge of the outer tube flap* or overlaying a projecting bottom portion of another inner tube flap upon the reversely folded bottom portion of the one inner tube flap, *which features constitute appellant's invention*. There is also an absence in this patent of a disclosure in which an inner tube is sealed to itself exclusively of an outer tube, and outer tube flaps which are protected entirely by the inner tube. [Our emphasis.]

In fact, Craig, which shows little more than a lined bag (designed for packaging carbon black) shows a construction having the very feature appellant wishes to avoid, paper wrapper edges in direct communication with the interior of the bag where they could absorb grease or the like exuding from the contents.

The Patent Office Solicitor's brief has very little to say about Craig. In fact it starts its argument with the statement, "Haslacher is the more important reference here * * *." The Examiner's rejection, found by the Board to be correct, was "unpatentable over Craig in view of Haslacher."

Haslacher has a heat-sealed liner and shows a variety of bottom formations, but not appellant's. The attitude of the Board was that



Haslacher would make it obvious to modify the Craig bag in such fashion as to arrive at appellant's construction. To do this, however, it is first necessary to modify Haslacher. As above pointed out, the claim feature relied on involves the wrapping of a liner flap end around a wrapper edge and this is the one thing Haslacher does not do. While he does seal the liner to itself and achieve the appellant's objective of keeping all parts of the wrapper out of contact with the contents of the bag, he does not do it with appellant's *structure* or in an all-glued bag.

[1] Since Haslacher fails to *disclose* the feature of the claim relied on, we do not agree with the Patent Office that it would *suggest* modifying the Craig bag to contain that feature. The Patent Office finds the suggestion only after making a modification which is not suggested, as we see it, by anything other than appellant's own disclosure. This is hindsight reconstruction. It does not establish obviousness. We therefore find claim 2 allowable over the references applied.

*Claims 9 and 10*

These claims are on a different footing. They do not contain the limitation of claim 2 which we have been discussing. They are directed to the "blank assembly." That assembly contains features which go to make *possible* the structure of claim 2 but they would not necessarily result in it.

The feature of these claims on which appellant relies for patentability is that the bottom edge of the inner tube-forming *blank* (liner) is disposed, in the assembly claimed, beyond the bottom edge of the outer tube-forming blank (wrapper). What this means is that the *edges* of the blanks which are transverse to the webs are separately formed before the webs are superposed to make the assemblies and when they are superposed one blank has its entire *edge* shifted longitudinally ahead of the other.

While the specification shows the longitudinally shifted *relationship* of the two blanks, it does not tell how to achieve it, from which we would deduce that those skilled in the art would know how to do it. We are confirmed in this belief by appellant's brief which supplies the information that "only if this Honorable Court fully understands certain basic bag fabricating fundamentals which are customarily followed in the bag manufacturing industry" will it be able to understand "Appellant's novel invention and its contribution to the bag manufacturing industry * * *." We are next told what we are not told by the specification:

> The wrapper blank 3 and the liner blank 4 are originally in the form of webs which are fed in a *conventional* manner and are subjected to a contour slitting and perforating operation. Suitable mechanisms individually slit the wrapper and line webs longitudinally but *merely perforate* the webs transversely to *define* a line of separation between adjacent blanks. The webs, *while still joined* by the transverse lines of perforations, *are superimposed and adhesively joined to form* a plurality of *blank assemblies* connected by the transverse line of perforations. The blank assemblies are formed into a tube and the tube is passed through rollers operating at differential [sic] speeds. A more advanced pair of rollers rotate faster than another set of rollers to create a tension in the tube causing it to separate along the lines of perforations. Thereafter, each separated tube is folded to form a square bottom construction. [Our emphasis.]

Under the circumstances, we must take this to be knowledge available to those of ordinary skill in the bag-making art.

Disclosure in Haslacher is relied on which appellant admits "teaches the extension of inner tube *flaps* beyond the bottom edges of the outer tube *flaps* * * *." [Our emphasis.] He argues, however, that "appellant is claiming the extension of inner tube flaps beyond the bottom edge of an outer tube blank." This rather tenuous difference comes down to the method employed to produce the inner tube flap extension. Haslacher does it by die-cutting portions out of his wrapper web, which appellant says is a waste of material, which it is in minor degree. Appellant does it by cutting the extensions for the bottom of one bag from the end of an adjacent blank which forms the top of a bag, pointing out that the thus utilized material is not needed on the top edge anyway. This is done by giving the necessary shape to the transverse line of perforations which are, in effect, the transverse line of severance. Of necessity, if webs are employed to form the "blank assemblies," as the specification would indicate, this is done before the webs are superposed and joined. Then whether the liner flaps extend over and beyond the ends of the wrapper flaps is merely a matter of adjusting the relationship of the two webs when they are superposed, so that one blank leads the other by the desired amount.

Based for the most part on appellant's own statements as to what was conventional in this art at the time of his invention, we are of the opinion that appellant's way of obtaining the desired marginal overhang and consequently the claimed blank asesmbly would have been obvious to one of ordinary skill. This was the Board's view and we agree with it.

[2] Appellant points out that the only difference between rejected claim 10 and allowed claim 11 is in a limitation added to claim 11 which is to be found in the prior art; wherefore, appellant argues, rejection of claim 10 reflects on the validity of claim 11. We cannot agree. While the added limitation is to be found in Craig, it has a special significance in claim 11 when read with the other recitations of the claim which clearly serves to distinguish the claim—"the subject matter as a whole," in the words of section 103—from the art of record, more specifically from Haslacher, Craig being distinguished from by other limitations. One element in a combination claim, thoug[illegible] old element, may serve to distinguish from the art by making a new combination and the same is true of the recitation of this old feature when taken in conjunction with the other recited features.

[3] The decision of the Board is reversed as to claim 2 and affirmed as to claims 9 and 10.

MODIFIED.

# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,749,267**, Gill and Southwick, THE METHOD OF COVERING THE JOINT BETWEEN WALLBOARD AND THE RESULTANT PRODUCT, filed June 4, 1959, D.C., N.D. Ill. (Chicago), Doc. 59c896, *United States Gypsum Co. v. National Gypsum Co. et al.* Complaint dismissed; plaintiff's motion for final injunction denied; counterclaims, including all amendments thereto, dismissed with prejudice; ordered that U.S. Patent No. 2,749,267, issued June 5, 1956, to Joseph W. Gill and Charles Russel Southwick as joint inventor-applicants and assignors to United States Gypsum Company, a corporation of Illinois and the aforesaid plaintiff, be corrected pursuant to Title 35 U.S.C. Section 256 by deleting from the said patent the name of Charles Russel Southwick as joint inventor Dec. 23, 1964.

**2,794,422**, A. J. Piel, LIQUID APPLICATOR FOR ANIMAL USAGE; **2,812,516**, same, ANIMAL ACTUATED LIQUID APPLICATOR FOR HIDE; Reg. No. 670,190 (CURRY TROL AND DESIGN), Piel Manufacturing Company, Stationary automatically operated livestock oiler and insecticide applicator; Reg. No. 748,038 (CURRY-TROL), The Piel Manufacturing Company, Incorporated, Insecticide oil, filed Apr. 16, 1962, D.C. Iowa (Des Moines), Doc. 5–1250, *Piel Manufacturing Company, Incorporated et al. v. George A. Rolfes Co. et al.* Reg. No. 748,038 included by amendment May 15, 1963; complaint dismissed; memo opinion reported at 143 USPQ 107 (no infringement of trademarks) (notice Oct. 5, 1964).

**2,812,510**. (See 2,794,422.)

**2,815,000**, E. C. Cook, PLASTIC FILM CUTTER AND SEALER, filed July 29, 1963, D.C., W.D.N.C. (Statesville), Doc. 478, *Cook Engineering & Electronics, Inc. v. Hickory Foundry & Machine Company.* Claims 1 and 4–14 of Patent No. 3,015,600 held invalid; complaint and counterclaim dismissed July 7, 1964. Same, appealed Aug. 4, 1964, C.C.A., 4th Cir., Doc. 9585, *Cook Engineering and Electronics, Inc. v. Hickory Foundry & Machine Company.*

**2,825,290**, W. F. Dameron, METHOD AND APPARATUS FOR DETERMINING DEPTH OF WELL SAMPLES, filed Sept. 26, 1964, D.C., W.D. Tex. (Pecos), Doc. 3924, *Core Laboratories, Inc. v. Rotary Engineers Laboratory, Inc.*

**2,827,807**, O. Hubner, POWER PACK MEANS FOR ELECTRICAL APPLIANCE, filed Sept. 18, 1964, D.C., S.D.N.Y., Doc. 64/2866, *Otto Hubner v. Sunbeam Corporation.*

**2,842,994**, H. Ruggeberg, ROTARY FILES, filed Sept. 14, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1544, *R & R Carbide Mfg. Co., Inc. v. The Metal Removal Company.*

**2,878,477**, Schmid and Maciukiewicz, WALL CLOSET CARRIER, filed Sept. 4, 1964, D.C., M.D. Pa. (Scranton), Doc. 8645, *Zurn Industries, Inc. v. Hoffman Specialty Mfg. Corp.*

**2,879,243**, H. F. G. Uelts, ABRASIVE GRAIN, filed Sept. 18, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 11,096, *Norton Company v. Carborundum Company.*

**2,882,239**, Meyer and Multari, ELECTRONIC TIMING APPARATUS WITH PRECISE STARTING POINT FOR SELECTED INTERVAL, filed Feb. 18, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–167, *Tempo Instrument, Inc. v. Logitek, Inc. et al.* Consent judgment for injunction Sept. 1, 1964.

**2,885,975**, C. E. Jennings, PROCESS FOR TREATING WATER, filed Sept. 14, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1275–EC, *Aqua-Serv Engineers, Inc. v. Erlen Products Co. et al.*

**2,890,684**, J. Banner, MOUNTING FOR SLIDING PANELS FOR DOORWAYS AND THE LIKE, filed Sept. 18, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1303–CC, *Anjac Mfg. Co. v. National Screen Products.*

**2,898,730**, C. H. Neffenger, CORROSION TESTING MECHANISM, filed Mar. 13, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–196, *The GS Equipment Co. v. The Singleton Co.* Consent judgment; defendant enjoined Sept. 10, 1964.

**3,100,525**, Smith and Plummer, CEMENTING; **3,100,528**, same, METHODS FOR USING INERT GAS, filed Nov. 14, 1963, D.C., S.D. Tex. (Houston), Doc. 63–H–603, *Big Three Welding Equipment Company v. Nitrogen Engineering Service Company.* Stipulation of dismissal Sept. 3, 1964.

**3,100,528**. (See 3,100,525.)

**3,106,225**, Gardel and Gorsky, TOY NURSING BOTTLE, filed Sept. 22, 1964, D.C., S.D.N.Y., Doc. 64/2894, *Doll Bottles, Inc. v. Lide Corporation.* Stipulation and order of dismissal Dec. 30, 1964.

**3,107,461**, W. C. Heirich, MARQUEE, filed May 4, 1964, D.C., W.D. Va. (Roanoke), Doc. 64–C–38–R, *William C. Heirich v. Owens Window Corporation.* Patent held valid and infringed; defendant enjoined; action dismissed with prejudice (notice Sept. 24, 1964).

**3,110,298**, N. M. Reiners, INTERNAL COMBUSTION ENGINE, filed Sept. 30, 1964, D.C. Md. (Baltimore), Doc. 15859, *Cummings Engine Company, Inc. v. General Motors Corp. et al.*

**3,123,406**, B. G. Hood, AUTOMOBILE ARM REST, filed Sept. 16, 1964, D.C., E.D. Va. (Norfolk), Doc. 4806, *Davidson Rubber Company, Incorporated v. Sheller Manufacturing Corporation.*



**3,123,551**, J. A. Crown, ADJUSTABLE INJECTOR RAZOR, filed Sept. 14, 1964, D.C. Del. (Wilmington), Doc. 2917, *Philip Morris, Incorporated v. Eversharp, Inc.*

**3,131,265**, I. S. Blonder, ELECTRICAL OUTLET ATTACHMENT, filed Sept. 18, 1964, D.C.N.J. (Newark), Doc. 862–64, *Blonder-Tongue Electronics v. Viking Cable Co.*

**3,132,248**, V. L. Eggebraaten et al., BETA RADIATION BACKSCATTER GAUGE, filed Sept. 10, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–905, *The Boeing Company v. Unit Process Assemblies, Inc.*

**3,137,900**, Green and Johnston, APPARATUS FOR MAKING TOPOGRAPHICAL MODELS, filed Sept. 23, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42812, *Architectural Models, Inc. v. Scale Models Unlimited.*

**3,147,801**, L. Katz, HEAT RADIATOR; **3,147,802**, same, filed Sept. 17, 1964, D.C. Mass. (Boston), Doc. 64–682–W, *Astro Dynamics, Inc. v. International Rectifier Corp.*

**3,147,802**. (See 3,147,801.)

**3,150,216**, W. Z. Salcer, METHOD FOR MAKING PLASTIC ARTICLES, filed Sept. 28, 1964, D.C.N.J. (Newark), Doc. 903–64, *B & S Plastic Art, Inc. v. Candlelight House, Inc.* Same, Doc. 905–64, *B & S Plastic Art, Inc. v. Efka Plastic Corporation et al.*

**Re. 23,947**, H. H. Fox, PROCESS OF AND COMPOSITIONS FOR COMBATING TUBERCULOSIS, filed Sept. 14, 1964, D.C., S.D.N.Y., Doc. 64/2822, *Hoffmann-La Roche, Inc. v. West Ward, Inc.* Cause dismissed with prejudice Nov. 12, 1964. Same, filed Sept. 15, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 36501, *Hoffmann-La Roche, Inc. v. Du Mont Pharmacal Co.* Stipulation of dismissal (notice Dec. 28, 1964). Same, filed Sept. 16, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–916, *Hoffmann-La Roche, Inc. v. Lan-Allen Drugs & Pharmacal Corp.* Same, filed Sept. 29, 1964, D.C., N.D. Calif. (San Francisco), Doc. 42831, *Hoffmann-La Roche, Inc. v. Barnes-Hind Laboratories, Inc.* Same, filed Dec. 16, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2106, *Hoffmann-La Roche, Inc. v. Kasar Company.*

**Re. 24,284**, S. J. Kopec, BROACH ASSEMBLY, filed Aug. 12, 1964, D.C., E.D. Mich. (Detroit), Doc. 25675, *Stanley J. Kopec v. Chrysler Corporation.*

**Des. 176,267**, Meyer and Stahlhut, REFLECTOR FOR TUBULAR LAMP LIGHTING FIXTURES, filed July 14, 1958, D.C., N.D. Ill. (Chicago), Doc. 58c1300, *Day-Brite Lighting, Inc. v. Compco Corporation.* Order holding patent invalid; defendant enjoined; complaint dismissed on merits insofar as charge of patent infringement is concerned Feb. 6, 1962. Filed notice of appeal Mar. 1, 1962. Filed opinion of U.S. Supreme Court of U.S. D.C. reversed Apr. 22, 1964. Judgment of District Court entered Feb. 7, 1962, be reversed insofar as said judgment holds defendant guilty of unfair competition and permanently enjoined; plaintiff's complaint for unfair competition dismissed pursuant to order of U.S. Supreme Court June 1, 1964.

**Des. 185,264**, P. J. Mole, LANTERN, filed Aug. 16, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c1366, *North American Signal Co. v. Wall-Able Manufacturing Co., Inc. et al.* Stipulation and order dismissing cause with prejudice as to complaint and counterclaim Aug. 31, 1964.

**Des. 190,069**, W. L. Minto, COMBINED MASSAGER AND INFRA-RED HEAT LAMP, filed Apr. 8, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c616, *International Biotical Corp. v. Associated Mills, Inc.* Final judgment; patent held not infringed; patent held valid when limited to the specific combination of design features shown therein; motion for preliminary and permanent injunction is denied Aug. 28, 1964.

**Des. 196,227**, A. Polatchek MOTOR DRIVEN SHOE BRUSH, filed Nov. 6, 1963, D.C. Mass. (Boston), Doc. 63–923–J, *Shields, Inc. v. Silvercraft Company, Incorporated.* Stipulation of discontinuance with prejudice Sept. 8, 1964.

# ABBREVIATURES OF APPLICATIONS

Published at the request of the applicant or owner in accordance with Notice of July 28, 1964, 804 O.G. 813. The abbreviatures are identified by serial number of the applications and arranged in chronological order. The heading of each abbreviature of application published herein indicates the number of pages of specification, including claims, and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and photocopies of them, or any part thereof, may be purchased for 30 cents a page.

25,871. **STABILIZED POLYCHLOROPRENE.** Richard Oscar Becker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, a corporation of Delaware. Filed May 2, 1960. Published February 23, 1965. Class 260—23.7. 16 pages of specification. No Drawing.

1. A polychloroprene taken from the group consisting of homopolymers of chloroprene and copolymers of at least 40%, by weight, based on total monomers, of chloroprene with at least 1 copolymerizable monomer containing the terminal grouping $CH_2{=}C{=}$ stabilized against discoloration on exposure to light by having incorporated into said polychloroprene, per 100 parts of polymer, (*a*) from 0.5 to 5 parts by weight of a non-discoloring antioxidant selected from the group consisting of triphenyl phosphite, alkylated triphenyl phosphite, and a phenolic antioxidant, and (*b*) from 5 to 40 parts by weight of a compound selected from the group consisting of (1) straight-chain fatty acids containing from 12 to 22 carbon atoms (e.g., lauric acid or stearic acid), (2) alkyl esters of straight-chain fatty acids containing from 12 to 22 carbon atoms, in which esters the alkyl groups contain from 1 to 8 carbon atoms (e.g., methyl linoleate), and (3) oils consisting predominantly of triglycerides of straight-chain fatty acids containing from 12 to 22 carbon atoms (e.g., safflower oil or linseed oil).

# REISSUES

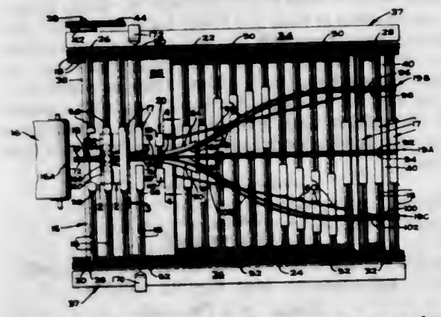
## FEBRUARY 23, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

### 25,732
### APPARATUS FOR SORTING ARTICLES

Paul E. Seaborn, Campbell, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Original No. 3,009,572, dated Nov. 21, 1961, Ser. No. 799,156, Mar. 13, 1959. Application for reissue Jan. 22, 1962, Ser. No. 168,870
12 Claims. (Cl. 209—121)



1. In an article sorting mechanism, a conveyor having a pick-up zone, a switching zone and a delivery zone, a plurality of article carriers mounted on said conveyor for movement therewith and for lateral movement with respect thereto, a downwardly projecting blade on each of said carriers, a first pair of guide rails one on either side of said blade for maintaining said carriers centrally of said conveyor between said pick-up zone thereof and said switching zone, a second pair of guide rails for retaining said carriers centrally of said conveyor between said switching zone and said delivery zone, a third pair of guide rails between said switching zone and said delivery zone for guiding said carriers to the left side of said conveyor, a fourth pair of guide rails between said switching zone and said delivery zone for guiding said carriers to the right side of said conveyor, a switching mechanism at said switching zone for selectively engaging said blades with any one of said second, third, or fourth pair of guide rails, said switching mechanism comprising a pair of flexible swinging gates rigidly connected to the forward end of the first pair of guide rails for conjoint swinging movement, a throw bar connected to the forward ends of both of said gates and adapted to be moved laterally in either direction to selectively bring said forward ends of said gates into a planar relation with the rails of said second, third or fourth pairs of guide rails, and means for moving said throw bar laterally.

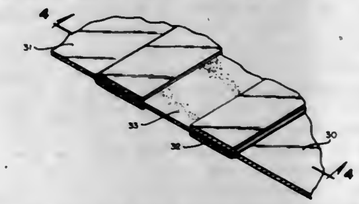
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### 25,733
### EXPANSION JOINTS FOR METAL PANELS

Harvey L. Patry, Ernest Patry, and Francis J. Patry, Lewiston, and H. Blair Lamont, Lincolnville, Maine, assignors, by mesne assignments, to Lamont & Riley, Inc., Worcester, Mass., a corporation of Massachusetts

Original No. 3,123,188, dated Mar. 3, 1964, Ser. No. 72,179, Nov. 28, 1960. Application for reissue June 30, 1964, Ser. No. 391,352
11 Claims. (Cl. 189—36)

1. An expansion joint comprising a length of substantially parallel relatively inextensible panels, a strip of elastomeric material, the inner edges of said elongate panels and the corresponding edges of said strip of elastomeric material being joined together by adhesive bonds, extending along the edges of said strip and along the inner edges of said panels and joining said strip and said panels into an integral structure, said bonds each comprising a bifurcation along the joined edges of said strip and the said inner edges of said panels such that the lateral margin of at least one of said joined edges in each bond lies



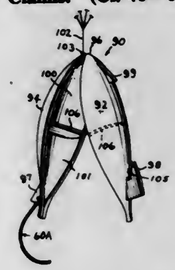
between the forks of said bifurcations in the other edge and adhesive material firmly anchoring said lateral margin within said bifurcations and completing said bond, said strip extending along the length of said panels and having a tensile strength greater than one thousand pounds per square inch and an elongation of at least one hundred percent, said bond having a peel-pull strength value at least equal to thirty-five pounds per inch per minute.

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### 25,734
### TIME DELAY ACTION AND RELEASE FOR AIRBORNE TOYS

Arthur H. Boese, Oklahoma City, Okla., assignor of one-half to Novel Ideas Incorporated, Oklahoma City, Okla., a corporation of Oklahoma

Original No. 3,006,109, dated Oct. 31, 1961, Ser. No. 806,496, Apr. 15, 1959. Application for reissue Oct. 30, 1963, Ser. No. 320,242
7 Claims. (Cl. 46—86)



*6. A toy rocket, including: an elongated stream-lined hollow body having a head end and a tail end, said body being longitudinally divided; hinge means connecting said body halves together at their head ends and biasing said tail ends to open position; a stabilizing fin connected with at least one section of said body, said fin having a forwardly open transverse slot; and flexible time delay release means comprising an elongated strand connected to one said body half, said strand wrapped across the line of juncture of said body halves with a portion of said strand disposed within the forwardly open slot of said fin in such a manner as to be released therefrom in the flight of the rocket.*

# PLANT PATENTS

## GRANTED FEBRUARY 23, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

**2,483**
**MINIATURE ROSE PLANT**
**Ralph S. Moore, 2519 E. Mineral King, Visalia, Calif.**
**Filed Nov. 5, 1963, Ser. No. 321,706**
**1 Claim. (Cl. Plt.—9)**

A new and distinct variety of miniature rose plant of hardy, dwarf, upright, much branched, bush type, as illustrated and described, characterized by buds and flowers resembling the Dian miniature rose in general form but being slightly larger when fully open, the buds somewhat more pointed, and the color more pink than red; the flowers being softly bicolor in that the top surface of petals is generally deeper pink that the lower surface, with the general color effect being a soft but bright pink; and further characterized by a plant which is vigorous in growth, easy to propagate from cuttings, with medium-small glossy foliage and an abundance of bloom, with the flowers borne singly or several to stem in loose clusters.

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**2,484**
**MINIATURE ROSE PLANT**
**Ralph S. Moore, 2519 E. Mineral King, Visalia, Calif.**
**Filed Nov. 5, 1963, Ser. No. 321,708**
**1 Claim. (Cl. Plt.—10)**

A new and distinct variety of miniature rose plant of hardy, dwarf, upright, much branched, bush type, as illustrated and described, characterized by buds and flowers resembling the Dian miniature rose in general form but with a more high centered flower and longer, more pointed buds; the flowers being a dark red color of velvety texture; the overall effect of bush and flower being that of the Dian miniature rose except that the foliage is more abundant, not so glossy, and the flower is a darker red color; and further characterized by a plant which is vigorous in growth, easy to propagate from cuttings, with medium-small semi-glossy dark green foliage, an abundance of bloom, with flowers borne singly or several to stem in loose clusters.

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**2,485**
**AZALEA PLANT**
**Howard Kerrigan, 3003 Totterdell St., Oakland, Calif.**
**Filed Dec. 26, 1963, Ser. No. 333,777**
**1 Claim. (Cl. Plt.—56)**

A new and distinct variety of azalea of the Belgian Indica type essentially identical with the variety Paul Schäme except for the flower color which is a uniform Dawn Pink to Porcelain Rose producing an overall color tonality that is unique in azaleas of this type.

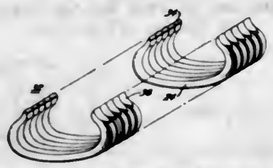


# PATENTS

## GRANTED FEBRUARY 23, 1965

## GENERAL AND MECHANICAL

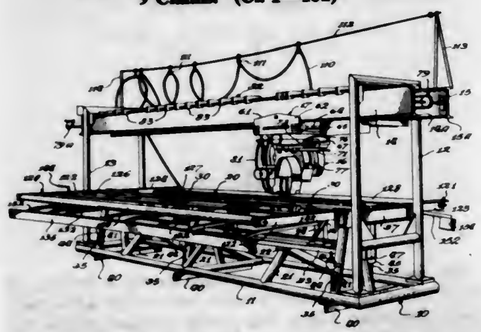
**3,170,160**
**INSULATED "C" RINGS IN COHERENT STRIP FORM**
**Raymond J. Burniston, Old Bridge, N.J., assignor to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey**
**Filed Nov. 14, 1962, Ser. No. 237,562**
**3 Claims. (Cl. 1—56)**



1. A coherent stick of insulated C rings comprising a belt like length of extruded high impact, rigid polyvinyl-chloride plastic presenting a plurality of spaced, parallel members interconnected with a relatively thin plastic web therebetween, each of said members including an arcuate upper side, a ribbed lower side including a pair of V-ribs extending lengthwise of said member on its lower side, each of said members further including a steel wire core having opposite flat surfaces and semi-circular margins, said belt like section having parallel opposite ends formed at an acute angle to its parallel side margins and deformed toward each other in parallelism whereby the ends of said members are offset at an angle and the end faces of each of the respective wire cores in each of said members is recessed within the ends of the plastic thereon, the curved ends of said members being reversely curved to provide a smooth lip on the inner side each C ring in said coherent stick.

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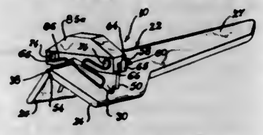
**3,170,161**
**METAL STITCHING APPARATUS**
**John P. Regan, Lake Forest, and Chester M. Wytalik, Itasca, Ill., assignors to Inland Steel Products Company, Milwaukee, Wis., a corporation of Delaware**
**Filed Sept. 10, 1962, Ser. No. 222,287**
**9 Claims. (Cl. 1—152)**



1. A panel assembly apparatus for fastening a sheet-like material to a frame member which comprises a supporting frame, a track means transversely mounted on said frame, a base table mounted transversely on said frame below said track means, a trolley means mounted on said track means, a fastener means comprising a wire stitching head having a reciprocating driver and wire stitch-forming means dependently mounted on said trolley means, a plurality of clincher blocks for clinching formed stitches mounted on said base table, said clincher blocks having stitch clinching grooves provided therein to provide a plurality of stitching stations, indexing means mounted on said trolley means cooperating with said track means to temporarily lock said stitching head in stitching alignment with the respective stitching stations, and means for moving said trolley means along said track means.

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**3,170,162**
**CLINCHING TOOL**
**Henry A. Balinski, Roselle, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois**
**Filed Jan. 25, 1963, Ser. No. 253,811**
**14 Claims. (Cl. 1—260)**



1. A clinching tool comprising a body including two angularly disposed sides, a punch member reciprocable along a path of movement generally normal to one of said sides from a retracted position to a position extending inwardly of said one of said sides, and drive means for moving said punch member inwardly of said side along said path in response to force applied to said drive means in a direction generally toward said body.

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**3,170,163**
**FOOTBALL UNIFORM**
**Hal D. Mitchell, Provo, Utah**
**(123 Glenview St., Santa Cruz, Calif.)**
**Filed May 15, 1962, Ser. No. 194,868**
**7 Claims. (Cl. 2—2)**

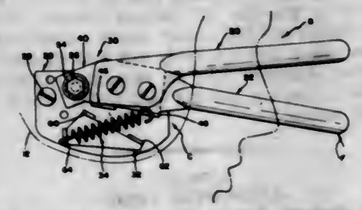


1. A football uniform, comprising a pair of pants having an unusually high waist; a supporter built into said pair of pants, said supporter including a belt portion adapted to encircle the trunk of a player at about his hip line, and side straps fixed to and interconnecting lateral sides of said belt portion and respective lateral sides of

said pants, internally thereof; a hip pad and sacrum guard assembly in the form of a belt adapted to encircle and tightly hug the player's trunk substantially at the waist, the hip pads thereof adapted to depend over the player's hips; a shirt having means along its front lower margin removably attached to the belt portion of said supporter; means releasably securing opposite lateral sides of said assembly to opposite lateral sides of the waist portion of the pants; and means for securely attaching opposite lateral sides of said assembly to opposite lateral sides of the shirt.

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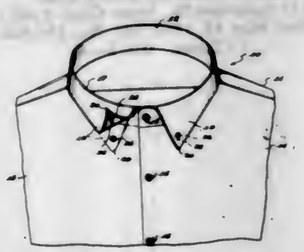
**3,170,164**
**HELMET AND FACE GUARD**
Lorrain A. Holder, 4150 Hough Ave., Cleveland 3, Ohio
Filed Mar. 22, 1962, Ser. No. 181,737
4 Claims. (Cl. 2—9)



1. In combination, a football helmet having a front opening, a bar-like face guard mounted onto said helmet and extending across said front opening, means at opposite ends of said face guard for mounting said face guard onto said helmet to have only pivotal movement with respect to said helmet, a first abutment means fixedly positioned onto said helmet, a second abutment means on said face guard for engaging said first abutment means to limit downward pivotal movement of said face guard beyond a predetermined position, and a spring means extending between said pivotable face guard and said helmet for holding said second abutment means against said first abutment means with a predetermined biasing force whereby upward forces on said face guard of a magnitude greater than said biasing force will pivot said face guard upwardly with said second abutment means moving away from said first abutment means.

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**3,170,165**
**SHIRT COLLAR FASTENING MEANS**
Nathan Wise, 10998 Strathmore Drive, Los Angeles, Calif.
Filed Dec. 18, 1962, Ser. No. 245,470
2 Claims. (Cl. 2—116)



1. A shirt comprising:
a main body having a shirt front portion;
a collar mounted upon said main body, said collar having a cape and a pair of collar wings extending from said cape and overlying said shirt front portion, each of said collar wings tapering to a collar point;
a generally triangular piece of cloth sewn to the underside of each collar wing near the point thereof, each piece of cloth and its respective collar wing forming a pocket having an open end directed towards the cape of said collar, and each pocket becoming progressively wider in proceeding from the collar point along the wing towards the cape;
a pair of elongated buttonholes, one in each of said triangular pieces of cloth, the longer dimension of each buttonhole extending towards said cape on a line generally bisecting the angle formed by the edges of its respective collar wing;
and a pair of buttons sewn upon said shirt front portion in alignment with the portions of said buttonholes nearer said cape.

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**3,170,166**
**SHIRT COLLAR CONSTRUCTION**
George Weiss, 820 Magnolia Blvd., Long Beach, Long Island, N.Y.
Filed July 23, 1964, Ser. No. 384,589
14 Claims. (Cl. 2—132)



1. An expandable stitch-and-turn collar construction comprising an interconnected superposed arrangement of coextensive stretchable and non-stretchable fabric plies forming the body of said collar and having opposite end edges defining a collar opening, the stretchable fabric plies of said arrangement extending throughout the entire collar body length and providing top and under collar plies and the non-stretchable plies being interposed between said top and under collar plies and extending from each end edge inwardly therefrom for only an end portion of the collar body length and providing respective non-stretchable inserts, and means securing said inserts to said end portions to restrict collar expansion in said end portions of the body of the collar adjacent the collar opening while permitting collar expansion in the remaining collar body portion therebetween.

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**3,170,167**
**LENGTH ADJUSTMENT MEANS FOR GARMENTS**
Marcus Manly Isaacs, Coogee, New South Wales, Australia (583 Pacific Highway, St. Leonards, New South Wales, Australia)
Filed Oct. 18, 1962, Ser. No. 231,392
Claims priority, application Australia, Nov. 9, 1961, 11,160/61
1 Claim. (Cl. 2—269)

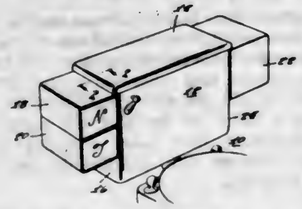


The combination with a garment having a bottom, of length adjustment means therefor, such length adjustment means including a hem flap freely returned within the garment without direct attachment to the garment, an adjustment lining securing said hem flap in adjusted length position in relation to the garment, said adjustment lining having inner and outer ends and being permanently attached at its inner end to the inner surface of said garment at a point above said hem flap and with its outer end returned to overlie said returned hem flap, and a plurality of spaced rows of adjustment stitches which are parallel to said bottom of the garment and which do not penetrate the outer surface of the garment, said rows of adjustment stitches securing together said overlying portions of said hem flap and adjustment lining and the extreme outer edge of the adjustment lining being secured firmly to the hem flap by the lowermost row of adjustment stitches.



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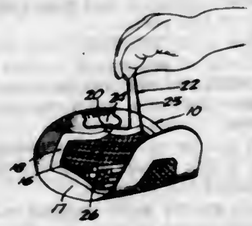
**3,170,168**
**UTILITY CABINETS FOR TOILETS**
Frank D. Cicatello, 111 Norden St., Staten Island 4, N.Y.
Filed June 24, 1963, Ser. No. 290,098
1 Claim. (Cl. 4—1)



In combination with a toilet having a vertical water tank with a removable top cover, at least one cabinet positioned adjacent one side of said tank and having an opening for use, additional first and second cabinets stacked one above the other adjacent the other side of the tank, each additional cabinet having an opening for use, each of said cabinets having a horizontal slit in one vertical wall adjacent the associated side of said tank and having another horizontal slit in the opposite parallel vertical wall, first means having an upper curved end engaging the top of said tank at said one side and having a lower curved end engaging the slit of said one cabinet in the wall adjacent said one side to hold said one cabinet in position, and second means engaging the top of said tank on the other side and having first and second vertically spaced curved elements engaging the respective slits of said additional cabinets in the walls adjoining the other side to hold same in position, said elements each being a hanger bracket, said brackets being secured one to another in stacked relation.

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**3,170,169**
**URINAL SCREEN**
Louis Clark, Los Angeles, Calif., assignor to Clark Paper Converting Corp., Los Angeles, Calif., a corporation of California
Filed June 5, 1962, Ser. No. 200,165
8 Claims. (Cl. 4—109)



1. A removable urinal screen comprising a flexible flat body having a perforate portion, a pair of upwardly projecting tabs on one side of said body, said tabs being spaced across said body from each other a distance equal to a substantial portion of the distance across said body in that direction for lifting said body by said pair of tabs and causing said body to flex and form a trough for retaining objects present on said body.

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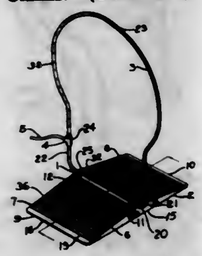
**3,170,170**
**FEMALE URINAL**
Hattie Deslauriers, nee Robillard, 1080 David St., Duvernay, Quebec, Canada
Filed Mar. 5, 1964, Ser. No. 349,720
1 Claim. (Cl. 4—110)



A female urinal comprising an elongated vessel having at one end a flat bottom whereby the vessel can be positioned in upright stable position, a curved wall defining the front, the back and the sides of said vessel and having a substantially oval-shaped plane cross-section, a top wall merging with the back and sides of said wall, said vessel being provided with a mouth defined by the upper edge of the front and sides of said curved wall and by said top wall, the lateral edge portions of said mouth being concave, said mouth lying in a plane which is inclined towards the bottom and front of said vessel with respect to the long axis of said vessel, the front edge portion of said mouth being straight and substantially parallel to said bottom and in substantial alignment with the front of said curved wall.

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**3,170,171**
**SHOWER HOOP FOR PLAY YARDS**
Lawrence E. Mayhew and Marian J. Mayhew, both of 16205 Salisbury Road, Independence, Mo.
Filed Oct. 8, 1962, Ser. No. 229,008
7 Claims. (Cl. 4—145)



1. A portable play yard shower bath device comprising,
(*a*) a base,
(*b*) a tubular hoop member having a bottom portion with ends extending ouwardly of said base and terminating at its ends in upwardly extending connected side members,
(*c*) means pivotally mounting the bottom portion of the hoop member on the base whereby said side members are outwardly of the base permitting selective swinging movement of said hoop member toward the base, said pivotally mounting means having engagement with said bottom portion to normally retain the hoop in selected position,
(*d*) said hoop member having a water supply connection thereto,
(*e*) and spray discharge openings spaced along the length of said hoop member and arranged to spray

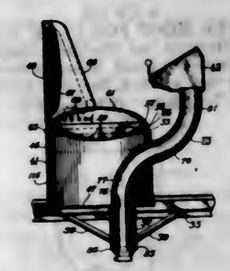
water generally toward a line normal to said hoop member.

3,170,172
SUN-BATHING DEVICE
Loren P. Kessman, P.O. Box 95, Hamel, Ill.
Filed Dec. 7, 1961, Ser. No. 157,715
6 Claims. (Cl. 5—348)



1. A device for supporting a sun-bather comprising spaced top and bottom walls of flexible material, said top wall being of transparent material and said bottom wall having a reflective upper surface, said walls being connected to each other at their peripheries to form a sealed chamber, the spacing of said walls being effected by inflation of said chamber.

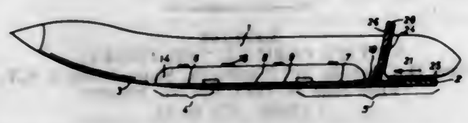
3,170,173
VEHICLE OPERATOR'S STATION
Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.
Original application May 31, 1961, Ser. No. 113,890, now Patent No. 3,088,537, dated May 7, 1963. Divided and this application July 16, 1962, Ser. No. 210,034
3 Claims. (Cl. 5—348)



1. An operator's seat for a work vehicle comprising: an open-topped rigid enclosure, a resilient air-impervious seat surface closing the top of said enclosure, means for introducing air under pressure into said enclosure to inflate said seat surface, and a substantially rigid perforated member disposed within said rigid enclosure for restricting the passage of air between upper and lower portions of said enclosure so as to provide dampening action for said seat surface.

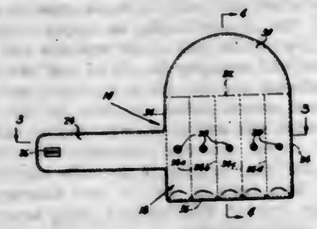
3,170,174
COLLAPSIBLE BOAT
Klaus Hansel, Karlsdorfer Strasse 3, Hofgeismar, near Kassel, Hesse, Germany
Filed Sept. 1, 1961, Ser. No. 136,698
Claims priority, application Germany, Mar. 8, 1961, H 41,950
16 Claims. (Cl. 9—2)

1. An inflatable collapsible boat comprising flexible sheet material defining a pair of spaced buoyant tubes connected at one end to form the bow of the boat and spaced at the other end to form the stern of the boat, there being flexible material between said spaced tubes defining the bottom of the boat, a pair of rigid floor boards positioned side by side and undetachably secured to said flexible bottom, said boards having adjacent edges in spaced relation, a pair of pivotally connected removable floor boards between said spaced floor boards the edges of said pivotally connected boards opposite said pivotally connected edges contacting the spaced edges of the un-



detachably secured floor boards to brace the boat with said first-named floor boards longitudinally thereof, a transom extending upwardly from the rearmost of said first-named floor boards between said tubes and spaced inwardly of the stern end of said rearmost first-named floor boards for mounting a motor on the boat, the portion of said rearmost undetachable floor board extending aft of said transom being covered with said flexible sheet material and defining stern fins.

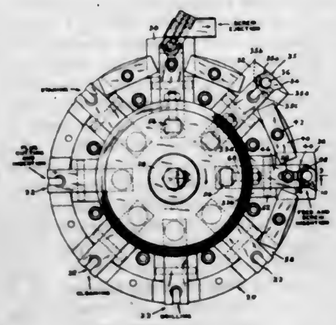
3,170,175
BUOYANT SWIMMING DEVICE
Virgil T. Brandt, 3324 Explorer Drive, Sacramento, Calif.
Filed Sept. 6, 1963, Ser. No. 307,063
5 Claims. (Cl. 9—337)



1. A buoyant swimming device comprising pouch means including a first rectangular face flexible member,
a second similar shaped flexible member peripherally secured to said first face member along only three consecutive edges, the second edge in this series being a bottom edge thus defining a pocket between the two said members, the pocket thereby having a sealed bottom and an open top,
buoyant means received in said pocket up to the level of the top of said pocket,
a flexible flap cover extending from and across the unsecured edge of said second member and foldable over said unsecured edge and then extendable parallel to and outside of a major top portion of said first member,
a flexible tab member extending lengthwise perpendicularly from a first of said consecutive edges of said first and second face members,
hook members secured to the terminal end of said tab member constructed so as to provide a flat surface substantially coplanar with the extension of the exterior face of said second member, and including a projecting hook outstanding from the exterior face of the extension of said first face member,
and a plurality of horizontally spaced eye means at the same level as the hook means and secured to the outer surface of said second face member to selectively receive said hook,
the total horizontal length of the tab and the portion of the pocket beyond the selected eye being such as to accommodate the device to being circumscribed about varying sized portions of a swimmer's body, whereby when the flat surface of the tab is in outermost or exposed relationship with a member of a swimmer's body, the flap cover will be both in contact with the swimmer and also held closely to the outer face of said first face member to keep the cover in closed position to thus preclude accidental displacement of said buoyant means away from said pocket.



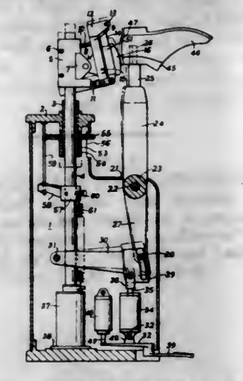
3,170,176
MACHINE FOR MAKING LOCK NUTS
John W. Brightman, Ridgewood, and Philip G. Cowley and John B. Loop, Fair Lawn, N.J., assignors to The Nylok Corporation, Paramus, N.J., a corporation of Delaware
Filed June 19, 1962, Ser. No. 203,505
5 Claims. (Cl. 10—72)



1. In a machine for making nuts comprising means for receiving a nut blank and presenting said blank in turn to a plurality of tools which perform successive operations in the manufacture of said nuts, including tools which operate on an axis which is perpendicular to a wrench receiving flat on said nut blank; a jig for bolding said nut blank comprising a socket having a base and a plurality of side walls, said base engaging the bottom of said nut blank and said walls engaging the wrench receiving flats of said nut blank, two of said side walls being parallel to form thereby a slot through which said nut blank may be inserted into and ejected from said jig, said parallel side walls being at an acute angle to the axis of said tools which operate perpendicularly to said wrench receiving flat of said nut blank.

3,170,177
LAST REMOVING MACHINE
Sidney Hawkes, Rushden, England, assignor to Fred Hawkes (N.V. Engineers) Limited, Rushden, England, a British company
Filed Mar. 7, 1963, Ser. No. 263,643
Claims priority, application Great Britain, Mar. 31, 1962, 12,487/62
9 Claims. (Cl. 12—15.1)

1. A last removing machine comprising a last support, a stripper device, means to bring about a primary relative movement between the last support and stripper device so that the latter will be applied under pressure against a shoe mounted on the last support, means for yielding under the direct mechanical thrust of this pressure to initiate a secondary relative movement between the last support and stripper device whereby the shoe is slipped from the last, and means providing for a manually-



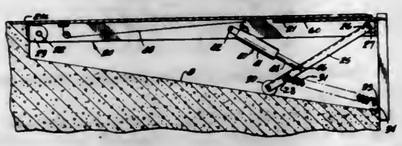
adjustable variable setting of the length of said secondary relative movement.

3,170,178
METHOD OF MAKING A FOOT CUSHIONING INSOLE
William M. Scholl, 213 W. Schiller St., Chicago, Ill.
Filed June 22, 1962, Ser. No. 204,359
6 Claims. (Cl. 12—146)



1. The method of making a foot cushioning device comprising a layer of thermoplastic cushioning material and a cover layer of open-mesh fabric woven of thermoplastic filaments, including the steps of
superposing said layers,
placing a thin thermoplastic film over the exposed face of the fabric layer,
heat sealing said layers and film together in a single operation to provide a heat seal seam defining the shape of the finished device and a tear line for removing the device from waste stock, and
tearing off the film along the inner edge of the heat seal seam.

3,170,179
DOCKBOARD UNIT
Richard C. Layne, P.O. Box 601, Lansdale, Pa.
Filed Apr. 24, 1962, Ser. No. 189,732
1 Claim. (Cl. 14—71)

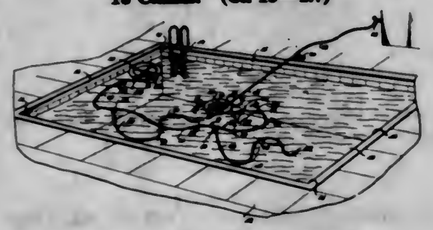


In a dockboard unit for installation in a dock having an inclined pit, a ramp pivotally mounted to the dock for vertical swinging movement, a rocker arm pivotally connected at one end to the ramp and at the other end in sliding contact with the inclined pit floor, a tension spring connected at one end to the arm and at the other end to the pit tending to rotate it to a position to swing the ramp upwardly, a fluid-actuated cylinder and piston unit pivotally connected at one end to the arm and at the other end to the ramp tending to prevent rotating of the

arm, said cylinder and piston unit including a cylinder having a bypass between the opposed ends thereof controlled by a manual valve, a check release valve associated with said bypass, a piston in said cylinder and having a check valve for controlling flow of fluid in said cylinder to opposite sides thereof, said check valves controlling a fluid flow from one end of the cylinder to the other in opposite directions.

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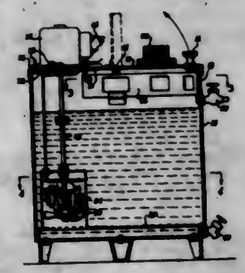
3,170,180
SWIMMING POOL CLEANING AID
Milton D. Winston and John A. Stephens, Pasadena, Calif., assignors, by direct and mesne assignments, to Maronge Inventions, Inc., a corporation of California
Filed Jan. 14, 1963, Ser. No. 251,096
18 Claims. (Cl. 15—1.7)



1. A swimming pool cleaning aid comprising:
a first float for placement at a substantially stationary position within a pool;
a second float;
means for continually moving said second float along the side walls of said pool, and in constant contact therewith, in a single direction only about said first float;
and fluid conduit means coupled between said first and said second floats.

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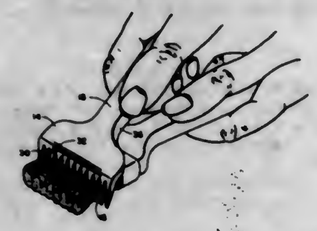
3,170,181
CLEANING AND DRYING DEVICE
William Von Werder, Hyattsville, Md.
(8239 New Hampshire Ave., West Hyattsville, Md.)
Filed Mar. 11, 1963, Ser. No. 264,193
10 Claims. (Cl. 15—4)



1. A cleaner and dryer unit for brushes, combs and the like, comprising
a container for said brushes, combs and the like, having an access door and a shut-off valve controlled ventilator opening to the atmosphere at the top and a drain cock at the bottom adapted to completely drain the container for the drying operation,
perforated means for holding said brushes, combs and the like spaced off the bottom of the container,
a heater element in said container for heating the fluid contained therein during both the cleaning and drying operations,
an impeller element close to said heater element so as to cause a full flow of the fluid past said heater element, said flow being directed downwardly for inducing a turbulent circulation of said heated fluid under said perforated means and upwardly through the items to be cleaned and dried during the corresponding operation, the ventilator valve being preferably open during the drying operation.

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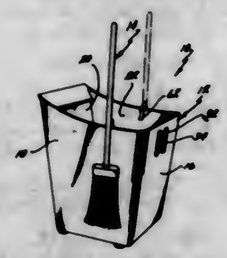
3,170,182
PAINT BRUSH CLEANING TOOL
Franklin D. Burian, Kimball, S. Dak.
Filed June 29, 1960, Ser. No. 39,489
1 Claim. (Cl. 15—142)



In a paint brush cleaning tool, the combination which comprises an elongated handle having a comb back with tapering elongated teeth extended therefrom on one end, the back and teeth being integral, the upper ends of spaces between the teeth being V-shaped as seen from the forward side whereby paint is squeezed from the elongated fine bristles of a paint brush as the teeth are pushed transversely of the teeth and longitudinally of the bristles and through said bristles and are simultaneously pressed toward the bristles transversely of the bristles, the side surface of each tooth being thin in a forward to rearward dimension for defining an edge portion thereof which latter is closest an adjacent tooth whereby each said edge portion engages bristles during use on substantially a line of contact for concentrating pressure on the bristles in a limited area, such lines of contact being disposed transversely of the elongated brush bristles and effectively stripping paint from the brush, when the handle is held horizontally, said teeth extend forwardly and downwardly from said handle at a substantial angle of inclination with respect to said handle for rendering the tool most effective when pushed forwardly through the bristles.

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3,170,183
ONE-PIECE DUSTPAN AND WASTEBASKET COMBINATION
Vernon A. Leatherman, 305 Sherman St., Grand Haven, Mich.
Filed Jan. 25, 1963, Ser. No. 253,892
1 Claim. (Cl. 15—257.1)



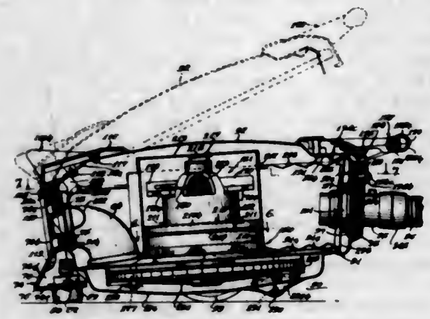
An integral, one-piece, open top, molded, plastic combination wastebasket and dustpan, comprising: four integral walls and an integral bottom of molded plastic; the upper edges of said walls defining an open top; one of said side walls projecting upwardly beyond the other side walls and including an upwardly and outwardly pro-



truding integral lip terminating in a sharp edge and an adjacent ramp surface; said one side, lip, and edge being configurated to cause only said sharp edge and another portion of said one side near the bottom of said receptacle to contact a floor surface when said receptacle is tipped on its side to place said edge into close contact with the floor to act as a dirt ramp; the wall opposite said one wall having opening means therein providing handle means to enable a user to grasp said basket at said handle means, and tip said receptacle temporarily on its side for sweeping dirt over said lip, and back up again; said ramp surface being at an obtuse angle substantially less than 180° to the adjacent wall portion of said one side to form a dirt retention ridge; said adjacent wall portion being substantially parallel to the inner surface of the opposite side wall and the remainder of said one wall portion being outwardly inclined with respect to the opposite side wall.

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3,170,184
VACUUM CLEANER
Ivar Jepson and Julius P. Wied, Oak Park, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 30, 1960, Ser. No. 39,865
14 Claims. (Cl. 15—323)

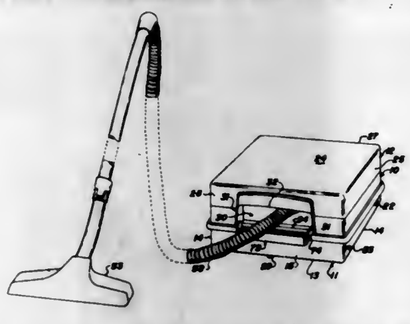


1. In a suction cleaner the combination of a housing, spaced means for supporting said housing, switch means mounted on said housing comprising relatively movable contacts, a switch actuating member projecting from the bottom of said housing and operatively connected to actuate said contacts when moved toward the bottom of said housing, spring means normally biasing said switch actuating member away from the bottom of said housing, motor driven fan means supported by said housing, the center of gravity of said suction cleaner with respect to said spaced means being such as to cause said housing to pivot about the axis of said spaced means until said switch actuating member engages the surface supporting said cleaner, whereby said contacts are actuated by applying a force to the top of said housing directly above said switch actuating member of sufficient magnitude momentarily to compress said spring.

7. A suction cleaner comprising a panlike housing having a diameter several times the depth thereof, a cover hinged to the open top of said housing, a sealing gasket interposed between said cover and said housing, a pair of wheels for supporting said housing disposed at diametrically opposed portions of said housing, electric motor means mounted in said housing, a power cord connected to said motor means and extending from said housing, a carrying handle connected to said cover and projecting from the periphery thereof, a supporting stand projecting from said housing at a point diametrically opposite said handle, said handle and at least a portion of said stand providing a cord support for said power cord.

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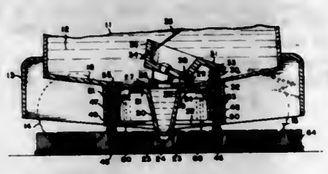
3,170,185
SUCTION CLEANERS
Louis E. Segemann, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Aug. 14, 1962, Ser. No. 216,779
8 Claims. (Cl. 15—327)



1. An electrical appliance such as a canister suction cleaner comprising a body having a base and a cover therefor, filter mounting means in said base for supporting a dirt filter, bracket means in said base for supporting said filter mounting means, a handle mounted on said base by said bracket means and movable to a projected carrying position and a collapsed inoperative position, and latch means on said cover and including part of said bracket means on said base for latching said cover to said base.

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3,170,186
CLEANING DEVICE
Albert J. Kramer, 700 Washington Bldg., Washington, D.C.
Filed Sept. 4, 1963, Ser. No. 306,465
11 Claims. (Cl. 15—532)



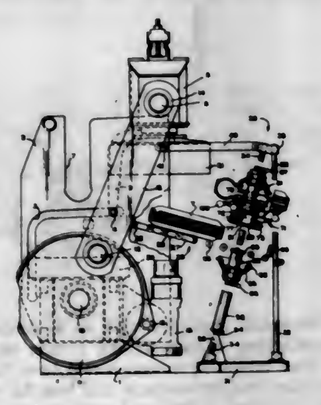
1. A surface cleaning device comprising a tank for holding a cleaning liquid, means for discharging liquid in the tank onto a surface to be cleaned, said means including a hollow rigid member connected to the tank, said member having outlet openings, a brush mounted on the tank independently of and spaced from the rigid member for contacting the surface to be cleaned, means for movably supporting the tank and rigid member to cause continuous and simultaneous contact of the openings and brush with the surface.

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3,170,187
TIRE CURING PRESS WITH DUAL POST INFLATORS
James W. Brundage, Akron, Ohio, assignor to NRM Corporation, a corporation of Ohio
Filed May 23, 1960, Ser. No. 30,989
22 Claims. (Cl. 18—2)

19. Apparatus for holding and inflating tires during a cooling period following vulcanization, comprising, a support for a tire, said support having an upwardly opening transverse passage, a stationary member adjacent said support, a carriage, said carriage having center frame movably carried by said stationary member, two closure pairs vertically aligned with said support, each closure

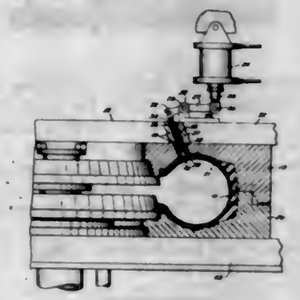
pair comprising opposed members having a seat to engage a tire bead, one member of each closure pair being mounted on said carriage center frame and the other member of said pairs being mounted for relative movement toward and away from the first member of each pair, means to selectively move one of said movable members away from



said center frame into said support passage so that the closure members will be separated one below and one above the plane of said support, means to position a tire on said support in alignment with said separated closure members, means to inflate a tire clamped between said closure members above said support, and means to move said carriage when said tire is inflated.

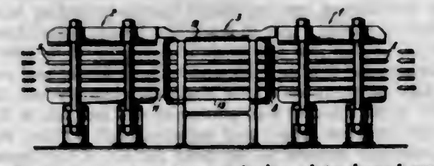
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3,170,188
RETRACTABLE SIDEWALL-VALVE CURING PIN
Archie H. Gollings, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation of application Ser. No. 774,941, Nov. 19, 1958. This application Oct. 25, 1962, Ser. No. 234,005
1 Claim. (Cl. 18—2)



Apparatus for forming a valve opening in the sidewall of a tire while said tire is undergoing the process of vulcanization in a mold, comprising a single passage in the mold radially inwardly of the tread area of the tire and substantially normal to the tire sidewall, a sleeve slidable in said passage, a plunger assembly adapted for reciprocal motion axially of said single passage comprising first and second rods oppositely threaded into said sleeve, the first of said rods terminating in a curing pin having a closed end, and articulating means to selectively confine the length of said curing pin completely to said passage and to move said pin through the tire sidewall in a direction subetantially normal thereto.

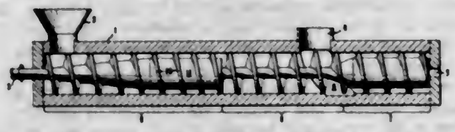
3,170,189
MULTI-PLATE HOT PRESS
Wilhelm Hütter, Krefeld, Germany, assignor to Niederrheinische Maschinenfabrik Becker & Van Hullen, Krefeld, Germany
Filed Apr. 2, 1962, Ser. No. 184,393
4 Claims. (Cl. 18—4)



1. In a press system for producing plate-shaped work pieces of wood, synthetic material, fiber material, and other compressible substances: a pair of presses having multiple pressing plates arranged one above the other, said presses being in alignment and the repective plates thereof being at substantially the same respective levels when the presses are open, first conveying means arranged adjacent one of said presses on the side thereof opposite the other press and operable to feed supporting plates with material to be pressed between the said pressing plates of said one press when the press is open, said pressing plates of both presses being movable toward each other for pressing said material on the supporting plates therein, second conveyor means interposed between said presses and including first moving means for engaging the ends of the support plates in said one press all at one time and operable to draw the support plates from between the pressing plates of said one press, said second conveyor means also including means for movably supporting each support plate for movement in a horizontal direction from said one press toward the other press and further including second moving means for engaging the other ends of said support plates all at one time and operable to push the support plates into said other press between the pressing plates thereof, and additional conveyor means on the side of said other press opposite said one press for withdrawing the support plates from between the pressing plates of said other press.

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3,170,190
EXTRUSION APPARATUS
Reuben Thomas Fields, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 6, 1963, Ser. No. 300,334
7 Claims. (Cl. 18—12)

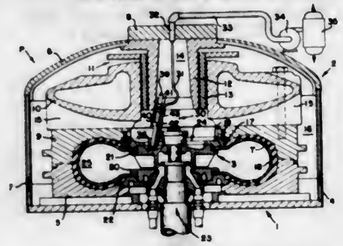


1. In an extruder for plastic and like materials comprising an extruder screw of substantially uniform diameter, rotatably located in a horizontally disposed extrusion barrel, said extrusion barrel having an inlet port and an outlet port in close proximity to opposite ends of the extruder, said extruder screw comprising at least two helically grooved tandemly arranged compressive screw sections having the same direction of helical twist, separated by an intermediate section, said intermediate section being located between said inlet port and said outlet port of said extrusion barrel, said extrusion barrel having at least one devolatilization port located in the barrel wall surrounding the intermediate section of the extruder screw, the improvement which comprises a recess in the wall of the extrusion barrel beginning at the point of entry of the devolatilization port, said recess extending around said barrel on its internal surface in the direction in which the extruder screw is adapted to turn.



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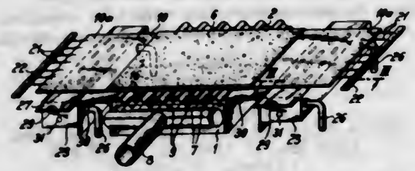
3,170,191
TIRE CURING PRESS
Raymond E. Burkhart, East Detroit, Mich., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed July 19, 1963, Ser. No. 296,331
6 Claims. (Cl. 18—17)



1. In a steam dome type combined shaping and curing press for tires, said press having a movable top assembly including an upper mold half and a top bead positioning ring and having a diaphragm assembly including a top diaphragm clamping ring and a top diaphragm supporting ring, said upper mold half and all of said rings together comprising a reservoir for the collection of steam condensate while said press is performing its curing operation, the improvement comprising means provided for removing said condensate from substantially the lowest portion of said reservoir before and during the initial opening of said press upon completion of said curing operation.

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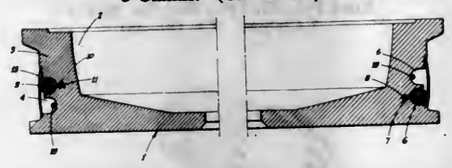
3,170,192
DEVICE FOR CORRUGATING SHEETS OF FIBROUS CEMENT
Karl Adolf Oesterheld, Luthe via Wunstorf (Hannover), Germany
Filed Feb. 20, 1964, Ser. No. 346,183
Claims priority, application Germany, Feb. 23, 1963, O 9,245
9 Claims. (Cl. 18—19)



1. A device for corrugating sheets of fibrous cement comprising a corrugating suction box subdivided into a plurality of longitudinally extending separate suction chambers, a rigid cover disposed on said corrugating suction box and provided with suction holes and with corrugations corresponidng to the corrugations to be formed in said sheets of fibrous cement, an auxiliary suction box arranged at either end of said corrugating suction box and in spaced relationship thereto, a plain surface cover disposed on either of said auxiliary suction boxes and provided with suction holes, a flexible layer with an air permeable middle portion and air impermeable end portions, which for supporting said sheets of fibrous cement to be corrugated is stretched over said corrugating suction box and said auxiliary suction boxes in such a manner that said air permeable middle portion is situated on said corrugated cover of said corrugating suction box, whereas said air impermeable end portions are situated on said plain surface covers of said auxiliary suction boxes with parts of said impermeable end portions and projecting beyond said auxiliary suction boxes, and tension members secured to said air impermeable end portions of said flexible layer and exerting a predetermined amount of pull thereon.

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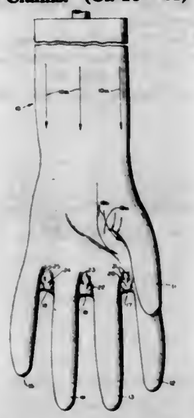
3,170,193
ELECTRIC HEATING UNIT FOR TIRE MATRICES
Louis T. Fike, Lodi, Calif., assignor to Super Mold Corporation of California, Lodi, Calif., a corporation of California
Filed Oct. 15, 1962, Ser. No. 230,378
5 Claims. (Cl. 18—38)



5. In a tire receiving matrix which includes a full-circle body, a pair of separate heating elements mounted on and extending about the body circumferentially and from opposite sides thereof, the length of each element being sufficient to embrace substantially one-half the peripheral extent of the body, the adjacent ends of the elements being spaced from each other axially of the matrix but extending in overlapping relation, said elements being electric, a terminal box on the body adjacent one pair of such adjacent ends, and circuit wires extending separately from both ends of each element to the terminal box.

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3,170,194
GLOVE MOLD
William H. Abildgaard, Sunnyvale, Calif., assignor to Plastomeric Products Corporation, San Jose, Calif., a corporation of California
Filed Aug. 14, 1961, Ser. No. 131,204
4 Claims. (Cl. 18—41)



4. In a mold that is in the general shape of the human hand or other member having finger-like projections that extend therefrom, said mold being adapted to be coated by a liquid out of which a glove is to be formed, said liquid running and spreading on said mold prior to curing or setting thereof into a thin film-like glove that may be removed from the mold, the improvement comprising a mold having the general shape of a human hand with the projecting fingers thereof well spaced and with the cross-sections of the fingers being somewhat flattened in the direction parallel to the palm of the hand, the body portion of said mold having a plurality of channels formed

in the surfaces of both the back of the hand and the palm thereof extending toward the webs between the roots of the fingers for guiding the flow of liquid from said back and from said palm toward said webs to increase the thickness of the thin film-like material forming the webs between the fingers.

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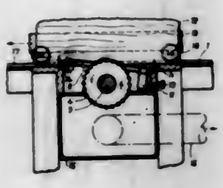
3,170,195
VULCANIZING MEMBER WITH VENTING MEANS
Harold Wayne Knox, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 20, 1961, Ser. No. 90,475
2 Claims. (Cl. 18—45)



1. A member to exert force upon the inner surface of an unvulcanized pneumatic tire during the shaping and vulcanizing operations in a tire mold, comprising an expansible, rubbery diaphragm wall having means in the outer surface thereof to vent air outwardly from between said wall and said inner tire surface to a point of escape in the tire mold beyond the tire, said means comprising a plurality of land portions of limited area distributed over said wall and beyond the bead areas of said tire and separated by interconnected channels of varying depth traversing said diaphragm wall.

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3,170,196
GRATE FOR BALE RASP
Samuel Denis, Winterthur, Switzerland, assignor to Rieter Machine Works Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed July 6, 1961, Ser. No. 122,177
Claims priority, application Switzerland, July 8, 1960, 7,888/60
6 Claims. (Cl. 19—80)



1. In a bale rasp for reducing fibre bales in spinning plants, a rotating rasp element including a plurality of spaced saw-tooth discs adapted to engage and reduce a fibre bale while moving at a right angle to the rotation axis of said element, a stationary bale support on either side of said rasp element, said supports having coplanar surfaces slidably supporting a bale as it moves from one of said supports onto said rasp element and therefrom onto the second support, and a grate interposed between said supports and having grate bars placed between said discs and at a right angle with respect to the rotation axis of said rasp element, said grate bars having opposed ends adjacent to said supports, and having a continuously inclining surface portion terminating adjacent the second support at an elevation higher than said second support.

3,170,197
APPARATUS FOR PRODUCING A FIBROUS GLASS PREFORM
Ivan G. Brenner, 247 Mouil St., Newark, Ohio
Filed Jan. 12, 1961, Ser. No. 82,209
2 Claims. (Cl. 19—148)



1. Apparatus for producing a fibrous glass preform comprising:
(*a*) a flexible, freely movable, conduit;
(*b*) means for cutting fibrous glass strands into short lengths and supplying said short lengths to said conduit,
(*c*) means for supplying gases under pressure to said conduit to convey said short lengths of fibrous glass strands therethrough,
(*d*) a distributor ring having individually rotatable sections encircling the exit end of said conduit and being spaced apart therefrom,
(*e*) means for supplying gases under pressure to said distributor ring,
(*f*) orifices located in said rotatable sections of said distributor ring through which the gases supplied to said distributor ring are projected to impinge upon the short lengths of fibrous glass strands passing from said conduit and disperse them,
(*g*) means for supplying a suitable binding material to said dispersed short lengths of strands, and
(*h*) a foraminous collecting surface for collecting said dispersed short lengths of fibrous glass strands.

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3,170,198
WOODEN I-BEAM
Eliot I. Snider, 80 Dorset Road, Newton, Mass.
Filed June 22, 1960, Ser. No. 37,883
3 Claims. (Cl. 20—5)



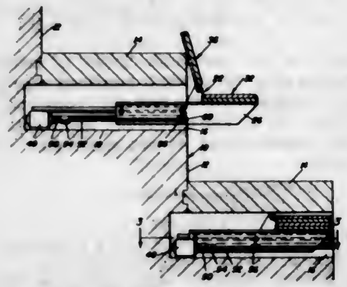
1. A structural truss comprising an elongated web member of sheet plywood, said web member comprising a plurality of sheets with abutting edges and lying in the same plane, each sheet having alternate layers in mutually perpendicular arrangement, the layers of said sheets having their grains extending diagonally of the principal dimension of the web member, flange members extending at right angles to the web member from its lateral edges, each of said flange members consisting of a plurality of elongated structural wood members of uniform cross section adhesively bonded together and to the web in stacked relation, and a plurality of relatively stiff structural truss timbers of uniform cross section each extending diagonally of the principal dimension of the web



member substantially its full width between the flange members and overlying the abutting edges of the sheets forming the web, said truss members being bonded to the web member throughout the mutually contacting surfaces thereof and varying in mutual spacing with distance from the ends of the web to provide stiffness against lateral bending of the web and the beam.

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3,170,199
RETRACTILE STADIUM SEAT
James H. Martin, 10579 Dale Ave., Stanton, Calif.
Filed Nov. 9, 1961, Ser. No. 151,349
1 Claim. (Cl. 20—1.126)

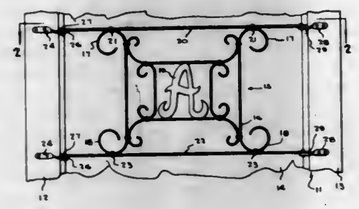


In combination with a stadium structure including vertically spaced treads and upstanding risers interconnecting said treads, a plurality of said risers each having an outwardly opening recess formed therein extending along said riser, a plurality of retractible seat structures, means mounting some of said seat structures in each of said recesses for movement between a retracted position disposed in said recesses and an extended position disposed outwardly of said recesses, said means comprising a pair of generally parallel and horizontally disposed C-shaped channel members for each of said seat structures, means mounting said channel members in said recesses with the channel members extending from front to rear of said recesses, said seat structures each including a pair of generally parallel support members carried by opposite sides of the corresponding seat structure, said support members each including guide roller means guidingly engaged with the corresponding channel member for movement longitudinally therealong, said seat structures each including a generally horizontally disposed seat portion and an upstanding backrest portion, said backrest portions each being swingably mounted for movement relative to the corresponding seat portion between an upstanding position and a generally horizontally disposed position vertically aligned with the corresponding seat portion, and motor means drivingly connected between said stadium structure and each of said seat portions for moving said seat structures between said retracted and extended positions.

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3,170,200
DOOR GRILL
Edythe K. Arans, 863 Lewis St. (P.O. Box 907), Sheridan, Wyo.
Filed Feb. 26, 1963, Ser. No. 261,056
1 Claim. (Cl. 20—71)

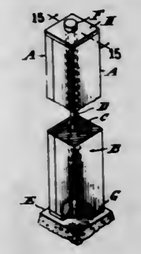
In combination with a door having a transparent intermediate portion, a pair of vertically spaced flexible horizontal bar members of sufficient length to extend substantially completely across the width of said transparent portion, a decorative grill vertically disposed between the intermediate portions of said bar members, said grill being of generally rectangular outline and having curved outwardly extending arms at its respective top and bottom corners, means securing the top curved arms to spaced intermediate portions of the upper bar member, means securing the bottom curved arms to spaced intermediate portions of the lower bar member, respective hinge brackets secured to the door at one side of said transparent portion spaced substantially the same vertical distance apart as said bar members, respective bolt means hingedly securing the ends of said bar members to said



hinge brackets and being in vertical alignment, depending pin elements on the opposite ends of said bar members, and horizontal latch brackets secured on the door at the opposite side of said transparent portion, said brackets being provided with apertures located to lockingly receive said pin elements, said bar members being sufficiently flexible to allow said pin elements to be lifted out of said apertures.

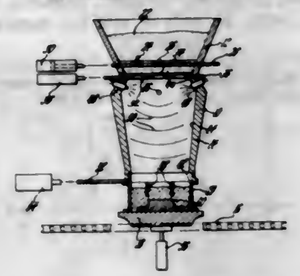
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3,170,201
DEMOUNTABLE SECTIONAL POST
Jay C. Nofziger, 547 N. Oxford Ave., Los Angeles, Calif.
Filed May 26, 1961, Ser. No. 112,979
2 Claims. (Cl. 20—99)



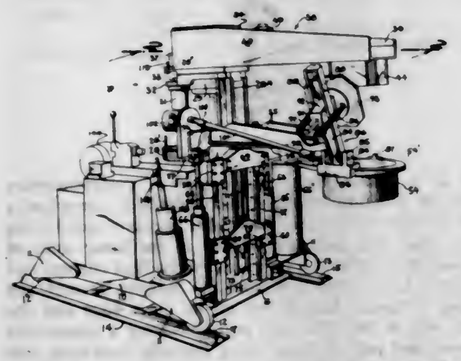
1. In a knock-down post, a pair of complementary strips of structural material each of which comprises a pair of right-angularly disposed side portions each having inner sides and outer edges, one of the inner sides of one side portion having a central longitudinal channel and coplanar faces extending from the margins thereof and having a tongue and groove on its outer edge and the inner side of the other side portion having a tongue and groove; said pair of strips being laterally positioned side by side in longitudinal abutting relation to each other with the tongue and groove on the outer edge of one of the side portions of each of said strips in rabbeted engagement with the tongue and groove on the inner face of the other side portion of the other of said strips whereby the coplanar faces on one of said strips abut the coplanar faces on the other strip and whereby said longitudinal channels lie opposite each other and collectively constitute a central longitudinally extending bore between the assembled strip; an end plate on at least one of the ends of the assembled strips having an aperture overlying the adjacent end of said bore, means fastening said end plate relative to said strips to hold said strips against lateral separation, and a reinforcing bar extending through said aperture and through said bore longitudinally thereof.

3,170,202
FOUNDRY PROCESS
William J. Huston, Sr., 645 Northfield, Pontiac, Mich., and Arthur E. De Mott, 4145 Eagle Court, Drayton Plains, Mich.
Filed Aug. 22, 1962, Ser. No. 218,639
10 Claims. (Cl. 22—40)



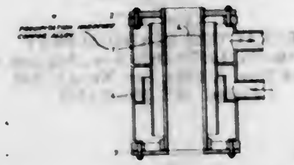
1. The method of preparing a mold sand retaining flask for casting, comprising: placing a pattern member in a flask, closing the bottom of said flask and raising said flask into closing position relative to the open end of a combustion chamber member, dropping a measured load of molding sand through said combustion chamber and into said molding flask, introducing an explosive charge into said combustion chamber, igniting said explosive charge, and directing the explosive wave forces against the sand in said flask for packing said sand about said pattern member.

3,170,203
VACUUM CASTING MACHINES
George Harrison, 6901 W. 30th St., Berwyn, Ill., and Nelson Harrison, 432 Shenstone Road, Riverside, Ill.
Filed Oct. 28, 1960, Ser. No. 65,732
9 Claims. (Cl. 22—73)



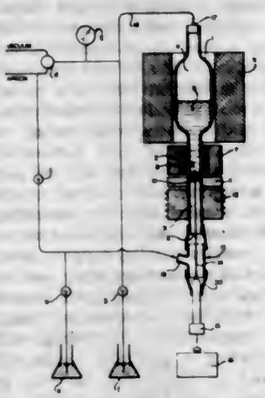
1. In a casting machine, a support; a vertical standard on said support; a vertical cylinder on said support adjacent said standard; a piston within said cylinder having a piston rod extending outwardly, above said cylinder; a block fixed to said piston rod; a rotatable arm supported by said block and journaled on said piston rod; a casting die having cavities therein fixed to said arm; a horizontal frame fixed to said standard, surrounding said piston rod and providing a recess between said piston rod and the outer extremity of said frame; a motor fixed to said block and supported within said recess and including means for angularly turning said arm; and means for supplying pressure fluid beneath the piston in said cylinder for raising said rotatable arm.

3,170,204
MOLD FOR THE CONTINUOUS CASTING OF HIGH-MELTING METALS
Bruno Tarmann, Styria, Austria, assignor to Gebr. Böhler & Co. Aktiengesellschaft, Vienna, Austria
Filed Feb. 20, 1961, Ser. No. 90,561
Claims priority, application Austria, Feb. 25, 1960, 1,448/60
4 Claims. (Cl. 22—136)



1. A mold for the continuous casting of metals, said mold consisting of a precipitation hardened copper alloy at the level of molten material, said alloy consisting essentially of about 1% to 2% chromium, incidential impurities and the balance being copper; and copper metal in the other level.

3,170,205
METHOD OF CONTINUOUSLY CASTING THERMOELECTRIC MATERIAL
George A. Brown, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
Filed Aug. 21, 1961, Ser. No. 132,786
3 Claims. (Cl. 22—200.1)

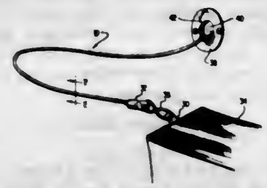


3. A method of continuously casting a thermoelectric material in which bismuth and tellurium together constitute more than one-half of the content of the material so that the resulting mixture has low thermal conductivity, into a thermoelectric rod of extended length and high strength, which method comprises:

(*a*) providing a quartz casting tube lined with carbon and having a reservoir at one end and an opening at the other with a uniform bore zone therebetween,
(*b*) charging said reservoir with said thermoelectric material,
(*c*) heating said material to create liquid material in said reservoir,
(*d*) applying a positive pressure of inert gas of 20 p.s.i.g. on said liquid,
(*e*) allowing said liquid to flow from said reservoir toward said opening through said bore,
(*f*) cooling said liquid in said bore through a temperature gradient of 200° C. per centimeter in the direction of travel of the material in said bore, thereby to solidify said material in said bore and to create a solid-liquid interface between said liquid and solid zones in said bore zone and to completely and rapidly solidify said material in the solid zone of the bore below said interface,
(*g*) removing heat continuously generated at said interface by said solidification, and
(*h*) continuously withdrawing said solid material through said opening at a withdrawal rate of 7 inches per hour while said heat is being removed to produce a continuously-cast elongated thermoelectric rod of high strength of said material.

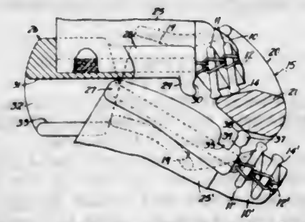


3,170,206
CABLE ASSEMBLY
George C. Triplett, Atlanta, Ga., assignor to Gladwin Plastics, Inc., Atlanta, Ga., a corporation of Georgia
Filed Mar. 22, 1963, Ser. No. 267,401
4 Claims. (Cl. 24—73)



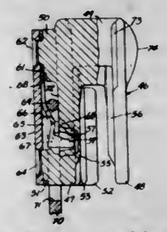
1. A flexible cable assembly for connecting an article, such as a telephone directory, with respect to a fixed member, such as a wall of a telephone booth, said assembly comprising a cable having a flexible core, a sheath of flexible coating material encasing and engaging said core along the full length of the core, first securing means adapted to be secured to said fixed member and having an opening therein loosely receiving one end of said coated core to permit relative movement between said cable and said first securing means, second securing means including a swivel adapted to be secured to said article, said second securing means having a circular opening therein loosely receiving the opposite end of said coated core, and a ball element fixedly mounted upon each end of said coated core in gripping engagement with said sheath and being engageable respectively with portions of said first and second securing means defining said openings for preventing withdrawal of the respective ends of said coated core from said first and second securing means, said circular opening being sufficiently larger than the end portion of the cable received therein so as to permit relative universal movement between the cable and said second securing means.

3,170,207
SLIDE FASTENER STOP
Louis H. Morin, Bronx, N.Y.
(125 Beechwood Ave., New Rochelle, N.Y.)
Filed Oct. 10, 1963, Ser. No. 315,207
3 Claims. (Cl. 24—205.11)



1. In a device of the class described, having a pair of stringers carrying fastener elements, a slider having a constricted throat portion and diverging channels defined by top and bottom wings and a pair of flared side walls connected by a frog, each side wall comprising two parts separated by a slot to permit the movement of the stringers, said device also having a separable end connection for said stringers including a stop member to limit movement of the slider in one direction and a socket therein; the improvement providing means to prevent mismeshing of said fastener elements, said means comprising a pin joined to one of said stringers and adapted to pass through one of the channels of the slider and to engage in said socket, an inter-engaging projection and recess on said pin and stop member adapted to position said pin in said socket, a straight wall at the constricted throat portion of said slider disposed at right angles to the longitudinal axis of said slider, and angularly disposed walls on the inner end of the socket portion of said stop member which meet at a raised apex in the path of said slider midway of the width of said stop member to engage said straight wall on said slider and permit said slider to lean to one side of the longitudinal axis of said stop member to permit ready entrance of said pin through said slider into said socket of said stop member.

3,170,208
LOCK SLIDER
Louis H. Morin, Bronx, N.Y.
(125 Beechwood Ave., New Rochelle, N.Y.)
Filed May 16, 1962, Ser. No. 195,173
5 Claims. (Cl. 24—205.14)

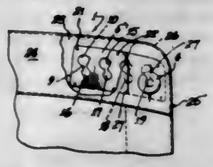


1. A compression slider comprising a slider body defined by normally widely spaced walls joined and spaced by a web, one wall only of the slider having flanged sides for guidance of scoops of a stringer into and out of a channel of the slider body, said flanged wall having spaced raised platforms, a flat plate fixed to and joining said platforms, a spring lock fixed to one of the platforms between said plate and one of said platforms, said spring lock having lock means operating in an aperture in said flanged wall of the slider body and normally extending into the channel of said body, a pull having a pivot end arranged between said flanged wall and said spring lock and operatively engaging the spring lock to move said lock means into inoperative position with respect to the channel of the slider body, projecting means with a bevelled surface on and integral with said flanged wall engaged by the pivot of the pull in checking movement of the pull in one direction on the slider body, a shoulder on one of said platforms for checking movement of the pull in the opposite direction, and the other unflanged wall of the slider body adapted to being moved by compression in the direction of the flanged wall in mounting and retaining the slider on coupled scoops of a pair of stringers.

3,170,209
FASTENER
Richard K. Parry, 1233 E. Sierra Madre Ave., Glendora, Calif.
Filed Feb. 20, 1963, Ser. No. 259,942
10 Claims. (Cl. 24—222)

7. In a fastener for two members of an article, one article member having an opening removably fitting a fastening device on the other article member, the improve-

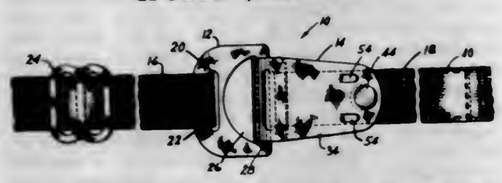
ment wherein said fastening device comprises the combination of a stud and a mount therefor, said stud having a post having on the outer end thereof a button-like head of a certain size, said post having on the inner end thereof a base of smaller size, said mount having a slot device comprising a comparatively large upper aperture, a lower smaller aperture and connecting slot, said large aperture being of a size to pass said base, said large aperture being smaller than said head, said aperture opening into said slot which is larger than said post, said slot opening into said smaller aperture, said smaller aperture being larger than said post and smaller than said base, said slot being downwardly, forwardly inclined on said mount, whereby the line of pull between said article members tends to maintain said stud in said smaller aperture, said other article member having inner and outer layers, means for



securing said mount to said inner layer, said outer layer having an opening communicating with said slot device, said opening in said outer layer being on a bias with said slot device and in register with said smaller aperture whereby the body of the outer layer of said article acts as a guard to resist return of said stud from said smaller aperture to said large aperture, said slot having parallel sides, said post having parallel sides slidably fitting said slot, a portion of the periphery of said post having a size greater than the distance between its parallel sides preventing said post from passing in either direction through said slot unless oriented with its sides juxtaposed with the sides of said slot, said base having a lateral projection acting as a key, said large aperture having a corresponding notch, said lateral projection and notch acting as a guard to restrict entry or withdrawal of said smaller base in the absence of a particular relative orientation thereof.

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**3,170,210**
**HOOK AND EYE**
**Allan L. Frew, Woodbury, Conn., assignor to Waterbury Buckle Company, Waterbury, Conn., a corporation of Connecticut**
**Filed Mar. 4, 1964, Ser. No. 349,320**
**11 Claims. (Cl. 24—226)**



1. A belt buckle comprising a hook member including a connector portion having an opening through which the end portion of a belt strap may be passed to form a loop pivotally connecting said hook member thereto for movement of said hook member relative to said belt strap between open and closed positions about a pivot axis extending transversely of said belt strap, said hook member also including a curved portion having a center of curvature at least approximately coincident with said pivot axis and a handle portion forming a continuation of said curved portion which handle portion is positioned adjacent said belt strap when said hook member is in its closed position and away from said belt strap when said hook member is in its open position, said connector portion having a width equal to the width of said handle portion at the junction of the latter with said connector portion, cooperable means on said handle portion and on said belt strap to releasably hold said hook member in its closed position, and an eye member adapted for connection to another belt strap end portion and having an opening for receiving said handle portion and curved portion of said hook member, said opening being defined by a generally straight wall and another wall which is spaced relatively close to said generally straight wall at the opposite ends thereof and which is spaced relatively far from said generally straight wall in the vicinity of the center thereof, said opening having a zone adjacent said generally straight wall which zone is only slightly longer longitudinally of said eye member than the thickness of said connector portion and throughout which zone said opening has a width equal to or greater than the width of said connector portion, said opening at points outside of said zone having a width less than said width of said connector portion with the result that when said connector portion enters said opening it necessarily occupies and is maintained in said zone so that said eye member is prevented from riding up on the associated looped belt strap end portion.

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**3,170,211**
**SAFETY SEAT BUCKLE**
**Andrew J. Van Noord, Grand Rapids, Mich., assignor to Kent Engineering Consultants, Grand Rapids, Mich., a partnership of Michigan**
**Filed May 16, 1963, Ser. No. 280,801**
**12 Claims. (Cl. 24—230)**



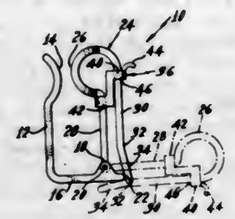
1. A seat belt buckle, comprising:
a housing member open upwardly and having a bottom wall and parallel spaced side walls upstanding thereover,
a latching member provided in said housing and having one end formed and disposed for pivotal engagement with said side walls and the other end extended towards an end of said housing, spring means engaged between said side walls and said latching member for biasing said latching member for engagement with said housing bottom wall,
a cover member including top side and end walls receptive in enclosing relation over said housing member and having one end wall thereof received in hinged engagement with one end of the housing and the other end wall disposed in engagement with the extended end of said latching member,
said other cover member end wall and said extended latching member end being spaced from said housing bottom wall for receiving a member in said housing for engagement with said latching member.

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**3,170,212**
**EAR CLIP**
**Eugene Grosz, 387 Grand St., New York, N.Y.**
**Filed Sept. 16, 1963, Ser. No. 309,146**
**5 Claims. (Cl. 24—252)**

1. A bracket having a pivot axis and a projection, a pivot member having two legs, one of said legs being pivotally connected with said bracket for pivotal movement relative to said bracket about said pivot axis, the other of said legs being engaged with said projection to fulcrum thereabout, each of said legs having a length thereof parallel with and spaced relative to the other, and a clamp movable in the space between said legs and including means engaging each of said legs and slidable along the parallel lengths thereof to retain the same in their parallel spaced relationship and adjustably vary the

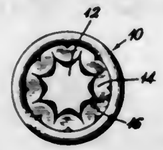




effective legnth of said other of said legs to selectively vary the tension between said other leg and said projection during the fulcruming movement of said other leg about said projection.

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**3,170,213**
**CLASPING DEVICES**
**Fred G. Thomas, Jr., 134 Mountain Ave., Somerville, N.J.**
**Filed July 31, 1962, Ser. No. 213,665**
**7 Claims. (Cl. 24—255)**

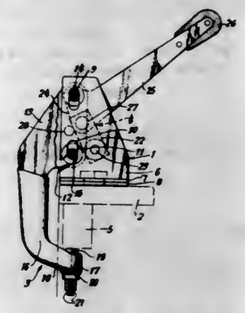


1. A diaper clasp for gripping adjacent ends of a diaper comprising an inflexible plastic member having a centrally disposed, longitudinally extending aperture therethrough and having an outer periphery, said periphery being thicker than the remainder of said member so as to strengthen said clasp against bending stresses, a plurality of extending lobes affixed to said memebr so as to surround said aperture and extending therefrom a substantial distance into said aperture and lying in a plane substantially with said member, the free ends of said lobes being rounded and separate and closely spaced one from the other and said aperture being completely open between each free end of said lobe so as to receive said ends through said aperture and to securely fasten said ends therein by snubbing action in the space between each of said lobes.

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**3,170,214**
**TOGGLE CLAMPS**
**William Downie Cochrane, 21 Millhams St., Christchurch, Hampshire, England**
**Filed Sept. 18, 1961, Ser. No. 138,972**
**3 Claims. (Cl. 24—263)**

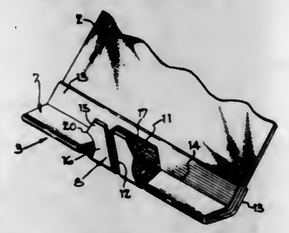
1. A toggle clamp including: a body, an elongated clamping jaw having a clamping surface at one end thereof, said body and said jaw being mounted together for relative movement therebetween, an actuating lever, a toggle linkage, said toggle linkage comprising first and second link members, said link members being pivotally joined at their inner ends, two pin members spaced apart along said jaw and carried by said jaw, one of said pin members positioned in a first slot in said body and the other of said pin members positioned in a second slot in said body, each of said slots having a portion thereof which is generally parallel to the longitudinal axis of said jaw, at least one of said slots having a portion at an angle with said longitudinal axis, one of said toggle link members being integral with said actuating lever, the outer end of one of said toggle link members being pivotally secured to said body, the outer end of the other of said



toggle link members being pivotally secured to the pin member which is most remote from the clamping surface of the clamping jaw.

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**3,170,215**
**WEB-TO-TUBE FASTENING CLIP**
**Robert A. Hopkins, Cincinnati, Ohio, assignor to Bell Intercontinental Corporation (Balcrank Division), New York, N.Y., a corporation of Delaware**
**Filed June 6, 1963, Ser. No. 285,947**
**3 Claims. (Cl. 24—265)**

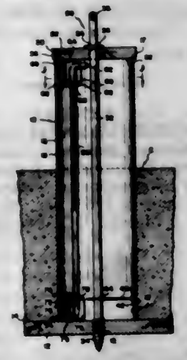


1. A fastening clip formed of sheet metal for securing a strip of flexible material to the frame member of an article of furniture, said frame member having a mounting aperture for anchoring said clip, said fastening clip comprising, a clamping body which is generally U-shaped in cross section, said U-shaped clamping body adapted to be fitted over the end portion of a strip of flexible material and pressed in permanent clamping engagement therewith, said U-shaped clamping body, upon being pressed in clamping engagement with said strip of flexible material being thereby stiffened longitudinally, a compressible stud projecting outwardly from the forward edge of said clamping body and disposed at an acute angle to the plane of the clamping body, said stud being of flat formation and residing in a plane generally parallel to the forward edge of the clamping body, said compressible stud having a wedge-shaped compression head, a neck portion joining the compression head to said clamping body, said stud having an open slot extending longitudinally through said compression head and through the neck portion to the clamping body, adapting the compression head to be compressed in the direction of its width, said compression head being delineated by opposed side edges which diverge outwardly from the outer end of the head toward the neck portion, said diverging side edges delineating opposed locking shoulders adjacent the neck portion, the distance across said shoulders being greater than the width of the neck portion, said stud adapted to be forcibly inserted into the aperture of said frame member, the distance across said aperture being less than the distance across the said locking shoulders, whereby the

diverging side edges of the compression head are adapted to create a camming action relative to the opposite sides of the mounting aperture to compress the head adapting the head and locking shoulders to pass through the aperture, said head adapted to spring outwardly after passage through said aperture with said locking shoulders overhanging the opposite sides of the aperture at the interior surface of the tubular member to confine the stud within the mounting aperture, the said U-shaped cross section of the clamping body thereby resisting the pressure developed by the compression head of the compressible stud to increase the clamping action of the fastening clip.

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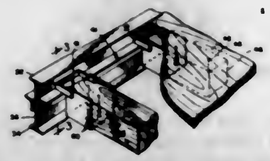
**3,170,216**
**APERTURE FORMING MOLD FOR MOLDED STRUCTURES**
**Charles H. Neese, 7801 Layton Drive, Springfield, Va.**
**Filed Nov. 13, 1963, Ser. No. 323,461**
**2 Claims. (Cl. 25—128)**



1. An aperture forming mold assembly for molded structures, comprising, an elongated hollow mold member of sheet material having a closed cross-sectional configuration with open top and bottom ends, said hollow mold member being split longitudinally, with the adjacent side edges overlapping each other, a pressure block with an opening therethrough which has a flat lower surface which lays across and engages the periphery of the open top of said hollow mold member, a support rod of substantially greater length than said hollow mold member which extends through the said opening of said pressure block and longitudinally through the said hollow mold member, said rod having a threaded section which extends below said open bottom end to engage a mold-board, a single plate bracket member integral with the inner surface of said hollow mold member and having an opening through which said support rod extends, said bracket being positioned immediately adjacent said bottom end of mold member, the upper end of said support rod having a handle to facilitate turning thereof, said rod also having a stop means integral therewith located immediately above and in contact with said pressure block, whereby turning of said handle will cause said thread to draw the said rod toward said mold board to press said pressure block against the top of said hollow mold member causing the bottom end thereof to be pressed against said mold board to hold said hollow mold member in firm upright position with respect to said mold board, two pair of fastening brackets within said hollow mold member, one bracket pair adjacent the top end and the other bracket pair adjacent the bottom end of the hollow mold member, a bracket of each of said bracket pairs being immediately adjacent one of said overlapping side edges and spaced a small distance therefrom, the remaining bracket of each of said bracket pairs being similarly positioned with respect to the other of said side edges, to permit the overlapping edges to slide freely with respect to each other without interference from the brackets when said cylinder is slightly collapsed, said brackets being L-shaped pieces one leg of which is attached to the inner surface of said mold member, the other leg extending outwardly from said surface transversely across said hollow mold member and having an opening therein, said openings being aligned with the opening in the corresponding leg of its other paired bracket when said side edges of the hollow mold member are in overlapping contact, the aligned holes in both bracket pairs being in a straight line, a locking rod which extends down through said aligned holes and is shorter than the length of said hollow mold member, said rod connecting the paired brackets to support and fixedly hold the overlapping edges of the hollow mold member together, said rod when removed permitting the overlapping edges to slide with respect to each other to slightly collapse said hollow mold member for easy removal thereof from the hardened molded structure.

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**3,170,217**
**CONCRETE SLAB FORM FILL-IN PANEL STRUCTURE AND SUPPORTING BRACKET THEREFOR**
**Walter D. Williams, River Forest, Ill., assignor to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware**
**Filed Dec. 3, 1963, Ser. No. 327,680**
**1 Claim. (Cl. 25—131.5)**



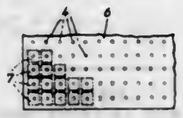
In a concrete floor slab form installation, in combination, a pair of elongated panel-supporting stringers disposed in spaced parallel relationship, means on said stringers defining opposed ledge-forming panel supports having upstanding lugs thereon, a series of rectangular panels including panel facings and having their opposite end regions resting upon said supports and bridging the distance between the stringers, adjacent panels in the series being disposed in contiguity and edge-to-edge relationship in a direction extending longitudinally of the stringers with the panel facings thereof lying in a common horizontal plane and presenting a smooth uninterrupted surface on which the concrete of the slab is adapted to be poured, one pair of adjacent panels being separated by a small odd dimension, and a fill-in panel structure for said odd dimension, said fill-in panel structure comprising a fill-in panel facing of a size commensurate with said odd dimension, a pair of spaced apart parallel beams of rectangular cross section and underlying and supporting said fill-in panel facing, a supporting bracket mounted on each end region of each beam, each supporting bracket including a bracket proper in the form of an upright U-shaped cradle-like part having side wings straddling the opposite sides of the associated beam and a connecting web underlying and nailed to the underneath face of the associated beam, and a bracket extension on said bracket proper in the form of a rectangular loop of sheet metal having side flanges projecting from the forward edges of the side wings, and a transverse connecting web, the extensions of the various brackets resting on-edge upon and being supported by said ledge-forming panel supports, the loops of sheet metal which comprise said extensions each encircling one of the upstanding lugs on the ledge-forming supports, said fill-in panel facing lying



in the common horizontal plane of the panel facings of the panels and providing a continuation of the smooth uninterrupted surface afforded by the panel facings.

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**3,170,218**
**METHOD OF PRODUCING TABLETS OF SEMICONDUCTOR MATERIAL, PARTICULARLY SELENIUM**
**Ernst Siebert, Berlin-Siemensstadt, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, and Erlangen, Germany, a corporation of Germany**
**Filed Oct. 26, 1962, Ser. No. 233,409**
**Claims priority, application Germany, Oct. 31, 1961, S 76,487**
**6 Claims. (Cl. 29—25.3)**



1. The method of producing semiconductor tablets comprising the steps of:

(*a*) placing upon a starting plate, consisting of a metallic carrier sheet with a semiconductor coating, a stencil having uniformly distributed small holes exposing corresponding areas of the semiconductor surface,

(*b*) depositing a cover-electrode material upon the semiconductor layer covered by the stencil;

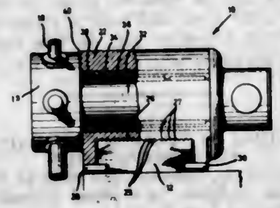
(*c*) removing the stencil, and coating the entire semiconductor and cover-electrode surface of the starting plate with insulating varnish;

(*d*) spraying, after drying of the varnish layer, a metallic terminal-electrode material upon the entire surface of the varnish coating, whereby the terminal-electrode material penetrates through the varnish in the cover-electrode areas and forms electric contacts with the cover-electrode material; and

(*e*) dividing the now-coated starting plate between the areas into a multiplicity of tablets.

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**3,170,219**
**TOOL CARRIAGE**
**Karl Spohn, Obereslingen (Neckar), and Gerhard Föll, Goppingen, Germany, assignors to Index-Werke KG, Hahn & Tessky, Esslingen (Neckar), Germany**
**Filed Mar. 9, 1962, Ser. No. 178,760**
**Claims priority, application Germany, Mar. 16, 1961, J 19,608**
**4 Claims. (Cl. 29—35.5)**



1. In a metal working machine, a stationary base portion having a guide surface and a movable lightweight metal tailstock having a sliding surface adapted to engage the guide surface of said base portion, the surface of said tailstock being harder than the metal of said lightweight metal tailstock.

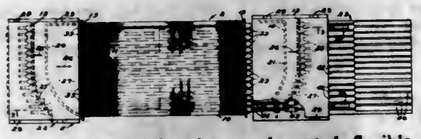
**3,170,220**
**METHOD OF MAKING AND ATTACHING AN INSULATOR TO A SUPPORTING SPRING STRUCTURE**
**Richard P. Doerer, Ypsilanti, Mich., assignor to Van Dresser Specialty Corporation, Warren, Mich., a corporation of Michigan**
**Filed Jan. 28, 1963, Ser. No. 254,351**
**5 Claims. (Cl. 29—91.1)**



1. A method of forming an elongated, flexible, sheet-like insulator having in its free state condition a lengthwise dimension approximating the lengthwise dimension of an elongated border frame of a supporting spring structure of an upholstered assembly, for use of said insulator in said upholstered assembly between said supporting spring structure and an overlying padding; comprising providing first and second elongated sheets of flexible material adapted to extend lengthwise of said border frame and which have a lengthwise dimension approximating the lengthwise dimension of said border frame, providing a plurality of elongated, laterally spaced, substantially parallel, flexible, stretchable, resilient reinforcing strands adapted to extend lengthwise of said border frame and which are initially shorter than the corresponding portions of said border frame, longitudinally stretching said strands beyond their elastic limit to a stable free state condition of increased length such that said stretched strands have approximately the same lengthwise dimension respectively as the corresponding portions of said border frame, extending said stretched strands upon one side of said first sheet lengthwise thereof and extending said second sheet upon the side of said stretched strands opposite said first sheet lengthwise of said first sheet, and then securing said sheets together.

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**3,170,221**
**METHOD OF STRETCHING AND ATTACHING AN INSULATOR TO A SUPPORTING SPRING STRUCTURE**
**Richard P. Doerer, Ypsilanti, Mich., assignor to Van Dresser Specialty Corporation, Warren, Mich., a corporation of Michigan**
**Original application Nov. 13, 1961, Ser. No. 151,771, now Patent No. 3,132,352, dated May 12, 1964. Divided and this application Jan. 28, 1963, Ser. No. 254,352**
**11 Claims. (Cl. 29—91.1)**

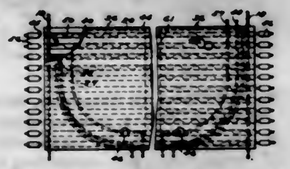


1. A method of forming an elongated, flexible, sheet-like insulator having in its free state condition a lengthwise dimension approximating the lengthwise dimension of an elongated border frame of a supporting spring structure of an upholstered assembly, for use of said insulator in said upholstered assembly between said supporting spring structure and an overlying padding; comprising providing a preformed, elongated, flexible, stretchable, resilient sheet-like insulator having an initial lengthwise dimension in its free state less than the minimum lengthwise

dimension of said border frame, and longitudinally stretching said preformed insulator beyond its elastic limit to a stable free state condition of increased length in which the lengthwise dimension thereof approximates the lengthwise dimension of said border frame.

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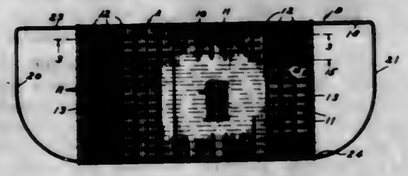
**3,170,222**
**METHOD OF MAKING AN INSULATOR AND ATTACHING THE SAME TO A SUPPORTING SPRING STRUCTURE**
**Richard P. Doerer, Ypsilanti, Mich., assignor to Van Dresser Specialty Corporation, Warren, Mich., a corporation of Michigan**
**Filed Jan. 28, 1963, Ser. No. 254,353**
**8 Claims. (Cl. 29—91.1)**



1. A method of forming an elongated, flexible, sheet-like insulator having in its free state condition a lengthwise dimension approximating the lengthwise dimension of an elongated border frame of a supporting spring structure of an upholstered assembly, for use of said insulator between said supporting spring structure and an overlying padding; comprising providing first and second elongated sheet of flexible material adapted to extend lengthwise of said border frame and which have a lengthwise dimension approximating the lengthwise dimension of said border frame, providing a plurality of elongated, laterally spaced, substantially parallel, flexible, resilient reinforcing strands of undulating form adapted to extend lengthwise of said border frame and which are initially longer than the corresponding portions of said border frame, longitudinally compressing said strands beyond their elastic limit to a stable free state condition of decreased length such that said compressed strands have approximately the same lengthwise dimension respectively as the corresponding portions of said border frame, extending said compressed strands upon one side of said first sheet lengthwise thereof and extending said second sheet upon the side of said compressed strands opposite said first sheet lengthwise of said first sheet, and then securing said sheets together.

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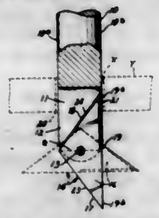
**3,170,223**
**METHOD OF STRETCHING AND ATTACHING AN INSULATOR TO A SUPPORTING SPRING STRUCTURE**
**Richard P. Doerer, Ypsilanti, Mich., assignor to Van Dresser Specialty Corporation, Warren, Mich., a corporation of Michigan**
**Original application Nov. 13, 1961, Ser. No. 151,773, now Patent No. 3,132,353, dated May 12, 1964. Divided and this application Jan. 28, 1963, Ser. No. 254,354**
**4 Claims. (Cl. 29—91.1)**



1. A method of forming and applying an elongated flexible, sheet-like insulator to an elongated border frame of a supporting spring structure of an upholstered assembly; comprising providing a preformed insulator including an elongated substantially rectangular sheet of flexible material provided with transverse undulations and having an initial lengthwise dimension less than the lengthwise dimension of said border frame, and also including a plurality of elongated, laterally spaced substantially parallel, stretchable resilient reinforcing strands threaded through said undulations and extending longitudinally of said sheet and having anchorage members at the opposite ends of said sheet extending transversely thereof to which said strands are terminally connected, securing one of said anchorage members to one end of said border frame, then longitudinally stretching said preformed insulator whereby to place said strands in tension and to increase the lengthwise dimension of said strands and said sheet to approximately the lengthwise dimension of said border frame, and thereafter while said strands are in tension and said strands and sheets are increased in length as aforesaid, securing the other of said anchorage members to the opposite end of said border frame.

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**3,170,224**
**ROTARY CUTTING TOOL**
**Stanley A. Johnson, % North Star Specialties Inc., 800 16th Ave. SE., Minneapolis, Minn.**
**Filed Jan. 15, 1964, Ser. No. 337,856**
**2 Claims. (Cl. 29—105)**



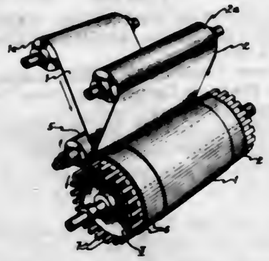
1. A rotary metal working tool bit comprising:
(*a*) an elongated shaft having a bifurcated outer end,
(*b*) a cutting head in the form of an isosceles triangle, the base portion of which has a longitudinal dimension substantially greater than the transverse dimension of said shaft and which is formed to define flat parallel side surfaces,
(*c*) the converging sides of said cutting head defining cooperating cutting edges, and opposite side portions of the base of said head defining cooperating substantially coplanar cutting edges,
(*d*) said cutting head being mounted in the bifurcated end of said shaft centrally along the altitude thereof for unlimited pivotal movements in a plane bisecting the axis of said shaft,
(*e*) the altitude of said cutting head having a dimension corresponding generally to the transverse dimension of said shaft, whereby said head may be substantially retracted into the projected planes of opposite sides of said shaft when said head is pivotally moved to an inoperative position with the base thereof in substantial alignment with one side of said shaft.

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**3,170,225**
**METHOD OF MAKING FOIL WOUND ELECTRICAL COILS**
**Willard F. M. Gray, Hancock, and Rene O. Moser, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York**
**Original application Mar. 15, 1957, Ser. No. 646,313, now Patent No. 2,977,556, dated Mar. 28, 1961. Divided and this application June 8, 1960, Ser. No. 34,691**
**5 Claims. (Cl. 29—155.57)**

2. The method of making a coil of insulated foil for electrical induction apparatus, said coil incorporating ducts for circulation of cooling media, which comprises winding the insulated foil material into a coil while providing pressure means resting on and pressing the insulated foil material toward the underlying coil surface, providing between adjacent turns of said coil during the winding thereof a plurality of juxtaposed elongated members





extending along said coil for providing a substantially smooth support base in said coil for continuously sustaining the pressure thereon, and thereafter removing only certain ones of said elongated members from between other elongated members in the wound coil thereby leaving ducts extending through said coil.

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**3,170,226**
**LINE STOPPING AND VALVE INSERTING APPARATUS AND METHOD**
**Timothy Allan Larry, San Clemente, Calif., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois**
**Filed Aug. 7, 1957, Ser. No. 676,902**
**24 Claims. (Cl. 29—157)**

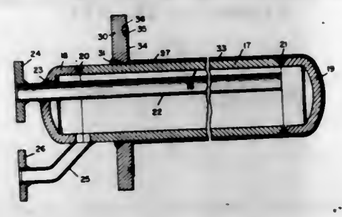


1. The method of connecting a valve into a pipe line while in service, the steps comprising: securing about the line an enclosure having a sealable opening; cutting out a section of the line within the enclosure to provide opposed flat line ends by operations conducted through said openings; and sealingly securing to said enclosure, within and closing said opening, a gate valve bonnet carrying an expansible gate assembly movable linearly between and directly sealable oppositely against said line ends, all without escape of line fluid from said enclosure.

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**3,170,227**
**METHOD OF FABRICATING CLAD TUBES**
**William W. Richmond, Huntington, and Ernest Mantius, New York, N.Y., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey**
**Original application June 27, 1960, Ser. No. 38,992. Divided and this application Feb. 3, 1961, Ser. No. 94,105**
**7 Claims. (Cl. 29—157.3)**

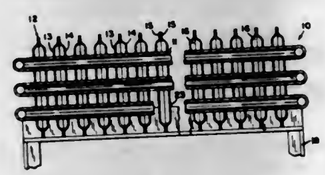
1. The method of fabricating heating tubes useful for acid concentrators which comprises first forming a closed hollow mild steel elongate tubular member, forming an inlet and an outlet in said member at one end thereof, applying brazing compound upon a portion of the outer surface of said member including one outer end surface thereof remote from said inlet and said outlet, inserting the coated end of the member into a thin-walled tantalum



tubular envelope closed at one end thereof, heating the envelope and member so as to effect a tension upon the envelope to draw the same onto the member and maintaining the heat at sufficient temperature as to fuse the brazing compound and thus join the envelope and member.

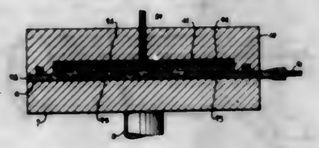
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**3,170,228**
**METHOD OF MAKING HEAT EXCHANGERS**
**Donald G. Rich, Fayetteville, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Original application Apr. 25, 1960, Ser. No. 24,312, now Patent No. 3,050,959, dated Aug. 28, 1962. Divided and this application June 15, 1962, Ser. No. 202,855**
**2 Claims. (Cl. 29—157.3)**



1. A method of making a heat exchanger which comprises the steps of: forming and sintering a quantity of powdered metal into a plurality of porous metal heat transfer members having an aperture therein adapted to receive the exterior surface of a hollow heat exchange pipe, said heat transfer members, each being formed with lip portions thereon disposed out of a plane of a side of said heat transfer members; arranging and assembling said porous metal heat transfer members on a relatively impervious hollow heat exchange pipe passing through said apertures, said members being positioned in pairs with the lip portions of the pairs of members disposed in opposite directions so that the lip portions of the pairs of members are closely adjacent each other; forming a relatively low resistance thermal bond between said heat transfer member and between the said heat exchange pipe and said members by solidifying a solid material between the lip portions of pairs of members and between said members and said heat exchange pipe, and thereby also forming hollow porous envelopes disposed about said pipe; and attaching a header means in communication with said hollow porous envelopes to introduce a volatile liquid into the interior of said hollow porous envelopes to enable wetting of the exterior surface of said envelopes from the interior thereof through said porous members, whereby evaporation of said liquid may take place from said exterior surface.

3,170,229
FABRICATION OF HOLLOW ARTICLES
William Vernon Wenger, Alton, Ill., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia
Original application June 23, 1959, Ser. No. 822,290, now Patent No. 3,127,860, dated Apr. 7, 1964. Divided and this application July 19, 1962, Ser. No. 221,642
3 Claims. (Cl. 29—157.3)



1. A method for fabricating a hollow panel from a blank having an unjoined interior portion contained within opposite outer faces of said blank comprising holding said blank against a rigid surface adjacent one face of said blank by uniform application of a hydraulic blank-holding pressure on the other face of said blank, maintaining said blank-holding pressure for a predetermined time interval of at least 3 seconds, subsequently injecting sufficient blank-expanding hydraulic pressure within said unjoined portion to distend said unjoined portion and releasing said blank-holding and blank-expanding pressures.

3,170,230
TOOL FOR REMOVING CONTACTS FROM CONNECTORS
Bronius Gaizauskas, Chicago, Ill., assignor to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey
Filed July 11, 1963, Ser. No. 294,349
5 Claims. (Cl. 29—203)



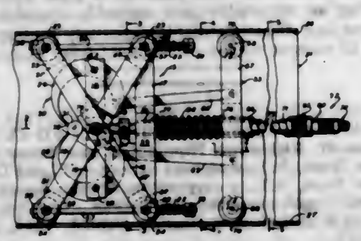
1. A one-piece molded plastic remover tool adapted to remove an article from a container comprising:
a pair of substantially semi-cylindrical walls each forming a substantially concave semi-cylindrical inner surface,
a segmented portion of the outer surface beginning at one edge of each of the semi-cylindrical walls forming a flat outer surface thereon,
an integral hinge extending the length of the semi-cylindrical wall and formed by joining together the one edge of each semi-cylindrical wall so that the flat surfaces of each semi-cylindrical wall are substantially contiguous,
a substantially cylindrical passage formed by substantially contacting the other edges of said semi-cylindrical walls,
a substantially semi-cylindrical groove formed on the inner surface of said hinge and extending the length thereof providing said tool with flexibility and preventing undue strain thereon,
an arcuate wall integrally and longitudinally extending from one end of each of said semi-cylindrical walls with their longitudinal centers spaced approximately 180° apart,
the inner surface of said arcuate wall being concentric and contiguous with the inner surfaces of the semi-cylindrical walls to form engaging surfaces, said arcuate walls converging at their ends, and the thickness of the arcuate walls being less than the thickness of the semi-cylindrical walls whereby said remover wraps the arcuate walls around a portion of the article to grasp the article for removal from the container without injuring the article and said tool being capable of extracting more than one size article from the container.

3,170,231
APPARATUS FOR INSERTING ELONGATED TAILED OBJECTS INTO OPEN-TOPPED RECEPTACLES
Fred C. Gleason, Cannondale, Conn., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 16, 1962, Ser. No. 230,963
14 Claims. (Cl. 29—208)



1. Apparatus for inserting elongate tailed objects into open-topped containers, said apparatus comprising a plurality of inclined chutes each adapted to receive an elongate tailed object and to conduct it downwardly tail first, means on which said chutes are mounted in laterally adjacent relationship, means for moving said mounting means with said chutes thereon laterally through a predetermined path, a first feeding means, means mounting said first feeding means for discharge in said path for supplying substantially upright open-topped containers beneath the lower discharge end of a respective one of said chutes while in said path, means mounted adjacent said path for maintaining each of the containers beneath a respective one of said chutes for a predetermined portion of said path, second feeding means, and means mounting said second feeding means for discharge in said path for supplying an elongate tailed object tail down to a respective one of said chutes as the latter is in said portion of said path.

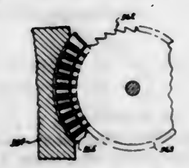
3,170,232
APPARATUS FOR POSITIONING COMPONENTS
Edward H. Craver, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, a corporation of New York
Filed Aug. 29, 1961, Ser. No. 136,396
7 Claims. (Cl. 29—271)



1. In a device for positioning an element within an enclosure, a plurality of pairs of crossed links positionable within said enclosure, a common pivot pin passing through each pair of crossed links at the intersections to form common pivot joints, means for urging said links to pivot about said common pivot pin to move the extremities of said links into engagement with said enclosure, an arm having a jaw for holding the component against the common pivot joints, means for pivotally mounting said arm, and means for urging said arm to pivot said jaw toward said common pivot joints.



3,170,233
METHOD OF FORMING A PIN CARRIAGE
Kenneth F. Oldenburg, Arcadia, Bryan F. Kahne, Monrovia, and Dominick Fazio, San Gabriel, Calif., assignors, by mesne assignments, to Addmaster Corporation, San Gabriel, Calif., a corporation of California
Original application Sept. 25, 1961, Ser. No. 140,549, now Patent No. 3,095,143, dated June 25, 1963. Divided and this application Apr. 26, 1962, Ser. No. 190,372
6 Claims. (Cl. 29—418)



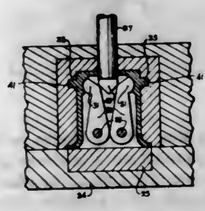
1. The method of preparing a curved pin carriage for a calculating machine or the like which comprises forming an integral body having a plurality of parallel spaced bars with openings in said bars extending at right angles to a plane passing through said bars and with webs connecting said bars, said webs being of smaller cross section than the cross sections of said bars whereby said webs will yield upon bending said body transversely of the lengths of said bars and into a curve, forming a pin carriage frame, forming a strip having a plurality of stop pins thereon, inserting said stop pins in certain of said openings, separating said pins from said strip, bending said webs whereby to bend said body into said curve, and mounting said curved body in said frame.

3,170,234
JOINTING OF REFRACTORY METALS BY SOLID-STATE DIFFUSION BONDING
Charles O. Tarr, Cincinnati, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Sept. 17, 1962, Ser. No. 224,262
10 Claims. (Cl. 29—488)

1. The method of joining refractory metals in the group consisting of tungsten, tantalum, columbium, molybdenum, rhenium and vanadium and alloys consisting of a combination thereof to themselves and one another which comprises bringing smooth oxide-free surfaces of said metals into contact at a relatively low pressure and at a temperature of at least 1350° C. and below the melting point of the lowest-melting metal being joined in a protective atmosphere, whereby said surfaces are bonded.

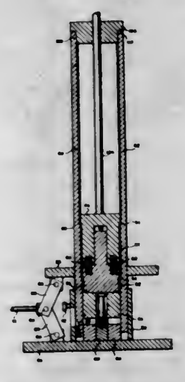
6. The method of joining refractory metal parts consisting of at least one refractory metal in the group consisting of tungsten, tantalum, rhenium, columbium, molybdenum and vanadium and alloy combinations thereof which comprises interposing a thin layer of a metal selected from said group between said parts and bringing oxide-free surfaces of said parts and said layer into contact at a relatively low pressure under vacuum at a temperature of at least about 1350° C. and below the melting points of said parts and said layer whereby said parts are bonded together.

3,170,235
METHOD OF FABRICATING A CONNECTING DEVICE
Henry M. Williams, Alton, Ill., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia
Filed Sept. 15, 1958, Ser. No. 760,998
8 Claims. (Cl. 29—534)



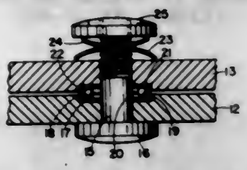
1. A method of fabricating bases for connectors having a radially projecting pin forming part of a bayonet type connection comprising extruding metal into a thin-wall cupped cylinder with at least one nib projecting inwardly from and integral with the wall of said cylinder with said nib disposed adjacent the end-wall of said cylinder, and deforming a portion of said nib in a direction transverse said side wall to extrude the metal of said side wall into a lug projecting radially from the exterior of said cylinder on said side wall.

3,170,236
METHOD OF MAKING A CASING
Jess L. Massingill, Jackson, Mich., assignor, by mesne assignments, to Metal Flo Corp., a corporation of Michigan
Filed Sept. 28, 1959, Ser. No. 842,764
4 Claims. (Cl. 29—534)



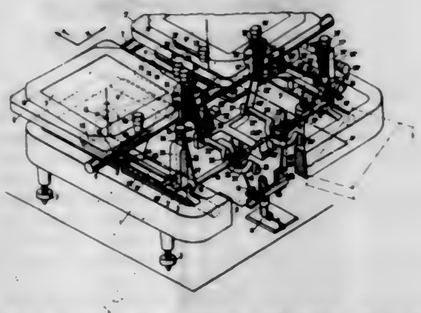
1. The method of forming a tubular casing having axial portions of various dimensions and a radially extending flange comprising the steps of inserting a tubular blank into a die having an inner configuration similar to that of the casing, interiorly expanding the circumference of a first axial portion of the blank while said blank is relatively sationary with respect to the die, axially translating the entire blank with respect to the die through a reduced portion formed on the die to exteriorly reduce a second axial portion of the blank and forcing the end of the reduced axial portion against a second die while fixing said blank with respect to the first die to form an inwardly projecting flange from the end of said reduced portion.

**3,170,237**
**PINKING SHEARS**
Curt Weidauer, Clinton Corners, N.Y., assignor to Samuel Brinkman, New York, N.Y.
Filed Dec. 3, 1962, Ser. No. 241,922
3 Claims. (Cl. 30—268)



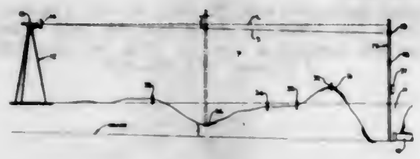
3. Shears comprising cutting blades, said cutting blades being swingably mounted on a common pivot, said pivot having a head on one end and a threaded portion on the other end thereof, said cutting blades being freely swingable about said pivot independent from one another, antifriction bearing means on said pivot, said bearing means being interposed between said blades and being housed in opposed recesses provided in said blades, spring means on said pivot, said spring means abutting against one of said blades maintaining said blade in proper cutting relation to said other blade, and a nut on said threaded portion, said nut tightening said spring means, said spring means comprising at least two substantially dish-shaped spring washers.

**3,170,238**
**METHOD AND APPARATUS FOR THE PHOTOGRAMMETRIC PLOTTING OF ASSOCIATED AERIAL PHOTOGRAPHS IN PAIRS**
Henk Ysermann, Aarau, Switzerland
Filed Sept. 14, 1960, Ser. No. 55,961
Claims priority, application Switzerland, Sept. 17, 1959, 78,350
2 Claims. (Cl. 33—20)



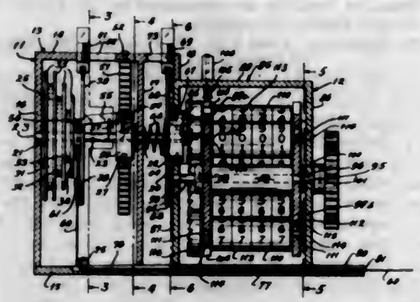
1. An apparatus in two halves for the photogrammetric plotting of stereometrically associated aerial photographs in pairs, comprising a box frame, a plurality of adjustable screw legs supporting said frame, two pairs of guide rods securely attached on said frame so as to extend parallel to the sides thereof, a sliding carriage movably provided on each pair of said guide rods, two guide members mounted securely on said frame and extending at right angles to said guide rods, two frame-like sliding carriages movably mounted on said guide members so as to be displaceable independently of each other, said frame-like sliding carriages serving as carriers for one of said stereometricaly associated aerial photographs, each half of said apparatus having at least one stereoscopic model guide means, two shafts each mounted at right angles on each half of said apparatus, and a guide lever secured to each of said shafts, the angular position of at least one of said guide levers being adjustable with respect to its associated stereoscopic model guide means prior to the plotting operation, said stereoscopic model guide means transmitting deviations during the plotting of the aerial photographs in the form of independent rotational movements to said two shafts intersecting at right angles, the guide levers transmitting the rotational movements of the said shafts independently of each other in the form of relative movements between the carriers of the aerial photographs and their associated carriers of the measuring marks in the direction of $x$ and $y$.

**3,170,239**
**SELF-READING GRADE TARGET**
Edgar W. Cotton, 2562 Santa Ana St., Costa Mesa, Calif.
Filed Jan. 21, 1963, Ser. No. 252,792
2 Claims. (Cl. 33—70)



1. Apparatus for establishing a grade comprising, in combination, a builder's level having a tripod and a cross-haired telescope, a prism applicable to the telescope in either upright or upside down positions, means on the prism for indicating whether it is applied in upright or upside down position, said prism being of a character to refract a level ray of light through the telescope upwardly or downwardly depending upon its applied position an amount equal to the amount of the proposed grade, and a target pole having two targets adjustable vertically thereon independently of each other, and scales on the target pole progressing upwardly and downwardly from one target and movable thereby, which scales are readable against the other target.

**3,170,240**
**VARIABLE DRIVE LINEAR MEASURING INSTRUMENT FOR ESTIMATING MATERIAL QUANTITIES AND THE LIKE**
Matthew J. Collins, 403 Oakmont Circle, Ballwin, Mo.
Filed Apr. 29, 1963, Ser. No. 276,346
6 Claims. (Cl. 33—140)

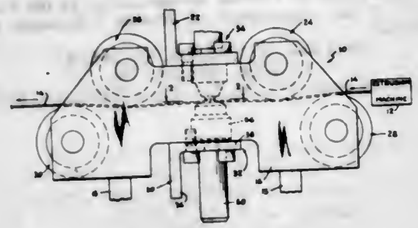


6. A variable drive linear measuring instrument for separately totalling different materials, comprising
a plurality of rotational operated registering counters,
a turret mounting carrying said registering counters at equal radial distances from a turret axis,
means to index the turret mounting angularly to an operable position,



means to couple and uncouple a selected registering counter at the operable position,
a winding reel rotatable about an axis coinciding with the operable position of the turret,
an extensible cord rewindable upon the reel to an initial measuring position,
means to extend the cord unwindably from the reel,
irreversible means to couple the rotation of the reel to the register of the counter on unwinding rotation only,
spring-operated means to resist unwinding the reel and to rewind same,
the reel having a plurality of axial adjacent wind-receiving means of different perimeters scaled proportionate to each other,
means to retain the inner end of the cord in axial registration with a selected wind-receiving means of the reel, and
means to shift such axial registration from one of the wind-receiving means to another.

**3,170,241**
**MEASURING APPARATUS**
Arthur Fibish, Prospect Heights, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,655
5 Claims. (Cl. 33—147)



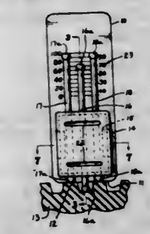
1. Apparatus for continuously measuring the thickness of sheet material passing thereby comprising first and second upright support means disposed in spaced parallel relation, first and second transverse support means mounted on said upright support means in spaced parallel relation adapted to have the sheet material pass therebetween, roller means mounted between said upright support means for presenting said sheet material in a substantially taut condition, quick detachable anvil means detachably mounted to said first transverse support means having a portion adapted to engage one side of the sheet material to be measured, said first transverse support means having first and second opposed parallel flat surfaces and slot means opening to a side edge of said first transverse support means and disposed substantially transverse to said first and second parallel flat surfaces, said quick detachable anvil means comprising first and second threadably engageable members each having a surface for respectively engaging said first and second flat surfaces of said transverse support means and one of said members having a portion insertable into said slot means for engagement with the side walls thereof to accurately locate said anvil means relative thereto in a quick detachable manner, and means including indicia means responsive to the thickness of and directly engageable with the other side of said sheet material to be measured being mounted on said second transverse support means in alignment with said anvil means whereby variations in thickness of the material passing between said indicia means and said anvil means will be indicated by said indicia means.

**3,170,242**
**MICROMETER TOOL SETTING GAGE**
Henry L. Deittrick, Fraser, and Robert W. Hanson, Utica, Mich., assignors to Michigan Special Machine Co., Warren, Mich., a corporation of Michigan
Filed Aug. 20, 1962, Ser. No. 218,062
1 Claim. (Cl. 33—165)



A tool setting gage comprising: an elongated rectangularly shaped base portion; a pair of integral blocks formed on one end of said base portion and extended upwardly therefrom and longitudinally thereof; each of said blocks being spaced apart by a longitudinally extended central axial groove; each of said blocks being provided with a downwardly and inwardly sloping longitudinally extended surface on the inner sides thereof adjacent said axial groove; a vertically extended mounting block fixed to the other end of said base portion; a horizontal bore formed in said mounting block and in alignment with said longitudinal axial groove; a micrometer means detachably clamped in said horizontal bore in said mounting block; a tool abutment member operatively mounted on the inner end of said micrometer means and disposed in longitudinal alignment with said axial groove; a plurality of integral blocks formed on each side of the base portion, the blocks on one side of said base portion being spaced transversely apart from each other; each of said last mentioned blocks having a downwardly and inwardly sloping surface formed on the inner side thereof; the inwardly sloping surfaces of said last mentioned blocks being disposed in the same plane and in alignment with the inwardly sloping surfaces on said first mentioned blocks on said one end of the base portion; the last mentioned blocks on each side of said base portion being transversely aligned in pairs and each pair being longitudinally spaced apart predetermined equal distances; said last mentioned blocks being adapted to function as gage blocks set at predetermined distances from the abutment member on said micrometer means and being operative to engage tool adaptors to permit the insertion and setting of elongated cutting tools in the adaptors.

**3,170,243**
**TIRE TREAD-DEPTH GAUGE**
Selden T. Williams, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 13, 1961, Ser. No. 137,867
6 Claims. (Cl. 33—169)



1. A tire tread-depth gauge comprising a flat support plate having a base end adapted to rest against a tire tread, a housing fixed to said plate and located adjacent the base end of said support plate, an adjustable rod-like depth-indicating finger slidably mounted in said housing and of such length that one end of said finger will extend well above said housing when its opposite end is flush

with said base, a piece of elastomeric material confined within said housing between said finger and support plate and serving to hold said finger in parallel spaced relationship to said plate, a pair of ribs formed inwardly of said housing and bearing against said finger to embed it within said elastomeric material in order to impart frictional resistance to said finger, said plate having suitable indicia imprinted thereon to indicate tire tread depth as determined by the position of the upper end of said finger.

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**3,170,244**
**DEVICE FOR ENSURING CONSTANT STEP LENGTH IN STEP-BY-STEP HOISTING MECHANISMS**
**Rolf Gustaf Johansson, Jakob Dubbes Vag 13, Saltsjo-Duvnas, Sweden**
**Filed Apr. 3, 1962, Ser. No. 184,880**
**Claims priority, application Sweden, Apr. 5, 1961, 3,546/61**
**2 Claims. (Cl. 33—180)**

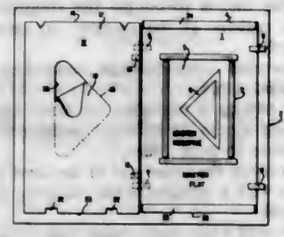


1. A device for controlling the lifting movement of a hoisting mechanism adapted to climb stepwise along a climbing rod and for ensuring a predetermined lift length of said hoisting mechanism, said device comprising a ring displaceable along and adapted to be locked in selected positions on said climbing rod and having abutment faces on its underside and upper side, and a bracket having two side members and upper and lower edge members and provided with an interior abutment face at its upper edge, an interior abutment face at its lower edge, and an exterior abutment face at its lower edge, said bracket being displaceable along said climbing rod between a position in which it abuts with its upper interior abutment face against the upper abutment face of said ring to thus prevent the ring from being moved up, and a position in which said bracket itself is prevented from being moved up by abutment with its lower interior abutment face against the underside abutment face of said ring and in which it is adapted to be locked, to thus prevent further advance of the upwardly climbing hoisting mechanism upon abutment of said mechanism against the exterior abutment face of said bracket.

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**3,170,245**
**METHOD AND APPARATUS FOR PREPARING PIN-BAR PLATES FOR USE ON OFFSET PRINTING PRESSES**
**Edward R. Updegraff, 4611 Harvard Road, College Park, Md.**
**Filed Aug. 1, 1962, Ser. No. 213,936**
**8 Claims. (Cl. 33—184.5)**

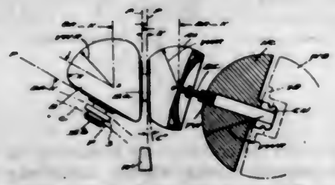
1. A method of preparing pin-bar plates for use in multi-color or multi-form printing, said method comprising the steps of preparing a flat for each color or form appearing in the finished printing job by securing a photographic negative to a sheet of light blocking material and removing a portion of the sheet where it is desired for light to penetrate the negative, superimposing said flats in perfect registration on a light table, and simultaneously punching a plurality of holes through said flats adjacent a corresponding edge of each flat while said flats are maintained in said perfect registration, said holes corresponding in size and spacing to selected pin-bar holes in a pin-bar plate with which said flats are adapted to be used,



separating said flats, releasably securing each flat to a separate pin-bar plate with said punched holes in said secured flat being in registry with said selected holes in said pin-bar plate, and then transferring the image carried by said flat to said pin-bar plate for subsequent development thereon.

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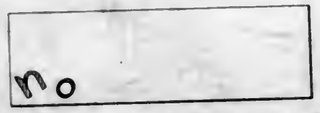
**3,170,246**
**SPACE FILLING ATOMIC UNITS AND CONNECTORS FOR MOLECULAR MODELS**
**Walter L. Koltun, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare**
**Filed Feb. 23, 1962, Ser. No. 186,287**
**3 Claims. (Cl. 35—18)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A chemical model comprising:
(*a*) a first unit representing an atom,
(*b*) said first unit being substantially rigid and having a female fastener socket therein,
(*c*) said first unit having a frusto-conical face surrounding said socket and inclined downwardly from its smaller base at an angle of about 4° from a flat plane therethrough,
(*d*) a second unit representing an atom and having a frusto-conical face also inclined downwardly from its smaller base at an angle of about 4° from a flat plane therethrough and carrying at its smaller base a male fastener element adapted to detachably engage in said female fastener element,
(*e*) said male fastener element having a flexible central portion and being of a length such that when it is assembled with said female fastener socket said conical faces are spaced just sufficiently apart to enable said first unit to rock through an angle of about plus or minus 8° before its conical face rocks into engagement with the conical face of said second unit,
(*f*) the rocking engagement of said conical faces limiting the degree of flexure of said male fastener element and affording fulcruming action for converting rocking forces into forces acting axially of said male and female fastener elements for effecting separation thereof.



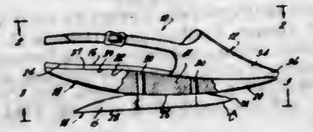
**3,170,247**
**INSTRUCTIONAL READING MATERIAL**
**Janko P. Kovacevich, R.D. 2, Box 118, Medina, Ohio**
**Continuation of abandoned application Ser. No. 833,000, Aug. 11, 1959. This application Nov. 21, 1960, Ser. No. 70,903**
**4 Claims. (Cl. 35—35)**



1. Instructional reading matter consisting of a set of display means arranged as a unit with parallelly oriented faces,
each of some of said display means having thereon different words of at least three letters with the letters in a generally upright position and correctly arranged from left to right but in a generally confused pattern different from the pattern on other display means of the set,
with the next adjacent letters of different colors and with the terminal letters the same color.

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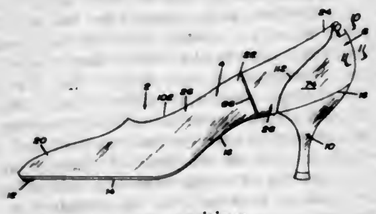
**3,170,248**
**PLATFORM SHOE STRUCTURE**
**Beth Levine, 59 W. 12th St., New York, N.Y.**
**Filed Sept. 21, 1962, Ser. No. 225,276**
**5 Claims. (Cl. 36—2.5)**



1. A shoe comprising a shoe body and a pedestal therefor, said body having an insole provided with an upper, said pedestal comprising a rigid support completely underlying said insole and a rigid base secured to the lower surface of said support, said support having a larger longitudinal dimension than said base, said insole having a toe portion, a shank portion and a heel portion, said support extending from said toe portion to said heel portion, said base being in contact with the lower surface of said support substantially only below said shank portion, said support and said base each having an elongated arcuate contour, said contours extending in mutually opposing directions.

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**3,170,249**
**SHOE CONSTRUCTION WITH IMPROVED HEEL PORTION**
**Leonard L. Talcher, Miami, Fla., assignor to Caressa, Inc., a corporation of Florida**
**Filed Jan. 15, 1964, Ser. No. 337,797**
**10 Claims. (Cl. 36—2.5)**



1. A shoe structure comprising:
(*a*) an outsole member;
(*b*) a heel secured to said outsole member at one end thereof;
(*c*) an insole overlying the inner surface of said outsole member, said insole having a toe, shank and heel portion thereon;
(*d*) an upper having lower margins thereon secured between said outsole member and said insole;
(*e*) said upper comprising first and second sections,
(1) said first section comprising a toe covering portion and rearwardly extending side portions,
(2) one of said side portions having an edge disposed above said heel along a medial longitudinal axis of said upper and the other side portion having an edge disposed laterally of said longitudinal axis and above said shank portion of said insole,
(3) said second section comprising a member having respectively opposite edges stitched to said first section along the edges of said one and said other side portions, to form respective heel and shank seam structures in said upper;
(*f*) an upper heel covering blank having a V-notch therein extending from the bottom portion thereof to the mid-section thereof and a pair of integral wings extending on opposite sides of said V-notch,
(1) said V-notch being sewn along the edges thereof to form a seam structure so as to conform said heel covering blank to the contour of upper along the heel portion thereot; and,
(*g*) said upper heel covering blank being stitched to said upper whereby said seam structure of said heel covering blank overlies said heel seam structure of said upper, and the wings of said heel covering blank being attached to said upper symmetrically about the medial longitudinal axis of said upper.

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**3,170,250**
**FOOT CUSHIONING DEVICE**
**William M. Scholl, 213 W. Schiller St., Chicago, Ill.**
**Original application June 22, 1962, Ser. No. 204,359. Divided and this application May 11, 1964, Ser. No. 366,430**
**10 Claims. (Cl. 36—44)**



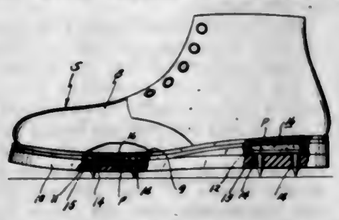
1. In a cushioning device,
a first layer of thermoplastic cushioning material,
a second layer of open-mesh fabric woven of thermoplastic filaments overlying one side of the first layer,
a thin thermoplastic film less dense than said layers over the exposed side of said fabric layer, and
a fine line heat seal seam composed of the material of said layers and said film and defining the outline of the device, the inner edge of said seam forming a tear line for said film only.

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**3,170,251**
**ANTISKID ATTACHMENT FOR SHOES**
**Raymond Patrick, Rte. 1, Box 246, Pinconning, Mich.**
**Filed May 3, 1963, Ser. No. 277,883**
**3 Claims. (Cl. 36—59)**

1. An anti-skid shoe provided with a sole having recessed areas in the upper face thereof; a pattern of passages in each recessed area extending through said sole, anti-skid plates movable vertically in said recessed areas and formed with a plurality of sharpened spikes slidable in said passages as the wearer's weight is shifted from

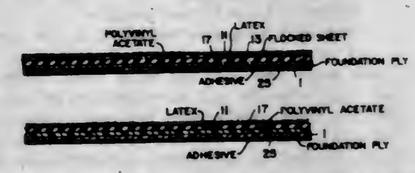
one foot to the other; resilient pads secured to said plates; said spikes having reciprocal movement in said sole



passages to clean the surface of the spikes when the wearer is walking.

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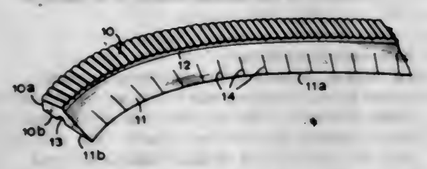
**3,170,252**
**LAMINATED SHOE COUNTER AND METHOD OF MAKING**
**Louis Ravich, Marblehead, Mass., assignor, by mesne assignments, to Colonial Tanning Co., Inc., Boston, Mass.**
**Filed Jan. 12, 1961, Ser. No. 82,278**
**7 Claims. (Cl. 36—68)**




1. A laminated unitary shoe counter having self-stiffening properties comprising a fibrous foundation ply internally impregnated with polyvinyl acetate, a sheet having a single flocked surface on one side and a layer of latex on the other side, and an intermediate layer of polyvinyl acetate adhesively uniting said layer of latex and said foundation ply.

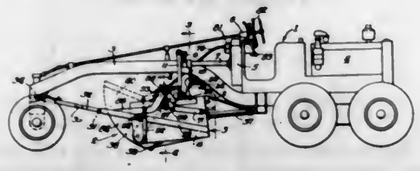
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**3,170,253**
**SHOE WELT**
**Curtis R. Johnson, Creve Coeur, Mo., assignor to Brown Shoe Company, Inc., St. Louis, Mo., a corporation of New York**
**Filed May 18, 1964, Ser. No. 367,974**
**1 Claim. (Cl. 36—78)**




As a new article of manufacture, a welt for use in the manufacture of flat lasted shoes, said welt being formed of flexible material having an outer edge tapering from a relatively thin outer margin inwardly, a longitudinal shoulder spaced inwardly from said outer margin and being parallel to said outer margin, said welt having a scarf edge extending from said shoulder to an inner margin and the portion of said welt between said inner margin and shoulder convergently tapering toward said inner margin, and said welt having a flat bottom surface opposite said scarfed edge and between said outer and inner margins, and a stitch receiving groove in said bottom surface located below said shoulder and extending parallel with said shoulder, said groove reducing the thicknes of the welt to increase the flexibility thereof in bending transverse to said longitudinal shoulder.

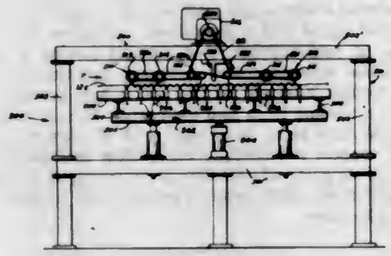
**3,170,254**
**SUSPENDED ELEVATOR SCRAPER ATTACHMENT**
**William E. Martin, P.O. Box 187, Kewanee, Ill.**
**Filed Aug. 23, 1962, Ser. No. 218,989**
**11 Claims. (Cl. 37—8)**



5. In a road working and material handling vehicle, in combination, a frame on said vehicle, a scraper bowl, link means to releasably suspend said bowl from said frame and vehicle including control means to raise and lower or to move said bowl into various angular positions in fore and aft and in transverse relations or in combinations thereof, and an auxiliary material handling mechanism mounted on said bowl for cooperation therewith to further facilitate the action and function of said bowl, said auxiliary mechanism bowl mounting providing means to cause the universally suspended bowl and said auxiliary mechanism to move bodily together under the action of said link means.

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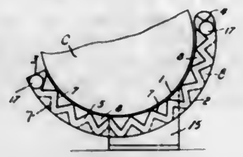
**3,170,255**
**PRESS FOR IRONING OUT PLEATS AND THE LIKE**
**Richard P. Doerer, Ypsilanti, and Herman G. Guenther, East Detroit, Mich., assignors to Van Dresser Specialty Corporation, Warren, Mich., a corporation of Michigan**
**Original application June 23, 1960, Ser. No. 38,402. Divided and this application July 24, 1961, Ser. No. 126,339**
**6 Claims. (Cl. 38—49)**



1. Apparatus for smoothing out the pleats in a piece of material, said apparatus comprising right and left, laterally spaced presser devices respectively having right and left rolls, said rolls being laterally spaced and their axes of rotation being horizontal and parallel to one another, a support beneath said rolls for supporting the material in a position to be engaged by the peripheries of said rolls, means for rotating said left roll clockwise and said right roll counter-clockwise, whereby when said material is so oriented on said support that the pleats thereof extend longitudinally of said rolls, said rolls will smooth out said pleats, means for relatively moving said support and presser devices vertically toward and away from each other to move the piece of material on said support into and out of engagement with said rolls, and a member midway between and fixed relative to said presser devices and cooperable with said support upon relative movement thereof toward said presser devices to grip and hold the piece of material therebetween, thereby preventing the piece of material from shifting laterally.



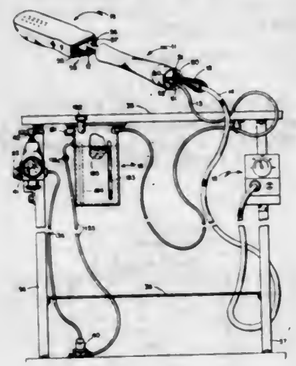
**3,170,256**
**DRYING AND IRONING MACHINES**
**Henri Léon Lucien Jesus, 77 Rue de Bellevue, Boulogne-Billancourt, France**
**Filed June 28, 1961, Ser. No. 120,245**
**Claims priority, application France, June 30, 1960, 831,601, Patent 1,269,278**
**6 Claims. (Cl. 38—56)**



1. In a drying and ironing machine having at least two work units including a rotatable cylinder and a fixed trough adapted to cooperate with said cylinder, at least one of said units comprising at least one hollow section provided with two end plates and a cylindrically-shaped wall having an external working surface and fitted with duct means for heating purposes, said means comprising at least one conduit, said conduit being formed by a portion of said cylindrically-shaped wall and a strip of angle iron whose two flanges have their longitudinal edges welded against the internal surface of said wall.

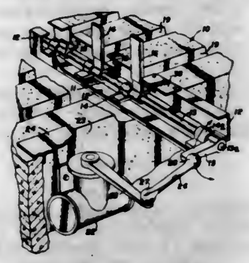
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**3,170,257**
**PORTABLE IRON**
**Walter Dzindulonis, 13 Morris St., and Carl Somy, 79 Moon Road, both of Lynn, Mass.**
**Filed Sept. 17, 1962, Ser. No. 224,078**
**2 Claims. (Cl. 38—77)**



1. A portable iron, comprising a handle, an ironing block attached to said handle, a source of moist air under pressure, a flexible conduit connected between said source and said handle, a flexible electrical supply line connected to said handle and a power supply; said block comprising a relatively shallow interior chamber, a perforated ironing plate adjacent said chamber and an electrical heating element in said block; means being provided to connect said chamber through said handle to said conduit; means being provided to connect said electrical heating element through said handle to said supply line; said chamber including a baffled portion between the perforated portion of said ironing plate and said means for connecting said conduit; said entire block being covered with a layer of smooth, heat resistant plastic.

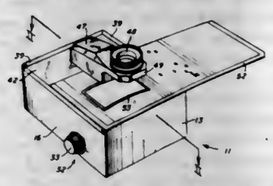
**3,170,258**
**GATE WITH AUTOMATIC CLOSER**
**William T. Ohlhausen, 8037 Down Drive, Fort Worth, Tex.**
**Filed May 11, 1962, Ser. No. 194,053**
**5 Claims. (Cl. 39—5)**



1. A ground hinged bump gate comprising:
a rectangular flat base of substantial thickness resting on a roadway,
a transverse channel midway in said base and nearly as deep as the thickness of said base,
a shaft suspended on bearings along the center of said channel below the surface of said base and above the bottom of said channel,
pickets of flat spring material attached to and spaced along said shaft and normally extending upright from same in the same plane,
parallel grooves in the upper surface of said base sloping from the ends of said base down toward the level of said shaft in the transverse channel, spaced even with said pickets and large enough to receive the same in a prone position,
a crank on one end of said shaft,
a pneumatically damped door closer attached to the side of said base and linked to said crank.

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**3,170,259**
**MICROFILM VIEWER**
**Burton L. R. Frye, 460 Foster Road, Napa, Calif.**
**Filed Feb. 21, 1963, Ser. No. 260,339**
**4 Claims. (Cl. 40—63)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A portable microviewer for supporting and holding data cards and for illuminating and viewing translucent film mounted in a particular position on the cards, the microviewer comprising:
a rectilinear open-top casing formed of opaque vertical side walls and an opaque bottom wall,
an opaque vertical partition wall dividing the casing interiorly into compartments,
a light source in one of said compartments,
light source power means in another compartment,
control means for the light source,
a surface-roughened translucent light-diffusing cover plate translucently and removably covering the entire open top of the casing,
said side walls of the casing being formed at their upper ends with a horizontal track means for slidably receiving the cover plate,
a card holding and viewing means carried by said cover plate,

said holding and viewing means being formed with a body portion having a bottom surface secured at one end to the upper surface of said plate and having an unsecured extension of said bottom surface lying in close proximity to said upper surface of the plate for forming therewith a card-receiving slot,
said holding and viewing means further being formed with a support flange projecting outwardly of the body portion over said casing light source compartment, and
a magnifying lens carried by said support flange,
said lens being so disposed as to be over said translucent film when said card is received in said slot.

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**3,170,260**
**GREETING CARD DISPLAY HOLDER**
**Denise Parker, 720 Park Ave., New York, N.Y.**
**Filed Sept. 17, 1962, Ser. No. 223,898**
**1 Claim. (Cl. 40—124)**

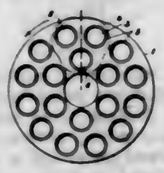


A display device for greeting cards, comprising a plurality of pairs of ribbons, each of said pairs including two juxtaposed ribbons forming loops, a plurality of ornamental ribbon securing members, each of said members having a ring frictionally engaged with a pair of juxtaposed ribbons and an ornamental body attached at one side to the ring, the rings being movable along the ribbons by grasping the ornamental bodies to adjust lengths of ribbon loops between adjacent rings for receiving greeting cards, and support means at one end of the ribbons for mounting the same suspended from a support, said support means including a generally triangular wire frame with a coiled eye at its apex, two angularly disposed straight arms extending from the eye, a releasable crossbar extending angularly from one end of one arm, the other arm having a free end formed with a hook for engaging a free end of the crossbar, said crossbar being formed with a series of spaced loops, each pair of ribbons having one end engaged on one of the loops of the crossbar, each of the ornamental bodies being a flat flexible member, with a coating of pressure sensitive adhesive on said one side for detachably engaging a card and a ribbon loop to fix the position of an engaged card on the ribbons.

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**3,170,261**
**REVOLVING FIREARM**
**Luigi Ludovici, 1 Via Celestino V, L'Aquila, Italy**
**Filed Sept. 23, 1963, Ser. No. 310,596**
**3 Claims. (Cl. 42—59)**

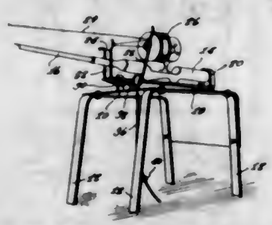
1. A revolving firearm for ring cap cartridges having a frame, comprising in combination a barrel having three inner tubes, a revolving cylinder provided with a plurality of cartridge chambers, said chambers being arranged in six sets each comprising three chambers always in register with said inner tubes and provided in two concentrical rings comprising twelve and six cartridge chambers, respectively, a rotative hexagonal housing arranged within said firearm frame and having a central cylindrical bore and six notches uniformly provided at its inner end facing said cylinder, a leaf spring secured to the housing and acting on the outer faces of said hexagonal housing, a firing pin arranged within said cylindrical bore, a multiple striker provided at the inner end of said firing pin and having three percussion ribs at an angle of 120° to one another and a fourth percussion rib forming the extension of one of said three ribs, a spiral spring arranged within said central bore and abutting at one end on a restricted portion of said central bore and at the other end on an enlarged portion of said firing pin and urging said pin in a direction opposite to said cylinder, a key fixed within said cylindrical bore at the outer end



thereof, said enlarged portion of the firing pin having a projection slidable in said key, a peg provided on said cylinder to engage said notches for rotating the housing and thus the striker through an angle of 120° at each complete turn of said cylinder and means rigidly secured to the outer end of the firing pin for adjusting said striker in the position of both simultaneous and single shots, whereby the three percussion ribs will be placed in register with the three cartridge chambers, in turn in register with the three inner tubes and, respectively, the fourth percussion rib in register with one of said cartridge chambers, so that in the case of single shots the fourth percussion rib will be able to automatically shoot all the cartridges contained in the cylinder by rotating said fourth percussion rib through the angle of 120° at any complete turn of said cylinder.

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**3,170,262**
**AUTOMATIC FISH CATCHER**
**Emmett A. Hall, Rte. 1, Box 346, Vernal, Utah**
**Filed July 1, 1963, Ser. No. 291,685**
**1 Claim. (Cl. 43—15)**



An automatic fish catcher comprising a horizontal base, have a plurality of legs depending therefrom, a line equipped fishing pole having a handle, an elongated holder support pivotally secured at one end thereof to the top of said base, and adapted to hold the handle of said pole, a spring positioned at said one end to exert a lifting force on said support, means at the opposite end of said support defining an upstanding front pole holder and guide for said line, depending detent means on said support at said opposite end, an upwardly opening U-shaped bracket on said base having leg portions adapted to receive said support and said detent means therebetween, and an L-shaped lever having a relatively short U-shaped arm disposed between and pivotally connected to said leg portions and engageable with said detent means to hold said support in a latched position, said lever having a relatively long arm projecting upwardly in said latched position of said support and about which a portion of said line extending from said guide is wound, whereby upon exertion of a pull on said line the lever may be swung to release the detent, said spring swinging said support and handle upwardly.



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**3,170,263**
**FISHING LURE**
**Loren E. Purdy, 2920 Lake Angelus, Pontiac, Mich.**
**Filed May 6, 1963, Ser. No. 278,185**
**2 Claims. (Cl. 43—42.04)**



1. A fishing lure, comprising:
a flat surfaced member turned up at one end and down at the other end and having side edge portions curved to provide a fishtail action when pulled through the water,
an elongated member tapered toward said one end and having a forward end connected to one side surface of said flat surfaced member and having the after end standing thereover,
a three-prong fishhook pivotally connected to said other end of said flat-surfaced member for free swinging and trailing action therebehind,
said fishhook being susceptible to being disposed forwardly toward said one end on said flat surfaced member with the prong ends thereof disposed rearwardly toward said other end,
one of the prongs of said fishhook being disposed upwardly and in engagement with the after end of said tapered member and the other of said prongs laying on said flat surfaced member,
and spring finger means extended from said tapered member for light retaining engagement with one of said other prongs and holding said fishhook in forward disposition.

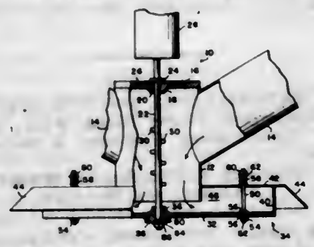
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**ERRATUM**

For Class 43—43.4 see:
Patent No. 3,170,756

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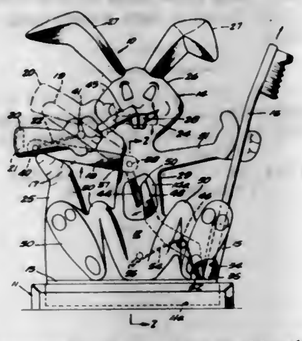
**3,170,264**
**CENTRIFUGAL SPRAY DEVICE**
**John E. Waldrum, Ambler, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware**
**Filed Aug. 11, 1961, Ser. No. 130,994**
**1 Claim. (Cl. 43—145)**



A centrifugal spray device comprising a disc assembly including a pair of generally flat plates resiliently connected to each other in spaced face-to-face relationship to form a chamber therebetween, one of said plates being positioned above the other, the lower of said plates having an upwardly extending peripheral wall with an upper edge thereof abutting the under surface of the upper plate, said upper plate extending peripherally beyond the wall, conduit means opening into said chamber, a shaft secured to said lower plate for rotating said plate, agitating and vibrating means associated with said shaft and including a boss associated with said lower plate, said boss being eccentrically located with respect to said shaft, and a disc counterbalancing said boss, said disc having an eccentric hole therein, said disc telescopingly engaging said boss through said hole whereby said disc and said boss are positioned in counterbalancing relationship with respect to each other.

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**3,170,265**
**ANIMATED TOOTHBRUSH HOLDER**
**Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif.**
**Filed May 14, 1962, Ser. No. 194,545**
**3 Claims. (Cl. 46—116)**



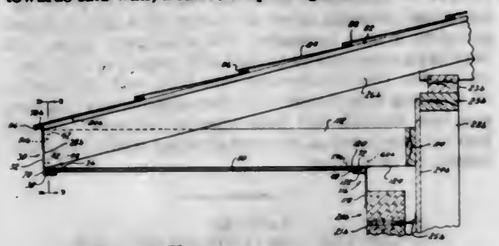
1. An animated toy holder for a toothbrush in the form of a character adapted to create the appearance that he is brushing his teeth, said holder comprising:
(*a*) a frame including means simulating the appearance of a living character,
(*b*) holding means on said frame adapted to support a toothbrush,
(*c*) a first member which simulates the appearance of an upper arm of the character and is pivotally supported on said frame,
(*d*) a leaf spring connected at one of its ends to said first member,
(*e*) a second member which simulates the appearance of the lower arm and hand of the character holding a small toothbrush, and is supported solely by being fixed to the other end of said leaf spring, said leaf spring being supported by said first and second members, and
(*f*) means on said frame adapted to pivot said simulated upper arm a limited increment incident to the removal of the toothbrush from said holding means, whereby the removal of the toothbrush from said holding means will cause said simulated lower arm and toothbrush to oscillate to simulate toothbrushing action.

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**3,170,266**
**SOFFIT SYSTEMS**
**Charles L. Roberts, Louisville, Ky., and Paul W. Stoneburner, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Continuation of application Ser. No. 8,035, Feb. 11, 1960. This application Nov. 7, 1962, Ser. No. 236,102**
**23 Claims. (Cl. 50—66)**

17. In combination: a vertical wall; a roof structure having an inward portion supported on said wall and an

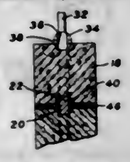
outer overhanging portion having an outer generally vertical edge spaced from said wall a substantial distance; a facia strip secured at said vertical edge and having an inward flange extending inwardly from said vertical edge towards said wall; a frieze strip being secured to said outer



overhanging portion of said wall and having an outward flange extending outwardly from said wall; and a soffit strip placed longitudinally along said overhanging portion with its edges resting respectively on said inward flange and said outward flange to form a soffit under said overhanging portion.

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**3,170,267**
**WALL STRUCTURE WITH INTERLOCKED BLOCKS**
**Morton M. Rosenfeld, 271 Madison Ave., New York, N.Y.**
**Filed Oct. 6, 1961, Ser. No. 143,363**
**2 Claims. (Cl. 50—78)**



1. A wall structure comprising a wall formed from a plurality of blocks, a groove extending along the top and bottom face of each block, a pair of spaced holes in each block within the plane defined by said grooves, rod-like members within aligned holes in blocks of adjacent successive courses, said members having ends terminating at a point within said blocks, spherical spacer means intermediate the ends of said members for seating in contacting engagement with the sides of a channel formed by juxtaposition of a groove on a top surface of one block and a groove on the bottom surfaces of the blocks thereabove, a notch formed in each said spacer means, said notch extending in a direction parallel to the longitudinal axis of the rod-like members, and connecting members extending between and interconnected with adjacent ones of said rod-like members, the ends of said connecting members being received in said notches formed in said spacer means, said connecting members also being disposed within said channel.

2. A wall structure in accordance with claim 1 wherein a layer of mortar is provided betwen adjacent successive courses of blocks, and indicia means on said spacer means for designating the desired thickness of the layer of mortar between adjacent successive courses.

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**3,170,268**
**EXPANSION JOINT COVER STRUCTURE**
**Claude P. Balzer, Edward M. Corman, and Alvin A. Reiff, Wichita, Kans., assignors to Balco, Inc., Wichita, Kans., a corporation of Kansas**
**Filed May 7, 1962, Ser. No. 192,882**
**7 Claims. (Cl. 50—173)**

1. An expansion joint cover assembly for structural sections disposed in spaced relationship and defining an elongated joint therebetween, said assembly comprising,

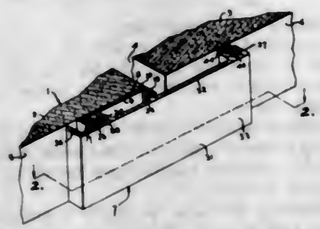
(*a*) an elongated relatively rigid base member adapted to be mounted on the outer face of one of the structural sections adjacent the margin thereof,

(*b*) spaced longitudinally extending first and second member portions on said base member and projecting outwardly therefrom,

(*c*) one of said first and second member portions having an extension toward the other of said member portions and cooperating with the base member to define a longitudinally extending cavity,

(*d*) the second of said member portions having an extension toward the first member portion and defining a ledge facing the base member and spaced therefrom,

(*e*) an elongate resilient member positioned in said cavity between the first member extension and the base member and having a face exposed toward said second member portion,



(*f*) an elongated relatively rigid cover member overlying said base member and having a width extending laterally therebeyond to overlie the joint between said structural sections and a longitudinal segment of the other structural section in proximity to said joint,

(*g*) said cover member having a plurality of laterally spaced longitudinally extending member portions projecting toward said base member,

(*h*) a pair of said member portions on the cover member being positioned inwardly of said first and second member portions on the base member and having spacing for lateral movement relative thereto,

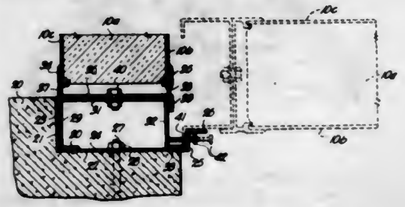
(*i*) one of said pair of member portions on the cover member having an extension extending into the cavity of the base member and engaging the resilient member therein whereby said resilient member urges said cover member toward the second member portion on the base member, and

(*j*) ledge means on the other of said pair of member portions on the cover member to complementarily engage the ledge portion on the second member portion of the base member in interlocking relationship thereto in response to lateral movement of the cover member effected by the resilient member for cooperating therewith to retain the cover member on the base member.

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**3,170,269**
**BASE CHANNEL-PANEL FOOTING STRUCTURE**
**Jon B. Dunnington, Mercer Island, Wash., assignor to Butler Manufacturing Company, a corporation of Missouri**
**Filed Aug. 3, 1961, Ser. No. 129,042**
**4 Claims. (Cl. 50—186)**

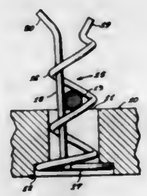
1. In a building structure, a foundation having a recess along one edge, a base channel anchored within said recess, said base channel having a vertical inner wall and a horizontal lower wall, said inner and lower channel walls contacting said foundation walls in said recess, said base channel including a vertical outer wall of lesser height than said inner wall, a horizontal platform flange connected to the upper edge of the vertical outer wall and extending outwardly therefrom, said outer wall being connected to said lower wall and extending normal thereto, and a wall panel having a footing member attached thereto, said footing member having a horizontal top wall with a vertical inner wall and a vertical outer wall attached to the inner and outer edges of said top wall and extending downwardly normal thereto, horizontal flange feet fixed to the free edges of said vertical walls and extending normal thereto in the same direction, said panel footing member fitting in said base channel member with the horizontal top wall thereof sub-



stantially in line with the upper edge of the channel inner wall and with the inner wall and flange foot of the outer wall substantially abutting the opposing faces of the channel inner and outer walls, and removable means locking said footing member within said base channel member whereby said locking member may be removed and said wall panel and base channel member may be pivoted outwardly to remove said panel from its erected position, the extremity of the outermost horizontal flange foot pivoting about the intersection of the horizontal lower wall and the vertical outer wall of said base channel.

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**3,170,270**
**FASTENER**
**Frederick J. Sparber, 911 Delgado St., and Johnnie F. McDonald, 204 Avenida del Fuego, both of Belen, N. Mex.**
**Filed July 9, 1962, Ser. No. 208,224**
**6 Claims. (Cl. 50—313)**



5. Means for supporting a construction member comprising, in combination:

a straight member;

a helical member for extending through a hole in the construction member, surrounding the straight member and having an inside diameter considerably greater than the diameter of the straight member;

a head connecting the helical and straight members at one end and extending beyond helical diameter so as to bear against the outside of the construction member;

and a cross rod having a diameter approximating the difference of the diameters of the straight member and of the inside of the helical member, said cross rod being grasped between the straight and helical members so as to bear against the inside of the construction member.



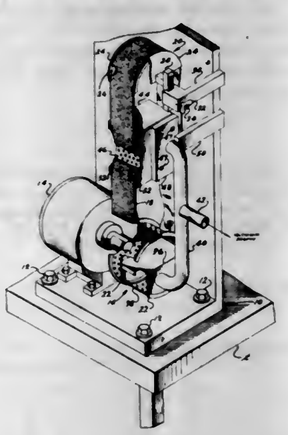
**3,170,271**
**BOWLING PIN SQUARING DEVICE**
**Victor Unterbrink and Larry Unterbrink, Ottawa, Ohio, assignors to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois**
**Filed July 2, 1962, Ser. No. 206,696**
**4 Claims. (Cl. 51—125)**



1. Apparatus including a support surface for squaring the bottom end of a bowling pin, said apparatus comprising a hollow substantially rectangular box of a length less than the length of a bowling pin and having axially aligned pin receiving openings in its ends and a bottom wall parallel to the opening axes adapted to slide along the support surface, and a grinding disc fixed above said support surface with its axis in alignment with and parallel to the opening axes.

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**3,170,272**
**CONTOUR ABRADING MACHINE AND METHOD**
**Richard C. Burnham, 79 Allen St., Greenfield, Mass.**
**Filed June 3, 1963, Ser. No. 284,978**
**9 Claims. (Cl. 51—141)**



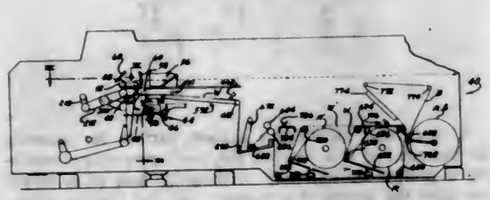
3. Contour abrading machine comprising means for continuously advancing an endless abrading belt in a slack condition about a path, a contoured surface disposed within said path and suction means for drawing a portion of the abrading belt into surface-to-surface conformity with said contoured surface.

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**3,170,273**
**PROCESS FOR POLISHING SEMICONDUCTOR MATERIALS**
**Robert J. Walsh and Arno H. Herzog, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware**
**No Drawing. Filed Jan. 10, 1963, Ser. No. 250,987**
**11 Claims. (Cl. 51—281)**

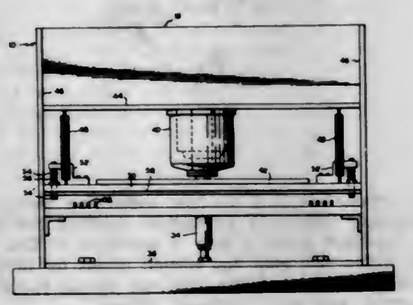
8. A process for polishing semiconductor materials having a hardness on the Moh's scale of hardness from about 2 to about 7, to a high degree of surface perfection comprising polishing said materials with a substance selected from the group consisting of silica sols and silica gels.

3,170,274
WRAPPING MACHINE
Franklin B. Roberts, Springfield, and Walter Lacsek, Indian Orchard, Mass., assignors to Package Machinery Company, East Longmeadow, Mass., a corporation of Massachusetts
Filed Nov. 13, 1961, Ser. No. 151,910
44 Claims. (Cl. 53—226)



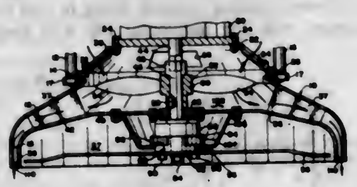
5. A wrapping machine comprising a horizontally disposed infeed platform, a horizontally disposed discharge platform spaced thereabove and vertically aligned therewith, an elevator having a first position contiguous with and horizontally aligned with said infeed platform and a second position contiguous with and horizontally aligned with said discharge platform, linkage means for mounting said elevator and moving it between said positions along a substantially rectilinear path and a pair of end folders mounted on said elevator, spaced thereabove and projecting towards said infeed platform in the first position of said elevator, and means for swinging said folders to diverging positions when the elevator reaches its first position and means yieldingly urging said folders towards parallel positions when the elevator starts to move upwardly from its first position.

3,170,275
MEANS FOR HEAT SEALING LIDS ON BLISTERS
Howard A. Rohdin, 397 Forest Ave., and Adolph A. Rohdin, 385 Forest Ave., both of Glen Ridge, N.J.
Filed Sept. 12, 1963, Ser. No. 308,502
12 Claims. (Cl. 53—373)



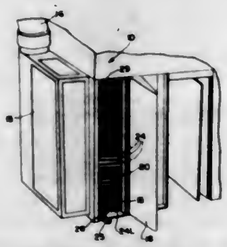
12. A machine for sealing lids onto preformed containers comprising: a pressure unit, said pressure unit having associated therewith sources of predetermined voltages; a carrier having means to position a container and means to position a lid thereon; electrode means formed of electrically conductive but resistant material, said electrode means being sized, shaped and located to effect a seal between said lid and said container; said carrier being movable into active relationship with said pressure unit station; means operative concomitantly with arrival of said carrier at said pressure unit for selecting a predetermined one of said predetermined voltages and means for applying sealing pressure between said lid and said container; means controlling the duration of said pressure application, and means controlling the application of said predetermined voltage to said electrode.

3,170,276
AIR SUPPORTED LAWN MOWER
Russell V. Hall, P.O. Box 23, Kinderhook, Ill.
Filed June 18, 1962, Ser. No. 203,069
4 Claims. (Cl. 56—25.4)



1. In a power mower, in combination:
housing means comprising spaced, stationary members providing first and second chambers;
a rotary power source mounted on said housing means;
rotary cutting means disposed in said first chamber and operatively connected with said power source;
rotary impeller means for inducing a flow of pressure fluid;
said rotary impeller means disposed in said second chamber and operatively connected with said power source;
discharge means for communicating pressure fluid from said second chamber against a supporting surface for effecting a lifting reactance against said housing means sufficient to support the weight of said mower.

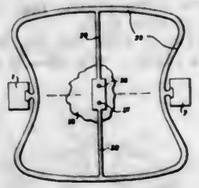
3,170,277
COTTON HARVESTER CLEANING SCREEN
Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,671
8 Claims. (Cl. 56—44)



1. In a cotton harvester including an upright casing having a side opening therein, an upright rotatable drum within the casing adjacent the opening directing movement of cotton in a certain direction, the invention comprising: structure defining an upright pivot on the casing at the opening; an upright cleaning grille in the casing bridging the opening and adjacent a side of the drum and supported on and extending from the pivot to an upright free edge spaced from the pivot, the grille being angularly disposed relative to the direction of movement of the cotton and in intercepting relation to the cotton whereby the cotton may impinge against the grille and be deflected toward and off of the free edge; and adjusting means on the casing connected to the cleaning grille for adjusting the angular disposition of the grille.

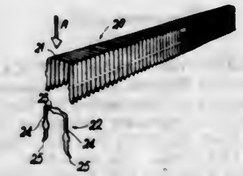


3,170,278
FLEXURAL VIBRATOR FOR NORMAL-FREQUENCY OSCILLATORS, ESPECIALLY IN TIME-MEASURING APPLIANCES
Theo Stutz, Zurich, Switzerland, assignor to Gesellschaft zur Forderung der Forschung an der Eidg. Techn. Hochschule, Zurich, Switzerland
Filed Sept. 18, 1962, Ser. No. 224,901
Claims priority, application Switzerland, Sept. 18, 1961, 10,885/62
12 Claims. (Cl. 58—23)



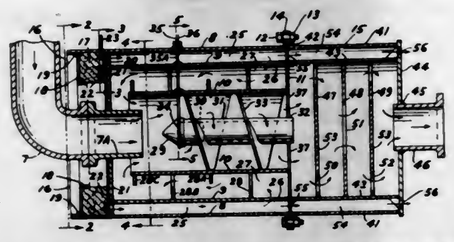
1. In a flexural vibrator for normal-frequency oscillators, the combination comprising a symmetrical spring body, said spring body being symmetrical with respect to two mutually perpendicular axes of symmetry and including a pair of spaced spring arms, identical masses secured respectively to intermediate portions of said spring arms for rectilinear vibratory motions in opposite directions along one of said axes of symmetry, means connecting together the opposite end portions of said spring arms, and means including web means connecting each of the interconnected end portions of said spring arms to a fixing point on a rigid carrier member for the spring body, said web means being located in spaced relation on said carrier member along the other of said axes of symmetry.

3,170,279
METHOD OF PRODUCING A GANG OF NAILING MEANS FROM SHEET METAL
Antonio Dubini, Santo Stefano, Lecco, Italy
Filed June 28, 1960, Ser. No. 39,397
Claims priority, application Italy, July 18, 1957, 575,329; July 3, 1959, 11,266/59
7 Claims. (Cl. 59—77)



1. In a method of producing a gang of interconnected staples, comprising the steps of corrugating a strip of sheet metal transversely to its elongation to form alternating ridge and groove portions in which said groove portions are bent to a smaller radius of curvature than said ridge portions to stress the material at said groove portions to a greater extent than the remainder of said strip; and subsequently piercing through said corrugated strip along spaced lines respectively extending along the bottoms of said groove portions except at spaced portions along said lines to leave spaced uncut portions integrally connecting adjacent ridge portions of said strip.

3,170,280
CARBON MONOXIDE ELIMINATOR
John H. Rees, 1410 Iroquois, Detroit, Mich.
Filed July 8, 1963, Ser. No. 293,470
7 Claims. (Cl. 60—30)



1. A carbon monoxide eliminator, comprising a tubular member attached to the exhaust manifold of an internal combustion engine, a second tubular member inside said first tubular member, and spaced there from along the sides to define an air passageway, common end plates for closing the ends of said tubular members, openings in said end plates in communication with said first named air passageway, a compartively shorter third tubular member open at both ends and concentric with said first and second tubular members, and having its side walls spaced from said second tubular member to define a second air passageway, a refractory element positioned longitudinally in said third tubular member, a fourth tubular member secured to said refractory element, a spiral wall on the outside of said fourth tubular member, baffles in said second air passageway, openings in the walls of said second tubular member to provide communication between said first and second air passageway, means of communication between the second air passageway and the interior of said third tubular member, at the leading end of said third tubular member, and an extension of said exhaust mainfold telescoping, in spaced relation, the leading end of said third tubular member.

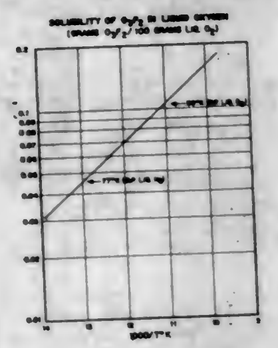
3,170,281
METHOD OF PRODUCING THRUST BY HYDROGENATION OF AN ACETYLENIC HYDROCARBON
Irvin Glassman, Princeton, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 3, 1959, Ser. No. 831,428
4 Claims. (Cl. 60—35.4)

1. A method of producing thrust for the propulsion of a rocket which consists of separately introducing into a reaction chamber in said rocket a liquid acetylenic hydrocarbon and an excess of liquid hydrogen under conditions of elevated temperature and pressure to cause the hydrogenation of said acetylenic hydrocarbon to form methane and hydrogen as the major reaction products, said hydrogenation being accompanied by the liberation of heat, and discharging the heated reaction products from said reaction chamber through an exhaust nozzle to create a propelling thrust.

3,170,282
USE OF $O_3F_2$ AS A HYPERGOLIC ADDITIVE FOR LIQUID OXYGEN
Abraham D. Kirshenbaum, Philadelphia, Charles S. Stokes, Willow Grove, and Aristid V. Grosse, Haverford, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Jan. 29, 1963, Ser. No. 254,846
6 Claims. (Cl. 60—35.4)

5. A method for operating a bipropellant liquid reaction motor which comprises bringing together in a combustion

zone of said motor a solution of about 0.05% to about 0.10% by weight trioxygen difluoride in liquid oxygen and a fuel selected from the group consisting of ethanol,



propane, unsymmetrical dimethyl hydrazine, hydrogen, unsymmetrical dimethyl hydrazine-diethylene triamine mixture, and JP–4.

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3,170,283

## COMPACTED HYDRAZINE BISBORANE FUEL AND METHOD OF OPERATING GAS GENERATORS

David C. Sayles, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Apr. 23, 1963, Ser. No. 275,168
9 Claims. (Cl. 60—35.4)
(Granted under Title 35, U.S. Code (1952), sec. 266)

5. The method of operating a gas generator whereby large quantities of gases are produced, said method comprising elevating the temperature of compacted hydrazine bisborane to the decomposition temperature of said hydrazine bisborane.

6. The method of operating a gas generator whereby large quantities of gases are produced, said method comprising elevating the temperature of a composition consisting essentially of a cured intimate admixture of about 85% to about 95% by weight hydrazine bisborane and about 5% to about 15% by weight of an organic polymeric binder.

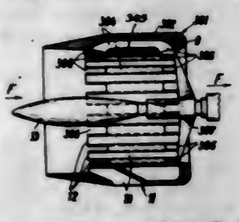
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3,170,284

## SCREW PROPELLER PROPULSION DEVICES

Herbert Mönnich, Gut Wollen 11, Bremen, St. Magnus, Germany

Filed July 30, 1963, Ser. No. 298,644
Claims priority, application Germany, Nov. 19, 1962, M 54,866
9 Claims. (Cl. 60—35.5)



1. In a screw propeller propulsion device, comprising a screw propeller for driving a craft in a forward direction, a guide ring having front and rear ends surrounding the propeller and extending in a direction opposite to the direction of propulsion, inner and outer walls on said guide ring forming a ductway therebetween, said inner wall being provided with an inlet opening adjacent the front end of said guide ring and in communication with the interior of said ring, said screw propeller being disposed in said guide ring with its peripheral edges adjacent said inlet opening and disposed forwardly thereof, said ductway being provided with an outlet adjacent the rear end of said guide ring.

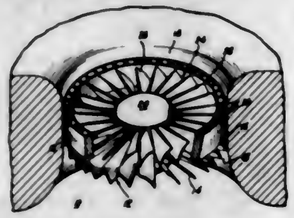
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3,170,285

## VERTICAL TAKEOFF AERIAL LIFTING DEVICE

Antonio Ferri, Rockville Centre, N.Y., assignor to Green Applied Science Laboratories, Inc., Hempstead, N.Y., a corporation of New York

Filed Jan. 2, 1958, Ser. No. 706,639
4 Claims. (Cl. 60—35.6)



1. A vertical lifting device including a stator having blades whose outer tips are supported against a cylindrical wall defining an axial opening and whose inner tips support a hub centrally positioned within said opening, a rotor rotatably mounted on said hub and having compressor blades closely above said stator, said blades being closely positioned to each other and extending for a major portion of said opening, a nozzle assembly mounted closely adjacent said wall on the outer tips of said rotor blades to exhaust gases at high velocity and propel the tips of said rotor at supersonic velocity, the turning angle of said rotor and its velocity being such that there is no appreciable rise in static pressure through said device.

3. A method of operating a bladed compressor wheel of the character described to obtain great lifting force and improved fuel efficiency from a wheel having a relatively small diameter, said method comprising taking a compressor wheel mounted in the body panel of an aircraft and the like, driving said wheel with a supersonic tip velocity to draw air into said wheel at an average velocity of Mach 1, and exhausting the the air therefrom at substantially higher velocity with no appreciable rise in static pressure.

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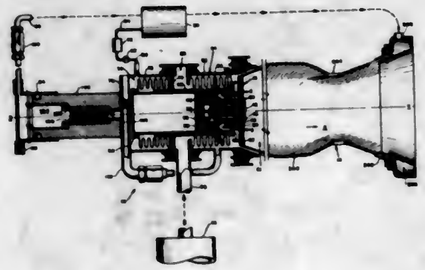
3,170,286

## INJECTOR-VALVE DEVICE

Samuel Stein, Shaker Heights, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Mar. 26, 1962, Ser. No. 182,692
14 Claims. (Cl. 60—35.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In a low thrust rocket engine for a space vehicle having a short combustion chamber interposed between an injector for supplying propellant thereto and a nozzle oriented in the thrust direction with cooling means connected to a pressurized propellant source for circulating said propellant along the periphery of said combustion chamber and nozzle prior to flowing through said injector for regeneratively cooling said engine, the improvement comprising valve means immediately adjacent said injector for interrupting the flow of propellant into said combustion chamber, an accumulator chamber fixedly mounted on said vehicle for receiving said propellant from said cooling means when said valve means is closed whereby said regenerative cooling continues after said combustion is stopped, a first conduit for conveying propellant from said accumulator chamber to said propellant source, one way valve means in said first conduit for preventing propellant flow to said chamber, a piston slidably mounted in said accumulator chamber for movement along the longitudinal axis of said nozzle and having a passage in communication with said chamber, means for mounting said engine for movement along said longitudinal axis, means for connecting said piston and said engine for concomitant movement, a second conduit connected to said passage and said cooling means for conveying propellant to said



accumulator chamber thereby moving said piston and said engine in said thrust direction, and check valve means in said second conduit for preventing propellant flow from said accumulator chamber to said cooling means whereby propellant in said chamber is forced through said first conduit and one way valve means to said source as said piston is moved opposite said thrust direction by said engine.



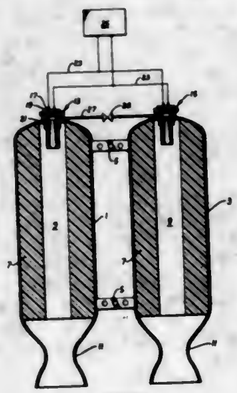
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3,170,287

## MANIFOLDING OF IGNITERS IN LARGE ENGINE CLUSTERS

Barnet R. Adelman, Atherton, Calif., assignor to United Aircraft Corporation, a corporation of Delaware

Filed Apr. 19, 1962, Ser. No. 188,645
4 Claims. (Cl. 60—35.6)



1. A redundant ignition system for a cluster of rocket motors comprising a plurality of rocket motors formed in a cluster, each of said motors having an independent igniter therein, and a manifold line connecting each of said independent igniters to each other whereby hot gas can flow through said manifold line and ignite another igniter upon the ignition of any one of the igniters.

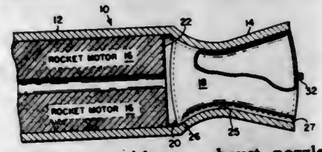
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3,170,288

## NOZZLE SEAL

Salvatore J. Penza and Frederick L. Haake, Oxnard, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 22, 1962, Ser. No. 204,653
9 Claims. (Cl. 60—35.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)




1. In combination with an exhaust nozzle of a jet propulsion engine, a device for sealing the nozzle from an external environment and capable of automatically opening the nozzle upon starting the engine comprising:

(*a*) an inflated means constructed of a material that is impervious to fluids;

(*b*) said means being disposed within said nozzle and sealably engaging around an interior surface of the nozzle;

(*c*) said means extending across and blocking the nozzle's passage so as to seal the interior of the jet engine from said external environment;

(*d*) said means further being constructed of a material that is destrucible by the jet stream from the engine whereby upon starting the engine the means will be collapsed by puncturing due to the jet stream and the bag will then be discharged from the nozzle so as to allow the immediate and uninterrupted operation of said nozzle.

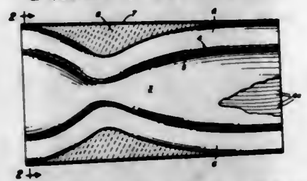
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3,170,289

## LIGHTWEIGHT REFRACTORY METAL STRUCTURE

Bruce E. Kramer, Loveland, Ohio, assignor to the United States of America as represented by the Secretary of the Navy

Filed July 5, 1962, Ser. No. 207,829
2 Claims. (Cl. 60—35.6)



1. A refractory metal rocket nozzle capable of withstanding temperatures and gas velocities generated during ignition comprising in combination a plurality of strips of refractory metals arranged longitudinally to form an inner liner, coating means on said strips of refractory metal to provide erosion resistance and to form a continuous inner surface, an outer liner, corrugated means supporting said inner liner in spaced relation with said outer liner, insulating means between said inner and outer liners, and means attaching said inner liner to said corrugated supporting means.

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3,170,290

## LIQUID ROCKET SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Richard N. Porter

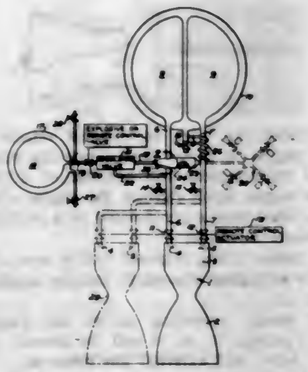
Filed July 20, 1962, Ser. No. 211,464
2 Claims. (Cl. 60—35.6)

1. In a liquid rocket system having a rocket motor, collapsible fuel and oxidizer reservoirs contained within a common pressure vessel and connected by supply

lines to said rocket motor, the combination of a pressure fluid generator comprising:

(*a*) a reservoir containing a monopropellant under pressure;

(*b*) a flow line from said monopropellant reservoir to said pressure vessel;



(*c*) a catalyst means interposed in said flow line;

(*d*) heat exchange means for the monopropellant at the entrance end of said catalyst means interposed in a selected supply line;

(*e*) and a pressure regulator upstream from said catalyst means and subject to pressure in a selected supply line.

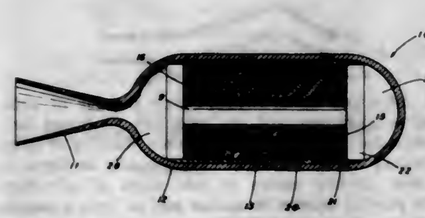
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**3,170,291**

## LINER FOR PROPELLANT GRAINS

**Barnet R. Adelman, Atherton, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**

**Filed July 1, 1963, Ser. No. 291,726**
**2 Claims. (Cl. 60—35.6)**



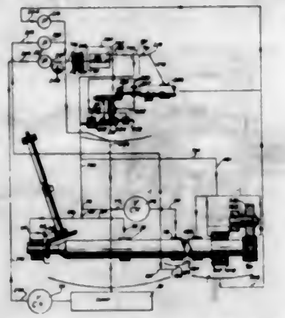
1. A gas generator having in combination: a centrally perforated, substantially cylindrical, solid propellant grain; a casing for containing said grain having at least one cavity at the forward and aft ends wherein accumulated gases tend to work into the interface between the casing and the grain; and means for bonding said outside surface of said grain to the inside surface of said casing comprising a hollow cylindrical body of a predetermined thickness and at least one centrally perforated disc of substantially uniform thickness integral to the inside surface of said cylindrical body and extending into said propellant grain for a predetermined distance whereby each said disc tends to prohibit seepage of hot gases from each said cavity along the interface.

**3,170,292**

## LUBRICATING SYSTEM FOR A GAS TURBINE ENGINE

**Benjamin T. Howes and Ivan M. Swatman, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**

**Original application Apr. 4, 1960, Ser. No. 19,797. Divided and this application Nov. 21, 1960, Ser. No. 70,460**
**6 Claims. (Cl. 60—39.08)**



1. A gas turbine engine comprising a low pressure spool housing having an internal opening positioned therein, a low pressure spool including a compressor, a turbine and an interconnecting shaft, said compressor being adapted to initially compress air taken into the gas turbine engine, a plurality of bearings rotatably supporting said low pressure spool within said low pressure spool housing, a power turbine, a plurality of bearings, said bearings rotatably supporting said power turbine in said gas turbine engine, said power turbine being adapted to power an external load, a high pressure spool housing, an accessory gear box housing affixed to said high pressure spool housing, a high pressure spool, a plurality of bearings rotatably supporting said high pressure spool in said high pressure spool housing and said accessory gear box housing, said accessory gear box housing having an opening positioned therein communicating with the internal opening in said low pressure spool housing, a main sump communicating with the opening in said low pressure spool housing, a first auxiliary sump positioned to collect oil from the bearings supporting said power turbine, a second auxiliary sump positioned to collect oil from one of the bearings supporting said low pressure spool, the oil from the remainder of the bearings supporting said low pressure spool being collected by said main sump, a first pump supported by said accessory gear box housing and having an inlet connected to said main sump and an outlet connected to supply all of said bearings with oil under pressure, a second pump supported by said accessory gear box housing and having an inlet connected to said first auxiliary sump, a third pump supported by said accessory gear box housing and having an inlet connected to said second auxiliary sump, said second and third pumps having outlets discharging into said accessory gear box whereby the oil discharged therefrom may flow through the opening therein, through the internal opening in said low pressure spool housing and into said main sump.

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**3,170,293**

## TURBINE ENGINE

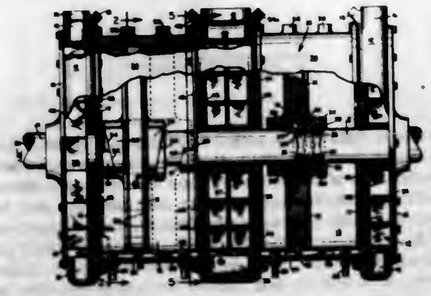
**Robert W. Vehling, 1202 Schleicher Road, Indianapolis 19, Ind., and John F. Gleichman, 6216 Central Ave., Indianapolis 20, Ind.**

**Filed Feb. 15, 1962, Ser. No. 173,431**
**3 Claims. (Cl. 60—39.15)**

1. An engine having a
turbine wheel chamber;



an axial combustion chamber;
a wall between the turbine and combustion chambers;
a shaft rotatably extending through said wall and said chambers;
a turbine wheel fixed on said shaft in said turbine chamber;
a piston mounted on and shiftable longitudinally along said shaft within said combustion chamber;
means holding said piston against rotation in said combustion chamber;
means reciprocating said piston along the shaft upon rotation of the shaft;



said wall having nozzle passageways through it communicating between said two chambers and directed toward said wheel;
a disc valve member rotatable about the axis of said shaft adjacent said wall and having openings therethrough registering with and opening and closing said passageways upon rotary travel of the disc;
cam means actuated by travel of said piston rotating said disc member effecting said passageway opening and closing;
a fuel inlet orifice in the wall of said combustion chamber to one side of the center of travel of said piston; and said orifice being covered by said piston upon the piston approaching its limit of travel toward said disc member.

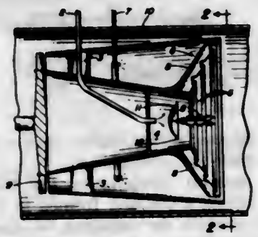
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**3,170,294**

## OXYGEN INJECTION SYSTEM

**Robert E. Meyer, Tequesta, Fla., and William E. Helfrich, Glastonbury, Conn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**

**Continuation of application Ser. No. 32,050, May 26, 1960. This application Mar. 20, 1963, Ser. No. 267,388**
**1 Claim. (Cl. 60—39.46)**



An oxygen injection system for a jet engine having a compressor, gas generating means, a turbine downstream of said gas generating means, an afterburner assembly located downstream of said turbine, said injection system comprising in combination, an inner body centrally located in said afterburner assembly, said inner body having a bullet like configuration tapering rearward, an opening at the downstream end of said inner body, a vertical wall having an aperture therein mounted in said inner body upstream of said opening, an oxygen injection line leading into said inner body, said oxygen line extending through said aperture and terminating on the downstream side of said vertical wall, baffle means located downstream of and in close proximity to the outlet of said oxygen injection line, said baffle means being formed by a dish shaped baffle, said dish shaped baffle being centrally located with respect to the outlet of said oxygen injection line, the open side of said dish shaped baffle facing in a downstream direction, a plurality of supporting tabs attached to said dish shaped baffle fixedly securing said baffle to said inner body, said afterburner assembly comprising a plurality of radial gutters fixedly secured to the downstream end of said inner body, said radial gutters having an open side facing downstream, each of said gutters being interconnected with the interior of said inner body, a plurality of concentric flameholders each having an open side facing downstream and being interconnected with said radial gutters whereby the positioning of said baffle with respect to said radial gutters and the outlet of said oxygen line is such that oxygen emitted from said oxygen line will strike said baffle at an angle which will uniformly reflect said oxygen into said radial gutters and convey it to said concentric flameholders thus providing a homogeneous mixture of said oxygen with the fuel and combustion gases flowing therethrough.

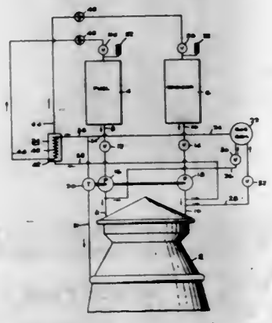
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**3,170,295**

## PROPELLANT TANK PRESSURIZATION SYSTEM

**Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Marshall A. Appel and Donald F. Weitzel**

**Filed Apr. 9, 1963, Ser. No. 271,823**
**6 Claims. (Cl. 60—39.48)**

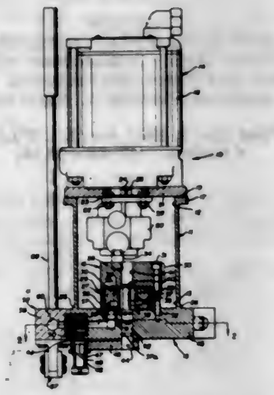


5. In a propulsion system a construction for pressurizing propellant tanks wherein one of said tanks contains fuel and one of said tanks contains oxidizer, the combination comprising:
first and second propellant pumps;
duct means connecting said oxidizer tank to the inlet of said first propellant pump;
duct means connecting said fuel tank to the inlet of said second propellant pump;
a turbine connected to drive said propellant pumps;
a gas generator;
individual duct means connecting the outlets of said first and second propellant pumps to the inlet of said gas generator;
valve means to adjust the feeds of said oxidizer and said fuel to said gas generator to provide a fuel-rich mixture;

duct means connecting the outlet of said gas generator to said turbine to feed combustion products from said gas generator to said turbine;
heat transfer means;
bleed duct means to feed oxidizer from said first propellant pump to said heat transfer means;
bleed duct means upstream of said turbine to feed hot combustion products from said gas generator to said heat transfer means;
means to adjust the feeds of said oxidizer and hot combustion products to said heat transfer means in an amount sufficient to vaporize said oxidizer and lower the temperature of said hot combustion products;
duct means to feed vaporized oxidizer from said heat transfer means to said oxidizer propellant tank to increase the presesure in said tank; and
duct means to feed said combustion products from said heat transfer means to said fuel tank to increase the pressure in said fuel tank.

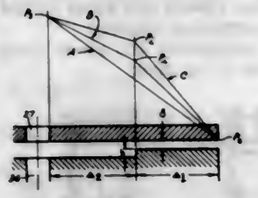
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**3,170,296**
**MANUAL AND MOTOR DRIVE APPARATUS FOR HYDRAULIC MOTOR**
George T. Johnson and Lloyd R. Mawhorr, Mansfield, Ohio, assignors to Shafer Valve Company, Mansfield, Ohio, a corporation of Ohio
Filed Mar. 18, 1963, Ser. No. 265,791
5 Claims. (Cl. 60—52)



1. A manual and motor drive apparatus for selectively operating a hydraulic motor having pressure and exhaust connections comprising,
a casing having first and second ends and adapted to form a fluid reservoir,
a reversible power-driven pump carried on said first end of said casing,
manifold means having an integral hand-driven piston pump mounted on and forming said second end of said casing and having fluid outlet means adapted for connection to a hydraulic motor,
operatively connected check and multi-way valve means within said casing in operative communication with said reservoir,
said check and multi-way valve means being hydraulically connected with said power-driven pump and said manifold means,
and selectively positionable porting means within said multi-way valve means whereby said hydraulic motor may be selectively connected with said power-driven pump and said hand-driven pump and whereby said hydraulic motor may be selectively reversed.

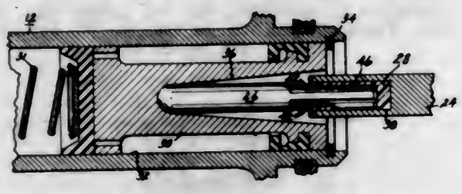
**3,170,297**
**HYDROSTATIC THRUST BEARING DEVICE**
Ralph H. Larson, Southfield, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,381
19 Claims. (Cl. 60—53)



1. In a fluid displacement apparatus: a cylinder block having at least one fluid displacement chamber therein opening into a respective port on one end face thereof, a valving plate located opposite said end face and having at least one port oppening into the face opposite said end face for communicating with said cylinder block port, said opposed faces providing a fluid flow path therebetween, first and second means for communicating said opposed faces to ambient pressure in said apparatus, said first means being spaced radially inwardly from each of said ports and said second means being spaced radially outwardly from each of said ports, one of said faces comprising a recessed portion located between its respective said port and one of said means, said recessed portion being located adjacent to and intersecting the peripheral edge of its respective port, the depth of said recessed portion being within the range of .0001" and .003", the ratio of the width of said recessed portion to the distance said one means is spaced therefrom being between 0.4 and 10.

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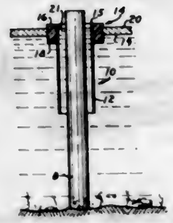
**3,170,298**
**METHOD AND APPARATUS FOR COMPENSATING FOR TOLERANCE STACK LIMITS IN A POWER BRAKE UNIT**
Ronald L. Shellhause, Vandalia, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,499
19 Claims. (Cl. 60—54.6)



1. A brake booster power wall-to-master cylinder piston push rod assembly comprising,
a first rod member actuable by the booster power wall and having a cylinder formed in one end,
a second rod member for engaging the master cylinder piston and having one end thereof received in said cylinder a distance determined by the distance between the master cylinder piston rear stop and the brake release position of the booster power wall,
and a hard set in situ plastic in said cylinder joining said rod members into a force-transmitting push rod assembly.



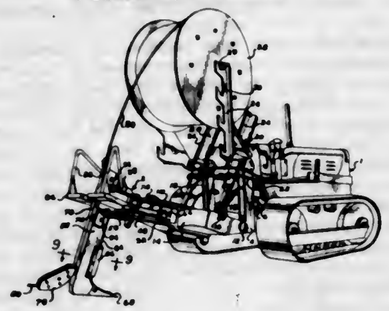
**3,170,299**
**MEANS FOR PREVENTION OF ICE DAMAGE TO BOATS, PIERS AND THE LIKE**
John H. O. Clarke, 3 Weems Creek Drive, Annapolis, Md.
Filed Apr. 27, 1962, Ser. No. 190,763
9 Claims. (Cl. 61—1)



2. Means maintaining an ice-free zone in a body of water subject to natural icing conditions comprising a metallic heat conducting member marginally and continuously surrounding said zone, water impervious, heat insulating material extending continuously around the outer face of said heat conducting member and fixedly connected in heat insulating relationship therewith, said heat insulating material having continuous closing upper and lower terminal edges with the vertical dimension therebetween being greater than the thickness of ice resulting from said natural icing conditions, the lower end of said heat conducting member extending substantially beyond the lower edge of said insulating material, and means supporting said heat conducting member in said water with its upper edge at least at the surface of the water in its ice-free condition and its lower end depending into heat conducting relationship in a lower strata of warm water beneath a layer of ice resulting from said natural icing conditions, said insulating material being so positioned on said heat conducting member that with the latter in its supported position the upper edge of said insulating material is at least not below the surface of the water in its ice-free condition and the lower edge thereof terminates at a depth no less than the bottom surface of the layer of ice resulting from said natural icing conditions, said insulating material completely covering the sheet material when it passes through said ice layer.

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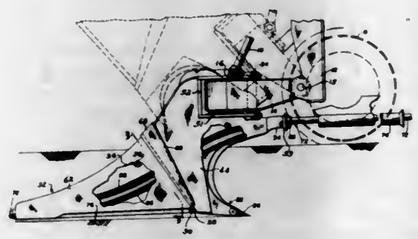
**3,170,300**
**TRACTOR MOUNTED CABLE LAYING DEVICE**
Leon O. Kelley, P.O. Box 488, Stamford, Tex.
Filed Aug. 8, 1960, Ser. No. 48,271
4 Claims. (Cl. 61—72.6)



1. A device for laying cable, flexible conduit, and the like in combination with a traction element, which cable lying device comprises, a first frame rigidly mounted on said traction element and extending upwardly along the rear portion thereof, rearwardly extending, apertured lugs on the lower portion of said first frame, an apertured second frame pivotally mounted to said lugs on said first frame to move about a horizontal axis, fluid actuated jack means pivotally connected to said first frame and to said second frame so fluid pressure within said jack means will impart relative movement therebetween, a third frame pivotally mounted to said second frame and extending rearwardly therefrom for relative swinging movement about an upright axis between said second frame and said third frame, a fourth frame pivotally connected to the rear of said third frame for pivotal movement about an upright axis, at least one apertured lug extending horizontally outward on each opposite side of said third frame and at least one lug extending horizontally outward on each side of said fourth frame, a fluid actuated cylinder pivotally connected between ends of said apertured lugs on each side of said third frame and said fourth frame, pump means mounted on said traction element to supply fluid pressure to one end of one cylinder and to the opposite end of the other cylinder, simultaneously, conduit means for directing fluid from the other end of the respective cylinders, a plow beam adjustably connected to said fourth frame and having the lower end thereof extending downward therebelow, hinge members mounted on the rear side of said plow shank, a plow mounted on the lower end of said plow shank for engagement into the ground, a tube member, hinge members on said tube member, which hinge members on said tube member are complementary to the hinge members on said plow shank, pivot means pivotally connecting said complementary hinge members for pivotal movement of said tube member about an upright axis.

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**3,170,301**
**PIPE AND/OR CABLE LAYING DEVICE**
Leon O. Kelley, P.O. Box 488, Stamford, Tex.
Filed Dec. 3, 1962, Ser. No. 241,703
10 Claims. (Cl. 61—72.6)



1. A device for laying pipe and the like for use with a traction element having a draw bar thereon, which device comprises;
(*a*) a first frame connected with the draw bar of the traction element for pivotal movement of said frame about a horizontal axis,
(*b*) a second frame portion,
(1) said second frame portion having an aperture formed horizontally therethrough at the rear end thereof near the bottom, and an upright hole formed at the forward end thereof,
(*c*) a pivot pin pivotally connecting said second frame portion to said first frame for pivotal movement of said second frame portion about an upright axis,
(*d*) a pointed plow mounted on the lower, forward portion of said second frame portion,
(*e*) a third frame portion extending rearwardly from said second frame portion,
(1) said rearwardly extending frame portion being horizontally apertured on the forward end thereof near the bottom, which aperture is adapted to register with said horizontal aperture in said second frame portion,

(*f*) a pivot pin extending horizontally through said registering apertures in said second and third frame portions to connect said frame portions together in end to end pivotal relation,

(*g*) said second frame portion having a horizontal opening extending into the forward end thereof a spaced distance above said pointed plow and above the normal ground level when said plow is in plowing position within the terrain,

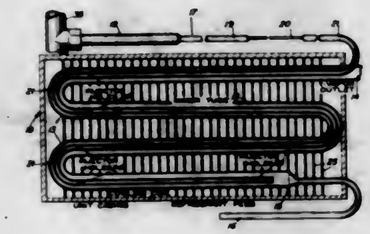
(1) said opening extending downwardly and longitudinally through said second frame portion, which opening terminates on the rear face thereof,

(*h*) said third frame portion having an opening extending longitudinally therethrough with the forward end of the opening being in register with the opening which terminates on the rear end of said second frame, when said third frame portion is in one position,

(1) said opening in said third frame portion terminating at the rear end of said third frame portion substantially at the bottom thereof so pipe and the like may be directed into the opening on the forward end of said second frame portion at a point above the ground and will be directed out of the opening in the rear end of said third frame portion substantially at the bottom thereof to enable a pipe or the like to be directed and laid below the surface of the terrain as the traction element draws the plow through the terrain.

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**3,170,302**
**EVAPORATIVE COOLING DEVICE**
**Oren F. Potts, 4300 22nd St. N., St. Petersburg, Fla.**
**Filed Dec. 23, 1963, Ser. No. 332,582**
**23 Claims. (Cl. 62—7)**

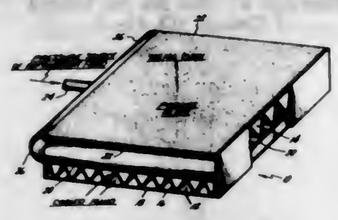


1. A cooling device comprising a hollow coil communicating at one end with a source of sub-atmospheric pressure and at its other end with a source of gas to effect the drawing of gas into said coil, a source of volatile refrigerant, a tube communicating at one end with said refrigerant and at its other end with the interior of said coil to discharge therewithin the sub-atmospheric pressure-induced flow of refrigerant to expand and vaporize it and absorb heat from said coil to cool it, said tube being formed of successive sections of lesser diameter of tubing to increase the velocity of the refrigerant flowing therethrough to increase the cooling effect on said coil.

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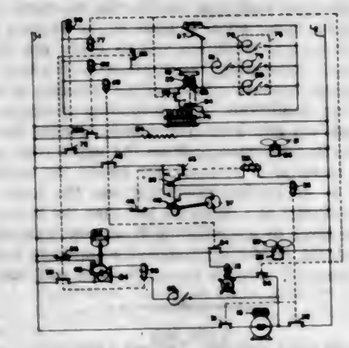
**3,170,303**
**SUBLIMATOR**
**George C. Rannenberg, East Granby, and John S. Lovell, Bloomfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Aug. 20, 1963, Ser. No. 303,382**
**11 Claims. (Cl. 62—64)**

6. The process of cooling a fluid or surface comprising the steps of conducting a refrigerant having a triple point to a porous plate having a pore size in the order of ½ micron pervious to said refrigerant, passing the refrigerant through said porous plate, subjecting said refrigerant to a pressure at or below the triple point of said refrigerant so that said refrigerant freezes therein, and placing said refrigerant adjacent said fluid or surface intended to be cooled whereby heat is transferred from said fluid or surface causing said frozen refrigerant to sublimate.



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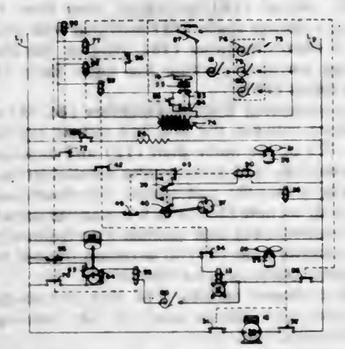
**3,170,304**
**REFRIGERATION SYSTEM CONTROL**
**Harry T. Hale, Bridgeport, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed Sept. 26, 1963, Ser. No. 311,716**
**3 Claims. (Cl. 62—155)**



1. In a control arrangement for a reverse cycle refrigeration system having compression means, an outdoor coil, refrigerant metering means, and an indoor coil connected in refrigerant flow relationship operable upon energization of the compression means to cool, reversing means effective to connect the compression means, indoor coil, refrigerant metering means, and outdoor coil in refrigerant flow relationship operable upon energization of the compression means to heat, the combination of means for defrosting the outdoor coil including first means actuated in response to a predetermined outdoor coil condition to ready said defrosting means for operation and second means periodically actuated to ready said defrosting means for operation, said defrosting means being responsive to the substantially simultaneous actuation of said first and second means to defrost said outdoor coil, said second means being adapted to terminate outdoor coil defrost after a predetermined time interval, said first means intervening to terminate outdoor coil defrost during said predetermined time interval in response to a second outdoor coil condition, and means for regulating said defrosting means in response to energization of said compression means to prevent start-up of the system on the defrost cycle.



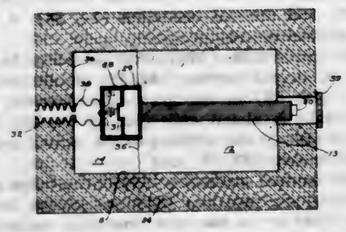
**3,170,305**
**REFRIGERATION SYSTEM DEFROST CONTROL**
**David B. Dibble, North Syracuse, and Harry T. Hale, Bridgeport, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed Sept. 26, 1963, Ser. No. 311,841**
**5 Claims. (Cl. 62—155)**



1. In a control arrangement for a reverse cycle refrigeration system selectively energizable to heat and cool, having compression means, an outdoor coil, refrigerant metering means, and an indoor coil connected in refrigerant flow relationship to cool, and means for reversing the flow of refrigerant through the indoor coil, said refrigerant metering means, and said outdoor coil to heat, the combination comprising control means for regulating said reversing means for defrosting the outdoor coil including first means operable in response to a first outdoor coil condition to ready said defrosting control means for operation, and second means periodically operable to ready said defrosting control means for operation, said defrosting control means being responsive to the substantially simultaneous actuation of the first and second means to defrost the outdoor coil, said second means being adapted to terminate outdoor coil defrost after a predetermine time interval, said first means intervening in response to a second outdoor coil condition to terminate outdoor coil defrost during said predetermined time interval, and condition responsive means for regulating said defrost control means to prevent start-up of the defrost cycle during the remainder of the predetermined time interval.

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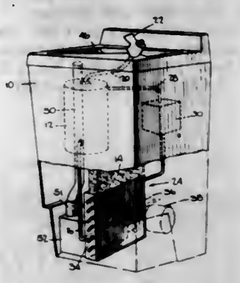
**3,170,306**
**CRYOGENIC MEANS FOR COOLING DETECTORS**
**Urban E. Gross, Jr., Anaheim, and Alfred I. Weinstein, Whittier, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio**
**Filed Apr. 30, 1963, Ser. No. 276,909**
**8 Claims. (Cl. 62—165)**



1. A device for maintaining circuit components at cryogenic temperatures comprising chamber means having heat transfer means extending thereinto, an outer container substantially surrounding said chamber means, insulation means maintained between said chamber means and said outer container, support means supporting said chamber means within said outer container, port means providing ports for venting said chamber means and for accommodating a portion of said heat transfer means, solid coolant means partially filling said chamber means, and said heat transfer means being adapted to be connected in thermally conductive relationship to a component to be cooled whereby gases released by heat transferred to said chamber means from said heat transfer means are discharged through said port means.

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**3,170,307**
**WATER COOLER APPARATUS**
**Frank S. Best, Rumson, N.J., assignor to Great Bear Spring Company, New York, N.Y., a corporation of New Jersey**
**Filed Sept. 30, 1963, Ser. No. 312,615**
**3 Claims. (Cl. 62—188)**



1. A water cooler for installation at locations remote from sewer or drain facilities and provided with means for automatically disposing of waste or excess water resulting from the use of the water cooler, said cooler comprising a housing, a bubbler mounted externally on said housing, a tank disposed within said housing through which in operation of said cooler a stream of water is adapted to flow under pressure to said bubbler, refrigeration means surrounding said tank for cooling the water as it passes through said tank, a collecting pan disposed adjacent said bubbler for collecting the excess water flowing therefrom, a waste tank disposed in the lower portion of said housing, a flexible pipe interconnecting said collecting pan with said waste tank, outlet means for said waste tank leading outwardly of said housing, motive means disposed within said housing adjacent said waste tank, pumping means disposed within said waste tank and driven by said motive means for receiving water from said waste tank and delivering it to said outlet means under pressure, said outlet means being connected to said remotely located drain facility, and control means for said motive means having a float operatively responsive to the fluid elevation in said waste tank to start said pump means at one fluid elevation and to stop said pump means at a second higher fluid elevation in said waste tank whereby the fluid level in said waste tank varies between an upper and lower level enabling said water cooler to be installed at any location irrespective of the accessibility of sewer or drain facilities.

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**3,170,308**
**ICE CUBE TRAY**
**Salvatore P. Cucuzza, 3803 Dorchester Road, Philadelphia 14, Pa.**
**Filed July 11, 1962, Ser. No. 209,133**
**5 Claims. (Cl. 62—367)**

1. An ice cube tray and partition combination, comprising a movable partition means having smooth faces, a tray, said partition means fitting into said tray and defining, together with said tray, a plurality of ice cube compartments,

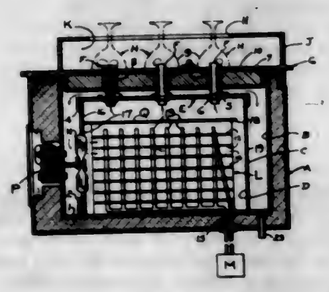
a plurality of rigid non-yielding posts mounted on said tray, each of said posts extending into one of said ice cube



compartments, and actuating means attached to said partition means to move it.

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**3,170,309**
**DEVICE FOR CHILLING THE INTERIORS OF DRINKING GLASSES**
George Joseph Federighi and William F. Cuzens, San Francisco, Calif., assignors to Chill Master Corporation, San Francisco, Calif., a corporation of California
Filed Sept. 18, 1961, Ser. No. 138,822
7 Claims. (Cl. 62—458)



6. A receptacle cooling apparatus, comprising a housing, an upper horizontally disposed panel, a lower horizontally disposed panel defining a bottom and an intermediate compartment, means forming a passage connecting said bottom and intermediate compartments, cooling coils disposed in said bottom compartment, a plurality of receptacle stations on said upper panel, each station including a tube extending downwardly through the upper panel to said lower panel, and communicating with said bottom compartment, a port in said upper panel adjacent each of said tubes, and an air flow creating means causing air to flow from said bottom compartment upwardly through said tubes, downwardly through said ports into said intermediate compartment and thence through said passage into said bottom compartment.

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**3,170,310**
**HEAT OPERATED ABSORPTION REFRIGERATOR**
Paul Herbert Cronelid, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Aug. 29, 1961, Ser. No. 134,677
Claims priority, application Sweden, Sept. 24, 1960, 9,144/60
1 Claim. (Cl. 62—490)

The combination with a continuous absorption refrigeration system of the pressure-equalized type containing refrigerant, inert gas and absorption liquid, the system comprising a plurality of parts including a generator (21), absorber (28), condenser (23) and cooling element (19) connected for circulation of refrigerant, inert gas and absorption liquid, of

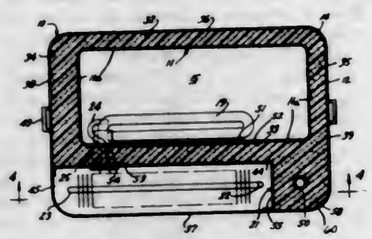
(*a*) a cabinet (10) having an outer shell (12) including spaced first and second upstanding exterior sides (36, 37) substantially parallel to one another and spaced third and fourth upstanding exterior sides (38, 39) substantially parallel to one another which are joined to the first and second sides (36, 37) and substantially perpendicular thereto,

(*b*) the cabinet (10) having an inner liner (11) defining a storage space (15) provided with an opening and a closure member (16) therefor, the liner (11) having surfaces defining the inner sides (11*a*) of the cabinet (10),

(*c*) an upstanding L-shaped member (44, 55) which is disposed between the first and second exterior sides (36, 37) of the outer shell (12) and includes a first wall section (44) substantially parallel to the second exterior side (37) and spaced therefrom and a second wall section (55) which is transverse to the first wall section (44) and extends therefrom to the second exterior side (37) at a region thereof removed from the fourth exterior side (39),

(*d*) the L-shaped member (44, 55) and abutting second and third exterior sides (37, 38) defining an apparatus space (45),

(*e*) the condenser (23) and absorber (28) being air-cooled and disposed in the apparatus space (45) and the cooling element (19) being arranged to effect cooling of the storage space (15) and the gen-



erator (21) being disposed in the corner of the outer shell (12) defined by the abutting end portions of the second and fourth exterior sides (37, 39), the generator (21) being disposed at the opposite side of the second wall section (55) of the L-shaped member (44, 55) from the apparatus space (45),

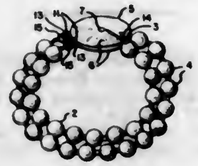
(*f*) the cabinet (10) having spaces for thermal insulation between three of the inner sides (11*a*) and the first, third and fourth exterior sides (36, 38 and 39) of the outer shell (12) and between a fourth of the inner sides (11*a*) and the first and second wall sections (44, 55) of the L-shaped member and the portion of the third exterior side (37) between the second wall section (55) and the fourth exterior side (39), and thermal insulation (14, 58) in the last-mentioned spaces,

(*g*) the inner sides (11*a*), exterior sides (36, 37, 38, 39), L-shaped member (44, 55) and thermal insulation (14, 58) in the spaces therebetween defining thermally insulated walls (32, 33, 34, 35) having a bulge (60) at the juncture of the second and fourth exterior sides (37, 39), and

(*h*) the thermal insulation (58) in the bulge (60) enveloping the generator (21) and joining the insulation (14) in the thermally insulated walls (33, 35) adjacent thereto and being retained within the abutting end portions of the second and fourth exterior sides (37, 39) and the second wall section (55) of the L-shaped member (44, 55).



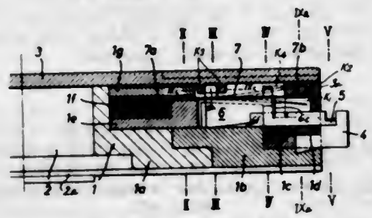
**3,170,311**
**NECKLACE WITH MEANS FOR SHORTENING THE EFFECTIVE LENGTH THEREOF**
Sally F. Raphael, 128 N. Craig St., Pittsburgh, Pa.
Filed Sept. 24, 1962, Ser. No. 225,742
2 Claims. (Cl. 63—2)



1. An article of jewelry comprising an elongated element, an attachment comprising opposed slightly spaced apart facing elements, a pivot member of generally pin form extending between the facing elements, the facing elements being connected to the pivot member, a hook connected with one of the facing elements and two generally elongated links each pivotally connected with the pivot member and having its outer end projecting out from between the facing elements, the links being completely separate from the hook, the ends of the elongated element being connected respectively with the outer ends of the links, the elongated element having intermediate its ends a hook receiving portion of such size as to enter the hook so that the effective length of the article of jewelry may be shortened by hooking the hook of the attachment onto the hook receiving portion of the elongated element, the pivotal connections of the links with the pivot member of the attachment comprising openings in the links through which the pivot member passes, said attachment including means permitting each link and the adjacent end portion of the elongated element to turn through a complete circle about the pivot member and permitting the links to assume a natural generally aligned position when the article of jewelry is worn whether or not the hook is hooked onto the hook receiving portion of the elongated element.

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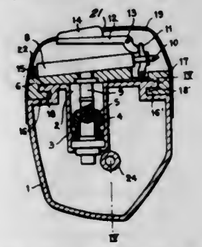
**3,170,312**
**PATTERN WHEEL ARRANGEMENT**
Hans Joachim Stock, Freiburg, Germany, assignor to Franz Morat, G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Jan. 22, 1963, Ser. No. 253,114
20 Claims. (Cl. 66—50)



1. A pattern wheel arrangement, comprising, in combination, a rotary carrier means; a plurality of needle influencing elements mounted on said carrier means for rotation therewith and for movement in radial direction relative thereto between inoperative and operative positions; a plurality of coupling members, each coupling member being mounted on said carrier means for movement belween an inoperative position and a coupling position coupled with one of said needle-influencing elements, said coupling members being movable in said radial direction between an inner position and an outer position for shifting in said coupling position said needle-influencing elements between said inoperative and operative positions; first control means for moving selected coupling members between said inoperative position and coupling position and including selector means so that only selected needle-influencing elements are coupled with said coupling members between said inner and outer positions so that selected needle-influencing elements coupled with said coupling members are shifted to corresponding inoperative and operative positions.

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**3,170,313**
**CIGARETTE LIGHTER**
Roger Louis Alphonse Moreau, 64 Rue des Mocards, Fontenay-sous-Bois (Seine), France
Filed Jan. 29, 1963, Ser. No. 254,758
Claims priority, application France, Mar. 1, 1962, 889,687, Patent 1,323,719
7 Claims. (Cl. 67—7.1)



1. In a lighter for smokers using as fuel a liquefied gas such as butane, a removable cartridge containing said fuel and forming the lower portion of the body of the lighter, a head forming the upper portion of said lighter and including the usual fuel igniting means, together with a controller valve mechanism, a fuel intake pipe extending downwardly from said head when said head is held vertically, said pipe being adapted for insertion into said cartridge through a gasket joint forming part of said cartridge by downward insertion of the pipe into said gasket joint, said cartridge and said head having each relatively wide and narrow sides in transverse cross section and complementary in size to form a complete substantially flat lighter, the upper part of the cartridge and the lower adjacent wall of the head of the lighter having complementary interlocking detent surfaces, said detent surfaces connecting into each other by relative rotation of the head relatively to the cartridge about the axis of said pipe after the vertical movement of said pipe into the cartridge that distance which is required to bring into preliminary lateral alignment the said complementary interlocking detent surfaces, and the said rotation of said head and cartridge relatively to one another bringing the narrow and wide complementary sides of said cartridge and said head into alignment and interconnecting the said two parts of the lighter to form a single substantially flat lighter assembly while preventing the endwise separation of the said cartridge and head.

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**3,170,314**
**WASHING SYSTEM FOR ECONOMIZING ON WATER USAGE**
Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 12, 1963, Ser. No. 301,385
3 Claims. (Cl. 68—12)

1. A washing system comprising:

(*a*) container means for receiving articles and water;

(*b*) supply means for providing water to said container means;

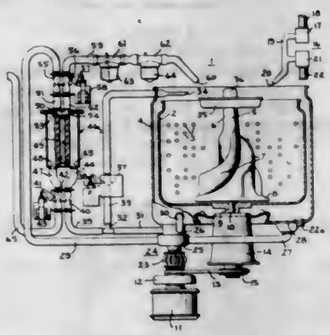
(*c*) washing means for effecting the washing of articles in said container means;

(*d*) filter means for removing lint from the water;

(*e*) means for rehabilitating the water to make it suitable for rinsing the articles;

(*f*) circulating means for circulating water out of said container and back thereinto, said circulating means including a first passage passing through said filter means and a second passage passing through said rehabilitation means;

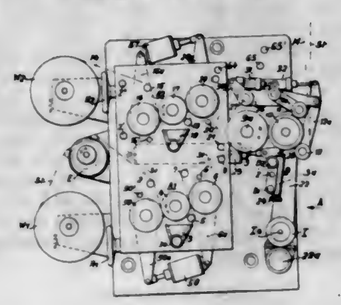
(*g*) drain means for effecting removal of water from said container means to a drain;



(*h*) and sequence control means for causing in sequence, first, operation of said supply means, second, operation of said washing means and said circulation means to effect washing of the articles including circulation of the water through said filter means, third, operation of said washing means and said circulation means to effect rinsing of the articles including circulation of the water through said rehabilitation means, fourth, operation of said drain means.

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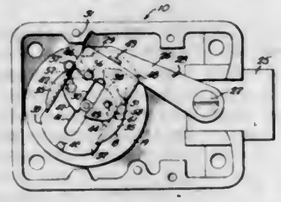
**3,170,315**
**DEVICE FOR PROCESSING WEBS OF TEXTILE FABRIC AND OTHER MATERIALS**
**Ernst Erich Wippermann, 1 Blinker Weg, Langenberg, Germany; Lothar Mühleisen, 6 St. Bernhardstrasse, Klosing, Augsburg, Germany; and Oskar Poech, Uerkheim, Canton Aargau, Switzerland**
**Filed June 13, 1960, Ser. No. 35,560**
**19 Claims. (Cl. 68—22)**



1. In an apparatus for processing webs of textile fabrics and other materials: a driving roller, idling roller means forming a bite with said driving roller for passing therebetween the web to be processed, said idling roller means being frictionally rotatable by said driving roller and being tiltably journalled for varying its distance from said driving roller, fluid operable means operatively connected to said idling roller means for selectively pressing the same at variable pressure against said driving roller, and at least one processing unit preceding said driving roller and to be passed through by the web to be processed on its way to said driving roller, said processing unit including a power driven roller and squeezing rollers forming bites with and frictionally rotatable by said power driven roller, said processing unit also including a fluid container interposed between said squeezing rollers and adapted to receive and store processing fluid to be passed through by the web to be processed when passing from one of said squeezing rollers to another one of said squeezing rollers.

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**3,170,316**
**COMBINATION LOCK CONSTRUCTION**
**Harry C. Miller and Steven Helesfai, Rochester, N.Y., assignors to Sargent & Greenleaf Inc., Rochester, N.Y., a corporation of New York**
**Filed Dec. 31, 1962, Ser. No. 248,753**
**14 Claims. (Cl. 70—333)**



1. In a combination lock having a plurality of selectively adjustable, peripherally recessed tumbler wheels, a rotatable driving cam for adjusting said tumbler wheels, a bolt, a fence lever pivotally connected to said bolt having a nose for engaging the periphery of said driving cam and a radially extending fence transversely overlying the peripheries of said tumbler wheels, said driving cam having a peripheral gate for receiving said fence lever nose to permit said fence to enter the tumbler recesses when the latter are adjusted in registry therewith; the improvement comprising shielding means to selectively shield said driving cam gate against entry of the fence lever nose therein including a reciprocative shielding slide supported on said driving cam for radial movement from a normal shielding position to a non-shielding position relative to the driving cam gate, a movable actuating member carried on said driving cam, manipulating means coupled to said actuating member for moving the latter relative to said shielding slide over a preselected range of movement, and spring means coupled to said actuating member and to said shielding slide to be actuated by movement of the actuating member to store up energy during movement of the actuating member toward a selected intermediate position in said range of movement and be shifted to a direction upon passage of said intermediate position to expend the stored up energy on said shielding slide to drive the latter fully to said non-shielding position.

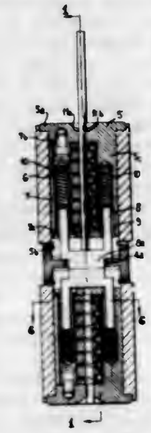
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**3,170,317**
**KEY-OPERATED LOCK**
**Roger E. Parlier, 8 Ave. de Crozet, Geneva, Switzerland**
**Filed May 21, 1963, Ser. No. 281,948**
**Claims priority, application Switzerland, May 24, 1962, 6,416/62**
**2 Claims. (Cl. 70—364)**

2. A key-operated lock comprising a frame, structure on said frame defining a pair of substantially diametrically opposite locking grooves, a barrel rotatably housed in said frame, structure on the barrel defining a series of diametrically extending guiding slots, a series of wards for movement in said slots, a series of grooves defined by widened portions of said slots being provided, a series of springs being housed within said grooves to bias said wards towards said locking grooves, a bearing plate positioned transversely of each of the said grooves housing the said springs, such that each spring is positioned within its groove between its bearing plate and the ward which it is biassing towards a locking position, said grooves for receiving the bearing plates being shallower than the



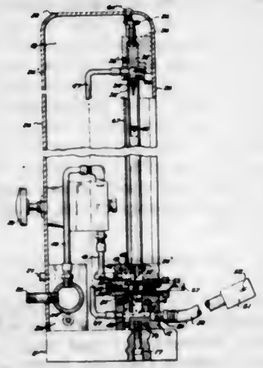
grooves which house the springs and said bearing plates having a central portion shaped to conform with the



cross-sectional shape of the grooves which house said springs.

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**3,170,318**
**AIR GAGE**
**William A. Minix, Detroit, Mich., assignor to Freeland Gauge Company, Detroit, Mich.**
**Filed June 25, 1963, Ser. No. 290,526**
**4 Claims. (Cl. 73—37.5)**

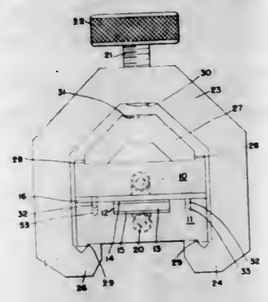


1. In an air flow device for gaging bores or the predetermined dimension of a part, wherein air leakage from a gage element within said bore or relative to such part is visibly measured and compared with air leakage from said gage element within a predetermined master bore or part of predetermined dimension, thus providing a range for the selection or rejection of work pieces; the invention comprising a base, a valve body on the base having an intake chamber and a delivery chamber, an air tube support mounted on the base above the valve body, an upright transparent air flow tube interposed between the valve body and support, an air float movable in said tube, a source of air under regulated pressure connected to the intake chamber for direction through said tube, a conduit delivering air from the tube support to said delivery chamber, a gage element having an orifice, a conduit between said delivery chamber and gage element, a by-pass valve in said valve body communicating with said intake chamber to regulate escape of air from said intake chamber to said delivery chamber for regulating the range of movements of said float and in turn the amplification adjustment of the gage for a predetermined pressure of said air source, an air bleed valve in said valve body communicating with said delivery chamber for regulating escape of air passing therethrough to atmosphere, being a float level adjustment of the gage for a predetermined pressure of said air source, and an upright scale arranged relative to said tube, said bypass valve including a sleeve adjustably threaded into said valve body and a knob on the sleeve on the exterior of the body;

said air bleed valve including a stem concentrically threaded through and adjustable relatively to said sleeve, said stem projecting axially outward of said knob.

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**3,170,319**
**GAS PERMEABILITY CHAMBER**
**Peter O. Karlowicz, 4911 Higbee St., Philadelphia, Pa.**
**Filed Nov. 30, 1960, Ser. No. 72,811**
**3 Claims. (Cl. 73—38)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



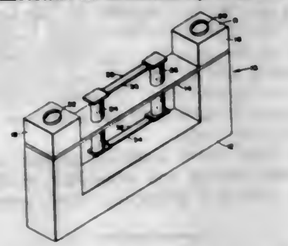
1. A gas permeability chamber for measuring the permeability of specimens and comprising an upper clamping member having recessed portions at its upper part and a lower clamping member having recessed portions at its lower part, said lower clamping member having a cut-out portion at its upper part, a pair of gaskets sandwiching said specimen all disposed within said cut-out portion, a gas passageway in each of said clamping members and said gaskets so aligned to pass gas generally vertically centrally of said specimen, a frame threaded at its upper end and having upwardly extending legs at its lower end engaging said recessed portions of the lower clamping member, a pressure distributor within said frame and spaced therefrom, said distributor having a round recess at its uppermost portion and legs to engage the recessed portions of said upper clamping member, a screw engaging said threads at the upper end of said frame for nesting within said round recess of said distributor for applying vertical pressure through the legs of said frame and distributor to insure an air-tight fit between said clamping members and means for passing gas through said passageway.

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**3,170,320**
**VIBRATION TRANSDUCER**
**Robert E. Talmo, Pasadena, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**
**Filed Feb. 6, 1963, Ser. No. 256,779**
**4 Claims. (Cl. 73—71.2)**

1. A vibration transducer comprising: a U-shaped frame, a thin flat spring clamped across the open end of said frame, a pair of posts connected to said spring at spaced points equidistant from the clamped ends of the spring, a pair of spaced parallel filaments of semiconductor material connecting the tops of said posts, a pair of spaced parallel filaments of semiconductor material connecting

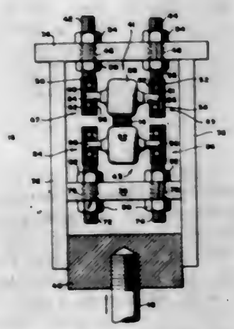
the bottoms of said posts, and electrical means for determining the difference in conductivity between the upper



and lower filaments due to distortion of the filaments by deflection of the spring.

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**3,170,321**
**FATIGUE TESTING MACHINE**
**Vincent E. Sullivan, Washington, D.C., and Rich L. Waterman, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Jan. 5, 1960, Ser. No. 674**
**8 Claims. (Cl. 73—100)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

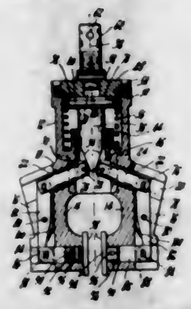


6. A testing machine having means for fixedly gripping one end of a specimen and means for flexing said specimen by application of a force continually normal to the axis of the specimen, a specimen clamp included in said flexing means, said clamp including a pair of spaced adjustable specimen gripping rollers, said rollers having a specimen-receiving space therebetween transversely of their axes for maintaining essentially frictionless rolling contact with said specimen in said space during flexure thereof, said rollers having end means housed in mounting means, said mounting means having adjusting means for moving the ends of said rollers relative to one another in a direction transverse of the axis of rotation of said rollers, thereby allowing frictionless movement of said specimen between said gripping rollers during flexure of the specimen with substantially no axial force transmitted to said specimen.

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**3,170,322**
**GRIP**
**Ronald C. Cavanaugh, Canton, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts**
**Filed June 5, 1962, Ser. No. 200,201**
**1 Claim. (Cl. 73—103)**

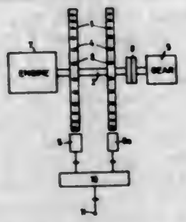
A grip comprising a frame with an upper cylinder portion, a pair of dependent leg portions, and a reversely directed portion extending upwardly into said cylinder portion, an actuator mounted in said cylinder portion for slidable movement axially of said grip within said reversely directed portion, said actuator including an upper piston portion for cooperation with said cylinder portion to be driven therealong by air pressure thereabove and a pair of wedging surfaces defining equal acute angles with the axis of said grip, a closure above said piston portion and secured in sealed relation to said frame, a mounting element secured in said closure and extending thereabove, said mounting element and said closure including cooperating passages for air under pressure, spring means cooperating with said frame and biasing said piston portion toward said closure, a first pair of links mounted for slidable movement in said frame, each said link being slidable axially of itself and in a



direction perpendicular to one of said wedging surfaces; a roller rotatably mounted in the inner end of each of said first pair of links and engaging one of said wedging surfaces, a second pair of links each having its upper end pivotally secured to an outer end of one of said first pair of links and being pivotally mounted intermediately of itself in said frame, a pair of jaw carriers mounted for coaxial slidable movement only in said frame in opposite directions along a line perpendicular to said axis of said grip, each said jaw carrier being pivotally joined at an outer end to a lower end of one of said second pair of links, a pair of jaws with faces parallel to each other and to the grip axis, and spring means cooperating with said frame and biasing outwardly the lower ends of said second pair of links.

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**3,170,323**
**DEVICE FOR PRODUCING A TORQUE OR TORSION RESPONSIVE SIGNAL**
**Friedrich Knürt, Walter Engel, and Hans-Joachim Lippmann, all of Nuremberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany**
**Filed Sept. 20, 1960, Ser. No. 57,330**
**Claims priority, application Germany, Sept. 30, 1959, S 65,229**
**9 Claims. (Cl. 73—136)**



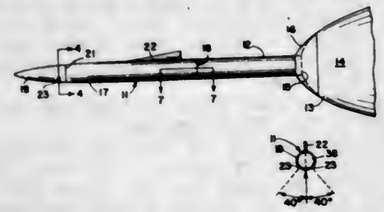
8. A system comprising a power source, a power transmitting rotating body operatively connected to the power source for rotation thereby and a load connected to said transmitter body, in combination: an apparatus for sensing differences in rotational displacements of axially



spaced parts of the rotating body, comprising two members each fixedly mounted on axially spaced parts of said body for rotation therewith, said members each having a plurality of magnetized regions distributed discontinuously circumferentially thereof at uniform distances, semiconductor Hall voltage generator plates respectively mounted near the travel paths of said members to be subjected to the magnetic fields of said regions during rotation of said parts, said Hall plates forming part of a magnetic circuit having a gap transverse to the direction of rotation of said members, the Hall plates having Hall electrode means, circuit connections to said Hall electrode means to take off the respective Hall voltages, the gaps being each located at the same distance from the respective travel paths of said members, the circumferential spacing of the magnetized regions of the two members being the same, the angular relationship between the magnetized regions of the respective members being preset, and comparator means to sense the degree of relative displacement of the current pulses derived from the Hall plates, said differences in rotational displacement being correlative with the torque and therefore with the load, so that said sensed differences are correlative with the load.

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**3,170,324**
**AERODYNAMIC MEASURING DEVICE**
**Virgil S. Ritchie, Hampton, and Howard F. Ogden, Yorktown, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**
**Filed June 29, 1961, Ser. No. 120,797**
**8 Claims. (Cl. 73—212)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

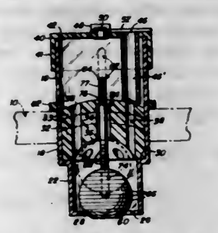


1. A static pressure probe comprising, a base member, a tubular forward member having a circular cross section, means rotatably mounting said forward member on said base member, said forward member having a pair of sampling orifices formed in the periphery thereof, said orifices being formed on radii of said forward member which form an angle of from 70° to 80°, inclusive, with one another, a vane exteriorly affixed to said forward member and lying in a plane substantially bisecting said radial angle, a static pressure measuring device, and means for providing communication between said orifices and said measuring devices.

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**3,170,325**
**BATTERY VENT CAP FLUID LEVEL INDICATOR**
**Lewis A. Sinclair, 905 Terrace Drive, Annandale, Va.**
**Filed Apr. 27, 1962, Ser. No. 190,589**
**2 Claims. (Cl. 73—306)**

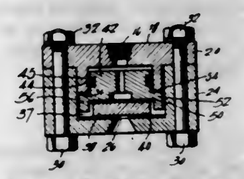
1. A vent cap fluid level indicator for a wet-cell battery having at least one cap receiving opening therein, comprising in combination, a housing of transparent material, adapted to be receivably secured in said opening, a perforated skirt extending downwardly from said housing, a lid secured to the upper portion of said housing and having a breathing aperture and a filling aperture therein, a plug having a central guide opening within said housing and having a lower concave surface, a float within said skirt section having an upper convex surface mating with said concave surface, a stem extending upwardly from said float through said guide opening into said housing, said stem and float respectively comprised of a series of hori-



zontal laminations removably secured to each other such that their lengths may be varied, and indication means on said stem observable through said housing.

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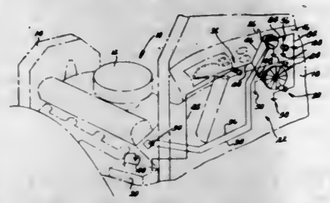
**3,170,326**
**HIGH PRESSURE FLUID LEVEL GAGE**
**Forrest E. Knecht, Newfield, N.J., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 24, 1962, Ser. No. 189,936**
**6 Claims. (Cl. 73—330)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A high-pressure liquid level gauge, comprising a body having a cavity opening to the front thereof, for receiving the liquid to be measured, a piston disposed for movement in said cavity, a pressure responsive gasket disposed between the side walls defining said cavity and said piston adapted to permit movement of said piston and effecting an increased seal with increase of liquid pressure in said body, said piston having a liquid indicating slot in the front face thereof communicatively connected to said cavity, a transparent member covering said liquid indicating slot, a gasket interposed between said piston and said transparent member, and a cover enclosing the front of said body and secured thereto having a slot therethrough for viewing the liquid level in said indicating slot, said transparent member being adapted to bear against said cover over said viewing slot.

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**3,170,327**
**ELECTRIC CURRENT INDICATING APPARATUS**
**Pascal R. Powell, 9271 Catherine, Garden Grove, Calif.**
**Filed Nov. 13, 1961, Ser. No. 151,715**
**1 Claim. (Cl. 73—343.5)**



Apparatus for indicating the attainment of a predetermined temperature in an engine, said apparatus comprising:

a thermoelectric generator for mounting in heat-sensing

relationship with said engine to provide an electrical output varying in accordance with the temperature of said engine;

a meter in circuit with said generator and having an indicator movable in correspondence with said varying electrical output of said generator, said meter including means defining an adjustment track coextensive with a critical range of traverse of said indicator corresponding to a critical temperature range of said engine;

a light source carried by said meter adjacent said adjustment track;

a power source connected to said light source to provide a light beam;

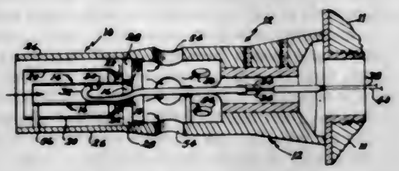
time-controlled recording means in circuit with said power source and including a timing motor and a movable recording chart normally continuously driven by said timing motor at least during operation of said engine;

an electro-responsive device actuable to provide a mark on said chart;

and a light-sensitive means in circuit with said electro-responsive device and carried by said meter adjacent said adjustment track in confronting relationship with said light source, and operative upon interruption of said light beam by said indicator to effect actuation of said electro-responsive device, said light-sensitive means being adjustably movable along said adjustment track to predictably alter the temperature in said critical temperature range at which said electro-responsive device is actuated.

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**3,170,328**
**TOTAL TEMPERATURE PROBE**
**Frank D. Werner and Robert E. Keppel, Minneapolis, Minn., assignors to the United States of America as represented by the Secretary of the Air Force**
**Filed June 13, 1961, Ser. No. 116,898**
**1 Claim. (Cl. 73—349)**



A temperature probe for measuring the temperature of a fluid medium consisting of a trio of concentric cylinders, said cylinders being positioned such that said fluid medium flows parallel to their longitudinal axis, a temperature-sensitive resistance element being included in the innermost cylinder, a pair of velocity controls positioned at the downstream end of said cylinders, one of said velocity controls being placed between the outermost cylinder and the middle cylinder and the other of said velocity controls being positioned between the middle cylinder and the innermost cylinder, and a cylindrical housing connected to said outermost cylinder at the downstream end thereof, said housing having a plurality of bleed openings for permitting continuous flow therethrough.

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**3,170,329**
**TEMPERATURE MONITORING APPARATUS**
**Fred Robert Prediger, Westfield, and Michael Kniazuk, Mountainside, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**
**Filed Oct. 2, 1961, Ser. No. 142,362**
**1 Claim. (Cl. 73—355)**

Apparatus for monitoring the temperature of a glowing silicon semiconductor body in the operating range of the glowing body above about 1100° C., comprising:

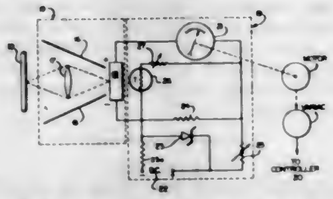
(*a*) a silicon solar cell transducer converting the energy radiated by said body to electrical energy having an output voltage of the order of 300 millivolts for such operating temperature of the glowing body, with an internal impedance of the order of 200 ohms;

(*b*) a source of D.C. reference voltage of a magnitude somewhat less than that generated by the silicon solar cell, said source comprising:

(i) a D.C. supply voltage,

(ii) a Zener diode fed from said D.C. supply voltage,

(iii) a voltage dividing resistance network connected across said Zener diode, said reference voltage being the voltage across a portion of said voltage divider, and



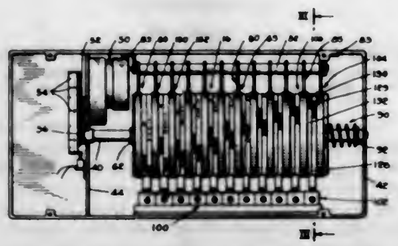
(iv) a thermistor, and a resistor in series therewith, connected in parallel with a portion of said voltage dividing resistance network, said thermistor being physically mounted on said solar cell so as to be affected by the same ambient temperature that affects said solar cell, and decreasing in resistance with an increase in ambient temperature, thereby modifying said reference voltage to reduce it when said ambient temperature of the solar cell and thermistor increases;

(*c*) a D.C. voltmeter having a voltage range substantially less than 300 millivolts; and

(*d*) means connecting the temperature-compensated reference voltage in opposition to the voltage of the output of the silicon solar cell through said voltmeter so that said voltmeter indicates the difference in such voltages, and thereby serves as an indication of the temperature of the glowing silicon semiconductor body in its operating range above about 1100° C.

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**3,170,330**
**TIMING CONTROLLER**
**Howard Edwin Reinecke, La Crescenta, Calif., assignor to Febco, Incorporated, Los Angeles, Calif., a corporation of California**
**Filed Jan. 19, 1960, Ser. No. 3,318**
**5 Claims. (Cl. 74—3.52)**

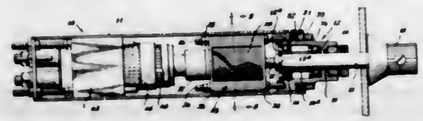


1. In a timing controller, in combination: means rotatably mounting and driving a shaft; a plurality of timing disks rotatably carried on the shaft, each comprising a unitary body provided with a pair of axially spaced camming surfaces fixed relative to one another constituting generally cylindrical surfaces having interrupting recesses formed therein; means for resiliently biasing said disks into adjacent frictional relation; means for imparting shaft rotation to one of the disks; and follower means each resiliently biased into movable contact with both a camming surface of one disk and the non-corresponding camming surface of the adjacent disk.



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**3,170,331**
**CAM MECHANISM**
**Harold T. Lyman, Milford, Conn., assignor to Interstate Manufacturing Corporation, Orange, Connecticut**
**Filed Mar. 5, 1963, Ser. No. 263,016**
**2 Claims. (Cl. 74—10.6)**

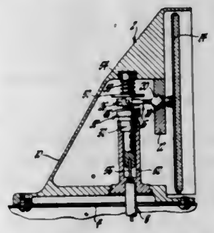


1. In a radio frequency tuner having a stationary tuning element and a movable tuning element in which the latter is precisely operated in accordance with a cam track adjustable to correspond to a desired characteristic tuning curve, a lead screw terminating at one end in a shaft journaled in a supporting bearing and fixed against axial displacement, a plurality of cam track washers mounted in pile formation about said lead screw each said washer having a central opening concentric with the axis of said lead screw, each of said cam track washers having a first ledge and a second ledge on the periphery of said central opening extending toward said lead screw and located substantially diametrically opposite each other, a first cam surface on said first ledge and a second cam surface on said second ledge both of said cam surfaces facing in the same general direction, said cam track washers being rotatively adjustable to align said cam surfaces to form substantially continuous cam tracks respectively having the necessary contours to correspond to such a desired tuning curve, means for adjustably rotating each washer, means for retaining said washers in adjusted position, first and second drive nuts threaded on said lead screw in spaced relation to each other, said first drive nut having a first arm extending toward said second drive nut in close proximity and parallel to said lead screw, said second drive nut having a second arm extending toward said first drive nut in close proximity and parallel to said lead screw, a first and second cam follower mounted on said first and second arms engaging said first and second cam surfaces respectively, said arms being substantially equal in length and positioned relative to each other so that said cam followers engage said first and second cam surfaces respectively in a plane normal to the axis of said lead screw, a resilient member disposed between and engaging said drive nuts to bias them axially and rotatively to take up thread back-lash and maintain said followers in operating engagement with said first and second cam surfaces repectively as said lead screw is rotated and means connecting said movable element with one of said drive nuts.

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**3,170,332**
**REMOTE CONTROL MIRROR**
**Theodore F. Peters, Dearborn, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 8, 1961, Ser. No. 151,100**
**11 Claims. (Cl. 74—54)**

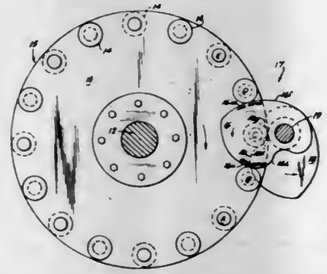
9. A remotely controlled mirror mechanism comprising a mounting bracket, a mirror support, first means supporting said mirror support and connected to said mounting bracket for movement about mutually perpendicular first and second axes, a drive means rotatably supported in said mounting bracket, second means engaging the drive means so as to prevent axial movement thereof, third means connected to said drive means for rotating the



latter, fourth means connecting said drive means with said first means so that rotation of said drive means in one direction moves said mirror support solely about said first axis while rotation of said drive means in the opposite direction moves said mirror support solely about said second axis.

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**3,170,333**
**ROTARY-POSITIONING DEVICE**
**Emil Umbricht, Northville, Mich., assignor to Ajem Laboratories, Inc., Livonia, Mich.**
**Filed Mar. 29, 1963, Ser. No. 268,870**
**2 Claims. (Cl. 74—84)**



1. A rotary indexing device comprising a driven rotor having a plurality of cam bearing means fixed at a constant distance from the rotor's axis, each angularly equispaced one from its neighbor, and grouped together at less than 180° about the rotor's axis and having an equal number of similarly disposed cam bearing means grouped together in the other 180°, said groups being equally spaced from each other, all of said cam bearing means being alternately fixed on opposite sides of a plane perpendicular to the axis of said rotor, a cam drive having two rotary cams, each of which includes a plane passing through its cam surfaces and those of its respective set of alternate cam bearing means and each cam is rotatable on a common axis perpendicular to said plane, said cam drive and said rotor being mounted with their axes parallel with one another and spaced at a fixed distance to give a predetermined torque,

said cams being shaped each to include an equiangular dwell segment of constant radii long enough simultaneously to bear between said groups respectively in opposing directions on one of the two pairs of adjacent alternate group-end-position cam bearing means, said groups being sufficiently widely spaced to ensure positive engagement of said rotor by said dwell segments whereby the rotor is held from moving during the rotation of said cam drive in the dwell angle,

one of said cams further being shaped with an acceleration segment of increasing radii for bearing on the leading cam bearing means as the dwell segments leave this respective pair of cam bearing means to accelerate smoothly the rotor at predetermined rates, and the second cam being further shaped with an acceleration-lock segment of correspondingly decreasing radii for bearing back on the trailing cam bearing means sufficiently to ensure positive engagement of said pair of group-end-position cam bearing means on these acceleration cam surfaces during the acceleration period,

said second cam still further being shaped with a first notch segment to engage positively the trailing cam bearing means as it passes between the axis of the cam drive and the axis of the driven rotor thereby permitting the drive cam thereafter to disengage the leading cam bearing means,

said cams additionally being shaped with at least one constant velocity set of segments which set includes:

(i) a constant-drive segment of increasing radii to bear on the former trailing, now leading, cam bearing means and

(ii) a constant-drive-lock segment of correspondingly decreasing radii to encounter and to bear back on the next trailing cam bearing means,

which two segments respectively engage the newly adjacent pair of cam-bearing means in a positive manner to impart a constant angle of velocity to said driven rotor, and

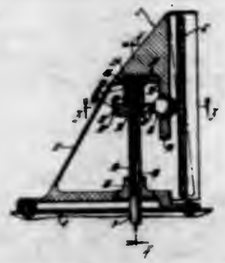
(iii) another notch segment to receive the newly trailing cam bearing means from the constant-drive-lock segment and to engage it positively as it passes between the axis of the cam drive and the axis of the driven rotor thereby permitting the drive cam thereafter to disengage the newly leading cam bearing means, the number of said constant velocity segment sets being equal to one less than the number of cam bearing means in one of the driven rotor's groups,

these cams finally being shaped with a deceleration segment of decreasing radii for encountering and bearing back on the next trailing cam bearing means, which together with the former trailing, and now leading, cam bearing means forms a newly adjacent pair, whereby smoothly to decelerate said rotor and a deceleration-lock segment of correspondingly increasing radii to receive the newly-leading cam bearing means from the last notch segment and to bear forward on this newly-leading cam bearing means sufficiently to ensure positive engagement of the new pair on these deceleration cam surfaces during the deceleration period to the beginning of the next dwell period.

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**3,170,334**
**REMOTE CONTROL MIRROR**
**Wilford B. Shrode, Huntington Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 8, 1961, Ser. No. 151,101**
**9 Claims. (Cl. 74—96)**

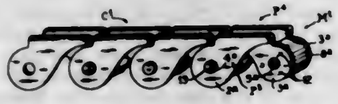
1. A remote control mirror mechanism comprising, a mounting bracket, a mirror support, first means supporting said mirror support and connected to said mounting bracket for movement about mutually perpendicular first and second axes, second means for moving said first means and mirror support about said axes, third means threaded into the second means, fourth means normally restraining movement of the second means so that relative rotation of said third means with respect to the second means moves said second means along said third means to pivot the mirror support about said first pivot axis, and means for locking said second means to the third means in all positions of said second means so that rotation of said third means moves the second means transverse to the



second axis to pivot said support about the second pivot axis.

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**3,170,335**
**LINK PLATE CHAIN CONSTRUCTION**
**Paul Louis Emile Kantzmann, Villejuif, France, assignor to Compagnie des Transmissions Mecaniques Seine-Doubs-Isere, Levallois-Perret, France, a corporation of France**
**Filed Jan. 13, 1964, Ser. No. 337,462**
**Claims priority, application France, Jan. 17, 1963, 921,702, Patent 1,356,967**
**3 Claims. (Cl. 74—250)**

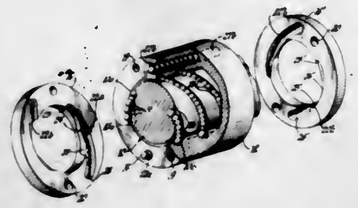


3. A transmission chain comprising an assembly of cranked link elements, each link element having two cranked plates, each cranked plate having a given thickness and comprising a first portion and a second portion contained in two planes which are parallel with each other and spaced apart an extent slightly greater than said thickness of the plate, a third portion interconnecting the first and second portions and having an axis along which the third portion is folded, the first portion and second portion each having an aperture, the axes of the apertures being parallel with each other and orthogonal with said axis of the third portion, the plate being so shaped that if said three portions are laid flat in a single plane they form a metal blank comprising a rectangular central portion corresponding to said third portion, the first and second portions being symmetrically disposed relative to the central portion, and the distance between the apertures in a direction parallel with said axis of the third portion being equal to the desired pitch of the transmission chain for which the link element is intended; the plates being so folded about the corresponding axis of the third portion and so disposed relative to each other that the first portions of the plates are outwardly offset from the second portions of the plates, a pin mounted with an interference fit in the apertures of the first portions and holding the first portions the desired distance apart, a cylindrical washer composed of the same metal as the plates and interposed between the second portions and secured to the second portions so as to hold the second portions the desired distance part, the washer having a central aperture which is coaxial with the apertures of the second portions so that the assembly consisting of the washer and second portions has a transverse bore in which the pin of the immediately adjacent link element in the transmission chain is a slide fit, the second portions having a curved contour in said plane of the second portions, the radius of said contour being indentical to the outside radius of the washer, whereby the transmission chain engages the sprockets for which it is intended through the medium of a cylindrical face constituted by the washer and the second portions.



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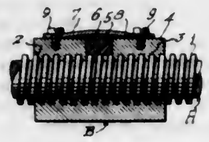
**3,170,336**
**BALL NUT AND SCREW ASSEMBLY**
**Arthur F. Bohnhoff, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 19, 1962, Ser. No. 238,381**
**12 Claims. (Cl. 74—424.8)**



1. In a ball nut device for a recirculating ball nut and screw assembly, a ball nut provided with a helical groove and a longitudinal return passage and a ball return device secured to one end of the ball nut for providing in conjunction with said one end of the ball nut passageway means between the helical groove of the ball nut and the longitudinal return passage, said passageway means including a terminal helical passage portion having the same helical pitch as the helical groove, an ejecting passage portion having a wall portion providing a cam surface of substantial length having a different pitch to diverge from the helical path by about half the width of said groove and an increasing depth to a point where the balls are fully accommodated within the ejecting passage portion and a generally radial portion connected to said longitudinal return passage and another ball return device secured to the ball nut at a point spaced from said one end of the ball nut providing a ball passageway between the helical groove of the ball nut and the longitudinal return passage.

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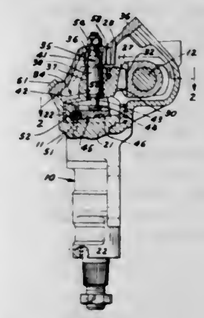
**3,170,337**
**SCREW AND NUT ASSEMBLY**
**Francis M. Linley, Jr., Fairfield, Conn., assignor to Montgomery & Company, Inc., Chatham, N.J., a corporation of New York**
**Filed Mar. 19, 1964, Ser. No. 353,034**
**7 Claims. (Cl. 74—424.8)**



3. The combination of a continuous screw and a nut having an axial opening which a continuous screw thread mating with and screwed onto said screw, said nut being provided with a hole extending substantially radially through the side of the nut and into said screw-threaded opening, a block of material slidably mounted in said hole with its inner end flat and parallel to the axis of said screw threaded opening and frictionally engaging the crests of a plurality of convolutions of said screw, and spring means on said nut normally biasing said block toward and into contact with said screw, so that the pitch diameter of the screw will be held in firm yielding contact with the pitch diameter of the threaded portion of the nut, thereby ensuring accurate linear relationship of the mated parts on the pitch diameters of the respective threads.

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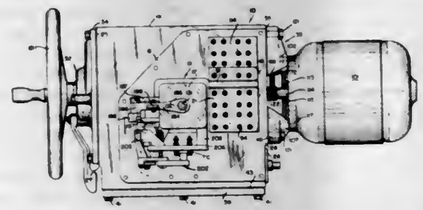
**3,170,338**
**STEERING GEAR**
**Peter G. Ivanchich, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Dec. 20, 1962, Ser. No. 246,135**
**8 Claims. (Cl. 74—499)**



2. In a gear set, a housing, a first shaft mounted in said housing, a gear mounted on said first shaft, a second shaft mounted for limited axial movement in said housing, a gear mounted on said second shaft in engagenemt with the gear mounted on said first shaft, said gears being shaped such that axial movement of said second shaft will adjust the lash between said gears, an automatic lash adjustment means coupled to said second shaft and said housing for automatically adjusting the lash between said gears, said automatic adjustment means comprising a slidable spring urged wedge member slidably mounted in said second shaft and an abutment member mounted in said housing, said abutment member extending into said shaft and into engagement with said slidable spring urged wedge member.

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**3,170,339**
**VALVE OPERATOR**
**William F. Plume, Wheaton, Ill., assignor, by mesne assignments, to Link-Belt Company, a corporation of Illinois**
**Filed Mar. 23, 1961, Ser. No. 97,821**
**18 Claims. (Cl. 74—626)**



1. A valve operator comprising a main housing adapted to be mounted on the body of a valve having a protruding valve stem end, said housing having a chamber surrounding said protruding valve stem end; valve actuating mechanism including a reversible motor, worm pinion shaft means driven by said motor, a worm gear journaled in said housing and meshingly engaged with and driven by said worm pinion shaft means, a driven shaft driv-

ingly coupled to said worm gear through intermeshing axially directed helical splines whereby relative axial movement between said worm gear and driven shaft is permitted in either direction in response to torque thrust forces developed when said worm gear drives said driven shaft in a selected direction, means yieldingly supporting one end of said driven shaft for opposite axial and rotational movement with respect to said main housing to establish a predetermined resistance to said relative axial movement between said worm gear and driven shaft and means slidably and non-rotatably coupling the other end of said driven shaft to the protruding valve stem end; and motor control means comprising cut out switches operatively connected to said driven shaft for disrupting motor operation in response to axial movement of said driven shaft in either direction relative to said worm gear when said predetermined resistance is exceeded, position limit switches operatively connected to said worm pinion shaft for actuation thereby to establish respective opposite directional motor drive circuits when said valve operator reaches its opposite limit positions, and manual switch means selectively operable to energize said respective opposite directional motor drive circuits established by said position limit switches.

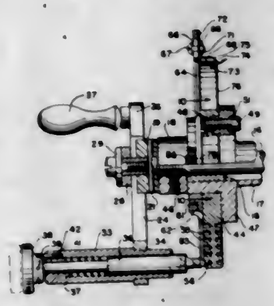
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**3,170,340**

## ROTARY TABLE WITH DIVIDING ATTACHMENT

**Bernard F. Frechlich, Colerain Township, Hamilton County, Ohio (% Troyke Mfg. Co., 11294 Orchard St., Sharonville, Cincinnati, Ohio)**

**Filed Jan. 29, 1963, Ser. No. 254,634**
**5 Claims. (Cl. 74—813)**



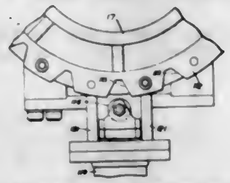
1. In combination with a rotary work table which comprises a base, a table member rotatably mounted on the base, a worm wheel mounted on the table member, a worm gear meshing with the worm wheel, a shaft for turning the worm gear, a housing mounted on the base and surrounding the shaft, an indexing device comprising an index plate pivotally mounted on the housing surrounding the shaft, means for locking the index plate in a selected angular position, said index plate having a plurality of circumferentially spaced perforations, a crank mounted on the shaft, a plunger mounted on the crank and releasably engageable with the perforations to hold the crank and shaft in selected positions, and a perforation locating assembly mounted on the housing adjacent the index plate, the perforation locating assembly comprising a pair of members rotatably mounted on the housing surrounding the shaft, each of said members having an outwardly projecting index arm, means for locking the members with the index arms at a selected angular spacing, one of the arms extending outboard of the index plate, and a resilient member mounted on the outboard portion and engageable with the index plate to resist turning of the members around the shaft, the members being turnable upon application of a predetermined force.

**3,170,341**

## POSITIONING SYSTEMS

**John Ivor Tennant Green, London, England, assignor to The British Iron and Steel Research Association, London, England**

**Filed July 5, 1960, Ser. No. 40,786**
**8 Claims. (Cl. 74—822)**



1. A detent mechanism for accurately positioning a rotary member at a prescribed angular position, said mechanism comprising a detent mounted for movement along a fixed longitudinal axis, means for displacing said detent along said axis and for yieldably urging said detent into operative relationship with said rotary member with a substantially constant force, and means on said rotary member and said detent cooperating with one another to permit displacement of said detent along its longitudinal axis in opposition to said substantially constant force, such displacement being in response to a turning force acting on said rotary member greater than a predetermined value.

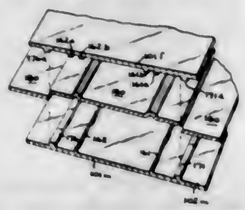
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**3,170,342**

## METHOD OF MAKING CUTTING DIES

**Robert H. Downie, Neenah, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey**

**Filed Aug. 13, 1962, Ser. No. 216,452**
**10 Claims. (Cl. 76—107)**



1. A method for making a cutting and scoring die having co-acting male and female die plates, which comprises photomechanically imposing in register on respective photosensitized plates plan images of the concomitant male and female scoring elements and co-acting members of paired cutting elements and chemically removing material from the respective plates except in the regions bearing photomechanically imposed images to leave male and female die plates having scoring and cutting elements as integral portions thereof in shallow relief above the plate background areas of said plates.

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**3,170,343**

## APPARATUS FOR MANUFACTURING METAL PARTS BY DEFORMATION

**Roger Gauriat, Montreuil, France, assignor to Cie Electro-Mecanique, Paris, France, a corporation of France**

**Filed Sept. 7, 1962, Ser. No. 222,133**
**Claims priority, application France, May 15, 1962, 897,569**
**1 Claim. (Cl. 80—24)**

In a reduction mill apparatus for producing a profiled central body portion included between two terminal enlargements on a metallic part, comprising upper and lower roll segments adapted to engage and roll said metallic part, said roll segments each being provided with



leading and trailing recesses in the rolling surfaces thereof adapted to clear the leading and trailing ends of the metallic part and thus result in the reduction of only the central body portion to the desired profile, and the trailing end of each of said roll segments being provided with a terminal part having a radius greater than the greatest radius of the remainder of the roll segment, said terminal parts acting conjointly to retain the metal at the trailing terminal enlargement which tends to stretch during the rolling and to compress it into the trailing recessed portions of said roll segments.



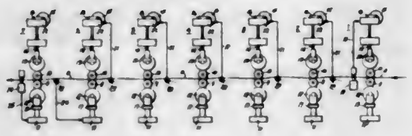
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**3,170,344**

## METHOD AND APPARATUS FOR CONTROLLING THE THICKNESS OF ROLLED STRIP MATERIAL

**Roscoe E. Marrs, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed Sept. 19, 1961, Ser. No. 139,193**
**7 Claims. (Cl. 80—35)**



1. In a rolling mill of the type having a plurality of stands through which a strip of material to be reduced in thickness is passed, each of the stands comprising a pair of opposed rolls rotating at a predetermined speed, the method of reducing material to a final thickness which comprises passing the material through the stands in succession, applying pressure on the material in each stand, maintaining the speed of the rolls in each stand at a fixed predetermined speed, sensing the tension in the material before it enters a pair of stands, and varying the pressure on the material at the next stand in accordance with variations in the tension in the material before it enters the stand to maintain the mass flow of the material constant throughout the mill.

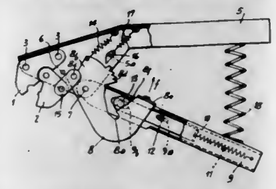
4. In a multi-stand rolling mill comprising a first stand, a final stand and a plurality of intermediate stands, each of the stands comprising a pair of material engaging rolls, the combination comprising an X-ray thickness gage means positioned between said first stand and the first of the intermediate stands for regulating the force exerted between the material engaging rolls of the first of said stands, means for maintaining the speed of the rolls in each intermediate stand at a fixed predetermined speed, and means positioned before each of said intermediate stand for sensing the tension in a strip passing through said intermediate stand, said tension sensing means being operative to control the force between the rolls of the following intermediate stand, whereby the thickness of a strip delivered by an intermediate stand varies with the tension in the strip in advance of such intermediate stand.

**3,170,345**

## PLIERS ESPECIALLY FOR CRIMPING

**Roger Poingt, Vincennes, France, assignor to the Societe dite: Etablissements Proner an Anonymous Societe, Montreuil-sous-Bois, Seine, France**

**Filed Dec. 18, 1961, Ser. No. 160,117**
**Claims priority, application France, Dec. 19, 1960, 847,330**
**6 Claims. (Cl. 81—15)**



1. A pliers, comprising, in combination, a stationary arm; a stationary jaw fixedly mounted on said stationary arm; a movable arm connected to said stationary arm; a movable jaw; intermediate means connecting said movable jaws to said movable arm and being movable relative to said movable arm from a rest position to a locking position for moving thereby said movable jaw from a wide open position to an intermediate position without moving said movable arm; and locking means on said movable arm and cooperating with said intermediate means when the latter is moved to said locking position for locking said intermediate means in its locking position to said movable arm so that said movable jaw may be moved from said intermediate to a closed position by moving said movable arm after said intermediate means has been locked thereto.

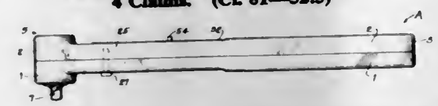
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**3,170,346**

## PRESET TORQUE WRENCH

**Paul Ochs, Glen Ellyn, Ill., assignor to P. A. Sturtevant Co., Addison, Ill., a corporation of Illinois**

**Filed June 15, 1962, Ser. No. 202,795**
**4 Claims. (Cl. 81—52.5)**



2. A force-transmitting mechanism comprising a housing, a work-engaging member associated with said housing at one end, a torque beam disposed in said housing and having its forward end fixed to said work-engaging member, an overload release disposed in said housing adjacent the rear end of said torque beam, said overload release including a member pivotally connected to said housing adapted to transmit the force applied at said housing to said torque beam, and a second member also pivotally connected to said housing to trip the first said member upon the application of a predetermined torque to said housing, said second member having a portion engageable by said torque member upon deflection thereof to cause said second member to trip said first member.

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**3,170,347**

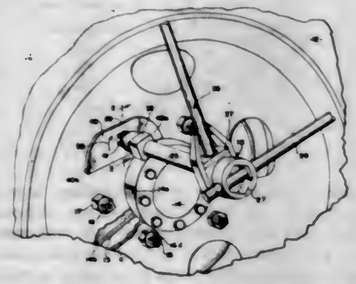
## TRUCK WHEEL WRENCH APPARATUS

**Adolph O. Brye, Norma, N. Dak.**

**Filed Nov. 27, 1961, Ser. No. 154,962**
**3 Claims. (Cl. 81—121)**

1. Truck wheel wrench apparatus for removing a Budd wheel having an inside rim and an outside rim mounted on a hub by studs, square nuts and hexagonal nuts respectively, the square nuts being threaded on the studs and the hexagonal nuts being threaded on the square nuts, comprising the combination of a wrench assembly

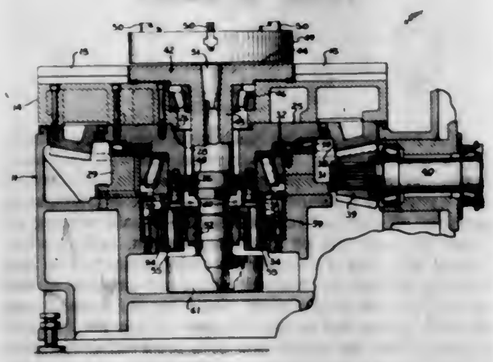
having a shank, a square nut socket on one end of the shank, a hexagonal socket on the opposite end of the shank, and a polygonal collar mounted on the shank intermediate said square and hexagonal sockets to transmit a turning force to said shank, said hexagonal socket having a transverse slide bar aperture therein, an elongated slide bar positionable in said aperture for applying a turning force to said assembly when the square



socket is positioned on a square nut, and a second elongated wrench having a handle and a socket secured to said handle and positionably over said collar and forming a matching fit therewith, said second wrench socket being positionable on said collar to have the handle extend at approximately right angles to the slide bar in a plane parallel to the plane of elongation of the slide bar.

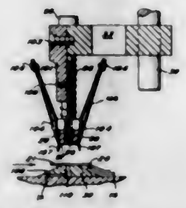
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**3,170,348**
**AUXILIARY HIGH-SPEED TABLE FOR VERTICAL TURRET LATHES AND THE LIKE**
**Edgar L. McFerren, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin**
**Filed June 4, 1962, Ser. No. 199,872**
**5 Claims. (Cl. 82—28)**



1. In a machine tool such as a vertical turret lathe or the like, the combination comprising a bed, a main table journaled on said bed, a drive shaft, a drive pinion connected to said drive shaft, and a ring gear on said main table drivingly engaged with said pinion, an auxiliary high-speed table journaled within said main table, a planetary drive connection between said main table and said auxiliary table, said drive being actuatable to operate said auxiliary table at a stepped up speed relative to said main table or to permit rotation of said tables in unison, and means for selectively actuating said drive connection whereby said auxiliary table is driven at a greater speed than said main table or remains rotatable in unison therewith.

**3,170,349**
**DOWN CUTTER ASSEMBLY**
**Abraham Weinkle, Reading, Pa., assignor to American Safety Table Company, Inc., Reading, Pa., a corporation of Pennsylvania**
**Filed Oct. 25, 1962, Ser. No. 232,986**
**7 Claims. (Cl. 83—140)**



1. A downcutter apparatus for use in conjunction with a work utility secured to a work surface for severing a worked upon article from trailing fabric and filaments, comprising in combination,

(1) a bottom plate secured in operative position close behind the operating head of the work utility and so oriented that work passes thereover after being operated on by said operating head, said bottom plate being vertically slotted through its upper surface with the slot length disposed transversely to the direction of feed of the work utility and including front and rear camming surfaces disposed respectively in front of and behind said slot,

(2) a cutting head assembly vertically reciprocable between a deactuated position and an actutaed position, including,

(*a*) clamp means operative to press down to the upper surface of said bottom plate when said cutting head assembly is actuated to thereby clamp the material overlying the bottom plate,

(*b*) front and rear resilient spreader means secured to and shiftable with said clamp means conjointly operative with said bottom plate front and rear camming surfaces respectively to grasp the material overlying the bottom plate and pull the same taut across the bottom plate slot when said cutting head assembly is actuated, said spreader means extending downward below said clamp means to thereby engage the material to be cut and pull the same taut before the latter is clamped by said clamping means,

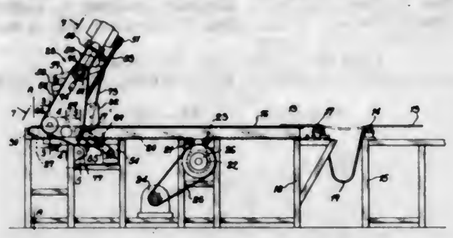
(*c*) severing means operative to sever the material clamped over the bottom plate by passing downward therethrough into the bottom plate slot, and

(3) means coupled to said cutting head assembly for actuating and deactuating the same.

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**3,170,350**
**METHOD AND APPARATUS FOR SEVERING STRIP MATERIAL INTO LENGTHS**
**Harold F. Hawkins, Lockport, N.Y., assignor to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York**
**Filed Apr. 6, 1962, Ser. No. 185,745**
**16 Claims. (Cl. 83—156)**

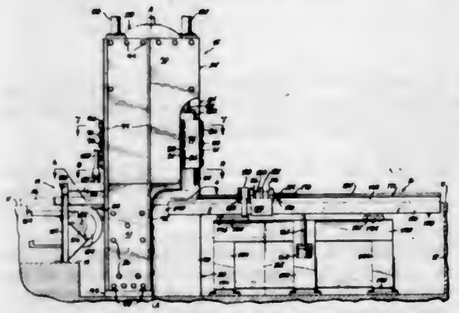
1. Apparatus for severing a continuous strip of material into separate lengths which comprises a belt conveyor comprising a plurality of belt elements spaced transversely of the direction of travel of the conveyor, a severing element positioned above the conveyor to move a cutting element on a cutting stroke across the path of said strip when located on the conveyor, and a plurality of lifting elements movable upwardly between adjacent belt elements to lift the strip of material above the belt



elements during movement of the severing element to move the cutting element through the strip.

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**3,170,351**
**SHEAR FOR BILLETS AND THE LIKE**
**Alexander Krynytzky, Ebenezer, N.Y., assignor, by mesne assignments, to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Nov. 28, 1960, Ser. No. 72,101**
**14 Claims. (Cl. 83—157)**

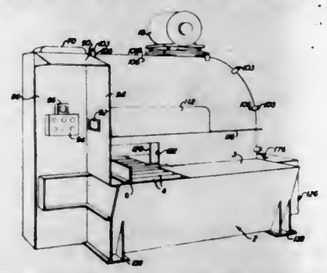


1. A shear for cutting billets or the like along a shearing plane, comprising a fixed platen, a fixed cutting blade mounted on said fixed platen with its cutting edge arranged substantially in said shearing plane, means feeding the billets to be sheared across said fixed cutting blade from a feeding to a discharge side of the shear, stationary frame side plates at opposite sides of said fixed platen and extending transversely across said shearing plane, a moving platen guided by said side plates for movement along said shearing plane, a moving cutting blade mounted on said moving platen and having its cutting edge arranged substantially in said shearing plane, one of said side plates having its transverse edge surface at the discharge side of said shear substantially bounded by said shearing plane and extending from said fixed cutting blade in the direction of approach of said moving cutting blade, and movable means at said discharge side of the shear for receiving the part cut from said billet by said cutting blades and moving said cut part downwardly and away from said transverse edge surface of said one of said side plates for discharge from said shear.

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**3,170,352**
**GUARD FOR MACHINE TOOLS**
**James L. Hensley, Clinton, Tenn., assignor, by mesne assignments, to Tyssaman Machine Company, Inc., Knoxville, Tenn., a corporation of Delaware**
**Original application Jan. 23, 1958, Ser. No. 710,716, now Patent No. 3,069,950, dated Dec. 25, 1963. Divided and this application Nov. 6, 1959, Ser. No. 851,412**
**10 Claims. (Cl. 83—168)**

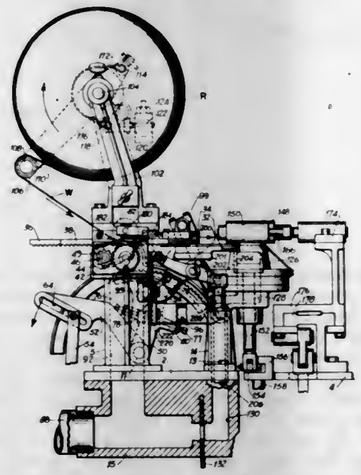
1. In a cut off tool having a base, an arbor mounted for rotation about a horizontal axis disposed above said base, a cutting wheel on one end of said arbor, means for rotating said wheel about said axis, means for moving the rotating wheel bodily along a horizontal path at right angles to its axis of rotation, and means for positioning work to be cut on the top of said base in the path of said wheel, the improvement which comprises a stationary wheel guard including a rear wall extending upwardly from said base on one side of the path of said wheel and having an elongated slot therein for receiving said arbor, a front wall extending upwardly from said base on the



opposite side of said wheel, said front and rear walls being provided with aligned openings therein through which the work to be cut may extend across the path of the wheel, a top wall extending between said front and rear walls above said wheel, and end walls extending between said front and rear walls at points spaced from the ends of the path of said wheel a substantial distance to form enclosed areas remote from the workpiece holding area to receive any foreign matter thrown from the cutting wheel.

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**3,170,353**
**AUTOMATIC WEB WRAPPER FEED**
**Henry H. Wheeler, Newtown, Conn., and Neal R. Parlatore, Laurelton, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey**
**Filed Apr. 14, 1961, Ser. No. 102,983**
**11 Claims. (Cl. 83—276)**

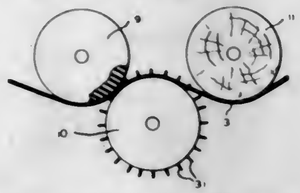


1. In a cigar manufacturing machine, a wide continuous tobacco web, a tobacco web feed mechanism for a binder or wrapper cutter for a machine made cigar, said mechanism having a fixed suction table, a travelling suction head, a die having a length substantially equal to the width of said web and having a width less than one-half of the length of said die, said die oriented with its width in alignment with the line of motion of said head, and means for intermittently reciprocating said head between

said table and said die to transport a leading end of said web across said die, said orientation minimizing the distance said web is required to be transported.

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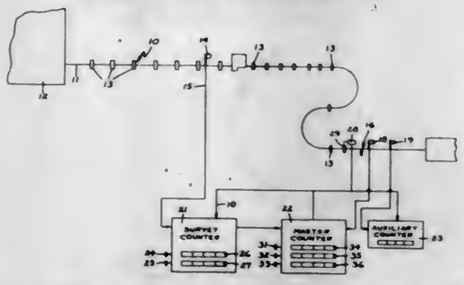
3,170,354
**ADHESIVE TAPE PERFORATING MACHINE**
William M. Scholl, 211–213 W. Schiller St., Chicago, Ill.
Filed Aug. 2, 1962, Ser. No. 214,330
8 Claims. (Cl. 83—347)



1. In an adhesive tape perforating machine,
means for moving an adhesive tape web having pressure sensitive adhesive on one side thereof along a predetermined path,
a needle roller for perforating said tape web over which the web travels with the adhesive bearing side next to the roller, and
an anvil roll of silicone rubber into which the needles of said needle roll extend after passing through the tape web.

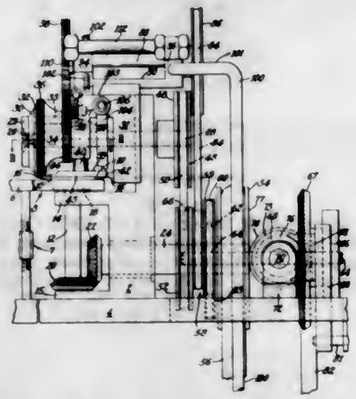
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3,170,355
**MAXIMUM AND MINIMUM LENGTH CONTROL FOR A ROLLING MILL SHEAR**
Benjamin R. Neely, Jr., West Boylston, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 1, 1961, Ser. No. 136,405
5 Claims. (Cl. 83—362)



1. Apparatus for cutting elongated product into sections as it moves in the direction of its length, comprising a shear lying in the path of movement of the product, a first means for sensing passage of said product in said path upstream from said shear and determining the length of the remainder section of the product above the largest whole number of sections of predetermined normal length, a second means for controlling the shear to cut the product into the said whole number of sections of predetermined normal length, and a third means operative in response to sensing by said first means of the length of the said remainder section above a predetermined minimum length to allow the shear to cut the product into the said whole number of sections of normal length and operative in response to sensing of the length of the said remainder section below the said minimum length to cause the shear to cut one of the sections preceding the said remainder section to a predetermined intermediate length selected to make the actual remainder section larger than the said minimum length.

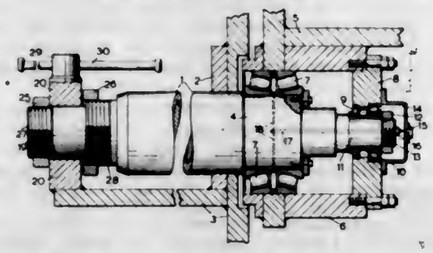
3,170,356
**CANVAS PARING MACHINES**
Walter F. Lygo, Leicester, England, assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Jan. 7, 1963, Ser. No. 249,838
Claims priority, application Great Britain, Jan. 10, 1962, 929/62
10 Claims. (Cl. 83—430)



1. A machine for trimming a marginal portion of one layer of sheet material from a composite sheet of two or more layers stitched together comprising,
a work table,
a first disk knife having a circular cutting edge rotatable in a plane substantially parallel with and above the work table for cutting the stitches holding two of said layers together,
a second knife having a circular cutting edge rotatable in a plane substantially normal to the edge of the first knife for cutting a marginal strip from one of said layers,
a guard member extending over the first disk knife,
and a feed wheel rotatable adjacent said second knife and above said guard member to urge said one layer against the guard member to feed the composite sheet material past the knives.

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3,170,357
**SHEARING MACHINE WITH A PIVOTAL BLADE HAVING ECCENTRIC MEANS TO ADJUST BLADE ALONG AXIS OF THE PIVOT**
Harry Ridgway, Sandal, Wakefield, England, assignor to Joseph Rhodes & Sons Limited, Wakefield, England, a British company
Filed Dec. 13, 1960, Ser. No. 75,494
Claims priority, application Great Britain, Dec. 18, 1959, 43,044/59
3 Claims. (Cl. 83—608)



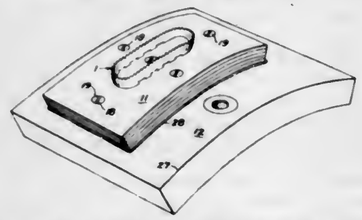
1. A heavy-duty metal plate shearing machine comprising a machine frame, a fixed blade secured to said frame, alined, spaced, fixed bearings secured to said frame,



a pivot shaft axially slidably mounted in said fixed bearings, a movable blade pivotally mounted on said shaft and secured against movement relative thereto in the axial direction thereof, said movable blade being mounted in cutting relation to said fixed blade, collars mounted on said shaft on opposite sides of one of said fixed bearings, a spindle mounted for rotation about its longitudinal axis on said fixed bearing, an eccentric mounted on said spindle, means for rotating said spindle and eccentric, a pair of plungers mounted on said fixed bearing for sliding movement parallel to the axis of said pivot shaft, each of said plungers being positioned tightly between said eccentric and one of said collars whereby rotary movement of said spindle and eccentric acting through said plungers and collars will effect endwise movement of said pivot shaft and lateral movement of said movable blade relative to said fixed blade.

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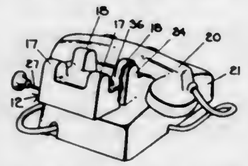
3,170,358
**DIE RULE AND METHOD OF FORMING AND MOUNTING THE SAME**
Merrill D. Martin, Oakland, Calif.
(1250 67th St., Emeryville, Calif.)
Filed Mar. 27, 1962, Ser. No. 182,732
14 Claims. (Cl. 83—673)



1. In a method of forming a die rule and die rule mounting for a rotating die cutter element the steps of
providing a primary base conforming to the peripheral curvature of rotation of said element,
forming slits through said primary base conforming to the contour of the die rule,
pressing the die rule into the slits so that the cutting edges of the die rule protrude from the convex face of said primary base,
and mounting said primary base on a curved second base adapted to be secured to said rotating element.

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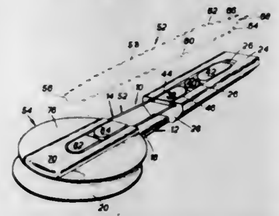
3,170,359
**MUSIC BOX FOR TELEPHONES**
Jean George Mourra, 4922 SW. 87th Place, Miami, Fla.
Filed May 10, 1963, Ser. No. 279,524
2 Claims. (Cl. 84—94)



1. A music box for telephones comprising a housing having a chamber and a plurality of slotted portions at one end releasably mounting said music box on a telephone, a plurality of upstanding shoulder members mounted on said housing forming a cradle receiving the telephone receiver, starting pin means slidably mounted in said cradle engaged by said receiver and extending into said chamber, music producing means mounted in said chamber, actuating means operatively connected to said music producing means mounted in said housing, spring means yieldingly urging said pin means into contact relation with said actuating means preventing the operation of said actuating means whereby upon the depressing of said starting pin means by said telephone receiver said actuating means is released to produce music.

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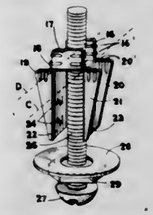
3,170,360
**MUSICAL CLAPPING INSTRUMENTS**
Toivo Miettinen, R.R. 3, Port Arthur, Ontario, Canada
Filed Oct. 21, 1963, Ser. No. 317,490
5 Claims. (Cl. 84—402)



1. A rhythm-keeping instrument comprising a handle, a striker plate at one end of said handle, and a clapper plate assembly removably connected to said handle, said clapper plate assembly comprising an elongated spring wire including spaced legs secured to the other end of said handle and extending in spaced relation along said handle toward said one end thereof, and a clapper plate secured to said flexible element and overlying said striker plate; said structure characterized in that said handle and said clapper plate include undercut groove portions in the upper surface thereof, conforming substantially to opposite ends of said spring wire, and opening toward each other from adjacent ends of said clapper plate and said handle, said spaced leg portions of said spring wire being removably received at opposite ends in the grooves of said clapper plate and handle.

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3,170,361
**TOGGLE BOLT**
Rudolph M. Vaughn, 611 Lido Park Drive, Newport Beach, Calif.
Filed Aug. 6, 1962, Ser. No. 215,075
2 Claims. (Cl. 85—3)



1. An improved toggle bolt comprising: a one-piece nut structure consisting of an elongated integral sheet of spring metal having a central threaded opening and including pairs of transverse slots extending inwardly adjacent to opposite sides of said opening to define opposed central tabs and pairs of longitudinal edge tabs for said sheet, said central and edge tabs being bent about first and second parallel fold lines in directions upwardly and towards each other to define a channel structure having substantially parallel sidewalls, said slots constituting vertical cuts in opposite channel walls, the floor portions of said channel structure between said pairs of longitudinal edge tabs on opposite sides of said central threaded opening being initially co-planar and adapted to be resiliently bent downwardly about transverse fold lines to define arms so that said slots are widened out to substan-

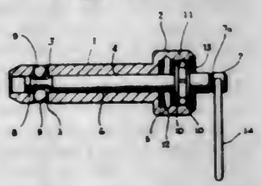
tially ninety degree angles when said arms are held in a vertically downwardly extending position; and a screw received in said threaded opening so that said arms lie adjacent to opposite sides of said screw in parallel relationship thereto, whereby said channel structure and screw may be passed through an opening and said arms released so that they flex towards their original positions, subsequent tightening of said screw drawing said channel structure against the periphery of said opening to complete unbending of said arms to positions in which the edges of said tabs defining said vertical cuts engage each other to resist further unbending movement of said arms, the edges of the central and longitudinal tabs including opposing beaded portions to facilitate the engagement of said edges.

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## 3,170,362
## BALL DETENT COUPLING DEVICE WITH RING SHAPED FRICTION MEANS

Charles Mewse, Welwyn Garden City, England, assignor to Avdel Limited, a British company

Original application Aug. 3, 1959, Ser. No. 831,388, now Patent No. 3,068,737, dated Dec. 18, 1962. Divided and this application Oct. 26, 1962, Ser. No. 233,410
Claims priority, application Great Britain, Aug. 8, 1958, 25,629/58
1 Claim. (Cl. 85—5)



A connecting device comprising:

a tube having an axial bore and an enlarged head at one end thereof and at least one radial aperture spaced from said head, said head having an enlarged bore concentric with said tube and at least one annular recess formed in the inside of said enlarged bore adjacent the junction of said tube and head;

a cover piece closing the outer end of said enlarged bore and having an aperture formed at the center thereof;

a locking member movable in said radial aperture;

an operating member axially slidably supported within said tube for movement between a locking position and a release position;

cam means on said operating member operative to cause said locking member to protrude outwardly from said radial aperture upon said movement of said operating member to said locking position within said tube, and to allow said locking member to recede inwardly into the tube upon movement of said operating member to said release position, said operating member having an intermediate portion located in and positioned for movement within said enlarged bore of said head and a head portion passing through said aperture of said cover piece to form an operating knob by which said operating member may be moved between said locking position and said release position, said intermediate portion having spaced apart radially extending annular flanges defining an annular groove therebetween;

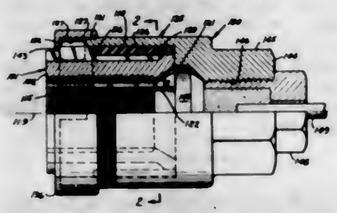
and friction means for resisting movement of said operating member comprising a ring-shaped resilient member located within said groove and movable with the intermediate portion of said operating member and contained entirely within the enlarged bore of said head, said resilient member exerting an outward pressure against the inner surface of said bore and receivable in said annular recess to retain said operating member against movement at least when it is in said locking position.

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## 3,170,363
## EXPLOSIVE SEPARABLE NUT

William R. Dickle, Manhattan Beach, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California

Filed Nov. 6, 1961, Ser. No. 150,306
4 Claims. (Cl. 85—33)



1. A separable nut with an axis, comprising: a plurality of nut segments shaped to fit in spaced adjacency with each other to form an interrupted exterior surface with axially-extending gaps between the segments, and an interrupted internally-threaded passage; a peripheral band having an internal, axially-extending fin in each gap, and an internal interrupted surface in full surface-to-surface engagement with the interrupted exterior surfaces of the nut segments, the fins filling the gaps and thereby holding the segments in alignment and making a fluid seal therebetween, and a continuous surface of revolution on the outside of the band, the band being made of a readily-cut, fluid-impermeable material; a retainer having a recess opening at one end thereof, and having an inner cylindrical wall within which the band and segments are fitted, the surface of revolution making full peripheral contact with said cylindrical wall, the band thereby making a fluid-sealing fit between the retainer and the segments and making sliding fit between itself and the retainer; key and spline means keying the retainer and segments together in torque-transmitting and axially-slidable relationship with each other; a yieldable collar attached to the retainer which laterally overhangs at least a part of ech key and each segment; and an explosive in fluid communication with said recess and adapted to fire gaseous products of explosion between the retainer and the segments for overcoming that part of the collar which overhangs the segments, and firing the retainer off the segments so that they can separate from each other when the threads of said internally-threaded passage are threaded onto a shank and form a fluid seal therewith, the collar forcing the key along the spline so as to cut the band and release the segments.

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## 3,170,364
## RECESSED HEAD SCREW

Robert K. Johnson, 1535 Cleveland Ave., Glendale, Calif., and Rudolph J. Cicconi, 5101 Buffalo St., Sherman Oaks, Calif.

Filed May 6, 1963, Ser. No. 278,163
1 Claim. (Cl. 85—45)



A right-hand threaded screw shank provided with a flat head having a centrally disposed recess and grooves extending upwardly and outwardly from the recess,



each of said grooves having a driving wall, a back-out wall and a flat bottom wall,

said bottom wall extending tangentially upwardly and outwardly from the rim of the recess with increasing radial magnitude into mergence with the top flat surface of the screw head,

said driving and back-out walls being parallel with each other and with the longitudinal axis of the screw shank, and to a plane containing a radius

each of said driving walls being of greater area than that of said back-out walls and offset from a longitudinal plane which contains said longitudinal axis of the screw shank and forwardly of the clockwise direction of rotation of the screw shank,

each of said back-out walls offset to a lesser extent than said driving walls from said shank axis-containing plane and rearwardly relative to the clockwise direction of rotation of the screw shank,

the back-out wall of each groove disposed on a vertical plane medial of a diametrically opposed groove,

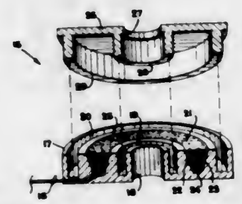
said mergence of the bottom wall of each groove with the flat top surface of the screw head being on a radius of curvature from a point offset from the longitudinal axis of the screw shank and lying in a plane which passes through the longitudinal axis at right angles to the walls of the groove, whereby the outside corner of the back-out wall is at a greater distance from said axis of the screw shank than the outside corner of the driving wall, and whereby clockwise forces of a rotating driver bit applied to and absorbed by said driving walls will impart introverted torque of maximum capacity to the screw shank in a clockwise direction of rotation.

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## 3,170,365
## EXPLOSIVE WASHER

Rudolph M. Vaughn, 611 Lido Park Drive, Newport Beach, Calif.

Filed Aug. 23, 1962, Ser. No. 218,974
1 Claim. (Cl. 85—50)



An explosive washer for separating first and second members held together by a bolt comprising, in combination: a cylindrical casing having a central opening through which said bolt may loosely pass, said casing including radially spaced inner and outer anular grooves and a central annular channel of substantially V-shape in cross-section disposed radially between said inner and outer annular grooves; an explosive charge filling said channel; a circular shaped cover member having a central opening adapted to register with said first mentioned central opening and including radially spaced inner and outer annular flanges extending normally from said cover in positions to be received and secured within said inner and outer annular grooves of said casing, respectively, to confine said explosive charge in said central annular channel; and detonating wire means extending from said explosive charge through said casing to the exterior thereof for detonating said charge after said washer has been positioned about said bolt whereby said bolt is destroyed to separate said members.

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## 3,170,366
## DEVICE FOR FILLING BORE-HOLES FORMED IN ROCK FORMATION WITH PARTICULATE EXPLOSIVE

Sven Hugo Alfredsson, Nasbypark, Sweden, assignor to Nitroglycerin Aktiebolaget, Gyttorp, Sweden, a corporation of Sweden

Filed Dec. 15, 1961, Ser. No. 159,628
Claims priority, application Sweden, Dec. 22, 1960, 12,451/60
10 Claims. (Cl. 86—20)



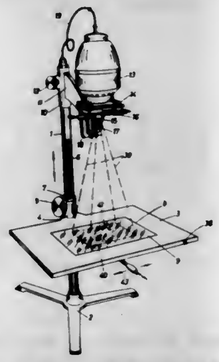
1. A device for filling a bore-hole with particulate explosive conveyed into the hole by pressure fluid comprising tube means having a smaller diameter than said bore-hole, filter means mounted on said tube means adjacent to the discharge end thereof and extending entirely around the same, said filter means being engageable with the walls of said bore-hole in a manner to maintain said tube means in concentric relation with said bore-hole, whereby particulate explosive will be discharged into said bore-hole and particles of explosive entrained in said pressure fluid will be removed from the fluid adjacent to the discharge from the tube means.

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## 3,170,367
## PHOTOGRAPHIC ENLARGER

Richard Wick, Grunwald, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany

Filed May 10, 1961, Ser. No. 109,113
7 Claims. (Cl. 88—24)

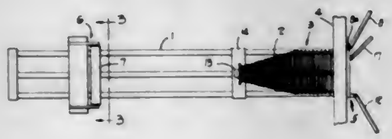


1. In a photographic enlarger, in combination, a support having a surface adapted to receive an image to be observed at said surface by the operator and then reproduced on light-sensitive printing paper carried by said surface, said support having a transparent portion; light-measuring means located adjacent said transparent portion at the side of said support opposite from said surface thereof for measuring at least part of the light pass-

ing through said transparent portion of said support to said opposite side thereof, said light-measuring means forming part of a photoelectric control device for controlling the exposure of the printing paper; and indicating means carried by said light-measuring means for indicating at said surface of said transparent portion of said support the part of said transparent portion through which light passes to be measured by said light-measuring means.

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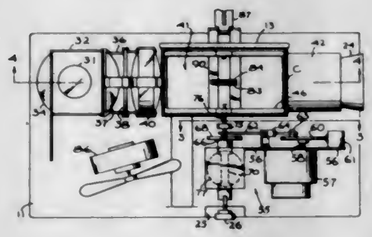
**3,170,368**
**MECHANICAL REGISTRATION OF PROCESS COLOR**
**Homer W. Barnhart, 418 E. Maynard Ave., Columbus, Ohio**
**Original application Jan. 4, 1957, Ser. No. 632,436, now Patent No. 3,000,737, dated Sept. 19, 1961. Divided and this application July 14, 1961, Ser. No. 124,123**
**8 Claims. (Cl. 88—24)**



1. In combination, in a process color camera assembly of the class described, a frame unit movable to various positions in said assembly, spaced film positioning means on said unit, said camera having lens means and a back unit at one end, a copy board unit therefor spaced from the lens means and screen bars carried by said back and board units, said frame unit being shiftable to said board and back units and supported by the bars therein, and a vacuum back member in said back unit including positioning means having the same spacing as the means of the frame unit aforesaid, whereby film or the like having mating positioning means is inter-changeably positionable with respect thereto and engageable therewith.

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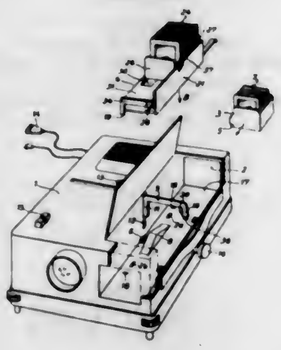
**3,170,369**
**SLIDE PROJECTOR**
**Gerald J. Frey, 1834 Devon Road, and Clinton W. Hough, 600 Chatham Place, both of Pasadena, Calif.**
**Filed July 18, 1962, Ser. No. 211,950**
**5 Claims. (Cl. 88—28)**



1. In a projector for use with bound image bearing transparency slides, the combination of:
a housing including a base portion, supporting structure and outer cover;
an optical system disposed in said housing and having a space between elements thereof to define a projection gate;
an illuminating system disposed in said housing and positioned for cooperation with said optical system;
a generally rectangular cartridge removably positioned in said housing and extending partially therefrom, said cartridge including a pair of spaced shafts;
an endless belt positioned about said spaced shafts, said belt having a plurality of adjacently disposed clips for individually supporting and retaining individual slides, a plane extending through axes of said shafts being in alignment with said projection gate;
a driving mechanism carried by said base and removably operatively coupled to at least one of said shafts to impart angular movement thereto sufficient sequentially to dispose each of said slides individually in said projection gate;
means forming a portion of said coupling of said driving mechanism for permitting each of said slides to remain in said projection gate for a finite predetermined period of time;
means engageable with each slide in said projection gate for aligning said slide therein; and
circuit means for energizing said illuminating system and said slide aligning means only when a slide is positioned within said projection gate.

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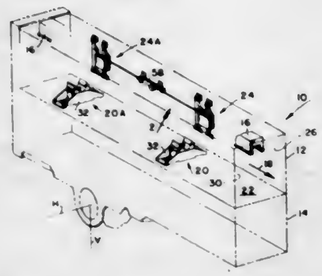
**3,170,370**
**SLIDE PROJECTOR FOR SLIDES IN A MAGAZINE OR IN A SEPARATE CONTAINER**
**Hans Muich, Wetzlar (Lahn), Germany, assignor to Ernst Leitz Gesellschaft mit beschrankter Haftung, Wetzlar (Lahn), Germany**
**Filed Aug. 23, 1962, Ser. No. 218,954**
**Claims priority, application Germany, Sept. 2, 1961, L 39,925**
**5 Claims. (Cl. 88—28)**



2. A slide projector comprising a casing, means in said casing defining a guideway for a slide magazine, means on said guideway for holding in position thereon a slide-storage container wherein the slides are held against each other, there being a transverse dividing wall in the center of said slide-storage container, a reciprocating slide-changing mechanism mounted in said casing for transferring slides from said slide-storage container to the projecting position and returning the slides to the storage container, means operatively cooperating with said slide-changing mechanism and said slide-storage container held in position on said guideway for removing slides from one side of said dividing wall and for returning the slides after projection thereof to the other side of said dividing wall, said last-named means including a leaf spring secured to said dividing wall with its upper edge extending above the upper edge of the said wall thereby providing a guiding edge for said slide-changing mechanism, and resilient means on said slide-storage container for urging the slides on both sides of said dividing wall thereagainst.



**3,170,371**
**MISSILE SNUBBER MECHANISM**
**Josef W. Zimmer, John T. Bratton, and Melvin Appelman, St. Louis County, Mo., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed May 28, 1963, Ser. No. 284,304**
**9 Claims. (Cl. 89—1.7)**

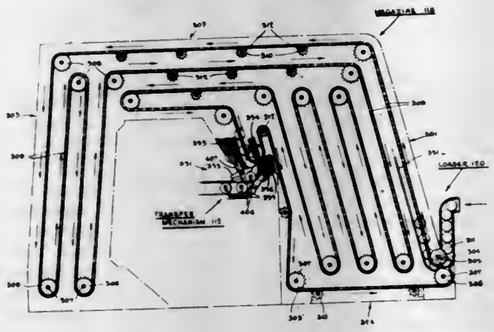


1. In a shipboard missile launcher of the type comprising an elongated cell having a longitudinally extending launcher rail disposed therewithin at the top thereof from which a missile is adapted to be suspended by missile suspension lugs and along which the lugs are adapted to slide during launching of the missile, the improvements, in combination, comprising;
(*a*) a pair of longitudinally spaced lower snubbers disposed in the cell beneath the missile having missile engaging members mounted by guide means for restraining said members to upward rectilinear movement into engagement with the missile,
(*b*) longitudinally spaced pairs of upper side snubbers, each pair cooperating with a lower snubber, the snubbers of a pair being disposed, one on each side of the missile, below said rail and equiangularly spaced from the aril, and mounted by means permitting movement into engagement with the missile, and
(*c*) means for moving all members into engagement with the missile for securing the missile in a fixed position within the cell, whereby ship pitch and roll forces tending to act on the missile lugs are absorbed by the snubbers.

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**3,170,372**
**LOADER AND MAGAZINE MECHANISM**
**Arthur J. Stanton, Bethesda, Md., David F. Anderson, McLean, Va., and Richard E. Taylor, Hyattsville, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed June 3, 1957, Ser. No. 663,323**
**14 Claims. (Cl. 89—33)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

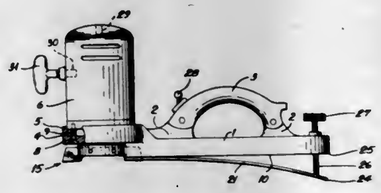
1. A substantially self-balancing ammunition magazine and loader combination for use with a trainable rapid-fire gun elevatable about a gun trunnion axis comprising an elongated flexible carrier for carrying rounds of ammunition through the magazine, support means in engagement with said carrier for supporting and guiding the carrier throughout the travel thereof and trainable with the gun, means for guiding the rounds as the latter are moved by said carrier, drive means for said carrier, a loading station adjacent the carrier and at one side of the magazine for introducing rounds to the carrier, an unloading station adjacent the carrier, said unloading station being centrally disposed within the confines of the magazine and remote from the loading station for receiving rounds from the carrier, means at said unloading station for unloading rounds from the magazine regardless of elevation of the gun, said carrier means being supported in a substantially balanced circuitous path of travel for moving the rounds from the loading station to the unloading station so as to fill the magazine successively and substantially equally on opposite sides of a vertical plane including the gun trunnion axis to thereby maintain a close weight balance of the magazine during loading and unloading operations, said loading station including a housing trainable with the gun and aligned with said carrier, a plurality of round guiding walls of said housing defining a vertical chute, horizontal inlet and outlet stations respectively located at the top



and bottom of said chute, gate means adjacent said inlet station actuated in response to a predetermined loading condition on the carrier, control means for interrupting the operation of said drive means and operative in response to a break in the continuity of spacing of rounds in the chute, and round indexing means adjacent said outlet station for effecting proper placement of the rounds on said carrier.

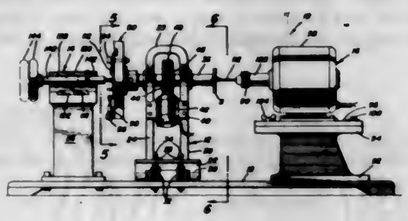
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**3,170,373**
**TOOL FOR SCRAPING AND SMOOTHING PLASTIC AND METAL SURFACES**
**Ernest Crepeau, 53 Youville Blvd., Chateauguay, Quebec, Canada, and Stanislas Laplerre, 456 Ch. Lac St.-Louis, Lower Woodland, Quebec, Canada, assignors of thirty-three and one-third percent to Jeanne Dagenais née Deschamps, Chateauguay, Quebec, Canada**
**Filed May 2, 1962, Ser. No. 191,809**
**7 Claims. (Cl. 90—12)**



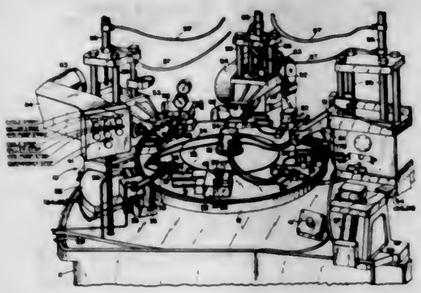
1. A portable power tool for scraping and smoothing out metal and plastic surfaces of variable curvatures comprising an elongated base frame having an extension at one end thereof, a power driven rotary cutter carried by said end extension, a flexible resilient blade extending underneath said base frame and secured thereto adjacent said rotary cutter and free of said base frame for the major portion of said resilient blade and base frame, and adjusting means mounted at the end of said base frame opposite said extension, engageable with said resilient blade for varying the radius of curvature of the same.

3,170,374
**APPARATUS FOR PRODUCING LENS PATTERNS FROM SPECTACLE FRAME LENS OPENINGS**
Milton Clar, 2444 Ross Road, Silver Spring, Md., assignor of one-third to Russell M. Melamut, Silver Spring, Md., and one-third to William T. Dunlap, Fanwood, N.J.
Filed Apr. 26, 1962, Ser. No. 190,276
15 Claims. (Cl. 90—13.9)



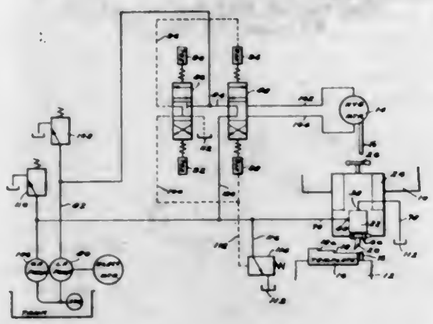
1. An apparatus for automatically machining an element to conform to a preformed frame, said apparatus comprising a fixed unit and a movable unit relatively movable with respect to said fixed unit, one of said units including spaced aligned holders including a frame holder and an element holder, and means mounting and driving said holders for simultaneous rotation about a common axis, the other of said units including a follower for engagement with the interior surface of a frame carried by said frame holder, and a machine tool component for machining an element carried by said element holder, said follower and said machine tool component being spaced apart and aligned with said frame holder and said element holder, respectively.

3,170,375
**MACHINE TOOL FOR MILLING PINKING SHEAR BLADES**
Curt Weidauer, Clinton Corners, N.Y., assignor to Samuel Brickman, New York, N.Y.
Filed Aug. 3, 1962, Ser. No. 214,603
2 Claims. (Cl. 90—15.1)



1. In a machine tool for milling pinking shear blades, said blades having pinking serrations, the combination with hydraulically operated fixtures for holding said blades, of arcuately reciprocatingly moved milling tool devices, said fixtures having a centering stud for locating said blades properly, said arcuately moved milling devices having a pivot, said pivot coinciding precisely with said centering stud at the instant of said milling device performing its milling operation on one of said blades held in one of said fixtures.

3,170,376
**HYDRAULIC POSITIONING MEANS**
Sylvester R. Cadwolinsky, 3650 Lapeer Road, Pontiac, Mich.
Filed June 21, 1961, Ser. No. 118,665
12 Claims. (Cl. 91—22)



1. In combination, a relatively fixed member and a relatively movable member, a hydraulic motor for moving the movable member, a valve mounted on one of said members, a stop mounted on the other member, a movably mounted actuating member located in the relative path of travel of said stop, flow restricting means in said valve for variably restricting the flow therethrough, said actuating member being operably connected with said flow restricting means such that flow through the valve is responsive to the position of said actuating member, a source of relatively low pressure connected to the inlet of said hydraulic motor, a source of relatively high hydraulic pressure, a high pressure line extending from said high pressure source to said valve on the upstream side of said flow restricting means, the outlet of said motor being connected with said high pressure line, an exhaust line connected to said valve downstream of said flow restricting means, said flow restricting means being operative to restrict the flow from the high pressure line to the exhaust line and thereby increase the pressure in said high pressure line to an extent sufficient to stop said motor when said actuating member is engaged by said stop.

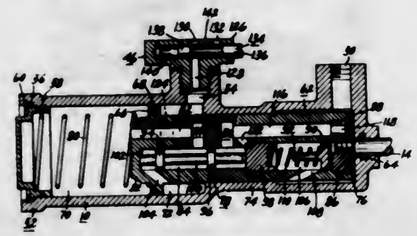
3,170,377
**COMPACTION APPARATUS**
William A. Herpich and Henry C. French, Jr., Knoxville, Tenn., assignors to Dempster Brothers, Inc., Knoxville, Tenn., a corporation of Tennessee
Filed June 10, 1959, Ser. No. 819,457
5 Claims. (Cl. 91—169)



1. Compaction apparatus comprising a body, a packer head movable back and forth in said body, a double-acting telescopic cylinder unit connected at one end thereof to said body and connected to the other end thereof to said packer head for moving said head, said cylinder unit comprising a plurality of cylinders having large central openings therein in free communication with each other, and fluid conduit menas connected to said ram end of said cylinder unit for delivering fluid to the interior of the cylinders, the unit during expansion strokes thereof, and separate fluid conduit means for delivering fluid to the space between the cylinders and out of communication with the interior thereof for causing retraction strokes of the cylinders, said cylinder unit being so constructed that a large volume of fluid may pass freely into the interior thereof during expansion strokes and pass freely from the interior thereof during retraction strokes whereby back pressure during retraction strokes is minimized.

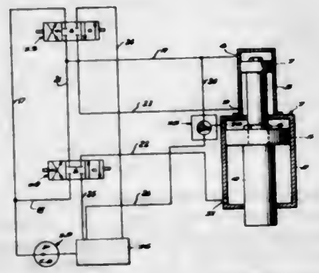


3,170,378
**HYDRAULIC MOTOR**
Robert P. Rohde, Saginaw, and William B. Thompson, Frankenmuth, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,046
5 Claims. (Cl. 91—224)



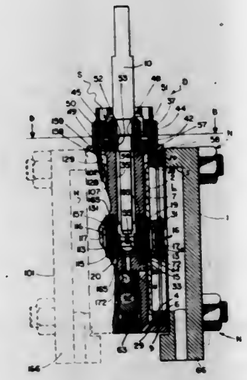
1. A wiper motor including, a cylinder, a differential area piston therein, a manual control valve which, when open, constantly subjects the smaller piston area to pressure, valve means carried by said piston and actuated at opposite ends of the running stroke of the piston for alternately connecting the larger area of the piston to pressure and drain to reciprocate the same, and power means acting on the larger area of said piston for automatically parking said piston outside of its running stroke when the manual valve is moved to the "off" position whereat both piston areas are connected to drain.

3,170,379
**HYDRAULIC SYSTEM**
John Saylor Dempster, Knoxville, Tenn., assignor to Dempster Brothers, Inc., Knoxville, Tenn., a corporation of Tennessee
Filed Feb. 13, 1962, Ser. No. 173,022
4 Claims. (Cl. 91—414)



1. A hydraulic system comprising a fluid pump, an expansible hydraulic cylinder, tandem double-acting pistons mounted in the cylinder, means connecting the pistons in the cylinder, said pistons and said cylinder defining working chambers on one side of the pistons for forward extending movement of the connecting means and working chambers for return travel of the connecting means on the opposite side of the pistons, ports in the cylinder wall communicating with each of the working chambers, a reservoir, conduit means for supplying fluid from the reservoir to the pump, first valve means, second valve means, conduit means for supplying fluid from the pump to the first and second valve means, conduit means for discharging fluid from the valve means independently to the reservoir, conduit means communicating between said first and second valve means and said extending working chambers, and conduit means communicating independently between one of said return working chambers and said first valve means, and between the other of said return working chambers and said second valve means, said second valve means including means for selectively providing communication between said other return working chamber and said extending working chambers, whereby a plurality of forces and rates of travel of the connecting means in the cylinder are provided.

3,170,380
**PRESSURE RESPONSIVE DEVICE**
Kenneth L. Tate, Harry Stultz, Howard R. Jaquith, and Richard G. Beach, Rochester, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed June 11, 1962, Ser. No. 201,627
20 Claims. (Cl. 92—10)



1. In a pressure responsive device, a spring-material diaphragm having a closed corrugation; a ring having a flat end face, said ring being juxtaposed to said corrugation with said end face facing the concave side of said corrugation all around the said corrugation; the inner periphery of said end face being defined by a sharp edge, all around the said ring, said diaphragm being sealed to said ring, all around the outer periphery thereof at said end face, and means maintaining said corrugation in contact with said sharp edge, substantially continuously along said sharp edge.

3,170,381
**ADJUSTABLE DRUM FOR A ROTARY EXPOSURE UNIT**
Walter Wanielista, Westchester, Ill., assignor to Robertson Photo-Mechanix, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 28, 1963, Ser. No. 268,709
9 Claims. (Cl. 95—76)

1. In drum-type photographic exposure apparatus,
a pair of end plates mounted for rotation,
each of said end plates having a side face facing toward and parallel to the side face of the other of said end plates,
means defining a plurality of radially spaced annularly shaped ribs and grooves on said side faces,

said ribs and grooves being arranged in registry with corresponding ribs and grooves of the other side face,

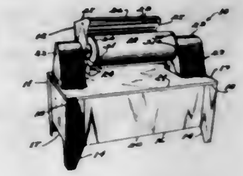
drum plate means comprising a plate extending between said end plates and slidably inserted into a pair of grooves to form a cylinder of selected size, inlet means formed in said side faces to lead said plate means into any pair of said corresponding grooves, and

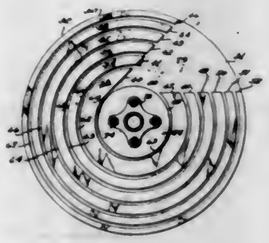
means to effect rotation of said end plates.

5. In drum-type photographic exposure apparatus for subjecting photosensitive material to a light treatment,

a light source,

a vacuum system and a pair of axially aligned spindle shafts positioned in spaced relation to said light source,





a pair of circularly shaped end plates mounted respectively on said spindle shafts for corotation therewith,

each of said end plates having a side face extending perpendicularly to the axes of said shafts,

each of said side faces having a plurality of annularly shaped radially spaced lands formed respectively thereon and extending angularly around said side faces from a first plane defining a first partial chord of said side face to a second plane defining a second partial chord of said side face,

said lands on each of said side faces forming grooves therebetween such that a tangent drawn from any of said grooves from said first plane in the direction of said second plane will intersect said second plane radially outwardly of said side face,

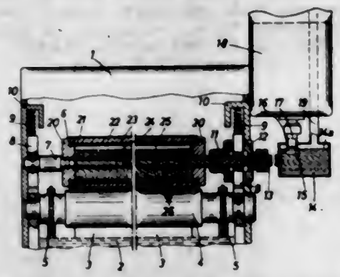
a drum plate comprising a sheet of flexible material extending between the side faces of said end plates and adapted to be slidably inserted into a pair of equally radially outwardly spaced grooves for forming a drum cylinder,

check valve means mounted on said drum plate to provide air flow from the exterior of the drum cylinder into the interior of the drum cylinder when the drum plate is inserted into said pair of grooves to form a cylinder drum,

a flow passage means formed in one of said spindle shafts axially therethrough and in open communication with the interior of the drum cylinder, and

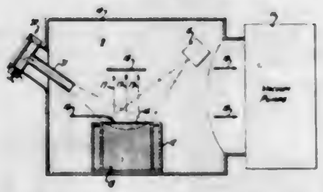
means connecting said one of said spindle shafts in fluid communication with the vacuum system for withdrawing air from the drum cylinder.

**3,170,382**
**PHOTOGRAPHIC DEVELOPING MACHINE**
**Richard Schwab, Munich-Grunwald, Rudolf Birk, Munich, and Helmut Käfer, Munich-Grunwald, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany**
**Filed Jan. 16, 1961, Ser. No. 82,925**
**Claims priority, application Germany, Jan. 16, 1960, A 33,715**
**6 Claims. (Cl. 95—89)**



3. For use in a machine for developing light-sensitive materials, in combination, a hollow cylinder having a perforated cylindrical wall; means supporting said cylinder for rotation about its axis; a layer of felt covering said cylindrical wall; and a yieldable, plastic, cylindrical sheet surrounding and engaging said layer of felt and having inwardly extending, short tubular portions extending into the layer of felt and defining perforations which pass through the plastic sheet so that a treating liquid supplied to the interior of said cylinder will flow through the perforated cylindrical wall thereof into said layer of felt and from the latter through the tubular portions of said sheet to the exterior surface thereof to be applied to light-sensitive material engaging the exterior surface of said sheet.

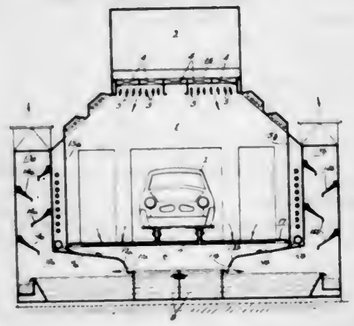
**3,170,383**
**HIGH VACUUM OBSERVATION APPARATUS**
**Charles d'A. Hunt, Orinda, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California**
**Filed Sept. 26, 1961, Ser. No. 140,750**
**3 Claims. (Cl. 98—1)**



1. An apparatus for viewing the interior of an evacuated chamber having condensable vapor therein comprising an elongated viewing tube open at both ends adapted to be supported in a wall of an evacuated chamber so as to extend therethrough toward an area to be viewed, said tube terminating at an end exterior to an evacuated chamber in an enlarged chamber having walls and having a cross-sectional area substantially greater than the cross-sectional area of the interior of said tube, and being in communication with the interior of said tube, a viewing window supported in one of said walls of said enlarged chamber opposite said exterior end of said tube for allowing viewing of the interior of an evacuated chamber through said tube from said window, and means for introducing a gas into said enlarged chamber to raise the pressure therein above the pressure in said tube to insure flow of the gas from said enlarged chamber through said tube for maximizing deflecting collisions of gas molecules and condensable vapor traveling along the tube, whereby the deflected vapor impinges upon the tube walls and condenses before reaching said window.



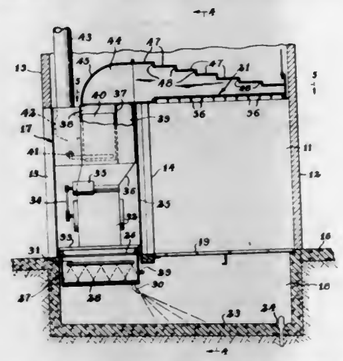
**3,170,384**
**SPRAY-PAINTING BOOTHS**
**Evert Krantz, Stockholm, Åke Arborgh, Jonkoping, and Gunnar Wilhelmsson, Smalands-Taberg, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden**
**Filed May 14, 1962, Ser. No. 194,630**
**Claims priority, application Sweden, May 16, 1961, 5,155/61**
**4 Claims. (Cl. 98—36)**



1. A spray-painting booth for objects being painted as they are conveyed therethrough, comprising a channel having a pair of spaced longitudinal side walls, a floor and a ceiling, said ceiling having ventilating air inlet means to distribute air to objects being painted within said channel, a grill coextensive with said floor for permitting ventilating air to be discharged from said channel, a chamber disposed beneath said grill, said chamber having a pair of inwardly sloping, downwardly extending longitudinal side walls connected on either side of said grill, means defining a longitudinal slot dividing each of said downwardly extending side walls into an upper and a lower portion, and a liquid basin confined between the lower portions of said downwardly extending side walls for carrying a liquid at a level closely adjacent said slot, washing liquid supply means positioned adjacent said grill along the upper portion of each of said downwardly extending side walls and adapted to coat said upper portions with a film of washing liquid flowing toward said slots, said slot means dimensioned to increase the velocity of the outflowing air sufficient to eject and atomize liquid both from the liquid basin and the liquid film flowing toward the slots whereby paint particles carried by said outflowing air are agglomerated.

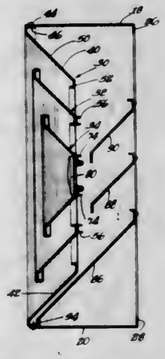
**3,170,385**
**AIR SCREEN STRUCTURE COMPONENTS AND METHOD OF OPERATION**
**Melvin W. Tompkins and William L. Ellis, both of New Castle, Ind., assignors to New Castle Products, Inc., New Castle, Ind., a corporation of Indiana**
**Filed Oct. 18, 1961, Ser. No. 145,889**
**5 Claims. (Cl. 98—36)**

1. In an air screen structure wherein a circulating air stream establishes a barrier across a passageway, said structure including an overhead air discharge plenum extending transversely of said passageway and having an air screen defining discharge grating means forming the bottom wall thereof and permitting the introduction of air downwardly into said passageway, an air return plenum positioned opposite said discharge grating means across said passageway in the floor thereof, an air circulating means interconnecting said air return and discharge plenums and located out of said passageway, the improvement comprising the provision of an air mixing chamber forming the upper end of said air circulating means and in communication with said discharge plenum, combination air heating and by-pass means in said circulating means below said mixing chamber and



located no higher than said grating means, the top wall portion of said discharge plenum progressively approaching said grating means in opposition to the initial direction of air stream flow which upon introduction thereinto is generally from one end thereof from said mixing chamber and in a direction across said passageway, said discharge plenum being of decreasing total air flow area in the direction of air stream flow.

**3,170,386**
**VENTILATOR**
**Myron B. Reynolds, Evanston, Ill., assignor to Leslie Welding Co. Inc., Franklin Park, Ill., a corporation of Delaware**
**Filed Oct. 31, 1962, Ser. No. 234,380**
**4 Claims. (Cl. 98—37)**

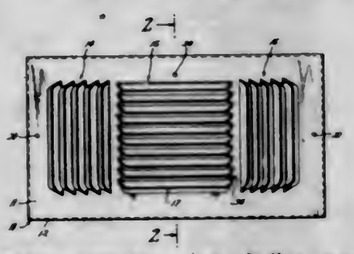


1. A vertical ventilator adapted to be mounted in an upstanding outside wall of a building comprising an upstanding rectangular shell having upstanding opposite side walls and top and bottom walls, a plurality of substantially concentric rectangular louvers of progressively decreasing dimensions disposed within and substantially concentric with said shell and respectively having upstanding side sections and top and bottom sections defining passageways having axes generally parallel to the axis of said shell, the largest of said louvers having its outer peripheral edges immediately adjacent said shell walls and secured to said shell, bracket means connected to said largest louver and supporting the other of said louvers, and a

plurality of substantially horizontally disposed vertically spaced and downwardly and forwardly extending baffles fixedly mounted between said opposite side walls of said shell behind said louvers, the lowermost of said baffles extending beneath and in overlapping spaced relationship to said bottom section of said largest louver, and the uppermost of said baffles extending with an upper margin thereof not substantially above the inner margin of the top section of said largest louver.

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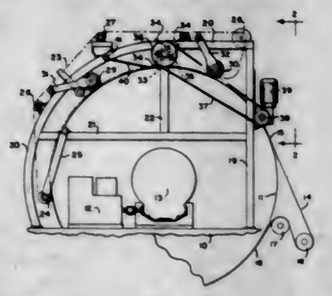
**3,170,307**
**DIFFUSERS**
**John V. Felter, Austin, Tex.**
**(P.O. Box 7464, Houston, Tex.)**
**Filed Dec. 17, 1962, Ser. No. 245,238**
**7 Claims. (Cl. 98—40)**



1. Diffuser, comprising a web of pliant material, said web having at least one pair of elongate cuts thereacross laterally spaced one from the other and defining a vane therebetween, said cuts terminating at each end thereof at points spaced from an edge of said web, said cuts being correspondingly curved at least at their end portions and the central portion of one cut extending across a line defined by the end points of the other cut, said vane being bent out of alignment with said web along said line at the vane ends extending between said cuts, whereby the leading edge of each vane is cut from the trailing side of the adjacent vane whereby a diffusion space to the same side of said web as said vanes is created.

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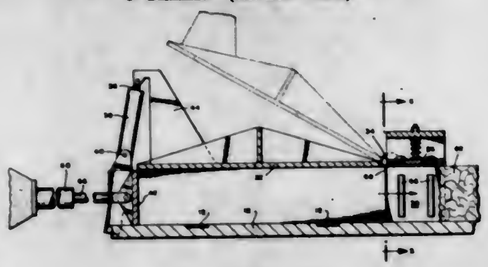
**3,170,308**
**FILTER**
**Lance Eric Harold Reichstein, Toorak, Victoria, Australia, assignor to Amotek, Inc., New York, N.Y., a corporation of Delaware**
**Filed June 21, 1961, Ser. No. 118,645**
**2 Claims. (Cl. 100—162)**



1. In a drum filter, a tank; a drum having a substantial portion thereof submerged within a slurry within said tank; a plurality of rolls spaced from the drum and parallel to the axis thereof, cake discharge means surrounding a substantial portion of the periphery of said drum, tangentially leaving said drum, passing over said rolls and tangentially returning to said drum; an endless compressing belt having a run thereof wrapped around a substantial arc of the periphery of said drum; a plurality of compressing roll means acting at spaced points along the run of said belt in contact with the periphery of said drum; a roll rotatable about an axis parallel with the axis of rotation of said drum and spaced radially beyond the periphery of said drum; flexible members attached to said roll and extending radially outwardly whereby upon rotation of said roll said flexible members slap the run of said belt in contact with the periphery of said drum; and means for rotating said roll.

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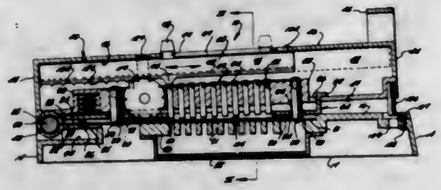
**3,170,309**
**AUTO BODY SALVAGE PRESS**
**Roy A. Paris, 5628 University Way, Seattle, Wash.**
**Filed Oct. 15, 1962, Ser. No. 230,331**
**9 Claims. (Cl. 100—192)**



1. An automobile body salvage press, comprising: (*a*) a floor supporting base surface, a generally rectangular dimensionally changeable unobstructed compression chamber having a pair of upstanding generally opposed, spaced-apart, parallel and transversely movable side compression walls on said base surface, each of said side compression walls including a first actuating means therefor, a top pressure wall means between said side walls, said top wall means being hingedly anchored at one end and including second actuating means for moving it about its hinged end, a ram member at one end of and movable longitudinally through said compression chamber and including third actuating means therefor; (*b*) first anti-friction means in said base surface for carrying the weight of said side compression walls; (*c*) a discharge tunnel means on said base surface coaxially disposed at the end of said compression chamber opposite said ram member and having pressure spring backed top and side plates; and (*d*) second anti-friction means on the inner surfaces of said top and side plates for permitting a compacted body to move out of said compression chamber and through said discharge tunnel means.

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**3,170,390**
**APPARATUS FOR INCISING AND IMPRINTING INFORMATION**
**Jack M. Wagner, 605 Santa Maria Road, Arcadia, Calif.**
**Filed Mar. 29, 1962, Ser. No. 183,550**
**17 Claims. (Cl. 101—19)**



1. Apparatus for incising a blank with data comprising
(1) a base,
(2) a punch carriage,



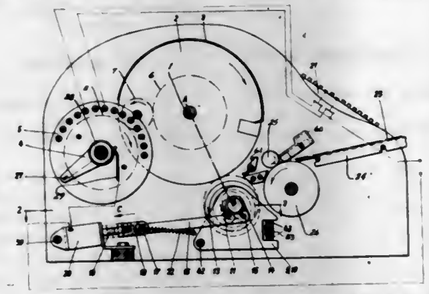
(3) means on the base engageable with the blank to position the blank in a predetermined fixed position relative to the base,
(4) a plurality of data punches mounted in the punch carriage and adapted to engage the blank,
(5) die means movable relative to the punches and to the base normally disposed out of cooperating relation with the punches and underlying the blank when the blank is in its predetermined position relative to the base,
(6) means in the punch carriage operable for selecting at least one of the plurality of punches and for locking the selected punch into blank incising position,
(7) means connecting the punch carriage to the base for movement of the carriage toward and away from the base, movement of the carriage toward the base bringing the selected punch into incising engagement with a predetermined area of the blank, and
(8) means cooperating with the die means operable on movement of the selected punch into said incising engagement to move the die means into cooperating relation with the selected punch.

13. Apparatus for incising a blank with data comprising
(1) a base,
(2) a punch carriage,
(3) means on the base engageable with the blank to position the blank in a predetermined position relative to the base,
(4) a plurality of data punches mounted in the punch carriage and adapted to engage the blank,
(5) die means movably supported by the base cooperating with the punches and underlying the blank when the blank is in its predetermined position relative to the base,
(6) punch selecting means in the punch carriage operable for selecting at least one of the plurality of punches and for locking the selected punch into blank incising position,
(7) means engageable with the die means for aligning the die means with the selected punch,
(8) means connecting the punch carriage to the base for movement of the carriage toward and away from the base, movement of the carriage toward the base bringing the selected punch into incising engagement with a predetermined area of the blank,
(9) imprinting means operable in response to operation of the punch selecting means to imprint the blank with data corresponding in value to the punch selected by operation of the punch selecting means, and
(10) means in the carriage engaging the imprinting means for maintaining the imprinting means and the punch selecting means in a selected operable relation to the selected punch.

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**3,170,391**
**APPARATUS FOR OPERATING A SELECTIVE PRINTING MACHINE**
**Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzensbader Str. 21, Berlin-Grunewald, Germany**
**Filed Oct. 11, 1961, Ser. No. 144,406**
**Claims priority, application Germany, Oct. 14, 1960, R 28,894, R 28,895**
**14 Claims. (Cl. 101—91)**

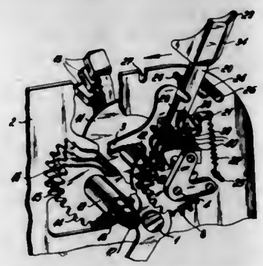
1. In a rotary printing machine, in combination, a printing roller means; a counter pressure roller means; shaft means having an axis and supporting one of said roller means for free rotation thereon about said axis, said shaft means including journal means; control means including movable control cam means slidingly engaging said journal means and supporting the same for movement to and from an operative position in which said axis of said shaft means is advanced toward the other roller means so that said one roller means is located in close proximity of the other roller means to define with the same a printing line; operating means for shifting said movable control cam means of said control means for effecting movement of



said one roller means; and actuating means driven in synchronism with said printing roller means and connected to said operating means for actuating the same during each revolution of said printing roller means.

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**3,170,392**
**TYPE VALUE SELECTING MEANS IN POSTAGE METERS**
**Helmut Sonntag, Kalbach, Taunus, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany**
**Filed May 17, 1963, Ser. No. 281,134**
**Claims priority, application Germany June 2, 1962**
**4 Claims. (Cl. 101—91)**



1. A postage meter comprising in combination:
(*a*) selector means;
(*b*) type adjusting means;
(*c*) a pivotable coupling lever supporting said selector means, said coupling lever having a first limit position for causing operative engagement between said selector means and said type adjusting means and said coupling lever having a second limit position for causing operative disengagement of said selector means from said type adjusting means;
(*d*) a first pivot means supporting said coupling lever;
(*e*) a latching lever;
(*f*) a second pivot means arranged angularly with respect to said first pivot means supported by said coupling lever and supporting said latching lever;
(*g*) fixed latching means adapted to be engaged by said latching lever to maintain said coupling lever in said first limit position thereof;
(*h*) a first spring exerting a bias upon said coupling lever in a direction from said first limit position thereof to said second limit position thereof;
(*i*) a second spring tending to cause resilient engagement between said latching lever and said fixed latching means, said second spring exerting a bias upon said latching lever in a direction angularly related to said first mentioned direction; and

(*j*) an operating member integral with said latching lever for manipulating said coupling lever against the bias of said first spring and for manipulating said latching lever against the bias of said second spring.

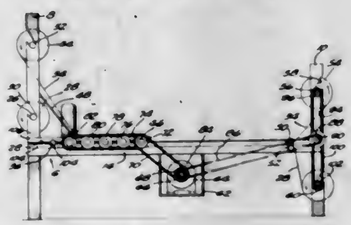
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**3,170,393**
**METHOD OF PRINTING WITH A HEAT SETTABLE INK**
George W. Reinke, Palos Verdes Estates, Calif., assignor to Rineglas, Inc., a corporation of Illinois
No Drawing. Filed June 25, 1962, Ser. No. 205,072
3 Claims. (Cl. 101—129)

1. The method of printing a heat settable ink containing 90 to 100 percent solids onto an ink receptive material comprising the steps of, applying wet heat settable ink to one surface of the ink receptive material through a silk screen to provide imprinting thereon, moving the material with the wet ink thereon into engagement and under slight pressure with a heated surface of a movable element moving at the same speed as said material so that the heated surface of said element directly engages the exposed surface of the wet ink, and allowing the moving element to be in momentary engagement with the wet ink to increase the ink temperature to between 200 and 325° F. for a time sufficient to set the ink without heating said material and to impart to the exposed surface of the ink a finish in accordance with the finish of the heated surface of the element, wherein the set ink thickness is substantially the same as the wet ink thickness.

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**3,170,394**
**CLOTHING PATTERN REPRODUCER**
Hyman R. Levin, 4218 N. Waverly, Lakewood, Calif.
Filed July 19, 1962, Ser. No. 210,928
2 Claims. (Cl. 101—131)



1. In a clothing pattern reproducer, a frame comprising a front upright unit and a rear upright unit, side frame members extending longitudinally between said front and rear upright units, a flat bed supported between said side frame members at the front portion of said frame, a plurality of rollers extending between and rotably supported by said side frame members, a heater assembly extending between and supported by said side frame members rearwardly of said flat bed and having a smooth flat top surface on a horizontal plane substantially coincident with the upper surface of said flat bed, said front upright unit extending above said flat bed and having a copy sheet and a master pattern sheet feed roll supported thereon, the rear upright unit having a copy sheet and a master pattern sheet feed roll supported thereon, said plurality of rollers extending transversely of said bed with their lower portions on a common plane and contacting said bed to produce pressure on superimposed portions of said copy sheet and master pattern sheet between said rollers and the bed, said rollers including a forwardly disposed sheet moistening roller and a following set of pressure rollers located between the front and rear of the bed, and means for driving said moistening pressure rollers and said rewind rolls.

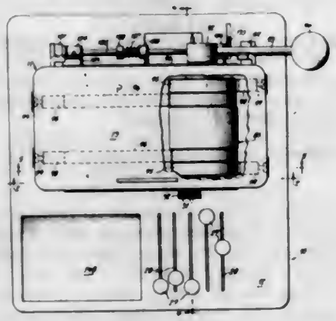
**3,170,395**
**DUPLICATING**
Robert W. Gundlach, Victor, and Vsevolod S. Mihajlov, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 7, 1963, Ser. No. 314,152
8 Claims. (Cl. 101—149.4)

1. A duplicating method for preparing and duplicating a two-sided document comprising:
(*a*) applying visible intelligence to each of the two sides of an original sheet using a colored material containing a heat volatizable color reactive chemical;
(*b*) positioning said sheet between the faces of two non-porous master members;
(*c*) applying heat to said sheet so that said color reactive chemical evaporates and transfers to each of the said faces;
(*d*) removing said sheet from between said two master members;
(*e*) positioning a substantially impermeable copy sheet treated with a color reaction partner for said color reactive chemical between said faces of said two master members;
(*f*) applying heat to said two master members so that said color reactive chemical evaporates and transfers from said two master members to said copy sheet forming an intensely colored duplication of said intelligence.

7. A duplicating method comprising:
(*a*) positioning between the faces of two master members an original sheet bearing images on each of its two sides, said images made with a colored marking material containing a transferable component;
(*b*) transferring at least a portion of said marking material from the image on each side of said original sheet to the face of the master member facing it;
(*c*) removing said original sheet from between said two master members;
(*d*) positioning a copy sheet between said two master members with their marking material bearing faces toward said copy sheet; and,
(*e*) re-transferring at least a portion of said transferable marking material from the face of each of said master members to one of the opposite sides of said copy sheet and separating said copy sheet from said master member whereby a two-sided duplicate of said original sheet is obtained.

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**3,170,396**
**ROLLER PRINTER**
Costas Avgerinos, Wilton, Conn., assignor to Farrington Manufacturing Company, Springfield, Va., a corporation of Massachusetts
Filed Sept. 21, 1962, Ser. No. 225,280
20 Claims. (Cl. 101—269)

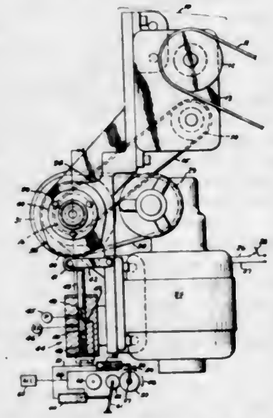


1. In a printing machine of the character described having means for supporting character type faces within a print bed for reproduction of corresponding character images onto a print receiving medium disposed within and in fixed relation to said print bed, roller means for impressing said print receiving medium against said type faces in said print bed and adapted when rotated to linearly traverse said print bed, means for guiding the linear travel of said roller means when rotated along a plane parallel to the plane of said print bed, means for rotating said roller means, and restraining means for rendering the linear travel of said roller means uniformly unequal in extent to its circumferential rotative movement throughout each traverse thereof across said print bed, whereby the peripheral surface of said roller means is pressed in skidding contact with said print receiving medium when traversing said print bed.



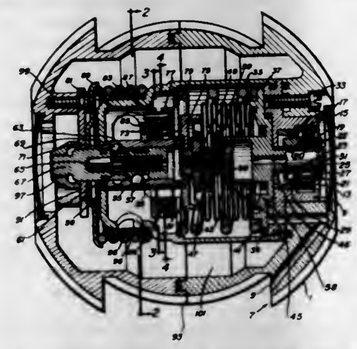
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**3,170,397**
**INK FOUNTAIN AND DUCTOR ROLL DRIVE**
Orville V. Dutro, 5068 N. Commonwealth, and Sherman H. Hewson, 640 Knight Way, both of La Canada, Calif.
Filed Oct. 9, 1962, Ser. No. 229,353
3 Claims. (Cl. 101—350)



1. In combination: a fountain roller, a vibrator roller; a ductor roller; and an ink fountain drive comprising a cam shaft, a cam carried and driven by said shaft, unidirectional drive means driving the fountain roller, a first fluid-powered actuator for intermittently driving said unidirectional drive means, mounting means mounting the ductor roller for swinging movement between a first position wherein it contacts and rotates with the fountain roller, and a second position where it contacts the vibrator roller, a second fluid-powered actuator for moving the mounting means to move the ductor roller to each of the said two positions, fluid-valving means responsive to the cam adapted to simultaneously actuate and deactuate the actuators, the actuators comprising piston-cylinder assemblies, and the fluid-valving means being connected to all of said assemblies to actuate them simultaneously, a first and a second power source, both power sources being connected to the cam shaft to actuate the same in the same direction, and each adapted to be overridden by the other power source, whereby the cam shaft may be driven by either of said power sources independently of the other, and the frequency of actuation of the cam and thereby the valving means and actuators being determinable by either of said power sources, and a source of static pressure connected to the actuators opposed to the fluid-valving means to bias the mounting means toward one of said positions, pressure from the fluid-valving means overcoming such static pressure to move the mounting means to the other of said positions.

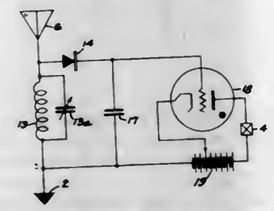
**3,170,398**
**BAROMETRIC MUNITION**
Theodore R. Paulson, Abingdon, Md., and Paul F. Shivers, Minneapolis, Minn., assignors to the United States of America as represented by the Secretary of the Army
Filed May 11, 1961, Ser. No. 109,463
3 Claims. (Cl. 102—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A barometric munition comprising two separable sections, means to cause said munition to spin during flight, a spring within said munition compressed between said separable sections and tending to force said sections apart, a locking means within said munition holding said sections together against the action of said spring, an evacuated bellows within said munition, a bellows spring tending ot expand said bellows, means for adjusting the tension on said bellows spring, means operable on compression of the bellows against the action of said bellows spring to unlock said locking means, a passage so arranged as to transmit exterior pressure to said bellows, latch means constructed and arranged to prevent compression of said bellows, centrifugally actuated arming means for releasing said latch means, vanes on said munition adapted to cause said munition to rotate while falling, means for normally rendering said arming means inoperative and means operable on expansion of said bellows for rendering said arming means operative, whereby said sections will be pushed apart by said spring only when said munition is taken to an altitude above a predetermined altitude, and then allowed to fall freely to said predetermined altitude.

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**3,170,399**
**RADIO REMOTE CONTROL MINE CIRCUIT WITH NO CURRENT DRAIN**
Wilbur S. Hinman, Jr., Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed May 18, 1951, Ser. No. 227,093
1 Claim. (Cl. 102—19.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A radio operated remote control mine adapted to detonate only in response to a radio frequency signal of predetermined frequency and intensity which is present for

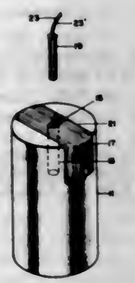
a predetermined time, said mine comprising in combination: a casing; an explosive charge, a partition, and electronic components in said casing, said partition separating said explosive charge from said components; a detonator supported in said partition and adapted to actuate said explosive charge; an insulating housing formed in one of the walls of said casing; a longitudinal antenna positioned in said insulating housing so as to be flush with the outer surface of said casing; a subpanel on which said components are mounted; and an insulating compound filling the comaprtment in which said components are placed, said compound rigidly holding said components and providing waterproofing therefor; said electronic components comprising: an inductor and a first capacitor in parallel forming a resonant circuit tuned to said predetermined frequency, one end of said resonant circuit being connected to said casing which serves as circuit ground, and the other end of said resonant circuit being connected to one end of said antenna, a rectifier and a second capacitor in series connected in parallel across said resonant circuit, said second capacitor being chosen so that a sustained current for said predetermined time from said resonant circuit is required to charge said second capacitor, a gas-filled cold-cathode triode having an anode, a grid and a cathode, said grid and cathode being connected in parallel with said second capacitor, a battery providing grid bias voltage and anode voltage to said triode, said detonator being electrically connected in said anode-cathode circuit; the application to said antenna of a sustained radio frequency signal of said predetermined frequency and intensity for said predetermined time producing an alternating current in said resonant circuit which is rectified by said rectifier and charges up said capacitor during said predetermined time to a voltage which overcomes said grid bias voltage, the gas in said triode thereupon ionizing and causing current to flow in said anode-cathode circuit functioning said detonator, actuating said explosive charge, and thereby detonating said mine.

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3,170,490
## DETONATING MEANS SECURING DEVICE

Richard Groff Nelson, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed Nov. 23, 1960, Ser. No. 71,195
5 Claims. (Cl. 102—24)



1. An explosive assembly comprising an explosive charge containing a well, said well being of a size to receive an electric detonator, a length of filament tape covering said well and secured to said explosive charge on either side of said well, said filament tape having a slit therein positioned immediately over said well, said slit being parallel to the direction of the longest filaments in said length of filament tape.

3,170,491
## CARTRIDGE CASE

Walter T. Johnson, Kensington, and Stanley P. Proos, Lanham, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Sept. 11, 1962, Ser. No. 222,979
6 Claims. (Cl. 102—43)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A cartridge case for use in a gun having a bore comprising, in combination; a circular base having a generally flat portion, an extractor ring extending laterally from the flat portion, a primer for igniting an explosive disposed in the generally flat portion, and an outside cylindrical side wall extending longitudinally from the junction of the flat portion and the extractor ring less than one-fourth the diameter of the circular base; a plastic obturator, separate and distinct from said circular base, attached to said circular base and having an outside cylindrical side wall extending longitudinally from the side wall of the circular base less than one-half the diameter of the circular base, the diameter of the side wall of the obturator being of the same diameter as the side wall of the circular base; and a container for explosive material, separate and distinct from said circular base and said obturator, attached to said obturator and having an outside cylindrical side wall extending longitudinally at least twice the diameter of the circular base, the diameter of the container being of the same diameter as the side wall of the circular base; the outside cylindrical wall of the obturator being in contact with the cylindrical side wall of the circular base and the cylindrical side wall of the container to form a uniform outside cylindrical surface for the entire cartridge case, whereby upon ignition within a gun of the explosive material within the container, the base supports the obturator and the obturator forms a gas-tight seal between the cartridge and gun bore as a missile is projected from the gun.

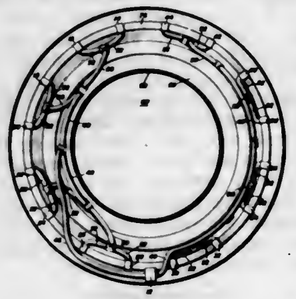
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3,170,492
## EQUAL LENGTH DETONATING CORDS FOR WARHEAD DETONATION

Harold S. Morton, Takoma Park, and Zanville M. Raffel, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 16, 1956, Ser. No. 616,358
2 Claims. (Cl. 102—70)

2. A detonating cord initiation system for detonating an explosive annulus, comprising, a single point of initiation; a dendritic network of armored detonating cord, said network having a first plurality of equal lengths of armored detonating cord emanating from said point of initiation, a second plurality of equal lengths of armored detonating cord, said second plurality being divisible into groups equal in number to the number of equal length cords constituting said first plurality and having each length within each group depending from a common junction at the end of each length included in said first plurality, and successive pluralities of equal lengths of armored detonating cord, each of said successive pluralities being divisible into groups each of which depends from the end of a cord included in the preceding plurality, the ends of each cord in the final plurality being positioned at points equally spaced around the periphery of said annulus; and means



for igniting said point of initiation, whereby the resulting detonation waves are caused to travel along equal half-lengths of armored detonating cord to produce uniform detonation of said explosive annulus.

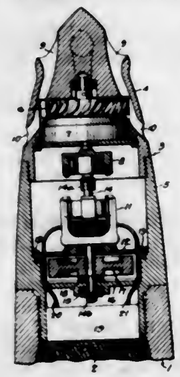
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3,170,493
## FLYWHEEL FOR GENERATOR IN ORDNANCE MISSILE

Lawrence B. Hellprin, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army

Filed May 18, 1951, Ser. No. 227,094
2 Claims. (Cl. 102—70.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a missile having a target responsive electronic fuse and an electric generator adapted to power said fuse, improved air-responsive means therein for driving said generator which will rapidly bring said generator up to operating speed and also provide sufficient generator speed to maintain said fuse sensitized during missile travel through the stratosphere, said improved means comprising in combination: an air driven turbine mounted in the nose of said missile, a gear train connected to said turbine to increase its effective starting torque, a flywheel mounted on the shaft of said generator, and a clutch coupling the output of said gear train to the shaft of said generator, said air driven turbine imparting a rapid initial rotation to said generator and flywheel by means of said gear train, and said flywheel maintaining the speed of said generator during missile travel through the stratosphere, said clutch being adapted to remove the load of said gear train from the shaft of said generator when the generator rotational power is being supplied by said flywheel.

3,170,494
## ACCELERATION SENSITIVE VARIABLE CLOCK

Frank H. Swaim, Silver Spring, Md., and Arthur Hausner, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army

Filed Mar. 17, 1955, Ser. No. 495,077
4 Claims. (Cl. 102—84)
(Granted under Title 35, U.S. Code (1952), sec. 266)



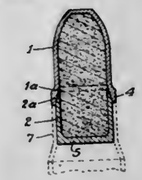
2. An arming device for an ordnance projectile fuze comprising: a frame, a first gear on a first shaft mounted for rotation on said frame, a spring biasing said gear in a first direction, said first gear being eccentrically balanced so that an acceleration applied to the frame in a predetermined direction will cause the gear to rotate against the spring bias, a second shaft mounted for rotation on said frame, a pinion attached to the second shaft with the teeth meshing with the teeth of the first gear, a second gear mounted for rotation on said second shaft, a one way clutch means for causing said second gear to turn with said second shaft when the first gear rotates in said first direction and for permitting said second shaft to rotate freely of said second gear when the first gear is rotated against said spring bias, and means for regulating the speed of rotation of said second gear.

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3,170,495
## DISINTEGRATING TRAINING AMMUNITION FOR FIREARMS

Werner Jungermann, Karlsruhe, Baden, Rudolf Niemann, Mulheim, Baden, Ludwig Sitz, Karlsruhe, Baden, and Willi Walther, Johlingen, Baden, Germany, assignors to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany

Filed Feb. 7, 1963, Ser. No. 256,919
Claims priority, application Germany, Mar. 17, 1962, J 21,459
2 Claims. (Cl. 102—91)

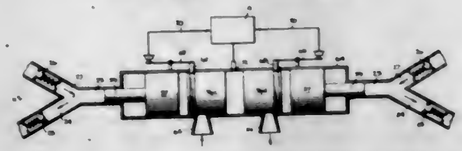



1. A projectile for practice ammunition adapted for firearms, said projectile comprising an elongated disintegrating bullet formed of two parts, one part consisting of a hollow cylindrical base member of uniform exterior diameter closed at one end and open at its other end, said last named other end being provided with an outer conical surface, the other part of said bullet consisting of a hollow nose member provided with a hollow cylindrical portion of the same exterior diameter as said base member, said hollow cylindrical portion having its

open end provided with an inner conical surface which engages tightly the outer conical surface on said hollow cylindrical base member, said inner conical surface being surrounded by an outwardly projecting cylindrical guide band formed integrally with said hollow nose member, said nose member having at its closed end a flat surface which merges with a circumferential convex wall into the cylindrical portion of said nose member, said united base member and nose member providing a single chamber therein having substantially the same diameter from the base member to the convex wall portion of said nose member, and a core formed of metal powder having the shape of said chamber contained within said chamber.

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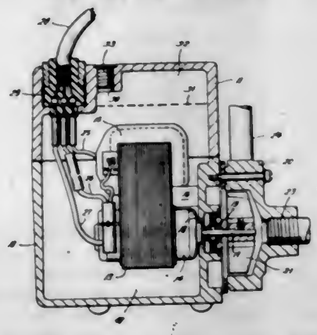
**3,170,406**
**FREE PISTON ENGINE**
**Raymond A. Robertson, White Hill Road, R.F.D. 1, Yorktown Heights, N.Y.**
**Filed Nov. 28, 1962, Ser. No. 240,523**
**15 Claims. (Cl. 103—54)**



1. A free piston type device comprising a chamber, a piston disposed in said chamber, means for urging said piston to move from one extreme position thereof in a predetermined direction within said chamber toward the other extreme position thereof, an additional piston disposed within said chamber spaced apart in said predetermined direction from said piston, means permanently disposed in the space between said piston and said additional piston for elastically transmitting at least a portion of the movement of said piston and said additional piston to one another, and means urging said additional piston in response to the movement thereof transmitted from said piston for providing a restoring force sufficient to return said additional piston and thereby said piston opposite to said predetermined direction toward said one extreme position.

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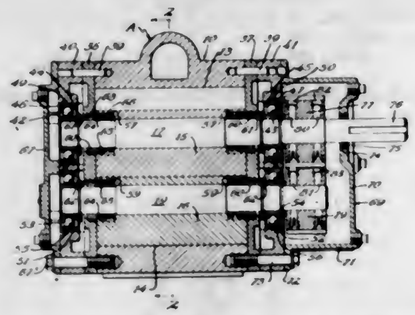
**3,170,407**
**MOTOR-PUMP UNIT**
**Damon B. Johnson, Oklahoma City, Okla., assignor to Little Giant Corporation, Oklahoma City, Okla., a corporation of Oklahoma**
**Filed Mar. 12, 1962, Ser. No. 178,932**
**3 Claims. (Cl. 103—87)**



1. A motor-pump unit having a motor housing and a pump housing adjacent thereto with an aperture therebetween, an electric motor mounted in the motor housing, said motor having a stator and a rotor and a stator coil all of which are spaced apart from the top and bottom of the motor housing, said rotor having a horizontal shaft extending through said aperture into said pump housing and carrying a pump impellor thereon in said pump housing, a seal around said shaft between said shaft and the aperture in the housing, said motor housing and pump housing being disposed side by side as distinct from one on top of the other, said motor housing including an uppermost portion asymmetric with respect to the axis of said shaft extending above the uppermost portion of said pump housing providing a chamber radially spaced from said shaft axis, said motor housing being totally closed, and oil in said motor housing extending from the bottom to a level above the top of the motor coil and stator but below the top of the housing leaving an air space therebetween in said chamber, the air in said chamber being at atmospheric pressure when said oil is cool, i.e. unheated by operation of the pump.

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**3,170,408**
**ROTARY PUMPS**
**Robert A. Hill and Howard M. Tomasko, Minneapolis, Minn., assignors to Waterous Company, St. Paul, Minn., a corporation of Minnesota**
**Original application Jan. 20, 1960, Ser. No. 3,551, now Patent No. 3,106,166, dated Oct. 8, 1963. Divided and this application July 16, 1962, Ser. No. 209,839**
**1 Claim. (Cl. 103—126)**

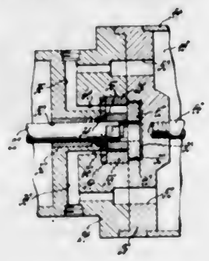


A rotary pump including a pair of lobed intermeshing rotors, rotor shafts in said rotors, a housing defining intersecting rotor chambers enclosing said rotors, said housing including a discharge outlet and a suction inlet on opposite sides of the intermeshing portions of said lobes, end plates closing the ends of said housing, means connected to said end plates supporting said shafts in parallel relation, flat ends on said rotors substantially in sealing relation with said end plates, said rotors being axially slidable to vary the spacing between the rotor ends and said end plates, said rotors having axial sockets in the ends thereof, the inner surfaces of said end plates including sockets encircling said shafts, said inner surfaces also including grooves leading from said discharge outlet side of said housing to said sockets, all of said sockets having a diameter smaller than the roots of the lobes of said rotors, a sealing ring in each of said sockets in said end plates, and sealed relative thereto, a cooperable sealing ring in each axial socket in said rotor and engaging the first named sealing rings with a running fit, means urging said cooperable sealing rings and first named sealing rings into engagement, said cooperable sealing rings being sealed relative to their shafts, whereby pressure in said sockets will assist in urging said sealing rings into engagement, and whereby axial movement of one rotor toward one end plate, increasing the distance between said one rotor and the other said end plate will permit fluid in the socket in the other said end plate to flow to the suction inlet side of the housing and lower the fluid pressure in the socket in said other end plate until the rotor is forced to return to a position centralized between said end plates.



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**3,170,409**
**ROTOR PUMP SEAL**
**Stewart B. McLeod, Southfield, and Robert E. Shelhart, Dearborn, Mich., assignors to Dura Corporation, Oak Park, Mich., a corporation of Michigan**
**Filed Apr. 1, 1963, Ser. No. 269,478**
**8 Claims. (Cl. 103—126)**



4. In a rotor gear pump including a fluid receptive chamber and having a pair of relatively rotatable gear-toothed fluid pumping rotor members provided in concentric and eccentric relation therein, with fluid transfer spaces provided therebetween in the course of their rotation and open on one axial side of said chamber,
sealing means, comprising;
an axially moveable disc provided on the side of said chamber on which said fluid transfer spaces are open,
and means magnetically attracting said disc to said rotors for rotation therewith and the closing of the spaces formed therebetween.

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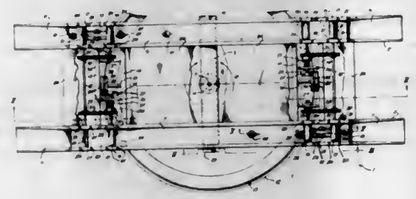
**3,170,410**
**APPARATUS AND METHOD FOR ALIGNING RAILROAD TRACKS**
**James W. Christoff, Minneapolis, Minn., assignor to Mannix Co. Ltd., Calgary, Alberta, Canada**
**Filed Apr. 7, 1961, Ser. No. 101,503**
**16 Claims. (Cl. 104—8)**



1. In the art of performing a ballasting operation on a section of railroad track by moving along the roadbed an under-track ballast handling device of the type constructed to pass beneath the ties while resting on said roadbed and to yield a levelled roadbed extending beyond the ends of the ties, said device elevating a span of said track with a forward portion of said elevated span immediately in advance of said device sloping upwardly thereto from the unworked roadbed and a rearward portion of said elevated span immediately in the rear of said device sloping downwardly away therefrom towards the levelled roadbed, the improvement which comprises the steps of:
(i) positioning track alignment apparatus on the track above and rearwardly of said under-track device, said apparatus comprising a rigid elongated boom, a front cart pivotally connected to said boom, a rear cart pivotally connected to a part of said boom remote from said first cart, said carts having rail engaging wheels for supporting said apparatus on the track rails for travel therealong, and a liner head assembly mounted on said boom intermediate said front and rear carts for movement relative to said boom transversely of the longitudinal extent thereof, said assembly including rail engaging means positioned to bear against a vertical surface of each rail to exert a transverse, track aligning force thereon,
(ii) so coupling said track alignment apparatus to said under-track device for travel therewith that said front cart is positioned on said elevated span generally above said under-track device, said rear cart is positioned on an unelevated portion of said track lying rearwardly of said rearward elevated span portion, and said liner head assembly is positioned to engage the rails of said track at a position in said rearward elevated span portion, and
(iii) controlling the transverse position of said liner head assembly relative to said boom whereby to exert transverse aligning forces on said rearward elevated span portion to align the same with said unelevated portion of the track as said elevated span portion is lowered into position resting on said levelled roadbed.

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**3,170,411**
**TURNTABLE FOR AUTOMOBILES AND THE LIKE**
**George H. Howard, Jackson, Mich.**
**(2611 E. 55th St., Huntington Park, Calif.)**
**Filed Sept. 3, 1963, Ser. No. 306,039**
**15 Claims. (Cl. 104—40)**



1. An automobile turntable unit powered by the mounted automobile's rear wheels, comprising in combination, a pair of trackways secured together in spaced parallel relationship for rotation as a unit, a pivot providing a pivot point of support for said unit substantially at the central point intermediate the ends and sides of said trackways, a circular supporting rail below said unit and concentric with said pivot point, means carried by said trackways adjacent each end thereof and in contact with said circular rail for stabilizing said turntable, turntable rotating power wheels mounted on and secured to said turntable at each end thereof and riding on said circular rail, at least one pair of drive rollers at the opposite ends of said trackways in position to be engaged and driven by the rear wheels of an automobile resting thereon, a shaft and drive means connecting the driven pair of said drive rollers to one of said power wheels for rotating the turntable unit on said circular rail, stop means on each of said trackways above said circular rail and adjacent a pair of said drive rollers, stop cooperating means on said circular rail below said stop means on said trackways at the predetermined stop positions for said turntable, said stop means, including a locking and unlocking means to operate with said stop cooperating means, the front wheels of said automobile being located on said trackways between the said stop means, and at least one of said automobile rear wheels being located in driving position on one pair of said drive rollers.

### 3,170,412
### CHAIR SWING DAMPER
Tony R. Sowder, Spokane, Wash., assignor to Riblet Tramway Company, Spokane, Wash., a corporation of Washington
Filed May 6, 1963, Ser. No. 278,198
5 Claims. (Cl. 104—173)

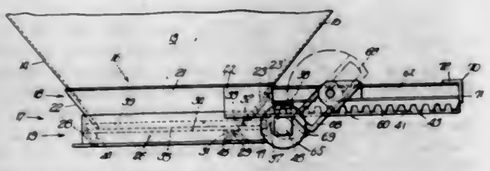


1. In a mono-cable tramway passenger chair including a hanger pivotally supported for swinging movements about the substantially horizontal axis of a single cable-supported non-rotatable spindle, a chair swinging movement damper, comprising:

means for converting mechanical energy to heat; and

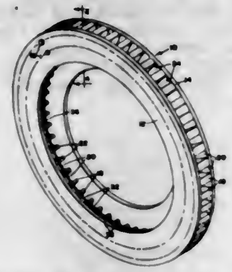
means connecting said first named means to said spindle and said chair, for effecting the conversion of swinging-movement-induced mechanical energy to heat.

### 3,170,413
### HOPPER OUTLET DISCHARGE STRUCTURE
George B. Darcy, Westmount, Quebec, Canada, assignor to Enterprise Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 5, 1962, Ser. No. 164,581
3 Claims. (Cl. 105—282)



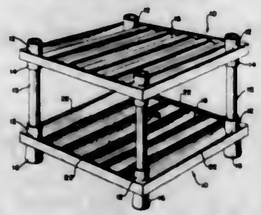
1. A hopper discharge opening closure structure for use in a railroad car and the like having an opening providing for the downward discharge of lading and comprising, in combination, a frame surrounding the opening and having a slotted opening at one end thereof, a sliding gate on said frame projecting through the slot for closing the opening, said end of the projecting portion of the gate being of substantially Z-shape to present an upwardly extending wall and a forwardly projecting flange lying at a higher level than the main body of the gate, runway members on said frame extending from the slotted opening adjacent the runway, brackets extending from the projecting flange of the gate to seat on the runway members, a shaft rotatably carried by the gate and extending beneath the brackets of the gate and mounted in the angle formed by the upwardly extending wall and the flange of the gate, and interengaging rack and pinions carried by the runways and shaft respectively for moving the gate by rotation of the shaft.

### 3,170,414
### WAFERING DIE STRUCTURE WITH SPLITTER
Roy E. Harrington and Murray W. Forth, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 28, 1961, Ser. No. 162,669
14 Claims. (Cl. 107—14)



7. Die structure for a wafering machine, comprising: an annulus having inner and outer peripheries and including a pair of coaxially spaced apart ring-like side members and a plurality of uniformly circumferentially spaced apart generally radial spacers arranged between the side members and rigid therewith to provide a like plurality of die openings, each spacer and opening having radially opposite inner and outer end portions respectively at the inner and outer peripheries of the annulus, the end portions of the openings at one periphery establishing material inlets and the end portions of the openings at the other periphery establishing material outlets; a divider element extending circumferentially of the annulus at said one periphery and engaging the end portions of the spacers at said one periphery and axially intermediate said side members to circumferentially bridge the die opening end portions at said one periphery, said element being of limited radial dimension in the area of said one periphery and said end portions of the spacers at said one periphery being cut away to accommodate and provide retaining means for removably receiving the divider element and retaining same in place in recessed relation to said end portions.

### 3,170,415
### ARCTIC STAND
Eli Svilokos, 51 Riverdale Ave., Buffalo, N.Y.
Filed May 17, 1963, Ser. No. 281,254
1 Claim. (Cl. 108—27)

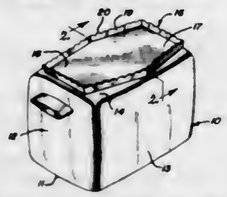


A storage device for overshoes and the like, comprising, a plurality of shelf units disposed in vertically spaced and registered relation, each of said shelf units being of rectangular form and having an upstanding side wall extending therearound, a floor joined to and filling the area bounded by said side wall, said floor being of corrugated form with the corrugations thereof extending between opposite portions of said side wall, the corrugations of said floor defining alternate peaks and valleys and being of heights relative to said side wall such that the peaks are disposed below the upper edges of said opposite portions of the side wall and the valleys are disposed above the lower edges of said opposite portions of the side wall, each shelf unit also having a socket assembly at each corner thereof, each socket assembly having an upper socket portion projecting above said side wall and a lower socket portion projecting below said side wall,

and leg members joining said shelf units and maintaining the same in the aforesaid vertically spaced and registered disposition, said leg members being received at opposite ends thereof in opposed socket portions of juxtaposed shelf units.

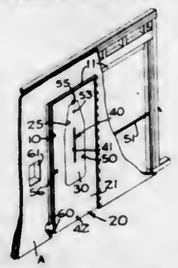


### 3,170,416
### TOASTER COVER AND SERVING TRAY DEVICE
Stephen Gerlich, Chicago, Ill.
(2629 W. 98th St., Evergreen Park, Ill.)
Filed Apr. 3, 1963, Ser. No. 270,277
4 Claims. (Cl. 108—42)



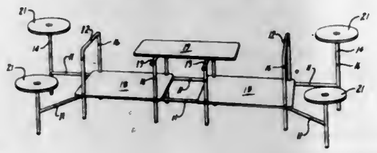
1. A combination storage cover and serving tray device for a toaster having a plurality of bread-receiving slots in the top wall of the casing thereof, comprising, a plate-like base mountable on the top wall of the toaster casing, said base having a length greater than its width and an area in plan sufficiently large enough to cover the bread-receiving slots when centered on the top wall of the toaster casing, locating means operatively engageable with the top wall structure defining the bread-receiving slots to substantially prevent relative transverse and longitudinal movement between said locating means and the top wall of the toaster casing when mounted thereon, and adjustable means for connecting said locating means to the normally lowermost side of said base, said adjustable means permitting said base and said locating means to slide longitudinally with respect to each other to a predetermined relative position whereby said base will be centered on the top wall of the toaster casing when said projections are inserted in the bread-receiving slots, said base and locating means being dismountable from the toaster casing and said base being capable of supporting articles thereon so as to be usable as a serving tray for the articles.

### 3,170,417
### COMBINATION DOOR AND IRONING BOARD
James E. Avidiya, 15110 Rose Mar Ave., San Jose, Calif.
Filed Dec. 9, 1963, Ser. No. 329,121
2 Claims. (Cl. 108—42)



1. In combination, a wall construction, a door mounted on said wall construction for sliding movement, said door being formed with an opening therethrough conforming to the contour of an ironing board, an ironing board, means interconnecting said door and said iron board for supporting said ironing board for pivotal movement relative to said door from an upright retracted position within said opening to alternate extended horizontal positions removed from said opening for providing reversible ironing surfaces in respective adjacent areas, and means interengaging said door and said ironing board for retaining said ironing board in either of the extended horizontal positions.

### 3,170,418
### DISPLAY APPARATUS AND SYSTEM
Rolf J. Gruenstein, 1639 Lewiston Drive, Sunnyvale, Calif.
Filed Aug. 9, 1963, Ser. No. 301,072
8 Claims. (Cl. 108—101)

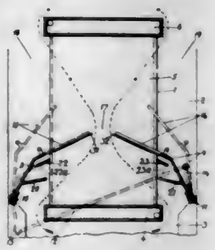


1. In a display system, a plurality of frame parts, means removably securing the frame parts into a unitary assembly, a plurality of display platforms mounted upon the frame parts, at least one of the frame parts being in the form of an H-frame, the H-frame being comprised of a pair of spaced parallel tubular members, the tubular members having holes intermediate the ends thereof, a lock rod extending through the holes in the tubular member, a cross tubular member mounted coaxially on the lock rod and adapted to have its ends engage the spaced parallel members, and locking means disposed within the spaced parallel members and engaging the lock rod to lock the spaced parallel members and the cross member into a unitary rigid H-frame, said lock rod being provided with cut-out portions forming surfaces which are inclined with respect to the spaced parallel members, the locking means consisting of lock members, the lock members being formed with elongate slots having inclined faces on opposite sides of the slot and engaging the inclined surfaces of the lock rod and means mounted in the lock members and engaging the lock rod for retaining the lock members on the lock rod in a predetermined position to lock the lock rod into said first and second frame members.

### 3,170,419
### CONTROL DEVICE FOR FURNACE GASES IN HOT WATER BOILERS
John Franzén, Askersund, Sweden, assignor to John Axel Franzén, Askersund, Sweden
Filed Feb. 13, 1963, Ser. No. 258,247
Claims priority, application Sweden, Mar. 15, 1962, 2,872/62
6 Claims. (Cl. 110—97)

1. In a heat exchange assembly, wall means defining a chamber, a furnace, means for passing hot furnace gases through the chamber, a water heating element located within the chamber for supplying hot circulatory water for heating rooms and like purposes, and control means within the chamber for the hot furnace gases, said water heating element including a plurality of broadly flattened tubes having opposite ends, said tubes being arranged in spaced apart parallel relationship and being of a width less than the distance between opposite wall means of the chamber for providing spaces within the chamber at each end of the heating element, water dividing and water collecting boxes connected to the opposite ends of the

tubes, said control means including a deflector plate mounted in the space in the chamber at each end of the heating element intermediate said boxes and essentially disposed in the spaces between the tubes so that gases passing through the chamber are caused to move inwardly of the tubes adjacent one of the boxes, then axially of the



heating element sweeping the surfaces of the tubes in the spaces between the tubes and thence outwardly of the tubes adjacent the other box, and means movably mounting said plates in said spaces in the chamber for adjusting the cross-sectional area of the axial path of the gases in the heating element.

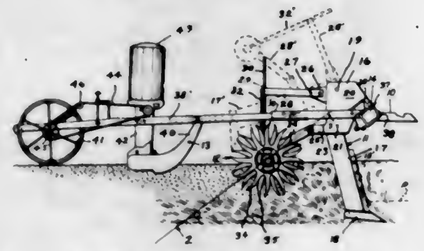
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**3,170,420**
**REFRACTORY BRICK ROOF PATCH ASSEMBLY**
**Francis C. Palacio, Conshohocken, Pa., assignor to E. J. Lavino and Company, Philadelphia, Pa., a corporation of Delaware**
**Filed Aug. 20, 1963, Ser. No. 303,266**
**11 Claims. (Cl. 110—99)**



1. A refractory brick roof patch assembly comprising a pair of bodies of refractory material of similar configuration, each of said bodies including a longitudinally extending cutout portion formed in one of the outwardly directed faces thereof, said bodies being disposed in closely spaced relationship to one another, casing means disposed in surrounding relationship with said bodies, means for retaining said casing means in operative position with respect to said bodies, said casing means comprising a pair of identical metallic portions, each of said portions including opposite longitudinally extending edges, each of said portions including a longitudinally extending offset portion adjacent one of said edges, said offset portion of each of said casing portions fitting within the cutout portion of one of said bodies, said offset portion also receiving the other longitudinal edge portion of the other of said casing portions so as to overlie said offset portion whereby the assembly defines a substantially rectangular cross-sectional configuration with flat outer surfaces, said one edge portion of each of said metallic portions being completely protected by the other metallic portion from direct exposure to the heat of a furnace, the other longitudinal edge portion of each of said metallic portions being at least partially protected by the other metallic portion from direct exposure to the heat of a furnace.

**3,170,421**
**SUBMULCHER AND PLANTER IN COMBINATION THEREWITH**
**Leonard Norris, Reinbeck, and Eric M. McElhinney, Jesup, Iowa**
**Filed Aug. 23, 1961, Ser. No. 133,389**
**4 Claims. (Cl. 111—1)**



1. In an agricultural machine,
a transversely disposed tool bar adapted to be attached to a tractor,
a plurality of narrow, generally planar, vertically extending subsoiler blades selectively mounted at spaced positions on said tool bar,
a flat, generally horizontal chisel attached to the lower end of each said subsoiler blade for breaking up the subsoil strata at a point well below the topsoil strata,
rolling cultivator assemblies each including a plurality of axially spaced, relatively rotatable, toothed rotary hoe wheels,
means yieldably mounting a rolling cultivator assembly on each of said subsoiler blades,
each of said rolling cultivator assemblies being positioned rearwardly of and in alignment with a respective one of said subsoiler blades and disposed above the plane of operation of said respective chisels for cultivating the topsoil strata above said subsoil strata,
and planter units attached to said tool bar in trailing relation to each of said rolling cultivator assemblies,
said planter units each including a planter runner aligned with the groove formed by a said subsoiler blade and disposed in the topsoil strata above the lower level of operation of said rolling cultivator assemblies for depositing seed or the like therein.

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**3,170,422**
**SOIL AERATOR AND CONDITIONER**
**Marvin L. Gregory, 490 S. Lee St., Lakewood, Colo.**
**Filed Aug. 15, 1963, Ser. No. 302,236**
**1 Claim. (Cl. 111—96)**



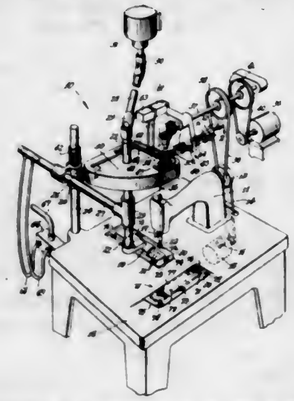
A hand and foot operated soil aeration and conditioning tool for poking holes in sod and soil and for the application of loose granular materials into the poked holes comprising a support member, a cross handle extending laterally from said support adjacent to the top thereof,



a reciprocally movable probe supported by said support member having a lower sharpened end for soil engagement, a handle on said probe extending laterally from said support in position adjacent the cross handle of said support member when said probe and handle is in the locked position, a loose materials storage tube of translucent material adjacent said support member, a transition piece communicating with said storage tube for the passage of such loose materials, said transition piece further providing a loose materials valve opening in position aligned with said reciprocating probe, a foot pedal adjacent said transition piece at the lower end of said support member and in radial position with the cross handle of said support member of the application of operator applied foot pressure, said elements being cooperatively arranged whereby the proble is, when extended, useful for poking said holes and for simultaneously closing the passage through said valve opening, and, when retracted, permits the egress of said loose materials out of said storage tube, transition piece and valve opening and into said poked holes, and a lock element on said support member for selectively holding said probe in the extended position whereby thrust forces exerted against said support member are transmitted to said extended probe for poking the desired holes, said handle, cross handle and foot pedal being cooperatively placed whereby an operator's hand may be conveniently placed on one said cross handle with a foot being selectively applied to the foot pedal whereby the desirable reciprocal movement of said probe as energized by the operator's other hand on said probe handle can be resisted selectively by the cross handle of said support member and by the foot pedal thereon.

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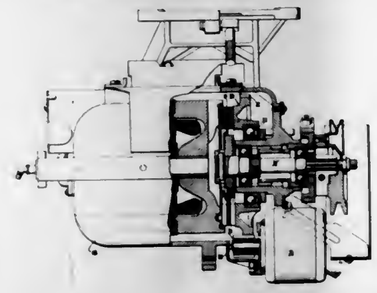
**3,170,423**
**AUTOMATIC GUIDING APPARATUS**
**Thomas F. Heneby, Bethel, Conn., assignor to Ernest M. Junkins, Monroe, Conn.**
**Filed Apr. 24, 1961, Ser. No. 105,193**
**13 Claims. (Cl. 112—2)**



1. An apparatus for guiding work past a work station along a predetermined path including an arcuate length comprising a work holder adapted to hold work, means supporting the work holder for free lateral and longitudinal and rotational movement in a plane, said work station including a needle, first means for moving the work holder past the needle, means for sensing and producing a signal indicative of the approach of the arcuate length of the path to the needle, second means independent of the first work holder moving means adapted to be connected to a source of external energy for moving the work holder to have the work pivot about the needle and means connecting the sensing means to the second work holder moving means for moving the work holder upon receipt of a signal from the sensing means with the work holder supporting means permitting and accommodating any lateral and longitudinal movement of the work holder as it pivots.

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**3,170,424**
**POSITIONAL CONTROL SYSTEMS**
**Harry B. Fuge, Somerville, N.J., assignor to The Singer Company, a corporation of New Jersey**
**Filed July 22, 1952, Ser. No. 300,285**
**8 Claims. (Cl. 112—219)**



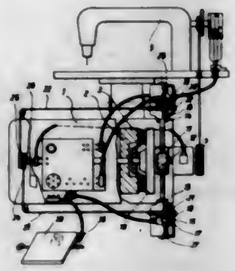
1. A control mechanism for the stopping of electrically driven sewing machines in one or more predetermined positions of the needle bar, comprising a motor (17) for driving the sewing machine, brake means (15) for stopping the sewing machine, manually controlled means (18) for operatively connecting and disconnecting the motor to and from the sewing machine, first and second electrical circuits, a switch (36) connected in the first circuit and operated by the manually controlled means so as to permit the energization of the first circuit when the motor is operatively disconnected from the machine, time-delay relay means (42) in the first circuit responsive after a time delay initiated by the operation of the switch to prepare a second circuit which, when closed, applies the braking means, and the first circuit including means (48) connected with positively operated parts of the sewing machine and operative in response to predetermined angular positions of the parts for closing the second circuit to brake the machine.

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**3,170,425**
**ELECTRIC DRIVE FOR SEWING MACHINES**
**Ernst Becker, Darmstadt, Germany, assignor to Firma Quick-Rotan Becker & Co.**
**Filed Aug. 14, 1962, Ser. No. 216,904**
**Claims priority, application Germany, Aug. 16, 1961, Q 665**
**16 Claims. (Cl. 112—220)**

1. Drive mechanism for a sewing machine comprising, a motor including a drive shaft having opposite output ends, a primary high speed drive including a rotatable flywheel mounted on one of the output ends of the drive shaft of said motor and a rotatable clutch plate engageable by said flywheel and a rotatable driving pulley interconnected with said clutch plate and a rotatable brake disc/driving plate, the brake disc/driving plate and flywheel and clutch plate of said primary high speed drive being coaxial, the clutch plate of said primary high speed drive being axially shiftable between the flywheel and brake disc/driving plate thereof, a worm wheel-worm-worm shaft subassembly for driving the brake disc/driving plate of said primary high speed drive, a pair of auxiliary drives including a reduced speed drive and a slow speed drive, said reduced speed drive constituted by a rotatable friction disc on the worm shaft of said worm wheel-worm-worm shaft subassembly and a rotatable magnetic clutch engageable with the friction disc and driven by a

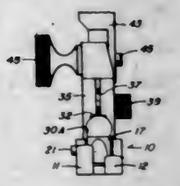
drive from the opposite output end of the drive shaft of said motor and a stationary magnetic brake, the magnetic clutch and friction disc and magnetic brake of said reduced speed drive being coaxial, the friction disc of said reduced speed drive being axially shiftable between the magnetic clutch and magnetic brake thereof for selectively rotating the worm shaft in a certain direction of rotation, said slow speed drive constituted by a rotatable friction disc on the worm shaft of said worm wheel-worm-worm shaft subassembly and a rotatable magnetic clutch engageable with the friction disc and driven by a drive from the said opposite output end of the drive



shaft of said motor and a stationary magnetic brake, the magnetic clutch and friction disc and magnetic brake of said slow speed drive being coaxial, the friction disc of said slow speed drive being axially shiftable between the magnetic clutch and magnetic brake thereof for selectively rotating the worm shaft in a direction of rotation opposite to said certain direction of rotation, the said opposite output end of the drive shaft of said motor being a common power output to said reduced and slow speed drives for driving the worm shaft successively in opposite directions of rotation through the respective auxiliary drives of said pair thereof.

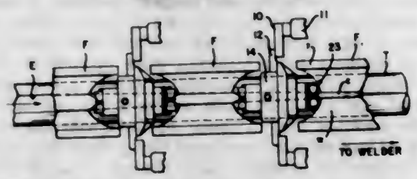
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**3,170,426**
**FOUR-WAY ADJUSTABLE SEWING MACHINE FOOT**
**Angelo Micale, 995 Nassau St., North Brunswick, N.J.**
**Filed Oct. 29, 1963, Ser. No. 319,806**
**2 Claims. (Cl. 112—240)**



1. A sewing machine foot of the character described comprising a foot proper with toes spaced to receive a needle, a block pivotally mounted on the foot proper, a rod, a releasable fastener securing the forward portion of the rod to the block, means permitting turning of said block and foot proper to the right or left about said releasable fastener relative to said rod, the latter extending rearwardly beyond the foot proper, a connector slidably mounting said rod so that the foot proper, the block, and the rod, may be moved forwards and backwards relative to the connector, and releasable means for fastening the connector at a desired position of the rod.

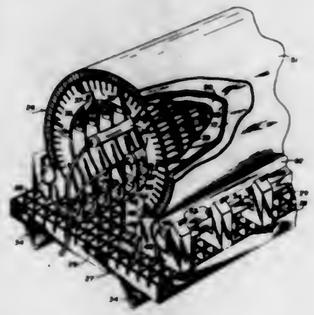
**3,170,427**
**STRIP EDGE GUIDE DEVICE FOR TUBE MILLS**
**Lewis H. Ruple, Perrysburg, and Richard L. Dreier, Toledo, Ohio, assignors to Abbey Etna Machine Company, Perrysburg, Ohio, a corporation of Ohio**
**Filed Dec. 3, 1962, Ser. No. 242,010**
**3 Claims. (Cl. 113—33)**




1. In a tube mill in which a sheet metal ribbon is gradually formed into a tube and the edges thereof are seam welded and in which the final forming is effected by a series of fin roll passes which are spaced from each other and are arranged adjacent the welder, the improvement comprising edge guide devices for the ribbon substantially occupying the space between adjacent fin roll passes and between the last fin roll pass and the welding point and including a set of rollers along which the edges of the ribbon travel, said rollers arranged in closely spaced axially parallel relationship to one another, each of said rollers consisting of side portions which taper outwardly from an intermediate portion, the edge guide devices containing the ribbon edges and militating against distortion thereof from the time the ribbon enters the first fin roll pass until it reaches the welding point.

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**3,170,428**
**FIXTURE FOR MAKING HONEYCOMB PANEL**
**Hartley R. Herman, La Mesa, and Benjamin R. Alsobrook, Chula Vista, Calif., assignors to Rohr Corporation, a corporation of California**
**Original application Nov. 26, 1954, Ser. No. 471,394, now Patent No. 2,944,594, dated July 12, 1960. Divided and this application July 11, 1960, Ser. No. 48,783**
**7 Claims. (Cl. 113—99)**



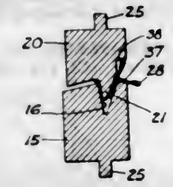
1. A lattice fixture adapted to support a honeycomb sandwich composed of a cellular core, a first skin in contact with the lower end of said core and a second skin in contact with the upper end of said core while the skins are brazed to the core, said fixture comprising a first set of spaced apart thin metal strips; a second set of spaced apart thin metal strips transverse to and interlocked with the strips of said first set; said strips of both sets having the bottom edges thereof disposed in a common plane; a rigid plate secured to the top edges of a plurality of the strips of both sets, the top face of said plate being shaped to the contour to which the sandwich is deformed in response to the application of pressure to the top face of said second skin; and at least one rigid elongated member



secured at the center only thereof to the bottom edges of the lattice comprising the strips of both sets to support the same and to restrain the strips from shifting.

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**3,170,429**
**METHOD OF FORMING SHEET METAL**
**Lawrence L. Hock, Snyder, N.Y., assignor to Niagara Machine & Tool Works, Buffalo, N.Y.**
**Original application June 23, 1961, Ser. No. 119,091, now Patent No. 3,135,313, dated June 2, 1964. Divided and this application Feb. 17, 1964, Ser. No. 354,196**
**1 Claim. (Cl. 113—116)**

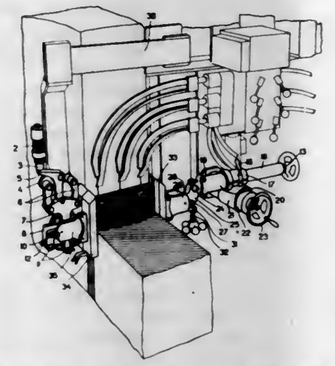



In a method of fabricating a sheet metal article of generally T-shaped cross section with return bent edges by repeated strokes of a pair of forming die members having a V-groove in one member and a generally complementary ridge formation in the other with the dies arranged so that in closed position there is substantially a metal thickness space between the rear surfaces of said groove and ridge formation and a substantially greater space at the front surfaces thereof, the steps of forming a V adjacent to a margin of a sheet metal workpiece by bending the same between said V-groove and ridge formation, flattening the same to return bent form between said front surfaces, forming a second V adjacent to the opposite margin of said workpiece in like manner to the first step, simultaneously forming a Z in the medial portion of the workpiece by cooperation of the apex of said ridge formation and the rear edge surface of said V-groove and flattening said second formed V between the surfaces of said members rearwardly of said groove and ridge formation, and finally flattening one of the angles of said Z-formation between the front surfaces of said groove and ridge formation to produce an article of T-shaped cross section.

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**3,170,430**
**INSTALLATION FOR WELDING OR CASTING UNDER MOLTEN SLAG COOLED CLOSURE PLATES**
**Michal Bielák, Bratislava, Czechoslovakia, assignor to Výskumný ústav zváračský MHD., Bratislava, Czechoslovakia**
**Filed Jan. 24, 1962, Ser. No. 168,377**
**Claims priority, application Czechoslovakia, Feb. 3, 1961, PV 617/61**
**9 Claims. (Cl. 113—136)**

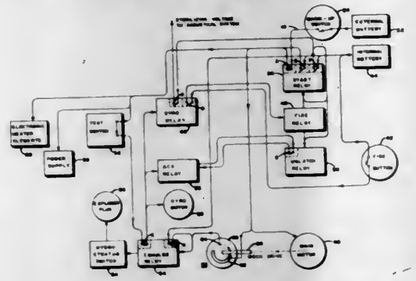
1. In an apparatus for welding under molten slag in a vertical welding gap between work-pieces and having cooled closure plates extending across the gap at the front and back of the work-pieces for containing the molten slag in the gap; front and back pressure applying devices for holding the closure plates tightly against the work-pieces, each of said devices comprising an actuating arm, means mounting said arm for generally horizontal movement toward and away from the work-pieces, a horizontal pivot on said arm, a lever swingable on said pivot relative to said arm, pressure exerting rails slidably mounted on said lever for generally horizontal movement relative to the latter, said rails having arcuate surfaces at one end for bearing against the related closure plates, a beam pivoted on said arm to swing relative to the latter about a vertical axis and bearing against the other ends of said rails, means for exerting a force urging said arm toward the work-pieces whereby said beam uniformly transmits said force to said rails for application by the latter to the related closure plates, and adjustable screw means



connected to said arm and lever for angularly displacing the latter and said rails relative to said arm about said horizontal pivot, thereby to vertically vary the locations of the contacts of said arcuate surfaces of the rails with the related closure plates.

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**3,170,431**
**TORPEDO ENABLING SYSTEM**
**Herbert D. Norviel, Billerica, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 2, 1961, Ser. No. 149,786**
**2 Claims. (Cl. 114—23)**



1. An acoustic homing torpedo adapted to have various electrical components therein energized, while the torpedo is in a launching tube and during a warm-up period of operation, by a warm-up circuit contained within said torpedo and connected through a control cable extending to the torpedo from an externally-located warm-up switch and battery, said torpedo comprising, in combination:

(*a*) an internal battery;
(*b*) a fire button;
(*c*) a gyro relay having normally-open switch means;
(*d*) a fire relay;
(*e*) a start relay having normally-closed switch means, first normally-open switch means, second normally-open switch means, and being connected to said fire relay for energization upon operation of said fire relay;
(*f*) a main motor for torpedo propulsion;
(*g*) means operative following energization of said main motor and resultant forward movement of said torpedo to sever said control cable;
(*h*) said warm-up circuit including said start relay normally-closed switch means;

(*i*) said gyro relay being connected for energization upon closure of said warm-up switch, whereby said gyro relay normally-open switch means closes only upon initiation of said warm-up period;

(*j*) said internal battery, fire button, gyro relay normally-open switch means and fire relay being series-connected, whereby said fire relay becomes energized upon operation of said fire button provided said warm-up switch has first been closed;

(*k*) said start relay being connected to said fire relay for start relay energization upon operation of said fire relay as a result of fire button operation following warm-up switch closure, said start relay having a hold-in circuit including said start relay second normally-open switch means;

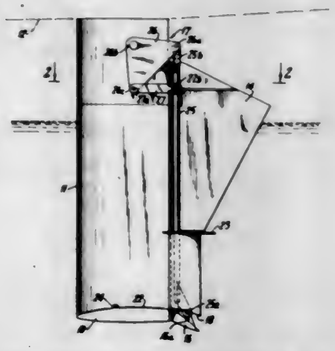
(*l*) said warm-up circuit also being connected through said start relay first normally-open switch means to said internal battery;

(*m*) energization of said start relay, upon operation of said fire button following closure of said warm-up switch, effecting switch-over of warm-up circuit energization from said external battery to said internal battery; and

(*n*) said internal battery, start relay normally-open switch means and said main motor being series-connected, whereby said main motor starts to run upon operation of said fire button provided said warm-up switch has first been closed.

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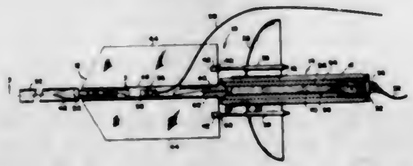
**3,170,432**
**MECHANICAL CONTROL FOR SUBMERGED HYDROFOIL SYSTEMS**
**John K. Roper, Stony Brook, N.Y., assignor to Atlantic Hydrofoils, Inc., Stony Brook, N.Y., a corporation of New York**
**Filed Apr. 14, 1964, Ser. No. 359,563**
**10 Claims. (Cl. 114—66.5)**



1. In combination with a water borne vessel, a passive self-compensating hydrofoil control system comprising a substantially vertical streamlined hydrofoil strut connected at its upper end to the hull of the vessel, said strut having a central fore-to-aft axis; a hydrofoil plane connected to the lower end of said strut and operable to maintain a hydrodynamic lift of the vessel to a minimum submergence of the hydrofoil plane below the free water surface at cruise speed of the vessel, said hydrofoil plane being formed at least in part by a horizontal flap pivotable relative to the strut; a vertical flap; means securing the vertical flap to said strut for pivotal movements about a vertical axis offset to one side of said fore-to-aft axis and from which said vertical flap extends rearwardly, the profile of said vertical flap forming a distinct discontinuity with the profile of said vertical strut, whereby one side of said vertical flap partly defines an air pocket when the opposite side of said vertical flap is exposed to the water flow, said vertical flap terminating at its lower end at a height above said hydrofoil plane which is greater than said minimum submergence; and mechanical linkage means interconnecting both of said pivotal flaps and operable, on application of unbalanced external forces to one flap causing it to pivot, to apply to the other flap a force acting to move said other flap toward a position for equalizing the forces applied to both flaps.

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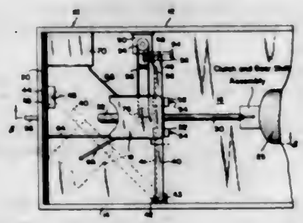
**3,170,433**
**IMBEDMENT ANCHOR ASSEMBLY**
**John T. Gardiner, Monrovia, Calif., assignor to Pneumo-Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware**
**Filed Jan. 10, 1963, Ser. No. 250,589**
**4 Claims. (Cl. 114—206)**



1. An imbedment anchor comprising a projectile assembly including an anchor body having leading and trailing ends and a separable body extension secured to and extending rearwardly from the trailing end of said anchor body, a recoil assembly mated with said body extension and separable therefrom, the projectile assembly and recoil assembly normally being in such assembled relation, a first cable extending from said anchor body, a second cable extending from said recoil assembly for recovering the same, means for forcibly separating said recoil assembly from said projectile assembly to propel the latter from the former for imbedment of the anchor body and thereafter forcibly separating said body extension from said anchor body.

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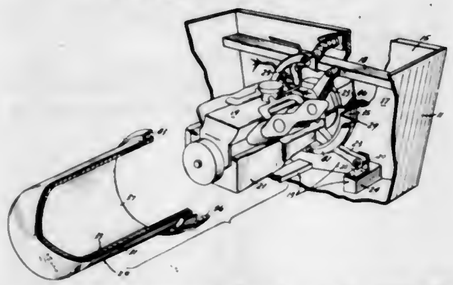
**3,170,434**
**AUXILIARY POWER UNIT FOR INBOARD CRUISERS**
**John W. Ewing, 5112 41st Ave., Hyattsville, Md.**
**Filed Apr. 15, 1963, Ser. No. 272,951**
**7 Claims. (Cl. 115—5)**



1. A boat with an auxiliary power unit comprising a boat hull having an inboard engine with a propeller shaft connected thereto, and a portable, light weight self powered outboard-type auxiliary motor, support means within said hull on which said auxiliary motor is mounted so that it can be moved from a stored inactive position along a predetermined path to an active position, and having a vertical stub shaft aligned with the propeller shaft, power transmission means for mechanically connecting the propeller and motor power shaft, the propeller shaft being disengageable from the inboard engine to allow free rotation thereof, whereby the auxiliary motor can be connected mechanically to the propeller shaft to drive it freely of the inboard engine.



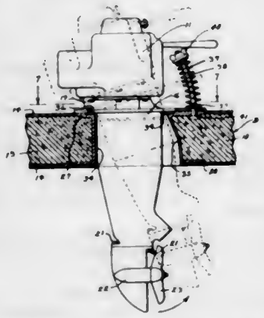
**3,170,435**
**ENGINE SOUNDPROOFING**
**Harry Najimian, Jr., Lake Bluff, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware**
**Filed May 1, 1962, Ser. No. 191,486**
**6 Claims. (Cl. 115—34)**



5. The combination in a boat of support means including a generally vertical portion adjacent the stern of said boat, an internal combustion engine mounted on said support means immediately adjacent to and at least partially on said vertical portion and in otherwise unsupported forwardly extending relation to said vertical portion, and a rigid housing having an exterior of generally curvilinear configuration throughout, and mounted on said vertical portion of said support means in generally enclosing, spaced relation to said engine, said housing having its inner surface lined with a sound absorbing material and being mounted on said vertical portion of said support means by means for excluding the transmission of vibration therebetween.

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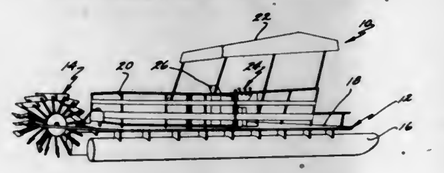
**3,170,436**
**BOAT FOR SPORT OR RECREATION**
**Simon Deutsch, 8455 W. Bradley Road, Milwaukee, Wis.**
**Filed July 2, 1963, Ser. No. 292,398**
**1 Claim. (Cl. 115—41)**

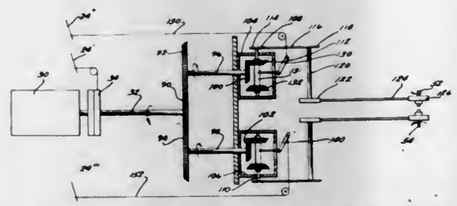


A boat comprising a light weight, shallow draft hull provided with a vertical opening intermediate its ends and extending completely therethrough, a mounting sleeve extending through said opening and rigidly connected with the hull and forming a part thereof, and a de-mountable engine including a vertically disposed drive shaft and an adaptor enclosing the drive shaft and rigidly connected with the engine and extending entirely through the sleeve, means pivotally securing the adaptor to the upper and forward end of the sleeve to permit tilting movement of the engine and adaptor, a curved bolt rigidly carried by the upper rear end of the sleeve and extending through a part of the adaptor, an expansion spring coiled around the bolt and engaging the upper face of a part of the adaptor, and a nut threaded on the upper end of the bolt and forming a stop for the upper end of the spring whereby the spring normally exerts a pressure on the adaptor to hold the same against the sleeve and against tilting movement.

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**3,170,437**
**PADDLE DRIVE FOR BOATS**
**Orval L. Kilmer, 5870 28th St. SE., Grand Rapids, Mich.**
**Filed Aug. 30, 1962, Ser. No. 220,475**
**2 Claims. (Cl. 115—49)**

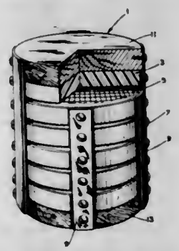




1. A paddle wheel boat comprising: a hull; a pair of adjacent paddle wheels at the rear of said boat and mounted on a common frame; an engine forming a power plant means in said boat; separate drive means from said power plant means to each of said paddle wheels; control means for each drive means to enable independent wheel operation for maximum maneuverability; both of said wheels being mounted to a common bracket; said bracket being pivotally mounted to and extending from the rear of said boat; and extensible-contractable power motor means between a portion of said bracket rearwardly of its pivotal mount and said boat, to raise and lower said bracket and both wheels simultaneously with respect to said boat while allowing simultaneous driving of selected ones of said paddles.

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**3,170,438**
**DEVICE FOR PROLONGED WATER MARKING**
**Coleman Nadler and Harry T. Haefelin, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Sept. 30, 1963, Ser. No. 312,796**
**3 Claims. (Cl. 116—124)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



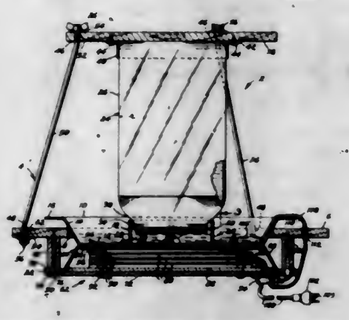
1. A dye marker device for air-sea survival usage comprising:

(*a*) a plurality of cakes consisting of polyvinyl alcohol, a highly water soluble dye, glycerine and borax in proper proportion to bond the alcohol and dye together and to control the rate of emission of the dye when exposed to sea water;

(*b*) a packet for supporting the cakes in the water;
(*c*) means for maintaining the cakes a predetermined distance apart in the packet and for providing simultaneous exposure of substantial surface areas of each cake to the water.

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**3,170,439**
**WINTER BIRD WATERING STATION AND BATH**
Herbert Juenger, Ketchum Ave., Mountainville, N.Y.
Filed Aug. 9, 1963, Ser. No. 301,124
10 Claims. (Cl. 119—73)

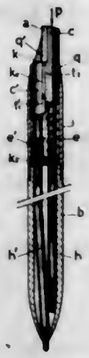


1. A bird watering station and bath, comprising: a base plate having a central opening therethrough, said opening being spaced inwardly from the periphery of said plate to provide a bird perch; a tray disposed on said base plate, and including a frusto-conical portion received within and extending through said opening; a supporting cylinder disposed to rest upon and secured to said tray, said cylinder having a smaller diameter than that of said tray and being adapted to support an inverted liquid supply container; and heater means spaced from and secured to the underside of said base plate to confront said central opening, the bottom of said tray being in direct engagement over a major portion of the area thereof with said heater means, said heater means including: an inverted pan supported below said base plate in spaced relationship; a cover plate secured to the lower end of said pan, and together with said pan defining a chamber; and at least one electrical heating element mounted within said chamber.

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**3,170,440**
**CONTROL DEVICE WITH TWO PUSH BUTTONS FOR TWO COLOURS BALL POINT PENS**
Francis Levoia, Bregnasona, Lugano, Switzerland, assignor to Real Patentauswertungs Anstalt, Vaduz, Liechtenstein
Filed Apr. 22, 1963, Ser. No. 274,528
Claims priority, application Switzerland, Mar. 6, 1963, 2,878/63
8 Claims. (Cl. 120—42.13)

1. A casing for a ball point pen comprising, in combination:
(*a*) a barrel having an axis and formed with an axially elongated cavity;
(*b*) a divider member secured in said cavity against axial movement, said divider member extending in an axial plane and dividing an axial section of said cavity into two portions, said divider member including two axially elongated members of resilient material, respective portions of said elongated members being resiliently movable toward and away from each other in said plane transversely of said axis;
(*c*) locking means secured on said divider member and projecting therefrom in said plane in a direction transverse of said axis, said locking means being resiliently movable in said plane toward and away from a locking position, said locking means including two locking members respectively secured on said portions of said elongated members for movement toward and away from each other, said locking members being remote from each other when said locking means are in said locking position;
(*d*) two actuator members axially slidable in respective ones of said portions between respective operative and inoperative positions;
(*e*) engagement means fixedly fastened on each actuator member for axially abutting engagement with said locking means when said locking means is in said locking position thereof;



(*f*) lock releasing means fixedly fastened on each actuator member and engageable with said locking means for moving the same in said transverse direction away from said locking position thereof when said actuator member moves from said inoperative toward said operative position thereof; and
(*g*) resilient means permanently urging each actuator member to move from said operative toward said inoperative position thereof, said engagement means axially abutting against said locking means under the urging of said resilient means when said actuator member is in the operative position thereof and said locking means is in said locking position.

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**3,170,441**
**CONTROL DEVICE WITH TWO PUSH BUTTONS FOR TWO COLOURS BALL POINT PENS**
Francis Levoia, Bregnasona, Lugano, Switzerland, assignor to Real Patentauswertungs, Anstalt, Vaduz, Liechtenstein
Filed Apr. 22, 1963, Ser. No. 274,529
Claims priority, application Switzerland, Mar. 6, 1963, 2,879/63
7 Claims. (Cl. 120—42.13)

1. A casing for a ball point pen comprising, in combination:
(*a*) a barrel having an axis and formed with an axially elongated cavity;
(*b*) a divider member secured in said cavity against axial movement, said divider member extending in an axial plane and dividing an axial section of said cavity into two portions, said divider member including two axially elongated members of resilient material, respective portions of said elongated members being resiliently movable toward and away from each other in said plane transversely of said axis;
(*c*) locking means secured on said divider member and projecting therefrom in said plane in a direction transverse of said axis, said locking means being resiliently movable in said plane toward and away from a locking position, said locking means including two locking members respectively secured on said



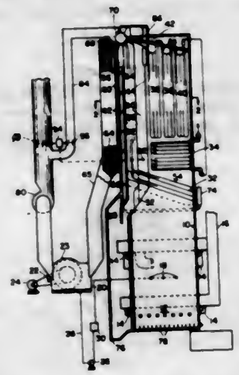
portions of said elongated members for movement toward and away from each other, said locking members being adjacent each other when said locking means are in said locking position;
(*d*) two actuator members axially slidable in respective ones of said portions between respective operative and inoperative positions;
(*e*) engagement means fixedly fastened on each actuator member for axially abutting engagement with said locking means when said locking means is in said locking position thereof;



(*f*) lock releasing means fixedly fastened on each actuator member and engageable with said locking means for moving the same in said transverse direction away from said locking position thereof when said actuator member moves from said inoperative toward said operative position thereof; and
(*g*) resilient means permanently urging each actuator member to move from said operative toward said inoperative position thereof, said engagement means axially abutting against said locking means under the urging of said resilient means when said actuator member is in the operative position thereof and said locking means is in said locking position.

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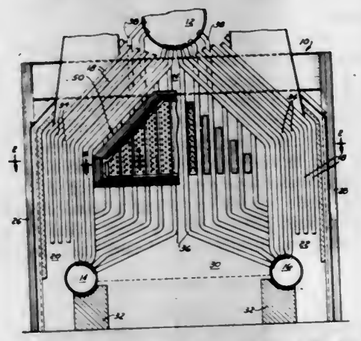
**3,170,442**
**BLACK LIQUOR CHEMICAL RECOVERY UNIT UTILIZING GAS RECIRCULATION**
Frank W. Hechmuth, West Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1962, Ser. No. 248,000
2 Claims. (Cl. 122—7)



1. In a system for recovering chemicals and generating and superheating steam from the combustion of black liquor, the combination of a smelter furnace defined by generally vertical walls, means for supplying black liquor into the furnace interior and for burning the same in the lower portion thereof for producing combustion gases laden with chemical ash particles, a super heater heat exchanger positioned within the upper portion of the furnace, a gas pass connected to the upper portion of the furnace, said gas pass comprised of walls forming a tortuous gas passage made up of a plurality of upwardly and downwardly extending interconnected passages, the walls of the gas passage being lined with fluid cooled tubes, a first portion of the gas passage being connected to the upper portion of the furnace, said first portion being an open gas pass free of any heat exchange members other than the fluid cooled tubes lining the walls thereof, a second portion of the gas passage being downstream of the first portion and in series flow relationship therewith, a plurality of steam generating tubes positioned within the second portion of the gas passage, a stack open to atmosphere at one end and connected to the second portion of the gas passage at the other end, a fan positioned within the stack, first damper means positioned within the stack downstream of the fan, a duct having an inlet end and an outlet end, the inlet end being connected to the stack upstream of the first damper means but downstream of the fan, with the outlet end of the duct connected to the first portion of the gas passage, second damper means positioned in said duct, temperature sensing means positioned in said first portion of the gas passage, said temperature sensing means being operatively connected to the first and second damper means so as to move the first damper means in a closing direction when an increase in temperature is sensed while moving the second damper means in an opening direction, and moving the first damper means in an opening direction when a decrease in temperature is sensed while moving the second damper means in a closing direction, to thereby allow the attainment of higher superheat temperature while still preventing undue slagging of the steam generating tubes positioned within the second portion of the gas passage.

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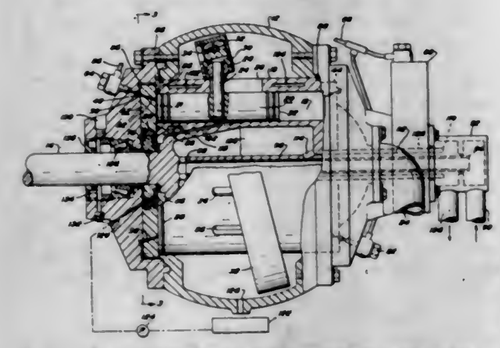
**3,170,443**
**INTER-TUBE GAS BURNER FOR A COAL OR OIL-FIRED WATERWALL BOILER**
Herbert Neill Jackson, Don Mills, Toronto, Ontario, Canada, assignor to Eclipse Fuel Engineering Co., Rockford, Ill., a corporation of Illinois
Filed Apr. 29, 1963, Ser. No. 276,554
18 Claims. (Cl. 122—236)



1. The combination with a water tube boiler having means forming an internal combustion chamber and including a vertical waterwall comprised of closely spaced parallel water tubes which lie in a common vertical plane, and also having an outside boiler casing extending around the chamber-forming means and including a vertical wall structure adjacent to, and substantially coextensive with, said waterwall, of an auxiliary fuel gas burner assembly

for firing said combustion chamber, said burner assembly comprising a windbox operatively installed in said wall structure and having an inside wall disposed in close proximity to a selected area of the outside face of said waterwall, said inside wall being provided with a plurality of hollow projecting portions providing bays which enter between adjacent water tubes of the waterwall and extend into the combustion chamber, said projecting portions being of elongated trough-like design, each projecting portion being substantially coextensive with a span of the selected area, the distal edge region of each projecting portion being formed with a series of spaced openings therealong, a gas manifold disposed within said windbox and having lead-out nipples extending to and in register with said openings, and in combination therewith, defining a series of small nozzle-mixing gas-burning nozzles, means for supplying air under pressure to the windbox, and means for supplying fuel gas under pressure to said gas manifold.

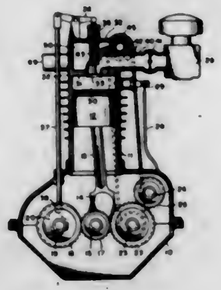
### 3,170,444
### ROTARY ENGINE
Gerard V. Haddon, R.D. 1, Glen Mills, Pa.
Filed Mar. 14, 1963, Ser. No. 265,238
18 Claims. (Cl. 123—41.34)



1. A rotary compression ignition engine comprising a cylindrical rotor, said rotor having a plurality of cylinders equally spaced from and parallel to the axis of the rotor, said cylinders being equi-angularly spaced with respect to the axis of the rotor, a double-acting piston having a head at each end thereof disposed within each of said cylinders, guide means for constraining said pistons to a uniform path as said rotor is rotated about its axis to cause relative reciprocal motion between each piston and its associated cylinder, valve means associated with the ends of said cylinders, at least two exhaust ports, at least two intake ports, each piston head and its associated cylinder end forming a combustion chamber, ignition means, said valve means, guide means and ignition means cooperating with said intake and exhaust ports to achieve a four stroke compression-ignition cycle in each of said chambers, said guide means including a fixed circular outer guide track, said pistons having their paths during rotation of said rotor determined by said fixed circular guide track.

### 3,170,445
### INTERNAL COMBUSTION ENGINE
Walter A. Folcke, 4737 Resmar Road, La Mesa, Calif.
Filed Feb. 25, 1963, Ser. No. 260,705
1 Claim. (Cl. 123—75)

An internal combustion engine comprising, in combination: a long cylinder; a piston slidable in said cylinder; a cylinder head secured to one end of said cylinder to provide a closed combustion chamber between said cylinder head and piston, said cylinder head being provided with an inlet valve opening facing the end of said piston; a rotary crank shaft mounted near the end of said cylinder remote from said combustion chamber; a pitman connecting said piston to said crank shaft; an inlet valve constructed to open and close said valve opening; means driven by said crank shaft to operate said inlet valve and cause it to open said valve opening when said piston is closely adjacent said cylinder head; a carburetor having a tubular outlet; a throttle valve mounted in said outlet; said cylinder head having a short duct connecting said tubular outlet to said inlet valve opening and also a short passageway whose inner end terminates in said duct adjacent said valve opening, said cylinder head having a long cylindrical bore in which the outer end of said passageway terminates; an open ended tubular valve supported for rotation in said cylindrical bore, said tubular valve having a single opening extending through its wall positioned to register with the outer end of said



passageway at each rotation of said tubular valve; means continually driven by said crank shaft to rotate said tubular valve and cause said single opening therein to register with the outer end of said passageway when said piston commences its suction stroke and remain in registry therewith during the initial portion of said suction stroke whereby air passes axially through said tubular valve, said short passageway and said inlet valve opening into said combustion chamber during the initial portion of said suction stroke; the tubular outlet of said carburetor supplying fuel-air mixture to said inlet valve opening and combustion chamber during the remaining portion of said suction stroke, said piston being constructed to compress said charge of air and fuel-air mixture in the combustion chamber as said crank shaft returns the piston to its initial position adjacent said cylinder head; and means for igniting the compressed charge.

### 3,170,446
### VALVE ACTUATING MECHANISM
John Dolza, P.O. Box 192, Fenton, Mich.
Filed Aug. 7, 1963, Ser. No. 300,611
4 Claims. (Cl. 123—90)

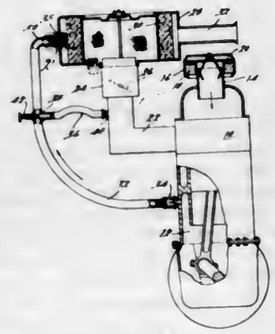


1. An hydraulic lash adjuster device comprising a fixed support, a hollow plunger member slidably supported within said support, said plunger including an open end



and a closed end formed to provide a spherical seat, a stop member disposed within said support and adapted to limit the axial movement of said plunger within said support, a plug member disposed within said plunger member and including an end portion projecting through the open end of said plunger, spring means urging said plug into engagement with said stop member and also urging said plunger axially away from said support and said plug member, the closed end of said plunger and said plug forming a first variable volume fluid chamber, an expandable seal member including a first portion secured to the plunger proximate the open end thereof and a second portion secured to said plug whereby said plunger, plug, and expandable seal define a second variable volume fluid chamber, passage means formed through said plug member and communicating said first and second fluid chambers, and a valve member coacting with said passage means to permit flow from said second to said first fluid chamber and preventing flow from said first to said second chamber.

### 3,170,447
### SPRING
Louis J. Svoren and Eugene C. Van Elmeren, Jr., Racine, Wis., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed June 14, 1963, Ser. No. 288,040
13 Claims. (Cl. 123—119)

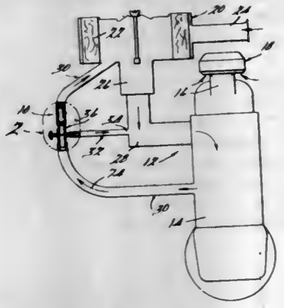


1. In a flame stop for a crankcase ventilating system having a blowby flow passage connected to the crankcase, the improvement comprising a flame stop formed from a continuous section of coiled wire having a plurality of spaced coils and being mounted within said passage, the coils of said wire having a spacing forming a restriction in said passage sufficient to prevent the propagation of flame through the passage to the crankcase while also having a spacing permitting flow of blowby through the passage from the crankcase.

### 3,170,448
### SPRING
Colin Campbell, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,889
15 Claims. (Cl. 123—119)

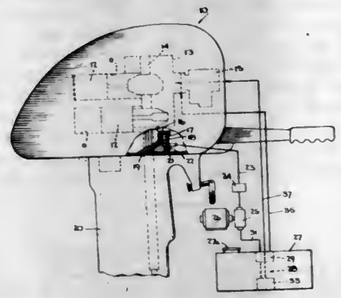
1. In a flame stop for a crankcase ventilation system for an engine, a flow passage,

a compressible wire spring element mounted in said passage, and mounting means for said wire spring element permitting compression of said wire spring element in said passage during crankcase ventilation,



said wire spring element being compressible by fluid in said passage at predetermined pressure conditions resulting from engine operation.

### 3,170,449
### APPARATUS AND METHOD FOR INTRODUCING ENGINE DRAINAGE INTO THE FUEL SYSTEM
Charles P. Goggi, Staten Island, N.Y., assignor to Goggi Corporation, Staten Island, N.Y., a corporation of New York
Filed Oct. 3, 1962, Ser. No. 228,166
10 Claims. (Cl. 123—136)



1. In an internal combustion engine having an induction system for delivering a working charge of air to the engine, said induction system receiving fuel and lubricating oil drainage during operation, and a fuel system for delivering a fuel and lubricating oil mixture from a supply thereof to the engine for combustion therein, the combination of a device for distributing the drainage from the induction system to the mixture being delivered by the fuel system to the engine comprising structure forming a chamber adapted to be serially connected to the fuel system, said chamber forming a flow passage having an inlet and outlet through which the mixture is adapted to flow, and means connected to said chamber for delivering the drainage from the induction system to said chamber adjacent to the path of flow therein, whereby the drainage is distributed to the mixture as it flows through said chamber.

### 3,170,450
### HYDRAULIC SYSTEM
Melvin L. Kent, East Cleveland, Ohio, and Edward V. Manning, Watertown, N.Y., assignors to The New York Air Brake Company, a corporation of New Jersey
Filed June 23, 1961, Ser. No. 119,170
10 Claims. (Cl. 123—179)

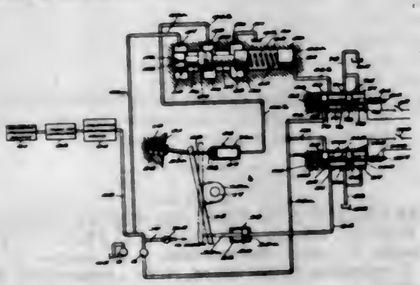
1. A hydraulic starting system for accelerating an engine to starter cut-out speed comprising

(*a*) a variable displacement hydraulic motor having a displacement control element which is movable be-

tween minimum and maximum displacement-establishing positions;

(*b*) a source of hydraulic fluid capable of delivering fluid at a substantially constant pressure and at a rate which varies between a minimum value and a maximum value equal to the demand of the motor when it is running at a certain speed less than cut-out speed and its displacement control element is in maximum displacement-establishing position;

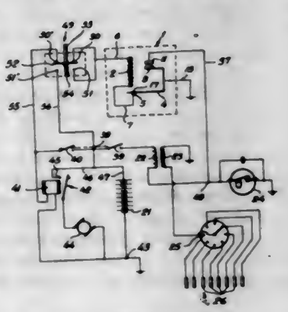
(*c*) conduit means connected with the motor and the source for leading fluid from the source to and through the motor; and



(*d*) motor control means, independent of the source, connected with the displacement control element and responsive to the flow demand of the motor for positioning said element in the maximum displacement-establishing position when the motor is running and the demand is below said maximum delivery rate and for moving said element toward the minimum displacement-establishing position as the flow demand tends to increase above said maximum delivery rate, whereby the change in displacement of the motor maintains motor demand substantially constant at the rate of demand at said certain speed.

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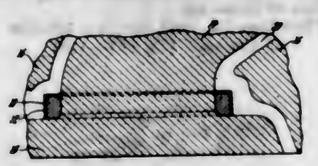
**3,170,451**
**ENGINE STARTING SYSTEM**
**Roland Fortier, Thetford Mines, Quebec, Canada, assignor to Les Industries Electriques de Thetford Ltee, Thetford Mines, Quebec, Canada**
**Filed Dec. 26, 1961, Ser. No. 162,006**
**1 Claim. (Cl. 123—179)**



A starting system for internal combustion engines comprising spark plugs, a battery, a starter motor, an induction coil having a primary and a secondary, a cam operated timer switch and a vibrator unit electrically connected to said primary, a distributor for the spark plugs of the engine electrically connected to said secondary, an ignition switch for electrically connecting the induction coil to the battery, a starter switch for electrically connecting the starter motor to the battery, and a manually operated push button switch having a normal position in which said switch electrically connects said vibrator unit to the wire electrically connecting said starter switch to the starter motor, such that said vibrator unit will vibrate as long as said starter motor operates, said manually operated push button switch having an alternate depressed position in which it by-passes said starter switch and electrically connects said vibrator unit directly to said battery, so that continuation of operation of said vibrator unit can be achieved even after stoppage of said starter motor, said vibrator unit having a solenoid, a fork-shaped vibrating lever with contacts at the outer ends of its two branches and electrically connected to ground by a spring blade, and stationary contacts adapted to successively and alternatively abut the contacts at the outer ends of said branches, one of said stationary contacts being electrically connected to said solenoid and the other stationary contact being electrically connected to the primary of the induction coil.

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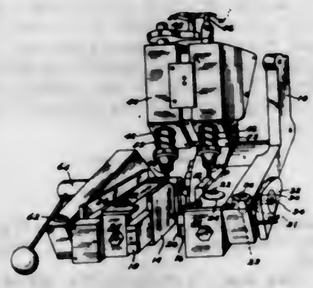
**3,170,452**
**VALVE SEAT**
**John M. Dobovan, Mount Clemens, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed June 28, 1961, Ser. No. 120,362**
**8 Claims. (Cl. 123—188)**



1. A poppet valve seat construction for internal combustion engines and the like comprising a cast iron body and a valve seat insert metallurgically joined to said body, said insert being a wear resistant ferrous metal alloy different than said body and containing substantial amounts of chromium, said insert being metallurgically joined to said body through a nickel base brazing alloy including small amounts of an element taken from the group consisting of boron and silicon.

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**3,170,453**
**WHEEL TRIMMER**
**Frank Pernock, Birmingham, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan**
**Filed Nov. 29, 1962, Ser. No. 240,909**
**36 Claims. (Cl. 125—11)**



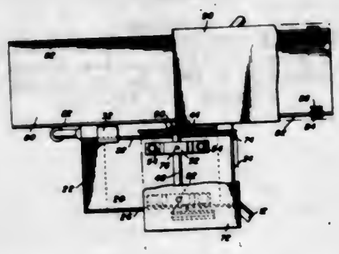
1. A trimmer for a grinding wheel having a rotatable axis, said axis being located in a plane extending radially of the grinding wheel, said trimmer comprising a pair of closely adjacent trimming elements, means mounting said elements for simultaneous movement in trimming relation to the peripheral edge portion at one side



of the grinding wheel, each of said elements occupying and being movable in a plane which is parallel to the aforesaid radial plane of the wheel, the plane of one of said elements being laterally spaced from the plane of the other of said elements, and means for moving said elements in the planes which they occupy so as to trim different radially spaced annular zones on the aforesaid edge portion at said one side of the wheel.

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**3,170,454**
**TILE AND MASONRY SAW**
**Elmer F. Maugh, Frankfort, Ind., assignor to E & R Manufacturing Co., Inc., Kirklin, Ind., a corporation of Indiana**
**Filed May 23, 1962, Ser. No. 197,040**
**4 Claims. (Cl. 125—13)**

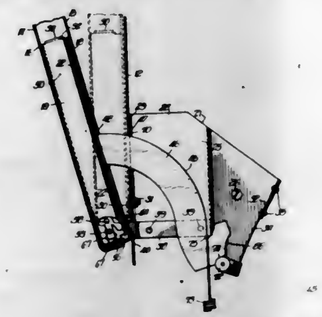


1. A masonry saw comprising a base, a vertically orientated circular masonry cutting blade, means rotatably mounting said blade centrally on said base, motor means for effecting a rotation of said blade, a first horizontally orientated flat table fixedly secured to said base adjacent a first side of the blade and in a horizontal plane above the center of rotation of said blade, a second horizontal flat table orientated in the same plane as said first table adjacent the other side of the blade, said tables each having a forward edge parallel to the rotary axis of the blade, means mounting said second table for movement parallel to the cutting blade in said horizontal plane between a first position wherein the forward edge of the second table is located forward of the cutting edge of the blade and a second position wherein the forward edge of the second table is located in general alignment with or to the rear of the cutting edge, a flat horizontally orientated rest, and means mounting said rest in a plane below the plane of the tables and in alignment with and slightly forward of the cutting edge of the blade at the approach side thereof, the forward edge of the fixed table being located approximately on line with that forward portion of the cutting edge located in the same plane as said fixed table.

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**3,170,455**
**REMOVABLE OVEN DOOR AND HINGE ASSEMBLY**
**Robert Norton Goss, Cleveland, Tenn., assignor to Hardwick Stove Company, Cleveland, Tenn., a corporation of Delaware**
**Filed Feb. 7, 1963, Ser. No. 256,946**
**12 Claims. (Cl. 126—194)**

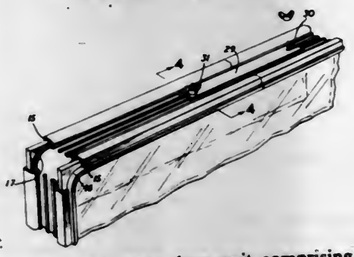
1. In combination, a structure defining an opening, a door for closing said opening, a hinge holder attached to said door and having a channel portion elongated parallel to the plane of the door, and a hinge member pivoted to said structure and having an elongated portion at its outer ends disposed within the channel portion of said hinge holder, and a pin attached to said structure and projecting through an arcuate slot in said hinge holder, said hinge holder having a slot opening from said arcuate slot with which said pin aligns in a partially open position of said door to permit removal of the door by movement in the direction of elongation of said channel and said



elongated portion to disengage the hinge holder from the elongated portion of said hinge member.

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**3,170,456**
**OVEN DOUBLE PANE DOOR UNITS AND METHOD OF MAKING SAME**
**Gordon E. Moes, 330 Hugell Ave., and James B. Moes, 188 Yonge St., both of Midland, Ontario, Canada**
**Filed Sept. 9, 1963, Ser. No. 308,299**
**1 Claim. (Cl. 126—200)**



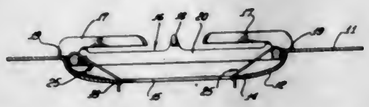
An oven double pane door unit comprising a strip of metal having parallel spaced apart longitudinally extending channels therein, said strip being bent in the form of a rectangular frame with the free ends of said strip substantially butting one another, the corners of said frame each having a pair of transversely spaced apart slots therein in registry with said channels, rectangular panes of transparent material of a size substantially corresponding to the size of said frame carried by said frame in parallel spaced apart arrangement and having their edges enclosed in said channels and the corners thereof projecting through and straddled by said slots, sealing means disposed between said frame and said panes for sealing said panes in said frame, means for locking the free substantially butting ends of said frame together to form a rigid unitary combination, and a continuous band of metal disposed around the periphery of and secured on said frame to encase said frame and the projecting corners of said panes.

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**3,170,457**
**SECUREMENT MEANS FOR A STOVE GRATE**
**John Bacallato, South Gate, Calif., assignor to Sattler Mfg. Corporation, Los Angeles, Calif., a corporation of California**
**Filed July 9, 1963, Ser. No. 293,747**
**2 Claims. (Cl. 126—214)**

1. In combination with a gas range having a stove top having a burner well with burner margins defining a burner opening and a grate supported on said top over the burner well, the provision of: means securing the grate to the range comprising a securement member of flat spring

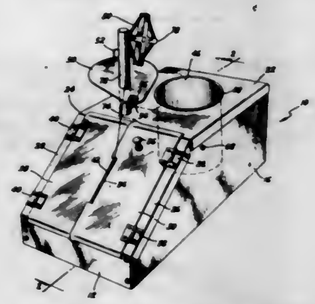
metal strip stock including an elongated main body portion; a supporting and positioning end portion in engagement with the grate; and a latching end portion in



engagement with said burner opening margins, said securement member having a length for tightly retaining the grate in non-rattling association with the range.

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**3,170,458**
**ICE FISHING HOLE HEATER**
**Leonard Anderlie, 6813 Beard Ave. N., Minneapolis 19, Minn.**
**Filed Mar. 22, 1963, Ser. No. 267,221**
**9 Claims. (Cl. 126—271.3)**

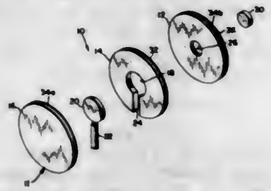


1. An ice fishing hole heater comprising:
(*a*) a casing having a top and downwardly extending walls forming an open bottom so that one end of said casing can overlie an ice fishing hole;
(*b*) door means in said top at said one end for providing access to said ice fishing hole, said door means including a pair of door panels hingedly connected at their remote edges to said casing and forming a slot at their adjacent edges for the accommodation of a fishing line;
(*c*) the other end of said top having an opening therein;
(*d*) a receptacle having a lateral flange engageable with said top so as to allow suspension of said receptacle into the interior of said casing,
(*e*) whereby heat from said receptacle will circulate within said casing to keep said ice fishing hole from refreezing.

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**3,170,459**
**BIO-MEDICAL INSTRUMENTATION ELECTRODE**
**Clifford G. Phipps, Newbury Park, Calif., and Glenn F. Kelly, Jacksonville, Fla., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Mar. 20, 1962, Ser. No. 181,214**
**5 Claims. (Cl. 128—2.06)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

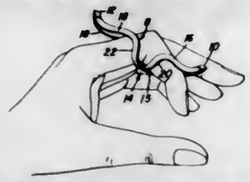
1. A bio-medical electrode assembly for attaching to a subject's skin, comprising a housing composed of a plurality of superimposed flat layers of flexible insulation material adhesively secured together, one of said layers having a face portion adapted physically to contact the skin, an electrode supported between said layers in fixed, spaced relation to said skin, said housing having a central opening capable of containing a conductive paste for creating a single conductive path between said electrode and the subject's skin, and adhesive means on the face portion of the body for adhering the assembly including the entire edge of the opening completely around the skin area op-



posite said housing opening so as to maintain a fixed electrical path of constant resistance between the electrode and the subject's skin.

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**3,170,460**
**ONE-PIECE OPENWORK FINGER SPLINT**
**Charles E. Stilson, 4246 Cortland Ave., Detroit 4, Mich.**
**Filed Feb. 21, 1963, Ser. No. 260,208**
**5 Claims. (Cl. 128—77)**



1. A readily applicable and removable brace functionally designed to limit extension and prevent hyperextension of the user's finger and comprising: a onepiece openwork splint embodying opposed spaced parallel elongated rigid side members, said side members being alike and having corresponding median portions thereof joined together in spaced-apart parallelism by a downwardly curved palmar brace, a rear upwardly curved dorsal brace bridging the space between and rigidly connecting corresponding rearward end portions of said side members and spaced rearwardly from said palmar brace, a second correspondingly upwardly curved dorsal brace spaced forwardly from said palmar brace and spanning the space between and interconnecting forward portions of said side members, and a third upwardly curved dorsal brace spaced forwardly from the second dorsal brace and interconnecting the extreme forward end portions of said side members, said palmar brace being curved in a direction opposite to the curvature of said first, second and third dorsal braces and lying in a plane spaced from the plane of said first, second and third dorsal braces and cooperating with the latter and said side members in defining an elongated open-ended substantially circular passage.

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**3,170,461**
**DISPOSABLE SURGICAL MASK**
**Hillary G. Watts, Jr., 4002 W. 18th St., Wichita, Kans.**
**Filed Sept. 18, 1961, Ser. No. 138,767**
**5 Claims. (Cl. 128—146)**

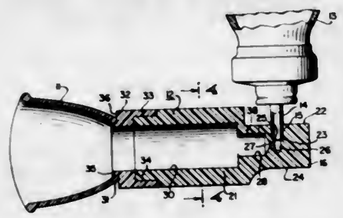


1. A disposable surgical mask comprising, a rectangular flexible porous absorbent pad of size to cover the nose and mouth of a human being, said pad being made of from 7 to 10 loosely piled layers of non-woven absorbent cellulose material, two cellulose material layers congruent with and stitched on four edges to said pad, one on each side of said pad and reinforced with threads in mesh configuration, said pad and said layers having two spaced and parallel pleats therein which divide said pad into three substantially equal portions each parallel to the long side of said rectangular pad, a non-porous and impervious polyethylene film on the outside of said mask having the same width as said pad but having a shorter length either than said pad or its own width, centrally positioned so as to cover all except the two end portions of said pad and stitched on its two short or length sides to the middle portions of the long or length sides of said pad, two flexible binding tapes folded lengthwise over the long sides of said pad and stitched thereto, each of said tapes being approximately five times the length of said pad, and a flexible metal nose piece, inserted through a slit in the top one of said tapes on the back side, and held and located between said tape and said pad, said mask being used by tying each of said tapes around the head of the wearer, such that said non-porous layer is on the side away from the face, said porous pad and cellulose layers absorbing water and contaminants from the air as it passes along said pad and layers, said non-porous sheet serving to cause said passing air to travel further through said porous material, said nose piece being bent in the shape of the contour of the nose of the wearer and serving to prevent air from escaping upward and fogging the wearer's glasses, and said mask being disposable after use.



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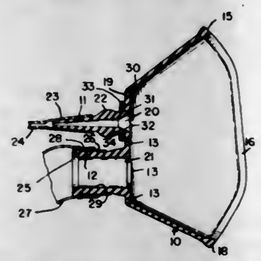
**3,170,462**
**AEROSOL OPHTHALMIC DEVICE**
**Victor C. Hall, Media, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**
**Filed Jan. 5, 1962, Ser. No. 164,494**
**1 Claim. (Cl. 128—173)**



A device for administering to the eye a brust of medicament-containing mist discharge from an aerosol container having an aerosol discharge stem, said device comprising:
(*a*) an eyecup; and
(*b*) a tube-like block connected to the eyecup and adapted to be interposed between the aerosol discharge stem and the eyecup; said block comprising:
(i) a substantially solid end portion having a shouldered aperture therein for receiving the discharge stem of the aersol container, the axis of the aerosol stem-receiving aperture being substantially perpendicular to and intersecting the axis of the tube-like block with the end of such stem adapted to abut against the shoulder of such aperture, said shoulder being located in a position prior to the intersection of said axes, said aperture extending a short distance past said shoulder;
(ii) a substantially cylindrical, largely hollow portion forming a main chamber, with one end of said chamber communicating with the opening in the apex of the eyecup;
(iii) an intermediate portion intergal with said solid end portion and forming an intermediate chamber communicating at one end with the end of the main chamber remote from the eyecup and communicating at its opposite end with the extension of the aerosol stem-receiving aperture, said intermediate chamber being substantially smaller than the main chamber, but in axial alignment therewith, the exterior aerosol-facing portion of the tubelike block in the region of the aerosol container being flat-surfaced, which surface extends over part of the side wall of said intermediate chamber and with the thickness of the wall of said intermediate chamber being substantially less to said flat exterior surface of the block than the thickness of the wall of said intermediate chamber elsewhere around the periphery of the block; and
(iv) said intermediate portion having at least one aperture in the wall thereof extending from the side of the intermediate chamber to said flat exterior surface of the block to provide a side vent of minimum length and hence of maximum air capacity possible for its diameter,
whereupon, when the aerosol container is compressed relative to the block and the burst of medicament-containing mist is discharged at a relatively high velocity and at a relatively low temperature through the aerosol discharge stem into the intermediate chamber of the tube-like block, a substantial quantity of air is drawn into the intermediate chamber through the side vent thereof and is mixed with the aerosol mist in the intermediate chamber and in the main chamber to increase the temperature of the mist and decrease its velocity so that, when the mixture reaches the eye through the eyecup, the resulting temperature and velocity of the mixture is not injurious to the eye.

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**3,170,463**
**FACIAL MASK WITH OXYGEN/AIR MIXING MEANS**
**James E. Duggan, Berkley, Mich., assignor, by mesne assignments, to Watts Electric & Mfg. Co., Birmingham, Mich., a corporation of Delaware**
**Filed Sept. 28, 1962, Ser. No. 226,830**
**3 Claims. (Cl. 128—205)**



1. A facial mask comprising a hollow rearwardly opening substantially cup-shaped body adapted to be positioned over the nose and mouth of a person and having rim portions adapted to be positioned against the face of said person, the base of said cup-shaped body being upright and having two substantially parallel outwardly projecting substantially horizontal tubular projections opening into said cup-shaped body, one of said tubular projections being tapered and having a maximum outside diameter smaller than the inside diameter of the other tubular projection, said one tubular projection being provided with a tapered passageway, said one tubular projection also having an outwardly projecting annular flange spaced

from said base, the other of said tubular projections having a maximum outside diameter greater than twice the maximum outside diameter of said one tubular projection and having a substantially uniform passageway, the base of said cup-shaped body having a plurality of spaced openings arranged in a circle surrounding the other of said tubular projections and providing communication between the atmosphere and the interior of said cup-shaped body, means adapted to be sleeved upon said one tubular projection for supplying oxygen through said tapered passageway to the interior of said cup-shaped body, a flexible bag having a tubular neck sleeved upon and secured to the other of said tubular projections, said bag being adapted to receive from said person a portion of an exhalation not discharged through said openings, and means for holding the cup-shaped body upon the face of a person, including a retaining strap adapted to extend around the head of a person, said strap being provided adjacent one end with an opening having edges sleeved upon said one tubular projection in rear of said annular flange and having adjacent the other end thereof a series of longitudinally spaced openings respectively provided with edges adapted to be selectively sleeved upon said one tubular projection in rear of said annular flange.

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**3,170,464**
**CONTRACEPTIVE MEANS**
**Emilio Ferdi, 48 Via Lima, and Carlo Del Guercio, 115 Via Tripolitania, both of Rome, Italy**
**Filed Jan. 22, 1962, Ser. No. 167,651**
**Claims priority, application Italy, Jan. 26, 1961, 1,204/61; July 15, 1961, 12,857/61; Sept. 25, 1961, 17,137/61**
**1 Claim. (Cl. 128—271)**



A contraceptive comprising an element having a mass of shape-retainable material meltable at body temperature in the shape of an ellipsoid of revolution and conforming to the shape of the glans penis, said element having a wall with a thickness which increases centrally of said element, an internal-flat central bulge on the wall of said element, at least two ribs extending from the central bulge towards the edge of the element and projecting inwardly from the wall of the element and an adhesive substance on and restricted to said bulge in a quantity sufficient to temporarily secure the element on the glans penis while permitting the element to be subsequently released in the vagina, where the element is retained for being dissolved.

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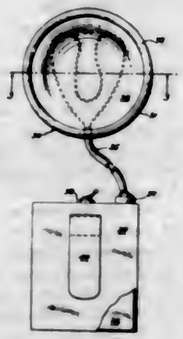
**3,170,465**
**INTERNAL BODY HEATING DEVICES**
**James E. Heaney, 1690 Woodside Road, and James J. McCann, 330 La Questa Way, both of Woodside, Calif.**
**Filed June 26, 1962, Ser. No. 205,443**
**7 Claims. (Cl. 128—401)**

1. An electrical heating device for applying a controlled amount of heat to a part of the human body within one of its natural cavities while the patient is ambulatory comprising

a form-fitting, moisture-resistant, heat transmitting, non-electrical-conducting housing portion constructed from physiologically and chemically innocuous material said housing portion having a resiliently flexible relatively thin configuration and shaped to conform to a particular internal area of the body of the patient,

a metallic electrical-resistance heating element incased within the material of which said housing portion is constructed,

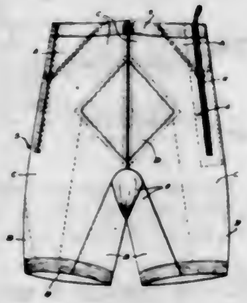
a lightweight, portable battery capable of providing a low voltage electrical current,



a length of flexible, insulated electrical conductor establishing a circuit including said heating element and said battery, and said housing portion comprising a relatively thin and generally circular sheet-like diaphragm with a thickened annular peripheral rim portion.

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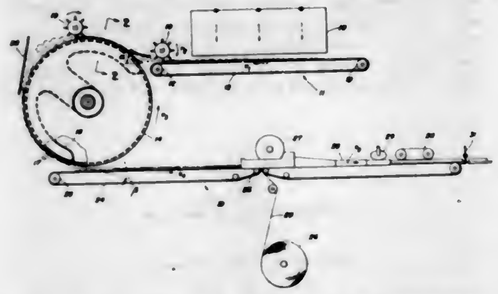
**3,170,466**
**FOUNDATION GARMENT OF THE PANTY GIRDLE TYPE**
**Marcel Gingras, St. Foy, Quebec, Canada, assignor to Dominion Corset Company, Limited, Quebec, Canada**
**Filed Aug. 10, 1962, Ser. No. 216,146**
**5 Claims. (Cl. 128—528)**



1. A foundation garment of the panty girdle type comprising three layers of material superimposed upon each other and stretchable in different directions from each other, a first outer layer of said three layers of material constituting the main body section of the garment and being stretchable in a horizontal direction, a second of said three layers of material constituting a pair of side supporting panels superimposed on said first layer at opposite side portions of the garment, the said side panels being stretchable at an angle to the horizontal and in opposite directions with respect to each other, each of said side panels having an extension member projecting therefrom in a direction towards and beyond the front medial line of the garment and overlapping each other and underlying portions of the said first layer of material to form with the said first layer of material a three-layer reinforcing front panel member.



**3,170,467**
**CIGARETTE MAKING MACHINE**
**Joseph Daniel Di Giacomo, Pound Ridge, and Charles Vaclav Staller, Hastings on Hudson, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey**
**Filed Jan. 9, 1961, Ser. No. 81,519**
**5 Claims. (Cl. 131—66)**



4. Apparatus for making cigarette rods comprising a first conveyor including a pair of spaced rollers and a belt trained on the rollers with the belt running at one linear speed, means for showering shredded tobacco on the belt of the first conveyor, a rotating drum positioned adjacent the belt of the first conveyor and running at a peripheral linear speed greater than that of the belt, a rotating picker wheel positioned on the belt of the first conveyor and running at a peripheral linear speed greater than the belt of the first conveyor for moving the shredded tobacco off the belt of the first conveyor onto the drum, means for holding the shredded tobacco on the drum, a second conveyor including a plurality of rollers and a belt trained on the rollers with the belt running at a linear speed similar to the peripheral linear speed of the drum and receiving the shredded tobacco from the drum, and means receiving the tobacco from the belt of the second conveyor and forming it into a cigarette rod.

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**3,170,468**
**SMOKING PIPE**
**Robert L. Smith, Burgaw, N.C., assignor to Filto Pipes, Inc., Burgaw, N.C., a company of North Carolina**
**Filed Oct. 17, 1963, Ser. No. 316,923**
**8 Claims. (Cl. 131—213)**



1. A smoking device comprising:

(*a*) a bit member having a smoke duct therethrough,

(*b*) a tobacco product receptacle,

(*c*) a stem having a shell casing connecting said bit member with said receptacle,

(*d*) means for supporting a retroverted-flow filter housed substantially within said stem and in said smoke duct comprising a projecting portion at one end of said member, said projecting portion having an inner and outer surface disposed about said smoke duct and forming a shoulder thereon facing said tobacco product receptacle,

(*e*) a cap member having a wall forming a closed end portion and an open end portion, the wall at said open end portion being resilient and deformable, said cap member being adapted to engage the outer surface of said projecting portion in coaxial relation with and spaced from said shell casing,

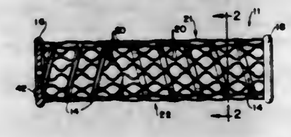
(*f*) an open-ended sleeve coaxially disposed within said cap member and having its wall spaced therefrom and having one end projecting into said smoke duct and engaging said inner surface of said projecting portion, bearing radially outward against said projecting portion whereby when said cap member is placed over said projecting portion, said projecting portion is reinforced by said sleeve against radially inward movement by said cap member, and the circumference of the inner diameter of said open-end wall portion of said cap member is less than the diameter of the outer surface of said projecting portion so that said cap member is deformed and surrounds said projecting portion thereby affording a spring gripping action on said projecting portion, and

(*g*) a filter support basket and ejector mounted in one of the ends of said sleeve comprising a bottom portion having a pair of relatively narrow opposed legs extending beyond one end of said sleeve,

(*h*) one of said members having a slot therein at one end thereof adjacent the place where said members are joined thereby providing an opening between said open ended sleeve and the bit member portion adjacent said slot to permit smoke to pass through the opening, around said sleeve, through said sleeve and into said smoke duct in said bit member.

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**3,170,469**
**FLEXIBLE HAIR CURLING DEVICE**
**Nathan L. Solomon, P.O. Box 550, Englewood, N.J.**
**Filed May 31, 1961, Ser. No. 113,815**
**5 Claims. (Cl. 132—39)**



4. A one piece hair curler comprising a continuous helical coil forming a generally tubular body and a series of circumferentially spaced apart longitudinally extending flexible strips integrally interconnecting consecutive helices of said coil, said strips having a length between consecutive helices greater than the distance between connections to said consecutive helices for forming a flexible yieldable wall.

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**3,170,470**
**HAIR HOLDING DEVICE**
**Nathan L. Solomon, P.O. Box 550, Englewood, N.J.**
**Filed June 21, 1960, Ser. No. 37,779**
**13 Claims. (Cl. 132—46)**

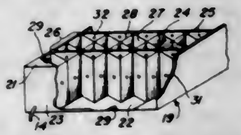


4. A one piece clamp comprising an elongated piece of thin flexible material having an elongated finger formed therein intermediate of its ends and forming a continuous band thereabout, said finger and said band forming a cooperating pair of clamping members, said band having a vertically oriented depression therein intermediate of its ends for causing said band to assume a concavo-convex shape, said band being displaceable in opposite directions alternately with respect to the free end of said finger in

response to a selected force applied to snap said members towards and away from each other, thereby maintaining said clamp open or closed.

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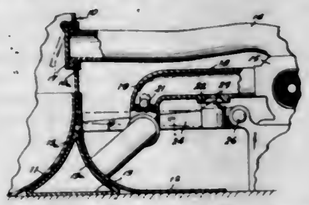
**3,170,471**
**INFLATABLE HONEYCOMB**
**Emanuel Schaltzer, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**
**Filed Apr. 23, 1962, Ser. No. 189,648**
**7 Claims. (Cl. 135—1)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. An inflatable envelope panel, comprising: a flexible internal skin, a flexible external skin, and a flexible peripheral wall member interconnecting said internal skin to said external skin in spaced relationship to form an enclosed envelope; a flexible bracing core element positioned within and secured to the inner surfaces of said enclosed envelope, each said internal skin, external skin, peripheral wall, and said bracing core being constructed of a metal-plastics laminate and having the inherent physical property characteristic of developing sufficient tensile stress therein when said envelope is inflated to resist subsequent envelope collapse; and means for introducing an inflation medium into said envelope.

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**3,170,472**
**NON-MECHANICAL TIE-DOWN MEANS FOR INFLATABLE TENTS OR SHELTERS**
**Walton W. Cushman, 6428 Lamar Drive SE., Washington, D.C.**
**Filed Aug. 30, 1962, Ser. No. 220,967**
**10 Claims. (Cl. 135—1)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

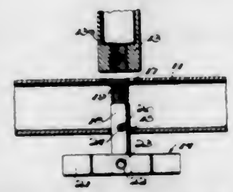


1. In a shelter adapted to be inflated into its erected condition, a downwardly-opening inverted substantially V-shaped pocket, an inflatable member of substantially triangular cross-section inserted in said pocket, and mechanism associated with the shelter for inflating the same and for creating a partial vacuum in said pocket.

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**3,170,473**
**CAPTIVE BOLT**
**Ernest W. Downs, Natick, and Phillins F. La Casse, Hollis-ton, Mass., assignors to the United States of America as represented by the Secretary of the Army**
**Continuation of application Ser. No. 794,478, Feb. 19, 1959. This application Sept. 12, 1962, Ser. No. 228,211**
**1 Claim. (Cl. 135—3)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

In a knockdown portable tent frame adapated to be assembled and disassembled in the field, said tent frame including elongated hollow tubular structural members having two opposed transverse wall openings, one of said openings having diametrically arranged, slot-like wing portions, and elongated stringers adapted to be assembled with said tubular members at right angles thereto, said stringers having integrally formed therewith screw-threaded end sockets; the combination therewith of loss-proof captive bolt assemblies semi-permanently lodged in said tubular members, each of said bolt assemblies comprising a shank transversely extending through said wall opening in said tubular member, one end of said shank being screw-threaded for separable engagement with a screw-threaded end socket in one stringer, said shank having a transverse opening substantially spaced from either end of said shank and so located that



the distance by which the engaged screw-threaded end of said shank protrudes from one of said wall openings in said tubular member does not exceed the distance of said shank opening from the other wall opening, a removable pin projecting through said shank opening and normally lodged in the hollow interior of said tubular member for preventing accidental separation of said shank from said tubular member when said tubular member is not engaged with said stringer, said pin being capable of longitudinal insertion through said slot-like wing portions, a removable large head on the other end of said shank for manipulating said shank, and removable locking means for holding said shank and head together.

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**3,170,474**
**COLLAPSIBLE UMBRELLA**
**Siegfried Meyer, 250 W. 91st St., New York, N.Y.**
**Filed Oct. 24, 1962, Ser. No. 232,758**
**9 Claims. (Cl. 135—26)**



1. A collapsible umbrella comprising a central rod having an upper and a lower tubular rod section, said upper rod section being adapted to slide telescopically into said lower rod section, a collapsible rib structure pivotally attached to the upper end of said upper rod section, an umbrella canopy supported by said collapsible rib structure, and pulling means located and longitudinally disposed within said upper rod section and attached



at its upper end to the central portion of said umbrella canopy, said pulling means being adapted to pull a portion of the umbrella canopy within said upper rod section when said rib structure is collapsed.

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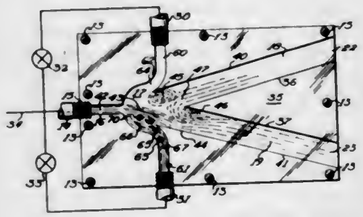
**3,170,475**
**ATTACHMENT FOR A WALKING ASSIST DEVICE**
**Gertrude P. Forbes, 246 East Ave. N., Battle Creek, Mich.**
**Filed Feb. 11, 1963, Ser. No. 257,430**
**9 Claims. (Cl. 135—57)**



6. An attachment for a walking assist device of the type having an elongate member with a ground-engaging lower end portion, said attachment comprising a top plate member having a bottom frictional surface and a socket extending from the upper surface thereof, means connected to said plate member for removably retaining said socket in mating engagement with said lower end portion of said elongate member, a lower plate member having an area greater than that of said top plate member and having a bottom surface with frictional characteristics differing from those of the bottom surface of said top plate member, and means for removably securing said lower plate member over the bottom surface of said top plate member.

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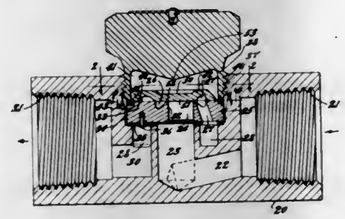
**3,170,476**
**PURE FLUID AMPLIFIER**
**Richard J. Reilly, St. Paul, Minn., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Aug. 22, 1962, Ser. No. 218,651**
**4 Claims. (Cl. 137—81.5)**



1. A pure fluid amplifier, including: a fluid inlet supplied with a fluid flow to be controlled; a fluid flow outlet including at least two outlet channels to receive said fluid flow upon operation of said amplifier; two control ports adjacent said fluid inlet with one port each on opposite sides of said inlet; said control ports further being adjacent said fluid flow and directed against said fluid inlet at an obtuse angle; and a control fluid flow issuing from one of said openings adjacent said inlet fluid flow and against a side of the inlet fluid flow in flow opposition thereto; said control fluid flow changing the pressures existing in said outlet across said inlet fluid flow to switch said fluid flows in said outlet to said outlet channel opposite said port from which said control fluid flow issues.

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**3,170,477**
**STEAM TRAP**
**John Scott, Jr., Huntingdon Valley, and Richard A. Handschumacher, Oreland, Pa., assignors to Yarnall-Waring Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Aug. 2, 1961, Ser. No. 128,821**
**18 Claims. (Cl. 137—183)**



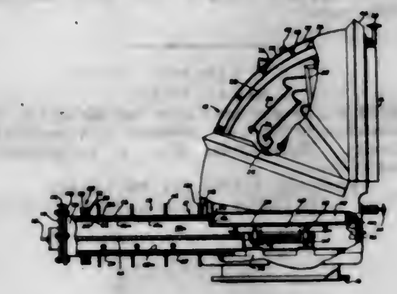
1. A steam trap having a body forming a control chamber, walls forming an inlet passage adjacent the middle of one side of said control chamber, walls forming an outlet passage to one side of the control chamber at a location more remote from said middle than said inlet passage, a valve plate freely movable in said control chamber, said valve plate having a seated position at which said inlet passage is at least nearly closed and the portion of the control chamber on the side of the valve plate remote from the inlet and outlet passages is nearly closed off from the outlet, and having an open position in which the inlet passage and the outlet passage communicate through the control chamber and with the portion of the control chamber on the side of the valve plate remote from the inlet and outlet passages, said valve plate having a relatively reduced cross section toward the middle thereof forming a depression on the top side of said plate and having a relatively thicker cross section outwardly of the middle, a first valve seat means cooperating with the valve plate in seated position of the valve plate to at least greatly reduce flow from the inlet passage to the control chamber and to the outlet passage, and a second valve seat means cooperating with the valve plate in seated position of the valve plate to restrict flow from the portion of the control chamber remote from the inlet and outlet passages to the outlet passage, there being continuous leakage means between the portion of the control chamber remote from the inlet and outlet passages to the outlet even when the valve is seated.

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**3,170,478**
**VALVE CONSTRUCTION**
**Austin U. Bryant, Walnut Creek, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California**
**Filed Feb. 8, 1963, Ser. No. 257,143**
**6 Claims. (Cl. 137—340)**

1. In a valve structure including a valve body having a bonnet opening and heating means within said valve body, a bonnet structure comprising:
a flange plate around said bonnet opening,
a gasket secured to said flange plate around said bonnet opening,
a bonnet plate secured to said flange plate,
a seal ring of rubber or the like between said bonnet plate and said gasket,

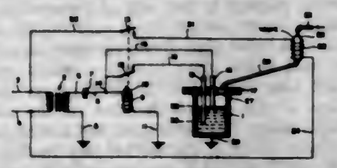
an elongated tubular member secured around said gasket adjacent said seal ring, and



an inlet conduit for a liquid coolant connected to said tubular member.

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3,170,479
**LIQUID LEVEL CONTROL APPARATUS**
Richard J. Mueller, Franklin Park, Ill., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 882,365, Mar. 27, 1959. This application Jan. 17, 1962, Ser. No. 168,574
5 Claims. (Cl. 137—392)

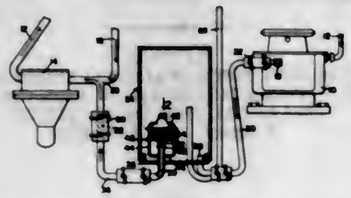


5. A fluid level control apparatus for use with a container of electrically conductive fluid, comprising: valve means operable to feed fluid into said container; and means for sensing the level of said fluid including, electrode means having at least one electrode normally in contact with the fluid, first switch means for controlling the operation of said valve means, second switch means for controlling the energization of said electrode means, electromagnetic means responsive to a loss of contact between the fluid in said container and said one electrode for closing said first switch means to operate said valve means to feed fluid to said container, and opening said second switch means to de-energize said one electrode; and means for shunting out said electromagnetic means when the level of fluid in the container rises to a predetermined level for thereupon opening said first switch means to render said valve means inoperative and for closing said second switch means.

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3,170,480
**FLOAT VALVE CONSTRUCTION**
Ernest F. Stone, 167 North St., Grafton, Mass., and Arthur F. Dumont, 214 Brigham Hill Road, North Grafton, Mass.
Filed Sept. 24, 1963, Ser. No. 311,852
1 Claim. (Cl. 137—433)

A float valve construction for a fuel-level control apparatus for a gasoline engine, said float valve construction comprising a light weight floating body, spaced parallel plates one at each side of the light weight body, two pairs of aligned apertures in the light weight plates, an aligned pair being at opposite sides of the floating body, a wire extending through each pair of aligned apertures, said wires each having an inturned end at one side of said body, a pipe, a valve seat at an end of the pipe, said wires being fastened to said pipe in position to guide the light weight body moving on the wires to and from the valve



seat, and a valve-closing means on one of said plates cooperatively arranged with respect to said valve seat to open or close the valve.

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3,170,481
**FLOW CONTROL VALVE**
Frank G. Pramell, 2818 Laurel Canyon Place, Los Angeles 46, Calif.
Filed Apr. 16, 1963, Ser. No. 273,360
5 Claims. (Cl. 137—493.2)



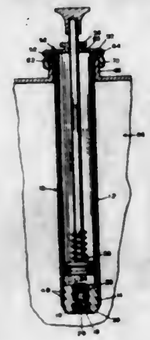
4. In a flow control valve, a hollow valve body having an inlet at one end and an outlet at the other, a tubular throttling member longitudinally movable in said body and including, at the inlet end of said body, a piston with an axial cylindrical bore therein opening toward said inlet end of said valve body, inlet cap means included in said valve body fitted into said body at the inlet end thereof and having a port therethrough which constitutes said inlet of said body, a cylindrical extension on said cap means around said port projecting inside said cylindrical bore of said piston and having bearing and sealing engagement therewith, a poppet valve received in the base of said piston, confined by said cylindrical extension of said cap, there being a metering orifice through said poppet valve, and said poppet valve and the forward end of said tubular throttling member being adapted for seating interengagement by virtue of inflow of hydraulic fluid through said inlet, said metering orifice communicating with an interior region of said tubular throttling member in such position, and said poppet valve being adapted for unseating movement upon reverse flow through the valve, a spring urging said throttling member in the direction of said inlet, throttling port means providing a port arranged to pass fluid between said interior region of said throttling member and said outlet, and means on said throttling member for varying the effective size of said throttling port in response to longitudinal movement of said throttling member.

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3,170,482
**AIR PUMP FOR PRESSURE VESSELS AND METHOD FOR MAKING SAME**
John R. Wicoff, 4556 Harrison St., Gary, Ind., assignor of one-half to S. Anton Wlodis, Chicago, Ill.
Filed Aug. 30, 1961, Ser. No. 134,979
2 Claims. (Cl. 137—541)

1. A valve closure for a cylinder pump comprising a cylindrical body having a passageway axially therethrough, a circumferential recess in said passageway, an elastic O-ring seal in said circumferential recess, an inwardly projecting ledge circumferentially in said passageway, a valve axially movable in said passageway, said valve including a stem having a removable bushing and a disk closure for seating against said elastic O-ring seal, a coil spring on said stem of said valve, one end of said coil spring seated on said ledge, the other end of said coil spring being biased against said bushing, the terminal end of said cy-

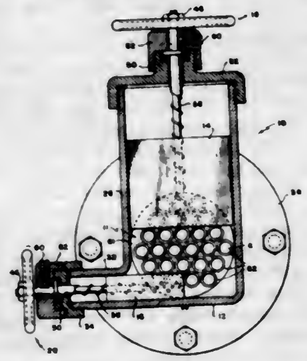




lindrical body being circumferentially chamfered at an approximate angle of 45 degrees with said body, a right angle V groove circumferentially of said cylindrical body, one side of said V groove being sloped approximately 30 degrees into said cylindrical body, the other side of said V groove forming an edge with said chamfered end and forming an included angle of approximately 75 degrees with said chamfered end, and at least one other groove circumferentially of said cylindrical body.

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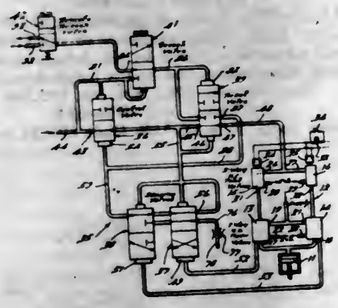
3,170,483
**QUIET FLOW REGULATOR VALVE**
Richard A. Milroy, 107 Bent Gate Road, Annapolis, Md.
Filed Aug. 1, 1962, Ser. No. 214,149
3 Claims. (Cl. 137—553)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A fluid flow system comprising:
a pipe;
a gate valve in said pipe for metering the flow of a fluid passed through said pipe and including
a coarse-regulating gate,
a fine regulating gate, and
control means on each of said gates for selectively moving said gates as a stepped linear flow controller to any one of a plurality of positions including a closed position where no fluid is permitted to flow in said pipe, and a fully open position whereby maximum flow is permitted; and a plurality of open tubes longitudinally disposed in said pipe and having ends thereof contacting said valve to be opened and closed by the same in one plane whereby a pressure differential across said valve, caused by a fluid passing thereacross, may be substantially entirely absorbed by said tubes, thereby decreasing the turbulence and noise generated by the fluid passing through the pipe.

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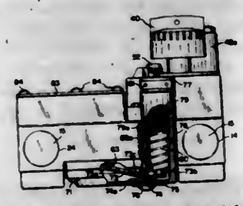
3,170,484
**VALVE SYSTEM**
Gordon R. Benz, Detroit, Robert J. Kissler, Harper Woods, and Andrew B. Huntington, Royal Oak, Mich., assignors to Ross Operating Valve Company, Detroit, Mich., a corporation of Michigan
Filed June 20, 1962, Ser. No. 203,885
13 Claims. (Cl. 137—596.16)



1. In a safety system for use in conjunction with a fluid motor control system of the type having a pair of synchronously operable valves, a control member movable between a normal position and a safety position disenabling said synchronously operable valves, sensing means shiftable from a normal position to a disenabling position in response to the occurrence of discrepant positions between said valves, and means responsive to the expiration of a predetermined time after shifting of said sensing means to its disenabling position for causing said control member to shift to its safety position.

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3,170,485
**MANIFOLD GAS VALVE**
Frederik J. Ages, Rolling Hills Estates, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed May 5, 1961, Ser. No. 108,173
2 Claims. (Cl. 137—613)

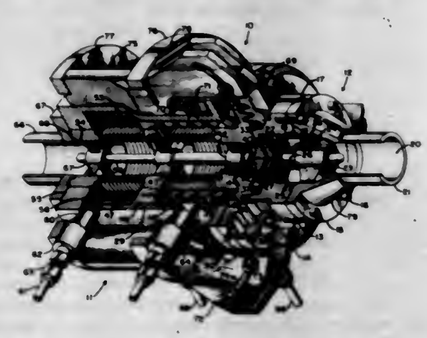


1. A compact manifold valve comprising a valve body having an inlet and an outlet and a plurality of open sided valve cavities between said inlet and outlet in opposite sides of said body; control valve means located in and closing one of said cavities and having manual actuating means extending into the atmosphere on one side of said valve body for manually adjusting said valve means; a passageway formed in said body and extending between said opposite sides; and a pressure regulator valve assembly, including a valve seat, a pressure responsive member and a cooperating pressure regulator valve positioned by

said pressure responsive member, said pressure regulator valve assembly being located in and closing another of said cavities on the opposite side of said valve body from said one cavity, said valve assembly having adjustable resilient valve biasing means in the form of an elongated spring extending partially through said passageway as to enable said pressure regulator valve to be adjustable at said same one side as said manual actuating means is located and adjustable means in said passageway accessible from said one side and cooperating with said spring for varying the biasing effect thereof on said pressure regulator valve; the axes of said control valve means, said pressure regulator valve, and said spring all being substantially parallel to each other to enable the assembly to be as compact as possible.

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**3,170,486**
**FLUID COUPLING**
**Richard L. De Witt, Rocky River, and Harold W. Schmidt, Cuyahoga Falls, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**
**Filed May 16, 1962, Ser. No. 195,346**
**5 Claims. (Cl. 137—614)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

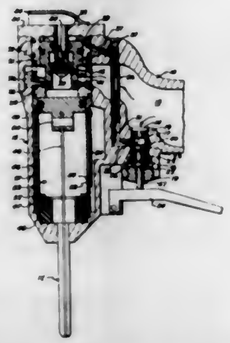


1. A detachable liquid flow control component for cooperative engagement with a fixedly mounted liquid control component, said detachable component comprising: a hollow body providing a flow passage and an open end face; a valve element extending outwardly from said open end face; means in said hollow body to yieldingly bias said valve element to closed position; a slideable member extending longitudinally within said hollow body; said slideable member formed with an intermediate annular flange extending inwardly toward the flow passage of said hollow body; inlet means for supplying pressurized gas to said hollow body; and a bellows attached to said inwardly extending annular flange for isolating the flow passage from the inlet means whereby pressure against said inwardly extending annular flange overrides said biasing means to actuate said valve element to open position.

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**3,170,487**
**SPRINGLESS FIRING VALVE**
**Albert G. Juilfs and Carl T. Bocht, Cincinnati, Ohio, assignors to Senco Products, Inc., Cincinnati, Ohio, a corporation of Ohio**
**Filed July 9, 1962, Ser. No. 207,175**
**7 Claims. (Cl. 137—625.6)**

1. In combination, a valve chamber having a head and a seat, a valve element (37) reciprocable in said chamber, a stationary member fixed in said chamber and having a first portion (33) of a given diameter, said valve element having a bore (37*a*) in one end thereof to receive said first portion, said stationary member having a second portion (34) of a different diameter, and said valve element having another bore (37*b*) in the other end thereof to receive said second portion, the diameter of said first mentioned bore being different than the diameter of said second mentioned bore, and the effective outside diameter of said valve element being constant throughout, whereby when fluid power of equal pressure is applied to both of said ends of said valve element at a time when said portions occupy their respective bores, said valve element will move under the influence of the fluid power applied at that end of said valve element having the smaller bore therein.



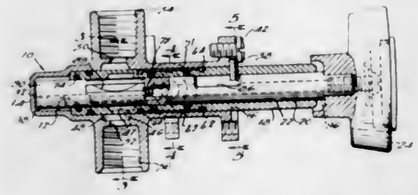
2. The combination of claim 1 in which said stationary member is provided with a passage therethrough to atmosphere, said stationary member also being provided with orifices extending from the outside of said stationary member to said passage, said orifices being located intermediate said second portion and said head, sealing means (40) in said valve element adapted to engage said stationary member when said valve element is moved toward said head, and a sealing member (41) on said valve element, the peripheral edge at least of said sealing member (41) being movable with respect to said valve element, the stationary member (33–34), sealing member (41) and sealing means (40) being arranged so that when said sealing member (41) is on said seat, said sealing means (40) is normally free of said stationary member; initial movement of said valve element towards said head bringing said sealing means (40) into sealing engagement with said stationary member while said sealing member (41) remains on said seat; further movement of said valve element toward said head serving to lift said sealing member (41) off said seat; and whereby when said sealing means (40) is engaged with said stationary member and said sealing member (41) is off said seat, initial movement of said valve element toward said seat will bring said sealing member (41) into contact with said seat while said sealing means (40) remains engaged with said stationary member, further movement of said valve element toward said valve seat serving to bring said sealing means (40) out of engagement with said stationary member while maintaining said sealing member (41) on said seat.

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**3,170,488**
**MIXING VALVE**
**Alex Manoogian, Detroit, Mich., assignor, by mesne assignments, to Masco Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Sept. 30, 1963, Ser. No. 312,744**
**7 Claims. (Cl. 137—625.17)**

1. A mixing valve comprising a body having a bore closed at one end and open at the other and inlets communicating with said bore, a sleeve lining said bore and projecting from the open end thereof and provided with inlet ports in fluid flow relation with said inlets, sealing means between the outside of said sleeve and said bore forming a seal therebetween and between which said inlet ports are disposed, the interior of said sleeve forming a valve bore of uniform section throughout its length, a movable cylindrical valve member having a sliding fit in said sleeve bore and projecting from one end thereof, said sleeve having an outlet port, said body having an outlet port in fluid flow relation with said sleeve outlet port, said valve member being relieved along a portion of its length to form a mixing passage along one side thereof adapted to be selectively positioned by axial and rotational movement so as to provide a fluidl flow passage between either or both of said inlet ports in said sleeve and said outlet port thereof

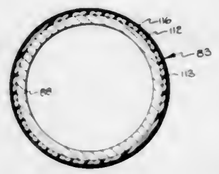




depending upon the orientation of said passage relative to said ports, a series of annular sealing means between said valve member and sleeve to prevent fluid flow axially along said sleeve except through said relieved portion, said series including spaced annular seals between said sleeve bore and said valve member and positioned so as to straddle the inlet ports in said sleeve in the closed position of said valve member, the relieved portion of said valve member providing equal and oppositely disposed transverse surfaces exposed to the fluid pressure of the liquid flowing through the valve when open so as to neutralize the axial thrust exerted on the valve member by such fluid pressure, said valve member in its closed position being in communication with only said outlet port in said sleeve.

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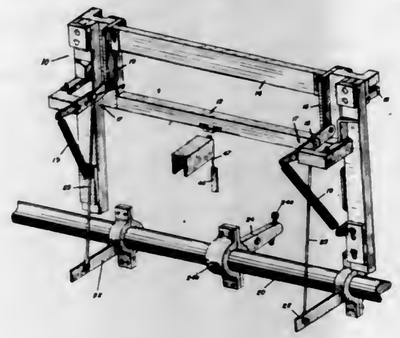
**3,170,489**
**METHOD OF MAKING PLASTIC IMPREGNATED PAPER TUBES AND RESULTING PRODUCT**
**McCleery B. Cunningham, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina**
**Filed Jan. 27, 1961, Ser. No. 85,347**
**1 Claim. (Cl. 138—145)**



A composite multi-ply tubular member comprising, in combination, a multi-ply inner layer comprising a plurality of wound plies of unimpregnated paper and a multi-ply outer layer comprising a plurality of wound plies of paper impregnated with a thermosetting resin to provide a smooth, hard, cut and wear-resistant outer surface on said composite tubular member, said inner layer comprising at least 90% of the total wall thickness of said member.

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**3,170,490**
**REED MOTION CONTROL FOR TERRY LOOM**
**Edward L. Carter, Kannapolis, N.C., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina**
**Filed June 14, 1963, Ser. No. 287,989**
**9 Claims. (Cl. 139—27)**



1. A reed motion control for a terry loom which has a reed swinging means for swinging the reed away from the beat up position and holding the reed in the beat up position, a reed motion shaft linked to the swinging means, and drive means for rotating the reed motion shaft back and forth between a position in which the reed swinging means holds the reed in the beat up position and a position in which the reed motion shaft is rotated beyond the position in which the reed swinging means is held out of the reed beat up position, said reed motion control comprising an adjusting arm adapted to be mounted on the reed motion shaft, a replaceable adjustable member on the free end of said adjusting arm adjustable in the direction of movement of said adjusting arm, a control member mounted for lateral movement relative to the path of said adjusting arm as it is swung back and forth by the reed motion shaft from a position in which one end is in the path of and abuttable by said adjustable member on said adjusting arm to a second position in which the end is out of the path of the adjusting arm, and actuating means connected to said control member adapted to couple said control member to a control means for the loom.

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**3,170,491**
**LOOM HARNESS**
**Albert J. Kleny and Charles F. Kramer, Philadelphia, Pa., assignors to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Mar. 13, 1962, Ser. No. 179,297**
**7 Claims. (Cl. 139—82)**

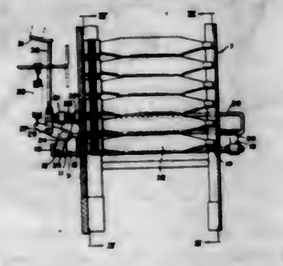


1. In a loom having a plurality of contiguous heddle frames, means for reducing sidewise movement of any of the frames comprising members on each of said heddle

frames and vertically moved therewith having a vertical face portion in interengaging relation to a vertical face portion of a contiguous heddle frame.

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3,170,492
## MECHANISM FOR PIRN MAGAZINES IN WEAVING LOOMS
Jaime Picanol, "Cam Patral Catalunya," Zillebeke-les-Ypres, Belgium
Filed July 3, 1962, Ser. No. 207,369
Claims priority, application Belgium, Mar. 20, 1962, Patent 615,293
6 Claims. (Cl. 139—245)



1. Apparatus for feeding pirns from a magazine adapted to contain a stack of superposed pirns which comprises:

a bar;

means for supporting said bar adjacent the lowermost pirn in said stack, and for sliding movement between first and second operative positions, said bar having a projection thereon adjacent one end, said projection having a lower curved face engaging one end of the lowermost pirn in said stack when said bar is in its first operative position, said projection having an upper curved face located alongside the lower curved face for engaging one end of the second lowermost pirn in said stack when said bar is moved to its second operative position;

a post carried on the other end of said bar and extending parallel with said bar, said post engaging the other end of the lowermost pirn in said stack when said bar is in its first operative position;

a rod, said rod being U-shaped at one end, the free branch of said U-shaped end extending parallel with said post;

means for supporting said rod for sliding movement parallel to said bar and between first and second operative positions, the free branch of the U-shaped end of said rod supportingly engaging the other end of the second lowermost pirn in said stack when said rod is in its second operative position; and

means connected with said bar and said rod for simultaneously sliding said bar and said rod between their first and second operative positions.

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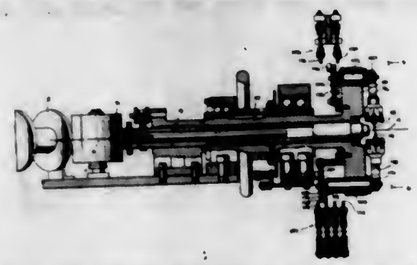
3,170,493
## FABRIC
Eugene M. Hoffman, Carlisle, Pa., assignor to C. H. Masland & Sons, Carlisle, Pa., a corporation of Pennsylvania
Filed May 3, 1962, Ser. No. 192,214
17 Claims. (Cl. 139—403)



15. A pile fabric composition of interwoven backing warp yarn, face warp yarn, weft yarns including binding weft yarn, pile projections of said face warp yarn having base legs extending warpwise and being bound under different binding wefts, said different binding wefts being separated by an odd number of intermediate binding wefts, at least some of said pile projections being partially cut on the face side of the fabric.

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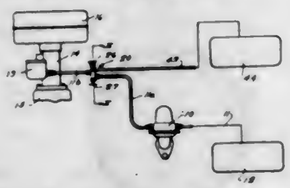
3,170,494
## GRID WINDING MACHINE
James B. Lindsay, Millburn, N.J., assignor to Kable Engineering Company, Union City, N.J., a corporation of New Jersey
Filed June 30, 1961, Ser. No. 121,157
7 Claims. (Cl. 140—71.5)



1. In a grid winding machine the combination of a side wire guide, means to move a side wire through said guide at differing speeds, a spindle mounted for rotation about said guide, grid wire supply means mounted on said spindle for rotation therewith, a plurality of side wire fastening tools, means for movably mounting said tools on said spindle for rotation therewith and for transferring said tools between an operative position in engagement with the side wire and an inoperative position out of engagement with the side wire, first control means for periodically moving said fastening tools to their operative position during the movement of the side wire at one side wire speed, and second control means for periodically moving said fastening tools to their inoperative position during the movement of the side wire at the higher side wire speed.

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3,170,495
## FUEL EXCHANGER DEVICE
Samuel Wagner, 2405 Hillsdale Drive E., Brookfield, Wis.
Filed Sept. 19, 1962, Ser. No. 224,706
3 Claims. (Cl. 141—388)



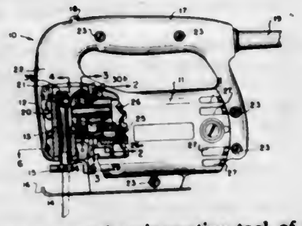
1. In a system for exchanging liquid fuel between two motor vehicles each having a fuel container, a motor, a fuel line therebetween and motor operated means for pumping fuel from said container through said line to said motor,

a fuel exchanger device comprising a multi-passaged valve in the line of one of said vehicles, and

a flexible tube for connection to said valve with its delivery end in the tank of the other of said vehicles whereby the pump of said first vehicle can be operated to cause fuel from said one line to be pumped into the container of said other vehicle.



3,170,496
## POWER-OPERATED RECIPROCATING TOOL WITH INTEGRAL BEARING BLOCK
Samuel H. Kohler, Lutherville, and Allen C. Stanley, Baltimore, Md., assignors to Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Oct. 2, 1962, Ser. No. 227,950
10 Claims. (Cl. 143—68)



1. In a power-operated reciprocating tool of the type comprising a split housing including a pair of complementary mating portions detachably secured together, and further comprising a reciprocating assembly including a reciprocating shaft with a yoke secured thereto, and a tool element carried by the reciprocating shaft beyond the housing, the improvement in journaling the reciprocating shaft in the housing and simultaneously supporting the reciprocating assembly from twisting about the axis of reciprocation which comprises:

(*a*) a one-piece bearing block and means to retain said block between the mating portions of the split housing, and to prevent said block from twisting about the axis of reciprocation;

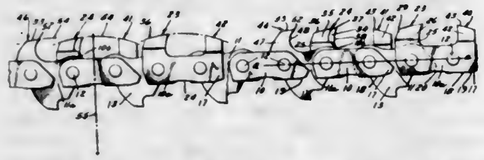
(*b*) said block comprising a body portion formed with a bore for journaling the reciprocating shaft; and

(*c*) said block further comprising a guideway formed integrally with said body portion and extending therefrom parallel to the axis of reciprocation;

(*d*) whereby the yoke is slidably supported on said guideway, and whereby the reciprocating assembly is prevented from twisting about the axis of reciprocation.

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3,170,497
## SOLID TOE ROUTER SAW CHAIN
Jack W. Ehlen, Torrance, and George A. Frech, Los Angeles, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Apr. 25, 1962, Ser. No. 191,395
5 Claims. (Cl. 143—135)



1. For a saw chain having side links and center links alternately connected by hinge means disposed on transverse hinge axes, a side cutter on a side link plate, said side cutter comprising:

(*a*) an intermediate portion connected to said side link plate, said portion being defined by an inclined inside face extending from said side link plate and an outside face extending laterally outwardly from said side link plate;

(*b*) a longitudinally directed block extending from said intermediate portion vertically outwardly from the respective link plate substantially in the direction of the plane thereof;

(*c*) a continuous, generally vertically transverse front face on said block extending over and spaced from the respective link plate;

(*d*) an outside face on said block laterally outwardly of the respective link plate extending substantially in the direction thereof, and an inside face on said block lateraly inwardly of the respective link plate extending substantially in the direction thereof;

(*e*) said outside face extending longitudinally rearwardly from said front face and trailing laterally inwardly;

(*f*) a top generally horizontal face on said block extending longitudinally rearwardly from said front face and trailing vertically inwardly, said top face and outside face adjoining;

(*g*) a transverse cutting edge being formed with the top face and front face;

(*h*) a generally vertical cutting edge being formed with the outside face and the front face and extending substantially in the direction of the respective plate, and an inside vertical edge being formed with said inside face and said front face, said inside vertical edge being opposite said vertical cutting edge and substantially coextensive therewith,

(*i*) said cutting edges adjoining to form a continuous cutting edge,

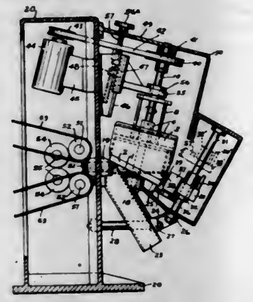
(*j*) said top face lying on an arc whose center is on a line centrally positioned between said hinge axes of said side link and which is perpendicular to a plane in which the hinge axes of said side link lie;

(*k*) and a bottom continuously horizontal face subjacent said top face extending from and laterally above said inclined inside face of said intermediate portion and terminating inwardly adjoining said inside face on said block,

(*l*) said front face of said block being defined by said horizontal top and bottom faces and said coextensive, vertical outside and inside edges of said outside and inside faces respectively.

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3,170,498
## TOBACCO CUTTING MACHINE WITH ROTATING KNIFE TOP
Alfred Schmermund, % Maschinenfabrik Alfred Schmermund, Gevelsberg, Westphalia, Germany
Filed Dec. 6, 1960, Ser. No. 74,113
Claims priority, application Germany, Dec. 7, 1959, Sch 27,096
10 Claims. (Cl. 146—106)

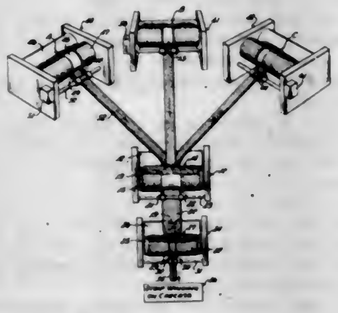


1. In a machine for cutting fibrous material such as tobacco the combination of a supporting frame, a rotary head mounted on a fixed axis of rotation upon said frame comprising an outer cylindrical shaped casing portion and an inner cylindrical shaped casing portion, means to variably extend and retract the inner casing with respect to the outer casing in the direction of the axis of the rotary head, a blade construction mounted between said casing portions on the inner cylindrical casing for movement

therewith, said blade construction comprising an arcuate blade arrangement having a cutting edge protruding beyond said head and which cutting edge is tapered so that extended the taper would form a cone having a predetermined apex angle beyond and in the same facing direction as the cutting edge, and means for feeding bunched fibrous material including a nozzle the exit plane of which lies in a side of said cone line as extended from the cutting edge of the blade.

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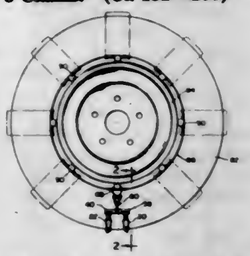
**3,170,499**
**PREPARATION AND APPLICATION OF TIRE MATERIAL, THE TIRE THUS PRODUCED AND THE APPARATUS USED**
**Herbert H. Deist, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**
**Filed Oct. 12, 1962, Ser. No. 230,175**
**20 Claims. (Cl. 152—330)**



12. A vehicle tire comprising
a tire carcass,
a body of rubber material encircling said carcass,
said body being made up of separate predetermined portions with each portion consisting essentially of a selected type of rubber stock and the rubber stock of which each portion consists having particular characteristics desired for use in forming such portion,
said portions being disposed in a predetermined relation to each other and to the body,
and said body having a gradual transition therewithin between adjacent different type rubber stocks which form adjacent predetermined portions of said body to promote effective bonding between said adjacent portions of the body.

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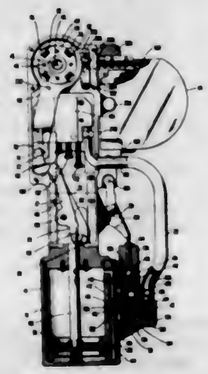
**3,170,500**
**ANTI-SKID DEVICE**
**Lester N. Yohe, 1601 Melrose Ave., Havertown, Pa.**
**Filed Mar. 5, 1964, Ser. No. 349,613**
**8 Claims. (Cl. 152—233)**



1. An anti-skid traction device for vehicle wheels having a rim, a tire mounted on said rim, and attachment elements secured to said rim on opposite sides of said tire, said device comprising:
(*a*) a pair of short flexible traction element sections;
(*b*) first and second rigid bars;
(c) means attaching the opposite ends of said traction elements to a corresponding one of said bars to arrange said traction elements substantially in parallel spaced relationship with each other;
(*d*) means on said first bar for releasably securing it to an attachment element on the rim at one side of said tire;
(*e*) extensible-retractible toggle means on said second bar for releasably securing said second bar to an attachment element on the rim at the other side of said tire with said traction elements secured around the tread from one to the other side of said tire and locked in place;
(*f*) said extensible-retractible toggle means comprising pivotably connected linkage movable over-center to lock the traction device in place; and
(*g*) screw means for adjusting the length of said device to fit tires of different sizes.

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**3,170,501**
**CRIMPING TOOL**
**George Ustin, Verona, and Louis Netta, Elizabeth, N.J., assignors to Buchanan Electrical Products Corporation, Hillside, N.J., a corporation of New Jersey**
**Filed Mar. 20, 1961, Ser. No. 96,938**
**11 Claims. (Cl. 153—1)**



1. In a crimping tool, a dieholder having an axially disposed bore defining an operating location and a radially disposed workpiece transmission channel located on one of the facing surfaces threeof communicating with said bore, an operating member disposed in encircling relation with said dieholder and rotatively displaceable relative thereto, and reciprocatable means displaceable intermediate an advanced and a retracted position for advancing electrical connector elements through said transmission channel and into said operating location, said last mentioned means being displaceable to its retracted position by rotative displacement of said operating member relative to said dieholder.

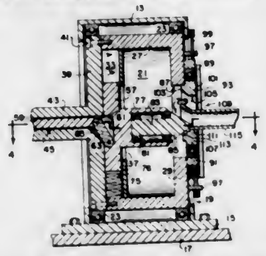
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**3,170,502**
**TUBE FLARING MACHINE**
**Willis G. Groth, 1207 Governors Drive SE., Huntsville, Ala.**
**Filed May 18, 1962, Ser. No. 196,015**
**5 Claims. (Cl. 153—81)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. A tube flaring machine, comprising:
(*a*) a tubular shell



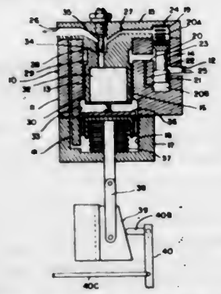
(*b*) a cylindrical housing adapted to rotate about its longitudinal axis;
(c) means for rotatively mounting said housing within said tubular shell;
(*d*) said cylindrical housing having an interior chamber defined by a cylindrical side wall, a front wall, and a rear wall;
(*e*) said rear wall having a rectangular slot therein with a rear countersunk portion;
(*f*) a closure plate secured to the outer surface of said rear wall;
(*g*) said closure plate having an outwardly extending tubular shaft symmetrically aligned with the housing's longitudinal axis;
(*h*) means for rotating said tubular shaft and housing;



(*i*) a plate mount slidably located within said rectangular slot and countersunk portion;
(*j*) a rod slidably located within said tubular shaft;
(*k*) a link means for connecting said rod and said plate mount;
(*l*) said plate mount having a tubular boss;
(*m*) a male tube flaring die rotatively mounted within said tubular boss;
(*n*) said front wall of said housing having a large aperture;
(*o*) a support having a unitary circular female tube flaring die rotatively mounted therein; and
(*p*) means for slidably positioning said support on the outer surface of said front wall whereby the center of said female die may be located eccentric to the housing's longitudinal axis.

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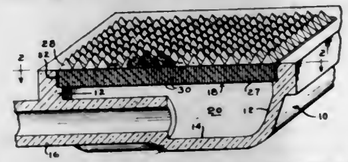
**3,170,503**
**FUEL VISCOSITY RESPONSIVE CONTROL**
**Walter F. Isley, Grosse Pointe, and Frank C. Druzynski, Bloomfield Township, Mich., assignors to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia**
**Filed Apr. 23, 1962, Ser. No. 189,378**
**15 Claims. (Cl. 158—36)**



1. In a multifuel engine having a fuel supply means, a a fuel control system comprising
(*a*) means adapted for connection to said fuel supply means and operable to regulate the fuel to a predetermined constant pressure, and
(*b*) a viscosity responsive control device communicating with said pressure regulating means and operable to vary the fuel delivered to the engine by said fuel supply means, said device comprising
a first orifice communicating with said pressure regulating means,
a second orifice connected in series with said first orifice,
a pressure chamber intermediate said first and said second orifices,
a pressure responsive means carried in said pressure chamber and being adapted for operable connection with said fuel supply means whereby as pressure varies in said pressure chamber in response to changes in the viscosity of the fuel being used, said pressure responsive means is operable to vary the amount of the fuel delivered to the engine, and
temperature responsive means operable to vary the size of at least one of said orifices in response to temperature variations in the fuel being delivered to the engine whereby the amount of fuel being delivered to the engine will be varied in response to viscosity changes in the fuel being delivered.

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**3,170,504**
**CERAMIC BURNER PLATE**
**John G. Lanning, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York**
**Filed June 5, 1962, Ser. No. 200,235**
**8 Claims. (Cl. 158—116)**



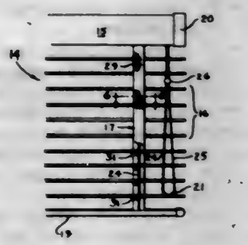
1. A gas burner plate comprising a thin walled ceramic honeycomb having an inlet surface and an opposed combustion surface, a plurality of unobstructed gas passages uniformly distributed throughout the honeycomb and extending between and terminating in said surfaces, said passages being defined and separated from one another by thin walls of ceramic, each said passage having a cross-sectional area not exceeding 0.006 square inch, the aggregate cross-sectional areas of the gas passages providing an open space of at least 20% of the area of said combustion surface, at least a portion of said combustion surface having a configuration comprising a plurality of peaked protrusions, adjacent peaked protrusions having adjacent sloping surfaces forming an included angle therebetween of about 20 to 120° and having apexes spaced at least a distance of ⅛ inch whereby a plurality of said gas passages terminate in the sloping surfaces of each said peaked protrusion, and the length of all said gas passages being at least about 0.2 inch.

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**3,170,505**
**FULL-CLOSURE TYPE VENETIAN BLINDS**
**Hans K. Lorentzen, Montclair, Joseph A. Anderle, Clifton, and James J. Kapeller, Jr., East Rutherford, N.J., assignors to Levolor Lorentzen, Inc., Hoboken, N.J., a corporation of New Jersey**
**Continuation of application Ser. No. 507,782, May 12, 1955. This application Dec. 27, 1962, Ser. No. 247,721**
**11 Claims. (Cl. 160—176)**

1. In a Venetian blind of the full-closure type in which (*a*) a plurality of ladders have front and rear vertical tapes that are interconnected by vertically-spaced cross

tapes, (*b*) crowned slats are supported by the cross tapes, (*c*) lift cords depend between the front and rear vertical tapes and pass through elongated transverse openings in the slats, and (*d*) the rear edges of the slats are formed to move astride of the lift cords when the blind is closed; the improvement which comprises: the slats having openings through which the cross tapes pass close to but spaced



from the rear edges of the slats, the cross tapes having shoulders which, when the slats are horizontal, engage the tops of the slats at points close to but spaced from the rear edges of the slats whereby, when the blind is closed with the rear edges of the slats depressed, the cross tapes pull the lower edges of the slats away from the rear vertical tapes and against the faces of the subjacent slats.

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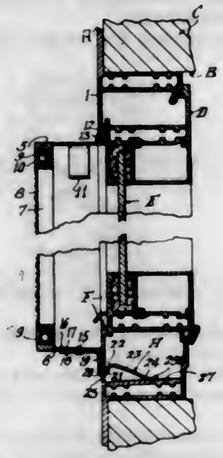
**3,170,586**
**DOOR STRUCTURE**
**Robert O. Johnson, Erie, Pa., assignor to Fenestra, Incorporated, Detroit, Mich., a corporation of Michigan**
**Filed Apr. 16, 1962, Ser. No. 187,672**
**3 Claims. (Cl. 160—206)**



1. A U-shaped combination reinforcing member, leaf hinge and pivot mounting means having a pair of leg portions secured together by a connecting portion and aligned openings extending through the leg portions, a U-shaped clevis also having a pair of leg portions secured together by a connecting portion fitting over the U-shaped combination reinforcing member, leaf hinge and pivot mounting means and having openings in the leg portions thereof aligned with the openings in the leg portions of the combination reinforcing member, leaf hinge and pivot mounting means, a pivot rod extending through the aligned openings, and a screw threaded through the connecting portion of the U-shaped clevis, passing through the connecting portion of the combination reinforcing member, leaf hinge and pivot mounting means and engaging the pivot rod whereby the pivot rod is secured to the combination reinforcing member, leaf hinge and pivot mounting means.

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**3,170,587**
**WINDOW FRAME AND SCREEN COMBINATIONS**
**George J. Kleinknecht, Ridgewood, N.J., assignor to Screens and Fabricated Metals Corp., North Bergen, N.J., a corporation of New Jersey**
**Filed Apr. 8, 1963, Ser. No. 271,228**
**3 Claims. (Cl. 160—369)**



1. The combination with a window frame that has a front wall with a flat front face, jambs, a lintel portion having an inwardly extending lip, and a sill portion having at least one opening extending through said front face, of a screen that has a frame including a top rail, a bottom rail and stiles abutting said face of the window frame, said top rail having a flange seated behind said lip on the window frame and said bottom rail having at least one spring clip secured thereon and extending through said opening in the sill portion of the window frame, said clip abutting a portion of said window frame rearwardly of said front wall and exerting yielding pressure on said screen frame tending to move the screen in its own plane to hold said flange behind said lip, and said clip also having a portion yieldingly and separably interlocking with the wall of said opening in the sill portion of the window frame and drawing said screen frame into tight abutting contact with the face of the window frame.

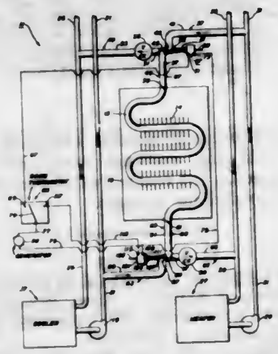
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**3,170,588**
**HEATING AND COOLING SYSTEM**
**Gilbert H. Avery, 4542 Alderagate Road, Memphis, Tenn.**
**Filed Dec. 18, 1962, Ser. No. 245,604**
**6 Claims. (Cl. 165—26)**

1. In a heating and cooling system, a source of heating medium, a heating medium delivery conduit and a heating medium return conduit respectively leading from and leading to said source of heating medium, a source of cooling medium, a cooling medium delivery conduit and a cooling medium return conduit respectively leading from and leading to said source of cooling medium, a coil, means including passage means between said coil and said delivery and return conduits and including a pair of three-way valve means in said passage means respectively adjacent opposite ends of said coil for selectively directing the flow of said heating medium from said heating medium



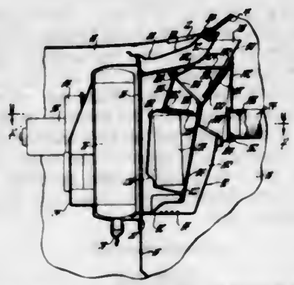
delivery conduit through said coil in one direction and into said heating medium return conduit and directing the flow of said cooling medium from said cooling medium delivery conduit through said coil in the opposite direction and into said cooling medium return conduit, a pair



of check valve means in said passage means respectively between said pair of three-way valve means and said return conduits for preventing flow from said conduits toward said coil and permitting flow in the opposite direction.

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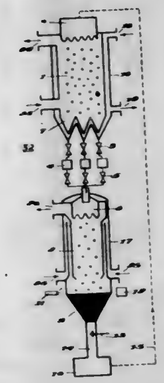
**3,170,589**
**AUTOMOTIVE HEATING AND AIR CONDITIONING SYSTEMS**
**Delbert D. De Rees, Rochester, and Robert M. Fox, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Sept. 20, 1961, Ser. No. 139,417**
**3 Claims. (Cl. 165—42)**



1. An automotive heating and air conditioning system comprising an automotive body, said body defining a passenger compartment and having a cowl structure and a firewall forward of said passenger compartment, said firewall defining an aperture, said cowl structure extending rearwardly from said firewall, a subassembly joined to said firewall and cowl structure and extending into said compartment, heat exchange means in said subassembly and accessible for mounting and removal by way of said aperture, partitions within said subassembly and lying in planes intersecting at acute angles to effect rigidity in said body, said partitions defining through ports for air, said heat exchange means being mounted at the forward sides of said partitions, means for conducting outside air to said aperture, and dampers arranged to control said ports to direct air through and around said heat exchange means and into said passenger compartment.

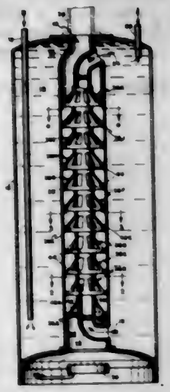
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**3,170,510**
**MAGNETOHYDRODYNAMIC INSTALLATION WITH HIGH TEMPERATURE HEAT EXCHANGER**
**Gustav Baumann, Gebenstorf, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company**
**Filed July 16, 1962, Ser. No. 210,094**
**Claims priority, application Switzerland, July 17, 1961, 8,400/61**
**6 Claims. (Cl. 165—104)**



1. A heat exchanger for pre-heating high pressure combustion air, said heat exchanger including upper and lower shaft-like chambers arranged one above the other and through which discrete bodies capable of storing and also discharging heat corresponding to their mass and specific heat pass in a free fall manner, a first distributor for said heat storing bodies located at the upper entrance end to said upper chamber, a second distributor for said heat storing bodies located at the upper entrance end to said lower chamber, a plurality of intermediate storage spaces for said bodies located at the lower end of said upper chamber, each said storage space terminating in an outlet, a passageway individual to each said outlet and which serves to connect the same with said second distributor, each said passageway including a sluice chamber for temporarily holding said bodies collected in the storage space correlated thereto as well as a shut-off valve located between the entrance to said sluice chamber and said outlet from said storage space and also a throttle valve located between the exit from said sluice chamber and said second distributor, means for passing lower pressure hot exhaust gas through said upper chamber in heat-exchange relation with said free falling bodies to transfer heat thereto, means for passing higher pressure combustion air through said lower chamber in heat-exchange relation with the heated free falling bodies to transfer heat to the combustion air, and means opening and closing each said shut-off valve and the throttle valve correlated thereto in an alternate manner so that the sluice chamber correlated thereto is filled with said shut-off valve open and said throttle valve closed and is thereafter emptied with said shut-off valve closed and said throttle valve open, whereby such higher pressure combustion air from said lower chamber as is trapped within said sluice chamber upon emptying thereof by upward flow through said passageway is thereafter discharged upwardly into said storage space correlated thereto upon re-opening of said shut-off valve and re-closing of said throttle valve for loosening said bodies therein prior to the next discharge into said sluice chamber, said last-mentioned means also actuating said shut-off and throttle valves for said passageways in a sequential manner such that said sluice are filled and emptied in succession.

### 3,170,511
### STACKED HEAT INTERCHANGER
Lyle D. Guthrie, 1619 Guy St., Apt. 3, San Diego, Calif.
Filed Mar. 27, 1961, Ser. No. 98,534
4 Claims. (Cl. 165—108)



1. A heat exchanger comprising:

three concentric enclosures, said first enclosure comprising a pipe that forms a heated chamber, the space between said first and second enclosures forming a heater chamber, and the space between said second and third enclosures forming a storage chamber;

means for forming a passage between one end of said heated chamber and one end of said storage chamber;

means for forming a passage between the other end of said heated chamber and the other end of said storage chamber, whereby fluid may pass from said storage chamber into said heated chamber to be heated and may then pass from said heated chamber to said storage chamber to be stored until withdrawn;

a plurality of heat interchangers, each having an inner band, an outer band, and generally radially extending vanes interconnecting said bands; the inner band of each interchanger being axially spaced relative to the outer band;

means for positioning said heat interchangers in a stacked manner along the length of said heat exchanger with said inner bands in heat conducting relation with said inner enclosure, said outer bands in heat conducting relation with said second enclosure, and said vanes positioned in said heater chamber, the vanes of successive heat interchangers having progressively larger areas along substantially the entire length of said heater chamber, whereby successive vanes are enabled to more efficiently extract heat from the passing gases;

and means for causing hot flue gases to traverse said heater chamber, and cause said vanes to extract heat from said flue gases and to transmit said heat to said heated chamber and said storage chamber.

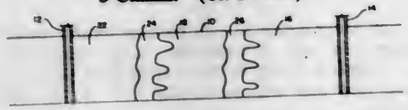
### 3,170,512
### HEAT EXCHANGER
John F. D. Smith, Fayetteville, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 268,945
3 Claims. (Cl. 165—110)

1. A condenser comprising an elongated, heat conducting, impervious, metal, heat exchange tube, the exterior surface of said heat exchange tube having a shape defining a plurality of substantially circumferentially extending, substantially annular, grooves; a porous heat conducting, metal jacket being secured in heat exchange relation with substantially the entire exterior surface of said heat exchange tube and defining with said annular grooves a plurality of condensate passages; said porous metal jacket having formed therein an opening extend-



ing below and in communication with each said annular passage of said heat exchange tube, said opening defining a passage for the removal of condensate from said plurality of condensate passages.

### 3,170,513
### METHOD OF MISCIBLE FLOODING
John N. Dew and Philip W. Reed, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 26, 1960, Ser. No. 58,236
5 Claims. (Cl. 166—9)



1. A method for the recovery of hydrocarbons from a subterranean hydrocarbon-bearing reservoir traversed by an injection well and a recovery well which comprises:

(*a*) injecting a first mixture of liquefied low molecular weight hydrocarbon and water into said reservoir, said hydrocarbon being in an amount from about 3 to 15 percent of the reservoir hydrocarbon pore space and said water being in an amount for a displacement velocity in said reservoir greater than the hydrocarbon of said first mixture;

(*b*) injecting a second mixture of water and hydrocarbon gas, said gas being in an amount for a displacement velocity in said reservoir greater than the water of said second mixture;

(*c*) controlling the velocity of the gas of said second mixture displacing said first mixture in such a manner for displacement of the hydrocarbon of said first mixture through and ahead of the water of said first mixture prior to reaching said recovery well; and

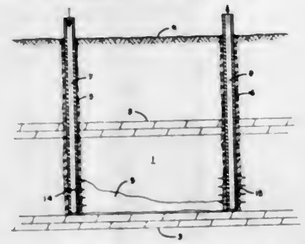
(*d*) recovering hydrocarbons from said reservoir via said recovery well.

### 3,170,514
### AQUEOUS DISPLACEMENT OF OIL
Robert R. Harvey and Emery M. Craighead, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Oct. 22, 1962, Ser. No. 232,286
13 Claims. (Cl. 166—9)

1. In a process for producing oil from an oil-bearing stratum comprising injecting an aqueous flooding liquid into said stratum thru a well therein so as to displace oil therefrom and producing said aqueous liquid and displaced oil thru a well in said stratum, the improvement comprising incorporating in solution in said liquid, in micelle forming concentration in the range of 1.5 to $10^{-2}$ molar, compound A selected from the group consisting of the calcium salts of fatty acids, the calcium salts of alkyl sulfonic acids, and the calcium salts of alkyl sulfates wherein the alkyl group contains from 8 to 18 carbon atoms and compound B, an alkali metal salt of the same group member and having the same number of carbon atoms as compound A in a concentration in the range of 0.05 to 0.5 gram per 100 grams of $H_2O$ in said liquid, said compounds A and B being added to the flooding liquid before injection.



### 3,170,515
### IN-SITU COMBUSTION PROCESS
Bertram T. Willman, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware
Filed June 12, 1961, Ser. No. 116,452
4 Claims. (Cl. 166—11)



1. A method for the recovery of oil from an underground oil-bearing formation penetrated by an input well and a spaced output well which comprises: injecting water having a density greater than said oil through said input well into only a lower portion of said formation, continuing the injection of such water until water breakthrough occurs in said output well, thereafter initiating in-situ combustion in only said lower portion of said formation about said input well and injecting an oxygen-containing gas through said input well into only said lower portion of said formation to support said combustion and to drive oil from said formation toward said output well.

### 3,170,516
### METHOD OF PLUGGING A WELL BORE WITH A THERMOSETTING RESIN
Warren E. Holland and Charles B. Corley, Jr., Houston, and William C. Lindsey, Corpus Christi, Tex., assignors, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware
Filed June 25, 1962, Ser. No. 204,700
5 Claims. (Cl. 166—23)



1. A method of plugging the bore of a well pipe having a support plug secured therein at a predetermined level, comprising:

depositing on said support plug a quantity of a liquid mixture of a thermosetting phenolic condensation resin and a catalytic hardener therefor, and a plurality of metallic balls sufficient in number to be interspersed through said mixture to the surface thereof; and

delaying production of the well until said thermosetting phenolic condensation resin has hardened.

### 3,170,517
### FRACTURING FORMATION AND STIMULATION OF WELLS
John W. Graham, Houston, Tex., and Nils L. Muench, Washington, D.C., assignors, by mesne assignments, to Jersey Production Research Company, Tulsa, Okla., a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 236,939
14 Claims. (Cl. 166—42)



1. A method for fracturing a subsurface earth formation penetrated by a well having a casing therein which comprises introducing into said casing a body of fracturing liquid in sufficient quantity to cover at least a portion of said formation and extend in said well a substantial distance from the earth's surface to provide a substantial gas space in said well above said body, introducing a gasiform fluid into said space and building up in said space a pressure sufficient to cause fracturing of said formation with only said fracturing liquid when said casing and said formation are perforated, and then perforating said casing and said formation in said fracturing liquid.

### 3,170,518
### WELL METHOD AND APPARATUS WHICH IS PARTICULARLY ADAPTED FOR USE IN MULTIPLE ZONE WELLS
Cicero C. Brown, Houston, Tex., assignor to Brown Oil Tools, Inc., Houston, Tex., a corporation of Texas
Filed May 23, 1960, Ser. No. 31,189
6 Claims. (Cl. 166—48)

1. A well apparatus for producing well fluids from upper and lower fluid producing zones traversed by a well bore, including,

a lower well packer located between the producing zones,

an upper well packer located above the upper producing zone,

a first tubing string connected with and supporting both well packers and having its lower end communicating with the lower zone below the lower packer,

said lower well packer including hydraulically-actuated means for moving said packer into set position and means communicating the hydraulically-actuated means with the bore of said first tubing string whereby pressure may be applied to said hydraulically-actuated means through said tubing to set said lower packer without manipulation of the tubing,

a second tubing string lowerable independently of the first string and well packers,

said upper well packer having means actuated by the imposition of weight for moving the packer into set position, said second tubing string being engageable with said upper packer to impose its weight thereon to set the same into sealing position with the wall of the well bore,

said second string having its lower end communicating with the upper producing zone between the packers,

and means for directing fluid pressure through said first tubing string to the hydraulically-actuated means of the lower packer subsequent to the setting of the upper packer to move said lower packer into set position within the well bore.

5. The method of positioning and setting a lower hydraulically-actuated well packer and an upper weight-set



well packer and a pair of tubing strings within a well bore including,

lowering both packers in unset condition on a first tubing string into the well bore,

landing said first string in final position within the bore to locate said packers in final position,

thereafter lowering a second tubing string into the bore and connecting it with the upper packer,

imposing the weight of the second string on said upper packer to set the same by the imposition of weight,

landing second tubing string in final position,

mounting control head equipment on the upper end of the well to control the same,

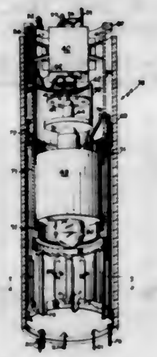
circulating fluid through the tubing strings and around the unset lower packer,

and finally setting the hydraulically-actuated lower packer while the tubing strings and control head equipment remain in place.

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**3,170,519**
**OIL WELL MICROWAVE TOOLS**
**Duane B. Haagensen, Lexington, Mass., assignor, by mesne assignments, to Gordon L. Allot, Washington, D.C., Cortlandt S. Dietler, Denver, Colo., and Robert E. Sonnelson, Wellesley, Mass., trustees**
**Filed May 11, 1960, Ser. No. 28,340**
**10 Claims. (Cl. 166—60)**

1. An apparatus for heating a petroleum-bearing formation and adapted to be connected to the lower extremity of a producing string at a position opposite said formation, said apparatus comprising a capsule having first and second portions, said first portion of said capsule containing a plurality of electrical devices mounted therein for simultaneously generating microwave energy and thermal energy, means for supplying excitation voltages to said devices, means for directing said microwave energy at a frequency of between 1000 and 300,000 megacycles into said petroleum-bearing formation, said second portion of said capsule having perforations therein for allowing petroleum products to enter said producing string, means for connecting said capsule to said producing string, said second capsule portion including a heat



exchanger positioned therein, means for carrying said thermal energy from said microwave generating devices to said heat exchanger for heating said petroleum products entering said producing string through said perforated portion of said capsule.

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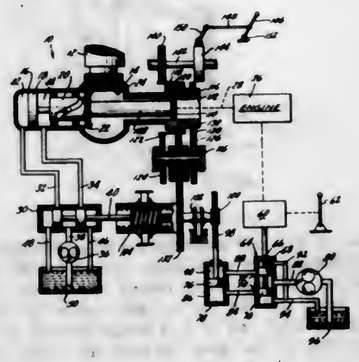
**3,170,520**
**DUAL-FLOW TRANSFER ASSEMBLY**
**Armais Arutunoff, Bartlesville, Okla., assignor to Reda Pump Company, Bartlesville, Okla., a corporation of Delaware**
**Filed Aug. 28, 1962, Ser. No. 219,849**
**5 Claims. (Cl. 166—65)**



4. In a well casing having a string of tubing, an electrically driven submergible pump operatively connected to said tubing, a cable leading from an external source of power to said pump, a cable accommodating packer assembly adapted for selective location in said casing, said assembly comprising a cylindrical body having a separable, parti-cylindrical portion an open cable receiving bore formed jointly in the adjacent flat faces of said body and separable portion, means for securing said separable portion to said body, a separable gland insertable in one end of said bore for sealing a cable extending through the latter, and means for securing said gland to respective body portions.



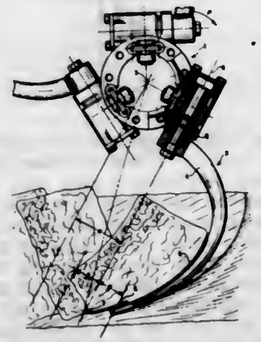
**3,170,521**
**FEATHERED PROPELLER CONTROL**
**Leonard L. Gaubis, East Granby, Conn., and Edward H. Kusiak, Springfield, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed June 24, 1963, Ser. No. 289,844**
**3 Claims. (Cl. 170—160.29)**



1. For a variable pitch propeller having a plurality of blades movable to a feathered position, a hub supporting said blades, means in said hub for automatically maintaining the propeller in a nonrotational position when the blades are in a feathered position, said means responsive to rotational movement of said propeller for adjusting the pitch of the blade to either a higher or lower blade angle to prevent said rotational movement.

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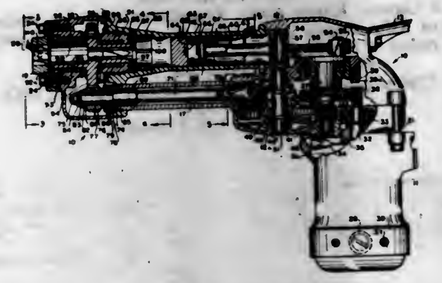
**3,170,522**
**SPADING MACHINE**
**Herbert Vissers, Spoorstraat 4, Nieuw-Vennep, Netherlands**
**Filed Aug. 5, 1963, Ser. No. 300,009**
**5 Claims. (Cl. 172—91)**



1. A spading machine, comprising a number of spading blades of involute profile radially disposed about a hub, each of said blades being rotatably mounted on a stub axle supported in the hub for individual tilting with respect to the hub while rotating together with the other blades around the center line of the hub, the center line of each said stub axle being situated substantially in a plane which is perpendicular to a radius of the hub, and each spading blade having a cutting edge which, both in the tilted and untilted condition of the blade, lies within a distance from the elongated center line of its stub axle which is at most equal to half the distance between said elongated center line and the center line of the hub.



**3,170,523**
**ROTARY HAMMER**
**Harold O. Short, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland**
**Filed July 30, 1962, Ser. No. 213,363**
**11 Claims. (Cl. 173—104)**



11. In a rotary hammer, the combination of:

(*a*) a gear journaled for rotation in the forward portion of the hammer;

(*b*) said gear having an integrally-formed axially-extending portion with a socket formed therein for receiving the shank of a tool bit;

(*c*) driving means for said gear; said driving means including:

(1) a shaft journaled for rotation in the hammer to one side of said gear, the axis of said shaft being parallel to the axis of said gear; and

(2) a pinion mounted upon said shaft and engaging said gear; and

(*d*) a friction slip coupling in said driving means;

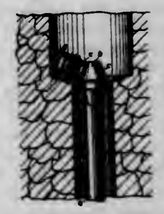
(*e*) said slip coupling including

(1) resilient mean; and

(2) means engaging said resilient means to vary the point of torque release, whereby said slip coupling is adjustable.

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**3,170,524**
**ROLLER-TYPE ENLARGING OR REAMING BIT**
**Kurt Trosken, 28 Manteuffelstrasse, Essen-Ost, Germany, and Werner Jonschel, 63 Margarethenstrasse, Essen-West, Germany**
**Filed Apr. 6, 1960, Ser. No. 20,367**
**Claims priority, application Germany, Apr. 9, 1959, B 52,777**
**4 Claims. (Cl. 175—53)**

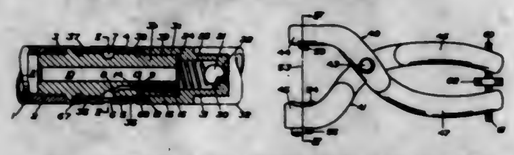


1. A roller-type enlarging bit comprising a drill stem having a longitudinal axis, a body portion mounted on one end of said drill stem, the other end of said drill stem adapted to extend in a pilot drill hole, pin members extending from said body portion in a star-like fashion, the axes of said pin members being inclined relatively to the longitudinal axis of said drill stem, and a cutting roller mounted to rotate about an axis on each of said pin members, each of said cutting rollers having a plurality of circumferentially disposed cutting ribs of wedge-shaped cross sectional profile, the inclination of the portion of the wedge-shaped cross section of said cutting ribs with respect to a plane normal to the axis of said cutting roller

being greater on the side of said cutting rib facing towards said body portion than on the side facing away therefrom.

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3,170,525
DEVICES FOR SUPPLYING FLUID TO A DRILLING TOOL
Alf Gunnar Kvelle-Aune, Trondheim, Norway, assignor to Aflas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Apr. 12, 1962, Ser. No. 187,071
Claims priority, application Norway, Apr. 15, 1961, 139,857
10 Claims. (Cl. 175—218)

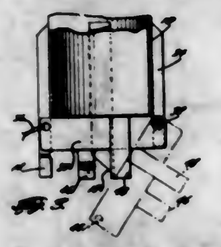


10. In apparatus of the character described for supplying fluid to a rotating drilling tool at one end of a drill string formed of a number of equivalent detachable hollow drilling elements during rotation thereof from a non-rotating source of fluid, the combination which comprises a connecting element for interconnecting adjoining said hollow drilling elements in said drill string, a longitudinally extending internal passageway in said connecting element for leading said fluid therethrough from one said hollow drilling element to the next and forming with said hollow drilling elements a continuous passage leading throughout said drill string to said tool, means at each opposite end of said connecting element for interconnecting successive hollow drilling elements thereto, first one-way valve means in said passage and permitting flow through said passage in the direction toward said drilling tool but preventing flow in the opposite direction, a conduit leading transversely into said connecting element from the outside thereof to said passage, second one-way valve means for permitting fluid flow through said conduit into said passage but preventing flow in the opposite direction and effective downstream of said first one-way valve means, a swivel bushing rotatably disposed around said connecting element and adjacent said conduit, means for maintaining the axial positioning of said swivel bushing on said connecting element, an inlet opening in said swivel bushing for introduction of fluid flow therethrough, means providing flow communication from said inlet opening in said bushing to said conduit into said longitudinal passage in substantially all angular positions of said bushing with respect to said connecting element during relative rotation thereof, a coupling device for engaging said swivel bushing and having a fluid supply passage therein, means on said coupling device and said swivel bushing for said engagement thereof whereby said coupling device holds said swivel bushing against rotation and including means for axially positioning said coupling device with respect to said fluid bushing for direct flow communication between said fluid supply passage in said coupling device and said fluid inlet opening in said swivel bushing.

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3,170,526
DRILL BIT
Willis L. Chauvin, P.O. Box 206, Houma, La.
Filed Sept. 13, 1962, Ser. No. 223,325
4 Claims. (Cl. 175—270)

1. In a drill bit including an upright sleeve for attachment to a tubular drill rod, and at least one tooth and bar each projecting below the lower end of said sleeve spatially of each other and each disposed substantially exteriorly of said sleeve and in substantially parallel relation to each other, a bridge element normally extending diametrically across the lower end of said sleeve and having one end thereof hingedly connected between the tooth and the bar on said sleeve for swinging movement from the normal position to a generally vertical position below said sleeve, another tooth and bar spatially disposed to each other and projecting below the lower end of the sleeve diametrically opposite said one tooth



and bar, at least one tooth carried by said bridge element for eliminating any core being formed by the tooth on the sleeve, and rupturable means operatively connected to the tooth and the bar on said sleeve for releasably holding the other end of said bridge element in the normal position in the space between the other tooth and bar.

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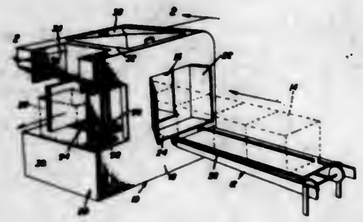
3,170,527
TRAVELLING GUIDE FOR ROCK DRILLING
Edgar D. Norton, Bishop, Calif., assignor to Union Carbide Corporation, a corporation of New York
Filed June 15, 1962, Ser. No. 202,880
4 Claims. (Cl. 175—326)



1. A rock drilling apparatus for directionally controlling the travel of a drill bit when drilling a hole parallel to and intersecting a prior drill hole, said apparatus comprising a travelling guide consisting of a drill rod sleeve being longitudinally parallel and fixedly connected through a spacer to an elongated guide member, said elongated guide member having cross-sectional dimensions substantially the same as said drill rod sleeve and having longitudinal axial dimensions substantially greater than said drill rod sleeve, said spacer having a thickness less than the width of the opening left at the overlapping portion of the drill holes, a drill rod loosely fitting in said drill rod sleeve, said drill rod sleeve being slidably positioned between a drill bit fixedly attached to the end of said drill rod and drill rod coupling means, resilient means positioned between said drill bit and one longitudinal extremity of said drill rod sleeve and between said drill rod coupling means and the other longitudinal extremity of said drill rod sleeve for restricting the motion of said drill rod sleeve along the longitudinal axis of said drill rod close to the drill bit end of said drill rod, said apparatus being suitable for use in producing a series of longitudinally parallel and cross-sectionally overlapping holes.



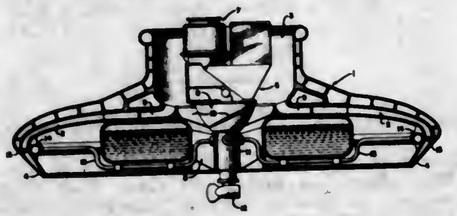
3,170,528
CARTON FILLING AND WEIGHING DEVICE
John F. Flodin, Sunnyside, Wash., assignor to Flodin Inc., Sunnyside, Wash., a corporation of Washington
Filed Jan. 8, 1963, Ser. No. 250,969
4 Claims. (Cl. 177—52)



1. In a container filling and weighing machine, conveyor means continuously operative to urge empty containers toward a conveyor unloading position, means intermittently operative for displacing empty containers from said unloading position to a loading position removed from the urge of the conveyor means, feeding means rendered operative during inoperative periods of said intermittently operative displacing means to load the containers at said loading position, and weight sensing control means operatively connected to said feeding means and the displacing means to render the displacing means operative to displace an empty container against a loaded container for discharge thereof from the loading position, said displacing means comprising, plunger means slidably mounted in spaced relation to a delivery end of said conveyor means for movement perpendicular to movement of the conveyor means to receive and block movement of containers on the conveyor means, motor means mounted below said plunger means, linkage means drivingly connecting said motor means to the plunger means for movement of the plunger means through a predetermined stroke and cycle control means engageable by the linkage means for deenergizing the motor means upon completion of said stroke.

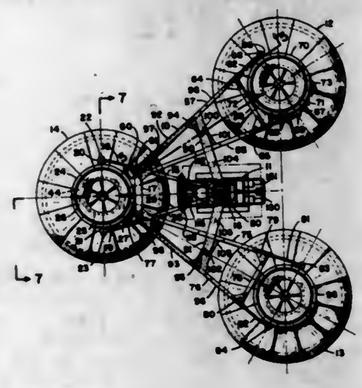
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3,170,529
LIFT AUGMENTATION MEANS FOR GROUND EFFECT MACHINES
Archibald P. Kelley and Leslie W. Norman, Scottsdale, Ariz., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 8, 1960, Ser. No. 20,855
5 Claims. (Cl. 180—7)



1. A ground effect machine comprising: a body forming passage means with an inlet and inner and outer downwardly directed outlets, said outer outlet being of restricted width and disposed to surround said inner outlet, means in said passage means for forcing air from said inlet through said outlets; and means carried by said body and communicating with said passage means for supplying relatively dense fluid to a region of said passage means immediately upstream of and leading solely to said outer outlet.

3,170,530
MOBILE AIR SUPPORTED VEHICLE
Richard W. Black, 700 Jackson Drive, Williamsburg, Va.
Filed Mar. 23, 1961, Ser. No. 97,976
13 Claims. (Cl. 180—7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



5. A lift unit for an air supported vehicle comprising a gimbal ring, a fan shroud mounted in said gimbal ring, a fan disposed in said shroud, a fan driving engine supported by said gimbal ring and carrying said fan, a skirt of pliable material disposed below said fan and comprising an outer wall having its upper end surrounding and secured to said fan shroud, an inner wall having its upper end surrounding and secured to a portion of said engine below said fan, the radial distance between the upper ends of said walls being substantially equal to the length of the blades of said fan so that the air moved by said fan is forced into the annular space between the outer and inner walls of said skirt, and a perforated annular member secured at its outer and inner edges to the bottom edges of said outer and inner walls, said annular member being effective to provide an annular air jet impinging on the underlying ground surface to raise said lift unit above the ground and said inner wall constituting a bell-shaped open bottom plenum chamber to assist in maintaining said unit above the ground surface.

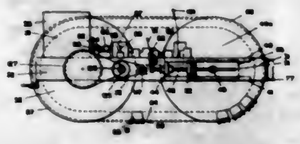
8. In an air supported vehicle, a frame having at least three divergent arms, a lift unit under each of said arms and each comprising an outer gimbal ring rockably secured to the corresponding arm, an inner gimbal ring rockably mounted in said outer ring, a fan shroud mounted in said inner ring, a power driven fan disposed within said shroud, a skirt of pliable material depending from said shroud, and tricing lines arranged at angular intervals around said skirt and divided into two groups disposed one group at each side of said skirt, an operator's platform mounted on said frame, and vehicle control means mounted on said platform and including one or more control components so connected to said groups of tricing lines that the bottom edges of corresponding sides of all of said lift units can be raised simultaneously to assist in the directional control of said vehicle.

10. In an air supported vehicle, a frame having at least three divergent arms, a lift unit disposed below and connected to each of said arms, each of said lift units having a gimbal ring connection with the associated arm to enable said lift units to assume different individual positions relative to said frame and each lift unit having a skirt of pliable fabric material to facilitate passage of said lift units past obstructions in the path of said vehicle, a platform mounted on said frame, vehicle propulsion means

mounted on said platform, and vehicle control means mounted on said platform and operatively connected to said propulsion means and said lift units.

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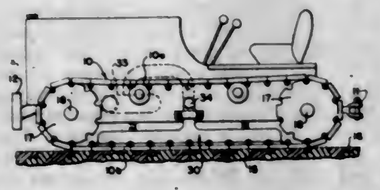
**3,170,531**
**CONVERTIBLE TRACTOR**
Clarence G. Katzenberger, Rte. 1, Middleton, Wis.
Filed May 24, 1960, Ser. No. 31,368
4 Claims. (Cl. 180—9.2)



1. An endless track type tractor which is convertible to a tricycle type tractor comprising, a frame, a driver wheel connected to each side of the rear portion of said frame, motor means carried by said frame for operation of said wheels, a slidable removable axle member attached to each side of the forward end of said frame, a forward wheel revolvably mounted to each said axle member, an endless track secured over the respective front and rear wheels on each side of the frame, means secured to said frame for forcing said axle member forwardly to maintain said track substantially taut between said respective front and rear wheels when used as an endless track type tractor, means for loosening the said track to permit removal of the track and removal of the front wheels, means for pivotally connecting said tricycle type wheel to the front of a frame for use when said track and said other front wheels are removed from the tractor.

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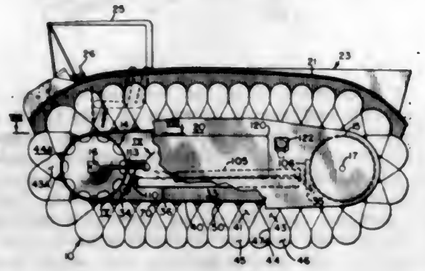
**3,170,532**
**EFFECTIVE WEIGHT-INCREASING DEVICE FOR TRACK-LAYING VEHICLES**
John A. Boppart, Jr., Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed July 8, 1963, Ser. No. 293,543
7 Claims. (Cl. 180—9.2)



1. In a track-laying vehicle, the combination comprising:
- an endless vehicle-supporting track having upper and lower runs and engaging a supporting surface at the lower run, said track including a plurality of articulated rigid plates of which each plate has a cavity in the outer face of the plate and a passage therethrough at the cavity;
- wall means in close proximity to the track plates forming a plenum chamber immediately above the lower run of the track and open at the lower side thereof in communication with said passages in the track plates as the plates pass underneath the wall means; and
- means connected to the plenum chamber for establishing and maintaining sub-atmospheric air pressure within the plenum chamber and in those cavities communicating with the plenum chamber.

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**3,170,533**
**VEHICLE WITH PNEUMATIC SUPPORT**
Kenneth J. Fewel, Arlington, and Gene P. Schell and Byron R. Winborn, Irving, Tex., assignors to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed July 5, 1963, Ser. No. 292,984
21 Claims. (Cl. 180—9.2)



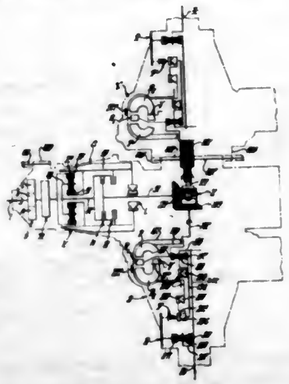
16. A vehicle propelled on a pair of endless pneumatic tracks which comprises:
- a chassis having transverse axles at one end and a pair of stub shafts at the other end;
- a pair of cylindrical wheels mounted on said axles on opposite sides of said chassis;
- a cylindrical wheel mounted on each of said stub shafts and each aligned with one of said wheels on said axles;
- means for driving said axles;
- a flexible belt encircling the wheels on each side of said chassis;
- resilient means for urging said stub shafts away from said axles independently of each other to independently tension each of said belts;
- flexible structures positioned adjacent each of said belts and forming a first layer of transverse chambers;
- flexible structures secured to each of said belts and interleaved with the chambers of said first layer to form a second layer of transverse chambers; and
- structure associated with the chambers of each belt and forming flow channels of limited flow capacity through the contiguous walls of adjacent pairs of said chambers where one chamber of each pair is in said first layer and one is in said second layer.

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**3,170,534**
**TRANSMISSION AND SWINGING DRIVE AXLES INCLUDING TORQUE CONVERTERS**
Oliver K. Kelley, Bloomfield Hills, Kenneth W. Gage, Birmingham, and Richard W. Craig, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 7, 1959, Ser. No. 785,390
9 Claims. (Cl. 180—73)

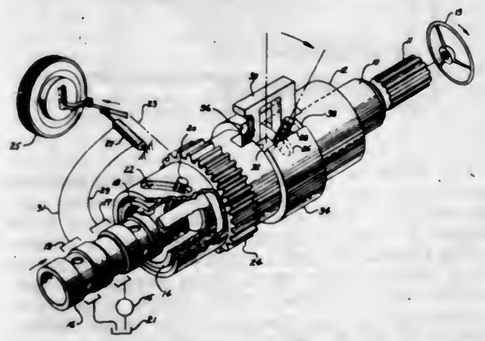
1. In a motor vehicle an engine mounted on the vehicle, a combination transmission and dual axle unit mounted on the vehicle, said transmission and axle unit including a two speed input gear unit connected to said engine and a pair of hydraulic torque converter units arranged transversely to said input gear unit, means connecting each of said converter units to the output of said input gear unit, means for pivotally supporting said input unit and one of said converter units in the vehicle for common movement about a predetermined axis extending longitudinally of the vehicle, means pivotally supporting the other converter unit for independent movement about said predetermined axis, and an output axle shaft extending from each converter unit.





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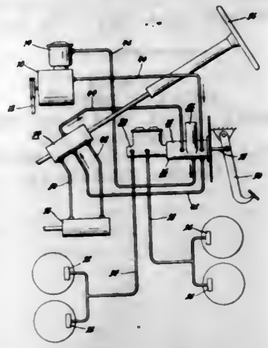
**3,170,535**
**POWER STEERING MECHANISM**
David W. Barton, Birmingham, and John R. Elwell, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of application Ser. No. 824,814, July 3, 1959. This application Feb. 23, 1962, Ser. No. 176,488
9 Claims. (Cl. 180—79.2)



1. A control means for controlling the power means of a power steering mechanism comprising: a driving means; a sensing means having concentric telescopically related input and output shafts, said input shaft adapted to be driven by said driving means, a generally cylindrical, axially-split band spring encircling the outer of said shafts so as to contract thereon, and presenting opposed ends in spaced relationship, a radially extending arm fixed to the inner of said shafts and extending through an opening in the outer of said shafts located so as to be interposed between said opposed ends of said spring, an abutment member carried by the outer of said shafts longitudinally located with respect to said shafts so as to be interposed between said opposed ends of said spring, and having substantially the same chordal thickness as said arm, said input shaft adapted to be rotated relative to said output shaft against the force of said axially-split band spring when the torque applied to said driving means exceeds a selected value, a movable valve element and actuating means movable in response to relative rotation of said shafts of said sensing means and adapted to move the movable valve element, whereby the relative rotation of said input and output shafts causes said valve actuating means to actuate said movable valve element to control the power means of a power steering mechanism.

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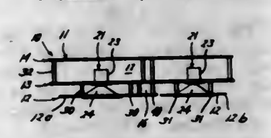
**3,170,536**
**HYDRAULIC POWER BRAKE AND POWER STEERING SYSTEM**
Robert M. Van House, Dayton, Ohio, Charles R. Kenrick, Niles, Mich., and George E. Kellogg, Miamisburg, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,119
5 Claims. (Cl. 180—82)



2. A hydraulic booster system for providing booster action to first and second independently operable mechanisms, said system comprising, a source of hydraulic pressure, means connecting said source to said first mechanism and said second mechanism in series, means subject to operation of said first mechanism to interrupt the series connection of said first mechanism with said second mechanism for providing a limited hydraulic pressure connection from said source to said second mechanism, accumulator means operatively connected to said source to accumulate hydraulic pressure, and means selectively connected to receive hydraulic pressure from said source for delivery of the same to said accumulator and said second mechanism in one position of operation and to deliver accumulator pressure to said second mechanism in a second condition of operation.

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**3,170,537**
**STEREOPHONIC LOUD SPEAKER OR INSTRUMENT**
Patrick M. Sullivan, 3755 Grammercy, Houston 25, Tex., and Garold D. Sears, 5634 Eskridge, Houston 23, Tex.
Filed Jan. 21, 1963, Ser. No. 252,988
7 Claims. (Cl. 181—31)



1. A sound reproducing instrument for stereophonically reproducing audio frequencies from a signal voltage the frequency and amplitude of which represent the total sound to be reproduced comprising,
- (*a*) means for receiving a signal voltage the frequency and amplitude of which represent the total sound to be reproduced,
- (*b*) means for converting the received signal voltage into vibrations the frequency and amplitude of which represent the total sound to be reproduced,

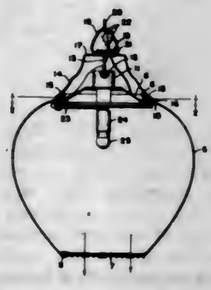
(c) panel means secured to said converting means whereby the vibrations are imparted to said panel means,

(d) additional panel means secured to but spaced from said first named panel means whereby the vibrations from said first named panel means are also imparted to said additional panel means and the space between said panel means and additional panel means providing an air volume in which the vibrations may be induced, and

(e) said panel means and said additional panel means having predetermined areas which selectively concentrate a frequency range of vibrations in said predetermined areas of said panel means and additional panel means to thereby stereophonically reproduce the total sound represented by the signal voltage.

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**3,170,538**
**SPEAKER DEVICE**
Kenneth L. Detrick, 2915 S. State Road 7, West Hollywood, Fla.
Filed July 6, 1964, Ser. No. 380,587
5 Claims. (Cl. 181—31)

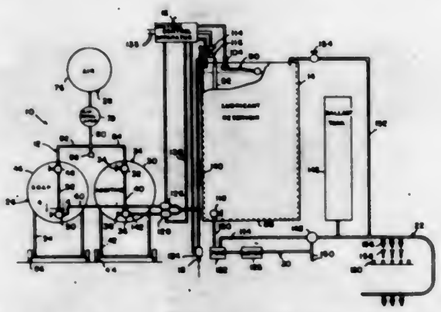


1. A speaker device of the character described comprising a relatively thin walled plastic shell, the shell having an upper open neck portion and with the shell open at its bottom and covered by a grill, a cone-type speaker fitted within the shell, a bell housing overlying the upper open end of the shell and with the bell housing being connected to the speaker to clamp the speaker in underlying relation to the neck portion, cushion means between the speaker and the shell, means carried by the bell housing for spacing the bell housing from the neck portion to form a circumferential relief opening for the projection of sound from the speaker such as the bass notes and a chain connected to the top of the bell housing for suspending the device.

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**3,170,539**
**CONVEYOR LUBRICATING APPARATUS**
Kenneth E. Seay, Dearborn, and Edgar Victor Borden, Livonia, Mich., assignors to Seco Chemicals Incorporated, Detroit, Mich., a corporation of Michigan
Filed May 14, 1962, Ser. No. 194,558
13 Claims. (Cl. 184—15)

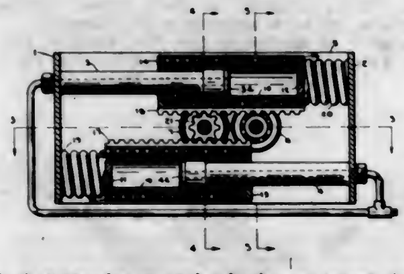
10. Lubricating apparatus comprising means for storing a soap concentrate and a water softening additive under pressure, a lubricant reservoir, mixture control means operable between the means for storing a soap concentrate and additive and the lubricant reservoir for sequentially metering predetermined quantities of additive and water, soap concentrate and water, and water into the lubricant reservoir to provide a diluted lubricant including a pair of float operated switch actuators mounted in fixed positions in the lubricant reservoir having portions movable for controlling flow of soap concentrate, additive and water into the reservoir, means for storing the diluted lubricant under pressure and means



for distributing the diluted lubricant from the reservoir to remote mechanisms to be lubricated.

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**3,170,540**
**ENGINE STARTER**
Otto E. Dietrich, 617 W. Jackson St., Morton, Ill.
Filed Dec. 2, 1963, Ser. No. 327,478
7 Claims. (Cl. 185—40)



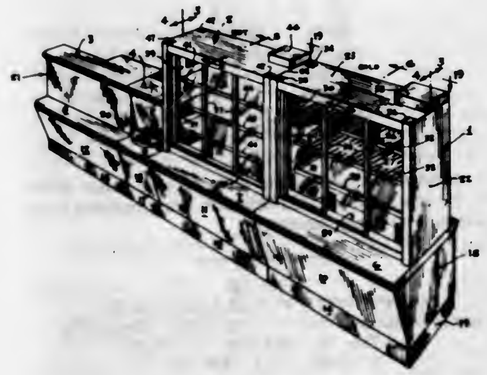
1. A starter for an engine having an output shaft, the starter comprising a support adapted for mounting adjacent the output shaft, a hollow piston rod secured to the support, a hollow piston on the piston rod, a cylinder having a closed end and an open end and engaging the piston with the piston rod extending through said open end, the cylinder being reciprocable relative to the piston, a spring housing larger than the cylinder, means securing the housing and the cylinder to define an annular space between the housing and the cylinder, a spring in the annular space and compressed between said securing means and the support, a pinion on the output shaft, a rack on the housing and meshing with the pinion, a fluid pump, the pump having a fluid inlet and a pressure fluid discharge, means connecting said discharge with the closed end of the cylinder and including the hollow of the piston rod and the hollow of the piston, and means to permit rapid escape of fluid from the closed end of the cylinder, whereby expansion of the spring imparts a linear impulse to the spring housing and the rack turns the pinion.

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**3,170,541**
**FOOD VENDING ASSEMBLY**
Otto E. Werner, Skokie, Ill., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 159,983
1 Claim. (Cl. 186—1)

A composite restaurant food service structure comprising a plurality of units alignable in abutment end-to-end and having an integral portion projecting laterally from each unit at an intermediate height to provide a continuous counter on a customer side of the structure for the transport of food items by the customer along said counter, at least one of said units comprising a closed display cabinet, a plurality of superposed shelves in said cabinet, each of said shelves visible and accessible from said customer side and from the opposite servicing side, a cashier's position unit adjacent said cabinet unit and a food preparation unit juxtaposed in said structure with the couter extending integrally past both said last-mentioned units, a co-terminous wall on each of said last-mentioned units ex-

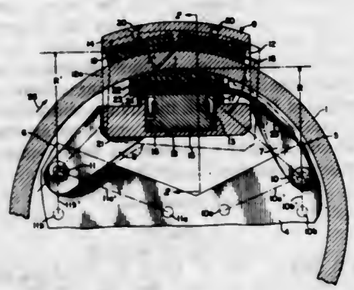




tending upwardly from said counter to a height allowing prepared food items to be passed over said wall, a shelf at the top of said wall, said shelf heated at said preparation unit for retaining items in a heated condition while awaiting removal by a customer, said shelf and said wall transparent at said cashier's position, whereby food items removed by a customer from said display cabinet and food items removed from said preparation unit wall may be rested on the counter for visual evaluation by a cashier stationed on the servicing side of said assembly at said cashier's position.

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**3,170,542**
**SELF-ENERGIZING RING DISC BRAKE**
Theodore Frayer, North Canton, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 27, 1963, Ser. No. 304,901
10 Claims. (Cl. 188—76)



10. In a brake the combination of

a rotatable member having concentric inner and outer surfaces,

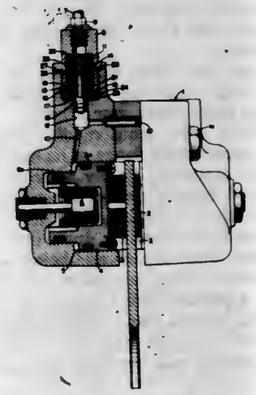
a stationary member,

a first brake shoe pivotally mounted on the stationary member for pivotal movement in relation thereto and substantially in the plane thereof with the pivotal mounting being arcuately displaced in an upstream direction from a radius through said first brake shoe to define a torque arm so that said first brake shoe may engage with the outer surface of the rotatable member with a self energizing action upon one way rotation of the rotatable member, and

a second brake shoe pivotally mounted on the stationary member for pivotal movement in relation thereto and substantially in the plane thereof in arcuately displaced downstream relation from a radius through said second brake shoe to define a torque arm so that said second brake shoe may engage with the inner surface of said rotatable member in substantially opposed relationship to said first brake shoe with a self energizing action upon said one way rotation of the rotary member.

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**3,170,543**
**DELAY VALVE**
Albert W. Cook, Tallmadge, and Carl E. Bricker, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 6, 1962, Ser. No. 242,683
7 Claims. (Cl. 188—152)



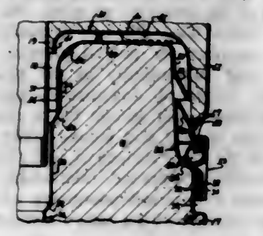
1. In a hydraulic brake including a hydraulic system and means for applying pressure to the hydraulic brake of the system, a housing, and brake means slidably carried by said housing in a pressure chamber provided therein,

said housing having a bore therein for connecting the hydraulic system to said pressure chamber,

a delay valve comprising poppet valve means positioned in said housing in said bore means to prevent passage of liquid to said pressure chamber on pressure application but to release liquid upon release of the pressure applying means, said delay valve having a small sliding clearance in said housing whereby a portion of the pressure applied to the liquid in the hydraulic system is instantly applied to said brake means and

a coil of small diameter tubing operatively positioned in said housing and connecting to spaced portions of said bore means to provide a bypass around said poppet valve means whereby full liquid pressure is applied to said brake means after a time delay occasioned by the slow flow of a volume of liquid through said tubing.

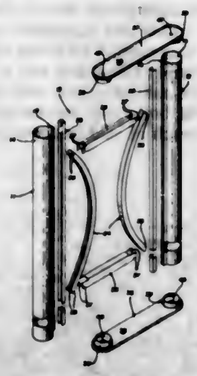
3,170,544
PREFABRICATED METAL CHIMNEY
Alan Kinkead and Richard L. Stone, Palo Alto, Calif., assignors to William Wallace Corporation, Belmont, Calif., a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,654
8 Claims. (Cl. 189—37)



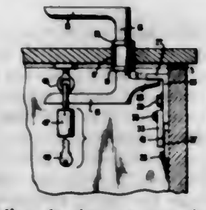
1. A prefabricated double walled chimney section adapted to be coupled to a similar section to form a chimney column, said section comprising:
(*a*) an inner pipe;
(*b*) an outer pipe;
(*c*) insulation between said pipes;
(*d*) a male coupler on the upper end, and a female coupler on the lower end of said section, said couplers comprising
(*e*) annular radial plates with inner and outer generally axially extending flanges connected to said inner and outer pipes for retaining the spacing between them;
(*f*) said inner and outer flanges of said male coupler being rigidly connected to the upper ends of said inner and outer pipes, respectively;
(*g*) said outer pipe being rigidly connected to said female coupler outer flange at its lower end, and said inner pipe extending closely adjacent near its lower end to said female coupler inner flange and being movable relative thereto, said inner pipes of succeeding sections extending down into the inner pipe of the next lower section and below said plate;
(*h*) means for spacing said plates of adjacent couplers apart by a predetermined amount to provide a fixed annular air spaced between adjoining sections;
(*i*) and means on said male and female couplers for axially locking said section to an adjoining like section.

3,170,545
SUPPORTING POST CONSTRUCTION
Andrew J. Toti and Carlo J. Toti, both of 319 McHenry Ave., Modesto, Calif.
Filed July 25, 1961, Ser. No. 126,622
11 Claims. (Cl. 189—39)

10. A post construction comprising, in combination: a pair of elongated spaced metal structural members; each of said structural members comprising a hollow substantially tubular body having opposite longitudinal edge sections projecting laterally therefrom, said edge sections being spaced from and generally parallel to each other, means in conjunction with said edge sections extending longitudinally of said body and closing off said body along said edge sections whereby said edge sections and said means together define a generally hollow flange structure which extends longitudinally of its associated body and projects laterally therefrom; said structural members being arranged in said post construction with their flange structures facing each other; a series of metal connecting members interposed between and extending generally transversely of said spaced structural members, opposite ends of said connecting members being engaged over and straddling the respective flange structures of said structural members, and fasteners extending laterally through the respective opposite ends of said connecting members and into the respective hollow flange structures of said structural members from opposite sides of said flange structures, the inner ends of said fasteners being received within said hollow flange structures.



3,170,546
LATCH WITH FUSIBLE RELEASE
Wyley Shepherd, 1943 NW. 1st Court, Miami, Fla.
Filed Feb. 25, 1963, Ser. No. 260,557
2 Claims. (Cl. 189—50)



1. In a building having an opening therein and a closure mounted on the building for swinging movement about a first axis between a closed position in which the closure closes the opening and an open position in which the opening provides access into or out of a portion of the building, latch means carried by the closure, and keeper means carried by the building for engagement by the latch means to maintain the closure closed; the improvement comprising means mounting the keeper means for swinging movement relative to the building about a second axis perpendicular to said first axis and perpendicular to the direction of movement of the latch means as the latch means passes the keeper means, between an operative position in which the keeper means coacts with the latch means to maintain the closure closed and an inoperative position in which the latch means passes the keeper means during closure opening movement, and fusible link means on said building connected to said keeper means for maintaining the keeper means in said operative position in the absence of heat sufficient to weaken said fusible link means.

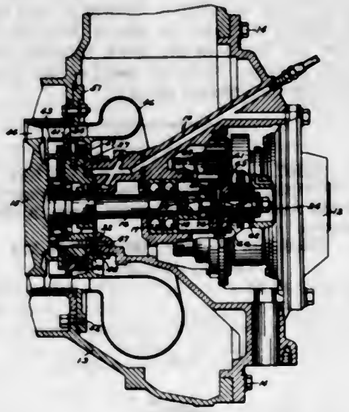
3,170,547
LOUVER WINDOW
Earl D. Wilcox, 760 W. 190th St., Gardena, Calif.
Filed May 10, 1963, Ser. No. 279,478
3 Claims. (Cl. 189—62)

1. In louver window construction, the combination with a pair of jambs adapted to be secured to a window framing, each jamb provided with aligned bearing openings, of: glass holders swingingly supported in each bearing opening of the jambs, the glass holders adapted to support between aligned pairs thereof a glass panel, each glass holder being of channel form and having a web and a pair of flanges, the web of one of said glass holders provided with an extended half round portion extending beyond the flange and lying in the plane of the web, said extended portion and the web formed with a circular raised boss portion, the boss portion provided with a series of spaced parallel ribs, said raised boss portion adapted to be received within a bearing opening of the jamb, and an actuator lever formed with ribs complementary to the ribs of the raised boss of the glass holder for engagement with the ribs of said boss, and a rivet securing the ribs of the boss and actuator lever in working relationship.



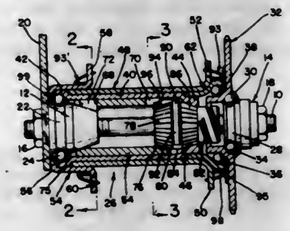


3,170,548
OVERSPEED CONTROL MEANS FOR A GAS TURBINE ENGINE
Donald L. Carriere, Highland Park, James T. Laskey, Livonia, and Ivan M. Swatman, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application Oct. 30, 1961, Ser. No. 148,603. Divided and this application Dec. 28, 1962, Ser. No. 248,010
3 Claims. (Cl. 192—3)



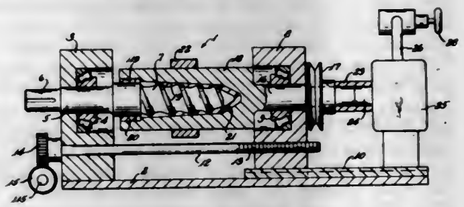
1. In a gas turbine engine, a housing, a turbine and a turbine shaft rotatably mounted within said housing, means mounted within said housing for supplying motive fluid to said turbine, a burner connected to said means, fuel supply means connected to said burner for supplying fuel thereto, a centrifugal brake mechanism coupled between said housing and said shaft, said centrifugal brake mechanism including means for bringing said centrifugal brake mechanism into engagement when the speed of the shaft reaches a selected level, a fuel control means connected to said fuel supply, said fuel control means including means positioned in heat transferring relationship to said centrifugal brake mechanism and responsive to the heat generated by the engagement of said centrifugal brake mechanism for reducing the fuel supply to said burner.

3,170,549
BICYCLE COASTER BRAKE
Elbert H. Baker III, Andover, Ohio, assignor to Gregory Industries, Lorain, Ohio, a corporation of Ohio
Filed June 23, 1961, Ser. No. 119,147
13 Claims. (Cl. 192—6)



1. In a bicycle coaster brake assembly including a supporting shaft, a drive sprocket rotatably supported on the shaft at one end thereof, and a hub rotatably supported on the drive sprocket at one end and on the shaft at the other end; the improvement in said hub comprising a first cylindrical member having its one end flared outwardly to form a ball race for the reception of ball bearings interposed between said race and the supporting shaft, a second cylindrical member telescopically fitted over said first member and having its one end abutting said flared end of the first member and at its other end having an outwardly-extending flange with spoke holes formed therein, a third cylindrical member telescopically fitted over the flared end of the first cylindrical member and a portion of said second cylindrical member, said third cylindrical member having its one end flanged inwardly to at least partially cover the ball race formed in said first member and an outwardly-extending flange at its other end with spoke holes formed therein, and a fourth cylindrical member abutting the inner periphery of said second cylindrical member at said other end thereof and having a ball race formed therein for the reception of ball bearings interposed between the hub and said drive sprocket.

3,170,550
VARIABLE SPEED DRIVE WITH BRAKE
John M. Hausman, 2669 Wilbur Road, Rte. 4, Medina, Ohio
Filed Aug. 21, 1962, Ser. No. 218,259
9 Claims. (Cl. 192—12)



1. A variable speed drive apparatus comprising
a driven extruder-type screw,
a cylinder receiving said screw therein from one end thereof,
means forming a closed end chamber with said cylinder about said screw,
a pair of spaced means journalling said screw and said cylinder in axial alignment and positioning them in telescoped cantilever relation,
means operatively engaging said screw and said cylinder for changing the relative axial positions thereof,

a heat resistant tough high shear plastic material received in said chamber to connect said screw to said cylinder,

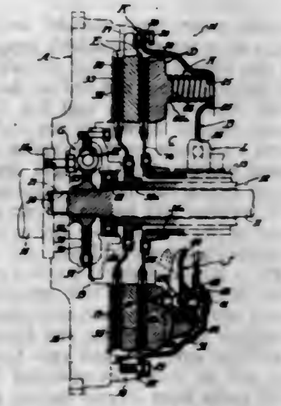
said screw being driven to transmit drive to said cylinder,

means engaging said cylinder to rotate therewith and form an output for the apparatus, and

means operatively connecting to said cylinder to prevent overriding of said cylinder with relation to said screw.

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3,170,551
DUAL PLATE CLUTCH
Leo W. Cook, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 6, 1962, Ser. No. 242,705
2 Claims. (Cl. 192—48)



1. A clutch device having a plurality of power outputs, the combination comprising: a rotatable driving flywheel of the type having an exposed internal cavity defined generally by an interior sidewall and an annular peripheral wall terminating in an open mouth and having an annular flange extending radially inwardly from the peripheral wall; a plurality of concentrically arranged driven shafts extending outwardly of said device and comprising a first shaft having one end centrally rotatably journalled in said flywheel and passing through said cavity, a second shaft formed as a sleeve fitting about said first shaft, and a third shaft formed as a sleeve fitting about said second shaft; torsional vibration dampening means disposed between said flywheel flange and cavity sidewall and continuously drivingly connecting the peripheral wall with said first shaft; roller bearing means rotatably journalling one end of said second shaft within said flywheel flange; first and second driven means each comprising a friction disc; first and second annular pressure plates each drivingly connected with said flywheel and each adapted for axial movement relative to each other and to said flywheel; means normally urging the pressure plate most remote from the flywheel in a direction toward the flywheel to provide clutch engagement of at least one of said driven discs; resilient means normally urging said two pressure plates together to provide for clutch engagement of the other of said friction discs; release means adapted to be selectively actuated for overcoming the effects of said first resilient means whereby one of said friction discs may be fully disengaged; stop means adapted to permit limited axial movement of said most remote pressure plate by said first release means so that said other pressure plate will be caused to part from said other friction disc and overcome the effect of said second resilient means.

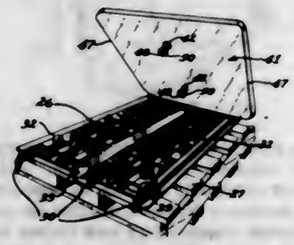
3,170,552
MAXIMUM OUTPUT SPEED FLUID SHEAR COUPLING
Orville Mitchell, Dallas, Tex., assignor to John E. Mitchell Company Inc., Dallas, Tex., a corporation of Missouri
Filed June 19, 1961, Ser. No. 118,149
7 Claims. (Cl. 192—58)



1. In a coupling: a rotary driving member, a rotary driven member coaxial with the driving member, a torque-transmitting liquid between the members; the driven member having relief space around and within it to receive liquid forced centrifugally, a flexible sealing element extending around the driven member across the relief space to form an outer wall therefor and sealed on its sides to the driven member, the relief space being expandible to a size to receive all of the liquid; the flexible element being yieldable outwardly in the relief space between its sealed sides to expand the relief space to receive liquid from between the members, whereby to reduce the torque transmission from the driving to the driven member, and weight means on the driven member and located against the outer side of the flexible element, the weight means being outwardly yieldable in response to a centrifugal force, and resilient means acting inwardly against the weight means and flexible element to urge the flexible element inward to reduce the size of the relief space and to confine the liquid to the space between the driving and driven members when the speed of the driven member is below predetermined speed.

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3,170,553
AIRCRAFT CONVEYOR SYSTEM
James N. McElroy, Phoenix, Ariz., assignor to Intermountain Aviation, Inc., Phoenix, Ariz., a corporation of Arizona
Filed Jan. 28, 1963, Ser. No. 254,311
1 Claim. (Cl. 193—35)



An aircraft conveyor track system comprising in combination:

(*a*) a pair of laterally spaced side channel members,

(*b*) an intermediate U-shaped guide channel member located between said side channel members,

(*c*) horizontally transversely journaled load carrying rollers mounted on said side channels and said guide channel located each side of said guide channel and between said side channels,

(*d*) a cargo carrying pallet operative longitudinally on said conveyor track comprising,

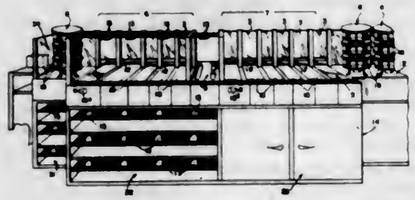


(*e*) a flat cargo carrying plate transportably supported by its bottom surface on said load carrying rollers,

(*f*) and a pair of longitudinally spaced guide rollers journaled on the bottom of said flat plate one adjacent each end thereof and engaging within said U-shaped guide channel member so as to provide the sole means to laterally retain said cargo carrying plate of said pallet in load carrying contact with said track rollers as said pallet moves along said track.

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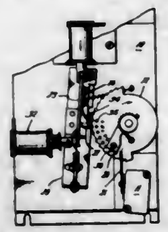
3,170,554
COIN-OPERATED SERVICE BUFFET COUNTER
Lill Davis, 1236½ Ingraham St., Los Angeles, Calif.
Filed Sept. 24, 1962, Ser. No. 225,609
2 Claims. (Cl. 194—2)



1. In a service buffet and service counter, vertical means dividing a service counter into front food receiving and rear serving sections, the said dividing means having transparent portions permitting the observation from the front receiving sections of the articles served from the rear service section, said dividing means being positioned so as not to cover the food, said front and rear sections being otherwise open to the atmosphere, and a plurality of conveyors within the counter in side-by-side relationship and extending through said serving and receiving sections and below said dividing means for receiving and conveying plates of food from the service section to the receiving section past said dividing means, said conveyors being of different widths corresponding generally to the widths of the plates to be carried thereon, a coin-operated means operable from the receiving section for initiating operation of each conveyor to move a plate of food to the front receiving section from the rear serving section, and metering means for counting the coins used to initiate the operation of each conveyor.

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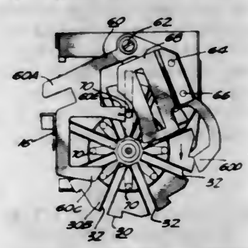
3,170,555
COIN-OPERATED TIMING MECHANISMS
Russel W. New, Dallas, Tex., assignor to Meter-All Mfg. Co., Inc., Dallas, Tex., a corporation of Texas
Filed Aug. 14, 1961, Ser. No. 131,301
14 Claims. (Cl. 194—9)



1. A coin accumulator for use with a timing device for washers, washer-extractors, dry cleaning machines and the like comprising a frame, a switch on the frame, a ratchet wheel rotatably mounted on the frame and biased to an initial position and having a part engageable with the switch to actuate the same upon predetermined rotation of the wheel from said initial position to a switch actuating position, a pawl mounted on the frame for reciprocation with respect to the wheel to advance the same stepwise responsive to reciprocation of the pawl from said initial to said switch actuating position, coin actuated means for reciprocating the pawl responsive to a coin being deposited therein so that the ratchet wheel is stepped for each coin deposited; a stop on the frame engaging the ratchet wheel to prevent its return to its initial position as it is advanced by the pawl, and means for moving both the stop and pawl out of engagement with the ratchet wheel to permit it to return to its initial position.

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3,170,556
COIN RECEIVING MECHANISM
John C. Nyberg, North Hollywood, Calif., assignor to Paramount Pictures Corporation, New York, N.Y., a corporation of New York
Filed Dec. 10, 1962, Ser. No. 243,239
6 Claims. (Cl. 194—102)



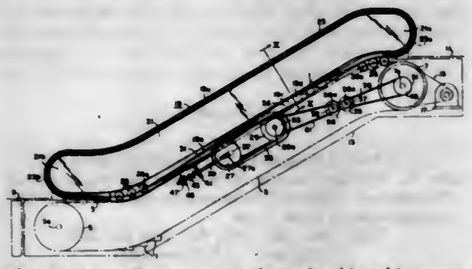
1. In apparatus of the type wherein coins are inserted into a coin receiving slot therein to effectuate a purchase, a coin receiving mechanism comprising a coin receiving chute displaced a predetermined distance from said coin receiving slot, a movable coin carrying member supported between said coin receiving slot and said coin receiving chute, said coin carrying member containing a plurality of coin carrying slots therein spaced twice said predetermined distance apart, means for supporting said coin carrying member with one of its coin carrying slots aligned with said coin receiving slot, means for moving said movable coin carrying member to move the coin carrying slot aligned with said coin receiving slot to alignment with said coin receiving chute, and thereafter to align the succeeding coin carrying slot to alignment with said coin receiving slot, a coin slot blocking member, and means supported between said coin receiving slot and said coin carrying member to block said coin receiving slot during motion of said coin carrying member.

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3,170,557
HANDRAIL STRUCTURE FOR PASSENGER CONVEYORS
Yutaka Takenaga, Moriyama-shi, Aichi-ken, and Mitoshi Makimoto, Higashi-Kasugai-gun, Aichi-ken, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan, a company of Japan
Filed Dec. 27, 1961, Ser. No. 162,537
Claims priority, application Japan, Jan. 18, 1961, 36/1,988
13 Claims. (Cl. 198—16)

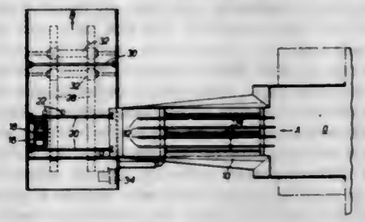
1. In a moving stairway, a lower landing and an upper landing, a balustrade extending between said landings and having handrail guide means including a lower portion adjacent said lower landing and an upper portion adjacent said upper landing, a continuous flexible handrail disposed for movement through a predetermined path of travel, said handrail having a first continuous surface for reception of the hands of stairway passengers and a second continuous surface engaging said guide means, said handrail having an upper run supported by said guide means and a lower return run disposed entirely

beneath said balustrade, said lower run being supported substantially by a guide unit disposed substantially midway between said upper and lower portions of said guide means, said guide unit comprising an upper and a lower guide element spaced in the direction of movement of said upper run, said lower run having a first section extending between the upper portion of said guide means and said lower guide element, a second section extending between said lower and upper guide elements and a third section extending between said upper guide element and the lower portion of said guide means, said lower run being disposed for engagement of each of said guide elements by only said handrail second surface.



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**3,170,558**
**RIGHT ANGLE TRANSFER DEVICE FOR FRAGILE LAMINAR ARTICLES**
George Normanseil, Wigwick, England, assignor to T. & T. Vicars Limited, Newton, Le-Willows, England, a British company
Filed Apr. 16, 1963, Ser. No. 273,433
8 Claims. (Cl. 198—29)

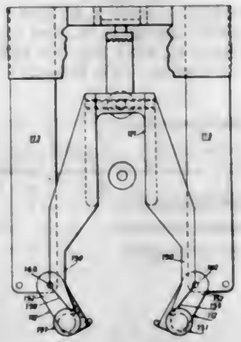


1. A right angle transfer device for fragile laminar articles comprising a cushioned surface, a transfer point, said cushioned surface being adapted to receive fragile laminar articles and to lead them to said transfer point, movable conveyor means extending away from said transfer point in a direction transverse to that in which said cushioned surface leads the articles thereto, and guide elements located at said transfer point and being movable between an elevated position wherein they are above the active surface of said conveyor means and a retracted position wherein they are below said active surface, whereby a said article received on said guide elements is deposited on said movable conveyor means.

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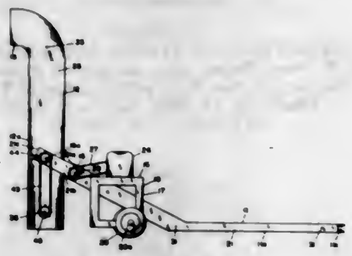
**3,170,559**
**FEEDING MECHANISMS FOR BISCUIT OR THE LIKE LAMINAR ARTICLES**
Ronald Baldwin Clements, Upholland, near Wigan, England, assignor to T. & T. Vicars Limited, Lancashire, England, a British company
Filed May 9, 1963, Ser. No. 279,265
Claims priority, application Great Britain, May 12, 1962, 18,355/62
2 Claims. (Cl. 198—31)

1. In a laminar article feeding machine, an inlet channel for receiving a continuous stream of laminar articles in stacked relationship, a pair of spring-loaded cheeks defining an article-receiving cup aligned with said inlet channel, a plunger within said cup and longitudinally displaceable therein under the pressure of articles from said stream to allow accommodation within the cup of a batch of articles from that stream, and cut-off means actuable to segregate the batch of articles from said stream, to move it out of alignment therewith, and to force it out of said cup whilst simultaneously constituting an abutment to arrest forward movement of said stream, whereafter it is retracted to leave said cup empty to receive another batch of articles from the continuous stream, said cut-off means comprising a reciprocable block having a pair of depending finger elements, said elements being profiled to contact projections on the end faces of said cheeks of said article-receiving cup to force said cheeks apart on downward movement of said block, and a leading edge of said inlet channel and the adjacent face of said reciprocable block being relatively adjustable in a longitudinal direction to define a gap approximately equal to the thickness of one of the articles.



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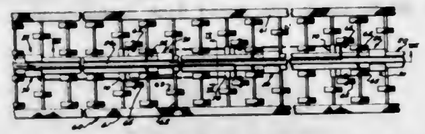
**3,170,560**
**PORTABLE UNLOADERS**
Robert W. Obenaecher, 421 S. Minnesota St., Prairie du Chien, Wis.
Filed July 22, 1963, Ser. No. 296,800
10 Claims. (Cl. 198—102)



1. An unloader device comprising, a frame, a material receiving section having a pair of side panels and being mounted on said frame in fixed relation, a substantially horizontal line shaft rotatably mounted between said side panels, means to drive said line shaft, said receiving section having a conveyor belt driven by said line shaft, a substantially horizontal jack shaft rotatably mounted between said side panels, means for transmitting power from said line shaft to said jack shaft, an elevator section pivotally mounted on said jack shaft, said elevator section having a bucket conveyor driven by said jack shaft, said conveyor belt being adapted to pass material to said bucket conveyor.



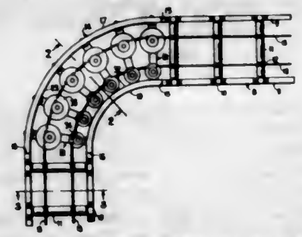
**3,170,561**
**ACCUMULATOR CONVEYORS**
Donald A. Schneider, Ada Township, Kent County, Mich., assignor to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 24, 1962, Ser. No. 232,746
18 Claims. (Cl. 198—127)



1. In a conveyor having an article supporting and conveying track and a power driven propelling member for moving articles along said track; a support rail for said propelling member having a first pair of spaced guide surfaces forming a slot therebetween along the path of travel of said propelling member, said support rail also having a second guide surface, said first and second guide surfaces being spaced apart; said propelling member at spaced intervals having riders for engaging said first guide surfaces and supporting said propelling member on said first surfaces for travel therealong; said propelling member being biased to travel along and be supported by said second surface; said propelling member, when supported by said first guide surfaces being in article propelling position and when supported by said second guide surface being in article non-propelling position; movable means in one position engaging said riders and guiding them from said second guide surface to said first guide surfaces and in a second position guiding them from said first guide surfaces to said second guide surface; actuator means for shifting said means between said positions.

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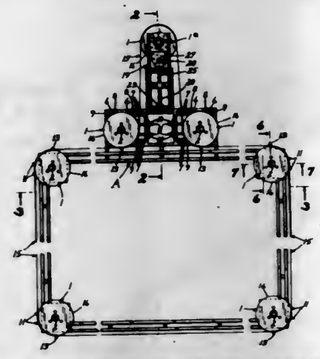
**3,170,562**
**CONVEYOR TURN MECHANISM**
Floyd E. Eyster, 7017 Forest Hills Road, Rockford, Ill.
Filed June 25, 1963, Ser. No. 290,439
3 Claims. (Cl. 198—127)



1. A turn conveyor mechanism of the character described, comprising a right angle turn section embodying a pair of equally spaced and parallel side frames mounted on top of channels and having their ends secured to the ends of corresponding straight side frames, a plurality of equally spaced rollers extending across the straight side frames, each roller having a pair of spaced peripheral grooves, a pair of equally spaced and parallel cables running in said peripheral recesses of each roller of the said conveyor and on top of each roller of the said conveyor, and a plurality of roller support bars in radial and equal spaced relation to each other, each roller support bar having its ends secured to the inner sides of the said side frames of the said right angle turn section, and each said roller support bar supporting a pair of spaced inclined axles, a free turning roller on each axle, each one of said rollers having a tapered peripheral recess, an object supporting disk secured to the upper end of each roller, each disk having a beveled periphery, the said rollers and disk being inclined at such an angle as to permit the object, which it movably supports, to rest on the said beveled periphery, and the said cables and said cables rotating said rollers and said disks by riding in said tapered peripheral recesses of said rollers.

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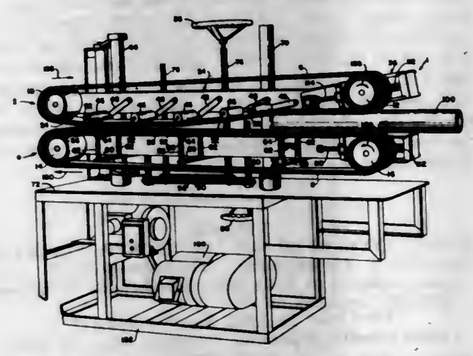
**3,170,563**
**POWER TRANSMISSION MECHANISM**
Seymour Peterson, Dassel, Minn., assignor to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota
Filed May 7, 1963, Ser. No. 278,627
3 Claims. (Cl. 198—137)



1. Power transmission mechanism comprising:
(*a*) an endless relatively wide metallic spring belt,
(*b*) and a plurality of guide wheels mounted for rotation on axes generally parallel to the plane of said belt and at longitudinally spaced points along the path of travel defined by said belt,
(*c*) said guide wheels having axially relatively thin peripheral portions engaging the adjacent portion of said belt intermediate its opposite side edges with sufficient force to impart a cross-sectional radius thereto at said points,
(*d*) and means for tilting the axis of one of said guide wheels whereby to vary the plane of the path of travel defined by said belt.

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**3,170,564**
**CONVEYOR APPARATUS**
Charles Gatto, 77 Florida St., Farmingdale, N.Y.
Filed Apr. 2, 1963, Ser. No. 269,917
10 Claims. (Cl. 198—165)



1. Apparatus for facilitating the handling and conveying of extrusion products away from the extrusion source, comprising in combination, upper and lower elongated endless deck conveyor means respectively trained about

rearward and forward rotatable drums, said upper and lower conveyor means being disposed in spaced, superposed, substantially parallel relation, an upper and lower elongated support structure positioned longitudinally of said upper and lower conveyor means, respectively, said rotatable drums being journalled at the rearward and forward ends of said elongated support structures, said upper support structure being formed of rearward and forward sections, said sections being pivotally connected, a series of horizontally aligned rotatable rollers pivotably connected to said rearward section of said upper support structure said rotatable rollers being arranged above the engaging the lower horizontal run of said upper conveyor means, and driving means associated with at least one said rotatable drum.

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**3,170,565**
**BALE DIVERTER**
William A. Matheson and Elmer G. Hennінger, Bloomington, Ill., assignors to Portable Elevator Mfg. Co., Bloomington, Ill., a corporation of Illinois
Filed Jan. 24, 1963, Ser. No. 253,667
6 Claims. (Cl. 198—185)

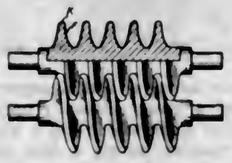


1. In a bale distributing system utilizing a conveyor, a bale deflector movably mounted on the conveyor, comprising a front surface and two side surfaces, all of which surfaces slope upwardly relative to the conveyor and intersect at a point above the conveyor; a V-shaped wing mounted at the point on a vertical shaft by means of a vertical bearing; the wing having two essentially planar surfaces diverging and sloping rearwardly from the front surface; said wing being rotatable about said bearing between two deflecting positions; each of the positions being characterized by one wing surface being adjacent an intersection of the front surface and one side surface and extending toward the front of the deflector whereby bales carried by the conveyor ride up the front surface, are deflected by the one wing surface toward the opposite side of the front surface, over said one side surface and fall away from the deflector on the side opposite said one wing surface; and a rope control system for moving the deflector along the conveyor and for rotating the wing from one deflecting position to the other deflecting position.

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**3,170,566**
**SCREW CONVEYOR OR LIKE SCREW MACHINE**
Hans-Georg Zimmermann, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
Filed Nov. 20, 1962, Ser. No. 238,877
Claims priority, application Germany, Nov. 22, 1961, K 45,290
7 Claims. (Cl. 198—213)

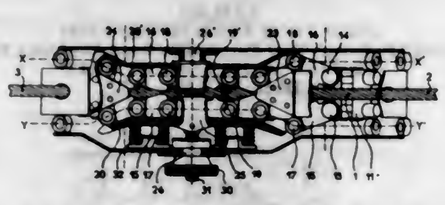
1. A screw conveyor comprising at least two interfolded screw flights, a housing at least partially shaped to closely confine the screw flights and having inlet and outlet means therein, at least two interfolded flights being adapted to rotate in the same direction, the thread tips of each flight being closely adjacent the thread flanks of the interfolded flight, the threads having convex tips and concave flanks, so that in an axial section the tip of a thread appears in the form of at least one convex tip curve and the thread flanks as concave flank curves which merge tangentially into the tip curve, the thread flank profile between the



points where the thread tip merges into the thread flanks between adjacent threads being so formed that it is closely adjacent the thread tip of the interfolded flight along a solid curve which travels on the meshing thread tip from one flank to the next between the left- and right-hand transition points at which the thread tip merges into the thread flanks, whereby with each revolution of the screws the entire surface of each screw is swept once by the adjacent screw.

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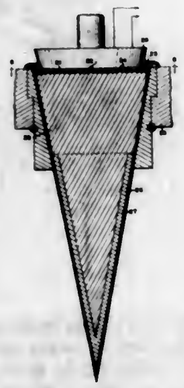
**3,170,567**
**SYSTEM FOR APPLYING DRAFT FORCE TO AN ELONGATED OBJECT**
René Capgras, 51 Rue du Rocher, Paris 8, France
Filed July 6, 1962, Ser. No. 208,027
Claims priority, application France, July 11, 1961, 867,571; July 25, 1961, 868,910
5 Claims. (Cl. 205—22)



1. In a machine for moving an elongated article lengthwise, an element movable in a path substantially parallel to said article, a series of gripper devices, each gripper device comprising a pair of elongated members disposed on opposite sides of said article in a common plane passing through said article and extending longitudinally with respect to said article, means pivotally mounting each member adjacent the trailing end thereof on said element for pivotal movement of the leading end of each member toward and away from said article, an article engaging jaw projecting inwardly from each member between the ends thereof toward said article and cam means disposed on opposite sides of said element, said cam means having a portion formed to engage the leading ends of said members upon movement of said element to pivotally move said members toward said article to provide gripping engagement between said jaws and said article and a second portion on said cam means spaced from said first portion in the direction of travel of said element and formed to engage the leading ends of said members to pivotally move said members away from said article and release said gripping engagement, said members serving to multiply the force exerted by said cam means to increase the gripping engagement of said jaws and the position of said jaws on said members tending to retain said jaws in engagement with said article.



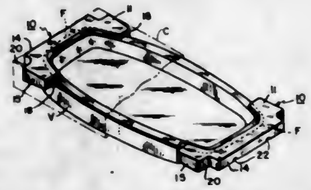
**3,170,568**
**HERMETICAL PAPER CONTAINERS, LIDS, AND METHOD OF PROVIDING SAME**
Paul H. Carter, Baltimore, Md., assignor to Maryland Cup Corp., Owings Mills, Md., a corporation of Maryland
Filed Mar. 7, 1963, Ser. No. 263,518
7 Claims. (Cl. 206—46)



2. A hermetical paper container comprising a filled body section of wax impregnated paper having an annular open end adapted to receive a lid, a wax impregnated lid disposed in said open end, said lid having an annular flange adjacent to and in continuous contact with an annular surface portion of said body section, and a layer of a thermoset adhesive selected from the group consisting of polyvinyl acetate and polystyrene, securing the flange to the body section.

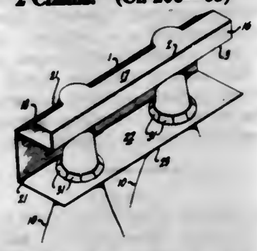
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**3,170,569**
**PACKAGING PARTS**
Eugene J. Knapp, Corning, and Harry P. Laffkas, Addison, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 26, 1963, Ser. No. 276,058
5 Claims. (Cl. 206—46)



1. A combination unitary light-weight packaging part of foamed plastic material and a shallow vessel having end flange portions, wherein one such packaging part is positioned on a flanged portion at each end of said vessel, said packaging part comprising; a receptacle having a unitary body portion with top, bottom, front, back and side surfaces; a recessed portion communicating with said front surface and extending between said top and bottom surfaces having a configuration complementary to an end wall of the vessel; a forwardly opened groove communicating with said recessed portion and receiving a flanged end portion on the vessel, said side and top surfaces of the part cooperating with inner wall surfaces of an enclosing container to fixably position the article therein and cushionably maintain the flanged end portions of the article in spaced-apart relationship with the bounding wall of the container.

**3,170,570**
**CARRIER AND MULTICONTAINER PACKAGE**
Harold B. Rice, Walnut Creek, Calif., assignor to John Burton Machine Corporation, Concord, Calif.
Filed Apr. 15, 1964, Ser. No. 359,893
2 Claims. (Cl. 206—65)



2. In a package that includes a pair of upright containers in side by side relationship each having a restricted diameter neck at its upper end and a cap secured over said upper end having an axially downwardly facing surface around said neck,

a carrier for said containers formed from a unitary sheet of semirigid sheet material and comprising:

a pair of vertically spaced upper and lower horizontally disposed neck engaging supports,

said supports each being provided with neck receiving openings receiving the necks of said containers therethrough,

a vertically disposed wall extending between said supports and integrally connected thereto,

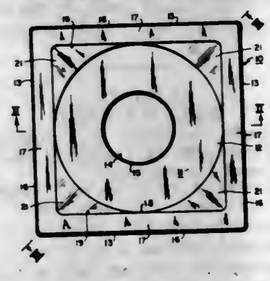
a cap covering section fixedly secured to said upper support and extending upwardly from said upper support along one of the corresponding sides of said caps and completely over the tops of said caps and in engagement therewith and then angularly downwardly and terminating in a free edge adjacent said upper support,

said cap covering section being formed with arcuate slits providing openings receiving the opposite corresponding sides of said caps therethrough with one side of each slit sprung past its corresponding cap and in gripping relation with the axially downwardly facing surface thereof,

the portions of said section adjacent the opposite sides of said slits being in covering relation with the upwardly directed surfaces of said caps.

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**3,170,571**
**PACKAGING AND DISPLAY TRAY**
Eugene J. Knapp, Corning, and Harry P. Laffkas, Addison, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 31, 1962, Ser. No. 220,777
4 Claims. (Cl. 206—72)

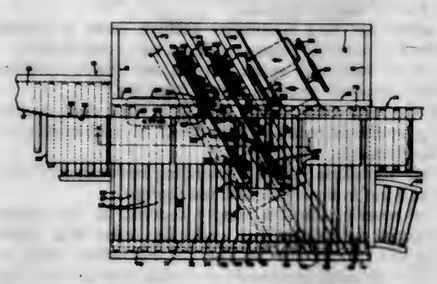


1. An improved light-weight tray for packaging and displaying a plurality of frangible dish-shaped articles which comprises, a unitary body having a bottom portion and upwardly extending side wall portions, said bottom por-

tion having a circular upper surface, said side wall portions having substantially planar outer surfaces and inner surfaces communicating between the periphery of said circular upper surface and the top of said side wall portions, said inner surfaces having a plurality of arcuate portions extending vertically upwardly from and having the general configuration of a periphery of said circular upper surface, and a plurality of recessed corner portions intermediate said arcuate portions having downwardly-inwardly tapered surface portions communicating with said arcuate portions and extending downwardly to portions of the periphery of said circular upper surface.

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3,170,572
## HIGH SPEED SORTING CONVEYOR
Lawrence L. Harrison, Syracuse, N.Y., assignor to Lamson Corporation, Syracuse, N.Y., a corporation of New York
Filed Sept. 28, 1961, Ser. No. 141,485
6 Claims. (Cl. 209—74)

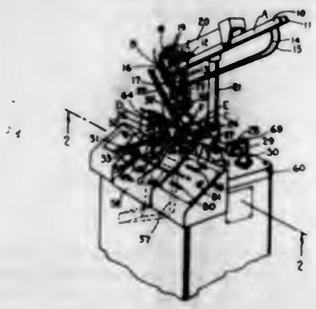


1. A high speed sorting conveyor including a main conveyor structure for advancing a procession of articles over a predetermined path at a predetermined speed along the predetermined path, certain of said articles being provided with a code designation for delivery to a branch conveyor for advancement over a second path, said main conveyor including a live roll transfer section of extended width, a branch conveyor at the down-stream end of said section, certain of the rolls of said section being of varying length and some of said rolls of varying length being arranged in axially aligned and axially spaced apart relation to provide passages extending diagonally of said section, article pushers movable in said passages for engaging and moving articles diagonally from said predetermined path for discharge to said branch conveyor, and power means operable in response to a code designation on an article advancing in said procession for effecting such movement of said article pushers for moving said articles diagonally and simultaneously advancing the same at said predetermined speed, in the original direction while maintaining the original orientation of said articles.

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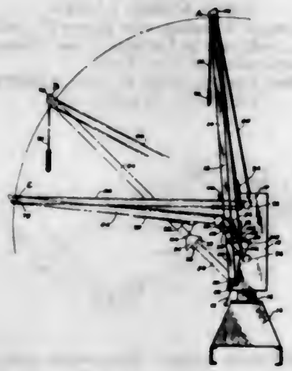
3,170,573
## BOBBIN TESTER
Robert F. Parks, Greenville, S.C., assignor to Steel Heddle Manufacturing Company, Paris, S.C., a corporation of Pennsylvania
Filed May 8, 1962, Ser. No. 193,291
2 Claims. (Cl. 209—88)

1. A bobbin testing machine including, a gravity feed rack for positioning bobbins to be tested, a driven cam shaft, means driven by said cam shaft releasing bobbins one at a time from said storage means, a tray receiving said released bobbins one at a time moved responsive to the cam shaft, a chuck opened to receive a bobbin from the tray responsive to the cam shaft rotating each bobbin about its longitudinal axis, a spring biased plunger urged against an intermediate portion of the bobbin during rotation of the bobbin, a pair of electrical contacts closed responsive to a predetermined increment of movement of the plunger during rotation of the bobbin, guide means movable responsive to the closing of the contacts, counting means actuated by a bobbin in the chuck for totalizing the bobbins tested, counting means operated by the closing of the contacts indicating the number of bobbins separated, a first chute normally receiving bobbins from the chuck, and a second chute opened by said guide means receiving bobbins from the chuck.



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3,170,574
## JACKKNIFE BOOM
Alvin H. Wilkinson, Tulsa, Okla., assignor to Auto Crane Company, Tulsa, Okla., a corporation of Oklahoma
Filed Apr. 5, 1962, Ser. No. 185,381
10 Claims. (Cl. 212—144)



6. In a crane,
a sectional pivotal boom,
hinge means connecting the sections of the boom for alternate positions of extended and jackknifed,
latch means cooperating with the hinge means to provide the jackknifed position of the boom,
and said sections of said boom disposed in abutting relationship in the extended position of the boom for precluding load on the hinge means during operation of the boom, and means provided on said boom for cooperation between two sections thereof for limiting the movement of one section during jackknifing of the boom for independently maintaining a substantially horizontal position for the said one section in the jackknifed position of the boom.



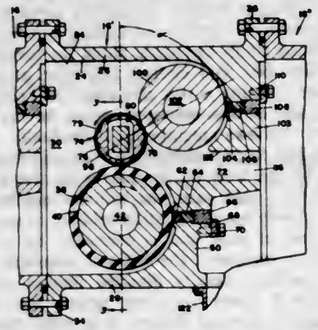
3,170,575
## CUSHIONING DEVICE FOR RAILROAD CAR COUPLERS
James L. Gibson, P.O. Box 761, Fort Worth, Tex.
Filed Jan. 13, 1964, Ser. No. 337,326
5 Claims. (Cl. 213—43)



1. A cushioning device for railroad car couplers comprising, in combination with a railroad car having a pair of couplers on opposite ends thereof, the combination of a pair of hydraulic cylinders, each having a piston therein, supported on the car adjacent the couplers, each of said pistons being operatively connected to one of the couplers, and two other hydraulic-pneumatic cylinders each having a free floating piston therein and having a liquid space and an air space in opposite ends thereof on opposite sides of the piston, the air space of one of said hydraulic-pneumatic cylinders being filled with compressed air and the air space of the other of said hydraulic-pneumatic cylinders being filled with atmospheric air, the liquid spaces of the hydraulic-pneumatic cylinders being in fluid communication, respectively, through connecting lines, with liquid spaces in opposite ends of the first mentioned hydraulic cylinders on opposite sides of the pistons thereof.

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3,170,576
## ROTARY SEAL
Raymond G. Frank, Ambler, Pa., assignor, by mesne assignments, to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1962, Ser. No. 219,238
8 Claims. (Cl. 214—17)

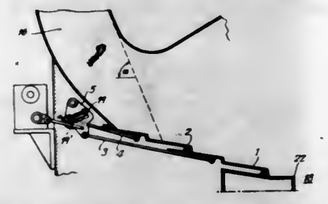


1. A seal unit comprising a housing, first and second rollers rotatably supported at their ends by said housing, said rollers being tangent to each other and in rolling engagement with each other, said second roller including a plurality of discrete segments disposed side by side, an elastic sleeve maintaining said segments in such side by side disposition, and means for evacuating the interior of said second roller and the space around the ends of said first roller.

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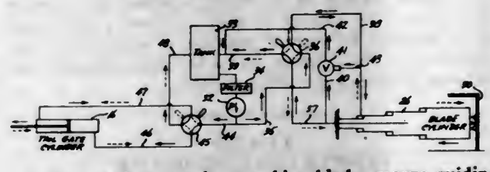
3,170,577
## FUEL CHARGING APPARATUS FOR LARGE FURNACES
Johannes Josef Martin, 14 Montsalvatstrasse, Munich, Germany
Filed Oct. 26, 1962, Ser. No. 233,337
Claims priority, application Germany, Nov. 3, 1961, M 50,770
7 Claims. (Cl. 214—23)

1. Charging apparatus for large furnaces, particularly for burning refuse, comprising at least two relatively movable superimposed rams, drive means for reciprocatingly moving one of said rams, a catch rigidly connected to one of said rams, an abutment connected to the second of said rams, and means connected to the second ram and to said abutment for adjusting the position of said abutment relative to the second ram, said catch being adapted to abut against said abutment for moving, by said ram moved by said drive means, the other ram through a distance defined by the position of said abutment.



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3,170,578
## GARBAGE TRUCK PACKING BLADE ACTUATION
Stephen I. Moreland, 6510 35th Ave. NE., Seattle, Wash.
Filed Nov. 18, 1959, Ser. No. 853,799
2 Claims. (Cl. 214—82)



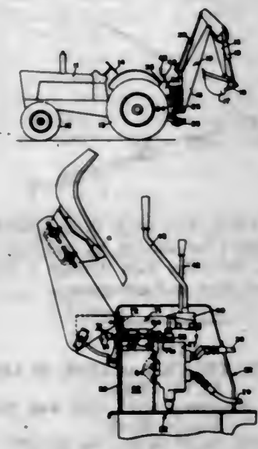
1. In a garbage truck, a packing blade, means guiding said blade for movement of said blade transversely thereof, a hydraulic piston-and-cylinder blade actuator extending transversely of said blade, a source of hydraulic liquid, first conduit means connecting said hydraulic liquid source to said actuator for extending said actuator to move said blade in the packing direction, means operatively connected to said actuator for effecting return movement of said blade in the direction opposite said packing direction, and second conduit means supplemental to said first conduit means and connected in parallel therewith receiving liquid expelled from said actuator during such return movement.

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3,170,579
## HYDRAULIC CONTROL STRUCTURE
Maurice A. Popeller, East Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 5, 1963, Ser. No. 270,937
7 Claims. (Cl. 214—138)

1. In a power implement including a boom, ground-engaging accessories associated with the boom, hydraulic means for raising and lowering the boom and operating the ground-engaging accessories, the combination therewith of a hydraulic control structure comprising: a main support; valve structure operatively connected with the hydraulic means carried on the support and including a multiple valve bank with a series of aligned reciprocal valve control elements, each movable between a neutral zone and an operating zone, each element having a member-receiving portion thereon with each portion being substantially coplanar with the portions of the other elements when the elements are in the neutral zone; a locking member supported on the support for movement toward and away from the elements between a locking position in which the member engages the member-receiving portions of the elements when in their neutral zone and a

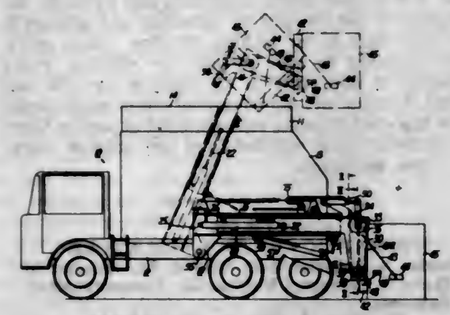
remote position in respect to the control elements; means biasing the locking member to the remote position; a cam fixed to the support; a key-controlled rotatable follower on the support engaging the cam to effect movement of



the follower axially as it rotates; a connection between the follower and locking member for causing movement of the member between its positions in response to axial movement of the follower; and a key associated with the follower for effecting rotation thereof.

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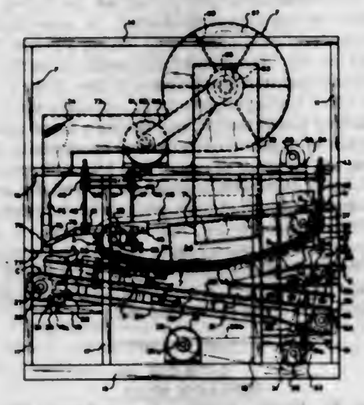
3,170,580
VEHICLE LOADING DEVICE
Victor G. Seyhe, 10833 W. Rockne Ave., Hales Corners, Wis.
Filed May 21, 1962, Ser. No. 196,193
2 Claims. (Cl. 214—302)



1. The combination of a vehicle having a substantially fully open top truck body and a hoisting mechanism comprising: a lifting frame mounted on the sides of said truck body for pivotal movement about horizontal transverse axis disposed substantially midway fore and aft of said truck body, a pair of arms slidably disposed within said frame, hydraulic means connected to said frame and said arms for moving said arms telescopically along said frame for extension and retraction of said arms relative to said frame, a vertically disposed support member pivotally connected to the outer ends of said arms, said support member having means for engaging a trash box, hydraulic means connected to said frame and said truck body for rotating said frame relative to said body to position said support member above said truck body whereby material from the trash box can be distributed over the entire length of the truck body, and hydraulic means operatively connected to said support member for pivoting said support member relative to said arms to dump the load from the trash box into said truck body.

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3,170,581
DEPANNING APPARATUS
Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Feb. 23, 1962, Ser. No. 175,035
14 Claims. (Cl. 214—309)



1. In depanning apparatus; generally longitudinally extending conveyor means of a width suitable for transporting baked bread loaves in pans; a suction box open along its bottom side and mounted a spaced distance above said conveyor means; an endless conveyor means above said conveyor means and having a lower run of a predetermined width extending along the lower portion of said suction box said endless conveyor means comprising means forming a belt covering the open portion of said box; said endless conveyor means having dependent resilient bellows members, individually opening through said belt to communication with said suction box for sealing to the tops of the loaves in the pans and lifting them from said pans; the bellows members being arranged in closely spaced relation relative to said loaves so that the top of each loaf is contacted by a number of said bellows members; the bellows members at their lower ends having laterally directed flanges with generally horizontal lower surfaces; means for reinforcing said laterally directed flanges to prevent them from rolling under when they engage a loaf; said endless conveyor means and conveyor means diverging so that said bread loaves can be lifted clear of the pans which proceed on said conveyor means; and means for receiving the depanned products from said endless conveyor means.

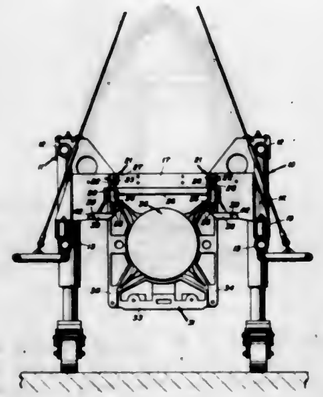
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3,170,582
WEAPON TRANSFER DOLLY LATCH MECHANISM
George W. Gilbert, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Navy
Original application Dec. 29, 1960, Ser. No. 79,475, now Patent No. 3,095,212, dated June 25, 1963. Divided and this application June 18, 1963, Ser. No. 288,846
5 Claims. (Cl. 214—394)

1. A device for securing a load to a transporting vehicle comprising, in combination,
a vehicle frame,
supports carried by said frame,
load supporting structures releasably supported on said supports,



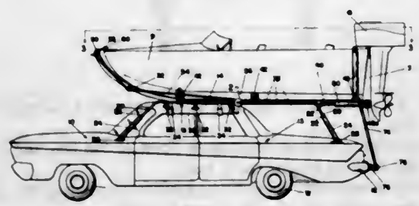
bracket means secured to said supports,
bolt means for adjustably securing said bracket means to said support,
normally locked latches pivotally mounted on said bracket means,
link means connected to said bracket means and said latches for pivotally mounting the latches,
keeper means pivotally mounted on the bracket means



in engagement with said latches for maintaining the latches in a normally locked condition,
pin means carried by the latches in engagement with said load supporting structures for releasably supporting the structures on said supports, and
actuating rods carried by said latches for actuating the latches to disengage the pin means from the load supporting structures.

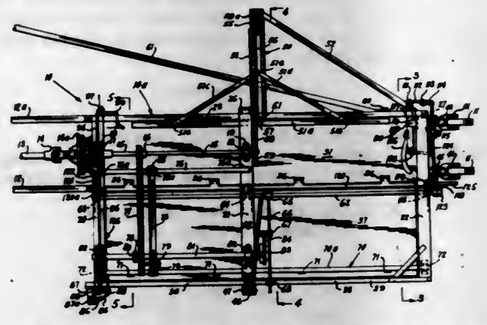
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3,170,583
CAR-TOP BOAT LOADER AND CARRIER
Walter H. Meyer, 730 E. Bridgeport, Spokane, Wash.
Filed Sept. 15, 1961, Ser. No. 138,377
5 Claims. (Cl. 214—450)



1. A car-top boat loader and carrier, comprising: a first frame adapted to be removably fixed upon a car and having substantially parallel side rails with terminal end portions; the terminal end portions of said side rails being angled downwardly for support upon the automobile body at points removed from the roof; a floating frame adapted to receive a boat and having side rails associated with said first-named side rails for relative rectilinear movements of said floating frame; means on said first frame for selectively moving said floating frame between a loaded position and an unloading position, and other means independent of said first means for selectively loading and unloading a boat with respect to said floating frame.

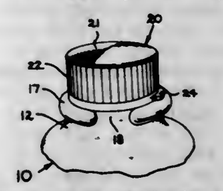
3,170,584
AUTOMATIC SELF BUNCHING AND DISPENSING BALE CARRIER
John J. Crawford and Robert L. Crawford, both of Rte. 3, Box 548, Corvallis, Oreg.
Filed Nov. 20, 1963, Ser. No. 327,574
6 Claims. (Cl. 214—504)



1. In combination with a traveling baler, an automatic actuated traveling carrier and bale buncher connected to said baler for collecting, bunching and dumping bales of material on the ground or on a traveling platform comprising a plural bale carrier means including a box-like structural frame support means, ground wheel means for traveling support of said frame means, draw bar means for connecting said carrier means to said baler, power take-off means from said baler including spring biased clutch means operatively connecting said baler to said carrier means, a delivery chute means for receiving said bales of material, drop table means hingedly secured to said chute means, biased catch release mechanism means operatively secured to said drop table means, and reciprocating mechanism means selectively operated by said clutch means to drop said drop table means and discharge accumulated bales of material on said chute and said table means periodically, and bale actuated mechanism for selectively actuating said clutch means, said reciprocating mechanism and said drop table means to bunch and discharge bales of material onto the ground.

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3,170,585
BOTTLE AND SAFETY SNAP CAP THEREFOR
George H. O'Donnell, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Nov. 18, 1963, Ser. No. 324,278
4 Claims. (Cl. 215—9)

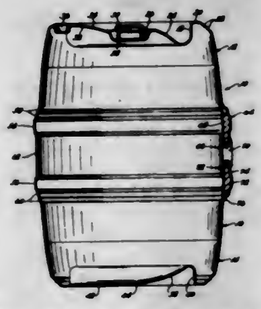



1. In combination, a bottle having a mouth defining neck rising therefrom, said neck formed with an annular downwardly facing closure retaining abutment spaced from the mouth end, a circumferentially extending radial bead externally of the neck immediately below said abutment and of greater radial extent than said closure retaining abutment, said bead being of reduced radial extent in at least one area to provide a transverse notch of radial extent greater than said closure retaining abutment but less than the radial extent of the remainder of said bead, a resilient closure telescoped over said neck, said closure including a top panel portion, an annular skirt depending from said top panel, the radial extent of said

skirt being not greater than the radial extent of said transverse notch, said skirt having an inwardly directed bead formed integrally therewith for holding engagement with said abutment and projecting into the space between said abutment and said bead, a tab extending radially outwardly from the lower margin of said skirt, the radial extent of said tab being greater than the radial extent of said transverse notch but not greater than the radial extent of the remainder of said bead, said closure being rotatable relative to the neck to effect registration of the tab with said transverse notch.

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**3,170,586**
**SINGLE WALLED METAL CONTAINER**
**Walter W. Bulgrin, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**
**Filed Dec. 22, 1961, Ser. No. 161,469**
**2 Claims. (Cl. 220—5)**

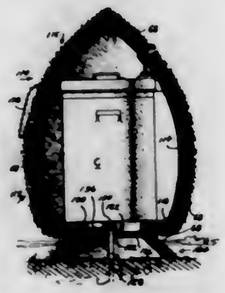


1. In a single walled metal container, the combination of end shells of predetermined axial length formed with integral double walled chimes, an intermediate continuous center portion, said center portion having annular configurated flat surfaces reinforced on at least one side of said surfaces by annular corrugations, one of said end shells having a concaved recessed aperture located coaxially of said end shell in a convexed surface bounded by one of said integral double walled chimes, an embossed sump extending radially outwardly from the outer periphery of said concaved recessed aperture and an adaptor fitting projecting axially outwardly from within said concaved recessed aperture and extending coaxially of said end shell above said convexed surface, said embossed sump and said adaptor fitting disposed below the outermost end surface of said one integral double walled chime, a second adaptor fitting projecting axially inwardly within said embossed sump and substantially circumferentially aligned with the flat surface between said integral double walled chimes, the other of said end shells having a spherical domed surface bounded by the other of said integral double walled chimes and an embossed sump extending radially outwardly from the center of said spherical domed surface, said embossed sump terminating in an axial apertured portion of said other double walled chime, said axial apertured portion having an adaptor fitting projecting axially inwardly in alignment with said embossed sump, and a patch plate assembly surrounding and defining a bung opening in said intermediate continuous center portion.

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**3,170,587**
**DEVICES FOR CONCEALING AND SUPPORTING REFUSE RECEPTACLES**
**Herman M. Beeber, 51 Beacon Hill Drive, Metuchen, N.J.**
**Filed Dec. 28, 1962, Ser. No. 248,020**
**3 Claims. (Cl. 220—18)**

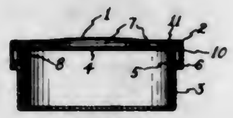
1. In combination, a device for concealing and supporting a refuse receptacle such as a trash or garbage can, comprising a hollow body member open at the upper end thereof, a removable cover member closing the upper end of said body member, said body member and cover member cooperating to together simulate the shape of a shrub when the cover member is in place on the body member, means for supporting a refuse receptacle on the interior of said body member, said body member including a countersunk region at the lower end thereof lying below the support surface for said refuse receptacle, an-



chor means secured to the ground beneath said body member, the lower end of said body member having an aperture permitting said anchor means to extend into the countersunk region at the lower end of said body member, means for locking said anchor means in said countersunk region to thereby hold said body member in position over said anchor means, and artificial plant elements secured to the outer surface of said body and cover members to simulate the foliage of a shrub.

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**3,170,588**
**SNAP RELEASE CONTAINER**
**Joe M. Lyon, Jr., 600 E. Capitol St., Salt Lake City, Utah**
**Filed May 17, 1963, Ser. No. 281,166**
**11 Claims. (Cl. 220—60)**

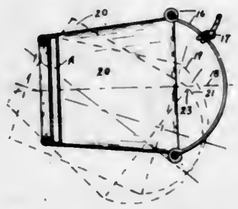


1. A container of the character described comprising:
a base,
including a hollow receptacle open at the top and having locking means on its side;
a cover assembly including an outer cover member having a substantially flat upper surface,
having a central opening,
a depending skirt portion,
and locking means on the skirt adapted to releasably engage the locking means on said base;
an inner cover plate having an integral annular ridge on its upper surface intermediate its center and the periphery of said plate;
a crowned disc having a portion thereof of curved cross section;
said disc being adapted to flex and snap downward when pressure is applied through said cover plate opening to separate said cover member and said cover plate and to separate the cooperating locking means on said base and said cover and being adapted to snap upward when said cover assembly is urged downward onto said base to engage said locking means.

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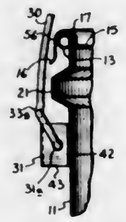
**3,170,589**
**NON-SINKABLE BUCKET**
**Charles A. Winslow, 205 Martinique Ave., Tiburon, Calif.**
**Filed Dec. 3, 1962, Ser. No. 241,714**
**5 Claims. (Cl. 220—66)**



4. A bucket comprising a generally tapered circular metal form including walls, a first bucket bottom attached to the smaller end of said walls, a bail attached to the larger end of said tapered walls, a second bottom attached to said first bottom, said combination comprising a non-sinkable bucket with an air chamber in its bottom, a bail on its rim and being balanced to rotate bottom up when floated.

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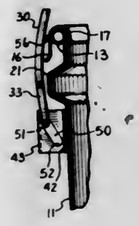
**3,170,590**
**PAIL TYPE SHIPPING CONTAINER**
**Frederick E. Ullman, Winnetka, Phillip C. Urasky, Chicago, and James J. Deegan, Downers Grove, Ill., assignors, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware**
**Filed Aug. 10, 1962, Ser. No. 216,094**
**1 Claim. (Cl. 220—91)**



In a shipping container the combination comprising a cylindrical wall, the upper edge of said wall being formed into an outwardly extending curl, a bead formed in said wall adjacent to and beneath said curl, a cover seated on said upper edge projecting outwardly beyond said cylindrical wall, a pair of ears secured to said wall beneath said bead in diametrically opposite positions, said ears being in the form of flat vertically oriented pieces of metal extending radially outward from said wall and having a radial extent slightly less than twice the height of said bead so as to permit accommodation of said ear when similar containers are stacked bead to bead, a bail having an arcuate profile and generally circular loops formed at its ends, said loops being angled inwardly with respect to said profile and occupying planes bearing an angle of about 45° to about 100°, and said ears having openings for relatively snug sliding engagement with said loops so that when said bail is swung downwardly said loops slide in said openings causing the ends of the bail to be cammed radially inward for snug nested engagement between the bail and the wall of the container.

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**3,170,591**
**PAIL TYPE SHIPPING CONTAINER**
**Frederick E. Ullman, Winnetka, and Phillip C. Urasky, Chicago, Ill., assignors, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware**
**Filed Aug. 10, 1962, Ser. No. 216,095**
**2 Claims. (Cl. 220—91)**



1. In a shipping container the combination comprising a cylindrical wall, the upper edge of the wall being formed into an outwardly extending curl, a bead formed in the wall near the upper edge of the container, a pair of ears located in diametrical positions on the wall of the container immediately below the upper bead and secured by welding or the like, said ears each being in the form of a flat vertically oriented plate of metal extending radially outward from the wall of the container and having a radial extent which is slightly less than twice the height of the bead so as to permit accommodation of the ear when similar containers are arranged bead-to-bead during shipment, said ears having openings formed therein, a bail of generally semi-circular shape having loops formed in its ends for engaging the openings in said ears, said bail being sprung inwardly and said openings being in the form of slots angled upwardly and outwardly so that when an upward force is applied to the bail the loops thereon are moved into seated position in the upper ends of the slots with the bail spread outwardly to clear the bead and curl and so that when the bail is swung downwardly for shipment the loops on the bail are free to spring inwardly to occupy the lower ends of the respective slots for close nesting of the bail with respect to the container and so that the bail is held clear of the side walls of adjacent containers regardless of the relative orientation between them.

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**3,170,592**
**PAIL TYPE SHIPPING CONTAINER**
**Frederick E. Ullman, Winnetka, and Phillip C. Urasky, Chicago, Ill., assignors, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware**
**Filed Aug. 10, 1962, Ser. No. 216,136**
**2 Claims. (Cl. 220—91)**

1. In a shipping container the combination comprising a cylindrical wall, the upper edge of the wall being formed into an outwardly extending curl, an upper bead formed in the wall near the upper edge of the container and a lower bead formed in the wall adjacent the lower end of the container, a pair of ears located in diametrically opposite positions on the wall of the container immediately below the upper bead, each of said ears being secured to the wall of the container by welding or the like, each of said ears having a central opening formed therein, a bail of generally semicircular shape having inwardly bent end portions for engaging the openings in said ears, each of said ears having an integral cam-like protuberance along the upper edge portion thereof so that when the bail is swung to its upraised position the bail rides radially outward on said protuberances to clear the bead and curl and

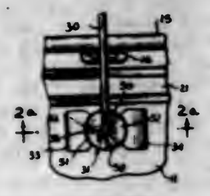
so that when the bail is swung downwardly for shipment the loops on the bail ride inwardly on said protuberances for close nesting of the bail with respect to the container and so that the bail is held clear of the side walls of adjacent containers regardless of the relative orientation be-



tween them, the maximum radial extent of the protuberances on the ears being slightly less than twice the height of the beads so as to permit accommodation of the ears when similar containers are arranged bead-to-bead during shipment.

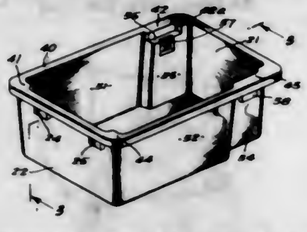
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3,170,593
PAIL TYPE SHIPPING CONTAINER
Frederick E. Ullman, Wilmette, and Phillip C. Uransky, Chicago, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Original application Aug. 18, 1962, Ser. No. 216,136. Divided and this application June 5, 1964, Ser. No. 372,844
3 Claims. (Cl. 220—91)



3. In a shipping container the combination comprising a cylindrical wall, the upper edge of the wall being formed into an outwardly extending curl, an upper bend formed in the wall near the upper edge of the container, a pair of ears located in diametrically opposite positions on the wall of the container immediately below the upper bead, each of said ears being secured to the wall of the container by welding or the like, each of said ears having a central opening formed therein, a bail of generally semicircular shape having inwardly bent end portions for engaging the openings in said ears, said end portions terminating in substantially right angular bent-over tips, each of said ears having an integrally formed cam surface inside of the ear, said cam surfaces being displaced approximately 90° from said tips when said bail is in its uppermost position, and said bail being outwardly sprung for pressing said tips against said surfaces so that when the bail is swung to an upraised position said bail tips ride outward on said surfaces and said bail clears the bead, curl and cover and so that when the bail is swung downwardly for shipment said bail tips ride inwardly on said surfaces for closely nested positioning of the bail adjacent the wall of the container.

3,170,594
STACKABLE AND NESTABLE CONTAINER
Fred M. Nascher, Los Angeles, Calif., assignor, by mesne assignments, to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 4, 1963, Ser. No. 306,567
2 Claims. (Cl. 220—97)



1. An integrally formed stackable and nestable container of sheet material of uniform cross-section throughout comprising integral oppositely disposed side and end walls and a bottom wall interconnecting the side and end walls, said side and end walls diverging upwardly and outwardly from said bottom wall and terminating in a flange connecting the marginal edges of said side and end walls, one container end wall having an outwardly offset shelf forming recess therein, said recess including bottom, side and end walls, the bottom wall being disposed below the marginal flange and merging into the side wall thereof, said recess side wall being disposed outwardly of the container end wall and merging into said marginal flange, the end walls thereof terminating inwardly of the container side walls, said container side walls each including adjacent the other container end wall an inwardly offset portion extending the entire height of the side walls and defined by angularly disposed shoulders extending from adjacent the bottom wall to said marginal flange, said offset portion being of greatest length adjacent the juncture with the bottom wall and of less length at the juncture with the said flange to permit nesting of superimposed identical containers, each of said offset portions of the side walls including an outwardly extending shelf forming recess, each recess including bottom, side and end walls, said recess bottom wall being disposed below the marginal flange and merging into said side wall thereof, said recess side wall being disposed outwardly of the container side walls, one of the said recess end walls terminating short of the container end wall, the other of said recess end walls merging into the inclined shoulder, each of said side and end wall shelf forming recesses having a length several times their width and each recess including a downwardly extending anti-wedging post of less width than said shelf recess and of a height at least twice the distance from the bottom wall of the shelf forming recess to the said marginal flange, the exterior walls of the post diverging outwardly and downwardly in non-parallel relationship both with the container walls and a true vertical plane and terminating in a post bottom wall, said bottom wall being parallel with the recess bottom walls and the marginal flange of the container and extending inwardly and merging with the container walls.

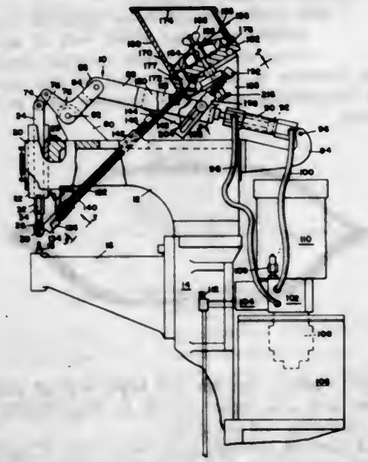
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3,170,595
HOPPER AND FEED MECHANISM
Raphael Stein, 1363 Meeting House Road, Huntingdon Valley, Pa.
Filed Jan. 15, 1962, Ser. No. 166,988
11 Claims. (Cl. 221—182)

2. Apparatus comprising a hopper adapted to receive a plurality of rod-like members, a raceway depending from said hopper, means for transferring rod-like members from said hopper to a slot extending along said raceway, a throat plate having a slot offset from said raceway slot,



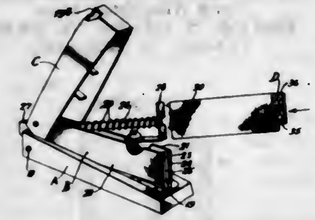
and an arcuate slot in the throat plate connecting the lower end of said raceway slot to the upper end of the said throat plate slot, the lower end of said raceway slot being lower than the upper end of said throat plate slot,



and means for intermittently pushing a rod-like member from said raceway slot to said throat plate slot, said means including an arcuate finger reciprocally mounted within said arcuate slot.

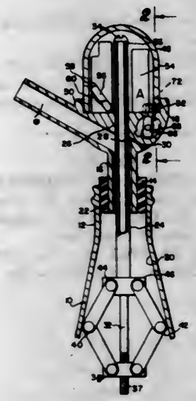
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3,170,596
CLIP DISPENSER AND CARTRIDGE LOADER
Curt E. Nyberg, Skokie, Ill.
(1422 Lamar, Memphis, Tenn.)
Continuation of application Ser. No. 42,430, July 12, 1960. This application Jan. 3, 1963, Ser. No. 250,979
13 Claims. (Cl. 221—188)



1. In a dispensing device for dispensing elongated paper clips, a base member, a magazine member pivotally mounted upon said base member, spring means urging said magazine member upwardly, said magazine member having an open front end equipped with stripper bars which extend inwardly in spaced-apart relation and an ejector carried by said base member and having a vertical portion extending along the forward end of said magazine member for ejecting clips when the magazine member is depressed, a follower pusher member slidably mounted in said magazine and provided with a slot, spring members urging said pusher member forwardly, a clip holder containing clips extending through the space between said stripper bars and supporting clips within said magazine with the clips in longitudinal alignment with said stripper bars, said clips being wider than the space between said stripper bars, and a rod extending through the slot of said follower pusher member and having a head wider than said slot adapted, when pressed forwardly, to engage said clip holder to eject the same and also, when drawn rearwardly to engage said follower to retract the same.

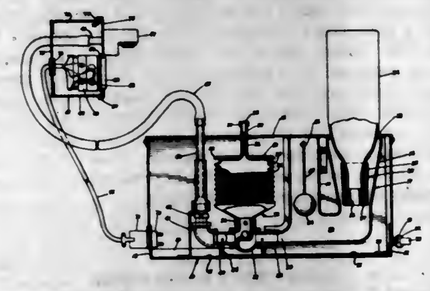
3,170,597
MATERIALS DISPENSER AND RECORDING MEANS
Arthur M. Reichenberger, 4047 W. State, Phoenix, Ariz.
Filed Feb. 12, 1962, Ser. No. 172,564
7 Claims. (Cl. 222—36)



1. In a materials dispenser and recording means, the combination of: a materials container; a radio signal transmitter; switch means responsive to dispensation of materials from said container; said radio transmitter responsive to operation of said switch means and thereby energized to send out a signal; and a radio receiver and recorder disposed to receive said signal and record the dispensation of materials from said container.

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3,170,598
BAR DISPENSER
Elywn M. McPherson, Hopkins, Minn., assignor to McPherson Enterprises, Inc., Minneapolis, Minn., a corporation of Iowa
Filed Nov. 19, 1962, Ser. No. 238,346
11 Claims. (Cl. 222—36)



1. A bar dispenser for automatically measuring and discharging successive uniform predetermined smaller portions of liquor from a larger supply, which dispenser comprises:

(A) a supply vessel adapted to contain a quantity of liquor,

(B) a resilient compressible bellows pump in communication with said supply vessel,

(C) a check valve between said bellows pump and supply vessel to permit flow only in the direction of the bellows pump,

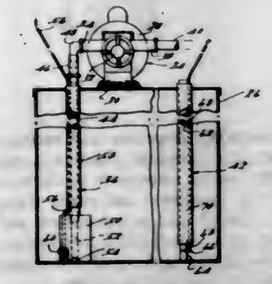
(D) a dispensing spigot,

(E) a distribution line between said bellows pump and spigot and a check valve in said distribution line to permit flow only in the direction of the spigot;

(F) a pivoted compression lever positioned adjacent one end of said bellows pump to compress the same,
(G) an electric motor,
(H) cam means adapted to be driven by said motor,
(I) connecting rod means eccentrically mounted relative to said cam means and secured to said compression lever,
(J) switch means associated with said spigot to energize said motor and
(K) switch means associated with one peripheral edge of said cam means to deenergize said motor after one cycle of rotation of said cam means.

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**3,170,599**
**AUTOMATIC LIQUID DISPENSER**
Leon J. Pianowski and Charles E. Fenoglio, Detroit, Mich., assignors to The Udylite Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,626
4 Claims. (Cl. 222—39)

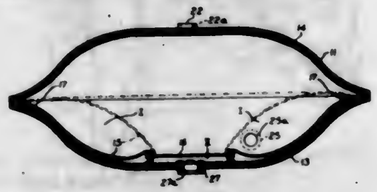


1. An automatic liquid dispenser comprising pumping means including a suction tube assembly connected to the inlet of said pumping means and adapted to be disposed in a supply container containing makeup solution and a discharge tube for discharging the makeup solution into a treating receptacle, said suction tube assembly comprising conduit means formed with an inlet port at the base thereof for withdrawing makeup solution contiguous to the bottom of the supply container, control means including presettable means for energizing said pumping means after a preselected depletion of the treating solution has occurred, timing means for maintaining said pumping means energized for a preselected time period, and sensing means associated with suction tube assembly and a point within the supply container spaced therefrom and electrically connected to said control circuit for signaling the depletion of makeup solution therein to said control circuit effecting deenergization of said presettable means and signaling the occurrence of such event.

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**3,170,600**
**COLLAPSIBLE CONTAINER**
Robert E. Pierson, East Greenwich, R.I., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1962, Ser. No. 242,177
1 Claim. (Cl. 222—94)

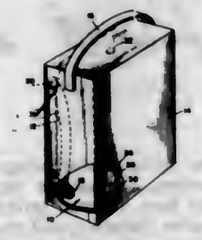
A collapsible container adapted for the storage of pulverulent material, said container being formed of relatively flexible material, comprising:
a substantially cylindrical body portion having upper and lower walls closed at their ends to form a container;
means to fill said container;
a bladder layer comprising a rectangular sheet of coated cord fabric attached about its periphery to said lower wall of said container thereby to form a first chamber,
said sheet being generally coterminous with said lower wall of said container,
said sheet having an air-permeable fabric center section disposed parallel to the axis of said cylindrical body portion,
said center section being attached about its periphery to said lower wall of said container thereby to form a second chamber;
a first opening in said upper wall of said container for introducing gas under pressure into said container;



a second opening through said lower wall of said container and said center section of said bladder layer for emptying said container;
a third opening through said lower wall of said container spaced from said second opening for introducing gas under pressure into said first chamber to force pulverulent material in contact with said bladder layer onto said center section thereof; and
a fourth opening through said lower wall of said container spaced from said second and third openings for introducing gas under pressure into said second chamber to aerate pulverulent material on said center section.

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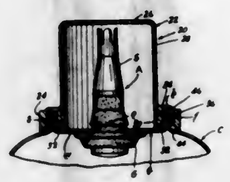
**3,170,601**
**PORTABLE AND DISPOSABLE GASOLINE CONTAINER**
Charles E. Daley, 18 Oakdale Road, North Wilmington, Mass.
Filed Feb. 15, 1963, Ser. No. 258,693
3 Claims. (Cl. 222—153)



1. A container for a combustible liquid, said container comprising an inner shell and an outer shell, said inner shell being composed of a metal, said outer shell being composed of a rupturable flame retardant material, said inner shell having an opening at a first portion, an elongated nozzle communicating with said opening and secured at one of its ends to the inner shell and extending toward a second portion of said inner shell outside said inner shell and inside said outer shell, the free extremity of said nozzle being closed, a ripcord attached to said outer shell and extending therealong in registration with said nozzle, one portion of said ripcord being connected to the free extremity of said nozzle, said ripcord being capable of rupturing said outer shell in order to cause said nozzle to project outwardly from within said outer shell.

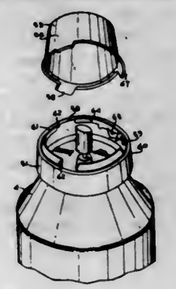


**3,170,602**
**COVER FOR CONTAINERS**
Fred F. Snellentrop, Jr., Shrewsbury, and Allan A. Snellentrop, Mehlville, Mo., assignors to Pres-Pak Valve Corp., St. Louis, Mo., a corporation of Missouri
Filed Apr. 22, 1963, Ser. No. 274,428
1 Claim. (Cl. 222—182)



In combination with a pressurized container provided with a cupshaped top closure member of the character described, said closure member including a bottom wall and a circular side wall that terminates at the top in an annular beaded portion, said bottom wall having a dispensing valve assembly mounted centrally therein with the tiltable valve stem projecting above the bottom wall aforesaid,
a cover assembly for said container and the projecting valve stem thereof, said assembly being molded of a flexible plastic material and comprising initially:
a cap body including a top wall and a circular side wall that terminates at the bottom in a rim portion, the external peripheral surface of the rim portion having a smaller diameter than the internal peripheral surface of said side wall of the top closure member;
a circular flange projecting laterally from the side wall of the cap body adapted to overlie said annular beaded portion of the top closure member;
a plurality of circular spaced ribs projecting radially from the outer peripheral surface of said rim partion and merging at their upper ends into said flange, each of said ribs being adapted to frictionally engage against the inner surface of said side wall of the top closure member;
a disposable skirt section circularly spaced from said rim portion and the ribs thereon, said skirt section comprising an annulus having an internal diameter in correspondence with the external diameter of said beaded portion of the top closure member;
a feathered lower edge thereon to facilitate pressfitting the annulus onto said beaded portion of the top closure member;
a frangible circular web segment connection between the upper end portion of the skirt section and the laterally projecting flange of the cap body, said web segment being a component common to said annulus and flange;
a vertical slit or score formation in the external peripheral surface of the annulus, said slit extending from the web segment aforesaid to the feathered edge of said annulus;
a tear tab projecting radially laterally from the annulus contiguously to the slit;
and a vertically disposed cylindrical fingerpiece on the free end of the tab to facilitate severance of the annulus from the laterally projecting flange of the cap body in consequence of manually pulling said tab arcuately away from said flange circumferentially along said frangible web segment, the severance beginning and ending at the slit or score formation aforesaid.

**3,170,603**
**TAMPERPROOF CONTAINER CLOSURE**
Gary L. Kitterman, Kansas City, Kans. (6100 Wilson Ave., Kansas City, Mo.)
Filed Dec. 31, 1962, Ser. No. 248,423
3 Claims. (Cl. 222—182)



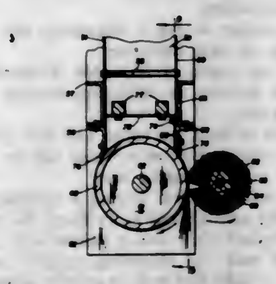
3. In combination,
(a) a container having a dispensing end,
(b) a cap on said container,
(c) said cap being of frangible material and having a collar portion in encircling relation to said dispensing end,
(d) means on said cap collar and said dispensing end of the container retaining said cap in closing relation to said dispensing end,
(e) said collar portion having a peripheral first wall extending axially outwardly from the upper end of the container neck and a second wall connected to the first wall and extending radially inwardly with respect to said first wall in axially outwardly spaced relation to said dispensing end of said container and said second wall terminating at its inner edge in a dome portion,
(f) a fracture line in said inwardly extending wall and extending around the cap so that impact and pressure on said dome portion will break the cap along said fracture line and move said dome portion toward said dispensing end and permit removal of the dome portion for access to the dispensing end of the container,
(g) said fracture line having circumferentially spaced portions of different radially outward spacing from said dome portion defining lugs on the dome portion and collar,
(h) said lugs being engageable after fracture for securing the dome portion on the collar portion in closing position.

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**3,170,604**
**APPARATUS FOR APPLYING AN ADHESIVE TO PLANAR ARTICLES SUCH AS WEBS OR SHEETS OF VENEER**
Ralph Chapman, Corvallis, Oreg., assignor to Wood Processes, Oregon Ltd., Corvallis, Oreg., a partnership
Filed Aug. 7, 1961, Ser. No. 129,906
5 Claims. (Cl. 222—233)

1. Apparatus for applying a powdered adhesive to a surface of a traveling, planar article:
(a) said apparatus comprising an upstanding, relatively long, narrow bin for holding a supply of said powder;
(b) said bin having a rectangular outlet opening in the bottom thereof;
(c) a cylinder mounted adjacent said opening for rotation about a horizontal axis, with said axis being parallel to the longitudinal axis of said opening and with the upper surface of said cylinder projecting into the interior of said bin and filling said opening to provide a movable bottom wall for said bin;
(d) said cylinder having a diameter greater than the width of said opening;

(*e*) means for rotating said cylinder at a predetermined peripheral speed and in one direction;
(*f*) said cylinder having a plurality of depressions in its surface into which powder within said bin may settle thereby to be removed from said bin;
(*g*) a brush means rotatably mounted in axially parallel relationship to and adjacent said cylinder, and externally of said bin and including means for driving said brush means in a direction of rotation opposite to the direction of rotation of said cylinder for removing said powder from said depressions upon the emergence of the latter from said bin;
(*h*) a plurality of generally parallel spaced apart rods disposed horizontally within said bin and extending the length thereof;
(*i*) said rods being positioned above said cylinder and relatively closer to said opening than to the top of said bin:

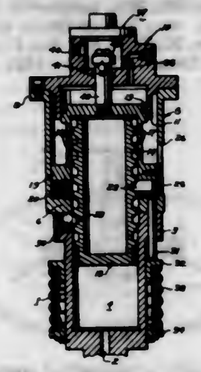


(*j*) a plurality of spaced apart blades attached to and spanning the distance between said rods such that said rods and blades define a grate within said bin;
(*k*) a longitudinally disposed doctor blade attached to said grate and extending downwardly toward said cylinder;
(*l*) said doctor blade having a lower, straight edge engaging the surface of said cylinder throughout substantially the length of the latter and at a position near the wall of said bin toward which the surface of said cylinder within said bin rotates;
(*m*) and means for reciprocating said rods in a direction longitudinally of said cylinder so that said blades undercut any bridges formed in said powder and said doctor blade packs said powder uniformly into said depressions to a level even with the surface of said cylinder.

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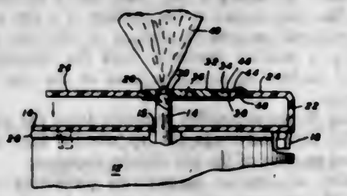
**3,170,605**
**EJECTION UNIT**
**Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of William F. MacGlashan, Jr.**
**Filed June 26, 1963, Ser. No. 290,870**
**4 Claims. (Cl. 222—389)**

1. An ejection unit, comprising:
(*a*) an injection fluid housing;
(*b*) a plunger movable therein to eject the contents thereof;
(*c*) an actuator piston and cylinder means disposed in coxial relation to said plunger, said piston and cylinder means having a predetermined stroke less than the travel of said plunger;
(*d*) a first mechanical means interposed between said piston and cylinder means and said plunger to move said plunger a predetermined distance;
(*e*) and a second mechanical means for locking said plunger against return movement from a previous position to which said plunger is moved by said piston and cylinder means, whereby, on repeated operation of said piston and cylinder means, said plunger is advanced in said fluid housing to eject predetermined quantities of fluid therefrom.



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**3,170,606**
**AEROSOL ACTUATOR**
**Wilbur L. Boyer, Norristown, Pa., assignor to Corrosion Reaction Consultants, Inc., Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Jan. 31, 1962, Ser. No. 170,135**
**3 Claims. (Cl. 222—394)**

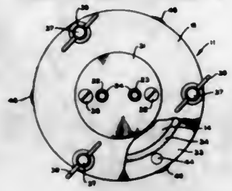


1. An article of manufacture comprising an aerosol container having a discharge conduit, an actuator for said conduit, said actuator being mounted upon said container, said actuator including a pivotably mounted arm, a nozzle plate supported by said arm, said nozzle plate having a plurality of orifices circumferentially disposed on said plate, each orifice having an end which has a diameter at least as great as the I.D. diameter of said conduit, said arm being mounted for pivotable movement through a range between first and second positions, a portion of said arm abutting an end of said conduit and one of said orifices being in line with said end of said conduit in the first position of said arm, means biasing said arm to its second position wherein said arm and said one orifice are spaced from said conduit, and means mounting said plate on said arm so that each of the orifices may be selectively disposed for cooperation with said conduit, whereby a variety of flow discharge patterns may be selectively obtained.

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**3,170,607**
**CLOSURE FOR PRESSURIZED CONTAINERS**
**Erik W. Anthon, Kensington, Calif., assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.**
**Filed Sept. 1, 1961, Ser. No. 135,566**
**4 Claims. (Cl. 222—400.7)**

1. A cover for a pressurizable glass container having a shoulder and a neck with an outwardly extending lip, comprising a cap, fluid transfer means extending through the cap, a ring member adapted to fit around the neck of the container, an internally extending flange on said ring member, resilient means fitting within the ring member and against the flange, a plurality of legs on the ring member axially movable with respect thereto, resilient tips on

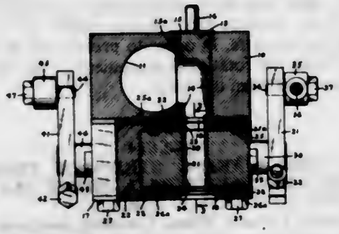


one end of the legs adapted to engage the shoulder of the container, and clamping means for clamping the ring member to the cap while urging the resilient means against the lip of the container.

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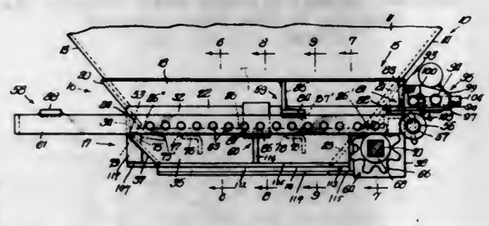
**3,170,606**
**DRIPLESS DISPENSING APPARATUS**
**Earle Thomas Oakes, Islip, Lewis Garth Doom, East Islip, Paul E. Sundheim, Bayport, and Paul Albert McElligott, Greenlawn, N.Y., assignors to The E. T. Oakes Corporation, Islip, N.Y., a corporation of New York**
**Filed Oct. 3, 1961, Ser. No. 142,573**
**1 Claim. (Cl. 222—502)**



Apparatus for depositing individual portions of semi-fluid material onto a moving receiving surface comprising a depositing head having a material conducting channel therein, a valve in said channel for controlling flow of said material therethrough, a discharge port in said head, a cylindrical member disposed between said channel and said discharge port having a transverse bore extending therethrough, a cylindrical sleeve surrounding said member having a closed end and an open end and a pair of diametrically aligned openings in the wall thereof, said discharge port being of substantially larger diameter than said aligned openings and flaring outwardly from the adjacent aligned opening to prevent the adherence of said semi-fluid material thereto, said aligned opening adjacent said discharge port having an outer widened portion of substantially the same diameter as said discharge port, a first shaft fixed to and extending axially from said closed end of said sleeve, a second shaft fixed to and extending axially from the end of said cylindrical member adjacent to said open end of said sleeve and means connected to said shafts for oscillating said member and said sleeve about their respective axes to move the said openings and said transverse bore intermittently into and out of alignment with said channel and said discharge port to cause predetermined portions of said material to be cut off by the shearing action between said member and said sleeve and to be deposited on the moving receiving surface.

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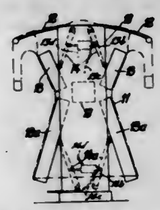
**3,170,609**
**SLIDING HOPPER CLOSURE OPERATING AND SUPPORTING MECHANISM**
**George B. Dorey, Westmount, Quebec, Canada, assignor to Enterprise Railway Equipment Company, Chicago, Ill., a corporation of Illinois**
**Continuation of application Ser. No. 36,502, June 16, 1960. This application Feb. 20, 1964, Ser. No. 346,187**
**11 Claims. (Cl. 222—505)**



3. In combination, a hopper having a discharge opening and a sliding gate for the opening, a frame supported by and surrounding the lower portion of the hopper and supporting said gate, means for moving said gate including a shaft journaled in the frame and interengaging pinion and rack means on the shaft and connected to one end of said gate respectively, said rack means including laterally spaced walls adapted to straddle the pinions and coextensive with and extending beyond the other end of said gate, guiding means for the rack means including walls extending laterally from the frame across the plane of the rack means, and pads on the said walls lying between the spaced walls of the rack means.

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**3,170,610**
**GARMENT PRESS**
**Herbert Kannegiesser, Vlotho (Weser), Hollwiesen, and Richard Juraschek, Vlotho (Weser), Germany, assignors to Kannegiesser & Co., Maschinenfabrik G.m.b.H., Vlotho (Weser), Hollwiesen, Germany**
**Filed Aug. 16, 1961, Ser. No. 131,760**
**4 Claims. (Cl. 223—57)**

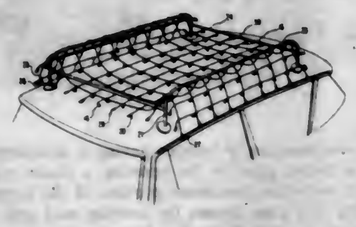


1. A press body adapted for use in a garment press having press plates operable for engaging the front and back of the press body for pressing garments on said body, said body being adapted to receive and support a garment to be pressed, at least two spreader fin plates arranged one above the other on each side of said press body and supported by said press body and respectively movable laterally outwardly with regard to said press body, all of said spreader fin plates being located substantially in one and the same plane, a single link for each spreader fin plate pivotally supported at one end by said press body and pivotally connected at the other end to a single intermediate point only on the respective said spreader fin plate and operable to actuate the latter in said plane, each said spreader fin plate being freely tiltable in said plane and independently of the others of said spreader fin plates and about the said point of connection thereof with respective said link so as to adjust to the configuration of the garment to be pressed which is placed on the body, and fluids operable means connected to said link responsive to pressure for actuating said link to move

said spreader fin plates laterally relative to said body thereby to hold a garment spread out for being acted on by said press plates.

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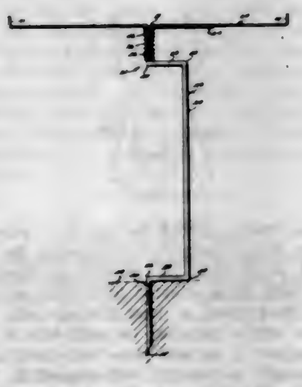
3,170,611
SUPPORT NET
Lloyd S. Gullen, 33494 Alta Loma, Farmington, Mich., assignor of one-third to Annie A. Gullen, Farmington, Mich., and one-third to Beulah Barker, Beltsville, Md.
Filed May 11, 1964, Ser. No. 366,356
7 Claims. (Cl. 224—42.1)



1. An article support comprising a first series of parallel flexible strands running in one direction, a second series of parallel flexible strands running in a second direction at an angle to said first series of strands to define thereby a plurality of strand crossing points, means to connect said strands at each crossing point to define a net, and a loop of strand material integrally formed from one of said series of strands at a plurality of said crossing points.

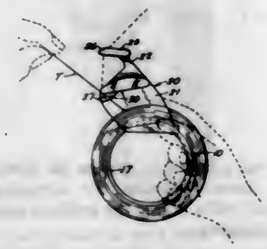
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3,170,612
GARDEN TOOL HOLDER
Gordon Bienemeschein, P.O. Box 122, Lake Villa, Ill.
Filed Oct. 19, 1962, Ser. No. 231,685
13 Claims. (Cl. 224—45)



1. A combination rack and tool holder for supporting tools comprising:
a rectangular tray having an upturned front end and an upturned rear end,
rail means passing through the upturned front and rear ends to form side rails for said tray,
a plurality of interconnected semi-circular tool handle supports for engaging a tool handle to suspend the tool, and
said rails extending through the rear upturned end to connect said semi-circular tool handle supports with said tray.

3,170,613
HAND DISPENSER FOR ADHESIVE TAPE
James H. Casey, Roseville, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 6, 1962, Ser. No. 221,787
3 Claims. (Cl. 225—66)



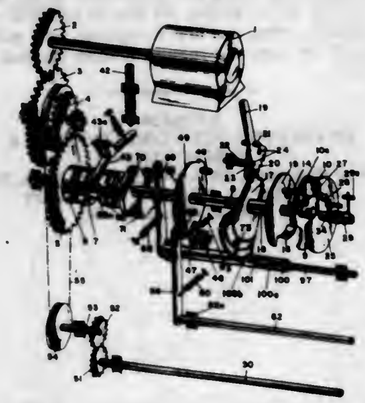
1. A dispenser for use in connection with adhesive tape which is wound into roll form on the external surface of a circular core, said dispenser comprising a substantially semi-circularly shaped handgrip for insertion within the core so that the convex surface of said handgrip is in contact with the internal surface of the core, said handgrip being wider than the core and having a flange attached to each edge of the convex surface thereof and extending radially outward beyond the internal edges of the core, so that the core can be held between said flanges and be rotatable with respect to said handgrip as the handgrip is held in the hand of the operator while the tape is unwound from the core, in order to protect the hand of the operator from the rotational movement of the core as the tape is unwound from the core.

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3,170,614
DEVICE FOR MAKING STRIPS OF PREDETERMINED LENGTH FROM A SHEET MATERIAL WOUND TO FORM A ROLL
Walter Faust, Urbach, Hesse, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany
Filed Mar. 11, 1963, Ser. No. 264,191
Claims priority, application Germany, Apr. 6, 1962, T 21,931
13 Claims. (Cl. 226—134)

1. A device for making strips of predetermined length from a sheet material wound to form a roll, said device comprising in combination:
(*a*) transport roller means adapted to draw sheet material wound in form of a roll from such a roll;
(*b*) drive means for driving said transport roller means adapted to be torque-transmitting in but one single direction, said drive means including a first shaft;
(*c*) a spring-biased abutment structure fixedly mounted on said first shaft;
(*d*) a fixed stop limiting rotary motion of said first shaft and of said abutment structure under said spring bias;
(*e*) a motor;
(*f*) a second shaft arranged coaxially to said first shaft and driven by said motor;
(*g*) a rotary abutment driven by said second shaft adapted to engage said abutment structure to operate said first shaft against said spring bias; and
(*h*) adjusting means for controlling angle of rotation of the said rotary abutment preceding engagement thereof with said abutment structure, said adjusting means including cam means adapted to move said rotary abutment out of engagement with said abutment structure upon engagement of said abutment by said cam means, a sleeve integral with said cam means

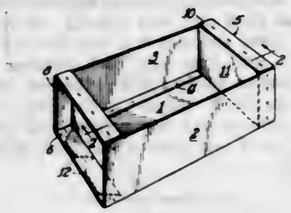




loosely mounted on said second shaft, and means for turning said sleeve around said second shaft.

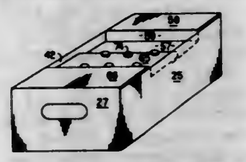
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3,170,615
COLLAPSIBLE TRAY
Wallis L. Mortenson, Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Sept. 20, 1962, Ser. No. 225,085
1 Claim. (Cl. 229—16)



An open top, collapsible tray formed from a unitary blank of foldable paperboard cut and scored to provide, in sequence, a one-piece bottom panel, a side panel hinged thereto, top connecting strips having panels hingedly extending therefrom to form opposed end panels, and a second side panel; said blank having inwardly foldable reinforcing strips extending entirely along opposite edges of the blank and integrally hinged to the side wall panels, bottom panel, and connecting strips; said reinforcing strips being inwardly folded at each end of the tray to engage flatwise against the respective end portions of the bottom and side wall panels and to engage flatwise against the respective connecting strips at each end of the tray; said end panels each having a vertical dimension comparable to the height of the side walls and being swingable downward to close the ends of the tray; the free edge portions of the infolded reinforcing strips along the ends of the bottom panel being permanently secured at spaced points to provide unsecured edge portions; the lower free edges of the end walls carrying thereon hinged tongue elements which are insertable between such respective unsecured edge portions and the adjacent portions of the bottom panel to secure the end walls frictionally in end-closing position.

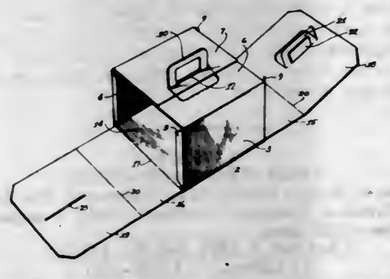
3,170,616
LOCK FLAP-BEER CARTON
Robert S. Crozier, 1345 Dutrisac St., St. Laurent, Montreal 9, Quebec, Canada
Filed Apr. 8, 1963, Ser. No. 271,369
Claims priority, application Canada, Feb. 1, 1963, 867,892
6 Claims. (Cl. 229—16)



1. A stackable carton containing bottles said carton adapted to be stacked in pallets and wherein said pallets are transportable, said carton including mutually opposed end walls, side walls, a bottom, a pair of carrying apertures in mutually opposed walls and top closure means, said top closure means comprising a pair of closure flaps each said flap being integrally and hingedly connected to an associated one of a pair of mutually opposed walls, each said flap being provided with a plurality of apertures therein, each said aperture having a portion disposed towards the center of a carton adapted to facilitate insertion therethrough and removal therefrom of a crown seal and finish ring of a bottle, a portion of each said flap adjacent to its connection to its associated wall being free of apertures and being adapted to rest upon the top surface of said other mutually opposed walls the apertured portion of said flaps being adapted to be disposed below the top surface of said other mutually opposed walls, whereby the crown seals and finish rings of bottles placed in said carton are adapted to be passed through said apertures and are adapted to co-operate therewith to lock said closure and to stabilize said bottles.

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3,170,617
PACKAGING BOX
Joseph H. Vineberg, 257 Island Park Drive, Ottawa, Ontario, Canada
Filed June 6, 1962, Ser. No. 200,422
1 Claim. (Cl. 229—23)

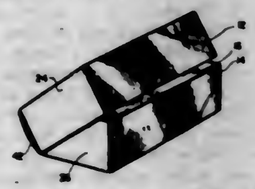


A box structure comprising a unitary blank of flexible material having a bottom wall panel, a pair of side wall panels extending from said bottom wall panel, and a top wall panel extending from each of said side wall panels, said top wall panels being foldable into overlapping relation over said bottom wall panel, a second unitary blank of flexible material having a bottom wall panel in unattached underlying relation to said first bottom wall panel, a pair of side wall panels extending from said second bottom wall panel, and a top wall panel extending from each of said second side wall panels, said second top wall panels being foldable into overlapping relation with each other and with said first top wall panels, said bottom wall panels being of substantially equal size, and all of said side wall panels being of substantially equal

size, each of said last mentioned side wall panels having a flap at each end thereof foldable into unattached underlying relation with one of said first mentioned side wall panels, one of said top wall panels of each of said blanks having a handhole containing flap partially severed therefrom, the other of said top wall panels of each of said blanks having a slit therein for reception of one of said handhole containing flaps, the handhole containing flap on one blank generally paralleling the longitudinal axis of the blank and the handhole containing flap on the second blank being generally perpendicular to the longitudinal axis thereof so that the flaps are orientated in side by side relation when the top wall panels are orientated in perpendicular overlapping relation to each other, the handhole containing flap on the lowermost top wall panel extending through three superimposed top wall panels with the other handhole containing flap extending through only one overlying top wall panel.

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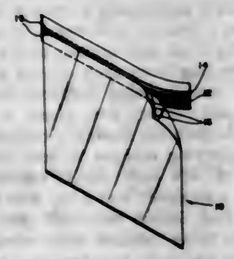
**3,170,618**
**DISPOSABLE PET SANITARY STATION**
Robert Sweeney, 33 Stoughton St., Medford, Mass.
Filed July 29, 1963, Ser. No. 298,195
1 Claim. (Cl. 229—33)



A carton, comprising integrated articulated lid and bottom portions, said portions being formed from a rectangular body panel, side and end panels disposed along the marginal edges of said body panel and arranged generally normal to the plane thereof, said carton defining a closed container with the side and end panels of the lid portion overlapping the side and end panels of the bottom portion when said lid and bottom portions are folded against one another and defining a flat open tray with continuous surrounding upright sidewalls when said lid and bottom portion are folded open into substantially co-planar positions, a back hinge portion connecting said lid and bottom portion, said hinge portion being of a width greater than said side panels, said hinge portion defining an outward curve when said lid and bottom portions are folded against one another.

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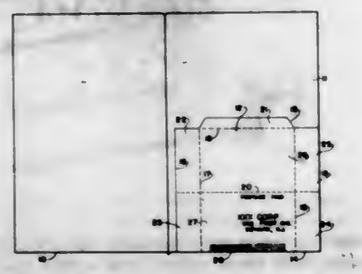
**3,170,619**
**TEAR STRIP PACKAGING**
John P. Repke, Parma, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Michigan
Filed Oct. 5, 1961, Ser. No. 143,203
17 Claims. (Cl. 229—62)



1. A package of sealed stretchable film and a tear tape therefor, said tape being sealed to said film and having a greater resistance to tearing than the film sealed thereto, said tape having corrugations formed therein, said corrugations having at least a component extending transversely at least up to the line of juncture of the unsealed film with the seal to pucker the film at said line of juncture, whereby, when said film is ruptured by a pull at the location of the tape, the rupture follows the said line of juncture.

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**3,170,620**
**ENVELOPE UNIT CONTAINED IN A PUBLICATION**
Samuel Nirenstein, 29 E. 64th St., New York, N.Y.
Filed May 23, 1963, Ser. No. 282,629
1 Claim. (Cl. 229—68)

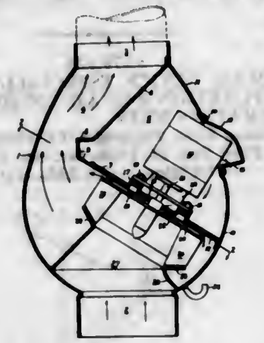


A page of a publication, one side of said page having lines thereon defining an envelope blank on said page, said blank having four sides and being generally rectangular with a flap portion extending from a central portion of one of said sides, two of said sides of said blank coinciding with two edges of said page forming a corner of said page, a first fold line parallel to said flap across the center of said envelope blank, second and third fold lines at right angles to said first fold line intersecting said first fold line and extending across said envelope blank, said second and third fold lines defining side portions of said envelope blank and said first fold line dividing said envelope blank into front and back portions, at least one of which has an address printed thereon, and a glue on said envelope blank adjacent to the side of said envelope blank opposite said flap portion, said glue being on the same side of said page as said lines defining said envelope blank.

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**3,170,621**
**APPARATUS FOR EXHAUSTING FUMES FROM FACTORIES AND THE LIKE**
John Maynard Morrison, Carss Park, near Sydney, New South Wales, Australia, assignor to Centrifo Pty. Limited, Brighton-le-Sands, New South Wales, Australia, a company of New South Wales
Filed Oct. 23, 1963, Ser. No. 318,333
5 Claims. (Cl. 230—117)

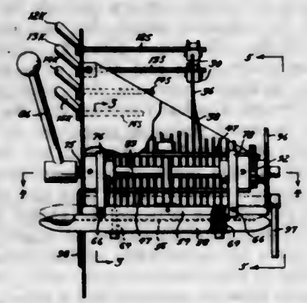
1. Apparatus for exhausting fumes, comprising:
(A) a casing having an inlet and outlet in axial alignment;
(B) a motor mounting chamber enclosed within said casing, said chamber being defined by:
(1) a first portion of the wall of said casing disposed between said inlet and outlet;
(2) a first partition joined to said first portion and extending downwardly therefrom obliquely across the interior of said casing to a deflecting end terminating short of a second portion of the wall of said casing opposite said first portion to define with said second portion a passageway open to said outlet; and,
(3) a second partition joined to the deflecting end of said first portion and extending downwardly therefrom obliquely across the interior of said casing to a juncture with said first portion of the casing wall, said second partition having an opening therein to accommodate the passage of a motor shaft therethrough;



(C) a motor mounted in said chamber so as to have the driven shaft thereof extending through said opening;
(D) a centrifugal fan wheel mounted on said shaft; and,
(E) shrouding means supported on said casing to direct fluid medium from the inlet thereof to the intake of said fan wheel and from the exhaust of said fan wheel to said passageway.

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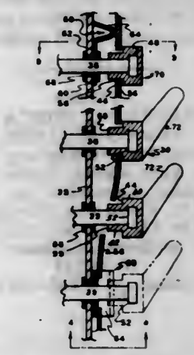
**3,170,622**
**VOTING MACHINE**
John G. Lord, Swarthmore, Pa.
(6 W. 6th St., Chester, Pa.)
Filed Feb. 1, 1963, Ser. No. 255,520
1 Claim. (Cl. 235—50)



A voting machine for recording the number of votes and for simultaneously punching a coded card, said machine including
a punchboard,
a stripper plate above, and spaced from, said punchboard, to provide a card receiving space,
means mounting said stripper plate and said punchboard for movement to an upper or to a lower position relative to said punch,
a fixed plate adjacent, and preventing access to, said stripper plate and said punchboard, said fixed plate having a slot therein which aligns with said card receiving space when said stripper plate and said punchboard are in their lower position to permit insertion and withdrawal of said card only in said lower position,
a movable punch mounted adjacent said card receiving space,
a voting spindle movable by the voter to a voting, or non-voting position,
a flexible element connecting said voting spindle to said punch whereby movement of said voting spindle to voting position moves said punch toward said space and vice versa,
said movement of said punch toward said space being insufficient to bring said punch into engagement with said card, and
means for raising said stripper plate and said punchboard to cause said punch to engage said card and for lowering said stripper plate and said punchboard to disengage said card from said punchboard to bring said space into alignment with said slot to permit withdrawal of said card.

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**3,170,623**
**VOTING MACHINE WITH REMOVABLE VOTING SPINDLE HANDLES**
Ransom F. Shoup, Bryn Mawr, Pa., assignor to Shoup Voting Machine Corporation, New York, N.Y.
Filed July 12, 1962, Ser. No. 209,445
1 Claim. (Cl. 235—54)



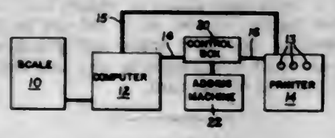
A voting machine including
a front wall,
voting spindles projecting through said wall,
enlarged heads carried by said spindles,
operating handles for said spindles,
each handle including a round hub having a transversely disposed slot for engaging the head of a corresponding spindle to prevent axial movement of said handle relative to said spindle,
a flexible locking strip having round holes engageable with said hubs to prevent lateral movement of the handles relative to their corresponding spindles, and a clip having a high portion and a low portion, and
means rotatably mounting said clip adjacent said handle and said strip whereby rotation of said clip to bring said high portion between said front wall and said strip prevents disengagement of said strip from said hubs and prevents lateral movement of said handles relative to said spindles and whereby rotation of said clip to bring said low portion between said strip and said front wall permits disengagement of said strip from said hubs and permits lateral movement of said handles relative to said spindles.

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**3,170,624**
**AUTOMATIC WEIGHING SCALES WITH RECORDING AND TOTALING APPARATUS**
Kenneth C. Allen, Dayton, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed Jan. 20, 1960, Ser. No. 3,624
7 Claims. (Cl. 235—58)

1. An automatic computing and recording scale system, comprising a weighing scale for supplying electrical weight

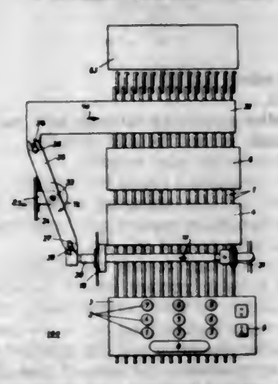
information of an article thereon, a computer having a unit price input, said computer being connected to receive said weight information from said scale for combining with unit price, means in said computer forming an electric digital signal of the computed value of said article a labeler for printing and issuing a ticket of said value upon receipt of an enabling signal from said computer, an electrical circuit providing a connection between said




computer and said labeler for transmitting said value signal and enabling signal to said labeler, an adding machine having individually operated electrical solenoid inputs for providing a record of the value of each article placed on the scale for which a ticket is issued, and electrical control means positioned in said circuit between said computer and said labeler and having switch means automatically operable in response to said enabling signal to apply said value signal to said adding machine inputs.

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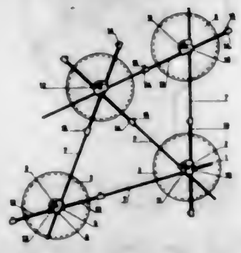
**3,170,625**
**CAPACITY-EXCEEDING INDICATING MEANS FOR COMPUTERS**
**Rolf Walther, Gerstetten, Wurttemberg, and Helmut Langenberger and Kurt Rührer, Niederstotzingen, Wurttemberg, Germany, assignors to Walther-Buromaschinen G.m.b.H., Gerstetten, Wurttemberg, Germany**
**Filed Apr. 13, 1962, Ser. No. 187,357**
**Claims priority, application Germany, Apr. 19, 1961, W 29,833**
**5 Claims. (Cl. 235—60.15)**



1. For use in computers capable of performing addition, subtraction, multiplication and division operations, means for indicating the exceeding of machine computational capacity comprising first means rotatable in unison with, and under control of, the computer computational facility; printing means including means for printing a symbol indicative of machine capacity-exceeding condition; pivotally mounted reciprocating means biased in a first direction, said reciprocating means being positioned adjacent said first means; said first means having a rotating lever arm for lifting said reciprocating means substantially linearly in a direction opposite said first direction when said computer computational facility moves by an amount greater than the computer computational capacity; connecting means linked between said reciprocating means and said printing means and adapted to condition said printing means to initiate printing of said capacity-exceeding symbol when said reciprocating means is moved in the direction opposite said first direction; second reciprocating means controllable upon initiation of the printing operation for linearly moving said first means in said first direction without disturbing the angular position of said lever arm, thereby permitting the first reciprocating means to move to its first position under control of the bias means.

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**3,170,626**
**ANALOGUE DEVICE ESPECIALLY FOR THE COMPUTATION AND ADJUSTMENT OF TRILATERATION NETS**
**Hans Georg Jerie, Freyung 6/11, Vienna I, Austria**
**Filed Feb. 26, 1960, Ser. No. 11,198**
**7 Claims. (Cl. 235—61)**



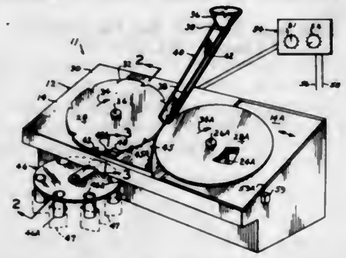
5. The method for compensating for errors in measurement of distances in establishing a trilateration network which comprises the steps of plotting the co-ordinates of known points in said network in a mapping scale, elastically connecting the known points with the unknown points in proportion to the distances previously measured whereby the distance between the known and unknown points can vary depending upon an elastic stress set up due to errors in measurement of the distances and whereby said elastic stress is proportional to the errors in measurement of the distances measured, bringing the trilateration network assembly into a state of static equilibrium as to the elastic stresses, plotting the first co-ordinates of the unknown points, thus establishing the zero position of the trilateration network, calculating the discrepancies between the real distances measured and the distances computed from the first co-ordinates of said unknown points, elastically reconnecting the known points with the unknown points in proportion to the distances previously determined as modified by amounts which correspond to said discrepancies proportional to a first correction scale which is larger than said mapping scale, whereby the distance between the known and unknown points can vary depending upon an elastic stress set up due to errors in measurement of the distance measured as modified by said discrepancy correction, re-bringing the trilateration network assembly into a state of static equilibrium as to the elastic stresses and plotting the second co-ordinates of the unknown points, thus establishing modifications of the co-ordinates of the unknown points, which modifications correspond to the corrections of the measured distances.

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**3,170,627**
**ARTICLE COUNTING DEVICE**
**Walter G. Pearson, 1615 Military Highway, Pineville, La., and Kersey J. Hurst, 25 Rockledge Road, Hartsdale, N.Y.**
**Filed July 8, 1963, Ser. No. 293,463**
**10 Claims. (Cl. 235—98)**

1. An article counting device, comprising: a frame; a support connected to said frame, said support having an inclined upper surface; a motor mounted within said frame, said motor having a shaft projecting upwardly through said support; a disc axially connected with said shaft in face to face contact with the upper surface of said support for rotation with said shaft, said disk having a series of equally spaced-apart article receiving recesses formed in its periphery; hopper means connected with said disk, said hopper means adapted to receive and hold a plurality of small articles to be counted, said support having a discharge aperture disposed below the path of travel of the recesses; normally open switch means mounted on said support adjacent the path of travel of the recesses in said disk so that articles carried by the recesses in said disk successively close said switch means as the disk is rotated; and electrical circuit means connected with a source of electrical energy for operating said motor, and rotating said disk, said electrical circuit means including, a single pole multiple contact selector switch having a manually positioned indicator, a single pole multiple contact ratchet relay having an indicator

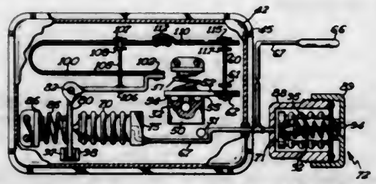




biased to starting position, wiring interconnecting the contacts of said ratchet relay with the respective contacts of said selector switch, a first relay and a second relay, make and break contacts controlled by said first and second relays, and other wiring interconnecting a source of electrical energy with said first and second relays and said ratchet relay through the indicators of said ratchet relay and said selector switch so that each time an article carried by a recess in said disk closes said normally open switch means, said ratchet relay is energized to advance the indicator of the latter and said motor is de-energized by the breaking of said make and break contacts when the indicator of said ratchet relay is advanced to the predetermined setting of the indicator of said selector switch energizing said second relay and de-energizing said first relay.

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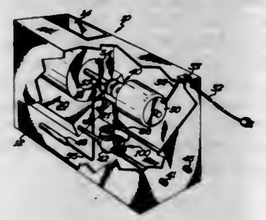
**3,170,628**
**THERMOSTAT**
**Frederick D. Joesting, Park Ridge, Ill., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Oct. 11, 1962, Ser. No. 229,856**
**3 Claims. (Cl. 236—1)**



1. In a thermostat for use with a fluid amplifier, a fluid-tight housing, inlet and outlet passages in said housing adapted to be connected to a source of fluid medium for a fluid amplifier and in controlling relationship to an amplifier, nozzle means connected to the outlet passage in said housing and having a pivoted flapper associated therewith, a movable shaft having two pairs of flange means thereon, one pair being adapted to selectively engage said flapper and tilt said flapper on said nozzle in opposite directions of shaft movement depending upon which of said flange means of said pair is engaged, a closed thermal system including a sensing bulb, expansion element and a collapsible setting means, said expansion element being positioned in said fluid-tight housing and said sensing bulb being adapted to be positioned in the space to be controlled by a fluid amplifier, a pivoted lever in said housing being engaged by said expansible element to be moved thereby, bimetal means connected to one extremity of said pivoted lever remote from said expansion element, second bimetal means connected to the free extremity of said first named bimetal means and reversed as to direction of activation therefrom, the free extremity of said second bimetal means engaging the second pair of said flange means on said movable shaft for operating said shaft, said second bimetal means compensating for the ambient temperature effect of the fluid within said housing on the expansible element, said first named bimetal means reversing the operation of said flapper nozzle for given changes in temperature sensed by said sensing bulb in accordance with the temperature of the fluid being valved by said thermostat and controlling a fluid amplifier.

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**3,170,629**
**AIR CONDITIONING CONTROL APPARATUS**
**Alvin J. Berger, Morton Grove, Ill., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Nov. 29, 1962, Ser. No. 240,917**
**5 Claims. (Cl. 236—1)**



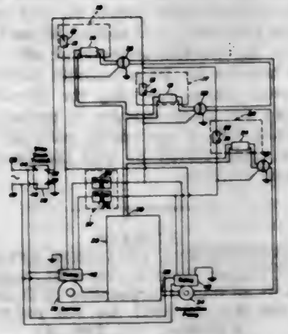
1. Air conditioning control apparatus for an air distribution unit including a fan and a coil type heat exchanger having a temperature changing medium flowing therein, comprising, a continuously operated motor means connected to and operating said fan, bi-directional clutch means including a plurality of parts one part of which is mounted on said motor means to be rotated therewith, a closed thermal sensing system including a sensing bulb positioned with respect to said air distribution unit to be responsive to temperature indicative of needs of operation of said control apparatus, said thermal system being connected to the other of said parts of said bi-directional clutch means for reversibly operating the same, a cable drive means connected to said clutch means to be rotated thereby, valve means connected to and controlling the flow of said temperature changing medium in said coil type heat exchanger, means connecting the opposite extremity of said cable drive means to said valve means to operate the same, and means associated with said valve means to respond to the temperature of the temperature changing medium flowing therethrough, said means being connected to said cable drive means and said valve means to reverse the direction of operation of said valve means for a given direction of rotation of said cable drive means with different temperatures sensed at said valve means.

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**3,170,630**
**CONTROL CIRCUIT FOR HYDRONIC SYSTEM**
**Abraham B. Chadwick, Jeffersontown, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware**
**Filed Aug. 21, 1963, Ser. No. 303,595**
**12 Claims. (Cl. 236—1)**

1. A zone temperature control system comprising a first zone; a first heat exchanger in said first zone; a sec-

ond zone; a second heat exchanger in said second zone; a fluid moving means; means coupled to said fluid moving means to feed a fluid along a first path to said first heat exchanger and along a second path to said second heat exchanger; first fluid control means to control the flow of the fluid through said first heat exchanger; second fluid control means to control the flow of the fluid through said second heat exchanger; heating means to heat said fluid; a first temperature sensitive means for detecting



the temperature in said first zone coupled to said first fluid control means, said fluid moving means and said heating means; a second temperature sensitive means for detecting the temperature in said second zone coupled to said second fluid control means, said fluid moving means and said heating means; and delay means interposed between said second temperature sensitive means and said heating means to delay the operation of said heating means for a preselected interval of time.

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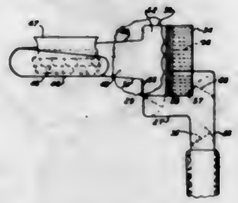
**3,170,631**
**HEAT AND PRESSURE SENSITIVE VALVE**
Eugene P. Whitlow, St. Joseph, Mich., assignor to American Gas Association, New York, N.Y., a corporation of New York
Filed Jan. 28, 1963, Ser. No. 254,342
2 Claims. (Cl. 236—92)



1. A valve for venting gases upon occurrence of predetermined temperature and pressure conditions therein comprising a vertical sealed valve body, means for introducing a gas into said valve body, teihperature-sensitive bimetallic elements vertically disposed within said valve body, a free end of said elements adapted for movement in response to temperature variations of a gas within said valve body, an orifice in the side wall of said valve body juxtaposed from said free end of said elements and adapted to receive said free end to provide a sealing engagement therebetween upon thermal expansion of said elements, a vertical stack surrounding said valve body secured thereto in sealing relation at a point below said orifice, a chimney joined to said stack and a check valve in said chimney, said check valve comprising a porous horizontal disc sealed within said chimney and a layer of mercury covering said disc, a flow of gas passing through said valve only when the gas is at a temperature affecting said bimetallic elements so as to open said orifice, and when the gas is at a pressure sufficient for flow through said check valve.

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**3,170,632**
**VEHICLE HEATING AND VENTILATION SYSTEM**
Daniel G. Gallie, Allen Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,768
7 Claims. (Cl. 237—2)



5. In an engine cooling system, an air intake blower, a volute type scroll housing said blower, a heat exchanger adapted to receive engine coolant, a housing for said heat exchanger, and an air diffusion system coupling said blower housing to said heat exchanger housing, said air diffusion system comprising a diffuser section coupled to said blower housing, said diffuser section having minimum wall divergence in a direction away from said blower housing and discharging into an abruptly stepped expansion chamber, said expansion chamber being coupled at its discharge end to the intake of said heat exchanger housing, said air diffusion system thereby being constructed and arranged to provide maximum efficiency in energy conversion from velocity head at the blower discharge to static head at the heat exchanger, and flexible seal means interposed between the outlet end of said diffuser section and the inlet of said expansion chamber to thereby isolate the blower vibrations from the heat-exchanger structure, the outlet end of said diffuser section, the inlet end of said expansion chamber and said flexible seal lying in substantially coplanar relationship whereby said flexible seal creates substantially no energy loss in the system.

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**3,170,633**
**ANTISEPTIC DISPENSER**
Charles Castelli, New Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 7, 1963, Ser. No. 286,278
10 Claims. (Cl. 239—327)

1. A dispenser for liquid antiseptic which comprises valve holding means defining an internal cylindrical bore communicating with the interior of the dispenser and a dispensing opening connecting said cylindrical bore with the ambient atmosphere, a hollow valve member presenting a cylindrical outer surface adapted to fit tightly within said bore and normally seal off said dispensing opening, said valve member comprising a cylindrical outer wall and a transverse inner wall together defining an internal spray chamber and an internal flow chamber, the cylindrical wall of said valve member defining a spray orifice connecting said spray chamber with the cylindrical outer surface of said valve member and a flow orifice connecting said flow chamber with said cylindrical outer surface, said flow orifice being spaced angularly from said spray orifice in the wall of the valve member and said valve member being adapted to be rotated in said cylindrical bore to selectively expose to the dispensing opening in

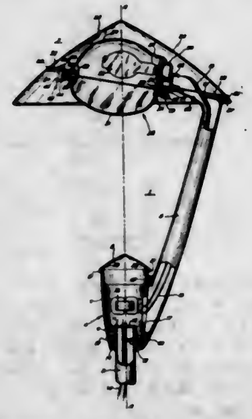


said valve holding means said spray orifice, said flow orifice or the cylindrical outer surface, itself, of the valve member, whereby the contents of the dispenser may be sprayed or poured therefrom or sealed from the outside atmosphere, respectively.

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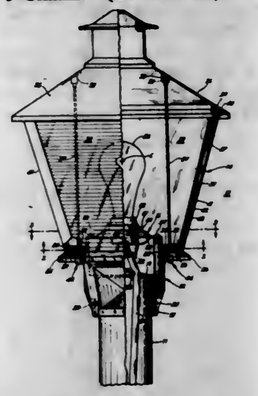


**3,170,634**
**LUMINAIRE**
Donald W. Harling, Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed June 19, 1961, Ser. No. 118,060
17 Claims. (Cl. 240—25)



2. In combination, a luminaire, a supporting member having a vertical axis and being constructed and arranged to be mounted coaxially atop a vertical pole, said luminaire including an optical assembly having a longitudinal axis, an elongate light source mounted within said optical assembly and extending substantially parallel to said longitudinal axis, and a pair of support arms fixedly connected at their lower end to said support member and extending upwardly and outwardly therefrom, the upper end of said support arms engaging one side of said luminaire to support the same with the longitudinal axis of said optical assembly extending substantially horizontally, said luminaire extending backwardly toward said vertical axis to position said light source in spaced relation from said support member and in substantial alignment with said vertical axis, said optical assembly being constructed and arranged to direct substantially all of the light emanating from said source on one side of a vertical plane containing said vertical axis, said support arms being positioned on the opposite side of said plane.

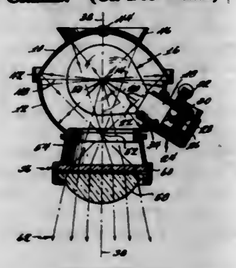
**3,170,635**
**LUMINAIRE ASSEMBLY**
Paul J. Curtin, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,082
9 Claims. (Cl. 240—25)



1. A luminaire comprising a base assembly for attachment to supporting structure and an optical assembly, said base assembly including lamp holding means extending generally upward from said base assembly, said optical assembly including light modifying means and a hood, a support plate engaging said base and having an aperture disposed in surrounding relation to said lamp holding means, said light modifying means extending generally upwardly from said base portion and being engaged at its lower end by said support plate, elongate fastening means extending between said support plate and said hood for releasably holding said light modifying means and said hood in a unitary assembly, and second releasable fastening means independent of said elongate fastening means and extending between said support plate and said base assembly so that said optical assembly can be releasably mounted on and removed from said base as a unitary assembly to expose said lamp holding means.

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**3,170,636**
**REFLECTIVE LAMPS**
Robert G. Nordquist, Springfield, Ohio, assignor to Grimes Manufacturing Company, Urbana, Ohio, a corporation of Ohio
Filed Apr. 15, 1963, Ser. No. 272,967
11 Claims. (Cl. 240—41.3)

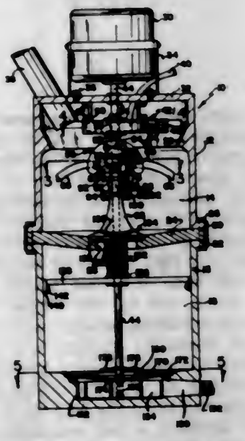


1. A lamp comprising first dome means forming an ellipsoidal interiorly-reflecting vertex surface having a major axis containing first and second focal points respectively at further distances from the surface, the edge of said surface terminating substantially in the first focal point plane which is perpendicular to said axis, second dome means connected to said first dome means and forming a hemispherical interiorly-reflecting surface which faces said ellipsoidal surface and has its center

of curvature at said first focal point, said second dome means including a predetermined light aperture through said hemispherical surface at its vertex centered on said axis, a light source centered on said first focal point, and means extending through said second dome means at an acute angle relative to said axis for supporting said light source and supplying electrical signals thereto to cause substantially all the light rays emanating from said source to pass through said light aperture either directly or by reflection from said reflecting surfaces, the so reflected rays being caused by said surfaces to converge at said second focal point.

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**3,170,637**
**METHOD AND APPARATUS FOR TREATING SEWAGE**
Aubrey C. Nowlin, 2607 S. Florence Drive, Tulsa, Okla.
Filed June 12, 1963, Ser. No. 287,294
16 Claims. (Cl. 241—15)



8. A sewage treatment unit comprising an upper and a lower chamber, valve means controlling passage of sewage from said upper chamber to said lower chamber, a sewage inlet to said upper chamber, a sewage outlet from said lower chamber, a central vertical drive shaft extending in both said upper and lower chambers, power means for driving said shaft, sewage comminuting means driven by said shaft within said upper chamber, and a pump driven by said shaft to discharge treated sewage through said outlet from said lower chamber.

15. A method of batch treating sewage comprising delivering sewage and a sewage treating material to a comminuting chamber, comminuting said sewage within said chamber in the presence of said treating material, thereafter delivering said comminuted, partially treated sewage together with said treating material to a second chamber for further treatment of the comminuted sewage by such material, and subsequently discharging said fully treated sewage from said second chamber simultaneously with the delivering of further sewage treating material to said comminuting chamber for comminuting such further sewage therein.

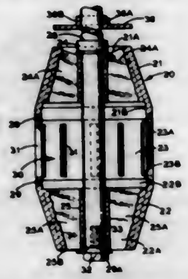
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**3,170,638**
**MIXING AND DISINTEGRATING HEAD**
Linwood P. Burton, 80 Cranberry St., Brooklyn, N.Y.
Filed Apr. 12, 1963, Ser. No. 272,667
10 Claims. (Cl. 241—46)

7. A mixing head comprising

(*a*) opposed spaced apart pumping means adapted to be submerged in a fluid, said pumping means including a frusto-conical member having internal vanes,

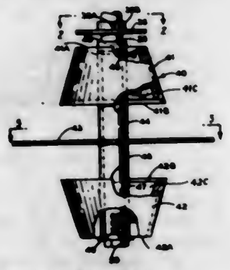
(*b*) means for imparting a rotary motion to said spaced pumping means to create a pumping action in which opposed streams of pumped fluid are directed toward one another,



(*c*) tubular means in spaced relationship to the respective vanes thereof interposed between said opposed means to result in both a mechanical and hydrostatic shear on the fluids being directed thereto upon the rotation of said latter means in unison with said spaced apart pumping means.

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**3,170,639**
**MIXING AND DISINTEGRATING HEAD**
Linwood P. Burton, 80 Cranberry St., Brooklyn, N.Y.
Original application Apr. 12, 1963, Ser. No. 272,667. Divided and this application Sept. 28, 1964, Ser. No. 399,591
16 Claims. (Cl. 241—46)



1. A mixing head comprising,

(*a*) a pair of spaced apart frusto-conical members adapted to be co-axially disposed on a drive shaft,

(*b*) each of said members having full open end portions wherein its smaller end defines a fluid inlet and its larger end a fluid outlet for the fluid entering the inlet end,

(*c*) means interposed between said members for ejecting the fluid discharging from the respective outlets of said members in a laterally outward direction therefrom and for mechanically effecting a shearing action on the fluid so ejected, said latter means comprising a plate shaped member having its peripheral portions extending laterally beyond the circumference of said frusto-conical members.

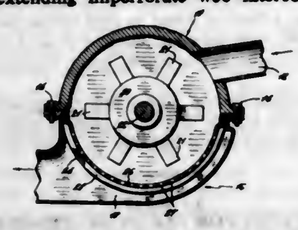
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**3,170,640**
**HAMMERMILL SCREEN**
William F. Kolts and Robert J. Reese, Carmel, Ind., assignors to Economy Elevator Enterprises, Inc., Carmel, Ind., a corporation of Indiana
Filed June 4, 1963, Ser. No. 285,503
1 Claim. (Cl. 241—86)

A screen for a hammermill, comprising an arcuate sheet of metal having a centrally disposed perforated section, an imperforate peripheral border extending laterally and longitudinally outwardly from said perforated



section and radially offset out of the plane thereof, and a radially extending imperforate web interconnecting the



outer edge of said perforated section and the inner edge of said border and retaining said perforated section and border in their offset relationship.

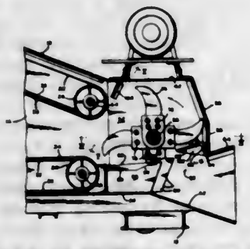
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**3,170,641**
**TREATED GRINDING RODS**
Albert L. Bard and Wayne B. Wood, Independence, Mo., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Oct. 16, 1961, Ser. No. 145,251
2 Claims. (Cl. 241—184)

1. A high carbon, abrasion resistant steel rod for rod mills, having a surface hardness in excess of 50 on the Rockwell C Scale, said rod being straight within ⅛ inch in five lineal feet of length.

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**3,170,642**
**BOX CRUSHER AND PAPER SHREDDER**
John V. Haidler, Ann Arbor, Mich., assignor to Economy Baler Co., Ann Arbor, Mich.
Filed Sept. 26, 1961, Ser. No. 140,885
13 Claims. (Cl. 241—186)

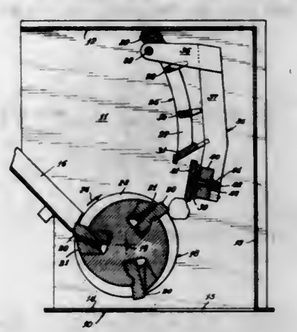


9. A paper shredding apparatus comprising, in combination, a frame, a shredding chamber defined on said frame having an inlet opening defined therein and an outlet opening in substantially opposed relation to said inlet opening, a shaft rotatably mounted in said chamber, drive means operatively associated with said shaft, shredder blades radially extending from said shaft and axially spaced thereon, spaced shear plates having a paper supporting upper surface mounted within said chamber intermeshing with said blades and located adjacent said inlet, paper abutment means mounted within said chamber in opposed relation to said inlet intermeshing with said blades adapted to abut with and buckle paper inserted into said chamber through said inlet.

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**3,170,643**
**APPARATUS FOR CRUSHING ROCK OR THE LIKE INCLUDING A SWINGING BREAKER BAR**
Albert B. Hanse and Leonard N. Kint, Cedar Rapids, Iowa, assignors to Pettibone Mulliken Corporation, a corporation of Delaware
Filed June 15, 1962, Ser. No. 202,868
5 Claims. (Cl. 241—189)

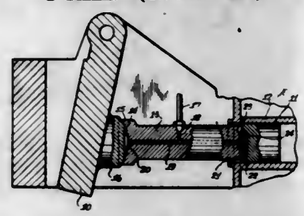
1. An apparatus for crushing rock or the like including: a casing having a pair of generally parallel side walls; an impeller mounted in said casing for rotation about a generally horizontal axis intersecting said side walls, and driven in a given direction, means to feed rock toward the upper side of said impeller at a zone from which it will be thrown both upwardly and in said given direction; a fixed grate device secured to said walls and extending therebetween, said device having an impacting face above and generally in said direction from said axis with its bottom terminus being spaced from the impeller whereby part of the rock would pass through the space between



the impeller and the face, said grate device having openings therethrough; arm means pivotally mounted in front of said grate device and extending approximately horizontally through said openings; depending support means attached to the arm means in said direction from said device and extending downwardly from the arm means; and a breaker member affixed to the bottom portions of the support means and positioned to intercept said part of the rock or the like, said member being in said direction from the pivotal connection and at a lower elevation than the pivotal connection.

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**3,170,644**
**THRUST TRANSMITTING APPARATUS FOR JAW CRUSHERS**
Kenneth Gauldie, Toronto, Ontario, Canada, assignor to Hydraulic Crushers Limited, New Liskeard, Ontario, Canada
Filed Sept. 7, 1962, Ser. No. 222,147
1 Claim. (Cl. 241—264)

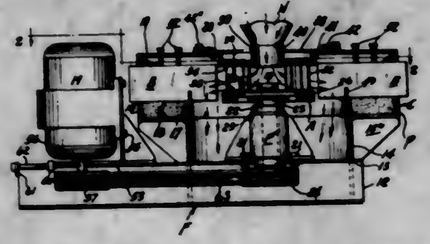


The combination with a hydraulically-operated jaw crusher having a jaw, a reciprocating ram, and a hydraulic system for operating the jaw through the ram, of means for transmitting thrust from the ram to the jaw comprising a thrust link interposed between said ram and said jaw and having a circular concave bearing surface at each end thereof, said jaw and said ram each having a circular convex bearing surface mating and in engagement with one of said concave bearing surfaces, the diameter of each said concave bearing surface being smaller than said convex bearing surface with which it is in contact, each of said convex bearing surfaces having a recess axially arranged therein, said thrust link having an axial duct communicating with each of said recesses and a passage communicating with said duct, and a conduit in-

dependent of said hydraulic system connected to said passage for supplying fluid under pressure to said surfaces through said passage, duct, and recesses.

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3,170,645
CRUSHER APPARATUS
George W. Bolanke, Russell G. Westcott, and Hans A. Wirth, Durand, Mich., assignors to Simplicity Engineering Company, Durand, Mich., a corporation of Michigan
Filed Dec. 26, 1961, Ser. No. 162,875
8 Claims. (Cl. 241—275)



1. A centrifugal crusher comprising: a bowl; an impeller rotatably mounted in said bowl and comprising vertically spaced apart upper and lower members; means for driving said impeller in a direction of rotation; circumferentially spaced buckets opening in the direction of rotation of said impeller interposed between said members; each bucket comprising generally angularly disposed portions, the upper and lower edges of which are secured to said members; replaceable wear pins mounted between said upper and lower members adjacent the end edges of said buckets; means feeding the material to be processed to said impeller; and subdividing means in said bowl around said impeller and against which the material being processed is flung.

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3,170,646
PORTABLE PUMP
Frederick H. Springer, Rte. 1, Hale Center, Tex.
Filed Jan. 4, 1963, Ser. No. 249,414
10 Claims. (Cl. 241—276)

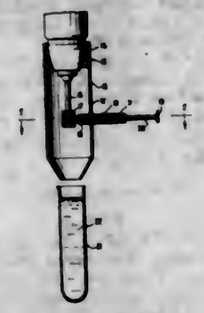


1. A portable pump assembly for use in combination with a tractor having a three-point hitch assembly, and a power take-off shaft, which portable pump assembly comprises;

(*a*) an elongated, rigid pipe section,
(*b*) an intake section connected to the inlet end of said elongated, rigid pipe section,
(*c*) equal-angular, Y-shaped, laterally extending, tubular discharge members connected to the opposite end of said elongated, rigid pipe section,
(*d*) a rod connecting the three-point hitch assembly of the tractor with said elongated, rigid pipe section for movement of said pipe section in a vertical plane to enable said intake section thereof to be at least partially submerged in a body of water,
(*e*) a shaft journaled within said intake section and extending axially of said elongated, rigid pipe section, and extending outward therefrom medially of said equal-angular, Y-shaped, laterally extending, tubular discharge members,
(*f*) a pump impeller, which pump impeller is mounted on and secured to said shaft in said intake section, to cause a flow of water in said intake section, said elongated, rigid pipe section, and at least one of said tubular discharge members upon rotation of said shaft,
(*g*) connection means connecting the power take-off shaft of the tractor in driving relation with said shaft mounting said pump impeller to rotate said shaft.

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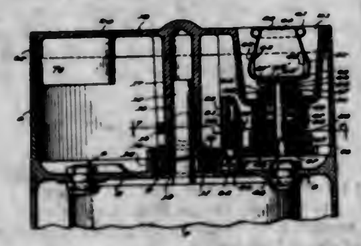
3,170,647
APPARATUS FOR USE IN DETERMINING PRESERVATIVE CONTENT OF WOOD
James C. Loftis, Spartanburg, S.C., assignor to Monie S. Hudson, Spartanburg, S.C.
Original application Mar. 21, 1956, Ser. No. 572,901, now Patent No. 2,992,902, dated July 18, 1961. Divided and this application May 1, 1961, Ser. No. 106,915
2 Claims. (Cl. 241—280)



1. In combination with a grinding apparatus including a motor, a motor housing, a rotatable shaft secured to said motor and protruding from said housing and a grinding head on said shaft, an adaptor comprising a removable elongate member disposed about said shaft and said grinding head and detachably supported by said motor housing, a flexible seal in one end of said member in frictional engagement with said motor housing, a hollow arm projecting laterally through a wall of said member, the innermost end of said arm being located adjacent said grinding head and means slidably disposed within said hollow arm for sliding a wood boring into engagement with said grinding head, the other end of said member being open to permit passage therethrough of ground particles of said wood boring.

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3,170,648
AMALGAM PRODUCING MACHINE
Robert C. McShirley, 6533 San Fernando Road, Glendale, Calif.
Filed Aug. 27, 1962, Ser. No. 219,392
14 Claims. (Cl. 241—284)



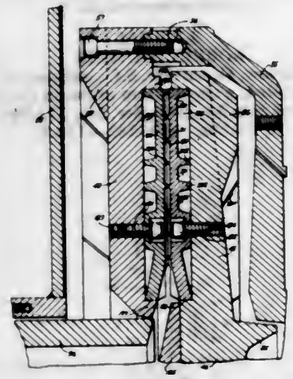
1. In a machine for producing dental amalgam having sufficient plasticity for installing in a tooth cavity, a frame structure, a rotor mounted on said frame structure for rotation about a vertical axis, power means operatively



connected to said rotor to effect rotation thereof about said vertical axis, an amalgam material retaining cup mounted on said rotor for rotation in an orbital path generated about a vertical axis laterally spaced from the axis of rotation of said rotor, devices carried by said frame structure and said rotor operative, as an incident to rotation of said rotor about its said vertical axis, to impart simultaneous rotation of said cup about said laterally spaced axis but in the direction opposite to the direction of rotation of said rotor and means formed integrally with the internal surface of said cup operative in response to the combined effect of rotation of said cup about its own axis and in said orbital path to cause amalgam forming ingredients separately introduced into said cup to be combined into a pellet.

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3,170,649
ATTRITION MILL APPARATUS
Chester Donald Fisher, Muncy, Pa., assignor to Sprout, Waldron & Company, Inc., Muncy, Pa., a corporation of Pennsylvania
Filed Apr. 16, 1962, Ser. No. 187,745
5 Claims. (Cl. 241—292)

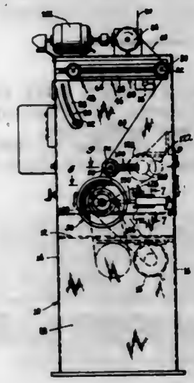


1. In apparatus having a rotating disc on one face of which are mounted a plurality of separate plate elements to be maintained in close tolerance spacing relative to a cooperating element of said apparatus and in which said plate elements tend to be axially deflected out of said close tolerance spacing, the improvement which comprises counterweight means on the opposite face of said disc, said counterweight means comprising an annular smooth-surfaced counterbalancing weight on said opposite disc face, said weight having slots therethrough for the subdivision thereof into a plurality of counterweight masses corresponding in number to and respectively opposed from said separate plate elements, said plate elements and said counterweight masses giving rise to substantially equal and opposite centrifugal forces during rotation thereof, the centrifugal forces on the counterweight masses counteracting the centrifugal forces on the plate elements to prevent axial deflection of the disc during rotation thereof.

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3,170,650
WIRE SPOOLING APPARATUS AND METHOD
Gordon L. Bauer, Shelton, Conn., assignor to Advanced Wyrepak Company, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Dec. 27, 1961, Ser. No. 162,353
26 Claims. (Cl. 242—25)

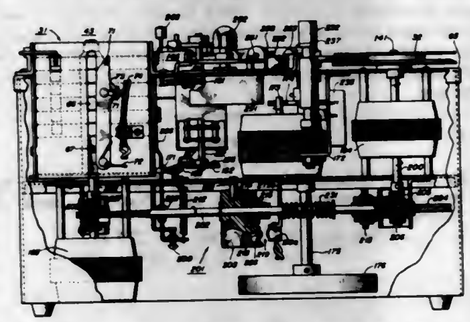
1. In a wire spooling machine, a spindle adapted to carry a spool on which wire is to be wound; adjustable-speed means for turning the spindle; means for guiding wire from a source of supply to the spool, said means including a dancer pulley assemblage of predetermined weight, over which the wire passes and including a track along which the assemblage can move; means responsive to movement of the dancer pulley assemblage along the track, for changing the speed of the spindle; and means



mounting the track about a pivotal axis for adjustable positioning thereof to effect different inclinations, thereby to alter the effect of gravity on the dancer pulley assemblage and enable the winding of wire under different tensions.

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3,170,651
TAPE RECORDER
Ralph W. Galke, Bellwood, Eugene J. Polley, Lombard, and Richard L. Rost, Barrington, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware
Filed July 10, 1961, Ser. No. 122,715
8 Claims. (Cl. 242—55.12)

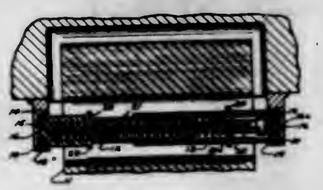


5. In a tape recorder adapted for automatically playing a series of recorded tape cartridges, reeling apparatus for winding a continuous flexible tape from a cartridge supply reel to a take-up reel throughout a playing cycle of a duration determined by the length of said tape, said reeling apparatus comprising: a transport mechanism including a capstan for transporting said tape at a constant linear rate from said supply reel to said take-up reel throughout said playing cycle, whereby said reels rotate at varying rotational speeds dependent upon the instantaneous apportionment of said tape therebetween; a control member movable along a predetermined path; means, including a drive member coupled to one of said reels and to said control member and a lost motion coupling between the other of said reels and said control member, for moving said control member along said predetermined path during said playing cycle at a rate and in a direction instantaneously proportional to the difference between said rotational speeds of said reels; an actuator coupled to said control member and movable therewith

along said predetermined path from a predetermined reference position at the start of said playing cycle through a position displaced from said reference position and back to said reference position at the end of said playing cycle; and a control device responsive to said return of said actuator to said predetermined reference position to control the operation of said transport mechanism.

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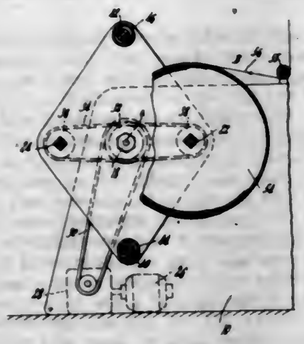
**3,170,652**
**ADJUSTABLE TENSION ROLL HOLDER**
**John William Kennedy, 1833 Plymouth Road S., Minneapolis, Minn.**
**Filed May 28, 1962, Ser. No. 198,132**
**6 Claims. (Cl. 242—55.2)**



1. An adjustable tension roll holder for toilet paper rolls and the like comprising a pair of spindle receiving trunnion members, means supporting said trunnion members in spaced-apart relation, a roll-journalling spindle assembly including a pair of telescopically received hollow elements with a longitudinally expandable spring element slidably confined therewithin, an adjustable element received within one end of said spring element and adjustable longitudinally thereof to vary the compressive force exerted by said spring, friction means on the outer ends of said telescoping elements responsive to the force exerted by said spring for the frictional resistance to rotation exerted thereby when received in said trunnions, a pair of arms fixedly attached to said telescoping element sand extending therefrom, and means for positively preventing relative rotation between the telescoping elements and the core of a paper roll mounted thereon.

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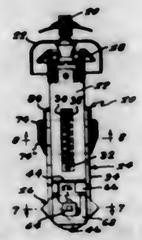
**3,170,653**
**WINDER**
**Charles M. Schott, Jr., Gloucester, Mass., assignor, by mesne assignments, to The First National Bank of Boston**
**Filed Apr. 29, 1963, Ser. No. 277,412**
**7 Claims. (Cl. 242—64)**



1. A phantom axis winder comprising two spaced apart turret end plates mounted to support structure by axially aligned stub shaft means, the space between the turret end plates along the stub shaft axis being open to be occupied by a roll, at least two spindles supported by said turret end plates, said spindles spaced apart from the stub shaft axis and from each other and adapted to form rolls from web proceeding through a web path, drive means for the spindles adapted to turn said spindles in the direction to take up incoming web and drive means for indexing the turret end plates together wherein only a first one of the turret end plates is directly driven by said drive means for indexing the turret end plates, a rigid drive member extending between the two turret end plates and joining them rigidly together, said rigid drive member spaced from the axis of rotation of said turret end plates and from said spindles, said rigid drive member adapted to drive the second turret end plate, the nearest portion of said rigid drive member to each of said spindles being spaced from said spindle a distance substantially greater than the distance between said spindle and said stub shaft axis, said spindles being spaced from each other a distance substantially greater than the distance of either from said stub shaft axis, but substantially less than the diameter of the largest roll formable thereon, whereby a fully formed roll can extend substantially beyond said axis without interference with said rigid drive member.

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**3,170,654**
**BOBBIN HANGER**
**Albert E. Winslow, Greenville, S.C., assignor to Winslow, Incorporated, a corporation of South Carolina**
**Filed July 31, 1962, Ser. No. 213,805**
**10 Claims. (Cl. 242—129.8)**



1. A bobbin hanger comprising a hanger leg fitted for depending suspension, a housing carried on said hanger leg for sliding manipulation along the depending axis thereof, said housing being shaped for penetrating the tip bore of a roving bobbin, and latching means carried for rotation by said housing for projection therefrom to lodge within a roving bobbin beneath the tip bore thereof, said latching means being formed with cam means at the axis thereof and being engaged at said cam means by a camming slot in said hanger leg adjacent the depending end thereof and being actuated through this engagement for alternate projection and retraction with respect to said housing upon sliding manipulation of said housing on said hanger leg.

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**3,170,655**
**HORIZON SCANNING METHOD FOR FIRING ROCKET STAGE**
**Firth Pierce, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Dec. 21, 1960, Ser. No. 77,478**
**7 Claims. (Cl. 244—14)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

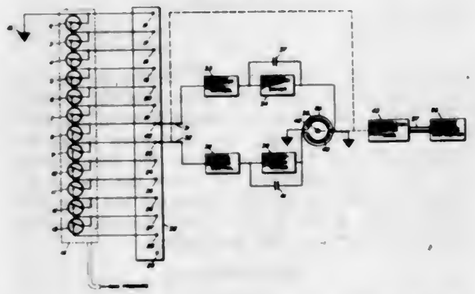
6. In a system for placing a payload into orbit, in combination, a space flight vehicle having a rocket stage for providing thrust along the longitudinal axis of the vehicle, and means carried by said vehicle for igniting the rocket stage, said means including a horizon sensing mechanism for initiating ignition of said rocket stage



while the vehicle is at a positive attitude with respect to the local horizontal.

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**3,170,656**
**RAM PRESSURE STEPPING MOTOR CONTROL FOR MISSILE GUIDANCE**
**Richard W. Cole, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Mar. 14, 1962, Ser. No. 179,817**
**6 Claims. (Cl. 244—14)**

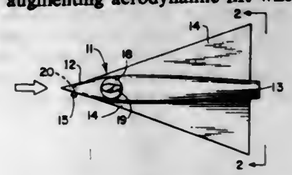


1. In combination with a ramjet missile having a guidance system, a step-function servo system comprising, a motor, a pressure manifold, pressure transducer switches located within said manifold, a second switch, a regulator circuit for controlling said motor, said second switch connecting individual pressure transducer switches to said regulator circuit, and a load mechanically connected to the motor and electrically connected to the guidance system, said load being variable by operation of the motor in response to control from said pressure switches and regulator circuit in accordance with ram pressure variations during missile flight.

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**3,170,657**
**LANDING ARRANGEMENT FOR AERIAL VEHICLE**
**John M. Riebe, Newport News, and Vernard E. Lockwood, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration**
**Original application May 2, 1960, Ser. No. 26,375, now Patent No. 3,028,122, dated Apr. 3, 1962. Divided and this application Mar. 22, 1962, Ser. No. 181,828**
**4 Claims. (Cl. 244—46)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

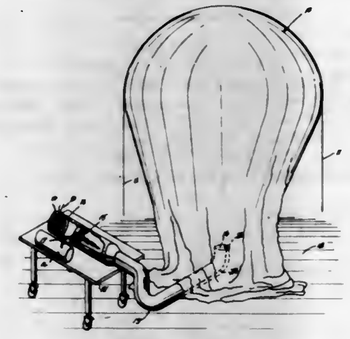
1. An aircraft comprising: an elongated fuselage section, an aerodynamic lifting surface integral with said fuselage section, propulsion means carried by said fuselage section, means for yawing said fuselage section while in flight between a low aspect ratio position wherein said fuselage section is substantially in alignment with the direction of movement of said aircraft and a high aspect ratio position wherein said fuselage section is substantially perpendicular to said direction of movement, and retractable flap means carried by said aircraft operable for augmenting aerodynamic lift when said fuselage



section is positioned substantially transverse to said direction of movement.

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**3,170,658**
**RAPID CONTROLLED BALLOON INFLATION MECHANISM**
**Paul E. Yost, Sioux Falls, S. Dak., assignor to Raven Industries, Inc., Sioux Falls, S. Dak., a corporation of South Dakota**
**Filed Sept. 5, 1961, Ser. No. 136,061**
**2 Claims. (Cl. 244—98)**



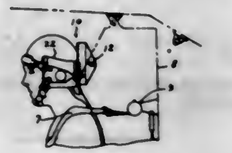
1. A mechanism for launching and flying a balloon comprising,
- a large capacity air conduit having a flexible portion and a discharge tube end for insertion into an opening in a balloon,
- a high capacity blower adapted for operation on the ground connected to said conduit for delivering a large volume of air at a predetermined flow rate,
- a burner means for said air conduit heating the air flowing through the conduit,
- a fuel supply line connected to the burner means,
- a ground located fuel supply connected to the supply line,
- valve means for controlling the flow of fuel to the burner means through said fuel line and limiting operation of the burner means maintaining the temperature of air flowing through the conduit at a safe maximum level relative to the material of the balloon, and a gas generating burner attached to the balloon for carrying aloft having a relatively low gas delivery providing a heated lifting gas for the balloon after it has been launched.

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**3,170,659**
**HEAD RESTRAINT FOR USE IN SPACE VEHICLES**
**Paul W. Wood, Jr., Irving, Tex., assignor to the United States of America as represented by the Secretary of the Air Force**
**Filed July 16, 1964, Ser. No. 383,265**
**7 Claims. (Cl. 244—122)**

1. A head restraint for restraining the head movement of a crewman occupying a seat structure in a space

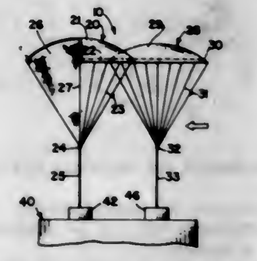
vehicle during acceleration and attitude changes of the vehicle and comprising: a frame member adapted for joining to the seat structure in the space vehicle, a rear head support joined to said frame member, a pair of ear flap members one each of which is movably joined to opposite sides of said rear head support and aligned for lateral movement toward and away from each other, a



pair of anchor blocks joined to said frame member and extending forward to laterally straddle said ear flap members, and a pair of adjusting means one each of which is movably joined to each of said anchor blocks for engaging the adjacent ear flap member and adjusting the lateral position of each of said ear flap members to restrain the head of the occupying crewman.

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**3,170,660**
**PARACHUTE GLIDER**
Alan B. Kehlet, Buena Park, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 28, 1962, Ser. No. 227,683
21 Claims. (Cl. 244—152)
(Granted under Title 35, U.S. Code (1952), sec. 266)



16. An aerochute comprising: a foldable airfoil; means for expanding said airfoil; said airfoil having a plurality of sections; flexible means interconnecting said sections, and control means for independently and conjunctively moving said sections to provide both horizontal and vertical translation of said aerochute.

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**3,170,661**
**PARACHUTES**
James Thomas Bennett, Woking, Surrey, England, assignor to C. Q. Parachute Company Limited, Woking, England, a British company
Filed May 14, 1963, Ser. No. 280,319
Claims priority, application Great Britain, May 15, 1962, 18,611/62
3 Claims. (Cl. 244—152)

1. A parachute comprising a canopy having a hem portion and an apex, the canopy being of a first section and a second section, the first section being relatively larger than the second section, the canopy having openings between the first and the second sections, the openings extending from the hem portion to a point between the hem portion and the apex, the hem portion having tapes of a length to extend across the width of the openings, the tapes being connected to the first section, rigging lines connected to the hem portion and extending from the canopy to a parachute harness, the tapes having line engaging means on the ends thereof, control lines on each edge portion of the second section extending through the line engaging means to a point on the harness for operation thereof, control lines on each edge portion of the first section extending to a point on the harness for operation thereof, the control lines on the edge portions of the first and second sections being operated to control the drift and steering of the parachute, the rigging lines of the second section being of the same length as the rig-



ging lines of the first section, the harness having a plurality of straps with one strap longer than the remainder of the straps and having the rigging lines of the second section connected thereto, the one strap being foreshortened, release means engaging the fore-shortened strap which when actuated will allow the one strap to increase its length, the lengthening of the one strap allowing the second section to billow out of round and symmetry with respect to the first section.

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**3,170,662**
**TIRE BEAD GROMMET AND METHOD OF MAKING SAME**
Malcolm G. Anderson, Hudson, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 29, 1961, Ser. No. 141,679
7 Claims. (Cl. 245—1.5)



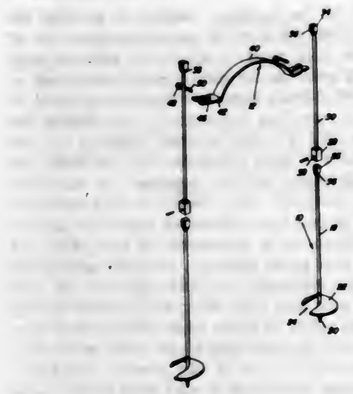
1. A tire bead grommet comprising a continuous wire tape having a plurality of wires embedded in rubber and laying in side by side relationship in the same plane, said tape coiled upon itself in a plurality of convolutions, the radially inner and outer convolutions of said tape each having the endings of each wire thereof spaced from any other wire ending a distance circumferentially of the tape which is at least equal to the width of said bead.

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**3,170,663**
**SCREW TYPE EARTH ANCHOR AND PIPELINE SADDLE**
Luther S. Fite, Natchez, Miss., assignor to W. D. Tyra, Sr., Dallas, Tex.
Filed Oct. 20, 1960, Ser. No. 63,774
7 Claims. (Cl. 248—49)

1. A pipeline saddle comprising an arcuate strap adapted to engage the upper portion of a pipe, outwardly extending flanges on each end of the strap, each flange having an inwardly extending notch on the radial outer edge thereof for laterally receiving an earth anchor rod,

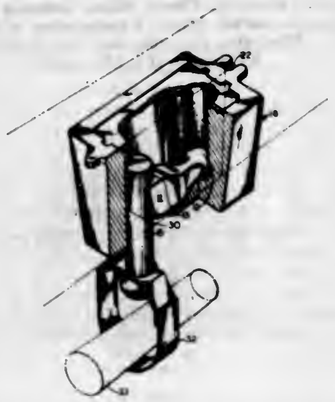




and means detachably engaged with the flange and bridging the notch for forming a closure therefor for retaining the earth anchor rod in the notch.

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**3,170,664**
**SUPPORT CLAMP**
John W. Carner, 1518 Walgrove, Los Angeles 66, Calif.
Filed May 13, 1963, Ser. No. 279,809
8 Claims. (Cl. 248—59)

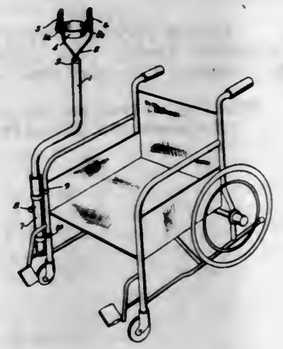


1. A support clamp for holding a rod comprising
a casing, and
a jaw freely retained within said casing, one end of said jaw being ball shaped, said one end of said jaw abutting against one wall of said casing, said one wall of said casing being curved to mate with said one end of said jaw to form a pivotal joint therewith, the other end of said jaw being hollowed, said other end of said jaw being adapted to abut against a rod in mating engagement therewith
whereby a rod may be forced against the wall of said casing opposite said one wall thereof and held in clamping engagement by said clamp.

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**3,170,665**
**EASY DRINKER DEVICE**
Mary G. S. Ryan, 15 Victory Road, Dorchester, Mass.
Filed Feb. 1, 1963, Ser. No. 256,222
1 Claim. (Cl. 248—311)
(Granted under Title 35, U.S. Code (1952), sec. 266)

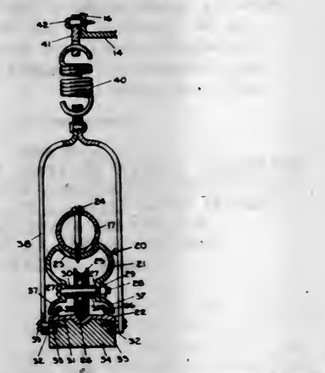
A device for use to enable an incapacitated person to drink from a container without assistance comprising a tubular support member having a substantially horizontal intermediate offset portion and terminating in a vertical lower end and vertical upper end which provides means to position a container before a patient's mouth and freely swing the container away, a lower socket member having clamp members attached thereto and receiving the vertical lower end of said support member for rotation therein, a



Y-shaped member received in said vertical upper end, and plural hook means for supporting a container connected to each upper portion of said Y-member, adjusting means coacting with said lower end of said tubular support member to position a container before a patient's mouth enabling him to drink unassisted.

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**3,170,666**
**GLIDER**
Victor Reiter, 1275 Mariola Court, Coral Gables, Fla., and Sam Richman, 7517 Buccaneer Ave., Treasure Island, Miami Beach, Fla.
Filed Oct. 8, 1962, Ser. No. 228,915
2 Claims. (Cl. 248—430)

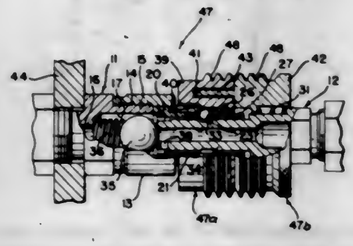


1. In a glider having a substantially horizontally disposed main frame and a substantially vertically disposed side frame mounted on each end of said first named frame, the combination comprising a pair of elongated roller supporting members having a concave top wall portion receiving each of said side frames and a pair of spaced side wall portions, means securing said side frames to said roller supporting members, a plurality of pins extending between said side wall portions, a roller rotatably mounted on each of said pins, spacer means mounted on said pins on each side of said rollers, elongated floor engaging members positioned in alignment with said roller supporting members, a track mounted on each of said floor engaging members, an upwardly extending flange member mounted on each side of said tracks, downwardly extending flange members mounted on said side wall portions of said roller supporting members in

spaced and overlapping relation with said first named flange members and spring means extending between said side frame and said floor engaging members yieldingly urging said rollers in contact relation with said tracks at a predetermined position thereof.

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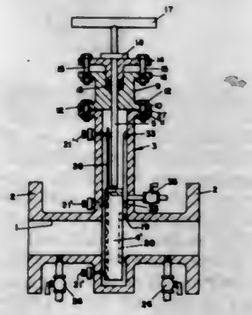
**3,170,667**
**QUICK CONNECT SYSTEM**
**Zoltan Szohatzky, Mentor, Ohio, assignor to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Nov. 4, 1963, Ser. No. 321,122**
**8 Claims. (Cl. 251—149.6)**



7. A coupling comprising:
separable male and female members;
one of said members including fluid control means therein;
said male member including an elongated portion receivable in a bore in said female member and operable to actuate said fluid control means;
detent means associated with said female members;
a groove on said elongated portion of said male member adapted to receive said detent means in one position thereof;
recess means formed in one of said members; and
projecting means carried by the other of said members with the dimension of said projecting means being substantially equal to the dimension of said recess means whereby said projecting means is receivable in said recess means.

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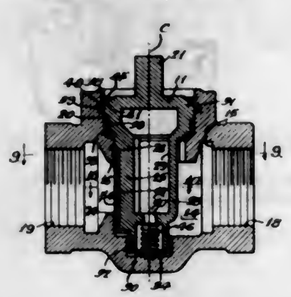
**3,170,668**
**BLANKING VALVE HAVING THREADED BOLT MEANS FOR INCREASING SEALING PRESSURE**
**Gerard D. Aulin, Claymont, Del. (% Sun Oil Co., P.O. Box 426, Marcus Hook, Pa.)**
**Filed Nov. 13, 1962, Ser. No. 236,901**
**2 Claims. (Cl. 251—158)**



1. A blanking valve comprising a pipe, a housing on said pipe and communicating with the interior thereof, an imperforate plate slidably mounted in said housing, a manually-operable stem secured to said plate and sealed through the wall of the housing, thereby to provide for manual actuation of said plate to move the same out of said housing into said pipe, at least one pair of bolts aligned with each other in the direction of movement of said plate, said bolts being threaded through the wall of said housing and extending substantially parallel to the axis of said pipe; and a guide member mounted on and secured to said bolts in such a manner that the bolts can rotate freely with respect to said member but the bolts cannot move longitudinally with respect to said member; said plate having in one face thereof an elongated groove extending in the direction of movement of said plate and receiving therein said guide member, whereby said guide member guides the movement of said plate out of said housing into said pipe and vice versa; said groove having an overhanging lip along its outer edge which comes into engagement with said member when said bolts move longitudinally parallel to the axis of said pipe in one direction, thereby to cause movement of said plate in this same direction; and the inner ends of said bolts coming into engagement with said plate when the same has moved out of said housing and into said pipe and when said bolts move longitudinally parallel to the axis of the pipe in a direction opposite to said one direction, thereby to move such plate into sealing engagement with the wall of said pipe.

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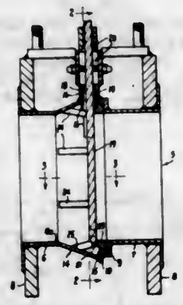
**3,170,669**
**ECCENTRIC PLUG VALVE HAVING ANTI-SLAMMING MEANS**
**William N. Roos, St. Cloud, Minn., assignor to Dezurik Corporation, Sartell, Minn., a corporation of Minnesota**
**Filed Oct. 13, 1960, Ser. No. 62,474**
**8 Claims. (Cl. 251—160)**



1. In an eccentric plug type valve, the combination comprising a valve body having walls defining a circular entrance, a plug inserted into said entrance and rotatable about the axis thereof between open and closed positions, said valve body having a fluid flow passage therethrough opened and closed by an eccentric portion of said plug when the latter is rotated between its two positions, the eccentric portion of said plug when partially open having a force exerted thereon by passing fluid which tends to slam it to one of said positions, said plug having a cylindrical portion disposed in said entrance, first and second annular grooves defined in the wall of said entrance, a resilient deformable ring disposed in said first groove and deformed into sealing engagement with said circular portion, a braking ring of friction material overlying a radial end surface on said cylindrical portion, a radially compressible retainer ring held captive in said second groove and extending therefrom to overlie said braking ring, and means on said plug causing fluid pressure in said valve body to urge it outwardly of said entrance so that said braking ring is compressed between said plug and retaining ring to create a retarding force on said plug which prevents slamming of the latter.



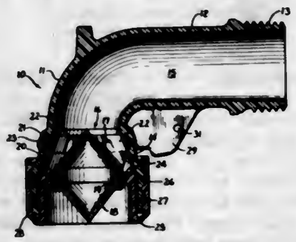
**3,170,670**
**TWO-WAY PULP STOCK VALVE**
**Robert Fulton Johnstone, Champlain Heights, St. John, New Brunswick, Canada, assignor, by mesne assignments, to Crane Canada Limited, Montreal, Quebec, Canada**
**Filed Feb. 19, 1962, Ser. No. 174,152**
**Claims priority, application Canada, Oct. 27, 1961, 834,733**
**2 Claims. (Cl. 251—172)**



1. A pulp stock valve for the control of the flow of fluid in either direction through the valve, the said gate valve comprising a housing having a fluid flow passage therethrough, a valve gate aligned transversely of the said passage and adapted to be moved into opening and closing positions relative to said passage, the said valve gate having its lower edge tapered and having its side edges notched to provide cutting edges, an annular recess in the walls of said passage located on one side of the plane of said gate valve, an annular floating metal valve seat in said annular recess, a stuffing box in said housing, the said stuffing box maintaining the said valve gate fluid pressure tight in said housing, the said valve seat being movable into the plane of the said stuffing box and is removable therethrough when the said valve gate has been removed from the said housing, and means to maintain the said valve seat in metal to metal sealing contact with the said valve gate when the said valve gate is in the closed position, the said means providing a pressure seal between the said valve seat and the said housing.

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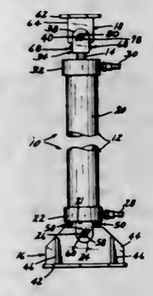
**3,170,671**
**ANGLE COCK**
**Matthaus Johannes Martinus Coppens, Delft, Zuid-Holland, Netherlands, assignor, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware**
**Filed Mar. 2, 1962, Ser. No. 176,938**
**Claims priority, application Great Britain, Mar. 3, 1961, 7,812/61**
**8 Claims. (Cl. 251—350)**



1. An angle cock comprising, in combination, a hollow casing defining a flow channel, said casing having a spigot end and an angularly related discharge end with the junction between the portions of said channel in said spigot and discharge ends being formed as a fluent bend, the discharge end of said casing terminating in an enlarged externally threaded portion defining a widened flow channel downstream of said bend, an obturating member positioned in the widened portion of said channel and defining with said discharge end an annular passageway having successive cross-sections of substantially uniform area, a double walled nut having internally disposed threads formed on its outer wall coupled with said externally threaded enlarged casing portion, the inner wall of said nut extending coaxially into said enlarged casing portion and terminating at its innermost extremity in an annular seat, said nut being coupled to said casing so that rotation of the former effects axial movement of said seat relative to said obturating member to selectively position said seat in engagement with and spaced apart from said obturating member, said nut adapted to hold said obturating and closure members in fixed positions relative to one another at all positions of said seat relative to said obturating member, said seat and said obturating member defining an annular discharge orifice at all possible spaced apart positions of said seat relative to said obturating member.

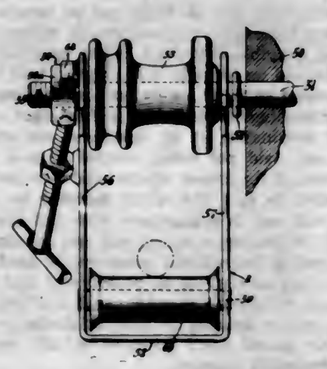
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**3,170,672**
**ATTACHMENTS FOR FLUID PRESSURE CYLINDER AND PISTON**
**William E. Stoneberg, Maxwell, Iowa**
**Filed Sept. 24, 1962, Ser. No. 225,688**
**3 Claims. (Cl. 254—93)**



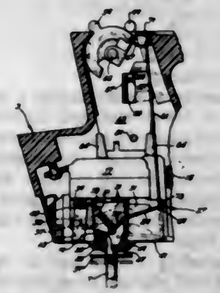
2. A jack comprising:
(*a*) a fluid pressure cylinder having a lower mounting element at its lower end and including a pair of laterally spaced generally parallel depending lugs, and a piston equipped plunger rod projecting upwardly from the upper end of said cylinder, said plunger rod having a mounting element at its upper end, including a pair of laterally spaced, generally parallel, upwardly extending lugs;
(*b*) a base, including a plate and an upstanding wall element, said wall element being received at its upper portion in said lower mounting element, a pair of laterally spaced adjustable stop screws mounted in the upper portion of said wall element abutting said lower mounting element intermediate said depending lugs, and
(*c*) a head, having a depending flange received in said upper mounting element of said plunger rod, the lower edge of said flange having mounted therein a pair of laterally spaced adjustable stop screws abutting said mounting element of said plunger rod intermediate said upwardly extending lugs.

3,170,673
STRINGING BLOCK
Anthony McAuley, Maywood, Ill., assignor to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed Feb. 3, 1961, Ser. No. 87,028
3 Claims. (Cl. 254—134.3)



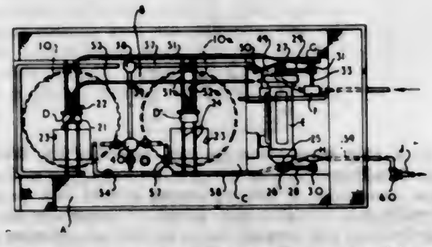
1. A device for stringing a cable on poles having a bolt, provided with an insulator secured thereon with an insulator nut, extending from the side of the pole, comprising: a U-shaped frame carrying a roller between the legs thereof and remote from the ends of the legs, said legs being formed into a hook configuration for engagement with the bolt to hang said device from the bolt; a locking means including an adjustable means mounted on one leg of said U-frame for abutting one side of said insulator nut and a bracket mounted on said one leg to abut the opposite side of said insulator nut to secure said stringing device to the nut and bolt.

3,170,674
HOUSEHOLD MIXER
John R. Gomersall, deceased, late of Elgin, Ill., by Florence Judith Gomersall, executrix, Elgin, Ill., Murray Ireland, Elgin, and Philip E. Willman, St. Charles, Ill., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 1, 1960, Ser. No. 46,845
3 Claims. (Cl. 259—1)



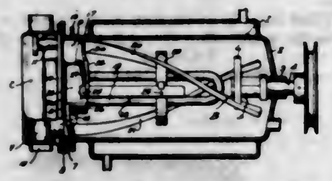
1. In a mixer head including beater means, motor means for driving said beater means, and control means for selectively energizing and de-energizing said motor means; the combination with said beater means of an ejector plate pivotally mounted for movement into engagement with said beater means to eject said beater means from said head portion; a manually operable button independent and horizontally displaced from said control means, a lever connecting said button to said ejector plate for moving said ejector plate into beater ejecting engagement with said beater means upon actuation of said button; a stop member pivotally mounted adjacent said lever and pivotable into and out of a lever engaging position to respectively lock said lever against movement and free said lever for movement; and biasing means urging said stop member toward said lever engaging position, said control means engaging and moving said stop member out of lever engaging position when said control means is disposed in a position wherein said motor means is de-energized.

3,170,675
MULCH PREPARING AND SPREADER MACHINE
John McIntosh Cairnie, 89 Pine St. N., Thorold, Ontario, Canada
Filed Oct. 19, 1962, Ser. No. 231,731
11 Claims. (Cl. 259—6)



1. A mulching and spreading machine comprising a pair of mulch receiving chambers, means for mixing mulch in the chambers, a water containing reservoir embracing the chambers and connected to each chamber, a fluid supply system including means for delivering water to the reservoir from a source of supply, means for modifying the last said means to cut off the water supply, means for circulating the fluid in the reservoir and around the chambers in a closed cycle and of individually supplying the same to each of said chambers and means for discharging mulch from the chamber.

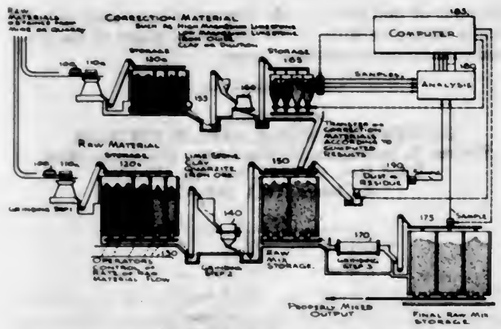
3,170,676
DISPENSING FREEZER BEATER AND MOUNTING THEREFOR
Lawrence E. Koch, Rockton, Ill., assignor to Louis A. M. Phelan
Filed Dec. 21, 1962, Ser. No. 246,405
5 Claims. (Cl. 259—45)



1. In combination with a freezing cylinder having a removable front cover including a large hub extending centrally into said cylinder to define therewith an annular flow path, and a discharge opening in said cover and located in said flow path, a removable sleeve mounted on said hub, a rotary beater in said cylinder for feeding material toward said cover, material pumping means at the front end of said beater for rotation in said flow path and forcing material into said discharge opening, said pumping means being mounted on said removable sleeve for rotationally supporting the front end of said beater.

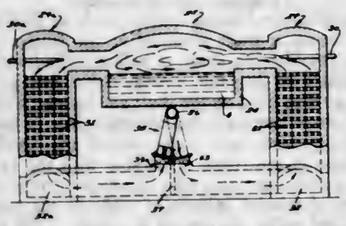


3,170,677
APPARATUS FOR MIXING MATERIALS
Montgomery Phister, Jr., Palos Verdes Estates, and Ralph B. Coss, San Pedro, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Original application Aug. 19, 1958, Ser. No. 755,989. Divided and this application Jan. 10, 1963, Ser. No. 261,922
4 Claims. (Cl. 259—154)



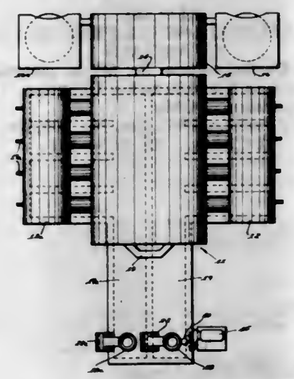

1. Apparatus for producing a mixture having predetermined percentages of certain compounds or elements comprising: first means for preparing and storing a raw mix approximating the desired percentages of said compounds or elements; second means, including a plurality of material preparing devices, for preparing and storing a corresponding plurality of correction materials, each correction material being selected to permit the correction of a deficiency or excess of a different one of said compounds or elements; third means operable to receive test samples and provide signals indicating the percentage contents of said compounds or elements therein; fourth means for selectively conveying said raw mix and each of said correction materials to said third means; fifth means including means defining predetermined simultaneous equations, responsive to said signals provided by said third means for solving said equations to determine the proper amounts of said correction materials needed for modifying said raw mix to compensate for any compound or element deficiency or excess therein; and sixth means for conveying said needed correction materials to said first means.

3,170,678
REGENERATIVE FURNACE DRAFT REVERSAL APPARATUS
George E. Keefer, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed June 20, 1962, Ser. No. 204,004
24 Claims. (Cl. 263—15)



1. A reversal valving apparatus for a regenerative type combustion furnace, said apparatus being adapted for alternate communication with first one and then the other of canal ports leading from opposed regenerative chambers of said furnace, said ports being located in proximate relationship, said apparatus comprising vertically arcuate track means, said track means being adapted to extend coextensively with said ports, plenum chamber means having an upper outlet and a lower inlet end, said upper outlet being adapted for pivotable connection to an exhaust stack, rollable support means carried on said lower inlet end, said rollable support means being adapted for rolling engagement with said track means and means for shifting said lower inlet end, via said support means, in an arcuate path along said track means from a position adapted for communication with one of said ports to a position adapted for communication with the other of said ports.

3,170,679
REVERSE FLOW APPARATUS FOR COMBUSTION FURNACE
George E. Keefer, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed July 20, 1962, Ser. No. 211,253
17 Claims. (Cl. 263—15)

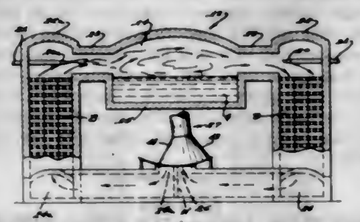


1. A reversible Venturi valve for regenerative-type furnaces, said valve being adapted for series connection in a stack in communication with a regeneration chamber of said furnace, said valve comprising first conduit means defining a Venturi contour expediting flow in one direction, second conduit means defining a Venturi contour expediting flow in the opposite direction, third means for alternately directing a supply of air to first one Venturi and then the other to expedite said flow, and movable fourth conduit means disposed between said first and second conduit means and constructed and arranged for alternate and variable movement between (1) a position communicating with said first conduit means and (2) a position communicating with said second conduit means, whereby flow conditions within said stack are completely variable between maximum flow in one direction and maximum flow in the opposite direction, said fourth conduit means being synchronized with said third means.

3,170,680
DRAFT REVERSAL APPARATUS FOR FURNACES
George E. Keefer, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Sept. 26, 1962, Ser. No. 226,244
19 Claims. (Cl. 263—15)

1. An apparatus for reversing the flow of inlet air and waste gases in a regenerative-type combustion furnace, said furnace being characterized by a construction including opposed regeneration chambers each having a canal leading therefrom to terminate in generally proximate openings, said apparatus comprising a housing enclosure adapted to embrace both of said openings, said housing including at least one inlet opening for admitting combustion air, an inner generally elongate, essentially closed, tubular conduit having open inlet and

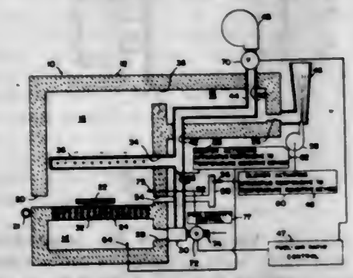
outlet ends within said housing, said inlet end being movable, said outlet end extending communicatingly beyond said housing, and means for cyclically moving said conduit inlet end from communicating connection with first



one and the other of said proximate openings, whereby as draft is induced in said conduit and said conduit is moved, the flow of gases in said furnace will be adapted to be reversed.

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**3,170,681**
**APPARATUS FOR SCALE FREE HEATING OF METALS**
Theodore E. Davies, Grosse Ile, Mich., assignor to The North American Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed June 24, 1963, Ser. No. 289,876
12 Claims. (Cl. 263—40)



1. Structure for heating material in a non-oxidizing atmosphere comprising a furnace enclosure, a porous hearth extending transversely of the enclosure dividing the enclosure into a lower primary combustion chamber and an upper secondary combustion chamber, means for metering fuel and between forty and sixty percent of the oxygen necessary to completely burn the fuel into the primary combustion chamber for ignition in the primary combustion chamber to heat material placed on the porous hearth, means for drawing the combustion gases of the first burning of the fuel through the porous hearth over the material to be heated and into the secondary combustion chamber and means for introducing sufficient oxygen into the secondary combustion chamber at a location adjacent to but above the material to be heated to complete the combustion of the fuel in the combustion gases from the first burning of the fuel in the primary combustion chamber in the secondary combustion chamber and to heat the material by radiation.

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**3,170,682**
**VARIABLE RATE LEAF SPRING SUSPENSION**
George M. Eggers, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 9, 1963, Ser. No. 301,138
13 Claims. (Cl. 267—52)

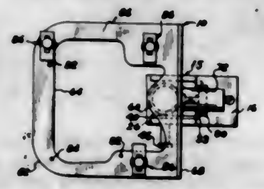
1. A variable rate leaf spring suspension comprising, a sprung mass, a leaf spring rectilinearly movable in a bearing member supported in a fixed vertical position on the sprung mass, a pair of road wheels mounted on lever arms pivotally connected to the sprung mass for movement in a path coplanar with the rectilinear path of movement of said spring, and means pivotally connecting the oppo-



site ends of said spring to the respective lever arms in vertically spaced relation to the horizontal plane of the pivotal connection of said lever arms.

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**3,170,683**
**UNIVERSAL ENGINE REPAIR FIXTURE**
Warren R. Selbert, 24533 Ross Ave., Dearborn, Mich.
Filed Dec. 18, 1961, Ser. No. 159,830
8 Claims. (Cl. 269—71)



1. A universal engine repair fixture, comprising
a base structure having a base plate adapted to be secured to a work bench or the like,
said plate having a device thereon with a pivot axis disposed substantially parallel thereto and a swinging support having one end thereof pivotally mounted on said pivot device for swinging motion between positions substantially perpendicular and substantially parallel to said base plate;
and an engine holder having an engine mounting platform with an engine-holding peripheral portion surrounding an enlarged central engine access opening,
a first means connecting said engine mounting platform to said swinging support at a location remote from said pivot device,
and engine hold-down elements mounted on said platform in peripherally-spaced relationship therewith.

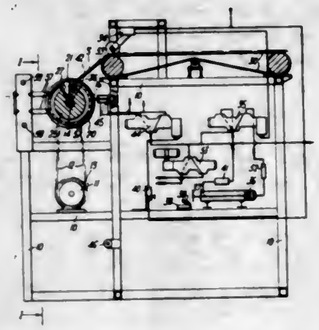
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**3,170,684**
**MEANS FOR FOLDING IN LAUNDRY OPERATIONS**
Oswald J. Eggleton, Abbotsford, 125 Gudge Heath Lane, Fareham, Hampshire, England
Filed Nov. 23, 1962, Ser. No. 239,680
Claims priority, application Great Britain, Feb. 2, 1962, 4,221/62
7 Claims. (Cl. 270—62)

1. Apparatus for folding articles such as sheets comprising a frame, a shaft mounted in the frame, driving means for rotating the shaft, a hollow cylindrical drum freely rotatable on the shaft, a brake device engaging with the drum, a roller fixed on the shaft and located within the drum, a V-shaped recess in the circumference of the drum spaced axially from said brake device and another V-shaped recess in the roller registrable with the recess in the drum, a stop associated with the drum serving to limit the amount of relative movement made by the roller before drum and roller are rotated in unison, a flat support member adjacent and below said drum, an axially movable annular member capable of stripping wound material from the drum and delivering it to the support member, a conveyor mounted in the frame, drive means for the conveyor, said conveyor being adapted to feed an article



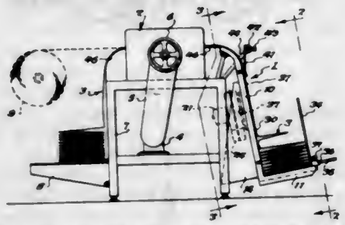
to the drum so that a leading edge of the article can be trapped between the V-shaped recesses, a displaceable member in the path of the article being so fed, a pressure system, means actuated by the displaceable member for energising said pressure system, said pressure system including valve means and pressure cylinders effective to



sequentially drive the roller, trap the article, and wind the article around the drum, as well as apply the braking device to the drum, the release of the displaceable member when the article has cleared it serving to release the brake device, disconnect the drive to the roller, and move the annular member to strip and deliver the article.

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**3,170,685**
**SHEET MATERIAL FOLDING METHOD AND APPARATUS**
Frank M. Bigger, Jr., 150 Columbia Ave., Wanakah, Hamburg, N.Y.
Filed June 10, 1963, Ser. No. 286,782
10 Claims. (Cl. 270—68)

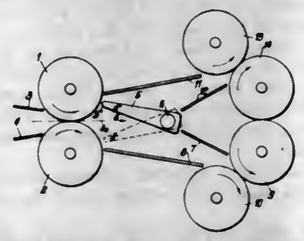


1. Apparatus for folding sheet material having successive fold lines therealong comprising, a normally generally upright rigid stationary supporting back and a stop at the lower end of said back, means for feeding sheet material downwardly along said back and against said stop, and means coacting with said back for producing pressure on the sheet material holding the material against said back, which pressure is less than the buckling force produced in adjacent panels of the material occasioned by the difference in force along the length of the sheet resulting from resistance to movement of the leading end of the sheet by said stop, thereby enabling pairs of successive panels of the material to move away from said back and hold upon themselves as the material moves downwardly along said back against said stop.

9. The method of folding sheet material having successive lines of folding alternating in the direction of folding thereof which comprises feeding the material generally downwardly along a rigid stationary support and against a stop, continuing to feed the material along the support with the leading line of folding held by the stop, and holding the material against the support with a pressure less than the buckling force produced in adjacent panels of the material occasioned by the difference in force along the length of the sheet resulting from resistance to movement of the leading line of folding by the stop, thereby enabling folding of the material along successive lines of folding.

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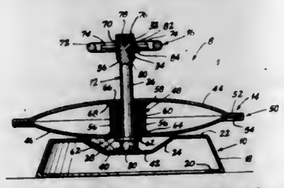
**3,170,686**
**FLAP SWITCH FOR CONVEYOR SYSTEM**
Gisbert Burkhardt, Konstanz, and Max Peek, Darmstadt, Germany, assignors to Telefunken Patentverwertungs G.m.b.H., Ulm (Danube), Germany
Filed June 8, 1961, Ser. No. 115,784
Claims priority, application Germany, June 15, 1960, T 18,535
3 Claims. (Cl. 271—64)



2. A method of controlling a flap switch in conveyor systems for flat shipments transported in upright position, comprising the steps of:
feeding a first shipment to the flap switch;
detecting a second shipment while said first shipment is in the flap switch; and
conditioning the flap switch to assume a position responsive to the detection of said second shipment while said first shipment is still in the flap switch.

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**3,170,687**
**ROTARY TOY APPARATUS**
Sidney Lugger, 8520 Korea Drive, Vinita Park, Mo.
Filed May 9, 1962, Ser. No. 193,550
1 Claim. (Cl. 272—33)



In a rotary toy apparatus, in combination:
a circular base including a peripheral side wall and a horizontally disposed top wall having a central depressed section formed therein;
a vertical standard expending upwardly above said base and including a main body section, an outstanding circular flange integral therewith, and a therebelow extension having a diameter larger than that of said main body section but smaller than that of said flange, said extension being rigidly secured to the depressed section aforesaid of the base top wall;
a free wheeling bearing unit disposed about the main body section of the standard resting on and supported by the outstanding circular flange aforesaid of the standard;
a rotatable disc assembly including an upper disc and a lower disc, the central portions of said discs being integrated with the bearing unit, and the diameter of said assembly being considerably larger than that of said base;

a handwheel including a rim portion and a hub portion, said hub portion extending above and below the rim portion and being integrated with said rim portion by a plurality of radial spokes, the diameter of said wheel being considerably smaller than that of the disc assembly;
a collar rigidly secured to the standard main body section, with the upper surface of said collar disposed below the top face of said body section a distance corresponding tot he length of the handwheel hub portion;
a perpendicular threaded opening extending centrally downwardly in the main body section of the standard from the top face thereof;
a circular top plate having a countersunk central opening therein, the diameter of said plate corresponding with that of the handwheel hub portion;
a screw having a countersunk head seated in the central opening of the top plate, and a threaded shank in engagement with the perpendicular opening in the standard, whereby to confine the hub portion thereof and thus the handwheel between said collar and said top plate;
a first horizontal threaded opening provided in the standard main body section above the collar aforesaid;
a second horizontal threaded opening provided in the hub portion of the handwheel, said first and second openings being in the same horizontal plane;
and a set screw having a threaded shank in engagement with the second opening and adapted to also engage in the first opening with both of said openings disposed in alignment, whereby said handwheel is rigid with the standard when the set screw engages both of the openings aforesaid, and is rotatable about the standard when the set screw engages only the second of said openings.

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**3,170,686**
**BALL CATCHING DEVICE**
Philip B. Porter, 2503 Gilbert Circle, Arlington, Tex.
Filed Mar. 1, 1962, Ser. No. 176,717
3 Claims. (Cl. 273—25)

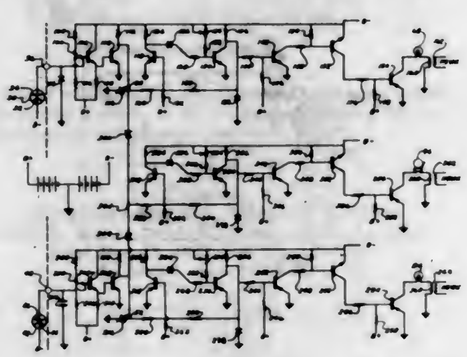


1. A ball catching device comprising a flexible body of resilient material having a handle portion formed on one end, a semi-spherical pocket formed on said body opposite said handle capable of receiving a ball in flight, the said body being semi-circular in transverse section between said handle and said pocket defining a channel gradually widening and deepening into said pocket.

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**3,170,689**
**FOUL DETECTING SYSTEM WITH TRANSISTOR OUTPUT SWITCH**
Raymond E. Brown, 765 Hazelvalley, Hazelwood, Mo., and Thomas A. Cragnale, Woodson Terrace, Mo. (9201 Gedde, St. Louis 34, Mo.)
Filed Apr. 27, 1962, Ser. No. 190,536
3 Claims. (Cl. 273—50)

2. A foul detecting and indicating device comprising means for projecting a beam across the foul line of a bowling lane, means for receiving said beam, a transistor operatively connected to a source of power and having a base and a collector and an emitter, a transformer having a primary winding and a secondary winding, indicating means adapted for operating upon application of electrical power thereto, said indicating means and secondary



winding being connected in series to the emitter and collector, said primary winding being operatively connected to a source of alternating current electrical power, and triggering means connected to said beam receiving means for causing the transistor to go into conduction when a bowler commits a foul by breaking the beam.

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**3,170,690**
**GOLF CLUB WITH HANDLE SECTIONS PIVOTALLY CONNECTED ON A HORIZONTAL AXIS**
Charles D. Germanson, 4513 N. Rockwell Ave., and Edward A. Hennigan, 2316 Sunnyside Ave., both of Chicago, Ill.
Filed Nov. 28, 1962, Ser. No. 240,688
1 Claim. (Cl. 273—77)



A golf club having an elongated straight shaft and an elongated head secured to the lower end of said shaft and having a flat bottom surface extending transversely of the shaft at a predetermined angle inclined from a normal to the shaft, said shaft being inclined away from the vertical at said angle when said flat bottom surface is in a horizontal plane, a handle comprising a first straight section secured to the other end of said shaft to form an extension thereof, a second section adapted to be grasped and held stationarily by the user, and a pivotal connection joining said sections together to swing in opposite directions through positions of alignment and about an axis extending transversely of the first section and the shaft at the same predetermined angle as said flat bottom surface of the head and in parallel with the bottom surface whereby, when said second section is supported stationarily with said axis disposed horizontally, said bottom surface also



is horizontal and is swingable in a vertical plane during swinging of said first handle seciton and shaft about the axis.

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**3,170,691**
**GOLF CLUB SHAFT AND HOSEL CONNECTOR**
Frank C. Pritchard, 880 Lake Shore Drive, Chicago 11, Ill.
Filed July 23, 1962, Ser. No. 211,758
1 Claim. (Cl. 273—80.5)

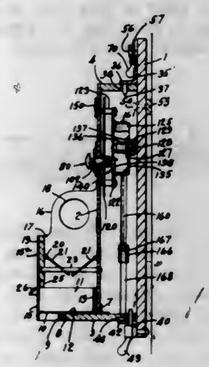


A golf club shaft and connector member assembly comprising a tubular tapered golf club shaft element having its small end lowermost, an elongated tapered plug located in the lower portion of said tubular tapered shaft and having an integral screw-threaded end portion thereof projecting downwardly beyond the lower end of said tubular shaft, said plug being movable axially within said tubular shaft, and a connector element in end-on relation to said lower end of said tubular shaft and having a threaded socket into which the screw-threaded portion of said plug is adapted to be screwed, said tapered plug, the portion of said tubular tapered shaft receiving said tapered plug, the length of said screw-threaded end portion of said plug and the length of said threaded socket in said connector element all being so dimensioned relative to each other that in their initial assemblage said tapered plug may be firmly wedged in said tapered tubular shaft when the lower end surface of said shaft engages endwise against the upper end of said connector element surrounding said threaded socket while the terminus of the threaded end of said plug is spaced aa pre-selected distance from the inner end of the threaded socket, and in their final full-tightened assemblage the terminus of the threaded end of said plug may be caused to engage the inner end of the threaded socket while said tapered plug moves axially within and relative to said tubular shaft which has its lower end in engagement with said connector element to thereby increase the wedging forces developed between said plug and said tubular shaft, and to increase the engagement force of the lower end of said tubular shaft against said connector element.

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**3,170,692**
**MISSILE TARGET WITH HIT INDICATING MEANS**
Feodor Kocsiff, 11306 Culver Blvd., Culver City, Calif.
Filed Feb. 17, 1961, Ser. No. 89,991
6 Claims. (Cl. 273—102.1)

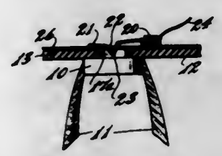
1. A game including a substantially vertically positioned playing board, a target carried by the playing board and toward which a missile is to be directed by a player, said target having a head extending forwardly from the front of the playing board, a shank secured to the head, a sleeve surrounding the shank, the sleeve extending through the playing board, an annular numbered disk dial positioned rearwardly of the playing board and freely surrounding the sleeve, an internally toothed disk spaced from the dial and fixedly secured thereto, the dial and the toothed disk being fixedly secured together; said shank provided at its end opposite the head with a swing dog; movement of the target head inwardly toward the front of the playing board releasing the dog from tooth engagement with the disk, means for rotating the toothed disk,



means projecting the head outwardly from the playing board to bring the dog into engagement with a following tooth of the toothed disk, and means to move the dial one number at a time.

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**3,170,693**
**MAGNETIC TARGET GAMES**
William Felsher, 8512 Fayette St., Philadelphia 50, Pa.
Filed Dec. 18, 1962, Ser. No. 245,454
4 Claims. (Cl. 273—102.2)



1. A magnetic target game comprising at least one airborne projectile, including a permanent magnet portion adapted to strike and be retained on a paramagnetic target; a paramagnetic target board having a front and an electrically conductive rear; a plurality of areas on the front delineated in a manner to visually distinguish from each other; at least one magnetic air gap in each delineated area extending through said board from front to rear, the effective diameter of said gap being less than the effective diameter of said permanent magnet portion; a paramagnetic spring blade spanning each of said gaps, normally spaced from and electrically insulated from the rear of said board but including a terminal portion beyond the gap adapted to make electrical contact with said rear, said blade also including a shaped intermediate portion extending toward said board, proximate said air gap, which shaped portion enters into and is encompassed by said air gap when said blade is attracted to the board by lines of magnetic force passing through said gap; and an electrical circuit associated with each delineated area including the spring blade behind said area, a source of electromotive force, the rear of said board, and signal means; said projectile, when magnetically held on the front of said board proximate a magnetic air gap, providing a magnetic field of force passing therethrough which draws said intermediate portion of the blade into the air gap and said terminal portion of the blade into contact

with the rear of said board to activate the signal means associated with the delineated area in which said air gap is located.

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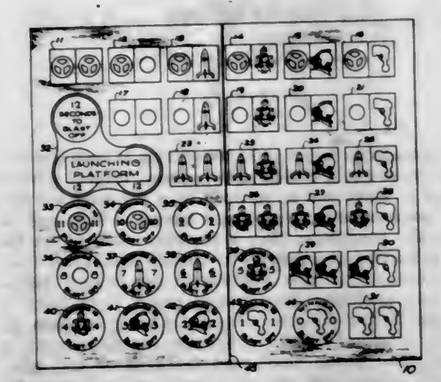
3,170,694
VARIABLE-SURFACE GAME TABLE
Jerry Paul Dolce, 2307 W. 41st Ave., Denver, Colo.
Filed Apr. 6, 1962, Ser. No. 185,655
4 Claims. (Cl. 273—115)



1. A game table comprising a frame adapted to support and marginally bound a horizontal playing field elevated for free access thereunder, a smooth-surfaced, stiffly pliant sheet marginally engaged for slight relative displacement with and interiorly filling said frame in exposure of its upper surface as a playing area, attachments affixed to the under side of said sheet in a pattern of spacedly parallel arrays of spacedly aligned elements, a shaft journalled on said frame subjacently parallel to each said array, and means connecting each said shaft to the individual attachment elements of the associated array operable to apply angular adjustment of the shaft as elevational displacement of the associated elements and consequent variation of sheet upper surface contour.

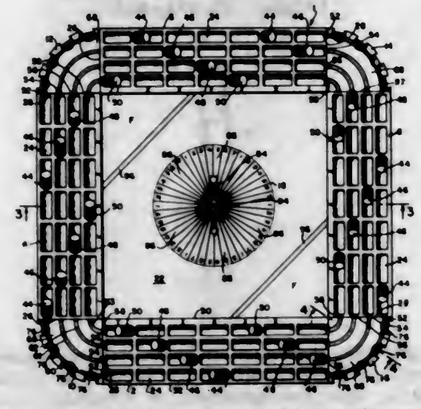
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3,170,695
GAME BOARD WITH PLAYING CARDS AND DICE
Phyllis R. Pirko, 461 Bianco Ave., Niles, Ohio
Filed Apr. 21, 1961, Ser. No. 104,552
3 Claims. (Cl. 273—134)




1. A game comprising a plurality of picture cards, each of said picture cards having two pictures of objects thereon, some of said picture cards having duplicate pictures of the same object and some of said picture cards having different pictures of said objects thereon, a playing board having individual spaces indicated by representations of all of said plurality of picture cards thereon and a plurality of positions indicated thereon, some of said positions having a representation of one of said pictures thereon, a pair of dice each of which has a picture on each of its sides corresponding to the pictures on said picture cards and a plurality of articles some of which form bases and the remainder of which are arranged to be supported thereon for selective positioning on said positions on said game board.

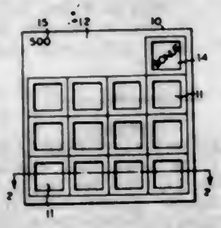
3,170,696
GAME BOARD WITH NUMERICALLY DESIGNATED COMPARTMENTS AND A PLAY SELECTOR WITH CORRESPONDING NUMERALS
John Nielsen, De Forest Road, Dix Hills, Rte. 1, Huntington, N.Y.
Filed May 11, 1962, Ser. No. 194,066
4 Claims. (Cl. 273—134)



3. A game-apparatus comprised of side sections, corner members, and move-selector means, each side section having transverse and longitudinal sides and being similarly formed of a plurality of compartments arranged coordinately in rows and columns, said rows being differently colored and each column being numerically labeled in consecutive order, each numerical label being respectively color designated in repetitive consecutive order to correspond with the respective colors of said rows and the consecutive order of the said respective colors thereof, said corner members being respectively positionable adjacent respective transverse sides of said side sections to establish continuity between the latter, and said move-selector means having numerical indicia thereon corresponding to the numerical labels of said columns, the numerical indicia selected by said move-selector being designative of the play to be made.

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3,170,697
CHANCE CONTROLLED GAME APPARATUS
Alberta L. Banks and Oliver Banks, Jr., both of 478 Oliver St. NW., Atlanta 13, Ga.
Filed Jan. 17, 1962, Ser. No. 166,812
6 Claims. (Cl. 273—135)

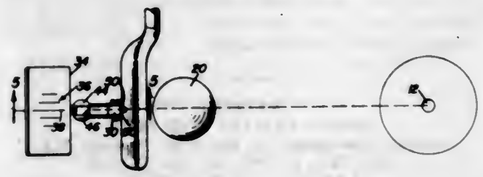


2. Game apparatus comprising, in combination, a plurality of player boards, each player board having specific locations marked on its playing surface; chance means for determining which player will use each of said player boards; a loser's board having specific locations marked on its playing surface; and a plurality of playing pieces, each playing piece being shaped so as to be readily positionable at any of the specific locations on the playing surface of any of the plurality of player boards or of the loser's board, and each playing piece being readily identifiable as either a major penalty piece, a double major penalty piece, a minor penalty piece, a bonus piece, or as a scoring piece bearing a numerical indication of its value; and chance means for determining when a playing piece is to be placed on one of said player boards and when one of said playing pieces is to be placed on said loser's board.



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3,170,698
GOLF CLUB WITH ADJUSTABLY MOUNTED SIGHTING MIRROR
William A. Schoedler, 4011 California Ave., Carmichael, Calif., and Tony S. Tsormpatzoglou, 5020 73rd St., Sacramento, Calif.
Filed Oct. 18, 1961, Ser. No. 145,919
3 Claims. (Cl. 273—163)

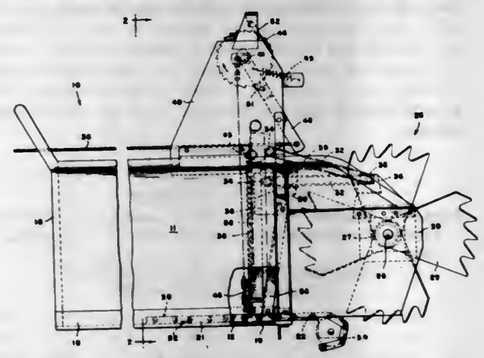


1. A golf putter embodying a shaft provided at the lower end thereof with a head having a forward ball driving surface, and means cooperable with the rear surface of said head enabling the user to analyze and familiarize himself with the particular putting situation at hand prior to making the contemplated puttt, said means embodying a downwardly inclined forwardly facing mirror having graduations on its viewable face, said graduations defining a range finding scale, said graduations embodying a principal graduation in alignment with a rear center point of said rear surface of said putter head, said mirror and all of its marginal edges being spaced rearwardly from said rear surface and serving to afford the user a panoramic view, whereby he may see the flag on the green and the position of the ball relative thereto, and consequently locate and orient the head of the club relative to the golf ball, and means mounting a median portion of the lower marginal edge only of said mirror on said rearward surface, said means bridging the space between said lower edge and rear surface and being spaced inwardly from the respective transverse ends of the head and mirror, respectively, and embodying a manually adjustable ball and socket joint, whereby the mirror may be universally adjusted relative to the putter head.

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3,170,699
MANURE SPREADER
Charles A. Smith and Horace G. McCarty, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,534
5 Claims. (Cl. 275—6)

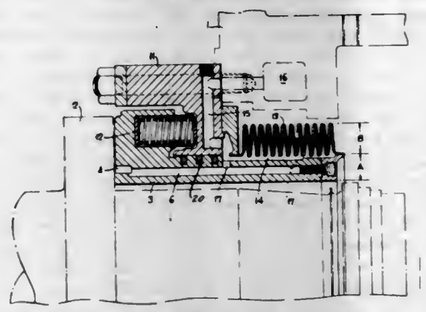
1. A manure spreader for fluid-solid material comprising a generally horizontally extending box having a floor, a pair of upright spaced longitudinal side walls, a forward end, a rear end and an upright wall closing said forward end, an apron movable over said floor and operable to convey material toward said box rear end, a beater supported at said box rear end and rotatable about a transverse axis to spread discharged material, a gate normally located in a substantially vertical position in front of said beater and extending between said side walls to close said box rear end, means connected to said gate and operative to lift the gate from said normal position to open said box, support means mounted for pivotal movement about a transverse axis rearwardly of said gate, means pivotally connecting the upper end of said gate to said support means for limited free swinging movement relative thereto, inclined guides carried inside said box on said side walls and engageable with a lower end of said gate, said guides having lower ends adjacent said box floor and extending upwardly and rearwardly therefrom, the location of said support means being such relative to said guides



that as the gate is elevated to a given point from said closing position the lower end of the gate is forced against the guides by pressure of material in the box and the upper end pivots on said support means, said gate remaining substantially vertical as it moves upwardly and at the same time shifting rearwardly to relieve the force of the material thereagainst.

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3,170,700
OIL SEAL FOR A ROTATABLE SHAFT EXTENDING INTO A GAS ENCLOSURE
Thomas Edward Adams, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Mar. 28, 1960, Ser. No. 18,010
Claims priority, application Great Britain, Apr. 2, 1959, 11,276/59
1 Claim. (Cl. 277—3)

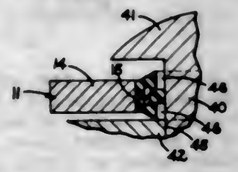


An oil seal for a rotatable shaft comprising in combination a casing adapted to contain gas under pressure, a member secured to said casing and providing an opening through which said shaft extends, a flange on said shaft having a radially extending face directed towards the interior of said casing, a non-rotatable bushing surrounding said shaft and provided with an end face adjacent to and facing said face of said flange, piston ring sealing means located between said bushing and said member and affording a sliding connection therebetween, a flexible bellows surrounding said shaft and said bushing at the side of said piston ring sealing means away from the faces of said bushing and said flange, said bellows being connected at one end to said member and at the other end to said non-rotatable bushing in such position as to be exposed at its exterior to gas in said

casing and defining about the bushing an oil chamber, means biasing said bushing to cause said end face of said bushing to contact said face of said flange, an oil pressure source, at least one passageway connecting said oil pressure source to said oil chamber, at least one further passageway connecting said oil chamber to the faces of said bushing and said flange, whereby oil supplied under pressure by said source to said oil chamber will be effective to substantially reduce the force exerted by pressure of gas in said casing upon the exterior of said bellows and to cause oil to flow to the contacting faces of said bushing and said flange to effect an oil seal therebetween.

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**3,170,701**
**SEALING WASHER**
**John W. Hoover, Dayton, Ohio, assignor to Precision Rubber Products Corp., Dayton, Ohio, a corporation of Ohio**
**Filed May 15, 1961, Ser. No. 109,997**
**6 Claims. (Cl. 277—180)**




1. A sealing washer for sealing a bolt, rivet, or the like having a head and a shank, comprising an outer support ring formed with an outer portion having substantially planar sides and an annular inner mooring portion of reduced cross sectional thickness symmetrically formed with respect to said outer portion, means in said mooring portion defining a plurality of generally arcuately formed openings therethrough positioned wholly within said mooring portion and closely adjacent the inner circumference of said outer portion and proportioned to occupy a major portion of the peripheral extent of said mooring portion, an elastomeric sealing ring molded entirely radially within said outer portion with integral webs formed through said openings, said sealing ring having outer side walls coterminous with the sides of said outer portion and diverging axially outwardly from a point adjacent the junction thereof at said outer portion and terminating radially inwardly of the innermost extent of said mooring portion, a centrally positioned peripherally continuous centering rib formed in said sealing ring and having an inside diameter proportioned to form a close fit on such shank to hold said washer centered thereon, said diverging sides being compressible by said head radially inwardly into the clearance between it and such shank substantially into the plane of the outer portion to form a compression sealing fit highly resistant to flow of fluid thereby.

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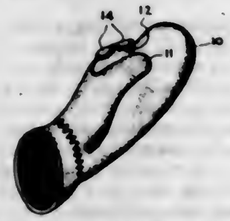
**3,170,702**
**SKI BINDING**
**Friedrich Beier, 25 Gratschenwinkelweg, Igls, Austria**
**Filed Apr. 12, 1962, Ser. No. 186,908**
**Claims priority, application Austria, Apr. 21, 1961, A 3,154/61**
**4 Claims. (Cl. 280—11.35)**



1. A ski having a longitudinal axis and comprising a fixedly supported toe rest, a clamping lever pivotally supported forwardly of said toe rest, a fixed heel rest rearwardly of said toe rest and adapted to support the heel of a boot with the toe of the latter in contact with the toe rest, a guiding plate supported for free longitudinal displacement rearwardly of said heel rest, a clamping jaw supported on said guiding plate for pivotal movement towards and away from said heel rest for contacting the heel of a boot supported thereon, said clamping jaw having an initial position inclined upwardly and forwardly on said ski, a cable extending from said clamping lever to said clamping jaw for pivotally moving the latter and concurrently displacing the guiding plate upon pivotal movement of the clamping lever, said cable passing under the toe rest and heel rest and then passing beyond the heel rest directly to the clamping jaw along a substantially straight line, said cable being fixedly secured to the clamping jaw, and an axially compressible hollow spring between the clamping jaw and the heel rest, said cable extending through said spring to exert a force on the clamping jaw to displace the same against the action of the spring when the clamping lever is pivotally moved.

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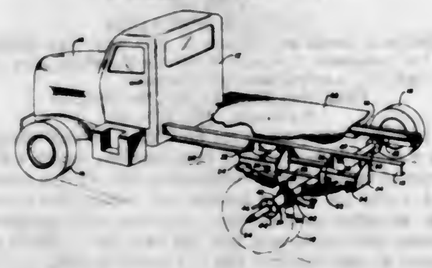
**3,170,703**
**SKIING GLOVES AND MITS**
**Jacques Marchand, 381 Broad St., Newark, N.J.**
**Filed Sept. 6, 1962, Ser. No. 221,712**
**4 Claims. (Cl. 280—11.37)**




1. The combination of a skier's glove having an individual thumb stall and an opposed first-finger side, a strap connecting the thumb stall to the first finger side of the glove, and a snap fastener element secured to the strap and adapted to engage a complementary fastener element disposed on the upper end of a ski pole when the skier's gloved hand grips the upper end of the pole in skiing.

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**3,170,704**
**WIDE WHEEL-BASE TRUCK**
**Harold G. Bradshaw, Salinas, Calif., assignor to Cochran Equipment Company, Salinas, Calif., a corporation of California**
**Filed Apr. 27, 1962, Ser. No. 190,704**
**5 Claims. (Cl. 280—34)**

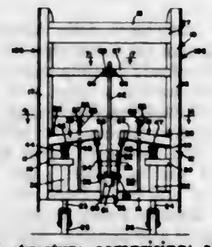


1. In a truck having a chassis with laterally spaced apart frame portions, spring means removably mounted on said frame portions, axle housing means resiliently mounted on said chassis by said spring means, wheel assemblies adjacent to said axle housing means, and inner and outer mounting means on said axle housing means and said wheel assemblies respectively for mounting said wheel assemblies on said axle means; the improved means for providing a wide wheel-base for said truck which comprises axle housing extension means removably connected between each of said inner and outer mounting means and having outer and inner mounting portions which are similar to said inner and outer mounting means respectively with said axle housing extension means rigidly connected to said axle housing for resilient nonrotatable movement therewith, chassis extension means positioned between said frame portions and said spring means, and inner and outer connector means arranged in the same pattern and removably connecting said chassis extension means to said frame portions and said spring means respectively with said spring means engaging said axle housing extension.



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**3,170,705**
**MANUAL CARRIER TRUCK**
**Max R. Peterson, 701 N. Main St., Monmouth, Ill.**
**Filed June 22, 1962, Ser. No. 204,531**
**9 Claims. (Cl. 280—43.1)**

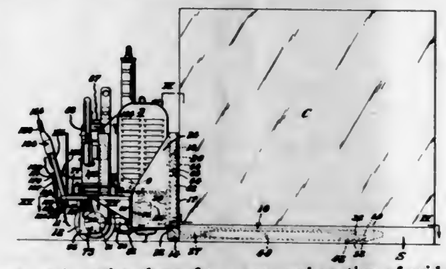


1. A carrying structure comprising: an upright frame including a pair of upright, opposed, and spaced apart side beams interconnected by rigid structure with edges thereof lying in a common upright plane defining a front of the frame; a pair of caster wheel means including vertically extending caster rods; means supporting the rods on the frame for vertical movement; a pair of arms hingedly supported on the respective side beams adjacent the bottom thereof and extending both inwardly and rearwardly therefrom to inner adjacent ends, the plates having means thereon engaging the top of the respective caster rods; a foot lever positioned centrally between the side beams hingedly mounted on the frame to swing about a horizontal axis and projecting rearwardly; means connecting the inner ends of the arms to the lever whereby downward movement of the lever will force the frame upwardly on the caster rods; a shelf supported on the frame and extending forwardly from the front side thereof; and a locking mechanism on the frame for retaining said frame in a predetermined position relative to the caster rods.

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**3,170,706**
**INDUSTRIAL TRUCK**
**Walter S. Nichols, Philadelphia, Pa., assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware**
**Original application June 8, 1961, Ser. No. 115,652. Divided and this application June 5, 1962, Ser. No. 200,282**
**2 Claims. (Cl. 280—43.12)**

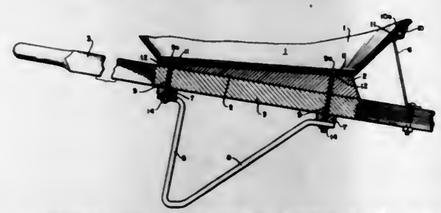
1. In an industrial truck, a chassis frame having steerable traction wheels at the rear thereof and means providing opposed laterally spaced upright guide channels at the front thereof, a platform in front of said chassis frame, said platform having an upright wall extending across the rear thereof, a pair of rollers mounted upon said wall for turning freely about a horizontal transverse axis and received respectively by said guide channels whereby to tie together the upper ends of said wall and guide channel means, at least one pair of levers extending longitudinally beneath said platform and interconnected at a point intermediate their ends for pivotal movement of each relative to the other about a horizontal transverse axis, one of said levers being pivotally connected by a rear portion thereof to said chassis frame and being engaged by a front end portion thereof beneath a front end portion of said platform, and the other lever being pivotally connected by a



rear end portion thereof to a rear end portion of said platform and having at the distal end thereof floor engaging rollers under a front end portion of said platform, said levers being operative to tie together the lower ends of said wall and guide channel means, and manually controllable power means operatively interposed between said chassis frame and platform and operable for actuating said levers to raise and lower said platform.

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**3,170,707**
**WHEELBARROWS**
**John Millar, Jr., Hershey, and Roy William Garber, Elizabethtown, Pa., assignors to Jackson Manufacturing Company, Harrisburg, Pa., a corporation of Pennsylvania**
**Filed July 12, 1962, Ser. No. 209,322**
**3 Claims. (Cl. 280—47.31)**



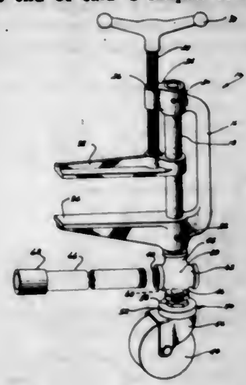
1. A portable cart comprising a chassis, a tray superimposed on said chassis, headed securing means attaching said tray to said chassis, said tray having a substantially continuous wall therein, said continuous wall having perforated areas therein, said tray having embossed areas protruding above said continuous wall proximate to each of said perforated areas, each of said embossed areas having its portions most remote from its respective perforated area gradually tapered upwardly from said continuous wall, each of said securing means having a head above said tray nested within one of said embossed areas, said chassis including supporting means lying beneath and supporting said continuous wall of said tray, and each of said securing means having a shank penetrating said supporting means to attach said tray to said chassis.

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**3,170,708**
**CASTERED CLAMP**
**Lawrence E. Miller, 2814 Dawes Road, Muskegon, Mich.**
**Filed Aug. 3, 1962, Ser. No. 214,577**
**4 Claims. (Cl. 280—47.32)**

1. A support device adapted to mobilize an article to be supported comprising: a generally U-shaped bracket; an elongated member extending between the ends of said bracket and beyond one end thereof; one end of said

bracket forming a fixed clamping jaw; a second clamping jaw having a collar movable along said elongated member, and cooperable with said fixed jaw to form an open mouth; the end of said U-shaped bracket opposite said



one end forming a threaded socket; a jaw operating screw shaft rotatably connected to said movable jaw and extending through said threaded socket; and a rollable standard mounted to said member end extending beyond said bracket.

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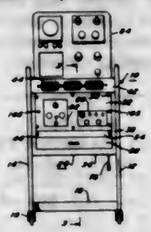
**3,170,709**
**UTILITY CARTS**
**Joseph T. Shacktel, 14636 Briggard Drive, Detroit 5, Mich.**
**Original application Aug. 16, 1956, Ser. No. 604,353, now Patent No. 3,037,786, dated June 5, 1962. Divided and this application Mar. 19, 1962, Ser. No. 180,901**
**7 Claims. (Cl. 280—47.34)**



1. A wheeled utility cart comprising
(*a*) a base frame structure having spaced longitudinally extending side members,
(*b*) traction wheels supported by said frame structure,
(*c*) an upright carrier structure longitudinally adjustably secured to said side members and comprising a pair of spaced connected bars extending generally vertically and inclined slightly to the rear,
(*d*) an accessory structure and means vertically adjustably securing said accessory structure to said upright carrier structure,
(*e*) a handle bar pivotally carried by said upright carrier structure adjacent the upper extremity thereof,
(*f*) said accessory structure comprising a support frame detachably secured to said securing means and extending in a plane substantially parallel to a plane containing said base frame structure,
(*g*) said support frame structure being substantially rectangular in plan and being adapted to selectively carry a tray, table top, basket and carriage body, and
(*h*) said carrier structure arranged to be disposed in a forwardly adjusted position when carrying said accessory structure disposed in an upper adjusted position and to be disposed in a rearwardly adjusted position when carrying said accessory structure disposed in a lower adjusted position whereby to maintain the assembly in balance.

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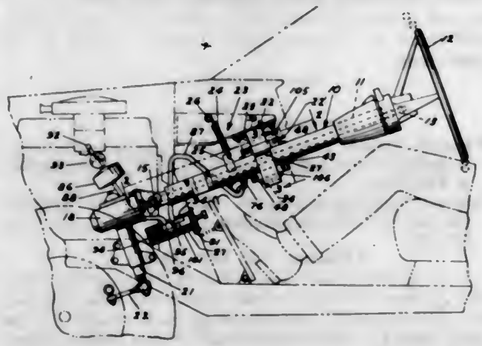
**3,170,710**
**VERSATILE ALL-PURPOSE INSTRUMENT DOLLY**
**Isadore B. Rachman, Philadelphia, Pa., assignor to Metal Dynamics Inc., Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Nov. 23, 1962, Ser. No. 239,445**
**6 Claims. (Cl. 280—79.2)**



1. A movable instrument dolly comprising a hollow housing, wheels, means for mounting said housing on said wheels, the bottom of said housing being at least partially open, said housing having a front wall and back wall parallel thereto, said housing also having side walls parallel to each other and perpendicular to said front and back walls, said front wall having an upper edge higher than the upper edge of said back wall, a top wall connecting the upper edges of said back, front and side walls, said top wall having support means thereon for supporting instruments on top of said housing, said front wall having a rectangular opening therein, the side edges of said rectangular opening having integral flanges extending toward the center of said opening, said flanges lying in a plane between said front and back walls, said flanges having a plurality of holes therein for mounting purposes, and connector means secured to said housing for receiving electrical power adapted to be supplied to instruments mounted on said housing.

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**3,170,711**
**MOVABLE STEERING COLUMN**
**Gene R. Dunlfon, Dearborn, and Patrick J. McCarthy, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Dec. 12, 1962, Ser. No. 244,124**
**7 Claims. (Cl. 280—87)**



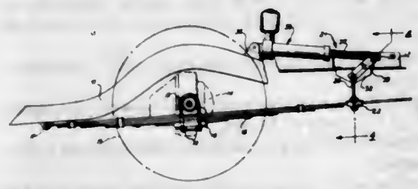
1. In a motor vehicle, a movable steering column mounted in said motor vehicle for movement among a plurality of operable driving positions, a locking mechanism coupled to said vehicle and said steering column for locking said steering column in one of said plurality of



driving positions, said locking mechanism including movable means for releasing said locking mechanism upon movement, a vacuum motor positioned adjacent said locking mechanism, linkage means coupling said movable means and said vacuum motor, a vacuum source, a foot operated valve positioned on the floor of the vehicle and adapted to be operated by the foot of the vehicle operator, said foot operated valve including means for connecting said vacuum source to said vacuum motor when said foot operated valve is in an actuated position and for connecting said vacuum motor to atmosphere when said foot actuated valve is in an unactuated position, whereby said vacuum motor is actuated and the locking mechanism is released when said foot actuated valve is in the actuated position.

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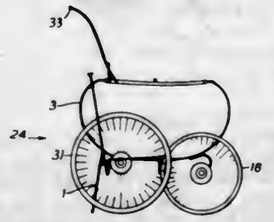
**3,170,712**
**SUSPENSION RIDE CONTROL**
**Eugene E. Hildebrandt, Northville, and Julius B. Schultz, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Apr. 21, 1961, Ser. No. 104,558**
**9 Claims. (Cl. 280—124)**



1. In a suspension system for motor vehicles having a sprung member and an unsprung member, first spring means operatively disposed between said members to transmit loads therebetween, said spring means coacting with said first spring means whereby at least a portion of the loads transmitted by said first spring means is transmitted through said second spring means, and means positionable to vary the rate of said first and second spring means to simultaneously increase the distance between said sprung member and said unsprung member and decrease the portion of the load transmitted through said second spring means.

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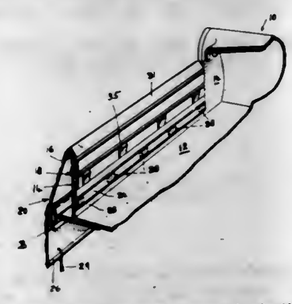
**3,170,713**
**PERAMBULATOR WITH ANTI-TILTING STAND AND BRAKE**
**John Saward, Beckenham, Kent, England, assignor to Royale Baby Carriages Limited, London, England**
**Filed Mar. 15, 1963, Ser. No. 265,479**
**Claims priority, application Great Britain, Jan. 22, 1963, 2,795/63**
**1 Claim. (Cl. 280—150)**



In a perambulator comprising a body, a chassis frame supporting the body and front and rear wheels rotatably mounted on the said chassis frame, the combination of a stand member pivotally mounted on said chassis frame at a location to the rearward of the axis for said rear wheels and movable between a forward inoperative position in which said stand member is lifted clear from the surface on which the perambulator wheels lie, whereby movement of the perambulator is unimpeded by said member, and a nearly upright operative position in which said stand member is rearwardly inclined to the vertical from its upper to its lower end, said lower end then contacting said surface, whereby tilting of the perambulator in an anti-clockwise direction around its rear wheels is resisted, a pair of toggle levers constituting a toggle assembly with retracted and extended conditions, one lever in said toggle assembly pivotally connected to said chassis, the other lever in said assembly pivotally connected to the said stand member, and a free pivot connecting the levers together, said assembly being adapted to actuate said stand member between its inoperative and operative positions, and to assist in holding said stand member in its operative position, corresponding to the extended condition of said assembly, a brake assembly, at least one brake member in said brake assembly which is engageable and disengageable from a front wheel of the perambulator, at least one brake link in said brake assembly pivotally connected between said toggle assembly and said brake member, one end of said brake link constituting said free pivot, whereby said brake member is actuatable by movement of said toggle assembly between retracted and extended positions, and a manually operable brake rod in said brake assembly connected to said one lever to thereby simultaneously actuate said brake member and said stand member via said toggle assembly.

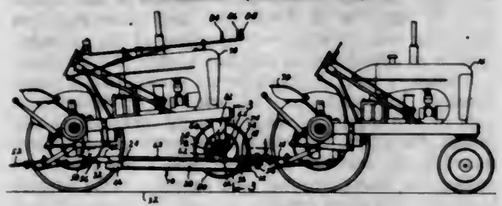
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**3,170,714**
**CLOTHES PROTECTOR FOR TRUNK COMPARTMENT OF A MOTOR VEHICLE OR THE LIKE**
**Alexander H. Stalker, 787 Coxwell Ave., Toronto 6, Ontario, Canada**
**Filed Mar. 25, 1963, Ser. No. 267,527**
**Claims priority, application Canada, Apr. 12, 1962, 846,616**
**2 Claims. (Cl. 280—150)**



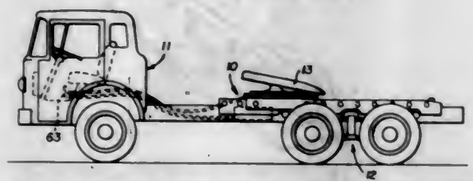
1. A vehicle trunk compartment including an outer, substantially vertical wall of magnetically-attractive material having an upper transverse edge, and a sheetlike protector device removably secured on an inner surface of said wall within said compartment and drapable over the upper edge and outer surface of said vertical wall, said protector device comprising a flexible, foldable body member including spaced parallel tubular sleeves at opposite transverse edges thereof, an elongated weight element disposed in one of said sleeves, and a plurality of independent, magnet elements slidably disposed in said other sleeve and removably retaining said other sleeve on the inner surface of said vertical trunk compartment wall, and at least one wedge element secured to an intermediate portion of said body member and having a surface extending angularly and disposed transversely relative to one of said tubular sleeves for aiding in folding and storing said flexible body member within said trunk compartment.

### 3,170,715
### TRACTOR TANDEM COUPLING
Harvey A. Johnson, Rte. 1, Glenwood, Minn.
Filed Oct. 23, 1962, Ser. No. 232,496
3 Claims. (Cl. 280—402)



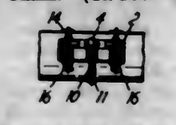
1. A tractor coupling for coupling together a pair of tractors in tandem relationship, said coupling comprising
(*a*) a towbar,
(*b*) a first hitching means at one end of said towbar adapted to permit vertical oscillatory movements of said towbar,
(*c*) a second hitching means connected at the other end of said towbar adapted for horizontal oscillatory movements of said towbar,
(*d*) a saddle having a base longitudinally slidably mounted on said tow bar,
(*e*) a pair of laterally spaced upstanding ears formed on said base,
(*f*) each of said ears defining a forwardly opening recess adapted to engage the front axle of the rear one of said tractors and to support the front wheel structure thereof in spaced relation to the ground, and
(*g*) means limiting forward movement of said front axle relative to said saddle.

### 3,170,716
### ADJUSTABLE FIFTH WHEEL MOUNTING
George N. Walther, Frederick S. Walther, and Forest L. Waite, Dayton, Ohio, assignors to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio
Filed Feb. 4, 1963, Ser. No. 256,653
4 Claims. (Cl. 280—407)



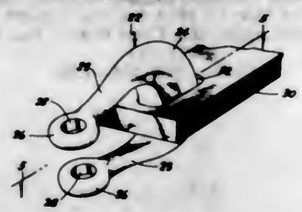
4. An adjustable frame mount with locking mechanism adapted to be mounted on the frame of a vehicle, said vehicle frame having at least two longitudinal side members, said frame mount with locking mechanism comprising, a rail attached to each side member, a mounting plate slidably engaging the upper surface of said rail and corrugated transversely thereto, spaced rail keepers attached to said mounting plate and engaging the under surfaces of said rails, a lock guide on each side of said mounting plate in the medial portion thereof, a bolt axially slidable in each said lock guide and oriented transversely of said rails, a plurality of notch-like receivers in the opposed and facing portions of said rails, the mating end of each said bolt and said receivers tapered at about 7° to provide locking engagement of said mounting plates at selected positions along said rails, a spring attached to each said bolt biasing each said bolt outwardly into engagement with said receivers, a cable having suitable guide means attached to each said bolt, and operating means connected to said cables selectively to disengage each said bolt from said receivers.

### 3,170,717
### TRAILER HITCH ATTACHMENT FOR AUTOMOBILE BUMPERS
Ernest G. Hollenga, Three Oaks, Mich., assignor to Pilot Incorporated, Battle Creek, Mich., a corporation of Michigan
Filed Nov. 26, 1963, Ser. No. 326,054
1 Claim. (Cl. 280—490)



A bumper hitch comprising a base plate adapted to be abutted against a bumper,
three pairs of parallel flanges projecting rearwardly from said plate at the ends and middle thereof,
a first anchor chain connected to said plate between the middle pair of flanges and extending downwardly therefrom,
cross flanges connecting the bottoms of the end pairs of flanges and defining generally vertical holes,
other anchor chains having bolts on one end passed through said holes with nuts on the bolts on the under sides of said cross flanges to extend around the top of a bumper,
said chains having bumper engaging hooks connected to their ends,
a support block rockably positioned between the middle one of said pairs of flanges,
a horizontal bolt supporting said block from its pair of flanges,
an arcuate sector on said block centered about said bolt and having transverse retaining openings formed therethrough in angularly spaced relation about said horizontal bolt,
pairs of holes formed in said flanges supporting said block and spaced angularly about said horizontal bolt,
a pin passed selectively through said pairs of holes and one of said retaining openings to hold said block at a selected angle relative to its base plate,
a rearwardly projecting end on said block,
and a ball hitch element supported from said rearwardly projecting end.

### 3,170,718
### NON-SWAY CLEVIS STRUCTURE
Edgar Thurston Strom, Beulah, N. Dak.
Filed Jan. 8, 1963, Ser. No. 250,122
5 Claims. (Cl. 280—504)

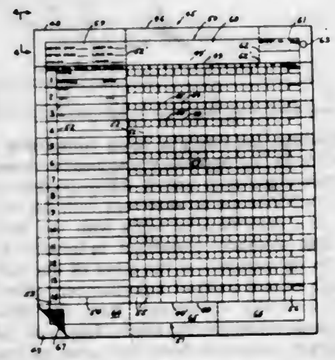


1. A clevis structure comprising:
(*a*) a generally U-shaped member having leg portions and being formed with a bight having an elongated transverse cross section, the major axis of said bight lying along a certain plane, the free ends of said leg portions having a pair of substantially aligned pin receiving apertures therein, the common axis taken through said apertures being substantially within said certain plane,
(*b*) a cooperable member having an elongated aperture extending therethrough for the reception of said bight,



(*c*) whereby the side walls of said aperture prevent the bight from twisting therein.

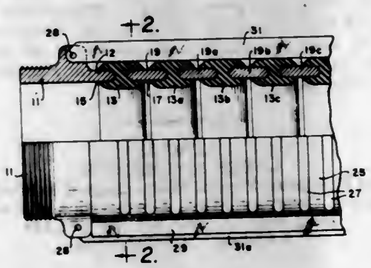
### 3,170,719
### BOWLING SCORE SHEETS
Herman I. Kraus, 83—80 118th St., Kew Gardens, N.Y.
Filed Sept. 21, 1961, Ser. No. 139,632
2 Claims. (Cl. 282—23)



1. A score sheet for bowling events including a horizontal perforation line in the sheet for separating the sheet into two parts, a first part including a plurality of adjacent rows of horizontal areas divided into a plurality of adjacent rows of boxes, the boxes in each of the horizontal areas being in alignment vertically with the boxes in an adjacent horizontal area, ten of the plurality of adjacent boxes in each of the horizontal areas corresponding to the frames constituting a bowling game, one of said plurality of boxes adjacent to one side of the ten boxes in each of said horizontal areas being provided for recording total score, another of the plurality of boxes adpacent to another side of the ten boxes in each of the horizontal areas being provided for recording the identity of the participants scoring in the horizontal area, the ten boxes and the one box in each of the horizontal areas constituting an incremental and total score portion of the sheet, at least one vertical perforation line in the sheet adjacent to the incremental scoring and total portion thereof and terminating at the horizontal perforation line for severing said portion from the first part of the sheet, horizontal perforation lines in said portion between adjacent horizontal rows for separating a horizontal strip thereof containing boxes with incremental and total scores, the second part including at least one section having horizontal areas vertically divided into a plurality of aligned boxes for recording total scores recorded in the first part for a plurality if scored games on the first part and for recording composite results of the bowling event, and at least one vertical perforation line in said second part for separating two areas thereof.

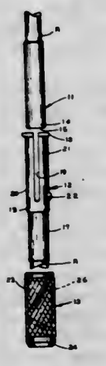
### 3,170,720
### FLEXIBLE CONDUIT FOR PIPING AND THE LIKE
Harold Browaing, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 30, 1962, Ser. No. 169,979
3 Claims. (Cl. 285—114)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A flexible conduit comprising, a first end means having one of its ends provided with means enabling it to be connected to another pipe, a second end means provided with means enabling it to be connected to another pipe, a plurality of resilient ring coupling means, each of said resilient ring coupling means containing a pair of annular cavities, each of said cavities being located at a respective end of said resilient ring coupling means, a plurality of non-resilient ring elements, said plurality of non-resilient ring elements being alternately coupled with said resilient ring coupling means to form a flexible fluidtight conduit with the end members being resilient coupling means, said non-resilient ring elements having



their respective ends received within said cavities and resiliently gripped by the resilient ring coupling means, thereby forming a fluidtight joint, said first end means being connected to one end of the series of non-resilient ring elements and said resilient coupling means, the other end of the series of non-resilient ring elements and resilient coupling means being connected to said second end coupling means, whereby said resilient ring coupling means and said non-resilient ring elements form a fluidtight flexible pipe coupling.

### 3,170,721
### FISHING ROD SLEEVE FURRULE
Ralph P. Wells, P.O. Box 50, 274 Gratigny Station, Miami, Fla., and Joyce M. Lawrence, 4000 NW. 190th St., Opa-Locka, Fla.
Filed Jan. 18, 1962, Ser. No. 167,008
3 Claims. (Cl. 287—126)

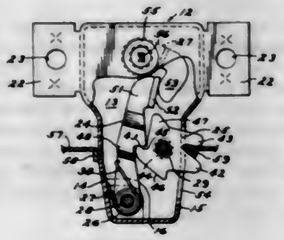


1. In a ferrule for sectional fishing rods, the combination comprising, a cylindrical male section, a tubular cylindrical female section adapted to receive said male section therein in any position of mutual rotary adjustment, the wall of said tubular female section having an axial slot, a cylindrical sleeve movable over said female section for compressing said female section into frictional engagement with said male section when received in said female section, the internal diameter of said sleeve being uniform and of such size that said compressing of said

female section is only to such a degree as will permit manual insertion and withdrawal of said male section with respect to said female section when said sleeve is fully positioned over said female section, and means constraining said sleeve to spiral movement with respect to said male and female sections, said sleeve constraining means comprising an axially-extending spiral groove formed in the internal surface of said sleeve, and a projection extending outwardly of the outer surface of said female section and receivable in said groove for constraining said sleeve to spiral movement with respect to said female section, said groove being of progressively increasing pitch from one end to the other and operative to provide the least amount of axial movement per degree of angular movement when the sleeve is fully positioned on said female section.

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**3,170,722**
**LATCH MECHANISM**
**Charles E. Schmitt, Pigeon, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed June 13, 1962, Ser. No. 202,189**
**5 Claims. (Cl. 292—304)**



1. A latch mechanism comprising:
an elongated housing having spaced support walls and side walls therebetween,
said side walls at one end of said housing being convergent and being adapted to act as pilot means for guiding said latch mechanism into latching position relative to a keeper device,
an elongated lever pivotally mounted at one of its ends at said one end of said housing for swinging movement about a pivot axis intersecting said support walls,
said lever extending longitudinally of said housing along one of said side walls,
a latch element pivotally mounted within said housing between said elongated lever and the other of said side walls for swinging movement about a pivot axis located intermediate the ends of said housing and parallel to said lever pivot axis.
said latch element having a keeper engaging portion at one side thereof projecting through an aperture in said other side wall of said housing,
a detent on said elongated lever intermediate the ends and on the side thereof toward said other side wall,
an abutment on said latch element on the side thereof opposite said keeper engaging portion and in opposing relation to said detent.
spring means urging said elongated lever and thereby said detent toward said other side wall into abutting relation to said latch element abutment,
and an outer manually operable means pivotally mounted on one of said support walls at the other end of said housing engageable with the other end of said elongated lever to swing the same and thereby said detent portion out of latch element holding position.

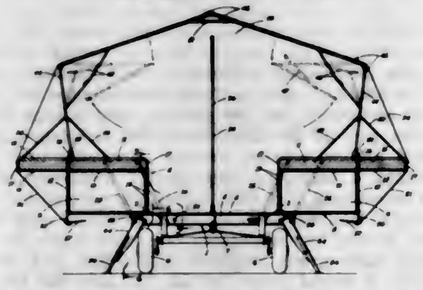
**3,170,723**
**APPARATUS FOR LIFTING LONG BUILDING ELEMENTS**
**Kjell Halvorsen, Stavsta, and Jonas Oscar Knapp, Ektorp, Sweden, assignors to Aktiebolaget Strängbetong, Stockholm, Sweden, a corporation of Sweden**
**Filed Apr. 25, 1962, Ser. No. 190,135**
**Claims priority, application Sweden, Apr. 29, 1961, 4,532/61**
**9 Claims. (Cl. 294—67)**



1. Apparatus for lifting a beam comprising a pair of tie members having opposite ends, means connecting said tie members together at one of the respective ends thereof in inverted V-shape arrangement with the tie members inclined at a determinable angle with the horizontal, a pair of link members connected in pivotal fashion to each of the tie members at the other of the ends thereof, one of each of said pairs of link members extending substantially vertically downwards from the other of the ends of the tie members, the other of each of the pairs of link members extending from the other of the ends of the corresponding tie member at an angle to the horizontal which is less than the angle of the tie member, and means at each of the ends of the link members remote from the other of the ends of the tie members for supporting the beam thereat, said means connecting the tie members being effective to receive a force for moving the tie members and link members and the beam therewith while said link members are effective to support the beam at a plurality of spaced locations.

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**3,170,724**
**CAMPING TRAILER**
**Theodore Heil, Lodi, Calif., assignor to Hollite Trailers, Inc., Lodi, Calif., a corporation of California**
**Filed May 17, 1963, Ser. No. 281,173**
**7 Claims. (Cl. 296—23)**

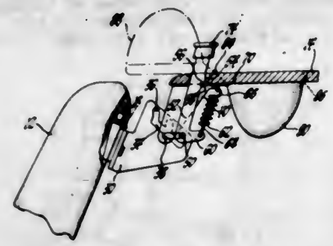


1. A camping trailer comprising a frame which includes a deck, a pair of separate mattress-supporting units extending lengthwise of the trailer in laterally opposed relation, means mounting the units in connection with the frame for lateral movement between a position on the deck adjacent each other and a position in contact with the deck but in relatively widely separated relation, and mechanical manually controlled means to move the units from one position to the other simultaneously comprising a pair of horizontally alined sprockets at each end of the frame spaced apart a greater distance than the full lateral movement of the units, an endless chain extending about the sprockets, a push-pull link extending in one direction from the upper run of the chain and connected to said run and to one unit, another push-pull link extending in the opposite direction from the lower run of the chain and connected to said lower run and to the other unit, and means to rotate one sprocket so as to drive the chain in one direction or the other.



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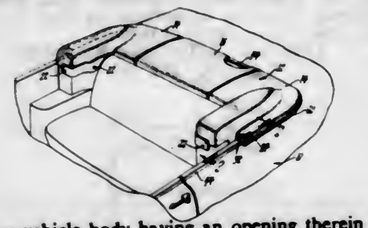
**3,170,725**
**ADJUSTABLE RECLINING AUTOMOBILE REAR SEAT AND HEAD REST THEREFOR**
**Clarence L. Komorowski, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Sept. 19, 1961, Ser. No. 139,197**
**2 Claims. (Cl. 296—63)**



1. In combination in a vehicle having a rear seat, rear seat back cushion, and storage shelf extending rearwardly from a position adjacent the top of the rear seat back cushion: a head rest connected to said storage shelf, a head rest storage compartment provided in said storage shelf, said heat rest having a padded head receiving portion and a shelf portion, said heat rest being movable from a stowed position within said storage shelf to a head rest forming position on top of said storage shelf, said shelf portion of said head rest forming a continuation of said storage shelf in said stowed position and supporting said padded head receiving portion op top of said storage shelf in said head rest forming position.

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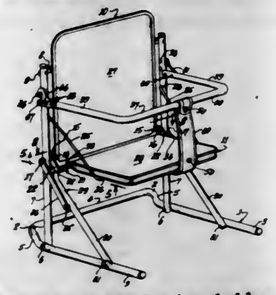
**3,170,726**
**CLOSURE FASTENING MEANS**
**Leonard A. Lystad, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 13, 1963, Ser. No. 264,907**
**6 Claims. (Cl. 296—136)**



1. In a vehicle body having an opening therein and a closure movable between open and closed positions with respect to said opening, closure fastening means comprising, a link member pivotally mounted adjacent one end thereof on said closure, connecting means movably mounted on said body and connected to the other end of said link member to mount said link member on said body for movement between a first position wherein said closure is in said open position thereof and a second position wherein said closure is in said closed position thereof, resilient means biasing said connecting means in one direction relative to said body at all times during movement of said closure between said positions thereof, said bias on said connecting means being operable upon said link member in said second position thereof to bias said link member toward said body and cause said link member to bias said closure toward said body, and means limiting movement of said closure under the action of said resilient means to locate said closure on said body in said closed position thereof.

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**3,170,727**
**AUXILIARY SEAT FOR CHILD**
**Arnold E. Peterson, 700 Allen Ave., Glendale, Calif.**
**Filed July 29, 1963, Ser. No. 298,177**
**5 Claims. (Cl. 297—253)**



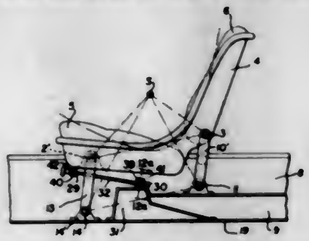
1. In a child's seat adapted for detachable mounting on an automobile seat of the type including a seat cushion component and a back cushion component provided with a rigid frame member disposed parallel to and closely adjacent to the rear surface of the seat cushion; said child's seat comprising a base component having a portion adapted to be supported by the automobile seat cushion component and said portion of said base component including a rearward extension terminating in an upwardly turned end engageable in rear of the rigid frame member of the automobile back cushion which is adjacent to the automobile seat cushion, a collapsible seat structure including a back sub-assembly and a seat sub-assembly pivotally mounted on said base component and movable as a unit on said pivotal mounting from a collapsed position generally parallel to the automobile seat cushion engaging portion of said base component to an erected position in which the back portion of said back and seat assembly is disposed substantially at right angles to said base component for engagement with the automobile seat back cushion, and means extending between said base component and said back and seat assembly manually operable to releasably lock said back and seat assembly in said erected position on said base component and simultaneously positioning said upwardly turned end in rear of the rigid frame member of the automobile back cushion which is adjacent to the automobile seat cushion.

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**3,170,728**
**SEAT FOR MOTOR VEHICLES**
**Béla Barényi, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany**
**Filed Jan. 18, 1960, Ser. No. 2,983**
**Claims priority, application Germany, Jan. 24, 1959, D 29,846**
**8 Claims. (Cl. 297—344)**

1. In a seat construction for a motor vehicle having a vehicle superstructure, seat frame means including backrest means, seat cushion means supported upon said seat frame means, the improvement consisting essentially of means for supporting said seat frame means on said vehicle superstructure to enable movement of said seat frame means in the longitudinal direction of the vehicle and to provide a high seat stability, said last-mentioned means including forward and rear bearing means secured to said seat frame means and forming forward and rear pivotal support axes extending in the transverse direction of the

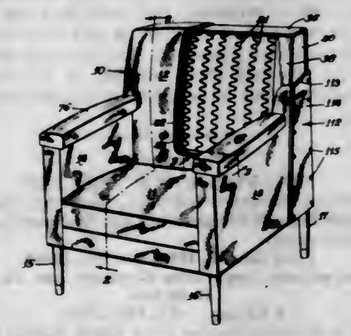
vehicle, at least the portion of said seat frame means between said two support axes being rigid so as to rigidly connect said two support axes, and a forward and rear swinging member arranged outwardly of and adjacent each side of said seat frame means, each said swinging member being pivotally supported upon said vehicle superstructure at the bottom end thereof and pivotally connected at the upper end thereof to the respective one of said rear bearing means, a further forward and rear swinging member pivoted on said forward support axis said forward support axis being adjacent the bottom part of said seat frame means, a recessed portion in said bottom part having walls intersected by said forward support axis



said rear support axis being disposed in the region of said backrest means in a plane vertically spaced above said forward support axis, the lower pivotal supports for each said first-named forward and rear swinging member being arranged in a plane vertically spaced above said lower pivotal supports for said further swinging member, and said swinging members adjacent each said side of said frame means forming with lines connecting their pivot axes as seen in side view a parallelogram ascending rearwardly from the front of said seat frame means, and adjustment means operatively connecting said seat frame means and said vehicle superstructure whereby a high stability of the seat construction is attained.

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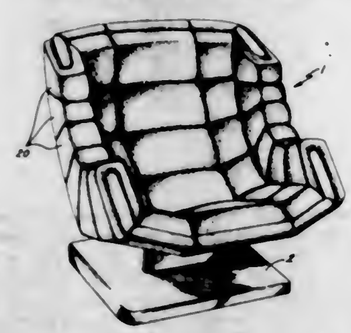
**3,170,729**
**FURNITURE CONSTRUCTION**
Raymond F. Grant, 3940 Lacey Road, Downers Grove, Ill., assignor of one-half to Kenneth T. Snow and Edward L. Bonne, both of Chicago, Ill.
Filed Apr. 12, 1962, Ser. No. 187,066
11 Claims. (Cl. 297—440)



1. A furniture piece comprising a seat section, said seat section having a generally centrally located cushion portion, laterally extending generally horizontally disposed flanges on both sides of said cushion portion, and a rearwardly extending generally horizontally disposed flange to the rear of said cushion portion, a back section, spaced arm sections, means fastening said arm sections to the front side edges of said back section, said back section adapted to rest directly on said rearwardly extending horizontal flange, each of said spaced arm sections adapted to rest directly on one of said laterally extending horizontal flanges, leg means having integral extensions adapted to pass upwardly through said laterally extending horizontal side flanges of said seat section and upwardly through said back section and said spaced arm sections, and means lockingly engaging the upper ends of said integral extensions to thereby interlock all of the furniture piece sections.

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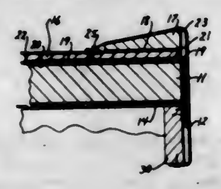
**3,170,730**
**UPHOLSTERED CHAIR**
Ronald Beckman, New York, N.Y., and William J. Cannan, Rutherford, N.J., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Nov. 13, 1962, Ser. No. 237,155
13 Claims. (Cl. 297—445)



1. A unit of furniture, comprising: a base; a plurality of logs forming support for a person; each of said logs having a pair of surfaces adapted for lying in proximity to said surfaces of adjacent of said logs; said surfaces of at least certain of said logs being formed to lie in a non-parallel relationship, whereby positioning of said logs adjacent one another provides the contour of the unit of furniture; means for securing said logs in said position; and means for securing said logs to and above said base.

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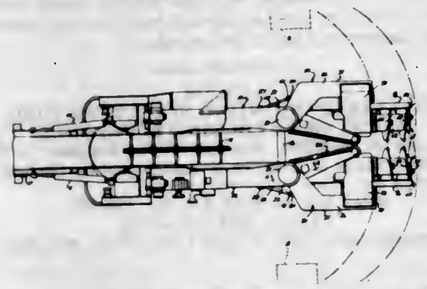
**3,170,731**
**UPHOLSTERY ASSEMBLY**
Daniel F. Caldemeyer, Lloyd O. Caldemeyer, and Howard M. Quakenbush, Evansville, Ind., assignors to National Furniture Manufacturing Co., Inc., Evansville, Ind., a corporation of Indiana
Filed Aug. 10, 1961, Ser. No. 130,603
8 Claims. (Cl. 297—452)



1. A preassembled upholstery assembly for the seat portion of upholstered furniture comprising a first cushioning layer, a second cushioning layer disposed over said first cushioning layer, a third cushioning layer disposed on a portion of said second cushioning layer, a base fabric disposed on another portion of said second cushioning layer, and a cover fabric secured to said base fabric at a stitching line combining said cover fabric, said base fabric and said second cushioning layer, said cover fabric extending over said third cushioning layer and concealing said stitching line.



**3,170,732**
**AUTOMATIC CONTROL FOR CONTINUOUS MINING MACHINE**
Emil J. Hlinsky, La Grange Park, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 23, 1961, Ser. No. 84,025
4 Claims. (Cl. 299—71)



1. In a continuous mining machine, a main frame, a pair of boom arms pivotally mounted on said main frame for movement about vertical axes at the front of said main frame at opposite sides thereof, a side cutting mining head rotatably mounted on each boom arm and extending longitudinally therealong and in advance thereof, individual hydraulic cylinders and pistons connected between said main frame and said boom arms for feeding said mining heads toward each other and retractably moving said mining heads with respect to each other, stop means for limiting inward movement of said mining heads toward each other and permitting retractable movement of one mining head comprising a control line connected between said cylinders adjacent one thereof, a shuttle valve in said control line, return lines leading from the same ends of said cylinders as said control line and spaced inwardly along said cylinders with respect to the connections of said control line to said cylinders, pressure lines connected to opposite ends of said shuttle valve and leading from the opposite ends of said cylinders from said control line, and holding said shuttle valve in position to block the passage of hydraulic fluid from one cylinder to the other and thereby stop feeding movement of said mining heads toward each other when the pressure on opposite sides of said shuttle valve is balanced and said pistons have moved to block the return of fluid from said cylinders through said return lines, and releasing pressure from one end of said shuttle valve upon the release of pressure to one of said cylinders, to accommodate the passage of fluid under pressure from one cylinder to the other to retractably move one piston and mining head upon extensible movement of the other piston and continued feeding movement of the associated mining head.

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**3,170,733**
**WHEEL COVER WITH LOCKING MEANS**
Robert E. Lamme, 41 E. 19th St., Hialeah, Fla.
Filed July 1, 1963, Ser. No. 291,941
2 Claims. (Cl. 301—37)

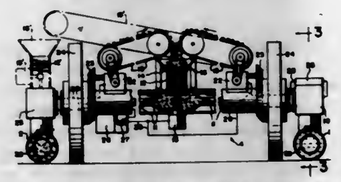
1. A hub cap assembly comprising a support member, outwardly extending lug portions mounted on said support member, said lug portions having bores for receiving wheel studs, a substantially cylindrical keeper mounted on said support member, said keeper member being threaded at its inner portion and provided with a slot, a substantially circular disc, said circular disc having a centrally disposed opening, a collar mounted at said opening and having an outwardly and axially extending flange mounted on a free edge of a radially disposed flange extending outwardly of said circular disc at said opening forming a seat, a substantially cylindrical locking member having an outwardly and radially extending flange member received by said seat, a barrel-type lock mounted on said locking member, said lock having a



threaded portion received by said threaded keeper member and a locking bolt mounted on said lock adapted to be received by said slot for locking said hub cap assembly.

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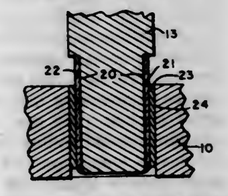
**3,170,734**
**FLUID CURRENT CONVEYING APPARATUS**
Sigurd F. Varian, 24 Alleo Way, Menlo Park, Calif.; Lorna Van Linge, executrix of said Sigurd F. Varian, deceased
Filed May 19, 1961, Ser. No. 111,251
9 Claims. (Cl. 302—14)



1. Apparatus for transporting items from a series of space-displaced remote locations to a central collecting point including, means defining an extensible fluid path for supplying fluid to the remote locations and being extensible in time-displaced relationship successively to the space-displaced remote locations, means defining a return extensible fluid path leading from the space-displaced remote locations to the central collecting point, means forming a movable junction in fluid communication between said extensible supply and return fluid paths for allowing fluid to flow from said supply fluid path to said return fluid path, and means for working the items at the remote locations into said return fluid path through said movable junction to cause the items to flow within said return fluid path back to the central collecting point.

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**3,170,735**
**INSULATED DIE SET**
Harland H. Coffin, Bridgeport, Conn., assignor to Producto Machine Company, Bridgeport, Conn., a corporation of Connecticut
Filed Nov. 17, 1960, Ser. No. 69,891
2 Claims. (Cl. 308—4)

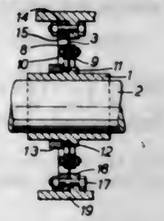


2. In a die set, a botom plate having a wall surface forming an opening therein; a top plate having a wall surface forming an opening therein; guide post means

having a surface mounted in the opening in one of said plates; bushing means mounted in the opening of the other of said plates slidingly receiving said guide post means; a layer of bonding material on one of said surfaces; a ceramic oxide layer integrally united to said one of said surfaces by said bonding material; and a layer of metal integrally attached to said ceramic oxide, the dimension of said layer of metal being such as to form a metal-to-metal press fit within one of said openings.

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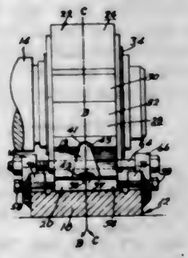
3,170,736
MOUNTINGS FOR JOURNAL BEARINGS
James Rostron Wright, Culcheth, near Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Sept. 24, 1962, Ser. No. 225,654
Claims priority, application Great Britain, Oct. 3, 1961, 35,609/61
2 Claims. (Cl. 308—26)



1. A mounting for a journal bearing, comprising a disc slotted at a first radius to define a first pair of diametrically opposed flexible webs, slotted at a second radius to define a second pair of diametrically opposed flexible webs displaced angularly by 90° relative to the first pair of flexible webs, and corresponding stiffening rings provided in corresponding positions on opposite sides of the disc between the first and second pairs of flexible webs.

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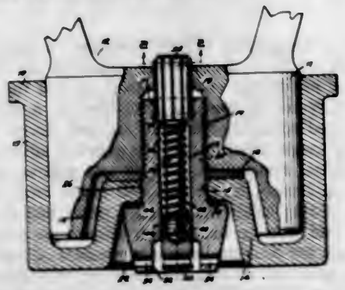
3,170,737
EXPANSION MOUNTING
Edward C. Denne, Jr., Glenside, Pa., assignor to SKF Industries, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,135
5 Claims. (Cl. 308—59)



1. In an expansion mounting, a base, a housing for rotatably mounting a shaft overlying said base, a pad providing a support portion mounted on said base, at least one rocker mounted on said support portion of said pad and supporting said housing, said rocker including a seat having a surface confronting and engaging a surface of said support portion, only one of said surfaces being arcuate to permit limited rolling movement of the rocker with respect to said support portion to afford movement of said housing relative to said pad, means defining a recess in said support portion, means defining a pocket in said seat, a keying element seated in said recess having a portion projecting from said recess beyond said support portion adapted to engage in said pocket to prevent sliding movement of said rocker with respect to said support portion, said projecting portion of the keying element spaced from said pocket whereby the weight of said rocker is supported on said pad, means mounting said pad for sliding movement on said base in a direction parallel to the rotational axis of the shaft whereby the relative position of said housing and base may be varied selectively, and means maintaining said base, housing, rocker, keying element and pad as an integral unit.

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3,170,738
ROTATABLE MOUNTING STRUCTURE WITH MECHANICAL LOCKING BLIND BOLT
Clarence H. Winfree, Warren, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 11, 1963, Ser. No. 250,959
1 Claim. (Cl. 308—135)
(Granted under Title 35, U.S. Code (1952), sec. 266)

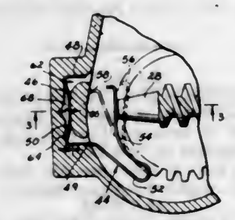


In a separable pivotal mounting structure for securing in journal-thrust bearing relationship first and second rotatable members, each of which has a registering opening therein comprising a socket member having an upwardly opening cup-shaped race chamber therein, said race chamber having a raised concentric boss portion providing a first planar thrust bearing surface having a centrally located opening therethrough, a journal shaft member rotatably positioned within said race chamber, said shaft member having a downwardly opening circular recess in its end portion receiving said raised boss and providing a second planar thrust bearing surface for seating on said first bearing surface, a standard bolt member having a threaded end portion, a central smooth shank portion and an enlarged cone shaped head; the base portion of said cone shaped head located adjacent to said smooth shank forming a horizontal shelf for seating within said boss, said conical head configuration permitting entry of a locking pin through a horizontal passageway in said head, said bolt extending upwardly through the opening in said boss with said shank portion in rotatable journal contact with the boss opening, said shaft member having a concentric threaded bore for engaging the threaded end of said bolt, an axial bore extending through said bolt, locking means slidably received within said axial bore, said locking means in the form of an axially displaceable plunger having a locking end protruding from the threaded end of said bolt and a retainer cap at the opposite end connected to said locking end by an intermediate pin portion, said pin portion having a reduced diameter from that of the axial bore, said axial bore having a reduced diameter neck portion that separates an internal gear-tooth type spline fitting from the remaining portion of the axial bore, said locking end of said plunger provided with external splines complemental to said internal splines of said bolt, the threaded bore of said shaft having an internal spline portion at its inner end for engaging and locking said external spline to said shaft member in non-rotatable relation therewith, said bolt having a hexagonal socket in its head providing an internal hex head wrench engaging portion, a coil spring encircling said central pin portion of said plunger with its upper limit abutting the underside of said reduced neck and its lower limit abutting and urging said cap into the hexagonal socket, said plunger cap having a horizontal passageway located so that when said plunger is in its biased position in the hexagonal socket it is in alignment with the horizontal passageway of said bolt head to permit a locking pin to lock said plunger against axial movement with respect to said bolt, and hex head wrench means insertable in the hexagonal socket producing axial movement of said plunger resulting in said external splines thereof being moved axially out of engagement with said bolt splines permitting said bolt to be unthreaded from said shaft.



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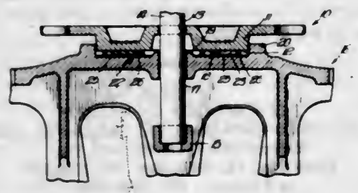
3,170,739
BEARING ASSEMBLY
Hans D. Lange, Chelsea, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,674
4 Claims. (Cl. 308—135)



4. A dynamoelectric machine comprising, a driving shaft, a leaf spring having a channel shaped portion and a reverse bend cantilevered resilient portion, a housing having a complementary channel shaped recess receiving said channel shaped portion, said housing and said channel shaped portion including cooperating means for securing said channel shaped portion in said complementary channel shaped recess, said reverse bend cantilevered resilient portion of said spring extending into said housing and engaging one end of said driving shaft for resisting axial movement of said driving shaft.

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3,170,740
CAR CONSTRUCTION
Edward Payson Smith, Winnetka, Ill., assignor to Illinois Railway Equipment Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 11, 1963, Ser. No. 257,578
10 Claims. (Cl. 308—137)

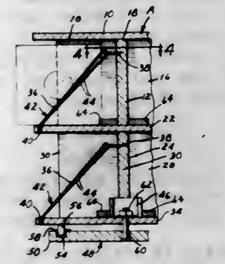


1. In combination:
(*a*) upper and lower railway car center plates,
(*b*) a center pin extending between said center plates,
(*c*) a carrier plate between said center plates having a central opening to accommodate said center pin,
(*d*) cavity providing means on said carrier plate, and
(*e*) a filling of a mixture of non-ferrous metal particles and lubricant in said cavity providing means.



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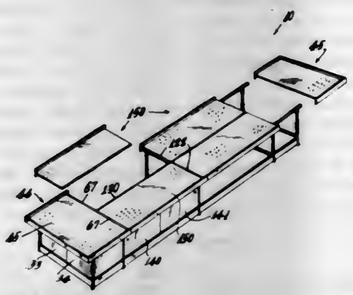
3,170,741
DEVICE FOR STORING FLAT ARTICLES
James B. Richards, Jr., Auburn, Ala.
(607 Alder St., Myrtle Beach, S.C.)
Filed Dec. 11, 1961, Ser. No. 158,358
2 Claims. (Cl. 312—12)



1. In a device for storing flat articles, including vertically spaced circular shaped upper and lower members, radially disposed divider walls separating said upper and lower members into wedge shaped quarters, the combination of:
a hook-member located at the intersection of the divider walls in each quarter adjacent the said upper member,
a thin cord-like member laced from said hook member in downwardly and outwardly spaced relation to the vertical axis of said device to the said lower member along a series of spaced points adjacent the circumference of said lower member, said cord-like member forming a crested series of article supporting dividers within each wedge shaped quarter of said device.

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3,170,742
DISPLAY AND STORAGE FIXTURES
Irving L. Berkowitz, Oceanside, N.Y., assignor to Kason Display Hardware Inc., Brooklyn, N.Y., a corporation of New York
Filed Apr. 14, 1961, Ser. No. 103,155
20 Claims. (Cl. 312—108)

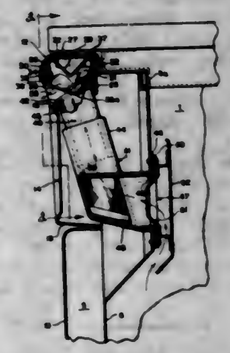


1. A counter fixture comprising a pair of parallel aligned unitary members each having a vertical post from which integrally extends a horizontal portion, opposed symmetrical brackets removably mounted on the lower ends of said vertical posts and extending toward each other, a lower member mounted on said brackets and between said posts, a second pair of unitary members in a vertical common plane, having vertical posts in the planes of said first pair of members, respectively, and horizontal integral portions extending from said vertical posts of said second pair of members inwardly toward each other,

means on the horizontal portions of the first pair of members to releasably interlock with the horizontal portion of said second pair of members, means to interconnect the inner ends of the horizontal portions of the second pair of members, opposed pairs of symmetrical brackets removably mounted on the posts of the first and second pair of members with the brackets of each pair extending toward each other, lower members mounted on said pairs of brackets, and a counter top slidably mounted on and having means slidably engaging the horizontal portions of the first pair of members, and abutting the horizontal portions of the second pair of members.

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3,170,743
DOMESTIC APPLIANCE
Leonard J. Martinink, Waukesha, Wis., assignor to General Electric Company, a corporation of New York
Filed Apr. 18, 1963, Ser. No. 273,867
4 Claims. (Cl. 312—313)

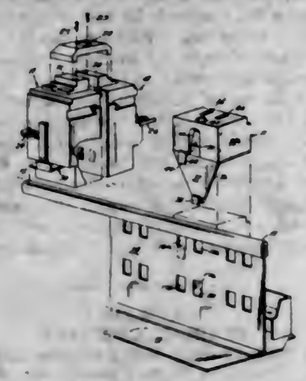


1. In a dishwasher having a tub and a closure door therefor; the combination comprising a vapor condenser secured to said door at the upper portion thereof and an air and vapor conduit for conducting moisture-laden air from said tub to said condenser, said conduit extending downwardly and rearwardly from said condenser; said condenser including an elongated V-shaped comb of good heat conduction material, the base of said comb being disposed wholly within the outlet end of said conduit; and a V-shaped baffle structure of good heat conduction material within said comb in the path of air issuing from said conduit, the base of said baffle structure being above the base of said comb, said door having an opening to ambient formed therein in communication with said condenser thereby to permit the escape of air after it has passed into said condenser.

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3,170,744
REMOVABLE GROUNDING RECEPTACLE FOR PANELBOARDS
George H. Farnsworth, Grosse Pointe Woods, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 27, 1960, Ser. No. 38,904
10 Claims. (Cl. 339—14)

4. A plug receptacle mountable on a panelboard at a circuit breaker location thereof, said receptacle comprising a housing having an open back and a cover therefor, a first and a second prong-receiving contact mounted within individual recesses of said housing and retained therein by said cover, prong-receiving apertures in the front thereof aligned with said contacts, said housing also having holes in a side thereof through which said contacts are accessible for circuit connections; a grounding contact disposed within another recess of said housing and aligned opposite another prong-receiving aperture of said housing;



a mounting hook extending from said grounding contact through a first wall of said housing opposite said side of said housing.

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3,170,745
ELECTRIC-CIRCUIT SELECTORS
Stanley Thomas Deakin, Walton-on-Thames, Surrey, England, assignor to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Dec. 5, 1962, Ser. No. 242,480
Claims priority, application Great Britain, Dec. 6, 1961, 43,779/61
7 Claims. (Cl. 339—18)

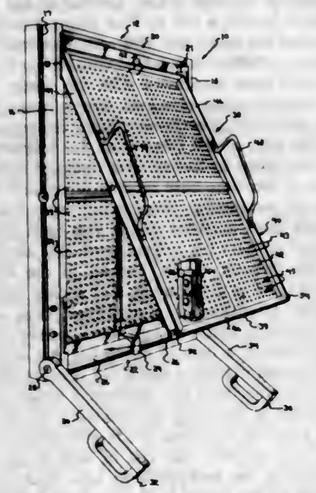


7. A panel and contact unit for use in an electric circuit selector comprising a panel of electrically conducting material with rows of holes therethrough, a separately constructed layer of electrically insulating material on each face of the panel with holes registering with the holes in the panel and upstanding from at least one insulating layer lining bushes for the holes in the panel and electric contact strips extending along the rows of holes, said contact strips having upstanding contact portions and holding means passing through the holes in the insulating layers and the lining bushes and engaging the outer faces of the insulating layers to hold them and the interleaved panel together.

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3,170,746
PLUGBOARD ASSEMBLY
Akin Akus, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 11, 1963, Ser. No. 250,815
4 Claims. (Cl. 339—18)

4. A latching and locking mechanism for plugboard assemblies of the type having a rear bay and a front bay adapted to be fitted therein and driven in a parallel plane for a given distance to effect contact between contact members supported in each bay, including a latch plate having cam surfaces disposed at one end adapted to cam said plate in a given direction responsive to front bay movement into or out of the rear bay, spring means held between the rear bay and a portion of the latch plate to drive said latch plate in a direction opposite to said given direction and means linking said latch plate

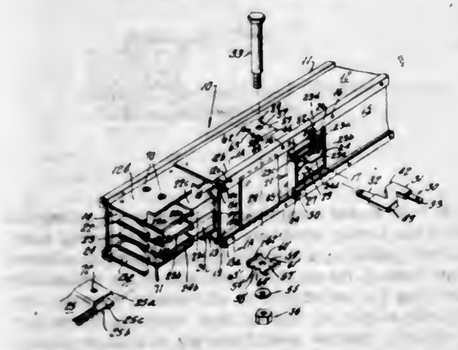


to limit movement thereof to a distance approximating said given distance to lock said front bay against withdrawal from said rear bay.



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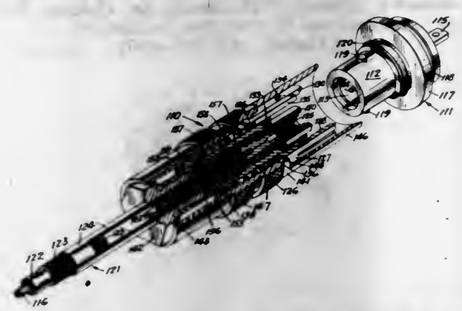
3,170,747
PARALLEL DISTRIBUTION DUCT STRUCTURE
John A. Herrmann, Grosse Pointe Farms, and Kent P. Stiner, Detroit, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1964, Ser. No. 341,374
15 Claims. (Cl. 339—22)



1. For use in electrically paralleling two bus distribution sections, conductive means having a first pair of plug-in type contact fingers for engagement with a first bus bar in a first bus distribution section, a central conductive member, a second pair of plug-in type contact fingers for engagement with a second bus bar in a second bus distribution section, said conductive member being connected between said first and second contact fingers to establish a conductive path therethrough; said conductive member and said first contact fingers defining a first acute angle, said conductive member and said second contact fingers defining a second acute angle, said conductive member having a first and second shoulder adjacent said first and second contact fingers respectively, for positioning said contact fingers with respect to said first and second bus bars respectively.

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3,170,748
COAXIAL CABLE CONNECTOR
Arden D. Van Horssen, Minneapolis, Minn., assignor to Nu-Line Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 17, 1962, Ser. No. 173,851
7 Claims. (Cl. 339—88)

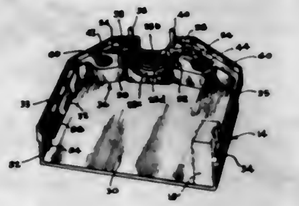


1. A shock and vibration-resisting connector for coupling a pair of electrical conductors,
comprising female and male body sleeves having cooperating contact means,
said male body sleeve having outwardly protruding bayonet pins thereon and means attachable to one of the conductors,
the female body sleeve having forward and rear ends and an intermediate portion, said forward end having a forwardly facing surface and being of a greater exterior diameter than the exterior diameter of the intermediate portion and defining an abrupt rearwardly facing exterior shoulder surface, said forward end having an inner periphery of a diameter substantially the same as the exterior diameter of the intermediate portion and receiving the male body sleeve, the enlarged forward end of said female body sleeve having circumferentially spaced bayonet pin-receiving slots extending entirely from the abrupt shoulder surface to the forwardly facing surface and longitudinally therethrough and opening endwise in both directions, the forward end of said female sleeve also having bayonet pin-receiving recesses each at one side of a respective slot and disposed intermediate the ends of the slot,
a slide ring slidably mounted on and guided for longitudinal movement by said intermediate portion of the female body sleeve,
elongate keeper lugs projecting endwise from said slide ring and being slidably mounted in said slots in obstructing relation with said pin-receiving recesses,
resilient means engaging the slide ring for urging the ring toward said abrupt shoulder surface at all times to normally maintain said keeper lugs in obstructing relation with the recesses, thereby locking and maintaining the bayonet pins within the recesses against disconnet caused by excessive shock and vibration, said resilient means permitting movement of the slide sufficient to move the lugs out of obstructing relation with the recesses,
an outer sleeve encompassing and slidably related to said slide ring and being movable along said intermediate portion, said outer sleeve having inwardly protruding flange means disposed between said slide ring and said abrupt shoulder surface, whereby to produce rearward movement of the ring and lugs when the outer sleeve is moved rearwardly along the female body sleeve, but permitting said lugs and ring to slide rearwardly along the female body sleeve while the outer sleeve remains stationary with the flange means engaging the abrupt shoulder,

and means on the rear end of said female body sleeve for securing the other of said conductors thereto.

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3,170,749
PLUG ASSEMBLY
Bengt J. Johansson, 1634 Spruce St., Des Plaines, Ill., and Robert F. Schlacks, 2435 Burling St., Chicago, Ill.
Filed June 21, 1962, Ser. No. 204,189
2 Claims. (Cl. 339—107)

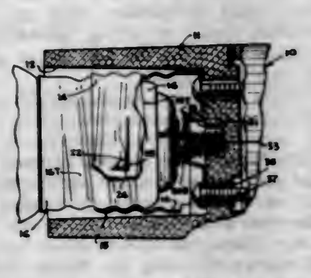


1. A connector assembly including a connector insulating body having a plurality of electrical contact elements therein, and a plurality of electrical leads extending from said contact elements, said connector assembly comprising:

first and second insulating bodies positioned in inter-engaging mating relation and defining a housing, said housing having said connector insulating body assembled at one end thereof and an electrical lead receiving opening at the other end thereof, said first and second insulating bodies of said housing each having a base portion which has upstanding walls integrally affixed thereto and extending along opposite sides of said base portion, said opposed upstanding walls of each of said first and second insulating bodies having means in engagement with said connector insulating body for holding said connector insulating body in assembly with said housing, one end of the base portion of each of said first and second said bodies having an upstanding boss integrally attached thereto, each of said bosses having an arcuate recess therein defining said electrical lead receiving opening of said housing when said first and second bodies are in inter-engaging mating relation, and a resilient clamp member in direct fastened engagement with each of said bosses and extending across said respective arcuate recess thereof, said clamp members cooperating to embrace said electrical leads, and means to hold said first and second insulating bodies in inter-engaged mating relation.

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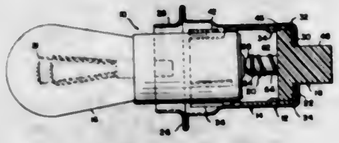
3,170,750
LAMP RECEPTACLE
Arthur I. Appleton, 1 Bridlewood Road, Northbrook, Ill.
Filed June 21, 1962, Ser. No. 204,288
1 Claim. (Cl. 339—189)



In a lamp receptacle, a thin-walled retaining shell presenting a threaded socket member for retaining a lamp having a base with a complementally threaded side wall, and a circular center contact at the bottom of the base presenting at the medial part thereof a bead of soft conductor metal, a circular center contact at the bottom of the receptacle having a rim surface adapted to be engaged by the base of the lamp and said center contact of the receptacle also including a concave contact surface engageable with said bead associated with the center contact of the lamp, spaced prong elements struck inward from the receptacle shell and presenting sharp corners engageable with the side wall of the lamp base for resisting the tendency for the lamp to loosen in a back-off direction due to vibration of the lamp base receptacle, spaced sharp edge projections of rectangular form struck upwardly in cantilever fashion from portions of the rim each presenting a pair of sharp corners for engagement and electrical contact with the circular center contact at the base of the lamp as said lamp is threaded in said socket member, and a sharp edge extension of rectangular form struck upwardly in cantilever fashion from said concave contact surface and presenting a pair of sharp corners each adapted to gouge into and maintain electrical contact of the lamp whereby said projections and extension assist said spaced prong elements in resisting the tendency of the lamp to loosen in a back-off direction due to vibration of the lamp receptacle, and whereby the last of said projections and said extension of the receptacle to lose electrical contact with the base of the lamp, in the event of back-off vibration of the lamp, results in extinguishment of the lamp thereby giving an indication of the extent of back-off vibration.

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3,170,751
LAMP BULB STABILIZING FILAMENT CENTERING TUBE WITHIN A SEALABLE CAPSULE
Robert M. Heller, Birmingham, Mich., assignor, by mesne assignments, to Wells Electric & Mfg. Co., Birmingham, Mich., a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,695
5 Claims. (Cl. 339—188)



5. A bulb socket comprising a single piece cylindrical socket tube having relatively wide manufacturing tolerances and including a radially enlarged portion adjacent one end thereof, means at said one end of the socket tube for securing the socket tube in an opening, a single combined bulb stabilizing and filament centering sleeve having relatively narrow manufacturing tolerances secured within the other end of the socket tube, bayonet slots in one end of the combined bulb stabilizing and filament centering sleeve adjacent the radially enlarged portion of the socket tube for securing a light bulb in the one end of the sleeve, one of said socket tube and sleeve having a radially inwardly extending flange at the other end thereof, the one end of the bulb stabilizing and filament centering sleeve also having axially extending slots therein and being tapered radially inwardly axially outwardly, an insulating core positioned within the other end of the bulb stabilizing and filament centering sleeve and socket tube, at least one passage in said core extending axially of said socket tube and sleeve, a contact member extending through said passage movable axially within the other end of the socket tube and sleeve and spring means for urging the contact member toward the one end of the socket tube and sleeve.



3,170,752
ELECTRICAL CONNECTOR APPARATUS
Arden D. Van Hernen, Minneapolis, Minn., assignor to Nu-Line Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 18, 1962, Ser. No. 231,461
3 Claims. (Cl. 339—217)



1. An electrical connector component comprising,

(a) a body member having a forward end defining an electrical contact means and a tubular rear portion having a rearwardly facing central access opening,

(b) a mounting ring fixedly retained within said tubular rear portion adjacent said access opening and having a cylindrical bore extending longitudinally forward from said access opening,

(c) said mounting ring being provided with a plurality of forwardly converging and outwardly flexible spring fingers angularly located with respect to each other,

(d) an elongate shank having means at the rear end thereof adapted for securing a wire thereto and an enlarged head at the forward end adapted for abutting at the rearward portion thereof against the free ends of said fingers in a captured engagement relation,

(e) said shank extending forwardly through said access opening and through the bore of said mounting ring, said shank having a first longitudinal portion nearer its rear end of a diameter slightly less than the diameter of said bore and a second longitudinal portion nearer its forward end of a diameter less than that of said first longitudinal portion, the adjacent ends of said longitudinal portions residing said bore with the forward end section of said second longitudinal portion projecting from said bore whereby an annular space is formed between the rear end section of said second longitudinal portion and the forward end section of said mounting ring,

(f) a cylindrical camming ring normally disposed in said annular space having an outer diameter of a size to fit freely within said bore and an inner diameter of a size to freely encircle said second longitudinal shank portion,

(g) said first longitudinal shank portion having a longitudinal groove extending therealong of a depth corresponding substantially to the difference in radii of said longitudinal shank portions, said grooves extending rearwardly through said access opening for admitting a tool for forcefully sliding said cylindrical camming ring forwardly along said second longitudinal shank portion to simultaneously cam said spring fingers outwardly to release the head of said shank and thereby allow withdrawal thereof.

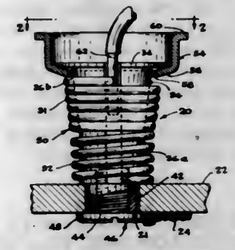
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3,170,753
ELECTRICAL CONNECTOR
Roy Witte, 1942 De Cook Ave., Park Ridge, Ill., and William H. McKee, 2436 E. Evergreen St., West Covina, Calif.
Filed July 19, 1962, Ser. No. 210,912
2 Claims. (Cl. 339—256)

2. An electrical connector adapted to receive an electrical lead therein, said connector comprising:

an electrical lead receiving member having a tubular body portion, said body portion having a laterally extending flange element at one end, said body portion having a groove extending along a portion of the length thereof and said flange element having a recess in alignment with said groove of said body portion, and said body portion tapering from said flange element toward its end away from said flange element;

a sleeve member having an inwardly directed flange element encircling said body portion and having an opening through which said body portion extends of greater diameter than said body portion but of less diameter than said body flange element;

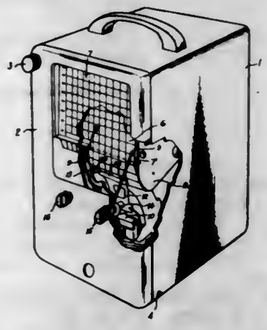


a coil spring received about said body portion in telescopic relation thereto, the maximum diameter of said coil spring at its upper end being greater than the diameter of the opening of said sleeve flange element whereby said coil spring is in abutting relation to said sleeve flange element; and

said sleeve member being effective upon the application of an external force thereto to compress said coil spring to permit insertion of said electrical lead into the area between the base of said groove and said coil spring, the depth of said groove being less than the diameter of said lead whereby said coil spring upon the withdrawal of external force on said sleeve expands toward relaxed position to engage under tension said electrical lead disposed within said groove of said body portion.

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3,170,754
ADJUSTMENT OF RECORDING DEVICES
Seymour Pincus, Manchester, N.H., assignor to Rustrak Instrument Co., Inc., Manchester, N.H., a corporation of New Hampshire
Filed Jan. 29, 1962, Ser. No. 169,329
6 Claims. (Cl. 346—25)

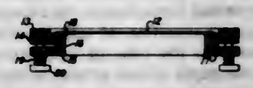


1. In a recording device, a pressure sensitive chart, a panel in front of said chart having an opening forming a window for at least part of said chart, means for driving said chart, conductive percussion means arranged facing said chart, a galvanometrically controlled stylus supported on the back of said panel and movable across said window in a plane extending between said percussion means and said chart, and also arranged to be movable by said percussion means in a direction perpendicular to said plane to contact said chart at an intersection be-

tween said percussion means and said stylus, thereby producing on said chart a recording mark corresponding to the instantaneous position of said stylus with respect to said percussion means, at least one control element consisting of a substantially triangular plate mounted rotatably on a corner thereof and having a contact edge formed on the base facing said corner; said contact edge engaging the latter when said stylus is engaged by said percussion means, said control element being supported together with said percussion means on said panel back, and arranged in the space between stylus and said chart, and movable from the front of said panel in a plane substantially parallel to that of said stylus movement so as to cause said percussion means when engaging said stylus to simultaneously engage said control element and relay means coupled to said percussion means, and to operate said control element by the simultaneous engagement of said stylus and said percussion means.

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**3,170,755**
**SYSTEM FOR PHOTOGRAPHICALLY RECORDING OSCILLOSCOPIC TRACES**
**Jean Imperial, Montrouge, France, assignor to "Ribet et Desjardins," Montrouge, Seine, France, a corporation of France**
**Filed Mar. 6, 1962, Ser. No. 177,856**
**Claims priority, application France, Mar. 13, 1961, 855,378**
**4 Claims. (Cl. 346—110)**



1. Apparatus for superimposing two images which are projected along mutally perpendicular axes which intersect each other comprising a thin sheet of material having a semi-transparent surface for facing one of said images and a semi-reflective surface for facing the other of said images and means supporting said sheet in a fixed plane which is specifically oriented with respect to said images to pass superposed images, the latter said means including resilient means holding said sheet taut in said fixed plane even for dimensional changes of said sheet, a pair of members peripherally engaging the sheet therebetween, a flange member having a planar surface which defines said fixed plane, said pair of members encircling said flange member and holding the sheet supported on the surface thereof, said resilient means acting between said flange member and said pair of members in a direction perpendicular to said planar surface to bias said pair of members and cause the same to assume a position in which the sheet is maintained taut and supported against the planar surface of the flange member, said pair of members being annular members which grip the sheet therebetween, said flange member including an inner flange which is encircled by said annular pair of members and an outwardly projecting flange on said inner flange, said inner flange having an upper surface which is the aforementioned planar surface, said outwardly projecting flange facing said pair of members, means secured to said pair of members and slidably supported in said outwardly projecting flange for movement in a direction perpendicular to said planar surface, said resilient means including a spring between said outwardly directed flange and the means secured to the pair of members for urging said pairs of members to a neutral position in which the pair of members draws said sheet against the planar surface of the inner flange and then obliquely downwardly.

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**3,170,756**
**SNAG-PROOF HOOK PROTECTORS**
**Carleton L. Butler, 3002 Jennings Road, Kensington, Md.**
**Filed Sept. 24, 1962, Ser. No. 225,566**
**1 Claim. (Cl. 43—43.4)**



A snag-proof hook assembly comprising a hook and a hook protector, said hook having a plurality of shanks and barbs, said hook protector comprising a hollow conical hood portion and a tubular structure having an outer circumference slightly larger than the periphery of said shanks, and an internal diameter substantially equal to the diameter of said shanks, said tubular structure being closely fitted around the shanks of said hook, and being slightly longer than said shanks, whereby a portion of said tubular structure extends beyond said shanks, said hook protector being formed of resilient heat sealable plastic sheet material, said tubular structure being inside and substantially coaxial with said conical hood portion, the extending portion of said tubular structure being heat sealed over and beyond said shank and around the beginning of the bight of said hook, whereby dislodgement from said hook, of said hook protector is obviated, the edge of the base of said conical portion, when deflected, clearing the point of said hook by a minute distance.

# CHEMICAL

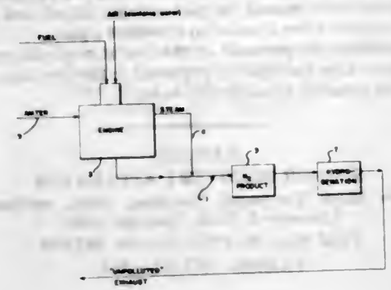
**3,170,757**
**PROCESS FOR PRODUCING LEVEL DYEINGS ON POLYAMIDE FIBERS**
**Harold C. Gift, Temple, and Lawrence P. Procter, Womelsdorf, Pa., assignors to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts**
**No Drawing. Filed Mar. 9, 1962, Ser. No. 178,581**
**9 Claims. (Cl. 8—55)**

1. A process producing level dyeings on polyamide fibers which comprises passing the fibers through an aqueous bath having a pH of about 6.5 to 8.5 containing a water soluble neutral dyeing dye for such fibers and an organic swelling agent for the fibers in which the dye is soluble, maintaining the bath at a temperature below about 90° F., removing the fibers from the dye bath before any substantial degree of dyeing occurs and thereafter subjecting the treated fibers to steaming under conditions comparable to those obtained by about a 3-minute steam treatment at atmospheric pressure.

**3,170,758**
**METHOD OF PURIFYING EXHAUST GASES**
**Donald L. Hemerkamp, Tinley Park, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**
**Filed Sept. 1, 1960, Ser. No. 53,503**
**2 Claims. (Cl. 23—2)**

1. A method of purifying exhaust gases consisting essential of carbon monoxide, nitrogen, oxides of nitrogen, olefinic hydrocarbons, steam and carbon dioxide which comprises passing the exhaust gases into contact with an iron oxide catalyst at a temperature of about 600 to 800° F. to convert at least about 25 volume percent of the carbon monoxide to carbon dioxide and produce hydrogen and passing the resulting hydrogen-containing effluent into contact with a platinum catalyst at a temperature of about 400 to 700° F. to saturate at least about 25 volume percent of the olefinic constituents of the exhaust gas.





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**3,170,759**
**METHOD OF MAKING PLUTONIUM MONOCARBIDE**
**Ross M. Mayfield, Glen Elyn, and William G. Tope, Naperville, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission**
**No Drawing. Filed June 19, 1962, Ser. No. 203,666**
**1 Claim. (Cl. 23—14.5)**

A process of producing plutonium monocarbide, comprising heating plutonium metal in a graphite crucible at between 1575 and 1650° C. for from 35 to 60 minutes while applying a vacuum, and cooling the product obtained to room temperature under vacuum.

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**3,170,760**
**PROCESS FOR RECOVERING COBALT BASE CATALYSTS**
**Giuseppe Morbidelli, Como, Italy, Luigi Notarbartolo, deceased, late of Milan, Italy, by Enza Pascalino and Paola Notarbartolo, administratrix and heiress, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy**
**No Drawing. Filed Nov. 6, 1962, Ser. No. 236,187**
**Claims priority, application Italy, Nov. 9, 1961, 661,531**
**9 Claims. (Cl. 23—87)**

1. A process for recovering cobalt base catalysts from a mother water having a low concentration of cobalt benzoate, comprising the steps of:

(*a*) treating the mother water with a cationic resin at a temperature between 70 and 90° C. whereby the cobalt ions are absorbed by the resin,

(*b*) eluting the resin having the adsorbed cobalt ions with an aqueous solution of hydrochloric acid,

(*c*) fractionating the eluted solution into a plurality of fractions including (1) fractions essentially free from cobalt chloride, (2) fractions having a cobalt chloride content lower than 5 percent, and (3) at least a fraction having a cobalt chloride content higher than 5 percent,

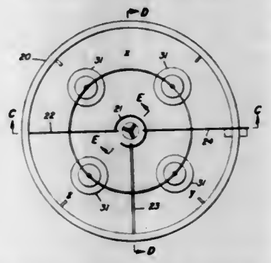
(*d*) recovering cobalt from the fraction having a cobalt chloride content higher than 5 percent, and

(*e*) adding hydrochloric acid to the fractions having a cobalt chloride content lower than 5 percent, to form an aqueous solution of hydrochloric acid, adapted for regenerating the resin in a regenerating step as defined at (*b*), and further including cobalt chloride, and

(*f*) subjecting the cobalt containing solution indicated at (*d*) to further steps leading to the recovery of the cobalt.

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**3,170,761**
**PROCESS FOR THE PRODUCTION OF PHOSPHORIC ACID AND APPARATUS THEREFOR**
**Stanislaw Maria Jasikowski and William Francis Sheldrick, Felixstowe, England, assignors to Fisons Fertilizers Limited, Felixstowe, Suffolk, England, a British company**
**Filed Nov. 13, 1961, Ser. No. 151,749**
**Claims priority, application Great Britain, Nov. 18, 1960, 39,638/60**
**5 Claims. (Cl. 23—165)**



1. A continuous process for the manufacture of phosphoric acid by the wet process from sulphuric acid and phosphate rock which comprises the steps of adding phosphate rock to the first zone of at least three zones communicating in series, at least two of said zones communicating with a draft tube provided with impeller means, adding sulphuric acid to a different zone in the series, circulating the reaction mixture with agitation through said zones, recirculating part of the reaction mixture from the last zone to the first zone in the series through said draft tube, withdrawing part of the reaction mixture from the last zone in the series, the holding time in the first zone being greater than the holding time in the subsequent zones.

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**3,170,762**
**MANUFACTURE OF MAGNESIUM HYDROXIDE**
**Carmela Ben-Ari, Ramat Gan, and Warren J. Fuchs, Mount Carmel, Haifa, Israel, assignors to Negev Phosphates Limited, Hakirya, Israel**
**No Drawing. Filed Oct. 2, 1961, Ser. No. 142,008**
**Claims priority, application Israel, Oct. 12, 1960, 14,490/60; Dec. 9, 1960, 42,445/60**
**5 Claims. (Cl. 23—201)**

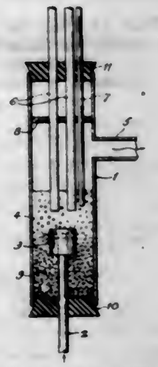
1. A process for the production of magnesium hydroxide comprising continuously feeding an aqueous calcium hydroxide suspension into a first vessel and an aqueous magnesium chloride solution into a second vessel, establishing between the two vessels a closed cycle by continuously flowing gaseous ammonia from said first to said second vessel and continuously flowing an aqueous ammonium chloride solution from said second to said first vessel, continuously discharging an aqueous calcium chloride solution from said first vessel and withdrawing precipitated magnesium hydroxide from said second vessel.

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**3,170,763**
**PROCESS FOR THE ELECTROTHERMIC PRODUCTION OF CARBON DISULPHIDE**
**James Reid, Shawinigan, Quebec, and Herbert S. Johnson, Shawinigan South, Quebec, Canada, assignors to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada**
**Filed May 28, 1962, Ser. No. 198,339**
**9 Claims. (Cl. 23—206)**

1. A process for the electrothermic production of carbon disulphide from hydrogen sulphide and at least one normally gaseous hydrocarbon as the sole reactants in the absence of catalysts for carbon disulphide formation, which process comprises passing a gaseous mixture of hydrogen sulphide and at least one normally gaseous

saturated hydrocarbon upwardly through a bed of finely-divided electrically conductive carbon particles, maintaining the bed in a fluidized state by the passage of said gaseous mixture therethrough, passing an electric current



through the resulting fluidized bed with sufficient power to maintain the fluidized bed in the temperature range 900–1500° C., and recovering carbon disulphide from the gas coming from the bed.

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**3,170,764**

**PROCESS FOR PRODUCING NON-MAGNETIC FINELY GROUND MATERIALS SUCH AS CHARCOAL AND CALCIUM CARBONATE**

Joseph W. Ayers and Justus K. Orlemann, Easton, Pa., assignors to Agrashell, Inc., Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed May 6, 1959, Ser. No. 811,252
14 Claims. (Cl. 23—269.1)

1. A process for excluding ferromagnetic properties from finely ground solids formed by the grinding, by metal grinding surfaces, of non-metallic solid material that normally is non-ferromagnetic but which upon said grinding will exhibit ferromagnetic properties resulting from the presence in the material of ferromagnetic particles derived by abrasion of minute metalliferous particles from said grinding surfaces, which comprises oxidizing to non-ferromagnetic form the minute metalliferous particles incorporated into said solids by abrasion from said grinding surfaces in the course of said grinding, thereby converting said solids to a finely ground form substantially free of ferromagnetic properties.

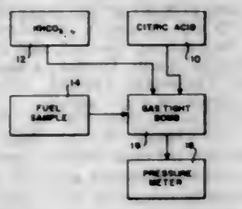
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**3,170,765**

**SUSPENDED WATER DETERMINATION**

William H. Huebl, Paul Schatzberg, and Nathan Glassman, Annapolis, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 28, 1963, Ser. No. 284,298
7 Claims. (Cl. 23—230)
(Granted under Title 35, U.S. Code (1952), sec. 266)




1. The method of determining the presence of suspended water in an organic liquid comprising the steps of: bringing said liquid into intimate contact with a mixture of water soluble powders which are substantially inert with respect to said organic liquid and react together when in solution to release a gas;
measuring the pressure of the gas at a predetermined time after the reaction is started to thereby determine the presence of suspended water.

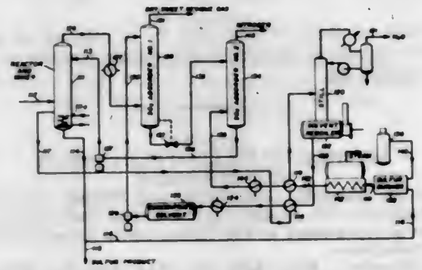
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**3,170,766**

**SULFUR RECOVERY APPARATUS**

Francis Mark Townsend, Norman, Okla., assignor to Lawrence S. Reid, Norman, Okla.

Filed Mar. 30, 1959, Ser. No. 802,980
8 Claims. (Cl. 23—263)



1. Apparatus for the removal of hydrogen sulfide from gas containing the same, which comprises the combination of a reaction chamber for contacting said gas with sulfur dioxide in the presence of an organic solvent to induce reaction between hydrogen sulfide and sulfur dioxide whereby sulfur and water are formed, a lower inlet connection for said gas into said reaction chamber, an upper inlet connection for a solution of said sulfur dioxide in a first portion of said organic solvent into said reaction chamber, mixing means within said reaction chamber to effect contact between said sour gas, said sulfur dioxide and said first portion of said organic solvent, a first absorber chamber for contacting treated gas from the reactor chamber with a second portion of said organic solvent to absorb and remove sulfur dioxide from said treated gas and communicating with said reaction chamber to cycle gas between said reaction chamber and said first absorber chamber, an outlet connection for treated gas at the top of said first absorber chamber, an inlet connection near the top of said first absorber chamber for introduction of said second portion of said organic solvent, an outlet connection for said organic solvent containing water and sulfur from the bottom of said reaction chamber, means for heating said organic solvent containing water and sulfur to a temperature above the melting point of sulfur to liquify and coagulate said sulfur, means for separating said liquified sulfur from said organic solvent containing water, still means for drying said organic solvent by heating it to a temperature whereat the water contained therein is evaporated, a second absorber chamber, means for cycling said dried organic solvent to said second absorber chamber, an inlet connection near the top of said second absorber chamber wherein the organic solvent is introduced and descends countercurrent to a stream of sulfur dioxide gas and is removed from the bottom of said second absorber chamber through an outlet connection, an inlet connection for sulfur dioxide near the bottom of said second absorber chamber, pumping means for transferring said organic solvent containing sulfur dioxide from the outlet of said second absorber chamber to the upper inlet connection into said reaction chamber.

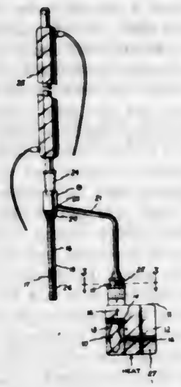


**3,170,767**

**APPARATUS FOR QUANTITATIVE DETERMINATION OF FATTY MATERIAL AND WATER IN BIOLOGICAL TISSUE**

Hugo E. Wistreich, Chicago, Ill., assignor to Reliable Packing Company, Chicago, Ill.

Filed Jan. 7, 1960, Ser. No. 994
2 Claims. (Cl. 23—263)



1. An apparatus for simultaneous and quantitative extraction of fatty material and water from biological tissue comprising a flask having an upper opening; a wall in said flask providing therein two chambers separated by said wall and communicating above said wall, one of said chambers aligned with said opening and adapted to contain the biological tissue; a tube providing a two-way path disposed in the opening in said flask; a condenser in non-alignment with said flasks and communicatively connected to said tube, said condenser adapted to condense water and solvent delivered thereby; and a separator communicatively connected to said tube and adapted to stratify condensed water and solvent and return the solvent through said tube to said first chamber, said separator disposed below the connection thereof with said tube.

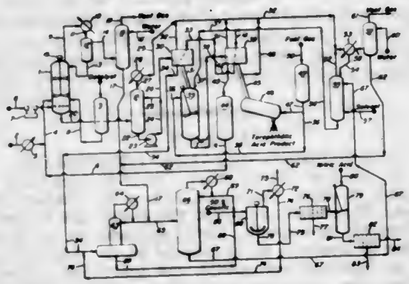
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**3,170,768**

**SYSTEM FOR CONTINUOUS PREPARATION OF TEREPHTHALIC ACID**

Richard H. Baldwin, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Original application Apr. 22, 1959, Ser. No. 808,150. Divided and this application Nov. 24, 1961, Ser. No. 156,190
3 Claims. (Cl. 23—263)



1. Apparatus for making purified terephthalic acid through oxidizing a feedstock consisting essentially of paraxylene with molecular oxygen in the presence of dehydrated saturated monocarboxylic acid having from two to eight carbon atoms, inclusive, in the molecule, heavy metal oxidation catalyst, and a bromine-affording substance all of which comprise mixture for reaction; which comprises: an oxidation vessel fabricated from corrosion resistant metal having means for receiving mixture for reaction, removing liquid reaction mixture containing terephthalic acid solids, and means for removing vapors and gases therefrom; a condenser; transfer means for conducting said vapors and gases to said condenser; transfer means for returning condensate to said oxidation vessel; solid-liquid phase separation means for separating crude terephthalic acid crystals from the liquid portion of the reaction mixture; distillation means for separating said liquid portion into a water overhead fraction, a dehydrated saturated monocarboxylic acid fraction, and a distillation bottoms fraction containing catalyst and acidic reaction byproducts and intermediates; means for washing the crude terephthalic acid crystals with dehydrated saturated monocarboxylic acid, connections for supplying said dehydrated acid to said means for washing the crude terephthalic acid crystals, and connections for cycling the dehydrated acid after washing to the oxidation vessel; and means for drying the washed terephthalic acid crystals to recover a purified and dried terephthalic acid product.

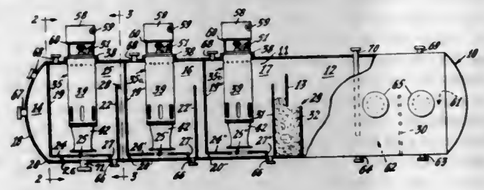
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**3,170,769**

**LIQUID PHASE CONVERSION APPARATUS**

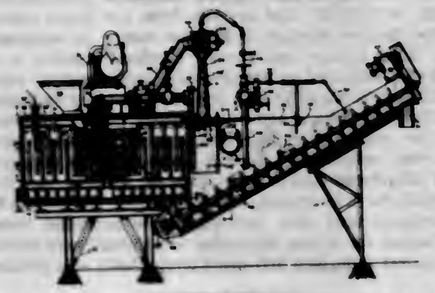
Samuel R. Stiles, Cresskill, N.J., James Warburton, Alamo, Calif., and John M. Black, Plandome, N.Y., assignors, by mesne assignments, to Pullman Incorporated, a corporation of Delaware

Filed Feb. 19, 1960, Ser. No. 9,838
6 Claims. (Cl. 23—285)



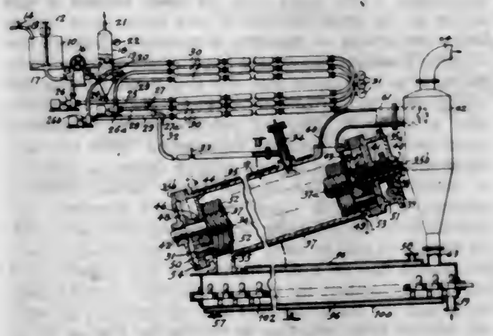
1. An apparatus for effecting liquid phase reactions which comprises wall means defining a mixing section adapted to contain a body of liquid therein; inlet means and outlet means in said section; liquid level establishing means vertically disposed as a weir plate in said section; a vertically disposed mixing device enclosed by a mixer housing within said section and having an inlet to said mixer formed by the lower portion of said housing for introducing a first liquid from the lower portion of said section to the lower portion of said mixer, said mixing device comprising an impeller, horizontally disposed distributing members above said impeller adapted for introducing a second liquid into the first liquid flowing upwardly past the horizontally disposed distributing members, a vertically disposed second liquid introducing means adapted to introduce said second liquid into said distributing members in said mixing device, a plurality of vertically elongated take-off tubes having entrance openings above said liquid distributing members, the opposite ends thereof being in open communication with the interior of said housing, said mixer adapted to induce the upward flow of a first liquid past said impeller and distributing members for contact with said second liquid, and to pass the resulting liquid mixture upwardly through said take-off tubes and then to reverse the flow of liquid outside of said tubes within said housing; and liquid ejecting means in the lower portion of said housing below the upper end of the weir plate in open communication with said mixer inlet in said section for ejecting liquid from said mixer into the lower portion of said section below the level of liquid therein for direct recirculation of said liquid into said mixing device.

3,170,770
APPARATUS FOR CONTACTING SOLIDS AND LIQUID
Samuel I. Bozeman, Santa Cruz, and Arthur M. Kivari, San Mateo, Calif., and Robert B. Thompson, Salt Lake City, Utah, assignors to The Elmco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed June 9, 1960, Ser. No. 35,047
7 Claims. (Cl. 23—287)



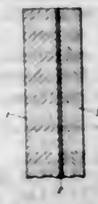
4. Liquid solids contact apparatus comprising a tank, a liquid inlet and means for maintaining a predetermined liquid level in said tank, a perforated baffle extending downwardly into the tank to terminate below said predetermined level and above the bottom of said tank thereby to define three communicating chambers including first and second laterally adjoining bottomless chambers overlying a third chamber on the tank bottom, a plurality of vertically spaced horizontal shelf segments in said first chamber arranged in staggered overlapping relationship, feed means adapted to introduce solids onto the surface of an upper one of said shelf segments, raking means mounted for movement across the surfaces of said shelf segments to rake solids therefrom, agitating means operable in said second chamber, said means for maintaining a predetermined liquid level in said tank including an outlet adjacent said tank bottom in said third chamber, and rake means mounted for movement across said tank bottom in said third chamber to move settled solids toward said outlet.

3,170,771
APPARATUS FOR CONTINUOUS DIGESTION OF TITANIUM BEARING MATERIALS
Nicolas Solodocha, Montreal, Quebec, Canada, assignor to Continental Titanium Corp. (N.P.L.), Montreal, Quebec, Canada
Filed Jan. 30, 1961, Ser. No. 85,534
6 Claims. (Cl. 23—290.5)



1. An apparatus for the continuous digestion of titanium bearing material or slag with low iron content, a continuous material heating and mixing unit having a plurality of pressurized and heated continuous conduit systems successively interconnected one to the other, and means to supply said titanium material and an acid mixture to a first of said continuous conduit systems, whereby said material is mixed with said acid and heated under pressure to reaction temperatures creating a liquid slurry; a continuous cylindrical digester having an elongated cylindrical shell, means to heat said shell, a plurality of kneading and conveying rollers mounted within said shell for concentric and planetary movement relative to the central axis of said shell with a first plurality of said rollers rotating about a central roller disposed along the central axis of said shell, means to rotate said rollers, a material inlet opening adjacent one end of said shell and a material outlet opening adjacent the other end of said shell, a conduit connection between said continuous heating and mixing unit and said shell material inlet opening terminating in a material injection nozzle adapted to discharge said material in fluid slurry form over said kneading rollers, the continued reaction of said material within said shell transforming said fluid slurry to a dough-like sticky mass and from said dough-like mass to a hard cake, said kneading rollers having cooperating external spiral threads adapted to knead and convey said mass in said dough-like form along the length of said shell and to continuously break said mass in said hard cake form to a powder form during the latter stage of said conveying action so as to discharge said powdered mass to said shell material outlet opening; and means to continuously cure said powdered material connected to said cylinder shell outlet opening.

3,170,772
OXIDE COATED CATHODES FOR ELECTRON TUBES
Reiji Sato and Taro Obtsuki, Tokyo, and Akira Suzuki, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Jan. 5, 1961, Ser. No. 80,784
1 Claim. (Cl. 29—183.5)



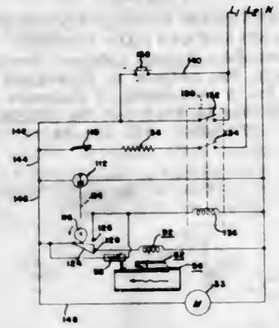
An oxide coated cathode having a minimized interface resistance for an electron tube, said cathode comprising a core metal of about 0.04% magnesium, 4% tungsten and the remainder nickel, a layer of pure nickel having a thickness between 1 to 5 microns plated on said core metal, and a layer of emitter materials applied over said layer of pure nickel whereby when said cathode is heated said layer of pure nickel is incorporated with said core metal so that no interface layer exists between said emitter material and said core metal.

3,170,773
REINFORCED METALLIC COMPOSITES
John W. Weeton, Rocky River, David L. McDanels and Robert W. Jech, Cleveland, Robert E. Oldrieve, Sandusky, Donald W. Petrasek, Cleveland, and Robert A. Signorelli, Strongsville, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
No Drawing. Original application Oct. 21, 1960, Ser. No. 64,226, now Patent No. 3,138,837, dated June 30, 1964. Divided and this application Jan. 23, 1964, Ser. No. 339,821
1 Claim. (Cl. 29—198)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A reinforced metallic composite comprising a plurality of cleaned tungsten fibers in contiguous relationship and oriented with their longitudinal axes substantially parallel to the longitudinal axis of the composite, each of said fibers having a diameter less than 0.010 inch and a length equal to the full length of the composite, and a copper matrix for maintaining the orientation of the fibers, the fiber content of the composite being 11 to 87 percent by volume.

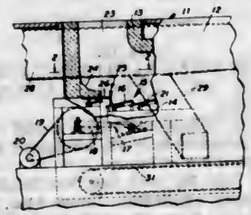


3,170,774
HUMIDITY SENSING CONTROL FOR A CLOTHES DRIER
Homer W. Deaton, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 5, 1960, Ser. No. 60,711
9 Claims. (Cl. 34—45)



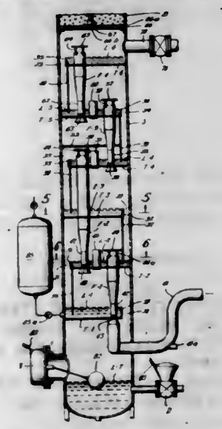
1. A drying cycle control for a clothes dryer comprising, means actuatable for terminating said drying cycle, an exhaust duct for receiving air from said dryer and having an opening, a humidity sensing element connected to the outside of said exhaust duct adjacent said opening and actuatably connected to said terminating means for terminating said drying cycle, a termination control duct having an inlet and an outlet and pivotally mounted to the outside of said exhaust duct adjacent said opening for pivotal movement in and out of said opening, said termination control duct having a first position for closing said opening wherein said inlet and said outlet are outside of said exhaust duct and a second position wherein said inlet is positioned inside said exhaust duct to divert said air and said outlet is positioned adjacent said humidity sensing element to direct said air into contact with said sensing element, and means for periodically pivoting said termination control duct into said second position.

3,170,775
CLINKER COOLER AND STATIONARY GRATE PLATES THEREFOR
Harry D. Howell, Jr., Redlands, Calif., assignor to Hanford Foundry Co., San Bernardino, Calif., a corporation of California
Filed Apr. 15, 1963, Ser. No. 272,963
6 Claims. (Cl. 34—164)



1. An integral retention grate member for a grate type cooler for cement clinker comprising a rectangular base plate having an edge adapted to be positioned downstream of the other edges, retainer plates extending upwardly from the downstream edge and from an intermediate position on said base plate to form a deep pocket for retention of clinker, said base plate being perforated between said retainer plates, and anchoring means extending from said base plate.

3,170,776
DEHYDRATION APPARATUS
Eugene F. Knight, 1703 Reverse St., Houston 24, Tex., and Clifford J. Ott, 10315 Tolman St., Houston 34, Tex.
Filed Aug. 7, 1961, Ser. No. 129,644
6 Claims. (Cl. 55—221)

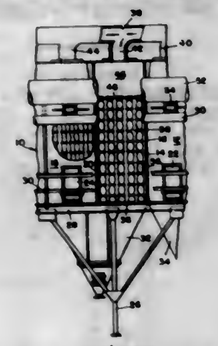


1. A dehydration apparatus for removing water from gases, comprising a shell having a plurality of vertically spaced trays therein including a first tray and a second tray thereabove, means with each of said trays for holding a layer of liquid desiccant, means for flowing the liquid desiccant downwardly from each of said trays to the tray therebelow, and means for directing a gas having water vapor therewith upwardly through said shell for picking up liquid desiccant with the gas to remove water vapor from the gas and to mix the liquid desiccant on the first tray with the second tray thereabove, said last-mentioned means including a venturi tube extending from below and through said first tray to and through said second tray thereabove and having an opening therein establishing fluid communication from the liquid on the first tray to the interior of the tube and said tube having an outlet for the gas and liquid desiccant above the layer of liquid on the second tray.

3,170,777
MOUNTING FOR FILTER TUBES
Hans J. Held, Lake Success, N.Y., assignor to The Ducon Company, Inc., Mineola, N.Y., a corporation of New York
Filed Aug. 14, 1961, Ser. No. 131,376
7 Claims. (Cl. 55—490)

1. A mounting for filter tubes comprising upper and lower plates, said plates being substantially parallel to each other and having aligned holes therethrough, an outer tubular collar extending through a hole in said upper plate, one end portion of a filter tube of flexible material extending through said collar, an inner collar disposed within said one end of said tube, a flange on said inner collar, said flange being juxtaposed to the upper surface of a portion of said upper plate with a portion of said tube disposed therebetween, a second inner collar extending through a hole in said lower plate, said second inner collar having a radially outwardly directed flange at its lower end juxtaposed to the lowermost surface of

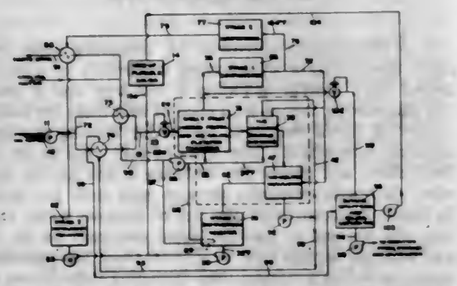
said lower plate adjacent the hole in said lower plate, the other end portion of said tube surrounding said second inner collar, a second outer collar surrounding said other end portion of said tube, means releasably securing said



second outer collar with respect to said lower plate, each set of collars cooperating with a portion of the tube therebetween to prevent slippage of said tube with respect to said collars.

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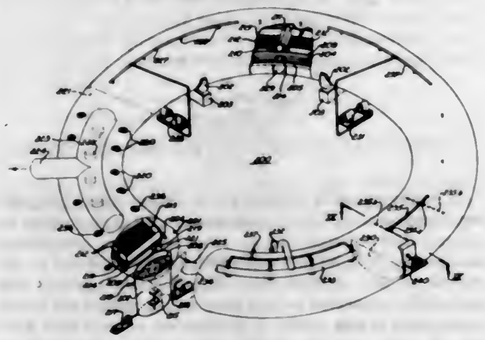
3,170,778
DESALTING SEA WATER
Ernest R. Roth, Media, Pa., assignor to Roy F. Weston, Inc., Newtown Square, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1961, Ser. No. 97,827
4 Claims. (Cl. 62—58)



3. The method of desalting a feed stream of sea water which comprises,
withdrawing heat from said feed stream to lower its temperature,
supplying to said feed stream a seed-slurry of finely divided discrete particles of material permanently solid at room temperature and presenting surfaces to which ice will adhere,
adding under pressure to said feed stream a liquefied refrigerant of composition inert to said feed stream and to said particles,
reducing said pressure for expansion of said refrigerant to induce bubble formation and to super-cool the mixture by bringing the temperature of said mixture below the freezing temperature of said feed stream,
thereafter delivering said mixture comprising said feed stream, said refrigerant and said seed-slurry to a freezing zone,
further reducing the pressure on said mixture including said feed stream for further expansion of said refrigerant for rapid cooling in said freezing zone of said feed stream and of said particles and for increasing the production within said freezing zone of a multiplicity of bubbles which hasten the freezing of said ice on said particles,
removing from said freezing zone to a washing zone said particles together with ice adherent thereto,
washing adherent liquid from said ice,
withdrawing said ice from said washing zone,
supplying to a melting zone refrigerant vapors at elevated temperature to said washed ice particles to melt said ice,
withdrawing from said melting zone said refrigerant for further cooling,
returning said solid particles in the form of said seed-slurry to said feed stream,
withdrawing from said freezing zone a stream whose salt concentration is materially higher than that of said feed stream, and
utilizing said withdrawn stream for withdrawing said heat from said feed stream.

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3,170,779
ENDLESS CONVEYOR FREEZE CONCENTRATION AND SEPARATION SYSTEM
George B. Karnofsky, Mount Lebanon Township, Allegheny County, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,503
17 Claims. (Cl. 62—58)



17. Method of making and washing ice comprising, in combination, supplying ice to be washed into a freshly emptied container by discharging saline water and a vaporizable liquid refrigerant in admixture under conditions suitable to partially freeze a portion of said water by vaporizing said refrigerant, the proportions of said water and liquid refrigerant being selected to provide a self-leveling and self-distributing feed slurry to form a bed of unwashed ice in said freshly emptied container, respectively relatively moving a succession of individual containers in an endless path to receive and wash said ice within one circuit of said containers respectively along said path, discharging wash liquid upon the ice in each container during said one circuit, draining liquid from ice being washed in said container downwardly into a plurality of wash liquid receiving compartments, and emptying said containers successively at the end of said one circuit into a discharge zone for the removal of washed ice therefrom respectively.

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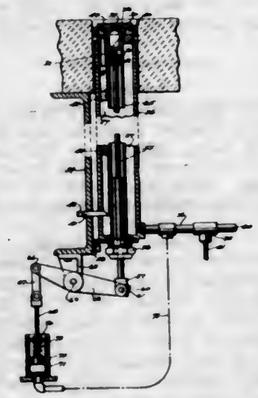
3,170,780
METHOD OF MANUFACTURING PORCELAIN ARTICLES BY CRYSTALLIZING GLASS MATERIALS
Toshio Takehara, Mizuho-ku, Nagoya, and Akihiro Tsuji, Gifu, Japan, assignors to NGK Insulators, Ltd., Nagoya, Japan, a corporation of Japan
Filed Feb. 26, 1963, Ser. No. 261,064
Claims priority, application Japan, Mar. 2, 1962, 37/8,037; Mar. 19, 1962, 37/10,799
2 Claims. (Cl. 65—19)

1. A method of manufacturing porcelain articles by crystallizing glass materials which comprises the steps of preparing a mixture of compositions containing 40 to 70% of $SiO_2$, 5 to 12% of $Al_2O_3$, 20 to 38% of oxide selected from the group consisting of CaO and MgO, 3 to 8% of $Na_2O$ and 0 to 2% of F as the basic composition and added with 1 to 5% of ZnS in the form selected from the group consisting of ZnS and a mixture of ZnO and S as nucleating agent and 0 to 3% of reducing agent and some coloring agents, in which the total amount of the basic composition comprises at least 90% of the total glass material, fusing said mixture in reducing atmosphere, shaping to a desired article and subjecting said article to heat treatment by raising the temperature to a point lower than the softening point of the glass and maintaining that temperature for less than 6 hours and then raising the temperature at the rate of less than 200° C./hr. up to 900 to 1000° C. and maintaining the temperature for less than 4 hours to completely crystallize the glass, thereby producing ceramic.



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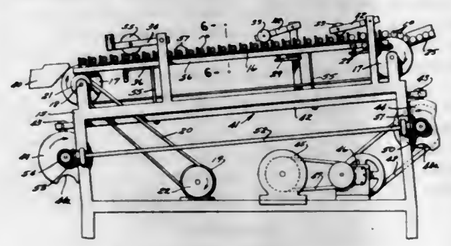
3,170,781
APPARATUS FOR FEEDING GASEOUS MATERIALS TO GLASS MELTING FURNACES
George E. Keefer, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Nov. 18, 1959, Ser. No. 853,854
4 Claims. (Cl. 65—159)



1. A device for injecting gaseous materials into a body of molten glass in a glass furnace chamber having side and bottom walls said device comprised of a pair of tubular members in concentric arrangement mounted in an aperture in a wall of said furnace at a place below the surface of said glass body therein and with the outer tube of larger internal diameter than the external diameter of the inner tube, thereby providing an annular chamber between said tubes and extending along the major portion of the length thereof, said chamber being sealed at its opposite ends, a nozzle head at one end of said annular space and arranged to form one of said end seals, said head having a restricted outlet opening extending therethrough that communicates with the furnace chamber and connecting with the inner tube, said head formed with an annular cooling chamber extending circumferentially thereof, means to supply said gaseous materials under operating pressure to said chamber, apertured means in said head connecting said chamber to the inner tube to pass said gases into said inner tube and through said outlet opening into the furnace chamber, means for circulating a cooling fluid through said nozzle cooling chamber, reciprocating valve means within said inner tube adapted to close said outlet opening, and valve operating means connected to said valve means and to said gaseous supply means normally positioning the valve means to open said outlet and operable automatically to close said outlet opening in response to a predetermined reduction in pressure of said supply means below said operating gas pressure.

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3,170,782
GLASS CONVEYING APPARATUS
Robert H. Koenig, Vineland, N.J., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Dec. 10, 1963, Ser. No. 329,436
9 Claims. (Cl. 65—227)



1. Apparatus for conveying tubular blanks in succession and in recumbent position intermittently through one or more forming stations, said apparatus comprising a conveyor having a downwardly-inclined upper reach, at least one endless flat band having an upper reach extending substantially throughout the length of said conveyor, a power source for driving said band, a vertically-movable rigid frame member mounted adjacent and parallel to said flat band, a series of upwardly-extending lug members mounted on said frame member on opposite sides of said flat band, and means for moving said frame member in vertically reciprocatable relation to raise and lower said lug members with respect to said upper reach to permit intermittent retention and downward travel of said blanks.

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3,170,783
METHOD OF PRE-EMERGENTLY CONTROLLING PLANTS
Ray D. Amburn, Mount Pleasant, Mich., assignor, by mesne assignments, to Vesely Company, Lapeer, Mich., a corporation of Michigan
No Drawing. Filed Oct. 25, 1961, Ser. No. 147,478
4 Claims. (Cl. 71—2.3)

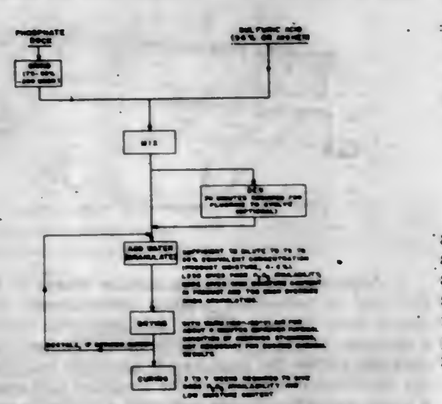
1. The method of pre-emergently controlling plant life which comprises applying to the area bearing said plant life a herbicidally effective amount of a solid granular material having deposited thereon from 0.25 to 25 percent by weight of a pre-emergence herbicide, said granular material comprising the hard inner ring constituent of corncobs substantially free from other constituents thereof, of a particle size between 8 and 100 mesh, a moisture content between 3 percent and 10 percent by weight, and a density between 22 and 30 pounds per cubic foot.

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3,170,784
PRODUCTION OF ORDINARY SUPERPHOSPHATE WITH STRONG SULFURIC ACID
Larrabee D. Hand, Jr., Florence, Ala., assignor to Tennessee Valley Authority, a corporation of the United States
Filed Nov. 6, 1961, Ser. No. 150,600
2 Claims. (Cl. 71—40)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for the production of granular ordinary superphosphate fertilizer material which comprises acidulating in a first vessel fine phosphate rock of more than about 90 percent minus-200 mesh with sulfuric acid of a concentration greater than about 96 percent $H_2SO_4$, the quantity of said acid added being sufficient to yield a mole

ratio in the final product of ($P_2O_5$+$SO_3$) to lime of about 1:1; holding in a second vessel the resulting powdery acidulate for a period of about 30 minutes to evolve at least about 50 percent of the fluorine originally present in said phosphate rock, said acidulate resulting from the acidulation of said fine phosphate rock by said sulfuric acid and said acidulate characterized as a substantially dry and non-stickable discrete particulate mass; subsequently adding water to the resulting powdery acidulate in quantity sufficient to dilute said acid to about 80 percent $H_2SO_4$, the total quantity of water introduced into said resulting pow-



dery acidulate (including that added indirectly through the addition of water present in said sulfuric acid and that added directly to said resulting acidulate) being sufficient to yield a final product having a moisture content in the range from about 4 to 8 weight percent; granulating the resulting powdery acidulate; and transferring the resulting granules directly to storage for a period of about 3 to 7 weeks until final equilibrium conditions are attained, said process being characterized by the fact that said granules have a $P_2O_5$ availability greater than about 96 percent by weight.

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3,170,785

**REMOVAL OF ADSORBED HYDROGEN FROM PYROPHORICALLY PARTICULATE MATERIALS**

Lawrence R. Phillips, Oak Ridge, Tenn., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,810
2 Claims. (Cl. 75—.5)

1. A process for reducing the pyrophoricity of tungsten particles having a surface area of greater than about 3 square meters per gram and which have hydrogen adsorbed on the surface thereof, said process comprising subjecting said particles to a vacuum of less than about 10 microns of mercury at a temperature below the sintering temperature of said particles and subsequently removing said particles from said vacuum and recovering said particles as non pyrophoric material having a surface area of greater than 3 square meters per gram.

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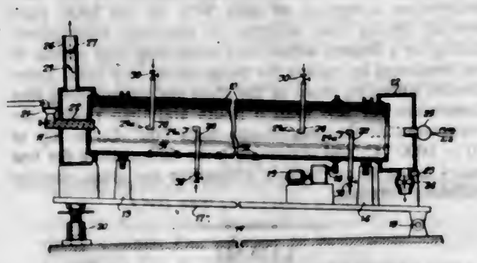
3,170,786

**ROTARY KILN PROCESSING OF CHEMICALLY REACTIVE MATERIALS**

Olav Moklebust, Stamford, Conn., assignor to R-N Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 2, 1962, Ser. No. 170,698
7 Claims. (Cl. 75—34)

1. The method of processing loose aggregates of reactive materials, at high feed rates, in an axially inclined rotary kiln having an upper charging inlet and a lower discharging outlet, which comprises: establishing said kiln inclination at a slope of not more than about 2 degrees to the horizontal, progressively feeding into the charging end said loose aggregate material while rotating said kiln at a rate of at least one-half revolution per minute, said charging rate being such as to establish and maintain a moving bed of said material occupying about 15–25% of the kiln volume, and while injecting into the kiln discharge end



a mixture of hot combustible gases and a controlled amount of free oxygen-containing gas such as to establish and maintain thereat a temperature effecting reaction of said material, and so adjusting the rotary kiln speed in relation to the kiln slope as to completely react each portion of said material as it passes through said reaction zone.

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3,170,787

**PROCESS FOR THE PRODUCTION OF ALUMINUM**

Ryoma Tanaka, Juntaro Yurimoto, and Hirosuke Ryu, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan

No Drawing. Filed Oct. 8, 1962, Ser. No. 229,165
Claims priority, application Japan, Oct. 10, 1961, 36/36,745
3 Claims. (Cl. 75—68)

1. A process for the production of aluminum, which comprises heating at least one alkylaluminum compound having the general formula of $(R^1R^2CH—CH_2)_3AlX$, wherein $R^1$ and $R^2$ are each selected from the group consisting of hydrogen atom and alkyl radicals and X is selected from the group consisting of hydrogen atom and $R^1R^2CH—CH_2$— radicals at a temperature between 200° C. and 300° C., while in the form of a liquid in a heating zone, to thermally decompose the said alkylaluminum compound to give aluminum, hydrogen and olefin, while keeping the decomposition rate of the said alkylalumium compound at a rate of more than 3% in mole per minute based upon the total number of moles of the said alkylaluminum compound present in the said heating zone, by measuring the volume of the generated gas during the decomposition reaction.

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3,170,788

**URANIUM BASE ALLOY**

Martin H. Binstock, Canoga Park, and Harold E. Kline, Chatsworth, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed July 16, 1962, Ser. No. 210,191
6 Claims. (Cl. 75—122.7)

1. A uranium base alloy consisting essentially of approximately 1.5–6 wt. percent molybdenum, one addition selected from the class consisting of:

(*a*) approximately 0.1–1 wt. percent aluminum, and

(*b*) approximately 0.2–1 wt. percent aluminum and silicon,

wherein the concentration of each of aluminum and silicon is at least approximately 0.1 wt. percent,

and the remainder uranium.



3,170,789

**NICKEL-BASE ALLOY**

Robert M. Woodward and Arthur C. Heitmann, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

No Drawing. Filed Nov. 16, 1961, Ser. No. 152,909
4 Claims. (Cl. 75—171)

1. An alloy consisting essentially of the following in percentages by weight: 26 to 27 percent of chromium, 5 to 6 percent of tungsten, 3 to 4 percent of iron, 1.0 to 1.3 percent of silicon, 0.23 to 0.27 percent of carbon, and the balance essentially nickel, said alloy being characterized by resistance to attack by molten glass, low creep, and high load carrying ability at elevated temperatures.

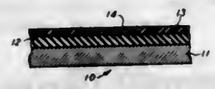
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3,170,790

**RED SENSITIVE XEROGRAPHIC PLATE AND PROCESS THEREFOR**

Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, a corporation of New York

Filed Jan. 8, 1959, Ser. No. 785,587
5 Claims. (Cl. 96—1)



2. A xerographic plate comprising a layer of vitreous selenium on an electrically conductive backing member, said selenium layer having a plurality of small, discrete, highly crystallized areas on only its surface opposite said conductive backing member.

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3,170,791

**PROCESS FOR MAKING A STENCIL SCREEN COATING AND COMPOSITION THEREFOR**

Clarence T. Cunningham, Alton, Ill., assignor to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed Feb. 10, 1961, Ser. No. 88,296
12 Claims. (Cl. 96—35)

11. In the method of forming a preselected pattern of voids on a stencil screen comprising the steps of filling the voids of said stencil screen with a coating of an aqueous mixture of gelatin and a light sensitizing agent, drying said coating on said screen, placing an image containing member having transparent and nontransparent portions before said screen, exposing said screen to light passing through said transparent portion of said image containing member, that portion of the gelatin coating in said voids of said screen contacted by said light bein rendered water insoluble, the remainder of said gelatin coating on said screen remaining water soluble, and washing said screen to remove said water soluble portion of said gelatin coating, said voids containing said water insoluble coating thus defining a pattern of the configuration of the transparent portion of said image containing member, the improvement wherein said aqueous mixture of gelatin and light sensitizing agent contains a dialkyl phthalate wherein the alkyl group has from 2 to 10 carbon atoms, the amount of gelatin in said solution being from 30 to 80 parts by weight based on the combined weight of gelatin and phthalate.

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3,170,792

**PROCESS FOR MAKING A STENCIL SCREEN COATING AND COMPOSITION THEREFOR**

Clarence T. Cunningham, Alton, Ill., assignor to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed Feb. 10, 1961, Ser. No. 88,297
11 Claims. (Cl. 96—35)

11. In the method of forming a preselected pattern of voids on a stencil screen comprising the steps of filling the voids of said stencil screen with a coating of an aqueous mixture of gelatin and a light sensitizing agent, drying said coating on said screen, placing an image containing member having transparent and non-transparent portions before said screen, exposing said screen to a light passing through said transparent portion of said image containing member, that portion of the gelatin coating in said voids of said screen contacted by said light being rendered water insoluble, the remainder of said gelatin coating on said screen remaining water soluble, and washing said screen to remove said water soluble portion of said gelatin coating, said voids containing said water insoluble coating thus defining a pattern of the configuration of the transparent portion of said image containing member, the improvement whereby said aqueous mixture of gelatin and a light sensitizing agent contains a member selected from the group consisting of alkyl esters of malonic, succinic, glutaric, adipic, pimelic, suberic, azelaic, sebacic, oleic, linoleic, linolenic, and eleostearic acids, said alkyl containing from 2 to 10 carbon atoms, and the amount of gelatin being from 33 to 80 parts by weight based on the combined weight of gelatin and alkyl ester.

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3,170,793

**PHOTOGRAPHIC FIXING BATH**

Marilyn Levy, Red Bank, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Oct. 27, 1960, Ser. No. 65,549
2 Claims. (Cl. 96—61)
(Granted under Title 35, U.S. Code (1952), sec. 266)

2. A fixing bath comprising an aqueous solution of sodium thiosulphate in the proportion of 50 to 300 grams per liter of water, a quantity of preservative, a quantity of gelatine hardening agent, an acidifying agent in quantity to change the pH value of the bath less than 5%, the quantity of preservative and hardening agent having a total weight less than ⅓ to ¼ of the weight of sodium thiosulphate and a quantity of coloidal silica in an amount from 20 to 250 grams per liter.

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3,170,794

**PROCESS FOR PREPARING DEODORIZED FISH PROTEIN**

George A. Jeffreys, Salem, Va., and Abraham J. Krell, Houston, Tex., assignors to Reliance Chemicals Corporation, Houston, Tex., a corporation of Texas

Filed May 8, 1962, Ser. No. 193,883
9 Claims. (Cl. 99—18)

1. The process of preparing deodorized fish protein which comprises, digesting pre-cooked fish meat having a concentration of 16% to 25% fish in water with protein-modifying fungal enzymes in the presence of yeast and sugar at a temperature in the range from about 30° C. to about 65° C. for ½ to 8 hours to liquefy the fish meat and reduce the fish odor and taste to a desired low level, continually agitating the ingredients during the digestions said enzymes being those produced by culturing molds of the *oryzae-flavus* group of the genus Aspergillus on a solid nutrient, and drying the resulting fish product.

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3,170,795

**CULINARY MIX FOR PRODUCING CHEMICALLY LEAVENED BAKED GOODS**

Arlee A. Andre, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 9, 1962, Ser. No. 178,538
4 Claims. (Cl. 99—94)

1. A pulverulent culinary mix for the quick preparation of baked bread-type products without conventional proofing and gluten development steps, said products having

substantially the characteristics of baked goods leavened by means of yeast, said mix comprising

(A) high protein air-classified wheat flour having a protein content of between about 18% and 25% by weight of the flour;

(B) shortening;

(C) about 2.5–7.5% by weight of the mix of glucono-delta-lactone;

(D) from 0% to about 2.5% by weight of the mix of at least one fast-acting acidic leavening agent; and

(E) an amount of a basic $CO_2$-producing chemical leaving substance sufficient to maintain a ratio of 1.5:1 to 0.5:1 with respect to the total of said lactone and fast-acting acidic leavening substance on an equivalent weight basis.

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3,170,796
PACKAGED CULINARY MIX FOR PREPARING RICH BAKED GOODS
Arlee A. Andre, Springfield Township, Hamilton County, and Herbert B. Swerlngen, Green Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed July 17, 1962, Ser. No. 210,583
2 Claims. (Cl. 99—94)

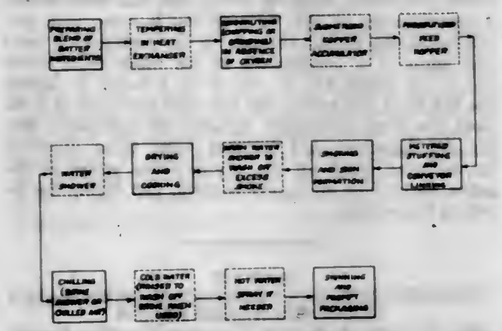
1. A packaged culinary mix for preparing rich baked goods containing above about 16% by weight shortening consisting essentially of:

(*a*) a discrete unit of free-flowing dry ingredients which do not stick together and form lumps comprising sugar, flour and shortening, said shortening not exceeding about 16% by weight of the dry ingredients; and

(*b*) a discrete unit of fluid shortening containing at least 0.01% by weight of said fluid shortening of a surface active emulsifier, and said discrete unit of fluid shortening comprising at least 1.0% by weight of the total culinary mix such that the total amount of shortening in the mix does not exceed about 26% by weight of the total culinary mix.

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3,170,797
CONTINUOUS MANUFACTURE OF SMALL SMOKED SAUSAGES
Edward C. Sloan, Madison, Wis., and William B. Abera, deceased, late of Madison, Wis., by The First National Bank of Madison, Wis., executor, assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1962, Ser. No. 185,476
5 Claims. (Cl. 99—109)



1. The substantially continuous process of making packaged wiener-sized smoke and heat processed sausages characterized by their substantially complete uniformity in size, straightness, shape, weight, composition, flavor, texture, color and good keeping qualities which comprises the steps of: preparing a uniform blend of sausage batter ingredients having an accurate predetermined composition with respect to its content of moisture, protein, fat, ash, salt and spices and including a fraction of a percent of an oxygen scavenger; comminuting said blend in the absence of appreciable amounts of oxygen to form sausage batter; maintaining said batter substantially out of contact with air and stuffing it as a metered stream into artificial casings of uniform diameter fed at predetermined uniform speed; linking the stuffed casings into links of uniform length and individually supporting the links as formed and during the subsequent smoking and heating processing steps on conveyorized link-forming and supporting means; conveying the linked product at predetermined speed through a multi-zone processing tunnel wherein the product passes through at least one smoking and skin-forming zone in which the surfaces of the linked product are uniformly treated with a smoke-containing fluid and then through at least one cooking and drying zone wherein heated unsaturated air is circulated past the product so as to substantially raise the internal temperature thereof and dry the exterior thereof; removing the product from said supporting means; and skinning the product to remove said casing therefrom.

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3,170,798
INTERESTERIFICATION PROCESS
Johan Burgers, Springfield Township, Hamilton County, and Charles Woolsey Moel, Wyoming, Ohio, and Paul Selden, Hamilton, Ontario, Canada, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 22, 1961, Ser. No. 154,337
2 Claims. (Cl. 99—118)

1. In the process of effecting random molecular rearrangement of fatty triglyceride esters containing not more than 0.1% free fatty acid, the steps of (1) dispersing with agitation in said fatty triglyceride esters from about 0.02% to 0.08% by weight of said esters of alkali metal hydroxide in the form of an aqueous solution containing from 1% to 12% hydroxide, and from about 0.10% to 0.30% by weight of said esters of glycerine, while maintaining said esters at a temperature high enough to melt all solids present but not greater than about 160° C., (2) immediately heating said dispersion to a temperature within the range of 120° C.–200° C. at reduced pressure, thereby removing water, and maintaining the esters within said temperature range until there has been substantial rearrangement of said esters, (3) destroying catalyst present in said rearranged esters by adding an edible acidic material selected from the group consisting of phosphoric acid and citric acid, in an amount equal to 1 to 5 equivalents of alkali metal hydroxide, (4) removing from said esters oil-insoluble material thereby formed, and (5) thereafter removing free fatty acids present in said esters.

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3,170,799
PROCESS OF PREPARING STABLE TRIGLYCERIDES OF FAT FORMING ACIDS
Reuben O. Feuge and Werner Landmann, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Nov. 28, 1961, Ser. No. 155,514
6 Claims. (Cl. 99—118)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for producing the thermodynamically stable polymorphic form of solid triglyceride mixtures wherein at least 20 weight percent consists of closely related triglyceride types and wherein the triglyceride component fatty acids contain at least 12 carbon atoms, said process consisting of forcing the said triglyceride mixture at a temperature below the melting point and at a pressure of at least 1000 pounds per square inch through an orifice about .01 inch in diameter.



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3,170,800
SWEETENING AGENT AND PROCESS THEREFOR
Morton Pader, West Englewood, and John J. Miles, Jr., Westwood, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed May 16, 1961, Ser. No. 110,333
15 Claims. (Cl. 99—141)

1. A sugar substitute consisting essentially of sucrose, modified by not more than about 2% by weight of the composition of an edible whipping agent and a minor amount of at least one sweetener selected from the group consisting of cyclamates and saccharin, the material being in the form of particles having a bulk density of from about 0.2 to about 0.4 gram per cc. and a caloric value of about 20 to 40% of that of granular sucrose on a volume basis.

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3,170,801
LOW-CALORIE SWEETENING AGENT
John P. McNaught, Saddle River, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Feb. 1, 1962, Ser. No. 170,493
13 Claims. (Cl. 99—141)

1. A sugar substitute consisting essentially of lactose modified by containing about 0.1 to 2% by weight of a hydrolyzed caseinate whipping agent and a minor amount of at least one artificial sweetener, the substitute being in the form of free-flowing particles having a bulk density in the range of 0.20 to 0.40 gram/cc., and having a total moisture content of about 3–8% by weight, at least about 25% and no more than about 98% of the product consisting of alpha-monohydrate crystalline lactose.

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3,170,802
METHOD FOR TREATMENT OF SOYBEAN PROTEINS
Daniji Fukushima, Yono-shi, Saitama-ken, Japan, assignor to Zaidan Hojin Noda Sangyo Kagaku Kenkyusho, Chiba-ken, Japan
Filed Dec. 14, 1960, Ser. No. 75,799
7 Claims. (Cl. 99—145)

1. The method of producing soy sauce comprising treating a material selected from the group consisting of soybean and defatted soybean with an aqueous solution of methanol for 30–60 minutes wherein the relationship between the treating temperature ($x$° C.) and the concentration of the said aqueous methanol solution ($y$ percent by volume) is substantially as follows:

$(-10x+620) \leqq y \leqq (10x-460)$, when $54 \leqq x < 55$;
$(-4x+290) \leqq y \leqq (2x-20)$, when $55 \leqq x < 60$;
and $50 \leqq y \leqq 100$, when $60 \leqq x \leqq 120$,

simultaneously heating to a temperature of 54–120° C. wherein said temperature is determined according to the above-stated relationship, removing said aqueous methanol solution, and thereafter directly hydrolyzing said treated soybean protein with proteases without prior hot aqueous pretreatment.

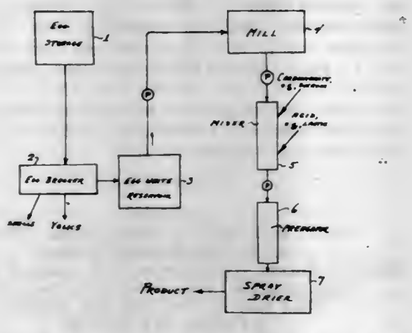
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3,170,803
PREPARATION OF DEHYDRATED FOOD PRODUCTS
Arthur I. Morgan, Jr., and Sigmund Schwimmer, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Feb. 19, 1962, Ser. No. 174,317
8 Claims. (Cl. 99—199)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The method of preparing a dehydrated food product of improved natural flavor which comprises (1) dehydrating a food with the application of enzyme-destructive heating to prepare a dehydrated food containing latent natural flavor, (2) dehydrating a food in the absence of enzyme-destructive heating to prepare a dehydrated food containing flavor-developing enzymes, and (3) admixing a major proportion of dehydrated food 1 with a minor proportion, effective for flavor restoration, of dehydrated food 2.

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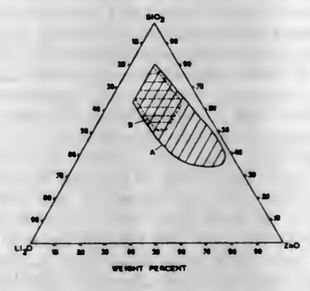
3,170,804
PREPARATION OF DRIED EGG WHITE
Leo Kline, El Cerrito, Takashi F. Sugihara, Richmond, and John J. Meehan, Pinole, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
Filed June 3, 1963, Ser. No. 285,155
7 Claims. (Cl. 99—210)
(Granted under Title 35, U.S. Code (1952), sec. 266)




1. A process for preparing dried egg white products which comprises providing liquid egg white containing its natural complement of sugars, adding thereto a water-soluble carbohydrate in an amount from about 5 to about 20% by weight, and an edible acid in an amount to provide a pH from about 6 to about 8 in the reconstituted product, and immediately drying said egg white containing its natural complement of sugars plus added carbohydrate plus added acid.

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3,170,805
CERAMICS AND THEIR PRODUCTION
Peter William McMillan and Graham Partridge, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Feb. 20, 1961, Ser. No. 90,414
Claims priority, application Great Britain, Feb. 29, 1960, 7,086/60
9 Claims. (Cl. 106—39)




1. A ceramic material formed by controlled devitrification of a heat-sensitive glass consisting of major constituents which make up at least 90 percent by weight

of the total composition and lie in the system defined by $Li_2O$—2.0 to 27.0 percent, ZnO—10.0 to 59.0 percent, and $SiO_2$—34.0 to 81.0 percent; minor constituents which consist of an oxide of at least one of the metals selected from the group consisting of sodium, potassium, aluminium, magnesium, calcium, barium, lead and boron; and a nucleating agent selected from the group consisting of gold, silver, copper and phosphate ion.

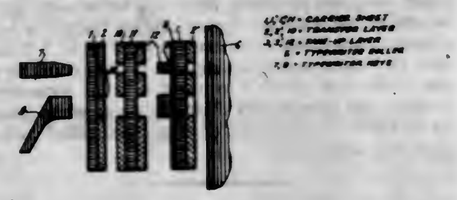
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**3,170,806**
**HEAT SETTABLE BUTADIENE-STYRENE COATING MIXTURES**
Joseph G. Svrchek, Hinsdale, Ill., assignor to Dearborn Chemical Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Feb. 1, 1963, Ser. No. 255,647
4 Claims. (Cl. 106—285)

1. A composition settable by heat into an impervious protective coating comprising a mixture whose solids content contains from 5 to 40% of (*a*) a viscous liquid butadiene-styrene copolymer containing from 75 to 85% butadiene and 15 to 25% styrene and from 60 to 95% of (*b*) a partly oxidized butadiene-styrene copolymer containing from 75 to 85% butadiene and 15 to 25% styrene, said partly oxidized polymer having been oxidized to the extent of assimilating from about 5 to 20% of its weight in oxygen, and a solvent for (*b*).

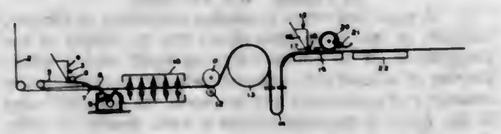
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**3,170,807**
**CONTACT COPY CORRECTING SHEET AND METHOD OF USING**
Robert J. Fuerst, White Plains, N.Y., assignor to Kores Manufacturing Corporation, New York, N.Y.
Filed May 16, 1962, Ser. No. 195,289
3 Claims. (Cl. 117—2)



1. An assembly for correcting contact copy of the type formed by placing one sheet which is provided on one face with a transfer layer in face to face contact with another sheet which is provided with a take-up layer, with said transfer and take-up layers contacting each other, and applying pressure to spaced portions of the other face of said one sheet so that corresponding portions of said transfer layer thereof will be transferred onto the take-up layer of said other sheet, in combination, a first sheet provided on one face with a transfer layer; a second sheet provided on one face with a take-up layer, said first and second sheets being superposed with said transfer and take-up layers adjacent to each other; and a correcting sheet interposed between said superposed first and second sheets, said correcting sheet comprising a carrier sheet provided on one face thereof with a first layer which when superposed upon said transfer layer of said one sheet will upon application of pressure become detached from its carrier sheet and adhere to said one sheet, and provided on its other face with a second layer which when superposed upon said take-up layer of said other sheet will upon application of pressure become detached from its carrier sheet and adhere to said take-up layer of said other sheet, said one face of said interposed correcting sheet being adjacent to said transfer layer of said one sheet and said other face of said correcting sheet being adjacent to said take-up layer of said other sheet.

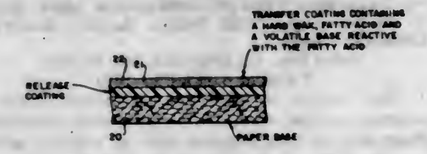
**3,170,808**
**METHOD OF FABRICATING A TESSELLATED SURFACE COVERING**
Richard Almy and David T. Zentmyer, Lancaster Township, Lancaster County, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Original application Dec. 9, 1958, Ser. No. 779,107, now Patent No. 3,056,224, dated Oct. 2, 1962. Divided and this application Aug. 21, 1961, Ser. No. 133,544
7 Claims. (Cl. 117—20)



1. A method of forming a resilient tessellated surface covering comprising depositing upon a backing layer a mass of tesserae of plasticized thermoplastic vinyl resin composition, orienting said tesserae upon said backing layer as a single layer of tesserae positioned in a non-geometric pattern substantially all of which are spaced from adjacent tesserae along at least a substantial portion of the peripheries thereof, bonding said tesserae to said backing layer in spaced position against movement with respect to said backing layer, filling the areas between said tesserae with a powdered plasticized thermoplastic vinyl resin matrix material, and applying heat and pressure to said tesserae and matrix material on said backing layer to fuse said matrix powder and join said tesserae into an integral wearing layer.

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**3,170,809**
**TRANSFER SHEET AND PROCESS OF MAKING**
Marshall S. Barbour, Livermore, Maine, assignor to Oxford Paper Company, a corporation of Maine
Filed May 4, 1962, Ser. No. 192,327
5 Claims. (Cl. 117—36.4)

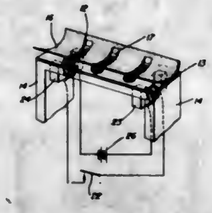



1. The method of preparing a transfer sheet which comprises coating a suitable base sheet with a coating composition comprising an aqueous emulsion of a hard wax, a fatty acid, and a volatile base which is reactive with the fatty acid, and thereafter drying the coating on to the base sheet.

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**3,170,810**
**METHODS OF AND APPARATUS FOR FORMING SUBSTANCES ON PRESELECTED AREAS OF SUBSTRATES**
Claude A. R. Kagan, Pennington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 24, 1962, Ser. No. 197,394
5 Claims. (Cl. 117—38)

1. The method of coating selected areas of a substrate with a coating material, which method comprises:
forming a sheet of relatively thin, resilient, magnetic material into a mask of a desired pattern for masking a surface of a substrate and exposing only selected areas of the substrate surface to be coated;
buckling the thus-formed mask to deform the same permanently to an extent such that, when the buckled mask is placed on the surface of the substrate, a major portion of the opposed surface of the mask is warped out of the plane of the substrate surface;
placing the buckled mask on the substrate surface;



producing magnetic coercive forces tending to urge the mask against the substrate surface so that the mask is forced into a condition such that its opposed surface lies wholly in the plane of and is pressed firmly against the substrate surface;
depositing the coating material onto the exposed portions of the substrate material; and
removing the magnetic coercive forces to permit the resilient mask to spring back to its deformed condition, thereby facilitating the removal of the mask from the coated substrate surface.

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**3,170,811**
**PRODUCTION OF FUSED POLYTETRAFLUOROETHYLENE FILM ON ELASTOMERS**
Arthur G. Sands, Cheverly, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 28, 1962, Ser. No. 176,459
6 Claims. (Cl. 117—71)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A method of providing a thin film of fused polytetrafluoroethylene on an elastomer which is adversely affected in physical properties by the high degree of heat required to fuse polytetrafluoroethylene which comprises coating a thin film of bright metal on a surface of the elastomer, coating a thin film of polytetrafluoroethylene on said metal film from an aqueous dispersion of finely divided polytetrafluoroethylene, air-drying said film of polytetrafluoroethylene and fusing said dried film of polytetrafluoroethylene on said elastomer by directing heat solely thereto at a temperature above the fusion point of polytetrafluoroethylene.

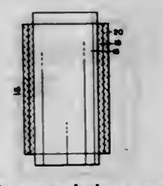
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**3,170,812**
**METHOD OF VITRIFYING CERAMIC COATINGS**
Murray A. Schwartz, Dayton, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Sept. 30, 1953, Ser. No. 383,422
2 Claims. (Cl. 117—93.2)

1. An improved method of providing a protective coating on a beryllium carbide-carbon body, which comprises applying on said body a ceramic coating comprising approximately 1.5–3.5 moles of an acidic oxide, approximately 0.1–0.6 mole of an amphoteric oxide and approximately 0.8–2.4 moles of a basic oxide, wherein the major acidic oxide component is $SiO_2$, the major amphoteric oxide component is $Al_2O_3$ and the major basic oxide component is CaO, heating the resulting coated body by radiant heating means in a non-oxidizing atmosphere until a portion of said coating is melted, said melted portion being sufficient to cover the surface of said body and subsequently heating the resulting coated body by induction heating means in a non-oxidizing atmosphere at a sufficiently higher temperature to effect complete vitrification.

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**3,170,813**
**METHOD FOR ENCAPSULATING SEMICONDUCTORS**
Charles S. Duncan, Penn Hills Township, Allegheny County, and Herbert L. Taylor, Murrysville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 19, 1961, Ser. No. 111,143
4 Claims. (Cl. 117—215)



1. In a method of encapsulating a semiconductor member to effect a hermetic seal thereby, the steps comprising applying a coating of a first refractory material by plasma jet spray to the exposed surfaces of the member, applying a second coating of a second refractory insulating material on the member, the melting point of said second material being less than the melting point of the first coating and heating the member to a temperature above the melting point of said second coating material so that the second coating flows and adheres to the first coating and closes any voids therein.

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**3,170,814**
**METHOD OF CLEANING SEWER SYSTEMS**
Eugene J. Stroia and Ronald L. Voda, Southgate, Mich., assignors to Terra Chemical Corporation, Southgate, Mich., a corporation of Michigan
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,617
13 Claims. (Cl. 134—22)

1. A method of removing flocculatable accumulations and buoyant materials held from floating by the accumulations from a sewer system which comprises adding to a catch basin of the system an effective proportion of a water soluble polyelectrolytic organic polymer, subsequently mixing said polymer with the flocculatable accumulations and the buoyant materials by utilizing the rain water entering said system to form a flocculent mixture which frees the buoyant materials, whereby the flocculent mixture and the buoyant materials are carried by the rain water through the system to the point of discharge.

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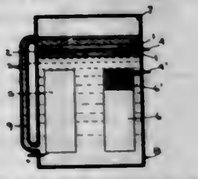
**3,170,815**
**REMOVAL OF CALCIUM SULFATE DEPOSITS**
William S. White, Midland County, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 10, 1961, Ser. No. 130,464
7 Claims. (Cl. 134—27)

1. A method of removing a gypsum deposit from a confined surface which comprises contacting said deposit with a chilled fluid thereby to cool the deposit, removing said chilled fluid from the so cooled deposit, contacting the cooled deposit with an aqueous solution containing between about 20 and 40% of sodium hydroxide by weight, said solution having a temperature such that said sodium hydroxide solution and said cooled deposit when in mutual contact reach a temperature between about 50° F. and 70° F., for sufficient time to convert the gypsum deposit to a sludge, removing the resulting spent

sodium hydroxide solution from said confined surface, dissolving any sludge not removed during the removal of the sodium hydroxide solution by treatment with an acid solution, and removing the resulting spent acid solution from said confined surface.

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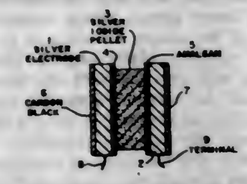
3,170,816
**LEAD-ACID STORAGE BATTERY**
Ernst Voss and Klaus Dohmeldt, Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 12, 1960, Ser. No. 62,200
Claims priority, application Germany, Oct. 14, 1959, A 33,046
14 Claims. (Cl. 136—3)



1. A lead-acid storage battery cell comprising a liquid acidic electrolyte and, within the electrolyte, a positive lead electrode, a negative lead electrode, and a gas consuming auxiliary electrode of a liquid mercurial substance selected from the group consisting of mercury and mercury alloys, porous plates of a material substantially inert to the electrolyte being provided for holding the liquid mercurial substance therebetween, the plates having pore diameters between about 40μ and about 90μ.

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3,170,817
**IONICALLY CONDUCTIVE DEVICES FREE OF ELECTRODE POLARIZATION**
John N. Mrgudich, Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 24, 1961, Ser. No. 84,737
7 Claims. (Cl. 136—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)




1. An ionically conductive, non-polarizable device enabling a controlled transport of ions comprising a solid ionic conductor selected from the group consisting of silver halides and silver-mercuric halides, and placed between two identical amalgamated silver electrodes in contact with said ionic conductor.

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3,170,818
**SEALED MINIATURE STORAGE BATTERY**
Lutz Horn, Hagen, Westphalia, and Fritz Philipp, Hagen-Haspe, Germany, assignors to Varta Aktiengesellschaft, Hagen, Germany
Filed Oct. 14, 1960, Ser. No. 62,745
8 Claims. (Cl. 136—6)

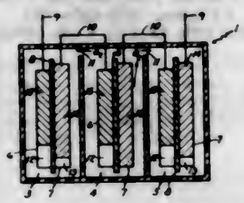
1. An hermetically sealed miniature storage battery of the alkaline type comprising at least one cell, each cell having a positive electrode and a negative electrode, each electrode comprising a porous metallic structure, the electrochemical capacity of the negative electrode being at least twice that of the positive electrode, a separator disposed between said electrodes, said separator having a capillary structure pervious to gas, an alkaline electolyte substantially completely absorbed by said separator and immobilized therein by the said capillary structure, a metallic casing having an open end, said casing being proportioned to receive and house said positive electrode, said separator and electrolyte and said negative electrode in



stacked contacting relation, a metallic cover provided with a tapered and pointed contact spike to pierce and electrically engage a porous electrode at the open end of said casing, said cover being also in electrical contact with said electrode, gasket means for insulating said cover and the electrode engaged therewith from said casing, and means for hermetically sealing said cover in the end of said casing.

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3,170,819
**ELECTRIC BATTERY**
Jay J. Abramson, Euclid, Ohio, assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed Sept. 5, 1961, Ser. No. 135,815
6 Claims. (Cl. 136—6)



1. A sealed, multicell storage battery having a plurality of cells electrically connected in series comprising a plurality of cell compartments within a sealed battery container, each of said cell compartments housing an electrode assembly having a positive electrode, a negative electrode and a separator therebetween, said positive electrode having an excess of charged positive active material over the amount of charged negative active material and said negative electrode having an excess of reserve uncharged negative active material which provides for the preferential evolution of oxygen upon overcharge and overdischarge, with electrolyte being contained substantially within the pores of the electrode assembly in each cell compartment, and gas passage means interconnecting the cell compartments to provide a gas space common to all of the electrode assemblies within the sealed battery container whereby oxygen evolved in one cell compartment may pass into another cell compartment and be combined with active material in said other cell compartment.

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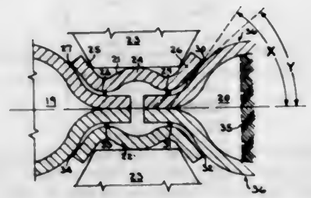
3,170,820
**METHOD OF MAKING DUPLEX ELECTRODES FOR HIGH RATE PRIMARY BATTERIES**
George R. Dreagle, North Olmsted, Milton B. Clark, North Royalton, and Robert E. Stark, Avon Lake, Ohio, and Theodore R. Beatty, Bennington, Vt., assignors to Union Carbide Corporation, a corporation of New York
Filed Mar. 19, 1963, Ser. No. 266,357
9 Claims. (Cl. 136—10)

1. A method of fabricating duplex electrodes for use in primary batteries, comprising securing two thin expanded metallic grids to one face of a substantially rectangular shaped, electrically-conductive, electrochemically inert thin metallic separator, compressing an electropositive oxide material through and onto one of said grids and the portion of said face of said separator beneath said grid, compressing an electronegative material through and onto the other of said grids and the portion of said face of said separator beneath said grid, and folding said separator member in half such that said grids are disposed opposite each other in a back to back fashion.



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3,170,821
**GRIDLESS TUBULAR ELECTRODE ASSEMBLY FOR STORAGE BATTERIES**
Ernest F. Schenk, Bloomfield, N.J., assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed Dec. 20, 1962, Ser. No. 246,119
4 Claims. (Cl. 136—14)

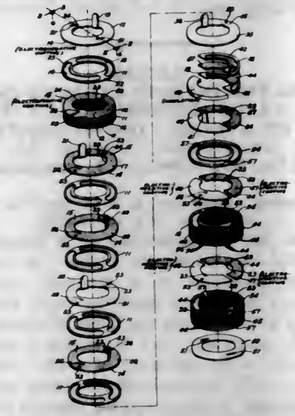


1. A gridless tube-type electrode comprising at least two rows of a plurality of perforated metal tubes vertically arranged side by side and containing electrochemically active material, said perforated metal tubes being closed at each end so that there is a curved portion and a pointed portion which is formed by compressing the end of each metal tube, adjacent rows of said tubes being disposed so that the tube ends of said adjacent rows are opposite to one another, adjacent rows of said tubes being electrically connected to each other by means of a pair of flanged center rails between which the ends of said tubes are placed, said flanged center rails being positioned opposite to one another, each center rail flange being in contact with and slightly deforming the curved portion of each tube end, and the web portion of each flanged center rail being welded to the pointed portion of each tube end so as to produce a substantially rigid electrode structure.

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3,170,822
**DEFERRED ACTION TYPE BATTERY CONSTRUCTION**
David L. Babcock, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 14, 1949, Ser. No. 98,924
4 Claims. (Cl. 136—90)

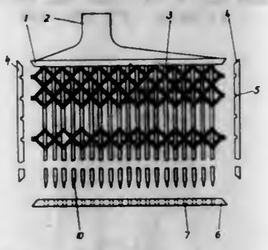
1. A cylindrical battery of the deferred action type comprising a low voltage section at the top thereof made up of a number of thin annular coated battery plates having one side electronegative and the other side electropositive with successive plates having electronegative and electropositive sides face-to-face, a low voltage, high amperage section adjacent the low voltage section made up of a number of annular coated plates having both sides electropositive and an equal number of annular coated plates having both sides electronegative with successive plates having electronegative and electropositive sides face-to-face, and a high voltage section made up of a number of half-annulus coated plates with electronegative and electropositive sides arranged in potential series concentrically down one half and up the opposite half of the lower end of the battery



with plates in successive layers having electronegative and electropositive sides face-to-face.

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3,170,823
**METHOD OF PRODUCING LEAD-ACID STORAGE BATTERY PLATES AND PLATES SO PRODUCED**
Karl Geisbauer, Paul-Lagarde-Strasse 20, Munich 12, Germany
Filed Nov. 30, 1962, Ser. No. 241,371
Claims priority, application Germany, Dec. 8, 1961, D 37,624
12 Claims. (Cl. 136—38)



9. A lead-acid storage battery plate comprising a grid having a frame consisting of a top member, a bottom member substantially parallel thereto and two parallel side members interconnecting the top and bottom members, and a plurality of vertical bars parallel to the side members and extending from the top to the bottom member; a lug extending from the top member; and a plurality of narrow strips of microporous synthetic resin of zig-zag shape mounted on the vertical bars and extending transversely thereto, the apices of the strips being in registry with the vertical bars and alternate apices of adjacent ones and being in contact with each other, respectively, whereby the strips form a honey-combed structure on the grid for an active mass.

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3,170,824
**IRON ALLOY**
Donald B. Roach, Dimon A. Roberts, and Albert M. Hall, Columbus, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Dec. 27, 1962, Ser. No. 248,187
4 Claims. (Cl. 148—31)

1. As a new composition of matter, a highly ductile alloy annealed at about 1100° C. and water-quenched,

said alloy consisting of from 13 to 18 percent by weight of manganese, from 7 to 11 percent of nickel, from 1.1 to 0.95 percent of carbon and up to 1 percent of silicon, the balance being iron.

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**3,170,825**

## DELAYING THE INTRODUCTION OF IMPURITIES WHEN VAPOR DEPOSITING AN EPITAXIAL LAYER ON A HIGHLY DOPED SUBSTRATE

Edward C. Schaaraschmidt, Cranford, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 2, 1961, Ser. No. 141,996
1 Claim. (Cl. 148—175)

A method for the production of a plurality of P+P single crystal semiconductor bodies by simultaneous thermal decomposition of a thermally decomposable semiconductor compound from the vapor phase, said P layer having a resistivity in the range of about 1–10 ohm-cms., which comprises: (*a*) providing a single crystal semiconductor wafer substrate of highly doped P-conductivity type, (*b*) thermally decomposing said semiconductor compound in the substantial absence of added impurities during an initial period of deposition, (*c*) adding an amount of impurities with said semiconductor compound in the vapor phase sufficient to obtain a P layer having a resistivity in the range of about 1–10 ohm-cms., and (*d*) decomposing said combination to form said desired P layer.

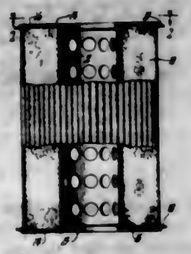
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**3,170,826**

## METHOD OF BONDING A FILTER PAPER TUBE TO SUPPORTING END PLATES

James A. Norton and David P. Lake, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 4, 1961, Ser. No. 107,705
6 Claims. (Cl. 156—69)



1. In a process for making filter elements the steps comprising forming a paper tube having ends and bonding rigid end plates to said ends by means of an adhesive composition comprising a vinyl plastisol including small amounts of a phenol having from 2 to 4 hydroxyl groups and a compound capable of generating an aldehyde at elevated temperatures reactive with said phenol, said amounts being sufficient to impart adhesive properties to said plastisol.

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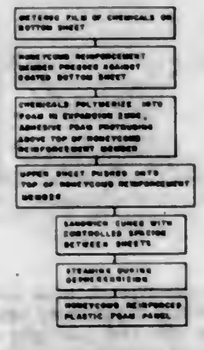
**3,170,827**

## REINFORCED PANEL PRODUCTION

Walter D. Voelker, Philadelphia, Pa., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York

Filed Feb. 8, 1962, Ser. No. 171,939
3 Claims. (Cl. 156—78)

1. The method of preparing a sandwich structure comprising upper and lower facing sheets with a polyurethane foam core reinforced with a honeycomb reinforcement member disposed therebetween which method comprises (1) advancing a lower facing sheet from a feed position through a coating zone wherein the said sheet is coated with a layer of predetermined thickness of chemicals entirely in liquid phase which are capable of interacting to produce polyurethane foam, (2) advancing the thus coated facing sheet through a reinforcement placement zone wherein a honeycomb reinforcement member is pressed against the said coated sheet and into bonding relationship therewith, (3) advancing the said coated sheet and contiguously disposed honeycomb reinforcement member through an expansion zone wherein chemical reaction proceeds and the said coating generates a polyurethane foam which rises within the tubes of the said honeycomb reinforcement member to a level slightly above the upper surface thereof, the air in the said tubes being displaced by the rising foam, (4) advancing the thus formed structure comprising the lower




facing sheet and contiguously disposed foam over-filled honeycomb reinforcement member through a lay-down zone wherein an upper facing sheet is pressed upon the foam over-filled honeycomb reinforcement member and compresses the excess foam into the tubes of the said honeycomb reinforcement member, (5) advancing the thus formed structure comprising upper and lower facing sheets and foam-filled honeycomb reinforcement member disposed therebetween through a curing zone wherein the foam is cured by application of heat while pressure is applied to the said structure to maintain the upper facing sheet in bonding contact with the honeycomb reinforcement member, producing thereby a structure wherein the honeycomb reinforcement member is bonded to both upper and lower facing sheets, and (6) withdrawing in a product withdrawal zone a sandwich structure comprising upper and lower facing sheets having a polyurethane foam core reinforced with a honeycomb reinforcement member disposed therebetween.

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**3,170,828**

## METHOD OF MAKING A STORAGE VESSEL WITH A DISTENDED HEMISPHERICAL ROOF

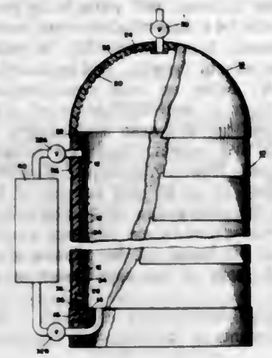
Robert L. Irvine, 60 Sutton Place S., New York, N.Y.

Original application Sept. 25, 1959, Ser. No. 842,324, now Patent No. 3,050,208, dated Aug. 21, 1962. Divided and this application Nov. 13, 1961, Ser. No. 162,624
4 Claims. (Cl. 156—212)

1. A method for constructing a storage vessel for volatile liquids which comprises erecting a metal cylindrical tank having an open top end, adhesively securing a fabric impregnated with an elastomer to the outer wall surface of said cylindrical tank about an annular margin at the tank's top end, distending said adhesively secured fabric



to a hemispherical shape by the application of fluid pressure from within the tank, and applying a rigid foam



polymer to said distended fabric to permanently maintain the same in distended hemispherical disposition.

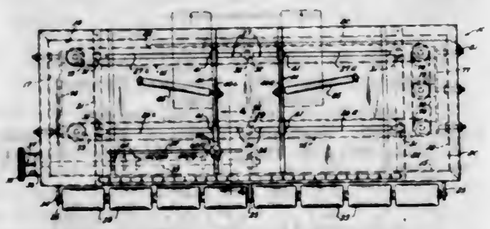
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**3,170,829**

## GUIDE FOR A TIRE BUILDING MACHINE

Thomas Allen Batten, Silver Lake, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Apr. 26, 1962, Ser. No. 190,397
8 Claims. (Cl. 156—405)



1. In a guide (**10**) for tire building machines, said guide having a plate (**20**) adapted to be positioned in operative relation with a tire building drum (**11**) and a pair of guide fence members (**40**) connected for simultaneous movement toward and away from each other transversely over said plate, adjustable stop means (**60**) for establishing a plurality of predetermined positions for said guide members, latch means (**55**) carried by one of said fence members to selectively engage said adjustable stop means, and means (**80**) normally biasing said fence members for movement in one direction and said latch means into selective engagement with one of said adjustable stop means.

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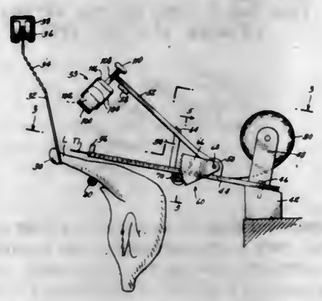
**3,170,830**

## APPARATUS FOR APPLYING POULTRY TAGS

Sigurd M. Moberg, Pompton Plains, N.J., assignor to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey

Filed Jan. 19, 1962, Ser. No. 167,295
6 Claims. (Cl. 156—489)

1. Apparatus for applying, to a chicken's leg, an elongate paper tag having an adhesive coating toward each of opposite ends of one face thereof, said apparatus comprising a pair of rotary rollers, a U-shaped roller carrier yieldably holding said rollers together in assembled parallel relationship, said rollers being yieldably separable to a sufficient extent to roll about opposite sides of a leg of a chicken to wrap the tag around the leg, and capable, thereafter, of again moving together to press together the



coated face portions of said opposite ends; the sides of said roller carrier being sufficiently spaced apart to avoid material interference with the chicken leg upon said moving together of said rollers.

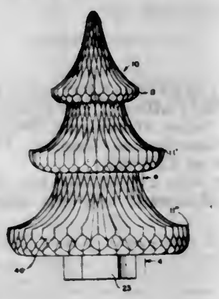
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**3,170,831**

## HONEYCOMB PAPER STRUCTURE

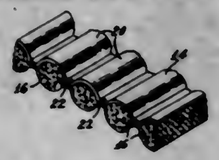
Richard E. Paige, 411 E. 57th St., New York, N.Y.

Filed Jan. 18, 1961, Ser. No. 83,483
2 Claims. (Cl. 161—14)



1. An ornamental device simulating in its expanded condition an object of predetermined shape, comprising a plurality of superposed leaves, said leaves being joined by a plurality of parallel glue lines staggered on alternate sheets thereof whereby a substantially honeycomb blanket is formed, said blanket along the outer longitudinal edge thereof being contoured in simulation of the peripheral edges of said object, the inner longitudinal edge of said blanket being contoured whereby a hollowed portion is formed to completely enclose a light bulb, hinging means securing together the inner longitudinal edges of said leaves above and below the hollowed portion, reinforcing strips of substantially the same outline as that of said blanket secured to the outermost leaves thereof, fastening means secured along the outer longitudinal edge of one of said reinforcing strips to retain said blanket in an expanded condition, said parallel glue lines being angularly disposed with relation to the vertical axis of said ornamental device within a range of 70° from the vertical axis whereby the light rays from the enclosed lamp are deflected from a horizonal path to provide a diffused glow.

3,170,832
**FOAMED POLYESTER RESIN LAMINATED PRODUCTS AND METHOD OF MAKING SAME**
Christopher L. Wilson, Cranberry Lake, Stonisburg, and Oscar Shaffman, Yonkers, N.Y., assignors to Hudson Foam Plastics Corporation, Edgewater, N.J., a corporation of New York
Filed July 8, 1954, Ser. No. 441,984
4 Claims. (Cl. 161—119)



1. A laminated material comprising a layer of resilient, foamed polyester resin consisting of the reaction product of (1) a polyester resin derived from adipic acid and diethylene glycol, (2) toluene diisocyanate, (3) water, and (4) a tertiary amine catalyst; a thermoplastic layer superposed on said foamed layer, spaced portions of said foamed layer being compressed and surface portions thereof being directly fused to said thermoplastic layer.

3. A method of making a laminated material comprising superposing a layer of thermoplastic resin on a layer of resilient, foamed polyester resin consisting of the reaction product of (1) a polyester resin derived from a polycarboxylic acid and a polyhydric alcohol, (2) a diisocyanate, (3) water, and (4) a tertiary amine catalyst; applying pressure and heat to said superposed layers at predetermined areas thereof to heat seal said layers together where said areas are superposed and to compress said foamed layer at said areas, and permitting said heat sealed layers to cool.

3,170,833
**ADHESIVE COMPOSITIONS AND LAMINATES PREPARED THEREFROM**
Paul Randolph Noyes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 2, 1961, Ser. No. 92,762
18 Claims. (Cl. 161—186)



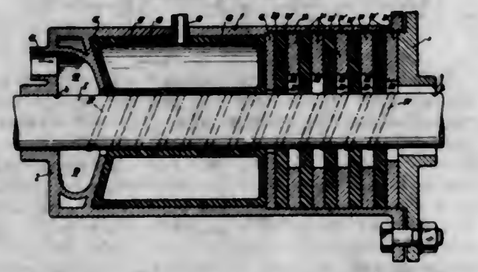

1. An adhesive composition comprising as essential components thereof: (A) a hydroxyl-terminated terephthalate copolyester, (B) a diepoxide having two cyclohexyl rings joined by a divalent linking radical having carboxylate functionality, each said cyclohexyl ring having a single oxirane oxygen atom joined to adjacent carbon atoms in the ring, and at least one member adduct selected from the group consisting of (C) a carboxylic adduct of pyromellitic dianhydride and a polyol characterized by two to three hydroxyl substituents including two primary hydroxyl substituents per molecule and as being free of non-benzenoid carbon-to-carbon unsaturation, each said primary hydroxyl substituent thereof being condensed with one mole of said dianhydride, and (D) a polyisocyanate adduct of an organic diisocyanate and an aliphatic polyol composition consisting essentially of an aliphatic triol composed of carbon, hydrogen and oxygen atoms and having two to three primary hydroxyl substituents per molecule, the proportion of said diisocyanate component of said polyisocyanate adduct being sufficient to provide isocyanate groups in molar excess over the hydroxyl substituents of said polyol composition up to a ratio of two isocyanate groups per hydroxyl substituent, the proportion of said (C) pyromellitic adduct being 0.5–10 parts when said (D) adduct is absent and said (D) polyisocyanate adduct being 2–25 parts when said (C) adduct is absent, said parts being per 100 parts by weight of said (A) terephthalate copolyester, said adhesive components being compatibly in solution in a volatile organic solvent therefor, said hydroxyl-terminated copolyester (A) being an ester condensation polymer having units from at least one saturated aliphatic diol composed of carbon, hydrogen and oxygen atoms and having one to two primary hydroxyl substituents per molecule and units from a plurality of dicarboxylic components including 25 to 85 mol percent of terephthalic units based on the total moles of dicarboxylic acid units, and being characterized by an inherent viscosity in the range of 0.4 to 1.5 based on the relative viscosity of a solution of 0.6 gram of the copolyester in 100 ml. of m-cresol.

5. An adhesive composition of claim 1 having said adhesive components in the following proportions:

| | Parts |
|---|---|
| (A) Terephthalate Copolyester | 100 |
| (B) Diepoxide | 5–30 |
| (C) Pyromellitic dianhydride-adduct | 1–5 |
| (D) Polyisocyanate-adduct | 5–15 |

17. A reflective laminate consisting essentially of a transparent first surface layer of a condensation polymer made up of units from terephthalic acid and units from ethylene glycol, a layer of aluminum foil, an adhesive layer between one surface of said foil and said first layer, a second transparent surface layer of said condensation polymer and an adhesive layer between said second surface layer and a second surface of said metal foil, said adhesive being the cured adhesive composition of claim 5.

3,170,834
**METHOD OF DRESSING CRUDE ASBESTOS**
Karl Adolf Oesterheld, Lathe, near Wunstorf, Hannover, Germany
Filed July 18, 1961, Ser. No. 124,923
Claims priority, application Germany, July 20, 1960, O 7,532; May 10, 1961, O 8,052; May 15, 1961, O 8,060
1 Claim. (Cl. 162—3)

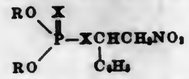


A method of dressing adhered asbestos natural state fibres from the source rock and retaining the natural length of said fibres comprising the steps of suspending unseparated natural state asbestos fibres in a liquid, forcing the suspended fibres under hydraulic pressure to traverse an elongated helical path extending as a spaced curve of a length greatly in excess of the greatest length of the natural asbestos fibres, subjecting the suspended fibres to continuous frictional pressure between elastically yieldable counter-pressure forces exerted to apply friction to the fibres and these counter-pressure forces also defining the helical path of travel and subjecting the fibres to repeated bending transversely of the length of the fibres by the exertion of oppositely directed compressive forces at intermittent intervals along the path of travel to permit the fibres to bend transversely of the force imposed helical path and forcibly return them thereto by repeated exertion of the last mentioned compressive forces, the helical path subjecting the fibres to transverse bending in constantly varying directions and at various points relative to the length of the fibres.



3,170,835
**NITROMETHYLBENZYL-PHOSPHOROTHIOIC ACID DIESTERS AND NEMATOCIDAL METHODS EMPLOYING SAME**
Kenneth L. Godfrey, St. Albans, W. Va., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Apr. 15, 1957, Ser. No. 652,652
6 Claims. (Cl. 167—22)

1. The method of destroying nematodes in agricultural soils which comprises contacting the said organisms with a toxic concentration of a phosphorothioate of the formula



where R is selected from the group consisting of phenyl, toyly chlorine substituted phenyl, p-nitro substituted phenyl alkyl, allyl and a lower alkoxy substituted lower alkyl, X is selected from the group consisting of oxygen and sulfur at least one being sulfur.

3,170,836
**INJECTABLE COMPOSITIONS COMPRISING A COPPER-CONTAINING CHELATE COMPLEX COMPOUND DISPERSED IN A STABILIZED OIL-IN-WATER EMULSION AND METHOD OF USING THE SAME**
Victor James Vergine, Eastcote, Middlesex, England, assignor to Glaxo Laboratories Limited, Greenford, England, a British company
No Drawing. Filed May 24, 1962, Ser. No. 197,291
11 Claims. (Cl. 167—53)

1. A composition for parenteral administration to animals comprising a copper-containing chelate complex compound in which substantially all the copper is chelated and which possesses a solubility in water at 20° C. of between 0.5% and 2.0% weight/volume, said complex being dispersed in a stabilized injectable emulsion of a parenterally acceptable oil in water said emulsion containing from 30–65% by weight of said oil and being stabilized with a member selected from the group consisting of (1) a predominantly oil-soluble, non-ionic wetting agent to stabilize the emulsion and a predominantly water-soluble, non-ionic wetting agent as emulsifying agent and (2) an ampholytic wetting agent to stabilize and emulsify said composition.

3,170,837
**METHOD OF OBTAINING ANTIBIOTIC AND PRODUCT**
Federico Arcamone, Aurelio di Marco, Mario Ghione, Paolo Pennella, and Arpad Green, all of Milan, Italy, assignors to Società Farmaceutici Italia, a corporation of Italy
Filed Mar. 13, 1958, Ser. No. 721,319
Claims priority, application France, Mar. 15, 1957, 734,081
7 Claims. (Cl. 167—65)

1. The process of producing the antibiotic FI 1163, which comprises incubating and aerating submerged in a liquid medium containing sources of assimilable carbon, nitrogen and mineral salts and having an initial pH of about 7, a culture of *Streptomyces lucensis* at a temperature ranging from about 20 to 37° C. for a period ranging from one to six days, extracting with a solvent taken from the group consisting of water immiscible alcohols, partly water miscible alcohols, chloroform, and aqueous acetone, concentrating in vacuo at a temperature ranging from room temperature to 40° C., treating the concentrate with a solvent taken from the group consisting of petroleum ether, ether and gasoline, separating and dissolving the resulting precipitate in a saturated sodium bicarbonate solution while passing a stream of nitrogen through the solution and operating in the dark, diluting with about an equal amount of water, separating solids, adjusting the pH to between 3 and 6, and separating and drying the precipitated antibiotic.

6. The antibiotic, FI 1163, produced by the process of claim 1, being a nitrogen containing, sulfur-free, acidic polyene antibiotic with a tetraene chromophor, having an ultraviolet absorption spectrum with maxima at 290, 304 and 318 mμ, being substantially insoluble in water, ether and gasoline but readily soluble in pyridine, dimethyl formamide, lower aliphatic alcohols, chloroform and aqueous mixtures of said alcohols and acetone, and forming water-soluble salts with alkali metals.

3,170,838
**CENTRIFUGATION OF WHOLE BLOOD TO SEPARATE EOSINOPHILS**
Richard Kendray Archer, Newmarket, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed May 22, 1961, Ser. No. 111,620
Claims priority, application Great Britain, May 25, 1960, 18,581/60
12 Claims. (Cl. 167—74)

1. Process for producing an aqueous preparation of eosinophils which comprises removing from eosinophil-rich mammalian blood the bulk of the erythrocytes therein, centrifuging the residual blood, discarding the lighter blood fractions up to and including the buffy coat layer, subjecting the heavier remaining fraction to treatment in an aqueous medium to cause selective lysis of erythrocytes present in said heavier fraction, centrifuging the resultant material to remove cell debris arising from said selective lysis, and recovering the aqueous preparation of eosinophils so obtained.

3,170,839
**CULTURE PROCESS IN VITRO PLACENTAL TISSUE GROWTH MEDIUM**
Lewis C. Ou, Berkeley, Calif., assignor to Borden Laboratories, a corporation of California
No Drawing. Filed Feb. 14, 1962, Ser. No. 173,114
1 Claim. (Cl. 167—78)

The method of growing human placental tissue for the purpose of elaborating chorionic gonadotropin comprising attaching the cytotrophoblastic, amnionic and chorionic portions thereof to a fixed support member and circulating a nutrient medium around said stationary tissue portions, said medium comprising:

| | | |
|---|---|---|
| (*a*) Yeast extract | gm. | 0.5 |
| (*b*) Eagles L. Media | gm. | 7.6 |
| (*c*) Bacto peptone | gm. | 15.0 |
| (*d*) Lacto albumin hydrolysate | gm. | 2.5 |
| (*e*) Human placental extract | ml. | 5.0 |
| (*f*) Amniotic fluid | ml. | 5.0 |
| (*g*) Human cord serum | ml. | 5.0 |
| (*h*) Human blood plasma | ml. | 50.0 |
| (*i*) Sodium bicarbonate, 10% | ml. | 10.0 |
| (*j*) Glutamine | ml. | 3.0 |
| (*k*) Thymidine | mgm. | 1.0 |
| (*l*) Vitamin E | gm. | 0.5 |
| (*m*) Penicillin | gm. | 0.5 |
| (*n*) Dihydrostreptomycin | gm. | 0.5 |
| (*o*) Distilled water q.s., 1 liter, | | |

while maintaining the circulating medium at a pH in the range 7 to 8 and at a temperature of about 37° C. and

periodically withdrawing a portion of said medium and extracting chorionic gonadotropin therefrom.

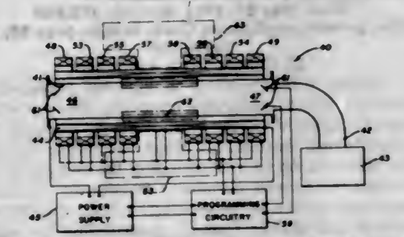
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3,170,840
POLYVALENT VACCINE CONTAINING 1,1'-HEXAMETHYLENEBIS[5 - (p-CHLOROPHENYL)BIGUANIDE]
Eugene A. Timm, Grosse Pointe Woods, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Oct. 16, 1962, Ser. No. 231,044
9 Claims. (Cl. 167—78)

1. An aqueous polyvalent vaccine comprising pertussis and poliomyelitis antigens, diphtheria and tetanus toxoids, and a water-soluble salt of 1,1'-hexamethylenebis[5-(p-chlorophenyl)biguanide] in a concentration in the range from 1:3000 to 1:500,000.

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3,170,841
PYROTRON THERMONUCLEAR REACTOR AND PROCESS
Richard F. Post, Walnut Creek, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 14, 1954, Ser. No. 443,447
30 Claims. (Cl. 176—5)

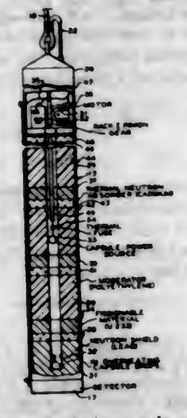


1. In a process wherein a plasma of energetic ion and neutralizing electrons is produced, the steps comprising providing an axially symmetric magnetic field in an evacuated region to radially define a zone in said field, establishing gradientially-intensified reflector field regions at spaced positions in said field to serve as closures for said zone effective for confining said plasma therein, and directing a space charge neutralized ion beam into said zone for confinement therein.

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3,170,842
SUBCRITICAL BOREHOLE NUCLEAR REACTOR AND PROCESS
Paul Kobler, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,536
14 Claims. (Cl. 176—11)

1. A nuclear reactor comprising in combination:
a first nuclear fuel element;
a first layer of neutron-slowing moderator material;
a second layer of thermal neutron barrier material; and
a second nuclear fuel element;
said first element, first layer, second layer and second elemeat being disposed in serial order as named adjacent each other along an axis;
a primary neutron generator; and
means to move said generator parallel to said axis from a point adjacent one of said fuel elements and on one side of said layers to a point adjacent the other of said fuel elements and on the other side of said layers;
said fuel elements each being of subcritical size and disposed to be activated by neutrons from said primary generator when adjacent thereto into a nuclear reaction producing sufficient numbers of fast nascent neutrons to in turn activate an adjacent fuel element into a similar reaction by passing said nascent neutrons through said second and first layers in that order, but insufficient numbers to activate an adjacent fuel element through said first and second layers in that order;
said subcritical size resulting in dieing out of said reaction in any of said fuel elements when not activated by sufficient neutrons coming from said primary neutron generator and adjacent fuel element; and
said first and second layer in that order being sufficient to prevent neutrons from said primary generator and the fuel element adjacent said first layer from passing into said other fuel element in sufficient numbers to substantially increase the production of fast nascent neutrons therein.



4. The process of controlling the nuclear reactor of claim 1 to produce energy at a desired predetermined rate comprising the steps of measuring the rate of energy generated by said reactor and moving said primary neutron generator parallel to said axis to a point where the reactor will produce energy at said desired rate by moving said generator relative to said layers in the direction from the second to the first fuel element to reduce the rate of energy generation, and in the direction from the first to the second fuel element relative to said layers to increase the rate of energy generation.

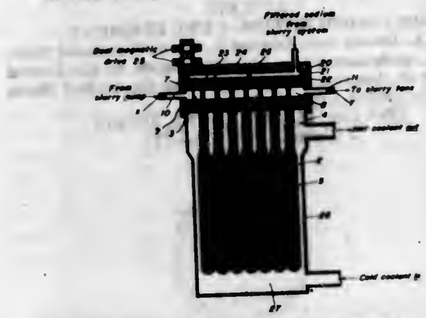
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3,170,843
PASTE REACTOR
Roland Philip Hammond, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 26, 1962, Ser. No. 233,496
3 Claims. (Cl. 176—18)

1. A fast neutron breeder reactor utilizing a paste slurry fuel of uranium comprising:
(a) a coolant enclosure tank,
(b) coolant inlet and outlet means connected in fluid communication to said tank,
(c) a plurality of fuel tubes closed at the bottom and positioned vertically within said tank and connected to a first header at the top of said tank,
(d) a plurality of purge tubes positioned inside of said fuel tubes, closed by a filter, and spaced from the wall of said fuel tubes,
(e) a second header positioned above said first header and connected in fluid communication to said purge tubes,
(f) valve means in said second header for allowing or preventing fluid communication between various combinations of said purge tubes and said second header,



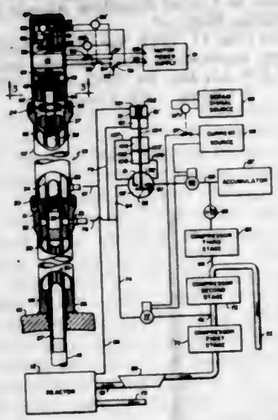
(g) slurry inlet and outlet means connected in fluid communication with said first header,
(h) sodium inlet and outlet means connected in fluid communication with said second header,
(i) processing means for said slurry,
(j) piping means connecting said processing means to said slurry inlet and outlet means,



(k) filter means in said processing means for removing sodium therefrom,
(l) piping means connecting said filter means to said sodium inlet and outlet means, and
(m) means connected to said coolant inlet and outlet means for removing the heat of fission generated in the reactor.

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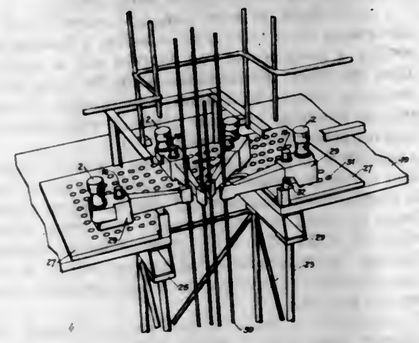
3,170,844
CONTROL ROD DRIVE MECHANISM
David Nicoll, San Diego, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 19, 1960, Ser. No. 57,086
9 Claims. (Cl. 176—36)



1. In a drive mechanism for inserting and retracting a control rod with respect to the core of a nuclear reactor which reactor is of the class enclosed in a pressure vessel and employing a fluid coolant, the combination comprising a reversible electrical motor, a clutch releasably coupling said electrical motor to said control rod to move said rod axially, a fluid driven cylinder having a first end communicated with said vessel and having a fluid inlet at a second end, means coupling said cylinder to said control rod to drive said rod axially into said core upon operation of said cylinder, a compressor receiving coolant from said reactor and compressing said coolant to a pressure higher than that within said vessel, and a valve for selectively transmitting said high pressure fluid from said compressor to said inlet at said second end of said cylinder.

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3,170,845
NUCLEAR REACTOR CONTROL SYSTEM
Seymour Oestreicher, Mineola, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation of application Ser. No. 488,888, Feb. 17, 1955. This application Nov. 29, 1961, Ser. No. 155,554
9 Claims. (Cl. 176—36)



1. The method of arranging a swimming pool reactor having a system of control rod drive packages which can be readily rearranged as to relative locations and speeds of control with respect to immersed reactor core elements including the steps of:
(a) providing a core supporting grid located deep in the pool and having a pattern including a multiplicity of identical core-element supporting stations shaped to receive and locate in definite mutually-parallel positions plural clustered similarly-shaped core elements including fuel elements, at least some of said core elements having a verticle bore receiving a control rod, all of which control rods extend upwardly in parallel relationship from elements supported on said grid;
(b) providing plural control-rod drive packages having interchangeable motor and gear means connected to actuate the reciprocable rod drives, and the packages having standardized housings with similarly drilled mounting flanges located in standardized locations offset from the associated reciprocable rod-drive and in a plane normal thereto;
(c) rigidly fixing a drive package mounting plate in a position above the pool and normal to said parallel control rods, and providing the mounting plate with a multiplicity of standardized drive-package anchorage positions drilled to register with the drilled flanges of any rod drive package, and placing the anchorage positions in a definite pattern such that whenever a drive package is bolted in a selected position its reciprocable rod drive will be in alignment with a corresponding core supporting station of said grid;
(d) mounting a lattice of core elements clustered in selected stations on said grid with control rods located at certain stations;
(e) mounting a rod-drive package at each anchorage position which corresponds with one of said certain stations, and selecting and installing therein the motor and gear means necessary to drive the associated control rod at a rate suitable to its intended control sensitivity; and
(f) coupling each control rod with the reciprocable rod drive with which it aligns.

3. In a nuclear reactor employing core configurations made up of multiple similarly shaped fuel elements, a certain critical number of which are required in a selected configuration to sustain a nuclear reaction, and said reactor including control rods extending into bores in fuel

elements for controlling said reaction and each rod being supported for reciprocation with respect thereto, said reactor including a grid having a pattern of fuel-element mounting locations greatly exceeding said critical number and each shaped to receive and support a fuel-element in a precise location, and said reactor including a mounting plate disposed opposite to and spaced from said core supporting grid, the improvement comprising:

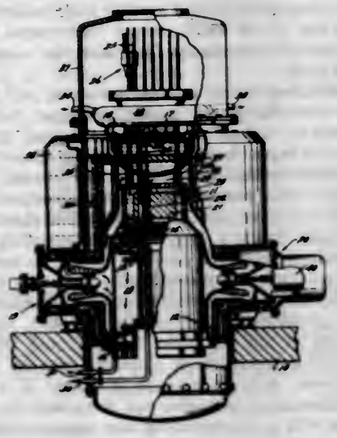
(*a*) a multiplicity of interchangeable control rod reciprocating drive units each including a housing supporting a reciprocable rod support and a motor to drive the latter, the housings of all the units having mounting flanges with holes therethrough in standardized locations precisely oriented with respect to said reciprocable rod support;

(*b*) said drive mounting plate having a number of identical mounting stations, each including a set of holes in standardized locations and said mounting stations being arranged in a pattern such that when aligned with the holes of a drive package flange mounted thereon the reciprocable rod support will be in precise alignment with respect to a fuel element location on said grid; and

(*c*) releasable securing means passed through the aligned holes for securing motor drive package mounting means in selected mounting stations of said plate.

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**3,170,846**
**STEAM GENERATOR**
**Ben Blumberg, Jr., Wyoming, Ohio, assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission**
**Filed May 6, 1963, Ser. No. 278,257**
**15 Claims. (Cl. 176—59)**



1. A nuclear steam generator comprising,

a gas cooled reactor,

a boiler separated from said reactor by a plenum chamber, said boiler being exposed to radiation from said reactor,

an open-ended pressure vessel surrounding said reactor and boiler and spaced therefrom,

a shield plug closing one end of said vessel,

means connecting said shield plug to said reactor for support thereof,

means spaced from said boiler closing the other end of said vessel,

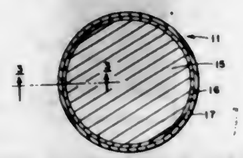
pump means for circulating gas within said pressure vessel in a closed cycle through said reactor, boiler, pump, and reactor whereby the gas is heated in said reactor and cooled in the boiler,

means directing water through said boiler in heat exchange with the gas therein,

and control means outside the pressure vessel connected to the reactor through said shield plug for control of the reactor.

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**3,170,847**
**SELF-MODERATING FUEL ELEMENT**
**Joseph A. Dudek and Edward L. Reed, Woodland Hills, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Dec. 15, 1959, Ser. No. 859,815**
**2 Claims. (Cl. 176—71)**



1. A nuclear reactor fuel element comprising a zirconium hydride moderator core, said zirconium hydride being encompassed with a layer of copper containing uranium dioxide interspersed therethrough in proportions such that the atom ratio of said uranium-to-said copper is from about 1:1 to about 1:12, said layer being covered by an outer protective layer of nickel.

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**3,170,848**
**FUEL ELEMENTS FOR VERTICALLY ORIENTED NUCLEAR REACTORS**
**Alan Charles Anthony Saunders, Ribbleton, Preston, England, assignor to United Kingdom Atomic Energy Authority, London, England**
**Filed June 11, 1962, Ser. No. 201,435**
**Claims priority, application Great Britain, July 19, 1961, 26,139/61; Jan. 24, 1962, 2,610/62**
**5 Claims. (Cl. 176—77)**



5. A string of elongate nuclear fuel elements superposed to form a column having a first flexible tube extending along the column, a second flexible tube extending also along the column on the opposite side of the column to the first flexible tube, an end fitting on the lower end of the bottom fuel element in the column and cable lifting means passing through said tubes to lift said column and said fitting, said means and said tubes being withdrawable from said fuel element string.

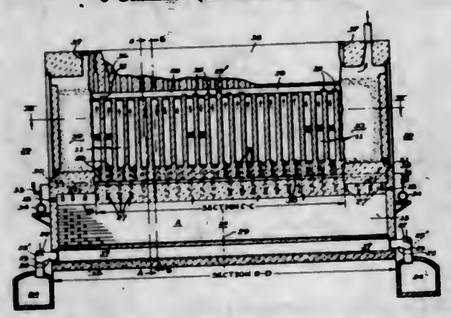


**3,170,849**
**RECOVERY AND PURIFICATION OF C-ALKYL IMIDAZOLES BY AZEOTROPIC DISTILLATION**
**Merwin D. Oakes, Chester, Pa., assignor to Air Products and Chemicals, Inc., a corporation of Delaware**
**No Drawing. Filed Sept. 15, 1961, Ser. No. 138,251**
**5 Claims. (Cl. 202—42)**

1. The method of recovering a C-alkyl imidazole selected from the group consisting of C-methyl imidazole C-ethyl imidazole from a mixture comprising C-alkyl imidazole and at least one component boiling within five centigrade degrees of the atmospheric boiling point of the said imidazole, which method comprises distilling said mixture in the presence of an added larger quantity of an alkyl aromatic hydrocarbon which boils at least largely in the range of 10 to 40 centigrade degrees below the boiling point of the C-alkyl imidazole, collecting from the distillation a narrow distillate cut containing the C-alkyl imidazole in admixture wtih said alkyl aromatic hydrocarbon and separating the C-alkyl imidazole from said distillate cut.

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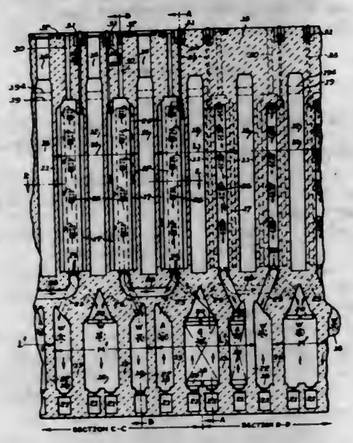
**3,170,850**
**DOUBLE DIVIDED GUN FLUE HORIZONTAL COKING RETORT OVEN**
**Daniel W. Bennett, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware**
**Filed Oct. 19, 1961, Ser. No. 146,163**
**6 Claims. (Cl. 202—141)**



1. In a coking retort oven, a horizontally-extending heating wall constituted of two inner groups of vertical combustion flues in endwise abutting relationship and two exterior groups of vertical combustion flues disposed at the far ends of the inner groups in endwise abutting relationship therewith, one of said exterior and one of said interior groups being communicably connected at their tops in a first set for reverse flow of waste gases of combustion from each to the other in alternation and the remaining exterior and interior groups being connected in a separate second set in like manner, regenerator ducts extending from the bottoms of each of the vertical flues through the bottom of the heating wall for inflow of regeneratively preheated air to and outflow of hot waste gases from each of the flues in alternation, two rich gas gun flues operable in alternation with each other for inflow of rich fuel gas to said wall, said gun flues being disposed lengthwise through the bottom of said wall with one of said gun flues extending inwardly from one end of said heating wall under three groups proceeding from said one end, and the other of said gun flues extending inwardly from the opposite end of said heating wall under three groups proceeding from said opposite end; and rich gas riser ducts communicably connecting each of said gun flues with the vertical combustion flues of the first and third groups of flues under which each of said gun flues extends, said gun flues each being closed to the second group of flues under which each of said gun flues extends and also being closed to, and terminating in advance of, the exterior group of flues disposed beyond the third group under which each of said gun flues extends.

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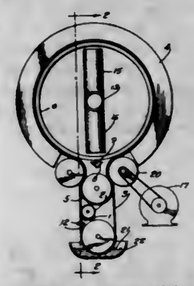
**3,170,851**
**DOWNFLOW HORIZONTAL COKING RETORT OVEN**
**Joseph van Ackeren, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware**
**Filed Aug. 16, 1961, Ser. No. 131,934**
**9 Claims. (Cl. 202—144)**



1. In a coke oven battery, in combination: a series of alternate horizontal coking chambers and intermediate heating walls arranged side by side in a row, each of said heating walls having a row of vertical flame flues with vertical partition walls between and separating each two flues, a vertical riser passage in each of said partition walls, a plurality of ports leading from each of said passages connecting each of said passages with a pair of flues in said heating wall at a plurality of closely spaced levels along the height of the flues, crossunder duct means passing beneath intervening coking chambers and communicably connecting the bottom ends of the flame flues in each heating wall solely with the bottom ends of the flame flues in one other heating wall, and regenerators communicably connected with the bottom ends of the vertical riser passages in said partition walls said regenerators extending parallel to said heating walls.

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**3,170,852**
**PROXIMITY SURFACE STILL**
**Clyde S. Barnhart, Sr., 4718 Kenmore Ave., Alexandria, Va.**
**Filed June 22, 1962, Ser. No. 204,652**
**4 Claims. (Cl. 202—236)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**



1. A close proximity still comprising a drum-type heat exchanger for introducing heat into the still, said heat

exchanger surrounding a rotatable condenser element concentrically mounted with reference to said heat exchanger, said condenser element having internal fluid conduit means for removing heat from said condenser element, an endless fibrous belt evaporator wrapped substantially around and spaced from said condenser element by an open screen endless belt-type separator between said evaporator and said condenser element, evaporator saturating means comprising a distilland trough and a roller therein for transferring the distilland from said trough to said evaporator means for rotating said evaporator, said separator and said condenser element.

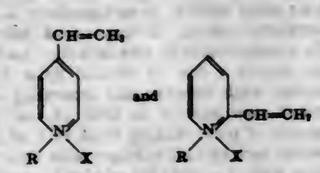
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### 3,170,853
### BRIGHT NICKEL PLATING BATHS CONTAINING A VINYL PYRIDINIUM COMPOUND BRIGHTENER

Harry Kroll, Kent County, R.I., assignor to Sarki Research and Development Corporation, a corporation of Rhode Island

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,032
11 Claims. (Cl. 204—49)

1. A bath for producing bright nickel deposits comprising an aqueous acid solution of at least one soluble nickel salt, 0.2 to 50 grams per liter of at least one organic sulfur compound selected from the group consisting of unsaturated aliphatic sulfonic acids, aromatic sulfonic acids, aromatic sulfonamides and sulfonimides, and 0.001 to 0.30 gram per liter of at least one compound having a formula selected from the group consisting of



where R is selected from the group consisting of allyl and methallyl radicals, and X is selected from the group consisting of bromine and chlorine.

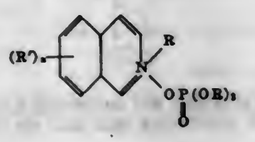
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### 3,170,854
### BRIGHT NICKEL PLATING BATH CONTAINING A PYRIDINIUM OR QUINOLINIUM PHOSPHATE BRIGHTENER AND METHOD OF ELECTROPLATING THEREWITH

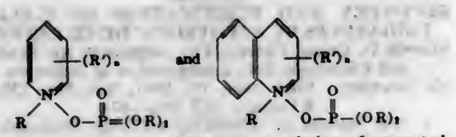
Harry Kroll, Kent County, R.I., assignor to Sarki Research and Development Corporation, a corporation of Rhode Island

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,063
11 Claims. (Cl. 204—49)

1. A bath for producing bright nickel deposits comprising an aqueous acid solution of at least one soluble nickel salt, 0.2 to 50 grams per liter of at least one organic sulfur compound selected from the group consisting of unsaturated aliphatic sulfonic acids, aromatic sulfonic acids, aromatic sulfonamides and sulfinimides, and 0.001 to 0.30 gram per liter of at least one compound selected from the group consisting of:



and



where R is selected from the group consisting of saturated and unsaturated aliphatic radicals having from 1 to 4 carbon atoms, R' is selected from the group consisting of methyl, ethyl, and vinyl groups, and $n$ has a value of 0–1.

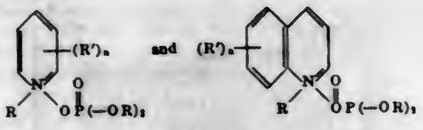
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### 3,170,855
### BRIGHT NICKEL PLATING BATHS

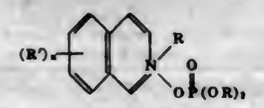
Harry Kroll, Kent County, R.I., assignor to Sarki Research and Development Corporation, a corporation of Rhode Island

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,068
10 Claims. (Cl. 204—49)

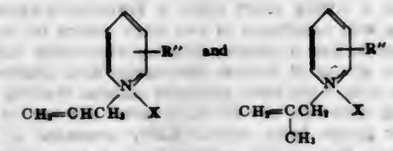
1. An aqueous electrolytic bath for the electrodeposition of mirror bright ductile nickel which comprises a solution containing soluble nickel salts and at least one organic sulfur compound selected from the group consisting of unsaturated aliphatic sulfonic acids, aromatic sulfonic acids, aromatic sulfonamide and sulfonimides, and a brightener consisting essentially of a component selected from ($a$) and ($b$), wherein ($a$) is selected from the group consisting of:



and



and ($b$) is selected from the group consisting of



wherein

R is selected from the group consisting of methyl, ethyl, propyl, butyl, allyl and methallyl;

R' is selected from the group consisting of methyl, ethyl, vinyl;

$n$ is 0 or 1;

R'' is a vinyl group in the 2 or 4 position;

X is a halogen.

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### 3,170,856
### METHOD AND DEVICE FOR PRODUCING HYPERPURE GALLIUM

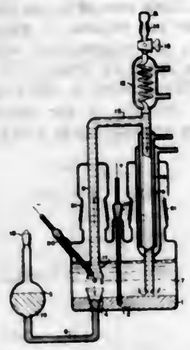
Siegfried Leibenzeder, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Sept. 28, 1961, Ser. No. 141,381
Claims priority, application Germany, Sept. 30, 1960, S 70,729
4 Claims. (Cl. 204—59)

3. The method of producing hyperpure gallium for electronic purposes by electrolytic precipitation, which comprises using a solution of a gallium complex of the type $Ga(GaX_4)$ wherein X is a halogen, in a non-aqueous



aromatic organic solvent selected from the group consisting of benzene, toluene and xylene, and adjusting the



current density above 200 amperes/square decimeter to precipitate gallium at the cathode in liquid form.

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### 3,170,857
### METHOD FOR PRODUCING GALLIUM, PARTICULARLY FOR SEMICONDUCTOR PURPOSES

Richard Dötzer, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,592
Claims priority, application Germany, Mar. 31, 1962, S 78,776
9 Claims. (Cl. 204—59)

1. A method for producing gallium from the sodium-aluminate liquor of the Bayer aluminum oxide process for recovering alumina from aluminum ores, which comprises adding finely divided aluminum to the sodium aluminate liquor to cement and to absorb the gallium contained in said sodium aluminate liquor as sodium gallate, the quantity of aluminum added being at least large enough to completely absorb the evolving gallium as an aluminum-gallium alloy, and thereafter separating the gallium from said aluminum-gallium alloy.

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### 3,170,858
### PROCESS FOR MAKING TETRAFLUOROETHYLENE POLYMERS

Paul E. Muehlberg, Lake Jackson, Gaines C. Jeffrey, Freeport, and Lester W. Harriman, Angleton, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 20, 1962, Ser. No. 211,423
5 Claims. (Cl. 204—154)

1. A process for making a tetrafluoroethylene homopolymer suitable for making fluid-permeable filters by pressing and sintering at elevated temperatures and pressures, which process comprises polymerizing tetrafluoroethylene by contacting monomeric tetrafluoroethylene with particles of a finely divided tetrafluoroethylene homopolymer, which homopolymer particles have previously been subjected to the action of high energy ionizing radiation in a reduced atmosphere not greater than 100 millimeters of Hg absolute pressure, with an effective dose to initiate polymerization of the monomeric tetrafluoroethylene, and graft copolymerizing an amount of tetrafluoroethylene equal to at least 50 percent by weight of the irradiated polymer, then again irradiating the graft copolymer in a reduced atmosphere not greater than 100 millimeters of Hg absolute pressure with an effective dose of high energy ionizing radiation to initiate polymerization of monomeric tetrafluoroethylene, again contacting the irradiated graft copolymer with monomeric tetrafluoroethylene and copolymerizing thereon an amount of tetrafluoroethylene equal to at least 50 percent by weight of the irradiated graft copolymer, and repeating the cycle of operations for a plurality of times.

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### 3,170,859
### PROCESS FOR THE PREPARATION OF SILICON FILMS

Michel Boudart, Princeton, and Peter I. Pollak, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 25, 1959, Ser. No. 801,690
4 Claims. (Cl. 204—157)

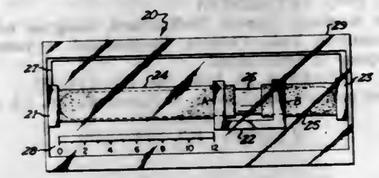
1. The method of forming a film of high purity silicon on a substrate which comprises flowing hydrogen into a reaction chamber, providing a mass of silicon and a substrate in said chamber with said substrate downstream of said mass of silicon in said hydrogen flow, exposing said hydrogen to a source of energy sufficient to disassociate hydrogen gas to hydrogen atoms at a point in said chamber where said hydrogen atoms thus generated contact and react with said mass of silicon to form a silicon hydride complex, and effecting deposition of silicon from said silicon hydride complexes on said substrate.

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### 3,170,860
### CONDITION RESPONSIVE DEVICES

William T. Morin, Jr., Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Jan. 22, 1962, Ser. No. 167,734
6 Claims. (Cl. 204—195)



6. A device of the character described comprising in combination: means for producing an electric output the magnitude of which is dependent on temperature; an absorbent matrix medium; a pair of spaced electrodes arranged in contact with said medium; a rupturable vial disposed adjacent said medium and containing an electrolyte composition, which composition upon rupture of said vial is capable of impregnating said medium; and means electrically connecting said electric output means and said electrodes for applying said output thereto, passage of said output through said electrodes generating reaction products in said electrolyte at said electrodes at a rate proportional to the temperature of said electric output means with at least one of said reaction products migrating at a time-temperature dependent rate along said medium to produce a visible change therein.

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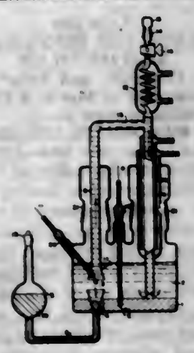
### 3,170,861
### APPARATUS FOR PRODUCING HYPERPURE GALLIUM

Siegfried Leibenzeder, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany

Original application Sept. 28, 1961, Ser. No. 141,381. Divided and this application May 6, 1964, Ser. No. 370,749
Claims priority, application Germany, Sept. 30, 1960, S 70,729
1 Claim. (Cl. 204—239)

Apparatus for producing hyperpure gallium for electronic purposes by electrolytic precipitation, which comprises a closed vessel having a gallium anode, a cathode, a collecting funnel, and a thermosiphon circulatory system, said cathode being located above said funnel so that

hyperpure gallium electrolytically precipitating on said cathode drops into said funnel, said thermosiphon system comprising two interconnected inlet and outlet legs, said



inlet leg being located above said cathode and said outlet leg being located above said anode at a location removed from said cathode, said outlet leg having cooling means in conjunction therewith.

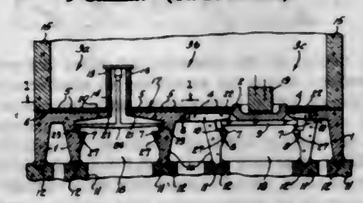
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**3,170,862**

**REINFORCED CONCRETE STRUCTURE IN AN ELECTROLYTIC FURNACE HOUSE FOR PRODUCING ALUMINUM**

**Reidar Hegland, Zurich, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a joint-stock company of Switzerland**

**Filed Oct. 10, 1961, Ser. No. 144,095**
**Claims priority, application Switzerland, Oct. 14, 1960, 11,522/60**
**9 Claims. (Cl. 204—244)**



1. A furnace house for furnace pots used in the electrolytic production of aluminum, comprising side walls, and means for supporting a plurality of furnace pots between said walls comprising a foundation structure, a floor supporting reinforced concrete structure supported on said foundation structure and constituting a plurality of sections extending between said walls and said furnace pots, means for supporting the furnace pots on said sections, and means electrically insulating said sections in all directions from each other, from the earth, from said foundation structure and from said furnace walls.

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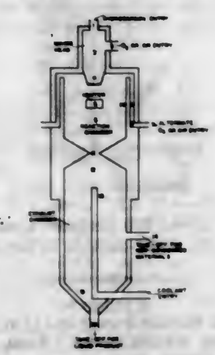
**3,170,863**

**HYDROCARBON CONVERSION PROCESS**

**Leo J. Spilman and Roy L. Grantom, El Dorado, Ark., assignors to Monsanto Company, a corporation of Delaware**

**Filed Sept. 30, 1960, Ser. No. 59,620**
**9 Claims. (Cl. 208—3)**

1. A process for the non-catalytic partial oxidation of liquid hydrocarbon feedstocks containing at least one percent of aromatic hydrocarbons to produce a liquid fraction of increased aromaticity and a gaseous fraction comprised of olefinic hydrocarbons of 2 to 4 carbon atoms, the process comprising introducing the liquid hydrocarbon feedstock concurrently with an oxygen containing gas selected from the group consisting of oxygen, air and mixtures thereof in a mol ratio of oxygen to hydrocarbon feedstock of 0.1:1 to 2:1 into a reaction zone at a hydrocarbon feed input rate of 0.5 to 10.0 liquid volumes of feed per minute per volume of reaction space within the reaction zone, the temperature within the reaction zone being in the range of about 375 to 700° C., the reaction zone pressure being in the range of 25 to 100 p.s.i.a., the flow velocity of the reactants within the reaction zone being approximately 1 to 15 feet per second



and the residence time of the reactants in the reaction chamber being in the range of $10\times10^{-3}$ seconds to $250\times10^{-3}$ seconds, thereafter passing the high temperature gaseous products into a cooling zone wherein said gaseous products are rapidly cooled by adiabatic expansion of the gaseous products into the cooling zone, the cooling zone being maintained at a pressure with respect to the pressure of the reaction zone such as to cause a reaction zone to cooling zone pressure ratio of 1.2:1 to 10:1.

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**3,170,864**

**HIGH QUALITY DAIRY WAX**

**Donald Pattison, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**

**No Drawing. Filed June 27, 1961, Ser. No. 119,790**
**2 Claims. (Cl. 208—21)**

1. Improved wax coating composition which comprises a refined paraffin wax having a typical congealing point of about 128° F., a typical viscosity of about 3.8 cs. at 210° F. and an oil content below about 0.5% by weight present in a concentration from about 70 to 90% by weight; a microcrystalline wax having a melting point in the range of about 125 to 190° F. present in a concentration from about 10 to 30% by weight; and a neutral oil present in a concentration from about 0.2 to 3% by weight, said neutral oil being characterized by having an aromatic content below about 12%, a paraffinic content greater than about 30%, a pour point in the range from about −10 to +10° F. and a viscosity in the range from about 60 to 80 Saybolt seconds at 100° F.

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**3,170,865**

**METHOD OF RETARDING DEPOSITION OF COKE IN PETROLEUM FURNACES**

**James B. Allen, Houston, and Douglas K. Layne, Arlington, Tex., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan**

**No Drawing. Filed July 17, 1961, Ser. No. 124,353**
**3 Claims. (Cl. 208—48)**

1. A method of extending the furnace life in petroleum furnaces by preventing, or decreasing coke accumulation in the furnace which comprises mixing with the petroleum prior to heating in the furnace from .1 to 100 parts per million of a polymethylsiloxane in fluid form, based on the weight of the petroleum.

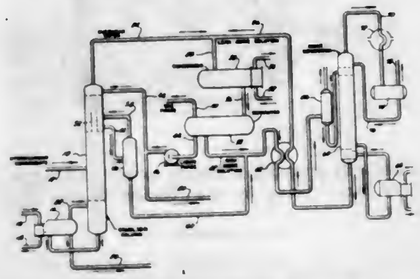


**3,170,866**

**PROCESS FOR STABILIZING LIQUIDS**

**Carl J. Wendt, Jr., Los Angeles, Calif., assignor to The Ralph M. Parsons Company, Los Angeles, Calif., a corporation of Nevada**

**Filed Mar. 13, 1961, Ser. No. 95,299**
**1 Claim. (Cl. 208—350)**



A process for stabilizing multi-component hydrocarbon liquids containing acidic gas constituents, which process comprises the steps of

(*a*) heating the hydrocarbon liquid in a column to produce an overhead vapor including hydrocarbon components and acidic gas constituents,

(*b*) contacting the overhead vapor with an aqueous solution of a reagent selected from the group consisting of alkanolamines, alkali metal carbonates, and alkali metal phosphates,

(*c*) cooling the overhead vapor-aqueous reagent solution to condense at least part of the hydrocarbon components,

(*d*) separating a gas product and condensed hydrocarbon product, each substantially free of acidic gas constituents, from the reagent solution rich in absorbed acidic gas constituents,

(*e*) returning at least part of the condensed hydrocarbon product as reflux to the column,

(*f*) regenerating the rich reagent solution by heating to remove absorbed acidic gas constituents, and

(*g*) contacting the overhead vapor with regenerated reagent solution.

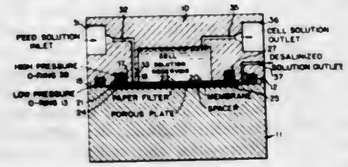
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**3,170,867**

**DESALINIZATION PROPERTIES OF HIGH FLOW POROUS MEMBRANES BY PRESSURE TREATMENT USING ALUMINUM ION**

**Sidney Loeb and Gargeswari R. Nagaraj, Los Angeles, Calif., assignors to The Regents of the University of California, Berkeley, Calif., a corporation**

**Filed May 21, 1962, Ser. No. 196,337**
**13 Claims. (Cl. 210—22)**




1. A method of separating water from an aqueous solution;

(*a*) dissolving a film-forming cellulosic ester in an aqueous solution of a pore-producing salt in an organic solvent;

(*b*) casting the resulting solution to form a membrane of substantially uniform thickness;

(*c*) evaporating a portion of said organic solvent for a predetermined period of time;

(*d*) immersing the cast membrane in water to remove said pore-producing salt;

(*e*) heating the cast membrane in water;

(*f*) applying under pressure an aqueous solution to one side of the resulting membrane; and

(*g*) adding a small concentration of aluminum ions to the aqueous solution.

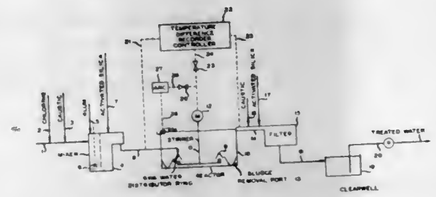
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**3,170,868**

**WATER TREATMENT WITH TEMPERATURE CONTROL**

**Vernon T. Atkinson, Pasadena, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Sept. 11, 1961, Ser. No. 137,189**
**5 Claims. (Cl. 210—49)**



1. A method of treating water which comprises adding a coagulant to said water, agitating by stirring at a rate of 0.7–2.8 r.p.m. the admixture of said water and said coagulant in a relatively quiescent reaction zone, allowing solids resulting from said adding to settle in said zone, withdrawing clarified water from said zone, measuring the temperature difference of water upstream of and downstream of said zone, and controlling the rate of said agitating in response to said measuring in accordance with the following relationships.

| Temperature difference, upstream is: | Agitation speed, r.p.m. |
|---|---|
| 2° F. or more colder | 2.8 |
| 1° F. to 2° F. colder | 2.3 |
| 0° F. to 1° F. colder | 1.8 |
| 0° F. to 1° F. warmer | 1.2 |
| 1° F. or more warmer | 0.7 |

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**3,170,869**

**CLARIFICATION OF AQUEOUS SUSPENSIONS WITH ACETALIZED POLYVINYL ALCOHOL**

**Saburo Imoto, Kurashiki, Japan, assignor to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan**

**No Drawing. Filed Apr. 3, 1962, Ser. No. 184,688**
**Claims priority, application Japan, Apr. 8, 1961, 36/12.240**
**10 Claims. (Cl. 210—54)**

1. A process for clarifying an aqueous suspension which comprises adding to said suspension from 0.01 to 0.5%, based on the weight of suspended material, of acetalized polyvinyl alcohol wherein the degree of acetalization of the polyvinyl alcohol is at least about 1% but less than about 15%.

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**3,170,870**

**REMOVING OCCLUDED AQUEOUS SYSTEM FROM HYDRATE CRYSTALS**

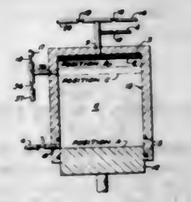
**Paul W. Bachman, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware**

**Filed May 17, 1963, Ser. No. 281,239**
**3 Claims. (Cl. 210—59)**

1. A process for removing occluded aqueous system from hydrate crystals comprising the steps of:

(*a*) introducing a slurry of hydrate crystals in an aqueous solution to a chamber;

(*b*) applying pressure to the slurry great enough to shear the crystal agglomerates at less than the pressure required to crush individual crystals, whereby said occluded aqueous system is squeezed from said crystals;

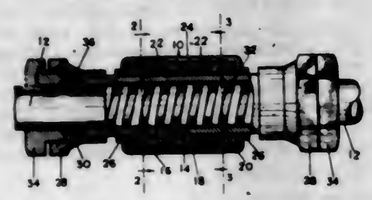


(*c*) removing from the chamber the exudate pressed from the decreasing volume of crystals; and

(*d*) maintaining the crystals at a temperature at which they remain solid during the application of pressure.

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**3,170,871**
**MAGNETIC FILTER**
**Saburo Miyata Moriya, 58 Shimo Takanawa, Yokohama, Japan**
**Filed Nov. 22, 1960, Ser. No. 71,095**
**4 Claims. (Cl. 210—222)**

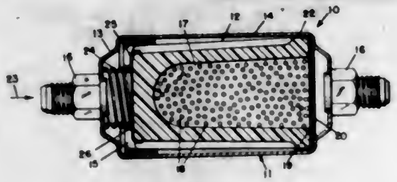


1. A magnetic filter line comprising a rigid tubular casing of non magnetic material, means for connecting said casing into a fluid carrying line, a magnet assembly including a plurality of annular permanent magnets axially spaced apart along the length of and surrounding said casing; said magnets being spaced apart by annuli of non magnetic material, a rigid housing of non magnetic material surrounding and enclosing said magnets, each of said magnets being magnetized on the diameter of each annulus, and having the axes of magnetization progressively angularly offset relative to each other along the length of said series.

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**3,170,872**
**CERAMIC BLOCK FILTER DRIER**
**Stephen Balogh and Ronald M. Wilber, Lyons, N.Y., assignors, by mesne assignments, to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio**
**Filed Aug. 3, 1962, Ser. No. 214,663**
**2 Claims. (Cl. 210—266)**

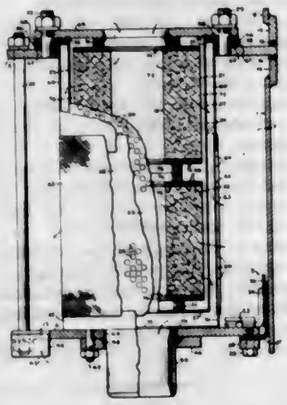
1. A device of the character described comprising: an elongated hollow body of rigid porous ceramic material having a closed end and an open end, a quantity of desiccant material in said body, a jacket surrounding and spaced from said body and having inwardly reduced end portions forming shoulders therewith, an inlet fitting in that end portion of said jacket adjacent the closed end of said body, an outlet fitting at the other end portion of said jacket, a compression spring interposed between the closed end of said body and the adjacent reduced portion of said jacket, an integrally formed outwardly extending annular flange at the open end portion of said body, a perforated metallic cap having a flange overlying the flange of said body and acting to contain said desiccant material within said body, and a fine woven strainer disc gripped marginally between said cap and the adjacent reduced end portion of said jacket, said body flange be-



ing in abutting press-fitted relation to said cap flange and said cap flange being in like relation to the adjacent shoulder.

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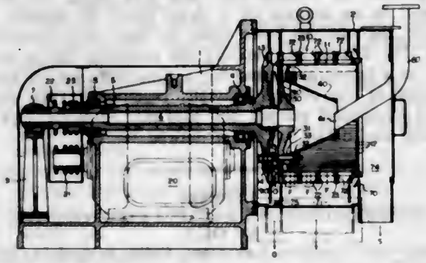
**3,170,873**
**WATER FILTER-SEPARATOR**
**Clifford H. May, Fairfax, Va., assignor to The Briggs Filtration Company, Washington, D.C., a corporation of Maryland**
**Filed July 7, 1958, Ser. No. 746,777**
**3 Claims. (Cl. 210—307)**



2. A dehydrator and filter for fuels comprising, in combination, a cylindrical tank, a first annular partition disposed adjacent one end of the tank forming an inlet chamber having a fuel inlet and an outlet chamber having a fuel outlet, a second annular partition disposed adjacent the other end of the tank forming a water outlet chamber having a water outlet, a water and filter coalescer separator unit disposed between the first partition and the second partition, said filter coalescer separator unit communicating with the inlet chamber and provided with means for directing the water to the water chamber while passing the filtrate to the outlet chamber, receiving means carried by the second partition and circumferentially spaced thereon, an annular ring having overlapping extremities and radially disposed means extending into the receiving means, inwardly projecting abutments carried by the extremities, an annular gasket interposed between the peripheral edge of the partition and the tank, said annular gasket being connected to the partition and disposed exteriorly and coextensive with said annular ring, and resilient means acting on the abutments to cause the ring to expand and force the gasket against the cylindrical tank to seal the second partition between the fuel outlet chamber and water outlet chamber.



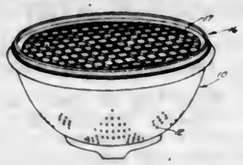
**3,170,874**
**CENTRIFUGAL FILTERS**
**Toru Iesso, 10 Chofu-minamicho, 1-chome, Ota-ku, Tokyo, Japan**
**Filed Apr. 26, 1961, Ser. No. 105,781**
**3 Claims. (Cl. 210—374)**



2. A continuous centrifugal filter having a cylindrically shaped rotatable basket member with a perforate peripheral wall and a front and rear end, said filter being operable upon a slurry to separate solids from liquid, said filter comprising means for feeding the slurry towards the rear end of said basket member, a rotatable pusher member mounted axially in said cylindrical basket member at the rear end thereof and adjacent the peripheral wall of the basket member, means for driving said basket member and said pusher member at different speeds of rotation to provide a predetermined speed difference therebetween, and a series of radially extending wedge elements arranged circumferentially and uniformly on the pusher member for pushing forward the solids retained on the inner peripheral wall of said basket member upon differential rotation of the latter and said pusher member, each of said wedge elements including directly connected front and rear planar sections each of which extend obliquely to a plane normal to the axis of rotation, the front planar section having a smaller obliquity than the rear planar section, the wedge elements being arranged on the pusher member in partially overlapping relation with the front planar section of each wedge element overlapping only the rear planar section of an adjacent wedge element to define therewith an inclined convergent passageway therebetween, said pusher member being provided with circumferentially spaced radial passageways rearwardly of the wedge elements, said means which feeds the slurry introducing the slurry to said pusher member through said radial passageways such that liquid of the slurry flows outwardly through the peripheral wall of the basket member while separated solids are passed through the inclined passageways between adjacent wedge elements onto said peripheral wall and then are urged forwardly in said basket member by said front planar members towards the front end of the basket member.

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**3,170,875**
**COLANDER**
**James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware**
**Filed Mar. 12, 1962, Ser. No. 179,000**
**1 Claim. (Cl. 210—465)**



A colander including a hemispherical hollow container having a continuous side wall and open top, a plurality of relatively small diameter perforations in said side wall, the central axis of said perforations being substantially parallel to the axis of rotation of said hemisphere located normal to the bottom of the hemisphere; legs on the colander to maintain the colander in an upright position on a supporting surface; an open grill positioned across said open top, and a rim integral and continuous with the periphery of said grill, a portion of said rim being positioned over the upper edge of said side wall and tightly engaging the outer surface of the side wall to maintain the grill in position across the open top; said grill and rim being fabricated from resilient, flexible plastic wherein the upper portion of the side wall of the container is flared outwardly between about 5°–13° from the vertical; and said rim has an inverted U-shape with the legs of the U being substantially parallel to each other and conforming to the flared upper portion of the side wall of the container; said legs of the U being tightly engaged with each side of the side wall of the container to seal the rim and grill to the container side wall and to maintain said grill taut between said rim.

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**3,170,876**
**TEXTILE TREATING COMPOSITIONS**
**Robert A. Olney, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Feb. 1, 1961, Ser. No. 86,325**
**9 Claims. (Cl. 252—8.8)**

1. A fluid textile softening composition which is readily dispersible in water consisting essentially of about 1 part by weight of a nonionic emulsifier selected from the group consisting of polyoxyethylene ethers of castor oil and polyoxyethylene ethers of hydrogenated castor oil, said ethers containing from 20 to 300 oxyethylene groups per mole of oil, and from about 1 to 3 parts by weight of the reaction product of a hexitol epihalohydrin condensate containing from 1 to 4 halohydrin radicals per hexitol residue reacted with a stoichiometric excess of an acyclic $C_{12}$ to $C_{20}$ fatty acid diamide of diethylene triamine.

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**3,170,877**
**ANTISTATIC TREATING SOLUTION FOR POLYACRYLONITRILE FIBERS AND METHOD**
**John P. G. Beiswanger and James J. Robinson, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Dec. 21, 1961, Ser. No. 161,271**
**9 Claims. (Cl. 252—8.8)**

1. A method for diminishing the tendency to accumulate a charge of static electricity of polyacrylonitrile fibers comprising by weight from 70 to 95 parts of an acrylonitrile polymer selected from the group consisting of polyacrylonitrile and a copolymer containing from 70 to 95% of acrylonitrile and from 30 to 5% of another polymerizable ethenoid monomer selected from the group consisting of a vinyl ester of a saturated fatty acid containing from 2 to 4 carbon atoms, an isopropenyl ester of a saturated fatty acid containing from 2 to 4 carbon atoms, an acrylic acid alkyl ester, a methacrylic acid alkyl ester, vinyl chloride, vinylidene chloride, styrene and α-methylstyrene, and from 30 to 5 parts of poly-N-vinyl pyrrolidone,

said method comprising treating such fibers with an acidic, about 0.1 to 10% by weight aqueous solution of a mixture consisting of

(*a*) a mixture of free mono- and di- acid phosphate esters of a nonionic surface active agent which is a condensation product of at least one mole of an alkylene oxide of 2 to 4 carbon atoms with one mole of an alkyl phenol containing 10 to 61 carbon atoms, and

(*b*) salts of said phosphate esters with organic ampholytic compounds containing at least one

basic amino group and at least one member of the group consisting of carboxylic, sulfonic, phosphoric and phosphonic acid groups,

said salts being present in an amount insufficient to raise the pH of said solution above 4.0 when the concentration of said mixture of (*a*) and (*b*) in said solution is at least 5% by weight,

and then drying the treated fibers to deposit thereon about 0.05 to 3% of said mixture of (*a*) and (*b*) by weight of the fibers.

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3,170,878
## GREASE COMPOSITION
Eldon L. Armstrong, Mullica Hill, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed Mar. 3, 1961, Ser. No. 93,024
2 Claims. (Cl. 252—18)

1. A grease consisting essentially of: a lubricating oil vehicle; a grease-forming quantity of a gelling agent comprising an alkyline earth metal salt-alkaline earth metal soap complex; and from about one to about sixty-five percent, by weight, of molybdenum disulfide of such fineness that its particles have an effective diameter of less than ten microns, said complex being comprised of an alkaline earth metal salt of a low molecular weight aliphatic monocarboxylic acid having from one to six carbon atoms per molecule, an alkaline earth metal salt of an intermediate molecular weight aliphatic monocarboxylic acid having from seven to twelve carbon atoms per molecule and an alkaline earth metal soap of a high molecular weight aliphatic monocarboxylic acid having more than twelve carbon atoms per molecule.

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3,170,879
## LUBRICANT
Richard A. Batcoak, Westmont, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed May 25, 1961, Ser. No. 112,511
33 Claims. (Cl. 252—18)

1. A method of preparing a lubricating composition, which comprises: (I) providing a charge mixture of (1) an oil of lubricating viscosity, (2) a thickening ingredient selected from

(A) an admixture of a basically reacting alkaline earth metal compound and a mix of aliphatic monocarboxylic acids comprising a mix selected from

(i) an aliphatic monocarboxylic acid having from 1 to 6 carbon atoms and an aliphatic monocarboxylic acid having from 7 to 12 carbon atoms, and

(ii) the acids specified in (i) and an aliphatic monocarboxylic acid having at least 13 carbon atoms, and

(B) an admixture of an alkaline earth metal compound selected from

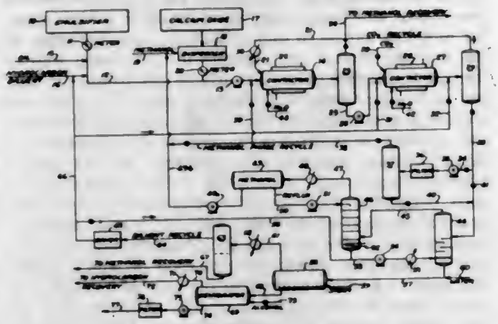
(iii) a salt of an aliphatic monocarboxylic acid having from 1 to 6 carbon atoms and a soap of an aliphatic monocarboxylic acid having from 7 to 12 carbon atoms, and

(iiii) the salt and soap specified in (iii) and a soap of an aliphatic monocarboxylic acid having at least 13 carbon atoms,

and (3) a compound selected from the group consisting of an ammonium salt of an aliphatic monocarboxylic acid, an ammonium salt of an aryl aliphatic monocarboxylic acid, an ammonium sulfate, an ammonium phosphate, an ammonium salt of a sulfated castor oil, an ammonium salt of a sulfonic acid—the sulfonic acid being selected from the group consisting of a phenyl sulfonic acid, a naphthyl sulfonic acid, an alkyl-substituted phenyl sulfonic acid, an alkyl-substituted naphthyl sulfonic acid and a mineral oil sulfonic acid—and an addition product of an amine and an aliphatic monocarboxylic acid, the amount of said thickening ingredient determined as salt-soap complex being from about 1 to about 50 percent by weight, the amount of said compound specified in (3) being from about 1 to about 10 percent by weight, and said lubricating oil being present in an amount of at least about 40 percent by weight, the amounts based upon the total charge mixture; and (II) mixing and heating the resulting charge mixture to a temperature and for a time sufficient to effect reaction of any of said basically reacting alkaline earth metal compound present and said mix of acids, and to thicken said oil to the extent desired.

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3,170,880
## DISPERSIONS OF CALCIUM COMPOUNDS IN OILS
Vanderveer Voorhees, Los Altos, Calif., assignor to Bray Oil Company, Los Angeles, Calif., a limited partnership of California
Filed Nov. 17, 1959, Ser. No. 853,631
13 Claims. (Cl. 252—327)



1. The process of preparing dispersions of calcium compounds in oils comprising reacting calcium oxide with an acid reagent selected from the class consisting of acids and acid anyhdrides whose calcium salts are water insoluble, in the presence of an emulsion of oil, methanol and an oil soluble emulsifying agent in the absence of water, said reactants being present in the following ratios:

| | Parts (wt.) |
|---|---|
| Emulsifying agent | 5–20 |
| Oil | 2–40 |
| Methanol | 2–20 |
| Calcium oxide | 1–4 |

acid reagent sufficient to convert the calcium oxide to the dispersed compound, distilling methanol from the reaction mixture thereafter treating the mixture with water to break the gel formed in said mixture and recovering oil and dispersed calcium compound from the water and insoluble residue.

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3,170,881
## SUPERBASED BARIUM CONTAINING LUBRICANTS
Vanderveer Voorhees, Los Altos, Calif., assignor to Bray Oil Company, Los Angeles, Calif., a limited partnership of California
No Drawing. Filed July 20, 1962, Ser. No. 211,397
8 Claims. (Cl. 252—32.7)

1. The process of making clear superbased barium containing lubricating oils which comprises

(1) forming a clear substantially water-free solution in lubricating oil of a compound selected from the class consisting of alkali and alkaline earth metal salts of high molecular weight oil-soluble sulfonic acids and of acids derived from reacting phosphorous sulfide with olefins of about 500 to 3,000 SSU viscosity at 210° F. and hydrolyzing the product with a metal base,

(2) adding to the resulting lubricating oil solution a substantially anhydrous methanol solution of barium oxide,

(3) agitating the mixture to form an emulsion,

(4) adding to the emulsion in the absence of water an acid which forms a water insoluble compound with barium,

(5) heating the resulting water-free mixture to distill methanol therefrom, thereby forming a gel,

(6) decomposing the resulting gel by the action of water, and

(7) dehydrating the mixture.



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3,170,882
## PROCESS FOR MAKING SEMICONDUCTORS OF PREDETERMINED RESISTIVITIES
Heinrich Gutsche, Northumberland County, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
Filed Nov. 4, 1963, Ser. No. 322,007
15 Claims. (Cl. 252—62.3)

1. A method for the production of semi-conductor material having predetermined resistivities which comprises providing a substrate of semi-conductor material of predetermined length and diameter and having a saturated concentration of active impurities therein, pulling said substrate to increase its length and decrease its diameter, depositing from the vapor phase an overlayer of pure said semiconductor material to increase its diameter by a predetermined amount thereby decreasing the effective impurity concentration in said substrate thereby forming a rod of said material, and zone refining said rod in an atmosphere non-reactive with respect to the semiconductor material during a predetermined number of zone passes at a controlled travel rate to distribute the impurities throughout said material.

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3,170,883
## STABILIZATION OF CHLORINE IN AQUEOUS SOLUTIONS
Robert W. Owen and Seymour Thomas, Jr., Scottsdale, Ariz., assignors to Cortez Chemicals Company, Phoenix, Ariz.
No Drawing. Filed Apr. 2, 1962, Ser. No. 184,590
1 Claim. (Cl. 252—187)

A water solution suitable for circulating use in a cooling system including an evaporative water-cooling tower, said solution consisting essential of water, free available chlorine in a concentration of about 0.2 to 3.0 p.p.m., and sulfamate ions in a concentration between about 1 and 10 p.p.m.

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3,170,884
## NAPHTHALENE DERIVATIVE SCINTILLATORS
Richard L. Macklin, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Feb. 19, 1962, Ser. No. 174,322
5 Claims. (Cl. 252—301.3)

1. An improved liquid scintillator for detecting high-energy gamma rays in the mev. energy range consisting essentially of 1-methyl naphthalene as the solvent of said scintillator, 2,5 diphenyloxazole as the primary solute of said scintillator, said primary solute having a concentration in the range of 5–50 gm./liter, and 1,4-bis 2-(5-phenyloxazolyl)-benzene as the secondary solute of said scintillator, said secondary solute having a concentration in the range of 0.1–1.0 gm./liter.

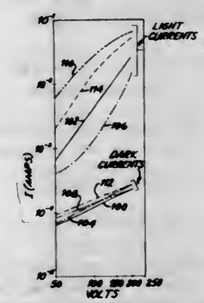
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3,170,885
## CATALYST AND PROCESS OF MAKING THE SAME
Jacque C. Morrell, 8 Oxford St., Chevy Chase, Md.
No Drawing. Filed Feb. 20, 1959, Ser. No. 794,535
8 Claims. (Cl. 252—435)

1. A polymerization catalyst comprising a dried mixture of a phosphoric acid and an inorganic support, said support consisting essentially of a natural porous silica material selected from the class consisting of kieselguhr, infusorial earth and diatomaceous earth and an additive selected from the group consisting of bentonite, montmorillonite and halloysite, the said phosphoric acid comprising about 70% to 85% of the said mixture, said support containing not less than about 80% of the said natural porous silica material and less than about 20% and more than 1% of said additive, said support being further characterized in that the said porous silica material together with said additive comprises not more than about 30% of the mixture.

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3,170,886
## METHOD FOR TREATING PHOTOCONDUCTIVE CADMIUM SULFIDE CELL
George H. Morrison, Westbury, Frank C. Palilla, Maspeth, and Walter Zloczower, Forest Hills, N.Y., assignors to General Telephone and Electronics, Inc., a corporation of Delaware
Filed Apr. 26, 1961, Ser. No. 105,770
1 Claim. (Cl. 252—501)




A method for treating a photoconductive cadmium sulfide cell which comprises heating said cell in a furnace to a temperature falling within the range 500°–800° C. for a period of four minutes; removing said fired cell from the furnace and exposing the removed cell to ambient conditions until said cell is cooled to room temperature; reheating said cell in a furnace to a temperature within said range for said firing period; permitting said furnace containing said reheated cell to cool to room temperature; again reheating said cell in a furnace to a temperature within said range for said firing period; and removing said again reheated cell from the furnace and exposing the again reheated cell to ambient conditions until the again reheated cell is cooled to room temperature.

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3,170,887
## VIBRATION DAMPING COMPOSITION AND METHOD OF MAKING SAME
Thomas Ramos, 536 Fort Washington Ave., New York, N.Y.
No Drawing. Filed Nov. 14, 1962, Ser. No. 237,768
15 Claims. (Cl. 260—18)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A vibration damping material, which comprises a mixture, having a Shore, Type A–2, durometer hardness between about 10 and 70, in parts of weight, of:

(*a*) about 10 to 40 parts of an epoxy resin obtained

by the reaction of epichlorohydrin and a dihydric phenol, having an epoxide equivalent between about 170 to 300,

(*b*) about 100 parts of a long chain, amine terminated, polyamide resin obtained by the treatment of a polymerized vegetable oil acid with a polyamine,

(*c*) about 35 to 45 parts of a chlorinated paraffin whose chlorine content, by weight, does not materially exceed 50%, and

(*d*) about 1.8 to 20 parts of a curing agent for said resins.

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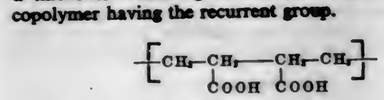
**3,170,888**

**LATICES OF VINYLIDENE CHLORIDE INTERPOLYMERS THICKENED WITH ETHYLENE-MALEIC ANHYDRIDE COPOLYMER AND ARTICLE COATED THEREWITH**

Leon Kutik, Broux, Francis W. Michelotti, Brooklyn, Sebastian T. Brancato, Queens Village, and Alice W. Pechnat, New York, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Aug. 31, 1962, Ser. No. 220,872
12 Claims. (Cl. 260—29.6)

1. A coating composition comprising a thickened latex consisting essentially of an aqueous dispersion of an interpolymer made from about 80% to about 87% by weight of vinylidene chloride, about 9% to about 18% by weight of ethyl acrylate, and about 1% to 4% by weight of methacrylic acid, the latex containing about 0.6 to 2.7 parts by weight, based on the latex solids, of a thickener consisting of a linear ethylene-maleic acid copolymer having the recurrent group.



and having a specific viscosity of 1.0 when determined on a 1%-by-weight solution of the copolymer in dimethyl formamide at 25° C., the solids content of the latex being about 40% to about 60% by weight.

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**3,170,889**

**POLYOLEFIN COMPOSITION**

Archibald Miller Hyson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 9, 1959, Ser. No. 797,870
3 Claims. (Cl. 260—32.6)

1. A normally solid polyolefin composition the polyolefin constituent of which consists of alpha-mono-olefin units having 2 to 5 carbon atoms containing from 0.0005% to about 5% by weight of the polyolefin of a compound selected from the class consisting of lauryl amido succinate, octadecyl amido succinate, decyl amido glutarate, lauryl amido adipate, n-octyl amido azelate, 2-ethylhexyl amido azelate and 2-ethylhexyl amido succinate.

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**3,170,890**

**POWDERS FOR FUSION COATING COMPRISING AN EPOXIDE RESIN, A SILOXANE RESIN, AN ACID ANHYDRIDE AND FILTERS**

Gerald C. Boyd and Harold L. Vincent, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Aug. 24, 1961, Ser. No. 133,561
1 Claim. (Cl. 260—37)

A free flowing powder suitable for fusion coating of solid surfaces consisting essentially of (A) from 40 to 75 percent by weight of a mixture of (1) from 40 to 99.5 percent by weight of an epoxide resin consisting essentially of a condensation product of epichlorohydrin and a bis(p-hydroxyphenyl)dimethylmethane, (2) from .5 to 60 percent by weight based on the combined weights of (1) and (2) of a siloxane resin having on the average from 1 to 1.7 monovalent hydrocarbon radicals per silicon atom of which monovalent hydrocarbon radicals at least 10 percent by number are phenyl and (3) an anhydride of a polycarboxylic acid, said anhydride having a melting point of at least 100° C. and said anhydride being present in amount such that there is from .4 to 1.4 anhydride equivalent weights per epoxide equivalent weight of the epoxy resin and (B) from 25 to 70 percent by weight of filler based on the combined weights of (A) and (B).

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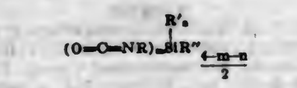
**3,170,891**

**SILICONE ISOCYANATES**

John L. Speier, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 14, 1962, Ser. No. 223,801
22 Claims. (Cl. 260—37)

7. A composition of matter comprising (1) an organosilicon compound of the structure



wherein R is selected from the group consisting of divalent hydrocarbon radicals and divalent hydrocarbon ether radicals having no more than one oxygen atom attached to any one carbon atom therein, each free of aliphatic unsaturation, R' is selected from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals each free of aliphatic unsaturation, R'' is selected from the group consisting of divalent oxygen radicals, divalent hydrocarbon radicals, divalent hydrocarbon ether radicals having no more than one oxygen atom attached to any one carbon atom therein, and divalent haloarylene radicals, each free of aliphatic unsaturation, *m* has a value from greater than 0 to 1 inclusive, *n* has a value from 0 to 3 inclusive, such that the sum of $m+n$ averages at least 1, and (2) a filler.

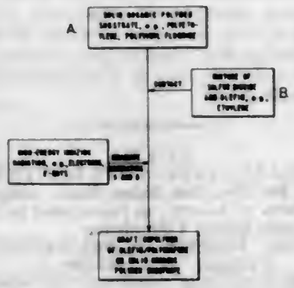
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**3,170,892**

**GRAFT POLYMERS WITH POLYSULFONE GRAFTS AND THEIR PREPARATION**

Warren F. Busse, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 29, 1960, Ser. No. 25,503
23 Claims. (Cl. 260—859)




1. The process of forming a graft copolymer which comprises contacting a mixture of an olefin and sulfur dioxide with a preformed solid substrate of an organic polymer having a molecular weight of at least 5000 activated by irradiation with at least 100 rads of high energy ionizing radiation having a minimum energy of at least 100 ev.

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**3,170,893**

**STABILIZATION OF POLYETHYLENE FOR THERMAL PROCESSING WITH SULFIDES OF DIALKYL PHENOLS**

Samuel Steingiser, Bridgeville, Pa., and Ival O. Salyer, Dayton, Ohio, assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 388,689, Oct. 27, 1953. This application June 25, 1964, Ser. No. 378,068
20 Claims. (Cl. 260—45.95)

1. A normally solid ethylene polymer containing a small amount, up to about 0.5 weight percent but sufficient to minimize adverse effects of thermal processing in the presence of free oxygen, of a sulfide of a dialkyl phenol having a total of not more than 13 carbon atoms in the two alkyl groups of each dialkyl phenol residue.

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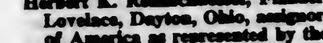
**3,170,894**

**SILICON-BONDED POLYHYDROCARBONOXY ORGANOPOLYSILOXANES AND ONE-COMPONENT ROOM TEMPERATURE CURED COMPOSITIONS CONTAINING SAID ORGANOPOLYSILOXANES AND CONDENSATION CATALYSTS**

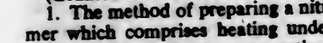
Paul L. Brown, Saginaw, and James Franklin Hyde, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,218
18 Claims. (Cl. 260—46.5)

15. A polysiloxane composition each molecule of which consists essentially of (1) at least two units of the formula



and (2) units of the formula



in which each R is selected from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, each Z is selected from the group consisting of chlorine atoms and radicals of the formula $R'(OCH_2CH_2)_cO-$ wherein R' is selected from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals and c has a value ranging from 1 to 3, each *a* has a value ranging from 2 to 3, each *b* has a value ranging from 0 to 2, the sum of $a+b$ in any unit (1) is no greater than 3, and each *d* has a value ranging from 0 to 2, and there being in each molecule of the ultimate siloxane composition an average of 1.3 to 2.0 R groups per silicon atom and essentially all of the molecules in said siloxane containing more than 7 units of (2).

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**3,170,895**

**TRIAZINE POLYMERS AND METHOD OF MAKING SAME**

Herbert K. Reimschuessel, Flanders, N.J., and Alan M. Lovelace, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Aug. 23, 1962, Ser. No. 219,082
2 Claims. (Cl. 260—47)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. The method of preparing a nitrogen-containing polymer which comprises heating under reflux a mixture in substantially equimolar proportions of 2-phenyl-4,6-diphenoxy-s-triazine and 2-phenyl-4,6-dianiline-s-triazine at a temperature of about 250° C. for about 10 hours.

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**3,170,896**

**PROCESS FOR ACYLATING POLYOXYMETHYLENES**

Kuno Wagner, Leverkusen, and Helmuth Kritzler, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1960, Ser. No. 1,856
Claims priority, application Germany, Jan. 16, 1959, F 27,489
7 Claims. (Cl. 260—67)

1. In a process of acylating high molecular weight polyoxymethylenes by reacting them at elevated temperature with an anhydride of a carboxylic acid, the improvement comprising conducting the reaction in the presence of about 0.5 to 10 parts by weight per 100 parts by weight of said anhydride of a carbodiimide selected from the group consisting of aliphatic, cycloaliphatic, aromatic and araliphatic carbodiimides, and a basic acylating catalyst selected from the group consisting of tertiary organic nitrogen bases, basic alkali metal salts, and basic alkaline earth metal salts.

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**3,170,897**

**REACTION OF ATOMIC HYDROGEN WITH AN ALIPHATIC ALCOHOL AND REACTION PRODUCTS THUS PRODUCED**

Paul W. Solomon, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 2, 1960, Ser. No. 73,289
19 Claims. (Cl. 260—67)

11. A process for the preparation of a stable polyoxymethylene polymer which comprises reacting at a temperature in the approximate range 0–15° C. and at a subatmospheric pressure with atomic hydrogen supplied from a source external to the reacting mass an alcohol maintained in the liquid phase, said alcohol being selected from the group consisting of n-propanol, n-butanol, n-pentanol, and n-hexanol.

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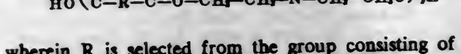
**3,170,898**

**LUBRICATING OIL COMPATIBLE POLYESTERS**

Joseph A. Verdol, Dolton, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 7, 1957, Ser. No. 676,720. Divided and this application Oct. 8, 1959, Ser. No. 848,885
14 Claims. (Cl. 260—75)

1. A polyester compatible with mineral lubricating oils, said polyester being characterized by the formula:



wherein R is selected from the group consisting of aliphatic and cyclic aliphatic divalent hydrocarbon radicals containing 12 to 38 carbon atoms, R' is an alkyl radical containing 4 to 20 atoms, R and R' contain a total of 22 to 44 carbon atoms and y is an integer from 1 up to the limit of compatibility of the polyester with the mineral lubricating oil.

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**3,170,899**

**COPOLYMERS OF OLEFINIC COMPOUNDS WITH p-TERTIARY ALKYL PHENYL ACRYLATES AND ISOMERS THEREOF**

Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 29, 1960, Ser. No. 11,441
25 Claims. (Cl. 260—86.7)

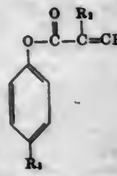
10. A process comprising heating a copolymer of 90–99.99 mole percent of at least one unsaturated aliphatic compound, compound A, having the structural formula:



wherein

$R_1$ is selected from the group consisting of hydrogen and alkyl having 1–4 carbon atoms,

and 0.01–10 mole percent of at least one unsaturated compound, compound B, having the structural formula:



wherein

$R_2$ is selected from the group consisting of hydrogen and alkyl having 1–3 carbon atoms and

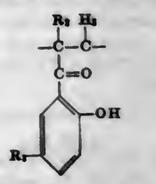
$R_3$ is a tertiary alkyl radical having 4–7 carbon atoms, in the presence of a Friedel-Crafts catalyst to a temperature of 90° C.–125° C. for 5–60 minutes to form a polymer of 90–99.99 mole percent of the recurring unit:



wherein

$R_1$ is selected from the group consisting of hydrogen and alkyl having 1–4 carbon atoms,

and 0.01–10 mole percent of the recurring unit:



wherein

$R_2$ is selected from the group consisting of hydrogen and alkyl having 1–3 carbon atoms and

$R_3$ is a tertiary alkyl radical having 4–7 carbon atoms,

said polymer having an inherent viscosity of 0.3–3.0 as measured on a solution of 0.1 gram of the polymer in 100 milliliters of alpha-chloronaphthalene at 125° C.

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### 3,170,900
### PROCESS OF POLYMERIZING LOWER OLEFINS

Shinjiro Kodama, Kenichi Fukui, Sachio Yuasa, Takeo Shimizu, and Tsutomu Kagiya, Kyoto, Seco Machi, Osaka, Minoru Hirata, Nihama-shi, and Tetsuya Yagi, Itami-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,092
Claims priority, application Japan, Sept. 9, 1957, 32/22,342; Dec. 18, 1957, 32/31,530, 32/31,531; Dec. 21, 1957, 32/32,038; Dec. 23, 1957, 32/32,131
7 Claims. (Cl. 260—88.2)

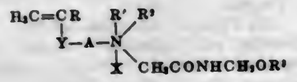
1. A process of preparing olefin polymers in reaction apparatus, said process comprising bringing at least one olefin selected from the class consisting of ethylene, propylene, n-butylene and isobutylene at a temperature below 200° C. at a pressure ranging from 1 to 300 atmospheres into contact with an inert solvent which contains at least one metal halide of a IV–VIII series metal, in the presence of at least one metal of the II–IV series, said metal being in a free state and constituting at least part of an element of said apparatus, which is employed to agitate the solvent.

### 3,170,901
### NOVEL QUATERNARY AMMONIUM COMPOUNDS AND POLYMERS THEREOF

Sidney Melamed, Elkins Park, Pa., and Ruth H. Shimizu, San Francisco, Calif., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,208
11 Claims. (Cl. 260—89.7)

2. A water-soluble polymer of monoethylenically unsaturated monomers comprising at least 5 mole percent of at least one monomer of the formula



where R is selected from the group consisting of hydrogen and methyl,

Y is selected from the group consisting of O, —CONR—, and —COO—,

A is an alkylene group having 2 to 10 carbon atoms, at least two of the carbon atoms thereof being connected in a chain extending between the N atom and the Y group,

R′ and $R^2$ are selected from the group consisting of (1) separate groups selected individually from the group consisting of saturated and ethylenically unsaturated hydrocarbon groups of 1 to 4 carbon atoms, and (2) a composite group selected from the group consisting of the morpholino residue, the pyrrolidino residue, the piperidino residue, and an N-alkyl piperazino residue of the formula

$$:(C_2H_4)_2:NR^4$$

where $R^4$ is an alkyl group of 1 to 18 carbon atoms,

X is a halogen atom, and

$R^3$ is an alkyl group having from 1 to 4 carbon atoms.

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### 3,170,902
### PROCESS FOR ALTERING THE PROPERTIES OF THERMOPLASTIC HALOGEN CONTAINING POLYMERS

Rudolf Nagelschmidt, Hanau am Main, Max Goecke, Bad Homburg vor der Hohe, and Heinz Kopoch, Hanau am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed Oct. 19, 1961, Ser. No. 146,205
Claims priority, application Germany, Oct. 21, 1960, D 34,588
21 Claims. (Cl. 260—92.8)

1. A process for altering the properties of polymeric materials selected from the group consisting of thermoplastic halogen containing polymers, co-polymers obtained from at least one monomeric halogen containing component which forms thermoplastic halogen containing homopolymers and polymer mixtures containing a polymer obtained from at least one monomeric halogen containing component which forms thermoplastic halogen containing homopolymers, said halogen in said polymeric materials being chemically bonded in the molecules of said polymeric materials and being selected from the group consisting of chlorine, fluorine and bromine which comprises reacting such polymeric materials at a temperature from 80 to 250° C. with at least one phosphorus compound selected from the group consisting of a reaction product (A) of a phosphorous compound ($A_1$) selected from the group consisting of monomeric and polymeric phosphorous acids and their partial esters with alcohols containing up to 18 carbon atoms with a polyamine ($A_2$) at least two nitrogen atoms of the amino groups of which each still carry at least one hydrogen atom and the metal salts (D) of such a primary reaction product (A) with a multivalent metal selected from the group consisting of magnesium, calcium, barium, zinc, aluminum, tin, lead, titanium, cadmium and iron.

17. A composition of matter comprising a polymeric material selected from the group consisting of thermoplastic halogen containing polymers, co-polymers obtained from at least one monomeric halogen containing component which forms thermoplastic halogen containing homopolymers and polymer mixtures containing a polymer obtained from at least one monomeric halogen containing component which forms thermoplastic halogen containing homopolymers, said halogen in said polymeric material being chemically bonded in the molecules of said polymeric material and being selected from the group consisting of chlorine, fluorine and bromine and at least one phosphorus compound selected from the group consisting of a reaction product (A) of a phosphorous compound ($A_1$) selected from the group consisting of monomeric and polymeric phosphorous acids and their partial esters with alcohols containing up to 18 carbon atoms with a polyamine ($A_2$) at least two nitrogen atoms of the amino groups of which each still carry at least one hydrogen atom and the metal salts (D) of such a primary reaction product (A) with a multivalent metal selected from the group consisting of magnesium, calcium, barium, zinc, aluminum, tin, lead, titanium, cadmium and iron.



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### 3,170,903
### DIOLEFIN POLYMERIZATION WITH LITHIUM ADDUCT OF A POLYNUCLEAR AROMATIC HYDROCARBON

Richard S. Stearns, Malvern, Pa., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 2, 1961, Ser. No. 92,779
12 Claims. (Cl. 260—94.2)

1. A process for the production of a rubbery polymer, comprising homopolymerizing a material selected from the group consisting of isoprene and butadiene, by contacting said material with a catalyst consisting essentially of an adduct of lithium with a polynuclear aromatic hydrocarbon compound, in the presence of a solvent for said material consisting of hydrocarbon.

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### 3,170,904
### PRODUCTION OF CIS-1,4 POLYBUTADIENE WITH A Ni-$BF_3$·ETHERATE-$AlR_3$ CATALYST

Kenichi Ueda, Akira Onishi, and Toshio Yoshimoto, Tozuka-ku, Yokohama, Junichi Hosono, Koboku-ku, Yokohama, and Katsuhiko Maeda, Tozuka-ku, Yokohama, Japan, assignors to Bridgestone Tire Company Limited, Tokyo, Japan

No Drawing. Filed Nov. 21, 1960, Ser. No. 70,408
Claims priority, application Japan, Nov. 28, 1959, 34/36,937; Dec. 31, 1959, 34/41,519; May 30, 1960, 35/25,674, 35/25,675; Oct. 4, 1960, 35/41,225
5 Claims. (Cl. 260—94.3)

1. A process for manufacturing cis-1,4 polybutadiene, which comprises polymerizing butadiene in liquid phase at a temperature between —50° C., and 150° C., under a pressure sufficient to maintain the reaction system in liquid phase and in an inert atmosphere to a solid polymer having a high content of cis-1,4 configuration and substantially no gel by using a catalyst essentially consisting of (A) metallic nickel having a large surface area for its weight, (B) boron trifluoride etherate, and (C) trialkyl aluminum; the mol ratio of the (C) component to the (B) component being between about 0.1 to about 5; and the amount of (A) component being about 0.1 to about 10 gram atoms per 1 mol of (B) component.



### 3,170,905
### PRODUCTION OF CIS-1,4 POLYBUTADIENE WITH AN ORGANIC COMPLEX COMPOUND OF NICKEL-BORON TRIFLUORIDE ETHERATE-ALUMINUM TRIALKYL CATALYST

Kenichi Ueda, Akira Onishi, Toshio Yoshimoto, Junichi Hosono, and Katsuhiko Maeda, all of Yokohama, Japan, assignors to Bridgestone Tire Company Limited, Tokyo, Japan

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,806
Claims priority, application Japan, Dec. 31, 1959, 34/41,517; Oct. 14, 1960, 35/41,224
7 Claims. (Cl. 260—94.3)

1. A process for the polymerization of butadiene, which comprises polymerizing butadiene in liquid phase at a temperature between about —30° C. and about 150° C., under a pressure sufficient to maintain the reaction system in liquid phase and under an inert atmosphere to a solid polymer having a high content of cis-1,4 configuration and substantially no gel formation by contacting butadiene with a catalyst obtained by mixing at a controlled temperature the three components consisting of (A) a nickel complex selected from the group consisting of tetracarbonyl nickel, hydroxy ester nickel complex, hydroxy ketone nickel complex, and hydroxy aldehyde nickel complex, (B) boron trifluoride etherate, and (C) trialkyl aluminum, the mol ratio of said (A) component to said (C) component being within the range of about 0.1 to about 4.0, and the mol ratio of said (C) component to said (B) component being within the range of about 0.1 to about 5.0.

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### 3,170,906
### PRODUCTION OF CIS-1,4 POLYBUTADIENE WITH A CARRIER-SUPPORTED NICKEL OR COBALT OXIDE CATALYST

Kenichi Ueda, Akira Onishi, Toshio Yoshimoto, Junichi Hosono, and Katsuhiko Maeda, all of Yokohama, Japan, assignors to Bridgestone Tire Company Limited, Tokyo, Japan

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,807
Claims priority, application Japan, Dec. 31, 1959, 32/41,519/59
6 Claims. (Cl. 260—94.3)

1. A process for manufacturing cis-1,4 polybutadiene, which comprises polymerizing butadiene in hydrocarbon solvent at a temperature in the range from —50° C. to 150° C. in an inert atmosphere to a solid polymer having at least 85% cis-1,4 structure, and substantially no gel by using as catalyst a three-component reaction product prepared by effecting reaction through mixing a carrier-supported metal oxide selected from the group consisting of nickel oxides and cobalt oxides, which is suspended in an anhydrous hydrocarbon with a boron trifluoride etherate at a temperature in the range from 10° C. to 100° C. and then with a trialkyl aluminum at a temperature in the range from —80° C. to 30° C., the carrier-supported metal oxide being prepared by the oxidation of the corresponding salt adhered to the carrier at a temperature lower than 600° C., the three components being mixed to react in such mole ratios so that the ratio of Al to B is in the range from 1/10 to 5/1 and that the ratio of said metal oxide to Al is in the range from 1/10 to 10/1.

5. A process for manufacturing cis-1,4 polybutadiene, which comprises polymerizing butadiene in hydrocarbon solvent at a temperature in the range from —50° to 150° C. in an inert atmosphere to a solid polymer having at least 85% cis-1,4 structure and substantially no gel by using as catalyst a three-component reaction product prepared by effecting reaction through mixing a diatomaceous earth-supported metal oxide selected from the group consisting of nickel oxides and cobalt oxides, which is suspended in an anhydrous hydrocarbon medium with titanium tetrachloride and a trialkyl aluminum at a temperature in the range from —100° C. to 40° C., the dia-

tomaceous earth-supported metal oxide being prepared by the oxidation of the corresponding salt adhered to diatomaceous earth at a temperature lower than 600° C., the three components being mixed to react in such mole ratios so that the ratio of Al to Ti is in the range from 0.5/1 to 1.2/1 and that the ratio of said metal oxide to Al is in the range from 1/10 to 10/1.

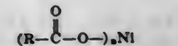
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### 3,170,907
### PRODUCTION OF CIS-1,4 POLYBUTADIENE WITH A NICKEL CARBOXYLIC ACID SALT-BORON TRIFLUORIDE ETHERATE - ALUMINUM TRIALKYL CATALYST

**Kenichi Ueda, Akira Onishi, Toshio Yoshimoto, Junichi Hosono, and Katsuhiko Maeda, all of Yokohama, Japan, assignors to Bridgestone Tire Company Limited, Tokyo, Japan**

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,868
Claims priority, application Japan, Dec. 31, 1959, 34/41,518
6 Claims. (Cl. 260—94.3)

1. A process for manufacturing cis-1,4 polybutadiene, which comprises: polymerizing butadiene in the presence of hydrocarbon diluent, at a temperature between about −30° C. and about 150° C., under a pressure sufficient to maintain the reaction system in liquid phase and under an inert atmosphere to a solid polymer having at least 70% cis-1,4 structure by contacting butadiene with a catalyst obtained by effecting reaction through mixing at a controlled temperature the three components consisting of (A) an organic carboxylic acid salt of nickel of the formula



wherein R is a hydrocarbon radical, and *n* is the valence of nickel, (B) boron trifluoride etherate and (C) trialkylaluminum, the mole ratio of said trialkylaluminum to said boron trifluoride etherate being within the range of 0.1 to 5.0, and the mole ratio of said nickel salt to said trialkylaluminum being within the range of 0.03 to 7.0.

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### 3,170,908
### CATALYST AND PROCESS FOR POLYMERIZATION OF PROPYLENE

**Vernon D. Florio and William J. Raich, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

No Drawing. Filed Apr. 12, 1962, Ser. No. 186,847
7 Claims. (Cl. 260—93.7)

4. In the polymerization of an ethylenically unsaturated α-monoolefin monomer by contacting the same at a polymerization temperature with a reaction mixture of a polymerization-active catalyst and an inert liquid diluent medium, the improvement which comprises carrying out the polymerization with a polymerization-active catalyst structure composed of metallic copper having a surface comprising the product obtained by reaction of the copper surface by heating with a titanium tetrahalide, which catalyst structure is substantially free of unreacted titanium tetrahalide and activated with a chemical compound having a metal-to-hydrocarbon bond.

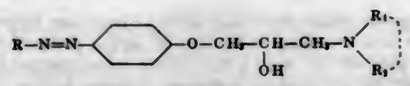
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### 3,170,909
### CATIONIC AZO COMPOUNDS

**Otto E. Neracher, Mount Vernon, N.Y., Abraham Cantor, Elkins Park, Pa., and William Schmidt, Flushing, N.Y., assignors to West Laboratories, Inc., Long Island City, N.Y., a corporation of New York**

No Drawing. Filed June 22, 1962, Ser. No. 204,622
1 Claim. (Cl. 260—152)

A cationic azo compound selected from the group consisting of (1) azo tertiary amines of the formula:



wherein R is selected from the group consisting of phenyl, lower alkyl phenyl, lower alkoxy phenyl, chloro substituted phenyl and naphthyl radicals, and



is a secondary amino radical selected from the group consisting of N,N-lower dialkylamino, N,N-lower dialkanol amino, piperidyl and morpholinyl radicals, (2) biologically acceptable salts of said amines with acids, and (3) quaternary ammonium derivatives of said amines.

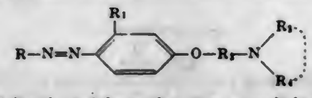
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### 3,170,910
### CATIONIC AZO COMPOUNDS

**Otto E. Neracher, Mount Vernon, N.Y., Abraham Cantor, Elkins Park, Pa., and William Schmidt, Flushing, N.Y., assignors to West Laboratories, Inc., Long Island City, N.Y., a corporation of New York**

No Drawing. Filed June 22, 1962, Ser. No. 204,625
1 Claim. (Cl. 260—152)

A cationic azo compound selected from the group consisting of (1) azo tertiary amines of the formula:



wherein R is selected from the group consisting of phenyl and p-chloro phenyl radicals, $R_1$ is selected from the group consisting of hydrogen, hydroxy and lower-alkoxy radicals, $R_2$ is an alkyl group having 2 to 4 carbon atoms, and the group



is a secondary amino radical selected from the group consisting of N,N-lower dialkyl amino, N,N-lower dialkanol amino, piperidyl, and morpholinyl radicals, (2) biologically acceptable salts of said amines with acids, and (3) quaternary ammonium derivatives of said amines.

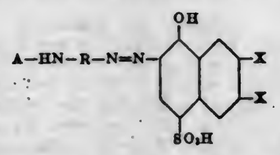
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### 3,170,911
### REACTIVE AZO DYESTUFFS

**Jakob Benz, Munchenstein, August Schweizer, Muttenz, and Hans Wasem, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland**

No Drawing. Filed Aug. 10, 1961, Ser. No. 130,461
Claims priority, application Switzerland, May 14, 1959, 73,180/59
5 Claims. (Cl. 260—153)

1. Reactive monoazo dye of the formula



wherein A is a fiber-reactive radical selected from the group consisting of monohalogeno-lower alkanoyl, lower alkenoyl, 2,4-dihalogeno-1,3,5-triazinyl-(6), 2-amino-4-halogeno-1,3,5-triazinyl-(6), 2-lower alkylamino-4-halogeno-1,3,5-triazinyl-(6), 2-(di-lower alkyl)-amino-4-halogeno-1,3,5-triazinyl-(6), 2-lower hydroxy-alkyl-amino-4-halogeno-1,3,5-triazinyl-(6), 2-(di-lower hydroxy alkyl)-amino-4-halogeno-1,3,5-triazinyl-(6), 2-lower carboxyalkyl amino-4-halogeno-1,3,5-triazinyl-(6), 2-N-lower alkyl-N-lower sulfoalkyl-amino-4-halogeno-1,3,5-triazinyl-(6), 2-carboxyphenylamino-4-halogeno-1,3,5-triazinyl-(6), 2-sulfophenylamino-4-halogeno-1,3,5-triazinyl-(6), 2-sulfonaphthylamino-4-halogeno-1,3,5-triazinyl-(6), 2-disulfonaphthylamino-4-halogeno-1,3,5-triazinyl-(6), 2,6-dihalogeno-pyrimidyl-(4) and 4,6-dihalogeno-pyrimidyl-(2), halogen having an atomic weight between 35 and 81; R is a radical selected from the group consisting of phenylene and naphthylene and bears from one to two sulfonic acid groups; one *x* is hydrogen, and the other *x* is $-SO_3H$.



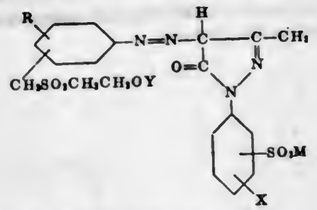
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### 3,170,912
### AZO DYESTUFFS CONTAINING A METHYLENESULFONYLETHANOL RADICAL OR ITS SULFATE ESTER

**Harlan B. Freyermuth, Easton, Pa., David I. Randall, New Vernon, N.J., and Saul R. Buc, deceased, late of Easton, Pa., by Dolores M. Buc, administratrix, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware**

No Drawing. Filed Dec. 28, 1961, Ser. No. 164,211
4 Claims. (Cl. 260—163)

1. An azo dyestuff of the formula



wherein Y is selected from the group consisting of H and $SO_3M$, R is selected from the group consisting of H, lower alkyl and lower alkoxy, X is selected from the group consisting of H, chlorine and bromine, and M is selected from the group consisting of H and alkali metal cations, the $CH_2SO_2CH_2CH_2OY$ and $SO_3M$ groups being in one of the meta and para positions relative to the N-bonded cyclic carbon atom, and X being in one of the ortho and para positions relative to the N-bonded cyclic carbon atom.

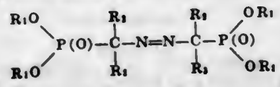
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### 3,170,913
### AZO-BIS-ALKYLPHOSPHONATES AND CORRESPONDING ACIDS

**Peter L. De Benneville, Philadelphia, and Heinz W. Blessing, Levittown, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware**

No Drawing. Filed Feb. 8, 1962, Ser. No. 171,822
6 Claims. (Cl. 260—192)

1. A compound having the formula



in which

$R_1$ represents a member selected from the group consisting of hydrogen and alkyl of 1 to 12 carbon atoms,

$R_2$ and $R_3$ taken individually are hydrocarbon groups of up to about 12 carbon atoms from the class consisting of alkyl, cycloalkyl, alkylarylalkyl, arylalkyl, arylalkenyl, alkylarylalkyl, aryl, and alkenyl wherein said alkenyl contains at least 3 carbon atoms and

$R_2$ and $R_3$ taken collectively with the carbon atom to which they are attached form an alicyclic ring of 3 to 9 carbon atoms.

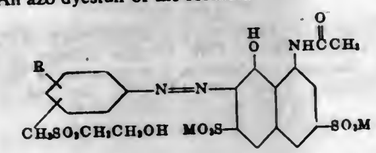
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### 3,170,914
### AZO DYESTUFFS

**Harlan B. Freyermuth, Easton, Pa., David I. Randall, New Vernon, N.J., and Saul R. Buc, deceased, late of Easton, Pa., by Dolores M. Buc, administratrix, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware**

No Drawing. Filed Dec. 28, 1961, Ser. No. 164,208
2 Claims. (Cl. 260—199)

1. An azo dyestuff of the formula



wherein R is selected from the group consisting of H, lower alkyl and lower alkoxy and is substituted in one of the ortho and para positions relative to the azo bridge, the methylenesulfonylethanol group is substituted in one of the meta and para positions relative to the azo bridge, and M is selected from the group consisting of H and alkali metal.

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### 3,170,915
### SUCROSE ETHERS

**Van R. Gaertner, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware**

No Drawing. Filed Apr. 11, 1960, Ser. No. 21,120
16 Claims. (Cl. 260—210)

1. Compounds of the formula

R—$CH_2$-sucrose

wherein R is selected from the group consisting of alkyl radicals, alkenyl radicals having the olefinic double bond beyond the alpha position relative to the ether oxygen atom, and alkyloxy radicals having from 8 to 24 carbon atoms, and alkaryl radicals having a total of from 14 to 24 carbon atoms and from 8 to 18 carbon atoms in at least one alkyl radical attached to the aryl ring, and the sucrose is linked to the methylene group through the oxygen atoms of one of the hydroxyl groups of the sucrose.

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### 3,170,916
### METHOD OF PRODUCING DURABLE SAPONINE CONTAINING EXTRACTS FROM HORSE CHESTNUT AND PRODUCTS OBTAINED THEREFROM

**Kurt Dziengel, Berlin-Steglitz, Germany, assignor to Chemische Fabrik Tempelhof, Preuss & Temmler, Berlin-Tempelhof, Germany**

No Drawing. Filed Feb. 19, 1962, Ser. No. 174,300
12 Claims. (Cl. 260—210.5)

1. A method for producing durable percutaneously administerable extracts containing escine from horse-chestnut seed substance comprising the step of reacting the native escine-containing complex contained in said horse-chestnut seeds with lower aliphatic polyvalent alcohols having from two to three hydroxyl groups in the molecule.

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### 3,170,917
### DEAMINATION OF HETEROCYCLIC AMINO CONTAINING COMPOUNDS

**Louis Laufer, Bronx, and Bernard William Town, Mount Vernon, N.Y., assignors to Schwarz Bioresearch, Inc., Orangeburg, N.Y., a corporation of New York**

No Drawing. Filed Sept. 24, 1962, Ser. No. 225,839
4 Claims. (Cl. 260—211.5)

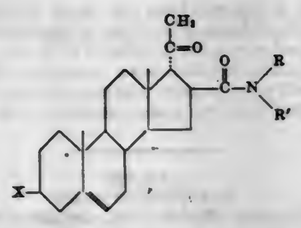
1. A process for deaminating heterocyclic organic compounds selected from the group consisting of aminopyrimidines and aminopurines, pyrimidine glycosides and purine glycosides having an amine group on the pyrimidine ring, and pyrimidine glycoside phosphate esters and purine glycoside phosphate esters having an amine group

on the pyrimidine ring, which comprises treating an aqueous solution containing said heterocyclic organic compound with nitrous acid anhydride gas in an amount in excess of stoichiometric requirements in the presence of cupric ions in an amount between about 5 gamma to about 25 gamma of cupric ions per gram of said heterocyclic organic compound in said aqueous solution.

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**3,170,918**
**3-HALO-16β-CARBAMYL-Δ⁴-PREGNEN-20-ONES**
**Pierre Crabbé, Mexico City, Mexico, assignor to Syntex S.A., Mexico City, Mexico, a corporation of Mexico**
**No Drawing. Filed Apr. 13, 1962, Ser. No. 187,202**
**20 Claims. (Cl. 260—239.5)**

1. A compound of the following formula:

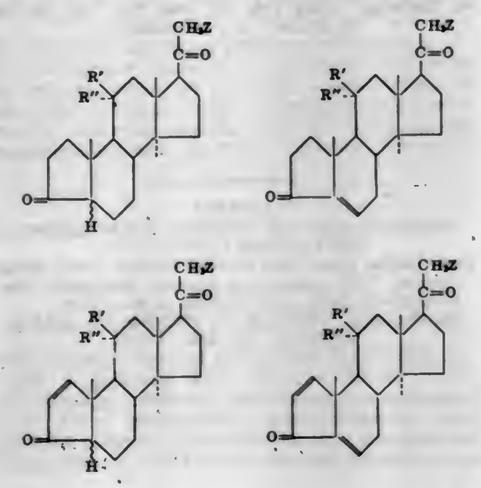


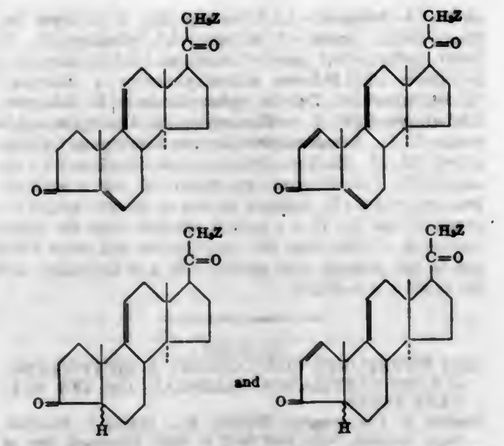
wherein X is selected from the group consisting of fluorine, chlorine and bromine; R and R¹ are selected from the group consisting of hydrogen, a lower alkyl, an amino lower alkyl, a lower alkylamino lower alkyl, a dilower alkylamino lower alkyl, an aryl containing up to 8 carbon atoms and an aralkyl group containing up to 8 carbon atoms, and R and R¹ together with the nitrogen form a heterocyclic radical selected from the group consisting of piperidino, morpholino, pyrrolidino, and piperazino.

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**3,170,919**
**A-NOR DERIVATIVES OF THE PREGNANE SERIES AND INTERMEDIATES IN THE PRODUCTION THEREOF**
**Josef Fried, Princeton, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia**
**No Drawing. Filed July 24, 1962, Ser. No. 212,154**
**31 Claims. (Cl. 260—239.5)**

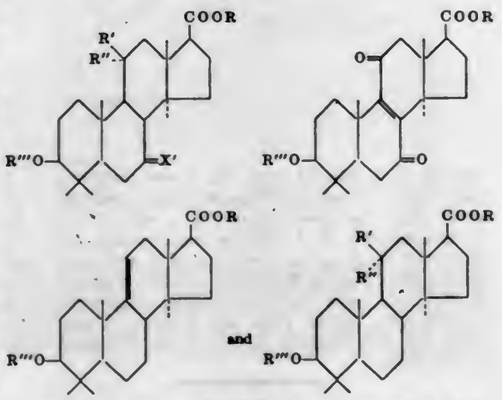
1. A compound selected from the group consisting of steroids having the formulae





wherein Z is selected from the group consisting of hydrogen, hydroxy, halogen and acyloxy; wherein the acyl is of a hydrocarbon carboxylic acid of less than twelve carbon atoms. R″ is hydrogen; R′ is selected from the group consisting of hydrogen and hydroxy; and together R″ and R′ is oxo.

9. A compound selected from the group consisting of steroids having the formulae



wherein R is selected from the group consisting of hydrogen and lower alkyl; R′ is selected from the group consisting of hydrogen and hydroxy; R″ is hydrogen and together R′ and R″ is oxo; R‴ is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms and X′ is selected from the group consisting of oxo and ethylenedithio.

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**3,170,920**
**3-OXO-16β - MERCAPTO - 17β - HYDROXY - 5α - ANDROSTANE-16-17 ACETONIDES AND THE PROCESS FOR THE PRODUCTION THEREOF**
**Taichiro Komeno, Sumiyoshi-ku, Osaka-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan**
**No Drawing. Filed Aug. 10, 1962, Ser. No. 216,059**
**23 Claims. (Cl. 260—239.55)**

1. Process for preparing a steroidal cyclic acetal which comprises reacting a 16-halogeno-17-oxo steroid of androstane series with a member selected from the group consisting of reactive thio(lower alkanoic acid derivatives and reactive lower alkyldithiocarbonic acid derivatives, reducing the resulting 16β-substituted thio-17-oxo steroid of androstane series with an alkali metal hydride compound and condensing the resultant 16β-mercapto-17β-hydroxy steroid of androstane series with a carbonyl compound selected from the group consisting of aldehydes and ketones in the presence of an acidic catalyst to obtain the 16β-mercapto-17β-hydroxy steroid 16,17-cyclic acetal of androstane series.

20. 3-oxo-16β-mercapto-17β- hydroxy - 5α - androstane 16,17-acetonide.

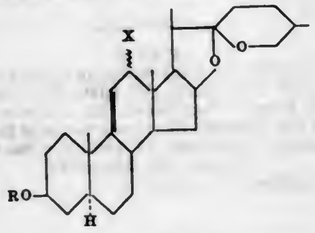
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**3,170,921**
**PREPARATION OF 9(11)-DEHYDRO-12-DESOXY SAPOGENINS**
**Joseph Elks, London, Gordon Hanley Phillipps, Greenford, Dennis Edward Clark, Worthing, David Arthur Thomas, Pinner, and Leslie Stephenson, Hanwell, London, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company**
**No Drawing. Filed July 5, 1963, Ser. No. 293,172**
**Claims priority, application Great Britain, Aug. 17, 1962, 31,720/62**
**19 Claims. (Cl. 260—239.55)**

1. A process which comprises the steps of reducing a 9(11)-dehydro-12 keto sapogenin to form a 9(11)-dehydro-12-hydroxy sapogenin, converting the 12 - hydroxy group to a 12-halogeno group selected from the group consisting of 12-chloro and 12-bromo groups and reducing the 12-halogeno group to form a 9(11)-dehydro-12-desoxy sapogenin.

14. A compound of the formula

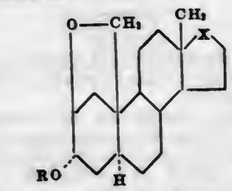


where X is selected from the group consisting of chlorine and bromine atoms and R is selected from the group consisting of hydrogen and lower alkanoyl groups.

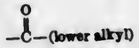
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**3,170,922**
**17-OXYGENATED 2β,19-EPOXY-5α-ANDROSTAN-3α-OLS, ETHERS AND ESTERS THEREOF**
**Raymond E. Counsell, Skokie, and Paul D. Klimstra, Northbrook, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed July 15, 1963, Ser. No. 295,247**
**15 Claims. (Cl. 260—239.55)**

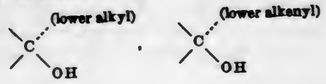
1. A compound of the formula



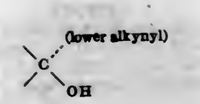
wherein R is selected from the group consisting of hydrogen, methyl, and



radicals, and X is a member of the class of radicals consisting of carbonyl, β-hydroxymethylene, and those represented by the formulas



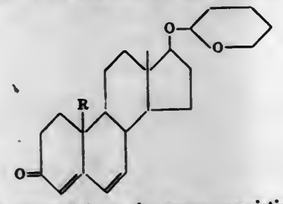
and



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**3,170,923**
**17-TETRAHYDROPYRANYLETHERS OF Δ⁴·⁶-ANDROSTADIENES**
**Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama**
**No Drawing. Filed Nov. 12, 1963, Ser. No. 323,122**
**Claims priority, application Mexico, Feb. 28, 1963, 71,076**
**3 Claims. (Cl. 260—239.55)**

1. A compound represented by the formula:

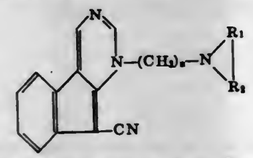


wherein R is selected from the group consisting of hydrogen and methyl.

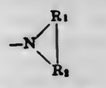
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**3,170,924**
**1(OR 3)-AMINOALKYL-1H-INDENO[2,1-d]-PYRIMIDINES**
**Pierre Marie Vanhoof, Brussels, Belgium, assignor to Manufacture de Produits Pharmaceutiques A. Christiaens Societe Anonyme, Brussels, Belgium**
**No Drawing. Filed Mar. 27, 1961, Ser. No. 98,319**
**Claims priority, application Great Britain, Apr. 1, 1960, 11,659/60**
**27 Claims. (Cl. 260—247.5)**

5. A compound of the formula

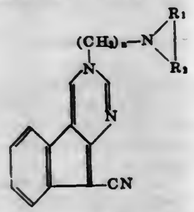


in which *n* is a whole number from 2 to 4, and



a member selected from the group consisting of morpholino, pyrrolidino and piperidino.

7. A compound of the formula



in which *n* is a whole number from 2 to 4, and



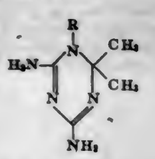
is a member selected from the group consisting of morpholino, pyrrolidino and piperidino.

### 3,170,925
### 1-SUBSTITUTED 4,6-DIAMINO-1,2-DIHYDRO-2,2-DIMETHYL-s-TRIAZINE COMPOUNDS

Leonard Doub, Bloomfield Hills, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Continuation of application Ser. No. 118,787, June 22, 1961. This application Nov. 8, 1963, Ser. No. 322,504
5 Claims. (Cl. 260—249.9)

1. A member of the class consisting of a free base and pharmaceutically-acceptable acid-addition salts thereof, said free base having the formula



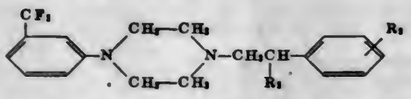
wherein R is a member of the class consisting of
alkyl of $C_2$ to $C_{12}$ inclusive substituted by cycloalkyl of $C_3$ to $C_7$ inclusive;
monochloroalkenyl of $C_3$ to $C_5$ inclusive;
alkoxyalkyl of $C_3$ to $C_6$ inclusive; and
phenoxyalkyl containing 3 to 6 carbon atoms in its alkyl portion.

### 3,170,926
### N-PHENYLPIPERAZINE COMPOUNDS

Anthony Stanley Fenton Ash, Epping, Andrew Malcolm Creighton, Mill Hill, London, and William Robert Wragg, Woodford Green, England, assignors to May & Baker Limited, Dagenham, England, a British company

No Drawing. Filed Aug. 18, 1961, Ser. No. 132,296
Claims priority, application Great Britain, Oct. 20, 1959, 35,550/59
12 Claims. (Cl. 260—268)

12. A member of the class consisting of the N-phenylpiperazine compounds of the formula:



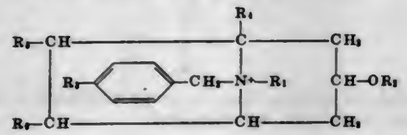
and their non-toxic acid addition salts, where $R_1$ is a member of the class consisting of hydrogen and hydroxyl, and $R_2$ is in one of the meta and para-poistions, and is a member selected from the class consisting of hydrogen, nitro, amino, allylamino, dimethylaminoethylamino, dimethylaminopropylamino, mono- and di-alkylamino, mono- and di-hydroxyalkylamino, monoalkanoyloxyalkylamino, alkoxycarbonylamino, 2-ketooxazolidino, alkanoylamido, alkylsulphonylamido, carbamoylamino, thiocarbamoylamino, and N-alkyl alkanoylamido, any N-substituents in $R_2$ containing a maximum of four carbon atoms.

### 3,170,927
### NEW TROPEINE DERIVATIVES HAVING AN AXONAL BLOCKING EFFECT

Károly Nádor, 4/a Abel Jeno Utca; Lajos György, 14 Taltos Utca; and Margit Doda, 2/c Karpat Utca, all of Budapest, Hungary

No Drawing. Filed Oct. 3, 1962, Ser. No. 229,263
6 Claims. (Cl. 260—292)

1. A quaternary tropeine of the formula



wherein $R_1$ is a member selected from the group consisting of methyl and ethyl, $R_3$ is a member selected from the group consisting of alkanoyl up to 18 carbon atoms, unsubstituted, halogen-, lower alkyl-, lower alkoxy-, phenyl-, phenoxy-, $C_5$–$C_6$ cycloalkyl- and hydroxyl-substituted acetyl, benzoyl, naphthoyl, $C_3$–$C_8$ cycloalkyl-carbonyl, tropeyl, mandelyl, amygdalyl- and thenoyl, $R_3$ is a member selected from the group consisting of unsubstituted and lower alkyl substituted $C_5$–$C_7$ cycloalkyl, $R_4$ is a member selected from the group consisting of hydrogen, methyl and ethyl, $R_5$ and $R_6$ together are selected from the group consisting of the pairs —H and —H, —H and —OH, —H and $—OCH_3$, —H and $O.CO.CH_3$, —OH and —OH, —OH and $—OCH_3$, $O.CO.CH_3$ and $O.CO.CH_3$, and of the member —O—; X is an anion of a pharmaceutically acceptable acid.

### 3,170,928
### PHENYLPROPANOL DERIVATIVES AND THEIR PRODUCTION

Joseph H. Burckhalter, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 10, 1961, Ser. No. 94,718
7 Claims. (Cl. 260—294.8)

1. 1 - (2 - pyridyl) - 1 - phenyl-2-(4-methoxyphenyl)-propan-2-ol.

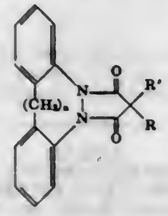
7. 1 - (2 - pyridyl) - 1 - phenyl-2-(4-methylthiophenyl)-propan-2-ol.

### 3,170,929
### DERIVATIVES OF DIBENZO[c,f][1,2]DIAZEPINE AND DIBENZO[c,g][1,2]DIAZOCINE

Harman S. Lowrie, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 23, 1961, Ser. No. 97,737
7 Claims. (Cl. 260—310)

1. A compound of the formula



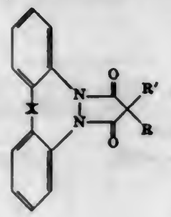
wherein $n$ is a positive integer less than 3; R is a member of the group consisting of hydrogen, lower alkyl, phenyl, and phenyl(lower alkyl); and R′ is a member of the group consisting of hydrogen and lower alkyl.

### 3,170,930
### DERIVATIVES OF DIBENZO[1,4,5]THIADIAZEPINE, DIBENZO[1,4,5]OXADIAZEPINE AND DIBENZO-[1,2,5]TRIAZEPINE

Harman S. Lowrie, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 23, 1961, Ser. No. 97,738
7 Claims. (Cl. 260—310)

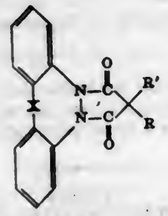
1. A compound of the formula



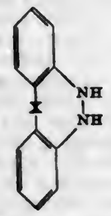


wherein X represents a member of the group consisting of R″N<, —O—, —S—, >SO, and $>SO_2$; R represents a member of the group consisting of hydrogen, lower alkyl, phenyl, and phenyl(lower alkyl); and R′ is a member of the group consisting of hydrogen and lower alkyl; R″ is lower alkyl.

7. The process for preparing a compound of the formula



wherein X represents a member of the group consisting of R″N<, —O—, —S—, >SO, and $>SO_2$; R represents a member of the group consisting of hydrogen, lower alkyl, phenyl, and phenyl(lower alkyl); and R′ is a member of the group consisting of hydrogen and lower alkyl; and R″ is lower alkyl which comprises mixing a compound of the formula



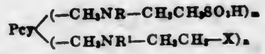
with at least one equivalent of a malonyl halide in the presence of a strong organic base.

### 3,170,931
### FIBER-REACTIVE PHTHALOCYANINE DYESTUFFS

Charles W. C. Stein, Westfield, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,411
8 Claims. (Cl. 260—314.5)

1. A compound of the formula



wherein

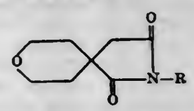
(1) Pcy represents a member of the group consisting of metal and metal-free phthalocyanine
(2) R is a member of the group consisting of H, lower alkyl, hydroxy-ethyl and $—CH_2CH_2SO_3H$,
(3) $R^1$ is a member of the group consisting of H, lower alkyl, hydroxy-ethyl, and $—CH_2CH_2—X$,
(4) X is the anion of a strong acid having a dissociation constant greater than $2.0\times10^{-5}$ and being selected from the group consisting of sulfuric, hydrochloric, hydrobromic, hydrofluoric, iodic, phosphoric, phosphonic, phosphinic, organic sulfonic, trichloroacetic, dichloroacetic, chloracetic, and formic acids,
(5) $m$ has an average value of 1 to 3, and
(6) $n$ has an average value of 1 to 4.

### 3,170,932
### 2-AZA-8-OXASPIRO[4,5]DECANE-1,3-DIONES

Ernst Jucker, Ettingen, Basel-Land, and Rudolf Süess, Bettingen, near Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,733
Claims priority, application Switzerland, Sept. 28, 1961, 11,276/61
6 Claims. (Cl. 260—326.5)

1. A compound of the formula:



wherein R is selected from the group consisting of hydrogen, lower alkyl, phenyl and phenylalkyl of which the alkyl portion has 1 to 3 carbon atoms.

### 3,170,933
### 2-(γ-METHOXYPROPYL-AMINOMETHYL)-1,4-BENZODIOXANE

Günther Schmidt, Biberach (Riss), Germany, assignor, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,438
1 Claim. (Cl. 260—340.3)

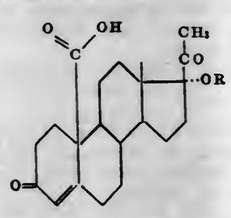
A compound selected from the group consisting of 2-(γ-methoxypropyl-aminomethyl)-1,4-benzodioxane and its non-toxic, pharmacologically acceptable acid addition salts.

### 3,170,934
### UNSATURATED 19-OXYGENATED 3-OXO-STEROIDS AND PROCESS FOR THEIR MANUFACTURE

Albert Wettstein, Riehen, Georg Anner, Karl Heusler, and Jaroslav Kalvoda, Basel, and Hellmut Ueberwasser, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,226
Claims priority, application Switzerland, July 15, 1960, 8,133/60; Oct. 28, 1960, 12,107/60; Dec. 23, 1960, 14,393/60; Apr. 5, 1961, 3,991/61; June 2, 1961, 6,482/61; Sept. 18, 1961, 10,803/61; Sept. 22, 1961, 11,071/61; Jan. 9, 1962, 185/62
5 Claims. (Cl. 260—397.1)

5. A compound of the formula



wherein R stands for an alkanoyl group with at most 15 carbon atoms.

### 3,170,935
### 6-METHYL STEROIDS AND PROCESS FOR PRODUCING SAME

Winifred June Adams, Bernard Ellis, Vladimir Petrow, and Isobel Ann Stuart-Webb, all of London, England, assignors to The British Drug Houses Limited, London, England, a British company

No Drawing. Filed Oct. 6, 1959, Ser. No. 844,648
Claims priority, application Great Britain, June 9, 1955, 16,645/55; June 20, 1955, 17,799/55; June 22, 1955, 18,118/55
8 Claims. (Cl. 260—397.3)

1. 6β-methylandrost-4-ene-3:17-dione.
3. 6β-methyl progesterone.

### 3,170,936
### PROCESS FOR THE PREPARATION OF 6,17α-DIMETHYL-4,6-PREGNADIENE-3,20-DIONE

Peter F. Morand and Romano Deghenghi, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,667
13 Claims. (Cl. 260—397.3)

1. The process of preparing 6,17α-dimethyl-4,6-pregnadiene-3,20-dione which comprises treating 17α-methyl-17β-carbomethoxyandrost-5-ene-3β-ol with hydrogen peroxide in formic acid, thereby securing 3β,5α,6β-trihydroxy-17α-methyl-17β-carbomethoxyandrostane; treating said last-named compound with the N-halo-imide of a divalent lower aliphatic acid and acetylating the crude reaction product, thereby securing 3β-acetoxy-5α-hydroxy-17α-methyl-17β-carbomethoxyandrostan-6-one; treating said last-named compound, in solution in an inert anhydrous solvent, with methyl magnesium bromide, thereby securing 3β,5α,6β-trihydroxy-6α,17α-dimethyl-17β-carbomethoxyandrostane; treating said last-named compound, in solution in an inert anhydrous solvent, with methyl magnesium bromide, thereby securing 3β,5α,6β-trihydroxy-6α,17α-dimethylpregnan-20-one; treating said last-named compound with an oxidizing agent which includes hexavalent chromium ion in molar excess thereby converting said 3β-hydroxy group to a 3-keto group, thereby securing 5α,6β-dihydroxy-6α,17α-dimethylpregnane-3,20-dione, and treating said last-named compound with concentrated hydrochloric acid in ethanol solution, thereby securing 6,17α-dimethyl-4,6-pregnadiene-3,20-dione.

### 3,170,937
### Δ³ STEROIDAL COMPOUNDS AND METHOD FOR PREPARING SAME

Vladimir Petrow, London, England, assignor to The British Drug Houses Limited

No Drawing. Filed Oct. 2, 1962, Ser. No. 227,725
Claims priority, application Great Britain, Oct. 5, 1961, 35,869/61
14 Claims. (Cl. 260—397.45)

1. A process for the preparation of a Δ³ derivative of the androstane and 19-norandrostane series and the D-homo analogues thereof from a corresponding 3-oxo-Δ⁴-steroid comprising reacting said 3-oxo-Δ⁴-steroid with a reagent selected from the group consisting of hydrazines and semi-carbazides to convert said steroid into a derivative selected from the group consisting of its corresponding 3-hydrazone and 3-semi-carbazone and reacting said derivative with an alkali metal hydroxide in the presence of an alcoholic solvent.

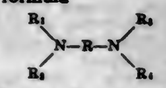
12. 17β-hydroxy-5ξ-androst-3-en-11-one.

### 3,170,938
### SURFACE ACTIVE AGENTS

William W. Levis, Jr., Wyandotte, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed May 31, 1957, Ser. No. 662,557
6 Claims. (Cl. 260—404.5)

1. A surface active agent consisting of the quaternary ammonium salt reaction product of an alkylating agent selected from the group consisting of lower alkyl halides, lower alkyl sulfates, lower alkylene chlorohydrins, sodium chloroacetate and benzylchloride and a tertiary amino-ester having the formula



wherein $R_1$, $R_2$, $R_3$ and $R_4$ are monovalent radicals selected from the group consisting of radicals having the formulae $—CH_2CH(OH)CH_3$; $—CH_2CH(OOCR_5)CH_3$; $—CH_2CH(OH)CH_2CH_3$; $—CH_2CH(OOCR_4)CH_2CH_3$; $—CH(CH_3)CH(OH)CH_3$ and $—CH(CH_3)CH(OOCR_5)CH_3$ wherein said radical formulae $R_5$ is selected from the group consisting of aliphatic hydrocarbon radicals having from 8 to 20 carbon atoms and abietyl radical, at least 1 and not more than 2 of said $R_1$, $R_2$, $R_3$ and $R_4$ radicals containing an $R_5$ radical in its structure; and wherein R is a divalent radical selected from the group consisting of alkylene radicals having 2 to 6 carbon atoms, 2-hydroxy-1,3-propylene, and radicals represented by the formula

$$[—R_6N(R_1)—]_n—R_6$$

wherein $n$ is an integer not higher than 2, $R_6$ is a divalent radical selected from the group consisting of ethylene and propylene and $R_1$ is a monovalent radical as hereinbefore defined.

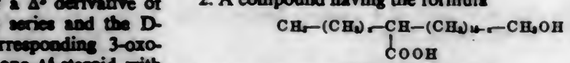
### 3,170,939
### CARBOXYLATED DERIVATIVES OF OLEYL ALCOHOL AND METHOD FOR THEIR PRODUCTION

Edward T. Roe, Chalfont, and Daniel Swern, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application June 20, 1960, Ser. No. 37,533. Divided and this application Jan. 22, 1962, Ser. No. 176,473
4 Claims. (Cl. 260—413)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for introducing a carboxyl group into oleyl alcohol comprising dispersing carbon monoxide, at substantially atmospheric pressure, in sulfuric acid containing about from 2 to 7% water, combining calculated amounts of oleyl alcohol and said sulfuric acid to provide a liquid phase having a ratio of at least about 3 moles of water to 1 mole of oleyl alcohol, and, at a temperature of about from 10 to 20° C., contacting the oleyl alcohol in liquid phase with carbon monoxide at about atmospheric pressure to introduce a carboxyl group at the double bond of the oleyl alcohol, and separating the carboxylic acid derivative from the reaction mixture.

2. A compound having the formula



wherein $x$ is an integer from 6 to 9.

### 3,170,940
### HYDROCARBYLMERCAPTOETHYL SUBSTITUTED SILICON COMPOUNDS

Hugh W. Johnston, Montclair, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 15, 1954, Ser. No. 423,515
4 Claims. (Cl. 260—448.2)

1. A process for preparing compounds having the formula

$$RSCH_2CH_2Si(OR')_3$$

where R and R' are hydrocarbyl radicals taken from the group consisting of alkyl and aryl radicals which comprises reacting a hydrocarbyl mercaptan with a vinyl trihydrocarbyloxsilane under the influence of ultra-violet light.

4. A copolymeric composition of matter containing butyl mercaptoethyl siloxane units and diphenylsiloxane units.

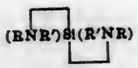
### 3,170,941
### NITROGEN-CONTAINING SPIRANES AND SILOXANES AND THEIR PREPARATION

John L. Speier, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

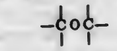
No Drawing. Filed Oct. 12, 1961, Ser. No. 144,538
20 Claims. (Cl. 260—448.2)

1. A spirane of the general formula



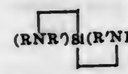


wherein R is selected from the group consisting of monovalent hydrocarbon, monovalent hydrocarbon radicals containing oxygen in the form of



linkages, aminoalkyl, aminophenyl and halogenophenyl radicals and R' is a divalent saturated aliphatic hydrocarbon radical wherein the nitrogen atom is attached to a carbon atom which is at least the third and not more than the sixth carbon atom away from the silicon atom.

7. A method for making a spirane of the formula



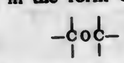
which comprises effecting a reaction between

(1) $(XR')_2SiX_2$

and

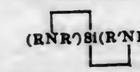
(2) $RNH_2$

wherein R is selected from the group consisting of monovalent hydrocarbon, monovalent hydrocarbon radicals containing oxygen in the form of

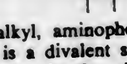


linkages, aminoalkyl, aminophenyl and halogenophenyl radicals, R' is a divalent saturated aliphatic hydrocarbon radical wherein the silicon atom is attached to a carbon atom which is at least the third and not more than the sixth carbon atom away from the other substituent attached to R' and X is a halogen atom selected from the group consisting of chlorine, bromine and iodine.

10. A method for making a polysiloxane of the unit formula $(RNHR')_2SiO$ which comprises hydrolyzing and condensing a spirane of the general formula



wherein R is selected from the group consisting of monovalent hydrocarbon, monovalent hydrocarbon radicals containing oxygen in the form of



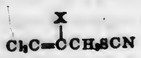
linkages, aminoalkyl, aminophenyl and halogenophenyl radicals and R' is a divalent saturated aliphatic hydrocarbon radical wherein the nitrogen atom is attached to a carbon atom which is at least the third and not more than the sixth carbon atom away from the silicon atom.

### 3,170,942
### CHLORINATED ALLYL THIOCYANATES

Llewellyn W. Fancher, Lafayette, Calif., and George P. Willsey, Houston, Tex., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 12, 1962, Ser. No. 186,836
3 Claims. (Cl. 260—454)

1. A compound of the formula:



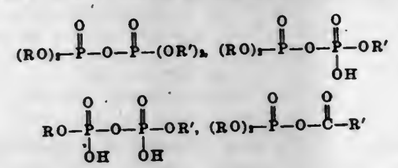
wherein X is selected from the group consisting of hydrogen and chlorine.

### 3,170,943
### PROCESS FOR MAKING PHOSPHORIC ACID ESTER ANHYDRIDES

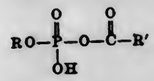
Friedrich D. Cramer, Darmstadt-Eberstadt, and Manfred G. Winter, Griesheim, near Darmstadt, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 12, 1961, Ser. No. 137,493
Claims priority, application Germany, Sept. 17, 1960, S 70,406
8 Claims. (Cl. 260—461)

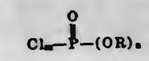
1. The process for the preparation of organo phosphoric acid esters selected from the group consisting of



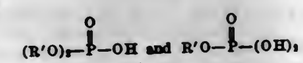
and



wherein R and R' are as defined hereinafter, which comprises reacting, in the presence of dimethyl formamide, organo chlorophosphoric acid ester of the formula



with an acid selected from the group consisting of R'COOH,



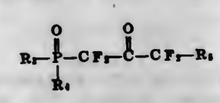
wherein R and R' are individually selected from the group consisting of alkyl of 1 to 10 carbon atoms, cycloalkyl of 3 to 8 carbon atoms, aryl of 6 to 14 carbon atoms in the aromatic nucleus thereof and of 1 to 10 carbon atoms in any alkyl substituents thereof, and the corresponding chloro-substituted radicals, and $m$ and $n$ are integers from 1 to 2 with the proviso that their sum be 3.

### 3,170,944
### HALOACETONYL PHOSPHONATES AND A METHOD OF PREPARING THEM

Karoly Szabo, Pleasantville, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,040
8 Claims. (Cl. 260—461)

1. An organophosphorus compound of the following formula:

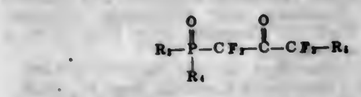


wherein $R_3$ and $R_4$ are selected from the class consisting of phenyl, lower alkyl, lower alkoxy, amino, lower alkylated amino and phenyl amino, and $R_5$ is selected from the class consisting of chlorine and



wherein $R_3$ and $R_4$ have the aforesaid values.

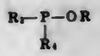
6. A method of preparing an organophosphorus compound of the following general formula:



wherein $R_3$ and $R_4$ are selected from the class consisting of phenyl, lower alkyl, lower alkoxy, amino, lower alkylated amino and phenylamino and $R_5$ is selected from the class consisting of chlorine and



wherein $R_3$ and $R_4$ have the values as above designated which comprises reacting a tertiary organophosphorus intermediate of the following formula



wherein $R_3$ and $R_4$ have the values as above given and R is selected from the class consisting of hydrogen, an alkali metal and lower alkyl, with sym. dichlorotetrafluoroacetone, it being understood that one mole of the trivalent organophosphorus intermediate is used per atom of chlorine replaced.

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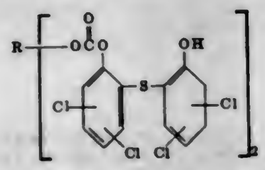
3,170,945

## ALKYLENEGLYCOL CARBONATE ESTERS OF 2,2'-THIOBIS-(DICHLOROPHENOLS)

Robert M. Schiein and Van R. Gaertner, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 22, 1960, Ser. No. 70,921
5 Claims. (Cl. 260—463)

1. A compound of the formula



wherein R is selected from the group consisting of bivalent alkylene and alkylene-oxy-alkylene radicals having from 2 to 4 carbon atoms in each alkylene group, and polyalkylene-oxy-alkylene radicals having from 3 to 10 alkylene groups and from 2 to 4 carbon atoms in each alkylene group.

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3,170,946

## PREPARATION OF ARYLCHLOROFORMATES

John R. Kliebenstein, Westfield, N.J., and William H. Hensley, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 17, 1961, Ser. No. 131,985
5 Claims. (Cl. 260—463)

1. A process for preparing an arylchloroformate which comprises reacting an aryl compound selected from the group consisting of 1-naphthol and phenol with phosgene at a temperature of 100 to 300° C. in contact with from 0.05 to 0.5 mol percent based on said aryl compound of an amine selected from the group consisting of tertiary amines and their hydrochloride and hydrobromide salts, said tertiary amine having an ionization constant no higher than $5\times10^{-4}$ at 25° C., organic in the presence of an inert solvent having a boiling point of 95–300° C.

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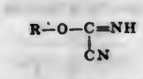
3,170,947

## PREPARATION OF CYANFORMAMIDE

Wilhelm Gruber, Darmstadt, and Werner Rank, Erlenbach, near Heilbronn (Neckar), Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,426
Claims priority, application Germany, Sept. 16, 1961, R 31,121
9 Claims. (Cl. 260—465.4)

1. A process for preparing cyanformamide which comprises reacting a cyanformimido alcohol ester of the formula



wherein R is a member of the group consisting of lower alkyl, lower alkenyl and lower aralkyl, with an anhydrous hydrogen halide selected from the group consisting of hydrogen chloride and hydrogen bromide at a temperature between about 0 and 63° C.

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3,170,948

## PREPARATION OF DIALKYL CYANOVINYLAMINES

Everett Joseph Frazza, Yorktown Heights, N.Y., and Lorence Rapoport, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 18, 1963, Ser. No. 252,308
4 Claims. (Cl. 260—465.5)

1. A method of preparing a member selected from the group consisting of dialkyl $\beta$-cyanovinylamines and the hydrochloride salts thereof which comprises reacting one mole of $\beta$-chloroacrylonitrile with one mole of a trialkylamine in which the alkyl radical contains from 2 to 12 carbon atoms, said reaction being a liquid phase reaction and being conducted at a temperature greater than about 40° C. whereby an olefin is evolved.

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3,170,949

## BIS(FLUOROALKYL)MALONONITRILES AND THEIR PREPARATION

Stephen Proskow, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,081
4 Claims. (Cl. 260—465.7)

1. A bis(fluoroalkyl)malononitrile of the formula



wherein each $R_x$ is selected from the group consisting of perfluoroalkyl, chloroperfluoroalkyl and $\omega$-hydroperfluoroalkyl of up to 10 carbons.

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3,170,950

## N-t-BUTYL-1,4-BUTANEDIAMINE AND SALTS THEREOF

Robert W. Fleming, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Oct. 9, 1961, Ser. No. 143,594
7 Claims. (Cl. 260—501)

1. A compound of the class consisting of N-t-butyl-1,4-butanediamine and its acid addition salts.

5. N-t-Butyl-1,4-butanediamine dicitrate.



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3,170,951

## PROCESS FOR THE PREPARATION OF SULFO-N-ALKYLPROPIONAMIDES

Edward Helmut Sheers, Flushing, N.Y., and David Randal Sexsmith, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 23, 1963, Ser. No. 282,598
7 Claims. (Cl. 260—513)

1. A process which comprises reacting an N-alkylacrylamide in which the alkyl group contains at least 10 carbon atoms with an alkali bisulfite while maintaining a pH of at least 7.5 to prepare sulfonated N-alkylacrylamide relatively free of polymer.

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3,170,952

## SIMULTANEOUS PRODUCTION OF ADIPIC ACID AND CYCLOHEXANONE OXIME

Jesse Oris White, Orange, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 1, 1960, Ser. No. 19,179
1 Claim. (Cl. 260—531)

In a process for the oxidation of cyclohexanol and cyclohexanone, admixed with cyclohexyl nitrite in at least equimolar amount to the cyclohexanone, to produce adipic acid without substantial loss of $HNO_3$ to $N_2O$ and $N_2$, and in which the oxidation is carried out at a temperature between 20° C. and 35° C. with an excess of aqueous nitric acid having a concentration of $HNO_3$ in the range of 25% to 75% by weight to yield adipomononitrolic acid, and in which the adipomononitrolic acid is converted to adipomonohydroxamic acid by heating at 50°–100° C. under reduced pressure with an excess of cyclohexanol while distilling off the resultant cyclohexylnitrite and recycling said distillate to the oxidation step, and in which the resulting adipomonohydroxamic acid is hydrolyzed to yield adipic acid by heating under reflux with a dilute aqueous mineral acid, the improvement which comprises: simultaneously producing adipic acid and cyclohexanone oxime and separating these products by (1) employing a mixture of cyclohexanone and cyclohexanol consisting of from 30% to 70% by weight cyclohexanone for converting the adipomononitrolic acid to adipomonohydroxamic acid; (2) hydrolyzing the resultant adipomonohydroxamic acid to adipic acid in the presence of an excess of the mixture of cyclohexanone and cyclohexanol; (3) adjusting the pH of the resulting aqueous mixture of adipic acid, cyclohexanone oxime, cyclohexanone, and cyclohexanol to the range of 7–8 with an aqueous base selected from the group consisting of alkali metal hydroxides, alkaline earth metal hydroxides, and ammonium hydroxide; and (4) separating the aqueous phase comprising a solution of adipic acid from the organic phase comprising a solution of cyclohexanone oxime in the mixed solvent consisting of cyclohexanone and cyclohexanol.

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3,170,953

## N-HYDROXYMALEAMIC ACID

Sherman C. Lasher, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 6, 1960, Ser. No. 53,912
1 Claim. (Cl. 260—534)

A compound of the group consisting of N-hydroxymaleamic acid, and its alkali metal salts.

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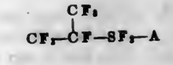
3,170,954

## PERFLUOROISOPROPYLSULFUR(IV) FLUORIDES

Richard M. Rosenberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 16, 1961, Ser. No. 117,513
12 Claims. (Cl. 260—543)

1. A compound of the formula:



wherein A is of the group consisting of fluorine, $\alpha$-fluorohaloalkyl of up to 18 carbons in which all halogens are of atomic number 9–17, $\beta$-alkoxyperfluoroethyl of up to 18 carbons and aliphatically saturated aromatic hydrocarbyl of 6 to 18 carbons and up to 2 aromatic rings.

6. A process of preparing perfluoroisopropylsulfur(IV) fluorides which comprises contacting perfluoropropylene with a sulfur(IV) fluoride of the formula $ASF_3$, wherein A is of the group consisting of fluorine, $\alpha$-fluorohaloalkyl of up to 18 carbons in which all halogens are of atomic number 9–17, $\beta$-alkoxyperfluoroethyl of up to 18 carbons and aliphatically saturated aromatic hydrocarbyl of 6 to 18 carbons and up to 2 aromatic rings, in the presence of cesium fluoride, under anhydrous conditions and at a temperature of 0–200° C.

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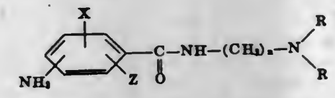
3,170,955

## AMINO AND HALOGEN SUBSTITUTED-N-DI-LOWERALKYLAMINO-ALKYL-BENZAMIDES

Richard K. Richards and Maynette R. Vernsten, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 25, 1958, Ser. No. 730,782
5 Claims. (Cl. 260—558)

4. A compound selected from the group consisting of bases having the formula:



where X is selected from the group consisting of chlorine and bromine, Z is selected from the group consisting of chlorine, bromine and hydrogen, $n$ is an integer of from two to three and R is loweralkyl, and the non-toxic, acid addition salts thereof.

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3,170,956

## METHOD FOR PRODUCING N-SUBSTITUTED NAPHTHYLAMINES

John F. Olin, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 13, 1959, Ser. No. 852,632
5 Claims. (Cl. 260—576)

1. In a method for making N-substituted naphthylamines of the formula $R—NH_2$ wherein R is selected from the group consisting of alkyl, alkylphenyl and phenyl radicals by reacting naphthol with a primary amine, the improvement comprising carrying out the reaction at a temperature in the range of 175–275° C. in the presence of an acid-activated silica-alumina catalyst and continuously removing the water of reaction in the form of an azeotrope.

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3,170,957

## PROCESS FOR THE PRODUCTION OF ASYMMETRICAL DIALKYL HYDRAZINES

Heinz Jonas and Hans-Joachim Abendroth, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 31, 1961, Ser. No. 85,964
Claims priority, application Germany, Feb. 4, 1960, F 30,467
6 Claims. (Cl. 260—583)

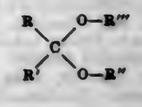
1. Process for the production of asymmetrical di-loweralkyl hydrazines which comprises reducing an N-nitroso-

di-lower-alkylamine with sodium amalgam containing about 0.4–0.7% by weight of sodium in the presence of a hydrogen donor selected from the group consisting of water, aqueous caustic, lower alkanols, and alcoholic sodium alcoholates as reducing agents under reaction conditions including adding the n-nitroso-di-lower alkylamine to the sodium amalgam, a temperature of between −20° C. and +100° C. and an excess of sodium amounting to 5–50% above the stoichiometric amount required for the reduction of the nitrosamine and recovering the asymmetrical di-lower alkyl hydrazine thereby formed.

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3,170,958
MONO- AND DI-SECONDARY ALIPHATIC ETHERS
William L. Howard, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 8, 1961, Ser. No. 108,240
1 Claim. (Cl. 260—611)

A method comprising reacting by contacting a compound having the formula



wherein R and R′ represent radicals independently selected from the group consisting of lower alkyl and cyclo alkyl radicals containing from 1 to 6 carbon atoms and wherein R and R′ can be joined together to form a cyclic ring having from 5 to 6 carbon atoms, and wherein R″ and R‴ represent radicals independently selected from the group consisting of lower primary and secondary alkyl radicals, cycloalkyl radicals having from 5 to 6 carbon atoms and phenyl radical; with hydrogen under acidic conditions in the presence of rhodium metal catalyst at from about 0° to about 250° C.

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3,170,959
ALLYLOXYMETHYL DIAROMATIC ETHERS
Walter B. Trapp, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 1, 1961, Ser. No. 106,532
6 Claims. (Cl. 260—613)

1. A composition of matter selected from the group consisting of para-allyloxymethyl diphenyl oxide, para-2-methylallyloxymethyl diphenyl oxide, 4,4′-di(allyloxymethyl) diphenyl oxide, 4,4′-di(2-methyl-allyloxymethyl) diphenyl oxide, 2,4′-di(allyloxymethyl) diphenyl oxide.

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3,170,960
PROCESS FOR PRODUCING DI-TERTIARY-BUTYL NITRO PHENOLS
Gerd Losten, Pittsburgh, Pa., and Louis H. Schwartzman, deceased, late of Pittsburgh, Pa., by Doris F. Schwartzman, executrix, Baltimore, Md., assignors to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Aug. 2, 1960, Ser. No. 47,111
4 Claims. (Cl. 260—622)

1. A process for producing 2,6-dialkyl-4-nitro phenol which comprises dissolving 2,6-dialkyl-4-tertiary alkyl-4-nitro-2,5-cyclohexadiene-1-one in an inert solvent in which 2,6-dialkyl-4-nitro phenol is insoluble and adding a complex of boron fluoride and a member selected from the group consisting of phenol, cresol, xylenol and diethyl ether thereto in mole ratios of complex to the dienone of from 1:5.2 to 1:12, whereupon an exothermal reaction occurs and 2,6-dialkyl-4-nitro phenol precipitates, and recovering this precipitate.

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3,170,961
PROCESS FOR SEPARATING DICHLOROBENZENE ISOMERS
Edgar C. Britton and Floyd L. Benson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 24, 1961, Ser. No. 91,310
15 Claims. (Cl. 260—650)

1. In a process for separating mixtures of isomeric dichlorobenzenes consisting largely of the meta and para isomers, the steps of reacting said mixtures with up to about one mole of a brominating agent selected from the group consisting of bromine and bromine chloride per mole of combined meta and orthodichlorobenzene therein contained, the quantity of said brominating agent being sufficient to increase the mole fraction of p-dichlorobenzene in the unbrominated dichlorobenzene substantially, in the presence of an effective amount of a nuclear substitution bromination catalyst at a temperature of about 0° C. to about 170° C. and separating the bromodichlorobenzene thereby produced.

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3,170,962
ORGANOSILICON-EPOXY RESIN COMPOSITIONS
Leslie J. Tyler, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Jan. 14, 1955, Ser. No. 481,967
2 Claims. (Cl. 260—824)

1. A composition of matter composed of the reaction product of: (A) a resinous epoxide prepared by the reaction of (1) a polyhydric phenol and (2) a compound selected from the group consisting of polyfunctional chlorohydrins and polyepoxides and mixtures thereof, said epoxide resin having an average of at least one OH per molecule, and (B) a silicone compound having more than one hydroxyl group attached directly to one or more silicon atoms and being free from functional groups other than hydroxy, alkoxy, and aroxy.

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3,170,963
ENAMEL COMPOSED OF A VINYL RESIN WITH EPOXIDE GROUPS GRAFTED THEREON
Abraham Ravve, Chicago, and Joseph T. Khamis, Brookfield, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed May 23, 1960, Ser. No. 30,739
18 Claims. (Cl. 260—830)

1. A thermosetting enamel composition comprising a solution in a volatile organic solvent of a branch-grafted vinyl chloride resin, said resin having a backbone selected from the group consisting of the homopolymer of vinyl chloride, the copolymer of vinyl chloride with vinyl acetate and the copolymer of vinyl chloride with vinylidene chloride, and having on said backbone grafted branches containing epoxy groups, said branches being derived by graft polymerization onto the backbone of organic substances having ethylenic unsaturation therein and bearing at least one oxirane ring and selected from the class consisting of butadiene monoxide, epoxidized polybutadiene, glycidyl methacrylate, glycidyl acrylate, dipentene oxide and glycidyl vinyl ether; and a non-volatile organic curing agent selected from the group consisting of phenolic amine resins, urea formaldehyde resins, polycarboxylic acids and the anhydrides of polycarboxylic acids.

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ERRATUM

For Class 260—859 see:
Patent No. 3,170,892

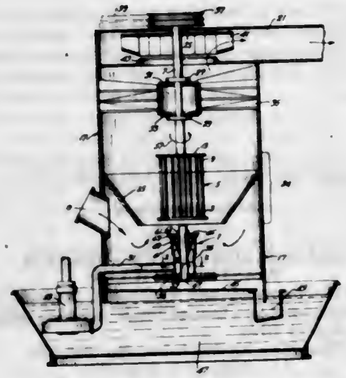


3,170,964
BLENDS OF POLY(METHYL METHACRYLATE) AND GRAFT COPOLYMER RESINS
Thomas S. Grabowski, Vienna, W. Va., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed July 31, 1961, Ser. No. 127,842
7 Claims. (Cl. 260—876)

1. A composition comprising a blend of (*a*) poly(methyl methacrylate), (*b*) a graft copolymer of (1) a polymerized diene rubber, the majority of the latex particles of said rubber having a size of between 500 and 700 angstroms and (2) a mixture of an alkenyl cyanide and a vinyl aromatic hydrocarbon and (*c*) a graft copolymer of (1) a polymerized diene rubber, the majority of the latex particles of said rubber having a size of about 1600 angstroms and (2) a mixture of an alkenyl cyanide and a vinyl aromatic hydrocarbon.

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3,170,965
AIR WASHER WITH MOVING CONE TO CONTROL VERTICAL DISTRIBUTION
Robert M. Jamison and Nicholas J. Panzica, Detroit, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed May 4, 1961, Ser. No. 107,710
2 Claims. (Cl. 261—29)



1. An apparatus for generating a spray of high velocity liquid pellets which comprises a substantially cylindrical rotatable cage structure having a feed port at one end and a plurality of spaced dispensing surfaces around its periphery, means for directing liquid through said feed port and onto said dispensing surfaces over substantially their full length, said directing means having a substantially cylindrical inner chamber, an annular vent coaxial with said chamber and coaxial and juxtaposed with said feed port, means for supplying liquid under pressure tangentially into said chamber, whereby said liquid acquires a circular component of flow and is forcefully ejected through said annular vent as an annular conical stream, means for limiting the pattern for said stream between geometrically projected coaxial cones directed through said feed port, one extending from the outer periphery of said annular vent to said cage adjacent the ends of said dispensing surfaces near said feed port, and the other extending from the inner periphery of the annular vent to the opposite ends of said dispensing surfaces, whereby liquid projected from said directing means is distributed along the length of said dispersing surfaces, and means for rotating said cage structure in a direction opposite to that of said circular flow component in said chamber whereby said dispersing means impact and break up liquid fed thereto into pellets dispering and projecting them outwardly.

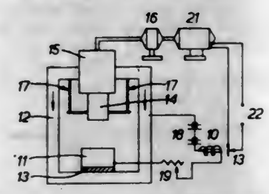
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ERRATUM

For Class 261—94 see:
Patent No. 3,170,969

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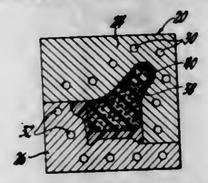
3,170,966
PRODUCTION OF VOLTAGE DEPENDENT RESISTANCES
James Kemény, 4 Rue de la Prairie, Bry-sur-Marne, France; Bernard Commun, 13 Rue Bandin, St.-Maude, France; Maurice Jolansperger, 11 Rue Albert Lecoq, Le Perreux, France; and Ferenez Konyevits, 1 Impasse Said-Carnot, Le Perreux, France
Original application Mar. 27, 1961, Ser. No. 98,712. Divided and this application Feb. 1, 1962, Ser. No. 176,476
2 Claims. (Cl. 264—22)



1. A method of making a non-linear electric resistor disposed in a metallic casing with a predetermined resistance value comprising the steps of filling a metallic container with discrete silicon carbide grains without the addition of a binding agent, placing the filled container in a press, electrically connecting a control device associated with the press so that control current flows through the silicon grains in said container, operating the press to compress and deform said metallic container and grains therein until the current flowing through said grains reaches a predetermined value, thereafter terminating the compression on said container and grains therein.

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3,170,967
METHOD OF MAKING VINYL FOAM SEALS
Lyle N. Williams and Harry R. Alley, Anderson, and Harold K. Barnhizer, Lapel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 25, 1960, Ser. No. 17,518
3 Claims. (Cl. 264—45)

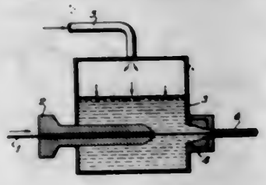


1. A method of making a polyvinyl foam sealing strip comprising the steps of filling a mold cavity having a configuration of said sealing strip to be formed with a vinyl plastisol capable on fusion of forming a flexible solid non-porous material, applying sufficient heat to said mold to cause said plastisol to form a gelled layer of predetermined thickness adjacent the mold cavity surfaces, withdrawing the ungelled vinyl plastisol from said mold cavity, depositing a quantity of a foamable vinyl plastisol into said mold cavity, said quantity being sufficient on expanding to completely fill the mold cavity, applying additional heat to said mold at a temperature capable of causing said foamable plastisol to expand and completely fill the mold cavity, heating the mold to between about 325° F. and 335° F. whereby said foamed material is fused with said layer to form a flexible, self-sustaining strip, cooling the formed sealing strip to approximately room temperature and finally subjecting said sealing strip

to a heat aging treatment of at least four hours at a temperature in the range of 175° F. to 200° F.

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3,170,968
METHOD OF MANUFACTURING CELLULAR INSULATED WIRE
Mitsuru Rokusuke, Zenzo Yoshida, Mikio Hanzawa, Yoshio Hamada, Setaro Hida, and Hiroshi Miyazaki, all of Tokyo, Japan, assignors to Nippon Telegraph & Telephone Public Corporation, Tokyo, Japan, a corporation of Japan
Filed Mar. 5, 1962, Ser. No. 177,376
Claims priority, application Japan, Mar. 31, 1961, 36/10,763
1 Claim. (Cl. 264—45)



Method of manufacturing insulated wire comprising passing the wire through a solution of synthetic resin of a molecular weight over 50,000 selected from the group consisting of polyethylene and polypropylene and a solvent the proportion by weight of solvent to resin being less than 2.5, under a pressure of the order of 50 to 80 grams per square centimeter, cooling the wire thus coated to a temperature below the gelation point of the resin solution, and reheating the coated wire to generate fine cells in the coating of a diameter of the order 10 to 30 microns.

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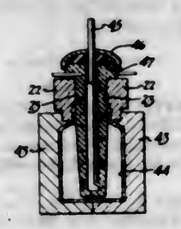
3,170,969
GAS-LIQUID CONTACTING OPERATIONS
Bernard J. Lerner, 727 Orchard Hill Drive, and Max Leva, 1030 Dalbert Road, both of Pittsburgh, Pa.
Filed Aug. 1, 1960, Ser. No. 46,336
2 Claims. (Cl. 261—94)



1. In a gas-liquid contact tower having means to supply gas and liquid to packing material contained within said tower, said packing material providing a relatively large surface area within said tower over which streams of said gas and liquid flow, the improvement which comprises the utilization of a packing material having impervious, non-absorbent external surfaces, said surfaces being provided with a thin, continuous coating, covering essentially the entire surfaces of said packing, said coating consisting of sub-microscopic particles of silica ranging of the order of 1 to 200 millimicrons in size, whereby substantially increased liquid filming over the impervious, non-absorbent external surfaces of said packing occurs, thereby substantially increasing the mass transfer efficiency of said tower without significant alteration of the gas pressure drop therethrough.

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3,170,970
METHOD FOR MAKING PLASTIC ARTICLES
Elmer L. Adams, deceased, late of Toledo, Ohio, by Wanda J. Adams, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Jan. 23, 1962, Ser. No. 169,174
4 Claims. (Cl. 264—94)



1. In a method of making a plastic article from a parison surrounding an air permeable core having a central axial recess, the steps of disposing the core and the parison interiorly of a blow mold, said core recess having an axially movable air tube inserted thereinto and having transverse openings, and simultaneously injecting air into the tube and moving the air tube in said recess to progressively inflate the parison by air passing through the tube openings and hence radially through said core.

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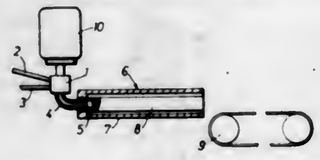
3,170,971
METHOD FOR MAKING HOLLOW PLASTIC ARTICLES
Lawrence D. Niememan and Anthony J. Scalora, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed June 22, 1962, Ser. No. 204,526
7 Claims. (Cl. 264—97)



1. In a method of making a blown plastic article from a parison defining a closed blowable shape and having an injection molded finish portion, the steps of injection molding both the parison finish portion and the closed parison blowable portion about a cylindrical sleeve, axially retracting the cylindrical sleeve from the parison blowable portion prior to blowing of the parison, and continuing to support the parison injection molded finish portion by the sleeve during blowing of the blowable portion of the parison.



3,170,972
METHOD OF EXTRUDING A POLYURETHANE ARTICLE
Ulrich Knipp and Cornelius Mühlhausen, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 10, 1961, Ser. No. 81,869
Claims priority, application Germany, Jan. 14, 1960, F 30,290
3 Claims. (Cl. 264—176)



1. A process for forming polyurethane plastic rods and tubes which comprises mixing under pressure the liquid reaction components of a polyurethane plastic, immediately passing the still liquid reaction mixture under the pressure exerted in said mixing step through a passageway having substantially smooth walls at a rate such that the residence time therein is longer than 1½ times the curing of the reaction mixture and maintaining the temperature of said passageway at least equal to that of said polyurethane reaction mixture, said passageway having the cross-sectional configuration of the desired final product so the liquid components react within said passageway to form a dimensionally stable product before exiting therefrom.

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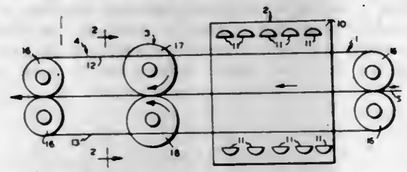
3,170,973
METHOD OF PRODUCING FIBERS
Kenichi Tanabe, Hideo Saito, and Tadao Ashikaga, all of Kurashiki, Japan, assignors of three-fourths to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan, and one-fourth to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 23, 1961, Ser. No. 90,955
Claims priority, application Japan, Feb. 23, 1960, 35/5,269
5 Claims. (Cl. 264—185)

1. A process of forming polyvinyl alcohol fibers of increased strength and hot-water resistance which comprises introducing into a coagulation bath, an aqueous solution of polyvinyl alcohol containing at least about 0.4% by weight of boric acid to form polyvinyl alcohol fibers therefrom, removing the thus-formed fibers from the coagulation bath and washing the fibers by soaking them in running water for at least about one minute to remove boric acid therefrom and to render them free of free boric acid.

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3,170,974
PROCESS FOR EMBOSSING FOAMED THERMOPLASTIC SHEETS
William A. Jacobs, Ellenville, N.Y., assignor to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware
Filed June 6, 1962, Ser. No. 200,543
6 Claims. (Cl. 264—284)

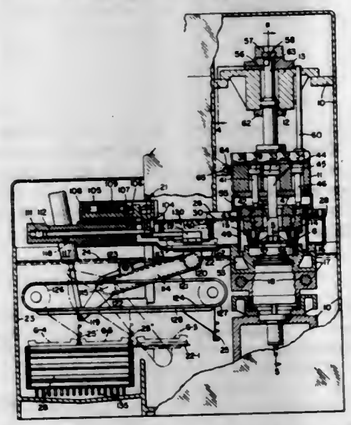
1. Method of embossing foamed thermoplastic sheet comprising heating both surfaces of said sheet to a temperature above the heat distortion temperature thereof but below that temperature at which said sheet is incapable of supporting itself against its own gravity, one said surface being heated to a higher temperature than the other said surface, and thereafter passing said heated sheet into the nip of a pair of rolls one of which is smooth-faced and the other of which has depressed portions on its face, the surface of said sheet which is heated to a higher temperature being in contact with said smooth-faced roll and the other said surface of said sheet being



in contact with said roll having depressed portions on its face.

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3,170,975
QUENCHING MACHINE
Oliver F. Bauer and Alvin W. Snook, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed June 30, 1960, Ser. No. 40,012
3 Claims. (Cl. 266—6)



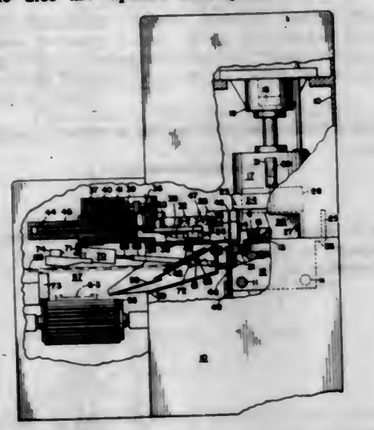
1. A quenching machine for gears and like workpieces, having a chamber for initial quenching, upper and lower dies arranged to hold a workpiece in said chamber during such initial quenching, means for circulating coolant liquid around a workpiece held by the dies for effecting such initial quenching and providing liquid to said chamber to a level above a workpiece therein, a tank for the further cooling of workpieces and adapted to contain coolant liquid to a level lower than the bottom of said chamber, the bottom wall of said chamber having a discharge orifice to said tank, a closure for said orifice and actuating means therefor, and transfer means for moving a workpiece beneath the level of liquid in the container from the dies to a position above said closure, said orifice and closure being so arranged that upon opening of the latter by said actuating means the workpiece and the body of liquid in which it is immersed in the container may together pass through the orifice to the tank.

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3,170,976
QUENCHING MACHINE
Oliver F. Bauer and Alvin W. Snook, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Apr. 13, 1961, Ser. No. 102,745
6 Claims. (Cl. 266—6)

1. A quenching machine for gears and like workpieces, comprising a tank for coolant liquid, upper and lower dies adapted to open for the reception and removal of workpieces and to close for clamping a workpiece between them, said dies in both the open and closed posi-

tions thereof being above the liquid level of said tank, means for force-quenching by circulating coolant liquid around a workpiece clamped between the dies, a container for liquid surrounding the lower die for maintaining coolant at a level above a workpiece on the lower die when the dies are opened subsequent to such forced



quenching, said container having a pivoted bottom closure adapted to open to a downwardly inclined position wherein it constitutes a chute for discharging a workpiece from the container into said tank, and a work transfer device for moving the workpiece from the lower die to a position directly above said closure.

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3,170,977

**OXYGEN LANCE WITH DETACHABLE BARREL**

Richard F. Obenchain, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Nov. 16, 1961, Ser. No. 152,832
4 Claims. (Cl. 266—34)

2. Apparatus for applying gas to a metallic refining bath comprising:

(*a*) a pair of lances,

(*b*) movable supporting means for said pair of lances,

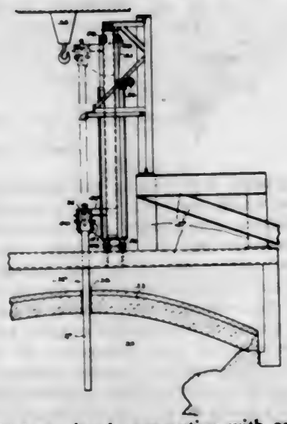
(*c*) means for selectively reciprocating said supporting means, whereby a selected one of said pair of lances is positioned over said metallic bath, and

(*d*) means on said support means operatively connected to each of said lances to raise and lower said lances relative to said metallic bath,

(*e*) each of said lances comprising:

(1) a lance head having sections therein for separately receiving and distributing gases and cooling medium,

(2) a lance barrel comprising a plurality of concentric conduits joined together,



(3) said lance head cooperating with one end of said lance barrel to distribute said gases and cooling medium to one end of said lance barrel whereby said cooling medium circulates through said lance barrel and back to said lance head and said gases flow through said lance barrel to the other end thereof and then out of said lance barrel into said metallic bath,

(4) said conduits of said lance barrel being slidably associated with said sections of said lance head,

(5) seal means operably associated with each of said conduits and said sections to maintain a seal between said sections and

(6) lever actuated quick-detach clamp means for removably securing said lance head to said lance barrel.

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# ELECTRICAL

3,170,978

**APPARATUS FOR DISPLAYING RELATIVELY DISPLACEABLE SUPERPOSED SIMULATIVE PATTERNS**

George H. Balding, Fremont, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 14, 1962, Ser. No. 244,848
4 Claims. (Cl. 35—10.4)

1. A display apparatus comprising in combination:

flight path generator means,

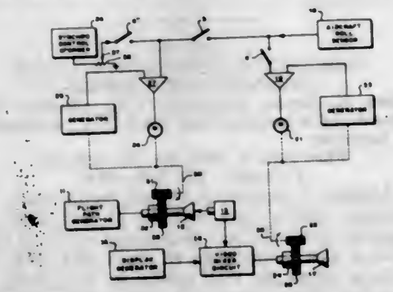
cathode ray tube means connected to said flight path generator means displaying on its face a pattern simulative of the flight path of an aircraft;

vidicon camera means adjacent to the face of said cathode ray tube means photographing said pattern simulative of flight path;

video mixer means connected to said vidicon camera means;

display generator means generating a signal representative of sky, ground and horizon relative to the aircraft connected to said video mixer means;

second cathode ray tube means connected to said video mixer means displaying on its face a pattern simulative of sky, ground and horizon relative to the air-



craft with said flight path pattern superimposed thereon;

first rotatable yoke means mounted on the neck of said first cathode ray tube means;



aircraft roll sensor means connected to said first rotatable yoke means rotating said first rotatable yoke means an amount proportional to the roll of the aircraft;

second rotatable yoke means mounted on the neck of said second cathode ray tube means;

means connecting said aircraft roll sensor means to said second rotatable yoke means rotating said second rotatable yoke means an amount proportional to the roll of the aircraft in a direction opposite to that of the direction of rotation of said first rotatable yoke means;

whereby said pattern simulative of the sky, ground and horizon relative to the aircraft is rotated an amount proportional to roll while the pattern simulative of the flight path pattern remains fixed.

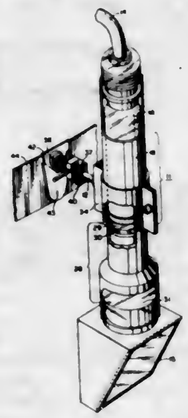
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3,170,979

**OPTICAL IMAGE INTERPOSING DISPLAY DEVICE**

Alan W. Baldwin, 4406 Panorama Drive SE., and Henry P. Birmingham, 2505 Branch Ave. SE., both of Washington, D.C.

Filed Apr. 30, 1962, Ser. No. 191,382
1 Claim. (Cl. 88—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A visual display device for superposing an image on background environment without affecting a viewer's normal vision comprising, in combination,

a cylindrical housing member having an end portion substantially enlarged in cross section;

a cathode ray tube positioned in said cylindrical housing opposite said enlarged end portion for receiving remote images;

rectangular mirror holding means attached to said enlarged end portion of said cylindrical housing member;

a half silvered rectangular mirror positioned at an angle of 45° within said mirror holding means;

plano-concavo lens means adjacent said cathode ray tube;

concavo-convex lens means adjacent said plano concavo lens means and within said enlarged end portion, whereby said lenses are positioned to project an image received from said cathode ray tube and said mirror at optical infinity;

a head harness formed of straps contoured to fit over the head of a viewer;

a pair of receptacles secured to said head harness, each of said receptacles being located thereon so as to be substantially positioned above a respective eye of a viewer wearing said harness and each of said receptacles being individually adapted to support said cylindrical housing member, thereby providing a ready means of selectively positioning said housing member over either eye of a viewer wearing said harness;

substantially cylindrically contoured adjustable clamp means disposed about said cylindrical housing member for vertical adjustment into a viewer's normal vision of said cylindrical housing member when it is supported by one of said receptacles;

a cylindrical shaft upon which said clamp means is pivotally mounted whereby said cylindrical housing member, when supported by one of said receptacles, may be moved in an arc before the face of a viewer wearing said harness so as to be positioned out of his field of vision;

a collar member having a threaded outer surface and an internal bore extending from one end of said collar member within which said shaft is slidably mounted for horizontal adjustment of said cylindrical housing member away from or toward a viewer wearing said harness, said one end of said collar member having radial slots to enable compression of said one end to compressingly engage said cylindrical shaft;

a locking nut rotatably mounted on said threaded outer surface whereby said nut, upon rotation thereof toward said one end, engagingly compresses said one end around said cylindrical shaft; and

a plate member affixed to the other end of said collar member and configured to be securedly received within any one of said receptacles in a manner to support said cylindrical housing member in front of the face of a viewer wearing said harness.

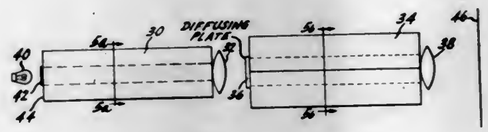
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3,170,980

**OPTICAL TUNNEL SYSTEM**

David E. Pritchard, Pasadena, Calif., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 9, 1962, Ser. No. 193,490
4 Claims. (Cl. 88—1)




1. In combination,

first and second optical tunnels arranged on a common optical axis, each said tunnel comprising a hollow structure of regular cross-section and having internal mirror surfaces;

a pair of lenses, each located at the output end of a different one of the tunnels;

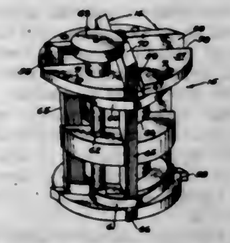
diffusing means positioned between the two tunnels at the input end of the second optical tunnel;

a light source located at the input end of the first optical tunnel;

an object to be projected located between the light source and the input end of the first optical tunnel, whereby multiple images of said object are projected onto the diffusing means when the object is illuminated by said light source; and

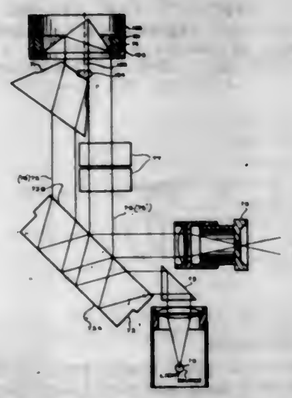
means located at the output end of the second tunnel beyond the lens for receiving multiple images of the multiple images appearing on the diffusing means.

3,170,981
**OPTICAL APPARATUS FOR DETERMINING THE AXIAL ALIGNMENT OF A BORE**
Eric J. Schneider, Chicago, Ill., assignor to Ingis Equipment Company, Chicago, Ill., a corporation of Illinois
Filed May 2, 1960, Ser. No. 25,938
10 Claims. (Cl. 88—14)



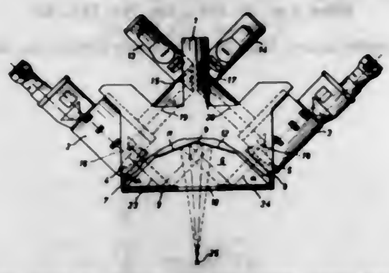
10. A device adapted for insertion into the bore of a workpiece for determining the alignment of the bore's axis relative to a predetermined reference axis perpendicular to the reflecting surface of a reference mirror, said device comprising a substantially cylindrical element insertable within said bore, mirror means, and slot means in said element receiving the said mirror means, wherein a reflecting surface of the said mirror means extends between the axis and the wall of the bore.

3,170,982
**METHOD OF MEASURING BY INTERFERENCE**
Harold S. Hemstreet, Wilton, Conn., and Robert A. Woodcock, Vestal, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Original application May 24, 1957, Ser. No. 661,540, now Patent No. 3,072,011, dated Jan. 8, 1963. Divided and this application May 4, 1962, Ser. No. 192,546
8 Claims. (Cl. 88—14)



1. A method of measuring angle error in a reflective member including three essentially mutually perpendicular reflecting surfaces, said reflective member exhibiting six kite apertures, comprising the steps of passing two coherent parallel incident light beams through the reflective member in three successive orientations in opposing directions and combining the two reflected beams in such a manner that the path length of each of the two light beams prior to combination are equal, said combined beam containing a fringe pattern for each orientation commensurate with the angle error of the reflective member for that orientation, the first orientation of the reflective member being such that the two light beams impinge on a first said kite aperture, rotating the reflective member by 60 degrees in either direction about its apex to position said reflective member in a second orientation such that the two incident light beams impinge on a second of said kite apertures, rotating the reflective member by 120 degrees in either direction from its first orientation about its apex to position said reflective member in a third orientation such that the two parallel incident light beams impinge on still another kite aperture, the three fringe patterns observed in the recombined beam for the three orientations of the reflective member being completely determinative of the angle error in the reflective member.

3,170,983
**TWO-OBSERVER MICROSCOPE EQUIPMENT PARTICULARLY WITH CENTRAL PENTAGONAL PRISM FOR VIEWING SURGICAL OPERATIONS**
Helmut Riedel, Oberkochen, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung doing business as Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany, a German corporation
Filed Nov. 27, 1962, Ser. No. 240,773
Claims priority, application Germany, Dec. 5, 1961, Z 7,571
1 Claim. (Cl. 88—39)

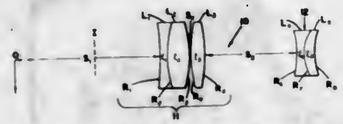


A two-observer microscope equipment comprising two separate equal microscopes for observation with incident light, said microscopes being united by a common supporting member and arranged symmetrically to a common vertical plane and being combined with two distinct light sources and reflecting means for directing the illuminating rays into the observation ray paths, the objectives together with the oculars as well as said light sources together with the reflecting means being arranged in separate tubes arranged parallel to another and at angles of about 45° to said common vertical plane, a pentagonal prism being arranged symmetrically between said objectives of the two microscopes as to be adapted to combine the observation- and illumination-rays, traversing the two separate microscopes, at an acute angle, said prism having base angles ($\alpha$) of approximately 45° and an apical angle of $90° < \varphi < 180°$, roof surfaces forming said apical angle, and a base surface, all said surfaces being mirror-coated with the exception of a central area in the base surface serving for the penetrating of said combined illumination- and observation-rays.

3,170,984
**ZOOM OPTICAL SYSTEM**
Harold E. Rosenberger, Brighton, and Herbert D. Koronen, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 29, 1961, Ser. No. 113,474
5 Claims. (Cl. 88—57)

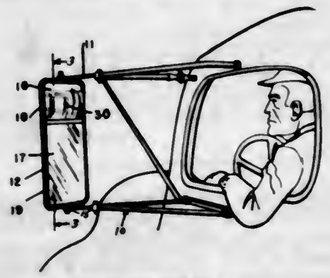
1. A zoom type of pancratic optical system corrected for chromatic and monochromatic image aberrations and having a substantially flat field, said system comprising a front lens member which consists of a compound meniscus lens which is concave on the object side and has a positive focal length of between $5.0F_1$ and $6.0F_1$ where $F_1$ is the focal length of the front member and is composed of a front double concave element having its surface of strongest curvature in contact with a rear double convex element and further includes a double convex lens spaced a fixed distance rearwardly thereof and having a positive focal length of between $1.2F_1$ and $1.4F_1$, said system comprising a double concave compound rear lens member which is optically aligned rearwardly of the front member and has a negative focal length which is substantially $.91F_1$ and which is composed of a front double concave element having its surface of strongest curvature forming an interface with a rear convex-concavo element wherein the concavo surface is rearmost and has weaker curvature than the interface, said members being movable with respect to a fixed





point on their common optical axis simultaneously and continuously at different rates so as to form a virtual image of continuously variable size of an object at a stationary position on said axis through a magnification range of greater than 4:1, and said members being spaced apart a distance between $.37F_1$ and $.47F_1$ when the system produces least magnification and being spaced apart a distance between $3.5F_1$ and $3.64F_1$ when the system produces highest magnification, the space between the object and the front member being correspondingly between $1.25F_1$ and $1.55F_1$ when the system produces least magnification and between $.90F_1$ and $1.20F_1$ when the system produces the greatest magnification.

3,170,985
**MIRROR FOR VEHICLES**
Rudolph Katulich, 212 W. Pleasant, Corry, Pa.
Filed Sept. 12, 1962, Ser. No. 223,004
1 Claim. (Cl. 88—87)

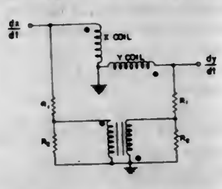


A rear view mirror comprising
a rectangular flat mirror member and a square convex mirror member,
the edges of said convex mirror member being generally in the same plane as the edges of said flat mirror member,
said mirror members being secured in a frame with the long sides of said flat mirror member parallel to two of the sides of said square mirror member,
a first continuous resilient channel member U-shaped in cross section encircling said mirror members and receiving the outer peripheral edges of three sides of each said mirror member,
a second resilient member being H-shaped in cross section disposed between said mirror members and receiving the edges of said mirror members which are adjacent to each other,
a flat sheet disposed generally parallel to the backs of said mirror members and having its outer edge disposed between the legs of and resting on the inside surface of one of the legs of said U-shaped resilient channel member,
a rigid channel frame U-shaped in cross section defining a rectangular enclosure receiving said U-shaped resilient channel member and holding the outer edge of said flat sheet between the inside of a leg of said U-shaped rigid frame and the outside of a leg of said first resilient U-shaped member,
a mounting bracket,
said mounting bracket being adapted to be attached to the front of either side of a vehicle cab,
said frame being pivotally attached to said mounting bracket at approximately the center of the short side of said frame,
the long sides of said frame extending generally in a vertical direction,
said convex mirror member being disposed above said flat mirror member,
the center of curvature of said convex mirror member being substantially below the center of said flat mirror member whereby a greater portion of the area behind and above said vehicle is visible than the portion of the area behind and below said vehicle.

3,170,986
**ELECTRICAL APPARATUS AND STABILIZED DIELECTRIC MATERIAL THEREFOR**
Kenneth W. MacFadyen, Lenox, and Anthony J. Polito, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York
Filed Dec. 28, 1959, Ser. No. 862,233
3 Claims. (Cl. 174—17)

1. Electrical apparatus comprising, in combination, a container, an electrical device in said container, a dielectric liquid comprising a halogenated aromatic compound in said container in contact with said electrical device, said dielectric liquid being subject to decomposition forming halogen-containing products, an epoxide scavenger compound in said dielectric liquid for neutralizing said halogen-containing products, and a zeolite compound in contact with said dielectric liquid for improving the electrical properties of the epoxide-containing dielectric liquid while removing the moisture from said dielectric liquid and without removing significant amounts of said epoxide scavenger compound.

3,170,987
**METHOD OF AND APPARATUS FOR PRODUCING ELECTRICAL SIGNALS REPRESENTING GRAPHIC INFORMATION**
Donald F. O'Brien, 55 Fairview Ave., Watertown, Mass.
Filed Dec. 12, 1963, Ser. No. 331,339
10 Claims. (Cl. 178—18)




1. A graphic information transducer for producing electrical signals characterizing the motion of a member in a plane, said transducer comprising, in combination:
a pair of independent coils each having a sensing section with substantially parallel turns lying in a plane, said coils being arranged with said sensing sections separated from one another and held stationary in overlying face-to-face relation and with said turns of each of said sensing sections substantially perpendicular to said turns of the other of said sensing sections;

an input member having an associated magnetic field which is substantially unvarying; and

means providing a planar surface substantially parallel with said planes of said sensing sections for supporting said input member for movement in the plane of said surface relative to said sensing sections with said magnetic field intersecting said sensing sections;

said input member being freely movable in said plane of said surface for inducing a voltage in each of said coils commensurate with the speed of movement of said input member relative to said each coil in a direction perpendicular to said turns of said sensing section thereof and constituting one of said electrical signals.

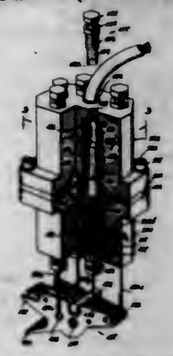
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**3,170,988**

**SOLENOID STRUCTURE**

David C. Sherrick, Bethesda, Md., assignor to SCM Corporation, a corporation of New York

Original application Dec. 13, 1956, Ser. No. 628,110, now Patent No. 2,982,810, dated May 2, 1961. Divided and this application Apr. 11, 1961, Ser. No. 102,259
11 Claims. (Cl. 178—28)



5. A simultaneous electrical code signal combination receiving and translating mechanism comprising: a support; a plurality of two-position levers pivotally disposed on said support on a common axis in side-by-side relation and spaced slightly from each other; a unitary multiple solenoid structure having a multi-wire operating circuit on said support including a housing comprising at least one structurally integral block made from magnetically conductive material and having a plurality of parallel bores therethrough, a portion of said circuit including a plurality of solenoid coils, one coil being disposed in each of said plurality of bores, and a plurality of solenoid plungers, each plunger projecting into a said coil coaxial with the associated bore and independently movable in accord with electric code signal combinations received in said multi-wire circuit in parallel paths transverse to said lever axis with a plunger aligned with each of said levers; means connecting aligned plungers and levers to enable lever movement as a result of plunger movement; and means connected to said housing coacting with said plungers to delimit end positions of plunger movement and to provide detent action for maintaining plungers and levers in whichever position they are moved by received code signals.

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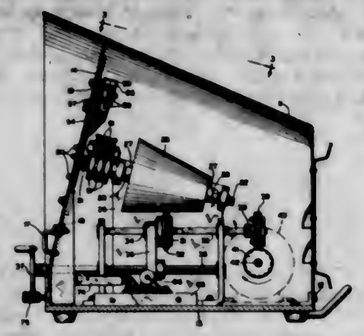
**3,170,989**

**TELEGRAPH SIGNAL DISPLAY DEVICE**

William V. Johnson, West Orange, and Anthony J. Scimeca, Old Bridge, N.J., assignors to The Western Union Telegraph Company, New York, N.Y., a corporation of New York

Filed Aug. 8, 1962, Ser. No. 215,667
10 Claims. (Cl. 178—69)

1. Telegraphic code interruption signal display means comprising a plurality of rotatably mounted and signal modulatable indicator lamps, means for rotating said lamps comprising a rotatable shaft in rigid connection therewith, a shaft-concentric driving cone affixed to said shaft, keyed wheel means having a friction driving surface engaging said driving cone and movable manually along the elements thereof during cone driving, driving wheel rotating means comprising a constant speed motor



and a longitudinally keywayed driving wheel axle driven thereby and engaging said keyed driving wheel means, radial optical slit means for each said lamp mounted adjacent thereto, lamp modulation means comprising lamp-connected slip rings, a power supply connected thereto, and circuit means for energizing and connecting simultaneously a plurality of separate signal code circuit interruption devices to said slip rings for testing.

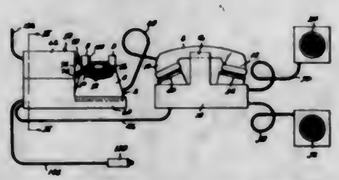
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**3,170,990**

**TELEPHONE OPERATING DEVICE FOR DISABLED PERSONS**

David L. Beatty, 10712 E. 84th Terrace, Raytown, Mo.

Filed Mar. 14, 1963, Ser. No. 265,124
2 Claims. (Cl. 179—1)



1. In combination with a telephone instrument including a base having thereon a pushbutton operable when depressed to remove said telephone from service and when released to place said telephone in service, and a dial capable of being turned to connect the telephone user with the central office operator, a telephone operating device for use by a disabled person, said device comprising:

(*a*) a case adapted to support said instrument base,

(*b*) electrically actuated operating means carried by said base and operable on successive actuations to perform, in a continuously repeated sequence, the functions of first releasing said pushbutton, second turning said dial to connect the user with the central office operator, and third to depress said pushbutton,

(*c*) an actuating switch adapted to be operated by a disabled person,

(*d*) an operative electrical circuit including a source of electrical power, said operating means, and said actuating switch,

(*e*) a by-pass switch in said operative circuit and operable when closed to complete said circuit independently of said actuating switch, and



(*f*) means actuated by said operating means to close said by-pass switch at the beginning of each of said functions performed by said operating means, and to open said by-pass switch upon completion of each said function.

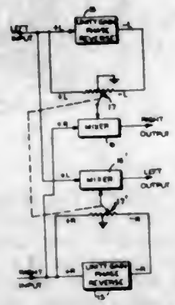
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**3,170,991**

**SYSTEM FOR STEREO SEPARATION RATIO CONTROL, ELIMINATION OF CROSS-TALK AND THE LIKE**

Ralph Glasgal, 39—43 46th St., Long Island City, N.Y.

Filed Nov. 27, 1963, Ser. No. 327,876
4 Claims. (Cl. 179—1)



1. A system of the character described, utilizing first and second input signals, first and second potentiometers, each comprising a resistance and a tap movable therealong, first and second mixers, each having an output terminal and two input terminals and first and second unity gain phase reversers, wherein the resistance of the first potentiometer is connected across both phases of the first input signal and the resistance of the second potentiometer is connected across both phases of the second input signal, the movable taps of said first and second potentiometers being electrically connected as inputs to said first and second mixers respectively, a first input signal electrically connected to the input terminal of the first phase reverser and the second mixer, a second input signal electrically connected to the input terminal of the second phase reverser and to the first mixer; the output signal of the first mixer being the new modified second signal and the output signal of the second mixer being the new modified first signal of said system.

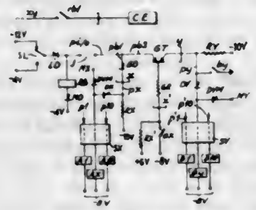
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**3,170,992**

**SELECTIVE ELECTRICAL MARKING ARRANGEMENTS**

Ronald William Stanley Kinsey, deceased, late of London, England, by Kathleen Kinsey, Letchworth, and Joyce Marguerite Eva Childs, Eltham, London, England, administratrices, assignors to Associated Electrical Industries Limited, London, England, a British company

Filed May 17, 1961, Ser. No. 112,168
5 Claims. (Cl. 179—18)



1. A selective marking arrangement comprising a selective marker for the individual selection and marking on a group basis of a plurality of coordinately grouped connections; a bi-functional gate provided in respect of each said connection for coding its identity for selection by the marker and decoding its selection when made by the marker, said gate comprising an input-output path including switching means operable to establish current flow through its path, encoding-decoding branch paths connecting said input-output path to the marker, and a transistor connected in one of said branch paths for passing encoding current of characteristic amplitude or direction through that branch path and the input-output path in an operated condition of said switching means; and further switching means operable by the selective marker according to a selection made thereby for causing said transistor to instead pass decoding current differing from the encoding current in respect of such characteristic, the input-output path of the gate having associated with it discriminating means operable in response only to decoding current flow in the transistor for marking the appertaining connection as having been selected.

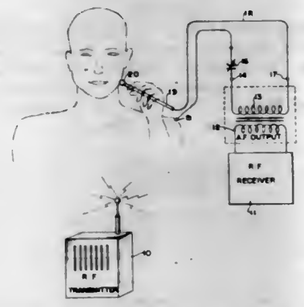
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**3,170,993**

**MEANS FOR AIDING HEARING BY ELECTRICAL STIMULATION OF THE FACIAL NERVE SYSTEM**

Henry K. Puharich, 87 Hawkes Ave., Ossining, N.Y., and Joseph L. Lawrence, 570 Fort Washington Ave., New York, N.Y.

Filed Jan. 8, 1962, Ser. No. 164,882
24 Claims. (Cl. 179—107)




1. Means for aiding hearing by imparting modulated electrical signals to viable nerves of the facial system of a subject, comprising a radio frequency receiver for receiving transmitted signals corresponding to audible sounds, said receiver having an output circuit, said output circuit having output terminals presenting modulated electrical signals corresponding to said audible sounds, first circuit means including a first capacitative coupling for connecting one terminal of said output in circuit with viable nerves of the facial system of the subject, and second circuit means including a second capacitative coupling for connecting the other terminal of said output in circuit with said viable nerves.

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**3,170,994**

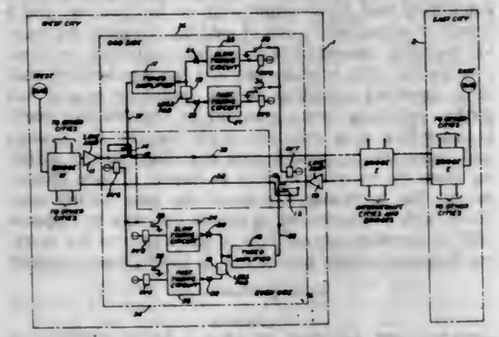
**TONE OPERATED ECHO SUPPRESSOR CONTROL CIRCUIT**

Thomas F. Benewicz, East Paterson, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 29, 1960, Ser. No. 59,272
10 Claims. (Cl. 179—170.2)

1. A two-way communication network comprising, in combination, a path for the transmission of signals in a first direction, a path for the transmission of signals in a second direction, each of said paths including respective first means and respective second means responsive after first and second preassigned time delays, respectively, to signals exceeding first and second preassigned thresholds, respectively, for disabling the other one of said paths and

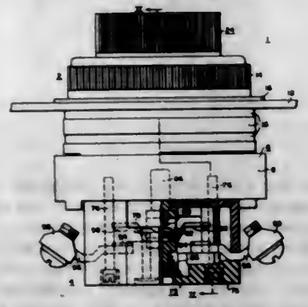
the other ones of said first and second means, said first time delay exceeding said second time delay and said second threshold exceeding said first threshold, either of said paths and the included ones of said first and second



means remaining in a disabled condition so long as said signals effecting said disabled condition persist at a level of amplitude exceeding said first threshold irrespective of the amplitude of signals applied to the disabled one of said paths during said disabled condition.

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**3,170,995**
**CONTROL SWITCH ACTUATING MEANS**
**John H. Mullen, Brighton Township, Beaver County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 23, 1961, Ser. No. 112,066**
**8 Claims. (Cl. 200—4)**

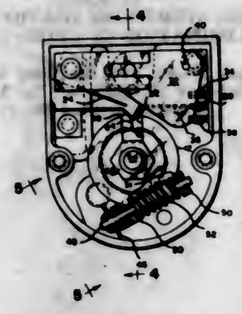


1. In a switch actuating unit for operating a plurality of reciprocable switch operating members, a rotatable selector structure, means operating upon rotation of said selector structure to operatively move at least one of said operating members, a rectilinearly reciprocable push-button structure, means operating upon operative rectilinear movement of said push-button structure to operatively move at least one of said operating members, and means preventing operative rectilinear movement of said push-button structure except when said selector structure is in one or more predetermined positions.

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**3,170,996**
**CAM OPERATED TIMING MECHANISM**
**Ralph L. Berg, Crystal Lake, Ill., assignor to Controls Company of America, Schiller Park, Ill., a corporation of Delaware**
**Filed July 20, 1962, Ser. No. 211,359**
**10 Claims. (Cl. 200—38)**

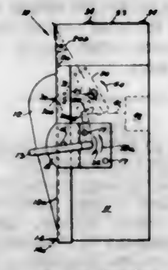
1. A timing device comprising, in combination,
a timing motor,
timing cam means connected to and driven by said timing motor,
switch means connected with said cam means and including a switch member movable selectively between two operative closed circuit positions in response to movement of said cam means, said switch member biased toward one of its operative positions and movable against said bias to the other of its operative positions by said cam means,



selector means having a first position in the path of movement of said movable switch member for engagement therewith to limit travel of said movable switch member toward one of its operative positions and a second position in the path of movement of said movable switch member for engagement therewith to limit travel of said movable switch member toward its other operative position,
and means for selectively positioning said selector means in its first and second positions whereby said timing device is adapted to provide off-to-on or on-to-off operation.

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**3,170,997**
**INTERLOCK FOR SWITCH ENCLOSURES**
**John A. Herrmann, Grosse Pointe Farms, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Jan. 16, 1962, Ser. No. 166,648**
**4 Claims. (Cl. 200—50)**

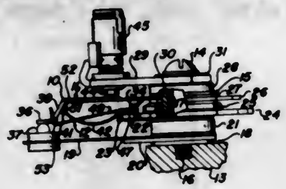


1. Interlock means for a circuit protective device housing having a hinged cover member and a manually operable switch handle assembly movable between an ON and an OFF position comprising an interlock bracket pivotally mounted to said housing at a main portion of said bracket and having a first end mechanically linked to said handle assembly, a second end of said interlock bracket being flanged from the main portion of the interlock bracket, said flanged portion being substantially parallel to a flat portion of said cover, said flanged portion member having a notch therein; fastening means fixed secured to said cover member and positioned at a point on said cover member in close proximity to said interlock bracket flanged portion; the end of said fastening means being received by said notch when said handle assembly is in said ON position to prevent lifting of said hinged cover member to prevent contact with elements disposed within said circuit interrupter housing; said fastening means being disposed outside of said notch when said handle assembly is in said OFF position.



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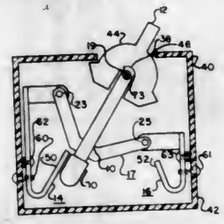
**3,170,998**
**SNAP ACTING THERMOSTATIC SWITCH**
**Maurice D. Stahl, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio**
**Filed Jan. 31, 1962, Ser. No. 170,201**
**7 Claims. (Cl. 200—67)**



1. A snap acting switch comprising first and second strip type elongated spring elements lying in substantial spaced parallelism with each other, each of said elements including compression and tension members, means for supporting one end of the first of said elements so that its other end is free to flex transversely, pivotal atttaching means for connecting one end of the second of said elements to the free end of the first of said elements, said pivotal attaching means including pivoted joints between the respective compression and tension members of said elements in such manner as to place said compression members under a compressive stress and said tension members under a tension stress, stops positioned on opposite sides of the non-pivoted end of said second element and so related to said pivotal attaching means that the free end of said second element moves back and forth between said stops with a snap action upon back and forth movement of the pivotally connected ends of said elements, one of said stops comprising a fixed contact, and a movable contact carried by the non-pivoted end of said second element for cooperation with said fixed contact.

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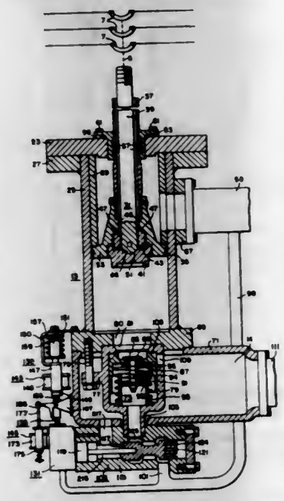
**3,170,999**
**SILENT MAGNETICALLY OPERATED SNAP-ACTION ELECTRIC SWITCH**
**Laurence R. Brown, 8103 Bardu Court, Springfield, Va.**
**Filed Apr. 18, 1963, Ser. No. 273,984**
**2 Claims. (Cl. 200—67)**



1. A switch having a toggle lever assembly pivotable about a pin and with only one permanent magnet mounted to move therewith, two ferromagnetic members positioned adjacent two extreme positions of movement of said magnet by said toggle lever assembly to hold the toggle lever assembly in either of two stable rest positions by magnetic attraction of said magnet to said members, contact bridging structure mounted to move with said toggle lever assembly and said permanent magnet and separate contact means integral with each of said two ferromagnetic members to form a closed conductive path with said bridging structure when said toggle lever assembly is in only one of said positions.

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**3,171,000**
**PISTON OPERATED CIRCUIT BREAKER**
**Russell N. Yeckley and Wayne S. Aspey, Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 14, 1960, Ser. No. 69,081**
**13 Claims. (Cl. 200—82)**



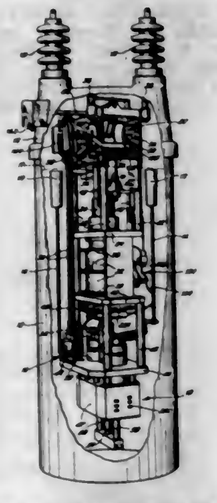
1. A circuit breaker comprising a stationary contact, a movable contact cooperable with said stationary contact and movable between two positions to open and close said contacts, hydraulic means operable to move said movable contact, said hydraulic means comprising a piston housing having an opening therein, a piston disposed within said piston housing, means operatively connecting said piston with said movable contact, a valve member connected to said piston housing at said opening, a sump comprising a sump housing, said valve member being disposed within said sump housing, and said valve member being operable to permit fluid to be dumped therethrough into said sump housing to effect movement of said piston to thereby effect movement of said movable contact from one to the other of said positions.

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**3,171,001**
**REPEATING CIRCUIT INTERRUPTER WITH FLUID INTEGRATING MEANS**
**Max Rigert, West Allis, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware**
**Filed Apr. 9, 1962, Ser. No. 186,079**
**6 Claims. (Cl. 200—89)**

1. A repeating circuit interrupter for protecting an electrical system and including a casing containing a quantity of dielectric fluid, switch means disposed in the lower end of said casing and beneath said dielectric fluid, operating means disposed near the upper end of said casing and above said dielectric fluid, a link extending downward from said operating means for connecting the latter to said switch means, said operating means including resilient means urging said switch means toward an open position and latch means for holding said switch means closed in opposition to said resilient means, trip means for releasing said latch means upon the occurrence of a predetermined condition in said system, electromagnetic reclosing means disposed between said operating means and said switch means and including a coil energizable

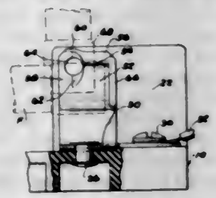
after each opening operation of said switch means and a plunger having a bore extending therethrough for permitting said link to pass therethrough, said plunger being connected to said operating means independently of



said link for being moved upwardly during each opening operation, said plunger being attracted downwardly into said coil upon the energization of the latter to relatch said switch means.

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**3,171,002**
**ELECTRICAL FUSE MOUNTING**
**Joseph D. Kinnear, 1894 Severn Road, Grosse Pointe Woods, Mich.**
**Filed Apr. 8, 1959, Ser. No. 804,931**
**21 Claims. (Cl. 200—133)**



1. A clip for releasably engaging the cylindrical end ferrule of a cartridge fuse comprising a base having a pair of upstanding, similarly shaped spring legs, each terminating in a free end, each spring leg having intermediate its ends an outwardly bowed portion cooperating to define a generally cylindrical, radially yieldable socket for circumferentially engaging a substantial portion of the ferrule, each spring leg having one axial end portion thereof relieved from generally the center of the outwardly bowed portion upwardly to adjacent the free end of the leg so that at said end portion of the clip, the spring legs are adapted to engage the ferrule of the fuse only around the generally lower half portion thereof.

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**3,171,003**
**THERMOSTAT WITH A PERMANENT MAGNET SNAP SWITCH**
**Theodore E. Larsen, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware**
**Filed Oct. 17, 1960, Ser. No. 63,150**
**4 Claims. (Cl. 200—138)**

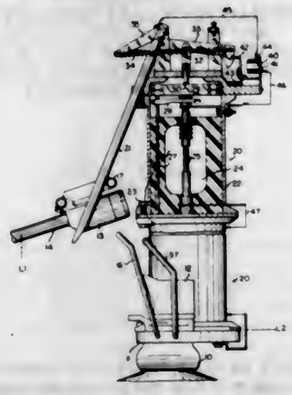
1. In a thermostat, a base, a bimetal, said bimetal having one end adjustably mounted on said base whereby the position of the bimetal can be changed to select a predetermined control point, a first ferromagnetic member attached to a free end of said bimetal, a bracket electrically insulated from and attached to said base, a shaft attached to said bracket as an integral part thereof, a magnetic assembly adjustably mounted on said shaft so said assembly can be rotated about said shaft, said assembly comprising a permanent magnet and a second ferromagnetic member having one end attached to one pole side of said magnet extending along one side of said magnet and having another end projecting beyond the face of the other pole of said magnet, and a flexible switch blade



forming a movable contact member of a switch when said blade engages an end of said shaft extending beyond said face of said magnet which forms a fixed contact of said switch, said blade being interposed between said first magnetic member and said face of said magnet whereby upon the movement of said first member toward said magnet said switch is closed when said member is attracted against said magnet, said assembly being effective to change the differential temperature of said bimetal, which is necessary to bring about switch operation, by rotating said second member to increase the air gap between said another end of said second member and said first member.

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**3,171,004**
**MECHANISM AND CIRCUITRY FOR HIGH VOLTAGE SWITCHING**
**Elmer L. Luehring, Cleveland, Ohio, assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois**
**Filed July 18, 1961, Ser. No. 124,899**
**4 Claims. (Cl. 200—146)**

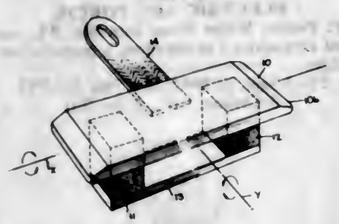


1. In a high voltage switch, the combination of a first device comprising load interrupter contacts, a second device having contacts connected to said interrupter contacts whereby to serve as a bypass for the first mentioned device, a third device which comprises the main contacts of the switch, with the parallel circuit of load interrupter and by pass being in series with the main contacts and with the parts mechanically connected and arranged so that during switch opening sequence the load interrupter is normally operable for opening before the main contacts open, and means for holding at least one of said first and second devices closed when the value of current through one of the devices is smaller than a predetermined value.



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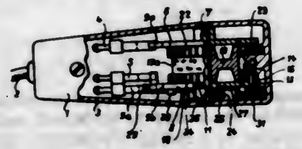
**3,171,005**
**SELF-ALIGNING ELECTRICAL CONTACT SHOES FOR MOVABLE CARRIERS**
**Harold G. Abbey, 189—10 Aberdeen Road, Jamaica 23, Long Island, N.Y.**
**Filed Feb. 25, 1963, Ser. No. 260,388**
**5 Claims. (Cl. 200—166)**



1. An electrical contact shoe assembly adapted to be borne by a moving carrier to engage a planar fixed contact, said carrier moving along a trackway parallel to said fixed contact but being subject to minor misalignment, said assembly comprising a mounting plate for attaching said assembly to said carrier, a compressible body secured to said plate, and a flat contact shoe bonded to said body, whereby said body is compressive when said shoe slidably engages said fixed contact to urge said shoe thereagainst, said body being equally compressible in all directions to cause said shoe to align itself with said fixed contact regardless of how said carrier is misaligned, said compressible body being formed of cellular insulating material whose cells are closed.

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**3,171,006**
**REVERSIBLE CONTROL SWITCH FOR A SLIDE PROJECTOR HAVING A SLIDE POSITION INDICATOR**
**Hans Muich, Walter Jung, and Heribert Luesem, Wetzlar (Lahn), Germany, assignors to Ernst Leitz Gesellschaft mit beschraenkter Haftung, Wetzlar (Lahn), Germany**
**Filed Sept. 21, 1961, Ser. No. 140,187**
**Claims priority, application Germany, Sept. 23, 1960, L 37,100**
**8 Claims. (Cl. 200—167)**

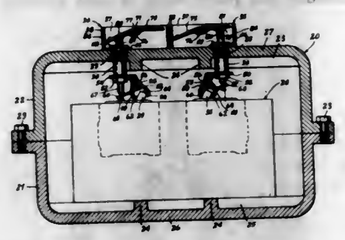


1. A remotely located control switch for slide projectors comprising: a casing, a geared counter having a scale disc in said casing, switching means mounted in said casing and operable from the exterior thereof to energize a circuit for actuating a slide changing mechanism, said switching means having a first and second spring biased pawl engaging said geared counted and a cam surface in said casing engaging said pawls so that said geared counter is rotated one step for each actuation of said switch member, said scale disc having a series of numerals corresponding to a series of slides to be projected, and a viewing window in said casing opposite said scale disc viewing one of said numerals to deterimne how many steps said counter is separated from a reference position.



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**3,171,007**
**CIRCUIT BREAKER ACTUATOR BOX**
**Marshall G. Zavertnik, St. Louis, Mo., assignor to Killark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri**
**Filed Aug. 17, 1961, Ser. No. 132,197**
**4 Claims. (Cl. 200—168)**



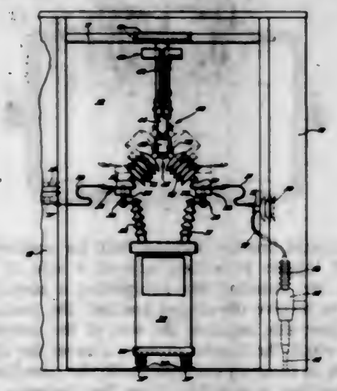
1. A circuit breaker actuator box for operating a plurality of toggles projecting beyond a side of a circuit breaker, the actuator box comprising a container large enough to receive the circuit breaker, the container having an open side adjacent the side of the circuit breaker beyond which the toggles project, a cover for closing the open side to form an enclosure with the container for the circuit breaker, removable means for fastening the cover to the container, the cover being adjacent to but spaced from the toggles when the cover is fastened to the container, each toggle being pivotal between first and second positions upon the application of external forces to opposite operating sides thereof, a plurality of trip lever means on the cover to pivotally support trip levers, each trip lever extending within the enclosure to a position overlying the toggle and having opposed bearing surfaces adjacent the operating sides of the toggle, a plurality of push rods extending through the cover, each rod being positioned adjacent a trip lever and having an end in engagement with the trip lever to pivot the trip lever in opposite directions when the rod is recirpocated in opposite directions, a plurality of push levers pivotally supported by the cover outside the enclosure, each push lever having ends on opposite sides of its pivotal support with one end in engagement with the push rod, whereby the push rod is reciprocated in opposite directions when opposite ends of the push lever are pushed, the space between the opposed bearing surfaces on each trip lever and the arc through which the trip lever pivots being such as to produce automatic alignment of each trip lever with its toggle regardless of whether such toggle is in its first or second position when the cover is mounted on the open side of the container.

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**3,171,008**
**LATCHABLE RAISING AND LOWERING MEANS FOR DISCONNECTING SWITCH OF METAL ENCLOSED SWITCHGEAR**
**Davis M. Phillips, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware**
**Filed Nov. 22, 1961, Ser. No. 154,305**
**3 Claims. (Cl. 200—169)**

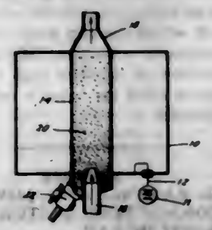
1. In metal enclosed switchgear, the combination of a stationary metallic frame, a circuit breaker unit movable horizontally into and out of an operative position relative to said frame, means including a first elongate member vertically supported on said frame and a second elongate member slidably engaging said first member, an operating handle pivotally mounted intermediate its ends on said first member and engaging said second member for moving the same vertically upon pivotal movement, a support member mounted on the lower end of said second member for vertical movement therewith, a plurality of insulators mounted on said support member and extending

downwardly therefrom, a plurality of stationary disconnect contacts carried by the circuit breaker unit and facing upwardly therefrom in vertical alignment below said insulators when said circuit breaker unit is in its operative position, a movable disconnect contact carried by each of said insulators, whereby pivotal movement of said operating handle will move each of said movable disconnect contacts into and out of engagement with one of said stationary disconnect contacts and locking means having a first portion fixedly mounted on said frame and a second portion mounted on said lever means for movement into and out of locking engagement with said first portion when said movable disconnect contacts are in each of their connected and disconnected positions.



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3,171,009
HEAT TREATMENT OF HIGH-MELTING SOLIDS IN FINE PARTICLE FORM
Walter Scholler, Muenchenstein, and Hans Paul, Wettingen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of the Swiss Confederation
Filed Apr. 24, 1961, Ser. No. 104,986
Claims priority, application Switzerland, Apr. 29, 1960, 4,960/60
4 Claims. (Cl. 219—10.55)



1. An apparatus for heating and causing to grow, fine-grained solid particles of a metal selected from the group consisting of tantalum, niobium, tungsten, molybdenum, vanadium and rhenium, said apparatus being adapted to suspending said particles in a fluidizing gas stream and heating said particles to a temperature in the zone of the recrystallization temperature of said metal, said apparatus comprising a cylindrical, vertically arranged cavity resonator connected by inductive coupling means to, and in resonance with, a source of high-frequency electromagnetic waves the frequency of said waves being higher than 1000 megacycles per second and said coupling means being adapted to excite in said cavity a standing wave with the $E_{011}$-mode, whereby the effective magnetic component of said standing wave has its maximum amount in the axis of said cavity and wherein the average particle size and the frequency of said waves are in such relation that the average particle radium is substantially equal to 1 to 5 times the penetration depth of eddy currents generated in said particles by the magnetic field of said standing wave, said apparatus further comprising a gas inlet nozzle located centrally in the bottom end of said cavity resonator for introducing a substantially axial gas stream, a gas outlet opening in the upper end of said cavity, means for confining the diameter of said gas stream to less than two thirds of the diameter of said cavity, and means for collecting the grown particles at the bottom end of said cavity.

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3,171,010
ELECTRIC ARC TORCH
Charles C. Potter, White River Junction, Vt., assignor to Thermal Dynamics Corporation, a corporation of New Hampshire
Filed Sept. 6, 1962, Ser. No. 221,727
3 Claims. (Cl. 219—75)



1. In an electric arc torch, at least one electrode, an arc passage extending from said electrode, and terminating in a nozzle opening, means for establishing an arc from said electrode, into said passage, means for introducing arc stabilizing gas tangentially into said passage in the region of said electrode to form a vortex, and means for introducing tangentially a second gas at the nozzle region of said passage in a direction opposite in sense to said vortex.

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3,171,011
STUD WELDING DEVICE
Lawrence P. English, Haddon Heights, N.J., assignor to KSM Products, Inc., Moorestown, N.J., a corporation of New Jersey
Filed Mar. 31, 1961, Ser. No. 99,839
5 Claims. (Cl. 219—98)

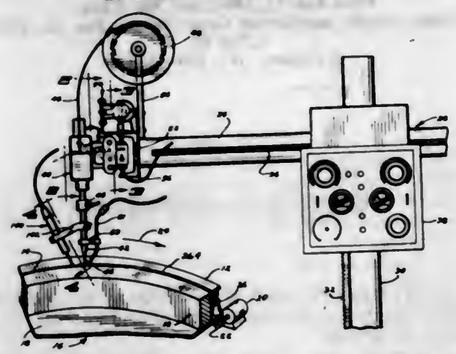


1. For use in a stud welding apparatus of the type comprising a holder for a stud to be biased against a workpiece for welding by a charge of predetermined magnitude to cause welding of said stud to said workpiece, said stud and said workpiece constituting an electrical load, a capacitor across which may be generated a predetermined charge, a source of alternating current providing a pair of terminals, a gating rectifier including an input terminal, an output terminal and a gate terminal, a first diode including an input terminal and an output terminal and a second diode including an input terminal and an output terminal, said input terminal of said gating rectifier and said input terminal of said first diode being operatively connected to one terminal of said source, a potentiometer connected between the output terminal of said first diode and the other terminal of said source, said gate terminal of said gating rectifier and said output terminal of said second diode being operatively connected together, a resistor connected between a wiper of said potentiometer and the input terminal of said second diode, and means for use in connecting said capacitor across said electrical load.



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3,171,012
AUTOMATIC GROOVE FOLLOWER FOR WELDING APPARATUS
Laurel A. Morehead, 1847 Beckman Ave., St. Paul, Minn.
Filed Mar. 26, 1962, Ser. No. 182,241
13 Claims. (Cl. 219—124)



12. In combination with apparatus which includes a welding head and means for moving the welding head transversely of, as well as toward and away from, a groove located on work to be welded, a follower assembly comprising:

(a) an elongated casing;

(b) a feeler rod having one end adapted to ride in said groove;

(c) means within said casing fulcruming said feeler rod including a wobble plate fixedly mounted on the feeler rod and a ring secured within the casing against which said plate bears;

(d) a contact actuated by said feeler rod when said feeler rod is deflected from a preferred position with respect to said groove;

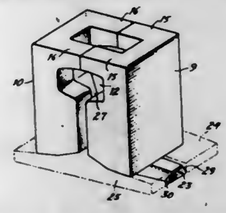
(e) a plurality of spaced contacts selectively engaged by said first mentioned contact in accordance with the direction in which said feeler rod is deflected; and

(f) means energized by engagement of said first mentioned contact with any one of said second mentioned contacts for causing said welding head to be moved into a preferred relationship with said groove.

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3,171,013
PROCESS AND APPARATUS FOR JOINING STEEL WORK BY AUTOMATIC AND SEMI-AUTOMATIC ELECTRIC ARC WELDING
François Georges Dunhier, Uccle, Belgium, assignor to La Soudure Electrique Autogene, S.A., Brussels, Belgium, a corporation of Belgium
Filed Dec. 7, 1962, Ser. No. 243,146
Claims priority, application Belgium, Dec. 14, 1961, 487,637
1 Claim. (Cl. 219—137)

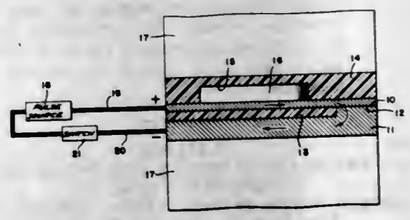
A process for joining steel rails by welding, which comprises placing between the ends of the rails level with their flanges a steel foot piece having a longitudinal section which corresponds substantially to the cross section of the flanges of the rails, arc welding the edges of the foot piece to the rail flanges, placing on the foot piece and on the rail flanges, near the bottoms of the rail webs, two half molds which widen progressively upwardly away from the webs of the rails and outwardly away from the heads of the rails at the level of the rail heads, said half molds extending upwardly substantially above the rail heads and having end faces which conform to the webs and to the heads of the rails on either part of the joint



to be welded, and depositing welding metal in said mold by the Electroslag process until the deposited metal has reached a point above the level of the heads of the rails.

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3,171,014
METHOD OF EFFECTING MAGNETIC DEFORMATION OF A WORKPIECE
Adriano C. Ducati, Newport Beach, Calif., assignor, by mesne assignments, to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware
Continuation of abandoned application Ser. No. 859,765, Dec. 15, 1959. This application Sept. 5, 1962, Ser. No. 222,763
9 Claims. (Cl. 219—149)



2. In a method of magnetic forming, the steps of providing a generally disc-shaped electrically-conductive workpiece, providing an electrically-conductive element parallel to and adjacent at least one surface of said workpiece, effecting flow of a large electric current radially through said workpiece and parallel to said electrically-conductive element, effecting flow of a large electric current through said electrically-conductive element parallel to said radial flow through said workpiece to create a strong magnetic field, said currents being sufficiently large that said field effects magnetic forming of said workpiece, and restraining at least portions of said workpiece in a predetermined manner.

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3,171,015
DIP STICK HEATER
George H. Grinde, 3126 Hampshire Ave. N., Minneapolis 27, Minn.
Filed May 9, 1962, Ser. No. 193,538
1 Claim. (Cl. 219—205)

A dip stick heater for the crankcase of an internal combustion engine, said heater comprising:

(a) an elongated tubular casing closed at its lower end,

(b) an elongated refractory insulating member, generally coaxially disposed within said casing, and

(c) coiled electrical heating element means disposed within said casing and carried by said insulating member, said heating element means comprising:

(1) a lower convoluted high resistance heating element section carried by said insulating member and disposed within said casing well below the normal oil level of said crankcase,

(2) an upper convoluted high resistance heating element section carried by said insulating mem-

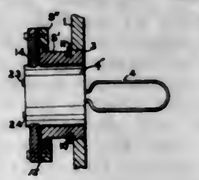
ber and disposed within said casing well above the normal oil level of said crankcase, and



(3) a relatively low resistance heating element section connecting said upper and lower convoluted heating element sections and defining an axially elongated relatively cool section immediately adjacent the normal oil level in said crankcase, whereby to substantially eliminate the formation of carbon at the point of juncture within said crank case of the oil and the air layer thereabove.

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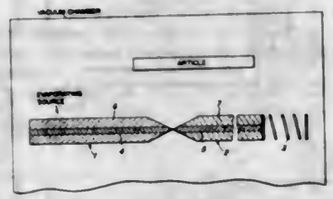
**3,171,016**
**PREHEATING MEANS FOR INTERNAL COMBUSTION ENGINES**
**John M. Sukala, 55 Institute Place, Bridgeton, N.J.**
**Filed Mar. 14, 1961, Ser. No. 95,543**
**1 Claim. (Cl. 219—208)**



Preheating means for internal combustion engines of water cooled type having a threaded core aperture in the water jacket comprising an immersion type electric hot water heater having a base, an elongated heating portion connected to the inner end of said base, a mounting flange connected to the outer end of said base, means to removably connect said heater into the block of said engine so that said heater is immersed in the water in said block comprising a connector member, said connector member having an open ended passage through which said heater extends into said water jacket, an externally threaded portion on the inner end of said connector adapted to be inserted in said threaded cored aperture in said engine block, sealing means between the inner end of said connector and the portion of said block surrounding said core aperture, a continuous annular lip on the outer end of said connector, said lip extending transversely to the longitudinal axis of said passage, means to rotatably position said heater to avoid internal obstructions in said engine block interfering with said elongated heater comprising an annular flange rotatably mounted on said connector on the inner side of said lip, sealing means between said mounting flange and the outer end of said connector, means to connect said mounting flange to said rotatable flange whereby said heater may be positioned inside said engine block in a water tight manner.

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**3,171,017**
**EVAPORATION OF METAL OR METALLOIDS**
**George Siddall and Leslie A. Holland, Crawley, and Alfred Hilliard, London, England, assignors to Edwards High Vacuum Limited, Crawley, England, and Société le Carbone-Lorraine, Paris, France**
**Filed Jan. 18, 1960, Ser. No. 3,166**
**Claims priority, application Great Britain, Jan. 16, 1959, 1,753/59**
**2 Claims. (Cl. 219—271)**



1. An evaporator source of a material to be vaporized under vacuum for producing a film of said material, said source comprising:

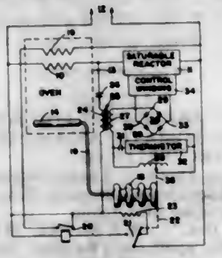
an elongate tubular shell, and a core member in said shell and consisting of a mixture of carbon and platinum as the material to be vaporized;

an elongate tubular member of an electrically conductive material, said core member projecting outwardly of its shell and said members being shaped to define limited areas at their ends, said member ends abutting and making contact at a limited area of the material to be vaporized; and

means resiliently urging said members into contact with each other so that passage of electric current through the members will cause vaporization of the material from the limited area of contact.

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**3,171,018**
**TEMPERATURE CONTROL**
**Joseph A. Lawler, Chicago Heights, Ill., assignor to Blue M Electric Company, Blue Island, Ill., a corporation of Illinois**
**Filed Mar. 2, 1961, Ser. No. 94,114**
**24 Claims. (Cl. 219—494)**



1. In a temperature control system, a heating element, a saturable reactor having a controlled winding in series with the element and a control winding, a transformer having a primary in circuit across the heating element and having a secondary in series with an inductor and the input of a bridge rectifier, the output of the bridge rectifier being connected to the control winding, the inductor having an E-shaped core, an I-shaped core mounted for motion toward and away from the open end of the E-shaped core, a temperature responsive bellows having a piston thereon engaging the I-shaped core, a screw moving the inductor toward and away from the piston, and a calibrated dial associated with the screw.



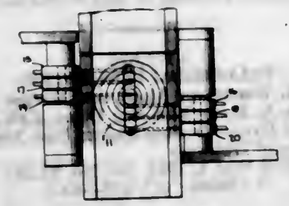
**3,171,019**
**TEMPERATURE CONTROL SYSTEM**
**John W. Riddel, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 26, 1961, Ser. No. 105,639**
**18 Claims. (Cl. 219—519)**



1. A temperature control circuit comprising a power supply, a first resistor and a relay coil in series therewith, said resistor being subject to the temperature to be controlled and having its value dependent thereon, said relay having contacts opened at a first level of coil current and closed at a second level of coil current, and means for changing the coil current from one level to a value close to the other level upon actuation of the contacts including a second resistor across the relay contacts and in series with the first resistor.

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**3,171,020**
**AUTOMATIC TOLL COLLECTION SYSTEM FOR BINARY TOKENS**
**John G. Lord, Swarthmore, Pa., assignor to Shoup Research and Development Corporation, Ridley, Pa., a corporation of Pennsylvania**
**Filed May 17, 1960, Ser. No. 29,689**
**3 Claims. (Cl. 235—61.11)**

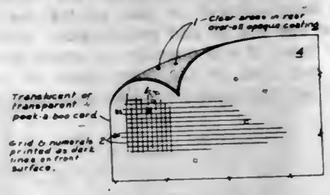


2. A toll collecting system including a token comprising a disc having concentric rings thereon at predetermined radial positions to provide a series of raised and depressed annular areas representing the binary bits of zero and one in a binary code expression and a reader for reading said code from said token, said reader including two groups of feelers responsive to said raised and depressed areas, one of said groups being arranged in radial relation to said token to read alternate bits of said binary code, and the other of said groups positioned remote from the first group to read the complementary alternate bits of said binary code.

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**3,171,021**
**PRINTING OF SUPERIMPOSABLE CARD SYSTEMS**
**Frederick Jonker, Washington, D.C., assignor to Jonker Business Machines, Inc., a corporation of Delaware**
**Filed Aug. 31, 1961, Ser. No. 136,978**
**5 Claims. (Cl. 235—61.12)**

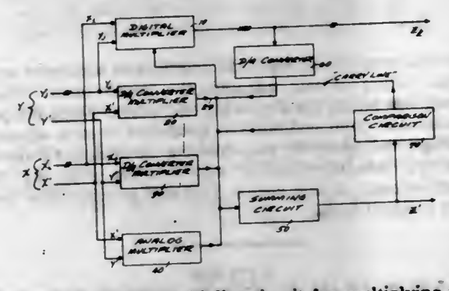
5. An information storage card of the peek-a-boo type, comprising an imperforate rectangular sheet of translucent paper which is at least partially reflective, one surface of said sheet being coated, except at selected localized small spots in a rectangular coordinate array, with a substantially opaque layer, and the opposite surface of said sheet being imprinted with a relatively non-




reflective pattern of grid lines conforming in accurate register to said rectangular coordinate array.

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**3,171,022**
**HYBRID MULTIPLIER**
**Hermann Schmid, R.D. 5, Binghamton, N.Y.**
**Filed Feb. 17, 1961, Ser. No. 90,038**
**7 Claims. (Cl. 235—150)**




1. An electronic multiplier circuit for multiplying first and second input signals together representing a multiplicand variable by third and fourth input signals together representing a multiplier variable to provide fifth and sixth output signals together representing the product of said variables, wherein said first, third and fifth signals are digital parallel binary signals and said second, fourth and sixth signals are analog, said circuit comprising in combination: a parallel binary multiplier circuit connected to receive said first and third signals and operative to provide said fifth signal; a first digital-to-analog converter multiplier circuit connected to receive said second and third signals and operable to provide a first analog voltage commensurate with the product of said second and third signals; a second digital-to-analog converter multiplier circuit connected to receive said first and fourth signals and operable to provide a second analog voltage commensurate with the product of said first and fourth signals; an analog voltage multiplier circuit connected to receive said second and fourth signals and operable to provide a third analog voltage commensurate with the product of said second and fourth signals; and summing means for combining said first, second and third analog voltages to provide said sixth signal.

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**3,171,023**
**ANALOGUE COMPUTER MORE PARTICULARLY UTILIZABLE FOR CALIBRATING A MEASURING DEVICE**
**Luc Donald de Seguin des Hons, 6 Rue Rene Brement, Drancy, France**
**Filed Jan. 11, 1961, Ser. No. 82,110**
**Claims priority, application France, Jan. 22, 1960, 816,425**
**15 Claims. (Cl. 235—197)**

10. In a computer for determining the approximate analogue and digital values of a function which is related to an independent variable quantity, of the type including a potentiometer through which flows the cur-

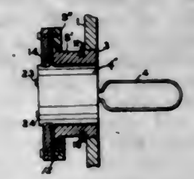
ber and disposed within said casing well above the normal oil level of said crankcase, and



(3) a relatively low resistance heating element section connecting said upper and lower convoluted heating element sections and defining an axially elongated relatively cool section immediately adjacent the normal oil level in said crankcase, whereby to substantially eliminate the formation of carbon at the point of juncture within said crank case of the oil and the air layer thereabove.

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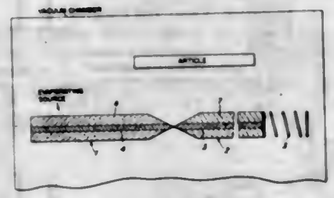
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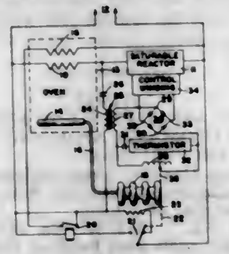
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an elongate tubular member of an electrically conductive material, said core member projecting outwardly of its shell and said members being shaped to define limited areas at their ends, said member ends abutting and making contact at a limited area of the material to be vaporized; and

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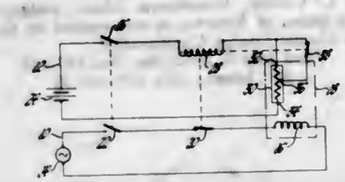
**3,171,018**
**TEMPERATURE CONTROL**
**Joseph A. Lawler, Chicago Heights, Ill., assignor to Blue M Electric Company, Blue Island, Ill., a corporation of Illinois**
**Filed Mar. 2, 1961, Ser. No. 94,114**
**24 Claims. (Cl. 219—494)**



1. In a temperature control system, a heating element, a saturable reactor having a controlled winding in series with the element and a control winding, a transformer having a primary in circuit across the heating element and having a secondary in series with an inductor and the input of a bridge rectifier, the output of the bridge rectifier being connected to the control winding, the inductor having an E-shaped core, an I-shaped core mounted for motion toward and away from the open end of the E-shaped core, a temperature responsive bellows having a piston thereon engaging the I-shaped core, a screw moving the inductor toward and away from the piston, and a calibrated dial associated with the screw.



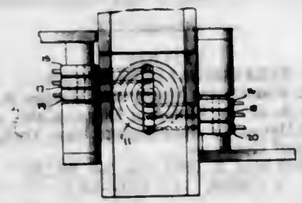
**3,171,019**
**TEMPERATURE CONTROL SYSTEM**
**John W. Riddel, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 26, 1961, Ser. No. 105,639**
**18 Claims. (Cl. 219—519)**



1. A temperature control circuit comprising a power supply, a first resistor and a relay coil in series therewith, said resistor being subject to the temperature to be controlled and having its value dependent thereon, said relay having contacts opened at a first level of coil current and closed at a second level of coil current, and means for changing the coil current from one level to a value close to the other level upon actuation of the contacts including a second resistor across the relay contacts and in series with the first resistor.

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**3,171,020**
**AUTOMATIC TOLL COLLECTION SYSTEM FOR BINARY TOKENS**
**John G. Lord, Swarthmore, Pa., assignor to Sloup Research and Development Corporation, Ridley, Pa., a corporation of Pennsylvania**
**Filed May 17, 1960, Ser. No. 29,689**
**3 Claims. (Cl. 235—61.11)**

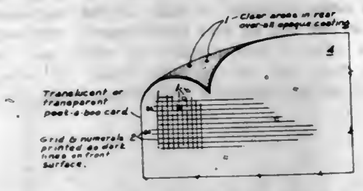


2. A toll collecting system including a token comprising a disc having concentric rings thereon at predetermined radial positions to provide a series of raised and depressed annular areas representing the binary bits of zero and one in a binary code expression and a reader for reading said code from said token, said reader including two groups of feelers responsive to said raised and depressed areas, one of said groups being arranged in radial relation to said token to read alternate bits of said binary code, and the other of said groups positioned remote from the first group to read the complementary alternate bits of said binary code.

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**PRINTING OF SUPERIMPOSABLE CARD SYSTEMS**
**Frederick Jonker, Washington, D.C., assignor to Jonker Business Machines, Inc., a corporation of Delaware**
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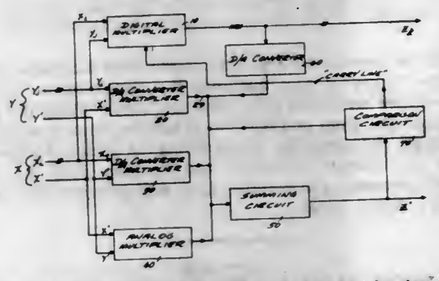
5. An information storage card of the peek-a-boo type, comprising an imperforate rectangular sheet of translucent paper which is at least partially reflective, one surface of said sheet being coated, except at selected localized small spots in a rectangular coordinate array, with a substantially opaque layer, and the opposite surface of said sheet being imprinted with a relatively non-




reflective pattern of grid lines conforming in accurate register to said rectangular coordinate array.

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**HYBRID MULTIPLIER**
**Hermann Schmid, R.D. 5, Binghamton, N.Y.**
**Filed Feb. 17, 1961, Ser. No. 90,038**
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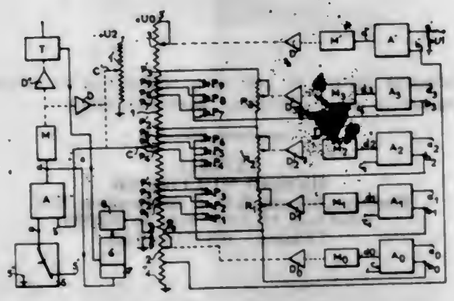

1. An electronic multiplier circuit for multiplying first and second input signals together representing a multiplicand variable by third and fourth input signals together representing a multiplier variable to provide fifth and sixth output signals together representing the product of said variables, wherein said first, third and fifth signals are digital parallel binary signals and said second, fourth and sixth signals are analog, said circuit comprising in combination: a parallel binary multiplier circuit connected to receive said first and third signals and operative to provide said fifth signal; a first digital-to-analog converter multiplier circuit connected to receive said second and third signals and operable to provide a first analog voltage commensurate with the product of said second and third signals; a second digital-to-analog converter multiplier circuit connected to receive said first and fourth signals and operable to provide a second analog voltage commensurate with the product of said first and fourth signals; an analog voltage multiplier circuit connected to receive said second and fourth signals and operable to provide a third analog voltage commensurate with the product of said second and fourth signals; and summing means for combining said first, second and third analog voltages to provide said sixth signal.

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**3,171,023**
**ANALOGUE COMPUTER MORE PARTICULARLY UTILIZABLE FOR CALIBRATING A MEASURING DEVICE**
**Luc Donald de Seguin des Hons, 6 Rue Rene Brement, Drancy, France**
**Filed Jan. 11, 1961, Ser. No. 82,110**
**Claims priority, application France, Jan. 22, 1960, 816,425**
**15 Claims. (Cl. 235—197)**

10. In a computer for determining the approximate analogue and digital values of a function which is related to an independent variable quantity, of the type including a potentiometer through which flows the cur-

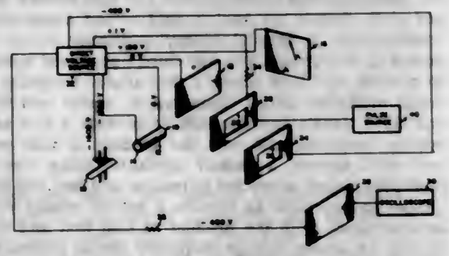
rent of a source of constant voltage and including a movable cursor and successive contacts, the voltages at said contacts being adjusted so that, on the one hand, the voltage at one end of said potentiometer represents the analogue value of said quantity for which said function becomes null, and, on the other hand, the voltages at certain of the other contacts in their successive order from



said end respectively represent determinate successive analogue values of said quantity; the improvement which comprises means for displacing said cursor along the potentiometer from said one end in relation to each adjusted voltage, and means for transforming the analogue form of the approximate values of said function given by the displacements of said cursor from said potentiometer end into a digital form.

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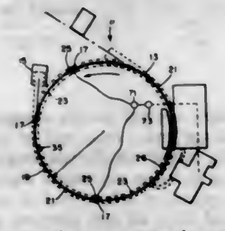
**3,171,024**
**NARROW BEAM ELECTRON SOURCE FOR THE ION SOURCE OF A MASS SPECTROMETER**
Haydon M. Smith, Whitmore Lake, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed Sept. 13, 1961, Ser. No. 137,818
3 Claims. (Cl. 250—41.9)



3. In combination,
means defining a region containing molecules of a gas,
means for emitting electrons,
an electron multiplier consisting solely of a tube positioned to receive the emitted electrons into one end of the tube and to provide a narrow electron beam emerging from the opposite end of the tube,
said electron beam being directed through said region to ionize the molecules in said region,
said tube having its longitudinal dimension substantially greater than its diameter,
said tube having a secondary electron emissive inner surface which is conductive,
and means for producing an electrical current flow between the ends of said tube through said secondary electron emissive surface to establish an electric field in the region defined by the tube,
means for extracting the ions from said region,
means disposed relative to said region to detect the ions extracted from the region,
and means for indicating the relative times at which ions of different mass reach said detecting means.

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**3,171,025**
**LONG STRAIGHT SECTIONS FOR ALTERNATING GRADIENT SYNCHROTRONS**
Thomas L. Collins, Watertown, Mass., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 3, 1962, Ser. No. 207,445
10 Claims. (Cl. 250—41.9)



1. Particle separating apparatus for use with a circulating source of highly energized strongly focussed protons traveling along a $z$ axis, comprising spaced quadrupole magnetic first and second coaxial focusing lenses for receiving and focusing said protons successively in alternate horizontal $x$ and vertical $y$ directions at right angles to each other and to said $z$ axis, said source being at the focal point of said first of said magnetic lenses, said second of said magnetic lenses being separated from said first lens to receive the protons and focus them at the focal point of said second lens and means reacting a target relatively against said protons to produce secondary reaction products which pass through said first lens and are deflected thereby at a sharp angle to the axis of said lenses thereby to clear the outside of said second magnet.

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**3,171,026**
**TELLURIUM DOSIMETER**
Harold Roth, Watertown, Mass., and Werner B. Teutsch and Victor A. J. van Lint, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 8, 1961, Ser. No. 94,263
4 Claims. (Cl. 250—83.3)



1. A monitor for measuring total radiation, comprising a highly purified tellurium specimen, means for maintaining said specimen at a temperature below approximately 90° K., and means associated with said specimen for measuring an electrical property thereof which is changed by radiation.

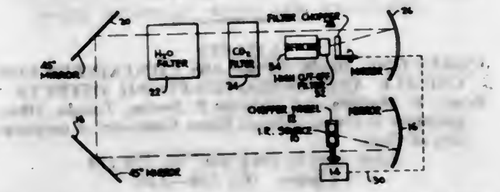
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**3,171,027**
**INFRARED ATMOSPHERIC CONTAMINATION DETECTOR SYSTEM WITH THE DETECTOR INTERRUPTED AT A SUB-HARMONIC FREQUENCY OF THE SOURCE**
Stanley Wallack, 35—11 85th St., Jackson Heights, N.Y.
Filed June 26, 1961, Ser. No. 119,683
6 Claims. (Cl. 250—83.3)

1. An atmospheric contaminant detection system comprising an infrared source, means beaming the energy from said source into a single path, means in said path for periodically interrupting the rays from said source,



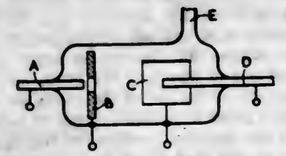
detector means located in said path including an electrical system for receiving energy from said source and translating same into electrical signals, and a filter chopper movably mounted in said path relative to the path of the rays between said source and said detector means, said



filter chopper including means for moving said filter chopper into and out of said path at a sub-harmonic frequency of the frequency of said means for interrupting said source to thereby establish a comparison between signals when said source is and is not transmitted through said path.

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**3,171,028**
**ULTRAVIOLET GAS ANALYSIS USING A FLOW-THROUGH TYPE IONIZATION CHAMBER**
James Ephraim Lovelock, Bower Chalke, near Salisbury, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Sept. 11, 1961, Ser. No. 137,141
Claims priority, application Great Britain, Sept. 16, 1960, 31,964/60; Mar. 15, 1961, 9,462/61
8 Claims. (Cl. 250—83.6)

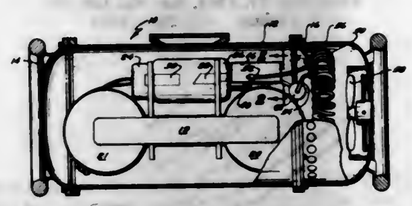


1. A device for use as an ionisation detector, comprising a chamber containing two sets of electrodes, one of which set is connected to effect an electrical discharge, one of the electrodes of the set being hollow so as to permit the introduction into the chamber of a discharge-sustaining gas, the electrical discharge in the discharge sustaining gas producing an ultra-violet radiation, and the second set of electrodes serving as detector electrodes for ionisation current produced by the ultraviolet radiation, one electrode of the second set being hollow so as to permit the introduction into the chamber of a gas mixture, said one electrode being encircled by the other electrode of the set to thereby define the region within which ionisation of the gas mixture occurs, the two sets of electrodes being disposed so that the ultraviolet radiation from the discharge is directed towards the said ionisation region.

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**3,171,029**
**COOLING SYSTEM FOR X-RAY APPARATUS**
Cormack E. Boucher, Seattle, Wash., assignor to Ind-X Corporation, Seattle, Wash., a corporation of Washington
Filed Feb. 26, 1962, Ser. No. 175,602
6 Claims. (Cl. 250—89)

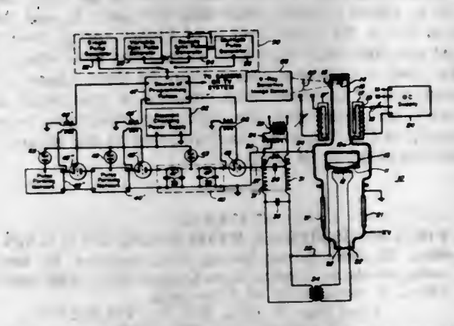
1. An X-ray apparatus comprising an X-ray generator comprising a cathode and an anode,
a high voltage transformer for supplying accelerating potential to said generator,
a cooling system for removing heat from said anode comprising a fluid circulatory system including a radiator,
a heat exchanger operatively associated with said anode to extract heat from the latter,
an ion drag pump comprising an emitter means and a collector means,



conduit means connecting said radiator, said heat exchanger and said ion drag pump in a closed series circuit,
a dielectric fluid filling said system,
and means supplied from the secondary of said high voltage transformer for supplying a high D.C. voltage to said emitter means and a collector means.

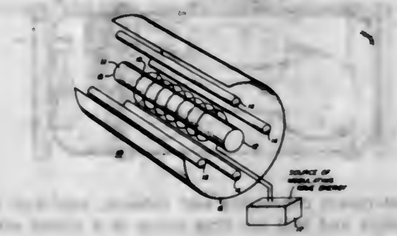
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**3,171,030**
**SYSTEM FOR PRODUCING SHORT PULSES OF X-RAY ENERGY**
Leigh Curtis Foster, Los Altos, and Pierce E. Reeves, Palo Alto, Calif., assignors to Zenith Radio Corporation, a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,589
3 Claims. (Cl. 250—95)



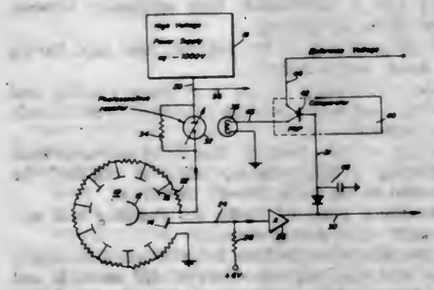
1. A system for producing short pulses of X-ray energy occurring with a controllable time separation between successive pulses comprising:
an X-ray generator of the vacuum tube type having an anode and a cathode;
a pulse transformer having a primary winding and having a secondary winding connected to said anode and cathode;
a plurality of pulse-forming time delay networks each exhibiting a delay corresponding to one-half the duration of the pulse derived therefrom;
uni-directional potential means for charging said networks to store energy therein;
a like plurality of controllable firing devices individually associated with respective ones of said networks and together therewith constituting a series circuit coupled to the primary winding of said transformer by one of said devices;
and means for controlling said firing devices to establish a discharge path through said networks in a preselected sequence to discharge said networks individually and develop a series of pulses having predetermined time separations therebetween, said time separations determined in part, by the delay times of said networks.

3,171,031
**OPTICAL MASER MODULATORS**
Ammon Yariv, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 31, 1961, Ser. No. 128,161
7 Claims. (Cl. 250—199)



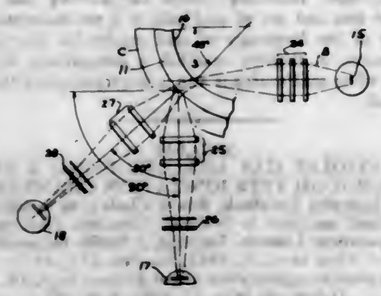
1. Apparatus for producing modulated electromagnetic radiation by maser action comprising a negative temperature medium characterized by at least three distinct electron energy levels, a pair of which have a separation corresponding to the signal frequency to be produced, means for applying to said medium pump wave energy at a first frequency to produce therein a population inversion between said pair of energy levels whereby stimulation emission is produced at the signal frequency, means for applying to said medium modulated wave energy at a second frequency corresponding to the separation between a first level of said pair of energy levels and a third level to modulate the population inversion between said pair of levels, said wave energy being effective to excite particles from said first level to said third level where the third level is of higher energy than the first and from said third level to said first level where the first level is of higher energy than the third whereby the amplitude of the stimulated emission is modulated, and means for abstracting for utilization modulated output energy at the frequency corresponding to the separation between said pair of levels.

3,171,032
**PHOTOMULTIPLIER WITH STABILIZED GAIN**
Arthur W. Holt, Silver Spring, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 8, 1962, Ser. No. 178,452
9 Claims. (Cl. 250—207)



4. In a photomultiplier circuit where the photomultiplier has an anode, a cathode, a plurality of dynodes, and the circuit includes a power supply, a conductor connected between the power supply and the photomultiplier cathode and voltage divider, the improvement comprising a stabilizing circuit to stabilize the D.C. reference of the output signal conducted from the anode of the photomultiplier, said stabilizing circuit including a line conducting a reference signal, comparison means to examine the output signal of the photomultiplier and provide a new signal as a result of a comparison with said reference signal, to provide said new signal which corresponds to changes in D.C. level of said output signal, and means electrically separate from but adjustable in response to said new signal for varying the high voltage from said power supply which is impressed on said voltage divider.

3,171,033
**INSPECTING RIMS OF GLASS CONTAINERS FOR CRIZZLE AND LINE-OVER-FINISH DEFECTS**
Benny B. Mathias and Thomas B. Sorbie, Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Aug. 8, 1961, Ser. No. 130,174
3 Claims. (Cl. 250—224)



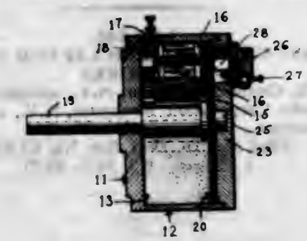
1. An apparatus for inspecting the rim of an open mouth container made of translucent material for crizzle and line-over-finish defects comprising a support for the container, a source of radiant energy mounted adjacent the container, means for focusing a beam of radiation from said source and directing the beam against the interior wall surface of the rim of the container at an acute angle to a radial plane to produce a spot of radiant energy on the rim of the container, means for rotating said container relative to said spot about the axis of the container to cause said spot to scan the rim of the container, a first element sensitive to said radiation mounted adjacent said container with its line of vision extending through the outer wall surface of the rim of the container and forming an angle ranging from 75 degrees to 105 degrees with the path of the beam toward the rim of the container so that a crizzle defect moving into the spot causes a reflection of a portion of the beam toward said first element, means for restricting the field of vision of said first sensitive element to the area of the rim onto which the spot of radiant energy is focused, a second element sensitive to said radiation positioned adjacent the container with its line of vision extending through the outer wall surface of the rim of the container and forming an angle ranging from 125 degrees to 175 degrees with the path of the beam toward the rim of the container so that a line-over-finish defect moving into the area of the spot causes a portion of the beam to be refracted and reflected toward said second sensitive element, and means for restricting the field of vision of the second sensitive element to the area of the rim of the container into which the spot of radiant energy is focused.

3,171,034
**ELECTRO-OPTICAL CONTROL**
Walter Tomasulo, 390 Walnut St., Washington Township, Bergen County, N.J., and George R. Brown, 44 4th St., Emerson, N.J.
Filed Dec. 21, 1961, Ser. No. 161,081
3 Claims. (Cl. 250—237)

1. An electro-optical control comprising
(*a*) an incandescent lamp for producing light of constant intensity,

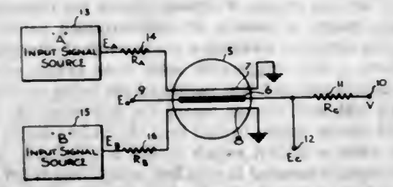


(*b*) a pair of photo-cells each positioned to receive at least a portion of light from the incandescent lamp,
(*c*) a light penetrable imperforate disc mounted for rotation between the lamp and the cells,
(*d*) tracks on the disc, each disposed to intervene between a cell and the lamp as the disc rotates, each having portions of varying light penetrability,



(*e*) the cells varying in electrical conductivity in accordance with the amount of light reaching each of them through the disc,
(*f*) the tracks varying in light penetrability inversely with respect to each other from maximum to minimum penetrability by the light passed to the cells,
(*g*) the cells connected in an electrical circuit in series with a common lead between them.

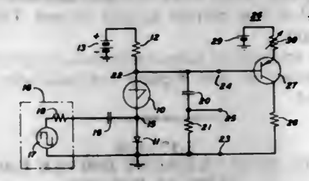
3,171,035
**SUPERCONDUCTIVE CIRCUITS**
Milton U. Clauser, Rolling Hills, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed May 26, 1958, Ser. No. 737,722
22 Claims. (Cl. 307—88.5)




1. An electrical circuit including the combination of an output circuit including a superconductor in the form of a film constructed of a material which is capable of being switched from a superconductive condition to an electrically resistive condition, a control element in the form of a pair of films positioned on opposite sides of the superconductor film for switching the superconductor film between a superconductive condition to introduce an impedance in said output circuit and an electrically resistive condition, and means coupled to the control element for applying currents to the control element for effecting a transition between a superconductive condition and an electrically resistive condition in the superconductor film.

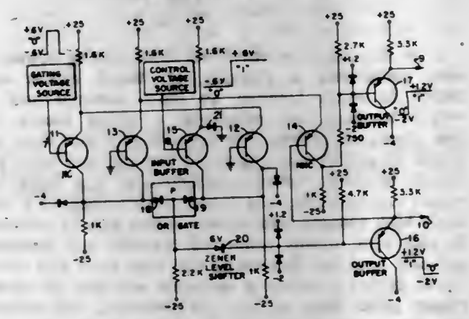
3,171,036
**FLIP-FLOP CIRCUIT WITH SINGLE NEGATIVE RESISTANCE DEVICE**
Roy Sokoler, New Brunswick, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 16, 1959, Ser. No. 853,350
10 Claims. (Cl. 307—88.5)

1. A bistable circuit comprising a nonlinear impedance device responsive to bias voltage in excess of a predetermined magnitude for initiating substantial conduction therein and responsive to the reduction of current flowing therethrough for terminating said substantial conduction, a source of pulses, at least a portion of the pulses of said source having the same polarity, means connected to said device for applying said pulses to said device for biasing said device into conduction in response to alternate ones



of said portion of pulses, and means connected to said device for diverting current therefrom to terminate said conduction in response to intermediate ones of said portion of pulses.

3,171,037
**SEMICONDUCTOR BISTABLE CIRCUIT WITH INTEGRAL GATE**
Wolfgang J. Poppelbaum, Champaign, Ill., and Neil E. Wiseman, Boreham Wood, England, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 11, 1960, Ser. No. 1,830
2 Claims. (Cl. 307—88.5)



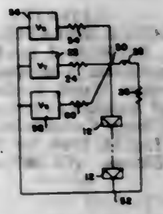

2. A flipflop and integral gate circuit comprising:
(1) a first transistor provided with base, collector and emitter electrodes to form one side of said flipflop;
(2) respective sources of energizing potential connected to said electrodes;
(3) an "OR" gate having first and second inputs for receiving bias current signals and an output coupled to said base to set the state of said flipflop;
(4) a first difference amplifier forming the other side of said flipflop and having a grounded input, a second input coupled to said emitter, and an output connected to said first input of said "OR" circuit to furnish bias current thereto;
(5) a second transistor provided with a base to receive control signals to switch said second transistor off or on, a collector connected to said second input of said "OR" gate to furnish bias current thereto, and an emitter;
(6) a source of energizing potential coupled to said emitter;
(7) a second difference amplifier having a first grounded input, a second input, and first and second outputs connected respectively to said first and second inputs of said "OR" gate, to provide a bias current normally to said first input of said "OR" gate;
(8) a source of gating voltage connected to said second input of said second difference amplifier to switch the output bias current from said second difference amplifier temporarily to said second input of said "OR" gate, the magnitudes of said bias currents from

the outputs of said difference amplifiers and said second transistor being substantially equal, thereby allowing said second transistor to control said "OR" gate only when said second difference amplifier furnishes bias current to said second "OR" gate input; and

(9) first and second output terminals coupled to respective sides of said flipflop for indicating the state thereof.

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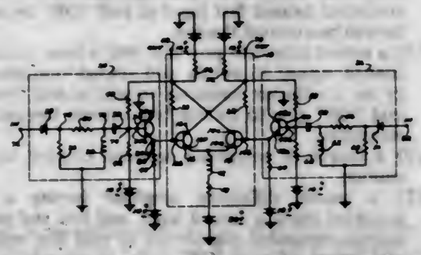
**3,171,038**
**FAST HIGH CURRENT DRIVER USING TUNNEL DIODES**
James C. Miller, Hamilton Square, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 19, 1960, Ser. No. 50,812
8 Claims. (Cl. 307—88.5)



2. A fast, high current driver circuit using tunnel diodes comprising a plurality of tunnel diodes connected in series between an input terminal and an output terminal, an impedance, a power source circuit connected through said impedance to said input terminal, an output load connected between said input and output terminals, means connected to said input terminals for switching said tunnel diodes whereby a relatively high voltage, high current output may be delivered to said load, means connected between said terminals and said load for decoupling said load from said driver circuit during a switching operation whereby low power trigger pulses may be used for switching, and wherein the time constant of said decoupling means and said load are of the same order of magnitude as the switching time of said tunnel diode driver circuit.

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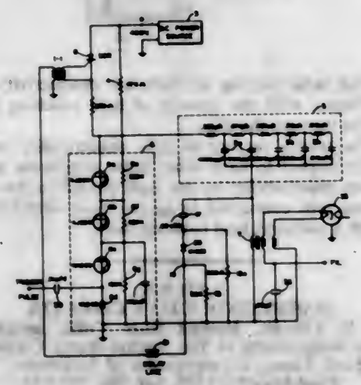
**3,171,039**
**FLIP-FLOP CIRCUIT**
Ray Lorenz, Culver City, Calif., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1960, Ser. No. 78,047
11 Claims. (Cl. 307—88.5)



1. A bistable multivibrator circuit including first and second input circuit means, first and second output terminals, a voltage source, and a semiconductor means having two operating states indicated by relatively high and low voltages on said first and second output terminals and respectively initiated and attained by an input pulse signal on said first and second input circuit means and having at least a first and second active element, each of said active elements having at least three electrodes, one electrode of said first active element being coupled directly to a similar electrode of said second active element, and a constant current source comprising a serially associated inductor and resistor directly coupled to said two directly coupled electrodes coupling them directly to said voltage source.

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**3,171,040**
**FAST CHARGING CIRCUIT FOR PULSE NETWORKS**
Helmut K. Geobel, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Jan. 16, 1961, Ser. No. 82,931
4 Claims. (Cl. 307—88.5)



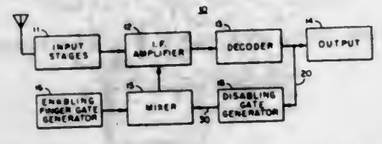
1. In combination in a pulse generating system, a capacity storage means, a current source for charging said storage means, a resistor of predetermined value in the charging circuit to establish a predetermined charging time constant, a first triggerable solid state switch means, a load circuit and said first switch means being serially connected with said storage means for delivering the energy in said storage means to said load circuit in a single power pulse when said first switch means is triggered, said resistor being connected to said first switch means for applying holding current thereto for maintaining said first switch means in open condition except when triggered, differentiating means connected to said load circuit and responsive to the decaying portion of said power pulse for producing a voltage spike to mark the termination of said power pulse, and a second switch means connected across said resistor in the charging circuit and responsive to said spike for momentarily reducing the resistance of the path between said source and said storage means until said storage means is substantially charged by said current source, and delay means in circuit between said differentiating means and said second switch means for permitting said first switch means to fully open before charging reoccurs.

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**3,171,041**
**SINGLE INPUT GATE CONTROLLING CIRCUIT**
Charles W. Hanna, Glenmemer, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 20, 1961, Ser. No. 125,996
9 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

3. In a receiver, the combination of circuit means for converting and decoding a transmitted wave signal into a pulse signal, utilizing means operating when activated by a predetermined pulse signal, said utilizing means being connected with said converting and decoding means for controlling wave signal transmission, single input gate controlling means coupled between said converting and decoding circuit means and said utilizing means, said single input gate controlling means comprising an input terminal coupled to said converting and decoding means, first and second discharge devices connected together so as to form a multivibrator, circuit means connecting said

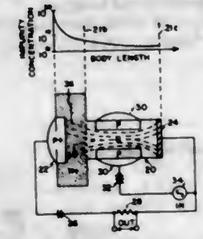





input terminal to said first discharge device and delaying any pulse impressed upon said terminal, output terminal means connecting said second discharge device to said utilizing means, and individual circuit means for prematurely triggering said second discharge device coupled between said input terminal and said second discharge device.

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**3,171,042**
**DEVICE WITH COMBINATION OF UNIPOLAR MEANS AND TUNNEL DIODE MEANS**
Herbert F. Mataré, Birmingham, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed Sept. 8, 1961, Ser. No. 136,886
10 Claims. (Cl. 307—88.5)

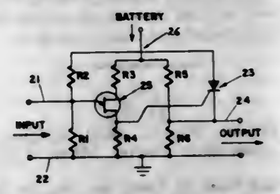


1. A semiconductor device comprising at least one source contact, a body of semiconductor material, a drain contact, at least one gate contact, said drain contact forming a tunnel rectifying junction with said body, the doping on one side of said tunnel junction being at least $10^{18}$ impurity particles per cubic centimeter and at least $10^{18}$ impurity particles per cubic centimeter on the other side of the junction, and in all cases said doping being sufficient to provide primary carrier flow by the tunnel mechanism, said gate contact forming a rectifying junction with said body, said source contact forming an ohmic junction with said body, control voltage means being connected to said gate contacts, a load member being connected to said drain contact to receive the majority carrier flow from said drain contact.

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**3,171,043**
**SIGNAL CUT-OFF ELECTRICAL SYSTEM**
Neil B. Peterson, Raynham, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Jan. 9, 1962, Ser. No. 165,148
1 Claim. (Cl. 307—88.5)

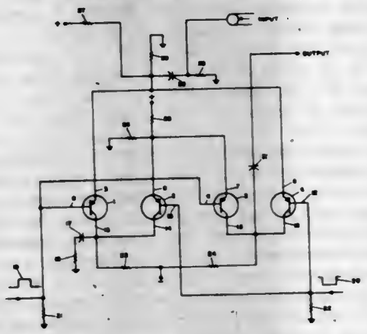
An electrical measurement cut-off filter comprising:
an output terminal and a reference terminal,
a uni-junction transistor having an input control electrode and a first and second base electrode, said input control electrode being connected to an electrical measurement signal source and having its impedance between said first and second base electrodes become minimal with a maximum current therethrough when the signal from said electrical measurement signal source is above a predetermined threshold level,
bias means including a D.C. source for said uni-junction transistor including a resistance means in series with said first and second base electrodes,




an SCR having an anode and a cathode and a gate electrode and having said gate electrode responsive to an input firing potential determined by the current through said resistance means and having said anode and said cathode connected between said electrical measurement signal source and said output terminal, and
a voltage divider supplied by said D.C. source having a tap connected to said output terminal,
whereby input measurement signals below the level sufficient to switch on said uni-junction transistor thereby leave said SCR disabled allowing only the potential from said tap of said voltage divider to appear at said output terminal while said signals above said level switch on said uni-junction transistor in turn firing said SCR.

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**3,171,044**
**HIGH-SPEED GATE CIRCUIT**
Charles S. Coffey, New Brunswick, N.J., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed Sept. 12, 1962, Ser. No. 223,178
11 Claims. (Cl. 307—88.5)



1. A high-speed gate circuit comprising:
two pairs of unidirectional devices possessing similar characteristics;
a source of high frequency input signals in excess of 100 megacycles coupled to the first of said pair of devices;
first and second output circuits of substantially equal impedance, the first output circuit being connected to one of the devices of each pair and the second output circuit being connected to the other devices of each pair;
means for rendering a first set of two of said devices conductive and a second set of the two remaining devices nonconductive, the two devices in each set being connected to different output circuits and each set having one of the said first pair of devices so that the input signal is fed to the output circuit connected to the conductive device of the first pair;

means for substantially simultaneously switching the input signal from one output circuit to the other by making the conductive devices nonconducting and the nonconductive devices conducting; and

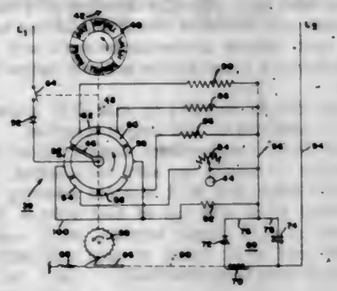
means for maintaining similar points between each output circuit and the devices connected thereto at substantially constant and equal potentials.

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**3,171,045**
**TIMER**

James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 25, 1960, Ser. No. 71,720
9 Claims. (Cl. 307—141)



1. In combination, an appliance timer comprising a first and a second contact, a switch blade for sequentially engaging said contacts and ratchet means comprising the sole means for moving said switch blade between said contacts, a solenoid actuator for actuating said ratchet means, a negative resistance diode connected in series with said solenoid actuator, said diode having a predetermined switching voltage, a capacitor connected in a parallel circuit with the actuator and diode, said capacitor being capable of being charged to a voltage great enough to exceed the switching voltage of said diode, a rectifier connected in series with said switch blade and oriented to prevent flow of current through said diode before said diode reaches its switching voltage, an alternating current power supply having a peak output voltage greater than the switching voltage of said diode for supplying energy to said rectifier and said parallel circuit for repeatedly operating said actuator, said negative resistance diode being in the form of a four layer transistor, a first resistance connected to said first contact, and a second resistance connected to said second contact, said resistances being in parallel with each other and connected in series with said parallel circuit.

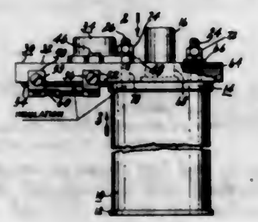
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**3,171,046**
**IGNITION DEVICE**

Creighton R. Meland, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 23, 1960, Ser. No. 38,378
5 Claims. (Cl. 307—156)

1. An ignition control unit comprising, an ignition transformer having a housing, a primary winding and a secondary winding located within said housing, one end of said housing being formed of insulating material, a terminal stud passing through said end of said ignition transformer and projecting beyond said insulating material, said terminal stud being connected with said primary winding, a metal heat sink having an opening receiving said terminal stud, fastener means engaging said terminal stud and clamping said metal heat sink between the end of said ignition transformer housing that is formed of insulating material and said fastener means, said metal heat sink being electrically connected with said terminal stud, and a three terminal semiconductor



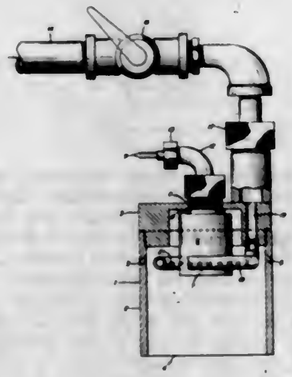
supported by said metal heat sink, one terminal of said semiconductor being in direct metal to metal contact with said heat sink member whereby said heat sink member is electrically and thermally connected with said terminal stud.

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**3,171,047**
**ULTRASONIC INSPECTION APPARATUS**

Jack N. Bergman, Hammond, and Bernard Ostrofsky, Gary, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Sept. 4, 1962, Ser. No. 221,071
3 Claims. (Cl. 310—8.7)



1. An ultrasonic testing apparatus for transmitting ultrasonic waves through a test material which comprises:

a housing having an open base and a head, said head forming the closed end of said housing;

a transducer casing rigidly mounted within said housing;

a piezoelectric type crystal positioned within said casing, said transducer having at least one exposed face;

means for supplying electrical energy to said crystal;

means for supplying a liquid to said housing;

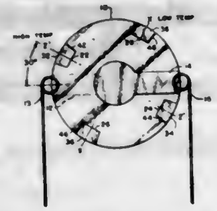
a conduit having a plurality of apertures positioned within the housing to receive said liquid and direct a stream of said liquid against the transducer casing at a point to the rear of the exposed face thereof, thereby cooling said transducer and supplying a liquid to form a couplant between the crystal and the working face of a test material positioned adjacent to the open base of said housing.



**3,171,048**
**CRYSTAL FREQUENCY TEMPERATURE COMPENSATION**

Eduard A. Gerber, West Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed June 7, 1963, Ser. No. 286,433
5 Claims. (Cl. 310—8.9)
(Granted under Title 35, U.S. Code (1952), sec. 266)



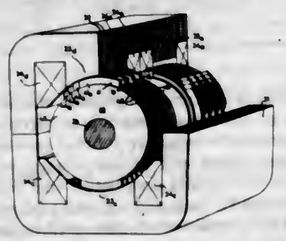
1. A crystal frequency temperature compensating device comprising a quartz crystal having two parallel plane faces and a substantially circular edge; at least one slug, having opposing sides perpendicular to said faces, inset within said crystal; and opposing surfaces within said crystal, perpendicular to said faces and to a given axis of said crystal, oriented to engage said opposing sides of said slug; said slug having a coefficient of expansion other than that along said given axis of said crystal, whereby a given change in temperature of said crystal and said slug applies sufficient pressure between said opposing surfaces within said crystal to change the frequency of said crystal by an amount equal and opposite to the change in the frequency of said crystal due to said given change in temperature.

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**3,171,049**
**VARIABLE-RELUCTANCE ELECTRIC MACHINES**

Jean Jarret, La Champenelle, Chemin du Clos Baron, Fourqueux, France, and Jacques Jarret, 35 bis Ave. du Belloy, Le Vesinet, France

Filed Feb. 4, 1963, Ser. No. 255,904
Claims priority, application France, Feb. 5, 1962, 886,980; Nov. 28, 1962, 916,814
3 Claims. (Cl. 310—168)



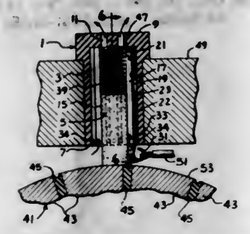
3. A variable-reluctance electrical machine comprising a stator longitudinally divided into a first part and a second part, at least two pairs of poles respectively on each part of said stator, said poles having an equal angular extent as measured around the rotor axis and each pole being provided with a magnetizing winding one terminal of which is connected to the winding of the pole of the same pair and the other terminal of which is connected to the winding of a pole of the other of said stator parts, a rotor axially divided into a first half-rotor and a second half-rotor, both of said half-rotors being integral with each other, and at least two pairs of magnetic teeth which project respectively from said first and second half-rotors in close proximity with the poles of the first and second parts of said stator to coact with the field created by said windings, each of said half-rotors having a number of pairs of teeth equal to the number of pairs of poles of each of said stator parts and each tooth having an angular extent substantially equal to the angular extent of said poles, the sum of the angular extent of the portion of a first half-rotor tooth under a given pole and of the portion of a second half-rotor tooth under a pole the winding of which is connected to one terminal of the winding of said given pole being substantially equal to the angular extent of a pole, the average density of magnetic material included in a half-rotor tooth decreasing from the central axis of the tooth on both sides of the last said axis, each of said half-rotor comprising a stack of a first plurality and a second plurality of strips of magnetic material in a plane normal to the rotor axis, each strip of said first plurality being shaped to provide substantially rectangular projecting portions having an angular extent less than the angular extent of said pole and greater than half of the same and each strip of said second plurality being circular and utilized as a spacer between groups of strips of said first plurality, and wherein each tooth is formed by the combination of at least one group of said projecting portions being angularly displaced in a fan-like assembly so as to take up together an angular extent substantially equal to the angular extent of said poles and to provide the average magnetic material density per volume unit of the tooth decreasing from about 80% near the central axis of the tooth to about 20% at both lateral parts of the same.

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**3,171,050**
**ELECTRICAL BRUSH HOLDER**

James Gordon, 3625 N. Halsted St., Chicago, Ill.

Filed Oct. 24, 1962, Ser. No. 232,753
20 Claims. (Cl. 310—239)



1. An electrical brush holder comprising a body having a bore provided with longitudinally extending slide-forming means for slidably receiving an electrical brush and confining same to reciprocating movement, said bore being open at one end and through which the brush may be inserted thereinto with the brush projecting outwardly of the bore at said one end thereof and with the brush being spaced from the other end of the bore, said body being perforated at its other end to provide an opening therethrough in communication with the bore, the cross-sectional area of the bore being substantially greater than the cross-sectional area that is to be occupied by the brush so as to form a passageway from said one end of the bore to the opening at the other end thereof, the passageway having cross-sectional areas such that vibratory movement of a brush in the bore constitutes a pump that creates a flow of air through the passageway from one end of the bore to the other.

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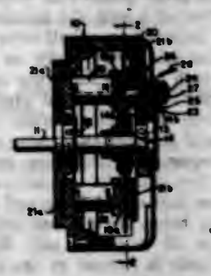
**3,171,051**
**ELECTRICAL PRINTED-CIRCUIT WINDING**

Robert P. Burr, Lloyd Harbor, Huntington, N.Y., assignor to Printed Motors, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 31, 1960, Ser. No. 66,113
3 Claims. (Cl. 310—268)

1. An electrical printed-circuit winding for an electromechanical energy converter having a narrow magnetic

air gap between conductive faces adjacent the winding and having brushes for translating electrical current flow to the winding, the winding comprising first and second sets of flat conductors having conductive exposed surface portions of said conductors for contact with the brushes and having substantially the entire remaining surface



portion made of an insulating film integral with said conductors and consisting of an insulating compound of the material of said conductors, said first and second sets of conductors forming a self-supporting unit and being insulated from each other solely by said insulating film over substantially their entire surface areas.

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3,171,052
CERAMIC-TO-METAL BOND FOR SPARK PLUGS AND THE LIKE
Karl Schwartzwalder, Holly, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 18, 1961, Ser. No. 144,128
6 Claims. (Cl. 313—145)

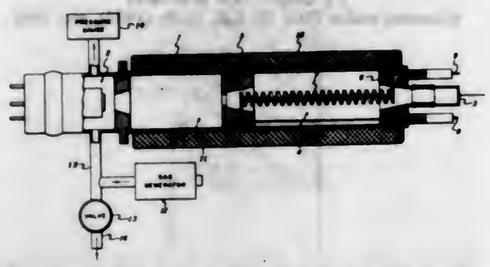


1. A metal-to-ceramic connection comprising a ceramic body having in contact with the surface thereof an alloy consisting essentially of silver and a small but effective amount of tellurium to provide improved more intimate contact with said ceramic.

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3,171,053
PLASMA-BEAM SIGNAL GENERATOR
Russell Targ and Morris Ettenberg, New York, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 15, 1959, Ser. No. 859,764
8 Claims. (Cl. 315—3.5)

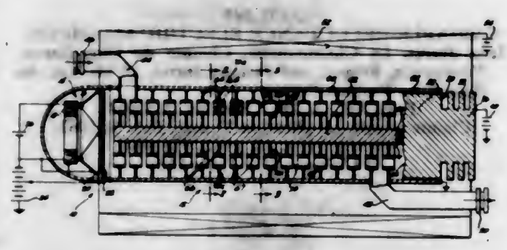
6. Apparatus comprising a hollow metallic cylinder, an electron beam collector positioned at one end of said cylinder, an electron gun positioned at the other end of said cylinder for directing an electron beam parallel to the axis of said cylinder toward said beam collector, means connected to said cylinder for establishing a pressure of the order of $10^{-4}$ millimeters of mercury of an ionizable gas within said cylinder in the region between said electron gun and said beam collector whereby a plasma is formed in said region upon the bombardment of said gas by said electron beam, means for producing a magnetic field directed axially along said cylinder, the charged particles comprising said plasma oscillating at a frequency determined by the magnitude of said magnetic



field and modulating said electron beam as said electron beam penetrates said plasma, and means positioned adjacent the modulated electron beam within said cylinder for interacting therewith to produce an output signal of a frequency related to that of said modulated electron beam.

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3,171,054
COUPLED COAXIAL CAVITY TRAVELING-WAVE TUBE
Paul Deng, Gardena, and James W. Sedin, Los Altos, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 217,973
3 Claims. (Cl. 315—3.5)

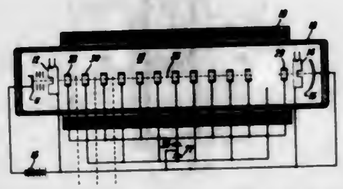


2. A traveling-wave tube comprising: means for launching a stream of electrons along a predetermined annular path, an electrically conductive tubular envelope concentrically disposed about and axially aligned with said annular path, an electrically conductive rod concentrically disposed within and axially aligned with said annular path, a plurality of electrically conductive wall means mounted in said envelope at spaced points therealong, said wall means extending perpendicular to said envelope and to said rod to define therewith a plurality of annular cavities, said wall means defining aligned annular apertures to provide a passage for said electron stream, preselected ones of said wall means each further defining a plurality of outer coupling apertures equally spaced circumferentially in regions radially outwardly of its said annular aperture and a like plurality of inner coupling apertures equally spaced circumferentially in regions radially inwardly of its said annular aperture, each outer coupling aperture in each said preselected wall means being angularly displaced with respect to each outer coupling aperture in each axially adjacent wall means, each inner coupling aperture in each said preselected wall means being angularly displaced with respect to each inner coupling aperture in each axially adjacent wall means, and each inner coupling aperture in each preselected wall means being angularly displaced with respect to each outer coupling aperture in the same wall means with the center of each inner coupling aperture lying angularly midway between the centers of the two nearest outer coupling apertures.



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3,171,055
RIPPLE VELOCITY MICROWAVE TUBE
Richard L. Harrison, Mineola, and Gerhard E. Weibel, Manhasset, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Sept. 9, 1960, Ser. No. 54,949
3 Claims. (Cl. 315—5.41)

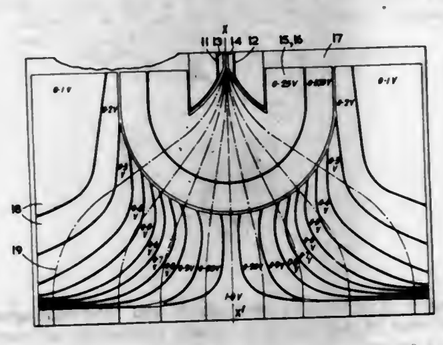


1. A microwave tube comprising an evacuated envelope having a longitudinal axis, means for producing a magnetic field along said axis, an electron source mounted at one end of said envelope, said electron source projecting an electron beam along said longitudinal axis, a collector mounted at the other end of said envelope, input coupling means mounted adjacent said electron source, output coupling means mounted adjacent said collector, a first set of $n+1$ electrodes spaced along said electron beam in the interaction region between said input and output couplers, $n$ being any integer except zero, a second set of $n$ electrodes spaced along said electron beam in the interaction region between said input and output couplers, each of the electrodes in said second set being located between two electrodes of said first set, the ratio of the width of each of said electrodes to the distance between adjacent electrodes being substantially equal to one half, means for coupling first and second voltage sources between said first and second sets of electrodes respectively and said electron source, the spacing of said electrodes and the magnitudes of said first and second voltage sources being adapted to cause the velocity of the electrons in the electron beam to vary substantially sinusoidally along the portion of said beam situated between said input and output coupling means.

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3,171,056
FLAT DISPLAY TUBE UTILIZING UNIQUE COLLIMATOR
Dennis Gabor, London, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed May 13, 1963, Ser. No. 279,758
Claims priority, application Great Britain, May 15, 1962, 18,647/62
2 Claims. (Cl. 315—18)

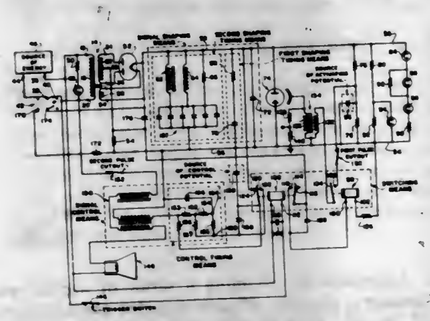
1. A cathode ray tube including an electron beam source, means for deflecting the electron beam from said source in a single plane, together with a collimator for aligning a deflected beam along lines in said plane parallel to each other, said collimator comprising two similar composite plates positioned parallel to each other and between which the deflected beam is arranged to pass, said plates each comprising a plurality of mutually insulated conductive areas or "islands" positioned symmetrically on both sides of a central axis and which are so shaped that when appropriate different potentials are applied to said areas or "islands" which progressively decrease away from the axis a collimating electric field is produced which bends an electron beam by an amount which is greater for greater initial deflection of the beam away



from said axis so as to align said beam parallel to said axis.

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3,171,057
NUCLEAR FLASH SIMULATOR
William D. Buckingham, Southampton, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed July 19, 1960, Ser. No. 43,903
18 Claims. (Cl. 315—241)

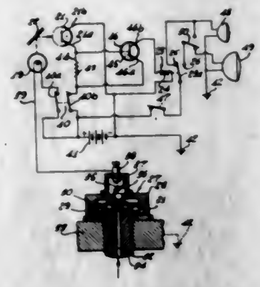


1. A flash simulator comprising a photospot lamp to generate a second occurring flash of light, a signal control means interposed between a source of energy and said first lamp to control the signal from the source of energy fed to said photospot lamp, a photoflash lamp to generate a first occurring flash of light, signal shaping means coupled to said photoflash lamp to control the waveshape of the signal fed to said photoflash lamp, and switching means coupled to first initiate activation of said photospot lamp and then initiate activation of said photoflash lamp.

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3,171,058
VELOCITY ACTUATED VEHICULAR HEADLIGHT CONTROL SYSTEM
Yoshiya Ono, 2-652 Shimotoda, Nishiwaki-shi, Hyogo-ken, Japan
Filed Apr. 4, 1961, Ser. No. 100,743
10 Claims. (Cl. 315—78)

1. In an automatic headlight control system for a vehicle having a driving engine and high and lower power headlight means, in combination, means to selectively energize said high power and said lower power headlight means, and dual detecting means responsive respectively



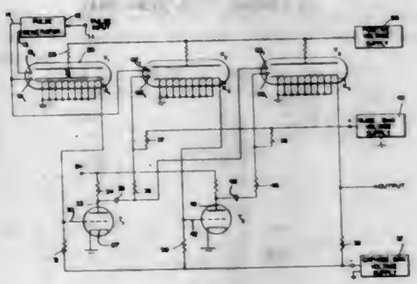
to speed conditions of said vehicle and rotational speed conditions of said engine for jointly controlling said energizing means.

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3,171,059
## COUNTING CIRCUIT EMPLOYING PLURAL MULTI-CATHODE COUNTING TUBES

Charles B. Falconer, Newton, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Apr. 5, 1962, Ser. No. 185,385
3 Claims. (Cl. 315—84.6)

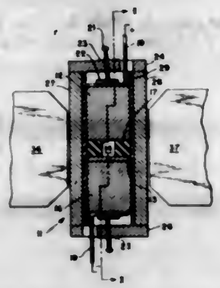


1. Apparatus for counting a series of applied pulses comprising a plurality of glow transfer counter tubes, in serial cascade, each of said counter tubes being characterized by having a plurality of digit cathodes and first and second guide cathodes intermediate each of said digit cathodes; a pulse generator having an input and first and second independent outputs, said applied pulses being connected to said input, said pulse generator being adapted to produce in response to each of said input pulses substantially square wave output pulses on said first and second outputs, said square wave output pulse on said second output having a leading edge in substantial time coincidence with the trailing edge of said square wave pulse on said first output, said first output of said pulse generator being connected directly to said first guide cathodes of a first one of said counter tubes, said second output of said pulse generator being connected directly to said second guide cathodes of said first one of said counter tubes and to said first guide cathodes of said second one of said counter tubes; means for biasing negatively one of said digit cathodes in each of said counter tubes; coupling means for capacitively coupling each of said negatively biased digit cathodes to the said second guide cathodes of the next successive one of said plurality of counter tubes and to the said first guide cathodes of the second successive one of said counter tubes, said coupling means having a coupling time constant less than the minimum interval between pulses in said applied series.

3,171,060
## PLASMA ACCELERATOR

George P. Wood, Yorktown, Arlen F. Carter, Newport News, and Adolf Busemann, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Mar. 7, 1962, Ser. No. 178,213
10 Claims. (Cl. 315—111)
(Granted under Title 35, U.S. Code (1952), sec. 266)



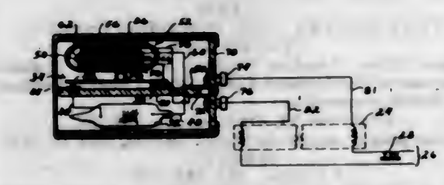
3. A steady flow, linear, high-density plasma accelerator comprising: a flow channel having a longitudinal axis, a plurality of positive electrodes spaced along said longitudinal axis and comprising a first wall of said channel, a plurality of negative electrodes spaced along said longitudinal axis and comprising a second channel wall opposing said first wall, a pair of elongated insulating strips extending parallel to said longitudinal axis and positioned between said positive and negative electrodes, said strips comprising opposing third and fourth walls of said channel, an electrical circuit interconnecting said positive and negative electrodes, said circuit being adapted to provide an electric field across said channel directed at a slant angle to said longitudinal axis, and means, positioned on opposite sides of said flow channel, for providing a magnetic field across said channel directed perpendicular to said electric field.

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3,171,061
## RESISTOR-CERAMIC CONTROL NETWORK FOR FLUORESCENT LAMP STARTERS

Harry Simon, Baldwinsville, and Harold Maglio, Syracuse, N.Y., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 28, 1962, Ser. No. 206,100
13 Claims. (Cl. 315—309)



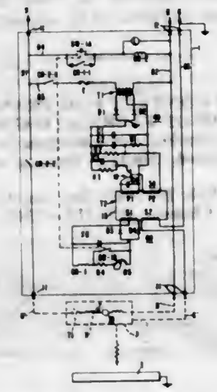
1. A fluorescent lamp starter including first and second resistor elements of plate form, said resistors being physically located parallel to one another in a contiguous relationship so as to create a capacitance between them, a thermal responsive switch connected in a series circuit with said first resistor, said second resistor being connected in parallel with said series circuit, and said first and second resistors being located in a close physical relationship with said thermal switch so as to supply heat to the switch, said parallel combination of plate resistors and thermal switch being mounted on a single support for connection in parallel with a fluorescent lamp.



3,171,062
## TOOL IMMOBILIZER CIRCUIT

Jay Hinton Rowe, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 11, 1962, Ser. No. 186,707
5 Claims. (Cl. 317—18)

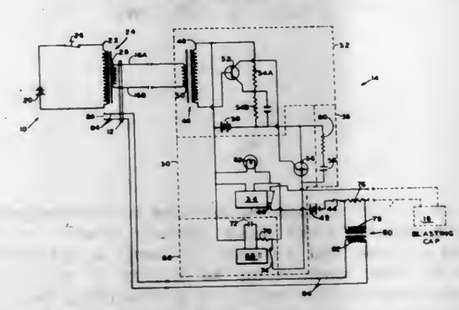


1. An improved electrical safety device for immobilizing a power tool when an unsafe work condition is encountered, said device comprising an electrical circuit arrangement, said arrangement comprising, a first conductor adapted to be operatively connected to one output terminal of a low frequency alternating current power source and to be operatively connected to a control element of a power tool, a second conductor adapted to be operatively connected to the other output terminal of such a power source and to such a control element of a power tool, a third conductor adapted to be operatively connected to electrical ground and to a part of such a power tool structure, an electrical oscillator means operatively connected across said first and second conductors for generating a high frequency alternating current output, a transformer having a primary winding and a secondary winding, said oscillator operatively connected to said primary winding to apply the high frequency alternating current output thereto, said secondary winding comprising a first portion and a second portion, a normally open switch means operatively connected in said first conductor, a switch operating means operatively connected to said switch means, an electrical actuating unit for switch operating means, said unit electrically connected to said first portion of said transformer secondary winding for actuating said operating means to close said switch means upon energization of said first portion of said secondary winding, said second portion of said secondary winding operatively connected in series with said third conductor, said first and second portions of said transformer secondary winding constructed and arranged so that any contact of the part of a power tool structure connected to said third conductor, with an electrically grounded object causes an increase in current in said second portion of said secondary winding in a direction to cause a sufficient reduction in energization of said first portion of the secondary winding to render the actuating unit for the switch operating means inoperative to maintain said switch in its closed position, permitting said switch to open and operatively disconnect the control element of an associated power tool from a power source connected to said first and second conductors.

3,171,063
## REMOTE TRIGGER ARRANGEMENT FOR BLASTER

John S. Hutchison and William J. Stark, Tulsa, Okla., assignors to Jersey Production Research Company, a corporation of Delaware

Filed July 20, 1962, Ser. No. 211,267
9 Claims. (Cl. 317—80)



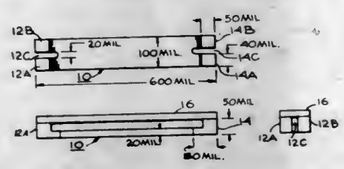
1. A triggering apparatus connected to a multi-conductor cable for applying an electric firing force on a seismic wave initiator blasting cap comprising:
- a low current high voltage pulsing circuit connected by a first transformer to a pair of conductors of said multiple cable;
- a pulse detecting means connected to said pair of conductors by a second transformer and adapted, upon detecting a pulse, to apply an output voltage pulse;
- a firing circuit connected to said pulse detecting circuit;
- a voltage pulse controlled switching means in said firing circuit; and
- a firing relay means, within said firing circuit, and connected in series with said switching means such that upon occurrence of said voltage pulse on said pair of conductors said pulse detecting means supplies a voltage pulse to activate said switching means and said firing relay to enable an impression of an electric firing force on said blasting cap without feed-over to adjacent conductors in said cable.

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3,171,064
## OPEN MULTIAPERTURE MAGNETIC CORE STRUCTURE

Donald J. Ruder, Menlo Park, Calif., assignor to Stanford Research Institute, Palo Alto, Calif., a corporation of California

Filed Apr. 18, 1963, Ser. No. 273,958
13 Claims. (Cl. 317—101)



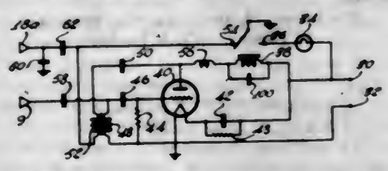

1. A magnetic element comprising a body of magnetic material having a substantially rectangular hysteresis characteristic and having a substantially U-shaped cross section with two arms extending away from the base of said U, a slot extending through at least one of said arms and forming at least two poles at said one of said arms, the distance between said two arms extending away from said base being considerably larger than the distance between the two poles formed by said slot, and a keeper made of magnetic material bridging the ends of said two arms.

3,171,065
## CIRCUITS FOR ELECTROMAGNETIC DEVICES
Daniel Lawrence King, New Southgate, London, and Eric Gibbon Hitch, Enfield, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Nov. 14, 1960, Ser. No. 69,125
Claims priority, application Great Britain, Nov. 26, 1959, 40,235/59
1 Claim. (Cl. 317—141)



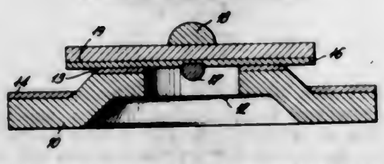
In a circuit arrangement including an electromagnetically operable device which normally assumes one of two conditions and is required to change to and remain in the other condition for the duration of an impulse train constituted by impulses of predetermined duration and time spacing, an impulsing relay connected to receive said impulse train and to be repeatedly operated by pulses of said train and released during the absence of pulses, a first resistance, an operating winding of said electromagnetically operable device connected in series with said first resistance, a capacitance shunting said winding, a second resistance, an energizing supply for said winding, and changeover contact means controlled by the impulsing relay between operated and unoperated positions, in one of which said contact means connects the serial connection of said first resistance and the capacitance-shunted winding across said energizing supply, and in the other of which it instead connects the second resistance across the capacitance to provide a discharge path therefor, the time constants of the capacitance with the resistance with which it is connected in the operated and unoperated positions of the changeover contacts being chosen to be shorter than the duration of each impulse of said impulse train and longer than the time spacing of successive impulses in the train respectively.

3,171,066
## TOUCH CONTROL CIRCUITS
Carl E. Atkins, West Orange, and Robert L. Ziolkowski, South Plainfield, N.J., assignors to Tung-Sol Electric Inc., a corporation of Delaware
Filed July 5, 1960, Ser. No. 40,827
4 Claims. (Cl. 317—146)



1. A system for controlling energization of a circuit in response to touch of an individual comprising in combination a normally oscillating circuit including an electronic valve, a source of energy, a relay having a winding connected in series with said valve across said source, said valve when the circuit is oscillating, passing insufficient current for actuation of said relay and when oscillation of the circuit is suppressed passing sufficient current for actuating said relay, a normally open circuit to be controlled, means responsive to actuation of said relay for closing said normally open circuit, means for loading said oscillatory circuit to suppress oscillation thereof, said last mentioned means comprising an element coupled to said valve and which when touched by an individual draws energy from the oscillatory circuit, means responsive to actuation of said relay for maintaining closed said controlled circuit irrespective of subsequent touching of said element and separate operator controlled means for releasing said relay, said valve being an electronic tube having an anode, a grid and a control electrode and said normally oscillatory circuit including coupled feedback anode and tank grid circuits, said element being coupled to said grid tank circuit and said relay when actuated opening said anode feedback circuit and said operator controlled means comprising means for completing the anode feedback circuit for resumption of oscillation with consequent release of the relay.

3,171,067
## BASE WASHER CONTACT FOR TRANSISTOR AND METHOD OF FABRICATING SAME
Robert L. Trent, Dallas, Tex., assignor to Texas Instrument Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 19, 1960, Ser. No. 9,852
5 Claims. (Cl. 317—234)



1. In a semiconductive device, a semiconductor member having a base, a base contact comprising a metallic washer having a central mesa-shaped portion defining a central aperture in said washer, a first portion of bonding material clad to the upper surface of the top of said mesa-shaped portion and forming an ohmic connection to said base, a second portion of said bonding material clad to said washer and spaced apart from said first region and a third portion of said bonding material located between said first and second portions and of lesser thickness than said first and second portions whereby a thin circumferential band of clad material is defined between said first and second portions.

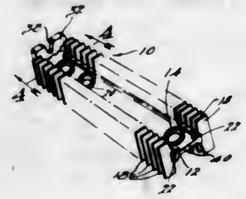
3,171,068
## SEMICONDUCTOR DIODES
Robert G. Dembewalter, Westfield, and Donald J. Shombert, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
Filed Oct. 19, 1960, Ser. No. 63,531
3 Claims. (Cl. 317—234)



1. A solid state semiconductor diode comprising a disc-shaped monocrystal wafer having two planar side layers substantially perpendicular to the center axis of the wafer, a series of radially spaced circumferential layers of alternate N-type and P-type conductivity material between the side layers and extending in the axial direction of the wafer forming a plurality of radially spaced circumferential P–N junctions disposed in parallelism to the axis of the wafer, said circumferential layers terminating in the side layers respectively and forming the edges of the circumferential P–N junctions contiguously adjacent both respective side layers and within the wafer, the first of said side layers consisting of P-type conductivity material covering the edges of the alternate P-type and N-type circumferential layers in the first side layer and ohmically interconnecting the edges of the P-type layers in the first side layer and forming first radial-plane P–N junctions with the edges of the N–type layers in the first side layer, said first radial-plane P–N junctions connecting the edges of the adjacent circumferential P–N junctions in the said first side layer and forming continuous P–N junctions therewith, the second of said side layers consisting of N-type conductivity material and covering the edges of said alternate P-type and N-type circumferential layers in the second side layer and ohmically interconnecting the edges of the N-type layers in the second side layer and forming second radial-plane P–N junctions with the edges of the P–type layers in the second side layer, said second radial-plane P–N junctions connecting the edges of the adjacent circumferential P–N junctions in the second side layer and forming continuous P–N junctions therewith, whereby said first and second radial-plane junctions together with the circumferential P–N junctions form a single P–N junction extending through said disc-shaped monocrystal wafer.



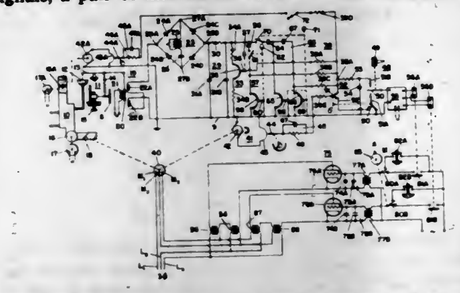
3,171,069
## DIODE HEAT SINK STRUCTURE
Michael A. Koltuniak, Macomb County, Thomas N. Urquhart, Oakland County, and Edward J. Sopcak, Livingston County, Mich., assignors to The Udylite Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 12, 1961, Ser. No. 144,625
4 Claims. (Cl. 317—234)



1. An air-cooled diode heat sink for dissipating heat evolved during the rectification of alternating electric current by a plurality of crystal diodes, said heat sink comprising an integrally cast metallic structure of high electrical and heat conduction properties including an elongated longitudinal web having a plurality of bores therethrough disposed in spaced intervals along said web, a plurality of crystal diodes removably mounted in said bores and disposed in intimate electrical and heat-conducting contact with said web, the surfaces of said web adjacent to said bores against which said diodes are seated provided with a surface finish of less than about 125 microinches, a plurality of transverse fins integrally attached to the longitudinal side edges of said web and disposed in spaced substantially parallel relationship, mounting means on one end of said web for mounting and electrically connecting said heat sink to a bus bar, and means at the other end portion of said web for engaging an insulated supporting member.

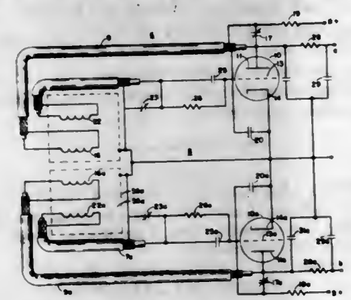
3,171,070
## ELECTRONIC CONTROLLED MOTOR SYSTEM FOR PROCESS CONTROL
Harold A. List, Ambler, and Willem H. Van Aller, Oreland, Pa., assignors to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 5, 1960, Ser. No. 6,920
2 Claims. (Cl. 318—28)

1. An automatic control system comprising means responsive to the deviations of a condition from a desired magnitude thereof for producing a first electrical signal in sense and magnitude corresponding with the existing deviation, a control element adjustable through a range of positions for changing a process variable affecting the magnitude of said condition, a reversible motor for adjusting said control element, a tachometer generator driven by said motor for producing a second electrical signal in sense and magnitude corresponding with the direction and rate of change of position of said control element, means for combining said electrical signals to produce a resultant electrical signal of sign dependent upon the magnitude and sign of said first and second signals, a pair of direction-relays selectively energized in



dependence upon the sign of said resultant signal, a magnetic amplifier comprising saturable core transformers having primary windings in circuit with said motor and its A.C. power source, and controlled rectifiers having output circuits including the secondary windings of said transformers and having input circuits selectively excited by said direction-relays to unbalance the reactances of said primary windings and so effect energization of said motor in accordance with said resultant electrical signal.

3,171,071
## SEAM FOLLOWER
Robert L. Brown, 2019 Princeton Blvd., Huntsville, Ala.
Filed July 15, 1960, Ser. No. 43,253
8 Claims. (Cl. 318—31)
(Granted under Title 35, U.S. Code (1952), sec. 266)

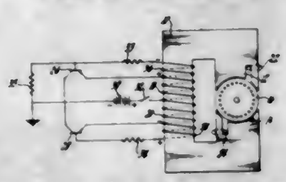


1. A seam follower comprising first and second oscillators, each said oscillator comprising amplifying means, a first resonant circuit connected to the input of said amplifying means, a second resonant circuit connected to the output of said amplifying means, a first coil forming an inductive element of said first resonant circuit and a second coil forming an inductive element of said second resonant circuit, said first and second coils being inductively coupled to each other, mounting means for said coils of said first and second oscillators, said second coils of said first and second oscillators being substantially identical and positioned by said mounting means with their electrical axes spaced, said second coils disposed adjacent a seam for sensing changes in permeability of the seam whereby the outputs of said oscillators vary with changes in the permeability sensed, means responsive to the outputs of said amplifying means of said first and second oscillators for positioning said mounting means to a position corresponding to equal output of

said oscillators, each said second resonant circuit being tuned to near resonance of its associated first resonant circuit.

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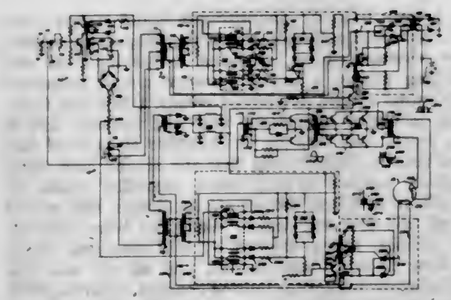
3,171,072
## MOTOR ENERGIZING CIRCUIT
Samuel E. Adair, Shorewood, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,506
6 Claims. (Cl. 318—138)



1. In combination, an electric motor having a magnetic circuit including a stator and a rotor with an air gap therebetween, an electric circuit including a pair of field coils on said stator, a pair of transistors having input electrodes and output electrodes, a direct voltage source, each of said field coils being connected in series with said voltage source through the output electrodes of a corresponding one of the transistors, a pair of feedback coils on said stator inductively coupled with the field coils, each of the feedback coils being the sole source of switching voltage for a corresponding one of the transistors and being connected in regenerative relation with the input electrodes thereof and adapted to drive it into its current saturation region when it is switched conductive and the other transistor is switched non-conductive, the magnetic circuit being proportioned so that it is magnetized to a point below the knee of its magnetization curve by the saturation current of either transistor whereby the magnetic flux linking the feedback coils approaches a limiting value during the conductive interval of each transistor to cause the feedback voltage to decrease and reverse polarity to switch the conductive transistor into non-conduction and the non-conductive transistor into conduction over repeated cycles to produce an alternating magnetomotive force in said magnetic circuit to energize said rotor.

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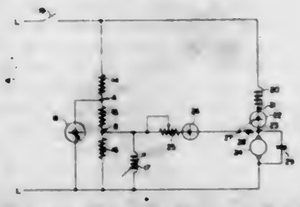
3,171,073
## SERVO AMPLIFIER CONTROL SYSTEM
William L. Adams, Lafayette, Ind., assignor to General Electronic Laboratories, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 1, 1961, Ser. No. 86,435
13 Claims. (Cl. 318—207)



1. In a power amplifier control circuit for controlling alternating current power from an alternating current power source to a servomotor of the type having a pair of field control windings for alternating current power in quadrature voltage phase in one winding with respect to the other winding, the combination of a pair of duty cycle control channels, each coupled to a respective one of the servo-motor control windings, a magnetic amplifier in each of the duty cycle channels, a Scott T formation coupled to the channels for applying said alternating current power to one of the channels in quadrature phase with respect to alternating current power applied to the other channel, electronic valve means in each channel coupled to the magnetic amplifier and Scott T formation for controlling the magnitude of alternating current power flow from the associated channel to the corresponding field control winding in accordance with magnetic amplifier output, a saturable amplifier coupled to the valve means of one of the channels and the corresponding field winding of the servo-motor, and a master control signal means coupled to the magnetic amplifiers and said saturable amplifier for controlling output of said magnetic amplifiers and said saturable amplifier.

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3,171,074
## SPEED-REGULATING CONTROL SYSTEMS FOR SERIES COMMUTATOR MOTORS
James W. Momberg, Somerville, and Edward W. Taylor, Martinsville, N.J., assignors to The Singer Manufacturing Company, Elizabeth, N.J., a corporation of New Jersey
Filed Mar. 6, 1961, Ser. No. 93,493
4 Claims. (Cl. 318—246)



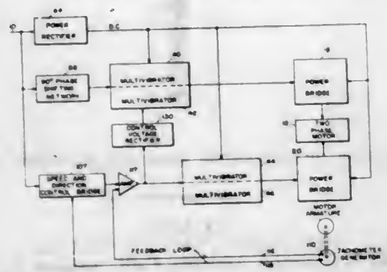
1. A speed-regulating control system for an electric motor having series-connected field and armature windings fed from an A.C. supply voltage comprising a solid-state controlled rectifier having an anode, a cathode and a gate for controlling the current to said windings, means for deriving a reference voltage for the gate including a fixed impedance connected across the supply voltage, a double-anode Zener diode shunting a portion of said impedance to stabilize the voltage across said portion, and a variable inducting impedance shunting a part of the portion shunted by the Zener diode, said variable impedance being connected in series with the armature winding between the gate and cathode of said rectifier.

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3,171,075
## SERVO SYSTEM FOR TWO PHASE MOTORS
George A. Kirk, Teaneck, N.J., assignor to General Signal Corporation, a corporation of New York
Filed Sept. 1, 1960, Ser. No. 53,389
17 Claims. (Cl. 318—341)

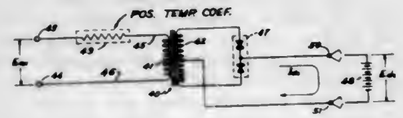
1. A control system for a polyphase motor having at least two windings, said system comprising a first pulse forming means operative when activated to energize one winding of the motor with a first train of full wave voltage pulses of fixed amplitude, a second pulse forming means operative when activated to energize another winding of the motor with a second pulse train of full wave voltage pulses of fixed amplitude, the amplitude of said first train of voltage pulses being substantially equal to the amplitude of said second train, a first trigger circuit means having an input and an output, the output of said first trigger circuit means being connected electrically to said first pulse forming means, a second trigger circuit means having an input and an output, the output of said second trigger circuit means being connected electrically to said second pulse forming means, means for supplying an alternating voltage of one phase to the input of said first trigger circuit means, means for supplying an alternating voltage of another phase to the input of said second trigger circuit means, means for supplying a direct current voltage bias to both said first and second trigger circuit means, and control means operable to vary the amplitude of said direct current voltage bias of said first trigger circuit means and simultaneously to vary the alternating voltage to the input of said second trigger circuit means to activate said first and second pulse forming means simultaneously.





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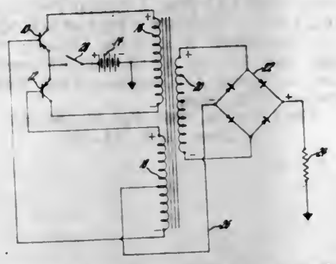
3,171,076
## BATTERY CHARGER WITH OUTPUT VOLTAGE AUTOMATICALLY MATCHING BATTERY RATING
Lewis A. Medlar, Lansdale, Pa., assignor to Fox Products Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 13, 1961, Ser. No. 137,794
5 Claims. (Cl. 320—51)




3. In a battery charger for charging batteries of two different known voltage ratings and being operative to automatically provide charging current of the proper magnitude for the different batteries, the combination of a transformer having a primary and a secondary winding; first circuit means for connecting said primary winding to an A.C. source providing potential of a predetermined magnitude, said first circuit means and said transformer being of limited current carrying capacity; the turns ratio between said primary winding and said secondary winding being such that a precisely predetermined no-load driving voltage appears across said secondary winding when said primary winding is energized from the A.C. source; rectifying means connected across said secondary winding to rectify said driving voltage; second circuit means for connecting said rectifying means to the battery being charged to provide a path for battery charging current; said driving voltage being that precisely predetermined potential operative to provide a predetermined ratio between charging current of the lower voltage rating batteries and the charging current of the higher voltage rating batteries; and positive temperature coefficient impedance means connected in series with said primary winding to limit current to a value which can be supplied via said first circuit means and said transformer, said impedance being operative to provide a higher resistance to current flow when charging a battery of the lower voltage rating and a lower resistance to current flow when charging a battery of the higher voltage rating.

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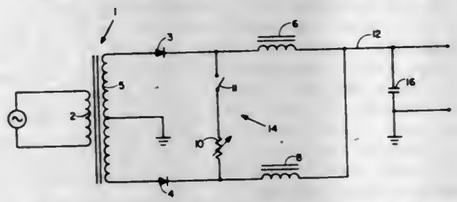
3,171,077
## TRANSISTOR CONVERTER CIRCUIT
Joseph E. Murphy, Cudahy, Wis., and Francis J. Starzec, Fullerton, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 9, 1959, Ser. No. 858,368
4 Claims. (Cl. 321—2)



1. A converter circuit comprising a pair of transistors each having input, output and common electrodes, a transformer having primary and feedback windings with respective center taps and having a secondary winding, said primary winding being connected between the output electrodes of the transistors, a voltage source connected between the center tap of the primary winding and the common electrodes of the transistors, said feedback winding being connected between the input electrodes of the transistors, a full wave rectifier circuit having its input terminals connected across the secondary winding, one output terminal of the rectifier circuit being connected through a load and said voltage source to the common electrodes and the other output terminal of the rectifier circuit being connected to the center tap of the feedback winding.

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3,171,078
## SPLIT PHASE FILTER POWER SUPPLY
George Robert Keener, Star Rte., Laceys Springs, Ala.
Filed Feb. 9, 1961, Ser. No. 88,229
5 Claims. (Cl. 321—9)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A power supply for supplying a low ripple D.C. voltage comprising:

(*a*) a transformer having a primary winding and a grounded center-tapped secondary winding;

(*b*) a first unidirectional conductive device connecting one end of said secondary winding to a common terminal;

(*c*) a second unidirectional conductive device connecting the other end of said secondary winding to said common terminal;

(*d*) a first choke means connected between said first unidirectional conductive device and said common terminal;

(*e*) a second choke means connected between said second unidirectional conductive device and said common terminal;

(*f*) a regulating means for varying the output voltage of said power supply;

(*g*) said regulating means having one end connected between said first unidirectional conductive device and said first choke means and having its other end

connected between said second unidirectional conductive device and said second coke means; and

(*h*) means for taking said output voltage between said common terminal and ground.

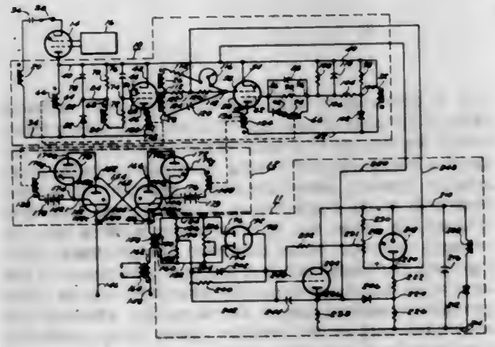
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3,171,079

## CONTROL CIRCUIT FOR A LOAD INCLUDING A HIGH FLUX DENSITY TRANSFORMER

Robert C. Mierendorf, Wauwatosa, Clarence W. Porter, Glendale, and Marvin A. Guettel, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Oct. 24, 1960, Ser. No. 64,480
7 Claims. (Cl. 323—58)



1. In a circuit for effecting the passage of alternating current to a load including a transformer, the combination comprising; a pair of electronic switches connected to pass alternate half cycles of alternating current through the transformer, means for selectively rendering said switches conducting, a phase back circuit having an output for controlling the points on the supply voltage wave at which the switches are rendered conducting, means independent of current flow in the load for phasing back only the initial half cycle conducting point of one of said switches later than the normal conducting point to provide a minimum circuit transient in the transformer, and means substantially responsive to peak current flow in the load connected to the phase back circuit and operative after said initial half cycle for regulating the output of the phase back circuit and thereby overcompensating the changes in current flow through the load in response to variations from a predetermined current flow through the load.

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3,171,080

## CONTROLLABLE ELECTRIC RESISTANCE DEVICES

Fritz Kesselring, Knonau, Zurich, Switzerland, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed June 22, 1960, Ser. No. 37,903
Claims priority, application Germany, June 24, 1959, S 63,593
15 Claims. (Cl. 323—94)

1. A controllable electric resistance device comprising a magnetic-field responsive resistance member of semiconductor material of substantially planar configuration and having a substantially circular cross section, said member having a peripheral electrode and a central electrode spaced from each other for passing current through said member, magnetic field means comprising an air-cored excitation coil of substantially circular cross section surrounding said member in coaxial relation thereto, and being positioned in a common diagonal plane with said members, whereby the resistance of said member between said peripheral and central electrodes



is variable in dependence upon the excitation of said coil.

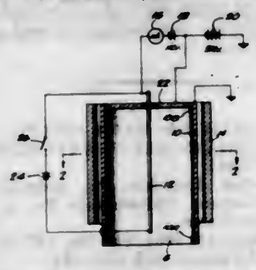
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3,171,081

## IONIZATION VACUUM GAUGE

Donald C. Garwood, Altadena, Calif., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 19, 1962, Ser. No. 173,981
3 Claims. (Cl. 324—33)



2. An improved ionization vacuum gauge comprising a conductive hollow cylinder, a conductive end plate for said hollow cylinder, means supporting said conductive end plate insulatingly from said hollow cylinder, a central electrode means for insulatingly supporting said central electrode coaxially within said hollow cylinder, a first source of potential, a switch, means connecting said switch and first source of potential in series, means connecting said serially connected switch and first source of potential across opposite ends of said central electrode for the purpose of heating said central electrode to emit electrons for initiating operation of said vacuum gauge, a second and third source of potential, means connecting one end of said second source of potential to one end of said third source of potential, means connecting said end plate to the junction of said second and third sources of potential, means connecting the other end of said third source of potential to said cylinder, a current-measuring device, and means connecting said current-measuring device between said central electrode and the other end of said second source of potential.

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3,171,082

## RANDOM PERMUTATION GENERATOR EMPLOYING PULSE WIDTH GENERATOR AND CIRCULATING SHIFT REGISTER

George M. Dillard, 7130 Forum, San Diego, Calif., and George L. Scott, % California Institute of Technology, Pasadena, Calif.

Filed Feb. 4, 1963, Ser. No. 256,174
6 Claims. (Cl. 328—60)
(Granted under Title 35, U.S. Code (1952), sec. 266)

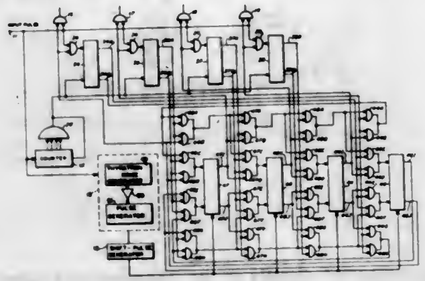
1. A random permutation generator comprising:

an input terminal;

means connected to said input terminal for generating a random number of shift pulses,



circulating storage means having a serial storage stages, each of said stages connected to said shift pulse generating means, said storage means operable to shift stored information one stage upon receiving a shift pulse,



a plurality of bypass means, each of said serial storage stages having an output connected to a different one of said bypass means, all of said bypass means connected to said input terminal, each of said bypass means operable to bypass the stages following the stage connected thereto upon coincidence of an output from said storage stage and a clock pulse,

a plurality of read-out means each of said read-out means connected to said input terminal and an output of a different one of said stages, each of said read-out means operable to yield a signal at its output upon the coincidence of an output from said storage and a clock pulse.

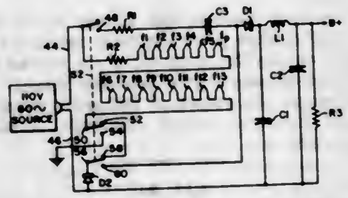
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3,171,083

## VACUUM TUBE HEATER IDLING CIRCUIT

Charles B. Heffron, Metuchen, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 16, 1962, Ser. No. 187,817
2 Claims. (Cl. 328—260)




1. A power supply for a television receiver having a plurality of vacuum tubes with heaters, a source of alternating current, said heaters connected to form the heater circuit, said heater circuit operatively connected to said source to provide a bidirectional current path therewith, a unidirectional current device and a filter operatively connected to said source to conduct current from said source of a first polarity, capacitance means and another unidirectional current device operatively connected to said source to conduct current from said source of an opposite polarity for storing energy in said capacitor means, said capacitor means responsive to current from said source of said first polarity to discharge through said unidirectional current device and said filter, and switch means to selectively (1) disconnect said other unidirectional current device from said capacitance means and connect said other unidirectional current device to said heater circuit in series with said source to apply reduced power to said heaters, and (2) disconnect said unidirectional current device from said source.

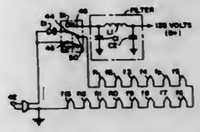
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3,171,084

## TELEVISION RECEIVER POWER SUPPLY

George Clifford Szikiai, Carnegie, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 26, 1961, Ser. No. 140,801
4 Claims. (Cl. 328—270)



1. A power supply for an electronic tube system having a plurality of tubes with heaters, cathodes, and anodes, said heaters being connected to form a heater circuit; a pair of power line terminals adapted to be connected to a source of alternating current, a rectifier, and an on-off switch connected to said heater circuit for completing a bidirectional current path including said terminals and said heater circuit when in the on position and for inserting said rectifier in series with said heater circuit to complete a unidirectional current path therethrough when in the off position.

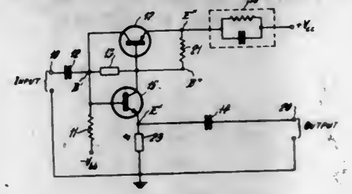
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3,171,085

## UNILATERALIZED TRANSISTOR AMPLIFIER

Lucio M. Vallese, New York, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 19, 1959, Ser. No. 814,360
10 Claims. (Cl. 330—17)



1. In a transistor amplifier circuit, in combination: transistor means corresponding to a pair of complementary-type transistors, each having a base, emitter and collector electrode, connected in a hook common collector circuit configuration wherein a signal is fed back to the base of one transistor from the collector of the other transistor; impedance means connected in the emitter circuit of said other transistor for controlling the magnitude and phase of the feedback signal, of such value that the feedback signal is equal in magnitude and opposite in phase to the intrinsic feedback signal through said one transistor, whereby the intrinsic feedback signal is cancelled, said transistor means thereby being unilateralized between the base and emitter of said one transistor; and connection means for a reference potential, the emitter circuit of said one transistor being returned to said reference potential connection.

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3,171,086

## TRAVELING WAVE AMPLIFIER AND OSCILLATOR WITH TUNNEL DIODES

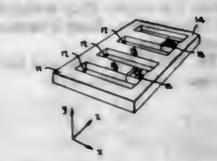
Horst W. A. Gerlach, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army

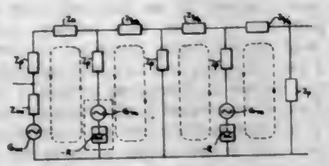
Filed Sept. 10, 1962, Ser. No. 222,744
9 Claims. (Cl. 330—43)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A traveling wave amplifier comprising:

(*a*) a slow wave structure having a series of rungs and

slots, said rungs and slots forming a series of resonant cells,



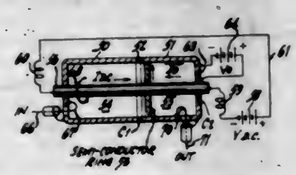


(*b*) negative impedance means,

(*c*) said negative impedance means connected in said rungs of said slow wave structure.

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**3,171,087**
**SOLID-STATE NONRECIPROCAL SIGNAL AMPLIFIER**
**Kern K. N. Chang, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware**
**Filed Feb. 15, 1961, Ser. No. 89,562**
**11 Claims. (Cl. 330—60)**

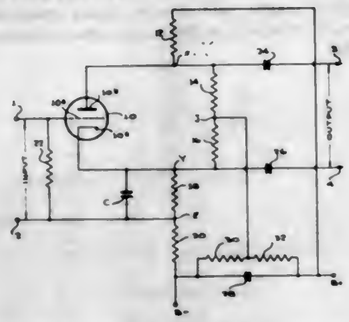


1. A solid-state signal amplifier comprising in combination, a pair of coaxial conductor elements, a body of semiconductor material connected between said conductor elements, a signal translating circuit connected with said conductor elements, means for connecting a direct-current supply source between said conductor elements to apply an electric field radially through said body of semiconductor material, and means for magnetically modulating the body of semiconductor material to apply energy from said source to said signal translating circuit at a selected signal frequency.

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**3,171,088**
**PHASE-SPLITTER CIRCUIT FOR USE WITH AN AUDIO AMPLIFIER**
**William Pera, 6122 Main St., Lanham, Md.**
**Filed Jan. 25, 1962, Ser. No. 168,693**
**2 Claims. (Cl. 330—117)**

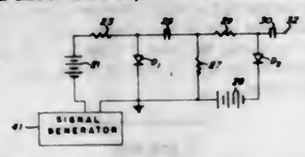
1. A phase splitter amplifier circuit, comprising a vacuum tube amplifier having a control grid comprising its input terminal and having plate and cathode terminals respectively comprising the output terminals of said amplifier; a source of operating potential; load resistances respectively coupling said output terminals to opposite terminals of said source; voltage divider means connected across said source and having a center tap; and resistor means connected across said output terminals and defining with said tube a parallel D.C. circuit and having a center



tap connected directly to the first-mentioned center tap.

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**3,171,089**
**DIODE RANDOM NOISE GENERATOR**
**Erwin Hirschmann, Greenbelt, and George N. Kamboouris, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Army**
**Filed June 11, 1963, Ser. No. 287,156**
**6 Claims. (Cl. 331—78)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**




1. A random noise generator comprising:

(*a*) random pulse generator means for generating a series of pulses having random amplitudes and periods, said pulses having slopes proportional to a bias voltage applied to said random pulse generator means;

(*b*) randomly variable bias voltage means connected to said random pulse generator means for continuously varying the amplitude of the applied bias voltage to said random pulse generator means;

(*c*) whereby the output of said pulse generator is a signal having a random amplitude, repitition rate and slope.

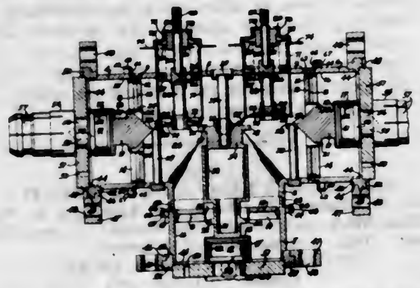
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**3,171,090**
**REMOTELY ACTUATED VACUUM COAXIAL SWITCH WITH REDUCED-IN-THICKNESS CONTACT PORTIONS FOR ELIMINATING CROSS-TALK**
**Ted N. Tilman, San Jose, Calif., assignor, by mesne assignments, to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware**
**Continuation of application Ser. No. 852,105, Nov. 10, 1959. This application May 4, 1964, Ser. No. 365,860**
**14 Claims. (Cl. 333—7)**

1. A coaxial switch for coaxial transmission line circuits comprising a metallic housing having a main portion and a transverse portion, a dielectric wall hermetically and movably connected for expansion across each portion of the housing and forming and enclosing therewith a vacuumized chamber, a first conductor coaxial with the main housing portion and extending hermetically through its respective wall into said chamber, said first conductor having a flat and reduced in thickness contact portion extending axially into said chamber with the adjacent portion of the conductor increasing in size and tapering as it recedes from the contact portion, a second



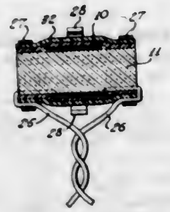
conductor coaxial with the transverse housing portion and extending hermetically through its respective wall into said chamber, said second conductor having a relatively thin contact portion projecting therefrom and spaced from and oppositely disposed to said flat contact portion on the first conductor whereby the conductive



capacity between the oppositely disposed contact portions is minimized, and mobile contact means having hermetic sealing means connecting it to the housing for operative movement to connect or disconnect said contact portions on the first and second conductors within said vacuumized chamber to make or break a circuit through the switch.

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**3,171,091**
**TRANSFORMER ENCASED IN MAGNETIC TAPE**
**Bernard M. Goldsmith, Little Silver, N.J., assignor to Nytronics, Inc., Phillipsburg, N.J., a corporation of New Jersey**
**Filed Aug. 2, 1960, Ser. No. 46,920**
**14 Claims. (Cl. 336—83)**



1. An electrical coil construction, comprising an elongated cylindrical core of magnetic-flux conducting material, a winding including plurality of turns over a portion of said core short of the axial ends thereof, there being thus exposed a substantially continuous cylindrical core surface at each end of said winding, and magnetic-flux conducting means connecting said surfaces independent of linkage to said winding, said last-defined means including plastic tape means of high-permeability material and circumferentially extending means radially inwardly compressing the high-permeability material into pressure contact with each of said end surfaces.

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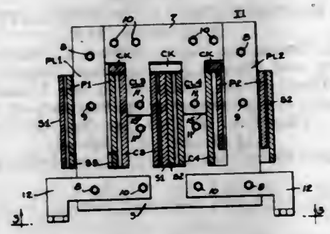
**3,171,092**
**ADJUSTABLE CONSTANT-CURRENT WELDING TRANSFORMER**
**William W. Jetter, Riverside, Ill., assignor to Mid-States Welder Manufacturing Co., a corporation of Illinois**
**Filed Aug. 26, 1958, Ser. No. 757,238**
**10 Claims. (Cl. 336—155)**

1. A welding transformer for supplying an adjustable welding current to a welding circuit, comprising:

a magnetically interconnected core structure providing primary path means, control path means, and return path means;

at least one primary winding encircling the primary path means;

at least two control windings encircling the control path means and adapted for variable direct current excitation which correspondingly alters their alternating-flux reluctance;



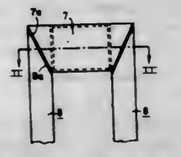
at least one secondary winding for supplying the welding current,

the said at least one secondary winding being located on said core structure so as to be effectively acted upon by the primary winding-induced flux which traverses the return path means; and

at least one choke winding in series with said secondary winding.

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**3,171,093**
**MAGNETIZABLE LAMINATED CORES FOR TRANSFORMERS AND REACTORS**
**Erich Rolf, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany**
**Original application Apr. 11, 1952, Ser. No. 281,831, now Patent No. 3,015,791, dated Jan. 2, 1962. Divided and this application Oct. 6, 1961, Ser. No. 143,375**
**Claims priority, application Germany, Apr. 18, 1951, S 22,796; June 30, 1951, S 23,741**
**5 Claims. (Cl. 336—217)**



1. A jointed magnetizable core designed to minimize increase in magnetic induction at the joints, comprising a cornered frame forming a closed magnetic flux path, the frame being formed of a plurality of layers of assembled laminations formed from sheet-metal strip material having a favorable magnetic direction lengthwise of the strip, a number of said layers each comprising two trapezoidal limb strips and two trapezoidal yoke strips, the said limb strips of said number of layers each having a straight diagonally extending end edge and the yoke strips each having two opposite straight diagonally extending end edges, the diagonal edges of the yoke strip adjoining the diagonal edges of respective limb strips at the corners of the frame, the yoke strip being at least twice the width of the limb strips, the diagonal end edges of the yoke strip providing, in conjunction with the diagonal edges of the limb strips, straight diagonal butt joints which extend from each innermost point of the corner to each outermost point of the corner, there being disposed, intermediate said number of layers, second limb sheet-metal strip layers which are rectangular in outline and are codirectional with the first-recited limb strips and which are provided, at the frame corners, with edges which are at right angles to the yoke strips and thus are angularly disposed with respect to the diagonal end edges of said first-recited limb strips, to provide overlap at the joints, each of the second limb sheet-metal strips extend-

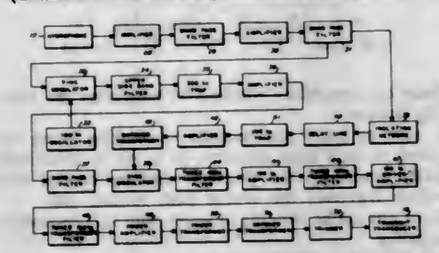
ing at their ends to the two outer upper and lower edges of the core, the corner joints of each layer being overlapped by magnetic material of an adjacent layer.

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3,171,094
## HETERODYNE AUTOCORRELATION TRANSPONDER

Keith E. Geren, San Diego, William C. Hubbard, Lemon Grove, and Warren A. Sener and Donald A. Young, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 18, 1961, Ser. No. 160,374
14 Claims. (Cl. 340—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



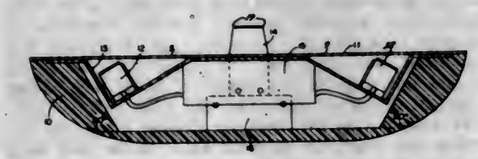
1. A transponder for transmiting a signal of given frequency throughout a subaqueous medium in response to received sonar signals within a predetermined frequency range comprising a hydrophone for converting said received sonar signals into electrical output signals proportional thereto, means connected to the output of said hydrophone for heterodyning the electrical output signals therefrom with a predetermined frequency signal, means effectively coupled to the output of said heterodyning means for passing the upper sideband of said heterodyned signals, means effectively connected to the outputs of said upper sideband signal passing means and said hydrophone for mixing a delayed portion thereof therewith, and means coupled to the output of said mixing means for broadcasting the lower sideband signal therefrom throughout the aforesaid subaqueous medium.

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3,171,095
## STREAM AND SOUND SPEED INSTRUMENT

Jarvis J. Gennari, Ozon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 10, 1962, Ser. No. 222,740
4 Claims. (Cl. 340—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



4. A meter to be mounted in a recess on the hull of a water vessel for determining the speed of sound in the fluid and the relative flow of said fluid with respect to said meter comprising:

(*a*) a streamlined housing having a central compartment and end compartments on each side of said central compartment, said housing being contoured for reception by a hull recess,

(*b*) a first sound transducer unit in one of said end compartments and a second sound transducer unit in the other of said end compartments,

(*c*) a reflector plate having a turbulence reducing knife edge thereon mounted midway along and externally of said housing,

(*d*) a cover plate between said housing and said reflector plate lying in the plane of said hull and substantially closing said compartments, said cover plate having a pair of apertures therethrough, and

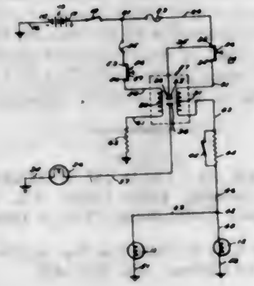
(*e*) electrical circuit means within said central compartment including a pair of oscillator circuits having external parallel acoustic delay lines defined by one of said transducer units, one of said apertures, said reflecting plate, the other of said apertures and the other of said transducer units, said electrical circuit means providing frequency outputs proportional to the speed of sound in the fluid and the relative flow of the fluid with respect to said meter.

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3,171,096
## AUTOMOBILE LAMP SAFETY CIRCUIT

James W. Murray, Dearborn, and Lawrence B. Ward, Milan, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,819
7 Claims. (Cl. 340—69)



1. In an automobile electrical system, a stop lamp, a source of electrical energy, a brake pedal, a stop lamp switch connected to said stop lamp and said source of electrical energy, said stop lamp switch being operable between an open and a closed position, means coupling said stop lamp switch and said brake pedal for closing said stop lamp switch and completing a circuit from said source of electrical energy to said stop lamp when said brake pedal is depressed; an indicator lamp, an auxiliary stop lamp switch connected to said source of electrical energy, said auxiliary stop lamp switch being operable between an open and a closed position, means coupling said auxiliary stop lamp switch and said brake pedal for closing said auxiliary stop lamp switch and completing a circuit through said auxiliary stop lamp switch from said source of electrical energy when said brake pedal is depressed, an electrical switch means coupling said indicator lamp, the circuit through said stop lamp switch and said stop lamp and the circuit through said auxiliary stop lamp switch for energizing said indicator lamp when said stop lamp fails, or when either said auxiliary stop lamp switch or said stop lamp switch fails in either the open or closed position.

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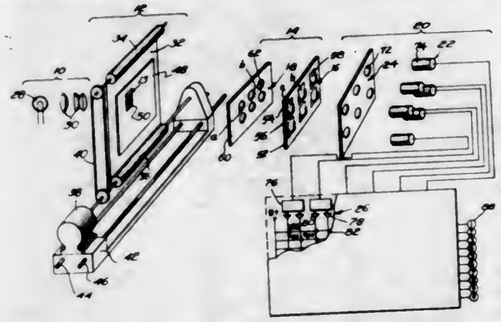
3,171,097
## CHARACTER RECOGNITION DEVICES

John A. Fitzmaurice, Arlington, and Edward N. Sabbagh, Andover, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Apr. 27, 1961, Ser. No. 106,038
6 Claims. (Cl. 340—146.3)

1. A character recognition system comprising positioning means for locating an unknown character, a plurality of lens means defining a plurality of optical paths each including said unknown character, a plurality of filter means disposed in said optical paths for receiving radiation through said lens means from said unknown character, a plurality of photodetector means disposed in said optical paths for receiving radiation from said plurality of filter means, and logical means for receiving a plurality of signals from said photodetector means, said plurality of signals cooperating to indicate a representation of said unknown character, each detector means of said plurality being characterized by a threshold of the light flux from each of said optical paths, each said detector having first output means for said light flux being greater than said threshold and second output means for said light flux being less than said threshold, a plurality of flip-flop means said logical means including AND-matrix means, said first output means and said second output means determining the state of said flip-flop means, said plurality of flip-flop means controlling said AND-matrix means.



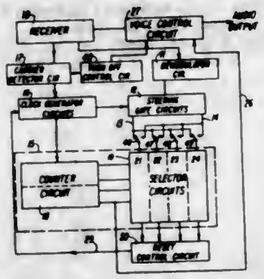


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3,171,098
## BINARY SELECTIVE CALLING SYSTEM

Reider G. Gabrielson, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 8, 1961, Ser. No. 87,872
10 Claims. (Cl. 340—164)



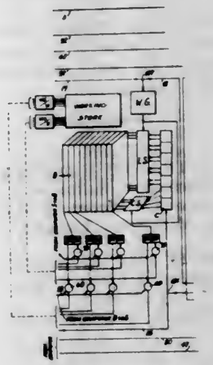
1. A selective calling unit for use with calling signals containing "zero" and "one" binary information in sequence according to a call code, said unit including in combination, first and second signal lines, circuit means receiving the calling signals and supplying first code signals representing the "zero" information to said first signal line and supply second code signals representing the "one" information to said second signal line, such that said first and second code signals are distributed between said signal lines in the sequence of the binary information, decoding circuit means including a plurality of selector circuits, each of said selector circuits having an input for receiving code signals, said decoding circuit means having energizing means for energizing said selector circuits in sequence such that the energization of each of said selector circuits coincides in time with successive ones of said code signals, output means coupled to said decoding circuit means and operated thereby only if said selector circuits are energized in a complete sequence, and means individually connecting each of said inputs of said selector circuits to a selected one of said signal lines so that such connections determine a particular distribution of code signals on said first and second signal lines which provides the complete sequence of operation of said selector circuits and thereby determines a particular call code which identifies said selective calling unit.

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3,171,099
## DIGITAL COMPUTERS FOR DATA PROCESSING SYSTEMS

Ronald Mitford Foulkes, Sale, England, assignor to Associated Electrical Industries (Manchester) Limited, London, England, a British company

Filed Apr. 1, 1958, Ser. No. 725,686
Claims priority, application Great Britain, Apr. 1, 1957, 10,585/57
6 Claims. (Cl. 340—172.5)



1. An electronic digital computer including a fast access working store designed to receive and provide information in simultaneous form, a slower access backing store designed to receive and provide information in serial form, a fast access buffer store designed to receive and provide information in simultaneous form interposed between said working store and said backing store, means for passing digital information in simultaneous form between the buffer store and the working store at the operating rate of the working store, a register interposed between the buffer store and the backing store, means for transferring digital information from the backing store to the register in serial form, means for transferring said information from the register to the buffer store in simultaneous form, means for receiving digital information in the register provided by the buffer store in simultaneous form and means for transferring said information to the backing store in serial form.

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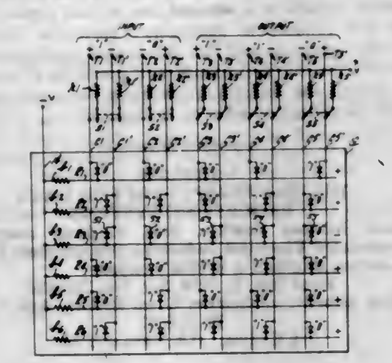
3,171,100
## PUNCHABLE MEMORY CARD HAVING PRINTED CIRCUIT THEREON

Jan A. Rajchman, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 21, 1962, Ser. No. 181,381
4 Claims. (Cl. 340—173)

1. A punched card for the storage of information comprising an insulating supporting card, a plurality of row conductors printed on the card, a plurality of column conductor pairs printed on said card and insulated from said word row conductors, and printed diodes located on said card at crossovers of row conductors and column conductor pairs, each of said diodes having a first terminal connected to a corresponding row conductor and having a second terminal connected to both conductors of a cor-

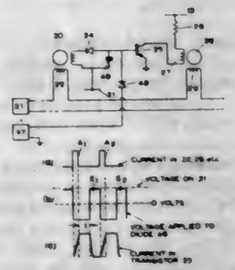
responding column conductor pair, the connection of said second terminal to one of the column conductors of the pair being interrupted by a punched hole going through



the connection and the card, whereby each diode represents the storage of a "1" or a "0" depending on whether it remains connected to one or the other of the conductors of the corresponding column pair.

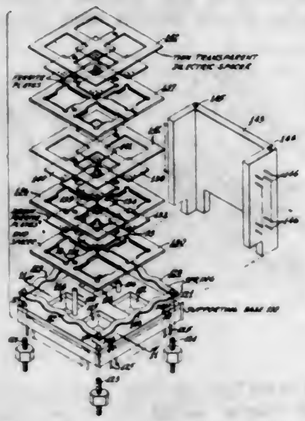
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**3,171,101**
**PULSE TRANSFER DEVICES**
Godfrey Newbold Hounsfield, Sutton-on-Trent, near Newark, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain
Filed Apr. 29, 1958, Ser. No. 731,735
Claims priority, application Great Britain, Apr. 30, 1957, 13,799/57
12 Claims. (Cl. 340—174)



1. A pulse transfer device comprising a switchable two-state element, a source of periodic pulses, means for applying periodic pulses from said source to said element to cause said element to switch from a first state to a second state, means responsive to said periodic pulses from said source for selectively producing data signals representing said first state to be registered in said element, a transistor amplifier, an input circuit connected from said producing means only to said amplifier for applying said data signal thereto to cause said amplifier to produce output signals, said input circuit being independent of any coupling to said element, an output circuit for applying said output signal to said element to register said first state therein, said transistor amplifier including means for storing an applied data signal for a period which continues after the termination of the periodic pulse in response to which it was produced, thereby to register said first state in said element after said termination, a source of turn-off pulses which occur in the intervals between said periodic pulses, and means for applying said turn-off pulses to said transistor amplifier so as to terminate said output signals.

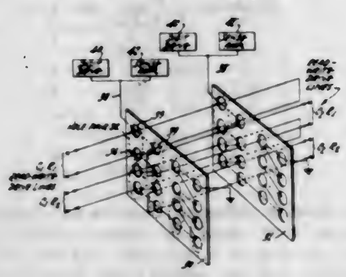
**3,171,102**
**MEMORY ASSEMBLY EMPLOYING APERTURED PLATES**
William E. Newman, Moorestown, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 7, 1960, Ser. No. 977
10 Claims. (Cl. 340—174)



1. A holder for apertured memory plates comprising a non-magnetic member formed with cut-outs, each cut-out slightly larger in size than a plate, inwardly extending lips on the edges of each cut-out for supporting a plate, and said member being formed with one groove in one surface of said member joining one pair of opposite cut-outs at a point where they are closely spaced and another groove in the opposite surface of said member joining another pair of opposite cut-outs at a point where they are closely spaced.

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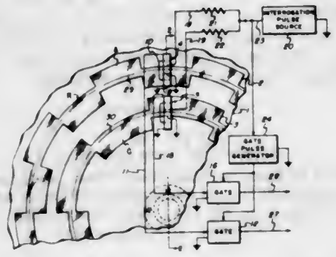
**3,171,103**
**MAGNETIC PLATE MEMORY SYSTEM**
William G. Rumble, Van Nuys, and Westley V. Dix, Canoga Park, Calif., assignors to Radio Corporation of America, a corporation of Delaware
Filed Aug. 26, 1960, Ser. No. 52,177
9 Claims. (Cl. 340—174)



1. In a magnetic memory system, the combination comprising a plurality of digit memory plates of magnetic material with rows and columns of hole pairs, each hole pair constituting two adjacent holes in the same plate for the storage of one information bit, each of said plates being provided with a printed digit drive winding going in the same direction through both holes of each hole pair by means of an intermediate passage in the other direction through a hole of another hole pair, and a plurality of read-write drive lines threaded through corresponding holes of all of said plates with the lines going in opposite directions through the holes of each hole pair.



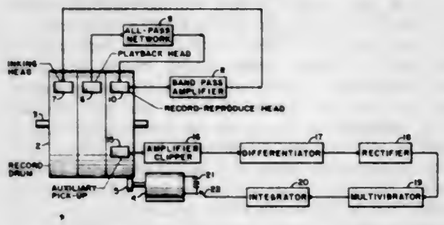
**3,171,104**
**VARIABLE RELUCTANCE BINARY DATA TRANSDUCER**
Bernard J. Norton, Norwood, Mass., and William D. Sauter, Seacliff, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Oct. 13, 1959, Ser. No. 846,145
5 Claims. (Cl. 340—174.1)



1. A binary data transducer comprising first and second C-shaped data sensing members each having an input and an output winding, the output windings being interconnected in series circuit whereby the currents induced in said interconnected output windings tend to flow in opposite directions, means for pulsing said input windings so as to induce said currents in said output windings, first and second substantially mirror-symmetric longitudinally abutting data storage members comprising transverse sections of magnetic and nonmagnetic material, and means for positioning said data sensing and said data storage members in close clearing relationship and allowing for close clearing relative movement of said sensing members longitudinally along said storage members, said sensing members being positioned across the direction of said movement, and one of said sensing members and said storage members being mutually displaced by a predetermined amount along the direction of said movement.

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**3,171,105**
**PLAYBACK SYSTEM**
Henry B. Ferguson, Tulsa, Okla., assignor to Jersey Production Research Company, a corporation of Delaware
Filed Jan. 11, 1960, Ser. No. 1,587
4 Claims. (Cl. 340—174.1)

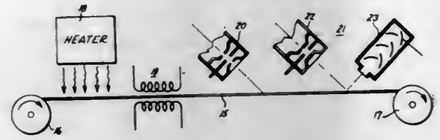



1. In a system wherein a magnetic record of an electrical signal is played back through a playback circuit to reproduce the said signal, the improvement which comprises a filter in the playback circuit characterized by having a phase response

$$\theta = K\frac{1}{\log f}$$

where K is a constant and $f$ is the frequency of the reproduced signal, whereby the effective frequency response of the filter may be changed by changing the speed of playback while applying the same amount of time delay to the said signal regardless of the speed of playback.

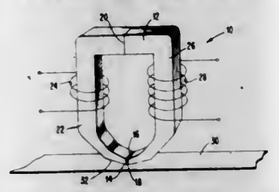
**3,171,106**
**INFORMATION STORAGE SYSTEM**
Charles Q. Lemmond, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 27, 1961, Ser. No. 92,025
1 Claim. (Cl. 340—174.1)




A system for recording information on a thermoplastic storage medium having elongated magnetic particles dispersed therein comprising means for heating the storage medium to a plastic condition, means for subjecting the storage medium to a magnetic field to align the elongated magnetic particles with their axes making substantially the same angle with the plane of the storage medium, while the storage medium is still in a plastic condition, recording means for subjecting the magnetic particles to localized magnetic fields to realign the axes of the magnetic particles in discrete areas of the storage medium to represent stored information while the storage medium is still in a plastic condition, and electron microscope readout means responsive to the alignment of the axes of the magnetic particles for retrieving the information.

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**3,171,107**
**WIDE-RECORD NARROW-READ MAGNETIC HEAD**
Fred L. Rogers, Jr., Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 3, 1961, Ser. No. 121,719
6 Claims. (Cl. 340—174.1)



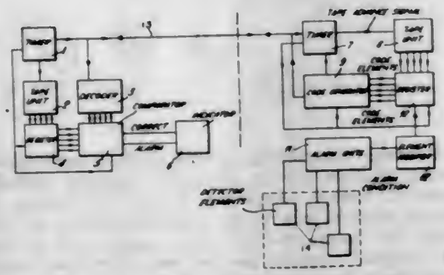
1. A magnetic head for recording and reading information on a magnetic recording medium comprising a magnetic core having a pair of spaced faces providing a gap, said faces having a predetermined width, a pair of spaced magnetic members disposed between said faces in said gap and each having a width less than one-half of said predetermined width, whereby said members are effective to bypass a major proportion of magnetic flux between said faces for magnetomotive forces less than a predetermined value applied to said core and to saturate and bypass a proportion of flux between said faces for magnetomotive forces significantly greater than said predetermined value applied to said core.

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**3,171,108**
**VALUABLE PROTECTION SYSTEM**
John Crerar MacKeen, 170 Hollis St., Halifax, Nova Scotia, Canada
Filed Nov. 23, 1960, Ser. No. 71,311
10 Claims. (Cl. 340—226)

1. A system for indicating at a remote location the presence of an alarm condition in an area said system comprising, an interrogator adapted to interrogate a responsor located adjacent said area at predetermined time intervals, means within said responsor adapted to generate

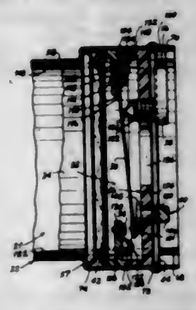
a first coded signal in response to an interrogation from said interrogator and to alter said response after each interrogation, at least one alarm unit positioned adjacent or in said area and connected to said responsor, means in said interrogator adapted to generate a second coded signal and to alter said second coded signal after each interroga-



tion, means in said interrogator adapted to compare said first coded signal with the second coded signal and to indicate an alarm condition when said first and second signals differ, and means in said responsor adapted to alter said first coded signal in response to an alarm from an alarm unit.

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**3,171,109**
**COMBINED FLASHLIGHT, FIRE ALARM, AND DISTRESS SIGNAL**
Andrew L. Appel, St. Louis, Mo.
(Rte. 1, Box 55, Old State Road, Ellisville, Mo.)
Filed July 21, 1961, Ser. No. 125,857
3 Claims. (Cl. 340—227)



1. In combination with a conventional flashlight mechanism mounted in the forward end portion of an elongated cylindrical casing and energizable by a pair of contiguously disposed storage batteries responsive to manipulations of a switch assembly, a fire alarm and distress signal assembly of the character disclosed comprising:

a metallic housing removably threaded onto the rear end portion of said casing;

an alarm mechanism mounted in the housing, said mechanism including a sound producing device, a stationary contact, and a therewith associated bimetallic switch blade that is anchored at one end with the free end portion of said blade biased away from the stationary contact;

means for varying the distance obtaining between said free end of the blade and the stationary contact;

means providing a normally open circuit for energizing the sound producing device, said means comprising a strip of conductive material extending within said casing but insulated therefrom for passing current from said batteries to the stationary contact;

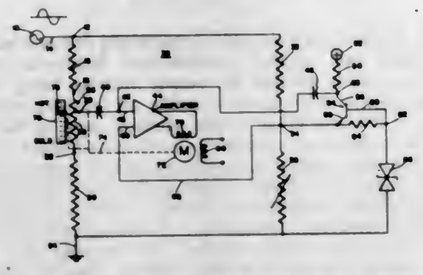
a pointed contact element of highly conductive material mounted in said free end portion of the bimetallic blade;

and manually operable means for effecting engagements of said stationary contact and said pointed contact to close the open circuit aforesaid whereby to cause said sound producing device to diffuse alarm signals in staccato fashion;

said bimetallic switch blade being adapted to automatically close said open circuit in consequence of abnormal ambient temperature conditions whereby to cause said sound producing device to diffuse an alarm signal in continuous fashion.

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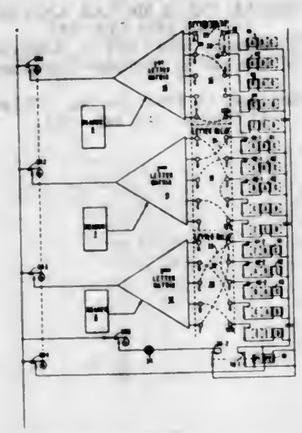
**3,171,110**
**CONTROL APPARATUS**
Robert P. Pearson, Roseville, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Aug. 22, 1961, Ser. No. 133,207
4 Claims. (Cl. 340—233)



1. In a fail-safe circuit: alternating power signal supplying means; automatic indicating bridge circuit means comprising temperature sensitive resistance means, substantially temperature stable resistance means, variable resistance means, all of said aforementioned resistance means being connected to form a bridge circuit, and said bridge circuit being connected for providing an output signal between a wiper on said variable resistance means and a junction point connecting said temperature sensitive resistance means and said temperature stable resistance means, voltage responsive means, including input summing means, and output means connected to receive said output signal from said bridge circuit at said input summing means and adapted to vary the position of said wiper on said variable resistance means to provide a minimum input signal to said voltage responsive means, and indicator means adapted to vary in accordance with said wiper means to give a temperature indication, said automatic indicating bridge circuit means providing a "Hot" indication on said indicator means when said temperature sensitive resistor fails in an open condition; means connecting said alternating power signal supplying means to said automatic indicating bridge circuit means; Zener diode means connected in parallel with said temperature sensitive resistance means and adapted to allow current flow therethrough when said temperature sensitive resistance means opens; amplifier means including input and output means connected to give an output signal when current flows through said Zener diode, said signal being substantially 180° out of phase compared to said signal supplied to said voltage responsive means from said bridge circuit; and means connecting said output means of said amplifier means to said input summing means of said voltage responsive means, said output signal from said amplifier means being of sufficient magnitude to override said output signal from said bridge circuit upon failure of said temperature sensitive resistance means in an "open" condition to drive said indicator means to a "Cold" indication so as to provide safe failure.



**3,171,111**
**RELAY SEQUENCE TESTING CIRCUIT**
Robert S. Sanford, R.D. 2, Smith Road, Poughkeepsie, N.Y.
Original application Mar. 13, 1958, Ser. No. 721,298, now Patent No. 3,035,247, dated May 15, 1962. Divided and this application Oct. 30, 1961, Ser. No. 148,682
2 Claims. (Cl. 340—252)



1. In a circuit for individually testing a plurality of multi coil relays;

a dual coil test relay;

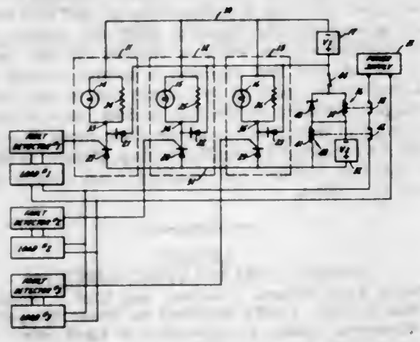
one coil of said dual coil test relay being connected in series with one of the coils of each multi coil relay;

a contact of said test relay shunting said one coil; and

means for actuating the second coil of said test relay, whereby said contact is opened removing the shunt from said first coil permitting said coil to maintain said test relay operated thereby indicating current flow in at least one of said multi coil relays.

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**3,171,112**
**FAULT INDICATOR CIRCUIT FOR POWER SUPPLY SYSTEM**
Raymond G. Martin, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 19, 1962, Ser. No. 174,324
2 Claims. (Cl. 340—253)



1. A protective circuit for interrupting the voltage supplied to a plurality of circuits during an abnormal condition and for indicating the particular circuit in which the abnormality occurred comprising:

(*a*) plurality of circuits to be protected,

(*b*) a power supply connected to said plurality of circuits to be protected,

(*c*) a first source of direct current voltage,

(*d*) a plurality of indicating lamps one each for each circuit to be protected, said lamps being connected in parallel across said first source of direct current voltage,

(*e*) a second source of direct current voltage,

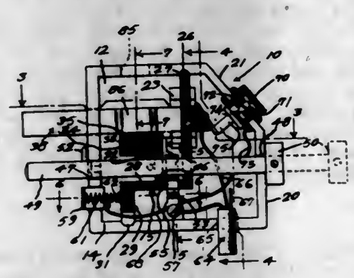
(*f*) a plurality of silicon controlled rectifiers each having an anode, a cathode, and a gate electrode, each said anode being connected to said second source of direct current voltage and said cathodes being connected one each to each said indicating lamps,

(*g*) a plurality of signal means connected one each between each gate electrode and each circuit to be protected whereby an abnormal condition in a particular circuit of a plurality of circuits causes a signal to be applied to the gate electrode connected to said particular circuit having an abnormal condition thereby permitting current flow from said second source of direct current voltage through said indicating lamp which is connected to the cathode of the silicon controlled rectifier whose gate electrode received the applied signal, and

(*h*) means disconnecting said power supply from said plurality of circuits to be protected upon the occurrence of an abnormal condition in said plurality of circuits to be protected.

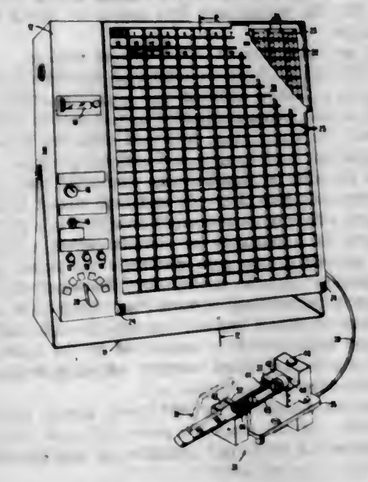
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**3,171,113**
**ELECTRIC PLUG WITH GROUND INDICATING LIGHT**
James K. McNamara, Box 473, Campbell Hall, N.Y.
Filed Jan. 2, 1962, Ser. No. 163,692
6 Claims. (Cl. 340—255)



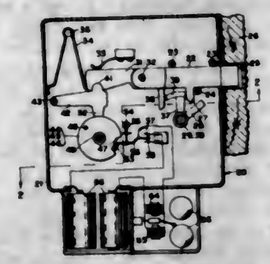
1. An electric plug including a casing, a pair of spaced blade contacts projecting from said casing and adapted to be electrically connected to two conductor wires of an electric cord leading from the casing for completing an electric circuit through said wires when the blades are received in and electrically connected to an electrical outlet receptacle, a ground contact slidably mounted in and spring urged outwardly of a part of the casing and adapted to be electrically connected to a third ground wire of the electric cord, said ground contact being disposed relative to said blades to engage an electrically grounded part of the receptacle when the blades are electrically connected thereto, and a testing unit supported by said casing including an electrically energized signal electrically connected to said ground contact and a movable contact electrically connected to the signal and selectively engageable with said blades for completing an electric circuit between one of the blades and the ground contact to indicate grounding of the third wire.

3,171,114
## AUTOMATIC PROGRAMMER
Richard A. Butler, Hopewell Junction, and Robert H. Cadwallader, Joseph J. Isole, Jr., and Gerr Park, all of Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 3, 1961, Ser. No. 80,319
2 Claims. (Cl. 340—267)



1. In an apparatus for aiding in the assembling of a device, a display board having a plurality of lamps located thereon, an interchangeable translucent sheet superimposed over said lamps, said sheet being laid out in areas complementary to said lamps, and carrying notations as to the number of operations and procedures involved in assembling said device, a jig for holding said device during assembly, contacts closed by the movement of said jig during assembly of said device, a rotary switch actuated by said contacts for sequentially lighting said lamps thereby indicating the number of operations performed; and a second rotary switch having contacts connected to lamps indicating procedure, said second switch being actuated by a circuit from said first switch to step said second switch to light one of said lamps to indicate a change of procedure upon completion of a predetermined number of movements of said jig.

3,171,115
## COMBINATION LOCK AND SIGNAL MEANS
Rocco Calabro, 2215 Bronxwood Ave., Bronx, N.Y.
Filed Nov. 14, 1960, Ser. No. 68,948
7 Claims. (Cl. 340—274)



1. A combination lock comprising, in combination, a housing, a retractable locking bolt in said housing, first means operating said bolt from either side of said housing, holding means securing said bolt in its locked position, said holding means having a rotatable shaft, third means on said shaft moving said holding means into locking and unlocking position, fourth means for rendering said holding means inoperative in the unlocking position, and alarm signal means arranged in said housing for indicating rotation of said shaft in either direction, and mechanical means on said shaft for operating said alarm signal means when said shaft is rotated in either direction.

3,171,116
## COMBINED DOOR SIGNAL AND MAIL INDICATOR SYSTEM
Thomas S. Conigliaro, 3690 Main St., Bridgeport, Conn., assignor of one-half to Nicholas Conigliaro, Carbondale, Pa.
Filed Sept. 13, 1961, Ser. No. 137,766
17 Claims. (Cl. 340—281)

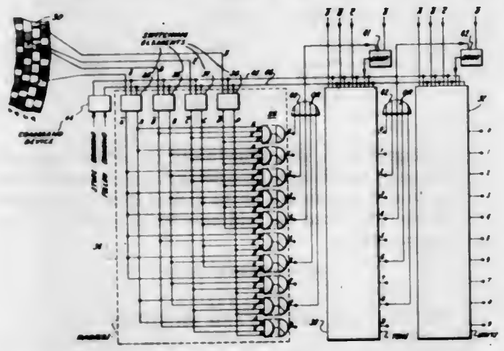


13. A combined door signal and mail indicator system comprising a two-wire energized door signal line having series connected to it an A.C. energizing means and also connected to it an electrical control including a push-button series connected in the line; a mail box controlled circuit comprising a mail box switch and a first rectifier series-connected to the switch, for effecting a rectified voltage; means connecting said mail box controlled circuit in parallel with the electrical control, said mail box switch being responsive to operation of the mail box to cause a rectified voltage in the signal line; an audible electric door signal and control means including a second rectifier and means connecting the second rectifier and signal in series with each other and with the signal line, rendering the signal inoperative when the line has the rectified voltage as effected by the mail box switch being closed, said control means enabling operation of the audible signal to occur when the push button is closed to effect non-rectified current through said electrical control which is independent of said first rectifier, said second rectifier blocking from the audible signal any rectified voltage which is effected through the mail box switch and first rectifier; a second electric signal adapted to be operated by current due to said rectified voltage as effected by the first rectifier; and means connecting the second signal to the door signal line to enable it to respond to rectified voltage therein as effected by the first rectifier and resulting from closing of the mail box switch.

3,171,117
## DIGITAL TRANSLATING CIRCUITS
Merton Carr Wilson, Pasadena, and Carl P. Spaulding, San Marino, Calif., assignors to Datex Corporation, Monrovia, Calif., a corporation of California
Filed Aug. 14, 1959, Ser. No. 833,777
3 Claims. (Cl. 340—347)

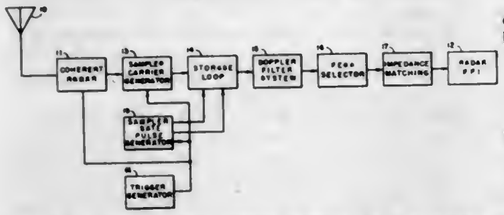
3. In combination, a source of cyclic binary coded decimal signals representative of a decimal number having a plurality of decimal orders, a plurality of transistor switching elements for each decimal order connected as monostable circuits in parallel circuit relationship with said source to be continuously responsive to said binary coded signals, said switching elements each having a pair of output circuits for electrically indicating the binary character of the received signal and its binary complement, a control gate for each decimal number of each decimal order connected to be responsive to a preselected combination of the pair of signals from said switching elements, each of said gates having a single output circuit and four input circuits connected to be coincidentally responsive to a different combination of binary coded dec-





imal signals derived from the output circuits of said switching elements to provide a unique output signal representative of the decimal digit provided by said source, and circuit means connected into the input circuit for each decimal order except the highest to complement the same binary character in each decimal order received from said source to cause a translation from a cyclic binary coded decimal to a binary coded decimal, said circuit means including means responsive to the signals representative of the even numbered digits from a higher decimal order in combination with said same binary character, and means responsive to each decimal signal for translating same to binary coded signals arranged in terms of the 8421 notation.

3,171,118
## DELAY LINE STORAGE SYSTEM
Torrence H. Chambers, Washington, D.C., and Lawrence F. Kalnoskas, Glassmanor, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 3, 1961, Ser. No. 107,599
15 Claims. (Cl. 343—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

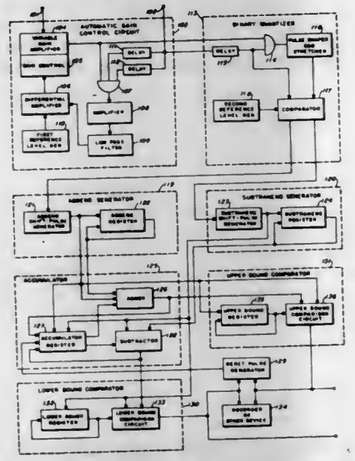



1. In an object locator system wherein periodic signals are analyzed to obtain location information, a signal recirculation loop having a finite recirculation time shorter than the period of the periodic signals by selected interval of time, means which may include part of said loop for periodically gating said loop to terminate the recircula-



tion of selected signals and apply new periodic signals thereto, and a plurality of frequency selective filters connected to said loop for deriving output signals therefrom in a plurality of channels in dependency on frequency.

3,171,119
## BINOMIAL SEQUENTIAL DETECTOR
Carlos Nuese and James W. Caspers, both of San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 11, 1961, Ser. No. 144,518
9 Claims. (Cl. 343—5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A binomial sequential detector comprising; signal input means for receiving video from a radar system receiver; binary quantizer means including reference level means for comparing said video against a reference level adapted to produce an addend output pulse when said video is equal to or greater than said reference level and a subtrahend pulse when said video is less than said reference level; accumulator means having a preset level for storing and counting said addend and subtrahend pulses, and comparison means for determining when the output of said accumulator means equals and exceeds a predetermined upper bound and lower bound set in said accumulator means where the upper bound is a number proportional to

$$\log\left(\frac{1-\beta}{\alpha}\right)$$

and the lower bound is a number proportional to

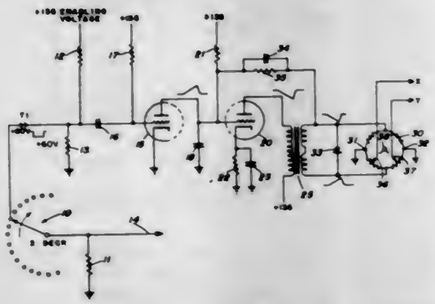
$$\log\left(\frac{\beta}{1-\alpha}\right)$$

$\alpha$ being the desired probability of a false alarm and $\beta$ being the desired probability of a miss.

3,171,120
## CLEARANCE LINE GENERATING SYSTEM
Theodore L. Beeler, New Hartford, N.Y., and Leighton B. Cooke, Winston-Salem, N.C., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 12, 1962, Ser. No. 210,608
6 Claims. (Cl. 343—5)

4. A clearance line generating circuit for displaying lines on a PPI scope that represent the clearance conditions of a weapon comprising a first amplifier circuit having an input and an output; an enabling voltage source coupled to the input of said first amplifier; said enabling

voltage delivering a voltage pulse to the input of said first amplifier periodically by a switching means for providing said first amplifier to be cut-off for the duration of the switch closure and to conduct upon switch opening; a capacitor connected to said output of said first amplifier for providing a sawtooth voltage pulse; a second amplifier having an input and an output; said second amplifier receiving the sawtooth voltage at its input; a transformer means having primary and secondary windings with said primary winding connected for receiving the output of said second amplifier; feedback network means coupled to one side of said secondary winding for providing a feedback voltage to the input of said second amplifier to improve amplifier operation; and a sine-cosine potentiometer coupled across said secondary winding for providing two output voltages, one which is proportional to the sine function of the input voltage and the other which is proportional to the cosine function.

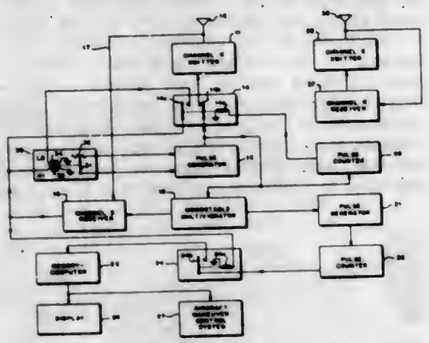


5. A system for displaying the degree of obstruction to shipboard weapons systems offered by the ship's superstructure on a PPI scope as the region bound by two radial clearance lines comprising a time-sharing switch having open and closed positions; first and second line generating circuits sequentially and periodically activated by closure of said time-sharing switch; each of said line generating circuits including means for developing and amplifying a saw-tooth voltage function only when energized by closure of said time-sharing switch; a sine-cosine potentiometer coupled to receive the sawtooth voltage for converting said sawtooth voltage into sine and cosine signal components; and a PPI scope coupled to display said sine-cosine signal components.

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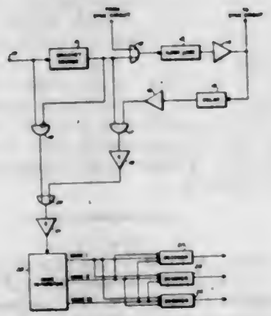
**3,171,121**
**AIRCRAFT COLLISION WARNING SYSTEM**
**Joseph A. Solga, 103 Lee Ave., Alexandria, Va.**
**Filed Feb. 13, 1963, Ser. No. 258,360**
**8 Claims. (Cl. 343—6.5)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

1. In a collision warning device:
transmitter means transmitting an interrogating pulse at a predetermined pulse repetition frequency,
receiver means for receiving an answer pulse to said interrogating pulse,
multivibrator means connected to said receiver means gating said receiver means on for a predetermined period following each transmitted interrogating pulse,
counter means connected to said receiver means providing a count proportional to the time interval between transmission of an interrogating pulse and receipt of an answer pulse during the gate-on interval of said receiver means,
computer means connected to said counter means for comparing successive counts within said counter providing an output when the difference between successive counts is constant,
display means connected to said computer means providing an indication when the difference between successive counts is constant, said counter means comprising: a pulse generator turned on by said interrogating pulse, a counter to count pulses from said pulse generator, and switch means to send to said computer means the count on said counter at receipt of an answer pulse.



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**3,171,122**
**IFF SYSTEM DEFRUITER MODIFICATION**
**Bernarr H. Humpherys, Escondido, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 22, 1963, Ser. No. 274,881**
**5 Claims. (Cl. 343—6.5)**
**(Granted under Title 35, U.S. Code (1952), sec. 266)**

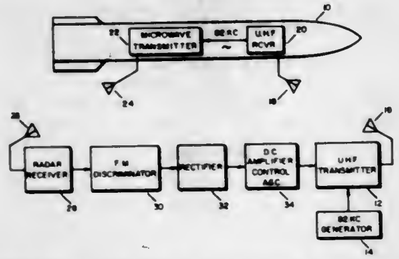


1. An IFF defruiter modification comprising:
bracket decode means for decoding selected pulses of an interrogation reply train and having inputs and outputs;
one of said inputs being adapted for receiving IFF video;
delay means operatively connected to an output of said bracket decode means for delaying the output of said bracket decode means by an amount comprising at least one reply train length;
coincidizing means having inputs and an output;
one input to said coincidizing means being operatively connected to the output of said delay means, another input of said coincidizing means being operatively connected to an output of said bracket decode means;
said coincidizing means being operable to produce an output pulse therefrom when outputs from said delay means and said bracket decode means are present at the inputs simultaneously;
another coincidence means having inputs and an output therefrom;
one input of said another coincidence means being adapted for receiving IFF video;
another input of said other coincidizing means being operatively coupled to the output of said bracket decode means and corresponding to an inhibit pulse on said coincidizing means;
said another coincidence means being operable to produce no output when an output from said bracket decode means is present at said input;
said output pulse from said first mentioned coincidizing means being operative to provide an enabling pulse for a decoding operation on said received IFF video.



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**3,171,123**
**RADIO BEACON SYSTEM**
**Joel S. Spira, New York, N.Y., assignor to Maxson Electronics Corporation, a corporation of New York**
**Filed Oct. 28, 1959, Ser. No. 849,385**
**7 Claims. (Cl. 343—6.8)**

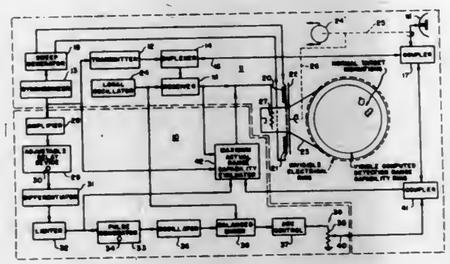



1. A radar beacon system comprising a first transmitter including means for generating a carrier wave, means for amplitude modulating the carrier wave of said first transmitter with a signal of constant frequency, a remote beacon including a radio receiver for receiving said carrier wave and having a detector for extracting the modulation signal therefrom, a second transmitter connected to said remote receiver and including means for generating a carrier wave and means for frequency modulating said carrier wave in accordance with the amplitude of the output signal of said remote receiver, means for radiating the output of said second transmitter, a frequency modulation receiver for receiving the frequency modulated carrier wave from said second transmitter and means responsive to the output of said frequency modulation receiver for controlling the first mentioned transmitter to vary the amplitude of the carrier wave output thereof in accordance with the frequency deviation of the received frequency modulated carrier wave.

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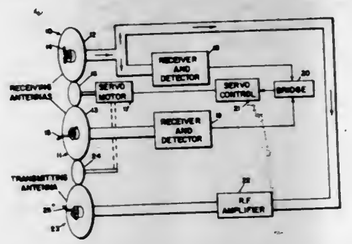
**3,171,124**
**RADAR PERFORMANCE MONITOR**
**Robert E. Dilks, Claremont, Bill E. Corrons, Montclair, and John A. Ihm, Claremont, Calif., and Robert G. Curtis, Scottsdale, Ariz., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware**
**Filed June 1, 1960, Ser. No. 33,313**
**12 Claims. (Cl. 343—17.7)**

1. A radar performance monitor for a radar system having transmitter means for generating transmitted pulses of radio frequency energy, receiver means for detecting echo signals reflected by objects in the path of said transmitted pulses and indicator means for visually displaying said objects, said monitor comprising signal generator means for producing a signal indicative of the maximum attainable range capability of said radar system in said receiver means while said radar system is operating, means connected to said receiver means and responsive to changes in noise signal magnitude above a predetermined level in the output of said receiver means for inversely varying the magnitude of said signal appearing in the output of said receiver means in accordance with said changes to reflect maximum actual range capability of said radar system due to noise in said system, means connected to said transmitter means responsive to variations in the power magnitude of said transmitted pulses below a predetermined level for directly varying the magnitude of said signal appearing in the output of said receiver means in accordance with said variations to reflect maximum actual range capability due to power changes of said transmitter means, and means for displaying said varied signal on said indicator means to provide thereon a continuous visual display of the maximum actual range capability of said radar system while said system is in operation.



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**3,171,125**
**RADAR COUNTERMEASURES ANTENNA SYSTEM**
**Jesse L. Butler, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware**
**Filed Oct. 5, 1961, Ser. No. 143,117**
**8 Claims. (Cl. 343—18)**



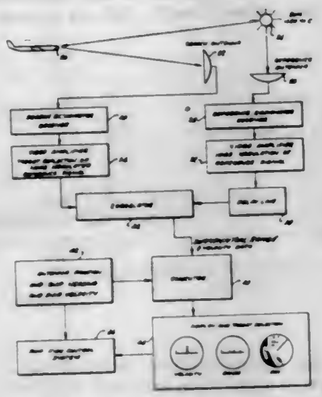

1. A countermeasures system for the deception of a radar system of the type which transmits polarized electromagnetic energy, the countermeasures system comprising an electromagnetic energy radiator for radiating polarized waves, means for supplying to the radiator wave energy for transmission, and means for orienting the radiator to cause its radiated energy to be cross polarized relative to the polarization of a true radar return.

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**3,171,126**
**PASSIVE DETECTION AND RANGING SYSTEM**
**Carl A. Wiley, Phoenix, Ariz., assignor to Giannini Scientific Corp., a corporation of Delaware**
**Filed Apr. 14, 1961, Ser. No. 103,019**
**16 Claims. (Cl. 343—112)**

1. A passive detection and ranging system, comprising: reference antenna means for sensing direct radiation produced by an external noise modulated source and generating a reference output signal; search antenna means for sensing reflected radiation from a target illuminated by said external source radiation and generating a target output signal; means for receiving and amplifying said

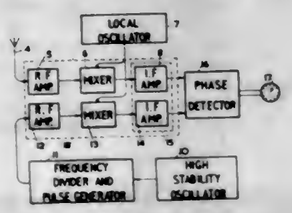
reference output signal; means for receiving and amplifying said target output signal; means for providing a differential time delay between said output signals; and a correlator for correlating said amplified reference and



target output signals to produce a coherent noise correlated output signal indicating the differential range between the signals produced by direct and reflected radiation.

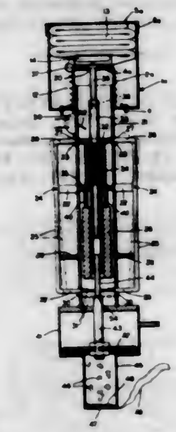
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**3,171,127**
**RADIO NAVIGATION APPARATUS**
**John Dimitri Asteraki, 20 Loring Road, Shenbrook, Bedfordshire, England; Charles Reginald Nowell Barnard, "Meirion," Boundary Road, Farnborough, Hampshire, England; and Aden Noel Beresford, 39 Tivoli Road, Cheltenham, Gloucestershire, England**
**Filed Oct. 2, 1962, Ser. No. 227,754**
**2 Claims. (Cl. 343—112)**




1. Radio navigation apparatus for obtaining a measure of the distance traveled by a mobile craft with respect to a transmitter of high frequency stability comprising: a high stability reference oscillator means for generating a reference signal; a superheterodyne type receiver having a first channel for receiving a first signal from said transmitter and a second channel for receiving a second signal from said reference oscillator, said first and second channels being closely similar whereby any phase disturbances of the signals therein are also closely similar; a mixer stage in each of said channels; a local oscillator common to each said mixer stage; phase detector means fed respectively from said first and second channels of the receiver and affording an output dependent upon the phase difference between said first and second signals; and a temperature controlled oven enclosing at least those temperature-sensitive components of said first and second channels which have an effect on the phases of the signals passing through said channels.

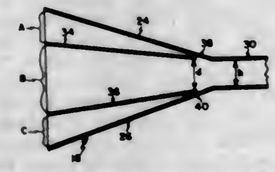
**3,171,128**
**EMERGENCY ANTENNA HAVING BALLOON MEANS TO ERECT ANTENNA AUTOMATICALLY IN RESPONSE TO IMPACT OR IMMERSION**
**Owen M. Shattuck, 1747 Sherrick Drive SE., Canton, Ohio, assignor of one-sixth each to Myron W. Nixon and Frank Howard, Jr., and one-third to Frank S. Hertzig, all of Canton, Ohio**
**Filed Nov. 8, 1962, Ser. No. 236,253**
**6 Claims. (Cl. 343—706)**



1. An emergency antenna construction comprising a container having an open upper end, a removable cap for said open upper end of the container, a spool extending upward from the bottom of the container to a point spaced from said cap, a flexible conductor coiled upon said spool, one end of said conductor being fixed to the container, a collapsed balloon attached to the other end of said conductor, a rubber-like capsule of compressed lighter-than-air gas in said balloon, said balloon being located within the container between the cap and the top of the spool, a spring-biased plunger located longitudinally relative to said spool, means operated by said plunger for releasing gas from said capsule to inflate the balloon whereby the inflated balloon will remove the cap from the container and will rise therefrom uncoiling said conductor from said spool, spring-loaded lever means normally holding said spring-biased plunger inoperative, a spring-suspended weight for tripping said spring-loaded lever means under certain conditions, and a gas-pressure-operated piston for tripping said spring-loaded lever means under certain other conditions.

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**3,171,129**
**LOW SIDE LOBE HORN ANTENNA WITH INTERNAL CONDUCTIVE PLATES**
**Joseph M. Nowakowski, Seattle, Wash., and Earl E. Swartz, Utica, Mich., assignors to The Bendix Corporation, Southfield, Mich., a corporation of Delaware**
**Filed Dec. 29, 1961, Ser. No. 163,118**
**4 Claims. (Cl. 343—786)**



1. Antenna apparatus for terminating a feeding waveguide having a mouth comprising



a horn type structure having a four sided enclosure forming a throat end and aperture end, said throat end being connected to said feeding waveguide mouth,

at least two sides of said horn structure being divergent,

two plate members each having an outer end and an inner end being in said horn structure, said plate members and divergent sides being positioned so that they are substantially perpendicular to a common plane,

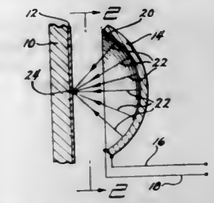
said plate members being positioned at the aperture end of said horn structure, so that the aperture is divided into three sections having sizes substantially in the ratio of 25–50–25,

the total volume of said plate members being less than the total unoccupied volume within said horn.

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**3,171,130**
**MAGNETIC RECORDING**
**Donald M. Humphreys, Livonia, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Nov. 20, 1961, Ser. No. 153,361**
**14 Claims. (Cl. 346—74)**

5. In combination: a piezoelectric crystal capable of vibrating during the period of time that an electromotive force is applied to said crystal, whereby a wave beam is produced by said crystal, said wave beam being transmitted through the ambient; said crystal having a wave beam emitting face concavely curved in the shape of a segment of a sphere causing said wave beam to converge to a focal point coincident with the center of the sphere; and a record medium having a magnetic surface thereon




which has been premagnetized to a predetermined level, said record medium being translated in relation to said crystal at a distance therefrom such that said wave beam impinges upon the magnetic surface at said focal point; whereby some portions of said surface are selectively demagnetized by the mechanical shock induced by said wave beam, and the remaining of said surface is left substantially undisturbed.

# DESIGNS

## FEBRUARY 23, 1965

200,392
COMBINATION RAZOR AND BLADE HOLDER
Paul Hess, 1040 Hollywood Ave., Chicago, Ill.
Filed Oct. 11, 1963, Ser. No. 76,944
Term of patent 14 years
(Cl. D4—3)



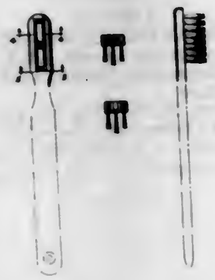
200,393
HEADBOARD FOR A BED
William Joseph Carr, Gardner, Mass., assignor to Heywood-Wakefield Company, Gardner, Mass., a corporation of Massachusetts
Filed Mar. 25, 1964, Ser. No. 79,173
Term of patent 14 years
(Cl. D5—4)



200,394
SHOELACE KNOT RETAINER
Albert S. Hakim, Monroe, La.
Filed Feb. 25, 1964, Ser. No. 78,774
Term of patent 14 years
(Cl. D7—6)



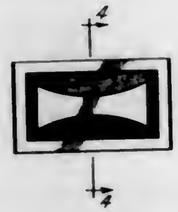
200,395
TOOTHBRUSH
Aaron House Brennesholtz, Ridgewood, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 29, 1963, Ser. No. 75,999
Term of patent 14 years
(Cl. D9—2)



200,396
CABINET PULL OR SIMILAR ARTICLE
Dean W. Myers and Luis E. Smith, Newport Beach, Calif., assignors to Jaybee Manufacturing Corp., Los Angeles, Calif., a corporation of California
Filed June 3, 1963, Ser. No. 75,184
Term of patent 14 years
(Cl. D10—8)



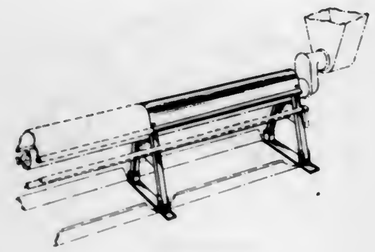

200,397
CABINET PULL OR SIMILAR ARTICLE
Dean W. Myers and Luis E. Smith, both of Newport Beach, Calif., assignors to Jaybee Manufacturing Corp., Los Angeles, Calif., a corporation of California
Original design application June 3, 1963, Ser. No. 75,184. Divided and this application Jan. 13, 1964, Ser. No. 78,584
Term of patent 14 years
(Cl. D10—8)



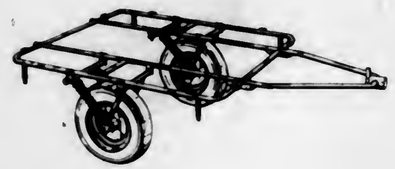





200,398
STOCK FEEDER SUPPORT UNIT
Marvin D. Van Peursem and Albert M. Best, Lancaster, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Oct. 9, 1962, Ser. No. 72,053
Term of patent 14 years
(Cl. D12—2)



200,399
TRAILER CHASSIS
Eric George Alexander Gill, Acton, London, England, assignor to Skylux Limited, London, England
Filed Feb. 28, 1964, Ser. No. 78,820
Claims priority, application Great Britain Dec. 4, 1963
Term of patent 14 years
(Cl. D14—3)



200,400
REFUSE CONTAINER CARRIER
Hugh E. Cooper, Rochelle, Ill., assignor to Anson Tool and Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 24, 1964, Ser. No. 79,678
Term of patent 14 years
(Cl. D14—3)



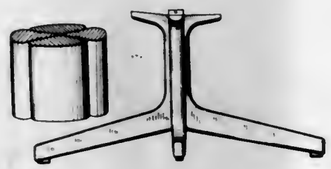
200,401
DOLLY FOR RETREADING MOLDS AND OTHER WHEEL-LIKE ARTICLES
Rudolph E. Olson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 26, 1964, Ser. No. 82,317
Term of patent 14 years
(Cl. D14—3)



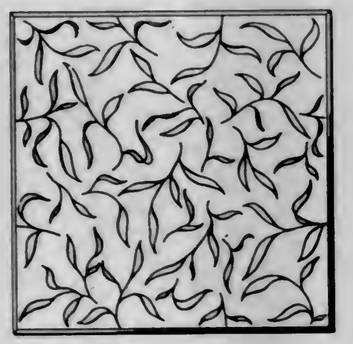
200,402
HANDLED STEERING WHEEL
John T. Le Rose, 35—35 72nd St., New York, N.Y.
Filed Apr. 20, 1964, Ser. No. 79,616
Term of patent 3½ years
(Cl. D14—30)



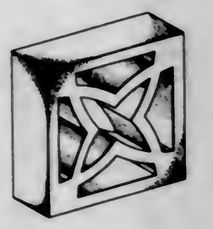
200,403
FURNITURE BASE
Donald C. Petitt, New York, N.Y., assignor to Knoll Associates, Inc., New York, N.Y., a corporation of New York
Filed Nov. 27, 1963, Ser. No. 77,582
Term of patent 14 years
(Cl. D15—1)



200,404
CEILING TILE OR SIMILAR ARTICLE
Philip M. Brody, 170 Boulevard, Scarsdale, N.Y., and Frederic H. Rahr, 1 East End Ave., New York, N.Y.
Filed Jan. 24, 1963, Ser. No. 73,298
Term of patent 14 years
(Cl. D18—2)



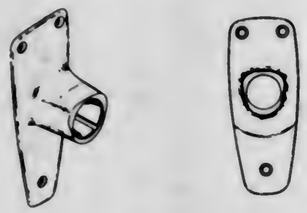
200,405
BLOCK
Thomas J. Stoy, Clearfield, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 26, 1963, Ser. No. 75,537
Term of patent 14 years
(Cl. D18—2)



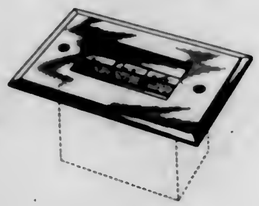
200,406
BRASSIERE
Edward E. Astor, Fort Lee, N.J., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 74,096
Term of patent 14 years
(Cl. D20—4)



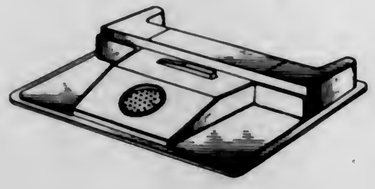
200,407
WALL FLANGE FOR SHOWER CURTAIN ROD
Herbert H. Wessel, Haverford Township, Delaware County, Pa., assignor to Wessel Hardware Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1963, Ser. No. 73,837
Term of patent 14 years
(Cl. D21—1)



200,408
COMBINED OUTLET BOX AND ESCUTCHEON PLATE WITH RECESSED PUSH-BUTTONS FOR A TABLE TOP OR SIMILAR ARTICLE
Marshall F. Thompson, 3112 W. Marshall St., Richmond, Va.
Filed Jan. 29, 1964, Ser. No. 78,407
Term of patent 14 years
(Cl. D26—13)

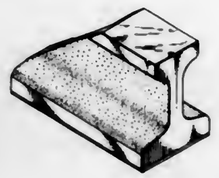


200,409
CONTROL PLATE FOR MAGNETIC RECORDING AND REPRODUCING MACHINE
Robert C. Zimmermann, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 7, 1964, Ser. No. 79,386
Term of patent 14 years
(Cl. D26—14)





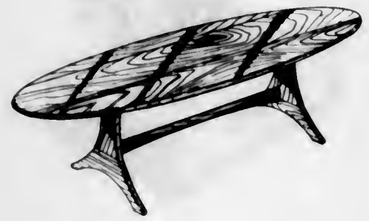
200,410
BOOK END
Crawford K. Stillwagon, 5325 Kirby Drive, Houston, Tex.
Filed Nov. 1, 1961, Ser. No. 67,345
Term of patent 14 years
(Cl. D33—3)



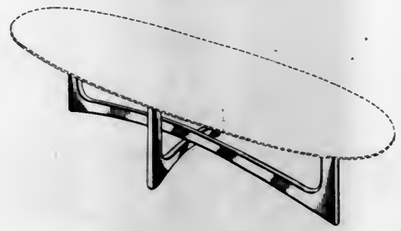
200,411
SEWING MACHINE CABINET OR SIMILAR ARTICLE
Edward W. Stanton, Cranford, and Henry J. Milan, Clark, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 18, 1963, Ser. No. 75,867
Term of patent 14 years
(Cl. D33—12)



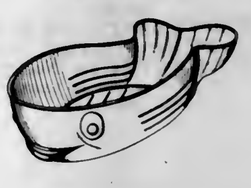
200,412
COFFEE TABLE
William Joseph Carr, Gardner, Mass., assignor to Heywood-Wakefield Company, Gardner, Mass., a corporation of Massachusetts
Filed Mar. 25, 1964, Ser. No. 79,191
Term of patent 14 years
(Cl. D33—14)



200,413
TABLE
Adrian M. Pearsall, Forty Fort, Pa., assignor to Craft Associates, Inc., Wilkes-Barre, Pa., a corporation of Pennsylvania
Filed June 10, 1964, Ser. No. 80,353
Term of patent 14 years
(Cl. D33—14)



200,414
DISPLAY CONTAINER OR SIMILAR ARTICLE
Albert E. Karp, 196—19 55th Ave., Flushing, N.Y.
Filed Feb. 1, 1962, Ser. No. 68,613
Term of patent 14 years
(Cl. D34—2)



200,415
HAND EXERCISING WEIGHT
Elmer L. Tarbox, Big Spring, Tex. (P.O. Box 5426, Lubbock, Tex.)
Filed May 14, 1962, Ser. No. 70,127
Term of patent 14 years
(Cl. D34—5)



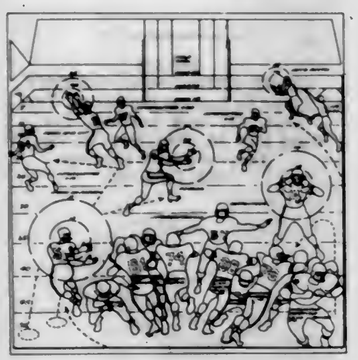
200,416
GOLF PUTTER HEAD
Joseph H. Lecah, 5120 Marcillus, El Paso, Tex.
Filed Oct. 7, 1963, Ser. No. 76,878
Term of patent 14 years
(Cl. D34—5)



200,417
CARRIER FOR GOLF EQUIPMENT
Harry J. Miele, 233 W. 3rd St., Williamsport, Pa.
Filed Dec. 27, 1963, Ser. No. 77,942
Term of patent 14 years
(Cl. D34—5)



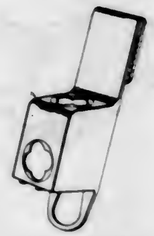
200,418
FOOTBALL DART GAME BOARD
Roger C. Olson, 297 Reservoir Road, Newington, Conn.
Filed Feb. 24, 1964, Ser. No. 78,739
Term of patent 14 years
(Cl. D34—5)



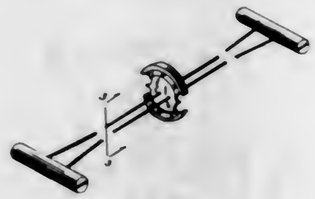
200,419
GOLF CLUB HEAD
George A. Phillips, 2838 Cataract Place, El Cajon, Calif.
Filed Mar. 4, 1964, Ser. No. 78,875
Term of patent 14 years
(Cl. D34—5)



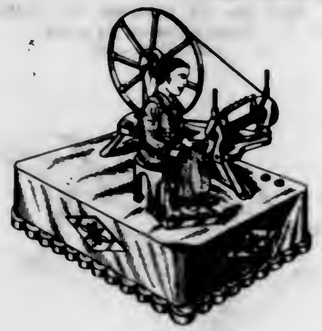
200,420
BELT-SUPPORTED GOLF BALL CARRIER
Verne N. Price, 2048 Petaluma Ave., Long Beach, Calif., assignor of one-half to Dave Davis, Long Beach, Calif.
Filed June 23, 1964, Ser. No. 80,538
Term of patent 14 years
(Cl. D34—5)



200,421
STRING SUPPORTED SPINNING TOY
Robert Ruf, 9923 S. Winston Ave., Chicago 43, Ill.
Filed Feb. 26, 1964, Ser. No. 78,792
Term of patent 7 years
(Cl. D34—15)

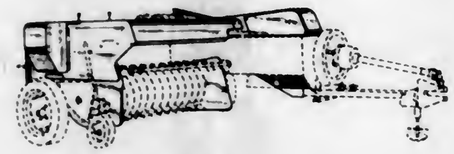


200,422
COMBINED SPINNING WHEEL AND ANIMATED FIGURE TOY OR SIMILAR ARTICLE
Robert H. Jarpey, 1286 W. 29th St., Los Angeles, Calif.
Filed Feb. 28, 1964, Ser. No. 78,825
Term of patent 3½ years
(Cl. D34—15)





200,423
HAY BALER
Constantine J. Kermes, Lancaster, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 78,240
Term of patent 14 years
(Cl. D40—1)



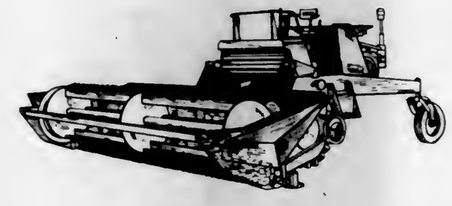
200,424
COMBINED LAWN EDGER FRAME AND SUPPORTING WHEELS THEREFOR
Marvin W. Bayless, Sr., Fairborn, Ohio, assignor to The Huffman Manufacturing Company, Dayton, Ohio, a corporation of Ohio
Filed Mar. 10, 1964, Ser. No. 78,953
Term of patent 14 years
(Cl. D40—1)



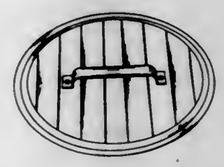
200,425
FINGER-HELD FRUIT STEM CUTTER
Harry Jordan, 83067 Reona St., Indio, Calif.
Filed May 15, 1964, Ser. No. 79,992
Term of patent 7 years
(Cl. D40—1)



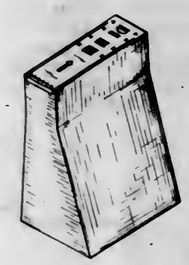
200,426
SWATHER
Constantine J. Kermes, Lancaster, Earl E. Koch, Mohnton, and Lawrence M. Halls, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 14, 1964, Ser. No. 81,288
Term of patent 14 years
(Cl. D40—1)



200,427
FRYING PAN LID
Ruth F. Merrick, San Diego, Calif.
(3857 Hazelwood Ave., Las Vegas, Nev.)
Filed July 31, 1964, Ser. No. 81,100
Term of patent 14 years
(Cl. D44—1)



200,428
DISPENSER FOR GRANULAR MATERIALS OR THE LIKE
Hans Merkel, Ruthmanninstrasse 5/5a, Nurtingen, Germany
Filed Feb. 18, 1964, Ser. No. 78,682
Term of patent 14 years
(Cl. D44—22)



200,429
COMBINED FUNNEL AND DISPENSER DEVICE
Lucille L. Worden, 814 15th Ave. W., Williston, N. Dak.
Continuation of design application Ser. No. 77,558, Nov. 26, 1963. This application Aug. 21, 1964, Ser. No. 81,400
Term of patent 14 years
(Cl. D44—29)



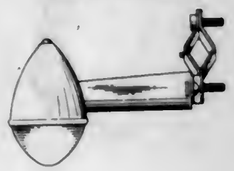
200,430
FINGER RING
Adolph Katz, Providence, R.I., assignor to Coro, Inc. of Rhode Island, Providence, R.I., a corporation of Rhode Island
Filed Jan. 13, 1964, Ser. No. 78,173
Term of patent 3½ years
(Cl. D45—10)



200,431
DIRECTION INDICATOR FOR A BICYCLE
Colin Cameron Smades, 43 Victoria Ave., Milton, Ontario, Canada
Filed May 6, 1963, Ser. No. 74,745
Term of patent 3½ years
(Cl. D48—32)



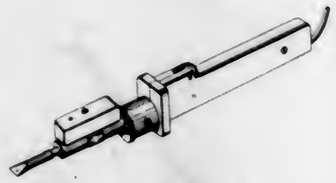
200,432
DIRECTION INDICATOR FOR A BICYCLE
Colin Cameron Smades, 43 Victoria Ave., Milton, Ontario, Canada
Filed May 6, 1963, Ser. No. 74,746
Term of patent 3½ years
(Cl. D48—32)



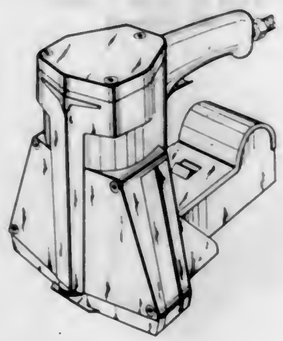
200,433
COMBINED DOOR LOCK HOUSING AND HANDLE THEREFOR
Berwyn E. Etter, 3120 46th Ave. N., St. Petersburg, Fla.
Filed Apr. 15, 1964, Ser. No. 79,615
Term of patent 3½ years
(Cl. D50—5)



200,434
ROD CEMENT EXTRUDER
Albert E. Newton, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed July 29, 1963, Ser. No. 76,024
Term of patent 3½ years
(Cl. D54—13)

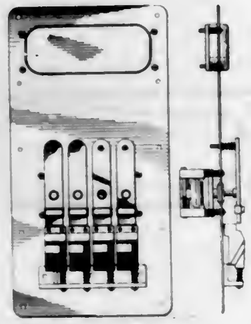


200,435
FLUID OPERATED CARTON CLOSER OR SIMILAR ARTICLE
Harry Preble, Cross River, N.Y., assignor to Speedfast Corporation, Long Island City, N.Y., a corporation of New York
Filed May 20, 1964, Ser. No. 80,073
Term of patent 14 years
(Cl. D54—13)

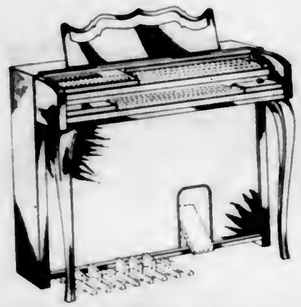




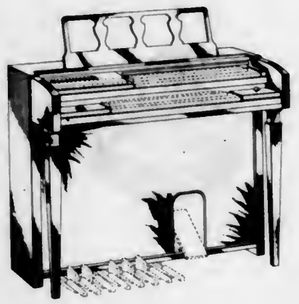
200,436
COMBINED BRIDGE AND PICK-UP UNIT FOR A GUITAR OR THE LIKE
James Ormston Burns, Buckhurst Hill, England, assignor to Ormston Burns Limited, Stamford Hill, London, England, a British company
Filed Oct. 23, 1963, Ser. No. 77,126
Claims priority, application Great Britain Apr. 25, 1963
Term of patent 14 years
(Cl. D56—1)



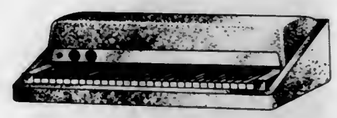
200,437
ORGAN CONSOLE
William Millington, Grand Rapids, Mich., and Wilbur M. Day, Cincinnati, Ohio, assignors to D. H. Baldwin Company, a corporation of Ohio
Filed Oct. 29, 1962, Ser. No. 72,286
Term of patent 14 years
(Cl. D56—2)



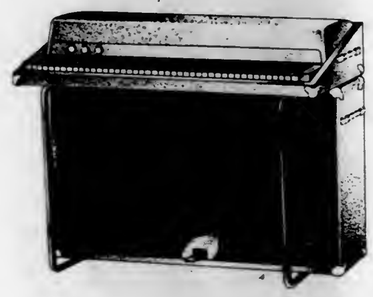
200,438
ORGAN CONSOLE
William Millington, Grand Rapids, Mich., and Wilbur M. Day, Cincinnati, Ohio, assignors to D. H. Baldwin Company, a corporation of Ohio
Filed Oct. 29, 1962, Ser. No. 72,287
Term of patent 14 years
(Cl. D56—2)



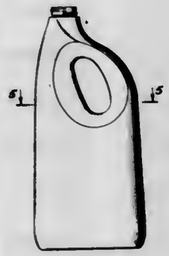
200,439
ELECTRIC PIANO
Harold B. Rhodes, 2443 Greenbriar St., Anaheim, Calif., assignor, by mesne assignments, of one-half to Fender-Rhodes, Inc., Fullerton, Calif., a corporation of California
Filed June 18, 1964, Ser. No. 80,469
Term of patent 14 years
(Cl. D56—9)



200,440
ELECTRIC PIANO
Harold B. Rhodes, 2443 Greenbriar St., Anaheim, Calif., assignor, by mesne assignments, of one-half to Fender-Rhodes, Inc., Fullerton, Calif., a corporation of California
Filed June 18, 1964, Ser. No. 80,470
Term of patent 14 years
(Cl. D56—9)



200,441
JUG
Boyd J. Hachten, Garden Grove, Alfred D. Sterges, Los Angeles, and Charles G. Brown, Palos Verdes Estates, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed July 20, 1964, Ser. No. 80,920
Term of patent 14 years
(Cl. D58—5)



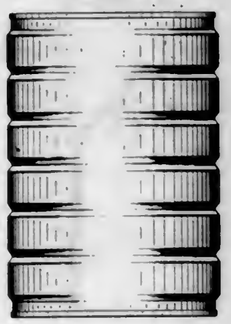
200,442
BOTTLE
Arnold I. Lorenzen, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Aug. 1, 1963, Ser. No. 76,863
Term of patent 14 years
(Cl. D58—6)



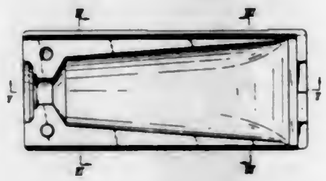
200,443
SHIPPING CONTAINER
James J. Deegan, Downers Grove, Ill., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed July 3, 1963, Ser. No. 75,656
Term of patent 14 years
(Cl. D58—11)



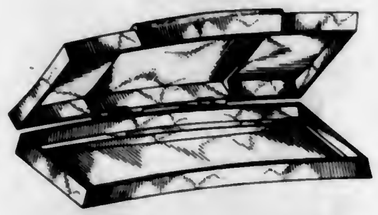
200,444
SHIPPING CONTAINER
Leonardus Arnoldus Nicolaas Bijvoet, Overveen, North Holland, and Heinrich Johann Steen, Delft, South Holland, Netherlands, assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed July 10, 1963, Ser. No. 75,726
Term of patent 14 years
(Cl. D58—11)



200,445
PACKAGING TRAY FOR A DISPENSING TUBE
George Edward Taplin, Waltham Cross, London, England, assignor to Gestetner Limited, London, England, a British company
Filed Dec. 19, 1963, Ser. No. 77,857
Claims priority, application Great Britain June 20, 1963
Term of patent 14 years
(Cl. D58—12.6)



200,446
BOX FOR JEWELRY OR THE LIKE
Jerome Shiffman, 128 Carthage Road, Scarsdale, N.Y.
Filed May 1, 1964, Ser. No. 79,761
Term of patent 7 years
(Cl. D58—12.7)

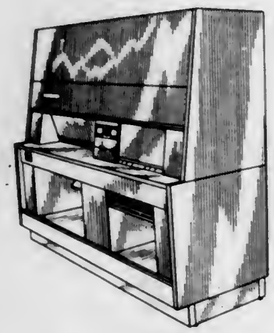


200,447
CAP OR SIMILAR ARTICLE
Herman B. Lorner, 3 Cherrywood Circle, West Orange, N.J.
Filed Dec. 2, 1963, Ser. No. 77,642
Term of patent 14 years
(Cl. D58—26)





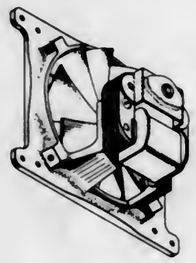
200,448
DOCUMENT REPRODUCING APPARATUS
John Rutkus, Jr., 2128 Baird Road, Penfield, N.Y.
Filed Jan. 2, 1964, Ser. No. 78,007
Term of patent 14 years
(Cl. D61—1)



200,449
PHOTOGRAPHIC PROCESSING APPARATUS
Joel W. Brave, 78 Broad Ave., Binghamton, N.Y.
Filed Mar. 2, 1964, Ser. No. 78,841
Term of patent 14 years
(Cl. D61—1)



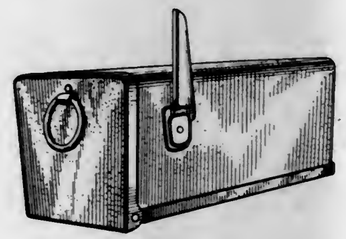
200,450
COMBINED FAN AND MOUNTING BRACKET FOR COOLING ELECTRONIC EQUIPMENT AND THE LIKE
Lloyd R. Bowen, 3968 Waterhouse Road, Oakland, Calif.
Filed Aug. 9, 1962, Ser. No. 71,230
Term of patent 14 years
(Cl. D62—4)



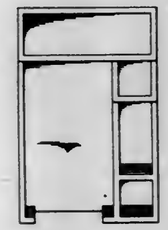
200,451
ADDING MACHINE OR SIMILAR ARTICLE
Hans Robert Suhr, Yokohama, and Masatomo Sugiyama and Izumi Yamanaka, Hiratsuka, Japan, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed May 27, 1963, Ser. No. 75,084
Term of patent 14 years
(Cl. D64—11)



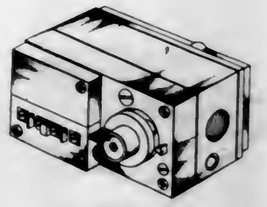
200,452
MAILBOX
Alan W. Duncan, Itasca, and Joseph A. Burlini, Morton Grove, Ill., assignors to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Apr. 22, 1963, Ser. No. 74,568
Term of patent 14 years
(Cl. D74—9)



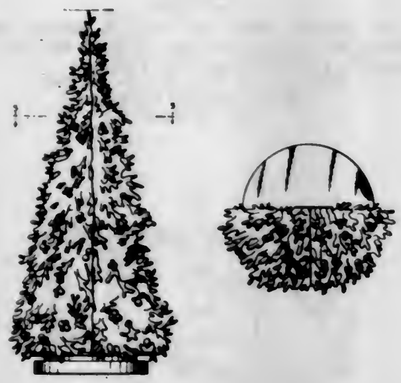
200,453
DESK TRAY
Pauline Rosner, 2029 Staunton Road, Cleveland Heights, Ohio
Filed Jan. 22, 1964, Ser. No. 78,307
Term of patent 3½ years
(Cl. D74—9)



**200,454**
**COMBINATION SAFETY-PILOT AND DIAPHRAGM VALVE**
Delmar K. Everitt, Santa Susana, Calif., assignor to Itt General Controls Inc., Glendale, Calif., a corporation of California
Filed Jan. 13, 1964, Ser. No. 78,176
Term of patent 14 years
(Cl. D78—1)

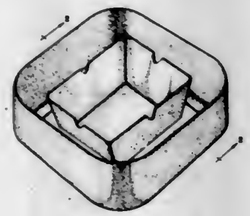


**200,455**
**DISPLAY STAND**
Sylvan Freund and Marcella Freund, both of 242 E. 72nd St., New York, N.Y.
Filed Aug. 22, 1963, Ser. No. 76,324
Term of patent 14 years
(Cl. D80—9)





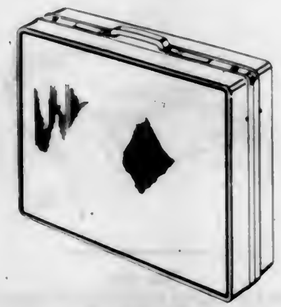
**200,456**
**ASH TRAY**
John R. Christian, 714-A Olive St., Yuba City, Calif.
Filed Sept. 18, 1963, Ser. No. 76,548
Term of patent 14 years
(Cl. D85—2)



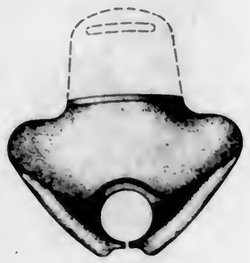
**200,457**
**LIPSTICK BRUSH OR THE LIKE**
Louis Sasmor, 4 Askins Place, New Rochelle, N.Y.
Filed July 6, 1964, Ser. No. 80,701
Term of patent 7 years
(Cl. D06—10)



**200,458**
**LUGGAGE CASE**
Willard G. Axtell, Englewood, Colo., and Allan J. Alvaney, 907 N. Stratford Road, Arlington Heights, Ill.; said Axtell assignor to Shwayder Brothers, Inc., Denver, Colo., a corporation of Colorado
Filed Feb. 4, 1963, Ser. No. 73,425
Term of patent 14 years
(Cl. D87—5)



**200,459**
**MOTORCYCLE FAIRING**
Emil J. Gomez, Jr., 4 Valley Terrace, Port Chester, N.Y.
Filed Oct. 16, 1963, Ser. No. 77,003
Term of patent 3½ years
(Cl. D90—1)



# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 23RD DAY OF FEBRUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Boese, Arthur H., ½ to Novel Ideas Inc. Time delay action and release for airborne toys. Re. 25,734, 2–23–65, Cl. 46—86.
FMC Corp.: *See*—
Seaborn, Paul E. Re. 25,732.
Lamont, H. Blair: *See*—
Patry, Harvey L., E., and F. J., and Lamont. Re. 25,733.
Lamont & Riley, Inc.: *See*—
Patry, Harvey L., E., and F. J., and Lamont. Re. 25,733.
Novel Ideas Inc.: *See*—
Boese, Arthur H. Re. 25,734.
Patry, Ernest: *See*—
Patry, Harvey L., E., and F. J., and Lamont. Re. 25,733.
Patry, Francis J.: *See*—
Patry, Harvey L., E., and F. J., and Lamont. Re. 25,733.
Patry, Harvey L., E., and F. J., and H. B. Lamont, to Lamont & Riley, Inc. Expansion joints for metal panels. Re. 25,733, 2–23–65, Cl. 189—36.
Seaborn, Paul E., to FMC Corp. Apparatus for sorting articles. Re. 25,732, 2–23–65, Cl. 209—121.

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Kerrigan, Howard. Azalea plant. 2,485, 2–23–65, Cl. 56.
Moore, Ralph S. Miniature rose plant. 2,483, 2–23–65, Cl. 9.
Moore, Ralph S. Miniature rose plant. 2,484, 2–23–65, Cl. 10.

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Alvaney, Allan J.: *See*—
Axtell, Willard G., and Alvaney. 200,458.
Ansan Tool and Mfg. Co., Inc.: *See*—
Cooper, Hugh E. 200,400.
Astor, Edward E., to International Latex Corp. Brassiere. 200,406, 2–23–65, Cl. D20—4.
Axtell, Willard G., and A. J. Alvaney, said Axtell assor. to Shwayder Bros., Inc. Luggage case. 200,458, 2–23–65, Cl. D87—5.
Baldwin, D. H., Co.: *See*—
Millington, William, and Day. 200,437.
Millington, William, and Day. 200,438.
Bayless, Marvin W., Sr., to The Huffman Mfg. Co. Combined lawn edger frame and supporting wheels therefor. 200,424, 2–23–65, Cl. D40—1.
Bell & Howell Co.: *See*—
Zimmerman, Robert C. 200,409.
Best, Albert M.: *See*—
Van Peursem, Marvin D., and Best. 200,398.
Bijvoet, Leonardus A. N., and H. J. Steen, to Inland Steel Co. Shipping container. 200,444, 2–23–65, Cl. D58—11.
Bowen, Lloyd R. Combined fan and mounting bracket for cooling electronic equipment and the like. 200,450, 2–23–65, D62—4.
Bravo, Joel W. Photographic processing apparatus. 200,449, 2–23–65, Cl. D61—1.
Brennesholtz, Aaron H., to E. I. du Pont de Nemours and Co. Toothbrush. 200,395, 2–23–65, Cl. D9—2.
Brody, Philip M., and F. H. Rahr. Ceiling tile or similar article. 200,404, 2–23–65, Cl. D18—2.
Brown, Charles G.: *See*—
Hachten, Boyd J., Sterges, and Brown. 200,441.
Burlini, Joseph A.: *See*—
Duncan, Alan W., and Burlini. 200,452.
Burns, James O., to Ormston Burns Ltd. Combined bridge and pick-up unit for a guitar or the like. 200,436, 2–23–65, D56—1.
Burns, Ormston Ltd.: *See*—
Burns, James O. 200,436.
Carr, William J., to Heywood-Wakefield Co. Headboard for a bed. 200,393, 2–23–65, Cl. D5—4.
Carr, William J., to Heywood-Wakefield Co. Coffee table. 200,412, 2–23–65, Cl. D33—14.
Christian, John R. Ash tray. 200,456, 2–23–65, Cl. D85—2.
Cooper, Hugh E., to Ansan Tool and Mfg. Co., Inc. Refuse container carrier. 200,400, 2–23–65, Cl. D14—3.
Coro, Inc. of Rhode Island: *See*—
Kata, Adolph. 200,430.
Craft Associates, Inc.: *See*—
Pearsall, Adrian M. 200,413.
Davis, Dave: *See*—
Price, Verne N. 200,420.
Day, Wilbur M.: *See*—
Millington, William, and Day. 200,437.
Millington, William, and Day. 200,438.
Deegan, James J., to Inland Steel Co. Shipping container. 200,443, 2–23–65, Cl. D58—11.
Duncan, Allan W., and J. A. Burlini, to Sears, Roebuck and Co. Mailbox. 200,452, 2–23–65, Cl. D74—9.
Du Pont de Nemours, E. I., and Co.: *See*—
Brennesholtz, Aaron H. 200,395.
Etter, Berwyn E. Combined door lock housing and handle therefor. 200,433, 2–23–65, Cl. D50—5.
Everitt, Delmar K., to ITT General Controls Inc. Combination safety-pilot and diaphragm valve. 200,454, 2–23–65, Cl. D78—1.
Fender-Rhodes Inc.: *See*—
Rhodes, Harold B. 200,439.
Rhodes, Harold B. 200,440.
Freund, Marcella: *See*—
Freund, Sylvan and M. 200,455.
Freund, Sylvan and M. Display stand. 200,455, 2–23–65, Cl. D80—9.
Gestetner Ltd.: *See*—
Taplin, George E. 200,445.
Gill, Eric G. A., to Skylux Ltd. Trailer chassis. 200,399, 2–23–65, Cl. D14—3.
Gomez, Emil J., Jr. Motorcycle fairing. 200,459, 2–23–65, Cl. D90—1.
Hachten, Boyd J., A. D. Sterges, and C. G. Brown, to Purex Corp., Ltd. Jug. 200,441, 2–23–65, Cl. D58—5.
Hakim, Albert S. Shoelace knot retainer. 200,394, 2–23–65, D7—6.
Halls, Lawrence M.: *See*—
Kermes, Constantine J., Koch, and Halls. 200,426.
Harbison Walker Refractories Co.: *See*—
Stoy, Thomas J. 200,405.
Hawkinson, Paul E., Co.: *See*—
Olson, Rudolph E. 200,401.
Hess, Paul. Combination razor and blade holder. 200,392, 2–23–65, Cl. D4—3.
Heywood-Wakefield Co.: *See*—
Carr, William J. 200,393.
Carr, William J. 200,412.
Huffman Mfg. Co., The: *See*—
Bayless, Marvin W., Sr. 200,424.
ITT General Controls Inc.: *See*—
Everitt, Delmar K. 200,454.
Inland Steel Co.: *See*—
Bijvoet, Leonardus A. N., and Steen. 200,444.
Deegan, James J. 200,443.
International Latex Corp.: *See*—
Astor, Edward E. 200,406.
Jarpey, Robert H. Combined spinning wheel and animated figure toy or similar article. 200,422, 2–23–65, Cl. D34—15.
Jaybee Mfg. Corp.: *See*—
Myers, Dean W., and Smith. 200,396.
Myers, Dean W., and Smith. 200,397.
Jordan, Harry. Finger-held fruit stem cutter. 200,425, 2–23–65, Cl. D40—1.
Karp, Albert. Display container or similar article. 200,414, 2–23–65, Cl. D34—2.
Kata, Adolph, to Coro, Inc. of Rhode Island. Finger ring. 200,430, 2–23–65, Cl. D45—10.
Kermes, Constantine J., to Sperry Rand Corp. Hay baler. 200,423, 2–23–65, Cl. D40—1.
Kermes, Constantine J., E. E. Koch, and L. M. Halls, to Sperry Rand Corp. Swather. 200,426, 2–23–65, D40—1.
Knoll Associates, Inc.: *See*—
Petitt, Donald C. 200,403.
Koch, Earl E.: *See*—
Kermes, Constantine J., Koch, and Halls. 200,426.
Leeah, Joseph H. Golf putter head. 200,416, 2–23–65, Cl. D34—5.
Lermer, Herman B. Cap or similar article. 200,447, 2–23–65, D58—26.
Le Rose, John T. Handled steering wheel. 200,402, 2–23–65, Cl. D14—30.

Lorenzen, Arnold I., to Owens-Illinois Glass Co. Bottle. 200,442, 2–23–65, Cl. D58—6.
Merkel, Hans. Dispenser for granular material or the like. 200,428, 2–23–65, Cl. D44—22.
Merrick, Ruth F. Fry pan lid. 200,427, 2–23–65, Cl. D44—1.
Miele, Harry J. Carrier for golf equipment. 200,417, 2–23–65, Cl. D34—5.
Milan, Henry J.: *See*—
Stanton, Edward W., and Milan. 200,411.
Millington, William, and W. M. Day, to D. H. Baldwin Co. Organ console. 200,437, 2–23–65, Cl. D56—2.
Millington, William, and W. M. Day, to D. H. Baldwin Co. Organ console. 200,438, 2–23–65, Cl. D56—2.
Myers, Dean W., and L. E. Smith, to Jaybee Mfg. Corp. Cabinet pull or similar article. 200,396, 2–23–65, Cl. D10—8.
Myers, Dean W., and L. E. Smith, to Jaybee Mfg. Corp. Cabinet pull or similar article. 200,397, 2–23–65, Cl. D10—8.
National Cash Register Co., The: *See*—
Suhr, Hans R., Sugiyama, and Yamanaka. 200,451.
Newton, Albert E., to United Shoe Machinery Corp. Rod cement extruder. 200,434, 2–23–65, Cl. D34—13.
Olson, Roger C. Football dart game board. 200,418, 2–23–65, Cl. D34—5.
Olson, Rudolph E.; to Paul E. Hawkinson Co. Dolly for retreading molds and other wheel-like articles. 200,401, 2–23–65, Cl. D14—3.
Owens-Illinois Glass Co.: *See*—
Lorenzen, Arnold I. 200,442.
Pearsall, Adrian M., to Craft Associates, Inc. Table. 200,413, 2–23–65, Cl. D33—14.
Petitt, Donald C., to Knoll Associates, Inc. Furniture base. 200,403, 2–23–65, Cl. D15—1.
Phillips, George A. Golf club head. 200,419, 2–23–65, Cl. D34—5.
Preble, Harry, to Speedfast Corp. Fluid operated carton closer or similar article. 200,435, 2–23–65, Cl. D54—13.
Price, Verne N., ½ to D. Davis. Belt-supported golf ball carrier. 200,420, 2–23–65, Cl. D34—5.
Purex Corp., Ltd.: *See*—
Hachten, Boyd J., Sterges, and Brown. 200,441.
Rahr, Frederic H.: *See*—
Brody, Philip M., and Rahr. 200,404.
Rhodes, Harold B., ⅛ to Fender-Rhodes, Inc. Electric piano. 200,439, 2–23–65, Cl. D56—9.
Rhodes, Harold B., ½ to Fender-Rhodes Inc. Electric piano. 200,440, 2–23–65, Cl. D56—9.
Rosner, Pauline. Desk tray. 200,453, 2–23–65, Cl. D74—9.
Ruf, Robert. String supported spinning toy. 200,421, 2–23–65, Cl. D34—15.
Rutkus, John, Jr. Document reproducing apparatus. 200,448, 2–23–65, Cl. D61—1.
Sasmor, Louis. Lipstick brush or the like. 200,457, 2–23–65, Cl. D86—10.
Sears, Roebuck and Co.: *See*—
Duncan, Alan W., and Burlini. 200,452.
Shiffman, Jerome. Box for jewelry or the like. 200,446, 2–23–65, Cl. D58—12.7.
Shwayder Bros., Inc.: *See*—
Axtell, Willard G., and Alvaney. 200,458.
Singer Co., The: *See*—
Stanton, Edward W., and Milan. 200,411.
Skylux Ltd.: *See*—
Gill, Eric G. A. 200,399.
Smades, Colin C. Direction indicator for a bicycle. 200,431, 2–23–65, Cl. D48—32.
Smades, Colin C. Direction indicator for a bicycle. 200,432, 2–23–65, Cl. D48—32.
Smith, Lula E.: *See*—
Myers, Dean W., and Smith. 200,396.
Myers, Dean W., and Smith. 200,397.
Speedfast Corp.: *See*—
Preble, Harry. 200,435.
Sperry Rand Corp.: *See*—
Kermes, Constantine J. 200,423.
Kermes, Constantine J., Koch, and Halls. 200,426.
Van Peursem, Marvin D., and Best. 200,398.
Stanton, Edward W., and H. J. Milan, to The Singer Co. Sewing machine cabinet or similar article. 200,411, 2–23–65, Cl. D33—12.
Steen, Heinrich J.: *See*—
Bijvoet, Leonardus A. N., and Steen. 200,444.
Sterges, Alfred D.: *See*—
Hachten, Boyd J., Sterges, and Brown. 200,441.
Stillwagon, Crawford K. Book end. 200,410, 2–23–65, Cl. D33—3.
Stoy, Thomas J., to Harbison Walker Refractories Co. Block. 200,405, 2–23–65, Cl. D18—2.
Sugiyama, Masatomo: *See*—
Suhr, Hans R. Sugiyama, and Yamanaka. 200,451.
Suhr, Hans R., M. Sugiyama, and I. Yamanaka, to The National Cash Register Co. Adding machine or similar article. 200,451, 2–23–65, Cl. D64—11.
Taplin, George E., to Gestetner Ltd. Packaging tray for a dispensing tube. 200,445, 2–23–65, Cl. D58—12.6.
Tarbox, Elmer L. Hand exercising weight. 200,415, 2–23–65, Cl. D34—5.
Thompson, Marshall F. Combined outlet box and escutcheon plate with recessed push-buttons for a table top or similar article. 200,408, 2–23–65, Cl. D26—13.
United Shoe Machinery Corp.: *See*—
Newton, Albert E. 200,434.
Van Peursem, Marvin D., and A. M. Best, to Sperry Rand Corp. Stock feeder support unit. 200,398, 2–23–65, Cl. D12—2.
Wessel Hardware Corp.: *See*—
Wessel, Herbert H. 200,407.
Wessel, Herbert H., to Wessel Hardware Corp. Wall flange for shower curtain rod. 200,407, 2–23–65, Cl. D21—1.
Worden, Lucille L. Combined funnel and dispenser device. 200,429, 2–23–65, Cl. D44—29.
Yamanaka, Izumi: *See*—
Suhr, Hans R., Sugiyama, and Yamanaka. 200,451.
Zimmerman, Robert C., to Bell & Howell Co. Control plate for magnetic recording and reproducing machine. 200,409, 2–23–65, Cl. D26—14.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 23RD DAY OF FEBRUARY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A & L Processing Co.: *See*—
Amburn, Ray D. 3,170,783.
AMP Inc.: *See*—
Aksu, Akin. 3,170,746.
Abbey Etna Machine Co.: *See*—
Ruple, Lewis H., and Drier. 3,170,427.
Abbey, Harold G. Self-aligning electrical contact shoes for movable carriers. 3,171,005, 2–23–65, Cl. 200—166.
Abbott Laboratories: *See*—
Richards, Richard K., and Vernsten. 3,170,955.
Abendroth, Hans-Joachim: *See*—
Jonas, Heins, and Abendroth. 3,170,957.
Abildgaard, William H., to Plastomeric Products Corp. Glove mold. 3,170,194, 2–23–65, Cl. 18—41.
Abramson, Jay J., to The Electric Storage Battery Co. Electric battery. 3,170,819, 2–23–65, Cl. 136—6.
Adair, Samuel E., to General Motors Corp. Motor energising circuit. 3,171,072, 2–23–65, Cl. 318—138.
Adams, Elmer L., deceased, by W. J. Adams, executrix, to Owens-Illinois Glass Co. Method for making plastic articles. 3,170,970, 2–23–65, Cl. 264—94.
Adams, Thomas E., to Associated Electrical Industries Ltd. Oil seal for a rotatable shaft extending into a gas enclosure. 3,170,700, 2–23–65, Cl. 277—3.
Adams, Wanda J.: *See*—
Adams, Elmer L. 3,170,970.
Adams, William L., to General Electronic Laboratories, Inc. Servo amplifier control system. 3,171,073, 2–23–65, Cl. 318—207.
Adams, Winifred J., B. Ellis, V. Petrow, and I. A. Stuart-Webb, to The British Drug Houses Ltd. 6-methyl steroids and process for producing same. 3,170,935, 2–23–65, Cl. 260—397.3.
Addmaster Corp.: *See*—
Oldenburg, Kenneth F., Kuhne, and Fazio. 3,170,233.
Adelman, Barnet R., to United Aircraft Corp. Manifolding of igniters in large engine clusters. 3,170,267, 2–23–65, Cl. 60—35.6.
Adelman, Barnet R., to United Aircraft Corp. Liner for propellant grains. 3,170,291, 2–23–65, Cl. 60—35.6.
Advanced Wyrepak Co., Inc.: *See*—
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Aerojet-General Corp.: *See*—
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Ages, Frederik J., to Honeywell Inc. Manifold gas valve. 3,170,485, 2–23–65, Cl. 137—613.
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Schwab, Richard, Birk, and Klufer. 3,170,382.
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Agrashell, Inc.: *See*—
Ayers, Joseph W., and Orlemann. 3,170,764.
Ahern, William B.: *See*—
Sloan, Edward C., and Ahern. 3,170,797.
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Air Reduction Co., Inc.: *See*—
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Tanabe, Kenichi, Saito, and Ashikaga. 3,170,973.
Simon, Harry, and Maglio. 3,171,061.
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Jamison, Robert M., and Panaica. 3,170,965.
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Aksu, Akin, to AMP Inc. Plugboard assembly. 3,170,746, 2–23–65, Cl. 339—18.
Alfredsson, Sven H., to Nitroglycerin Aktiebolaget. Device for filling bore-holes formed in rock formation with particulate explosive. 3,170,366, 2–23–65, Cl. 86—20.
Allen, James B., and D. K. Layne, to Dow Corning Corp. Method of retarding deposition of coke in petroleum furnaces. 3,170,865, 2–23–65, Cl. 208—48.
Allen, Kenneth C., to The Hobart Mfg. Co. Automatic weighing scales with recording and totaling apparatus. 3,170,624, 2–23–65, Cl. 235—58.
Alley, Harry R.: *See*—
Williams, Lyle N., Alley, and Barnhizer. 3,170,967.
Allot, Gordon L.: *See*—
Haagensen, Duane B. 3,170,519.
Almy, Richard, and D. T. Zentmyer, to Armstrong Cork Co. Method of fabricating a tessellated surface covering. 3,170,808, 2–23–65, Cl. 117—20.
Alsobrook, Benjamin R.: *See*—
Herman, Hartley R., and Alsobrook. 3,170,428.
Amburn, Ray D., to Vesely Co. Method of pre-emergently controlling plants. 3,170,783, 2–23–65, Cl. 71—2.3.
Amchem Products, Inc.: *See*—
Waldrum, John E. 3,170,264.
American Can Co.: *See*—
Downie, Robert H. 3,170,342.
American Cyanamid Co.: *See*—
Frazza, Everett J., and Rapoport. 3,170,948.
Sheers, Edward H., and Sexsmith. 3,170,951.
American Gas Association: *See*—
Whitlow, Eugene P. 3,170,631.
American Home Products Corp.: *See*—
Gleason, Fred C. 3,170,231.
Morand, Peter F., and Deghenghi. 3,170,936.
American Machine & Foundry Co.: *See*—
Di Giacomo, Joseph D., and Staller. 3,170,467.
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Wheeler, Henry H., and Parlatore. 3,170,353.
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Chadwick, Abraham B. 3,170,630.
American Safety Table Co., Inc.: *See*—
Weinkle, Abraham. 3,170,349.
Ametek, Inc.: *See*—
Reichstein, Lance E. H. 3,170,388.
Anderle, Joseph A.: *See*—
Lorentzen, Hans K., Anderle, and Kapeller. 3,170,505.
Anderlle, Leonard. Ice fishing hole heater. 3,170,458, 2–23–65, Cl. 126—271.3.
Anderson, David F.: *See*—
Stanton, Arthur J., Anderson, and Taylor. 3,170,372.
Anderson, Malcolm G., to The Goodyear Tire & Rubber Co. Tire bead grommet and method of making same. 3,170,662, 2–23–65, Cl. 245—1.5.
Andre, Arlee A., to The Procter & Gamble Co. Culinary mix for producing chemically leavened baked goods. 3,170,795, 2–23–65, Cl. 99—94.
Andre, Arlee A., and H. B. Sweringen, to The Procter & Gamble Co. Packaged culinary mix for preparing rich baked goods. 3,170,796, 2–23–65, Cl. 99—94.
Anner, Georg: *See*—
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,170,934
Anton, Erik W., to Warner-Lambert Pharmaceutical Co. Closure for pressurized containers. 3,170,607, 2–23–65, Cl. 222—400.7.
Appel, Andrew L. Combined flashlight, fire alarm, and distress signal. 3,171,109, 2–23–65, Cl. 340—227.
Appel, Marshall A.: *See*—
Dryden, Hugh L. 3,170,295.
Appelman, Melvin: *See*—
Zimmer, Josef W., Bratton, and Appelman. 3,170,371.
Appleton, Arthur I. Lamp receptacle. 3,170,750, 2–23–65, Cl. 339—180.
Arasa, Edythe K. Door grill. 3,170,200, 2–23–65, Cl. 20—71.
Arborgh, Ake: *See*—
Krantz, Evert, Arborgh, and Wilhelmsson. 3,170 384.
Arcamone, Federico, A. di Marco, M. Ghione, P. Pennella, and A. Green, to Societa Farmaceutici Italia. Method of obtaining antibiotic and product. 3,170,837, 2–23–65, Cl. 167—65.
Archer, Richard K., to National Research Development Corp. Centrifugation of whole blood to separate eosinophils. 3,170,838, 2–23–65, Cl. 167—74.
Armco Steel Corp.: *See*—
Bard, Albert L., and Weed. 3,170,641.
Armstrong Cork Co.: *See*—
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Armstrong, Eldon L., to Socony Mobil Oil Co., Inc. Grease composition. 3,170,878, 2–23–65, Cl. 252—18.
Arutunoff, Armais, to Reda Pump Co. Dual-flow transfer assembly. 3,170,520, 2–23–65, Cl. 166—65.
Ash, Anthony S. F., A. M. Creighton, and W. R. Wragg, to May & Baker Ltd. N-phenylpiperazine compounds. 3,170,926, 2–23–65, Cl. 260—268.
Ashikaga, Tadao: *See*—
Tanabe, Kenichi, Saito, and Ashikaga. 3,170,973.
Aspey, Wayne S.: *See*—
Yeckley, Russell N., and Aspey. 3,171,000.
Associated Electrical Industries (Manchester) Ltd.: *See*—
Foulkes, Ronald M. 3,171,099.
Associated Electrical Industries Ltd.: *See*—
Adams, Thomas E. 3 170,700.
King, Daniel L., and Hitch. 3,171,065.
Kinsey, Ronald W. S. 3,170,992.
Asteraki, John D., C. R. N. Barnard, and A. N. Beresford. Radio navigation apparatus. 3,171,127, 2–23–65, Cl. 343—112.
Atkins, Carl E., and R. L. Ziolkowski, to Tung-Sol Electric Inc. Touch control circuits. 3,171,066, 2–23–65, Cl. 317—146.
Atkinson, Vernon T., to Phillips Petroleum Co. Water treatment with temperature control. 3,170,868, 2–23–65, Cl. 210—49.
Atlantic Hydrofoils, Inc.: *See*—
Roper, John K. 3,170,432.
Atlas Chemical Industries, Inc.: *See*—
Nelson, Richard G. 3,170,400.
Olney, Robert A. 3,170,876.
Atlas Copco Aktiebolag: *See*—
Kvello-Aune, Alf. G. 3,170,525.
Aulisa, Gerard D. Blanking valve having threaded bolt means for increasing sealing pressure. 3,170,668, 2–23–65, Cl. 251—158.
Auto Crane Co.: *See*—
Wilkinson, Alvin H. 3,170,574.

Automatic Canteen Co. of America: *See*—
Mueller, Richard J. 3,170,479.
Werner, Otto E. 3,170,541.

Avdel Ltd.: *See*—
Mewse, Charles. 3,170,362.

Avery, Gilbert H. Heating and cooling system. 3,170,508, 2-23-65, Cl. 165—26.

Avgerinos, Costas, to Farrington Mfg. Co. Roller printer. 3,170,396, 2-23-65, Cl. 101—269.

Avidiya, James E. Combination door and ironing board. 3,170,417, 2-23-65, Cl. 108—42.

Ayers, Joseph W., and J. K. Orlemann, to Agrashell, Inc. Process for producing non-magnetic finely ground materials such as charcoal and calcium carbonate. 3,170,764, 2-23-65, Cl. 23—209.1.

Babcock, David L., to United States of America, Navy. Deferred action type battery construction. 3,170,822, 2-23-65, Cl. 136—90.

Bachman, Paul W., to Koppers Co., Inc. Removing occluded aqueous system from hydrate crystals. 3,170,870, 2-23-65, Cl. 210—59.

Baird-Atomic, Inc.: *See*—
Fitzmaurice, John A., and Sabbagh. 3,171,097.

Baker, Elbert H. III, to Gregory Industries. Bicycle coaster brake. 3,170,549, 2-23-65, Cl. 192—6.

Baker Perkins Inc.: *See*—
Temple, Hiram E. 3,170,581.

Balco, Inc.: *See*—
Balser, Claude P., Corman, and Reiff. 3,170,268.

Balding, George H., to United States of America, Navy. Apparatus for displaying relatively displaceable superposed simulative patterns. 3,170,978, 2-23-65, Cl. 35—10.4.

Baldwin, Alan W., and H. P. Birmingham. Optical image interposing display device. 3,170,979, 2-23-65, Cl. 88—1.

Baldwin, Richard H., to Standard Oil Co. System for continuous preparation of terephthalic acid. 3,170,768, 2-23-65, Cl. 23—263.

Baldwin-Lima-Hamilton Corp.: *See*—
Krynytzky, Alexander. 3,170,351.

Balinski, Henry A., to United States Gypsum Co. Clinching tool. 3,170,162, 2-23-65, Cl. 1—260.

Balogh, Stephen, and R. M. Wilber, to Parker-Hannifin Corp. Ceramic block filter drier. 3,170,872, 2-23-65, Cl. 210—266.

Blazer, Claude P., E. M. Corman, and A. A. Reiff, to Balco, Inc. Expansion joint cover structure. 3,170,268, 2-23-65, Cl. 50—173.

Banks, Alberta L., and O. Banks, Jr. Chance controlled game apparatus. 3,170,697, 2-23-65, Cl. 273—135.

Banks, Oliver, Jr.: *See*—
Banks, Alberta L., and O., Jr. 3,170,697.

Barbour, Marshall S., to Oxford Paper Co. Transfer sheet and process of making. 3,170,809, 2-23-65, Cl. 117—36.4.

Bard, Albert L., and W. B. Weed, to Armco Steel Corp. Treated grinding rods. 3,170,641, 2-23-65, Cl. 241—184.

Barenyi, Bela, to Daimler-Benz Aktiengesellschaft. Seat for motor vehicles. 3,170,728, 2-23-65, Cl. 297—344.

Barker, Beulah: *See*—
Gullen, Lloyd S. 3,170,611.

Barnard, Charles R. N.: *See*—
Asteraki, John D., Barnard, and Beresford. 3,171,127.

Barnhardt, Clyde S., Sr. Proximity surface still. 3,170,852. 2-23-65, Cl. 202—236.

Barnhart, Homer W. Mechanical registration of process color. 3,170,368, 2-23-65, Cl. 88—24.

Barnhiser, Harold K.: *See*—
Williams, Lyle N., Alley, and Barnhiser. 3,170,967.

Barton, David W., and J. R. Elwell, to Ford Motor Co. Power steering mechanism. 3,170,535, 2-23-65, Cl. 180—79.2.

Basnett, James T., to C. Q. Parachute Co. Ltd. Parachutes. 3,170,661, 2-23-65, Cl. 244—152.

Batten, Thomas A., to Firestone Tire & Rubber Co. Guide for a tire building machine. 3,170,829, 2-23-65, Cl. 156—405.

Bauer, Gordon L., to Advanced Wyrepak Co., Inc. Wire spooling apparatus and method. 3,170,650, 2-23-65, Cl. 242—25.

Bauer, Oliver F., and A. W. Snook, to The Gleason Works. Quenching machine. 3,170,975, 2-23-65, Cl. 266—6.

Bauer, Oliver F., and A. W. Snook, to The Gleason Works. Quenching machine. 3,170,976, 2-23-65, Cl. 266—6.

Baumann, Gustav, to Brown, Boveri & Cie., Aktiengesellschaft. Magnetohydrodynamic installation with high temperature heat exchanger. 3,170,510, 2-23-65, Cl. 165—104.

Bausch & Lomb Inc.: *See*—
Rosenberger, Harold E., and Korones. 3,170,984.

Beach, Richard G.: *See*—
Tate, Kenneth L., Stults, Jaquith, and Beach. 3,170,380.

Beatty, David L. Telephone operating device for disabled persons. 3,170,990, 2-23-65, Cl. 179—1.

Beatty, Theodore R.: *See*—
Drengler, George R., Clark, Stark, and Beatty. 3,170,820.

Becht, Carl T.: *See*—
Julifs, Albert G., and Becht. 3,170,487.

Becker, Ernst, to Quick-Rotan Becker & Co., Firma. Electric drive for sewing machines. 3,170,425, 2-23-65, Cl. 112—220.

Beckman, Ronald, and W. J. Cannan, to Herman Miller, Inc. Upholstered chair. 3,170,730, 2-23-65, Cl. 297—445.

Beeber, Herman M. Devices for concealing and supporting refuse receptacles. 3,170,587, 2-23-65, Cl. 220—18.

Beeler, Theodore L., and L. B. Cooke, to United States of America, Navy. Clearance line generating system. 3,171,120, 2-23-65, Cl. 343—5.

Behnke, George W., R. G. Westcott, and H. A. Wirth, to Simplicity Engineering Co. Crusher apparatus. 3,170,645, 2-23-65, Cl. 241—275.

Beier, Friedrich. Ski binding. 3,170,702, 2-23-65, Cl. 280—11.35.

Belsawanger, John P. G., and J. J. Robinson, to General Aniline & Film Corp. Antistatic treating solution for polyacrylonitrile fibers and method. 3,170,877, 2-23-65, Cl. 252—8.8.

Bell Intercontinental Corp. (Belcrank Division): *See*—
Hopkins, Robert A. 3,170,215.

Bell Telephone Laboratories, Inc.: *See*—
Benewics, Thomas F. 3,170,994.
Sokoler, Roy. 3,171,036.
Yariv, Amnon. 3,171,031.

Beman, Floyd L.: *See*—
Britton, Edgar C., and Beman. 3,170,961.

Ben-Ari, Carmela, and W. J. Fuchs, to Negev Phosphates Ltd. Manufacture of magnesium hydroxide. 3,170,762, 2-23-65, Cl. 23—201.

Bendix Corp, The: *See*—
Larson, Ralph H. 3,170,297.
Matare, Herbert F. 3,171,042.
Nowakowski, Joseph M., and Swarts. 3,171,129.
Smith, Hayden M. 3,171,024.

Benewics, Thomas F., to Bell Telephone Laboratories, Inc. Tone operated echo suppressor control circuit. 3,170,994, 2-23-65, Cl. 179—170.2.

Benno, Edward L.: *See*—
Grant, Raymond T. 3,170,729.

Bens, Gordon R., R. J. Kinsler, and A. B. Huntington, to Ross Operating Valve Co. Valve system. 3,170,484, 2-23-65, Cl. 137—596.16.

Benz, Jakob, A. Schweizer, and H. Wasem, to Sandoz Ltd. Reactive azo dyestuffs. 3,170,911, 2-23-65, Cl. 260—153.

Beresford, Aden N.: *See*—
Asteraki, John D., Barnard, and Beresford. 3,171,127.

Berg, Ralph L., to Controls Co. of America. Cam operated timing mechanism. 3,170,996, 2-23-65, Cl. 200—38.

Berger, Alvin J., to Honeywell Inc. Air conditioning control apparatus. 3,170,629, 2-23-65, Cl. 236—1.

Bergman, Jack N., and B. Ostrofsky, to Standard Oil Co. Ultrasonic inspection apparatus. 3,171,047, 2-23-65, Cl. 310—8.7.

Berkowitz, Irving L., to Kason Display Hardware Inc. Display and storage fixtures. 3,170,742, 2-23-65, Cl. 312—108.

Best, Frank S., to Great Bear Spring Co. Water cooler apparatus. 3,170,307, 2-23-65, Cl. 62—188.

Biggar, Frank M., Jr. Sheet material folding method and apparatus. 3,170,685, 2-23-65, Cl. 270—68.

Binstock, Martin H., and H. E. Kline, to United States of America, Atomic Energy Commission. Uranium base alloy. 3,170,788, 2-23-65, Cl. 75—122.7.

Birk, Rudolf: *See*—
Schwab, Richard, Birk, and Käufer. 3,170,382.

Birmingham, Henry P.: *See*—
Baldwin, Alan W., and Birmingham. 3,170,979.

Bistiák, Michal, to Výskumný ústav svárací MHD. Installation for welding or casting under molten slag cooled closure plates. 3,170,430, 2-23-65, Cl. 113—136.

Black and Decker Mfg. Co., The: *See*—
Kohler, Samuel H., and Stanley. 3,170,496.
Short, Harold O. 3,170,523.

Black, John M.: *See*—
Stiles, Samuel R., Warburton, and Black. 3,170,769.

Black, Richard W. Mobile air supported vehicle. 3,170,530, 2-23-65, Cl. 180—7.

Blaw-Knox Co.: *See*—
Karnofsky, George B. 3,170,779.

Blessing, Heinz W.: *See*—
De Benneville, Peter L., and Blessing. 3,170,913.

Blue M Electric Co.: *See*—
Lawler, Joseph A. 3,171,018.

Blumberg, Ben, Jr., to United States of America, Atomic Energy Commission. Steam generator. 3,170,846, 2-23-65, Cl. 176—59.

Blumenschein, Gordon. Garden tool holder. 3,170,612, 2-23-65, Cl. 224—45.

Boehringer Ingelheim G.m.b.H.: *See*—
Schmidt, Gunther. 3,170,933.

Bohler & Co. Aktiengesellschaft Gebr.: *See*—
Tarmann, Bruno. 3,170,204.

Bohnhoff, Arthur F., to General Motors Corp. Ball nut and screw assembly. 3,170,336, 2-23-65, Cl. 74—424.8.

Bonnett, Daniel W., to Koppers Co., Inc. Double divided gun flue horizontal coking retort oven. 3,170,850, 2-23-65. Cl. 202—141.

Boppart, John A., Jr., to The Garrett Corp. Effective weight-increasing device for track-laying vehicles. 3,170,532, 2-23-65, Cl. 180—9.2.

Borden, Edgar V.: *See*—
Snay, Kenneth E., and Borden. 3,170,539.

Borden Laboratories: *See*—
Orr, Lewis C. 3,170,839.

Borg-Warner Corp.: *See*—
Cook, Leo W. 3,170,551.
Grabowski, Thomas S. 3,170,964.

Boucher, Cormack E., to Ind-X Corp. Cooling system for X-ray apparatus. 3,171,029, 2-23-65, Cl. 250—89.

Boudart, Michel, and P. I. Pollak, to Merck & Co., Inc. Process for the preparation of silicon films. 3,170,859, 2-23-65, Cl. 204—157.

Bousman, Samuel I., A. M. Kivari, and R. B. Thompson, to The Elmco Corp. Apparatus for contacting solids and liquid. 3,170,770, 2-23-65, Cl. 23—287.





Boyd, Gerald C., and H. L. Vincent, to Dow Corning Corp. Powders for fusion coating comprising an epoxide resin, a siloxane resin, an acid anhydride and fillers. 3,170,890, 2-23-65, Cl. 260—37.

Boyer, Wilbur L., to Corrosion Reaction Consultants, Inc. Aerosol actuator. 3,170,606, 2-23-65, Cl. 222—394.

Bradshaw, Harold G., to Cochran Equipment Co. Wide wheelbase truck. 3,170,704, 2-23-65, Cl. 280—34.

Brancato, Sebastian T.: *See*—
Kutik, Leon, Michelotti, Brancato, and Pucknat. 3,170,888.

Brandt, Virgil T. Buoyant swimming device. 3,170,175, 2-23-65, Cl. 9—337.

Bratton, John T.: *See*—
Zimmer, Josef W., Bratton, and Appelman. 3,170,371.

Bray Oil Co.: *See*—
Voorhees, Vanderveer. 3,170,880.
Voorhees, Vanderveer. 3,170,881.

Brenner, Ivan G. Apparatus for producing a fibrous glass preform. 3,170,197, 2-23-65, Cl. 19—148.

Bricker, Carl E.: *See*—
Cook, Albert W., and Bricker. 3,170,543.

Bridgestone Tire Co. Ltd.: *See*—
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,904.
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,905.
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,906.
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,907.

Briggs Filtration Co., The: *See*—
May, Clifford H. 3,170,873.

Brightman, John W., P. G. Cowley, and J. B. Loop, to The Nylock Corp. Machine for making lock nuts. 3,170,176, 2-23-65, Cl. 10—72.

Briskman, Samuel: *See*—
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Weidauer, Curt. 3,170,375.

British Drug Houses Ltd., The: *See*—
Adams, Winfred J., Ellis, Petrow, and Stuart-Webb. 3,170,935.
Petrow, Vladimir. 3,170,937.

British Iron and Steel Research Assn., The: *See*—
Green, John I. 3,170,341.

Britton, Edgar C., and F. L. Beman, to The Dow Chemical Co. Process for separating dichlorobenzene isomers. 3,170,961, 2-23-65, Cl. 260—650.

Brooks, E. J., Co.: *See*—
Moberg, Sigurd M. 3,170,830.

Brown, Boveri & Cie., Aktiengesellschaft: *See*—
Baumann, Gustav. 3,170,510.

Brown, Cicero C., to Brown Oil Tools, Inc. Well method and apparatus which is particularly adapted for use in multiple zone wells. 3,170,518, 2-23-65, Cl. 166—48.

Brown, George A., to Merck & Co., Inc. Method of continuously casting thermoelectric material. 3,170,205, 2-23-65, Cl. 22—200.1.

Brown, George R.: *See*—
Tomasulo, Walter, and Brown. 3,171,034.

Brown, Laurence R. Silent magnetically operated snap-action electric switch. 3,170,999, 2-23-65, Cl. 200—67.

Brown Oil Tools, Inc.: *See*—
Brown, Cicero C. 3,170,518.

Brown, Paul L., and J. F. Hyde, to Dow Corning Corp. Silicon-bonded polyhydrocarbonoxy organopoly-silioxanes and one-component room temperature cured compositions containing said organopolysiloxanes and condensation catalysts. 3,170 894, 2-23-65, Cl. 260—46.5.

Brown, Raymond E., and T. A. Crugnale. Foul detecting system with transistor output switch. 3,170,689, 2-23-65, Cl. 273—50.

Brown, Robert L. Seam follower. 3,171,071, 2-23-65, Cl. 318—31.

Brown Shoe Co., Inc.: *See*—
Johnson, Curtis R. 3,170,253.

Browning, Harold, to United States of America, Navy. Flexible conduit for piping and the like. 3,170,720, 2-23-65, Cl. 285—114.

Brundage, James W., to NRM Corp. Tire curing press with dual post inflators. 3,170,187, 2-23-65, Cl. 18—2.

Bryant, Austin U., to Grove Valve and Regulator Co. Valve construction. 3,170,478. 2-23-65, Cl. 137—340.

Brye, Adolph O. Truck wheel wrench apparatus. 3,170,347, 2-23-65, Cl. 81—121.

Buc, Dolores M.: *See*—
Freyermuth, Harlan B., Randall, and Buc. 3,170,912.
Freyermuth, Harlan B., Randall, and Buc. 3,170,914.

Buc, Saul R.: *See*—
Freyermuth, Harlan B., Randall, and Buc. 3,170,912.
Freyermuth, Harlan B., Randall, and Buc. 3,170,914.

Bucellato, John, to Sattler Mfg. Corp. Securement means for a stove grate. 3,170,457, 2-23-65, Cl. 126—214.

Buchanan Electrical Products Corp.: *See*—
Ustin, George, and Netta. 3,170,501.

Buckingham, William D., to The Western Union Telegraph Co. Nuclear flash simulator. 3,171,057, 2-23-65, Cl. 315—241.

Bulgrin, Walter W., to The Firestone Tire & Rubber Co. Single walled metal contained. 3,170,586, 2-23-65, Cl. 220—5.

Bunker-Ramo Corp., The: *See*—
Clauser, Milton U. 3,171,035.
Phister, Montgomery, Jr., and Conn. 3,170,677.

Burckhalter, Joseph H., to Parke Davis & Co. Phenylpropanol derivatives and their production. 3,170,928, 2-23-65, Cl. 260—294.8.

Burgers, Johan, C. W. Motl, and P. Selden, to The Procter & Gamble Co. Interesterification process. 3,170,798, 2-23-65, Cl. 99—118.

Burian, Franklin D. Paint brush cleaning tool. 3,170,182, 2-23-65, Cl. 15—142.

Burkhardt, Gisbert, and M. Peek, to Telefunken Patentverwertungs G.m.b.H. Flap switch for conveyor system. 3,170,686, 2-23-65, Cl. 271—64.

Burkhart, Raymond E., to United States Rubber Co. Tire curing press. 3,170,191, 2-23-65, Cl. 18—17.

Burnham, Richard C. Contour abrading machine and method. 3,170,272, 2-23-65, Cl. 51—141.

Burniston, Raymond J., to The Thomas & Betts Co., Inc. Insulated C rings in coherent strip form. 3,170,160, 2-23-65, Cl. 1—56.

Burr, Robert P., to Printed Motors, Inc. Electrical printed-circuit winding. 3,171,051, 2-23-65, Cl. 310—268.

Burton, John, Machine Corp.: *See*—
Rice, Harold B. 3,170,570.

Burton, Linwood P. Mixing and disintegrating head. 3,170,638, 2-23-65, Cl. 241—46.

Burton, Linwood P. Mixing and disintegrating head. 3,170,639, 2-23-65, Cl. 241—46.

Busemann, Adolf: *See*—
Wood, George P., Carter, and Busemann. 3,171,060.

Busse, Warren F., to E. I. du Pont de Nemours and Co. Graft polymers with polysulfone grafts and their preparation. 3,170,892, 2-23-65, Cl. 260—859.

Butcosk, Richard A., to Socony Mobil Oil Co., Inc. Lubricant. 3,170,879, 2-23-65, Cl. 252—18.

Butler, Carleton L. Snag-proof hook protectors. 3,170,756, 2-23-65, Cl. 43—43.4.

Butler, Jesse L., to Sanders Associates, Inc. Radar countermeasures antenna system. 3,171,125, 2-23-65, Cl. 343—18.

Butler Mfg. Co.: *See*—
Dunnington, Jon B. 3,170,269.

Butler, Richard A., R. H. Cadwallader, J. J. Isole, Jr., and G. Park, to International Business Machines Corp. Automatic programmer. 3,171,114, 2-23-65, Cl. 340—267.

C. Q. Parachute Co. Ltd.: *See*—
Basnett, James T. 3,170,661.

Cadwallader, Robert H.: *See*—
Butler, Richard A., Cadwallader, Isole, and Park. 3,171,114.

Cairnie, John M. Mulch preparing and spreader machine. 3,170,675, 2-23-65, Cl. 259—6.

Calabro, Rocco. Combination lock and signal means. 3,171,115, 2-23-65, Cl. 340—274.

Caldemeyer, Daniel F. and L. O., and H. M. Quakenbush, to National Furniture Mfg. Co., Inc. Upholstery assembly. 3,170,731, 2-23-65, Cl. 297—452.

Caldemeyer, Lloyd O.: *See*—
Caldemeyer, Daniel F. and L. O., and Quakenbush. 3,170,731.

Campbell, Colin, to Walker Mfg. Co. Spring. 3,170,448, 2-23-65, Cl. 123—119.

Cannan, William J.: *See*—
Beckman, Ronald, and Cannan. 3,170,730.

Cannon Mills Co.: *See*—
Carter, Edward L. 3,170,490.

Cantor, Abraham: *See*—
Neracher, Otto E., Cantor, and Schmidt. 3,170,909.
Neracher, Otto E., Cantor, and Schmidt. 3,170,910.

Capgras, Rene. System for applying draft force to an elongated object. 3,170,567, 2-23-65, Cl. 205—22.

Carner, John W. Support clamp. 3,170,664, 2-23-65, Cl. 248—59.

Caressa, Inc.: *See*—
Taicher, Leonard L. 3,170,249.

Carrier Corp.: *See*—
Dibble, David B., and Hale. 3,170,305.
Hale, Harry T. 3,170,304.
Rich, Donald G. 3,170,228.
Smith, John F. D. 3,170,512.

Carriere, Donald L., J. T. Laskey, and I. M. Swatman, to Ford Motor Co. Overspeed control means for a gas turbine engine. 3,170,548, 2-23-65, Cl. 192—3.

Carter, Arlen F.: *See*—
Wood, George P., Carter, and Busemann. 3,171,060.

Carter, Edward L., to Cannon Mills Co. Reed motion control for terry loom. 3,170,490, 2-23-65, Cl. 139—27.

Carter, Paul H., to Maryland Cup Co. Hermetical paper containers, lids, and method of providing same. 3,170,568, 2-23-65, Cl. 206—46.

Casey, James H., to Minnesota Mining & Mfg. Co. Hand dispenser for adhesive tape. 3,170,613, 2-23-65, Cl. 225—66.

Caspers, James W.: *See*—
Nuese, Carlos, and Caspers. 3,171,119.

Castelli, Charles, to Johnson & Johnson. Antiseptic dispenser. 3,170,633, 2-23-65, Cl. 239—327.

Cavanaugh, Ronald C., to Instron Corp. Grip. 3,170,322. 2-23-65, Cl. 73—103.

Centrifio Pty. Ltd.: *See*—
Morrison, John M. 3,170,621.

Chadwick, Abraham B., to American Radiator & Standard Sanitary Corp. Control circuit for hydronic system. 3,170,630, 2-23-65, Cl. 236—1.

Chambers, Torrence H., and L. F. Kalnoskas, to United States of America, Navy. Delay line storage system. 3,171,118, 2-23-65, Cl. 343—5.

Chance, A. B., Co.: *See*—
McAuley, Anthony. 3,170,673.

Chang, Kern K. N., to Radio Corp. of America. Solid-state nonreciprocal signal amplifier. 3,171,087, 2-23-65, Cl. 330—60.

Chapman, Ralph, to Wood Processes, Oregon Ltd. Apparatus for applying an adhesive to planar articles such as webs or sheets of veneer. 3,170,604, 2-23-65, Cl. 222—233.

Chauvin, Willie L. Drill bit. 3,170,526, 2-23-65, Cl. 175—270.

Chemische Fabrik Tempelhof: *See*—
Dziengel, Kurt. 3,170,916.

Childs, Joyce M. E.: *See*—
Kinsey, Ronald W. S. and K., and Childs. 3,170,992.

Chill Master Corp.: *See*—
Federighi, George J., and Cusens. 3,170,309.

Christoff, James W., to Mannix Co., Ltd. Apparatus and method for aligning railroad tracks. 3,170,410, 2–23–65, Cl. 104—8.

Ciba Corp.: *See*—
Wettstein, Albert, Aaner, Heusler, Kalvoda, and Ueberwasser. 3,170,934.
Scheller, Walter, and Paul. 3,171,009.

Cicatello, Frank D. Utility cabinets for toilets. 3,170,168, 2–23–65, Cl. 4—1.

Cicconi, Rudolph J.: *See*—
Johnson, Robert K., and Cicconi. 3,170,864.

Cie Electro-Mecanique: *See*—
Gauriat, Roger. 3,170,343.

Clar, Milton, ½ to R. M. Malamut, and ½ to W. T. Dunlap. Apparatus for producing lens patterns from spectacle frame lens openings. 3,170,374, 2–23–65, Cl. 90—13.9.

Clark, Dennis E.: *See*—
Ilika, Joseph, Phillippe, Clark, Thomas, and Stephenson. 3,170,921.

Clark, Harold E., to Xerox Corp. Red sensitive xerographic plate and process therefor. 3,170,790, 2–23–65, Cl. 96—1.

Clark, Louis, to Clark Paper Converting Corp. Urinal screen. 3,170,169, 2–23–65, Cl. 4—109.

Clark, Milton B.: *See*—
Dreagler, George R., Clark, Stark, and Beatty. 3,170,820.

Clarke, John H. O. Means for prevention of ice damage to boats, piers and the like. 3,170,299, 2–23–65, Cl. 61—1.

Clauser, Milton U., to The Bunker-Ramo Corp. Superconductive circuits. 3,171,035, 2–23–65, Cl. 307—88.5.

Clements, Ronald B., to T. & T. Vicars Ltd. Feeding mechanisms for biscuit or the like laminar articles. 3,170,550, 2–23–65, Cl. 198—31.

Cochran Equipment Co.: *See*—
Bradshaw, Harold G. 3,170,704.

Cochrane, William D. Toggle clamps. 3,170,214, 2–23–65, Cl. 24—263.

Coffey, Charles S., to Edgerton, Germeshausen & Grier, Inc. High-speed gate circuit. 3,171,044, 2–23–65, Cl. 307—88.5.

Coffin, Harland H., to Producto Machine Co. Insulated die set. 3,170,735, 2–23–65, Cl. 308—4.

Cole, Richard W., to United States of America, Navy. Ram pressure stepping motor control for missile guidance. 3,170,656, 2–23–65, Cl. 244—14.

Collins, Matthew J. Variable drive linear measuring instrument for estimating material quantities and the like. 3,170,240, 2–23–65, Cl. 33—140.

Collins, Thomas L., to United States of America, Atomic Energy Commission. Long straight sections for alternating gradient synchrotrons. 3,171,025, 2–23–65, Cl. 250—41.9.

Colonial Tanning Co., Inc.: *See*—
Ravich, Louis. 3,170,252.

Combustion Engineering, Inc.: *See*—
Hochmuth, Frank W. 3,170,442.

Conigliaro, Nicholas: *See*—
Conigliaro, Thomas S. 3,171,116.

Conigliaro, Thomas S., ½ to N. Conigliaro. Combined door signal and mail indicator system. 3,171,116, 2–23–65, Cl. 340—281.

Conn, Ralph B.: *See*—
Phister, Montgomery, Jr., and Conn. 3,170,677.

Container Corp. of America: *See*—
Mortenson, Wallis L. 3,170,615.

Continental Aviation and Engineering Corp.: *See*—
Isley, Walter F., and Druzynski. 3,170,503.

Continental Can Co., Inc.: *See*—
Ravve, Abraham, and Khamis. 3,170,963.

Continental Oil Co.: *See*—
Dew, John N., and Reed. 3,170,513.

Continental Titanium Corp. (N.P.L.): *See*—
Soloducha, Nicolas. 3,170,771.

Control Data Corp.: *See*—
Holt, Arthur W. 3,171,032.

Controls Co. of America: *See*—
Berg, Ralph L. 3,170,906.

Cook, Albert W., and C. E. Bricker, to The Goodyear Tire & Rubber Co. Delay valve. 3,170,543, 2–23–65, Cl. 188—152.

Cook, Leo W., to Borg-Warner Corp. Dual plate clutch. 3,170,551, 2–23–65, Cl. 192—48.

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Beeler, Theodore L., and Cooke. 3,171,120.

Coppens, Mattheus J. M., to Inland Steel Co. Angle cock. 3,170,671, 2–23–65, Cl. 251—350.

Corley, Charles B., Jr.: *See*—
Holland, Warren E., Corley, and Lindsey. 3,170,516.

Corman, Edward M.: *See*—
Balser, Claude P., Corman, and Reiff. 3,170,268.

Corning Glass Works: *See*—
Knapp, Eugene J., and Laffkas. 3,170,569.
Knapp, Eugene J., and Laffkas. 3,170,571.
Lanning, John G. 3,170,504.

Corrons, Bill E.: *See*—
Dilks, Robert E., Corrons, Ihm, and Curtis. 3,171,124.

Corrosion Reaction Consultants, Inc.: *See*—
Boyer, Wilbur L. 3,170,606.

Cortes Chemicals Co.: *See*—
Owen, Robert W., and Thomas. 3,170,883.

Cosmau, Bernard: *See*—
Kemeny, Janos, Cosmau, Jelensperger, and Konyevits. 3,170,966.

Cotton, Edgar W. Self-reading grade target. 3,170,239, 2–23–65, Cl. 33—70.

Counsell, Raymond E., and P. D. Klimstra, to G. D. Searle & Co. 17-oxygenated 2β,19-epoxy-5α-androstan-3α-ols, ethers and esters thereof. 3,170,922, 2–23–65, Cl. 260—239.55.

Cowley, Philip G.: *See*—
Brightman, John W., Cowley, and Loop. 3,170,176.

Crabbe, Pierre, to Syntex S.A. 3-halo-16β-carbamyl-Δ⁴-pregnen-20-ones. 3,170,918, 2–23–65, Cl. 260—239.5.

Craig, Richard W.: *See*—
Kelley, Oliver K., Gage, and Craig. 3,170,534.

Craighead, Emery M.: *See*—
Harvey, Robert R., and Craighead. 3,170,514.

Cramer, Friedrich D., and M. G. Winter, to Shell Oil Co. Process for making phosphoric acid ester anhydrides. 3,170,943, 2–23–65, Cl. 260—461.

Crane Canada Ltd.: *See*—
Johnstone, Robert F. 3,170,670.

Craver, Edward H., to Western Electric Co., Inc. Apparatus for positioning components. 3,170,232, 2–23–65, Cl. 29—271.

Crawford Fitting Co.: *See*—
Szohatsky, Zoltan. 3,170,667.

Crawford, John J. and R. L. Automatic self bunching and dispensing bale carrier. 3,170,564, 2–23–65, Cl. 214—504.

Crawford, Robert L.: *See*—
Crawford, John J. and R. L. 3,170,584.

Creighton, Andrew M.: *See*—
Ash, Anthony S. F., Creighton, and Wragg. 3,170,926.

Crepeau, Ernest, and S. Lapierre, 33⅓% to J. Dagenais (nee Deschamps). Tool for scraping and smoothing plastic and metal surfaces. 3,170,373, 2–23–65, Cl. 90—12.

Crompton & Knowles Corp.: *See*—
Gift, Harold C., and Procter. 3,170,757.

Cronelid, Paul H., to Electrolux, Aktiebolaget. Heat operated absorption refrigerator. 3,170,310, 2–23–65, Cl. 62—490.

Cross, Alexander D., to Syntex Corp. 17-tetrahydropyranyl-ethers of Δ¹⁶-androstadienes. 3,170,923, 2–23–65, Cl. 260—239.55.

Crozier, Robert S. Lock flap-beer carton. 3,170,616, 2–23–65, Cl. 229—16.

Crugnale, Thomas A.: *See*—
Brown, Raymond E., and Crugnale. 3,170,689.

Cucuzza, Salvatore P. Ice cube tray. 3,170,308, 2–23–65, Cl. 62—367.

Cudnohufsky, Sylvester R. Hydraulic positioning means. 3,170,376, 2–23–65, Cl. 91—22.

Cunningham, Clarence T., to Owens-Illinois Glass Co. Process for making a stencil screen coating and composition therefor. 3,170,791, 2–23–65, Cl. 96—35.

Cunningham, Clarence T., to Owens-Illinois Glass Co. Process for making a stencil screen coating and composition therefor. 3,170,792, 2–23–65, Cl. 96—35.

Cunningham, McCleery B., to Sonoco Products Co. Method of making plastic impregnated paper tubes and resulting product. 3,170,489, 2–23–65, Cl. 138—145.

Curtin, Paul J., to McGraw-Edison Co. Luminaire assembly. 3,170,635, 2–23–65, Cl. 240—25.

Curtis, Robert G.: *See*—
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Cushman, Walton W. Non-mechanical tie-down means for inflatable tents or shelters. 3,170,472, 2–23–65, Cl. 135—1.

Cusens, William E.: *See*—
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Dagenais, Jeanne: *See*—
Crepeau, Ernest, and Lapierre. 3,170,373.

Daimler-Benz Aktiengesellschaft: *See*—
Barenyi, Bela. 3,170,728.

Daley, Charles E. Portable and disposable gasoline container. 3,170,601, 2–23–65, Cl. 222—153.

Danhier, Francois G., to La Soudure Electrique Autogene, S.A. Process and apparatus for joining steel work by automatic and semi-automatic electric arc welding. 3,171,013, 2–23–65, Cl. 219—137.

Datex Corp.: *See*—
Wilson, Merton C., and Spaulding. 3,171,117.

Davies, Theodore E., to The North American Mfg. Co. Apparatus for scale free heating of metals. 3,170,681, 2–23–65, Cl. 263—40.

Davis, Lill. Coin-operated service buffet counter. 3,170,554, 2–23–65, Cl. 194—2.

Dayton Steel Foundry Co., The: *See*—
Walther, George N. and F. S., and Waite. 3,170,716.

Deakin, Stanley T., to Sealectro Corp. Electric-circuit selectors. 3,170,745, 2–23–65, Cl. 339—18.

Dearborn Chemical Co.: *See*—
Svrchek, Joseph G. 3,170,806.

Deaton, Homer W., to General Motors Corp. Humidity sensing control for a clothes drier. 3,170,774, 2–23–65, Cl. 34—45.

De Benneville, Peter L., and H. W. Blessing, to Rohm & Haas Co. Azo-bis-alkylphosphonates and corresponding acids. 3,170,913, 2–23–65, Cl. 260—192.

Deegan, James J.: *See*—
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Deere & Co.: *See*—
Harrington, Roy E., and Forth. 3,170,414.
Hubbard, Arthur L. 3,170,277.
Popeller, Maurice A. 3,170,579.

Deghenghi, Romano: *See*—
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Dehmelt, Klaus: *See*—
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Delat, Herbert H., to The Firestone Tire & Rubber Co. Preparation and application of tire material, the tire thus produced and the apparatus used. 3,170,499, 2–23–65, Cl. 152—330.





Delttrick, Henry L., and R. W. Hanson, to Michigan Special Machine Co. Micrometer tool setting gage. 3,170,242, 2–23–65, Cl. 33—165.

De Mott, Arthur E.: *See*—
Huston, William J., Sr., and De Mott. 3,170,202.

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Herpich, William A., and French. 3,170,377.

Dempster, John S., to Dempster Bros., Inc. Hydraulic system. 3,170,379, 2–23–65, Cl. 91—414.

Denis, Samuel, to Rieter Machine Works Ltd. Grate for bale rasp. 3,170,196, 2–23–65, Cl. 19—80.

Denkewalter, Robert G., and D. J. Shombert, to Merck & Co., Inc. Semiconductor diodes. 3,171,068, 2–23–65, Cl. 317—234.

Denne, Edward C., Jr., to SKF Industries, Inc. Expansion mounting. 3,170,737, 2–23–65, Cl. 308—59.

DeRees, Delbert D., and R. M. Fox, to General Motors Corp. Automotive heating and air conditioning systems. 3,170,509, 2–23–65, Cl. 165—42.

Deschamps, Jeanne: *See*—
Crepeau, Ernest, and Lapierre. 3,170,373.

De Sequin des Hons, Luc D. Analogue computer more particularly utilisable for calibrating a measuring device. 3,171,023, 2–23–65, Cl. 235—197.

Deslauriers, Hattie nee Robillard. Female urinal. 3,170,170, 2–23–65, Cl. 4—110.

Detrick, Kenneth L. Speaker device. 3,170,538, 2–23–65, Cl. 181—31.

Deutsch, Simon. Boat for sport or recreation. 3,170,436, 2–23–65, Cl. 115—41.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
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Dew, John N., and P. W. Reed, to Continental Oil Co. Method of miscible flooding. 3,170,513, 2–23–65, Cl. 166—9.

De Witt, Richard L., and H. W. Schmidt, to United States of America, National Aeronautics and Space Administration. Fluid coupling. 3,170,486, 2–23–65, Cl. 137—614.

Dezurik Corp.: *See*—
Roos, William N. 3,170,669.

Dibble, David B., and H. T. Hale, to Carrier Corp. Refrigeration system defrost control. 3,170,305, 2–23–65, Cl. 62—155.

Dickie, William R., to Hi-Shear Corp. Explosive separable nut. 3,170,363, 2–23–65, Cl. 85—33.

Dietrich, Otto E. Engine starter. 3,170,540, 2–23–65, Cl. 185—40.

Di Giacomo, Joseph D., and C. V. Staller, to American Machine & Foundry Co. Cigarette making machine. 3,170,467, 2–23–65, Cl. 131—66.

Dilks, Robert E., B. E. Corrons, J. A. Ihm, and R. G. Curtis, to General Dynamics Corp. Radar performance monitor. 3,171,124, 2–23–65, Cl. 343—17.7.

Dillard, George M., and G. L. Scott. Random permutation generator employing pulse width generator and circulating shift register. 3,171,082, 2–23–65, Cl. 328—60.

Di Marco, Aurelio: *See*—
Arcamone, Federico, Di Marco, Ghione, Pennella, and Green. 3,170,837.

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Doerer, Richard P., to Van Dresser Specialty Corp. Method of making and attaching an insulator to a supporting spring structure. 3,170,220, 2–23–65, Cl. 29—91.1.

Doerer, Richard P., to Van Dresser Specialty Corp. Method of stretching and attaching an insulator to a supporting spring structure. 3,170,221, 2–23–65, Cl. 29—91.1.

Doerer, Richard P., to Van Dresser Specialty Corp. Method of making an insulator and attaching the same to a supporting spring structure. 3,170,222, 2–23–65, Cl. 29—91.1.

Doerer, Richard P., to Van Dresser Specialty Corp. Method of stretching and attaching an insulator to a supporting spring structure. 3,170,223, 2–23–65, Cl. 29—91.1.

Doerer, Richard P., and H. G. Guenther, to Van Dresser Specialty Corp. Press for ironing out pleats and the like. 3,170,255, 2–23–65, Cl. 38—49.

Dolce, Jerry P. Variable-surface game table. 3,170,694, 2–23–65, Cl. 273—115.

Dolza, John F. Valve actuating mechanism. 3,170,446, 2–23–65, Cl. 123—90.

Dominion Corset Co., Ltd.: *See*—
Gingras, Marcel. 3,170,466.

Dong, Paul, and J. W. Sedin, to Hughes Aircraft Co. Coupled coaxial cavity traveling-wave tube. 3,171,054, 2–23–65, Cl. 315—3.5.

Doom, Lewis G.: *See*—
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Dorey, George B., to Enterprise Railway Equipment Co. Hopper outlet discharge structure. 3,170,413, 2–23–65, Cl. 105—282.

Dorey, George B., to Enterprise Railway Equipment Co. Sliding hopper closure operating and supporting mechanism. 3,170,609, 2–23–65, Cl. 222—505.

Dötser, Richard, to Siemens-Schuckertwerke Aktiengesellschaft. Method for producing gallium, particularly for semiconductor purposes. 3,170,857, 2–23–65, Cl. 204—59.

Doub, Leonard, to Parke, Davis & Co. 1-substituted 4,6-diamino-1,2-dihydro-2,2-dimethyl-S-triazine compounds. 3,170,925, 2–23–65, Cl. 260—249.9.

Dow Chemical Co., The: *See*—
Britton, Edgar C., and Beman. 3,170,961.
Floria, Vernon D., and Raich. 3,170,908.
Howard, William L. 3,170,958.
Lashua, Sherman C. 3,170,953.
Muehlberg, Paul E., Jeffrey, and Harriman. 3,170,858.
Repko, John P. 3,170,619.
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White, William S. 3,170,815.

Dow Corning Corp.: *See*—
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Boyd, Gerald C., and Vincent. 3,170,890.
Brown, Paul L., and Hyde. 3,170,894.
Speier, John L. 3,170,891.
Speier, John L. 3,170,941.
Tyler, Leslie J. 3,170,962.

Downie, Robert H., to American Can Co. Method of making cutting dies. 3,170,342, 2–23–65, Cl. 76—107.

Downs, Ernest W., and F. F. La Casse, to United States of America, Army. Captive bolt. 3,170,473, 2–23–65, Cl. 135—3.

Dreier, Richard L.: *See*—
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Drengler, George R., M. B. Clark, R. E. Stark, and T. R. Beatty, to Union Carbide Corp. Method of making duplex electrodes for high rate primary batteries. 3,170,820, 2–23–65, Cl. 136—10.

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Isley, Walter F., and Druzynski. 3,170,503.

Dryden, Hugh L., deputy administrator of the National Aeronautics and Space Administration, with respect to an invention of M. A. Appel and D. F. Weitzel. Propellant tank pressurization system. 3,170,295, 2–23–65, Cl. 60—39.48.

Dryden, Hugh L., deputy administrator of the National Aeronautics and Space Administration, with respect to an invention of W. F. MacGlashan. Ejection unit. 3,170,605, 2–23–65, Cl. 222—389.

Dubini, Antonio. Method of producing a gang of nailing means from sheet metal. 3,170,279, 2–23–65, Cl. 59—77.

Ducati, Adriano C., to Giannina Scientific Corp. Method of effecting magnetic deformation of a workpiece. 3,171,014, 2–23–65, Cl. 219—149.

Ducon Co., Inc., The: *See*—
Held, Hans J. 3,170,777.

Dudek, Joseph A., and E. L. Reed, to United States of America, Atomic Energy Commission. Self-moderating fuel element. 3,170,847, 2–23–65, Cl. 176—71.

Duggan, James E., to Watts Electric & Mfg. Co. Facial mask with oxygen/air mixing means. 3,170,463, 2–23–65, Cl. 128—205.

Dumont, Arthur F.: *See*—
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Duncan, Charles S., and H. L. Taylor, to Westinghouse Electric Corp. Method for encapsulating semiconductors. 3,170,813, 2–23–65, Cl. 117—215.

Dunifon, Gene R., and P. J. McCarthy, to Ford Motor Co. Movable steering column. 3,170,711, 2–23–65, Cl. 280—87.

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Du Pont de Nemours, E. I., and Co.: *See*—
Busse, Warren F. 3,170,892.
Fields, Reuben T. 3,170,190.
Hyson, Archibald M. 3,170,889.
Noyes, Paul R. 3,170,838.
Proskow, Stephen. 3,170,949.
Rosenberg, Richard M. 3,170,954.
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Tocker, Stanley. 3,170,899.
White, Jesse O. 3,170,952.

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Dutro, Orville V., and S. H. Hewson. Ink fountain and ductor roll drive. 3,170,397, 2–23–65, Cl. 101—350.

Dziadulonis, Walter, and C. Somy. Portable iron. 3,170,257, 2–23–65, Cl. 38—77.

Dziengel, Kurt, to Chemische Fabrik Tempelhof. Method of producing durable saponine containing extracts from horse chestnut and products obtained therefrom. 3,170,916, 2–23–65, Cl. 260—210.5.

E & R Mfg. Co., Inc.: *See*—
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Eclipse Fuel Engineering Co.: *See*—
Jackson, Herbert N. 3,170,443.

Economy Baler Co.: *See*—
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Economy Elevator Enterprises, Inc.: *See*—
Kolts, William F., and Reese. 3,170,640.

Edgerton, Germeshausen & Grier, Inc.: *See*—
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Edwards High Vacuum Ltd.: *See*—
Siddall, George, Holland, and Hilliard. 3,171,017.

Eggers, George M., to General Motors Corp. Variable rate leaf spring suspension. 3,170,682, 2–23–65, Cl. 267—52.

Eggleton, Oswald J. Means for folding in laundry operations. 3,170,684, 2–23–65, Cl. 270—62.

Ehlen, Jack W., and G. A. Frech, to McCulloch Corp. Solid toe router saw chain. 3,170,497, 2–23–65, Cl. 143—136.

Elmco Corp., The: *See*—
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Hounsfield, Godfrey N. 3,171,101.

Electric Storage Battery Co., The: *See*—
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Elks, Joseph, G. H. Phillipps, D. E. Clark, D. A. Thomas, and L. Stephenson, to Glaxo Laboratories Ltd. Preparation of 9(11)-dehydro-12-desoxy sapogenins. 3,170,921, 2–23–65, Cl. 260—239.55.
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Tompkins, Melvin W., and Ellis. 3,170,385.
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English Electric Co. Ltd., The: *See*—
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English, Lawrence P., to KSM Products, Inc. Stud welding device. 3,171,011, 2–23–65, Cl. 219—98.
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Dorey, George B. 3,170,413.
Dorey, George B. 3,170,600.
Esso Research and Engineering Co.: *See*—
Pattison, Donald. 3,170,864.
Ettenberg, Morris: *See*—
Targ, Russell, and Ettenberg. 3,171,053.
Ewing, John W. Auxiliary power unit for inboard cruisers. 3,170,434, 2–23–65, Cl. 115—5.
Ex-Cell-O Corp.: *See*—
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Eyster, Floyd E. Conveyor turn mechanism. 3,170,562, 2–23–65, Cl. 198—127.
Fabricated Metals Corp.: *See*—
Kleinknecht, George J. 3,170,507.
Falconer, Charles B., to Laboratory for Electronics, Inc. Counting circuit employing plural multi-cathode counting tubes. 3,171,059, 2–23–65, Cl. 315—84.6.
Fancher, Llewellyn W., and G. P. Willsey, to Stauffer Chemical Co. Chlorinated allyl thiocyanates. 3,170,942, 2–23–65, Cl. 260—454.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
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Knipp, Ulrich, and Mühlhausen. 3,170,972.
Wagner, Kuno, and Kritzler. 3,170,896.
Farnsworth, George H., to I-T-E Circuit Breaker Co. Removable grounding receptacle for panelboards. 3,170,744, 1–23–65, Cl. 339—14.
Farrington Mfg. Co.: *See*—
Avgerinos, Costas. 3,170,396.
Faust, Walter, to Telefoban und Normalzeit G.m.b.H. Device for making strips of predetermined length from a sheet material wound to form a roll. 3,170,614, 2–23–65, Cl. 226—134.
Fazio, Dominick: *See*—
Oldenburg, Kenneth F., Kuhne, and Fazio. 3,170,233.
Febco, Inc.: *See*—
Reinecke, Howard E. 3,170,330.
Federighi, George J., and W. E. Cusens, to Chill Master Corp. Device for chilling the interiors of drinking glasses. 3,170,309, 2–23–65, Cl. 62—458.
Felsher, William. Magnetic target games. 3,170,693, 2–23–65, Cl. 273—102.2.
Felter, John V. Diffusers. 3,170,387, 2–23–65, Cl. 98—40.
Fenestra, Inc.: *See*—
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Fenoglio, Charles E.: *See*—
Pianowski, Leon J., and Fenoglio. 3,170,599.
Ferguson, Henry B., to Jersey Production Research Co. Playback system. 3,171,105, 2–23–65, Cl. 340—174.1.
Ferri, Antonio, to Gruen Applied Science Laboratories, Inc. Vertical takeoff aerial lifting device. 3,170,285, 2–23–65, Cl. 60—35.6.
Feuge, Reuben O., and W. Landmann, to United States of America, Agriculture. Process of preparing stable triglycerides of fat forming acids. 3,170,799, 2–23–65, Cl. 99—118.
Fewel, Kenneth J., G. P. Schell, and B. R. Winborn, to Ling-Temco-Vought, Inc. Vehicle with pneumatic support. 3,170,533, 2–23–65, Cl. 180—9.2.
Fibish, Arthur, to Illinois Tool Works Inc. Measuring apparatus. 3,170,241, 2–23–65, Cl. 33—147.
Fields, Reuben T., to E. I. du Pont de Nemours and Co. Extrusion apparatus. 3,170,190, 2–23–65, Cl. 18—12.
Fike, Louis T., to Super Mold Corp. of California. Electric heating unit for tire matrices. 3,170,193, 2–23–65, Cl. 18—38.
Filto Pipes, Inc.: *See*—
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Firestone Tire & Rubber Co.: *See*—
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Knox, Harold W. 3,170,195.
Stearns, Richard S. 3,170,903.
First National Bank of Boston, The: *See*—
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First National Bank of Madison, Wis., The: *See*—
Sloan, Edward C., and Ahern. 3,170,797.
Fisher, Chester D., to Sprout, Waldron & Co., Inc. Attrition mill apparatus. 3,170,649, 2–23–65, Cl. 241—292.
Fisons Fertilisers Ltd.: *See*—
Janikowski, Stanislaw M., and Sheldrick. 3,170,761.
Fite, Luther S., to W. D. Tyra, Sr. Screw type earth anchor and pipeline saddle. 3,170,663, 2–23–65, Cl. 248—49.
Fitzmaurice, John A., and E. N. Sabbagh, to Baird-Atomic, Inc. Character recognition devices. 3,171,097, 2–23–65, Cl. 340—146.3.
Fleming, Robert W., to Parke, Davis & Co. N-t-butyl-1,4-butanediamine and salts thereof. 3,170,950, 2–23–65, Cl. 260—501.
Flodin Inc.: *See*—
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Flodin, John F., to Flodin Inc. Carton filling and weighing device. 3,170,528, 2–23–65, Cl. 177—52.
Floria, Vernon D., and W. J. Raich, to The Dow Chemical Co. Catalyst and process for polymerization of propylene. 3,170,908, 2–23–65, Cl. 260—93.7.
Foicke, Walter A. Internal combustion engine. 3,170,445, 2–23–65, Cl. 123—75.
Foil, Gerhard: *See*—
Spohn, Karl, and Foil. 3,170,219.
Forbes, Gertrude P. Attachment for a walking assist device. 3,170,475, 2–23–65, Cl. 135—57.
Ford Motor Co.: *See*—
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Dunifon, Gene R., and McCarthy. 3,170,711.
Gallie, Daniel G. 3,170,632.
Hildebrandt, Eugene E., and Schults. 3,170,712.
Howes, Benjamin T., and Swatman. 3,170,292.
Ivanchich, Peter G. 3,170,338.
Lange, Hans D. 3,170,739.
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Schutte, Charles E. 3,170,722.
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Harrington, Roy E., and Forth. 3,170,414.
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Fortier, Roland, to Les Industries Electriques de Thetford Ltee. Engine starting system. 3,170,451, 2–23–65, Cl. 123—179.
Foster, Leigh C., and P. E. Reeves, to Zenith Radio Corp. System for producing short pulses of X-ray energy. 3,171,030, 2–23–65, Cl. 250—95.
Foulkes, Ronald M., to Associated Electrical Industries (Manchester) Ltd. Digital computers for data processing systems. 3,171,099, 2–23–65, Cl. 340—172.5.
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Fox, Robert M.: *See*—
De Rees, Delbert D., and Fox. 3,170,509.
Foxboro Co., The: *See*—
Peterson, Neil B. 3,171,043.
Fraak, Raymond G., to Pennsalt Chemicals Corp. Rotary seal. 3,170,576, 2–23–65, Cl. 214—17.
Fransen, John, to J. A. Fransen. Control device for furnace gases in hot water boilers. 3,170,419, 2–23–65, Cl. 110—97.
Fransen, John A.: *See*—
Fransen, John. 3,170,419.
Frayer, Theodore, to The Goodyear Tire & Rubber Co. Self energizing ring disc brake. 3,170,542, 2–23–65, Cl. 188—76.
Fraxa, Everett J., and L. Rapoport, to American Cyanamid Co. Preparation of dialkyl cyanovinylamines. 3,170,948, 2–23–65, Cl. 260—465.5.
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Ehlen, Jack W., and Frech. 3,170,497.
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Freyermuth, Harlan B., D. I. Randall, and S. R. Buc, deceased (by D. M. Buc, administratrix), to General Aniline & Film Corp. Azo dyestuffs containing a methylenesulfonylethanol radical or its sulfate ester. 3,170,912, 2–23–65, Cl. 260—163.
Freyermuth, Harlan B., D. I. Randall, and S. R. Buc, deceased (by D. M. Buc, administratrix), to General Aniline & Film Corp. Azo dyestuffs. 3,170,914, 2–23–65, Cl. 260—199.
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Froehlich, Bernard F. Rotary table with dividing attachment. 3,170,340, 2–23–65, Cl. 74—813.
Frye, Burton L. R. Microfilm viewer. 3,170,259, 2–23–65, Cl. 40—63.
Fuchs, Warren J.: *See*—
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Fuerst, Robert J., to Korea Mfg. Corp. Contact copy correcting sheet and method of using. 3,170,807, 2–23–65, Cl. 117—2.
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Kodama, Shinjiro, Fukui, Yuasa, Shimizu, Kagiya, Machi, Hirata, and Yagi. 3,170,900.
Fukushima, Danji, to Zaidan Hojin Noda Sangyo Kagaku Kenkyusho. Method for treatment of soybean proteins. 3,170,802, 2–23–65, Cl. 99—145.
Gabor, Dennis, to National Research Development Corp. Flat display tube utilizing unique collimator. 3,171,056, 2–23–65, Cl. 315—18.
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Gaertner, Van R., to Monsanto Co. Sucrose ethers. 3,170,915, 2–23–65, Cl. 260—210.
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Galke, Ralph W., E. J. Polley, and R. L. Rost, to Zenith Radio Corp. Tape recorder. 3,170,651, 2–23–65, Cl. 242—55.12.
Gallie, Daniel G., to Ford Motor Co. Vehicle heating and ventilation system. 3,170,632, 2–23–65, Cl. 237—2.
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Kelley, Archibald P., and Norman. 3,170,529.
Garwood, Donald C., to United States of America, National Aeronautics and Space Administration. Ionization vacuum gauge. 3,171,061, 2–23–65, Cl. 324—33.
Gass, Robert N., to Hardwick Stove Co. Removable oven door and hinge assembly. 3,170,455, 2–23–65, Cl. 126—194.
Gatto, Charles. Conveyor apparatus. 3,170,564, 2–23–65, Cl. 198—165.
Gaubis, Leonard L., and E. H. Kusiak, to United Aircraft Corp. Feathered propeller control. 3,170,521, 2–23–65, Cl. 170—160.29.
Gauldie, Kenneth, to Hydraulic Crushers Ltd. Thrust transmitting apparatus for jaw crushers. 3,170,644, 2–23–65, Cl. 241—264.
Gauriat, Roger, to Cie Electro-Mecanique. Apparatus for manufacturing metal parts by deformation. 3,170,343, 2–23–65, Cl. 80—24.
Geisebauer, Karl. Method of producing lead-acid storage battery plates and plates so produced. 3,170,823, 2–23–65, Cl. 136—38.
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Freyermuth, Harlan B., Randall, and Buc. 3,170,914.
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General Electric Co.: *See*—
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Lemmond, Charles G. 3,171,106.
MacFadyen, Kenneth W., and Polito. 3,170,986.
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General Electronic Laboratories, Inc.: *See*—
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General Motors Corp.: *See*—
Adair, Samuel E. 3,171,072.
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Lystad, Leonard A. 3,170,726.
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Murphy, Joseph E., and Starsec. 3,171,077.
Norton, James A., and Lake. 3,170,826.
Peters, Theodore F. 3,170,332.
Riddel, John W. 3,171,019.
Rohde, Robert P., and Thompson. 3,170,378.
Schwartswalder, Karl. 3,171,052.
Shellhause, Ronald L. 3,170,298.
Shrode, Wilford B. 3,170,334.
Van House, Robert M., Kenrick, and Kellogg. 3,170,536.
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General Telephone and Electronics Laboratories, Inc.: *See*—
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Morrison, George H., Pallila, and Zloczower. 3,170,886.
Gennari, Jervie J., to United States of America, Navy. Stream and sound speed instrument. 3,171,095, 2–23–65, Cl. 340—5.
Gerber, Eduard A., to United States of America, Army. Crystal frequency temperature compensation. 3,171,048, 2–23–65, Cl. 310—8.9.
Geren, Keith E., W. C. Hubbard, W. A. Sauer, and D. A. Young, to United States of America, Navy. Heterodyne autocorrelation transponder. 3,171,094, 2–23–65, Cl. 340—2.
Gerlach, Horst W. A., to United States of America, Army. Traveling wave amplifier and oscillator with tunnel diodes. 3,171,086, 2–23–65, Cl. 330—43.
Gerlich, Stephen. Toaster cover and serving tray device. 3,170,416, 2–23–65, Cl. 108—42.
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Gibson, James L. Cushioning device for railroad car couplers. 3,170,575, 2–23–65, Cl. 213—43.
Giddings & Lewis Machine Tool Co.: *See*—
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Gift, Harold C., and L. P. Procter, to Crompton & Knowles Corp. Process for producing level dyeings on polyamide fibers. 3,170,757, 2–23–65, Cl. 8—55.
Gilbert, George W., to United States of America, Navy. Weapon transfer dolly latch mechanism. 3,170,582, 2–23–65, Cl. 214—394.
Gingras, Marcel, to Dominion Corset Co., Ltd. Foundation garment of the panty girdle type. 3,170,466, 2–23–65, Cl. 128—528.
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Triplett, George C. 3,170,206.
Glasgal, Ralph. System for stereo separation ratio control, elimination of cross-talk and the like. 3,170,991, 2–23–65, Cl. 179—1.
Glassman, Irvin, to Air Reduction Co., Inc. Method of producing thrust by hydrogenation of an acetylenic hydrocarbon. 3,170,281, 2–23–65, Cl. 60—35.4.
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Bauer, Oliver F., and Snook. 3,170,976.
Gleichman, John F.: *See*—
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Godfrey, Kenneth L., to Monsanto Co. Nitromethylbenzylphosphorothioic acid diesters and nematocidal methods employing same. 3,170,835, 2–23–65, Cl. 167—22.
Goebel, Helmut K., to General Dynamics Corp. Fast charging circuit for pulse networks. 3,171,040, 2–23–65, Cl. 307—88.5.
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Nagelschmidt, Rudolf, Goecke, and Kopsch. 3,170,902.
Goggi, Charles P., to Goggi Corp. Apparatus and method for introducing engine drainage into the fuel system. 3,170,449, 2–23–65, Cl. 123—136.
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Goggi, Charles P. 3,170,449.
Goldfarb, Adoph E. Animated toothbrush holder. 3,170,265, 2–23–65, Cl. 46—116.
Goldsmith, Bernard M., to Nytronics, Inc. Transformer encased in magnetic tape. 3,171,091, 2–23–65, Cl. 336—83.
Gollings, Archie H., to The Firestone Tire & Rubber Co. Retractable sidewall-valve curing pin. 3,170,188, 2–23–65, Cl. 18—2.
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Cook, Albert W., and Bricker. 3,170,543.
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Gorannson, Charles D., and E. A. Hennigan. Golf club with handle sections pivotally connected on a horizontal axis. 3,170,690, 2–23–65, Cl. 273—77.
Gordon, James. Electrical brush holder. 3,171,050, 2–23–65, Cl. 310—239.
Grabowski, Thomas S., to Borg-Warner Corp. Blends of poly (methyl methacrylate) and graft copolymer resins. 3,170,964, 2–23–65, Cl. 260—876.
Graham, John W., and N. L. Muench, to Jersey Production Research Co. Fracturing formation and stimulation of wells. 3,170,517, 2–23–65, Cl. 166—42.
Grant, Raymond F., ½ to K. T. Snow, and E. L. Benno. Furniture construction. 3,170,729, 2–23–65, Cl. 297—440.
Grantom, Roy L.: *See*—
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Gray, Willard F. M., and R. O. Moser, to General Electric Co. Method of making foil wound electrical coils. 3,170,225, 2–23–65, Cl. 29—155.57.
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Green, John I. T., to The British Iron and Steel Research Assn. Positioning systems. 3,170,341, 2–23–65, Cl. 74—822.
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Gregory, Marvin L. Soil aerator and conditioner. 3,170,422, 2–23–65, Cl. 111—96.
Grimes Mfg. Co.: *See*—
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Grinde, George H. Dip stick heater. 3,171,015, 2–23–65, Cl. 219—205.
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Grosse, Aristid V.: *See*—
Kirshenbaum, Abraham D., Stokes, and Grosse. 3,170,282.
Gross, Eugene. Ear clip. 3,170,212, 2–23–65, Cl. 24—252.
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Grove Valve and Regulator Co.: *See*—
Bryant, Austin U. 3,170,478.

Gruber, Wilhelm, and W. Rank, to Rohm & Haas G.m.b.H. Preparation of cyanformamide. 3,170,947, 2-23-65, Cl. 260—465.4.

Gruen Applied Science Laboratories, Inc.: *See*—
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Gruenstein, Rolf J. Display apparatus and system. 3,170,418, 2-23-65, Cl. 108—101.

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Guettel, Marvin A.: *See*—
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Gullen, Annie A.: *See*—
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Gullen, Lloyd S.: ⅓ to A. A. Gullen, and ⅓ to B. Barker. Support net. 3,170,611, 2-23-65, Cl. 224—42.1.

Gundlach, Robert W., and V. S. Mihajlov, to Xerox Corp. Duplicating. 3,170,395, 2-23-65, Cl. 101—149.4.

Guthrie, Lyle D. Stacked heat interchanger. 3,170,511, 2-23-65, Cl. 165—108.

Gutsche, Heinrich, to Merck & Co., Inc. Process for making semiconductors of predetermined resistivities. 3,170,882, 2-23-65, Cl. 252—62.3.

György, Lajos: *See*—
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Haagensen, Duane B., to G. L. Allot and R. E. Bonnekson. Oil well microwave tools. 3,170,319, 2-23-65, Cl. 166—60.

Haase, Charles W., to United States of America, Navy. Single input gate controlling circuit. 3,171,041, 2-23-65, Cl. 307—88.5.

Haddon, Gerard V. Rotary engine. 3,170,444, 2-23-65, Cl. 123—41.34.

Haefelin, Harry T.: *See*—
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Hale, Harry T.: *See*—
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Hale, Harry T., to Carrier Corp. Refrigeration system control. 3,170,304, 2-23-65, Cl. 62—155.

Hall, Albert M.: *See*—
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Hall, Emmett A. Automatic fish catcher. 3,170,262, 2-23-65, Cl. 43—16.

Hall, Russell V. Air supported lawn mower. 3,170,276, 2-23-65, Cl. 56—25.4.

Hall, Victor C., to Merck & Co., Inc. Aerosol ophthalmic device. 3,170,462, 2-23-65, Cl. 126—173.

Halvorsen, Kjell, and J. O. Knapp, to Strängbetong, Aktiebolaget. Apparatus for lifting long building elements. 3,170,723, 2-23-65, Cl. 294—67.

Hamada, Yoshio: *See*—
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Hammond, Roland P., to United States of America, Atomic Energy Commission. Paste reactor. 3,170,843, 2-23-65, Cl. 176—18.

Hand, Larrabee D., Jr., to Tennessee Valley Authority. Production of ordinary superphosphate with strong sulfuric acid. 3,170,784, 2-23-65, Cl. 71—40.

Hanel, Klaus. Collapsible boat. 3,170,174, 2-23-65, Cl. 9—2.

Handschumacher, Richard A.: *See*—
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Hanse, Albert B., and L. N. Klint, to Pettibone Mulliken Corp. Apparatus for crushing rock or the like including a swinging breaker bar. 3,170,643, 2-23-65, Cl. 241—189.

Hanson, Robert W.: *See*—
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Rokunohe, Mitsuru, Yoshida, Hanzawa, Homada, Hida, and Miyazaki. 3,170,968.

Hardwick Stove Co.: *See*—
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Harling, Donald W., to McGraw-Edison Co. Luminaire. 3,170,634, 2-23-65, Cl. 240—25.

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Harrington, Roy E., and M. W. Forth, to Deere & Co. Wafering die structure with splitter. 3,170,414, 2-23-65, Cl. 107—14.

Harrison, George and N. Vacuum casting machines. 3,170,203, 2-23-65, Cl. 22—73.

Harrison, Lawrence L., to Lamson Corp. High speed sorting conveyor. 3,170,572, 2-23-65, Cl. 209—74.

Harrison, Nelson: *See*—
Harrison, George and N. 3,170,203.

Harrison, Richard L., and G. E. Weibel, to General Telephone and Electronics Laboratories, Inc. Ripple velocity microwave tube. 3,171,055, 2-23-65, Cl. 315—6.41.

Harvey, Robert R., and E. M. Craighead, to Phillips Petroleum Co. Aqueous displacement of oil. 3,170,514, 2-23-65, Cl. 166—9.

Hausman, John M. Variable speed drive with brakes. 3,170,550, 2-23-65, Cl. 192—12.

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Swaim, Frank H., and Hausner. 3,170,404.

Hawkes, Fred (N.V. Engineers) Ltd.: *See*—
Hawkes, Sidney. 3,170,177.

Hawkes, Sidney, to Fred Hawkes (N.V. Engineers) Ltd. Last removing machine. 3,170,177, 2-23-65, Cl. 12—15.1.

Hawkins, Harold F., to Dunlop Tire and Rubber Corp. Method and apparatus for severing strip material into lengths. 3,170,350, 2-23-65, Cl. 83—166.

Heffron, Charles B., to Westinghouse Electric Corp. Vacuum tube heater idling circuit. 3,171,083, 2-23-65, Cl. 328—260.

Hegland, Reidar, to Swiss Aluminium Ltd. Reinforced concrete structure in an electrolytic furnace house for producing aluminum. 3,170,862, 2-23-65, Cl. 204—244.

Heil, Theodore, to Heilite Trailers, Inc. Camping trailer. 3,170,724, 2-23-65, Cl. 296—23.

Heilite Trailers, Inc.: *See*—
Heil, Theodore. 3,170,724.

Heilprin, Laurence B., to United States of America, Army. Flywheel for generator in ordnance missile. 3,170,403, 2-23-65, Cl. 102—70.2.

Heitman, Arthur C.: *See*—
Woodward, Robert M., and Heitman. 3,170,789.

Held, Hans J., to The Ducon Co., Inc. Mounting for filter tubes. 3,170,777, 2-23-65, Cl. 55—490.

Helesfal, Steven: *See*—
Miller, Harry C., and Helesfal. 3,170,316.

Helfrich, William E.: *See*—
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Hellenga, Ernest G., to Pilot Inc. Trailer hitch attachment for automobile bumpers. 3,170,717, 2-23-65, Cl. 280—490.

Heller, Robert M., to Watts Electric & Mfg. Co. Lamp bulb stabilising filament centering tube within a sealable capsule. 3,170,751, 2-23-65, Cl. 339—186.

Hemstreet, Harold S., and R. A. Woodson, to General Precision, Inc. Method of measuring by interference. 3,170,982, 2-23-65, Cl. 88—14.

Henebry, Thomas F., to E. M. Junkins. Automatic guiding apparatus. 3,170,423, 2-23-65, Cl. 112—2.

Henney, James E., and J. J. McCann. Internal body heating devices. 3,170,465, 2-23-65, Cl. 128—401.

Hennigan, Edward A.: *See*—
Goranson, Charles D., and Hennigan. 3,170,690.

Henninger, Elmer G.: *See*—
Matheson, William A., and Henninger. 3,170,565.

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Hensley, William H.: *See*—
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Herman, Hartley R., and B. R. Alsobrook, to Rohr Corp. Fixture for making honeycomb panel. 3,170,428, 2-23-65, Cl. 113—99.

Herpich, William A., and H. C. French, Jr., to Dempster Bros., Inc. Compaction apparatus. 3,170,377, 2-23-65, Cl. 91—169.

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Kolts, William F., and R. J. Reese, to Economy Elevator Enterprises, Inc. Hammermill screen. 3,170,640, 2-23-65, Cl. 241—86.

Koltun, Walter L., to United States of America, Health, Education & Welfare. Space filling atomic units and connectors for molecular models. 3,170,246, 2-23-65, Cl. 35—18.

Koltuniak, Michael A., T. N. Urquhart, and E. J. Sopcak, to The Udylite Corp. Diode heat sink structure. 3,171,069, 2-23-65, Cl. 317—234.

Komeno, Taichiro, to Shionogi & Co., Ltd. 3-oxo-16β-mercapto-17β-hydroxy-5α-androstane-16-17 acetonides and the process for the production thereof. 3,170,920, 2-23-65, Cl. 260—239.53.

Komorowski, Clarence L., to General Motors Corp. Adjustable reclining automobile rear seat and head rest therefor. 3,170,725, 2-23-65, Cl. 296—63.

Konyevits, Ferenc: *See*—
Kemeny, Janos, Cosnuau, Jelensperger, and Konyevits. 3,170,966.

Koppers Co., Inc.: *See*—
Bachman, Paul W. 3,170,870.
Bonnett, Daniel W. 3,170,850.
Leaton, Gerd, and Schwartzman. 3,170,960.
Obenchain, Richard F. 3,170,977.
Van Ackeren, Joseph. 3,170,851.

Kopsch, Heinz: *See*—
Nagelschmidt, Rudolf, Goecke, and Kopsch. 3,170,902.

Kores Mfg Corp.: *See*—
Fuerst, Robert J. 3,170,807.

Korones, Herbert D.: *See*—
Rosenberger, Harold E., and Korones. 3,170,984.

Kovacevich, Janko P. Instructional reading material. 3,170,247, 2-23-65, Cl. 35—35.

Kramer, Albert J. Cleaning device. 3,170,186, 2-23-65, Cl. 15—332.

Kramer, Bruce E., to United States of America, Navy. Lightweight refractory metal structure. 3,170,289, 2-23-65, Cl. 60—35.6.

Kramer, Charles F.: *See*—
Kieny, Albert J., and Kramer. 3,170,491.

Krantz, Evert, A. Arborgh, and G. Wilhelmsson, to Svenska Flaktfabriken, Aktiebolaget. Spray-painting booths. 3,170,384, 2-23-65, Cl. 98—30.

Kraus, Herman I. Bowling score sheets. 3,170,719, 2-23-65, Cl. 282—23.

Krell, Abraham J.: *See*—
Jeffreys, George A., and Krell. 3,170,794.

Kritzler, Helmuth: *See*—
Wagner, Kuno, and Kritzler. 3,170,896.

Kroll, Harry, to Sarki Research and Development Corp. Bright nickel plating baths containing a vinyl pyridinium compound brightener. 3,170,853, 2-23-65, Cl. 204—49.

Kroll, Harry, to Sarki Research and Development Corp. Bright nickel plating bath containing a pyridinium or quinolinium phosphate brightener and method of electroplating therewith. 3,170,854, 2-23-65, Cl. 204—49.

Kroll, Harry, to Sarki Research and Development Corp. Bright nickel plating baths. 3,170,855, 2-23-65, Cl. 204—49.

Krynytzky, Alexander, to Baldwin-Lima-Hamilton Corp. Shear for billets and the like. 3,170,351, 2-23-65, Cl. 83—157.

Kuhne, Bryan F.: *See*—
Oldenburg, Kenneth F., Kuhne, and Fasio. 3,170,233.

Kuhrt, Friedrich, W. Engel, and H.-J. Lippmann, to Siemens-Schuckertwerke Aktiengesellschaft. Device for producing a torque or torsion responsive signal. 3,170,323, 2-23-65, Cl. 73—136.

Kuntzmann, Paul L. E., to Compagnie des Transmissions Mecaniques Seine-Doubs-Isere. Link plate chain construction. 3,170,335, 2-23-65, Cl. 74—250.

Kurashiki Rayon Co., Ltd.: *See*—
Imoto, Saburo. 3,170,869.
Tanabe, Kenichi, Saito, and Ashikaga. 3,170,973.

Kusiak, Edward H.: *See*—
Gaubis, Leonard L., and Kusiak. 3,170,521.

Kutik, Leon, F. W. Michelotti, S. T. Brancato, and A. W. Pucknat, to Interchemical Corp. Latices of vinylidene chloride interpolymers thickened with ethylene-maleic anhydride copolymer and article coated therewith. 3,170,888, 2-23-65, Cl. 260—29.6.

Kvello-Aune, Alf G., to Atlas Copco Aktiebolag. Devices for supplying fluid to a drilling tool. 3,170,525, 2-23-65, Cl. 175—218.

Laboratory for Electronics, Inc.: *See*—
Falconer, Charles B. 3,171,059.

La Casse, Philias F.: *See*—
Downs, Ernest W., and La Casse. 3,170,473.

Laffkas, Harry P.: *See*—
Knapp, Eugene J., and Laffkas. 3,170,569.
Knapp, Eugene J., and Laffkas. 3,170,571.

Lake, David P.: *See*—
Norton, James A., and Lake. 3,170,826.

Lamme, Robert E. Wheel cover with locking means. 3,170,733, 2-23-65, Cl. 301—37.

Lamson Corp.: *See*—
Harrison, Lawrence L. 3,170,572.

Landmann, Werner: *See*—
Feuge, Reuben O., and Landmann. 3,170,799.

Lange, Hans D., to Ford Motor Co. Bearing assembly. 3,170,739, 2-23-65, Cl. 308—135.

Langenberger, Helmut: *See*—
Walther, Rolf, Langenberger, and Rohrer. 3,170,625.

Lanning, John G., to Corning Glass Works. Ceramic burner plate. 3,170,504, 2-23-65, Cl. 158—116.

Lapierre, Stanislas: *See*—
Crepeau, Ernest, and Lapierre. 3,170,373.

Larry, Timothy A., to Mueller Co. Line stopping and valve inserting apparatus and method. 3,170,226, 2-23-65, Cl. 29—157.

Larsen, Theodore E., to Honeywell Inc. Thermostat with a permanent magnet snap switch. 3,171,003, 2-23-65, Cl. 200—138.

Larson, Ralph H., to The Bendix Corp. Hydrostatic thrust bearing device. 3,170,297, 2-23-65, Cl. 60—53.

Lashua, Sherman C., to The Dow Chemical Co. N-hydroxymaleamic acid. 3,170,953, 2-23-65, Cl. 260—534.

Laskey, James T.: *See*—
Carriere, Donald L., Laskey, and Swatman. 3,170,548.

Laufer, Louis, and B. W. Town, to Schwarz Bioresearch, Inc. Deamination of heterocyclic amino containing compounds. 3,170,917, 2-23-65, Cl. 260—211.5.

Lavino, E. J., and Co.: *See*—
Palacio, Francis C. 3,170,420.

Lawler, Joseph A., to Blue M Electric Co. Temperature control. 3,171,018, 2-23-65, Cl. 219—494.

Lawrence, Joseph L.: *See*—
Puharich, Henry K., and Lawrence. 3,170,993.

Lawrence, Joyce M.: *See*—
Wells, Ralph P., and Lawrence. 3,170,721.

Layne, Douglas K.: *See*—
Allen, James B., and Layne. 3,170,865.

Layne, Richard C. Dockboard unit. 3,170,179, 2-23-65, Cl. 14—71.

Leatherman, Vernon A. One-piece dustpan and wastebasket combination. 3,170,183, 2-23-65, Cl. 15—257.1.

Leeds and Northrup Co.: *See*—
List, Harold A., and Van Aller. 3,171,070.

Leibenzeder, Siegfried, to Siemens-Schuckertwerke Aktiengesellschaft. Method and device for producing hyperpure gallium. 3,170,856, 2-23-65, Cl. 204—59.

Leibenzeder, Siegfried, to Siemens-Schuckertwerke Aktiengesellschaft. Apparatus for producing hyperpure gallium. 3,170,861, 2-23-65, Cl. 204—239.

Leitz, Ernst, Gesellschaft mit beschrankter Haftung: *See*—
Mulch, Hans. 3,170,370.
Mulch, Hans, Jung, and Lussem. 3,171,006.

Lemmond, Charles Q., to General Electric Co. Information storage system. 3,171,106, 2-23-65, Cl. 340—174.1.

Lerner, Bernard J., and M. Leva. Gas-liquid contacting operations. 3,170,969, 2-23-65, Cl. 261—94.

Leslie Welding Co. Inc.: *See*—
Reynolds, Myron B. 3,170,386.

Leston, Gerd, and L. H. Schwartzman, deceased (by D. F. Schwartzman, executrix), to Koppers Co., Inc. Process for producing di-tertiary-butyl nitro phenols. 3,170,960, 2-23-65, Cl. 260—622.

Le Tourneau, Robert G. Vehicle operator's station. 3,170,173, 2-23-65, Cl. 5—348.

Leva, Max: *See*—
Lerner, Bernard J., and Leva. 3,170,969.

Lever Brothers Co.: *See*—
McNaught, John P. 3,170,801.
Pader, Morton, and Miles. 3,170,800.

Levin, Hyman R. Clothing pattern reproducer. 3,170,394, 2-23-65, Cl. 101—131.

Levine, Beth. Platform shoe structure. 3,170,248, 2-23-65, Cl. 36—2.5.

Levis, William W., Jr., to Wyandotte Chemicals Corp. Surface active agents. 3,170,938, 2-23-65, Cl. 260—404.5.

Levoin, Francis, to Real Patentauswertungs Anstalt. Control device with two push buttons for two colours ball point pens. 3,170,440, 2-23-65, Cl. 120—42.13.

Levoin, Francis, to Real Patentauswertungs Anstalt. Control device with two push buttons for two colours ball point pens. 3,170,441, 2-23-65, Cl. 120—42.13.

Levolor Lorentzen, Inc.: *See*—
Lorentzen, Hans K., Anderle, and Kapeller. 3,170,505.

Levy, Marilyn, to United States of America, Army. Photographic fixing bath. 3,170,793, 2-23-65, Cl. 96—61.

Lindsay, James B., to Kahle Engineering Co. Grid winding machine. 3,170,494, 2-23-65, Cl. 140—71.5.

Lindsey, William C.: *See*—
Holland, Warren E., Corley, and Lindsey. 3,170,516.

Ling-Temco-Vought, Inc.: *See*—
Fewel, Kenneth J., Schell, and Winborn. 3,170,533.

Link-Belt Co.: *See*—
Plume, William F. 3,170,339.

Linley, Francis M., Jr., to Montgomery & Co., Inc. Screw and nut assembly. 3,170,337, 2-23-65, Cl. 74—424.8.

Lippmann, Hans-Joachim: *See*—
Kuhrt, Friedrich, Engel, and Lippmann. 3,170,323.

List, Harold A., and W. H. Van Aller, to Leeds and Northrup Co. Electronic controlled motor system for process control. 3,171,070, 2-23-65, Cl. 318—28.

Little Giant Corp.: *See*—
Johnson, Damon B. 3,170,407.

Lockwood, Vernard E.: *See*—
Riebe, John M., and Lockwood. 3,170,657.

Loeb, Sidney, and G. R. Nagaraj, to The Regents of the University of California. Desalinization properties of high flow porous membranes by pressure treatment using aluminum ion. 3,170,867, 2-23-65, Cl. 210—22.

Loftin, James C., to Monie S. Hudson. Apparatus for use in determining preservative content of wood. 3,170,647, 2-23-65, Cl. 241—280.

Loop, John B.: *See*—
Brightman, John W., Cowley, and Loop. 3,170,176.

Lord, John G. Voting machine. 3,170,622, 2-23-65, Cl. 235—50.

Lord, John G., to Shoup Research and Development Corp. Automatic toll collection system for binary tokens. 3,171,020, 2-23-65, Cl. 235—61.11.

Lorentzen, Hans K., J. A. Anderle, and J. J. Kapeller, Jr., to Levolor Lorentzen, Inc. Full-closure type Venetian blinds. 3,170,505, 2-23-65, Cl. 160—176.

Lorens, Ray, to Sperry Rand Corp. Flip-flop circuit. 3,171,039, 2-23-65, Cl. 307—88.5.

Lovelace, Alan M.: *See*—
Reimschuessel, Herbert K., and Lovelace. 3,170,895.

Lovell, John S.: *See*—
Rannenberg, George C., and Lovell. 3,170,303.

Lovelock, James E., to National Research Development Corp. Ultraviolet gas analysis using a flow-through type ionization chamber. 3,171,028, 2-23-65, Cl. 250—83.3.

Lowrie, Harman S., to G. D. Searle & Co. Derivatives of dibenso [c,f][1,2] diazepine and dibenso [c,g][1,2] diazocine. 3,170,929, 2-23-65, Cl. 260—310.

Lowrie, Harman S., to G. D. Searle & Co. Derivatives of dibenso [1,4,5] thiadiazepine, dibenso [1,4,5] oxadiazepine and dibenso [1,2,5] triazepine. 3,170,930, 2-23-65, Cl. 260—310.

Lucsek, Walter: *See*—
Roberts, Franklin B., and Lucsek. 3,170,274.

Ludovici, Luigi. Revolving firearm. 3,170,261, 2-23-65, Cl. 42—59.

Luehring, Elmer L., to Joslyn Mfg. and Supply Co. Mechanism and circuitry for high voltage switching. 3,171,004, 2-23-65, Cl. 200—146.

Lugger, Sidney. Rotary toy apparatus. 3,170,687, 2-23-65, Cl. 272—33.

Lussem, Heribert: *See*—
Muich, Hans, Jung, and Lussem. 3,171,006.

Lygo, Walter F., to United Shoe Machinery Corp. Canvas paring machines. 3,170,356, 2-23-65, Cl. 83—130.

Lyman, Harold T., to Interstate Mfg. Corp. Cam mechanism. 3,170,331 2-23-65, Cl. 74—10.6.

Lyon, Joe M., Jr. Snap release container. 3,170,588, 2-23-65, Cl. 220—60.

Lystad, Leonard A., to General Motors Corp. Closure fastening means. 3,170,726, 2-23-65, Cl. 296—136.

MacFadyen, Kenneth W., and A. J. Polito, to General Electric Co. Electrical apparatus and stabilized dielectric material therefor. 3,170,986, 2-23-65, Cl. 174—17.

Machi, Sueo: *See*—
Kodama, Shinjiro, Fukui, Yuasa, Shimizu, Kagiya, Machi, Hirata, and Yagi. 3,170,900.

MacKeen, John C. Valuable protection system. 3,171,108, 2-23-65, Cl. 340—226.

Macklin, Richard L., to United States of America, Atomic Energy Commission. Naphthalene derivative scintillators. 3,170,884, 2-23-65, Cl. 252—301.3.

Maeda, Katsuhiko: *See*—
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,904.
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,905.
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,906.
Ueda, Kenichi, Onishi, Yoshimoto, Hosono, and Maeda. 3,170,907.

Maglio, Harold: *See*—
Simon, Harry, and Maglio. 3,171,061.

Makimoto, Mitoshi: *See*—
Takenaga, Yutaka, and Makimoto. 3,170,557.

Malamut, Russell M.: *See*—
Clar, Milton. 3,170,374.

Mangia, Elmer F., to E & R Mfg. Co., Inc. Tile and masonry saw. 3,170,454, 2-23-65, Cl. 125—13.

Manning, Edward V.: *See*—
Kent, Melvin L., and Manning. 3,170,450.

Mannix Co., Ltd.: *See*—
Christoff, James W. 3,170,410.

Manoogian, Alex, to Masco Corp. Mixing valve. 3,170,488, 2-23-65, Cl. 137—625.17.

Mantius, Ernest: *See*—
Richmond, William W., and Mantius. 3,170,227.

Manufacture de Produits Pharmaceutiques A. Christiaens Societe Anonyme: *See*—
Vanhoof, Pierre M. 3,170,924.

Marchand, Jacques. Skiing gloves and mitts. 3,170,703, 2-23-65, Cl. 280—11.37.

Marengo Inventions, Inc.: *See*—
Winston, Milton D., and Stephens. 3,170,180.

Marra, Roscoe E., to General Electric Co. Method and apparatus for controlling the thickness of rolled strip material. 3,170,344, 2-23-65, Cl. 80—35.

Martin, James H. Retractile stadium seat. 3,170,199, 2-23-65, Cl. 20—1.126.

Martin, Johannes J. Fuel charging apparatus for large furnaces. 3,170,577, 2-23-65, Cl. 214—23.

Martin, Merrill D. Die rule and method of forming and mounting the same. 3,170,358, 2-23-65, Cl. 83—673.

Martin, Raymond G., to United States of America, Navy. Fault indicator circuit for power supply system. 3,171,112, 2-23-65, Cl. 340—253.

Martin, William E. Suspended elevator scraper attachment. 3,170,254, 2-23-65, Cl. 37—8.

Martiniak, Leonard J., to General Electric Co. Domestic appliance. 3,170,743, 2-23-65, Cl. 312—213.

Maryland Cup Corp.: *See*—
Carter, Paul H. 3,170,568.

Masco Corp.: *See*—
Manoogian, Alex. 3,170,488.

Masland, C. H., & Sons: *See*—
Hoffman, Eugene M. 3,170,493.

Massingill, Jess L., to Metal Flo Corp. Method of making a casing. 3,170,236, 2-23-65, Cl. 29—534.

Matare, Herbert F., to The Bendix Corp. Device with combination of unipolar means and tunnel diode means. 3,171,042, 2-23-65, Cl. 307—88.5.

Matheson, William A., and E. G. Henninger, to Portable Elevator Mfg. Co. Bale diverter. 3,170,565, 2-23-65, Cl. 198—185.

Mathias, Benny B., and T. B. Sorbie, to Owens-Illinois Glass Co. Inspecting rims of glass containers for crizzle and line-over-finish defects. 3,171,033, 2-23-65, Cl. 250—224.

Mawhorr, Lloyd R.: *See*—
Johnson, George T., and Mawhorr. 3,170,296.

Maxson Electronics Corp.: *See*—
Spira, Joel S. 3,171,123.

May & Baker Ltd.: *See*—
Ash, Anothony S. F., Creighton, and Wragg. 3,170,926.

May, Clifford H., to The Briggs Filtration Co. Water filter-separator. 3,170,873, 2-23-65, Cl. 210—307.

Mayer, Oscar, & Co., Inc.: *See*—
Sloan, Edward C. 3,170,797.

Mayfield, Rees M., and W. G. Tope, to United States of America, Atomic Energy Commission. Method of making plutonium monocarbide. 3,170,759, 2-23-65, Cl. 23—14.5.

Mayhew, Lawrence E., and M. J. Shower hoop for play yards. 3,170,171, 2-23-65, Cl. 4—145.

Mayhew, Marian J.: *See*—
Mayhew, Lawrence E., and M. J. 3,170,171.

McAuley, Anthony, to A. B. Chance Co. Stringing block. 3,170,673, 2-23-65, Cl. 254—134.3.

McCann, James J.: *See*—
Heaney, James E., and McCann. 3,170,465.

McCarthy, Patrick J.: *See*—
Dunlon, Gene R., and McCarthy. 3,170,711.

McCarty, Horace G.: *See*—
Smith, Charles A., and McCarty. 3,170,699.

McCulloch Corp.: *See*—
Ehlen, Jack W., and Frech. 3,170,497.

McDaniels, David L.: *See*—
Weston, John W., McDaniels, Jech, Oldrieve, Petrasek, and Signorelli. 3,170,773.

McDonald, Johnnie F.: *See*—
Sparber, Frederick J., and McDonald. 3,170,270.

McElhinney, Eric M.: *See*—
Norris, Leonard, and McElhinney. 3,170,421.

McElligott, Paul A.: *See*—
Oakes, Earle T., Doom, Sundheim, and McElligott. 3,170,606.

McElroy, James N., to Intermountain Aviation, Inc. Aircraft conveyor system. 3,170,553, 2-23-65, Cl. 193—35.

McFerren, Edgar L., to Giddings & Lewis Machine Tool Co. Auxiliary high-speed table for vertical turret lathes and the like. 3,170,348, 2-23-65, Cl. 82—28.

McGraw-Edison Co.: *See*—
Curtin, Paul J. 3,170,635.
Gomersall, John R., Ireland, and Willman. 3,170,674.
Harling, Donald W. 3,170,634.
Phillips, Davis M. 3,171,008.
Rigert, Max. 3,171,001.

McLeod, Stewart B., and R. E. Shelhart, to Dura Corp. Rotor pump seal. 3,170,409, 2-23-65, Cl. 103—126.

McMillan, Peter W., and G. Partridge, to The English Electric Co. Ltd. Ceramics and their production. 3,170,805, 2-23-65, Cl. 106—39.

McNamara, James K. Electric plug with ground indicating light. 3,171,113, 2-23-65, Cl. 340—255.

McNaught, John P., to Lever Brothers Co. Low-calorie sweetening agent. 3,170,901, 2-23-65, Cl. 99—141.

McPherson, Elywn M., to McPherson Enterprises, Inc. Bar dispenser. 3,170,596, 2-23-65, Cl. 222—36.

McPherson Enterprises, Inc.: *See*—
McPherson, Elywn M. 3,170,598.

McShirley, Robert C. Amalgam producing machine. 3,170,648, 2-23-65, Cl. 241—284.

Medlar, Lewis A., to Fox Products Co. Battery charger with output voltage automatically matching battery rating. 3,171,076, 2-23-65, Cl. 320—31.

Meehan, John J.: *See*—
Kline, Leo, Sugihara, and Meehan. 3,170,804.

Melamed, Sidney, and R. H. Shimisu, to Rohm & Haas Co. Novel quaternary ammonium compounds and polymers thereof. 3,170,901, 2-23-65, Cl. 260—89.7.

Meland, Creighton R., to General Motors Corp. Ignition device. 3,171,046, 2-23-65, Cl. 307—156.

Merck & Co., Inc.: *See*—
Boudart, Michel, and Pollak. 3,170,859.
Brown, George A. 3,170,205.
Denkewalter, Robert G., and Shombert. 3,171,068.
Gutsche, Heinrich. 3,170,882.
Hall, Victor C. 3,170,462.
Prediger, Fred R., and Kniasuk. 3,170,329.
Schaarschmidt, Edward C. 3,170,825.

Metal Dynamics Inc.: *See*—
Rachman, Isadore B. 3,170,710.

Metal Flo Corp.: *See*—
Massingill, Jess L. 3,170,236.

Meter-All Mfg. Co., Inc.: *See*—
New, Russel W. 3,170,555.

Mewse, Charles, to Avdel Ltd. Ball detent coupling device with ring shaped friction means. 3,170,362, 2-23-65, Cl. 85—5.

Meyer, Robert E., and W. E. Helfrich, to United States of America, Navy. Oxygen injection system. 3,170,294, 2-23-65, Cl. 60—39.46.

Meyer, Siegfried. Collapsible umbrella. 3,170,474, 2-23-65, Cl. 135—26.

Meyer, Walter H. Car-top boat loader and carrier. 3,170,583, 2-23-65, Cl. 214—450.

Micale, Angelo. Four-way adjustable sewing machine foot. 3,170,426, 2-23-65, Cl. 112—240.





Michelotti, Francis W.: *See*—
Kutik, Leon, Michelotti, Brancato, and Pucknat. 3,170,888.

Michigan Special Machine Co.: *See*—
Delttrick, Henry L., and Hanson. 3,170,242.

Mid-States Welder Mfg. Co.: *See*—
Jetter, William W. 3,171,092.

Mierendorf, Robert C., C. W. Porter, and M. A. Guettel, to Square D Co. Control circuit for a load including a high flux density transformer. 3,171,079, 2-23-65, Cl. 323—58.

Miettinen, Toivo. Musical clapping instruments. 3,170,360, 2-23-65, Cl. 84—402.

Mihajlov, Vsevolod S.: *See*—
Gundlach, Robert W., and Mihajlov. 3,170,395.

Miles, John J., Jr.: *See*—
Pader, Morton, and Miles. 3,170,800.

Millar, John, Jr., and R. W. Garber, to Jackson Mfg. Co. Wheelbarrows. 3,170,707, 2-23-65, Cl. 280—47.31.

Miller, Harry C., and S. Helesfai, to Sargent & Greenleaf Inc. Combination lock construction. 3,170,316, 2-23-65, Cl. 70—333.

Miller, Herman, Inc.: *See*—
Beckman, Ronald, and Cannan. 3,170,730.

Miller, James C., to United States of America, Navy. Fast high current driver using tunnel diodes. 3,171,038, 2-23-65, Cl. 307—88.5.

Miller, Lawrence E. Castered clamp. 3,170,708, 2-23-65, Cl. 280—47.32.

Milroy, Richard A. Quiet flow regulator valve. 3,170,483, 2-23-65, Cl. 137—553.

Miniz, William A., to Freeland Gauge Co. Air gage. 3,170,316, 2-23-65, Cl. 73—37.5.

Minnesota Mining & Mfg. Co.: *See*—
Casey, James H. 3,170,613.

Mitchell, Hal D. Football uniform. 3,170,163, 2-23-65, Cl. 2—2.

Mitchell, John E., Co. Inc.: *See*—
Mitchell, Orville. 3,170,552.

Mitchell, Orville, to John E. Mitchell Co. Inc. Maximum output speed fluid shear coupling. 3,170,552, 2-23-65, Cl. 192—58.

Mitsubishi Denki Kabushiki Kaisha: *See*—
Takenaga, Yutaka, and Makimoto. 3,170,557.

Miyasaki, Hiroshi: *See*—
Rokunohe, Mitsuru, Yoshida, Hanzawa, Homada, Hida, and Miyasaki. 3,170,968.

Moberg, Sigurd M., to E. J. Brooks Co. Apparatus for applying poultry tags. 3,170,830, 2-23-65, Cl. 156—489.

Moklebust, Olav, to R-N Corp. Rotary kiln processing of chemically reactive materials. 3,170,786, 2-23-65, Cl. 75—34.

Momberg, James W., and E. W. Taylor, to The Singer Mfg. Co. Speed-regulating control systems for series commutator motors. 3,171,074, 2-23-65, Cl. 318—246.

Monnich, Herbert. Screw propellor propulsion devices. 3,170,284, 2-23-65, Cl. 60—35.5.

Monsanto Co.: *See*—
Gaertner, Van R. 3,170,915.
Godfrey, Kenneth L. 3,170,835.
Olin, John F. 3,170,956.
Schisla, Robert M., and Gaertner. 3,170,945.
Spillane, Leo J., and Grantom. 3,170,863.
Steingiser, Samuel, and Salyer. 3,170,893.
Walsh, Robert J., and Herzog. 3,170,273.

Montgomery & Co., Inc.: *See*—
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Morand, Peter F., and R. Deghenghi, to American Home Products Corp. Process for the preparation of 6,17e-dimethyl-4,6-pregnadiene-3,20-dione. 3,170,936, 2-23-65, Cl. 260—397.3.

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Morbidelli, Giuseppe, and L. Notarbartolo, deceased, by E. Pascalino, administratrix, and P. Notarbartolo, heiress, to Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A. Process for recovering cobalt base catalysts. 3,170,760, 2-23-65, Cl. 23—87.

Moreau, Roger L. A. Cigarette lighter. 3,170,813, 2-23-65, Cl. 67—7.1.

Morehead, Laurel A. Automatic groove follower for welding apparatus. 3,171,012, 2-23-65, Cl. 219—124.

Moreland, Stephen I. Garbage truck packing blade actuation. 3,170,578, 2-23-65, Cl. 214—82.

Morgan, Arthur I., Jr., and S. Schwimmer, to United States of America, Agriculture. Preparation of dehydrated food products. 3,170,803, 2-23-65, Cl. 99—199.

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Morin, Louis H. Slide fastener stop. 3,170,207, 2-23-65, Cl. 24—205.11.

Morin, William T., Jr. to Honeywell Inc. Condition responsive devices. 3170,860, 2-23-65, Cl. 204—195.

Moriya, Saburo M. Magnetic filter. 3,170,871, 2-23-65, Cl. 210—222.

Morrell, Jacque C. Catalyst and process of making the same. 3,170,885, 2-23-65, Cl. 252—435.

Morrison, George H., F. C. Palilla, and W. Zloczower, to General Telephone and Electronics Laboratories, Inc. Method for treating photoconductive cadmium sulfide cell. 3,170,886, 2-23-65, Cl. 252—501.

Morrison, John M., to Centrifio Pty. Ltd. Apparatus for exhausting fumes from factories and the like. 3,170,621, 2-23-65, Cl. 230—117.

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Mrgudich, John N., to United States of America, Army. Ionically conductive devices free of electrode polarization. 3,170,817, 2-23-65, Cl. 136—4.

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Mulch, Hans, to Ernst Leitz, Gesellschaft mit beschrankter Haftung. Slide projector for slides in a magazine or in a separate container. 3,170,370, 2-23-65, Cl. 88—28.

Mulch, Hans, W. Jung, and H. Lussem, to Ernst Leitz, Gesellschaft mit beschrankter Haftung. Reversible control switch for a slide projector having a slide position indicator. 3,171,006, 2-23-65, Cl. 200—167.

Mullen, John H., to Westinghouse Electric Corp. Control switch actuating means. 3,170,995, 2-23-65, Cl. 200—4.

Murphy, Joseph E., and F. J. Starzec, to General Motors Corp. Transistor converter circuit. 3,171,077, 2-23-65, Cl. 321—2.

Murray, James W., and L. B. Ward, to Ford Motor Co. Automobile lamp safety circuit. 3,171,096, 2-23-65, Cl. 340—69.

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Nadler, Coleman, and H. T. Haefelin, to United States of America, Navy. Device for prolonged water marking. 3,170,438, 2-23-65, Cl. 116—124.

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Najimian, Harry, Jr., to Outboard Marine Corp. Engine soundproofing. 3,170,435, 2-23-65, Cl. 115—34.

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Neracher, Otto E., A. Cantor, and W. Schmidt, to West Laboratories, Inc. Cationic azo compounds. 3,170,910, 2-23-65, Cl. 260—152.

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Van Horssen, Arden D. 3,170,752.

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Oakes, Earle T., L. G. Doom, P. E. Sundheim, and P. A. McElligott, to The E. T. Oakes Corp. Dripless dispensing apparatus. 3,170,608, 2–23–65, Cl. 222—502.

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Pearson, Robert P., to Honeywell Inc. Control apparatus. 3,171,110, 2–23–65, Cl. 340—233.

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Peterson, Seymour, to Storm Industries, Inc. Power transmission mechanism. 3,170,563, 2–23–65, Cl. 198—137.

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Phipps, Clifford G., and G. F. Kelly, to United States of America, Navy. Bio-medical instrumentation electrode. 3,170,459, 2–23–65, Cl. 128—2.06.

Phister, Montgomery, Jr., and R. B. Conn, to The Bunker-Ramo Corp. Apparatus for mixing materials. 3,170,677, 2–23–65, Cl. 259—154.

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Picanol, Jaime. Mechanism for Pirn magazines in weaving looms. 3,170,492, 2–23–65, Cl. 139—245.

Pierce, Firth, to United States of America, Navy. Horizon scanning method for firing rocket stage. 3,170,655, 2–23–65, Cl. 244—14.

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Porter, Philip B. Ball catching device. 3,170,688, 2–23–65, Cl. 273—25.

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Powell, Pascal R. Electric current indicating apparatus. 3,170,327, 2–23–65, Cl. 73—343.5.

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Presnell, Frank G. Flow control valve. 3,170,481, 2–23–65, Cl. 137—493.2.

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Pritchard, David E., to Radio Corp. of America. Optical tunnel system. 3,170,980, 2–23–65, Cl. 88—1.

Pritchard, Frank C. Golf club shaft and hosel connector. 3,170,691, 2–23–65, Cl. 273—80.5.

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Ridgway, Harry, to Joseph Rhodes & Sons Ltd. Shearing machine with a pivotal blade having eccentric means to adjust blade along axis of the pivot. 3,170,357, 2–23–65, Cl. 83—608.
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Roper, John K., to Atlantic Hydrofoils, Inc. Mechanical control for submerged hydrofoil systems. 3,170,432, 2–23–65, Cl. 114—66.5.
Rosenberg, Richard M., to E. I. du Pont de Nemours and Co. Perfluoroisopropylsulfur (IV) fluorides. 3,170,954, 2–23–65, Cl. 260—543.
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Neracher, Otto E., Cantor, and Schmidt. 3,170,910.
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Smith, Charles A., and H. G. McCarty, to Sperry Rand Corp. Manure spreader. 3,170,699. 2–23–65, Cl. 275—6.
Smith, Edward P., to Illinois Railway Equipment Co. Car construction. 3,170,740, 2–23–65, Cl. 308—137.
Smith, Hayden M., to The Bendix Corp. Narrow beam electron source for the ion source of a mass spectrometer. 3,171,024, 2–23–65, Cl. 250—41.9.

Smith, John F. D., to Carrier Corp. Heat exchanger. 3,170,512, 2–23–65, Cl. 165—110.

Smith, Mosert L., to Filto Pipes, Inc. Smoking pipe. 3,170,468, 2–23–65, Cl. 131—213.

Saay, Kenneth E., and E. V. Borden, to Seco Chemicals Inc. Conveyor lubricating apparatus. 3,170,539, 2–23–65, Cl. 184—15.

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Solga, Joseph A. Aircraft collision warning system. 3,171,121, 2–23–65, Cl. 343—6.5.

Soloducha, Nicolas, to Continental Titanium Corp. (N.P.L.). Apparatus for continuous digestion of titanium bearing materials. 3,170,771, 2–23–65, Cl. 23—200.6.

Solomon, Nathan L. Flexible hair curling device. 3,170,469, 2–23–65, Cl. 132—39.

Solomon, Nathan L. Hair holding device. 3,170,470, 2–23–65, Cl. 132—46.

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Springer, Frederick H. Portable pump. 3,170,646, 2–23–65, Cl. 241—276.

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Stela, Charles W. C., to General Aniline & Film Corp. Fiber-reactive phthalocyanine dyestuffs. 3,170,931, 2–23–65, Cl. 260—314.5.

Stein, Raphael. Hopper and feed mechanism. 3,170,595, 2–23–65, Cl. 221—182.

Stein, Samuel, to United States of America, National Aeronautics and Space Administration. Injector-valve device. 3,170,296, 2–23–65, Cl. 60—35.6.

Steinglass, Samuel, and I. O. Salyer, to Monsanto Co. Stabilization of polyethylene for thermal processing with sulfides of dialkyl phenols. 3,170,893, 2–23–65, Cl. 260—45.95.

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Sulivan, Vincent E., and R. L. Waterman, to United States of America, Navy. Fatigue testing machine. 3,170,321, 2–23–65, Cl. 73—100.

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Swaim, Frank H., and A. Hausner, to United States of America, Army. Acceleration sensitive variable clock. 3,170,404, 2–23–65, Cl. 102—84.





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Talmo, Robert E., to United States of America, Army. Vibration transducer. 3,170,320, 2–23–65, Cl. 73—71.2.

Tanabe, Kenichi, H. Saito, and T. Ashikaga, % to Kurashiki Rayon Co., Ltd., and M. to Air Reduction Co., Inc. Method of producing fibers. 3,170,973, 2–23–65, Cl. 264—185.

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Ueda, Kenichi, A. Onishi, T. Yoshimoto, J. Hosono, and K. Maeda, to Bridgestone Tire Co. Ltd. Production of cis-1,4 polybutadiene with a Ni-BF₃ etherate-ALR₃ catalyst. 3,170,904. 2–23–65, Cl. 260—94.3.

Ueda, Kenichi, A. Onishi, T. Yoshimoto, J. Hosono, and K. Maeda, to Bridgestone Tire Co. Ltd. Production of cis-1,4 polybutadiene with an organic complex compound of nickel-boron trifluoride etherate-aluminum trialkyl catalyst. 3,170,905, 2–23–65, Cl. 260—94.3.

Ueda, Kenichi, A. Onishi, T. Yoshimoto, J. Hosono, and K. Maeda, to Bridgestone Tire Co. Ltd. Production of cis-1,4 polybutadiene with a nickel carboxylic acid salt-boron trifluoride etherate-aluminum trialkyl catalyst. 3,170,907, 2–23–65, Cl. 260—94.3.

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Ulman, Frederick E., and P. C. Uransky, to Inland Steel Co. Pail type shipping container. 3,170,593, 2–23–65, Cl. 220—91.

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# CLASSIFICATION OF PATENTS

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346– 25 : 3,170,754
74 : 3,171,130
110 : 3,170,755


## CLASSIFICATION OF DESIGNS


D 4– 3 : 200,392
D 5– 4 : 200,393
D 7– 6 : 200,394
D 9– 2 : 200,395
D10– 8 : 200,396
200,397
D12– 2 : 200,398
D14– 3 : 200,399
200,400
200,401
30 : 200,402
D15– 1 : 200,403
D18– 2 : 200,404
200,405
D20– 4 : 200,406
D21– 1 : 200,407
D26– 13 : 200,408
14 : 200,409
D33– 3 : 200,410
12 : 200,411
14 : 200,412
200,413
D34– 2 : 200,414
5 : 200,415
D34– 5 : 200,416
200,417
200,418
200,419
200,420
15 : 200,421
200,422
D40– 1 : 200,423
200,424
200,425
200,426
D44– 1 : 200,427
22 : 200,428
29 : 200,429
D45– 10 : 200,430
D48– 32 : 200,431
200,432
D50– 5 : 200,433
D54– 13 : 200,434
200,435
D56– 1 : 200,436
2 : 200,437
D56– 2 : 200,438
9 : 200,439
200,440
D58– 5 : 200,441
6 : 200,442
11 : 200,443
200,444
12.6 : 200,445
12.7 : 200,446
26 : 200,447
D61– 1 : 200,448
D61– 1 : 200,449
D62– 4 : 200,450
D64– 11 : 200,451
D74– 9 : 200,452
200,453
D78– 1 : 200,454
D80– 9 : 200,455
D85– 2 : 200,456
D86– 10 : 200,457
D87– 5 : 200,458
D90– 1 : 200,459


## CLASSIFICATION OF PLANTS


P. – 9 : 2,483
P. – 10 : 2,484
P. – 56 : 2,485



# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

February 23, 1965 Volume 811 Number 4


# TRADEMARKS

## NOTICES

### Service by Publication

A petition to cancel the registration identified below having been filed, and the notice of default of such proceedings sent by registered mail to registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrant listed herein, its assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, judgment will be entered against registrant and said registration will be canceled.

Shane Boys Wear, Inc., Philadelphia, Pa., Reg. No. 744,264, Canc. No. 8357.

EDWIN L. REYNOLDS,
*First Assistant Commissioner of Patents.*

## CONDITION OF TRADEMARK APPLICATIONS AS OF DECEMBER 31, 1964

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] ---------- 15,450
Date of oldest new application ---------- June 1, 1964
Date of oldest amended application ---------- May 4, 1964

J. H. MERCHANT, Director, Trademark Examining Operation

| TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application: New | Oldest Application: Amended |
|---|---|---|
| (I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 43, 44 | 6-16-64 | 6-1-64 |
| (II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B | 6-1-64 | 5-4-64 |
| Renewals (All Classes) | 12-11-64 | 12-10-64 |
| Sec. 12 (c) Publications (All Classes) | 12-14-64 | ---------- |

Applications filed during the month of December 1964—2,135

Registrations Issued ---------- 361—No. 785,410 to No. 785,770
Renewals Issued ---------- 50


The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

# MARKS PUBLISHED FOR OPPOSITION

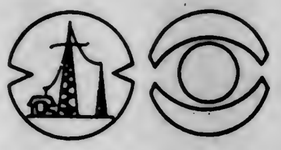
## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 164,098. Scuola Radio "Elettra" S.p.A., Turin, Italy. Filed Mar. 6, 1963.



### Class 21—Electrical Apparatus, Machines, and Supplies

For Radio and Television Receiver Sets and Component Parts Thereof, Electrical Instruction and Repair Kits Including Electrical Hand Tools for Assembling and Disassembling Radio and Television Receiver Sets and Components Thereof, Electrical Laboratory Kits for the Instruction of Students in Electrical and Electronic Circuits and Apparatus and Repair Thereof Including Transistor Circuit Kits and Components Thereof, Electrical Instrumentation Kits and Components Thereof, Electrical Motors and Domestic Appliances.

### Class 38—Prints and Publications

For Instruction Manuals and Instructional Printed Materials Pertaining to Student Instruction in the Service and the Repair of Radio and Television Sets, Electrical Motors, Domestic Appliances, Transistor and Other Electronic Circuits and Electrical and Electronic Measuring and Testing Instruments.

### Class 107—Education and Entertainment

For Educational Services in the Instruction by Mail Order Tuition Courses of Repair and Servicing of Radio and Television Receiver Sets, Electrical Motors and Domestic Electric Appliances, Electric and Electronic Instrumentation, Transistors and Other Types of Electronic Circuits and Components Thereof.

First use Jan. 10, 1958; in commerce Apr. 2, 1958.

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SN 178,355. Kempf, Mansfield Enterprise, Shawnee Mission, Kans. Filed Oct. 4, 1963.

## KMC

### Class 6—Chemicals and Chemical Compositions

For Lighter Fluid.
First use March 1963.

### Class 52—Detergents and Soaps

For Spot Remover.
First use January 1963.

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SN 183,787. Plus Products, Los Angeles, Calif. Filed Dec. 30, 1963.

## PLUS

### Class 18—Medicines and Pharmaceutical Preparations

For High Protein Vitamin Products and Mineral Food Fortifiers—Namely, Vitamin B-Complex, Sodium Ascorbate, Inositol, Namely, a Vitamin of the B-Complex, Vitamin A, Vitamins A and D Combined, Vitamin B-Complex, Vitamin $B_1$ (Thiamin Chloride), Vitamin D, Vitamin E, Lecithin Perles, Dietary Calcium, Choline, Vitamin Syrup Consisting of Vitamins A, D, $B_1$, $B_6$, $B_{12}$, C, E, Niacinamide and Pantothenic Acid.

### Class 46—Foods and Ingredients of Foods

For Food Supplements and Fortifiers for Breads, Rolls and Buns—Namely, a Granulated Mixture of Yeast, Molasses, Powdered Milk and Desiccated Liver, Protein Powder Consisting of Non-Fat Milk Solids, High Protein Concentrates From Soy Beans and Milk and Defatted Wheat Germ, Liver Powder, Calcium as Calcium Lactate, Soybean Oil, Safflower Oil, Veal Bone Ash, Yeast Tablets, Digestive Enzymes, Concentrated Garlic and Parsley, Garlic Oil, Yeast With Balanced B Vitamins, Protein Wafers, Protein Tablets, High Potency Cod Liver Oil, Wheat Germ Oil, Liver Powder, and Balanced B Yeast.

First use on or about Jan. 1, 1940.

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SN 194,930. Texaco Inc., New York, N.Y. Filed June 4, 1964.




The drawing is lined for red, green, and gold, but the mark is not limited to the colors shown. The applicant disclaims the words "The Quality From" apart from the mark as shown.

Owner of Reg. Nos. 57,902, 742,887, and others.

### Class 4—Abrasives and Polishing Materials

For Automobile Surface Cleaner-Polisher, Automobile Surface Cleaner-Wax, and Metal Polish.

### Class 6—Chemicals and Chemical Compositions

For Hydraulic Brake Fluid, Radiator Fluids (Flushing and Sealing), Anti-Freeze Fluids, and Lighter Fluids.

### Class 15—Oils and Greases

For Lubricating Oils and Lube Oil Additive.

### Class 52—Detergents and Soaps

For White Tire Cleaner and Windshield Washer Fluid.
First use Feb. 1, 1963.

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SN 201,514. John H. Breck, Inc., Springfield, Mass. Filed Sept. 9, 1964.

## ONCE IS ENOUGH

### Class 51—Cosmetics and Toilet Preparations

For Preparation for the Treatment of Dandruff, Creme Rinse for Making Hair Manageable and Restoring Natural Smoothness, Waveset, and Hairspray.

### Class 52—Detergents and Soaps

For Hair Shampoo.
First use Aug. 26, 1964.



## SECTION 2

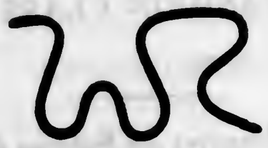
The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 179,932. Winthrop Rockefeller, d.b.a. Winrock Farms, Morrilton, Ark. Filed Oct. 28, 1963.



The mark consists of capital letters "W" and "R" running together.

For Cattle.
First use July 1, 1954.

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SN 191,724. Union Carbide Corporation, New York, N.Y. Filed Apr. 21, 1964.

## UCARSIL

Owner of Reg. Nos. 696,264, 699,274, and 779,748.
For Silicones for General Use in the Industrial Arts.
First use on or about Mar. 26, 1964.

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SN 191,790. J. E. Ohlsens Enke, Tastrup, Denmark. Filed Apr. 22, 1964.

## IDOL

Priority claimed under Sec. 44(d) on Danish application filed Dec. 16, 1963; Reg. No. 2,055, dated May 30, 1964.
For Cauliflower Seeds.
First use November 1956; in commerce January 1957.

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SN 192,428. Proctor Ellison Company, Boston, Mass. Filed Apr. 30, 1964.

## VELTAN

For Leather.
First use Nov. 1, 1955.

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SN 193,242. Garfield Williamson, Inc., d.b.a. Town & Country Prod., Jersey City, N.J. Filed May 11, 1964.

## BERGENITE

For Grass Seed.
First use Oct. 30, 1959.

SN 193,401. Peabody Coal Company, St. Louis, Mo. Filed May 13, 1964.




No claim is made by applicant for the word "Coal" except as associated with the other features of the mark.

For Coal.
First use May 1, 1946.

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SN 193,556. F. E. Knight, Inc., New York, N.Y. Filed May 15, 1964.

## CASTALDO

For Rubber Molding Compound for Making Molds in the Jewelry Industry.
First use 1942.

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SN 193,941. Corning Glass Works, Corning, N.Y. Filed May 21, 1964.

## CORAM

For Alumina.
First use Nov. 18, 1963.

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SN 193,977. Nalle Plastics, Inc., Austin, Tex. Filed May 21, 1964.

## NALTEX

Owner of Reg. Nos. 541,351 and 653,951.
For Plastic Netting for General Use in the Industrial Arts.
First use during September 1957.

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SN 194,321. Seton Leather Company, Newark, N.J. Filed May 26, 1964.

## SETON

Owner of Reg. No. 323,618.
For Leather.
First use in or about 1906.

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SN 194,539. Union Carbide Corporation, New York, N.Y. Filed May 28, 1964.

## UCAR

Owner of Reg. No. 696,264.
For Synthetic Resins for General Use in the Industrial Arts.
First use on or about Apr. 25, 1963.

SN 194,547. Barrday Limited, Galt, Ontario, Canada. Filed Apr. 17, 1964.

## FLEXMESH

Owner of Canadian Reg. No. 134,814, dated Feb. 28, 1964.
For Plastic Mesh for General Use in the Industrial Arts.

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SN 195,210. The Dayton Tire & Rubber Company, Akron, Ohio. Filed June 9, 1964.

THORO TUF

Owner of Reg. Nos. 151,732, 640,023, and others.
For Synthetic Rubber Used as a Component of Automobile Tires.
First use May 8, 1964.

---

SN 197,446. Union Carbide Corporation, New York, N.Y. Filed July 8, 1964.

NATIONAL

Owner of Reg. No. 738,063.
For Carbonaceous and Graphitic Materials for General Use in the Industrial Arts.
First use on or about Mar. 8, 1921.

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SN 198,046. The Harco Orchards & Poultry Farms, Inc., South Easton, Mass. Filed July 17, 1964.

HARCO

The drawing is lined for red, but the trademark is not to be restricted to use with any particular color.
For Live Poultry, Baby Chicks, and Hatching Eggs.
First use June 22, 1964; on or about Sept. 1, 1948, as to "Harco."

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SN 198,846. J. M. Huber Corporation, Borger, Tex. Filed July 30, 1964.

## HYDRAGLOSS

For Clay.
First use Dec. 20, 1963.

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SN 198,872. Peterlite Products Limited, London, England. Filed July 30, 1964.

## TIMELITE

Owner of British Reg. No. 778,169, dated May 30, 1958.
For Plastics in the Form of Sheets, Rods, Tubes, and of Shaped Sections, All for Use in the Manufacture of Watch and Clock Crystals.

SN 199,040. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 3, 1964.

## DELASORBS

For Coated Fabrics Used for Bookbinding and Other Generalized Uses in the Industrial Arts.
First use Dec. 16, 1963.

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## Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 201,553. Seward Luggage Manufacturing Company, Petersburg, Va. Filed Sept. 9, 1964.

## FASHION CLASS

For Luggage.
First use Aug. 28, 1964.

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## Class 4—Abrasives and Polishing Materials

SN 190,968. Precision Finishing, Inc., Sellersville, Pa. Filed Apr. 13, 1964.

## Chemtrol

For Vibratory and Barrel Finishing Compound for Use in the Deburring, Cleaning, Degreasing, and Burnishing of Metal.
First use Nov. 11, 1960.

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## Class 5—Adhesives

SN 187,955. Permatex Company, Inc., Brooklyn, N.Y. Filed Mar. 4, 1964.

## FORM-A-GASKET NO. 1

Owner of Reg. No. 547,708.
For Fast Drying, Hard Setting Adhesive in Paste and Liquid Form for Permanently Sealing Broken Head Gaskets, Cracked Batteries, Insulated Wires, etc.
First use March 1932.

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## Class 6—Chemicals and Chemical Compositions

SN 162,817. Carus Chemical Company, Inc., LaSalle, Ill. Filed Feb. 15, 1963.

## CARUS MN "28"

No claim is made to the exclusive right to the use of the letters "MN" apart from the mark. Owner of Reg. No. 734,759.
For Chemicals—Namely, Manganese Compounds and Compositions Containing Manganese Compounds for Agricultural and Industrial Use.
First use June 1958.



SN 182,557. American Home Products Corporation, New York, N.Y. Filed Dec. 9, 1963.

## BRICON

For Insecticides for Use on Animals.
First use Mar. 16, 1963.

---

SN 183,819. The Diversey Corporation, Chicago, Ill. Filed Dec. 20, 1963.

## DIVERSEAL

For Liquid Chromate Rinse Additive for Terminal Use in Phosphatising Lines.
First use Dec. 9, 1963.

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SN 183,852. Metro-Atlantic, Inc., Centredale, R.I. Filed Dec. 31, 1963.

## STAINDARE

Owner of Reg. Nos. 709,806 and 742,202.
For Textile Impregnating Agent Used in an Aqueous Bath for Impregnating Textile Fabrics.
First use Oct. 15, 1963.

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SN 187,574. Fritzsche Brothers, Inc., New York, N.Y. Filed Feb. 27, 1964.

## DERM-O-SCENT

For Fragrance Compound for Use in Perfumes for Manufacturing and Professional Use Only.
First use Feb. 11, 1964.

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SN 189,434. Checkmate Chemicals, Inc., Greenville, S.C. Filed Mar. 24, 1964.

## BISHOPEL

For Water Repellent for Fabric.
First use Mar. 17, 1964.

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SN 189,439. Checkmate Chemicals, Inc., Greenville, S.C. Filed Mar. 24, 1964.

## PAWN

For Pigment Printing Crock Reducing Agent.
First use Mar. 17, 1964.

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SN 190,098. Micro Chemical Company, Inc., Winnsboro, La. Filed Apr. 1, 1964.

## TRIPLE KILL

No claim is made to the word "Kill" apart from the mark as shown.
For Insecticide.
First use on or about June 1, 1959.

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SN 190,261. Heathath Corporation, Springfield, Mass. Filed Apr. 3, 1964.

## LUSTRA AID

Applicant disclaims the word "Aid" apart from the mark as shown.
For Plating Bath Additive—Namely, Purifying Chemical for Eliminating Heavy Metal Impurities, Reducing Carbonate Content and Improving Anode Corrosion in Zinc Plating Baths.
First use Sept. 12, 1963.

SN 190,379. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Apr. 6, 1964.

## PARCO

Owner of Reg. Nos. 288,605 and 598,070.
For Chemical Compositions Useful in Obtaining Corrosion-Resistant Coatings on Metals.
First use Sept. 29, 1947.

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SN 192,382. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Apr. 30, 1964.

## BAYLUSCIDE

Owner of German Reg. No. 746,703, dated Mar. 14, 1961; and U.S. Reg. No. 754,862.
For Pesticide.

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SN 192,572. Truman P. Cotnam, d.b.a. Kil-Balm Co., Butler, Wis. Filed May 4, 1964.

## KIL-BALM

For Rodent Poison.
First use July 1939.

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SN 194,284. The Drackett Company, Cincinnati, Ohio. Filed May 26, 1964.

G

For Chemical Preparation To Prevent Formation of Grease in Ovens.
First use May 8, 1964.

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SN 194,285. The Drackett Company, Cincinnati, Ohio. Filed May 26, 1964.

## O-GARD

Owner of Reg. No. 752,340.
For Chemical Preparation To Prevent Formation of Grease in Ovens.
First use May 8, 1964.

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SN 194,512. Parker Laboratories, Inc., Irvington, N.J. Filed May 28, 1964.

## ECHOSONIC

For Ultrasonic Transmission Gel for Use in Diagnostic Equipment.
First use Mar. 23, 1964.

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SN 194,802. Hysan Products Company, Chicago, Ill. Filed June 3, 1964.

## CONCEPT

For Hospital Disinfectant Deodorant Aerosol.
First use Mar. 5, 1963.

SN 195,260. Vulcan Materials Company, d.b.a. Frontier Chemical Company, Wichita, Kans. Filed June 9, 1964.

## GLAZD

For Pentachlorophenol Used as a Wood Preservative, Fungicide, Bactericide, Herbicide, and the Like.
First use Apr. 30, 1964.

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SN 195,413. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed June 11, 1964.

## HETENEDIOL

Owner of Reg. Nos. 434,060 and 589,148.
For Chemicals and Chemical Compositions Suitable as Chemical Intermediates.
First use Mar. 13, 1964.

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SN 195,414. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed June 11, 1964.

## HETDIOL

Owner of Reg. Nos. 434,060 and 589,148.
For Chemicals and Chemical Compositions Suitable as Chemical Intermediates.
First use Jan. 15, 1964.

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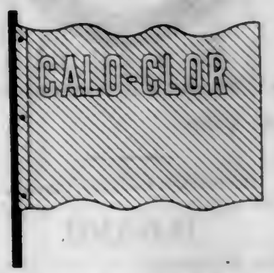
SN 196,482. Statite Waterproofing Corp., Bogota, N.J. Filed June 25, 1964.

## STATITE

Owner of Reg. No. 579,283.
For Waterproofing Composition for Cement and Concrete Which Imparts Water Repellent Properties, Acts as an Accelerator and Hardening Agent, and Gives Anti-Freeze Protection Thereto.
First use Dec. 1, 1940.

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SN 196,685. Mallinckrodt Chemical Works, St. Louis, Mo. Filed June 29, 1964.




The drawing is lined for the color green. Owner of Reg. Nos. 357,788, 555,449, and others.
For Turf Fungicide.
First use January 1956.

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SN 196,783. Hercules Powder Company, Wilmington, Del. Filed June 30, 1964.

## AZAK

For Selective Pre-Emergence Herbicide.
First use May 12, 1964.

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SN 196,820. Stauffer Chemical Company, New York, N.Y. Filed June 30, 1964.

## PREFAR

For Herbicides.
First use May 27, 1964.

SN 196,915. Stauffer Chemical Company, New York, N.Y. Filed July 1, 1964.

## ORDRAM

For Herbicides.
First use June 17, 1964.

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SN 197,040. Plymouth Cordage Company, Plymouth, Mass. Filed July 3, 1964.

## ZEX

For Fogging and Spraying Solution Against Small Flying Pests, and Roaches and Fleas.
First use Sept. 23, 1963.

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SN 197,419. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed July 8, 1964.

## CONFIRMAGEN

For Diagnostic Reagent for Laboratory Use.
First use June 4, 1964.

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SN 197,920. Sterling Drug Inc., New York, N.Y. Filed July 15, 1964.

## WARPATH

For Insecticide.
First use Mar. 6, 1964.

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SN 197,921. Thiokol Chemical Corporation, Bristol, Pa. Filed July 15, 1964.

## *Plastiscat* IV

For Burning Rate Catalyst for Solid Propellants.
First use on or about Mar. 31, 1963.

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SN 200,671. Stauffer Chemical Company, New York, N.Y. Filed Aug. 26, 1964.

## V-25

For Dicalcium Phosphate Dihydrate.
First use at least as early as 1958.

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### Class 10 — Fertilizers

SN 200,983. Skelly Oil Company, Kansas City, Mo. Filed Aug. 31, 1964.




The drawing is lined for the colors red and blue.
For Fertilizer.
First use Apr. 7, 1964.



### Class 12 — Construction Materials

SN 192,178. Hysol Corporation, Olean, N.Y. Filed Apr. 28, 1964.

## HY-FIL

For Two-Component Polymerizable Patching Material for Plywood and the Like.
First use Apr. 1, 1964.

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### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 187,098. Federal Screw Works, Detroit, Mich. Filed Feb. 20, 1964.

## PERMAJUST

For Fastener Assemblies for Angular Joints and Parts Thereof.
First use Jan. 22, 1964.

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SN 187,618. Screw and Bolt Corporation of America, Pittsburgh, Pa. Filed Feb. 27, 1964.

## DRILIT

For Screws Used in Fastening Together Metal Sheets.
First use Feb. 18, 1964.

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SN 193,460. Essex Wire Corporation, d.b.a. Precision Fittings, Inc., Fort Wayne, Ind. Filed May 14, 1964.

## TRU-FIT

For Flexible Supplies for Water Lines Consisting of Metal Tubing and Tubing Fittings.
First use on or about Sept. 1, 1954.

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### Class 15 — Oils and Greases

SN 187,931. Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Mar. 4, 1964.

## DEEP ROCK

Owner of Reg. Nos. 382,739, 658,975, and others.
For Gasoline, Diesel Fuel, Burner Fuel, Lubricating Oil, Lubricating Grease, Automatic Transmission Fluid, Hydraulic Oil, Steam Cylinder Oil, Household Oil, and Outboard Motor Oil.
First use July 1, 1912.

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SN 202,671. Bayou State Oil Corporation, Shreveport, La. Filed Sept. 25, 1964.

## Bio-ATF

Owner of Reg. Nos. 337,228, 439,139, and 514,043.
For Lubricating Oils.
First use July 28, 1964.

### Class 16 — Protective and Decorative Coatings

SN 188,701. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Mar. 16, 1964.

## AROLIN

For Emulsifiable Linseed Oil Used in the Manufacture of Paints.
First use at least as early as Aug. 9, 1963.

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SN 197,522. Unival Corporation, Scarsdale, N.Y. Filed July 9, 1964.

UNIVAL **RMC**

Owner of Reg. No. 776,012.
For Liquid Moisture-Repellent Coating Preparation To Prevent Rust and Corrosion From Ignition Systems and Metal Surfaces.
First use Nov. 1, 1963.

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### Class 18 — Medicines and Pharmaceutical Preparations

SN 174,254. Lingner-Werke G.m.b.H., Dusseldorf, Germany. Filed Aug. 1, 1963.

## DESENSATOL

Owner of German Reg. No. 768,933, dated Jan. 2, 1963.
For Ointment for the Sensitive Neck of the Tooth.
First use Feb. 11, 1963; in commerce Feb. 11, 1963.

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SN 189,771. Dr. Le Gear, Incorporated, St. Louis, Mo. Filed Mar. 27, 1964.

## SOLU-MYCIN

For Veterinary Product Containing Neomycin Sulfate for Treatment of Bacterial Enteritis.
First use Oct. 11, 1963.

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SN 190,868. C-Tex Carter Co., Denver, Colo. Filed Apr. 13, 1964.

## TYL-PHEN

For Tablet for the Relief of Pain in Medical and Dental Therapy.
First use Jan. 1, 1964.

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SN 191,218. Schering Corporation, Bloomfield, N.J. Filed Apr. 15, 1964.

## AFRIN

For Topical Nasal Decongestant.
First use Feb. 27, 1964.

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SN 191,941. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Apr. 24, 1964.

## SULREDOX

For Sulfhydryl Donor.
First use Apr. 10, 1964.

SN 192,801. Dermik Pharmacal Co., Inc., Syosset, N.Y. Filed May 6, 1964.

## PLAX

For Pharmaceutical Preparation for the Temporary Relief of Scaling and Itching of Psoriasis.
First use July 12, 1956.

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SN 193,474. Lamkin Brothers, Inc., Brownwood, Tex. Filed May 14, 1964.

## PARACON

For Mineral and Protein Cattle Feed Supplement Containing Larvicide for the Control of Certain Flies, and Certain Internal Parasites.
First use May 6, 1963.

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SN 194,327. Southwestern Drug Corporation, d.b.a. Red Arrow Laboratories, Dallas, Tex. Filed May 26, 1964.

## RESTIN

For Sleeping Aid Capsules.
First use May 4, 1964.

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SN 194,328. Southwestern Drug Corporation, d.b.a. Red Arrow Laboratories, Dallas, Tex. Filed May 26, 1964.

## wide-eye

For Medicinal Capsules for Deterring Fatigue and Drowsiness.
First use May 4, 1964.

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SN 194,329. Southwestern Drug Corporation, d.b.a. Brooke Laboratories, Dallas, Tex. Filed May 26, 1964.

## AZMATE

For Medicinal Capsules for the Relief of Asthma.
First use May 4, 1964.

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SN 194,330. Southwestern Drug Corporation, d.b.a. Brooke Laboratories, Dallas, Tex. Filed May 26, 1964.

## LOBELATE

For Smoking Deterrent Capsules.
First use May 4, 1964.

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SN 194,853. American Cyanamid Company, Wayne, N.J. Filed June 4, 1964.

## NEO-ARISTOVET

Owner of Reg. No. 694,472.
For Antibiotic-Steroid Preparation for Veterinary Use.
First use May 12, 1964.

SN 196,998. Vitamin Council Incorporated, d.b.a. Professional Dietary Quotas Company, St. Paul, Minn. Filed July 2, 1964.

## Choom ees

For Vitamin Preparations.
First use Jan. 25, 1962.

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SN 197,946. Drug Guild Co-Operative, Inc., Brooklyn, N.Y. Filed July 16, 1964.

## DURAVALS

For Vitamin and Mineral Preparation in Capsule Form.
First use October 1947.

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SN 198,656. Orion Pharmacal Co., Baldwin, N.Y. Filed July 28, 1964.

ORION CYCLE

The word "Cycle" is disclaimed apart from the mark as shown. The drawing is lined for red.
For Preparation for Permenstral Tension.
First use Jan. 15, 1963.

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SN 199,264. Boyle & Company, Bell Gardens, Calif. Filed Aug. 5, 1964.

## HYBEC FORTE

For Multiple Vitamin Preparation.
First use Sept. 27, 1961.

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SN 199,782. Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. Filed Aug. 13, 1964.

## STRITEN

Owner of Swedish Reg. No. 108,710, dated Feb. 7, 1964.
For Pharmaceutical Preparation Used in the Treatment of Panceratic Diseases and Fermentation Dyspepsias.

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SN 202,731. American Home Products Corporation, New York, N.Y. Filed Sept. 28, 1964.

## PROVET

Owner of Reg. No. 743,977.
For Line of Veterinary Preparations.
First use Nov. 10, 1961.

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SN 203,062. American Cyanamid Company, Wayne, N.J. Filed Oct. 1, 1964.

## QUENAMOX

For Diuretic.
First use Sept. 18, 1964.



SN 203,106. Merck & Co., Inc., Rahway, N.J. Filed Oct. 1, 1964.

## VIVACTIL

For Medicinal Preparation for Use as a Psycotherapeutic Agent.
First use Sept. 14, 1964.

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SN 203,297. Knoll A.-G. Chemische Fabriken, Ludwigshafen (Rhine), Germany. Filed Oct. 5, 1964.

## TALUSIN

Owner of German Reg. No. 607,169, dated May 12, 1951.
For Medicine and Drug for the Treatment of Cardiac Insufficiencies, Senile Heart Conditions, in the Follow-Up Treatment of Cardiac Infarction.

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SN 203,317. Mead Johnson & Company, Evansville, Ind. Filed Oct. 5, 1964.

## QUESTRAN

Owner of Reg. No. 735,573.
For Cholestyramine, an Exchange Resin for Use in Pruritus, Psoriasis and Reduction of Cholesterol.
First use on or prior to Apr. 17, 1964.

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SN 203,727. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Oct. 12, 1964.

## DILASCOPE

For Sterile Ophthalmic Solution.
First use July 29, 1964.

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SN 203,729. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Oct. 12, 1964.

## FLUORCAINE

For Sterile Ophthalmic Solution.
First use May 25, 1964.

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SN 203,730. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Oct. 12, 1964.

## FLUOROCAINE

For Sterile Ophthalmic Solution.
First use June 5, 1964.

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SN 203,731. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Oct. 12, 1964.

## FLURESS

For Sterile Ophthalmic Solution.
First use June 5, 1964.



SN 203,819. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. Filed Oct. 12, 1964.

## CODUREX

For Medicinal Preparation for Pre-Menstrual Tension.
First use Sept. 1, 1964.

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SN 203,820. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. Filed Oct. 12, 1964.

## PRE-CODUREX

For Medicinal Preparation for Pre-Menstrual Tension.
First use Sept. 1, 1964.

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SN 204,157. Geigy Chemical Corporation, Ardsley, N.Y. Filed Oct. 16, 1964.

## ADIAMBRIN

For Antirheumatic Preparation.
First use Oct. 8, 1964.

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# Class 21—Electrical Apparatus, Machines, and Supplies

SN 183,950. Baird-Atomic, Inc., Cambridge, Mass. Filed Jan. 3, 1964.

## GS

For Electronic Tubes for Indicating and Computing Devices and Systems.
First use Dec. 6, 1963.

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SN 193,564. Metex Electronics Corporation, Clark, N.J. Filed May 15, 1964.

## POLASTRIP

For Radio Frequency Shielding, Especially in Gasket Form Material.
First use in 1962.

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SN 201,348. American Hardware Supply Company, East Butler, Pa. Filed Sept. 8, 1964.

## VILLAGE PARK

For Electric Hedge Trimmer.
First use Oct. 15, 1961.

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# Class 22—Games, Toys, and Sporting Goods

SN 165,348. Walter H. Means and Associates, Atlanta, Ga. Filed Mar. 25, 1963.

PEDCO

For Fishing Lures.
First use Dec. 15, 1961.

SN 139,172. Romper Room, Inc., Baltimore, Md. Filed May 17, 1963.



For Line of Educational Toys and Boxed Games for Children (Not Including Jack-in-the-Box Toys).
First use Nov. 25, 1958.

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SN 184,139. Center for the Gifted Child Inc., San Francisco, Calif. Filed Jan. 7, 1964.

## MEMORY LANE

For Apparatus for Playing a Card Game.
First use Oct. 23, 1963.

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SN 185,527. P. and M. Doll Company, Inc., New York, N.Y. Filed Jan. 28, 1964.

## BABY "BUTTONS"

No claim of exclusive right is made to "Baby" for dolls and accessories.
For Dolls and Dolls' Accessories.
First use January 1964.

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SN 188,573. Pleasant Toy Corporation, Inc., Revere, Mass. Filed Mar. 12, 1964.

## ORBET-O

For Toys—Namely, a Hand Held Hoop Having a Track About Its Inner Periphery With a Cooperating Ball for Movement About the Track by Oscillation of the Hoop.
First use Jan. 13, 1964.

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SN 188,647. Mattel, Inc., Hawthorne, Calif. Filed Mar. 13, 1964.

## CRACKERS

For Stuffed Animal Toy.
First use Aug. 7, 1962.

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SN 190,316. Accurate Systems, Inc., Costa Mesa, Calif. Filed Apr. 6, 1964.

DEXTRA

For Surfboards.
First use Feb. 7, 1964.

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SN 191,557. Items Incorporated, St. Louis, Mo. Filed Apr. 20, 1964.

CAT-NIPPER

For Animal Toy, Particularly a Toy for a Cat.
First use Mar. 23, 1964.

SN 192,124. Naismith Memorial Basketball Hall of Fame Inc., Springfield, Mass. Filed Apr. 8, 1964.

NAISMITH HALL OF FAME MEMORIAL

The basketball design feature of the mark is disclaimed apart from the mark as used.
For Basketballs.
First use Mar. 5, 1964.

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SN 192,129. American Publishing Corporation, Waltham, Mass. Filed Apr. 24, 1964.

## THRIFT

For Equipment, Sold as a Unit, for Playing a Banking or Savings and Loan Game.
First use Dec. 30, 1963.

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SN 192,160. J. A. Dubow Sporting Goods Corp., Chicago, Ill. Filed Apr. 28, 1964.

## GRAND FLITE

For Sporting Goods, Especially Golf Clubs, Golf Playing Accessories, and Inflated Game Balls.
First use Nov. 21, 1963.

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SN 192,227. Richard L. Stevenson, d.b.a. R. L. Stevenson & Associates, Santa Monica, Calif. Filed Apr. 28, 1964.

## MAKAHA

For Skate Boards.
First use on or before Sept. 7, 1963.

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SN 192,795. Crisloid Plastics Inc., Providence, R.I. Filed May 6, 1964.

## GLADIATOR

For Game Sets of Chess and Checkers.
First use Apr. 1, 1964.

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SN 193,397. Northwestern Golf Company, Chicago, Ill. Filed May 13, 1964.

## M-P

For Golf Playing Equipment and Similar-Type Supplies.
First use January 1961.

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SN 193,424. Paul A. Theis and Donald M. Zahn, Washington, D.C. Filed May 13, 1964.

## HAT IN THE RING

For Equipment and Material Sold as a Unit for Playing an Educational Political Convention-and-Election-Type Board Game.
First use May 13, 1964.

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SN 193,548. Anna M. Greene, d.b.a. J. A. Greene, Sutton, Mass. Filed May 15, 1964.

## MOOSELOOK

For Fish Lure.
First use on or about July 1, 1944.



SN 193,554. Jack M. Kenmore, Bethel Park, Pa. Filed May 15, 1964.

Golf-Knicks

For Golf Ball Cleaner Consisting of a Plastic Container Holding a Sponge Against Which the Golf Ball Is Wiped To Clean It.
First use June 15, 1963.

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SN 193,694. Peoria Plastic Company, East Peoria, Ill. Filed May 18, 1964.

## FILL 'N THRILL

For Plastic Colored Easter Eggs.
First use November 1959.

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SN 195,554. The Selchow & Richter Company, Bay Shore, N.Y. Filed June 12, 1964.

## ROMAN X

For Accessories for Playing a Board Game.
First use Mar. 2, 1964.

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SN 195,555. The Selchow & Richter Company, Bay Shore, N.Y. Filed June 12, 1964.

## KARATE

For Accessories for Playing a Board Game.
First use Mar. 2, 1964.

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SN 195,556. The Selchow & Richter Company, Bay Shore, N.Y. Filed June 12, 1964.

## BEWITCH

For Accessories for Playing a Board Game.
First use Mar. 2, 1964.

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SN 195,655. Cortland Industries, Inc., Cortland, N.Y. Filed June 15, 1964.

## DAVY JONES

For Fishing Lines of Nylon, Linen or the Like.
First use in or about 1938.

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SN 195,685. Longfellow Corporation, Fraser, Mich. Filed June 15, 1964.

## TRAIL-PACK

For Fishing Rods and Parts Thereof.
First use about May 15, 1963.

SN 195,949. Lindberg Products, Incorporated, Skokie, Ill. Filed June 18, 1964.

LINDY LOONYS

For Toy Plastic Assembly Kits.
First use May 22, 1964.

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SN 195,958. Pacific Game Company, Inc., North Hollywood, Calif. Filed June 18, 1964.

## CAVALIER

For Chess Sets.
First use May 15, 1954.

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SN 196,519. Gentex Corporation, New York, N.Y. Filed June 26, 1964.

## SEA TOT

For Buoyant Vests.
First use Mar. 24, 1964.

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SN 196,973. Monarch Associates, Inc., St. Albans, N.Y. Filed July 2, 1964.

## WHIZ-EEE

For Flying Saucer Toy.
First use April 1964.

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SN 197,104. Fab-Lu, Ltd., New York, N.Y. Filed July 6, 1964.

## AMY

For Dolls and Doll Accessories.
First use May 1964.

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## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 166,629. William D. Fagan, d.b.a. WTM Service Equipment, Oak Lawn, Ill. Filed Apr. 12, 1963.

WTM

For Vehicle Body and Frame Reclaiming and Steering Correcting and Adjusting Equipment, Incorporating a Weight Traction Structure, Platform and Counterbalanced T Boom, Remote Control Constant Pressure System, Air Operated Oil Pumps, One for Counterbalance and One for Extensible Plunger of T Boom With Pressure Warning Light System, and Parts for the Foregoing Equipment.
First use Jan. 15, 1959.

SN 185,750. Aktiebolaget Scania-Vabis, Sodertalje, Sweden. Filed Jan. 31, 1964.



Owner of Swedish Reg. No. 87,050, dated Apr. 30, 1959; and U.S. Reg. Nos. 687,840 and 688,722.
For Diesel Engines and Diesel Driven Units Comprising Stationary Engines for Industrial Purposes, Generating Sets, Power Packs and Semi-Power Packs, Marine Engines, Pump Units and Parts of All Aforesaid Goods.

## Class 27 — Horological Instruments

SN 196,676. Jeco Co., Ltd., Meguro-ku, Tokyo, Japan. Filed June 29, 1964.

Jeco

For Clocks and Motors for Clocks.
First use May 1963; in commerce July 1963.

SN 197,599. Matsushita Electric Industrial Co., Ltd., Kita-kawachi-gun, Osaka, Japan. Filed July 10, 1964.

National

The word "National" is disclaimed apart from the mark as shown. Owner of Japanese Reg. No. 616,596, dated June 10, 1963; and U.S. Reg. No. 754,599.
For Time Pieces and Their Parts and Accessories, and Clocks.

## Class 31 — Filters and Refrigerators

SN 195,667. Hungerford & Terry, Inc., Clayton, N.J. Filed June 15, 1964.

FERROSAND CR

Owner of Reg. No. 770,329.
For Granular Filtering Media.
First use June 1961.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 190,670. United States Rubber Company, New York, N.Y. Filed Apr. 8, 1964.

U. S. ROYAL 833

Owner of Reg. Nos. 110,334, 642,083, and others.
For Pneumatic Tires.
First use Oct. 30, 1963.

## Class 37 — Paper and Stationery

SN 193,610. The American Institute of Architects, Washington, D.C. Filed May 18, 1964.

AIA

For Blank Forms for Use in the Construction Industry and Business Forms for Use in Architectural Practice.
First use in or prior to 1920.

## Class 38 — Prints and Publications

SN 181,167. Medical Data Services, Inc., Darien, Conn. Filed Nov. 14, 1963.

MD

The drawing is lined for the color blue.
For Service Reports—Namely, Statistical Tabulation for the Pharmaceutical Industry.
First use Feb. 23, 1961.

SN 195,455. Shure Brothers Incorporated, Evanston, Ill. Filed June 11, 1964.

SOUND SCOPE

For Company Newsletter Distributed Both Within the Company and to Others Outside of the Company.
First use on or about Mar. 12, 1964.

SN 196,795. Al Milton, Chicago, Ill. Filed June 30, 1964.

MASTER REPORT

For Individualized Brochures Describing Specific Business Projects or Items.
First use in or about August 1963.

SN 199,913. Norcross, Inc., New York, N.Y. Filed Aug. 14, 1964.

FOR YOUR P.G.

For Greeting Cards and Greeting Card Folders.
First use Nov. 20, 1963.



SN 200,259. Inter/Trade Incorporated, Philadelphia, Pa. Filed Aug. 20, 1964.

INTER/TRADE

For Books, Pamphlets, Loose-Leaf Pages, and Periodicals With Regard to International Business Law.
First use June 1, 1962.

SN 201,138. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 2, 1964.

EDUCATION AGE

For Magazine.
First use Aug. 14, 1964.

SN 201,926. C. G. Conn, Ltd., Elkhart, Ind. Filed Sept. 15, 1964.

CONNCHORD

Owner of Reg. Nos. 371,010, 755,016, and others.
For Magazine Published Periodically and Pertaining to the Field of Music Education.
First use March 1958.

SN 202,926. Golden Press, Inc., New York, N.Y. Filed Sept. 29, 1964.




For Children's Monthly Magazine.
First use Sept. 24, 1964.

## Class 40 — Fancy Goods, Furnishings, and Notions

SN 201,476. Allan E. Siegel, d.b.a. Sieco Manufacturing Company, Englewood, Colo. Filed Sept. 8, 1964.

SAV-UR-WAVE

For Plastic Foam Coiffure Hoods.
First use on or about Feb. 6, 1964.

SN 202,339. F. W. Woolworth Co., New York, N.Y. Filed Sept. 21, 1964.

Embassy

Owner of Reg. No. 768,228.
For Hair Pieces.
First use Apr. 20, 1964.

SN 203,030. The Reddy Company, Inc., Montpelier, Vt. Filed Sept. 30, 1964.




For Safety Pins.
First use 1947.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 181,553. Maison Knits, Inc., New York, N.Y. Filed Nov. 20, 1963.

BELA RAFFIA

Applicant hereby disclaims the exclusive right to the use of the word "Raffia" apart from the mark as shown.
For Fabrics in the Piece, Made Partly or Wholly of Raffia.
First use Apr. 30, 1963.

## Class 45 — Soft Drinks and Carbonated Waters

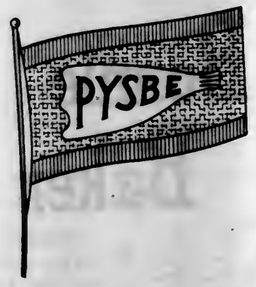
SN 176,074. Colonial Stores Incorporated, Norfolk, Va. Filed Aug. 30, 1963.

JUS-TREAT

For Fruit-Flavored Soft Drinks.
First use Apr. 13, 1962.

## Class 46 — Foods and Ingredients of Foods

SN 134,668. Pesquerias y Secaderos de Bacalao de Espana, S.A., San Sebastian, Spain. Filed Dec. 26, 1961.




The drawing is lined for red and yellow. Owner of Spanish Reg. No. 130,829, dated Apr. 3, 1948.
For Dried Codfish.

SN 135,752. Best Feeds & Farm Supplies, Inc., Oakdale, Pa. Filed Jan. 15, 1962.

BIRD

JOY

The drawing is lined for red, but the color does not form any part of the trademark. Owner of Reg. No. 615,414.
For Bird Seed.
First use Oct. 19, 1961.

SN 144,216. Thomas Carvel, Yonkers, N.Y. Filed Apr. 26, 1962.

BROWN BONNET

For Chocolate Flavored Coatings for Coating Frozen Confections, Such as Frozen Custards, Ice Cream, Frozen Fruit Ices, and Frozen Fruit Juices.
First use Mar. 1, 1954.

SN 162,529. Bookbinder's Restaurant, Inc., d.b.a. Old Original Bookbinder's, Philadelphia, Pa. Filed Feb. 12, 1963.

OLD ORIGINAL Bookbinder's

For Canned Food Products—Namely, Soups, Sauces, Meat Balls, and Steamed Clams.
First use January 1938; 1865 as to "Bookbinder's."

SN 183,857. Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. Filed Dec. 31, 1963.

Bonnie Baker

Owner of Reg. Nos. 660,412, 752,222 and others.
For Corn Meal, Wheat Flour; Fresh Dough Biscuits; Vegetable Shortening; Fresh Eggs; Fresh Bread; Brown 'N' Serve Rolls; Canned Evaporated Milk; Instant Non-Fat Dry Milk; Oleomargarine; Salad and Cooking Oils; Salt; Cake Mix, and Potato Chips.
First use Dec. 17, 1956, on wheat flour.

SN 185,061. Edward Sharp & Sons Limited, Maidstone, Kent, England. Filed Jan. 21, 1964.

Sharps

Priority claimed under Sec. 44(d) on British Reg. No. 855,922, dated Oct. 30, 1963.
For Candies.

SN 187,427. Petfoods Limited, Melton Mowbray, England. Filed Feb. 25, 1964.

DINE

Owner of British Reg. No. B801,238, dated Feb. 4, 1960.
For Cat Food.

SN 189,211. Sakata Ranches, Inc., d.b.a. T. and M. Farms, Watsonville, Calif. Filed Mar. 20, 1964.

Viva!

For Fresh Vegetables.
First use at least as early as April 1959.

SN 190,539. Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. Filed Apr. 7, 1964.




The lines on the drawing are a feature of the mark and are not representative of color. Owner of Reg. Nos. 693,285, 751,823, and 752,222.
For Instant Non-Fat Dry Milk.
First use Oct. 20, 1961.

SN 190,899. Dirigo Sales Corporation, Boston, Mass. Filed Apr. 13, 1964.

FOSTEX

For Blend of Phosphates for Incorporation Into Food Products.
First use Feb. 19, 1954.



SN 190,971. The Rath Packing Company, Waterloo, Iowa. Filed Apr. 13, 1964.



Owner of Reg. No. 559,600.
For Refrigerated Meats and Prepared Meat Products.
First use Oct. 7, 1963.

SN 191,631. Transmundo Company, Inc., New York, N.Y. Filed Apr. 20, 1964.

TRIPLE J

For Canned Corned Beef, Canned Corned Beef Hash, Canned Roast Beef, Canned Brisket Beef, Canned Tongue, Canned Corned Pork, Canned Corned Mutton, Canned Hamburgers, and Canned Beef Gravy.
First use Jan. 25, 1963.

SN 191,699. Abner Michaud, d.b.a. A. Michaud Co., Philadelphia, Pa. Filed Apr. 21, 1964.

PEPPER TOPPERS

No claim is made to the word "Pepper" apart from the mark as shown.
For Frozen Sliced, Chopped Meat Mixed With Peppers and Diced Onions and Moulded.
First use on or about Nov. 1, 1963.

SN 193,919. Atlas Biscuit Corporation, New York, N.Y. Filed May 21, 1964.

GOOFY ANIMALS

Applicant disclaims exclusive use of the word "Animals" except in combination with the rest of the mark shown.
For Iced Animal Crackers.
First use Mar. 25, 1964.

SN 193,994. Stange Co., by change of name from Wm. J. Stange Co., Chicago, Ill. Filed May 21, 1964.



The drawing is lined for red and orange.
For Certified Food Colors, Anti-Oxidants for Food Products, and Food Flavorings and Seasonings Which Include Spices or Herbs, or Extractives or Spices or Herbs, or Mixtures Thereof, All the Aforesaid Products Being for the Food Processing Industry.
First use Mar. 30, 1964, on certified food colors.

SN 194,111. Airline Foods Corporation, Westfield, N.Y. Filed May 25, 1964.

AIRLINE

Owner of Reg. No. 401,187.
For Prune Juice for Food Purposes.
First use on or about Nov. 3, 1911.

SN 194,127. California Canners and Growers, d.b.a. Richmond-Chase Company, San Francisco, Calif. Filed May 25, 1964.

Diet Delight

No claim is made to the word "Diet" apart from the mark as shown. Owner of Reg. Nos. 433,701, 583,066, and 616,308.
For Canned Fruits, Canned Vegetables, Canned Vegetable Juices, Canned Fruit Nectars, Canned Applesauce, Fruit and Berry Preserves, Jams, Jellies, Tomato Catsup, Salad Dressings, Imitation Maple Syrup, Chocolate Flavored Syrup, Butterscotch Topping, and Non-Caloric Sweetener.
First use Apr. 11, 1946, on canned fruits, vegetables and juice.

SN 194,173. A. Giurlani & Bros., San Francisco, Calif. Filed May 25, 1964.



Owner of Reg. No. 589,460.
For Canned Sardines.
First use Apr. 6, 1964.

SN 194,657. Rema Foods, Inc., New York, N.Y. Filed June 1, 1964.

DUET

For Tuna, Bonito, Sardines, Anchovies, Kippered Snacks, Oysters, Clams, and Tomato Sardines in Cans.
First use May 4, 1964.

SN 194,778. The Coca-Cola Company, Atlanta, Ga. Filed June 3, 1964.

HIGH-C

Owner of Reg. Nos. 638,864 and 251,763.
For Canned Fruit Drinks.
First use Mar. 3, 1964.

SN 194,952. Castle & Cooke, Inc., d.b.a. Dole Company, Honolulu, Hawaii. Filed June 5, 1964.

7:12

For Frozen Canned Concentrated Fruit Juices.
First use May 7, 1964.

SN 195,196. American Bakeries Company, Chicago, Ill. Filed June 9, 1964.

## YE OLDE ENGLISH

For Bakery Products—Namely, Fruit Cakes.
First use November 1920.

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SN 195,382. Dulany Foods Inc., Fruitland, Md. Filed June 11, 1964.

## DULANY

Owner of Reg. Nos. 508,171, 609,984, and others.
For Frozen Foods—Namely, Garden Peas, Vegetables, Peaches, Berries, Fruits for Fruit Cup, Corn-on-the-Cob, French Fried Potatoes, Rhubarb, Oysters, Shrimp, Breaded Shrimp, Breaded Oysters, Fish Sticks, Fried Scallops, Chicken Livers, Cut-Up Chicken, and Orange Juice Concentrate; and Canned Vegetables and Canned Tuna Fish.
First use about 1925.

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SN 195,453. Edward Sharp & Sons Limited, Maidstone, Kent, England. Filed June 11, 1964.




The word "Toffee" is disclaimed apart from the mark.
Owner of British Reg. No. 663,242, dated Oct. 14, 1947.
For Toffee Candy.

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SN 195,504. Best'O Distributors, Inc., d.b.a. Best'O Inc., Hollywood, Calif. Filed June 12, 1964.

## PRI-YUM

For Canned Dog and Cat Food.
First use May 15, 1964.

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SN 195,664. Hanan Products Company, Inc., Hicksville, N.Y. Filed June 15, 1964.

## COFFEE HANSE

For Frozen Vegetable Product in the Nature of a Cream Substitute for Use With Cereals, Coffee, Soups, and Beverages.
First use Apr. 15, 1964.

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SN 195,743. UBC Distributors Incorporators Incorporated, Chicago, Ill. Filed June 15, 1964.

## DEERWOOD

Owner of Reg. No. 194,603.
For Canned Vegetables and Fruits; Dried Vegetables and Fruits; Prepared Mustard; Spices; Coffee, Cocoa, Tea; Vinegar; Catchup; Peanut Butter; Evaporated Milk; Canned Salmon; Mince Meat; Jams, Preserves, Jellies; Corn Syrup; Corn Meal, Buckwheat Flour; Powdered Sugar; Cornstarch for Food Purposes; Rice; Breakfast Cereals; Spaghetti, Macaroni, and Noodles.
First use about 1912.

SN 195,787. Martin L. Hall Company, South Boston, Mass. Filed June 16, 1964.

## TEAMONADE

For Concentrated Flavor for Making a Tea and Lemon Flavored Food Beverage.
First use June 8, 1964.

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SN 195,821. Stella d'Oro Biscuit Company, Inc., New York, N.Y. Filed June 16, 1964.




"Stella d'Oro" is translated as "star of gold." The drawing is line for red and green. Owner of Reg. No. 658,308.
For Biscuits, Cookies, Cakes, Crackers, Breadsticks, and Toast.
First use January 1964.

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SN 195,822. Stella d'Oro Biscuit Company, Inc., New York, N.Y. Filed June 16, 1964.




"Stella d'Oro" is translated as "star of gold." Owner of Reg. No. 658,308.
For Biscuits, Cookies, Cakes, Crackers, Breadsticks, and Toast.
First use January 1964.

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SN 195,823. Stella d'Oro Biscuit Company, Inc., New York, N.Y. Filed June 16, 1964.




"Stella d'Oro" is translated as "star of gold." Owner of Reg. No. 658,308.
For Biscuits, Cookies, Cakes, Crackers, Breadsticks, and Toast.
First use January 1964.



SN 195,878. McKee Baking Company, Collegedale, Tenn. Filed June 17, 1964.

## MCKEE

For Cakes and Cookies.
First use 1939.

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SN 196,182. National Biscuit Company, New York, N.Y. Filed June 22, 1964.

## PASTRY CHEF

For Cake and Pastry.
First use on or before Oct. 31, 1962.

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SN 196,501. The Chunky Corporation, Brooklyn, N.Y. Filed June 26, 1964.

## TIME-OUT

For Candy.
First use Mar. 8, 1963.

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SN 196,672. Honig-Cooper Company, d.b.a. Columbus Marketing Company, San Francisco, Calif. Filed June 29, 1964.




No claim is made to the words "San Francisco, Sourdough, French bread, and original" apart from the mark as shown.
The name shown on the drawing does not represent any particular living person.
For Sourdough French Bread.
First use June 1, 1964.

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SN 196,934. American Kitchen Products Co., Inc., Jersey City, N.J. Filed July 2, 1964.

## BULLSHOT

For Cocktail Mix Containing Vegetable Juice, Beef Extract, Tomato Juice, and Other Ingredients.
First use Apr. 30, 1964.

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SN 197,076. Dean W. Carlson, d.b.a. Terry Lee Products, St. Paul, Minn. Filed July 6, 1964.

## Char-O-Snaps

Exclusive use of the word "Snaps" is disclaimed apart from the mark. Owner of Reg. No. 690,647.
For Dog and Cat Food.
First use Sept. 1, 1963.

SN 197,292. Hudson Vitamin Products, Inc., New York, N.Y. Filed July 7, 1964.

## EDIMATE

For Meat Tenderiser.
First use June 9, 1964.

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SN 197,293. Hudson Vitamin Products, Inc., New York, N.Y. Filed July 7, 1964.

## GELMATE

For Gelatin for Food Purposes.
First use June 10, 1964.

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SN 198,487. Milani Foods, Inc., Los Angeles, Calif. Filed July 24, 1964.

## FRENCH LADY

Owner of Reg. No. 411,070.
For Dressings for Salads.
First use May 18, 1942.

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SN 198,700. Automatic Canteen Company of America, Chicago, Ill. Filed July 29, 1964.

## CINADENT

For Chewing Gum.
First use June 28, 1956.

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SN 199,174. Cherokee Products Company, Haddock, Ga. Filed Aug. 4, 1964.

## GEORGIA GOLD

For Canned Fruits and Canned Vegetables.
First use 1939.

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SN 199,305. North Pacific Canners & Packers, Inc., Portland, Oreg. Filed Aug. 5, 1964.

## ROYAL GARDEN

For Frozen Vegetables.
First use Mar. 2, 1964.

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SN 199,409. B.G. Shrimp Sales Co., Inc., Hookers Point, Tampa, Fla. Filed Aug. 6, 1964.

## BEE GEE

For Frozen Shrimp.
First use July 11, 1962.

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SN 199,437. Anco Food Products (1961) Inc., Montreal, Quebec, Canada. Filed Aug. 7, 1964.




For Cheese.
First use 1961; in commerce Mar. 23, 1964.

SN 199,438. Anco Food Products (1961) Inc., Montreal, Quebec, Canada. Filed Aug. 7, 1964.




For Cheese.
First use 1961; in commerce Mar. 23, 1964.

SN 199,439. Anco Food Products (1961) Inc., Montreal, Quebec, Canada. Filed Aug. 7, 1964.

## ANFROM

For Cheese.
First use 1961; in commerce Mar. 23, 1964.

SN 199,470. G. W. Hume Company, Turlock, Calif. Filed Aug. 7, 1964.

## HONEY BEE

For Canned Fruits and Vegetables.
First use May 15, 1926.

SN 199,509. Stiefvaters', Incorporated, d.b.a. Stiefvaters', San Francisco, Calif. Filed Aug. 7, 1964.

## SIX-TEEN

For Concentrated Liquid Imitation Vanilla.
First use during July 1959.

SN 199,712. Derby Foods, Inc., Chicago, Ill. Filed July 31, 1964.




For Peanut Butter.
First use on or about Nov. 1, 1958.

SN 199,896. Flavor Corporation of America, Northbrook, Ill. Filed Aug. 14, 1964.

## ECONOMADE

For Flavoring Material for Animal Feeds.
First use Aug. 6, 1964.

SN 200,512. V-H Quality Food Products Ltd., Duvernay, Quebec, Canada. Filed Aug. 24, 1964.




For Chinese Food Sauces; Barbecue Chicken Sauce; and Barbecue Chicken Hot Sauce.
First use September 1962; in commerce September 1962.

SN 200,526. L.D.G. Corporation of Miami, Miami, Fla. Filed Aug. 24, 1964.




The word "Coffee" is disclaimed apart from the mark as shown.
For Ground Coffee.
First use on or about Nov. 5, 1963.

SN 200,558. Dubuque Packing Company, Dubuque, Iowa. Filed Aug. 25, 1964.

## HAPPY

For Cured, Smoked Ground and Shaped Ham.
First use June 26, 1964.

SN 200,653. McCormick & Company, Incorporated, Baltimore, Md. Filed Aug. 26, 1964.

## BAKO-VAN

Owner of Reg. No. 186,532.
For Imitation Vanilla Powder.
First use Aug. 10, 1964.

SN 200,676. Tata Incorporated, New York, N.Y. Filed Aug. 26, 1964.

## TATA

For Tea.
First use May 19, 1964.



SN 200,782. Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. Filed Aug. 27, 1964.

## BonnieBaker

Owner of Reg. Nos. 693,285, 751,828, and 752,222.
For Baked Cakes.
First use July 31, 1964.

SN 201,892. Sunkist Growers, Inc., Los Angeles, Calif. Filed Sept. 14, 1964.

## JET-SOL

For Pectin.
First use Aug. 19, 1964.

SN 201,898. Harold Tyler, d.b.a. Harold Tyler Maple Farms, Westford, N.Y. Filed Sept. 14, 1964.



"Heart of the Maples"

The drawing is lined for the colors red and green.
For Maple Syrup, Maple Candies, Maple Cream, and Maple Topping.
First use Mar. 23, 1962.

SN 201,914. G. H. Anderson Company, San Juan Bautista, Calif. Filed Sept. 15, 1964.




The drawing is lined for blue and gold.
For Fresh Pears.
First use 1928.

SN 201,959. Nifty Foods Corp., d.b.a. Lustig Foods, Brockport, N.Y. Filed Sept. 15, 1964.

## NIFTY

Owner of Reg. Nos. 722,296 and 743,083.
For Frozen Vegetables, Canned Vegetables, and Canned Apple Sauce.
First use in the year 1942, on frozen vegetables.

SN 202,317. Mario Saikhon, El Centro, Calif. Filed Sept. 21, 1964.

## MARIO

For Fresh Vegetables.
First use Dec. 24, 1963.

SN 202,415. Carnation Company, Los Angeles, Calif. Filed Sept. 23, 1964.

## PRAISE

For Liquid Non-Dairy Creamer.
First use Aug. 13, 1964.

SN 203,096. Jaya Foods, Inc., Chicago, Ill. Filed Oct. 1, 1964.

## CHEEZELETS

For Cheese Flavored Extruded Fried Corn Snack Food Preparation.
First use January 1953.

### Class 47 — Wines

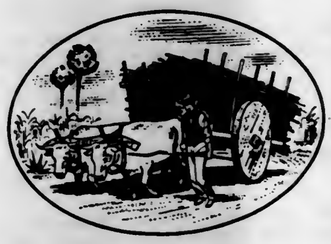
SN 198,498. Schenley Distillers, Inc., d.b.a. Weston Winery, New York, N.Y. Filed July 24, 1964.

## RAMROD

For Wines.
First use June 19, 1964.

### Class 49 — Distilled Alcoholic Liquors

SN 178,961. Old Florida Rum Company, Miami, Fla. Filed Oct. 14, 1963.



For Rum and Cordials.
First use Apr. 1, 1963.

SN 186,687. Berry Bros. & Rudd Limited, London S.W., England. Filed Feb. 14, 1964.



Owner of Reg. Nos. 353,590 and 306,022.
For Scotch Whisky.
First use Dec. 31, 1923; in commerce Dec. 31, 1933.

SN 191,201. Montebello Liquors, Incorporated, d.b.a. Baltimore Liquor Company, Baltimore, Md. Filed Apr. 15, 1964.




For Whiskey.
First use Mar. 30, 1959.

SN 193,856. Continental Distilling Corporation, Philadelphia, Pa. Filed May 20, 1964.

PUBLICKER

Owner of Reg. No. 311,040.
For Bourbon Whisky.
First use Nov. 17, 1933.

SN 195,649. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited, Philadelphia, Pa. Filed June 15, 1964.

KILTARIE

For Scotch Whisky.
First use May 21, 1964.

SN 195,651. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited, Philadelphia, Pa. Filed June 15, 1964.

DRUMBATHIE

For Scotch Whisky.
First use May 21, 1964.

SN 195,652. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited, Philadelphia, Pa. Filed June 15, 1964.

DRUMBASSIE

For Scotch Whisky.
First use May 21, 1964.

## Class 50—Merchandise Not Otherwise Classified

SN 153,440. Glendola R. Whipple, d.b.a. Gwenn Industries, Cleveland, Ohio. Filed Sept. 18, 1962.

HI-DRYER

For Clothes Rack for Hanging Drip-Dry Garments and Other Articles Over the Bathtub.
First use Sept. 7, 1962.

SN 176,599. Wood Flong Corporation, Hoosick Falls, N.Y. Filed Sept. 9, 1963.

FLEX-O-FLONG

For Matrix Sheet.
First use July 31, 1963.

SN 176,742. Morgen Manufacturing Co., Yankton, S. Dak. Filed Sept. 11, 1963.




For Adjustable Masonry Scaffolding.
First use 1950.

SN 177,298. Shock Guard, Long Beach, Calif. Filed Sept. 18, 1963.

SHOCK GUARD

For Materials Handling Skids.
First use June 23, 1963.

SN 189,714. Major Pool Equipment Corporation, South Kearny, N.J. Filed Mar. 26, 1964.

AQUA-LOCK

For Swimming Pool Covers.
First use Aug. 20, 1962.

SN 202,389. Spiegel Industries Corp., Teaneck, N.J. Filed Sept. 22, 1964.




For Hangers and Racks for Wearing Apparel.
First use Aug. 15, 1960.

SN 204,299. Smith-Lerner Industries, Inc., Phoenix, Ariz. Filed Oct. 19, 1964.

CLOSET VALET

For Clothing Hangers.
First use July 2, 1964.



SN 204,418. Superior Plastics Inc., Chicago, Ill. Filed Oct. 20, 1964.

MR. BONES

For Plastic Models of the Human Skeleton.
First use Sept. 30, 1964.

SN 204,473. The Hopp Press, Inc., New York, N.Y. Filed Oct. 21, 1964.

EYE-STOPPER

For Directory and Price Designating Signs for Merchandise Displays.
First use on or about July 6, 1964.

## Class 51—Cosmetics and Toilet Preparations

SN 137,237. Johann Maria Farina, Inc., New York, N.Y., assignee of Johann Maria Farina Gegenuber dem Julichs-Platz, Cologne (Rhine), Germany. Filed Feb. 5, 1962.



Owner of U.S. Reg. No. 247,552.
For Eau de Cologne, Perfumes and Cosmetics; Toothpaste; and Preparation Sticks for Facial and Skin Application, Such as Scented and Perfumed Cooling Sticks and Migraine Sticks.
First use 1927; in commerce at least as early as Apr. 15, 1927.

SN 182,620. Richard Hudnut, Morris Plains, N.J. Filed Dec. 9, 1963.

GLISSANDO

For Lipstick.
First use Nov. 29, 1963.

SN 183,504. H. Goodman & Sons, Inc., New York, N.Y. Filed Dec. 24, 1963.

MOISTURE GUARD

For Hair Spray for Styling the Hair, for a Finishing Spray, and for Firmly Setting the Hair.
First use on or about Nov. 26, 1963.

SN 183,664. Borun Bros., d.b.a. Joanette Parfumerie, Los Angeles, Calif. Filed Dec. 27, 1963.

JOANETTE

For Hair Grooming Preparations, Dry Skin Bath Oil, Bubble Bath Oil, Creme Rinse, Nail Grooming Preparations, and Lotions.
First use Oct. 10, 1951.

SN 185,023. Cosmetics Manufacturing Company, Los Angeles, Calif. Filed Jan. 21, 1964.

NOSE GARD

Applicant disclaims the word "Nose."
For Cosmetic Skin Cream for Preventing Sunburn.
First use Nov. 19, 1963.

SN 185,177. Viviane Woodard Corporation, Panorama City, Calif. Filed Jan. 22, 1964.

BEAUTY BRIEFS

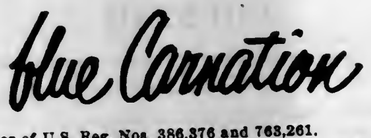
For Cosmetic Travel Kit Including Facial Cleanser, Skin Freshener, Skin Moisturizer, Facial Mask, Eye and Throat Emollient, Makeup, Rouge, Powder, Lip Gloss and Softener.
First use Oct. 1, 1963.

SN 185,496. Helene Curtis Industries, Inc., Chicago, Ill. Filed Jan. 28, 1964.

HAND MAGIC

Reserving its common law rights, applicant disclaims "Hand" apart from the mark as shown.
For Cosmetic Skin Lotion.
First use on or about Jan. 13, 1964.

SN 187,435. Roger & Gallet, S.A., Paris, France. Filed Feb. 25, 1964.




Owner of U.S. Reg. Nos. 386,376 and 763,261.
For Toilet Water, Talcum Powder, Perfume, Sachet, and Bath Powder.
First use Sept. 15, 1963; in commerce Sept. 15, 1963.

SN 188,203. Edward P. Cressler, d.b.a. Cressler Products Company, Newton, Kans. Filed Mar. 9, 1964.

RINSEDENT

For Mouth Wash and Dentifrice in Tablet Form.
First use in or about April 1945.

SN 191,512. Countess Laboratories, Inc., Long Beach, Calif. Filed Apr. 20, 1964.

GOLD 'N JADE

For Permanent Wave Lotion and Neutralizer.
First use May 7, 1961.

SN 193,208. Chas. Pfizer & Co., Inc., New York, N.Y. Filed May 11, 1964.

INSTANT BEAUTY

For Liquid Make-Up.
First use on or about Jan. 8, 1953.

SN 193,907. Susanne Thierry Parfums, Inc., Miami, Fla. Filed May 20, 1964.

## ONDINETTE

Owner of Reg. Nos. 623,674 and 774,308.
For Perfume and Toilet Water.
First use July 20, 1962.

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SN 193,921. Louis Bender, d.b.a. Elbee Co., Westfield, N.J. Filed May 21, 1964.

## GLOVELY

For Hand Creams.
First use May 1, 1964.

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SN 194,197. Lydia O'Leary, Inc., New York, N.Y. Filed May 25, 1964.

## NEGASOL

For Suntan Lotion.
First use Apr. 23, 1964.

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SN 194,881. H. Goodman & Sons, Inc., New York, N.Y. Filed June 4, 1964.

## SINGING IN THE RAIN

For Hair Spray.
First use Apr. 30, 1964.

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SN 194,976. Finn Birger Christensen, Copenhagen K, Denmark. Filed June 5, 1964.

## CHEETAH

For Perfumes.
First use September 1963; in commerce January 1964.

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SN 195,448. The Purdue Frederick Company, Yonkers, N.Y. Filed June 11, 1964.

## DEORMED

For Personal Deodorant.
First use June 5, 1964.

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SN 198,702. Avon Products, Inc., New York, N.Y. Filed July 29, 1964.

## 4-A

For After Shave Lotion.
First use June 18, 1964.

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SN 198,703. Avon Products, Inc., New York, N.Y. Filed July 29, 1964.

## IV-A

For After Shave Lotion.
First use June 18, 1964.

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SN 199,192. Flavormatic Industries, Inc., Woodside, N.Y. Filed Aug. 4, 1964.

## CLUB HOUSE

For Cosmetics—Namely, Cologne, Perfume, Toilet Water, and After Shave Lotion.
First use July 16, 1964.

SN 199,875. John H. Breck, Inc., Springfield, Mass. Filed Aug. 14, 1964.

## ONCE IS ENOUGH

For Hair Dressing Preparation.
First use July 29, 1964.

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### Class 52 — Detergents and Soaps

SN 177,558. Speco, Inc., Oklahoma City, Okla. Filed Sept. 23, 1963.

## SAFETY-VU

For Glass Cleaning and Coating Chemical Compositions.
First use July 31, 1963.

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SN 183,963. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 3, 1964.

## OCTAGON

Owner of Reg. Nos. 15,086, 332,151, and others.
For Cleaner, Cleanser and Detergent.
First use January 1961.

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SN 191,117. Birko Chemical Corporation, Denver, Colo. Filed Apr. 15, 1964.

## SU-TEC

For Cleaning Agents Which Are Compositions of Alkalis, Wetting Agents and Chelating Agents.
First use on or about Jan. 1, 1955.

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SN 191,118. Birko Chemical Corporation, Denver, Colo. Filed Apr. 15, 1964.

## BI-TEC

For Cleaning Agents Which Are Compositions of Alkalis, Wetting Agents and Chelating Agents.
First use on or about Jan. 1, 1955.

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SN 191,119. Birko Chemical Corporation, Denver, Colo. Filed Apr. 15, 1964.

## META-TEC NO. 2-C

For Cleaning Compounds Composed of Alkalis and Chelating Agents.
First use on or about Jan. 1, 1955.

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SN 191,120. Birko Chemical Corporation, Denver, Colo. Filed Apr. 15, 1964.

## S-P-D-E NO. 33

For Cleaning Compounds Which Are Combinations of Alkalis, Wetting Agents and Chelating Agents.
First use onor about Jan. 1, 1955.

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SN 192,408. Jack L. Lieberman, d.b.a. Lewis Beauty Supply Co., Philadelphia, Pa. Filed Apr. 30, 1964.

## MT5

For Dandruff Remover Shampoo, and Hair and Scalp Treatment Incorporating a Detergent.
First use Mar. 6, 1964.



SN 192,893. Chemical Cleaning & Equipment Service, Inc., Maplewood, La. Filed May 7, 1964.




The drawing is lined for the color red.
For Chemical Cleaning Compositions Which Are Used for the Interior Cleaning of Tanks, Barges, Pipes, and Other Industrial Containers and Processing Systems, and for Other Industrial Cleaning Purposes.
First use September 1962.

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SN 195,506. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed June 12, 1964.

## CUSTOM TONE

For Shampoo for the Hair.
First use May 28, 1964.

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SN 196,348. Cameo, Inc., Toledo, Ohio. Filed June 24, 1964.
Owner of Reg. No. 763,805.

## Lady Brooke

For Cleaning Preparation for Treating Cloth or Leather Shoes, Belts or Handbags.
First use Mar. 16, 1962.

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SN 197,263. Carter Products, Inc., New York, N.Y. Filed July 7, 1964.

## ROYAL KASHMIRFOAM

For Hand Soap.
First use June 1, 1964.

SN 197,264. Carter Products, Inc., New York, N.Y. Filed July 7, 1964.

## ROYAL KASHMIR FOAM

For Hand Soap.
First use June 1, 1964.

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SN 197,807. Alconox, Inc., New York, N.Y. Filed July 14, 1964.

## ALCOLAB

For Cleaning and Detergent Compound for Laboratory, Glassware, Surgical Instruments, Porcelain, Metal, and Rubber Equipment.
First use Oct. 10, 1956.

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SN 198,243. United Chemicals, Inc., Salt Lake City, Utah. Filed July 20, 1964.

## M-E-2

For Solution for Cleaning and Lubricating Electric Razor Cutting Heads.
First use on or about May 1, 1964.

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SN 198,332. Coastal Chemical Company, Incorporated, Savannah, Ga. Filed July 22, 1964.

## NU SPARKLE

Owner of Reg. No. 360,734.
For Liquid Preparation for Cleaning Window Glass.
First use Oct. 11, 1937.

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SN 199,014. John H. Breck, Inc., Springfield, Mass. Filed Aug. 3, 1964.

## GOLD BRICK

For Hair Shampoo.
First use June 11, 1964.

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SN 199,024. C-Z Chemical Co., Inc., Beloit, Wis. Filed Aug. 3, 1964.

## SIR JOHN

For Toilet Bowl Cleaner, Disinfectant and Deodorant.
First use June 27, 1963.

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# SERVICE MARKS

### Class 100 — Miscellaneous

SN 151,547. Washington Engineering Services Company, Inc., Kensington, Md. Filed Aug. 20, 1962.

## SIDL

For Documentation and Data Control Services Incident to Performance of Technical Projects Involving Technical Information and Communication.
First use May 1, 1961.

SN 159,203. ITT Cannon Electric Inc., Los Angeles, Calif., assignee of Cannon Electric Company, Los Angeles, Calif. Filed Dec. 17, 1962.




Applicant disclaims the words "Authorized Plug Specialist," apart from the mark as shown.
For Assembly and Servicing of Products in the Electrical Connector Field.
First use on or about Mar. 10, 1961.

SN 172,591. International Consumer Credit Association, St. Louis, Mo. Filed July 8, 1963.




The words "International Consumer Credit Ass'n" are disclaimed apart from the mark as shown. Owner of Reg. No. 543,162.

For Association Services—Namely, Informational Services on Matters Effecting Consumer Credit, viz, Federal and State Legislation, Business Trends, and Distribution to Its Members of Publications and Works on the Subject Matter of Consumer Credit.

First use Feb. 5, 1963.

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SN 172,592. International Consumer Credit Association, St. Louis, Mo. Filed July 8, 1963.




For Association Services—Namely, Informational Services on Matters Effecting Consumer Credit, viz, Federal and State Legislation, Business Trends, and Distribution to Its Members of Publications and Works on the Subject Matter of Consumer Credit.

First use Feb. 5, 1963.

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SN 194,560. A.R.F. Products, Inc., Raton, N. Mex. Filed June 1, 1964.

ARF

Owner of Reg. Nos. 616,830, 612,106, and 617,197.

For Research, Development and Engineering Services in the Fields of Physics, Chemistry, Mechanics, and Electronics.

First use on or about Jan. 1, 1943.

## Class 101 — Advertising and Business

SN 153,240. Badger Bearing Company, Milwaukee, Wis. Filed Sept. 13, 1962.



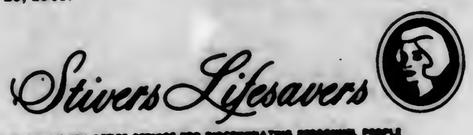

Applicant disclaims the words "for Bearings" apart from the mark as shown.

For Bearing and Power Transmission Equipment Distributorship Services.

First use February 1943.

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SN 167,769. Stivers Office Service, Chicago, Ill. Filed Apr. 29, 1963.




The surname "Stivers" and the phrase "The Temporary Office Service for Discriminating Personnel People" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 602,832 and 611,902.

For Maintaining a Staff of Trained Office Personnel To Provide Services for Clients on a Temporary Basis.

First use Feb. 19, 1963.

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SN 170,152. American Apparel Manufacturers Association, Inc., Washington, D.C. Filed June 3, 1963.




The service mark includes a fanciful showing of the letters "AAMA."

For Staging an Annual Industrial Exhibition for Manufacturers of Wearing Apparel.

First use November 1962.

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SN 170,491. Promotion Management Inc., San Francisco, Calif. Filed June 6, 1963.

P*M

For Services Consisting of Grocery Advertising and Sales Promotion Programs for Others.

First use Oct. 1, 1960.



SN 179,477. Tel-Atlas, Inc., Los Angeles, Calif. Filed Oct. 21, 1963.




For Service Comprising Consultation, Advice, Instruction, and Guidance in Selection of Equipment for a Merchandising Ordering Service.

First use first part of 1954.

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SN 180,347. Woodward & Lothrop, Incorporated, Washington, D.C. Filed Nov. 1, 1963.

Woodward & Lothrop

For Department Store Services.

First use Oct. 1, 1950; Apr. 29, 1881, in a different form.

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SN 185,932. Poster Products, Inc., Chicago, Ill. Filed Feb. 3, 1964.




The drawing is lined for red, blue, yellow, and green.

For Color Reproduction and Printing Services.

First use Apr. 19, 1963.

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SN 189,199. International Automotive Service Industries Show (joint venture), Chicago, Ill. Filed Mar. 20, 1964.

IASI SHOW

Owner of Reg. No. 663,610.

For Arranging for Exhibit of the Automotive Products of Applicants' Members, and Promoting and Conducting Expositions and Conventions for Manufacturers, Whose Products Are Sold in the Automotive Field.

First use May 29, 1958.

SN 189,903. Lady Baltimore Office Services, Inc., Baltimore, Md. Filed Mar. 30, 1964.




For Employment Agency Services—Namely, Furnishing Office Help.

First use May 11, 1961.

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## Class 102 — Insurance and Financial

SN 178,474. The Ohio National Life Insurance Company, Cincinnati, Ohio. Filed Oct. 7, 1963.



The mark consists of a large "O" immediately above a short, squat, thickened "N."

For Underwriting Insurance.

First use Aug. 9, 1963.

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SN 189,289. Great American Insurance Company, New York, N.Y. Filed Mar. 23, 1964.




The drawing is lined for the color red. Owner of Reg. Nos. 643,400 and 607,761.

For Underwriting the General Types of Insurance, Excluding Life.

First use Jan. 3, 1964.

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SN 193,980. Northern Life Insurance Company, d.b.a. Northern Life Insurance Co., Seattle, Wash. Filed May 21, 1964.

SIMCARE

For Underwriting of Hospital and Medical Insurance.

First use Jan. 28, 1964.

## Class 103 — Construction and Repair

SN 166,069. Continental Motors Corporation, Muskegon, Mich. Filed Apr. 4, 1963.



Owner of Reg. Nos. 118,628, 539,240, and others.
For Service, Rework, Maintenance, Overhaul, Repair, Design, Testing, Research and Field Engineering of Internal Combustion Engines, Transmissions, and Their Controls, Parts and Accessories, for Industrial, Marine, Transportation and Aircraft Power Application of Commercial and Military Customers and Users.
First use March 1914.

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SN 170,064. Halliburton Company, Duncan, Okla. Filed May 31, 1963.

SANFIX

For Sand Control Services and Particularly for a Service Employing a Method of Consolidating Loose or Incompetent Sands, Principally in Well Formations, With a Resin Solution.
First use May 20, 1963.

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SN 187,934. Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Mar. 4, 1964.

KERR-MCGEE

Owner of Reg. No. 683,905.
For Gas Station Services.
First use on or about Feb. 1, 1946.

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SN 190,660. James Adam Stewart Co., Carnegie, Pa. Filed Apr. 8, 1964.




Applicant disclaims the words "Home & Property Improvement" and "Value Center," apart from the mark as shown.
For Construction Services—Namely, Remodeling and Modernizing Homes.
First use July 1963.

## Class 107 — Education and Entertainment

SN 166,330. United States Combined Training Association, New Brunswick, N.J. Filed Apr. 8, 1963. COLLECTIVE MARK.




Applicant disclaims the words "Association" and "Combined Training" apart from the mark as shown.
For Rendering Equestrian Instruction and Staging Equestrian Contests.
First use January 1960.

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SN 172,154. Claster Enterprises, Inc., Baltimore, Md. Filed July 1, 1963.

"Blackouts"

For Title of a Television Program in Which the Audience (Both Studio and Home) Participate in the Identification of Silhouette Figures.
First use May 18, 1963.

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SN 182,891. Pine Crest Preparatory School, Inc., Fort Lauderdale, Fla. Filed Dec. 12, 1963.

PINE CREST

For Educational Services—Namely, Preparatory School Educational Services.
First use July 1939.

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SN 182,892. Pine Crest Preparatory School, Inc., Fort Lauderdale, Fla. Filed Dec. 12, 1963.




Without relinquishing any common law rights therein, the wording "Education," "Leadership," and "Character" is disclaimed apart from the mark as shown.
For Educational Services—Namely, Preparatory School Educational Services.
First use 1958.



SN 189,937. The Pulitzer Publishing Company, d.b.a. Radio Station KSD, St. Louis, Mo. Filed Mar. 30, 1964.

BUSINESS TODAY

Owner of Reg. No. 674,360.
For Title of a Radio Program.
First use Apr. 25, 1955.

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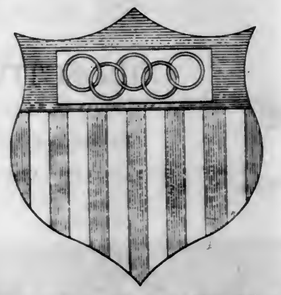
SN 191,113. Nino Bellassai, Norwalk, Conn. Filed Apr. 15, 1964.

ECHOES OF ITALY

For Title of a Radio Program.
First use May 1947.

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SN 192,535. United States Olympic Association, d.b.a. the United States Olympic Committee, New York, N.Y. Filed May 1, 1964.



The drawing is lined for the colors blue and red.
For Services Promoting, Publicizing, and Controlling the Participation of the United States in the Olympic and Pan American Games; and Organizing the Olympic and Pan American Games When Celebrated in the United States.
First use 1896.

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SN 195,132. Niagara Falls Museum Limited, Niagara Falls, Ontario, Canada. Filed June 8, 1964.

DAREDEVIL HALL OF FAME

Owner of Canadian Reg. No. 135,322, dated Apr. 10, 1964.
For Services of a Museum—Namely, the Displaying of Representations of Famous Persons, Objects Belonging to or Used by These Persons and Histories and Stories Pertaining to or About These Persons.

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# CERTIFICATION MARKS

## Class A — Goods

SN 144,217. Verband Dortmunder Bierbrauer, Dortmund, Germany. Filed Apr. 24, 1962.

DORTMUNDER

The mark certifies regional origin.
For Beer.
First use Oct. 3, 1898; in commerce 1933.

# COLLECTIVE MEMBERSHIP MARKS

## Class 200

SN 153,195. National Capital Field Trial Club Inc., Bethesda, Md. Filed Sept. 14, 1962.



For Indicating Membership in Applicant.
First use on or about Jan. 1, 1962.

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SN 178,836. The Trustees of Delta College, University Center, Mich. Filed Oct. 11, 1963.




No claim is made to the word "College" apart from the mark as shown.
For Indicating Membership in the Student Body of Delta College, or as an Alumnus Thereof.
First use 1961.

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SN 192,253. American Institute of Professional Geologists, Golden, Colo. Filed Apr. 29, 1964.




For Indicating Membership in the Applicant Association.
First use Apr. 27, 1964.

SN 194,064. National Automobile Dealers Association, Washington, D.C. Filed May 22, 1964.




For Indicating Membership in Applicant Association.
First use Oct. 15, 1958.

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SN 198,804. Alpha Delta Theta, Milwaukee, Wis. Filed July 30, 1964.

## ALPHA DELTA THETA

For Indicating Membership in a National Medical Technology Sorority.
First use Feb. 1, 1944.

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SN 198,806. Alpha Delta Theta, Milwaukee, Wis. Filed July 30, 1964.




For Indicating Membership in a National Medical Technology Sorority.
First use Feb. 1, 1944.



# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

785,410. CHIP-SEAL. Magnet Cove Barium Corporation. SN 148,824. Pub. 12–8–64. Filed 7–11–62.

785,411. STERIFLEX. Continental Plastics of Oklahoma Incorporated. SN 151,015. Pub. 12–8–64. Filed 8–13–62.

785,412. ENERGY. Shurfine Foods, Inc. SN 164,778. Pub. 12–8–64. Filed 3–15–63.

785,413. DESIGN OF LETTER S. Seal, Incorporated. MULTIPLE CLASS (Classes 1 and 21.) SN 166,218. Pub. 12–8–64. Filed 4–5–63.

785,414. TIKI AND DESIGN. William H. Scheel, Inc. SN 176,961. Pub. 12–8–64. Filed 9–13–63.

785,415. REXWEL. Rexall Drug and Chemical Company. SN 182,654. Pub. 12–8–64. Filed 12–9–63.

785,416. ROYALITE. United States Rubber Company. SN 189,405. Pub. 12–8–64. Filed 3–23–64.

785,417. POLYCREST. United States Rubber Company. SN 190,447. Pub. 12–8–64. Filed 4–6–64.

785,418. MIKOL. Archer-Daniels-Midland Company. SN 191,015. Pub. 12–8–64. Filed 4–14–64.

785,419. SV. Oliver A. Smith, Jr., d.b.a. Smith Vale Farms. SN 191,448. Pub. 12–8–64. Filed 4–17–64.

785,420. STEPANYL. Stepan Chemical Company. SN 191,452. Pub. 12–8–64. Filed 4–17–64.

785,421. KING KUSHION. Inter-State Nurseries, Incorporated. SN 191,556. Pub. 12–8–64. Filed 4–20–64.

785,422. TENNECO. Tenneco Corporation. SN 191,628. Pub. 12–8–64. Filed 4–20–64.

785,423. RED HOT. Standard Milling Company. SN 192,094. Pub. 12–8–64. Filed 4–27–64.

785,424. REXALL. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company. SN 192,326. Pub. 12–8–64. Filed 4–29–64.

### Class 2 — Receptacles

785,425. NAONIS. Industrie A. Zanussi. MULTIPLE CLASS (Classes 2, 21, 23, 24, 27, 31, 34, 36, and 44). SN 145,264. Pub. 12–8–64. Filed 5–23–62.

785,426. WIK-FED. Hydroponic Chemical Company. SN 149,744. Pub. 12–8–64. Filed 7–25–62.

785,427. TWIN TAB. J. L. Clark Manufacturing Co. SN 180,652. Pub. 12–8–64. Filed 11–7–63.

785,428. "PAT-CAP" ETC. AND DESIGN. Patterson Industries, Inc. SN 181,672. Pub. 12–8–64. Filed 11–21–63.

785,429. ZUPACK AND DESIGN. Habra-Werk Wilhelm F. Ott. SN 183,978. Pub. 12–8–64. Filed 1–3–64.

785,430. MONSANTO. Monsanto Company. SN 192,064. Pub. 12–8–64. Filed 4–27–64.

785,431. PLAXWARE. Monsanto Company. SN 192,066. Pub. 12–8–64. Filed 4–27–64.

785,432. KLD. A. Kimball Ltd. SN 198,181. Pub. 12–8–64. Filed 7–20–64.

785,433. TAP-A-TOP. Pabst Brewing Company. SN 198,208. Pub. 12–8–64. Filed 7–20–64.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

785,434. BLACK SHEEP. Buddy Schoellkopf Products Inc. MULTIPLE CLASS (Classes 3, 9, 22, and 39). SN 173,624. Pub. 9–22–64. Filed 7–24–63.

785,435. GOLDEN CIRCLE. Amity Leather Products Co. SN 195,913. Pub. 12–8–64. Filed 6–18–64.

785,436. HARTZ MOUNTAIN. Hartz Mountain Products Corp. SN 198,950. Pub. 12–8–64. Filed 7–31–64.

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### Class 4 — Abrasives and Polishing Materials

785,437. SHINA-MITES. E. I. du Pont de Nemours and Company. SN 195,206. Pub. 12–8–64. Filed 6–9–64.

785,438. BUFF-UP. Amway Corporation. SN 196,004. Pub. 12–8–64. Filed 6–19–64.

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### Class 5 — Adhesives

785,439. KU-GLU. Brunswick Corporation. SN 181,313. Pub. 12–8–64. Filed 11–18–63.

785,440. CHR. The Connecticut Hard Rubber Company. SN 190,313. Pub. 12–8–64. Filed 4–3–64.

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### Class 6 — Chemicals and Chemical Compositions

785,441. NEOPOLAR. Geigy Chemical Corporation. SN 161,987. Pub. 12–8–64. Filed 2–4–63.

785,442. CONSOLIDATED OIL & GAS INC AND DESIGN. Consolidated Oil & Gas, Inc. SN 164,203. Pub. 12–8–64. Filed 2–11–63.

785,443. FLEXOIL. Champion Chemicals, Inc. SN 168,156. Pub. 12–8–64. Filed 5–6–63.

785,444. OROCLAD. Technic, Inc. SN 168,870. Pub. 12–8–64. Filed 5–14–63.

785,445. OROFLO. Technic, Inc. SN 168,871. Pub. 12–8–64. Filed 5–14–63.

785,446. KLENZ-SCALD. Economics Laboratory, Inc. SN 170,898. Pub. 12–8–64. Filed 6–13–63.

785,447. INDICATAR. Mallinckrodt Chemical Works. SN 170,923. Pub. 12–8–64. Filed 6–13–63.

785,448. NEOWAX. Diamond Alkali Company. SN 171,106. Pub. 12–8–64. Filed 6–17–63.

785,449. SANISPRAY. L. H. Kellogg Chemical Company. SN 173,010. Pub. 12–8–64. Filed 7–15–63.

785,450. STERILENE. L. H. Kellogg Chemical Company. SN 173,012. Pub. 12–8–64. Filed 7–15–63.

785,451. BISTAT. L. H. Kellogg Chemical Company. SN 173,013. Pub. 12–8–64. Filed 7–15–63.

785,452. LANO-BASE. L. H. Kellogg Chemical Company. SN 173,014. Pub. 12–8–64. Filed 7–15–63.

785,453. CADMERC. H. Kohnstamm & Co., Inc., d.b.a. General Color Company. SN 174,670. Pub. 12–8–64. Filed 8–8–63.

785,454. SIPOMER. Alcolac Chemical Corporation. SN 174,735. Pub. 12–8–64. Filed 8–9–63.

785,455. MYVOIL. Eastman Kodak Company. SN 177,511. Pub. 12–8–64. Filed 9–23–63.

785,456. BIMAT. Eastman Kodak Company. SN 179,701. Pub. 12–8–64. Filed 10–24–63.

785,457. PELLENS. Morton Salt Company. SN 181,554. Pub. 12–8–64. Filed 11–20–63.

785,458. A AND DESIGN. Axton-Cross Company. SN 191,022. Pub. 12–8–64. Filed 4–14–64.

785,459. LANSTAN. FMC Corporation. SN 192,381. Pub. 12–8–64. Filed 4–30–64.

785,460. CEILING ZERO. West Chemical Products, Inc. SN 193,737. Pub. 12–8–64. Filed 5–15–64.

785,461. EC-SYN. Miles Laboratories, Inc. SN 196,055. Pub. 12–8–64. Filed 6–19–64.

785,462. BIRLANE. Shell Oil Company. SN 196,202. Pub. 12–8–64. Filed 6–22–64.

785,463. PLANAVIN. Shell Oil Company. SN 196,203. Pub. 12–8–64. Filed 6–22–64.

785,464. BENAVIN. Shell Oil Company. SN 196,205. Pub. 12–8–64. Filed 6–22–64.

785,465. MAINTAIN. United States Borax & Chemical Corporation. SN 196,572. Pub. 12–8–64. Filed 6–26–64.

785,466. REPRESENTATION OF A HAND AND ARROW (DESIGN). Barnebey-Cheney Company. SN 196,603. Pub. 12–8–64. Filed 6–29–64.

## Class 8 — Smokers' Articles, Not Including Tobacco Products

785,467. EGB AND DESIGN. Kommandit-Gesellschaft Ernst Gideon Bek & Company. MULTIPLE CLASS (Classes 8 and 28). SN 156,130. Pub. 12–8–64. Filed 10–29–62.

## Class 9 — Explosives, Firearms, Equipments, and Projectiles

785,434. (See Class 3 for this trademark.)

785,468. GUNSMITH WITH MONOGRAM GM ON THE ANVIL. Firma Gebruder Merkel & Co., G.m.b.H. SN 170,902. Pub. 12–8–64. Filed 8–20–64.

## Class 10 — Fertilizers

785,469. FLAMINGO AND DESIGN. Prohoroff Poultry Farms. SN 194,916. Pub. 12–8–64. Filed 6–4–64.

## Class 11 — Inks and Inking Materials

785,470. SCRIPTOMATIC. Scriptomatic, Inc. SN 197,230. Pub. 12–8–64. Filed 7–3–64.

785,471. POLYFAST. Interchemical Corporation. SN 197,959. Pub. 12–8–64. Filed 7–16–64.

## Class 12 — Construction Materials

785,472. INSULPURE. The Babcock & Wilcox Company. SN 193,840. Pub. 12–8–64. Filed 5–20–64.

785,473. AQUA-DRI. Silcoa Products, Inc. SN 193,992. Pub. 12–8–64. Filed 5–21–64.

785,474. SPINSULATION. Johns-Manville Corporation. SN 194,054. Pub. 12–8–64. Filed 5–22–64.

785,475. SEAL-O-MATIC. Macklanburg Duncan Company. SN 194,398. Pub. 12–8–64. Filed 5–27–64.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

785,476. STRATO-TRACK. Strato-Track, Inc. SN 156,837. Pub. 12–8–64. Filed 11–7–62.

785,477. RAMCON. Ramcon Corporation. SN 158,565. Pub. 6–9–64. Filed 12–5–62.

785,478. TOYOTOKI. Toyotoki Kaisha, Ltd., d.b.a. The Toyo Toki Company, Ltd. MULTIPLE CLASS (Classes 13 and 30). SN 177,468. Pub. 12–8–64. Filed 9–20–63.

785,479. TENSILIZED. VSI Corporation. SN 179,835. Pub. 12–8–64. Filed 10–25–63.

785,480. CONTEMPERA. Price Pfister Brass Mfg. Co. SN 188,794. Pub. 12–8–64. Filed 3–16–64.

785,481. TORQ-COIL. Associated Spring Corporation. SN 194,115. Pub. 12–8–64. Filed 5–25–64.

## Class 14 — Metals and Metal Castings and Forgings

785,482. INCUT. Inland Steel Company. SN 181,644. Pub. 12–8–64. Filed 11–21–63.

785,483. COBRA AND DESIGN. McArdle and Cooney, Inc. SN 189,791. Pub. 12–8–64. Filed 3–27–64.

785,484. DYNAECAST. Alloy Engineering & Casting Company. SN 199,246. Pub. 12–8–64. Filed 8–5–64.

## Class 15 — Oils and Greases

785,485. HANDI-LUBE. Michael S. Gallo, d.b.a. Gallo Manufacturing Company. SN 149,561. Pub. 12–8–64. Filed 7–23–62.

## Class 16 — Protective and Decorative Coatings

785,486. EXHIBITORS. Exhibitors, Inc., assignee of Henry C. Thompson, d.b.a. Henry C. Thompson Associates. MULTIPLE CLASS (Classes 16, 29, 37, and 50.) SN 145,139. Pub. 12–8–64. Filed 5–21–62.

## Class 17 — Tobacco Products

785,487. ROYAL. Philip Morris Incorporated. SN 148,830. Pub. 2–11–64. Filed 7–11–62.

## Class 18 — Medicines and Pharmaceutical Preparations

785,488. GRO-PAC. Anderson, Clayton & Co. SN 147,782. Pub. 12–8–64. Filed 6–27–62.

785,489. DIALPAK. Ortho Pharmaceutical Corporation. SN 154,365. Pub. 12–8–64. Filed 10–2–62.

785,490. SOC-EZE. Dental Research. SN 154,481. Pub. 12–8–64. Filed 10–4–62.

785,491. GAMMA-VENIN. Behringwerke Aktiengesellschaft. SN 172,559. Pub. 12–8–64. Filed 7–8–63.



785,492. TETRIMUNE. American Cyanamid Company. SN 177,597. Pub. 12–8–64. Filed 9–24–63.

785,493. PRENOCLIN. Boehringer Ingelheim, G.m.b.H., assignee of C. H. Boehringer Sohn. SN 179,597. Pub. 12–8–64. Filed 10–23–63.

785,494. TASK. Shell Oil Company. SN 196,908. Pub. 12–8–64. Filed 7–1–64.

785,495. DECAPRYN. Richardson-Merrell Inc. SN 196,988. Pub. 12–8–64. Filed 7–2–64.

785,496. DIBISPI. Allied Animal Research Corporation. SN 197,052. Pub. 12–8–64. Filed 7–6–64.

785,497. DENETE. American Home Producta Corporation. SN 197,053. Pub. 12–8–64. Filed 7–6–64.

785,498. CONTROLAX. Warner-Lambert Pharmaceutical Company. SN 197,216. Pub. 12–8–64. Filed 7–6–64.

## Class 19 — Vehicles

785,499. WTC AND DESIGN. Wilson Trailer Company. SN 184,412. Pub. 12–8–64. Filed 1–10–64.

785,500. TECTROL. Whirlpool Corporation. SN 187,370. Pub. 12–8–64. Filed 2–24–64.

785,501. HAMMERHEAD. Magnaform, Inc. SN 190,735. Pub. 12–8–64. Filed 4–9–64.

785,502. R THE MARK OF QUALITY AND DESIGN. Richardson Homes Corporation. SN 190,830. Pub. 12–8–64. Filed 4–10–64.

## Class 20 — Linoleum and Oiled Cloth

785,503. MIDAS. American Biltrite Rubber Co., Inc. SN 194,454. Pub. 12–8–64. Filed 5–28–64.

## Class 21 — Electrical Apparatus, Machines, and Supplies

785,413. (See Class 1 for this trademark.)

785,425. (See Class 2 for this trademark.)

785,504. ALFORD. Alford Manufacturing Company. SN 100,209. Pub. 12–8–64. Filed 7–5–60.

785,505. MEKTRON. Rogers Corporation. SN 167,415. Pub. 12–8–64. Filed 4–23–63.

785,506. HI-G. Hi-G Incorparted. SN 178,546. Pub. 12–8–64. Filed 10–8–63.

785,507. PERMA POINTS ETC. AND DESIGN. Motoronics, Inc. SN 178,949. Pub. 12–8–64. Filed 10–14–63.

785,508. TRIG-ALL. Baird-Atomic, Inc. SN 179,105. Pub. 12–8–64. Filed 10–16–63.

785,509. H AND DESIGN. The Hercules Tire & Rubber Company. SN 181,235. Pub. 12–8–64. Filed 11–15–63.

785,510. R-E-H. Ransburg Electro-Coating Corp. SN 181,922. Pub. 12–8–64. Filed 11–26–63.

785,511. PULSE/LOCK. Fifth Dimension, Inc. SN 182,416. Pub. 12–8–64. Filed 12–5–63.

785,512. IV AND DESIGN. Société A.R.L. Etablissements Bergey. SN 184,522. Pub. 12–8–64. Filed 1–13–64.

785,513. MAGIC CELL. Allis-Chalmers Manufacturing Company. SN 184,597. Pub. 12–8–64. Filed 1–15–64.

785,514. TIC AND DESIGN. Bowmar Instrument Corporation. SN 185,491. Pub. 12–8–64. Filed 1–28–64.

785,515. W AND DESIGN. Waters Manufacturing, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 186,917. Pub. 12–8–64. Filed 2–17–64.

785,516. CAB-XL. Cabot Corporation. SN 192,004. Pub. 12–8–64. Filed 4–27–64.

785,517. KORVETTENNA. Channel Master Corporation. SN 192,268. Pub. 12–8–64. Filed 4–29–64.

785,518. QUICK-CABLE. Quick Cable Corporation. SN 192,634. Pub. 12–8–64. Filed 5–4–64.

785,519. INTERCEPTOR. Federal Sign and Signal Corporation. SN 195,389. Pub. 12–8–64. Filed 6–11–64.

785,520. SHIELDFLEX. Magnetic Metals Company. SN 195,421. Pub. 12–8–64. Filed 6–11–64.

785,521. GCO AND DESIGN. Gruenberg Electric Co., Inc. SN 195,786. Pub. 12–8–64. Filed 6–16–64.

785,522. REDULE. Power Designs, Inc. SN 195,807. Pub. 12–8–64. Filed 6–16–64.

## Class 22 — Games, Toys, and Sporting Goods

785,434. (See Class 3 for this trademark.)

785,523. JACK LA LANNE'S. La Lanne Incorporated. SN 121,740. Pub. 12–8–64. Filed 6–9–61.

785,524. PUPPETRINA. Goldberger Doll Mfg. Co., Inc. SN 164,966. Pub. 12–8–64. Filed 3–19–63.

785,525. PUPPETINA. Goldberger Doll Mfg. Co., Inc. SN 164,967. Pub. 12–8–64. Filed 3–19–63.

785,526. BACHMANN AND DESIGN. Bachmann Bros., Inc. SN 167,794. Pub. 12–8–64. Filed 4–30–63.

785,527. TIC TOC. Russell S. Cline. SN 168,298. Pub. 12–8–64. Filed 5–7–63.

785,528. ORBIT. Plymouth Golf Ball Sales Company. SN 189,615. Pub. 12–8–64. Filed 3–25–64.

785,529. STARLIGHT. Plymouth Golf Ball Sales Company. SN 189,616. Pub. 12–8–64. Filed 3–25–64.

785,530. 278. Plymouth Golf Ball Sales Company. SN 189,617. Pub. 12–8–64. Filed 3–25–64.

785,531. WHITE MARSH. Plymouth Golf Ball Sales Company. SN 189,618. Pub. 12–8–64. Filed 3–25–64.

785,532. PEPPER. Ideal Toy Corporation. SN 190,178. Pub. 12–8–64. Filed 4–2–64.

785,533. TED. Ideal Toy Corporation. SN 190,179. Pub. 12–8–64. Filed 4–2–64.

785,534. SINNER SPINNER. Gudebrod Bros. Silk Co., Inc. SN 190,611. Pub. 12–8–64. Filed 4–8–64.

785,535. DEFENDER DAN. De Luxe Reading Corporation. SN 191,040. Pub. 12–8–64. Filed 4–14–64.

785,536. ALL-STAR AND DESIGN. American Toy & Furniture Co., Inc. SN 191,108. Pub. 12–8–64. Filed 4–15–64.

785,537. SNAP 'N BUILD. Kohner Bros., Inc. SN 191,183. Pub. 12–8–64. Filed 4–15–64.

785,538. SPECK. Mary Fitch Greenwood. SN 191,687. Pub. 12–8–64. Filed 4–21–64.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

785,425. (See Class 2 for this trademark.)

785,539. TURF COMMANDER. Jacobsen Manufacturing Co. SN 149,466. Pub. 12–8–64. Filed 7–20–62.

785,540. TURBOCONE. Jacobsen Manufacturing Co. SN 149,467. Pub. 12–8–64. Filed 7–20–62.

785,541. USM AND DESIGN. United Shoe Machinery Corporation. SN 150,471. Pub. 12–8–64. Filed 8–3–62.

785,542. KOLDWELD. Kelsey-Hayes Company. SN 165,786. Pub. 6–16–64. Filed 4–1–63.

785,543. B & W AND DESIGN. B & W Incorporated. SN 168,668. Pub. 12–8–64. Filed 5–13–63.

785,544. LUMPSTER. Columbus McKinnon Corporation. SN 169,908. Pub. 6–23–64. Filed 5–29–63.

785,545. GRASKING. Dealer Associates, Inc. SN 173,436. Pub. 12–8–64. Filed 7–22–63.

785,546. CANTATA. Oneida Ltd. SN 179,453. Pub. 12–8–64. Filed 10–21–63.

785,547. SOMAC. Kuhn-Verpackungsmaschinen GmbH. SN 184,387. Pub. 12–8–64. Filed 1–10–64.

785,548. LIBRAMAT. Price & Edwards (Engineering) Limited. SN 186,394. Pub. 12–8–64. Filed 2–10–64.

785,549. MATCHMATIC. Schramm, Inc. SN 187,523. Pub. 12–8–64. Filed 2–26–64.

785,550. MISCELLANEOUS DESIGN. Dymo Industries, Inc. SN 188,088. Pub. 12–8–64. Filed 3–6–64.

785,551. ROBIN. Van-Wilson Limited. SN 188,310. Pub 12–8–64. Filed 3–9–64.

785,552. LONG REACH. Anderson, Clayton & Co. SN 188,506. Pub. 12–8–64. Filed 3–12–64.

785,553. POWA-RAM. Cutler Engineering, Inc. SN 188,968. Pub, 12–8–64. Filed 3–18–64.

785,554. ROPE WRENCH. W. W. Patterson Company. SN 190,426. Pub. 12–8–64. Filed 4–6–64.

785,555. ELNA. Tavaro S.A. SN 190,764. Pub. 12–8–64. Filed 4–9–64.

785,556. TUF-BAK AND DESIGN. The Capewell Manufacturing Company. SN 190,871. Pub. 12–8–64. Filed 4–13–64.

785,557. ATKINS. Borg-Warner Corporation. SN 191,905. Pub. 12–8–64. Filed 4–24–64.

785,558. M MEYER SNOW PLOWS AND DESIGN. Meyer Products, Inc. SN 192,417. Pub. 12–8–64. Filed 4–30–64.

785,559. TACCONE INDEXED SYSTEM AND DESIGN. Taccone Corporation. SN 192,435. Pub. 12–8–64. Filed 4–30–64.

785,560. BRITE LINE AND DESIGN. DoAll Company. SN 192,476. Pub. 12–8–64. Filed 5–1–64.

785,561. VARISTALTIC. Manostat Corporation. SN 192,606. Pub. 12–8–64. Filed 5–4–64.

785,562. MAX MAJOR. Major Slicing Machine Corp. SN 193,683. Pub. 12–8–64. Filed 5–18–64.

785,563. MINNI-MITE. American Can Company. SN 194,770. Pub. 12–8–64. Filed 6–3–64.

785,564. CYCLE-MATIC. Springfield Cast Products, Inc. SN 198,780. Pub. 12–8–64. Filed 7–29–64.

785,565. LAM-N-HARD. Hoover Ball and Bearing Company. SN 199,280. Pub. 12–8–64. Filed 8–5–64.

785,566. QUAD MAST. Towmotor Corporation. SN 200,509. Pub. 12–8–64. Filed 8–24–64.

785,567. TAKON. Henry J. Dziekan. SN 200,633. Pub. 12–8–64. Filed 8–26–64.

785,568. HANDYWASH AND DESIGN. John E. Mitchell Company, Inc. SN 200,767. Pub. 12–8–64. Filed 8–27–64.

## Class 24 — Laundry Appliances and Machines

785,425. (See Class 2 for this trademark.)

785,569. HERITAGE. Hamilton Manufacturing Company. SN 199,824. Pub. 12–8–64. Filed 8–13–64.

## Class 25 — Locks and Safes

785,570. VANGUARD. Curtis Industries, Inc. SN 199,269. Pub. 12–8–64. Filed 8–5–64.

## Class 26 — Measuring and Scientific Appliances

785,515. (See Class 21 for this trademark.)

785,571. CECO. Cooke Engineering Company. SN 184,195. Pub. 8–6–63. Filed 12–18–61.

785,572. SPECTACULARS. Botany Industries, Inc., d.b.a. Sea and Ski Company and Renauld of France, assignee of The Harlequin Corporation. SN 184,232. Pub. 8–13–64. Filed 1–8–64.

785,573. R. C. ALLEN AND DESIGN. R. C. Allen Business Machines, Inc. SN 191,474. Pub. 12–8–64. Filed 4–20–64.

785,574. LOGICAIR. Ross Operating Valve Company. SN 192,081. Pub. 12–8–64. Filed 4–27–64.

785,575. VARE AND DESIGN. Vare Industries, Inc. SN 192,236. Pub. 12–8–64. Filed 4–28–64.

785,576. AUTO/SUBTRACT. Nuclear-Chicago Corporation. SN 195,136. Pub. 12–8–64. Filed 6–8–64.

785,577. SOLIDTHERM. Westcott Heath, Jr., d.b.a. Westcott Electronics. SN 195,478. Pub. 12–8–64. Filed 6–11–64.

785,578. PLAZA. Plaza Sunwear Company. SN 195,547. Pub. 12–8–64. Filed 6–12–64.

785,579. PORTA-LITE. General Aniline & Film Corporation. SN 195,780. Pub. 12–8–64. Filed 6–16–64.

785,580. KODABLITZ. Eastman Kodak Company. SN 196,126. Pub. 12–8–64. Filed 6–22–64.

## Class 27 — Horological Instruments

785,425. (See Class 2 for this trademark.)

785,581. RIBBON (DESIGN). Benrus Watch Company, Inc. SN 197,871. Pub. 12–8–64. Filed 7–15–64.

785,582. VERSAILLES. Joe B. Elkes, d.b.a. World Wide Associates and/or World Wide Creations. SN 199,520. Pub. 12–8–64. Filed 8–7–64.

## Class 28 — Jewelry and Precious-Metal Ware

785,467. (See Class 6 for this trademark.)

785,583. ADMIRA. Rodi & Wienenberger Aktiengesellschaft. SN 178,487. Pub. 12–8–64. Filed 10–7–63.

785,584. JEWELRY'S FINEST CRAFTSMEN. L. G. Balfour Company. SN 180,357. Pub. 12–8–64. Filed 11–4–63.

785,585. PRIDE RINGS. Medicated Products Company. SN 182,957. Pub. 12–8–64. Filed 12–11–63.

785,586. HC. The Higbee Company. SN 184,067. Pub. 12–8–64. Filed 1–6–64.

785,587. JUNIOR JEWELS. The Fractor Co., Inc. SN 185,379. Pub. 12–8–64. Filed 1–27–64.

785,588. DG AND DESIGN. Dori-Gold, Inc. SN 196,263. Pub. 12–8–64. Filed 6–23–64.

785,589. PEARLS BY CHIYODA AND DESIGN. Edward Slutsky, Inc. SN 196,380. Pub. 12–8–64. Filed 7–22–64.

## Class 29 — Brooms, Brushes, and Dusters

785,486. (See Class 16 for this trademark.)

785,590. "MAGIC" V-ACTION. The Drackett Company. SN 196,078. Pub. 12–8–64. Filed 6–4–63.

## Class 30 — Crockery, Earthenware, and Porcelain

785,478. (See Class 13 for this trademark.)

785,591. GOLDEN MOMENT. Castleton China, Inc. SN 189,548. Pub. 12–8–64. Filed 3–25–64.

785,592. PAVILION. Shenango Ceramics, Inc. SN 189,629. Pub. 12–8–64. Filed 3–25–64.

785,593. BITTERSWEET. Castleton China, Inc. SN 190,874. Pub. 12–8–64. Filed 4–13–64.

785,594. GOLDEN BLOSSOM. Stangl Pottery Company. SN 191,805. Pub. 12–8–64. Filed 4–22–64.



## Class 31 — Filters and Refrigerators

785,425. (See Class 2 for this trademark.)

785,595. FLEX-A-LITE AND DESIGN. Flexo Products, Inc. SN 134,967. Pub. 12–8–64. Filed 1–2–62.

785,596. STARVATION. The Permutit Company Limited. SN 167,929. Pub. 12–8–64. Filed 5–1–63.

785,597. SALT SAVER. Union Tank Car Company. SN 175,225. Pub. 12–8–64. Filed 8–16–63.

785,598. CAMBRIDGE ABSOLUTE. Cambridge Filter Corporation, by merger and change of name from Cambridge Filter Manufacturing Corp. SN 186,148. Pub. 12–8–64. Filed 2–6–64.

## Class 32 — Furniture and Upholstery

785,599. VERSA-PANEL. Arlington Aluminum Company. SN 160,827. Pub. 12–8–64. Filed 1–17–63.

785,600. TUSCAN VILLA. Globe Furniture Company. SN 196,521. Pub. 12–8–64. Filed 6–26–64.

785,601. SCRIPTOMATIC. Scriptomatic, Inc. SN 197,231. Pub. 12–8–64. Filed 7–3–64.

785,602. REGULINE. American Desk Manufacturing Company. SN 197,934. Pub. 12–8–64. Filed 7–16–64.

785,603. NOB HILL. National Mattress & Furniture Company, Inc., d.b.a. Spring Air of Greater Washington. SN 197,976. Pub. 12–8–64. Filed 7–16–64.

785,604. DARCOMITE. D'Arcy Company. SN 198,031. Pub. 12–8–64. Filed 7–17–64.

## Class 33 — Glassware

785,605. SSS AND DESIGN. Sasaki Glass Co., Ltd. SN 188,803. Pub. 12–8–64. Filed 3–16–64.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

785,425. (See Class 2 for this trademark.)

785,606. MICROBOND. Unitek Corporation. SN 164,407. Pub. 12–8–64. Filed 3–11–63.

785,607. T.C.C. Technical Components Co., Inc. SN 186,289. Pub. 12–8–64. Filed 2–7–64.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

785,608. PANACEA. Prince Rubber & Plastics Co., Inc. SN 185,933. Pub. 12–8–64. Filed 2–3–64.

785,609. FITZ KIT. The Fitzgerald Manufacturing Company. SN 190,912. Pub. 12–8–64. Filed 4–13–64.

785,610. ABEL LABEL REGENCY FALCON. The Abel Corporation. SN 191,993. Pub. 12–8–64. Filed 4–27–64.

785,611. B & R. Midwest Brake Bond Co. SN 194,757. Pub. 12–8–64. Filed 6–2–64.

785,612. U.S. ROYAL AND DESIGN. United States Rubber Company. SN 194,934. Pub. 12–8–64. Filed 6–4–64.

785,613. U.S. ROYAL AND DESIGN. United States Rubber Company. SN 194,935. Pub. 12–8–64. Filed 6–4–64.

785,614. MAINLINER. The Firestone Tire & Rubber Company. SN 195,522. Pub. 12–8–64. Filed 6–12–64.



## Class 36 — Musical Instruments and Supplies

785,425. (See Class 2 for this trademark.)

785,615. ECO AND DESIGN. Fabrica de Discos Peerless, S.A. SN 188,858. Pub. 12–8–64. Filed 3–17–64.

## Class 37 — Paper and Stationery

785,486. (See Class 16 for this trademark.)

785,616. SWITCHWRITER. The Parker Pen Company. SN 178,966. Pub. 12–8–64. Filed 10–14–63.

785,617. IMPERVIUM. Eagle Pencil Company. SN 180,718. Pub. 12–8–64. Filed 11–8–63.

785,618. QUIK-FROST. Morgan Adhesives Company. SN 182,812. Pub. 12–8–64. Filed 12–11–63.

785,619. DUBLWIPES. Calwis Company. SN 182,930. Pub. 12–8–64. Filed 12–13–63.

785,620. "IMPACT." Pacific Industries, Inc. SN 190,959. Pub. 12–8–64. Filed 4–13–64.

785,621. TUF-VIN. National Blank Book Company. SN 191,945. Pub. 12–8–64. Filed 4–24–64.

785,622. MOIST-O-MATIC. Taufek H. Ramsey, d.b.a. West Coast Sales. SN 192,944. Pub. 12–8–64. Filed 5–7–64.

785,623. SCRIPTOMATIC. Scriptomatic, Inc. SN 197,232. Pub. 12–8–64. Filed 7–8–64.

## Class 38 — Prints and Publications

785,624. TEXAS ALMANAC. A. H. Belo Corporation. SN 177,223. Pub. 12–8–64. Filed 9–18–63.

785,625. TEXAS ALMANAC AND STATE INDUSTRIAL GUIDE. A. H. Belo Corporation. SN 183,026. Pub. 12–8–64. Filed 12–16–63.

## Class 39 — Clothing

785,434. (See Class 3 for this trademark.)

785,626. JUNIORETTES BY BAMBURY. Rosenblatt & Kahn, Inc. SN 131,878. Pub. 12–8–64. Filed 11–13–61.

785,627. EVERYDAY-ANYDAY SAVE-A-PENNY. Wilhela Cushman, d.b.a. Willa Products Unltd. SN 163,710. Pub. 12–8–64. Filed 3–1–63.

785,628. GREYBELLE. Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills. SN 169,033. Pub. 12–8–64. Filed 5–16–63.

785,629. SWEET SIXTEEN. Teenform, Inc. SN 169,787. Pub. 12–8–64. Filed 5–27–63.

785,630. HANBURY. Kay Windsor, Inc. SN 174,924. Pub. 12–8–64. Filed 8–12–63.

785,631. HARNOSAND. Harnosand Knitting Mills, Limited. SN 176,303. Pub. 12–8–64. Filed 9–4–63.

785,632. SPRING COURT. Th. Grimmeisen. SN 178,191. Pub. 12–8–64. Filed 10–2–63.

785,633. ALNA. Alna Tricots de Luxe. SN 179,578. Pub. 12–8–64. Filed 10–23–63.

785,634. MISCELLANEOUS DESIGN. Davidow Suits, Inc. SN 179,998. Pub. 12–8–64. Filed 10–29–63.

785,635. ROMIKA. Industriewerke Lemm & Company, G.m.b.H. SN 181,779. Pub. 12–8–64. Filed 11–22–63.

785,636. SPORTICIPATOR. Catalina, Inc. SN 181,958. Pub. 12–8–64. Filed 11–27–63.

785,637. A'MANO. Sobel, Bernstein & Greene Co. SN 182,125. Pub. 12–8–64. Filed 11–29–63.

785,638. LEISURELY. Leisurely Corp. SN 182,628. Pub. 12–8–64. Filed 12–9–63.

785,639. BEGG. Hat Corporation of America. SN 187,419. Pub. 12–8–64. Filed 2–25–64.

785,640. DURAFIT. B-Z Mills, Inc. SN 188,851. Pub. 12-8-64. Filed 3-17-64.

785,641. BARTHBY FOOTWEAR. John Winter & Son, Inc. SN 189,518. Pub. 12-8-64. Filed 3-24-64.

785,642. GAME WINNER. Opp Textiles, Inc. SN 189,799. Pub. 12-8-64. Filed 3-27-64.

785,643. JON HALLE. McCubbin Hosiery, Inc. SN 190,945. Pub. 12-8-64. Filed 4-13-64.

785,644. RICHMEISTER. Woolrich Woolen Mills. SN 192,116. Pub. 12-8-64. Filed 4-27-64.

785,645. VOODOO. Melville Shoe Corporation. SN 192,306. Pub. 12-8-64. Filed 4-29-64.

785,646. GAYMODE. J. C. Penney Company. SN 193,403. Pub. 12-8-64. Filed 5-13-64.

785,647. MILES. Melville Shoe Corporation. SN 193,483. Pub. 12-8-64. Filed 5-14-64.

785,648. IRVINE. D'Antonio Shoe Corporation. SN 194,367. Pub. 12-8-64. Filed 5-27-64.

785,649. MAGIC JET FLEX. Moran Shoe Company. SN 194,409. Pub. 12-8-64. Filed 5-27-64.

785,650. GIVE & TAKE. Cord-De Paris, Inc. SN 194,469. Pub. 12-8-64. Filed 5-28-64.

785,651. FLAX-FROST. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 194,735. Pub. 12-8-64. Filed 6-2-64.

## Class 40 — Fancy Goods, Furnishings, and Notions

785,652. PRINCESS. C. J. Bates & Son, Incorporated. SN 170,727. Pub. 12-8-64. Filed 6-11-63.

785,653. VOGUE AND DESIGN. The Glemby Company, Inc. SN 170,742. Pub. 3-3-64. Filed 6-11-63.

785,654. HUBBY. Jimmie George, d.b.a. Hubby Co. SN 185,139. Pub. 12-8-64. Filed 1-22-64.

785,655. BEND ME BOWS. Morris Gubin, d.b.a. M.G. Novelty Co. SN 191,546. Pub. 12-8-64. Filed 4-20-64.

785,656. MILES. Melville Shoe Corporation. SN 193,484. Pub. 12-8-64. Filed 5-14-64.

785,657. DYPON. Dynalytic Engineering Co. SN 196,529. Pub. 12-8-64. Filed 6-26-64.

## Class 41 — Canes, Parasols, and Umbrellas

785,658. MILES. Melville Shoe Corporation. SN 193,485. Pub. 12-8-64. Filed 5-14-64.

785,659. CLEVYL. Societe Rhovyl. SN 194,325. Pub. 12-8-64. Filed 5-26-64.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

785,660. FORMULA N°. Cabin Crafts Inc. SN 136,533. Pub. 12-8-64. Filed 1-25-62.

785,661. MI-T-FINE. The Kroger Co. SN 172,317. Pub. 12-8-64. Filed 7-2-63.

785,662. SIXTY-FIVE PLUS. Allen Knitting Mills, Inc. SN 173,544. Pub. 12-8-64. Filed 7-23-63.

785,663. DERMA TEX. Harlemark International, Inc. SN 185,507. Pub. 12-8-64. Filed 1-28-64.

785,664. BUTYL-TEX. J. W. Johnson Company. SN 193,963. Pub. 12-8-64. Filed 5-21-64.

785,665. "THE EAGER WEAVER" AND DESIGN. Fabrica, Inc. SN 194,163. Pub. 12-8-64. Filed 5-25-64.

785,666. SPANPLAY. J. P. Stevens & Co., Inc. SN 194,254. Pub. 12-8-64. Filed 5-25-64.

785,667. JET STREAM PLUS. J. P. Stevens & Co., Inc. SN 194,255. Pub. 12-8-64. Filed 5-25-64.

785,668. SUPER JET STREAM. J. P. Stevens & Co., Inc. SN 194,256. Pub. 12-8-64. Filed 5-25-64.

## Class 43 — Thread and Yarn

785,669. RIPAILLE. Etablissements Louis Rochegude S.A. SN 181,531. Pub. 12-8-64. Filed 11-20-63.

785,670. BEAULON. Acme Backing Corporation. SN 181,781. Pub. 8-11-64. Filed 11-22-63.

## Class 44 — Dental, Medical, and Surgical Appliances

785,425. (See Class 2 for this trademark.)

785,671. CLEVYL. Societe Rhovyl. SN 194,326. Pub. 12-8-64. Filed 5-26-64.

785,672. PROCEDURE-PACK. The Seamless Rubber Company. SN 196,907. Pub. 12-8-64. Filed 7-1-64.

785,673. WATER PIK AND DESIGN. Aqua-Tec Corporation. SN 197,058. Pub. 12-8-64. Filed 7-6-64.

## Class 45 — Soft Drinks and Carbonated Waters

785,674. EST 1871 AND DESIGN. Fritzsche Brothers, Inc. SN 195,778. Pub. 12-8-64. Filed 6-16-64.

## Class 46 — Foods and Ingredients of Foods

785,675. PANTRY PRIDE. C. J. Patterson Company. SN 106,537. CONCURRENT USE. Pub. 7-3-62. Filed 10-17-60.

785,676. SIR WILLIAM. William Underwood Company. SN 124,478. Pub. 5-7-63. Filed 7-21-61.

785,677. U-MIX-M. Paul F. Beich Company. SN 159,194. Pub. 12-8-64. Filed 12-17-62.

785,678. GVA ETC. AND DESIGN. Cleveland Greenhouse Vegetable Growers Cooperative Association. SN 164,601. COLLECTIVE MARK. Pub. 12-8-64. Filed 3-14-63.

785,679. FISCO. Frosen Institutional Sales Co-Op, Inc., d.b.a. Frosen Institutional Sales Company. SN 166,704. Pub. 12-8-64. Filed 4-15-63.

785,680. MELANGE DELIGHTS. Jaret Imports, Inc. SN 167,002. Pub. 12-8-64. Filed 4-18-63.

785,681. CHAR-KOLD AND DESIGN. Victory Provision Co. SN 167,962. Pub. 12-8-64. Filed 5-1-63.

785,682. COLUMBINE. M. Caratan, Inc., d.b.a. M. Caratan. SN 168,153. Pub. 12-8-64. Filed 5-6-63.

785,683. LYS BAR AND DESIGN. Dufour, S.p.A. SN 171,340. Pub. 12-8-64. Filed 6-19-63.

785,684. BALANCED. Balanced Foods, Inc. SN 173,416. Pub. 12-8-64. Filed 7-22-63.

785,685. HEATHER ANNE. Harold D. Harvey, d.b.a. Highland Kitchens. SN 177,698. Pub. 12-8-64. Filed 9-25-63.

785,686. VERSIS AND DESIGN. Versis Foods, Inc. SN 178,237. Pub. 12-8-64. Filed 10-2-63.

785,687. COUNTRY SQUARES. General Foods Corporation. SN 178,603. Pub. 12-8-64. Filed 10-9-63.

785,688. WHITE TOP. Fran Mushroom Co., Inc. SN 178,796. Pub. 12-8-64. Filed 10-11-63.



785,689. RIVOLI ETC. AND DESIGN. Societe Pernod & Ricard. SN 179,980. Pub. 12-8-64. Filed 9-30-63.

785,690. GOBBLIN' GOOD. Armour and Company. SN 180,278. Pub. 12-8-64. Filed 11-1-63.

785,691. GOLDEN GOBBLER. Armour and Company. SN 180,279. Pub. 12-8-64. Filed 11-1-63.

785,692. SWEET GEORGIA. Central Soya Company, Inc. SN 182,580. Pub. 12-8-64. Filed 12-9-63.

785,693. DESIGN OF CHICKEN WITH CROWN. Regal Foods. SN 183,647. Pub. 12-8-64. Filed 11-20-63.

785,694. BIG BOY. Spaulding Bakeries Incorporated. SN 183,997. Pub. 12-8-64. Filed 1-3-64.

785,695. PRESSURE FLASH 18 PROCESS T.F.I. AND DESIGN. Trenton Foods, Inc. SN 186,577. Pub. 12-8-64. Filed 2-12-64.

785,696. REGAL HOSTESS. Regal Foods. SN 187,045. Pub. 12-8-64. Filed 2-19-64.

785,697. BIOTTA. Biotta Gemusebau AG, Tagerwilen. SN 187,390. Pub. 12-8-64. Filed 2-25-64.

785,698. CELY-PUFFS AND DESIGN. Cely Enterprises Corp. SN 187,651. Pub. 12-8-64. Filed 2-28-64.

785,699. CORS-PELL. National Frost Protection Co., Inc. SN 188,780. Pub. 12-8-64. Filed 3-16-64.

785,700. TULIP AND DESIGN. Hayden Flour Mills. SN 189,778. Pub. 12-8-64. Filed 3-27-64.

785,701. ROOSTER (DESIGN). Frugone & Preve S.p.A. SN 190,001. Pub. 12-8-64. Filed 3-31-64.

785,702. FLAVORITE. Dean Foods Company. SN 190,245. Pub. 12-8-64. Filed 4-3-64.

785,703. JOLLY JOAN. Ener-G Cereal, Inc. SN 190,504. Pub. 12-8-64. Filed 4-7-64.

785,704. MISS CHICKEN. Meat Industry Suppliers, Inc. SN 190,631. Pub. 12-8-64. Filed 4-8-64.

785,705. BRADSHAW'S. Sioux Honey Associates Cooperative. SN 190,848. Pub. 12-8-64. Filed 4-10-64.

785,706. PENNY POPPER. Topps Chewing Gum, Incorporated. SN 190,994. Pub. 12-8-64. Filed 4-13-64.

785,707. DRIVE. General Mills, Inc. SN 191,165. Pub. 12-8-64. Filed 4-15-64.

785,708. WHEAT STAX. General Mills, Inc. SN 191,166. Pub. 12-8-64. Filed 4-15-64.

785,709. DEMI. Carter Products, Inc. SN 192,987. Pub. 12-8-64. Filed 5-8-64.

785,710. SWIZZETS. Swizzels, Inc. SN 193,058. Pub. 12-8-64. Filed 5-8-64.

785,711. DAWE'S DESTROL. Dawe's Laboratories, Inc. SN 193,635. Pub. 12-8-64. Filed 5-18-64.

785,712. GUSHER AND DESIGN. Gusher Foods. SN 193,665. Pub. 12-8-64. Filed 5-18-64.

785,713. ROOT-T-TOOT. Just Born, Inc. SN 193,879. Pub. 12-8-64. Filed 5-20-64.

785,714. DEL-CERRO AND DESIGN. Stahmann Farms, Inc. SN 194,074. Pub. 12-8-64. Filed 5-22-64.

785,715. DEL-CERRO AND DESIGN. Stahmann Farms, Inc. SN 194,075. Pub. 12-8-64. Filed 5-22-64.

785,716. CONSUMERS GUILD. Early California Foods, Inc., assignee of Pacific Olive Company, d.b.a. Pacific Olive Co. SN 194,211. Pub. 12-1-64. Filed 5-25-64.

785,717. TWO HEADS (DESIGN). Phoenix Candy Co., Inc. SN 195,242. Pub. 12-8-64. Filed 6-9-64.

785,718. "HORSE SENSE." Reading Milling Co., Inc. SN 195,712. Pub. 12-8-64. Filed 6-15-64.

785,719. EL DORADO. Peter Paul, Inc. SN 195,961. Pub. 12-8-64. Filed 6-18-64.

785,720. NEBRASKA AND DESIGN. Central Nebraska Packing Co. SN 197,672. Pub. 12-8-64. Filed 7-13-64.

785,721. TURNMILL. Auguste Noel Limited. SN 197,938. Pub. 12-8-64. Filed 7-16-64.

785,722. WARM WELCOME! National Biscuit Company. SN 198,066. Pub. 12-8-64. Filed 7-17-64.

785,723. WHITEBROOK FARMS. Whitebrook Farms, Inc. SN 198,244. Pub. 12-8-64. Filed 7-20-64.

## Class 48 — Malt Beverages and Liquors

785,724. LOWENBRAU MUNICH DARK SPECIAL AND DESIGN. Löwenbräu München. SN 192,298. Pub. 12-8-64. Filed 4-29-64.

785,725. LOWENBRAU MUNICH AND DESIGN. Löwenbräu München. SN 192,299. Pub. 12-8-64. Filed 4-29-64.

785,726. LOWENBRAU MUNICH LIGHT SPECIAL AND DESIGN. Löwenbräu München. SN 192,300. Pub. 12-8-64. Filed 4-29-64.

785,727. LOWENBRAU MUNICH AND DESIGN. Löwenbräu München. SN 192,301. Pub. 12-8-64. Filed 4-29-64.

## Class 49 — Distilled Alcoholic Liquors

785,728. LUAU. Federal Liquors Ltd. SN 178,161. Pub. 12-8-64. Filed 7-17-63.

785,729. THOROUGHBRED. J. & G. Stewart Limited. SN 187,926. Pub. 12-8-64. Filed 3-4-64.

785,730. FORESTIER. Brown-Forman Distillers Corporation. SN 188,716. Pub. 12-8-64. Filed 3-16-64.

## Class 50 — Merchandise Not Otherwise Classified

785,486. (See Class 16 for this trademark.)

785,731. ZIP-A-LINE. Para-Tone Incorporated. SN 156,159. Pub. 12-8-64. Filed 10-29-62.

785,732. 3M. Minnesota Mining and Manufacturing Company. SN 188,260. Pub. 12-8-64. Filed 3-9-64.

785,733. KIWI. The Kiwi Polish Company Proprietary Limited. SN 192,727. Pub. 12-8-64. Filed 5-5-64.

## Class 51 — Cosmetics and Toilet Preparations

785,734. MORNING, NOON, 'N NIGHT. Richard Hudnut. SN 189,589. Pub. 12-8-64. Filed 3-25-64.

785,735. JEFF CLARK. Jeff Clark Corp. SN 191,907. Pub. 12-8-64. Filed 4-24-64.

785,736. MICROBAN. Chas. Pfizer & Co., Inc. SN 192,939. Pub. 12-8-64. Filed 5-7-64.

785,737. CAPTAIN'S CHOICE. Avon Products, Inc. SN 193,094. Pub. 12-8-64. Filed 5-11-64.

## Class 52 — Detergents and Soaps

785,738. ATANE. Wyandotte Chemicals Corporation. SN 160,243. Pub. 12-8-64. Filed 1-4-63.

785,739. TRIM. Lever Brothers Company. SN 165,932. Pub. 12-8-64. Filed 4-2-63.

785,740. JIFFY CLEAN. Standard Motor Products, Inc. SN 175,134. Pub. 12-8-64. Filed 8-15-63.

785,741. LO-RANGE. The Procter & Gamble Company. SN 179,654. Pub. 12-8-64. Filed 10-23-63.

785,742. PRESTO MAGIC AND DESIGN. Herman A. Lemley, d.b.a. Valley Chemical Company. SN 180,215. Pub. 12-8-64. Filed 10-31-63.

785,743. DURA BRITE. Pines International Chemical Company. SN 189,362. Pub. 12-8-64. Filed 3-23-64.

785,744. DURA STRIP. Pines International Chemical Company. SN 189,364. Pub. 12-8-64. Filed 3-23-64.

785,745. BOTL-GLO. Purex Corporation, Ltd. SN 190,432. Pub. 12-8-64. Filed 4-6-64.

785,746. MONOGRAM. Original Bradford Soap Works, Inc. SN 190,745. Pub. 12–8–64. Filed 4–9–64.

785,747. GOLDEN GALLEON AND DESIGN. Fuld Brothers, Inc. SN 191,922. Pub. 12–8–64. Filed 4–24–64.

785,748. BLUE BLAZER. Avon Products, Inc. SN 192,258. Pub. 12–8–64. Filed 4–29–64.

785,749. GOLDEN TOUCH. Afta Solvents Corporation. SN 192,343. Pub. 12–8–64. Filed 4–30–64.

785,750. WHOOSH! Fast Chemical Corporation. SN 193,143. Pub. 12–8–64. Filed 5–11–64.

## Service Marks

### Class 100 — Miscellaneous

785,751. HOLIDAY AND DESIGN. Erickson Petroleum Corporation. SN 164,024. Pub. 12–8–64. Filed 3–6–63.

785,752. HOLIDAY AND DESIGN. Erickson Petroleum Corporation. SN 164,027. Pub. 12–8–64. Filed 3–6–63.

785,753. MERCIL AND DESIGN. Mercil Plating Equipment Company. SN 189,913. Pub. 12–8–64. Filed 3–30–64.

### Class 101 — Advertising and Business

785,754. D & D. Resources Council Inc. SN 163,080. Pub. 12–8–64. Filed 2–19–63.

785,755. N.A.D.S. National Auto Dealers Service. SN 163,855. Pub. 12–8–64. Filed 3–4–63.

785,756. STAR GIRL. Michiana Personnel Service. SN 189,470. Pub. 12–8–64. Filed 5–22–63.

### Class 102 — Insurance and Financial

785,757. MEDICAL ASSURANCE PLAN MAP AND DESIGN. Medical Assurance Plan, Inc. SN 169,469. Pub. 12–8–64. Filed 5–22–63.

785,758. TRITON INSURANCE CO. AND DESIGN. Triton Insurance Co. SN 187,363. Pub. 12–8–64. Filed 2–24–64.

### Class 105 — Transportation and Storage

785,759. AA AMERICAN AND DESIGN. American Airlines, Inc. SN 192,777. Pub. 12–8–64. Filed 4–20–64.

### Class 106 — Material Treatment

785,760. GELCO. Geltman Laminating Corporation. SN 186,451. Pub. 12–8–64. Filed 2–11–64.

## Certification Mark

### Class A — Goods

785,761. FARMERS FORAGE RESEARCH AND DESIGN. Farmers Forage Research, Cooperative. SN 179,033. Pub. 12–8–64. Filed 10–15–63.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

### Class 2 — Receptacles

785,762. Chattanooga Boiler and Tank Company, Chattanooga, Tenn. SN 180,564. Filed P.R. 11–6–63; Am. S.R. 12–9–64.

CHATTANOOGA

For Storage Tanks.
First use Sept. 9, 1963.

785,763. Chattanooga Boiler and Tank Company, Chattanooga, Tenn. SN 182,035. Filed P.R. 11–29–63; Am. S.R. 12–9–64.

**CHATTANOOGA**

For Storage Tanks.
First use Sept. 9, 1963.

### Class 12 — Construction Materials

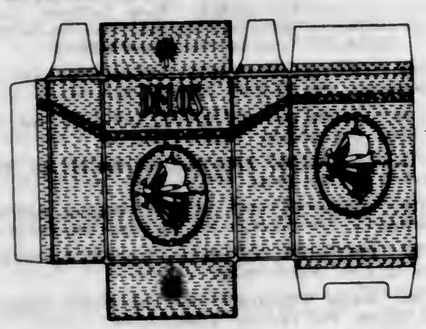
785,764. Cold Spring Granite Company, Cold Spring, Minn. SN 178,588. Filed P.R. 10–9–63; Am. S.R. 11–18–64.

**LAC DU BONNET**

For Cut Granite for Structural Use and Monumental Use.
First use November 1960.

### Class 17 — Tobacco Products

785,765. Cigarette Manufacturing Company "Ethnos," G. A. Kerasis, S.A., Piraeus, Greece. SN 187,084. Filed P.R. 2–20–64; Am. S.R. 12–4–64.




The drawing is lined for the colors gray and gold, but color is not claimed as a feature of the mark. The mark "Delos" stands for a tiny uninhabited Greek island which was famous in ancient mythology as the birthplace of Apollo.
For Cigarettes.
First use Feb. 1, 1958; in commerce Nov. 1, 1961.



### Class 21 — Electrical Apparatus, Machines, and Supplies

785,766. Dynamic Instrument Corp., Plainview, N.Y. SN 167,889. Filed P.R. 5–1–63; Am. S.R. 12–18–64.

**PLUG 'N PLAY**

For Battery Chargers and Power Supplies.
First use October 1962.

### Class 27 — Horological Instruments

785,767. Erismann-Schins S.A., La Neuveville, Berne, Switzerland. SN 172,296. Filed P.R. 7–2–63; Am. S.R. 11–24–64.

Super SHOCK-RESIST

Owner of Swiss Reg. No. 178,431, dated Nov. 18, 1959.
For Appliance for Protecting the Pivots of a Watch Pendulum, Small Clock and Escapement.

785,768. Bulova Watch Company, Inc., New York, N.Y. SN 183,245. Filed P.R. 12–19–63; Am. S.R. 12–8–64.

**ACCURETTE**

For Watches.
First use Nov. 21, 1963.

### Class 39 — Clothing

785,769. Byer-Rolnick Corporation, Garland, Tex., by change of name from Byer-Rolnick Hat Corporation, Garland, Tex. SN 168,695. Filed P.R. 5–13–63; Am. S.R. 11–19–64.

**PELUZZO**

The word "Peluzzo" is an Italian word meaning "down."
For Men's Hats.
First use on or about Apr. 22, 1963.

## Service Mark

### Class 101 — Advertising and Business

785,770. Urethane Institute, Washington, D.C. SN 166,331. Filed P.R. 4–8–63; Am. S.R. 4–30–64.

**URETHANE INSTITUTE**

For Association Services to Plastics Manufacturers.
First use Mar. 29, 1962.

# TRADEMARK REGISTRATIONS RENEWED

25,631. LIBERTY AND DESIGN. Cl. 43. 12–11–1894.
185,301. BLUE BONNET. Cl. 46. 6–10–24.
188,201. RAINBOW AND DESIGN. Cl. 46. 8–19–24.
189,562. THE TATLER AND DESIGN. Cl. 17. 9–23–24.
191,828. SUPERIOR. Cl. 46. 11–18–24.
192,713. IRONWEVE. Cl. 39. 12–9–24.
192,862. GALLIANO. Cl. 46. 12–16–24.
193,524. NAPHTOCHROM. Cl. 6. 12–30–24.
193,628. BOB EVANS THE ARISTOCRAT OF UNIFORMS. Cl. 39. 1–6–25.
194,120. CERTIFIED. Cl. 50. 1–13–25.
194,123. BAND-AID. Cl. 44. 1–13–25.
195,293. CAMPBELL'S. Cl. 46. 2–24–25.
195,840. CAMPBELL'S. Cl. 46. 3–3–25.
196,911. THE NORTHWESTERN MILLER. Cl. 38. 3–31–25.
197,279. DURAWIRE. Cl. 21. 4–14–25.
198,422. VELVATONE. Cl. 16. 5–19–25.
198,462. BROWNSKIN. Cl. 37. 5–19–25.
199,448. WHEATIES. Cl. 46. 6–9–25.
199,520. PEGITY. Cl. 22. 6–9–25.
408,267. CRYSTEEL. Cl. 44. 8–1–44.
408,268. CRYSTELLE. Cl. 44. 8–1–44.
409,903. AUTOGAP. Cl. 21. 10–31–44.
410,175. ME AND DESIGN. Cl. 26. 11–14–44.
410,329. INCO 70/30 AND DESIGN. Cl. 14. 11–21–44.
410,350. ACCELO. Cl. 31. 11–21–44.
410,470. FLEX-SITE. Cl. 37. 11–28–44.
410,583. SATISFIED. Cl. 46. 12–5–44.
410,929. BEAU SPUN. Cl. 43. 12–26–44.
411,055. CHERUBSKIN AND DESIGN. Cl. 42. 1–2–45.
411,080. ALL IN ONE. Cl. 46. 1–2–45.
411,109. COETS. Cl. 29. 1–2–45.
411,135. JOAN DORIS. Cl. 39. 1–2–45.
411,239. CARTIER. Cl. 28. 1–9–45.
411,240. CARTIER. Cl. 28. 1–9–45.
411,241. CARTIER. Cl. 8. 1–9–45.
411,302. DAVID HARUM. Cl. 46. 1–9–45.
411,433. CHAR-TEX. Cl. 51. 1–16–45.
411,728. LORD FREDERICK. Cl. 39. 1–30–45.
411,803. PRANG. Cl. 16. 2–6–45.
411,860. FLINT. Cl. 23. 2–6–45.
411,975. CARTIER. Cl. 27. 2–13–45.
412,090. KEMTEX. Cl. 52. 2–20–45.
412,778. CRYSTAL BROOK. Cl. 46. 3–27–45.
413,113. THE HOME FORUM. Cl. 38. 4–10–45.
413,114. CHRISTIAN SCIENCE QUARTERLY. Cl. 38. 4–10–45.
413,878. HR. Cl. 27. 5–15–45.
414,145. BEWILDERMENT. Cl. 51. 5–29–45.
414,146. REPRESENTATION OF A MALE VIOLINIST AND A WOMAN (DESIGN). Cl. 51. 5–29–45.
414,338. CHEERIOS. Cl. 46. 6–5–45.
414,502. CREOSANT. Cl. 18. 6–12–45.

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122,517. NATIONAL. Cl. 23. 8–20–18.
191,568. THERMOIL. Cl. 15. 11–11–24.
359,406. FLEXKIN. Cl. 50. 8–16–38.
359,670. PRINCESS MARGUERITE. Cl. 51. 8–30–38.
359,715. KEYSTONE ETC. AND DESIGN. Cl. 21. 8–30–38.
359,848. DEXTRAMIN. Cl. 6. 8–30–38.
361,949. POND'S COLD CREAM ETC. Cl. 51. 11–8–38.
364,846. NUODITE. Cl. 11. 2–14–39.
373,805. SERADEX. Cl. 15. 12–26–39.
380,930. CITRADEX. Cl. 18. 9–10–40.
419,139. CROSSED KEYS ENCLOSED IN CIRCLE. Cl. 6. 2–5–46.
441,499. S AND DESIGN. Cl. 26. 11–30–48.
649,093. CORNHUSKER ETC. AND DESIGN. Cl. 10. 7–23–57.
655,341. TRUTH-PASTE. Cl. 51. 12–3–57.
658,639. THE COURT OF PUBLIC OPINION. Cl. 107. 2–18–58.
658,700. VYMP. Cl. 18. 2–25–58.
659,157. ATIKAH ETC. AND DESIGN. Cl. 17. 3–4–58.
660,081. LAMP KING. Cl. 23. 4–1–58.
660,082. LINE KING. Cl. 23. 4–1–58.
660,206. BENETOS AND DESIGN. Cl. 46. 4–1–58.
660,375. JUDY LYNN. Cl. 39. 4–8–58.
663,464. DESIGN TRENDS. Cl. 32. 6–24–58.

*The following registrations issued Jan. 6, 1959*

672,000. TELLERETTE. Cl. 1.
672,003. XALON. Cl. 1.
672,006. SAMMY SORGHUM ETC. AND DESIGN. Cl. 1.
672,009. LEPRECHAUN. Cl. 1.
672,013. SARAN-O-VAC ETC. AND DESIGN. Cl. 2.
672,016. CAR-HOP. Cl. 2.
672,017. CONCEAL-IT. Cl. 3.
672,018. CADIE WINDO WIPE. Cl. 4.
672,025. PARTALL. Cl. 6.
672,027. POLYPHILONIC. Cl. 6.
672,028. POLYPHOBONIC. Cl. 6.
672,031. FRIOPLAST. Cl. 6.
672,037. GARDENURE. Cl. 10.
672,044. MICRO-MATCH AND DESIGN. Cl. 12.
672,045. MICRO-MATCH. Cl. 12.
672,047. THERMO-JET. Cl. 12.
672,050. LUMIRAMA. Cl. 13.
672,051. WEATHER-SEAL. Cl. 12.
672,052. DESIGN OF ELECTRONIC SYMBOL. Cl. 13.
672,058. VINALUME. Cl. 13.
672,060. AMERICAN SCOUT. Cl. 13.
672,062. DB DAVID BRADLEY. Cl. 13.
672,072. SPEED ROCK. Cl. 16.
672,074. STRAN-KOTE. Cl. 16.
672,075. "FIESTA" AND DESIGN. Cl. 16.
672,077. TRU-GLAZE. Cl. 16.
672,079. ESQUIRE. Cl. 17.
672,084. V-K. Cl. 18.
672,086. KEEPAWAY. Cl. 18.
672,091. QUEEN BEE. Cl. 18.
672,099. GRADUMET TRAL. Cl. 18.
672,100. NULSTRESS. Cl. 18.
672,101. QUIETROL. Cl. 18.
672,103. MELSA-FAX. Cl. 18.
672,105. WONDER-SLIM. Cl. 18.
672,106. AMETENSE. Cl. 18.
672,107. THEOMET. Cl. 18.
672,112. ARISTOCYL. Cl. 18.
672,113. METILON. Cl. 18.
672,114. NOVAPRAL. Cl. 18.
672,115. TRANSAMOL. Cl. 18.
672,117. CAR/PETS. Cl. 19.
672,118. SPORT KING. Cl. 19.
672,119. EPCO. Cl. 19.
672,124. LO-MERC. Cl. 19.
672,125. EAGLE DESIGN. Cl. 19.
672,126. REPRESENTATION OF AN EAGLE WITHIN A TRIANGLE AND CIRCLE. Cl. 19.
672,127. REPRESENTATION OF AN EAGLE WITHIN A GLOBE, TRIANGLE AND CIRCLE. Cl. 19.
672,129. CHARGE-A-LITE. Cl. 21.
672,130. THANK-U-COURTESY. Cl. 21.
672,133. KO-KO KING. Cl. 21.
672,135. CARLOMA "—SHH" ETC. AND DESIGN. Cl. 21.
672,136. FAIRWAY. Cl. 21.
672,139. TORCHIE AND DESIGN. Cl. 21.
672,142. M METZ AND DESIGN. Cl. 21.
672,149. PERSONNA. Cl. 21.
672,153. B-SHUR. Cl. 21.
672,157. RADISIL. Cl. 21.
672,162. VEEP. Cl. 21.
672,163. METALTITE. Cl. 21.
672,166. GREEN CAPPING MEMBER (DESIGN). Cl. 22.
672,167. GYMIK EXERCISOR. Cl. 22.
672,168. BOX-A-BALL. Cl. 22.
672,182. PORTAPAL. Cl. 23.
672,183. KINGMATIC. Cl. 23.
672,189. SLICK SHIFT. Cl. 23.
672,195. MOBIL-MANOR LOCK. Cl. 25.
672,200. TURBIDSCOPE. Cl. 26.
672,201. STARCRAFT. Cl. 26.
672,202. TRAJECTOR. Cl. 26.
672,204. DY AND DESIGN. Cl. 26.
672,207. EYE AND ARROW DESIGN. Cl. 26.
672,213. WISK-O-PAD. Cl. 29.
672,214. THE FRIENDLY VILLAGE AND DESIGN. Cl. 30.
672,216. DB DAVID BRADLEY. Cl. 31.
672,217. FAIRFAX. Cl. 31.
672,218. "COMMENT." Cl. 32.
672,221. WONDER WALL. Cl. 32.
672,224. H. Cl. 32.
672,228. FLEURETTE. Cl. 33.
672,238. PHONOCORD. Cl. 36.
672,243. SHU-SAVER. Cl. 39.
672,244. FORDMIL. Cl. 39.
672,251. KENTSHIRE. Cl. 42.
672,252. BRIJEAN ETC. AND DESIGN. Cl. 42.
672,253. ONORA. Cl. 42.
672,254. BELDORA. Cl. 42.
672,255. DALGORA. Cl. 42.
672,256. VALLEDORA. Cl. 42.
672,270. SIFERS CHOCOLATE FLO'Z. Cl. 46.
672,271. VITALITY COCKTAIL. Cl. 46.
672,272. REDUSAN. Cl. 46.
672,277. JUNO. Cl. 46.
672,281. DEMO. Cl. 46.
672,286. WAX-PAK. Cl. 50.
672,287. SUN-PORT ETC. AND DESIGN. Cl. 50.
672,257. AVALANCHE. Cl. 42.
672,291. HAPPY BIRTHDAY. Cl. 51.
672,299. KISS AND DESIGN. Cl. 52.
672,300. UNITED ELECTRODYNAMICS. Cl. 100.
672,301. INFRANK AND DESIGN. Cl. 100.
672,302. SPORTSMANSHIP HALL OF FAME. Cl. 100.
672,304. ASTE AND DESIGN. Cl. 101.
672,308. TREAD TCCO WELD. Cl. 103.
672,309. TREAD TCCO WELL. Cl. 103.
672,312. BEEZEE. Cl. 104.
672,314. KATHLEEN CARTER AND DESIGN. Cl. 107.
672,315. KUSTOMS OF AMERICA KOA AND DESIGN. Cl. 200.
672,316. IYOB FILIAE AND DESIGN. Cl. 200.
672,317. THE ARABIC CLUB AND DESIGN. Cl. 200.
672,319. AMERICAN TILE. Cl. 12.
672,327. HAND PAINTED ETC. AND DESIGN. Cl. 30.
672,329. MANAGEMENT WORKSHOP. Cl. 36.
672,333. FACE FOAM AND DESIGN. Cl. 51.
672,334. MALT 'N' BURGER. Cl. 100.
672,335. SPENCER PERMA-SAFE METHOD. Cl. 100.
672,337. TOTAL MARKETING. Cl. 101.
672,338. RENT-A-LUGGAGE AND DESIGN. Cl. 101.

### Section 18

655,275. HENLEY HOUSE. Cl. 39. 12–3–57.
706,606. PLIERENCH. Cl. 23. 11–1–60.
768,556. ALL PAC. Cl. 2. 4–28–64.



# TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

671,642. MIMS. Cl. 49. 12–23–58. Saserac Company, Inc., New Orleans, La. Corrected: In the statement, column 1, line 1, "The" should be deleted and after "Inc." *, also doing business as Saserac Co. Inc.* should be inserted.

764,693. EURODISC AND DESIGN. Cl. 36. 2–11–64. Ariola-Sonopress G.m.b.H., Gutersloh, Germany. Amended: In the statement, column 1, after line 1, , *now by change of name Ariola-Eurodisc Gesellschaft mit beschrankter Haftung* is inserted.

778,123. PROVEN. Cl. 23. 10–6–64. Pro Hardware, Inc., Larchmont, N.Y. Corrected: In the statement, column 2, line 4, "wheelbarrows" should be deleted and *power mowers* should be inserted.

780,414. KENDIX AND DESIGN. Cl. 42. 11–17–64. Internationale Textiel Organisatie Kendix N.V., d.b.a. International Kendix, Waalre, Netherlands. Corrected: In the statement, column 1, line 1, "Textile" should be deleted and *Textiel* should be inserted.

781,510. RABUN. Cl. 50. 12–8–64. Gorham Bronze, Inc., by change of name from Rabun Bronze Foundry, Incorporated, Los Angeles, Calif. Corrected: In the statement, column 1, line 1, "Brons" should be deleted and *Bronze* should be inserted.

782,574. CULLIGAN. Cl. 52. 12–29–64. Culligan, Inc., Northbrook, Ill. Corrected: In the statement, column 2, line 1, after "domestic" *washing* should be inserted.

# INDEX OF REGISTRANTS

## FEBRUARY 23, 1965

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Abbott Laboratories, North Chicago, Ill. 672,099, canc. Cl. 18.
Abel Corp., The, Columbus, Ohio. 785,610, pub. 12–8–64. Cl. 35.
Acme Backing Corp., New York, and Brooklyn, N.Y. 359,406, canc. Cl. 50.
Acme Backing Corp., New York, N.Y. 785,670, pub. 8–11–64. Cl. 43.
Afta Solvents Corp., Glencove, N.Y. 785,749, pub. 12–8–64. Cl. 52.
Aladdin Laboratories, Inc., Minneapolis, Minn. 672,016, canc. Cl. 2.
Alford Mfg. Co., Boston, Mass. 785,504, pub. 12–8–64. Cl. 21.
Alcoiac Chemical Corp., Baltimore, Md. 785,454, pub. 12–8–64. Cl. 6.
Allen Knitting Mills, Inc., New York, N.Y. 785,662, pub. 12–8–64. Cl. 42.
Allen, R. C., Business Machines, Inc., Grand Rapids, Mich. 785,573, pub. 12–8–64. Cl. 26.
Allied Animal Research Corp., Charlotte, N.C. 785,496, pub. 12–8–64. Cl. 18.
Allis-Chalmers Mfg. Co., West Allis, Wis. 785,518, pub. 12–8–64. Cl. 21.
Alloy Engineering & Casting Co., Champaign, Ill. 785,484, pub. 12–8–64. Cl. 14.
Alna Tricots De Luxe, Milan, Italy. 785,633, pub. 12–8–64. Cl. 39.
Al-Min Distributing, Inc., New York, N.Y. 672,017, canc. Cl. 3.
American Airlines, Inc., New York, N.Y. 785,759, pub. 12–8–64. Cl. 105.
American Biltrite Rubber Co., Inc., Trenton, N.J. 785,503, pub. 12–8–64. Cl. 20.
American Can Co., New York, N.Y. 785,563, pub. 12–8–64. Cl. 23.
American Crayon Co., The, Sandusky, Ohio, to The Joseph Dixon Crucible Co., Jersey City, N.J. 411,803, ren. 2–23–65. Cl. 16.
American Cyanamid Co., New York, N.Y. 672,112, canc. Cl. 18.
American Cyanamid Co., Wayne, N.J. 785,492, pub. 12–8–64. Cl. 18.
American Desk Mfg. Co., Temple, Tex. 785,602, pub. 12–8–64. Cl. 32.
American Encaustic Tiling Co.: *See*—
American Encaustic Tiling Co., Inc.
American Encaustic Tiling Co., Inc., d.b.a. American Encaustic Tiling Co., Lansdale, Pa. 672,319, canc. Cl. 12.
American Home Products Corp., New York, N.Y. 785,497, pub. 12–8–64. Cl. 18.
American Society of Tool Engineers, Detroit, Mich. 672,304, canc. Cl. 101.
American Thread Co., The: *See*—
Willimantic Linen Co., The.
American Toy & Furniture Co., Inc., Chicago, Ill. 785,536, pub. 12–8–64. Cl. 22.
Amity Leather Products Co., West Bend, Wis. 785,435, pub. 12–8–64. Cl. 3.
Amway Corp., Ada, Mich. 785,438, pub. 12–8–64. Cl. 4.
Anaconda Wire and Cable Co.: *See*—
Tubular Woven Fabric Co
Anchor Hocking Glass Corp., Lancaster, Ohio. 672,228, canc. Cl. 33.
Anderson, Clayton & Co., Houston, Tex. 785,488, pub. 12–8–64. Cl. 18.
Anderson, Clayton & Co., Houston, Tex. 785,552, pub. 12–8–64. Cl. 23.
Angier Corp., Framingham, Mass., to Ludlow Corp., Needham, Mass. 198,462, ren. 2–23–65. Cl. 37.
Aqua-Tec Corp., Fort Collins, Colo. 785,673, pub. 12–8–64. Cl. 44.
Arabic Club, The, Dayton, Ohio. 672,317, canc. Cl. 200.
Archer-Daniels-Midland Co., Minneapolis, Minn. 785,418, pub. 12–8–64. Cl. 1.
Ariola-Sonopress G.m.b.H., now by change of name Ariola-Eurodisc Gesellschaft mit beschrankter Haftung, Gutersloh, Germany. 764,693, cor. Cl. 36.
Arlington Aluminum Co., Detroit, Mich. 785,599, pub. 12–8–64. Cl. 32.
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Auguste Noel Ltd., London, England. 785,721, pub. 12–8–64. Cl. 46.
Avon Products, Inc., New York, N.Y. 785,737, pub. 12–8–64. Cl. 51.
Avon Products, Inc., New York, N.Y. 785,748, pub. 12–8–64. Cl. 52.
Axton-Cross Co., Shelton, Conn. 785,458, pub. 12–8–64. Cl. 6.
B & W Inc., Torrance, Calif. 785,543, pub. 12–8–64. Cl. 23.
Babcock & Wilcox Co., The, New York, N.Y. 785,472, pub. 12–8–64. Cl. 12.
Bachmann Bros., Inc., Philadelphia, Pa. 785,526, pub. 12–8–64. Cl. 22.
Baird-Atomic, Inc., Cambridge, Mass. 785,508, pub. 12–8–64. Cl. 21.
Balanced Foods, Inc., New York, N.Y. 785,684, pub. 12–8–64. Cl. 46.
Balfour, L. G., Co., Attleboro, Mass. 785,584, pub. 12–8–64. Cl. 28.
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Barrus, Mortier F., d.b.a. Rexco, Costa Mesa, Calif. 672,025, canc. Cl. 6.
Bates, C. J., & Son, Chester, Conn., to The Bates File Mfg. Co., Newington, Conn. 408,267–8, ren. 2–23–65. Cl. 44.
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Baxter Laboratories, Inc., Glenview, Ill. 359,848, canc. Cl. 6.
Baxter Laboratories, Inc., Glenview, Ill. 373,805, canc. Cl. 15.
Baxter Laboratories, Inc., Glenview, Ill. 380,930, canc. Cl. 18.
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Beaunit Mills, Inc.
Beaunit Mills, Inc., to Beaunit Corp., New York, N.Y. 410,929, ren. 2–23–65. Cl. 43.
Beaverite Products, Inc.: *See*—
Diebold, Inc.
Behringwerke Aktiengesellschaft, Marburg/Lahn, Germany. 785,491, pub. 12–8–64. Cl. 18.
Belch, Paul F., Co., Bloomington, Ill. 785,677, pub. 12–8–64. Cl. 46.
Belo, A. H., Corp., Dallas, Tex. 785,624–5, pub. 12–8–64. Cl. 38.
Benrus Watch Co., Inc., New York, N.Y. 785,581, pub. 12–8–64. Cl. 27.
Berman & Pokrass, Washington, D.C. 655,341, canc. Cl. 51.
Biotta Gemuesebau Ag, Tagerwilen, Tagerwilen, Switzerland. 785,697, pub. 12–8–64. Cl. 46.
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Boehringer Ingelheim, G.m.b.H.
Boeringer Ingelheim, G.m.b.H., from C. H. Boehringer Sohn, Ingelheim am Rhein, Germany. 785,493, pub. 12–8–64. Cl. 18.
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Botany Industries, Inc., d.b.a. Sea and Ski Co. and Renauld of France, Reno, Nev., from The Harlequin Corp., New York, N.Y. 785,572, pub. 8–18–64. Cl. 26.
Bowmar Instrument Corp., Fort Wayne, Ind. 785,514, pub. 12–8–64. Cl. 21.
Breese Burners, Inc.: *See*—
Breese Industries, Inc.
Breese Industries, Inc., from Breese Burners, Inc., Santa Fe, N. Mex. 672,139, canc. Cl. 21.
Brown-Forman Distillers Corp., Louisville, Ky. 785,780, pub. 12–8–64. Cl. 49.
Brunswick Corp., Chicago, Ill. 785,439, pub. 12–8–64. Cl. 5.
B-Shur Manufacturer, Long Beach, Calif. 672,153, canc. Cl. 21
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Byer-Rolnick Corp., from Byer-Rolnick Hat Corp., Garland, Tex. 785,769. Cl. 39.
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Byer-Rolnick Corp.
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Calter Distributors, Inc., Los Angeles, Calif. 672,091, canc. Cl. 18.
Calwis Co., Green Bay, Wis. 785,619, pub. 12–8–64. Cl. 37.
Cambridge Filter Corp., from Cambridge Filter Mfg. Corp., Syracuse, N.Y. 785,598, pub. 12–8–64. Cl. 31.
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Cambridge Filter Corp.
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Campbell, Joseph, Co.
Cape Cod Cooks, Inc., Sandwich, Mass. 672,271, canc. Cl. 46.
Capewell Mfg. Co., Hartford, Conn. 785,556, pub. 12–8–64. Cl. 23.

Caratan, M.: *See*—
Caratan, M., Inc.
Caratan, M., Inc., d.b.a. M. Caratan, Delano, Calif. 785,682, pub. 12–8–64. Cl. 46.
Carioma Corp., St. Louis, Mo. 672,135, canc. Cl. 21.
Carreras Ltd., Basildon, England. 189,562, ren. 2–23–65. Cl. 17.
Carter Products, Inc., New York, N.Y. 785,709, pub. 12–8–64. Cl. 46.
Cartier, Inc., New York, N.Y. 411,239–41, ren. 2–23–65. Cl. 28.
Cartier, Inc., New York, N.Y. 411,975, ren. 2–23–65. Cl. 27.
Castleton China, Inc., New Castle, Pa. 785,591, pub. 12–8–64. Cl. 30.
Castleton China, Inc., New Castle, Pa. 785,593, pub. 12–8–64. Cl. 30.
Catalina, Inc., Los Angeles, Calif. 785,636, pub. 12–8–64. Cl. 39.
Cely Enterprises Corp., Honolulu, Hawaii. 785,698, pub. 12–8–64. Cl. 46.
Central Nebraska Packing Co., North Platte, Nebr. 785,720, pub. 12–8–64. Cl. 46.
Central Soya Co., Inc., Fort Wayne, Ind. 785,692, pub. 12–8–64. Cl. 46.
Certified Dry Mist Corp., New York, N.Y. 194,120, ren. 2–23–65. Cl. 50.
Champion Chemicals, Inc., Odessa, Tex. 785,443, pub. 12–8–64. Cl. 6.
Channel Master Corp., Ellenville, N.Y. 785,517, pub. 12–8–64. Cl. 21.
Char-Tex, Inc., to Goodrich-Gamble Co., Minneapolis, Minn. 411,433, ren. 2–23–65. Cl. 51.
Chattanooga Boiler and Tank Co., Chattanooga, Tenn. 785,782–3. Cl. 2.
Chesler, J., & Sons, Inc., Brooklyn, N.Y. 672,195, canc. Cl. 25.
Christian Science Publishing Society, The, Boston, Mass. 413,113–14, ren. 2–23–65. Cl. 38.
Churchill, O. H., Co., Los Angeles, Calif., to Logrecco Bros., Delano, Calif. 192,862, ren. 2–23–65. Cl. 46.
Ciba Ltd.: *See*—
Society of Chemical Industry in Basle.
Cigarette Mfg. Co. "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. 785,765. Cl. 17.
Clark, Jeff, Corp., Jeffersonville, Ind. 785,735, pub. 12–8–64. Cl. 51.
Clark, J. L., Mfg. Co., Rockford, Ill. 785,427, pub. 12–8–64. Cl. 2.
Cleveland Greenhouse Vegetable Growers Cooperative Association, Cleveland, Ohio. 785,678, pub. 12–8–64. Cl. 46.
Cline, Russell S., Statesville, N.C. 785,527, pub. 12–8–64. Cl. 22.
Cold Spring Granite Co., Cold Spring, Minn. 785,764. Cl. 12.
Coleman, E. P., d.b.a. Sportsmanship Hall of Fame, Phoenix, Ariz. 672,302, canc. Cl. 100.
Columbia Varnish Co., Los Angeles, Calif., 672,075, canc. Cl. 16.
Connecticut Hard Rubber Co., The, New Haven, Conn. 785,440, pub. 12–8–64. Cl. 5.
Consolidated Cosmetics, Chicago, Ill., to Les Parfums De Dana, Inc., New York, N.Y. 414,146, ren. 2–23–65. Cl. 51.
Consolidated Oil & Gas, Inc., Denver, Colo. 785,442, pub. 12–8–64. Cl. 6.
Continental Plastics of Oklahoma Inc., Oklahoma City, Okla. 785,411, pub. 12–8–64. Cl. 1.
Cooke Engineering Co., Alexandria, Va. 785,571, pub. 8–6–65. Cl. 26.
Corbett, R. H., & Co. Ltd., Burgess Hill, Sussex, England. 672,182, canc. Cl. 23.
Corde-De Parie, Inc., New York, N.Y. 785,650, pub. 12–8–64. Cl. 39.
Country Gardens, Inc., Gillett, Wis., to Country Gardens, Inc., Milwaukee, Wis. 412,778, ren. 2–23–65. Cl. 46.
Craddock Furniture Corp., Evansville, Ind. 672,218, canc. Cl. 32.
Culligan, Inc., Northbrook, Ill. 782,574. Am. 7(d). Cl. 52.
Curtis Industries, Inc., Eastlake, Ohio. 785,570, pub. 12–8–64. Cl. 25.
Cushman, Wilhelm, d.b.a. Willa Products Unltd., New York, N.Y. 785,627, pub. 12–8–64. Cl. 39.
Cutler Engineering, Inc., Elk Grove Village, Ill. 785,553, pub. 12–8–64. Cl. 23.
D'Antonio Shoe Corp., New York, N.Y. 785,648, pub. 12–8–64. Cl. 39.
D'Arcy Co., Dover, N.H. 785,604, pub. 12–8–64. Cl. 32.
Davidow Suits, Inc., New York, N.Y. 785,634, pub. 12–8–64. Cl. 39.
Dawe's Laboratories, Inc., Chicago, Ill. 785,711, pub. 12–8–64. Cl. 46.
Dayton Bait Corp., Dayton, Ohio. 672,166, canc. Cl. 22.
Dealer Associates, Inc., Minden, La. 785,545, pub. 12–8–64. Cl. 23.
Dean Foods Co., Franklin Park, Ill. 785,702, pub. 12–8–64. Cl. 46.
De Luxe Reading Corp., Elizabeth, N.J. 785,535, pub. 12–8–64. Cl. 22.
De Macarte, Paul A. H., d.b.a. Thank-U-Courtesy Horn, Rockville, Conn. 672,130, canc. Cl. 21.
Dental Research, Birmingham, Ala. 785,490, pub. 12–8–64. Cl. 18.
Devoe & Raynolds Co., Inc., Louisville, Ky. 672,077, canc. Cl. 16.
De Witt, E. C., & Co. Inc., Chicago, Ill. 414,502, ren. 2–23–65. Cl. 18.
Diamond Alkali Co., Cleveland, Ohio. 785,448, pub. 12–8–64. Cl. 6.
Diebold, Inc., Canton, Ohio, to Beaverite Products, Inc., Beaver Falls, N.Y. 410,470, ren. 2–23–65. Cl. 37.
Dixon, Joseph, Crucible Co., The: *See*—
American Crayon Co., The.
Doall Co., Des Plaines, Ill. 785,560, pub. 12–8–64. Cl. 23.
Doran, John F., d.b.a. Malt 'N' Burger Co., Waterloo, Iowa. 672,334, canc. Cl. 100.
Doric Corp.: *See*—
Eddie Mill & Elevator Co.
Superior Feed Mills.
Dori-Gold, Inc., New York, N.Y. 785,588, pub. 12–8–64. Cl. 28.
Drackett Co., The, Cincinnati, Ohio. 785,590, pub. 12–8–64. Cl. 29.
Drey, Sam, Phoenix, Ariz., from Salt River Valley Produce, Inc., Glendale, Ariz. 672,281, canc. Cl. 46.
Dufour, S.p.A., Genoa-Cornigliano, Italy. 785,683, pub. 12–8–64. Cl. 46.
Duncan, Donald F., Inc., Chicago, Ill. 672,168, canc. Cl. 22.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 785,437, pub. 12–8–64. Cl. 4.
Dymec, Inc., from Dynac, Inc., Palo Alto, Calif. 672,204, canc. Cl. 26.
Dymo Industries, Inc., Emeryville, Calif. 785,550, pub. 12–8–64. Cl. 23.
Dynac, Inc.: *See*—
Dymec, Inc.
Dynalytic Engineering Co., Glendale, Calif. 785,657, pub. 12–8–64. Cl. 40.
Dynamic Instrument Corp., Plainview, N.Y. 785,766. Cl. 21.
Dalekan, Henry J., Chicago, Ill. 785,567, pub. 12–8–64. Cl. 23.
E-Z Mills, Inc., New York, N.Y. 785,640, pub. 12–8–64. Cl. 39.
Eagle Pencil Co., Danbury, Conn. 785,617, pub. 12–8–64. Cl. 37.
Early California Foods, from Pacific Olive Co., d.b.a. Pacific Olive Co., Visalia, Calif. 785,716, pub. 12–1–64. Cl. 46.
Eastman Kodak Co., Rochester, N.Y. 785,455–6, pub. 12–8–64. Cl. 6.
Eastman Kodak Co., Rochester, N.Y. 785,580, pub. 12–8–64. Cl. 26.
Ecko Products Co.: *See*—
Geneva Forge, Inc.
Economics Laboratory, Inc., St. Paul, Minn. 785,446, pub. 12–8–64. Cl. 6.
Eddie Mill & Elevator Co., to Doric Corp., Oklahoma City, Okla. 191,828, ren. 2–23–65. Cl. 46.
Egan, H. B., Mfg. Co., Muskogee, Okla. 672,117, canc. Cl. 19.
Elkes, Joe B., d.b.a. World Wide Associates and/or World Wide Creations, Skokie, Ill. 785,582, pub. 12–8–64. Cl. 27.
Elting Bros., Inc.: *See*—
Victorius, A. V., & Co.
Embart Mfg. Co., Hartford, Conn. 660,081–2, canc. Cl. 23.
Ener-G Cereal, Inc., Seattle, Wash. 785,703, pub. 12–8–64. Cl. 46.
Engelhard Industries Ltd., London, England. 672,157, canc. Cl. 21.
Erickson Petroleum Corp., Minneapolis, Minn. 785,751–2, pub. 12–8–64. Cl. 100.
Erismann-Schinz S.A., La Neuveville (Berne), Switzerland. 785,767. Cl. 27.
Ervin-Lambeth, Inc., Thomasville, N.C. 663,464, canc. Cl. 32.
Esquire, Inc., New York, N.Y., from Associated Cigar Co., Dallastown, Pa. 672,079, canc. Cl. 17.
Esso Standard Oil Co., New York, N.Y. 672,286, canc. Cl. 50.
Etablissements Louis Rochegude S.A., Valance, Drome, France. 785,669, pub. 12–8–64. Cl. 43.
Exchange Parts Co. of Fort Worth, Fort Worth, Tex. 672,119, canc. Cl. 19.
Exhibitors, Inc., San Jose, from H. C. Thompson, d.b.a. Henry C. Thompson Associates, Saratoga, Calif. 785,486, pub. 12–8–64. Multiple Class (Classes 16, 29, 37, and 50).
FMC Corp., New York, N.Y. 785,459, pub. 12–8–64. Cl. 6.
Fabrica de Discos Peerless, S.A., Mexico City, Mexico. 785,615, pub. 12–8–64. Cl. 36.
Fabrica, Inc., New York, N.Y. 785,665, pub. 12–8–64. Cl. 42.
Farison Mfg. Co., Napoleon, Ohio. 672,167, canc. Cl. 22.
Farmers Forage Research, Cooperative, Madison, Wis. 785,761, pub. 12–8–64. Cl. A.
Fast Chemical Corp., Yonkers, N.Y. 785,750, pub. 12–8–64. Cl. 52.
Federal Liquors Ltd., Cambridge, Mass. 785,728, pub. 12–8–64. Cl. 49.
Federal Sign and Signal Corp., Blue Island, Ill. 785,519, pub. 12–8–64. Cl. 21.
Feed Products, Inc., Fort Worth, Tex. 658,700, canc. Cl. 18.
Fifth Dimension, Inc., Princeton, N.J. 785,511, pub. 12–8–64. Cl. 21.
Firestone Tire & Rubber Co., The, Akron, Ohio. 785,614, pub. 12–8–64. Cl. 35.
Firma Gebruder Merkel & Co. G.m.b.H., Eckernforde, Germany. 785,468, pub. 12–8–64. Cl. 9.
Fitzgerald Mfg. Co., The, Torrington, Conn. 785,609, pub. 12–8–64. Cl. 35.
Flexo Products, Inc., Westlake, Ohio. 785,595, pub. 12–8–64. Cl. 31.
Foreman Fabrics Inc., New York, N.Y., to Burlington Industries, Inc., Greensboro, N.C. 411,055, ren. 2–23–65. Cl. 42.
Foy Paint Co., The, to Foy-Johnston, Inc., Cincinnati, Ohio. 198,422, ren. 2–23–65. Cl. 16.
Foy-Johnston, Inc.: *See*—
Foy Paint Co., The.
Fractor Co., Inc., The, Beverly Hills, Calif. 785,587, pub. 12–8–64. Cl. 28.
Fran Mushroom Co., Inc., Ravena, N.Y. 785,688, pub. 12–8–64. Cl. 46.
Fritzsche Bros., Inc., New York, N.Y. 785,674, pub. 12–8–64. Cl. 45.
Frozen Institutional Sales Co.: *See*—
Frozen Institutional Sales Co-op, Inc.





Frozen Institutional Sales Co-op, Inc., d.b.a. Frozen Institutional Sales Co., San Francisco, Calif. 785,679, pub. 12–8–64. Cl. 46.
Frugone & Preve S.p.A., Genoa, Italy. 785,701, pub. 12–8–64. Cl. 46.
Fuld Bros., Inc., Baltimore, Md. 785,747, pub. 12–8–64. Cl. 52.
Fuller Co.: *See*—
Infilco Inc.
Gallo Mfg. Co.: *See*—
Gallo, Michael S.
Gallo, Michael S., d.b.a. Gallo Mfg. Co., Racine, Wis. 785,485, pub. 12–8–64. Cl. 15.
Gary-Howe Corp., New York, N.Y. 672,105, canc. Cl. 18.
Geigy Chemical Corp., Ardsley, N.Y. 785,441, pub. 12–8–64. Cl. 6.
Geltman Laminating Corp., Los Angeles, Calif. 785,760, pub. 12–8–64. Cl. 106.
General Aniline & Film Corp., New York, N.Y. 785,579, pub. 12–8–64. Cl. 26.
General Color Co.: *See*—
Kohnstamm, H., & Co., Inc.
General Foods Corp., White Plains, N.Y. 785,687, pub. 12–8–64. Cl. 46.
General Mills Inc.: *See*—
Washburn Crosby Co.
General Mills, Inc., Minneapolis, Minn. 474,338, ren. 2–23–65. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 785,707–8, pub. 12–8–64. Cl. 46.
General Paint & Varnish Co., Inc., d.b.a. Wheeler Varnish Works, Chicago, Ill. 672,072, canc. Cl. 16.
General Tire & Rubber Co., The, Akron, Ohio. 672,003, canc. Cl. 1.
Geneva Forge, Inc., Geneva, N.Y., to Ecko Products Co., Chicago, Ill. 411,860, ren. 2–23–65. Cl. 23.
George, Jimmie, d.b.a. Hubby Co., Berkeley, Ill. 785,654, pub. 12–8–64. Cl. 40.
Glemby Co., Inc., The, New York, N.Y. 785,653, pub. 3–8–64. Cl. 40.
Globe Furniture Co., High Point, N.C. 785,600, pub. 12–8–64. Cl. 32.
Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. 785,524–5, pub. 12–8–64. Cl. 22.
Goodrich Electric Co., Chicago, Ill. 359,715, canc. Cl. 21.
Goodrich-Gamble Co.: *See*—
Char-Tex, Inc.
Gorham Bronze, Inc., by change of name from Rabun Bronze Foundry, Inc., Los Angeles, Calif. 781,510, cor. Cl. 50.
Greenwood, Mary F., Carmel, Calif. 785,538, pub. 12–8–64. Cl. 22.
Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills, Bristol, Va. 785,628, pub. 12–8–64. Cl. 39.
Grey, Mary, Hosiery Mills: *See*—
Grey Hosiery Mills.
Gruenberg Electric Co., Inc., Garden City, N.Y. 785,521, pub. 12–8–64. Cl. 21.
Gubin, Morris, d.b.a. M.G. Novelty Co., Chicago, Ill. 785,655, pub. 12–8–64. Cl. 40.
Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 785,534, pub. 12–8–64. Cl. 22.
Gusher Foods, Denver, Colo. 785,712, pub. 12–8–64. Cl. 46.
Habra-Werk Wilhelm F. Ott, Darmstadt, Germany. 785,429, pub. 12–8–64. Cl. 2.
Hall, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 785,651, pub. 12–8–64. Cl. 39.
Hamilton Mfg. Co., Two Rivers, Wis. 785,569, pub. 12–8–64. Cl. 24.
Hammel, Riglander & Co. Inc., New York, N.Y. 413,878, ren. 2–23–65. Cl. 37.
Harlemark International, Inc., Natick, Mass. 785,663, pub. 12–8–64. Cl. 42.
Harlequin Corp.: *See*—
Botany Industries, Inc.
Harnosand Knitting Mills, Ltd., Ozone Park, N.Y. 785,631, pub. 12–8–64. Cl. 39.
Harshaw Chemical Co., The, Cleveland, Ohio. 672,000, canc. Cl. 1.
Harts Mountain Products Corp., New York, N.Y. 785,436, pub. 12–8–64. Cl. 3.
Harveton Furniture, Inc., Atlanta, Ga. 672,224, canc. Cl. 32.
Harvey, Harold D., d.b.a. Highland Kitchens, Denver, Colo. 785,685, pub. 12–8–64. Cl. 46.
Hat Corp. of America, New York, N.Y. 785,639, pub. 12–8–64. Cl. 39.
Hayden Flour Mills, Tempe, Ariz. 785,700, pub. 12–8–64. Cl. 46.
Heath, Westcott, Jr., d.b.a. Westcott Electronics, Clifton, N.J. 785,577, pub. 12–8–64. Cl. 26.
Heikman-Meeter Co., The, Grand Rapids, Mich. 677,792, canc. Cl. 46.
Hercules Tire & Rubber Co., The, Stamford, Conn. 785,509, pub. 12–8–64. Cl. 21.
Hi-G Inc., Windsor Locks, Conn. 785,506, pub. 12–8–64. Cl. 21.
Higbee Co., The, Cleveland, Ohio. 785,586, pub. 12–8–64. Cl. 28.
Highland Kitchens: *See*—
Harvey, Harold D.
HiLand Foods, Inc., Arriba, Colo. 660,206, canc. Cl. 46.
Hockley, Roscoe L., d.b.a. Shooters' Specialties, Baltimore, Md. 672,243, canc. Cl. 39.
Hoover Ball and Bearing Co., Saline, Mich. 785,565, pub. 12–8–64. Cl. 23.
House of Perfection, Inc., The, New York, N.Y. 660,375, canc. Cl. 39.
Hubbard and Co., Pittsburgh, Pa., to Hubbard and Co., St. Louis, Mo. 409,903, ren. 2–23–65. Cl. 21.
Hubby Co.: *See*—
George, Jimmie.
Hudnut, Richard, Morris Plains, N.J. 672,291, canc. Cl. 51.
Hudnut, Richard, Morris Plains, N.J. 785,734, pub. 12–8–64. Cl. 51.
Huffstetler, L. R., Inc.: *See*—
Southern Citrus Packing Co., Inc.
Hydroponic Chemical Co., Inc., Copley, Ohio. 785,426, pub. 12–8–64. Cl. 2.
Ideal Toy Corp., Hollis, N.Y. 785,532–3, pub. 12–8–64. Cl. 22.
Industrie A. Zanussi, Pordenone, Italy. 785,425, pub. 12–8–64. Multiple Class (Classes 2, 21, 23, 24, 27, 31, 34, 36, and 44).
Industriewerke Lemm & Co. G.m.b.H., Gusterath-Tal, Kreis Trier, Germany. 785,635, pub. 12–8–64. Cl. 39.
Infilco Inc., Chicago, Ill., to Fuller Co., Catasauqua, Pa. 410,350, ren. 2–23–65. Cl. 31.
Inland Steel Co., Chicago, Ill. 785,482, pub. 12–8–64. Cl. 14.
Interchemical Corp., New York, N.Y. 785,471, pub. 12–8–64. Cl. 11.
International Nickel Co., Inc., The, New York, N.Y. 410,329, ren. 2–23–65. Cl. 14.
International Order of Job's Daughters, Owosso, Mich. 672,316, canc. Cl. 200.
Internationale Textiel Organisatie Kendix N.V., d.b.a. International Kendix, Waalre, Netherlands. 780,414, cor. Cl. 42.
Inter-State Nurseries, Inc., Hamburg, Iowa. 785,421, pub. 12–8–64. Cl. 1.
Jacobs Brothers, to Jacobs Brothers, Inc., Baltimore, Md. 193,628, ren. 2–23–65. Cl. 39.
Jacobs Brothers, Inc.: *See*—
Jacobs Brothers.
Jacobsen Mfg. Co., Racine, Wis. 785,539–40, pub. 12–8–64. Cl. 23.
Jaret Imports, Inc., Brooklyn, N.Y. 785,680, pub. 12–8–64. Cl. 46.
Johns-Manville Corp., New York, N.Y. 785,474, pub. 12–8–64. Cl. 12.
Johnson Bros. (Hanley) Ltd., New York, N.Y. 672,214, canc. Cl. 30.
Johnson, J. W., Co., Bellwood, Ill. 785,664, pub. 12–8–64. Cl. 42.
Johnson & Johnson, New Brunswick, N.J. 194,123, ren. 2–23–65. Cl. 44.
Johnson & Johnson: *See*—
Personal Products Corp., The.
Joseph & Feiss Co., The, Cleveland, Ohio. 655,275, canc. Cl. 39.
Juhase, Walter, d.b.a. The Walters Co., New York, N.Y. 672,287, canc. Cl. 50.
Just Born, Inc., Bethlehem, Pa. 785,713, pub. 12–8–64. Cl. 46.
Kaspar Winkler & Co.: *See*—
Fritz Schenker-Winkler.
Keepaway Laboratory: *See*—
Vigor Laboratories Ltd.
Keith, Ben E., Fort Worth, to Knapp-Sherrill Co., Donna, Tex. 185,801, ren. 2–23–65. Cl. 46.
Kellogg, L. H., Chemical Co., Minneapolis, Minn. 785,449–52, pub. 12–8–64. Cl. 6.
Kelsey-Hayes Co., Utica, N.Y. 785,542, pub. 6–16–64. Cl. 23.
Kenffel & Esser Co., Hobokin, N.J., from Micro-Master, Inc., Kansas City, Mo. 672,052, canc. Cl. 13.
Kimball, A., Ltd., Toronto, Ontario, Canada. 785,432, pub. 12–8–64. Cl. 2.
King, John J., Chicago, Ill. 672,183, canc. Cl. 23.
King Trailer Co., Inc., Torrance, Calif. 672,118, canc. Cl. 19.
Kiwi Polish Co. Proprietary Ltd., The, Richmond, near Melbourne, Victoria, Australia. 785,733, pub. 12–8–64. Cl. 50.
Knapp-Sherrill Co.: *See*—
Keith, Ben E.
Koch Refrigerators, Inc., Kansas City Mo. 672,217, canc. Cl. 31.
Kohner Bros., Inc., New York, N.Y. 785,537, pub. 12–8–64. Cl. 22.
Kohnstamm, H., & Co., Inc., d.b.a. General Color Co., New York, N.Y. 785,453, pub. 12–8–64. Cl. 6
Kommandit-Gesellschaft Ernst Gideon Bek & Co., Pforzheim/Baden, Germany. 785,457, pub. 12–8–64. Multiple Class (Classes 8 and 28).
Korvette, E. J., Inc.: *See*—
Pepperell Mfg. Co.
Kroger Co., The, Cincinnati, Ohio. 785,661, pub. 12–8–64. Cl. 42.
Kuhn-Verpackungsmaschinen GmbH, Baden-Baden-Oos, Germany. 785,547, pub. 12–8–64. Cl. 23.
Kustoms of America, Inc., Hollywood, Calif. 672,315, canc. Cl. 200.
L.O.F. Glass Fibers Co., Toledo, Ohio. 672,047, canc. Cl. 12.
La Lanne Inc., Hollywood, Calif. 785,523, pub. 12–8–64. Cl. 22.
Laporte, B., Ltd., Luton, Bedfordshire, England. 419,139, canc. Cl. 6.
Leaf Brands, Inc., Chicago, Ill. 672,277, canc. Cl. 46.
Leisurely Corp., New York, N.Y. 785,638, pub. 12–8–64. Cl. 39.
Lemley, Herman A., d.b.a. Valley Chemical Co., Williamstown, W. Va. 785,742, pub. 12–8–64. Cl. 52.
Les Parfums De Dana, Inc.: *See*—
Consolidated Cosmetics.
Lever Bros. Co., New York, N.Y. 785,739, pub. 12–8–64. Cl. 52.
Lexington Mill & Elevator Co., Lexington, Nebr., 411,802, ren. 2–23–65. Cl. 46.

Lilly, Eli, and Co., Indianapolis, Ind. 672,084, canc. Cl. 18.
Lindsey, James W., d.b.a. Lindsey Seed Co., Lubbock, Tex. 672,006, canc. Cl. 1.
Lindsey Seed Co.: *See*—
Lindsey, James W.
Linowitz, Sol M., Rochester, N.Y. 658,639, canc. Cl. 107.
Litecraft Mfg. Corp., Passaic, N.J. 672,050, canc. Cl. 12.
Logrecco Bros.: *See*—
Churchill, O. H., Co.
Lowenbrau Munchen, Munich, Germany. 785,724–7, pub. 12–8–64. Cl. 48.
Ludlow Corp.: *See*—
Angier Corp.
Lustro Plastic Tile Co., The, Stow, Ohio. 768,556, canc. Cl. 2.
Luxem, James P., Co., The, Franklin Park, Ill. 672,223, canc. Cl. 32.
M.G. Novelty Co.: *See*—
Gubin, Morris.
MacArthur, Arthur P., Milford, Pa. 672,301, canc. Cl. 100.
MacDermid of Bristol, Inc.: *See*—
MacDermid, William D.
MacDermid, W. D., Chemical Co.: *See*—
MacDermid, William D.
MacDermid, William D., d.b.a. W. D. MacDermid Chemical Co., to MacDermid of Bristol, Inc., Bristol, Conn. 412,090, ren. 2–23–65. Cl. 52.
Macklanburg Duncan Co., Oklahoma City, Okla. 785,475, pub. 12–8–64. Cl. 12.
Magnaform, Inc., Atlanta, Ga. 785,501, pub. 12–8–64. Cl. 19.
Magnet Cove Barium Corp., Houston, Tex. 785,410, pub. 12–8–64. Cl. 1.
Magnetic Metals Co., Camden, N.J. 785,520, pub. 12–8–64. Cl. 21.
Major Slicing Machine Corp., Walden, N.Y. 785,562, pub. 12–8–64. Cl. 23.
Mallinckrodt Chemical Works, St. Louis, Mo. 785,447, pub. 12–8–64. Cl. 6.
Malt 'N' Burger Co.: *See*—
Doran, John F.
Manostad Corp., New York, N.Y. 785,561, pub. 12–8–64. Cl. 23.
Marion Electrical Instrument Co., Manchester, N.H. 672,207, canc. Cl. 26.
McArdle and Cooney, Inc., Philadelphia, Pa. 785,483, pub. 12–8–64. Cl. 14.
McCubbin Hosiery, Inc., Oklahoma City, Okla. 785,643, pub. 12–8–64. Cl. 39.
McKinnon, Columbus, Corp., Tonawanda, N.Y. 785,544, pub. 6–23–64. Cl. 23.
Meat Industry Suppliers, Inc., Northfield, Ill. 785,704, pub. 12–8–64. Cl. 46.
Medical Assurance Plan, Inc., Milwaukee, Wis. 785,757, pub. 12–8–64. Cl. 102.
Medicated Products Co., Chicago, Ill. 785,585, pub. 12–8–64. Cl. 28.
Melville Shoe Corp., New York, N.Y. 785,645, pub. 12–8–64. Cl. 39.
Melville Shoe Corp., New York, N.Y. 785,647, pub. 12–8–64. Cl. 39.
Melville Shoe Corp., New York, N.Y. 785,656, pub. 12–8–64. Cl. 40.
Melville Shoe Corp., New York, N.Y. 785,658, pub. 12–8–64. Cl. 41.
Mercil Plating Equipment Co., Chicago, Ill. 785,753, pub. 12–8–64. Cl. 100.
Metaltite Products, Inc., Hammond, Ind. 672,163, canc. Cl. 21.
Meyer Products, Inc., Cleveland, Ohio. 785,558, pub. 12–8–64. Cl. 23.
Michiana Personnel Service, South Bend, Ind. 785,756, pub. 12–8–64. Cl. 101.
Micro-Master: *See*—
Keuffel & Esser Co.
Midwest Brake Bond Co., Detroit, Mich. 785,611, pub. 12–8–64. Cl. 35.
Miles Laboratories, Inc., Elkhart, Ind. 785,461, pub. 12–8–64. Cl. 6.
Milford Hosiery Co.: *See*—
Rotter, Alexander.
Miller Brothers Co., Inc., Johnson City, Tenn. 672,044–5, canc. Cl. 12.
Miller Publishing Co., The, to The Miller Publishing Co., Minneapolis, Minn. 196,911, ren. 2–23–65. Cl. 38.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 785,732, pub. 12–8–64. Cl. 50.
Mitchell, John E., Co., Inc., Dallas, Tex. 785,568, pub. 12–8–64. Cl. 23.
Mollart Engineering Co. Ltd., Surbiton, England. 410,175, ren. 2–23–65. Cl. 26.
Monsanto Co., St. Louis, Mo. 785,430–1, pub. 12–8–64. Cl. 2.
Montgomery Ward & Co., Inc., Chicago, Ill. 672,136, canc. Cl. 31.
Moran Shoe Co., Carlyle, Ill. 785,649, pub. 12–8–64. Cl. 39.
Morgan Adhesives Co., Stow, Ohio. 785,618, pub. 12–8–64. Cl. 37.
Morris, Philip, Inc., New York, N.Y. 785,487, pub. 2–11–64. Cl. 17.
Morton Salt Co., Chicago, Ill. 785,467, pub. 12–8–64. Cl. 6.
Motoronics, Inc., New York, N.Y. 785,507, pub. 12–8–64. Cl. 21.
Nassau Fabrics, Inc., New York, N.Y. 672,262, canc. Cl. 42.
National Auto Dealers Service, Cleveland, Ohio. 785,755, pub. 12–8–64. Cl. 101.
National Biscuit Co., New York, N.Y. 785,722, pub. 12–8–64. Cl. 46.
National Blank Book Co., Holyoke, Mass. 785,621, pub. 12–8–64. Cl. 37.
National Frost Protection Co., Inc., Burbank, Calif. 785,699, pub. 12–8–64. Cl. 46.
National Mattress & Furniture Co., Inc., d.b.a. Spring Air of Greater Washington, Md., Muirkirk, Md. 785,603, pub. 12–8–64. Cl. 32.
National Water Main Cleaning Co., New York, N.Y. 122,517, canc. Cl. 23.
New York Wire Cloth Co., York, Pa. 672,058, canc. Cl. 13.
North Platte Fertilizer Co., d.b.a. North Platte Fertilizer, Inc., North Platte, Nebr. 649,093, canc. Cl. 10.
North Platte Fertilizer, Inc.: *See*—
North Platte Fertilizer Co.
Northrop Aircraft, Inc., Beverly Hills, Calif. 672,125–7, canc. Cl. 19.
Nuclear-Chicago Corp., Des Plaines, Ill. 785,576, pub. 12–8–64. Cl. 26.
Nuodex Products Co., Inc., Elizabeth, N.J. 364,846, canc. Cl. 11.
Oneida Ltd., Oneida, N.Y. 785,546, pub. 12–8–64. Cl. 23.
1-XL Furniture Co., Inc., The, Goshen, Ind. 672,221, canc. Cl. 32.
Opp Textiles, Inc., Opp, Ala. 785,642, pub. 12–8–64. Cl. 39.
O'Rahilly, Aodagan, Leitrim, Ireland. 672,009, canc. Cl. 1.
Organic Compost Corp., Germantown, Wis. 672,087, canc. Cl. 10.
Original Bradford Soap Works, Inc., West Warwick, R.I. 785,746, pub. 12–8–64. Cl. 52.
Ortho Pharmaceutical Corp., Raritan, N.J. 785,489, pub. 12–8–64. Cl. 18.
P.I.P. Products: *See*—
Rosmarin, Philip F.
Pabst Brewing Co., Milwaukee, Wis. 785,433, pub. 12–8–64. Cl. 2.
Pacific Industries, Inc., San Francisco, Calif. 785,620, pub. 12–8–64. Cl. 37.
Pacific Olive Co.: *See*—
Early California Foods.
Packard Bell Electronics Corp., Los Angeles, Calif. 672,238, canc. Cl. 36.
Para-Tone Inc., La Grange, Ill. 785,731, pub. 12–8–64. Cl. 50.
Parker Brothers, Portland, Maine, and Salem, Mass., to Parker Brothers Inc., Salem, Mass. 199,520, ren. 2–23–65. Cl. 22.
Parker Brothers Inc.: *See*—
Parker Brothers.
Parker Pen Co. The, Janesville, Wis. 785,616, pub. 12–8–64. Cl. 37.
Patterson, C. J., Co., Kansas City, Mo. 785,675, pub. 7–3–62. Cl. 46.
Patterson Industries, Inc., East Liverpool, Ohio. 785,428, pub. 12–8–64. Cl. 2.
Patterson, W. W., Co., Pittsburgh, Pa. 785,554, pub. 12–8–64. Cl. 23.
Paul, Peter, Inc., Naugatuck, Conn. 785,719, pub. 12–8–64. Cl. 46.
Peaney, J. C., Co., New York, N.Y. 785,646, pub. 12–8–64. Cl. 39.
Pepperell Mfg. Co., Boston, Mass., to E. J. Korvette, Inc., New York, N.Y. 672,251, canc. Cl. 42.
Permutit Co. Ltd., The, Chiswick, London, England. 785,596, pub. 12–8–64. Cl. 31.
Pernod & Ricard, Societe, Paris, France. 785,689, pub. 12–8–64. Cl. 46.
Personal Products Corp., The, Milltown, N.J., to Johnson & Johnson, New Brunswick, N.J. 411,100, ren. 2–23–65. Cl. 29.
Personna International, Inc., New York, N.Y. 672,149, canc. Cl. 21.
Petrolite Corp., Webster Groves, Mo. 672,027–8, canc. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 785,736, pub. 12–8–64. Cl. 51.
Pfohoroff Poultry Farms, San Marcos, Calif. 785,469, pub. 12–8–64. Cl. 10.
Philco Corp., Philadelphia, Pa. 672,162, canc. Cl. 21.
Phoenix Candy Co., Inc., Brooklyn, N.Y. 785,717, pub. 12–8–64. Cl. 46.
Pierce, S. S., Co., Boston, Mass. 414,145, ren. 2–23–65. Cl. 51.
Pines International Chemical Co., Chicago, Ill. 785,743–4, pub. 12–8–64. Cl. 52.
Plaza Sunwear Co., Newark, N.J. 785,578, pub. 12–8–64. Cl. 26.
Pllerench Co. of America, Chicago, Ill. 706,606, canc. Cl. 23.
Plymouth Golf Ball Sales Co., Plymouth Meeting, Pa. 785,528–31, pub. 12–8–64. Cl. 22.
Pond's Extract Co., New York, N.Y. 359,670, canc. Cl. 51.
Pond's Extract Co., New York, N.Y. 361,949, canc. Cl. 51.
Portland Woolen Mills, Inc., Portland, Oreg. 672,257, canc. Cl. 42.
Power Designs, Inc., Westbury, N.Y. 785,522, pub. 12–8–64. Cl. 21.
Price & Edwards (Engineering) Ltd., Colnbrook, England. 785,548, pub. 12–8–64. Cl. 23.
Price Pfister Brass Mfg. Co., Pacoima, Calif. 785,480, pub. 12–8–64. Cl. 13.
Prince Rubber & Plastics Co., Inc., Buffalo, N.Y. 785,608, pub. 12–8–64. Cl. 35.
Printon Corp., New York, N.Y. 672,013, canc. Cl. 2.
Pro Hardware, Inc., Larchmont, N.Y. 778,123, cor. Cl. 23.
Procter & Gamble Co., The, Cincinnati, Ohio. 785,741, pub. 12–8–64. Cl. 52.
Purex Corp., Ltd., Wilmington, Calif. 785,745, pub. 12–8–64. Cl. 52.
Quick Cable Corp., Racine, Wis. 785,518, pub. 12–8–64. Cl. 21.
Ramcon Corp., Hampshire, Ill. 785,477, pub. 6–9–64. Cl. 13.
Ramsey, Taufek H., d.b.a. West Coast Sales, Campbell, Calif. 785,622, pub. 12–8–64. Cl. 37.
Ransburg Electro-Coating Corp., Indianapolis, Ind. 785,510, pub. 12–8–64. Cl. 21.





Ravon Products Co., New York, N.Y. 672,218, canc. Cl. 29.
Reading Milling Co., Inc., Reading, Pa. 785,718, pub. 12–8–64. Cl. 46.
Real Estate Workshop: *See*—
Schwartz, Russell J.
Reemtsma Cigarettenfabriken G.m.b.H., Hamburg-Othmarschen, Germany. 650,157, canc. Cl. 17.
Regal Foods, Skokie, Ill. 785,693, pub. 12–8–64. Cl. 46.
Regal Foods, Skokie, Ill. 785,696, pub. 12–8–64. Cl. 46.
Rent-A-Luggage, Inc., San Francisco, Calif. 672,338, canc. Cl. 101.
Resources Council Inc., New York, N.Y. 785,754, pub. 12–8–64. Cl. 101.
Rexall Chemical Co.: *See*—
Rexall Drug and Chemical Co.
Rexall Drug Co., Los Angeles, Calif. 672,095, canc. Cl. 18.
Rexall Drug and Chemical Co., Los Angeles, Calif. 785,415, pub. 12–8–64. Cl. 1.
Rexall Drug and Chemical Co., d.b.a. Rexall Chemical Co., Los Angeles, Calif. 785,424, pub. 12–8–64. Cl. 1.
Rexco: *See*—
Barrus, Mortier F.
Richardson Homes Corp., Elkhart, Ind. 785,502, pub. 12–8–64. Cl. 19.
Richardson-Merrell Inc., Cincinnati, Ohio. 785,495, pub. 12–8–64. Cl. 18.
Rodi & Wiesenberger Aktiengesellschaft, Pforzheim, Germany. 785,583, pub. 12–8–64. Cl. 28.
Rogers Corp., Rogers, Conn. 785,505, pub. 12–8–64. Cl. 21.
Rona Dresses, Inc., New York, N.Y. 411,135, ren. 2–23–65. Cl. 39.
Rosenblatt & Kahn, Inc., New York, N.Y. 785,626, pub. 12–8–64. Cl. 39.
Rosmarin, Philip F., d.b.a. P.I.P. Products, New York, N.Y. 672,333, canc. Cl. 51.
Ross Operating Valve Co., Detroit, Mich. 785,574, pub. 12–8–64. Cl. 26.
Rosson-Richards Processing Co., Inc., Houston, Tex. 672,124, canc. Cl. 19.
Rotter, Alexander, d.b.a. Milford Hosiery Co., New York, N.Y. 672,244, canc. Cl. 39.
Sagner's, A., Son, Frederick, Md. 411,728, ren. 2–23–65. Cl. 39.
Sahyun Laboratories: *See*—
Sahyun, Melville.
Sahyun, Melville, d.b.a. Sahyun Laboratories, Santa Barbara, Calif. 672,103, canc. Cl. 18.
Salt River Valley Produce, Inc.: *See*—
Drey, Sam.
Sasaki Glass Co., Ltd., Tokyo, Japan. 785,605, pub. 12–8–64. Cl. 33.
Sazerac Co., Inc., d.b.a. Sazerac Co. Inc., New Orleans, La. 671,642, cor. Cl. 49.
Scheel, William H., Inc., Brooklyn, N.Y. 785,414, pub. 12–8–64. Cl. 1.
Schenker-Winkler, Fritz, d.b.a. Kaspar Winkler & Co., Alstetten, Zurich, Switzerland. 672,031, canc. Cl. 6.
Schenlabe Pharmaceuticals, Inc., New York, N.Y. 672,106, canc. Cl. 18.
Schering Corp., Bloomfield, N.J. 672,107, canc. Cl. 18.
Schering Corp., Bloomfield, N.J. 672,113–15, canc. Cl. 18.
Schoellkopf, Buddy, Products Inc., Dallas, Tex. 785,434, pub. 9–22–64. Multiple Class (Classes 8, 9, 22, and 39).
Schramm, Inc., West Chester, Pa. 785,649, pub. 12–8–64. Cl. 23.
Schwab, Kathleen C., Kansas City, Mo. 672,314, canc. Cl. 107.
Schwartz, Russell J., d.b.a. Real Estate Workshop, Minneapolis, Minn. 672,329, canc. Cl. 36.
Scriptomatic, Inc., Philadelphia, Pa. 785,470, pub. 12–8–64. Cl. 11.
Scriptomatic, Inc., Philadelphia, Pa. 785,601, pub. 12–8–64. Cl. 32.
Scriptomatic, Inc., Philadelphia, Pa. 785,623, pub. 12–8–64. Cl. 37.
Sea and Ski Co. and Renauld of France: *See*—
Botany Industries, Inc.
Seal, Inc., Shelton, Conn. 785,413, pub. 12–8–64. Multiple Class (Classes 1 and 21).
Seamless Rubber Co., The, New Haven, Conn. 785,672, pub. 12–8–64. Cl. 44.
Sears, Roebuck and Co., Chicago, Ill. 672,062, canc. Cl. 13.
Sears, Roebuck and Co., Chicago, Ill. 672,216, canc. Cl. 31.
Shell Oil Co., New York, N.Y. 785,462–4, pub. 12–8–64. Cl. 6.
Shell Oil Co., New York, N.Y. 785,494, pub. 12–8–64. Cl. 18.
Shenango Ceramics, Inc., New Castle, Pa. 785,592, pub. 12–8–64. Cl. 30.
Shooters' Specialties: *See*—
Hockley, Roscoe L.
Shurfine Foods, Inc., Northlake, Ill. 785,412, pub. 12–8–64. Cl. 1.
Sifers Chocolate Syrup Co., Inc., Iola, Kans. 672,270, canc. Cl. 46.
Silcoa Products, Inc., New York, N.Y. 785,473, pub. 12–8–64. Cl. 12.
Sioux Honey Associates Cooperative, Sioux City, Iowa. 785,705, pub. 12–8–64. Cl. 46.
Slutsky, Edward, Inc., New York, N.Y. 785,589, pub. 12–8–64. Cl. 28.
Smith, Oliver A., Jr., d.b.a. Smith Vale Farms, Concord, Tenn. 785,419, pub. 12–8–64. Cl. 1.
Smith Vale Farms: *See*—
Smith, Oliver A., Jr.
Sobel, Bernstein & Greene Co., Los Angeles, Calif. 785,637, pub. 12–8–64. Cl. 39.
Societe A.R.L. Etablissements Bergey, Nice, France. 785,512, pub. 12–8–64. Cl. 21.
Societe Rhovyl, Paris, France. 785,659, pub. 12–8–64. Cl. 41.
Societe Rhovyl, Paris, France. 785,671, pub. 12–8–64. Cl. 44.
Society of Chemical Industry in Basle, to Ciba Ltd., Basel, Switzerland. 193,524, ren. 2–23–65. Cl. 6.
Southern Citrus Packing Co., Inc., Lakeland, Fla., to L. B. Huffstetler, Inc., Eustis, Fla. 188,201, ren. 2–23–65. Cl. 46.
Spaulding Bakeries Inc., Binghamton, N.Y. 785,694, pub. 12–8–64. Cl. 46.
Specialties, Inc., Syosset, N.Y. 441,499, canc. Cl. 26.
Spencer, Stephen W., Pittsburgh, Pa. 672,335, canc. Cl. 100.
Sperry Rand Corp., New York, N.Y. 672,129, canc. Cl. 21.
Sportsmanship Hall of Fame: *See*—
Coleman, E. P.
Spring Air of Greater Washington, Md.: *See*—
National Mattress & Furniture Co., Inc.
Springfield Cast Products, Inc., Springfield, Mass. 785,564, pub. 12–8–64. Cl. 28.
Stahmann Farms, Inc., Las Cruces, N. Mex. 785,714–15, pub. 12–8–64. Cl. 46.
Standard Milling Co., Kansas City, Mo. 785,423, pub. 12–8–64. Cl. 1.
Standard Motor Products, Inc., Long Island City, N.Y. 785,740, pub. 12–8–64. Cl. 52.
Stangl Pottery Co., Trenton, N.J. 785,594, pub. 12–8–64. Cl. 30.
Starcraft, Cleveland, Ohio. 672,201, canc. Cl. 26.
Stepan Chemical Co., Northfield, Ill. 785,420, pub. 12–8–64. Cl. 1.
Stetson China Co., Inc., Lincoln, Ill. 672,327, canc. Cl. 30.
Stevens, J. P., & Co., New York, N.Y. 785,666–8, pub. 12–8–64. Cl. 42.
Stewart, J. & G., Ltd., Edinburgh, Scotland. 785,729, pub. 12–8–64. Cl. 49.
Stilwell, Ralph M., Oakland, Calif. 672,132, canc. Cl. 21.
Stran-Steel Corp., Scorse, Mich. 672,074, canc. Cl. 16.
Strato-Track, Inc., Elkhart, Ind. 785,476, pub. 12–8–64. Cl. 18.
Superior Feed Mills to Doric Corp., Oklahoma City, Okla. 411,080, ren. 2–23–65. Cl. 46.
Swissels, Inc., Hoboken, N.J. 785,710, pub. 12–8–64. Cl. 46.
Taccone Corp., North East, Pa. 785,559, pub. 12–8–64. Cl. 28.
Tavaro S.A., Geneva, Switzerland. 785,555, pub. 12–8–64. Cl. 28.
Technic, Inc., Cranston, R.I. 785,444–5, pub. 12–8–64. Cl. 6.
Technical Components Co., Inc., Chicago Ridge, Ill. 785,607, pub. 12–8–64. Cl. 34.
Teenform, Inc., New York, N.Y. 785,629, pub. 12–8–64. Cl. 39.
Tenneco Corp., Houston, Tex. 785,422, pub. 12–8–64. Cl. 1.
Th. Grimmeisen, Paris, Seine, France. 785,632, pub. 12–8–64. Cl. 39.
Thank-U-Courtesy Horn: *See*—
De Macarte, Paul A. H.
Thermoil Lubricants Co., Tulsa, Okla. 191,568, canc. Cl. 15.
Thompson, Henry C.: *See*—
Exhibitors, Inc.
Thompson, Henry C., Associates: *See*—
Exhibitors, Inc.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 785,706, pub. 12–8–64. Cl. 46.
Towmotor Corp., Cleveland, Ohio. 785,566, pub. 12–8–64. Cl. 23.
Toyotoki Co., Ltd., The: *See*—
Toyotoki Kaisha, Ltd.
Toyotoki Kaisha, Ltd., d.b.a. The Toyotoki Co., Ltd., Kokura, Fukuoka, Japan. 785,478, pub. 12–8–64. Multiple Class (Classes 13 and 30).
Tracy-Burns Enterprises, Inc., Flint, Mich. 672,299, canc. Cl. 52.
Transformatoren- und Apparate-Fabrik Paul Metz, Furth (Bay.), Germany. 672,142, canc. Cl. 21.
Trans-Sonics, Inc., Lexington, Mass. 672,202, canc. Cl. 26.
Treadwell Construction Co., Midland, Pa. 672,308–9, canc. Cl. 103.
Trenton Foods, Inc., Kansas City, Mo. 785,695, pub. 12–8–64. Cl. 46.
Triton Insurance Co., Perry, Okla. 785,758, pub. 12–8–64. Cl. 102.
Triumph Corp., The, Baltimore, Md. 672,189, canc. Cl. 23.
Tubular Woven Fabric Co., Pawtucket, R.I., to Anaconda Wire and Cable Co., New York, N.Y. 197,279, ren. 2–23–65. Cl. 21.
Underwood, William, Co., Watertown, Mass. 785,676, pub. 5–7–63. Cl. 46.
Union Tank Car Co., Chicago, Ill. 785,597, pub. 12–8–64. Cl. 31.
United Geophysical Corp., Pasadena, Calif. 672,300, canc. Cl. 100.
United Shoe Machinery Corp., Boston, Mass. 785,541, pub. 12–8–64. Cl. 23.
United States Borax & Chemical Corp., Los Angeles, Calif. 785,465, pub. 12–8–64. Cl. 6.
U.S. Electrical Motors, Inc., Los Angeles, Calif. 672,200, canc. Cl. 26.
United States Rubber Co., New York, N.Y. 785,612–13, pub. 12–8–64. Cl. 35.
United States Rubber Co., New York, N.Y. 785,416–17, pub. 12–8–64. Cl. 1.
United States Steel Corp., Pittsburgh, Pa. 672,060, canc. Cl. 13.
Unitek Corp., Monrovia, Calif. 785,606, pub. 12–8–64. Cl. 34.
Urethane Institute, Washington, D.C. 785,770. Cl. 101.
VSI Corp., Pasadena, Calif. 785,479, pub. 12–8–64. Cl. 13.
Valley Chemical Co.: *See*—
Lemley, Herman A.
Van Herzeele, Francis: *See*—
Van Herzeele, Henry.
Van Herzeele, Henry, d.b.a. Atkinson Feed Mill, to F. Van Herzeele, Atkinson, Ill. 410,583, ren. 2–23–65. Cl. 46.

Van-Wilson Ltd., Burlington, Ontario, Canada. 785,551, pub. 12–8–64. Cl. 23.
Vare Industries, Inc., Roselle, N.J. 785,575, pub. 12–8–64. Cl. 26.
Veris Foods, Inc., Washington, D.C. 785,686, pub. 12–8–64. Cl. 46.
Victorius, A. V., & Co., to Elting Bros., Inc., New York, N.Y. 192,713, ren. 2–23–65. Cl. 39.
Victory Provision Co., Dayton, Ohio. 785,681, pub. 12–8–64. Cl. 46.
Vigor Laboratories Ltd., d.b.a. Keepaway Laboratory, London, England. 672,086, canc. Cl. 18.
Visan Nutritional Laboratories, The, Burbank, Calif. 672,272, canc. Cl. 46.
Walters Co., The: *See*—
Juhase, Walter.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 785,498, pub. 12–8–64. Cl. 18.
Washburn Crosby Co., to General Mills Inc., Minneapolis, Minn. 199,448, ren. 2–23–65. Cl. 46.
Waters Mfg., Inc., Wayland, Mass. 785,515, pub. 12–8–64. Cl. 21.
Weather-Seal, Inc., Barberton, Ohio. 672,031, canc. Cl. 12.
West Chemical Products, Inc., Long Island City, N.Y. 785,460, pub. 12–8–64. Cl. 6.
West Coast Sales: *See*—
Ramsey, Taufek H.
Westcott Electronics: *See*—
Heath, Westcott, Jr.
Westinghouse Broadcasting Co., Inc., New York, N.Y. 672,312, canc. Cl. 104.
Wheeler Varnish Works: *See*—
General Paint & Varnish Co., Inc.
Whirlpool Corp., St. Joseph, Mich. 785,500, pub. 12–8–64. Cl. 19.
Whitbrook Farms, Inc., Wilmington, N.C. 785,723, pub. 12–8–64. Cl. 46.
White Laboratories, Inc., Kenilworth, N.J. 672,100–1, canc. Cl. 18.
Wilis Products Unltd.: *See*—
Cushman, Wilhela.
Willimantic Linen Co., The, Hartford, Conn., to The American Thread Co., New York, N.Y. 25,631, ren. 2–23–65. Cl. 43.
Wilson Trailer Co., Sioux City, Iowa. 785,499, pub. 12–8–64. Cl. 19.
Windsor, Kay, Inc., New York, N.Y. 785,630, pub. 12–8–64. Cl. 39.
Winter, John, & Son, Inc., Short Hills, N.J. 785,641, pub. 12–8–64. Cl. 39.
Woolrich Woolen Mills, Woolrich, Pa. 785,644, pub. 12–8–64. Cl. 39.
World Wide Associates: *See*—
Elkes, Joe B.
Wyandotte Chemicals Corp., Wyandotte, Mich. 785,738, pub. 12–8–64. Cl. 52.

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